

**Entergy Arkansas, LLC
White Bluff Steam Electric Station
Recycle Ponds**

2020 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
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Prepared by:



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January 29, 2021

TABLE OF CONTENTS

EXECUTIVE SUMMARY	4
1. INTRODUCTION	5
2. GROUNDWATER MONITORING SYSTEM	6
3. INSTALLED OR DECOMMISSIONED WELLS DURING 2020	7
4. GROUNDWATER MONITORING DATA.....	8
5. STATUS SUMMARY OF THE 2020 GROUNDWATER MONITORING PROGRAM	9
6. PROJECTED ACTIVITIES FOR 2021	10

LIST OF APPENDICES

APPENDIX A: Site Map

APPENDIX B: Groundwater Monitoring Data

EXECUTIVE SUMMARY

Entergy Arkansas, LLC (Entergy), operated two recycle ponds as part of its process water system for bottom ash transport at the White Bluff Steam Electric Station (Plant) located near Redfield, Arkansas. The recycle ponds provided intermediate storage of waters used in the transport of coal combustion residuals (CCR) generated from the combustion of coal at the plant. Pond A commenced closure as of October 2018 and the Pond B is scheduled to commence closure in early 2021. Management of the CCR at the recycle ponds 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 White Bluff Plant completed the eight (8) background quarterly detection monitoring sampling events in the second quarter of 2020. Upon completion of the eighth background sampling event, the recycle ponds CCR Unit entered semi-annual detection monitoring in the second half of 2020 per 40 CFR § 257.94. In November/December 2020 the initial detection monitoring sampling was performed for the recycle ponds CCR Unit. The recycle ponds CCR Unit operated under the detection monitoring program (40 CFR § 257.94) during the duration of 2020.

1. INTRODUCTION

Entergy Arkansas, LLC (Entergy), operated two recycle ponds as part of its process water system for bottom ash transport at the Plant located near Redfield, Arkansas (Lat: 34.421658 / Long: -92.139455). The recycle ponds provided intermediate storage of waters used in the transport of CCR generated from the combustion of coal at the Plant. Pond A commenced closure as of October 2018 and the Pond B is scheduled to commence closure in early 2021. The recycle ponds are managed in accordance with the national criteria established in the CCR Rule. Entergy installed a groundwater monitoring system at the recycle ponds CCR Unit 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 recycle ponds CCR Unit.

2. GROUNDWATER MONITORING SYSTEM

The recycle ponds CCR unit groundwater monitoring system consists of 10 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 DECOMMISSIONED WELLS DURING 2020

Entergy did not install any new wells or decommission any existing wells in the certified groundwater monitoring system during 2020.

4. GROUNDWATER MONITORING DATA

In accordance with §257.90(e)(3), all monitoring data obtained under §§257.90 through 257.98 during 2020 are provided in Appendix B along with a summary of the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was collected as part of detection or assessment monitoring.

5. STATUS SUMMARY OF THE 2020 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 2020 is provided in the list below:

- In accordance with §257.94(b), quarterly detection monitoring was performed during the first and second quarters of 2020 for analysis of Appendix III parameters (boron, calcium, chloride, fluoride, pH, sulfate, and total dissolved solids (TDS)) and Appendix IV parameters (antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, fluoride, lead, lithium, mercury, molybdenum, selenium, thallium, and radium 226 and 228 combined) which completed the initial eight independent samples required under the Rule.
- In accordance with §257.94(b), semiannual detection monitoring was performed during the second half (November/December) of 2020 for analysis of Appendix III parameters. This was the first semi-annual detection monitoring event performed following completion of the initial eight independent background detection monitoring events.
- The second half 2020 detection monitoring sampling was performed during November/December 2020. Statistical evaluation of the data will be performed in 2021 to determine if any SSIs are identified in accordance with §257.93(h).
- No problems were encountered during 2020 with regard to the detection monitoring and corrective action system. Therefore, no actions were required to modify the system.
- The recycle ponds CCR unit remained in detection monitoring for the duration of 2020.

6. PROJECTED ACTIVITIES FOR 2021

Planned activities for the program during 2021 are listed below:

- Statistical evaluation of the second half 2020 detection monitoring sampling data will be performed during 2021 to determine if any SSIs are identified.
- Semiannual detection monitoring is planned for May and November 2021.

APPENDIX A

SITE MAP

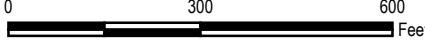


LEGEND

- ★ RECYCLING POND WELLS
- ⬡ RECYCLING POND BOUNDARY

NOTES

1. BASE MAP IMAGERY FROM GOOGLE EARTH PRO, 2018 .



1" = 300'
1:3,600

PROJECT:		ENTERGY WHITE BLUFF PLANT 1100 WHITE BLUFF ROAD REDFIELD, ARKANSAS	
TITLE:		RECYCLING POND WELL LOCATIONS	
DRAWN BY:	S. MAJOR	PROJ. NO.:	431458
CHECKED BY:	L. BURRIS	FIGURE 2	
APPROVED BY:	J. HOUSE		
DATE:	JANUARY 2021		
		Two United Plaza 8550 United Plaza Blvd., Suite 502 Baton Rouge, LA Phone: 225.216.7483	
FILE NO.:		431458-001.mxd	

APPENDIX B
GROUNDWATER MONITORING DATA

Sampling Schedule, Entergy White Bluff Recycle Ponds Network										
Well ID	Detection Monitoring Sampling Dates and Wells Sampled									Number of Samples Collected
	7/17/2018	10/23/2018	3/5/2019	5/29-5/30/2019	8/27/2019	11/19/2019	3/19/2019	6/10/2020	11/24-12/1/2020	
RP-1	X	X	X	X	X	X	X	X	X	9
RP-2	X	X	X	X	X	X	X	X	X	9
RP-3	X	X	X	X	X	X	X	X	X	9
RP-4	X	X	X	X	X	X	X	X	X	9
RP-5	X	X	X	X	X	X	X	X	X	9
RP-6	X	X	X	X	X	X	X	X	X	9
RP-7	X	X	X	X	X	X	X	X	X	9
RP-8	X	X	X	X	X	X	X	X	X	9
RP-9	X	X	X	X	X	X	X	X	X	9
RP-10	X	X	X	X	X	X	X	X	X	9

Notes: All samples collected through 2020 were part of the detection monitoring program. No samples collected through 2020 were part of an assessment monitoring program.

Field pH data collected during 2020, Entergy White Bluff Recycle Ponds network					
Well ID	Date Collected	pH (su)	Well ID	Date Collected	pH (su)
RP-1	7/17/2018	3.9	RP-6	7/17/2018	4.6
	10/23/2018	3.7		10/23/2018	4.1
	3/5/2019	3.7		3/5/2019	9.5
	5/30/2019	3.6		5/29/2019	7.0
	8/27/2019	3.7		8/27/2019	5.9
	11/19/2019	3.7		11/19/2019	5.9
	3/19/2020	3.37		3/19/2020	6.61
	6/10/2020	3.35		6/10/2020	6.64
	11/30/2020	3.61		11/24/2020	5.59
RP-2	7/17/2018	4.9	RP-7	7/17/2018	4.5
	10/23/2018	6.5		10/23/2018	4.3
	3/5/2019	6.8		3/5/2019	3.9
	5/30/2019	6.0		5/29/2019	3.8
	8/27/2019	5.4		8/27/2019	4.4
	11/19/2019	5.2		11/19/2019	4.1
	3/19/2020	5.47		3/19/2020	3.63
	6/10/2020	5.33		6/10/2020	3.64
	11/30/2020	3.96		12/1/2020	4.74
RP-3	7/17/2018	4.0	RP-8	7/17/2018	5.3
	10/23/2018	3.9		10/23/2018	5.2
	3/5/2019	4.0		3/5/2019	6.3
	5/30/2019	3.5		5/29/2019	5.9
	8/27/2019	3.7		8/27/2019	5.7
	11/19/2019	3.8		11/19/2019	5.6
	3/20/2020	3.75		3/19/2020	5.61
	6/10/2020	3.18		6/10/2020	5.53
	11/25/2020	3.51		11/25/2020	4.74

Field pH data collected during 2020, Entergy White Bluff Recycle Ponds network					
Well ID	Date Collected	pH (su)	Well ID	Date Collected	pH (su)
RP-4	7/17/2018	4.5	RP-9	7/17/2018	6.0
	10/23/2018	3.2		10/23/2018	5.5
	3/5/2019	3.2		3/5/2019	6.4
	5/29/2019	3.4		5/29/2019	5.8
	8/27/2019	4.8		8/27/2019	6.3
	11/19/2019	4.8		11/19/2019	6.1
	3/19/2020	5.04		3/19/2020	6.04
	6/10/2020	5.07		6/10/2020	5.70
	11/30/2020	3.51		11/25/2020	5.51
RP-5	7/17/2018	5.5	RP-10	7/17/2018	4.6
	10/23/2018	4.3		10/23/2018	3.7
	3/5/2019	3.9		3/5/2019	3.6
	5/29/2019	3.9		5/29/2019	3.7
	8/27/2019	4.2		8/27/2019	4.1
	11/19/2019	4.7		11/19/2019	4.0
	3/19/2020	3.54		3/19/2020	3.48
	6/10/2020	3.55		6/10/2020	3.81
	11/24/2020	3.59		11/25/2020	3.56

January 21, 2019

FTN Associates - Little Rock, AR

Sample Delivery Group: L1011119
Samples Received: 07/20/2018
Project Number: 7920-1845-002
Description: Entergy White Bluff Landfill
Site: ENERGY/WHITE BLUFF
Report To: Dana Derrington
3 Innwood Circle, Suite 220
Little Rock, AR 72211

Entire Report Reviewed By:



Justin Carr
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



Cp: Cover Page	1
Tc: Table of Contents	2
Ss: Sample Summary	3
Cn: Case Narrative	5
Sr: Sample Results	6
RP-1 L1011119-01	6
RP-2 L1011119-02	7
RP-3 L1011119-03	8
RP-4 L1011119-04	9
RP-5 L1011119-05	10
RP-6 L1011119-06	11
RP-7 L1011119-07	12
RP-8 L1011119-08	13
RP-9 L1011119-09	14
RP-10 L1011119-10	15
Qc: Quality Control Summary	16
Radiochemistry by Method 904	16
Radiochemistry by Method SM7500Ra B M	17
Gl: Glossary of Terms	19
Al: Accreditations & Locations	20
Sc: Sample Chain of Custody	21



SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



RP-1 L101119-01 Non-Potable Water

Collected by
Eric N.

Collected date/time
07/17/18 12:40

Received date/time
07/20/18 08:45

¹Cp

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Radiochemistry by Method 904	WG1143296	1	07/27/18 09:15	07/30/18 11:07	MK
Radiochemistry by Method Calculation	WG1141734	1	07/27/18 10:55	07/31/18 09:40	RRE
Radiochemistry by Method SM7500Ra B M	WG1141734	1	07/27/18 10:55	07/31/18 09:40	RRE

²Tc

³Ss

RP-2 L101119-02 Non-Potable Water

Collected by
Eric N.

Collected date/time
07/17/18 12:20

Received date/time
07/20/18 08:45

⁴Cn

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Radiochemistry by Method 904	WG1143296	1	07/27/18 09:15	07/30/18 11:07	MK
Radiochemistry by Method Calculation	WG1141734	1	07/27/18 10:55	07/31/18 09:40	RRE
Radiochemistry by Method SM7500Ra B M	WG1141734	1	07/27/18 10:55	07/31/18 09:40	RRE

⁵Sr

⁶Qc

⁷Gl

RP-3 L101119-03 Non-Potable Water

Collected by
Eric N.

Collected date/time
07/17/18 13:10

Received date/time
07/20/18 08:45

⁸Al

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Radiochemistry by Method 904	WG1143296	1	07/27/18 09:15	07/31/18 09:24	MK
Radiochemistry by Method Calculation	WG1141734	1	07/27/18 10:55	07/31/18 09:40	RRE
Radiochemistry by Method SM7500Ra B M	WG1141734	1	07/27/18 10:55	07/31/18 09:40	RRE

⁹Sc

RP-4 L101119-04 Non-Potable Water

Collected by
Eric N.

Collected date/time
07/17/18 13:45

Received date/time
07/20/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Radiochemistry by Method 904	WG1143296	1	07/27/18 09:15	07/31/18 09:24	MK
Radiochemistry by Method Calculation	WG1141734	1	07/27/18 10:55	07/31/18 09:40	RRE
Radiochemistry by Method SM7500Ra B M	WG1141734	1	07/27/18 10:55	07/31/18 09:40	RRE

RP-5 L101119-05 Non-Potable Water

Collected by
Eric N.

Collected date/time
07/17/18 14:30

Received date/time
07/20/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Radiochemistry by Method 904	WG1143296	1	07/27/18 09:15	07/31/18 09:24	MK
Radiochemistry by Method Calculation	WG1141734	1	07/27/18 10:55	07/31/18 09:40	RRE
Radiochemistry by Method SM7500Ra B M	WG1141734	1	07/27/18 10:55	07/31/18 09:40	RRE

RP-6 L101119-06 Non-Potable Water

Collected by
Eric N.

Collected date/time
07/17/18 14:50

Received date/time
07/20/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Radiochemistry by Method 904	WG1143296	1	07/27/18 09:15	07/31/18 09:24	MK
Radiochemistry by Method Calculation	WG1141734	1	07/27/18 10:55	07/31/18 10:00	RRE
Radiochemistry by Method SM7500Ra B M	WG1141734	1	07/27/18 10:55	07/31/18 10:00	RRE

PRIVILEGED AND CONFIDENTIAL / ATTORNEY-CLIENT COMMUNICATION/ATTORNEY WORK PRODUCT
PREPARED AT THE DIRECTION OF LEGAL COUNSEL

ACCOUNT:
FTN Associates - Little Rock, AR

PROJECT:
7920-1845-002

SDG:
L101119

DATE/TIME:
01/21/19 14:41

PAGE:
3 of 22

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



RP-7 L101119-07 Non-Potable Water

Collected by
Eric N.

Collected date/time
07/17/18 16:25

Received date/time
07/20/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Radiochemistry by Method 904	WG1143296	1	07/27/18 09:15	07/31/18 09:24	MK
Radiochemistry by Method Calculation	WG1141734	1	07/27/18 10:55	07/31/18 10:00	RRE
Radiochemistry by Method SM7500Ra B M	WG1141734	1	07/27/18 10:55	07/31/18 10:00	RRE

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

RP-8 L101119-08 Non-Potable Water

Collected by
Eric N.

Collected date/time
07/17/18 16:50

Received date/time
07/20/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Radiochemistry by Method 904	WG1143296	1	07/27/18 09:15	07/31/18 09:24	MK
Radiochemistry by Method Calculation	WG1144914	1	08/01/18 08:40	08/02/18 13:40	RRE
Radiochemistry by Method SM7500Ra B M	WG1144914	1	08/01/18 08:40	08/02/18 13:40	RRE

RP-9 L101119-09 Non-Potable Water

Collected by
Eric N.

Collected date/time
07/17/18 14:10

Received date/time
07/20/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Radiochemistry by Method 904	WG1143296	1	07/27/18 09:15	07/31/18 09:24	MK
Radiochemistry by Method Calculation	WG1144914	1	08/01/18 08:40	08/02/18 13:40	RRE
Radiochemistry by Method SM7500Ra B M	WG1144914	1	08/01/18 08:40	08/02/18 13:40	RRE

RP-10 L101119-10 Non-Potable Water

Collected by
Eric N.

Collected date/time
07/17/18 17:05

Received date/time
07/20/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Radiochemistry by Method 904	WG1143296	1	07/27/18 09:15	07/31/18 09:24	MK
Radiochemistry by Method Calculation	WG1144914	1	08/01/18 08:40	08/02/18 13:40	RRE
Radiochemistry by Method SM7500Ra B M	WG1144914	1	08/01/18 08:40	08/02/18 13:40	RRE

PRIVILEGED AND CONFIDENTIAL / ATTORNEY-CLIENT COMMUNICATION/ATTORNEY WORK PRODUCT
PREPARED AT THE DIRECTION OF LEGAL COUNSEL



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Justin Carr
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/L		+ / -	pCi/L	date / time	
RADIUM-228	4.26		0.745	0.687	07/30/2018 11:07	WG1143296
(T) Barium	100			30.0-110	07/30/2018 11:07	WG1143296
(T) Yttrium	100			30.0-110	07/30/2018 11:07	WG1143296

¹ Cp² Tc³ Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	5.72		1.08	0.838	07/31/2018 09:40	WG1141734

⁴ Cn⁵ Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	1.45		0.333	0.151	07/31/2018 09:40	WG1141734
(T) Barium-133	85.9			30.0-110	07/31/2018 09:40	WG1141734

⁶ Qc⁷ Gl⁸ Al⁹ Sc



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/L		+ / -	pCi/L	date / time	
RADIUM-228	1.15		0.659	0.883	07/30/2018 11:07	WG1143296
(T) Barium	85.2			30.0-110	07/30/2018 11:07	WG1143296
(T) Yttrium	97.3			30.0-110	07/30/2018 11:07	WG1143296

¹ Cp² Tc³ Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.92		0.931	1.07	07/31/2018 09:40	WG1141734

⁴ Cn⁵ Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.778		0.272	0.189	07/31/2018 09:40	WG1141734
(T) Barium-133	80.8			30.0-110	07/31/2018 09:40	WG1141734

⁶ Qc⁷ Gl⁸ Al⁹ Sc



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/L		+ / -	pCi/L	date / time	
RADIUM-228	5.14		0.681	0.621	07/31/2018 09:24	WG1143296
(T) Barium	100			30.0-110	07/31/2018 09:24	WG1143296
(T) Yttrium	100			30.0-110	07/31/2018 09:24	WG1143296

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	6.79		1.12	0.831	07/31/2018 09:40	WG1141734

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	1.65		0.437	0.21	07/31/2018 09:40	WG1141734
(T) Barium-133	55.5			30.0-110	07/31/2018 09:40	WG1141734



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/L		+ / -	pCi/L	date / time	
RADIUM-228	1.85		0.633	0.63	07/31/2018 09:24	WG1143296
(T) Barium	100			30.0-110	07/31/2018 09:24	WG1143296
(T) Yttrium	100			30.0-110	07/31/2018 09:24	WG1143296

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.36		0.828	0.748	07/31/2018 09:40	WG1141734

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.515		0.195	0.118	07/31/2018 09:40	WG1141734
(T) Barium-133	85.0			30.0-110	07/31/2018 09:40	WG1141734



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/L		+ / -	pCi/L	date / time	
RADIUM-228	1.27		0.541	0.529	07/31/2018 09:24	WG1143296
(T) Barium	100			30.0-110	07/31/2018 09:24	WG1143296
(T) Yttrium	100			30.0-110	07/31/2018 09:24	WG1143296

¹ Cp² Tc³ Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.98		0.795	0.727	07/31/2018 09:40	WG1141734

⁴ Cn⁵ Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.714		0.254	0.198	07/31/2018 09:40	WG1141734
(T) Barium-133	88.7			30.0-110	07/31/2018 09:40	WG1141734

⁶ Qc⁷ Gl⁸ Al⁹ Sc



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/L		+ / -	pCi/L	date / time	
RADIUM-228	4.53		0.707	0.626	07/31/2018 09:24	WG1143296
(T) Barium	98.2			30.0-110	07/31/2018 09:24	WG1143296
(T) Yttrium	100			30.0-110	07/31/2018 09:24	WG1143296

¹ Cp² Tc³ Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	6.34		1.06	0.865	07/31/2018 10:00	WG1141734

⁴ Cn⁵ Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	1.82		0.352	0.239	07/31/2018 10:00	WG1141734
(T) Barium-133	86.3			30.0-110	07/31/2018 10:00	WG1141734

⁶ Qc⁷ Gl⁸ Al⁹ Sc



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/L		+ / -	pCi/L	date / time	
RADIUM-228	1.19		0.607	0.608	07/31/2018 09:24	WG1143296
(T) Barium	100			30.0-110	07/31/2018 09:24	WG1143296
(T) Yttrium	99.0			30.0-110	07/31/2018 09:24	WG1143296

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.31		0.951	0.847	07/31/2018 10:00	WG1141734

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	1.13		0.344	0.239	07/31/2018 10:00	WG1141734
(T) Barium-133	78.3			30.0-110	07/31/2018 10:00	WG1141734



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/L		+ / -	pCi/L	date / time	
RADIUM-228	1.19		0.659	0.655	07/31/2018 09:24	WG1143296
(T) Barium	100			30.0-110	07/31/2018 09:24	WG1143296
(T) Yttrium	100			30.0-110	07/31/2018 09:24	WG1143296

¹ Cp² Tc³ Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.41		0.847	0.833	08/02/2018 13:40	WG1144914

⁴ Cn⁵ Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.224		0.188	0.178	08/02/2018 13:40	WG1144914
(T) Barium-133	80.7			30.0-110	08/02/2018 13:40	WG1144914

⁶ Qc⁷ Gl⁸ Al⁹ Sc



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/L		+ / -	pCi/L	date / time	
RADIUM-228	1.67		0.577	0.659	07/31/2018 09:24	WG1143296
(T) Barium	100			30.0-110	07/31/2018 09:24	WG1143296
(T) Yttrium	100			30.0-110	07/31/2018 09:24	WG1143296

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.13		0.892	0.987	08/02/2018 13:40	WG1144914

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.468		0.315	0.328	08/02/2018 13:40	WG1144914
(T) Barium-133	84.0			30.0-110	08/02/2018 13:40	WG1144914

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/L		+ / -	pCi/L	date / time	
RADIUM-228	1.82		0.669	0.759	07/31/2018 09:24	WG1143296
(T) Barium	100			30.0-110	07/31/2018 09:24	WG1143296
(T) Yttrium	99.2			30.0-110	07/31/2018 09:24	WG1143296

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	3.25		1.17	1.23	08/02/2018 13:40	WG1144914

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	1.43		0.502	0.471	08/02/2018 13:40	WG1144914
(T) Barium-133	82.3			30.0-110	08/02/2018 13:40	WG1144914

Method Blank (MB)

(MB) R3330550-1 07/30/18 11:07

Analyte	MB Result pCi/L	MB Qualifier	MB MDA pCi/L
Radium-228	-0.0576		0.317
(T) Barium	100		
(T) Yttrium	100		

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

L1012369-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1012369-01 07/30/18 11:07 • (DUP) R3330550-5 07/30/18 11:07

Analyte	Original Result pCi/L	DUP Result pCi/L	Dilution	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit pCi/L
Radium-228	-0.746	0.000	1	0.000	0.574		20	3
(T) Barium	100	100						
(T) Yttrium	100	100						

Laboratory Control Sample (LCS)

(LCS) R3330550-2 07/30/18 11:07

Analyte	Spike Amount pCi/L	LCS Result pCi/L	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.67	113	80.0-120	
(T) Barium			100		
(T) Yttrium			100		

L1012292-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1012292-01 07/30/18 11:07 • (MS) R3330550-3 07/30/18 11:07 • (MSD) R3330550-4 07/30/18 11:07

Analyte	Spike Amount pCi/L	Original Result pCi/L	MS Result pCi/L	MSD Result pCi/L	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-228	20.0	0.162	21.6	18.4	107	91.1	1	70.0-130			15.9		20
(T) Barium		100			100	100							
(T) Yttrium		96.0			100	100							

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Method Blank (MB)

(MB) R3330572-1 07/30/18 15:38

	MB Result	MB Qualifier	MB MDA
Analyte	pCi/l		pCi/l
Radium-226	-0.00189		0.0221
(T) Barium-133	90.0		

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1012292-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1012292-01 07/31/18 10:00 • (DUP) R3330572-5 07/30/18 15:38

	Original Result	DUP Result	Dilution	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
Analyte	pCi/l	pCi/l		%			%	pCi/l
Radium-226	0.180	0.00730	1	184	1.10		20	3
(T) Barium-133	94.2	87.8						

Laboratory Control Sample (LCS)

(LCS) R3330572-2 07/30/18 15:38

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	pCi/l	pCi/l	%	%	
Radium-226	5.02	5.44	108	80.0-120	
(T) Barium-133			92.6		

L1012369-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1012369-01 07/31/18 10:00 • (MS) R3330572-3 07/30/18 15:38 • (MSD) R3330572-4 07/30/18 15:38

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits
Analyte	pCi/l	pCi/l	pCi/l	pCi/l	%	%		%			%		%
Radium-226	20.1	0.173	20.4	20.5	101	101	1	75.0-125			0.342		20
(T) Barium-133		93.3			100	95.6							

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Method Blank (MB)

(MB) R3330842-1 08/02/18 13:40

	MB Result	MB Qualifier	MB MDA
Analyte	pCi/l		pCi/l
Radium-226	0.0145		0.0478
(T) Barium-133	93.7		

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

L1012099-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1012099-03 08/02/18 13:40 • (DUP) R3330842-4 08/02/18 13:40

	Original Result	DUP Result	Dilution	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
Analyte	pCi/l	pCi/l		%			%	pCi/l
Radium-226	0.293	0.361	1	20.7	0.186		20	3
(T) Barium-133	91.3	95.9						

Laboratory Control Sample (LCS)

(LCS) R3330842-2 08/02/18 13:40

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	pCi/l	pCi/l	%	%	
Radium-226	5.02	5.38	107	80.0-120	
(T) Barium-133			78.5		

L1012099-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1012099-06 08/02/18 13:40 • (MS) R3330842-3 08/02/18 13:40 • (MSD) R3330842-5 08/02/18 15:40

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits
Analyte	pCi/l	pCi/l	pCi/l	pCi/l	%	%		%			%		%
Radium-226	20.1	0.595	20.5	18.8	98.9	90.5	1	75.0-125			8.61		20
(T) Barium-133		88.1			99.9	100							

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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.

Abbreviations and Definitions

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

Qualifier Description

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

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 G

8 Al

9 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

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

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

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey-NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio-VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

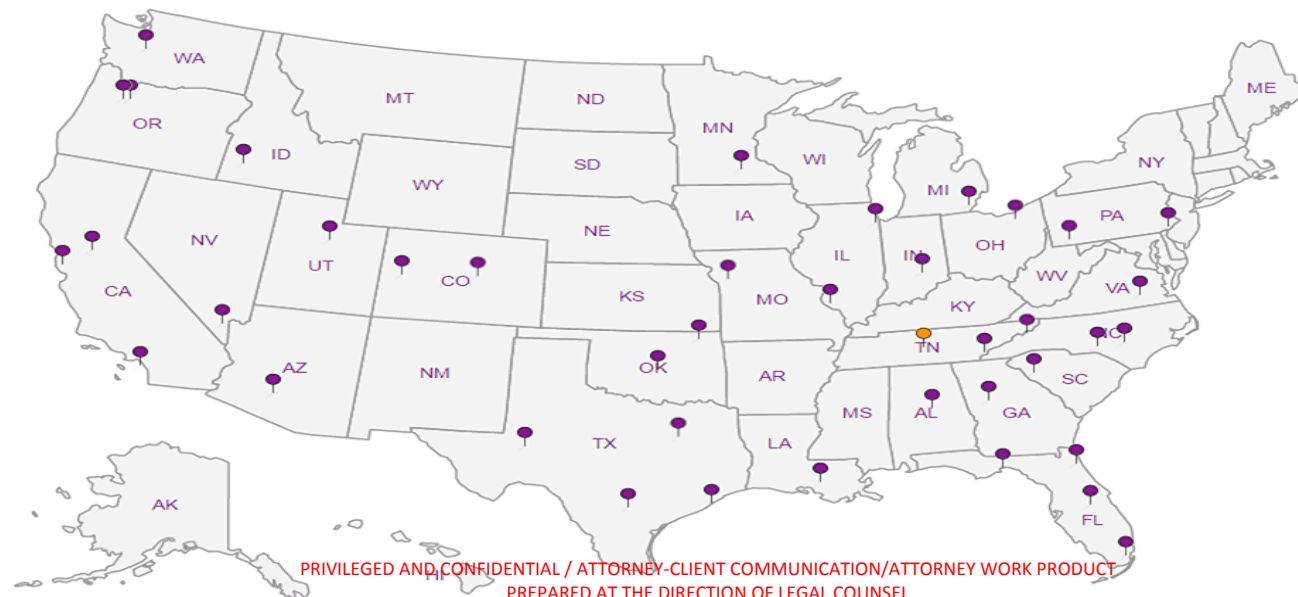
Third Party Federal Accreditations

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

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

Our Locations

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



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FTN Associates - Little Rock, AR				Billing Information:				Analysis / Container / Preservative				Chain of Custody			
3 Innwood Circle, Suite 220 Little Rock, AR 72211				Accounts Payable 3 Innwood Circle, Suite 220 Little Rock, AR 72211				Pres Chk				Page 1 of 1			
Report to: Dana Derrington				Email To: dld@ftn-assoc.com, hlf@ftn-assoc.com, ajp@ftn-assoc.com								Pace Analytical National Center for Testing & Innovation			
Project Description: Entergy White Bluff Landfill				City/State Collected:								12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859			
Phone: 501-920-9642		Client Project # 7920-1845-002		Lab Project # FTNLRAR-ENTERGYWB								L# 1011109 I130			
Fax:															
Collected by (print): Eric Nequise		Site/Facility ID # Entergy/White Bluff		P.O. #								Acctnum: FTNLRAR Template: T138202 Prelogin: P662523 TSR: 134 - Mark W. Beasley PB: 7-11-18			
Collected by (signature): [Signature]		Rush? (Lab MUST Be Notified) Same Day _____ Five Day _____ Next Day _____ 5 Day (Rad Only) _____ Two Day _____ 10 Day (Rad Only) _____ Three Day _____		Quote #								Shipped Via: FedEx Ground			
Immediately				Date Results Needed								Remarks			
Packed on Ice: N _____ Y _____												Sample # (lab only)			
Sample ID		Comp/Grab	Matrix *	Depth	Date	Time	No. of Ents	Cl, F, SO4 125mlHDPE-NoPres	Metals 250mlHDPE-HNO3	RA-226/228COMB 1L-HDPE-Add HNO3	TDS 125mlHDPE-NoPres				
RP-1		Grab	GW		7/17/18	1240	4	X	X	X	X				01
RP-2			GW			1220	4	X	X	X	X				02
RP-3			GW			1310	4	X	X	X	X				03
RP-4			GW			1345	4	X	X	X	X				04
RP-5			GW			1430	4	X	X	X	X				05
RP-6			GW			1450	4	X	X	X	X				06
RP-7			GW			1625	4	X	X	X	X				07
RP-8			GW			1650	4	X	X	X	X				08
RP-9			GW			1410	4	X	X	X	X				09
RP-10		↓	GW		↓	1705	4	X	X	X	X				10
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other		Remarks: Metals = As, Ba, Be, B, Ca, Cd, Co, Cr, Hg, Li, Mo, Pb, Sb, Se, Ti		Samples returned via: UPS _____ FedEx _____ Courier _____		Tracking # 4492 6215 6983 / 6972		pH _____ Temp _____ Flow _____ Other _____		Temp: _____ °C Bottles Received: _____ HCL / MeOH TBR		Sample Receipt Checklist COC Seal Present/Intact: _____ COC Signed/Accurate: _____ Bottles arrive intact: _____ Correct bottles used: _____ Sufficient volume sent: _____ If Applicable VOA Zero Headspace: _____ Preservation Correct/Checked: _____			
Relinquished by: (Signature) [Signature]		Date: 7/19/18		Time: 1300		Received by: (Signature) [Signature]		Trip Blank Received: Yes / No HCL / MeOH TBR		If preservation required by Login: Date/Time					
Relinquished by: (Signature)		Date:		Time:		Received by: (Signature)		Temp: _____ °C Bottles Received: _____ HCL / MeOH TBR		Hold:		Condition: NCF / OK			
Relinquished by: (Signature)		Date:		Time:		Received by: (Signature)		Temp: _____ °C Bottles Received: _____ HCL / MeOH TBR		Hold:		Condition: NCF / OK			

3 Innwood Circle, Suite 220
Little Rock, AR 72211

Accounts Payable
3 Innwood Circle, Suite 220
Little Rock, AR 72211

Pres
Chk

Analysis / Container / Preservative

Chain of Custody Page 4 of 4



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



Report to:
Dana Derrington

Email To: dld@ftn-assoc.com, hlf@ftn-assoc.com,
ajp@ftn-assoc.com

Project	
Description:	Entergy White Bluff Landfill

City/State
Collected:

Phone: 501-920-9642
Fax:

Client Project #
7920-1845-002

Lab Project #
FTNLRAR-ENERGYWB

Collected by (print):
Eric Neelise

Site/Facility ID #
Energy/White Bluff

P.O. #

Collected by (signature): *Erin Heavin*

Rush? (Lab MUST Be Notified)

Quote #

Immediately
Packed on Ice: N Y X

☐ Same Day ☐ Five Day
☐ Next Day ☐ 5 Day (Rad Only)
☐ Two Day ☐ 10 Day (Rad Only)
☐ Three Day

Date Results Needed

No. of Entres	...
---------------------	-----

[illegible]

* Matrix:

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

Remarks: Metals=As, Ba, Be, B, Ca, Cd, Co, Cr, Hg, Li, Mo, Pb, Sb, Se, Ti

Samples returned via:
☐ UPS ☐ FedEx ☐ Courier

pH _____ Temp _____

Flow _____ Other _____

Tracking #

Relinquished by : (Signature)

Date: 2/19/18	Time: 1300
---------------	------------

Received by: (Signature)

Trip Blank Received: Yes / No
HCL / MeOH
TBR

Relinquished by : (Signature)

Date:	Time:
-------	-------

Received by: (Signature)

Temp: 1.0°C Bottles Received: 48
ON/ATTORNEY WORK PRODUCT
Date: Time:

Relinquished by : (Signature)

PRIVILEGED AND CONFIDENTIAL

L/ATTORNEY-CLIENT

Date: 7/20/18 Time: 12:45

Sample Receipt Checklist

COC Seal Present/Intact:	NP	/
COC Signed/Accurate:		/ M
Bottles arrive intact:		/ M
Correct bottles used:		/ N
Sufficient volume sent:		/ N
<u>If Applicable</u>		
VOA Zero Headspace:		/ N
Preservation Correct/Checked:		/

If preservation required by Login: Date/Time

Hold:	Condition: NCE / OK
-------	------------------------

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January 21, 2019

FTN Associates - Little Rock, AR

Sample Delivery Group: L1011125
Samples Received: 07/20/2018
Project Number: 7920-1845-002
Description: Entergy White Bluff Landfill
Site: ENERGY/WHITE BLUFF
Report To: Dana Derrington
3 Innwood Circle, Suite 220
Little Rock, AR 72211

Entire Report Reviewed By:



Justin Carr
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	6	
Sr: Sample Results	7	³ Ss
RP-1 L1011125-01	7	
RP-2 L1011125-02	8	⁴ Cn
RP-3 L1011125-03	9	⁵ Sr
RP-4 L1011125-04	10	
RP-5 L1011125-05	11	⁶ Qc
RP-6 L1011125-06	12	
RP-7 L1011125-07	13	⁷ Gl
RP-8 L1011125-08	14	⁸ Al
RP-9 L1011125-09	15	
RP-10 L1011125-10	16	⁹ Sc
Qc: Quality Control Summary	17	
Gravimetric Analysis by Method 2540 C-2011	17	
Wet Chemistry by Method 9056A	18	
Mercury by Method 7470A	23	
Metals (ICP) by Method 6010B	24	
Metals (ICPMS) by Method 6020	25	
Gl: Glossary of Terms	27	
Al: Accreditations & Locations	28	
Sc: Sample Chain of Custody	29	

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



RP-1 L101125-01 GW

Collected by
Eric N.

Collected date/time
07/17/18 12:40

Received date/time
07/20/18 08:45

¹ Cp

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1141467	1	07/24/18 09:33	07/24/18 10:56	AJS
Wet Chemistry by Method 9056A	WG1141487	1	07/23/18 00:01	07/23/18 00:01	MAJ
Wet Chemistry by Method 9056A	WG1141487	20	07/23/18 00:16	07/23/18 00:16	MAJ
Wet Chemistry by Method 9056A	WG1141999	50	07/24/18 01:02	07/24/18 01:02	MCG
Mercury by Method 7470A	WG1141555	1	07/23/18 17:40	07/24/18 19:30	EL
Metals (ICP) by Method 6010B	WG1141246	1	07/24/18 07:43	07/25/18 11:26	TRB
Metals (ICPMS) by Method 6020	WG1141254	1	07/24/18 07:41	07/24/18 20:58	LD
Metals (ICPMS) by Method 6020	WG1141254	1	07/24/18 07:41	07/25/18 12:02	JPD

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

RP-2 L101125-02 GW

Collected by
Eric N.

Collected date/time
07/17/18 12:20

Received date/time
07/20/18 08:45

⁷ Gl

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1141467	1	07/24/18 09:33	07/24/18 10:56	AJS
Wet Chemistry by Method 9056A	WG1141486	1	07/22/18 23:13	07/22/18 23:13	MAJ
Mercury by Method 7470A	WG1141555	1	07/23/18 17:40	07/24/18 19:40	EL
Metals (ICP) by Method 6010B	WG1141246	1	07/24/18 07:43	07/25/18 12:19	TRB
Metals (ICPMS) by Method 6020	WG1141254	1	07/24/18 07:41	07/24/18 21:03	LD
Metals (ICPMS) by Method 6020	WG1141254	1	07/24/18 07:41	07/25/18 12:06	JPD

⁸ Al

⁹ Sc

RP-3 L101125-03 GW

Collected by
Eric N.

Collected date/time
07/17/18 13:10

Received date/time
07/20/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1141467	1	07/24/18 09:33	07/24/18 10:56	AJS
Wet Chemistry by Method 9056A	WG1141486	1	07/23/18 00:09	07/23/18 00:09	MAJ
Wet Chemistry by Method 9056A	WG1141486	10	07/23/18 00:23	07/23/18 00:23	MAJ
Mercury by Method 7470A	WG1141555	1	07/23/18 17:40	07/24/18 19:42	EL
Metals (ICP) by Method 6010B	WG1141246	1	07/24/18 07:43	07/25/18 12:21	TRB
Metals (ICPMS) by Method 6020	WG1141254	1	07/24/18 07:41	07/24/18 21:07	LD
Metals (ICPMS) by Method 6020	WG1141254	1	07/24/18 07:41	07/25/18 12:10	JPD

RP-4 L101125-04 GW

Collected by
Eric N.

Collected date/time
07/17/18 13:45

Received date/time
07/20/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1141467	1	07/24/18 09:33	07/24/18 10:56	AJS
Wet Chemistry by Method 9056A	WG1141486	1	07/23/18 00:36	07/23/18 00:36	MAJ
Wet Chemistry by Method 9056A	WG1141486	10	07/23/18 00:50	07/23/18 00:50	MAJ
Mercury by Method 7470A	WG1141555	1	07/23/18 17:40	07/24/18 19:44	EL
Metals (ICP) by Method 6010B	WG1141246	1	07/24/18 07:43	07/25/18 12:24	TRB
Metals (ICPMS) by Method 6020	WG1141254	1	07/24/18 07:41	07/24/18 21:12	LD
Metals (ICPMS) by Method 6020	WG1141254	1	07/24/18 07:41	07/25/18 12:15	JPD

RP-5 L101125-05 GW

Collected by
Eric N.

Collected date/time
07/17/18 14:30

Received date/time
07/20/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1141467	1	07/24/18 09:33	07/24/18 10:56	AJS
Wet Chemistry by Method 9056A	WG1141486	1	07/23/18 01:04	07/23/18 01:04	MAJ
Wet Chemistry by Method 9056A	WG1141486	5	07/23/18 01:18	07/23/18 01:18	MAJ
Mercury by Method 7470A	WG1141555	1	07/23/18 17:40	07/24/18 19:47	EL

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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



RP-5 L101125-05 GW

Collected by
Eric N.

Collected date/time
07/17/18 14:30

Received date/time
07/20/18 08:45

¹Cp

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Metals (ICP) by Method 6010B	WG1141246	1	07/24/18 07:43	07/25/18 12:27	TRB
Metals (ICPMS) by Method 6020	WG1141254	1	07/24/18 07:41	07/24/18 21:16	LD
Metals (ICPMS) by Method 6020	WG1141254	1	07/24/18 07:41	07/25/18 12:19	JPD

²Tc

³Ss

RP-6 L101125-06 GW

Collected by
Eric N.

Collected date/time
07/17/18 14:50

Received date/time
07/20/18 08:45

⁴Cn

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1141467	1	07/24/18 09:33	07/24/18 10:56	AJS
Wet Chemistry by Method 9056A	WG1141486	1	07/23/18 01:32	07/23/18 01:32	MAJ
Wet Chemistry by Method 9056A	WG1141486	20	07/23/18 01:46	07/23/18 01:46	MAJ
Mercury by Method 7470A	WG1141555	1	07/23/18 17:40	07/24/18 19:49	EL
Metals (ICP) by Method 6010B	WG1141246	1	07/24/18 07:43	07/25/18 12:29	TRB
Metals (ICPMS) by Method 6020	WG1141254	1	07/24/18 07:41	07/24/18 21:21	LD
Metals (ICPMS) by Method 6020	WG1141254	1	07/24/18 07:41	07/25/18 12:23	JPD

⁵Sr

⁶Qc

⁷Gl

⁸Al

RP-7 L101125-07 GW

Collected by
Eric N.

Collected date/time
07/17/18 16:25

Received date/time
07/20/18 08:45

⁹Sc

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1141467	1	07/24/18 09:33	07/24/18 10:56	AJS
Wet Chemistry by Method 9056A	WG1141486	1	07/23/18 02:00	07/23/18 02:00	MAJ
Wet Chemistry by Method 9056A	WG1141486	5	07/23/18 16:21	07/23/18 16:21	MAJ
Mercury by Method 7470A	WG1141555	1	07/23/18 17:40	07/24/18 19:51	EL
Metals (ICP) by Method 6010B	WG1141246	1	07/24/18 07:43	07/25/18 12:32	TRB
Metals (ICPMS) by Method 6020	WG1141254	1	07/24/18 07:41	07/24/18 21:50	LD
Metals (ICPMS) by Method 6020	WG1141254	1	07/24/18 07:41	07/25/18 12:28	JPD

RP-8 L101125-08 GW

Collected by
Eric N.

Collected date/time
07/17/18 16:50

Received date/time
07/20/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1141467	1	07/24/18 09:33	07/24/18 10:56	AJS
Wet Chemistry by Method 9056A	WG1141486	1	07/23/18 02:42	07/23/18 02:42	MAJ
Wet Chemistry by Method 9056A	WG1141486	10	07/23/18 02:56	07/23/18 02:56	MAJ
Mercury by Method 7470A	WG1141555	1	07/23/18 17:40	07/24/18 19:53	EL
Metals (ICP) by Method 6010B	WG1141246	1	07/24/18 07:43	07/25/18 12:34	TRB
Metals (ICPMS) by Method 6020	WG1141254	1	07/24/18 07:41	07/24/18 21:55	LD
Metals (ICPMS) by Method 6020	WG1141254	1	07/24/18 07:41	07/25/18 12:45	JPD

RP-9 L101125-09 GW

Collected by
Eric N.

Collected date/time
07/17/18 14:10

Received date/time
07/20/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1141467	1	07/24/18 09:33	07/24/18 10:56	AJS
Wet Chemistry by Method 9056A	WG1141486	1	07/23/18 03:10	07/23/18 03:10	MAJ
Wet Chemistry by Method 9056A	WG1141486	5	07/23/18 03:23	07/23/18 03:23	MAJ
Mercury by Method 7470A	WG1141555	1	07/23/18 17:40	07/24/18 19:55	EL
Metals (ICP) by Method 6010B	WG1141246	1	07/24/18 07:43	07/25/18 12:37	TRB
Metals (ICPMS) by Method 6020	WG1141254	1	07/24/18 07:41	07/24/18 22:00	LD
Metals (ICPMS) by Method 6020	WG1141254	1	07/24/18 07:41	07/25/18 12:49	JPD

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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



RP-10 L1011125-10 GW

Collected by
Eric N.Collected date/time
07/17/18 17:05Received date/time
07/20/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1141467	1	07/24/18 09:33	07/24/18 10:56	AJS
Wet Chemistry by Method 9056A	WG1141486	1	07/23/18 03:37	07/23/18 03:37	MAJ
Mercury by Method 7470A	WG1141555	1	07/23/18 17:40	07/24/18 20:01	EL
Metals (ICP) by Method 6010B	WG1141246	1	07/24/18 07:43	07/25/18 12:39	TRB
Metals (ICPMS) by Method 6020	WG1141254	1	07/24/18 07:41	07/24/18 22:04	LD
Metals (ICPMS) by Method 6020	WG1141254	1	07/24/18 07:41	07/25/18 12:53	JPD
Metals (ICPMS) by Method 6020	WG1141254	5	07/24/18 07:41	07/24/18 22:33	LD

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ ScPRIVILEGED AND CONFIDENTIAL / ATTORNEY-CLIENT COMMUNICATION/ATTORNEY WORK PRODUCT
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ACCOUNT:

FTN Associates - Little Rock, AR

PROJECT:

7920-1845-002

SDG:

L1011125

DATE/TIME:

01/21/19 14:51

PAGE:

5 of 30



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.

Justin Carr
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	3870000		2820	10000	1	07/24/2018 10:56	WG1141467

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	492000		1040	20000	20	07/23/2018 00:16	WG1141487
Fluoride	1910		9.90	100	1	07/23/2018 00:01	WG1141487
Sulfate	2310000		3870	250000	50	07/24/2018 01:02	WG1141999

Mercury by Method 7470A

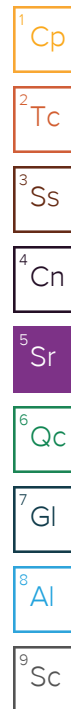
Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	2.52		0.0490	0.200	1	07/24/2018 19:30	WG1141555

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	94.9	B J	12.6	200	1	07/25/2018 11:26	WG1141246
Calcium	361000		46.3	1000	1	07/25/2018 11:26	WG1141246
Lithium	396		5.30	15.0	1	07/25/2018 11:26	WG1141246

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	07/25/2018 12:02	WG1141254
Arsenic	13.8		0.250	2.00	1	07/24/2018 20:58	WG1141254
Barium	28.8		0.360	5.00	1	07/24/2018 20:58	WG1141254
Beryllium	22.7		0.120	2.00	1	07/24/2018 20:58	WG1141254
Cadmium	0.629	J	0.160	1.00	1	07/24/2018 20:58	WG1141254
Chromium	4.63	B	0.540	2.00	1	07/24/2018 20:58	WG1141254
Cobalt	207		0.260	2.00	1	07/24/2018 20:58	WG1141254
Lead	4.42		0.240	2.00	1	07/24/2018 20:58	WG1141254
Molybdenum	0.165	B J	0.140	5.00	1	07/24/2018 20:58	WG1141254
Selenium	13.5		0.380	2.00	1	07/24/2018 20:58	WG1141254
Thallium	0.403	J	0.190	2.00	1	07/24/2018 20:58	WG1141254





Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	230000		2820	10000	1	07/24/2018 10:56	WG1141467

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	11100		51.9	1000	1	07/22/2018 23:13	WG1141486
Fluoride	51.4	J	9.90	100	1	07/22/2018 23:13	WG1141486
Sulfate	78800		77.4	5000	1	07/22/2018 23:13	WG1141486

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	0.517		0.0490	0.200	1	07/24/2018 19:40	WG1141555

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	107	B J	12.6	200	1	07/25/2018 12:19	WG1141246
Calcium	11100		46.3	1000	1	07/25/2018 12:19	WG1141246
Lithium	58.3		5.30	15.0	1	07/25/2018 12:19	WG1141246

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	0.836	B J	0.754	2.00	1	07/25/2018 12:06	WG1141254
Arsenic	1.72	J	0.250	2.00	1	07/24/2018 21:03	WG1141254
Barium	76.3		0.360	5.00	1	07/24/2018 21:03	WG1141254
Beryllium	0.696	J	0.120	2.00	1	07/24/2018 21:03	WG1141254
Cadmium	U		0.160	1.00	1	07/24/2018 21:03	WG1141254
Chromium	U		0.540	2.00	1	07/24/2018 21:03	WG1141254
Cobalt	15.2		0.260	2.00	1	07/24/2018 21:03	WG1141254
Lead	0.564	B J	0.240	2.00	1	07/24/2018 21:03	WG1141254
Molybdenum	0.219	B J	0.140	5.00	1	07/24/2018 21:03	WG1141254
Selenium	U		0.380	2.00	1	07/24/2018 21:03	WG1141254
Thallium	U		0.190	2.00	1	07/24/2018 21:03	WG1141254

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	1470000		2820	10000	1	07/24/2018 10:56	WG1141467

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	118000		519	10000	10	07/23/2018 00:23	WG1141486
Fluoride	526		9.90	100	1	07/23/2018 00:09	WG1141486
Sulfate	933000		774	50000	10	07/23/2018 00:23	WG1141486

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	0.279		0.0490	0.200	1	07/24/2018 19:42	WG1141555

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	128	B J	12.6	200	1	07/25/2018 12:21	WG1141246
Calcium	145000		46.3	1000	1	07/25/2018 12:21	WG1141246
Lithium	284		5.30	15.0	1	07/25/2018 12:21	WG1141246

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	07/25/2018 12:10	WG1141254
Arsenic	3.80		0.250	2.00	1	07/24/2018 21:07	WG1141254
Barium	38.1		0.360	5.00	1	07/24/2018 21:07	WG1141254
Beryllium	9.80		0.120	2.00	1	07/24/2018 21:07	WG1141254
Cadmium	0.327	J	0.160	1.00	1	07/24/2018 21:07	WG1141254
Chromium	2.50	B	0.540	2.00	1	07/24/2018 21:07	WG1141254
Cobalt	64.2		0.260	2.00	1	07/24/2018 21:07	WG1141254
Lead	0.733	B J	0.240	2.00	1	07/24/2018 21:07	WG1141254
Molybdenum	U		0.140	5.00	1	07/24/2018 21:07	WG1141254
Selenium	2.78		0.380	2.00	1	07/24/2018 21:07	WG1141254
Thallium	U		0.190	2.00	1	07/24/2018 21:07	WG1141254



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	451000		2820	10000	1	07/24/2018 10:56	WG1141467

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	67300		51.9	1000	1	07/23/2018 00:36	WG1141486
Fluoride	141		9.90	100	1	07/23/2018 00:36	WG1141486
Sulfate	177000		774	50000	10	07/23/2018 00:50	WG1141486

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	07/24/2018 19:44	WG1141555

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	136	B J	12.6	200	1	07/25/2018 12:24	WG1141246
Calcium	22300		46.3	1000	1	07/25/2018 12:24	WG1141246
Lithium	28.5		5.30	15.0	1	07/25/2018 12:24	WG1141246

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	07/25/2018 12:15	WG1141254
Arsenic	4.85		0.250	2.00	1	07/24/2018 21:12	WG1141254
Barium	103		0.360	5.00	1	07/24/2018 21:12	WG1141254
Beryllium	0.793	J	0.120	2.00	1	07/24/2018 21:12	WG1141254
Cadmium	U		0.160	1.00	1	07/24/2018 21:12	WG1141254
Chromium	0.687	B J	0.540	2.00	1	07/24/2018 21:12	WG1141254
Cobalt	14.9		0.260	2.00	1	07/24/2018 21:12	WG1141254
Lead	0.561	B J	0.240	2.00	1	07/24/2018 21:12	WG1141254
Molybdenum	0.148	B J	0.140	5.00	1	07/24/2018 21:12	WG1141254
Selenium	U		0.380	2.00	1	07/24/2018 21:12	WG1141254
Thallium	0.259	J	0.190	2.00	1	07/24/2018 21:12	WG1141254

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	368000		2820	10000	1	07/24/2018 10:56	WG1141467

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	27700		51.9	1000	1	07/23/2018 01:04	WG1141486
Fluoride	834		9.90	100	1	07/23/2018 01:04	WG1141486
Sulfate	187000		387	25000	5	07/23/2018 01:18	WG1141486

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	0.137	J	0.0490	0.200	1	07/24/2018 19:47	WG1141555

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	127	B J	12.6	200	1	07/25/2018 12:27	WG1141246
Calcium	30600		46.3	1000	1	07/25/2018 12:27	WG1141246
Lithium	100		5.30	15.0	1	07/25/2018 12:27	WG1141246

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Antimony	0.864	B J	0.754	2.00	1	07/25/2018 12:19	WG1141254
Arsenic	1.78	J	0.250	2.00	1	07/24/2018 21:16	WG1141254
Barium	98.7		0.360	5.00	1	07/24/2018 21:16	WG1141254
Beryllium	2.33		0.120	2.00	1	07/24/2018 21:16	WG1141254
Cadmium	0.241	J	0.160	1.00	1	07/24/2018 21:16	WG1141254
Chromium	0.572	B J	0.540	2.00	1	07/24/2018 21:16	WG1141254
Cobalt	32.9		0.260	2.00	1	07/24/2018 21:16	WG1141254
Lead	0.624	B J	0.240	2.00	1	07/24/2018 21:16	WG1141254
Molybdenum	0.444	B J	0.140	5.00	1	07/24/2018 21:16	WG1141254
Selenium	0.597	J	0.380	2.00	1	07/24/2018 21:16	WG1141254
Thallium	U		0.190	2.00	1	07/24/2018 21:16	WG1141254

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	1630000		2820	10000	1	07/24/2018 10:56	WG1141467

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	27900		51.9	1000	1	07/23/2018 01:32	WG1141486
Fluoride	848		9.90	100	1	07/23/2018 01:32	WG1141486
Sulfate	1220000		1550	100000	20	07/23/2018 01:46	WG1141486

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	0.0750	J	0.0490	0.200	1	07/24/2018 19:49	WG1141555

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	638		12.6	200	1	07/25/2018 12:29	WG1141246
Calcium	208000		46.3	1000	1	07/25/2018 12:29	WG1141246
Lithium	666		5.30	15.0	1	07/25/2018 12:29	WG1141246

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	1.00	B J	0.754	2.00	1	07/25/2018 12:23	WG1141254
Arsenic	3.97		0.250	2.00	1	07/24/2018 21:21	WG1141254
Barium	38.2		0.360	5.00	1	07/24/2018 21:21	WG1141254
Beryllium	14.6		0.120	2.00	1	07/24/2018 21:21	WG1141254
Cadmium	U		0.160	1.00	1	07/24/2018 21:21	WG1141254
Chromium	0.895	B J	0.540	2.00	1	07/24/2018 21:21	WG1141254
Cobalt	56.5		0.260	2.00	1	07/24/2018 21:21	WG1141254
Lead	0.490	B J	0.240	2.00	1	07/24/2018 21:21	WG1141254
Molybdenum	0.878	B J	0.140	5.00	1	07/24/2018 21:21	WG1141254
Selenium	2.80		0.380	2.00	1	07/24/2018 21:21	WG1141254
Thallium	U		0.190	2.00	1	07/24/2018 21:21	WG1141254

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	300000		2820	10000	1	07/24/2018 10:56	WG1141467

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	4570		51.9	1000	1	07/23/2018 02:00	WG1141486
Fluoride	237		9.90	100	1	07/23/2018 02:00	WG1141486
Sulfate	137000		387	25000	5	07/23/2018 16:21	WG1141486

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	07/24/2018 19:51	WG1141555

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	185	B J	12.6	200	1	07/25/2018 12:32	WG1141246
Calcium	24700		46.3	1000	1	07/25/2018 12:32	WG1141246
Lithium	180		5.30	15.0	1	07/25/2018 12:32	WG1141246

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Antimony	1.10	B J	0.754	2.00	1	07/25/2018 12:28	WG1141254
Arsenic	2.13		0.250	2.00	1	07/24/2018 21:50	WG1141254
Barium	91.3		0.360	5.00	1	07/24/2018 21:50	WG1141254
Beryllium	4.99		0.120	2.00	1	07/24/2018 21:50	WG1141254
Cadmium	U		0.160	1.00	1	07/24/2018 21:50	WG1141254
Chromium	U		0.540	2.00	1	07/24/2018 21:50	WG1141254
Cobalt	22.2		0.260	2.00	1	07/24/2018 21:50	WG1141254
Lead	0.420	B J	0.240	2.00	1	07/24/2018 21:50	WG1141254
Molybdenum	U		0.140	5.00	1	07/24/2018 21:50	WG1141254
Selenium	0.591	J	0.380	2.00	1	07/24/2018 21:50	WG1141254
Thallium	U		0.190	2.00	1	07/24/2018 21:50	WG1141254

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	590000		2820	10000	1	07/24/2018 10:56	WG1141467

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	43300		51.9	1000	1	07/23/2018 02:42	WG1141486
Fluoride	227		9.90	100	1	07/23/2018 02:42	WG1141486
Sulfate	306000		774	50000	10	07/23/2018 02:56	WG1141486

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	07/24/2018 19:53	WG1141555

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	616		12.6	200	1	07/25/2018 12:34	WG1141246
Calcium	48400		46.3	1000	1	07/25/2018 12:34	WG1141246
Lithium	146		5.30	15.0	1	07/25/2018 12:34	WG1141246

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Antimony	1.19	B J	0.754	2.00	1	07/25/2018 12:45	WG1141254
Arsenic	1.67	J	0.250	2.00	1	07/24/2018 21:55	WG1141254
Barium	76.9		0.360	5.00	1	07/24/2018 21:55	WG1141254
Beryllium	2.20		0.120	2.00	1	07/24/2018 21:55	WG1141254
Cadmium	U		0.160	1.00	1	07/24/2018 21:55	WG1141254
Chromium	1.13	B J	0.540	2.00	1	07/24/2018 21:55	WG1141254
Cobalt	34.5		0.260	2.00	1	07/24/2018 21:55	WG1141254
Lead	0.272	B J	0.240	2.00	1	07/24/2018 21:55	WG1141254
Molybdenum	3.50	B J	0.140	5.00	1	07/24/2018 21:55	WG1141254
Selenium	U		0.380	2.00	1	07/24/2018 21:55	WG1141254
Thallium	U		0.190	2.00	1	07/24/2018 21:55	WG1141254



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	358000		2820	10000	1	07/24/2018 10:56	WG1141467

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	32000		51.9	1000	1	07/23/2018 03:10	WG1141486
Fluoride	U		9.90	100	1	07/23/2018 03:10	WG1141486
Sulfate	157000		387	25000	5	07/23/2018 03:23	WG1141486

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	07/24/2018 19:55	WG1141555

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	101	B J	12.6	200	1	07/25/2018 12:37	WG1141246
Calcium	28800		46.3	1000	1	07/25/2018 12:37	WG1141246
Lithium	82.1		5.30	15.0	1	07/25/2018 12:37	WG1141246

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Antimony	0.860	B J	0.754	2.00	1	07/25/2018 12:49	WG1141254
Arsenic	2.43		0.250	2.00	1	07/24/2018 22:00	WG1141254
Barium	154		0.360	5.00	1	07/24/2018 22:00	WG1141254
Beryllium	0.398	J	0.120	2.00	1	07/24/2018 22:00	WG1141254
Cadmium	U		0.160	1.00	1	07/24/2018 22:00	WG1141254
Chromium	U		0.540	2.00	1	07/24/2018 22:00	WG1141254
Cobalt	8.57		0.260	2.00	1	07/24/2018 22:00	WG1141254
Lead	0.296	B J	0.240	2.00	1	07/24/2018 22:00	WG1141254
Molybdenum	0.505	B J	0.140	5.00	1	07/24/2018 22:00	WG1141254
Selenium	U		0.380	2.00	1	07/24/2018 22:00	WG1141254
Thallium	U		0.190	2.00	1	07/24/2018 22:00	WG1141254

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	221000		2820	10000	1	07/24/2018 10:56	WG1141467

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	51800		51.9	1000	1	07/23/2018 03:37	WG1141486
Fluoride	173		9.90	100	1	07/23/2018 03:37	WG1141486
Sulfate	19600		77.4	5000	1	07/23/2018 03:37	WG1141486

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	07/24/2018 20:01	WG1141555

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	114	B J	12.6	200	1	07/25/2018 12:39	WG1141246
Calcium	4260		46.3	1000	1	07/25/2018 12:39	WG1141246
Lithium	20.6		5.30	15.0	1	07/25/2018 12:39	WG1141246

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	0.958	B J	0.754	2.00	1	07/25/2018 12:53	WG1141254
Arsenic	2.79		0.250	2.00	1	07/24/2018 22:04	WG1141254
Barium	773		1.80	25.0	5	07/24/2018 22:33	WG1141254
Beryllium	2.60		0.120	2.00	1	07/24/2018 22:04	WG1141254
Cadmium	U		0.160	1.00	1	07/24/2018 22:04	WG1141254
Chromium	0.630	B J	0.540	2.00	1	07/24/2018 22:04	WG1141254
Cobalt	9.44		0.260	2.00	1	07/24/2018 22:04	WG1141254
Lead	0.530	B J	0.240	2.00	1	07/24/2018 22:04	WG1141254
Molybdenum	U		0.140	5.00	1	07/24/2018 22:04	WG1141254
Selenium	U		0.380	2.00	1	07/24/2018 22:04	WG1141254
Thallium	U		0.190	2.00	1	07/24/2018 22:04	WG1141254

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

Method Blank (MB)

(MB) R3328488-1 07/24/18 10:56

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

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

L1010126-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1010126-01 07/24/18 10:56 • (DUP) R3328488-4 07/24/18 10:56

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Dissolved Solids	349000	349000	1	0.000		5

L1010447-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1010447-01 07/24/18 10:56 • (DUP) R3328488-5 07/24/18 10:56

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Dissolved Solids	1220000	1260000	1	3.24		5

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

(LCS) R3328488-2 07/24/18 10:56 • (LCSD) R3328488-3 07/24/18 10:56

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%
Dissolved Solids	8800000	8600000	8700000	97.7	98.9	85.0-115			1.16	5

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Method Blank (MB)

(MB) R3327812-1 07/22/18 17:49

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

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1010435-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1010435-01 07/22/18 22:04 • (DUP) R3327812-4 07/22/18 22:17

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	3340	3270	1	1.92		15
Fluoride	ND	68.6	1	0.000		15
Sulfate	ND	3590	1	0.000		15

L101125-12 Original Sample (OS) • Duplicate (DUP)

(OS) L101125-12 07/23/18 04:05 • (DUP) R3327812-7 07/23/18 04:19

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	86.7	0.000	1	200	P1	15
Fluoride	U	0.000	1	0.000		15
Sulfate	434	0.000	1	200	P1	15

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

(LCS) R3327812-2 07/22/18 18:03 • (LCSD) R3327812-3 07/22/18 18:17

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chloride	40000	39100	39000	97.7	97.5	80.0-120			0.125	15
Fluoride	8000	8060	8070	101	101	80.0-120			0.180	15
Sulfate	40000	40100	40200	100	101	80.0-120			0.248	15

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L1010435-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1010435-01 07/22/18 22:04 • (MS) R3327812-5 07/22/18 22:31 • (MSD) R3327812-6 07/22/18 22:45

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	3340	53300	53300	99.8	99.9	1	80.0-120			0.0792	15
Fluoride	5000	ND	4630	5090	92.6	102	1	80.0-120			9.50	15
Sulfate	50000	ND	54600	54600	102	102	1	80.0-120			0.0474	15

L1011125-12 Original Sample (OS) • Matrix Spike (MS)

(OS) L1011125-12 07/23/18 04:05 • (MS) R3327812-8 07/23/18 04:33

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	86.7	50300	100	1	80.0-120	
Fluoride	5000	U	4710	94.2	1	80.0-120	
Sulfate	50000	434	52000	103	1	80.0-120	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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PREPARED AT THE DIRECTION OF LEGAL COUNSEL



Method Blank (MB)

(MB) R3327842-1 07/22/18 17:53

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

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1011188-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1011188-01 07/23/18 03:06 • (DUP) R3327842-4 07/23/18 03:21

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	35200	35000	1	0.414		15
Fluoride	1260	1240	1	1.68		15

L1011339-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1011339-01 07/23/18 17:46 • (DUP) R3327842-7 07/23/18 18:02

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	3120	3010	1	3.54		15
Fluoride	ND	78.6	1	33.4	J P1	15

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

(LCS) R3327842-2 07/22/18 18:08 • (LCSD) R3327842-3 07/22/18 18:24

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%
Chloride	40000	39100	39300	97.8	98.2	80.0-120			0.477	15
Fluoride	8000	8240	8280	103	103	80.0-120			0.399	15

L1011188-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1011188-01 07/23/18 03:06 • (MS) R3327842-5 07/23/18 03:36 • (MSD) R3327842-6 07/23/18 03:52

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Chloride	50000	35200	84100	83600	97.8	96.8	1	80.0-120			0.581	15
Fluoride	5000	1260	6240	6210	99.7	99.1	1	80.0-120			0.541	15

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L1011339-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1011339-01 07/23/18 17:46 • (MS) R3327842-8 07/23/18 18:17

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	3120	53400	100	1	80.0-120	
Fluoride	5000	ND	4730	93.4	1	80.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

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Method Blank (MB)

(MB) R3328202-1 07/23/18 17:22

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

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

L1011458-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1011458-01 07/24/18 01:48 • (DUP) R3328202-4 07/24/18 02:03

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Sulfate	15700	15900	1	1.02		15

⁷Gl

⁸Al

⁹Sc

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

(LCS) R3328202-2 07/23/18 17:37 • (LCSD) R3328202-3 07/23/18 17:53

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%
Sulfate	40000	40600	40600	102	101	80.0-120			0.136	15

L1011458-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1011458-01 07/24/18 01:48 • (MS) R3328202-5 07/24/18 02:50

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	ug/l	ug/l	ug/l	%		%	
Sulfate	50000	15700	66100	101	1	80.0-120	

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Method Blank (MB)

(MB) R3328151-1 07/24/18 19:23

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Mercury	U		0.0490	0.200

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

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

(LCS) R3328151-2 07/24/18 19:25 • (LCSD) R3328151-3 07/24/18 19:27

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%
Mercury	3.00	3.04	3.06	101	102	80.0-120			0.823	20

L1011125-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1011125-01 07/24/18 19:30 • (MS) R3328151-4 07/24/18 19:36 • (MSD) R3328151-5 07/24/18 19:38

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Mercury	3.00	2.52	5.10	5.52	86.2	100	1	75.0-125			7.99	20

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Method Blank (MB)

(MB) R3328564-1 07/25/18 10:59

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Boron	19.0	U	12.6	200
Calcium	86.4	U	46.3	1000
Lithium	U		5.30	15.0

1
Cp

2
Tc

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Ss

4
Cn

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Sr

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Qc

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Gl

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Al

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Sc

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

(LCS) R3328564-2 07/25/18 11:01 • (LCSD) R3328564-3 07/25/18 11:04

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Boron	1000	1010	1030	101	103	80.0-120			1.31	20
Calcium	10000	10100	10100	101	101	80.0-120			0.461	20
Lithium	1000	989	987	98.9	98.7	80.0-120			0.118	20

L1011183-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1011183-01 07/25/18 11:07 • (MS) R3328564-5 07/25/18 11:12 • (MSD) R3328564-6 07/25/18 11:15

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	246	1230	1230	98.6	98.2	1	75.0-125			0.361	20
Calcium	10000	1520	11400	11400	98.6	98.5	1	75.0-125			0.0435	20
Lithium	1000	24.5	970	976	94.5	95.1	1	75.0-125			0.634	20

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Method Blank (MB)

(MB) R3328165-1 07/24/18 19:43

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Arsenic	U		0.250	2.00
Barium	0.549	J	0.360	5.00
Beryllium	U		0.120	2.00
Cadmium	U		0.160	1.00
Chromium	0.811	J	0.540	2.00
Cobalt	U		0.260	2.00
Lead	0.330	J	0.240	2.00
Molybdenum	0.363	J	0.140	5.00
Selenium	U		0.380	2.00
Thallium	U		0.190	2.00

1

Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

Method Blank (MB)

(MB) R3328400-1 07/25/18 11:01

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Antimony	0.840	J	0.754	2.00

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

(LCS) R3328165-2 07/24/18 19:48 • (LCSD) R3328165-3 07/24/18 19:53

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Arsenic	50.0	50.3	50.1	101	100	80.0-120			0.331	20
Barium	50.0	50.1	49.3	100	98.6	80.0-120			1.62	20
Beryllium	50.0	51.2	51.0	102	102	80.0-120			0.328	20
Cadmium	50.0	51.9	52.1	104	104	80.0-120			0.274	20
Chromium	50.0	50.9	49.3	102	98.7	80.0-120			3.02	20
Cobalt	50.0	51.7	51.6	103	103	80.0-120			0.108	20
Lead	50.0	49.4	48.3	98.8	96.7	80.0-120			2.22	20
Molybdenum	50.0	47.9	48.4	95.8	96.8	80.0-120			1.02	20
Selenium	50.0	51.3	54.2	103	108	80.0-120			5.52	20
Thallium	50.0	49.4	49.4	98.8	98.7	80.0-120			0.0996	20

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

(LCS) R3328400-2 07/25/18 11:05 • (LCSD) R3328400-3 07/25/18 11:10

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Antimony	50.0	53.3	54.9	107	110	80.0-120			3.01	20

1

Cp

2

Tc

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Ss

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Cn

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Sr

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Qc

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Gl

8

Al

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Sc

L1010885-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1010885-02 07/24/18 19:57 • (MS) R3328165-5 07/24/18 20:07 • (MSD) R3328165-6 07/24/18 20:12

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Arsenic	50.0	2.71	51.8	51.1	98.1	96.8	1	75.0-125			1.29	20
Barium	50.0	48.4	100	101	104	105	1	75.0-125			0.621	20
Beryllium	50.0	U	51.4	44.7	103	89.4	1	75.0-125			14.0	20
Cadmium	50.0	U	53.3	51.5	107	103	1	75.0-125			3.47	20
Chromium	50.0	0.674	49.8	47.6	98.2	93.8	1	75.0-125			4.56	20
Cobalt	50.0	1.65	51.6	50.1	99.9	96.9	1	75.0-125			2.89	20
Lead	50.0	0.272	49.4	48.8	98.2	97.0	1	75.0-125			1.24	20
Molybdenum	50.0	5.96	56.6	56.0	101	100	1	75.0-125			1.06	20
Selenium	50.0	0.803	52.6	54.9	104	108	1	75.0-125			4.34	20
Thallium	50.0	U	49.2	48.6	98.5	97.2	1	75.0-125			1.26	20

L1010885-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1010885-02 07/25/18 11:14 • (MS) R3328400-5 07/25/18 11:23 • (MSD) R3328400-6 07/25/18 11:27

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Antimony	50.0	1.41	57.3	55.3	112	108	1	75.0-125			3.54	20

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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.

Abbreviations and Definitions

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

Qualifier Description

B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

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



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

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

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

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

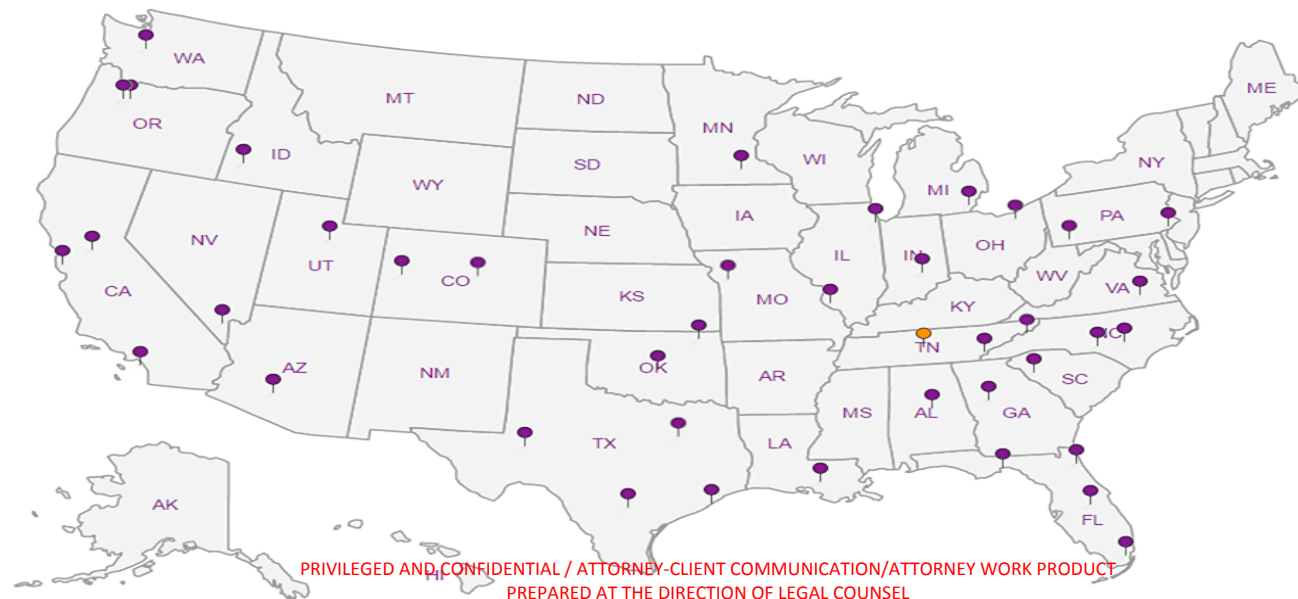
Third Party Federal Accreditations

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

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

Our Locations

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



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November 05, 2018

FTN Associates - Little Rock, AR

Sample Delivery Group: L1038564
Samples Received: 10/26/2018
Project Number: 7920-1845-002
Description: Entergy White Bluff Landfill

Report To: Dana Derrington
3 Innwood Circle, Suite 220
Little Rock, AR 72211

Entire Report Reviewed By:



Mark W. Beasley
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	5	
Sr: Sample Results	6	³ Ss
RP-1 L1038564-01	6	
RP-2 L1038564-02	7	⁴ Cn
RP-3 L1038564-03	8	⁵ Sr
RP-4 L1038564-04	9	
RP-5 L1038564-05	10	⁶ Qc
RP-6 L1038564-06	11	
RP-7 L1038564-07	12	⁷ Gl
RP-8 L1038564-08	13	⁸ Al
RP-9 L1038564-09	14	
RP-10 L1038564-10	15	⁹ Sc
Qc: Quality Control Summary	16	
Gravimetric Analysis by Method 2540 C-2011	16	
Wet Chemistry by Method 9056A	18	
Mercury by Method 7470A	22	
Metals (ICP) by Method 6010B	23	
Metals (ICPMS) by Method 6020	24	
Gl: Glossary of Terms	26	
Al: Accreditations & Locations	27	
Sc: Sample Chain of Custody	28	

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



RP-1 L1038564-01 GW

			Collected by	Collected date/time	Received date/time
			Eric N.	10/23/18 11:25	10/26/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1187570	1	10/30/18 14:38	10/30/18 15:21	AJS
Wet Chemistry by Method 9056A	WG1188247	1	11/01/18 03:26	11/01/18 03:26	ELN
Wet Chemistry by Method 9056A	WG1188247	20	11/01/18 03:37	11/01/18 03:37	ELN
Wet Chemistry by Method 9056A	WG1188247	50	11/01/18 12:06	11/01/18 12:06	ELN
Mercury by Method 7470A	WG1187737	1	10/29/18 23:12	10/30/18 18:06	TCT
Metals (ICP) by Method 6010B	WG1188184	1	10/31/18 11:54	10/31/18 17:54	ST
Metals (ICPMS) by Method 6020	WG1188190	1	10/30/18 15:44	10/31/18 17:32	LD

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

RP-2 L1038564-02 GW

			Collected by	Collected date/time	Received date/time
			Eric N.	10/23/18 11:00	10/26/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1187570	1	10/30/18 14:38	10/30/18 15:21	AJS
Wet Chemistry by Method 9056A	WG1188247	1	11/01/18 03:48	11/01/18 03:48	ELN
Mercury by Method 7470A	WG1187737	1	10/29/18 23:12	10/30/18 18:08	TCT
Metals (ICP) by Method 6010B	WG1188184	1	10/31/18 11:54	10/31/18 17:57	ST
Metals (ICPMS) by Method 6020	WG1188190	1	10/30/18 15:44	10/31/18 17:37	LD

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

RP-3 L1038564-03 GW

			Collected by	Collected date/time	Received date/time
			Eric N.	10/23/18 11:50	10/26/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1187570	1	10/30/18 14:38	10/30/18 15:21	AJS
Wet Chemistry by Method 9056A	WG1188247	1	11/01/18 04:10	11/01/18 04:10	ELN
Wet Chemistry by Method 9056A	WG1188247	20	11/01/18 04:20	11/01/18 04:20	ELN
Mercury by Method 7470A	WG1187737	1	10/29/18 23:12	10/30/18 18:16	TCT
Metals (ICP) by Method 6010B	WG1188184	1	10/31/18 11:54	10/31/18 17:59	ST
Metals (ICPMS) by Method 6020	WG1188190	1	10/30/18 15:44	10/31/18 17:42	LD

RP-4 L1038564-04 GW

			Collected by	Collected date/time	Received date/time
			Eric N.	10/23/18 13:40	10/26/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1187571	1	10/30/18 15:41	10/30/18 16:25	MMF
Wet Chemistry by Method 9056A	WG1188247	1	11/01/18 04:53	11/01/18 04:53	ELN
Wet Chemistry by Method 9056A	WG1188247	5	11/01/18 05:04	11/01/18 05:04	ELN
Mercury by Method 7470A	WG1187737	1	10/29/18 23:12	10/30/18 18:18	TCT
Metals (ICP) by Method 6010B	WG1188184	1	10/31/18 11:54	10/31/18 18:02	ST
Metals (ICPMS) by Method 6020	WG1188190	1	10/30/18 15:44	10/31/18 17:46	LD

RP-5 L1038564-05 GW

			Collected by	Collected date/time	Received date/time
			Eric N.	10/23/18 13:00	10/26/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1187571	1	10/30/18 15:41	10/30/18 16:25	MMF
Wet Chemistry by Method 9056A	WG1188247	1	11/01/18 05:15	11/01/18 05:15	ELN
Wet Chemistry by Method 9056A	WG1188247	5	11/01/18 05:26	11/01/18 05:26	ELN
Mercury by Method 7470A	WG1187737	1	10/29/18 23:12	10/30/18 18:21	TCT
Metals (ICP) by Method 6010B	WG1188184	1	10/31/18 11:54	10/31/18 18:05	ST
Metals (ICPMS) by Method 6020	WG1188190	1	10/30/18 15:44	10/31/18 17:51	LD

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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



RP-6 L1038564-06 GW

Collected by
Eric N.

Collected date/time
10/23/18 12:40

Received date/time
10/26/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1187571	1	10/30/18 15:41	10/30/18 16:25	MMF
Wet Chemistry by Method 9056A	WG1188247	1	11/01/18 05:36	11/01/18 05:36	ELN
Wet Chemistry by Method 9056A	WG1188247	20	11/01/18 05:47	11/01/18 05:47	ELN
Mercury by Method 7470A	WG1187737	1	10/29/18 23:12	10/30/18 18:24	TCT
Metals (ICP) by Method 6010B	WG1188184	1	10/31/18 11:54	10/31/18 18:13	ST
Metals (ICPMS) by Method 6020	WG1188190	1	10/30/18 15:44	10/31/18 18:14	LD

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

RP-7 L1038564-07 GW

Collected by
Eric N.

Collected date/time
10/23/18 12:15

Received date/time
10/26/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1187571	1	10/30/18 15:41	10/30/18 16:25	MMF
Wet Chemistry by Method 9056A	WG1188286	1	10/31/18 20:03	10/31/18 20:03	ELN
Wet Chemistry by Method 9056A	WG1188286	5	11/01/18 09:46	11/01/18 09:46	ELN
Mercury by Method 7470A	WG1187737	1	10/29/18 23:12	10/30/18 18:26	TCT
Metals (ICP) by Method 6010B	WG1188184	1	10/31/18 11:54	10/31/18 18:16	ST
Metals (ICPMS) by Method 6020	WG1188190	1	10/30/18 15:44	10/31/18 18:19	LD

RP-8 L1038564-08 GW

Collected by
Eric N.

Collected date/time
10/23/18 14:20

Received date/time
10/26/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1187571	1	10/30/18 15:41	10/30/18 16:25	MMF
Wet Chemistry by Method 9056A	WG1188286	1	10/31/18 20:20	10/31/18 20:20	ELN
Wet Chemistry by Method 9056A	WG1188286	5	10/31/18 20:37	10/31/18 20:37	ELN
Mercury by Method 7470A	WG1187737	1	10/29/18 23:12	10/30/18 18:29	TCT
Metals (ICP) by Method 6010B	WG1188184	1	10/31/18 11:54	10/31/18 18:19	ST
Metals (ICPMS) by Method 6020	WG1188190	1	10/30/18 15:44	10/31/18 16:21	LD

RP-9 L1038564-09 GW

Collected by
Eric N.

Collected date/time
10/23/18 13:20

Received date/time
10/26/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1187571	1	10/30/18 15:41	10/30/18 16:25	MMF
Wet Chemistry by Method 9056A	WG1188286	1	10/31/18 20:53	10/31/18 20:53	ELN
Mercury by Method 7470A	WG1187737	1	10/29/18 23:12	10/30/18 18:31	TCT
Metals (ICP) by Method 6010B	WG1188184	1	10/31/18 11:54	10/31/18 18:21	ST
Metals (ICPMS) by Method 6020	WG1188190	1	10/30/18 15:44	10/31/18 18:24	LD

RP-10 L1038564-10 GW

Collected by
Eric N.

Collected date/time
10/23/18 14:00

Received date/time
10/26/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG1187571	1	10/30/18 15:41	10/30/18 16:25	MMF
Wet Chemistry by Method 9056A	WG1188286	1	10/31/18 21:10	10/31/18 21:10	ELN
Wet Chemistry by Method 9056A	WG1188286	5	10/31/18 21:27	10/31/18 21:27	ELN
Mercury by Method 7470A	WG1187737	1	10/29/18 23:12	10/30/18 18:34	TCT
Metals (ICP) by Method 6010B	WG1188184	1	10/31/18 11:54	10/31/18 18:24	ST
Metals (ICPMS) by Method 6020	WG1188190	1	10/30/18 15:44	10/31/18 18:28	LD

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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

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	3330000		28200	100000	1	10/30/2018 15:21	WG1187570

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	434000		1040	20000	20	11/01/2018 03:37	WG1188247
Fluoride	1940		9.90	100	1	11/01/2018 03:26	WG1188247
Sulfate	2630000		3870	250000	50	11/01/2018 12:06	WG1188247

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	0.863		0.0490	0.200	1	10/30/2018 18:06	WG1187737

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	75.9	J	12.6	200	1	10/31/2018 17:54	WG1188184
Lithium	444		5.30	15.0	1	10/31/2018 17:54	WG1188184

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U	J4	0.754	2.00	1	10/31/2018 17:32	WG1188190
Arsenic	14.3		0.250	2.00	1	10/31/2018 17:32	WG1188190
Barium	12.7		0.360	5.00	1	10/31/2018 17:32	WG1188190
Beryllium	28.4		0.120	2.00	1	10/31/2018 17:32	WG1188190
Cadmium	0.817	J	0.160	1.00	1	10/31/2018 17:32	WG1188190
Calcium	385000		46.0	1000	1	10/31/2018 17:32	WG1188190
Chromium	3.18		0.540	2.00	1	10/31/2018 17:32	WG1188190
Cobalt	236		0.260	2.00	1	10/31/2018 17:32	WG1188190
Lead	2.02	B	0.240	2.00	1	10/31/2018 17:32	WG1188190
Molybdenum	U		0.140	5.00	1	10/31/2018 17:32	WG1188190
Selenium	17.3		0.380	2.00	1	10/31/2018 17:32	WG1188190
Thallium	0.366	J	0.190	2.00	1	10/31/2018 17:32	WG1188190



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	262000		2820	10000	1	10/30/2018 15:21	WG1187570

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	14800		51.9	1000	1	11/01/2018 03:48	WG1188247
Fluoride	56.6	J	9.90	100	1	11/01/2018 03:48	WG1188247
Sulfate	86600		77.4	5000	1	11/01/2018 03:48	WG1188247

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	10/30/2018 18:08	WG1187737

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	106	J	12.6	200	1	10/31/2018 17:57	WG1188184
Lithium	71.5		5.30	15.0	1	10/31/2018 17:57	WG1188184

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U	J4	0.754	2.00	1	10/31/2018 17:37	WG1188190
Arsenic	4.19		0.250	2.00	1	10/31/2018 17:37	WG1188190
Barium	80.4		0.360	5.00	1	10/31/2018 17:37	WG1188190
Beryllium	0.669	J	0.120	2.00	1	10/31/2018 17:37	WG1188190
Cadmium	U		0.160	1.00	1	10/31/2018 17:37	WG1188190
Calcium	12100		46.0	1000	1	10/31/2018 17:37	WG1188190
Chromium	0.900	J	0.540	2.00	1	10/31/2018 17:37	WG1188190
Cobalt	14.4		0.260	2.00	1	10/31/2018 17:37	WG1188190
Lead	1.20	B J	0.240	2.00	1	10/31/2018 17:37	WG1188190
Molybdenum	0.892	J	0.140	5.00	1	10/31/2018 17:37	WG1188190
Selenium	U		0.380	2.00	1	10/31/2018 17:37	WG1188190
Thallium	U		0.190	2.00	1	10/31/2018 17:37	WG1188190

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Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	1510000		7050	25000	1	10/30/2018 15:21	WG1187570

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	132000		1040	20000	20	11/01/2018 04:20	WG1188247
Fluoride	554		9.90	100	1	11/01/2018 04:10	WG1188247
Sulfate	941000		1550	100000	20	11/01/2018 04:20	WG1188247

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	10/30/2018 18:16	WG1187737

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	163	J	12.6	200	1	10/31/2018 17:59	WG1188184
Lithium	335		5.30	15.0	1	10/31/2018 17:59	WG1188184

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U	J4	0.754	2.00	1	10/31/2018 17:42	WG1188190
Arsenic	5.81		0.250	2.00	1	10/31/2018 17:42	WG1188190
Barium	22.1		0.360	5.00	1	10/31/2018 17:42	WG1188190
Beryllium	10.2		0.120	2.00	1	10/31/2018 17:42	WG1188190
Cadmium	U		0.160	1.00	1	10/31/2018 17:42	WG1188190
Calcium	162000		46.0	1000	1	10/31/2018 17:42	WG1188190
Chromium	1.64	J	0.540	2.00	1	10/31/2018 17:42	WG1188190
Cobalt	69.7		0.260	2.00	1	10/31/2018 17:42	WG1188190
Lead	0.422	B J	0.240	2.00	1	10/31/2018 17:42	WG1188190
Molybdenum	U		0.140	5.00	1	10/31/2018 17:42	WG1188190
Selenium	3.20		0.380	2.00	1	10/31/2018 17:42	WG1188190
Thallium	U		0.190	2.00	1	10/31/2018 17:42	WG1188190

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	748000		3750	13300	1	10/30/2018 16:25	WG1187571

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	91900		51.9	1000	1	11/01/2018 04:53	WG1188247
Fluoride	231		9.90	100	1	11/01/2018 04:53	WG1188247
Sulfate	369000		387	25000	5	11/01/2018 05:04	WG1188247

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	10/30/2018 18:18	WG1187737

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	117	J	12.6	200	1	10/31/2018 18:02	WG1188184
Lithium	64.0		5.30	15.0	1	10/31/2018 18:02	WG1188184

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U	J4	0.754	2.00	1	10/31/2018 17:46	WG1188190
Arsenic	2.52		0.250	2.00	1	10/31/2018 17:46	WG1188190
Barium	76.2		0.360	5.00	1	10/31/2018 17:46	WG1188190
Beryllium	4.17		0.120	2.00	1	10/31/2018 17:46	WG1188190
Cadmium	1.29		0.160	1.00	1	10/31/2018 17:46	WG1188190
Calcium	47600		46.0	1000	1	10/31/2018 17:46	WG1188190
Chromium	2.10		0.540	2.00	1	10/31/2018 17:46	WG1188190
Cobalt	78.1		0.260	2.00	1	10/31/2018 17:46	WG1188190
Lead	6.97		0.240	2.00	1	10/31/2018 17:46	WG1188190
Molybdenum	U		0.140	5.00	1	10/31/2018 17:46	WG1188190
Selenium	0.758	J	0.380	2.00	1	10/31/2018 17:46	WG1188190
Thallium	0.364	J	0.190	2.00	1	10/31/2018 17:46	WG1188190



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	412000	<u>J3</u>	2820	10000	1	10/30/2018 16:25	WG1187571

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	41500		51.9	1000	1	11/01/2018 05:15	WG1188247
Fluoride	309		9.90	100	1	11/01/2018 05:15	WG1188247
Sulfate	188000		387	25000	5	11/01/2018 05:26	WG1188247

⁶ Qc⁷ Gl

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	10/30/2018 18:21	WG1187737

⁸ Al

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	157	<u>J</u>	12.6	200	1	10/31/2018 18:05	WG1188184
Lithium	132		5.30	15.0	1	10/31/2018 18:05	WG1188184

⁹ Sc

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U	<u>J4</u>	0.754	2.00	1	10/31/2018 17:51	WG1188190
Arsenic	2.98		0.250	2.00	1	10/31/2018 17:51	WG1188190
Barium	49.4		0.360	5.00	1	10/31/2018 17:51	WG1188190
Beryllium	3.56		0.120	2.00	1	10/31/2018 17:51	WG1188190
Cadmium	0.502	<u>J</u>	0.160	1.00	1	10/31/2018 17:51	WG1188190
Calcium	34900		46.0	1000	1	10/31/2018 17:51	WG1188190
Chromium	0.786	<u>J</u>	0.540	2.00	1	10/31/2018 17:51	WG1188190
Cobalt	37.9		0.260	2.00	1	10/31/2018 17:51	WG1188190
Lead	0.880	<u>B J</u>	0.240	2.00	1	10/31/2018 17:51	WG1188190
Molybdenum	0.669	<u>J</u>	0.140	5.00	1	10/31/2018 17:51	WG1188190
Selenium	0.541	<u>J</u>	0.380	2.00	1	10/31/2018 17:51	WG1188190
Thallium	U		0.190	2.00	1	10/31/2018 17:51	WG1188190

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Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	1900000		7050	25000	1	10/30/2018 16:25	WG1187571

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	31800		51.9	1000	1	11/01/2018 05:36	WG1188247
Fluoride	1130		9.90	100	1	11/01/2018 05:36	WG1188247
Sulfate	1280000		1550	100000	20	11/01/2018 05:47	WG1188247

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	10/30/2018 18:24	WG1187737

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	702		12.6	200	1	10/31/2018 18:13	WG1188184
Lithium	799		5.30	15.0	1	10/31/2018 18:13	WG1188184

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U	J4	0.754	2.00	1	10/31/2018 18:14	WG1188190
Arsenic	8.04		0.250	2.00	1	10/31/2018 18:14	WG1188190
Barium	22.5		0.360	5.00	1	10/31/2018 18:14	WG1188190
Beryllium	19.7		0.120	2.00	1	10/31/2018 18:14	WG1188190
Cadmium	12.7		0.160	1.00	1	10/31/2018 18:14	WG1188190
Calcium	241000		46.0	1000	1	10/31/2018 18:14	WG1188190
Chromium	4.62		0.540	2.00	1	10/31/2018 18:14	WG1188190
Cobalt	69.6		0.260	2.00	1	10/31/2018 18:14	WG1188190
Lead	0.887	BJ	0.240	2.00	1	10/31/2018 18:14	WG1188190
Molybdenum	1.74	J	0.140	5.00	1	10/31/2018 18:14	WG1188190
Selenium	5.21		0.380	2.00	1	10/31/2018 18:14	WG1188190
Thallium	U		0.190	2.00	1	10/31/2018 18:14	WG1188190



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	302000		2820	10000	1	10/30/2018 16:25	WG1187571

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	3730	<u>B</u>	51.9	1000	1	10/31/2018 20:03	WG1188286
Fluoride	263		9.90	100	1	10/31/2018 20:03	WG1188286
Sulfate	143000		387	25000	5	11/01/2018 09:46	WG1188286

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	10/30/2018 18:26	WG1187737

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	224		12.6	200	1	10/31/2018 18:16	WG1188184
Lithium	211		5.30	15.0	1	10/31/2018 18:16	WG1188184

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U	<u>J4</u>	0.754	2.00	1	10/31/2018 18:19	WG1188190
Arsenic	1.41	<u>J</u>	0.250	2.00	1	10/31/2018 18:19	WG1188190
Barium	44.5		0.360	5.00	1	10/31/2018 18:19	WG1188190
Beryllium	6.84		0.120	2.00	1	10/31/2018 18:19	WG1188190
Cadmium	U		0.160	1.00	1	10/31/2018 18:19	WG1188190
Calcium	22100		46.0	1000	1	10/31/2018 18:19	WG1188190
Chromium	0.654	<u>J</u>	0.540	2.00	1	10/31/2018 18:19	WG1188190
Cobalt	16.3		0.260	2.00	1	10/31/2018 18:19	WG1188190
Lead	0.741	<u>B J</u>	0.240	2.00	1	10/31/2018 18:19	WG1188190
Molybdenum	U		0.140	5.00	1	10/31/2018 18:19	WG1188190
Selenium	0.584	<u>J</u>	0.380	2.00	1	10/31/2018 18:19	WG1188190
Thallium	U		0.190	2.00	1	10/31/2018 18:19	WG1188190

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	437000		2820	10000	1	10/30/2018 16:25	WG1187571

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	25000		51.9	1000	1	10/31/2018 20:20	WG1188286
Fluoride	406		9.90	100	1	10/31/2018 20:20	WG1188286
Sulfate	205000		387	25000	5	10/31/2018 20:37	WG1188286

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	10/30/2018 18:29	WG1187737

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	299		12.6	200	1	10/31/2018 18:19	WG1188184
Lithium	105		5.30	15.0	1	10/31/2018 18:19	WG1188184

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U	J4 J5	0.754	2.00	1	10/31/2018 16:21	WG1188190
Arsenic	5.39		0.250	2.00	1	10/31/2018 16:21	WG1188190
Barium	41.7		0.360	5.00	1	10/31/2018 16:21	WG1188190
Beryllium	1.75	J	0.120	2.00	1	10/31/2018 16:21	WG1188190
Cadmium	U		0.160	1.00	1	10/31/2018 16:21	WG1188190
Calcium	31900		46.0	1000	1	10/31/2018 16:21	WG1188190
Chromium	1.82	J	0.540	2.00	1	10/31/2018 16:21	WG1188190
Cobalt	39.7		0.260	2.00	1	10/31/2018 16:21	WG1188190
Lead	0.411	B J	0.240	2.00	1	10/31/2018 16:21	WG1188190
Molybdenum	142		0.140	5.00	1	10/31/2018 16:21	WG1188190
Selenium	U		0.380	2.00	1	10/31/2018 16:21	WG1188190
Thallium	U		0.190	2.00	1	10/31/2018 16:21	WG1188190

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	196000		2820	10000	1	10/30/2018 16:25	WG1187571

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	17600		51.9	1000	1	10/31/2018 20:53	WG1188286
Fluoride	131		9.90	100	1	10/31/2018 20:53	WG1188286
Sulfate	63300		77.4	5000	1	10/31/2018 20:53	WG1188286

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	10/30/2018 18:31	WG1187737

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	230		12.6	200	1	10/31/2018 18:21	WG1188184
Lithium	34.1		5.30	15.0	1	10/31/2018 18:21	WG1188184

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	0.846	J J4	0.754	2.00	1	10/31/2018 18:24	WG1188190
Arsenic	6.11		0.250	2.00	1	10/31/2018 18:24	WG1188190
Barium	150		0.360	5.00	1	10/31/2018 18:24	WG1188190
Beryllium	0.251	J	0.120	2.00	1	10/31/2018 18:24	WG1188190
Cadmium	0.192	J	0.160	1.00	1	10/31/2018 18:24	WG1188190
Calcium	29400		46.0	1000	1	10/31/2018 18:24	WG1188190
Chromium	3.58		0.540	2.00	1	10/31/2018 18:24	WG1188190
Cobalt	3.51		0.260	2.00	1	10/31/2018 18:24	WG1188190
Lead	1.76	B J	0.240	2.00	1	10/31/2018 18:24	WG1188190
Molybdenum	54.6		0.140	5.00	1	10/31/2018 18:24	WG1188190
Selenium	0.654	J	0.380	2.00	1	10/31/2018 18:24	WG1188190
Thallium	U		0.190	2.00	1	10/31/2018 18:24	WG1188190

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	691000		2820	10000	1	10/30/2018 16:25	WG1187571

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	79200		51.9	1000	1	10/31/2018 21:10	WG1188286
Fluoride	203		9.90	100	1	10/31/2018 21:10	WG1188286
Sulfate	354000		387	25000	5	10/31/2018 21:27	WG1188286

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	10/30/2018 18:34	WG1187737

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	1130		12.6	200	1	10/31/2018 18:24	WG1188184
Lithium	81.6		5.30	15.0	1	10/31/2018 18:24	WG1188184

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U	J4	0.754	2.00	1	10/31/2018 18:28	WG1188190
Arsenic	4.61		0.250	2.00	1	10/31/2018 18:28	WG1188190
Barium	222		0.360	5.00	1	10/31/2018 18:28	WG1188190
Beryllium	5.36		0.120	2.00	1	10/31/2018 18:28	WG1188190
Cadmium	U		0.160	1.00	1	10/31/2018 18:28	WG1188190
Calcium	76400		46.0	1000	1	10/31/2018 18:28	WG1188190
Chromium	1.34	J	0.540	2.00	1	10/31/2018 18:28	WG1188190
Cobalt	21.3		0.260	2.00	1	10/31/2018 18:28	WG1188190
Lead	1.38	B J	0.240	2.00	1	10/31/2018 18:28	WG1188190
Molybdenum	0.159	J	0.140	5.00	1	10/31/2018 18:28	WG1188190
Selenium	0.855	J	0.380	2.00	1	10/31/2018 18:28	WG1188190
Thallium	0.206	J	0.190	2.00	1	10/31/2018 18:28	WG1188190

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Method Blank (MB)

(MB) R3355764-1 10/30/18 15:21

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

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

L1037797-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1037797-07 10/30/18 15:21 • (DUP) R3355764-3 10/30/18 15:21

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Dissolved Solids	431000	430000	1	0.232		5

Laboratory Control Sample (LCS)

(LCS) R3355764-2 10/30/18 15:21

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Dissolved Solids	8800000	8250000	93.8	85.0-115	

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Method Blank (MB)

(MB) R3356606-1 10/30/18 16:25

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

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

L1038564-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1038564-05 10/30/18 16:25 • (DUP) R3356606-3 10/30/18 16:25

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Dissolved Solids	412000	438000	1	6.12	J3	5

Laboratory Control Sample (LCS)

(LCS) R3356606-2 10/30/18 16:25

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

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Method Blank (MB)

(MB) R3355942-1 10/31/18 17:27

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	225	⌵	51.9	1000
Fluoride	U		9.90	100
Sulfate	256	⌵	77.4	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1038523-13 Original Sample (OS) • Duplicate (DUP)

(OS) L1038523-13 11/01/18 01:05 • (DUP) R3355942-3 11/01/18 01:16

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	16700	17500	1	4.93		15
Fluoride	638	661	1	3.51		15
Sulfate	31400	32000	1	1.95		15

L1038535-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1038535-03 11/01/18 02:43 • (DUP) R3355942-6 11/01/18 02:53

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	2840	2840	1	0.190		15
Fluoride	ND	0.000	1	0.000		15
Sulfate	8150	8140	1	0.204		15

Laboratory Control Sample (LCS)

(LCS) R3355942-2 10/31/18 17:38

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	39700	99.4	80.0-120	
Fluoride	8000	7900	98.7	80.0-120	
Sulfate	40000	40100	100	80.0-120	

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L1038523-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1038523-13 11/01/18 01:05 • (MS) R3355942-4 11/01/18 01:27 • (MSD) R3355942-5 11/01/18 01:37

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	16700	65300	66300	97.3	99.3	1	80.0-120			1.50	15
Fluoride	5000	638	5400	5610	95.3	99.4	1	80.0-120			3.73	15
Sulfate	50000	31400	80100	80500	97.5	98.3	1	80.0-120			0.479	15

L1038535-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1038535-03 11/01/18 02:43 • (MS) R3355942-7 11/01/18 03:04

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	2840	40100	74.6	1	80.0-120	J6
Fluoride	5000	ND	3720	74.4	1	80.0-120	J6
Sulfate	50000	8150	45600	74.9	1	80.0-120	J6

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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Method Blank (MB)

(MB) R3355927-1 10/31/18 09:33

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Chloride	396	⌵	51.9	1000
Fluoride	U		9.90	100
Sulfate	271	⌵	77.4	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1038567-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1038567-02 10/31/18 22:01 • (DUP) R3355927-3 10/31/18 22:18

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	458	430	1	6.17	⌵	15
Fluoride	U	0.000	1	0.000		15
Sulfate	648	289	1	76.6	⌵ P1	15

L1038713-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1038713-08 11/01/18 01:58 • (DUP) R3355927-6 11/01/18 02:49

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	19600	19900	1	1.35		15
Fluoride	33.1	33.9	1	2.39	⌵	15
Sulfate	3350	3390	1	1.31	⌵	15

Laboratory Control Sample (LCS)

(LCS) R3355927-2 10/31/18 09:50

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Chloride	40000	38900	97.2	80.0-120	
Fluoride	8000	8010	100	80.0-120	
Sulfate	40000	39000	97.6	80.0-120	

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L1038567-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1038567-02 10/31/18 22:01 • (MS) R3355927-4 10/31/18 22:35 • (MSD) R3355927-5 10/31/18 23:26

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	458	48800	52400	96.7	104	1	80.0-120			7.09	15
Fluoride	5000	U	4930	5270	98.6	105	1	80.0-120			6.68	15
Sulfate	50000	648	48900	52500	96.4	104	1	80.0-120			7.09	15

L1038713-08 Original Sample (OS) • Matrix Spike (MS)

(OS) L1038713-08 11/01/18 01:58 • (MS) R3355927-7 11/01/18 03:06

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	19600	70100	101	1	80.0-120	
Fluoride	5000	33.1	5060	101	1	80.0-120	
Sulfate	50000	3350	54200	102	1	80.0-120	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

PRIVILEGED AND CONFIDENTIAL / ATTORNEY-CLIENT COMMUNICATION/ATTORNEY WORK PRODUCT
PREPARED AT THE DIRECTION OF LEGAL COUNSEL

Method Blank (MB)

(MB) R3355343-1 10/30/18 17:22				
	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Mercury	U		0.0490	0.200

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

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

(LCS) R3355343-2 10/30/18 17:24 • (LCSD) R3355343-3 10/30/18 17:27										
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%
Mercury	3.00	2.87	2.93	95.7	97.8	80.0-120			2.09	20

L1038378-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1038378-01 10/30/18 17:30 • (MS) R3355343-4 10/30/18 17:32 • (MSD) R3355343-5 10/30/18 17:35												
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Mercury	3.00	U	3.08	2.84	103	94.8	1	75.0-125			8.06	20

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PREPARED AT THE DIRECTION OF LEGAL COUNSEL

Method Blank (MB)

(MB) R3355787-1 10/31/18 17:06

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Boron	U		12.6	200
Lithium	U		5.30	15.0

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

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

(LCS) R3355787-2 10/31/18 17:09 • (LCSD) R3355787-3 10/31/18 17:11

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%
Boron	1000	1010	1010	101	101	80.0-120			0.0812	20
Lithium	1000	1050	1050	105	105	80.0-120			0.229	20

L1038882-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1038882-02 10/31/18 17:14 • (MS) R3355787-5 10/31/18 17:20 • (MSD) R3355787-6 10/31/18 17:23

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Boron	1000	1050	2010	2020	96.7	97.0	1	75.0-125			0.150	20
Lithium	1000	315	1440	1440	112	113	1	75.0-125			0.487	20

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PREPARED AT THE DIRECTION OF LEGAL COUNSEL



Method Blank (MB)

(MB) R3355759-1 10/31/18 16:07

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Antimony	U		0.754	2.00
Arsenic	U		0.250	2.00
Barium	U		0.360	5.00
Beryllium	U		0.120	2.00
Cadmium	U		0.160	1.00
Calcium	U		46.0	1000
Chromium	U		0.540	2.00
Cobalt	U		0.260	2.00
Lead	0.310	J	0.240	2.00
Molybdenum	U		0.140	5.00
Selenium	U		0.380	2.00
Thallium	U		0.190	2.00

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

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

(LCS) R3355759-2 10/31/18 16:12 • (LCSD) R3355759-3 10/31/18 16:16

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Antimony	50.0	62.3	63.4	125	127	80.0-120	J4	J4	1.72	20
Arsenic	50.0	51.6	52.8	103	106	80.0-120			2.24	20
Barium	50.0	47.4	48.9	94.8	97.8	80.0-120			3.11	20
Beryllium	50.0	48.9	50.8	97.7	102	80.0-120			4.01	20
Cadmium	50.0	49.2	49.9	98.5	99.8	80.0-120			1.32	20
Calcium	5000	5010	5170	100	103	80.0-120			3.27	20
Chromium	50.0	53.4	53.6	107	107	80.0-120			0.547	20
Cobalt	50.0	54.1	55.0	108	110	80.0-120			1.67	20
Lead	50.0	50.0	51.3	100	103	80.0-120			2.60	20
Molybdenum	50.0	49.4	50.4	98.7	101	80.0-120			2.08	20
Selenium	50.0	52.3	51.6	105	103	80.0-120			1.27	20
Thallium	50.0	48.9	50.0	97.9	100	80.0-120			2.09	20

L1038564-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1038564-08 10/31/18 16:21 • (MS) R3355759-5 10/31/18 16:30 • (MSD) R3355759-6 10/31/18 16:35

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Antimony	50.0	U	61.2	64.0	122	128	1	75.0-125		J5	4.40	20
Arsenic	50.0	5.39	53.8	54.4	96.8	98.0	1	75.0-125			1.09	20
Barium	50.0	41.7	89.2	87.3	95.0	91.1	1	75.0-125			2.21	20

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L1038564-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1038564-08 10/31/18 16:21 • (MS) R3355759-5 10/31/18 16:30 • (MSD) R3355759-6 10/31/18 16:35

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Beryllium	50.0	1.75	50.0	51.0	96.5	98.5	1	75.0-125			1.99	20
Cadmium	50.0	U	48.4	48.7	96.8	97.4	1	75.0-125			0.591	20
Calcium	5000	31900	36400	36400	89.0	88.8	1	75.0-125			0.0375	20
Chromium	50.0	1.82	51.1	51.7	98.6	99.7	1	75.0-125			1.06	20
Cobalt	50.0	39.7	90.6	91.4	102	103	1	75.0-125			0.853	20
Lead	50.0	0.411	48.6	49.4	96.5	97.9	1	75.0-125			1.47	20
Molybdenum	50.0	142	189	190	94.2	96.6	1	75.0-125			0.628	20
Selenium	50.0	U	51.6	51.2	103	102	1	75.0-125			0.883	20
Thallium	50.0	U	47.4	47.9	94.7	95.8	1	75.0-125			1.15	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

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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.

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.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

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

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

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

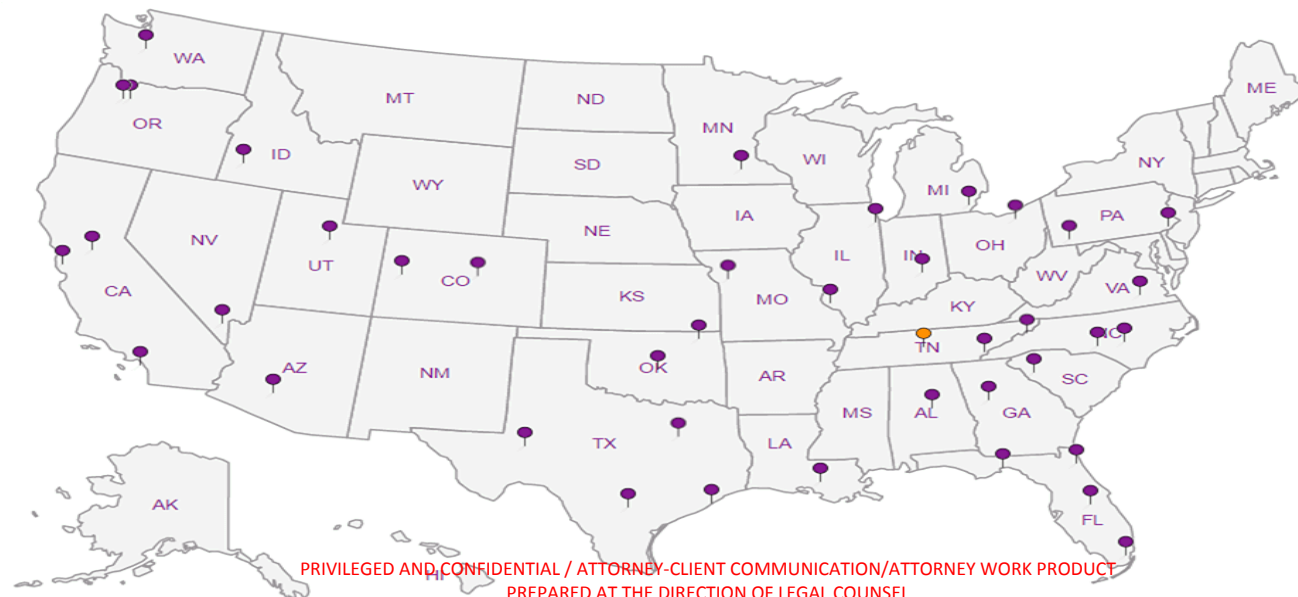
Third Party Federal Accreditations

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

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

Our Locations

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



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FTN Associates - Little Rock, AR

3 Innwood Circle, Suite 220
Little Rock, AR 72211Report to:
Dana DerringtonProject:
Description: **Entergy White Bluff Landfill**Phone: 501-920-9642
Fax:Collected by (print):
Eric NeaseCollected by (signature):
Eric NeaseImmediately
Packed on ice: N ☐ Y ☒

Billing Information:

Accounts Payable
3 Innwood Circle, Suite 220
Little Rock, AR 72211Email To: dld@ftn-assoc.com, hlf@ftn-assoc.com,
ajp@ftn-assoc.comCity/State
Collected:Lab Project #
FTNLRAR-ENTERGYWB

P.O. #

Quote #

Date Results Needed

Pres
Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859L # **1038564**
I128Acctnum: **FTNLRAR**Template: **T138202**Prelogin: **P677276**TSR: **134 - Mark W. Beasley**PB: **10-17-19 AA**Shipped Via: **FedEX Ground**

Remarks Sample # (lab only)

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	h.c. Cntrs	CI, FI, SO4, TDS 250ml HDPE-No Pres	Metals 250ml HDPE-HNO3	RA-226 1L-HDPE-Add HNO3	RA-228 1L-HDPE-Add HNO3								
RP-1	Grab	GW		10/23/18	1125	4	X	X	X	X								01
RP-2		GW			1100	4	X	X	X	X								02
RP-3		GW			1150	4	X	X	X	X								03
RP-4		GW			1340	4	X	X	X	X								04
RP-5		GW			1300	4	X	X	X	X								05
RP-6		GW			1240	4	X	X	X	X								06
RP-7		GW			1215	4	X	X	X	X								07
RP-8		GW			1420	4	X	X	X	X								08
RP-9		GW			1320	4	X	X	X	X								09
RP-10		GW			1400	4	X	X	X	X								10

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

Remarks: Metals= As, Ba, Be, B, Ca, Cd, Co, Cr, Hg, Li, Mo, Pb, Sb, Se, Ti

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
☐ UPS ☒ FedEx ☐ CourierTracking # **4624 2998 517 / 5106 2.40****Sample Receipt Checklist**
COC Seal Present/Intact: ☒ NP ☐ 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 Headpace: ☒ Y ☐ N
Preservation Correct/Checked: ☒ Y ☐ N

Relinquished by: (Signature)

Date: **10/23/18**Time: **1500**

Received by: (Signature)

Andre Pratt **10/23/18**
1500Trip Blank Received: Yes ☐ No ☒
HCL/MeOH
TBRTemp: _____ °C Bottles Received: **30**

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date: **10/25/18**Time: **1500**

Received by: (Signature)

Andre Pratt **10/25/18**
1500Temp: _____ °C Bottles Received: **30**

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date: **10/26/18**Time: **0845**

Received by: (Signature)

Andre Pratt **10/26/18**
0845Temp: _____ °C Bottles Received: **30**

If preservation required by Login: Date/Time

Hold: _____ Condition: **NCF / OK**

RAD SCREEN: <0.5 mR/hr

PRIVILEGED AND CONFIDENTIAL / ATTORNEY-CLIENT COMMUNICATION/ATTORNEY WORK PRODUCT
PREPARED AT THE DIRECTION OF LEGAL COUNSEL

November 28, 2018

FTN Associates - Little Rock, AR

Sample Delivery Group: L1038570
Samples Received: 10/26/2018
Project Number: 7920-1845-002
Description: Entergy White Bluff Landfill

Report To: Dana Derrington
3 Innwood Circle, Suite 220
Little Rock, AR 72211

Entire Report Reviewed By:



Mark W. Beasley
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



Cp: Cover Page	1
Tc: Table of Contents	2
Ss: Sample Summary	3
Cn: Case Narrative	5
Sr: Sample Results	6
RP-1 L1038570-01	6
RP-2 L1038570-02	7
RP-3 L1038570-03	8
RP-4 L1038570-04	9
RP-5 L1038570-05	10
RP-6 L1038570-06	11
RP-7 L1038570-07	12
RP-8 L1038570-08	13
RP-9 L1038570-09	14
RP-10 L1038570-10	15
Qc: Quality Control Summary	16
Radiochemistry by Method 904	16
Radiochemistry by Method SM7500Ra B M	17
Gl: Glossary of Terms	19
Al: Accreditations & Locations	20
Sc: Sample Chain of Custody	21



SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



RP-1 L1038570-01 Non-Potable Water

			Collected by Eric N.	Collected date/time 10/23/18 11:25	Received date/time 10/26/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Radiochemistry by Method 904	WG1187789	1	10/30/18 11:29	11/07/18 13:23	MK
Radiochemistry by Method Calculation	WG1188322	1	11/01/18 10:42	11/07/18 13:23	MK
Radiochemistry by Method SM7500Ra B M	WG1188322	1	11/01/18 10:42	11/03/18 11:36	RGT

¹Cp

²Tc

³Ss

RP-2 L1038570-02 Non-Potable Water

			Collected by Eric N.	Collected date/time 10/23/18 11:00	Received date/time 10/26/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Radiochemistry by Method 904	WG1187789	1	10/30/18 11:29	11/07/18 13:23	MK
Radiochemistry by Method Calculation	WG1188322	1	11/01/18 10:42	11/07/18 13:23	MK
Radiochemistry by Method SM7500Ra B M	WG1188322	1	11/01/18 10:42	11/03/18 11:36	RGT

⁴Cn

⁵Sr

⁶Qc

RP-3 L1038570-03 Non-Potable Water

			Collected by Eric N.	Collected date/time 10/23/18 11:50	Received date/time 10/26/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Radiochemistry by Method 904	WG1187789	1	10/30/18 11:29	11/07/18 13:23	MK
Radiochemistry by Method Calculation	WG1188322	1	11/01/18 10:42	11/07/18 13:23	MK
Radiochemistry by Method SM7500Ra B M	WG1188322	1	11/01/18 10:42	11/03/18 11:36	RGT

⁷Gl

⁸Al

⁹Sc

RP-4 L1038570-04 Non-Potable Water

			Collected by Eric N.	Collected date/time 10/23/18 13:40	Received date/time 10/26/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Radiochemistry by Method 904	WG1187789	1	10/30/18 11:29	11/07/18 13:23	MK
Radiochemistry by Method Calculation	WG1188322	1	11/01/18 10:42	11/07/18 13:23	MK
Radiochemistry by Method SM7500Ra B M	WG1188322	1	11/01/18 10:42	11/03/18 11:36	RGT

RP-5 L1038570-05 Non-Potable Water

			Collected by Eric N.	Collected date/time 10/23/18 13:00	Received date/time 10/26/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Radiochemistry by Method 904	WG1187789	1	10/30/18 11:29	11/07/18 13:23	MK
Radiochemistry by Method Calculation	WG1188322	1	11/01/18 10:42	11/07/18 13:23	MK
Radiochemistry by Method SM7500Ra B M	WG1188322	1	11/01/18 10:42	11/03/18 11:36	RGT

RP-6 L1038570-06 Non-Potable Water

			Collected by Eric N.	Collected date/time 10/23/18 12:40	Received date/time 10/26/18 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Radiochemistry by Method 904	WG1187789	1	10/30/18 11:29	11/08/18 11:22	MK
Radiochemistry by Method Calculation	WG1188322	1	11/01/18 10:42	11/08/18 11:22	MK
Radiochemistry by Method SM7500Ra B M	WG1188322	1	11/01/18 10:42	11/03/18 16:48	RGT

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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



RP-7 L1038570-07 Non-Potable Water

Collected by
Eric N.

Collected date/time
10/23/18 12:15

Received date/time
10/26/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Radiochemistry by Method 904	WG1187789	1	10/30/18 11:29	11/08/18 11:22	MK
Radiochemistry by Method Calculation	WG1188322	1	11/01/18 10:42	11/08/18 11:22	MK
Radiochemistry by Method SM7500Ra B M	WG1188322	1	11/01/18 10:42	11/03/18 16:48	RGT

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

RP-8 L1038570-08 Non-Potable Water

Collected by
Eric N.

Collected date/time
10/23/18 14:20

Received date/time
10/26/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Radiochemistry by Method 904	WG1187789	1	10/30/18 11:29	11/08/18 11:22	MK
Radiochemistry by Method Calculation	WG1188322	1	11/01/18 10:42	11/08/18 11:22	MK
Radiochemistry by Method SM7500Ra B M	WG1188322	1	11/01/18 10:42	11/03/18 16:48	RGT

RP-9 L1038570-09 Non-Potable Water

Collected by
Eric N.

Collected date/time
10/23/18 13:20

Received date/time
10/26/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Radiochemistry by Method 904	WG1187789	1	10/30/18 11:29	11/08/18 11:22	MK
Radiochemistry by Method Calculation	WG1189596	1	11/08/18 09:45	11/12/18 12:41	RRE
Radiochemistry by Method SM7500Ra B M	WG1189596	1	11/08/18 09:45	11/12/18 12:41	RGT

RP-10 L1038570-10 Non-Potable Water

Collected by
Eric N.

Collected date/time
10/23/18 14:00

Received date/time
10/26/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Radiochemistry by Method 904	WG1187789	1	10/30/18 11:29	11/08/18 11:22	MK
Radiochemistry by Method Calculation	WG1189596	1	11/08/18 09:45	11/12/18 12:41	RRE
Radiochemistry by Method SM7500Ra B M	WG1189596	1	11/08/18 09:45	11/12/18 12:41	RGT

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All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Mark W. Beasley
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	11.6		0.614	0.614	11/07/2018 13:23	WG1187789
(T) Barium	100			30.0-110	11/07/2018 13:23	WG1187789
(T) Yttrium	100			30.0-110	11/07/2018 13:23	WG1187789

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	15.6		1.54	0.97	11/07/2018 13:23	WG1188322

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	4.05		0.928	0.356	11/03/2018 11:36	WG1188322
(T) Barium-133	80.1			30.0-110	11/03/2018 11:36	WG1188322



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.75		0.398	0.535	11/07/2018 13:23	WG1187789
(T) Barium	100			30.0-110	11/07/2018 13:23	WG1187789
(T) Yttrium	100			30.0-110	11/07/2018 13:23	WG1187789

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	4.48		1.07	0.911	11/07/2018 13:23	WG1188322

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	2.74		0.676	0.376	11/03/2018 11:36	WG1188322
(T) Barium-133	79.2			30.0-110	11/03/2018 11:36	WG1188322



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	4.13		0.448	0.574	11/07/2018 13:23	WG1187789
(T) Barium	100			30.0-110	11/07/2018 13:23	WG1187789
(T) Yttrium	100			30.0-110	11/07/2018 13:23	WG1187789

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	6.90		1.19	0.842	11/07/2018 13:23	WG1188322

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	2.77		0.740	0.268	11/03/2018 11:36	WG1188322
(T) Barium-133	78.2			30.0-110	11/03/2018 11:36	WG1188322



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.65		0.446	0.588	11/07/2018 13:23	WG1187789
(T) Barium	100			30.0-110	11/07/2018 13:23	WG1187789
(T) Yttrium	100			30.0-110	11/07/2018 13:23	WG1187789

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.20		0.742	0.773	11/07/2018 13:23	WG1188322

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.554		0.296	0.185	11/03/2018 11:36	WG1188322
(T) Barium-133	98.4			30.0-110	11/03/2018 11:36	WG1188322



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.85		0.447	0.638	11/07/2018 13:23	WG1187789
(T) Barium	100			30.0-110	11/07/2018 13:23	WG1187789
(T) Yttrium	100			30.0-110	11/07/2018 13:23	WG1187789

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.93		0.910	0.919	11/07/2018 13:23	WG1188322

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	1.09		0.463	0.281	11/03/2018 11:36	WG1188322
(T) Barium-133	86.6			30.0-110	11/03/2018 11:36	WG1188322



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	3.27		0.511	0.623	11/08/2018 11:22	WG1187789
(T) Barium	100			30.0-110	11/08/2018 11:22	WG1187789
(T) Yttrium	100			30.0-110	11/08/2018 11:22	WG1187789

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	5.01		1.03	0.806	11/08/2018 11:22	WG1188322

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	1.74		0.516	0.183	11/03/2018 16:48	WG1188322
(T) Barium-133	89.8			30.0-110	11/03/2018 16:48	WG1188322



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	2.06		0.443	0.52	11/08/2018 11:22	WG1187789
(T) Barium	100			30.0-110	11/08/2018 11:22	WG1187789
(T) Yttrium	100			30.0-110	11/08/2018 11:22	WG1187789

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.63		0.890	1.07	11/08/2018 11:22	WG1188322

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.572		0.447	0.552	11/03/2018 16:48	WG1188322
(T) Barium-133	80.0			30.0-110	11/03/2018 16:48	WG1188322

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Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.896		0.385	0.494	11/08/2018 11:22	WG1187789
(T) Barium	100			30.0-110	11/08/2018 11:22	WG1187789
(T) Yttrium	97.3			30.0-110	11/08/2018 11:22	WG1187789

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.84		0.912	0.938	11/08/2018 11:22	WG1188322

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.941		0.527	0.444	11/03/2018 16:48	WG1188322
(T) Barium-133	64.3			30.0-110	11/03/2018 16:48	WG1188322



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	-0.0668		0.393	0.563	11/08/2018 11:22	WG1187789
(T) Barium	100			30.0-110	11/08/2018 11:22	WG1187789
(T) Yttrium	100			30.0-110	11/08/2018 11:22	WG1187789

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.729		0.748	0.861	11/12/2018 12:41	WG1189596

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.729		0.355	0.298	11/12/2018 12:41	WG1189596
(T) Barium-133	94.0			30.0-110	11/12/2018 12:41	WG1189596



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	3.09		0.454	0.524	11/08/2018 11:22	WG1187789
(T) Barium	100			30.0-110	11/08/2018 11:22	WG1187789
(T) Yttrium	100			30.0-110	11/08/2018 11:22	WG1187789

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	5.41		1.06	0.798	11/12/2018 12:41	WG1189596

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	2.32		0.605	0.274	11/12/2018 12:41	WG1189596
(T) Barium-133	87.0			30.0-110	11/12/2018 12:41	WG1189596



Method Blank (MB)

(MB) R3359372-1 11/07/18 13:23

Analyte	MB Result pCi/l	MB Qualifier	MB MDA pCi/l
Radium-228	0.213		0.373
(T) Barium	100		
(T) Yttrium	100		

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1038907-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1038907-02 11/08/18 11:22 • (DUP) R3359372-5 11/07/18 13:23

Analyte	Original Result pCi/l	DUP Result pCi/l	Dilution	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit pCi/l
Radium-228	-0.257	0.808	1	200	0.927		20	3
(T) Barium	100	100						
(T) Yttrium	100	100						

Laboratory Control Sample (LCS)

(LCS) R3359372-2 11/07/18 13:23

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	4.14	82.8	80.0-120	
(T) Barium			100		
(T) Yttrium			100		

L1038907-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1038907-01 11/08/18 11:22 • (MS) R3359372-3 11/07/18 13:23 • (MSD) R3359372-4 11/07/18 13:23

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-228	20.0	0.724	16.6	19.3	79.2	93.0	1	70.0-130			15.3		20
(T) Barium		100			100	100							
(T) Yttrium		99.0			100	100							

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Method Blank (MB)

(MB) R3357412-1 11/03/18 11:36

Analyte	MB Result pCi/l	MB Qualifier	MB MDA pCi/l
Radium-226	-0.00183		0.0421
(T) Barium-133	92.0		

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

L1037906-26 Original Sample (OS) • Duplicate (DUP)

(OS) L1037906-26 11/03/18 11:36 • (DUP) R3357412-5 11/03/18 11:36

Analyte	Original Result pCi/l	DUP Result pCi/l	Dilution	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit pCi/l
Radium-226	0.508	0.733	1	36.4	0.533		20	3
(T) Barium-133	100	92.0						

Laboratory Control Sample (LCS)

(LCS) R3357412-2 11/03/18 11:36

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.02	5.37	107	80.0-120	
(T) Barium-133			86.1		

L1037906-32 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1037906-32 11/03/18 11:36 • (MS) R3357412-3 11/03/18 11:36 • (MSD) R3357412-4 11/03/18 11:36

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-226	20.1	0.0630	20.2	20.9	100	104	1	75.0-125			3.26		20
(T) Barium-133		94.9			88.0	92.1							

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Method Blank (MB)

(MB) R3359508-1 11/12/18 12:41

	MB Result	MB Qualifier	MB MDA
Analyte	pCi/l		pCi/l
Radium-226	0.0172		0.0440
(T) Barium-133	88.1		

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1041921-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1041921-01 11/12/18 17:44 • (DUP) R3359508-5 11/12/18 12:41

	Original Result	DUP Result	Dilution	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
Analyte	pCi/l	pCi/l		%			%	pCi/l
Radium-226	0.148	0.252	1	52.1	0.347		20	3
(T) Barium-133	68.3	87.4						

Laboratory Control Sample (LCS)

(LCS) R3359508-2 11/12/18 12:41

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	pCi/l	pCi/l	%	%	
Radium-226	5.02	5.99	119	80.0-120	
(T) Barium-133			87.6		

L1037355-20 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1037355-20 11/12/18 12:41 • (MS) R3359508-3 11/12/18 12:41 • (MSD) R3359508-4 11/12/18 12:41

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits
Analyte	pCi/l	pCi/l	pCi/l	pCi/l	%	%		%			%		%
Radium-226	20.1	0.0145	21.5	19.8	107	98.4	1	75.0-125			8.14		20
(T) Barium-133		85.0			85.8	94.0							

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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.

Abbreviations and Definitions

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

Qualifier Description

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

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 G

8 Al

9 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

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

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

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

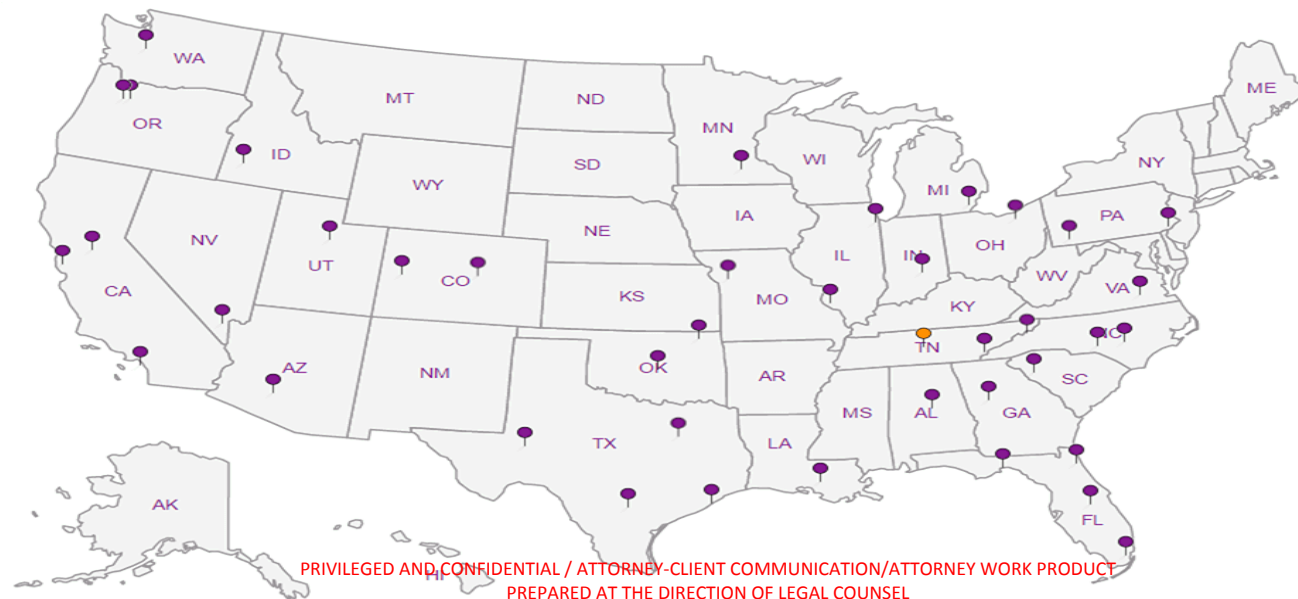
Third Party Federal Accreditations

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

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

Our Locations

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



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FTN Associates - Little Rock, AR

3 Innwood Circle, Suite 220
Little Rock, AR 72211

Billing Information:

Accounts Payable
3 Innwood Circle, Suite 220
Little Rock, AR 72211Report to:
Dana DerringtonEmail To: did@ftn-assoc.com, hlf@ftn-assoc.com,
ajp@ftn-assoc.comProject:
Description: Entergy White Bluff LandfillCity/State
Collected:Phone: 501-920-9642
Fax:Client Project #
7920-1845-002Lab Project #
FTNLRAR-ENTERGYWB

Collected by (print):

P.O. #

ERIC NEAL

Site/Facility ID #

Quote #

Collected by (signature):

Rush? (Lab MUST Be Notified)

Date Results Needed

Immediately
Packed on Ice: N ☐ Y ☒☐ Same Day ☐ Five Day
☐ Next Day ☐ 5 Day (Rad Only)
☐ Two Day ☐ 10 Day (Rad Only)
☐ Three Day

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	MS	Cl, F, SO ₄ , TDS 250mlHDPE-NoPres	Metals 250mlHDPE-HNO ₃	RA-226 1L-HDPE-Add HNO ₃	RA-228 1L-HDPE-Add HNO ₃
RP-1	Grab	GW		10/23/18	1125	4	X	X	X	
RP-2		GW			1100	4	X	X	X	
RP-3		GW			1150	4	X	X	X	
RP-4		GW			1340	4	X	X	X	
RP-5		GW			1300	4	X	X	X	
RP-6		GW			1240	4	X	X	X	
RP-7		GW			1215	4	X	X	X	
RP-8		GW			1420	4	X	X	X	
RP-9		GW			1320	4	X	X	X	
RP-10		GW			1400	4	X	X	X	

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

Remarks: Metals= As, Ba, Be, B, Ca, Cd, Co, Cr, Hg, Li, Mo, Pb, Sb, Se, Ti

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
☐ UPS ☒ FedEx ☐ Courier

Tracking # 9624 2998 5117 / 5106 2.40

Received by: (Signature)

Trip Blank Received: Yes ☒ No ☐
HCL / MeOH
TBR

Received by: (Signature)

Temp: _____ °C Bottles Received: _____

Received by: (Signature)

Temp: 26.1 = 2.79 30

Received by: (Signature)

Date: 10/26/18 0845

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

If preservation required by Login: Date/Time

Hold:

Condition:

NCF 10

RAD SCREEN: <0.5 mR/hr

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859L# 1038570
1128

Acctnum: FTNLRAR

Template: T138202

Prelogin: P677276

TSR: 134 - Mark W. Beasley

PB: 10-1719 AD

Shipped Via: FedEx Ground

Remarks Sample # (lab only)

PRIVILEGED AND CONFIDENTIAL / ATTORNEY-CLIENT COMMUNICATION/ATTORNEY WORK PRODUCT
PREPARED AT THE DIRECTION OF LEGAL COUNSEL

ANALYTICAL REPORT

March 14, 2019

FTN Associates - Little Rock, AR

Sample Delivery Group: L1076309
Samples Received: 03/07/2019
Project Number: 7920-1994-002
Description: Entergy White Bluff Landfill

Report To: Dana Derrington
3 Innwood Circle, Suite 220
Little Rock, AR 72211

Entire Report Reviewed By:



Mark W. Beasley
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	6	
Sr: Sample Results	7	³ Ss
RP-1 L1076309-01	7	
RP-2 L1076309-02	8	⁴ Cn
RP-3 L1076309-03	9	⁵ Sr
RP-4 L1076309-04	10	
RP-5 L1076309-05	11	⁶ Qc
RP-6 L1076309-06	12	
RP-7 L1076309-07	13	⁷ Gl
RP-8 L1076309-08	14	⁸ Al
RP-9 L1076309-09	15	
RP-10 L1076309-10	16	⁹ Sc
Qc: Quality Control Summary	17	
Gravimetric Analysis by Method 2540 C-2011	17	
Wet Chemistry by Method 9056A	19	
Mercury by Method 7470A	21	
Metals (ICP) by Method 6010B	22	
Metals (ICPMS) by Method 6020	23	
Gl: Glossary of Terms	25	
Al: Accreditations & Locations	26	
Sc: Sample Chain of Custody	27	

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



RP-1 L1076309-01 GW

				Collected by Andrew Pruitt	Collected date/time 03/05/19 10:30	Received date/time 03/07/19 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1247634	1	03/11/19 15:53	03/11/19 16:38	AJS	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1246717	1	03/08/19 21:49	03/08/19 21:49	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1246717	20	03/08/19 22:04	03/08/19 22:04	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1246717	50	03/09/19 08:36	03/09/19 08:36	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1246712	1	03/07/19 19:47	03/08/19 10:40	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1248331	1	03/11/19 17:28	03/12/19 17:59	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1246973	1	03/09/19 09:33	03/10/19 21:09	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1246973	1	03/09/19 09:33	03/11/19 16:03	LD	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

RP-2 L1076309-02 GW

				Collected by Andrew Pruitt	Collected date/time 03/05/19 10:10	Received date/time 03/07/19 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1247634	1	03/11/19 15:53	03/11/19 16:38	AJS	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1246717	1	03/08/19 22:18	03/08/19 22:18	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1246712	1	03/07/19 19:47	03/08/19 10:47	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1248331	1	03/11/19 17:28	03/12/19 18:02	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1246973	1	03/09/19 09:33	03/10/19 21:13	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1246973	1	03/09/19 09:33	03/11/19 16:07	LD	Mt. Juliet, TN

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

RP-3 L1076309-03 GW

				Collected by Andrew Pruitt	Collected date/time 03/05/19 12:30	Received date/time 03/07/19 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1247638	1	03/12/19 15:22	03/12/19 15:55	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1246717	1	03/08/19 22:33	03/08/19 22:33	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1246717	10	03/08/19 22:48	03/08/19 22:48	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1246717	20	03/09/19 08:51	03/09/19 08:51	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1246712	1	03/07/19 19:47	03/08/19 10:49	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1248331	1	03/11/19 17:28	03/12/19 18:05	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1246973	1	03/09/19 09:33	03/10/19 21:18	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1246973	1	03/09/19 09:33	03/11/19 16:12	LD	Mt. Juliet, TN

RP-4 L1076309-04 GW

				Collected by Andrew Pruitt	Collected date/time 03/05/19 12:00	Received date/time 03/07/19 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1247638	1	03/12/19 15:22	03/12/19 15:55	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1246717	1	03/08/19 23:03	03/08/19 23:03	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1246717	5	03/08/19 23:18	03/08/19 23:18	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1246712	1	03/07/19 19:47	03/08/19 10:52	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1248331	1	03/11/19 17:28	03/12/19 18:07	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1246973	1	03/09/19 09:33	03/10/19 21:22	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1246973	1	03/09/19 09:33	03/11/19 16:16	LD	Mt. Juliet, TN

RP-5 L1076309-05 GW

				Collected by Andrew Pruitt	Collected date/time 03/05/19 11:00	Received date/time 03/07/19 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1247638	1	03/12/19 15:22	03/12/19 15:55	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1246717	1	03/08/19 23:33	03/08/19 23:33	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1246717	5	03/08/19 23:48	03/08/19 23:48	ELN	Mt. Juliet, TN

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PREPARED IN CONNECTION WITH THE DEFENSE OF LEGAL COUNSEL

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



RP-5 L1076309-05 GW

				Collected by Andrew Pruitt	Collected date/time 03/05/19 11:00	Received date/time 03/07/19 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1246712	1	03/07/19 19:47	03/08/19 10:54	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1248331	1	03/11/19 17:28	03/12/19 18:10	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1246973	1	03/09/19 09:33	03/10/19 21:51	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1246973	1	03/09/19 09:33	03/11/19 16:36	LD	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

RP-6 L1076309-06 GW

				Collected by Andrew Pruitt	Collected date/time 03/05/19 09:40	Received date/time 03/07/19 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1247638	1	03/12/19 15:22	03/12/19 15:55	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1246717	1	03/08/19 23:48	03/08/19 23:48	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1246717	10	03/09/19 00:03	03/09/19 00:03	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1246712	1	03/07/19 19:47	03/08/19 10:57	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1248331	1	03/11/19 17:28	03/12/19 18:18	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1246973	1	03/09/19 09:33	03/10/19 21:55	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1246973	1	03/09/19 09:33	03/11/19 16:40	LD	Mt. Juliet, TN

RP-7 L1076309-07 GW

				Collected by Andrew Pruitt	Collected date/time 03/05/19 11:30	Received date/time 03/07/19 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1247638	1	03/12/19 15:22	03/12/19 15:55	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1246717	1	03/09/19 00:48	03/09/19 00:48	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1246717	5	03/09/19 09:20	03/09/19 09:20	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1246712	1	03/07/19 19:47	03/08/19 10:59	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1248331	1	03/11/19 17:28	03/12/19 18:20	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1246973	1	03/09/19 09:33	03/10/19 22:00	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1246973	1	03/09/19 09:33	03/11/19 16:45	LD	Mt. Juliet, TN

RP-8 L1076309-08 GW

				Collected by Andrew Pruitt	Collected date/time 03/05/19 08:00	Received date/time 03/07/19 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1247638	1	03/12/19 15:22	03/12/19 15:55	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1246717	1	03/09/19 01:02	03/09/19 01:02	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1246717	5	03/09/19 01:17	03/09/19 01:17	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1246712	1	03/07/19 19:47	03/08/19 11:02	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1248331	1	03/11/19 17:28	03/12/19 18:23	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1246973	1	03/09/19 09:33	03/10/19 22:05	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1246973	1	03/09/19 09:33	03/11/19 16:49	LD	Mt. Juliet, TN

RP-9 L1076309-09 GW

				Collected by Andrew Pruitt	Collected date/time 03/05/19 09:15	Received date/time 03/07/19 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1247638	1	03/12/19 15:22	03/12/19 15:55	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1246717	1	03/09/19 01:32	03/09/19 01:32	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1246712	1	03/07/19 19:47	03/08/19 11:09	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1248331	1	03/11/19 17:28	03/12/19 18:26	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1246973	1	03/09/19 09:33	03/10/19 22:09	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1246973	1	03/09/19 09:33	03/11/19 16:51	LD	Mt. Juliet, TN

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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



RP-10 L1076309-10 GW

Collected by
Andrew Pruitt

Collected date/time
03/05/19 08:30

Received date/time
03/07/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1247638	1	03/12/19 15:22	03/12/19 15:55	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1246717	1	03/09/19 02:17	03/09/19 02:17	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1246717	5	03/09/19 09:35	03/09/19 09:35	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1246712	1	03/07/19 19:47	03/08/19 11:11	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1248331	1	03/11/19 17:28	03/12/19 18:28	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1246973	1	03/09/19 09:33	03/10/19 19:44	RDS	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1246973	1	03/09/19 09:33	03/11/19 14:49	RDS	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

PRIVILEGED AND CONFIDENTIAL / ATTORNEY-CLIENT COMMUNICATION/ATTORNEY WORK PRODUCT
PREPARED AT THE DIRECTION OF LEGAL COUNSEL

ACCOUNT:
FTN Associates - Little Rock, AR

PROJECT:
7920-1994-002

SDG:
L1076309

DATE/TIME:
03/14/19 09:55

PAGE:
5 of 27



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

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	4720000		28200	100000	1	03/11/2019 16:38	WG1247634

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	601000		1040	20000	20	03/08/2019 22:04	WG1246717
Fluoride	1870		9.90	100	1	03/08/2019 21:49	WG1246717
Sulfate	2600000		3870	250000	50	03/09/2019 08:36	WG1246717

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	3.59		0.0490	0.200	1	03/08/2019 10:40	WG1246712

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	53.6	J	12.6	200	1	03/12/2019 17:59	WG1248331
Calcium	351000		46.3	1000	1	03/12/2019 17:59	WG1248331
Lithium	467		5.30	15.0	1	03/12/2019 17:59	WG1248331
Molybdenum	U		1.60	5.00	1	03/12/2019 17:59	WG1248331

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	03/11/2019 16:03	WG1246973
Arsenic	11.0		0.250	2.00	1	03/10/2019 21:09	WG1246973
Barium	8.85		0.360	5.00	1	03/10/2019 21:09	WG1246973
Beryllium	23.6		0.120	2.00	1	03/10/2019 21:09	WG1246973
Cadmium	0.742	J	0.160	1.00	1	03/10/2019 21:09	WG1246973
Chromium	1.57	J	0.540	2.00	1	03/10/2019 21:09	WG1246973
Cobalt	215		0.260	2.00	1	03/10/2019 21:09	WG1246973
Lead	1.96	J	0.240	2.00	1	03/10/2019 21:09	WG1246973
Selenium	13.5		0.380	2.00	1	03/10/2019 21:09	WG1246973
Thallium	0.344	J	0.190	2.00	1	03/10/2019 21:09	WG1246973

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	277000		2820	10000	1	03/11/2019 16:38	WG1247634

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	14900		51.9	1000	1	03/08/2019 22:18	WG1246717
Fluoride	84.9	J	9.90	100	1	03/08/2019 22:18	WG1246717
Sulfate	87400		77.4	5000	1	03/08/2019 22:18	WG1246717

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	03/08/2019 10:47	WG1246712

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	74.7	J	12.6	200	1	03/12/2019 18:02	WG1248331
Calcium	12200		46.3	1000	1	03/12/2019 18:02	WG1248331
Lithium	140		5.30	15.0	1	03/12/2019 18:02	WG1248331
Molybdenum	U		1.60	5.00	1	03/12/2019 18:02	WG1248331

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	03/11/2019 16:07	WG1246973
Arsenic	2.49		0.250	2.00	1	03/10/2019 21:13	WG1246973
Barium	44.3		0.360	5.00	1	03/10/2019 21:13	WG1246973
Beryllium	0.293	J	0.120	2.00	1	03/10/2019 21:13	WG1246973
Cadmium	U		0.160	1.00	1	03/10/2019 21:13	WG1246973
Chromium	1.99	J	0.540	2.00	1	03/10/2019 21:13	WG1246973
Cobalt	11.2		0.260	2.00	1	03/10/2019 21:13	WG1246973
Lead	0.834	J	0.240	2.00	1	03/10/2019 21:13	WG1246973
Selenium	U		0.380	2.00	1	03/10/2019 21:13	WG1246973
Thallium	U		0.190	2.00	1	03/10/2019 21:13	WG1246973

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	1790000		7050	25000	1	03/12/2019 15:55	WG1247638

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	158000		519	10000	10	03/08/2019 22:48	WG1246717
Fluoride	764		9.90	100	1	03/08/2019 22:33	WG1246717
Sulfate	1130000		1550	100000	20	03/09/2019 08:51	WG1246717

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	03/08/2019 10:49	WG1246712

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	105	J	12.6	200	1	03/12/2019 18:05	WG1248331
Calcium	179000		46.3	1000	1	03/12/2019 18:05	WG1248331
Lithium	379		5.30	15.0	1	03/12/2019 18:05	WG1248331
Molybdenum	U		1.60	5.00	1	03/12/2019 18:05	WG1248331

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	03/11/2019 16:12	WG1246973
Arsenic	7.10		0.250	2.00	1	03/10/2019 21:18	WG1246973
Barium	17.3		0.360	5.00	1	03/10/2019 21:18	WG1246973
Beryllium	11.4		0.120	2.00	1	03/10/2019 21:18	WG1246973
Cadmium	0.306	J	0.160	1.00	1	03/10/2019 21:18	WG1246973
Chromium	2.00		0.540	2.00	1	03/10/2019 21:18	WG1246973
Cobalt	65.3		0.260	2.00	1	03/10/2019 21:18	WG1246973
Lead	0.539	J	0.240	2.00	1	03/10/2019 21:18	WG1246973
Selenium	3.99		0.380	2.00	1	03/10/2019 21:18	WG1246973
Thallium	U		0.190	2.00	1	03/10/2019 21:18	WG1246973

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	697000		3750	13300	1	03/12/2019 15:55	WG1247638

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	90100		51.9	1000	1	03/08/2019 23:03	WG1246717
Fluoride	325		9.90	100	1	03/08/2019 23:03	WG1246717
Sulfate	344000		387	25000	5	03/08/2019 23:18	WG1246717

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	03/08/2019 10:52	WG1246712

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	99.8	J	12.6	200	1	03/12/2019 18:07	WG1248331
Calcium	45900		46.3	1000	1	03/12/2019 18:07	WG1248331
Lithium	69.7		5.30	15.0	1	03/12/2019 18:07	WG1248331
Molybdenum	U		1.60	5.00	1	03/12/2019 18:07	WG1248331

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	03/11/2019 16:16	WG1246973
Arsenic	2.37		0.250	2.00	1	03/10/2019 21:22	WG1246973
Barium	62.3		0.360	5.00	1	03/10/2019 21:22	WG1246973
Beryllium	3.39		0.120	2.00	1	03/10/2019 21:22	WG1246973
Cadmium	1.07		0.160	1.00	1	03/10/2019 21:22	WG1246973
Chromium	2.64		0.540	2.00	1	03/10/2019 21:22	WG1246973
Cobalt	57.4		0.260	2.00	1	03/10/2019 21:22	WG1246973
Lead	5.59		0.240	2.00	1	03/10/2019 21:22	WG1246973
Selenium	1.15	J	0.380	2.00	1	03/10/2019 21:22	WG1246973
Thallium	0.397	J	0.190	2.00	1	03/10/2019 21:22	WG1246973

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Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	515000		2820	10000	1	03/12/2019 15:55	WG1247638

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	48700		51.9	1000	1	03/08/2019 23:33	WG1246717
Fluoride	400		9.90	100	1	03/08/2019 23:33	WG1246717
Sulfate	257000		387	25000	5	03/09/2019 09:05	WG1246717

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	03/08/2019 10:54	WG1246712

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	144	J	12.6	200	1	03/12/2019 18:10	WG1248331
Calcium	43100		46.3	1000	1	03/12/2019 18:10	WG1248331
Lithium	163		5.30	15.0	1	03/12/2019 18:10	WG1248331
Molybdenum	U		1.60	5.00	1	03/12/2019 18:10	WG1248331

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	1.25	J	0.754	2.00	1	03/11/2019 16:36	WG1246973
Arsenic	3.52		0.250	2.00	1	03/10/2019 21:51	WG1246973
Barium	36.3		0.360	5.00	1	03/10/2019 21:51	WG1246973
Beryllium	4.34		0.120	2.00	1	03/10/2019 21:51	WG1246973
Cadmium	0.698	J	0.160	1.00	1	03/10/2019 21:51	WG1246973
Chromium	1.77	J	0.540	2.00	1	03/10/2019 21:51	WG1246973
Cobalt	38.6		0.260	2.00	1	03/10/2019 21:51	WG1246973
Lead	2.34		0.240	2.00	1	03/10/2019 21:51	WG1246973
Selenium	0.799	J	0.380	2.00	1	03/10/2019 21:51	WG1246973
Thallium	0.244	J	0.190	2.00	1	03/10/2019 21:51	WG1246973

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	1420000		5640	20000	1	03/12/2019 15:55	WG1247638

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	24000		51.9	1000	1	03/08/2019 23:48	WG1246717
Fluoride	395		9.90	100	1	03/08/2019 23:48	WG1246717
Sulfate	998000		774	50000	10	03/09/2019 00:03	WG1246717

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	03/08/2019 10:57	WG1246712

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	417		12.6	200	1	03/12/2019 18:18	WG1248331
Calcium	212000		46.3	1000	1	03/12/2019 18:18	WG1248331
Lithium	1380		5.30	15.0	1	03/12/2019 18:18	WG1248331
Molybdenum	12.9		1.60	5.00	1	03/12/2019 18:18	WG1248331

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	03/11/2019 16:40	WG1246973
Arsenic	1.00	J	0.250	2.00	1	03/10/2019 21:55	WG1246973
Barium	180		0.360	5.00	1	03/10/2019 21:55	WG1246973
Beryllium	1.88	J	0.120	2.00	1	03/10/2019 21:55	WG1246973
Cadmium	U		0.160	1.00	1	03/10/2019 21:55	WG1246973
Chromium	2.88		0.540	2.00	1	03/10/2019 21:55	WG1246973
Cobalt	8.45		0.260	2.00	1	03/10/2019 21:55	WG1246973
Lead	U		0.240	2.00	1	03/10/2019 21:55	WG1246973
Selenium	0.510	J	0.380	2.00	1	03/10/2019 21:55	WG1246973
Thallium	U		0.190	2.00	1	03/10/2019 21:55	WG1246973

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	336000		2820	10000	1	03/12/2019 15:55	WG1247638

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	4040		51.9	1000	1	03/09/2019 00:48	WG1246717
Fluoride	293		9.90	100	1	03/09/2019 00:48	WG1246717
Sulfate	139000		387	25000	5	03/09/2019 09:20	WG1246717

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	03/08/2019 10:59	WG1246712

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	200	J	12.6	200	1	03/12/2019 18:20	WG1248331
Calcium	24400		46.3	1000	1	03/12/2019 18:20	WG1248331
Lithium	213		5.30	15.0	1	03/12/2019 18:20	WG1248331
Molybdenum	U		1.60	5.00	1	03/12/2019 18:20	WG1248331

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	03/11/2019 16:45	WG1246973
Arsenic	1.49	J	0.250	2.00	1	03/10/2019 22:00	WG1246973
Barium	41.6		0.360	5.00	1	03/10/2019 22:00	WG1246973
Beryllium	6.35		0.120	2.00	1	03/10/2019 22:00	WG1246973
Cadmium	U		0.160	1.00	1	03/10/2019 22:00	WG1246973
Chromium	0.647	J	0.540	2.00	1	03/10/2019 22:00	WG1246973
Cobalt	12.5		0.260	2.00	1	03/10/2019 22:00	WG1246973
Lead	0.897	J	0.240	2.00	1	03/10/2019 22:00	WG1246973
Selenium	0.492	J	0.380	2.00	1	03/10/2019 22:00	WG1246973
Thallium	U		0.190	2.00	1	03/10/2019 22:00	WG1246973

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

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Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	468000		2820	10000	1	03/12/2019 15:55	WG1247638

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	22200		51.9	1000	1	03/09/2019 01:02	WG1246717
Fluoride	642		9.90	100	1	03/09/2019 01:02	WG1246717
Sulfate	183000		387	25000	5	03/09/2019 01:17	WG1246717

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	03/08/2019 11:02	WG1246712

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	241		12.6	200	1	03/12/2019 18:23	WG1248331
Calcium	32200		46.3	1000	1	03/12/2019 18:23	WG1248331
Lithium	298		5.30	15.0	1	03/12/2019 18:23	WG1248331
Molybdenum	85.0		1.60	5.00	1	03/12/2019 18:23	WG1248331

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	0.915	J	0.754	2.00	1	03/11/2019 16:49	WG1246973
Arsenic	5.16		0.250	2.00	1	03/10/2019 22:05	WG1246973
Barium	57.1		0.360	5.00	1	03/10/2019 22:05	WG1246973
Beryllium	0.961	J	0.120	2.00	1	03/10/2019 22:05	WG1246973
Cadmium	U		0.160	1.00	1	03/10/2019 22:05	WG1246973
Chromium	4.13		0.540	2.00	1	03/10/2019 22:05	WG1246973
Cobalt	10.4		0.260	2.00	1	03/10/2019 22:05	WG1246973
Lead	0.600	J	0.240	2.00	1	03/10/2019 22:05	WG1246973
Selenium	U		0.380	2.00	1	03/10/2019 22:05	WG1246973
Thallium	U		0.190	2.00	1	03/10/2019 22:05	WG1246973

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	232000		2820	10000	1	03/12/2019 15:55	WG1247638

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	17400		51.9	1000	1	03/09/2019 01:32	WG1246717
Fluoride	126		9.90	100	1	03/09/2019 01:32	WG1246717
Sulfate	44700		77.4	5000	1	03/09/2019 01:32	WG1246717

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	03/08/2019 11:09	WG1246712

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	107	J	12.6	200	1	03/12/2019 18:26	WG1248331
Calcium	24400		46.3	1000	1	03/12/2019 18:26	WG1248331
Lithium	32.7		5.30	15.0	1	03/12/2019 18:26	WG1248331
Molybdenum	25.4		1.60	5.00	1	03/12/2019 18:26	WG1248331

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	03/11/2019 16:54	WG1246973
Arsenic	1.62	J	0.250	2.00	1	03/10/2019 22:09	WG1246973
Barium	109		0.360	5.00	1	03/10/2019 22:09	WG1246973
Beryllium	U		0.120	2.00	1	03/10/2019 22:09	WG1246973
Cadmium	U		0.160	1.00	1	03/10/2019 22:09	WG1246973
Chromium	1.36	J	0.540	2.00	1	03/10/2019 22:09	WG1246973
Cobalt	0.930	J	0.260	2.00	1	03/10/2019 22:09	WG1246973
Lead	U		0.240	2.00	1	03/10/2019 22:09	WG1246973
Selenium	0.537	J	0.380	2.00	1	03/10/2019 22:09	WG1246973
Thallium	U		0.190	2.00	1	03/10/2019 22:09	WG1246973

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	485000		2820	10000	1	03/12/2019 15:55	WG1247638

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	70300		51.9	1000	1	03/09/2019 02:17	WG1246717
Fluoride	299		9.90	100	1	03/09/2019 02:17	WG1246717
Sulfate	215000		387	25000	5	03/09/2019 09:35	WG1246717

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	03/08/2019 11:11	WG1246712

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	706		12.6	200	1	03/12/2019 18:28	WG1248331
Calcium	32000		46.3	1000	1	03/12/2019 18:28	WG1248331
Lithium	56.0		5.30	15.0	1	03/12/2019 18:28	WG1248331
Molybdenum	U		1.60	5.00	1	03/12/2019 18:28	WG1248331

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	03/11/2019 14:49	WG1246973
Arsenic	2.31		0.250	2.00	1	03/10/2019 19:44	WG1246973
Barium	48.0		0.360	5.00	1	03/10/2019 19:44	WG1246973
Beryllium	4.57		0.120	2.00	1	03/10/2019 19:44	WG1246973
Cadmium	0.343	J	0.160	1.00	1	03/10/2019 19:44	WG1246973
Chromium	0.790	J	0.540	2.00	1	03/10/2019 19:44	WG1246973
Cobalt	17.7		0.260	2.00	1	03/10/2019 19:44	WG1246973
Lead	1.46	J	0.240	2.00	1	03/10/2019 19:44	WG1246973
Selenium	0.838	J	0.380	2.00	1	03/11/2019 14:49	WG1246973
Thallium	0.297	J	0.190	2.00	1	03/10/2019 19:44	WG1246973

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

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Method Blank (MB)

(MB) R3390887-1 03/11/19 16:38

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

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1075868-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1075868-01 03/11/19 16:38 • (DUP) R3390887-3 03/11/19 16:38

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Dissolved Solids	336000	341000	1	1.48		5

Laboratory Control Sample (LCS)

(LCS) R3390887-2 03/11/19 16:38

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Dissolved Solids	8800000	8900000	101	85.0-115	

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Method Blank (MB)

(MB) R3391273-1 03/12/19 15:55

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

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

L1076309-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1076309-03 03/12/19 15:55 • (DUP) R3391273-3 03/12/19 15:55

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Dissolved Solids	1790000	1760000	1	1.55		5

Laboratory Control Sample (LCS)

(LCS) R3391273-2 03/12/19 15:55

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Dissolved Solids	8800000	8550000	97.2	85.0-115	

7 Gl

8 Al

9 Sc

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Method Blank (MB)

(MB) R3390139-1 03/08/19 15:26

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

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1075868-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1075868-01 03/08/19 16:36 • (DUP) R3390139-3 03/08/19 16:50

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	3960	3990	1	0.790		15
Fluoride	291	292	1	0.172		15

L1076309-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1076309-09 03/09/19 01:32 • (DUP) R3390139-6 03/09/19 01:47

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	17400	17300	1	0.534		15
Fluoride	126	126	1	0.000		15
Sulfate	44700	44700	1	0.151		15

L1075868-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1075868-01 03/09/19 02:32 • (DUP) R3390139-8 03/09/19 02:47

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Sulfate	141000	140000	5	0.705		15

Laboratory Control Sample (LCS)

(LCS) R3390139-2 03/08/19 15:41

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Chloride	40000	39300	98.3	80.0-120	
Fluoride	8000	8160	102	80.0-120	
Sulfate	40000	39600	99.0	80.0-120	

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L1075868-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1075868-01 03/08/19 16:36 • (MS) R3390139-4 03/08/19 17:05 • (MSD) R3390139-5 03/08/19 17:20

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	3960	55100	55000	102	102	1	80.0-120			0.117	15
Fluoride	5000	291	5480	5480	104	104	1	80.0-120			0.00730	15
Sulfate	50000	152000	196000	196000	88.2	88.2	1	80.0-120	E	E	0.0106	15

L1076309-09 Original Sample (OS) • Matrix Spike (MS)

(OS) L1076309-09 03/09/19 01:32 • (MS) R3390139-7 03/09/19 02:02

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	17400	68700	103	1	80.0-120	
Fluoride	5000	126	5230	102	1	80.0-120	
Sulfate	50000	44700	95300	101	1	80.0-120	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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Method Blank (MB)

(MB) R3389943-1 03/08/19 10:28

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Mercury	U		0.0490	0.200

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

(LCS) R3389943-2 03/08/19 10:30 • (LCSD) R3389943-3 03/08/19 10:32

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%
Mercury	3.00	2.81	2.83	93.7	94.3	80.0-120			0.734	20

L1076309-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1076309-01 03/08/19 10:40 • (MS) R3389943-4 03/08/19 10:42 • (MSD) R3389943-5 03/08/19 10:45

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Mercury	3.00	3.59	6.62	6.05	101	82.1	1	75.0-125			8.85	20

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Method Blank (MB)

(MB) R3391142-1 03/13/19 09:49

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Boron	U		12.6	200
Calcium	U		46.3	1000
Lithium	U		5.30	15.0
Molybdenum	U		1.60	5.00

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

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

(LCS) R3391142-2 03/13/19 10:03 • (LCSD) R3391142-3 03/13/19 10:05

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Boron	1000	1000	1010	100	101	80.0-120			0.864	20
Calcium	10000	10100	10200	101	102	80.0-120			0.425	20
Lithium	1000	1000	1000	100	100	80.0-120			0.0889	20
Molybdenum	1000	1030	1030	103	103	80.0-120			0.208	20

L1076180-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1076180-01 03/12/19 17:22 • (MS) R3391152-2 03/12/19 17:27 • (MSD) R3391152-3 03/12/19 17:30

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	1000	ND	1080	1070	97.8	97.7	1	75.0-125			0.0883	20
Calcium	10000	94100	101000	102000	73.1	79.1	1	75.0-125	V		0.583	20
Lithium	1000	37.1	1060	1050	102	101	1	75.0-125			0.675	20
Molybdenum	1000	ND	1010	996	101	99.6	1	75.0-125			0.945	20

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Method Blank (MB)

(MB) R3390285-1 03/10/19 19:30

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Arsenic	U		0.250	2.00
Barium	U		0.360	5.00
Beryllium	U		0.120	2.00
Cadmium	U		0.160	1.00
Chromium	U		0.540	2.00
Cobalt	U		0.260	2.00
Lead	U		0.240	2.00
Thallium	U		0.190	2.00

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3390599-1 03/11/19 14:35

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Antimony	U		0.754	2.00
Selenium	U		0.380	2.00

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

(LCS) R3390285-2 03/10/19 19:35 • (LCSD) R3390285-3 03/10/19 19:39

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%
Arsenic	50.0	42.8	44.3	85.7	88.6	80.0-120			3.32	20
Barium	50.0	41.8	42.7	83.7	85.4	80.0-120			2.07	20
Beryllium	50.0	43.5	42.9	87.0	85.9	80.0-120			1.31	20
Cadmium	50.0	42.9	42.4	85.7	84.9	80.0-120			0.980	20
Chromium	50.0	43.5	45.3	87.0	90.6	80.0-120			4.10	20
Cobalt	50.0	42.8	44.6	85.6	89.1	80.0-120			4.11	20
Lead	50.0	42.1	43.0	84.1	86.0	80.0-120			2.20	20
Thallium	50.0	42.4	42.2	84.9	84.5	80.0-120			0.496	20

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

(LCS) R3390599-2 03/11/19 14:40 • (LCSD) R3390599-3 03/11/19 14:44

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%
Antimony	50.0	55.1	55.7	110	111	80.0-120			1.00	20
Selenium	50.0	49.4	47.1	98.4	93.0	80.0-120			1.1	20

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[L1076309-01,02,03,04,05,06,07,08,09,10](#)

L1076309-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1076309-10 03/10/19 19:44 • (MS) R3390285-5 03/10/19 19:53 • (MSD) R3390285-6 03/10/19 19:58

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	50.0	2.31	44.5	44.8	84.4	85.0	1	75.0-125			0.721	20
Barium	50.0	48.0	91.2	92.7	86.4	89.3	1	75.0-125			1.61	20
Beryllium	50.0	4.57	47.9	48.2	86.7	87.3	1	75.0-125			0.649	20
Cadmium	50.0	0.343	44.1	43.7	87.6	86.7	1	75.0-125			1.07	20
Chromium	50.0	0.790	43.3	43.9	84.9	86.2	1	75.0-125			1.52	20
Cobalt	50.0	17.7	60.7	61.6	85.9	87.8	1	75.0-125			1.58	20
Lead	50.0	1.46	44.4	45.5	85.8	88.1	1	75.0-125			2.47	20
Thallium	50.0	0.297	42.7	42.7	84.8	84.8	1	75.0-125			0.0226	20

L1076309-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1076309-10 03/11/19 14:49 • (MS) R3390599-5 03/11/19 14:58 • (MSD) R3390599-6 03/11/19 15:03

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Antimony	50.0	U	55.1	55.0	110	110	1	75.0-125			0.243	20
Selenium	50.0	0.838	50.9	52.8	100	104	1	75.0-125			3.69	20

1

Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

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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.

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

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



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

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

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

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

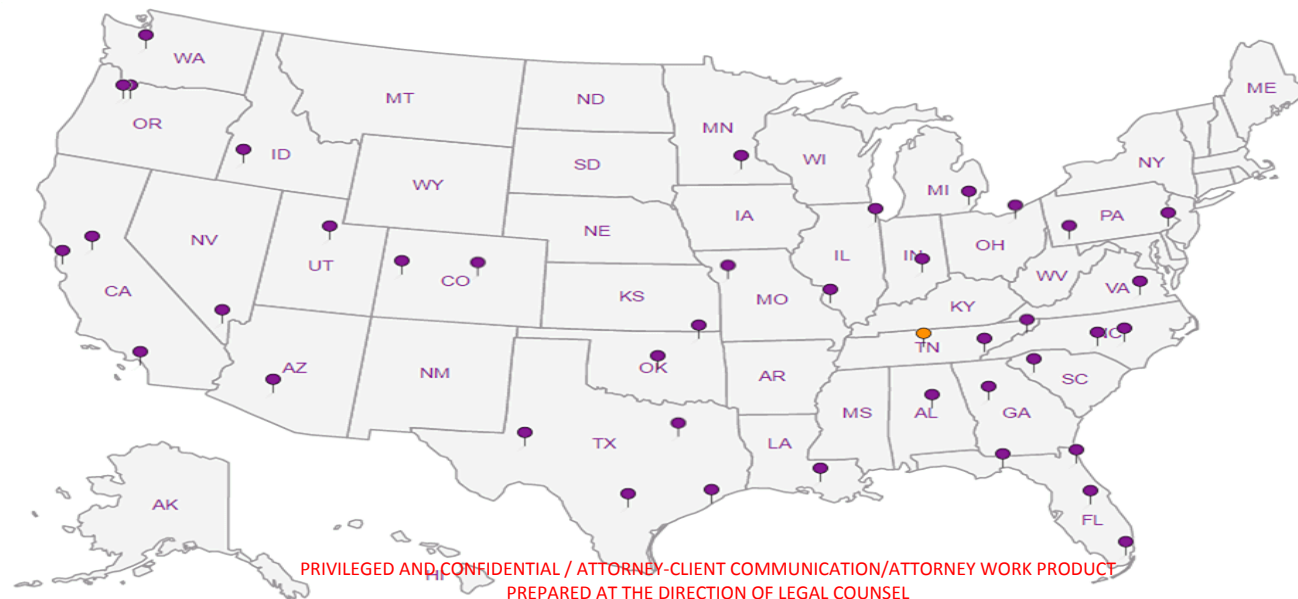
Third Party Federal Accreditations

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

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

Our Locations

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



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FTN Associates - Little Rock, AR

3 Innwood Circle, Suite 220
Little Rock, AR 72211

Billing Information:

Accounts Payable
3 Innwood Circle, Suite 220
Little Rock, AR 72211

Pres
Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 1



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



Report to:
Dana Derrington

Email To: dld@ftn-assoc.com, hlf@ftn-assoc.com,
ajp@ftn-assoc.com, mmv@ftn-assoc.com

Project
Description: Entergy White Bluff Landfill

City/State
Collected: Redfield, AR

Phone: 501-920-9642
Fax:

Client Project #
7920-1994-002

Lab Project #
FTNLRAR-ENTERGYWB

Collected by (print):
Andrew Pruitt

Site/Facility ID #

P.O. #

Collected by (signature):
Andrew Pruitt

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

Nc.
of
Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	Nc. of Cntrs
RP-1	Grab	GW		3/5/19	1030	4
RP-2		GW			1010	4
RP-3		GW			1230	4
RP-4		GW			1200	3
RP-5		GW			1100	4
RP-6		GW			0940	4
RP-7		GW			1130	3
RP-8		GW			0800	4
RP-9		GW			0915	4
RP-10		GW			0830	4

CI, FI, SO4, TDS 250miHDPE-NoPres

Metals 250miHDPE-HNO3

RA-226 1L-HDPE-Add HNO3

RA-228 1L-HDPE-Add HNO3

L# 1076309
H106

Acctnum: FTNLRAR

Template: T138202

Prelogin: P695342

TSR: 134 - Mark W. Beasley

PB: 18 2-26-19

Shipped Via: FedEx Ground

Remarks Sample # (lab only)

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

Remarks: Metals= As, Ba, Be, B, Ca, Cd, Co, Cr, Hg, Li, Mo, Pb, Sb, Se, Ti

pH Temp

Flow Other

Samples returned via:
UPS FedEx Courier

Tracking # 4876 1075 6815

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

Relinquished by: (Signature)

Date: 3/5/19

Time: 1900

Received by: (Signature)

Trip Blank Received: Yes / No

HCL / MeOH
TBR

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp: 16.10°C Bottles Received: 40

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Date: 3/7/19 Time: 0900

Hold:

Condition:
NCF / OK

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PREPARED AT THE DIRECTION OF LEGAL COUNSEL

April 08, 2019

FTN Associates - Little Rock, AR

Sample Delivery Group: L1076315
Samples Received: 03/07/2019
Project Number: 7920-1994-002
Description: Entergy White Bluff Landfill

Report To: Dana Derrington
3 Innwood Circle, Suite 220
Little Rock, AR 72211

Entire Report Reviewed By:



Olivia Studebaker
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	5	
Sr: Sample Results	6	³ Ss
RP-1 L1076315-01	6	
RP-2 L1076315-02	7	⁴ Cn
RP-3 L1076315-03	8	⁵ Sr
RP-4 L1076315-04	9	
RP-5 L1076315-05	10	⁶ Qc
RP-6 L1076315-06	11	
RP-7 L1076315-07	12	⁷ Gl
RP-8 L1076315-08	13	⁸ Al
RP-9 L1076315-09	14	
RP-10 L1076315-10	15	⁹ Sc
Qc: Quality Control Summary	16	
Radiochemistry by Method 904	16	
Radiochemistry by Method SM7500Ra B M	17	
Gl: Glossary of Terms	18	
Al: Accreditations & Locations	19	
Sc: Sample Chain of Custody	20	

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



RP-1 L1076315-01 Non-Potable Water

Collected by
Andrew Pruitt

Collected date/time
03/05/19 10:30

Received date/time
03/07/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1257626	1	04/02/19 14:07	04/05/19 10:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1250081	1	03/18/19 09:30	04/05/19 10:50	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1250081	1	03/18/19 09:30	03/18/19 18:16	RGT	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

RP-2 L1076315-02 Non-Potable Water

Collected by
Andrew Pruitt

Collected date/time
03/05/19 10:10

Received date/time
03/07/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1257626	1	04/02/19 14:07	04/05/19 10:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1250081	1	03/14/19 15:35	04/05/19 10:50	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1250081	1	03/14/19 15:35	03/15/19 16:22	RGT	Mt. Juliet, TN

RP-3 L1076315-03 Non-Potable Water

Collected by
Andrew Pruitt

Collected date/time
03/05/19 12:30

Received date/time
03/07/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1257626	1	04/02/19 14:07	04/05/19 10:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1250081	1	03/19/19 10:00	04/05/19 10:50	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1250081	1	03/19/19 10:00	03/19/19 17:22	RGT	Mt. Juliet, TN

RP-4 L1076315-04 Non-Potable Water

Collected by
Andrew Pruitt

Collected date/time
03/05/19 12:00

Received date/time
03/07/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1257626	1	04/02/19 14:07	04/05/19 10:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1250081	1	03/14/19 15:35	04/05/19 10:50	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1250081	1	03/14/19 15:35	03/15/19 16:22	RGT	Mt. Juliet, TN

RP-5 L1076315-05 Non-Potable Water

Collected by
Andrew Pruitt

Collected date/time
03/05/19 11:00

Received date/time
03/07/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1257626	1	04/02/19 14:07	04/05/19 10:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1250081	1	03/14/19 15:35	04/05/19 10:50	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1250081	1	03/14/19 15:35	03/15/19 16:22	RGT	Mt. Juliet, TN

RP-6 L1076315-06 Non-Potable Water

Collected by
Andrew Pruitt

Collected date/time
03/05/19 09:40

Received date/time
03/07/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1257626	1	04/02/19 14:07	04/05/19 10:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1250081	1	03/18/19 09:30	04/05/19 10:50	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1250081	1	03/18/19 09:30	03/18/19 18:16	RGT	Mt. Juliet, TN

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ACCOUNT:
FTN Associates - Little Rock, AR

PROJECT:
7920-1994-002

SDG:
L1076315

DATE/TIME:
04/08/19 16:47

PAGE:
3 of 20



RP-7 L1076315-07 Non-Potable Water

Collected by
Andrew Pruitt

Collected date/time
03/05/19 11:30

Received date/time
03/07/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1257626	1	04/02/19 14:07	04/05/19 10:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1250081	1	03/14/19 15:35	04/05/19 10:50	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1250081	1	03/14/19 15:35	03/15/19 16:22	RGT	Mt. Juliet, TN

¹Cp²Tc³Ss⁴Cn⁵Sr⁶Qc⁷Gl⁸Al⁹Sc

RP-8 L1076315-08 Non-Potable Water

Collected by
Andrew Pruitt

Collected date/time
03/05/19 08:00

Received date/time
03/07/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1257626	1	04/02/19 14:07	04/05/19 14:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1250081	1	03/14/19 15:35	04/05/19 14:50	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1250081	1	03/14/19 15:35	03/15/19 16:22	RGT	Mt. Juliet, TN

RP-9 L1076315-09 Non-Potable Water

Collected by
Andrew Pruitt

Collected date/time
03/05/19 09:15

Received date/time
03/07/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1257626	1	04/02/19 14:07	04/05/19 14:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1250081	1	03/14/19 15:35	04/05/19 14:50	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1250081	1	03/14/19 15:35	03/15/19 16:22	RGT	Mt. Juliet, TN

RP-10 L1076315-10 Non-Potable Water

Collected by
Andrew Pruitt

Collected date/time
03/05/19 08:30

Received date/time
03/07/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1257626	1	04/02/19 14:07	04/05/19 14:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1250081	1	03/14/19 15:35	04/05/19 14:50	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1250081	1	03/14/19 15:35	03/15/19 16:22	RGT	Mt. Juliet, TN

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All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Olivia Studebaker
Project Manager

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	9.47		0.620	0.781	04/05/2019 10:50	WG1257626
(T) Barium	112			62.0-143	04/05/2019 10:50	WG1257626
(T) Yttrium	107			79.0-136	04/05/2019 10:50	WG1257626

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	12.1		1.24	0.995	04/05/2019 10:50	WG1250081

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	2.64		0.617	0.214	03/18/2019 18:16	WG1250081
(T) Barium-133	90.8			30.0-110	03/18/2019 18:16	WG1250081



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.25		0.446	0.626	04/05/2019 10:50	WG1257626
(T) Barium	97.2			62.0-143	04/05/2019 10:50	WG1257626
(T) Yttrium	107			79.0-136	04/05/2019 10:50	WG1257626

¹ Cp² Tc³ Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.19		0.849	0.975	04/05/2019 10:50	WG1250081

⁴ Cn⁵ Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.936		0.403	0.349	03/15/2019 16:22	WG1250081
(T) Barium-133	71.2			30.0-110	03/15/2019 16:22	WG1250081

⁶ Qc⁷ Gl⁸ Al⁹ Sc



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	4.57		0.485	0.615	04/05/2019 10:50	WG1257626
(T) Barium	120			62.0-143	04/05/2019 10:50	WG1257626
(T) Yttrium	102			79.0-136	04/05/2019 10:50	WG1257626

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	6.90		1.13	0.931	04/05/2019 10:50	WG1250081

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	2.33		0.640	0.316	03/19/2019 17:22	WG1250081
(T) Barium-133	81.7			30.0-143	03/19/2019 17:22	WG1250081



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	2.37		0.403	0.63	04/05/2019 10:50	WG1257626
(T) Barium	81.0			62.0-143	04/05/2019 10:50	WG1257626
(T) Yttrium	116			79.0-136	04/05/2019 10:50	WG1257626

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.71		0.613	0.797	04/05/2019 10:50	WG1250081

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.336		0.210	0.167	03/15/2019 16:22	WG1250081
(T) Barium-133	105			30.0-110	03/15/2019 16:22	WG1250081



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	4.07		0.415	0.674	04/05/2019 10:50	WG1257626
(T) Barium	82.5			62.0-143	04/05/2019 10:50	WG1257626
(T) Yttrium	98.9			79.0-136	04/05/2019 10:50	WG1257626

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	5.01		0.764	0.829	04/05/2019 10:50	WG1250081

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.932		0.349	0.155	03/15/2019 16:22	WG1250081
(T) Barium-133	110			30.0-110	03/15/2019 16:22	WG1250081



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	3.05		0.443	0.568	04/05/2019 10:50	WG1257626
(T) Barium	128			62.0-143	04/05/2019 10:50	WG1257626
(T) Yttrium	108			79.0-136	04/05/2019 10:50	WG1257626

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	4.41		0.901	0.775	04/05/2019 10:50	WG1250081

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	1.36		0.458	0.207	03/18/2019 18:16	WG1250081
(T) Barium-133	88.5			30.0-110	03/18/2019 18:16	WG1250081

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Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	3.32		0.489	0.776	04/05/2019 10:50	WG1257626
(T) Barium	100			62.0-143	04/05/2019 10:50	WG1257626
(T) Yttrium	94.5			79.0-136	04/05/2019 10:50	WG1257626

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	3.85		0.855	1.1	04/05/2019 10:50	WG1250081

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.524		0.366	0.321	03/15/2019 16:22	WG1250081
(T) Barium-133	61.3			30.0-110	03/15/2019 16:22	WG1250081

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Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.965		0.421	0.624	04/05/2019 14:50	WG1257626
(T) Barium	95.0			62.0-143	04/05/2019 14:50	WG1257626
(T) Yttrium	95.6			79.0-136	04/05/2019 14:50	WG1257626

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.14		0.668	0.984	04/05/2019 14:50	WG1250081

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.178		0.247	0.36	03/15/2019 16:22	WG1250081
(T) Barium-133	48.6			30.0-110	03/15/2019 16:22	WG1250081

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Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.21		0.404	0.55	04/05/2019 14:50	WG1257626
(T) Barium	107			62.0-143	04/05/2019 14:50	WG1257626
(T) Yttrium	104			79.0-136	04/05/2019 14:50	WG1257626

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.44		0.627	0.809	04/05/2019 14:50	WG1250081

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.226		0.223	0.259	03/15/2019 16:22	WG1250081
(T) Barium-133	69.2			30.0-110	03/15/2019 16:22	WG1250081

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Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.31		0.362	0.541	04/05/2019 14:50	WG1257626
(T) Barium	87.2			62.0-143	04/05/2019 14:50	WG1257626
(T) Yttrium	101			79.0-136	04/05/2019 14:50	WG1257626

¹ Cp² Tc³ Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.71		0.717	0.919	04/05/2019 14:50	WG1250081

⁴ Cn⁵ Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.401		0.355	0.378	03/15/2019 16:22	WG1250081
(T) Barium-133	54.9			30.0-110	03/15/2019 16:22	WG1250081

⁶ Qc⁷ Gl⁸ Al⁹ Sc

Method Blank (MB)

(MB) R3399418-1 04/05/19 10:50

Analyte	MB Result pCi/l	MB Qualifier	MB MDA pCi/l
Radium-228	0.581		0.393
(T) Barium	104		
(T) Yttrium	110		

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Laboratory Control Sample (LCS)

(LCS) R3399418-2 04/05/19 10:50

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.84	117	80.0-120	
(T) Barium			103		
(T) Yttrium			97.7		

L1076953-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1076953-03 04/05/19 14:50 • (MS) R3399418-3 04/05/19 10:50 • (MSD) R3399418-4 04/05/19 10:50

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-228	20.0	-0.294	23.1	21.6	116	108	1	70.0-130			6.93		20
(T) Barium		116			111	110							
(T) Yttrium		109			94.4	99.0							

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[L1076315-01,02,03,04,05,06,07,08,09,10](#)

Method Blank (MB)

(MB) R3393409-1 03/15/19 20:45

	MB Result	MB Qualifier	MB MDA
Analyte	pCi/l		pCi/l
Radium-226	0.0276		0.0772
(T) Barium-133	83.6		

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

L1078102-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1078102-02 03/15/19 16:22 • (DUP) R3393409-8 03/18/19 18:16

	Original Result	DUP Result	Dilution	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
Analyte	pCi/l	pCi/l		%			%	
Radium-226	0.175	0.106	1	49.4	0.273		20	3
(T) Barium-133	65.3	99.4						

Laboratory Control Sample (LCS)

(LCS) R3393409-2 03/15/19 20:45

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	pCi/l	pCi/l	%	%	
Radium-226	5.02	4.44	88.4	80.0-120	
(T) Barium-133			77.9		

L1076245-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1076245-01 03/15/19 16:22 • (MS) R3393409-6 03/18/19 18:16 • (MSD) R3393409-7 03/18/19 18:16

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits
Analyte	pCi/l	pCi/l	pCi/l	pCi/l	%	%		%			%		%
Radium-226	20.1	0.0516	17.7	17.2	87.9	85.2	1	75.0-125			3.15		20
(T) Barium-133		88.0			103	103							

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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.

Abbreviations and Definitions

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

Qualifier Description

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

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ G⁸ Al⁹ Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

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

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

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

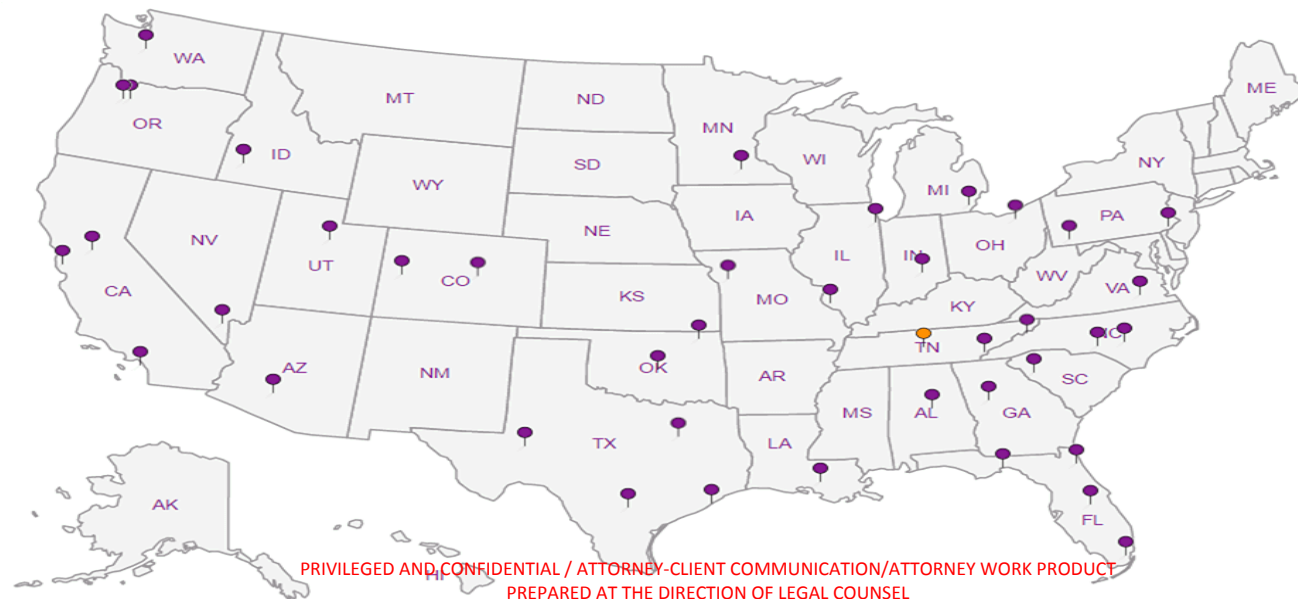
Third Party Federal Accreditations

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

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

Our Locations

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



PRIVILEGED AND CONFIDENTIAL / ATTORNEY-CLIENT COMMUNICATION/ATTORNEY WORK PRODUCT
PREPARED AT THE DIRECTION OF LEGAL COUNSEL

FTN Associates - Little Rock, AR

3 Innwood Circle, Suite 220
Little Rock, AR 72211Report to:
Dana DerringtonProject
Description: Entergy White Bluff LandfillPhone: 501-920-9642
Fax:Client Project #
7920-1994-002City/State
Collected: Redfield, ARLab Project #
FTNLRAR-ENTERGYWB

Collected by (print):

Site/Facility ID #

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)

Quote #

Immediately
Packed on Ice N ☐ Y ☒☐ Same Day ☐ Five Day
☐ Next Day ☐ 5 Day (Rad Only)
☐ Two Day ☐ 10 Day (Rad Only)
☐ Three Day

Date Results Needed

No.
of
Cntrs

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time															
RP-1	Grab	GW		3/5/19	1030	4	X	X	X	X										
RP-2		GW			1010	4	X	X	X	X										
RP-3		GW			1230	4	X	X	X	X										
RP-4		GW			1200	3	X	X	X	X										
RP-5		GW			1100	4	X	X	X	X										
RP-6		GW			0940	4	X	X	X	X										
RP-7		GW			1130	3	X	X	X	X										
RP-8		GW			0900	4	X	X	X	X										
RP-9		GW			0915	4	X	X	X	X										
RP-10		GW			0830	4	X	X	X	X										

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

Remarks: Metals= As, Ba, Be, B, Ca, Cd, Co, Cr, Hg, Li, Mo, Pb, Sb, Se, Ti

pH _____ Temp _____

6826 Flow _____ Other _____

Samples returned via:

☐ UPS ☒ FedEx ☐ Courier

Tracking # 4876 1075 6815

Relinquished by: (Signature)

Date:
3/5/19Time:
1900

Received by: (Signature)

Trip Blank Received: Yes / No
HCL / MeOH
TBR

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp: °C Bottles Received:
06+0.1=0.7 40

Relinquished by: (Signature)

PRIVILEGED AND CONFIDENTIAL / ATTORNEY-CLIENT COMMUNICATION / ATTORNEY WORK PRODUCT
PREPARED AT THE DIRECTION OF LEGAL COUNSEL

Date:

Time:

Hold:

Condition:
NCF 1 OK

Analysis / Container / Preservative

Pres
Chk

<2

<2

<2

Chain of Custody

Page 1 of 1

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

L# 1076315

H106

Acctnum: FTNLRAR

Template: T138202

Prelogin: P695342

TSR: 134 - Mark W. Beasley

PB: 226-9

Shipped Via: FedEx Ground

Remarks

Sample # (lab only)

-01

-02

03

04

05

06

07

08

09

10

Sample Receipt Checklist

COC Seal Present/Intact: ☒ 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

If preservation required by Login: Date/Time

June 13, 2019

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

FTN Associates - Little Rock, AR

Sample Delivery Group: L1104129
Samples Received: 05/31/2019
Project Number: 7920-1993-002
Description: Entergy White Bluff Landfill

Report To: Dana Derrington
3 Innwood Circle, Suite 220
Little Rock, AR 72211

Entire Report Reviewed By:



Mark W. Beasley
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

PRIVILEGED AND CONFIDENTIAL / ATTORNEY-CLIENT COMMUNICATION/ATTORNEY WORK PRODUCT
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Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	5	
Sr: Sample Results	6	³ Ss
RP-1 L1104129-01	6	
RP-2 L1104129-02	7	⁴ Cn
RP-3 L1104129-03	8	⁵ Sr
RP-4 L1104129-04	9	
RP-5 L1104129-05	10	⁶ Qc
RP-6 L1104129-06	11	
RP-7 L1104129-07	12	⁷ Gl
RP-8 L1104129-08	13	⁸ Al
RP-9 L1104129-09	14	
RP-10 L1104129-10	15	⁹ Sc
Qc: Quality Control Summary	16	
Gravimetric Analysis by Method 2540 C-2011	16	
Wet Chemistry by Method 9056A	18	
Mercury by Method 7470A	22	
Metals (ICP) by Method 6010B	24	
Metals (ICPMS) by Method 6020	25	
Gl: Glossary of Terms	27	
Al: Accreditations & Locations	28	
Sc: Sample Chain of Custody	29	

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



RP-1 L1104129-01 GW

				Collected by Andrew Pruitt	Collected date/time 05/30/19 09:08	Received date/time 05/31/19 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1291147	1	06/05/19 18:48	06/05/19 20:19	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1291417	1	06/07/19 00:06	06/07/19 00:06	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1291417	50	06/07/19 00:51	06/07/19 00:51	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1289970	1	06/03/19 19:00	06/04/19 12:04	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1289598	1	06/04/19 11:10	06/06/19 20:25	TRB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1289604	1	06/04/19 06:51	06/04/19 22:25	LAT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1289604	5	06/04/19 06:51	06/05/19 00:21	LAT	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

RP-2 L1104129-02 GW

				Collected by Andrew Pruitt	Collected date/time 05/30/19 09:25	Received date/time 05/31/19 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1291147	1	06/05/19 18:48	06/05/19 20:19	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1291417	1	06/07/19 01:06	06/07/19 01:06	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1291417	100	06/07/19 05:35	06/07/19 05:35	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1289970	1	06/03/19 19:00	06/04/19 12:07	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1289598	1	06/04/19 11:10	06/06/19 20:27	TRB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1289604	1	06/04/19 06:51	06/04/19 22:46	LAT	Mt. Juliet, TN

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

RP-3 L1104129-03 GW

				Collected by Andrew Pruitt	Collected date/time 05/30/19 08:40	Received date/time 05/31/19 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1291147	1	06/05/19 18:48	06/05/19 20:19	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1291417	1	06/07/19 01:36	06/07/19 01:36	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1291417	20	06/07/19 01:51	06/07/19 01:51	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1289970	1	06/03/19 19:00	06/04/19 12:09	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1289598	1	06/04/19 11:10	06/06/19 20:13	TRB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1289604	1	06/04/19 06:51	06/04/19 22:51	LAT	Mt. Juliet, TN

RP-4 L1104129-04 GW

				Collected by Andrew Pruitt	Collected date/time 05/29/19 10:40	Received date/time 05/31/19 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1290083	1	06/05/19 02:07	06/05/19 05:30	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1291417	1	06/07/19 02:06	06/07/19 02:06	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1291417	5	06/07/19 02:21	06/07/19 02:21	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1289970	1	06/03/19 19:00	06/04/19 12:40	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1289598	1	06/04/19 11:10	06/06/19 20:30	TRB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1289604	1	06/04/19 06:51	06/04/19 22:56	LAT	Mt. Juliet, TN

RP-5 L1104129-05 GW

				Collected by Andrew Pruitt	Collected date/time 05/29/19 10:03	Received date/time 05/31/19 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1290083	1	06/05/19 02:07	06/05/19 05:30	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1291417	1	06/07/19 02:36	06/07/19 02:36	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1291417	5	06/07/19 02:51	06/07/19 02:51	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1289970	1	06/03/19 19:00	06/04/19 12:43	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1289598	1	06/04/19 11:10	06/06/19 20:38	TRB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1289604	1	06/04/19 06:51	06/04/19 23:12	LAT	Mt. Juliet, TN

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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



RP-6 L1104129-06 GW

				Collected by Andrew Pruitt	Collected date/time 05/29/19 10:20	Received date/time 05/31/19 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1290083	1	06/05/19 02:07	06/05/19 05:30	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1291417	1	06/07/19 03:05	06/07/19 03:05	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1291417	20	06/07/19 08:54	06/07/19 08:54	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1289970	1	06/03/19 19:00	06/04/19 12:45	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1289598	1	06/04/19 11:10	06/06/19 20:41	TRB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1289604	1	06/04/19 06:51	06/04/19 23:17	LAT	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

RP-7 L1104129-07 GW

				Collected by Andrew Pruitt	Collected date/time 05/29/19 09:45	Received date/time 05/31/19 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1290083	1	06/05/19 02:07	06/05/19 05:30	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1291417	1	06/07/19 04:05	06/07/19 04:05	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1291417	5	06/07/19 04:20	06/07/19 04:20	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1289970	1	06/03/19 19:00	06/04/19 12:48	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1289598	1	06/04/19 11:10	06/06/19 20:44	TRB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1289604	1	06/04/19 06:51	06/04/19 23:22	LAT	Mt. Juliet, TN

RP-8 L1104129-08 GW

				Collected by Andrew Pruitt	Collected date/time 05/29/19 09:18	Received date/time 05/31/19 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1290083	1	06/05/19 02:07	06/05/19 05:30	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1291417	1	06/07/19 04:35	06/07/19 04:35	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1291417	5	06/07/19 04:50	06/07/19 04:50	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1289971	1	06/03/19 19:00	06/04/19 10:27	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1289598	1	06/04/19 11:10	06/06/19 20:47	TRB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1289604	1	06/04/19 06:51	06/04/19 23:27	LAT	Mt. Juliet, TN

RP-9 L1104129-09 GW

				Collected by Andrew Pruitt	Collected date/time 05/29/19 15:45	Received date/time 05/31/19 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1290083	1	06/05/19 02:07	06/05/19 05:30	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1291417	1	06/07/19 05:05	06/07/19 05:05	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1289971	1	06/03/19 19:00	06/04/19 10:29	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1289598	1	06/04/19 11:10	06/06/19 20:50	TRB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1289604	1	06/04/19 06:51	06/04/19 23:32	LAT	Mt. Juliet, TN

RP-10 L1104129-10 GW

				Collected by Andrew Pruitt	Collected date/time 05/29/19 10:20	Received date/time 05/31/19 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1290083	1	06/05/19 02:07	06/05/19 05:30	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1292521	1	06/08/19 12:12	06/08/19 12:12	ST	Mt. Juliet, TN
Mercury by Method 7470A	WG1289971	1	06/03/19 19:00	06/04/19 10:31	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1289598	1	06/04/19 11:10	06/06/19 20:52	TRB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1289604	1	06/04/19 06:51	06/04/19 23:37	LAT	Mt. Juliet, TN

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PREPARED AT THE DIRECTION OF LEGAL COUNSEL



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

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	5150000		28200	100000	1	06/05/2019 20:19	WG1291147

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	641000		2600	50000	50	06/07/2019 00:51	WG1291417
Fluoride	2140		9.90	100	1	06/07/2019 00:06	WG1291417
Sulfate	3180000		3870	250000	50	06/07/2019 00:51	WG1291417

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	4.02		0.0490	0.200	1	06/04/2019 12:04	WG1289970

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	66.7	J	12.6	200	1	06/06/2019 20:25	WG1289598
Calcium	356000		46.3	1000	1	06/06/2019 20:25	WG1289598
Lithium	463		5.30	15.0	1	06/06/2019 20:25	WG1289598
Molybdenum	U		1.60	5.00	1	06/06/2019 20:25	WG1289598

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		3.77	10.0	5	06/05/2019 00:21	WG1289604
Arsenic	12.3		1.25	10.0	5	06/05/2019 00:21	WG1289604
Barium	9.71		0.360	5.00	1	06/04/2019 22:25	WG1289604
Beryllium	24.9		0.120	2.00	1	06/04/2019 22:25	WG1289604
Cadmium	1.05	J	0.800	5.00	5	06/05/2019 00:21	WG1289604
Chromium	U		2.70	10.0	5	06/05/2019 00:21	WG1289604
Cobalt	223	O1 V	1.30	10.0	5	06/05/2019 00:21	WG1289604
Lead	U		1.20	10.0	5	06/05/2019 00:21	WG1289604
Selenium	13.3		0.380	2.00	1	06/04/2019 22:25	WG1289604
Thallium	U		0.950	10.0	5	06/05/2019 00:21	WG1289604

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	360000	J	113000	400000	1	06/05/2019 20:19	WG1291147

Sample Narrative:

L1104129-02 WG1291147: Redo confirms 1st result

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	16000		51.9	1000	1	06/07/2019 01:06	WG1291417
Fluoride	73.6	J	9.90	100	1	06/07/2019 01:06	WG1291417
Sulfate	983000		7740	500000	100	06/07/2019 05:35	WG1291417

Sample Narrative:

L1104129-02 WG1291417: Redo confirmed initial result

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	06/04/2019 12:07	WG1289970

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	86.2	J	12.6	200	1	06/06/2019 20:27	WG1289598
Calcium	13900		46.3	1000	1	06/06/2019 20:27	WG1289598
Lithium	159		5.30	15.0	1	06/06/2019 20:27	WG1289598
Molybdenum	U		1.60	5.00	1	06/06/2019 20:27	WG1289598

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	06/04/2019 22:46	WG1289604
Arsenic	2.50		0.250	2.00	1	06/04/2019 22:46	WG1289604
Barium	45.4		0.360	5.00	1	06/04/2019 22:46	WG1289604
Beryllium	0.601	J	0.120	2.00	1	06/04/2019 22:46	WG1289604
Cadmium	0.289	J	0.160	1.00	1	06/04/2019 22:46	WG1289604
Chromium	1.43	J	0.540	2.00	1	06/04/2019 22:46	WG1289604
Cobalt	11.9		0.260	2.00	1	06/04/2019 22:46	WG1289604
Lead	0.754	J	0.240	2.00	1	06/04/2019 22:46	WG1289604
Selenium	U		0.380	2.00	1	06/04/2019 22:46	WG1289604
Thallium	0.214	J	0.190	2.00	1	06/04/2019 22:46	WG1289604

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	2000000		7050	25000	1	06/05/2019 20:19	WG1291147

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	166000		1040	20000	20	06/07/2019 01:51	WG1291417
Fluoride	843		9.90	100	1	06/07/2019 01:36	WG1291417
Sulfate	1420000		1550	100000	20	06/07/2019 01:51	WG1291417

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	06/04/2019 12:09	WG1289970

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	154	J	12.6	200	1	06/06/2019 20:13	WG1289598
Calcium	180000	V	46.3	1000	1	06/06/2019 20:13	WG1289598
Lithium	374	Q1	5.30	15.0	1	06/06/2019 20:13	WG1289598
Molybdenum	U		1.60	5.00	1	06/06/2019 20:13	WG1289598

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	06/04/2019 22:51	WG1289604
Arsenic	3.85		0.250	2.00	1	06/04/2019 22:51	WG1289604
Barium	18.4		0.360	5.00	1	06/04/2019 22:51	WG1289604
Beryllium	13.4		0.120	2.00	1	06/04/2019 22:51	WG1289604
Cadmium	0.551	J	0.160	1.00	1	06/04/2019 22:51	WG1289604
Chromium	0.952	J	0.540	2.00	1	06/04/2019 22:51	WG1289604
Cobalt	62.8		0.260	2.00	1	06/04/2019 22:51	WG1289604
Lead	1.45	J	0.240	2.00	1	06/04/2019 22:51	WG1289604
Selenium	3.32		0.380	2.00	1	06/04/2019 22:51	WG1289604
Thallium	U		0.190	2.00	1	06/04/2019 22:51	WG1289604

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	620000		2820	10000	1	06/05/2019 05:30	WG1290083

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	84700		51.9	1000	1	06/07/2019 02:06	WG1291417
Fluoride	268		9.90	100	1	06/07/2019 02:06	WG1291417
Sulfate	350000		387	25000	5	06/07/2019 02:21	WG1291417

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	06/04/2019 12:40	WG1289970

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	102	J	12.6	200	1	06/06/2019 20:30	WG1289598
Calcium	41700		46.3	1000	1	06/06/2019 20:30	WG1289598
Lithium	66.9		5.30	15.0	1	06/06/2019 20:30	WG1289598
Molybdenum	U		1.60	5.00	1	06/06/2019 20:30	WG1289598

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	06/04/2019 22:56	WG1289604
Arsenic	2.07		0.250	2.00	1	06/04/2019 22:56	WG1289604
Barium	64.4		0.360	5.00	1	06/04/2019 22:56	WG1289604
Beryllium	3.23		0.120	2.00	1	06/04/2019 22:56	WG1289604
Cadmium	0.957	J	0.160	1.00	1	06/04/2019 22:56	WG1289604
Chromium	0.609	J	0.540	2.00	1	06/04/2019 22:56	WG1289604
Cobalt	51.8		0.260	2.00	1	06/04/2019 22:56	WG1289604
Lead	2.60		0.240	2.00	1	06/04/2019 22:56	WG1289604
Selenium	0.786	J	0.380	2.00	1	06/04/2019 22:56	WG1289604
Thallium	0.374	J	0.190	2.00	1	06/04/2019 22:56	WG1289604

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	565000		2820	10000	1	06/05/2019 05:30	WG1290083

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	50300		51.9	1000	1	06/07/2019 02:36	WG1291417
Fluoride	462		9.90	100	1	06/07/2019 02:36	WG1291417
Sulfate	314000		387	25000	5	06/07/2019 02:51	WG1291417

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	06/04/2019 12:43	WG1289970

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	139	J	12.6	200	1	06/06/2019 20:38	WG1289598
Calcium	46300		46.3	1000	1	06/06/2019 20:38	WG1289598
Lithium	168		5.30	15.0	1	06/06/2019 20:38	WG1289598
Molybdenum	U		1.60	5.00	1	06/06/2019 20:38	WG1289598

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	06/04/2019 23:12	WG1289604
Arsenic	1.68	J	0.250	2.00	1	06/04/2019 23:12	WG1289604
Barium	31.7		0.360	5.00	1	06/04/2019 23:12	WG1289604
Beryllium	4.89		0.120	2.00	1	06/04/2019 23:12	WG1289604
Cadmium	0.941	J	0.160	1.00	1	06/04/2019 23:12	WG1289604
Chromium	U		0.540	2.00	1	06/04/2019 23:12	WG1289604
Cobalt	46.3		0.260	2.00	1	06/04/2019 23:12	WG1289604
Lead	1.44	J	0.240	2.00	1	06/04/2019 23:12	WG1289604
Selenium	0.530	J	0.380	2.00	1	06/04/2019 23:12	WG1289604
Thallium	U		0.190	2.00	1	06/04/2019 23:12	WG1289604

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	1520000		5640	20000	1	06/05/2019 05:30	WG1290083

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	25300		51.9	1000	1	06/07/2019 03:05	WG1291417
Fluoride	363		9.90	100	1	06/07/2019 03:05	WG1291417
Sulfate	1020000		1550	100000	20	06/07/2019 08:54	WG1291417

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	06/04/2019 12:45	WG1289970

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	473		12.6	200	1	06/06/2019 20:41	WG1289598
Calcium	230000		46.3	1000	1	06/06/2019 20:41	WG1289598
Lithium	1130		5.30	15.0	1	06/06/2019 20:41	WG1289598
Molybdenum	5.40		1.60	5.00	1	06/06/2019 20:41	WG1289598

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	06/04/2019 23:17	WG1289604
Arsenic	1.61	J	0.250	2.00	1	06/04/2019 23:17	WG1289604
Barium	147		0.360	5.00	1	06/04/2019 23:17	WG1289604
Beryllium	3.60		0.120	2.00	1	06/04/2019 23:17	WG1289604
Cadmium	U		0.160	1.00	1	06/04/2019 23:17	WG1289604
Chromium	4.45		0.540	2.00	1	06/04/2019 23:17	WG1289604
Cobalt	23.8		0.260	2.00	1	06/04/2019 23:17	WG1289604
Lead	0.456	J	0.240	2.00	1	06/04/2019 23:17	WG1289604
Selenium	1.05	J	0.380	2.00	1	06/04/2019 23:17	WG1289604
Thallium	U		0.190	2.00	1	06/04/2019 23:17	WG1289604

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	347000		2820	10000	1	06/05/2019 05:30	WG1290083

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	4260		51.9	1000	1	06/07/2019 04:05	WG1291417
Fluoride	308		9.90	100	1	06/07/2019 04:05	WG1291417
Sulfate	189000		387	25000	5	06/07/2019 04:20	WG1291417

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	06/04/2019 12:48	WG1289970

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	200		12.6	200	1	06/06/2019 20:44	WG1289598
Calcium	24500		46.3	1000	1	06/06/2019 20:44	WG1289598
Lithium	216		5.30	15.0	1	06/06/2019 20:44	WG1289598
Molybdenum	U		1.60	5.00	1	06/06/2019 20:44	WG1289598

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	06/04/2019 23:22	WG1289604
Arsenic	0.730	J	0.250	2.00	1	06/04/2019 23:22	WG1289604
Barium	40.5		0.360	5.00	1	06/04/2019 23:22	WG1289604
Beryllium	7.70		0.120	2.00	1	06/04/2019 23:22	WG1289604
Cadmium	U		0.160	1.00	1	06/04/2019 23:22	WG1289604
Chromium	U		0.540	2.00	1	06/04/2019 23:22	WG1289604
Cobalt	12.9		0.260	2.00	1	06/04/2019 23:22	WG1289604
Lead	1.11	J	0.240	2.00	1	06/04/2019 23:22	WG1289604
Selenium	0.556	J	0.380	2.00	1	06/04/2019 23:22	WG1289604
Thallium	U		0.190	2.00	1	06/04/2019 23:22	WG1289604

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

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PREPARED AT THE DIRECTION OF LEGAL COUNSEL



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	603000		2820	10000	1	06/05/2019 05:30	WG1290083

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	23400		51.9	1000	1	06/07/2019 04:35	WG1291417
Fluoride	541		9.90	100	1	06/07/2019 04:35	WG1291417
Sulfate	301000		387	25000	5	06/07/2019 04:50	WG1291417

Mercury by Method 7470A

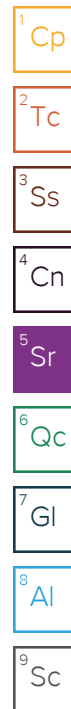
Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	06/04/2019 10:27	WG1289971

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	210		12.6	200	1	06/06/2019 20:47	WG1289598
Calcium	37400		46.3	1000	1	06/06/2019 20:47	WG1289598
Lithium	209		5.30	15.0	1	06/06/2019 20:47	WG1289598
Molybdenum	47.5		1.60	5.00	1	06/06/2019 20:47	WG1289598

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	06/04/2019 23:27	WG1289604
Arsenic	6.35		0.250	2.00	1	06/04/2019 23:27	WG1289604
Barium	87.4		0.360	5.00	1	06/04/2019 23:27	WG1289604
Beryllium	1.10	J	0.120	2.00	1	06/04/2019 23:27	WG1289604
Cadmium	U		0.160	1.00	1	06/04/2019 23:27	WG1289604
Chromium	1.63	J	0.540	2.00	1	06/04/2019 23:27	WG1289604
Cobalt	59.3		0.260	2.00	1	06/04/2019 23:27	WG1289604
Lead	U		0.240	2.00	1	06/04/2019 23:27	WG1289604
Selenium	U		0.380	2.00	1	06/04/2019 23:27	WG1289604
Thallium	U		0.190	2.00	1	06/04/2019 23:27	WG1289604





Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	222000		2820	10000	1	06/05/2019 05:30	WG1290083

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	19900		51.9	1000	1	06/07/2019 05:05	WG1291417
Fluoride	61.9	J	9.90	100	1	06/07/2019 05:05	WG1291417
Sulfate	33900		77.4	5000	1	06/07/2019 05:05	WG1291417

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	06/04/2019 10:29	WG1289971

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	134	J	12.6	200	1	06/06/2019 20:50	WG1289598
Calcium	23300		46.3	1000	1	06/06/2019 20:50	WG1289598
Lithium	34.9	B	5.30	15.0	1	06/06/2019 20:50	WG1289598
Molybdenum	22.6		1.60	5.00	1	06/06/2019 20:50	WG1289598

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	06/04/2019 23:32	WG1289604
Arsenic	1.55	J	0.250	2.00	1	06/04/2019 23:32	WG1289604
Barium	136		0.360	5.00	1	06/04/2019 23:32	WG1289604
Beryllium	U		0.120	2.00	1	06/04/2019 23:32	WG1289604
Cadmium	U		0.160	1.00	1	06/04/2019 23:32	WG1289604
Chromium	0.693	J	0.540	2.00	1	06/04/2019 23:32	WG1289604
Cobalt	1.82	J	0.260	2.00	1	06/04/2019 23:32	WG1289604
Lead	U		0.240	2.00	1	06/04/2019 23:32	WG1289604
Selenium	U		0.380	2.00	1	06/04/2019 23:32	WG1289604
Thallium	U		0.190	2.00	1	06/04/2019 23:32	WG1289604

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	289000		2820	10000	1	06/05/2019 05:30	WG1290083

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	61100		51.9	1000	1	06/08/2019 12:12	WG1292521
Fluoride	225		9.90	100	1	06/08/2019 12:12	WG1292521
Sulfate	64400		77.4	5000	1	06/08/2019 12:12	WG1292521

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	06/04/2019 10:31	WG1289971

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	246		12.6	200	1	06/06/2019 20:52	WG1289598
Calcium	8870		46.3	1000	1	06/06/2019 20:52	WG1289598
Lithium	33.9	<u>B</u>	5.30	15.0	1	06/06/2019 20:52	WG1289598
Molybdenum	U		1.60	5.00	1	06/06/2019 20:52	WG1289598

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	06/04/2019 23:37	WG1289604
Arsenic	0.937	<u>J</u>	0.250	2.00	1	06/04/2019 23:37	WG1289604
Barium	102		0.360	5.00	1	06/04/2019 23:37	WG1289604
Beryllium	3.18		0.120	2.00	1	06/04/2019 23:37	WG1289604
Cadmium	U		0.160	1.00	1	06/04/2019 23:37	WG1289604
Chromium	U		0.540	2.00	1	06/04/2019 23:37	WG1289604
Cobalt	11.1		0.260	2.00	1	06/04/2019 23:37	WG1289604
Lead	0.689	<u>J</u>	0.240	2.00	1	06/04/2019 23:37	WG1289604
Selenium	U		0.380	2.00	1	06/04/2019 23:37	WG1289604
Thallium	U		0.190	2.00	1	06/04/2019 23:37	WG1289604

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

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PREPARED AT THE DIRECTION OF LEGAL COUNSEL

Method Blank (MB)

(MB) R3418491-1 06/05/19 05:30

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

L1104197-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1104197-03 06/05/19 05:30 • (DUP) R3418491-3 06/05/19 05:30

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Dissolved Solids	471000	477000	1	1.27		5

Laboratory Control Sample (LCS)

(LCS) R3418491-2 06/05/19 05:30

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Dissolved Solids	8800000	8730000	99.2	85.0-115	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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Method Blank (MB)

(MB) R3418571-1 06/05/19 20:19

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

L1104216-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1104216-01 06/05/19 20:19 • (DUP) R3418571-3 06/05/19 20:19

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Dissolved Solids	358000	358000	1	0.000		5

Laboratory Control Sample (LCS)

(LCS) R3418571-2 06/05/19 20:19

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Dissolved Solids	8800000	8790000	99.9	85.0-115	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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Method Blank (MB)

(MB) R3418708-1 06/06/19 18:17

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

1
Cp

2
Tc

3
Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

L1103824-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1103824-02 06/06/19 19:38 • (DUP) R3418708-3 06/06/19 19:53

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

L1103933-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1103933-01 06/06/19 22:52 • (DUP) R3418708-6 06/06/19 23:07

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	14300	14300	1	0.0153		15
Fluoride	ND	19.8	1	37.4	J P1	15
Sulfate	8340	8360	1	0.255		15

Laboratory Control Sample (LCS)

(LCS) R3418708-2 06/06/19 18:32

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Chloride	40000	40700	102	80.0-120	
Fluoride	8000	8220	103	80.0-120	
Sulfate	40000	41500	104	80.0-120	

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L1103919-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1103919-01 06/06/19 21:08 • (MS) R3418708-4 06/06/19 21:52 • (MSD) R3418708-5 06/06/19 22:07

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	14600	64700	64700	100	100	1	80.0-120			0.0430	15
Fluoride	5000	ND	5110	5080	102	101	1	80.0-120			0.640	15
Sulfate	50000	11200	61600	61500	101	101	1	80.0-120			0.206	15

L1103934-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1103934-01 06/06/19 23:22 • (MS) R3418708-7 06/06/19 23:37

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	5480	56200	101	1	80.0-120	
Fluoride	5000	ND	5060	101	1	80.0-120	
Sulfate	50000	15400	65600	100	1	80.0-120	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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Method Blank (MB)

(MB) R3419311-1 06/08/19 10:43

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

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

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Gl

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Al

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Sc

L1098820-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1098820-02 06/08/19 11:41 • (DUP) R3419311-3 06/08/19 11:56

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	433	428	1	1.18	J	15
Fluoride	U	0.000	1	0.000		15
Sulfate	U	0.000	1	0.000		15

L1104139-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1104139-09 06/08/19 17:30 • (DUP) R3419311-6 06/08/19 17:46

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	7310	7350	1	0.569		15
Fluoride	111	106	1	4.24		15
Sulfate	80800	81200	1	0.538		15

Laboratory Control Sample (LCS)

(LCS) R3419311-2 06/08/19 10:59

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Chloride	40000	40200	100	80.0-120	
Fluoride	8000	8450	106	80.0-120	
Sulfate	40000	39900	99.9	80.0-120	

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L1104139-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1104139-01 06/08/19 12:44 • (MS) R3419311-4 06/08/19 13:00 • (MSD) R3419311-5 06/08/19 13:16

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	6350	56800	56900	101	101	1	80.0-120			0.0549	15
Fluoride	5000	99.3	5190	5200	102	102	1	80.0-120			0.0693	15
Sulfate	50000	14900	67200	67200	105	105	1	80.0-120			0.0107	15

L1104139-10 Original Sample (OS) • Matrix Spike (MS)

(OS) L1104139-10 06/08/19 18:02 • (MS) R3419311-7 06/08/19 18:18

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	9020	59500	101	1	80.0-120	
Fluoride	5000	149	5240	102	1	80.0-120	
Sulfate	50000	132000	181000	97.1	1	80.0-120	E

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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Method Blank (MB)

(MB) R3417626-1 06/04/19 11:10

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Mercury	U		0.0490	0.200

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

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

(LCS) R3417626-2 06/04/19 11:18 • (LCSD) R3417626-3 06/04/19 11:20

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%
Mercury	3.00	3.09	3.07	103	102	80.0-120			0.517	20

L1103957-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1103957-01 06/04/19 11:23 • (MS) R3417626-4 06/04/19 11:25 • (MSD) R3417626-5 06/04/19 11:28

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Mercury	3.00	ND	2.96	2.91	98.7	97.1	1	75.0-125			1.61	20

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Method Blank (MB)

(MB) R3417700-1 06/04/19 10:07				
	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Mercury	U		0.0490	0.200

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

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Gl

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Al

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Sc

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

(LCS) R3417700-2 06/04/19 10:09 • (LCSD) R3417700-3 06/04/19 10:12										
	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%
Mercury	3.00	2.81	3.13	93.6	104	80.0-120			11.0	20

L1103829-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1103829-07 06/04/19 10:19 • (MS) R3417700-4 06/04/19 10:22 • (MSD) R3417700-5 06/04/19 10:24												
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Mercury	3.00	U	2.34	2.12	77.9	70.8	1	75.0-125		J6	9.59	20

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Method Blank (MB)

(MB) R3418624-1 06/06/19 20:06

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Boron	U		12.6	200
Calcium	U		46.3	1000
Lithium	5.53	⌵	5.30	15.0
Molybdenum	U		1.60	5.00

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

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

(LCS) R3418624-2 06/06/19 20:08 • (LCSD) R3418624-3 06/06/19 20:11

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Boron	1000	979	994	97.9	99.4	80.0-120			1.56	20
Calcium	10000	9890	9790	98.9	97.9	80.0-120			0.950	20
Lithium	1000	984	980	98.4	98.0	80.0-120			0.417	20
Molybdenum	1000	987	987	98.7	98.7	80.0-120			0.00387	20

L1104129-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1104129-03 06/06/19 20:13 • (MS) R3418624-5 06/06/19 20:19 • (MSD) R3418624-6 06/06/19 20:21

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	1000	154	1110	1110	96.1	95.9	1	75.0-125			0.158	20
Calcium	10000	180000	187000	187000	65.5	65.4	1	75.0-125	⌵	⌵	0.00134	20
Lithium	1000	374	1370	1360	99.9	99.0	1	75.0-125			0.659	20
Molybdenum	1000	U	965	960	96.5	96.0	1	75.0-125			0.588	20

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Method Blank (MB)

(MB) R3417819-1 06/04/19 22:10

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Antimony	U		0.754	2.00
Arsenic	U		0.250	2.00
Barium	U		0.360	5.00
Beryllium	U		0.120	2.00
Cadmium	U		0.160	1.00
Chromium	U		0.540	2.00
Cobalt	U		0.260	2.00
Lead	U		0.240	2.00
Selenium	U		0.380	2.00
Thallium	U		0.190	2.00

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

(LCS) R3417819-2 06/04/19 22:15 • (LCSD) R3417819-3 06/04/19 22:20

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Antimony	50.0	58.8	57.7	118	115	80.0-120			1.91	20
Arsenic	50.0	51.0	52.2	102	104	80.0-120			2.44	20
Barium	50.0	49.3	50.2	98.6	100	80.0-120			1.79	20
Beryllium	50.0	48.5	47.2	97.0	94.5	80.0-120			2.68	20
Cadmium	50.0	51.0	50.9	102	102	80.0-120			0.247	20
Chromium	50.0	50.3	50.2	101	100	80.0-120			0.368	20
Cobalt	50.0	50.5	51.4	101	103	80.0-120			1.74	20
Lead	50.0	50.7	50.8	101	102	80.0-120			0.105	20
Selenium	50.0	54.3	53.4	109	107	80.0-120			1.64	20
Thallium	50.0	50.8	50.3	102	101	80.0-120			1.12	20

L1104129-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1104129-01 06/04/19 22:25 • (MS) R3417819-5 06/04/19 22:35 • (MSD) R3417819-6 06/04/19 22:41

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 %
Barium	50.0	9.71	60.8	60.1	102	101	1	75.0-125			1.20	20
Beryllium	50.0	24.9	71.1	71.4	92.4	93.0	1	75.0-125			0.375	20
Selenium	50.0	13.3	68.1	65.9	110	105	1	75.0-125			3.20	20

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L1104129-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1104129-01 06/05/19 00:21 • (MS) R3417819-8 06/05/19 00:31 • (MSD) R3417819-9 06/05/19 00:36

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Antimony	10.0	U	59.4	59.6	119	119	5	75.0-125			0.264	20
Arsenic	10.0	12.3	57.8	58.1	91.0	91.6	5	75.0-125			0.501	20
Cadmium	10.0	1.05	50.5	52.7	98.9	103	5	75.0-125			4.26	20
Chromium	10.0	U	42.3	42.1	84.6	84.3	5	75.0-125			0.375	20
Cobalt	10.0	223	258	258	68.6	69.0	5	75.0-125	V	V	0.0814	20
Lead	10.0	U	49.0	49.7	98.0	99.3	5	75.0-125			1.32	20
Thallium	10.0	U	49.2	49.4	98.4	98.7	5	75.0-125			0.318	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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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.

Abbreviations and Definitions

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

Qualifier	Description
B	The same analyte is found in the associated blank.
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.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
V	The sample concentration is too high to evaluate accurate spike recoveries.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



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

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

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

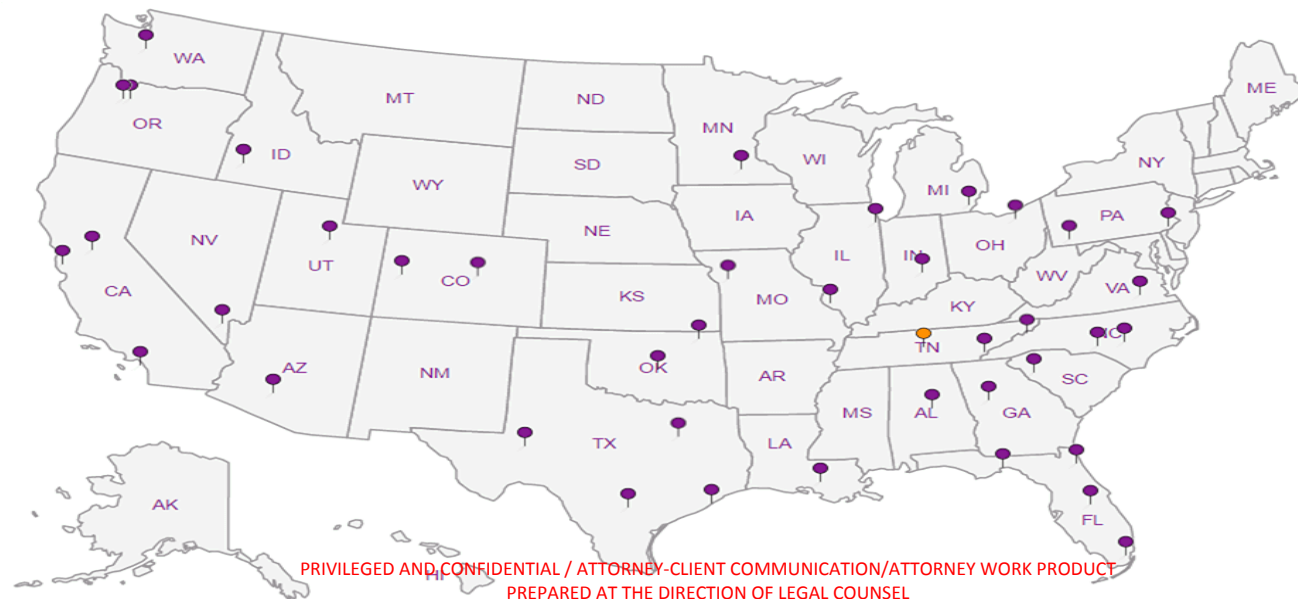
Third Party Federal Accreditations

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

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

Our Locations

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



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FTN Associates - Little Rock, AR 3 Innwood Circle, Suite 220 Little Rock, AR 72211				Billing Information:				Analysis / Container / Preservative				Chain of Custody Page 1 of 1			
				Accounts Payable 3 Innwood Circle, Suite 220 Little Rock, AR 72211				Pres Chk: 202				 Pace Analytical® National Center for Testing & Innovation 12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859			
Report to: Dana Derrington				Email To: dld@ftn-assoc.com , hlf@ftn-assoc.com , ajp@ftn-assoc.com , mmv@ftn-assoc.com				Cl, FI, SO4, TDS 250mlHDPE-NoPres Metals 250mlHDPE-HNO3 RA-226 1L-HDPE-Add HNO3 RA-228 1L-HDPE-Add HNO3				L# 1104129 G055 Acctnum: FTNLRAR Template: T138202 Prelogin: P710099 TSR: 134 - Mark W. Beasley PB: B 5-22-19 Shipped Via: FedEX Ground			
Project Description: Entergy White Bluff Landfill				City/State Collected: Redfield, AR											
Phone: 501-920-9642 Fax:		Client Project # 7920-1993-002		Lab Project # FTNLRAR-ENTERGYWB											
Collected by (print): Andrew Pruitt		Site/Facility ID #		P.O. #											
Collected by (signature): Andrew Pruitt		Rush? (Lab MUST Be Notified) ☐ Same Day ☐ Five Day ☐ Next Day ☐ 5 Day (Rad Only) ☐ Two Day ☐ 10 Day (Rad Only) ☐ Three Day		Quote #											
Immediately Packed on Ice N ☐ Y ☒		Date Results Needed		No. of Cntrs											
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time										
✓ RP-1	Grab	GW		5/30/19	0908	3	X	X	X	X					-01
✓ RP-2		GW		↓	0925	3	X	X	X	X					02
✓ RP-3		GW		↓	0840	3	X	X	X	X					03
✓ RP-4		GW		5/29/19	1040	3	X	X	X	X					04
✓ RP-5		GW		↓	1603	3	X	X	X	X					05
✓ RP-6		GW		↓	1620	3	X	X	X	X					06
✓ RP-7		GW		↓	0945	3	X	X	X	X					07
✓ RP-8		GW		↓	0918	3	X	X	X	X					08
✓ RP-9		GW		↓	1545	3	X	X	X	X					09
✓ RP-10		GW		↓	1020	3	X	X	X	X					10
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other _____				Remarks: Metals= CCR (As,Ba,Be,B,Ca,Cd,Co,Cr,Hg,Li,Mo,Pb,Sb,Se,Tl) Temps (1.4) Samples returned via: ☐ UPS ☒ FedEx ☐ Courier _____				RAD SCREEN: <0.5 mR/hr pH _____ Temp _____ Flow _____ Other _____				Sample Receipt Checklist COC Seal Present/Intact: ☐ NP ☒ Y ☐ N COC Signed/Accurate: ☒ Y ☐ N Bottles arrive intact: ☒ Y ☐ N Correct bottles used: ☒ Y ☐ N Sufficient volume sent: ☒ Y ☐ N If Applicable VOA Zero Headspace: ☐ Y ☒ N Preservation Correct/Checked: ☒ Y ☐ N			
Relinquished by: (Signature) Andrew Pruitt		Date: 5/30/19		Time: 1600		Received by: (Signature)		Trip Blank Received: Yes ☒ No ☐ HCL / MeOH TBR		If preservation required by Login: Date/Time					
Relinquished by: (Signature)		Date:		Time:		Received by: (Signature)		Temp: _____ °C Bottles Received:		Hold:					
Relinquished by: (Signature)		Date:		Time:		Received by: (Signature)		Date:		Time:		Condition: NCF 10			

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June 12, 2019

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

FTN Associates - Little Rock, AR

Sample Delivery Group: L1104133
Samples Received: 05/31/2019
Project Number: 7920-1993-002
Description: Entergy White Bluff Landfill

Report To: Dana Derrington
3 Innwood Circle, Suite 220
Little Rock, AR 72211

Entire Report Reviewed By:



Mark W. Beasley
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	5	
Sr: Sample Results	6	³ Ss
RP-1 L1104133-01	6	
RP-2 L1104133-02	7	⁴ Cn
RP-3 L1104133-03	8	⁵ Sr
RP-4 L1104133-04	9	
RP-5 L1104133-05	10	⁶ Qc
RP-6 L1104133-06	11	
RP-7 L1104133-07	12	⁷ Gl
RP-8 L1104133-08	13	⁸ Al
RP-9 L1104133-09	14	
RP-10 L1104133-10	15	⁹ Sc
Qc: Quality Control Summary	16	
Radiochemistry by Method 904	16	
Radiochemistry by Method SM7500Ra B M	17	
Gl: Glossary of Terms	18	
Al: Accreditations & Locations	19	
Sc: Sample Chain of Custody	20	

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



RP-1 L1104133-01 Non-Potable Water

Collected by
Andrew Pruitt

Collected date/time
05/30/19 09:08

Received date/time
05/31/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1290088	1	06/03/19 11:08	06/06/19 14:20	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1290045	1	06/03/19 15:37	06/06/19 14:20	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1290045	1	06/03/19 15:37	06/05/19 12:29	RGT	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

RP-2 L1104133-02 Non-Potable Water

Collected by
Andrew Pruitt

Collected date/time
05/30/19 09:25

Received date/time
05/31/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1290088	1	06/03/19 11:08	06/06/19 14:20	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1290045	1	06/03/19 15:37	06/06/19 14:20	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1290045	1	06/03/19 15:37	06/05/19 12:29	RGT	Mt. Juliet, TN

RP-3 L1104133-03 Non-Potable Water

Collected by
Andrew Pruitt

Collected date/time
05/30/19 08:40

Received date/time
05/31/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1290088	1	06/03/19 11:08	06/06/19 14:20	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1290045	1	06/03/19 15:37	06/06/19 14:20	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1290045	1	06/03/19 15:37	06/05/19 12:29	RGT	Mt. Juliet, TN

RP-4 L1104133-04 Non-Potable Water

Collected by
Andrew Pruitt

Collected date/time
05/29/19 10:40

Received date/time
05/31/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1290088	1	06/03/19 11:08	06/06/19 14:20	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1290045	1	06/03/19 15:37	06/06/19 14:20	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1290045	1	06/03/19 15:37	06/05/19 12:29	RGT	Mt. Juliet, TN

RP-5 L1104133-05 Non-Potable Water

Collected by
Andrew Pruitt

Collected date/time
05/29/19 10:03

Received date/time
05/31/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1290088	1	06/03/19 11:08	06/06/19 14:20	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1290045	1	06/03/19 15:37	06/06/19 14:20	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1290045	1	06/03/19 15:37	06/05/19 12:29	RGT	Mt. Juliet, TN

RP-6 L1104133-06 Non-Potable Water

Collected by
Andrew Pruitt

Collected date/time
05/29/19 10:20

Received date/time
05/31/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1290088	1	06/03/19 11:08	06/06/19 14:20	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1290045	1	06/03/19 15:37	06/06/19 14:20	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1290045	1	06/03/19 15:37	06/05/19 18:50	RGT	Mt. Juliet, TN

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ACCOUNT:
FTN Associates - Little Rock, AR

PROJECT:
7920-1993-002

SDG:
L1104133

DATE/TIME:
06/12/19 08:33

PAGE:
3 of 20

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



RP-7 L1104133-07 Non-Potable Water

Collected by
Andrew Pruitt

Collected date/time
05/29/19 09:45

Received date/time
05/31/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1290088	1	06/03/19 11:08	06/06/19 14:20	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1290045	1	06/03/19 15:37	06/06/19 14:20	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1290045	1	06/03/19 15:37	06/05/19 18:50	RGT	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

RP-8 L1104133-08 Non-Potable Water

Collected by
Andrew Pruitt

Collected date/time
05/29/19 09:18

Received date/time
05/31/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1290088	1	06/03/19 11:08	06/06/19 14:20	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1290045	1	06/03/19 15:37	06/06/19 14:20	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1290045	1	06/03/19 15:37	06/05/19 18:50	RGT	Mt. Juliet, TN

RP-9 L1104133-09 Non-Potable Water

Collected by
Andrew Pruitt

Collected date/time
05/29/19 15:45

Received date/time
05/31/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1290088	1	06/03/19 11:08	06/06/19 14:20	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1290045	1	06/03/19 15:37	06/06/19 14:20	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1290045	1	06/03/19 15:37	06/05/19 18:50	RGT	Mt. Juliet, TN

RP-10 L1104133-10 Non-Potable Water

Collected by
Andrew Pruitt

Collected date/time
05/29/19 10:20

Received date/time
05/31/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1290088	1	06/03/19 11:08	06/06/19 14:20	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1290045	1	06/03/19 15:37	06/06/19 14:20	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1290045	1	06/03/19 15:37	06/06/19 08:45	RGT	Mt. Juliet, TN

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All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Mark W. Beasley
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	12.7		1.82	1.53	06/06/2019 14:20	WG1290088
(T) Barium	86.6			62.0-143	06/06/2019 14:20	WG1290088
(T) Yttrium	122			79.0-136	06/06/2019 14:20	WG1290088

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	14.1		2.29	1.74	06/06/2019 14:20	WG1290045

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	1.42		0.466	0.205	06/05/2019 12:29	WG1290045
(T) Barium-133	89.3			30.0-143	06/05/2019 12:29	WG1290045



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.89		0.709	0.522	06/06/2019 14:20	WG1290088
(T) Barium	105			62.0-143	06/06/2019 14:20	WG1290088
(T) Yttrium	97.6			79.0-136	06/06/2019 14:20	WG1290088

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.54		1.01	0.763	06/06/2019 14:20	WG1290045

6 Qc

7 Gl

8 Al

9 Sc

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.651		0.304	0.241	06/05/2019 12:29	WG1290045
(T) Barium-133	98.8			30.0-143	06/05/2019 12:29	WG1290045



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	2.12		0.736	0.569	06/06/2019 14:20	WG1290088
(T) Barium	93.9			62.0-143	06/06/2019 14:20	WG1290088
(T) Yttrium	101			79.0-136	06/06/2019 14:20	WG1290088

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	3.45		1.23	0.852	06/06/2019 14:20	WG1290045

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	1.33		0.495	0.283	06/05/2019 12:29	WG1290045
(T) Barium-133	77.2			30.0-143	06/05/2019 12:29	WG1290045



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.32		0.818	0.579	06/06/2019 14:20	WG1290088
(T) Barium	94.5			62.0-143	06/06/2019 14:20	WG1290088
(T) Yttrium	95.1			79.0-136	06/06/2019 14:20	WG1290088

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.03		1.11	0.749	06/06/2019 14:20	WG1290045

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.715		0.291	0.17	06/05/2019 12:29	WG1290045
(T) Barium-133	97.2			30.0-143	06/05/2019 12:29	WG1290045

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Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.905		0.878	0.638	06/06/2019 14:20	WG1290088
(T) Barium	99.3			62.0-143	06/06/2019 14:20	WG1290088
(T) Yttrium	97.8			79.0-136	06/06/2019 14:20	WG1290088

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.37		1.16	0.947	06/06/2019 14:20	WG1290045

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.469		0.286	0.309	06/05/2019 12:29	WG1290045
(T) Barium-133	89.1			30.0-143	06/05/2019 12:29	WG1290045

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.849		0.705	0.597	06/06/2019 14:20	WG1290088
(T) Barium	92.2			62.0-143	06/06/2019 14:20	WG1290088
(T) Yttrium	118			79.0-136	06/06/2019 14:20	WG1290088

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.39		0.975	0.755	06/06/2019 14:20	WG1290045

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.540		0.270	0.158	06/05/2019 18:50	WG1290045
(T) Barium-133	107			30.0-143	06/05/2019 18:50	WG1290045



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	-1.03		0.700	0.772	06/06/2019 14:20	WG1290088
(T) Barium	102			62.0-143	06/06/2019 14:20	WG1290088
(T) Yttrium	105			79.0-136	06/06/2019 14:20	WG1290088

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.429		0.956	0.991	06/06/2019 14:20	WG1290045

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.429		0.256	0.219	06/05/2019 18:50	WG1290045
(T) Barium-133	96.6			30.0-143	06/05/2019 18:50	WG1290045

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Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.03		1.01	0.771	06/06/2019 14:20	WG1290088
(T) Barium	101			62.0-143	06/06/2019 14:20	WG1290088
(T) Yttrium	98.0			79.0-136	06/06/2019 14:20	WG1290088

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.52		1.32	1.09	06/06/2019 14:20	WG1290045

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.492		0.314	0.316	06/05/2019 18:50	WG1290045
(T) Barium-133	100			30.0-143	06/05/2019 18:50	WG1290045



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	-0.722		0.735	0.806	06/06/2019 14:20	WG1290088
(T) Barium	83.0			62.0-143	06/06/2019 14:20	WG1290088
(T) Yttrium	96.9			79.0-136	06/06/2019 14:20	WG1290088

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.820		1.19	1.16	06/06/2019 14:20	WG1290045

6 Qc

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.820		0.459	0.355	06/05/2019 18:50	WG1290045
(T) Barium-133	66.5			30.0-143	06/05/2019 18:50	WG1290045

7 Gl

8 Al

9 Sc



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.327		0.830	0.527	06/06/2019 14:20	WG1290088
(T) Barium	113			62.0-143	06/06/2019 14:20	WG1290088
(T) Yttrium	99.7			79.0-136	06/06/2019 14:20	WG1290088

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.660		1.05	0.71	06/06/2019 14:20	WG1290045

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.334		0.220	0.183	06/06/2019 08:45	WG1290045
(T) Barium-133	110			30.0-143	06/06/2019 08:45	WG1290045



Method Blank (MB)

(MB) R3420000-1 06/06/19 14:20

Analyte	MB Result pCi/l	MB Qualifier	MB MDA pCi/l
Radium-228	-0.162		0.296
(T) Barium	91.1		
(T) Yttrium	100		

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1104133-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1104133-01 06/06/19 14:20 • (DUP) R3420000-5 06/06/19 14:20

Analyte	Original Result pCi/l	DUP Result pCi/l	Dilution	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-228	12.7	14.5	1	13.0	0.707		20	3
(T) Barium	86.6	96.0						
(T) Yttrium	122	109						

Laboratory Control Sample (LCS)

(LCS) R3420000-2 06/06/19 14:20

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.58	112	80.0-120	
(T) Barium			97.8		
(T) Yttrium			108		

L1104338-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1104338-01 06/06/19 14:20 • (MS) R3420000-3 06/06/19 14:20 • (MSD) R3420000-4 06/06/19 14:20

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-228	20.0	0.364	19.6	21.7	96.2	106	1	70.0-130			9.99		20
(T) Barium		113			96.6	99.2							
(T) Yttrium		99.3			111	110							

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Method Blank (MB)

(MB) R3419653-1 06/05/19 12:28

	MB Result	MB Qualifier	MB MDA
Analyte	pCi/l		pCi/l
Radium-226	-0.00563		0.0544
(T) Barium-133	84.6		

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

L1104338-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1104338-01 06/05/19 18:50 • (DUP) R3419653-5 06/05/19 12:28

	Original Result	DUP Result	Dilution	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
Analyte	pCi/l	pCi/l		%			%	
Radium-226	0.564	0.256	1	75.3	0.838		20	3
(T) Barium-133	96.6	90.5						

Laboratory Control Sample (LCS)

(LCS) R3419653-2 06/05/19 12:28

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	pCi/l	pCi/l	%	%	
Radium-226	5.02	4.46	88.8	80.0-120	
(T) Barium-133			88.3		

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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.

Abbreviations and Definitions

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

Qualifier Description

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

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ G⁸ Al⁹ Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

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

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

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

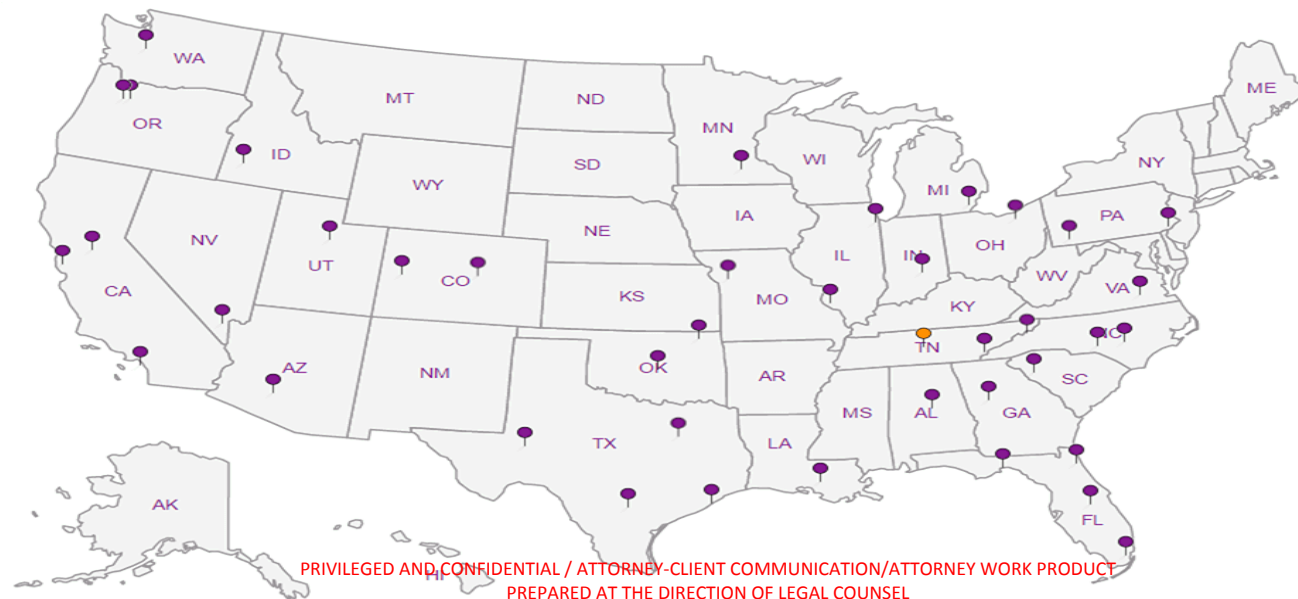
Third Party Federal Accreditations

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

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

Our Locations

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



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FTN Associates - Little Rock, AR

3 Innwood Circle, Suite 220
Little Rock, AR 72211

Report to:
Dana Derrington

Project
Description: Entergy White Bluff Landfill

Phone: 501-920-9642
Fax:

Client Project #
7920-1993-002

City/State
Collected: Redfield, AR

Lab Project #
FTNLRAR-ENTERGYWB

Collected by (print):
Andrea Pruitt

Site/Facility ID #

P.O. #

Collected by (signature):
Andrea Pruitt

Rush? (Lab MUST Be Notified)

Quote #

Immediately
Packed on Ice N ☐ Y ☒

Same Day ☐ Five Day ☐
Next Day ☐ 5 Day (Rad Only) ☐
Two Day ☐ 10 Day (Rad Only) ☐
Three Day ☐

Date Results Needed

No.
of
Cnts

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time		CI, FI, SO4, TDS 250ml HDPE-NoPres	Metals 250ml HDPE-HNO3	RA-226 1L-HDPE-Add HNO3	RA-228 1L-HDPE-Add HNO3								
RP-1	Grab	GW		5/30/19	0908	3	X	X	X	X								01
RP-2		GW			0925	3	X	X	X	X								02
RP-3		GW			0840	3	X	X	X	X								03
RP-4		GW		5/29/19	1040	3	X	X	X	X								04
RP-5		GW			1603	3	X	X	X	X								05
RP-6		GW			1620	3	X	X	X	X								06
RP-7		GW			0945	3	X	X	X	X								07
RP-8		GW			0918	3	X	X	X	X								08
RP-9		GW			1545	3	X	X	X	X								09
RP-10		GW			1020	3	X	X	X	X								10

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

Remarks: Metals = CCR (As, Ba, Be, B, Ca, Cd, Co, Cr, Hg, Li, Mo, Pb, Sb, Se, Ti)

Temps (1.4)

RAD SCREEN: <0.5 mR/hr

Samples returned via:
☐ UPS ☒ FedEx ☐ Courier

pH Temp
Flow Other

Sample Receipt Checklist
COC Seal Present/Intact: ☒ NP ☐ Y ☐ N
COC Signed/Accurate: ☒ Y ☐ N
Bottles arrive intact: ☒ Y ☐ N
Correct bottles used: ☒ Y ☐ N
Sufficient volume sent: ☒ Y ☐ N
If Applicable
VOA Zero Headspace: ☐ Y ☐ N
Preservation Correct/Checked: ☒ Y ☐ N

Relinquished by: (Signature)
Andrea Pruitt

Date: 5/30/19
Time: 1600

Received by: (Signature)
Trip Blank Received: Yes ☒ No ☐
HCL / MeOH
TBR

Relinquished by: (Signature)

Date:
Time:

Received by: (Signature)
Temp: 10.0-15.0°C
Bottles Received: 230

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date: 5/31/19
Time: 0845

Received by: (Signature)

Hold: Condition: NCF 10

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Pres
Chk

CI, FI, SO4, TDS 250ml HDPE-NoPres

Metals 250ml HDPE-HNO3

RA-226 1L-HDPE-Add HNO3

RA-228 1L-HDPE-Add HNO3

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



L # 1104133

G055

Acctnum: FTNLRAR

Template: T138202

Prelogin: P710099

TSR: 134 - Mark W. Beasley

PB: B 5-22-19

Shipped Via: FedEX Ground

Remarks Sample # (lab only)

FTN Associates - Little Rock, AR

Sample Delivery Group: L1134717
Samples Received: 08/30/2019
Project Number: 07920-1994-002
Description: Entergy White Bluff Landfill

Report To: Dana Derrington
3 Innwood Circle, Suite 220
Little Rock, AR 72211

Entire Report Reviewed By:



Mark W. Beasley
Project Manager

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

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Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	5	
Sr: Sample Results	6	³ Ss
RP-1 L1134717-01	6	
RP-2 L1134717-02	7	⁴ Cn
RP-3 L1134717-03	8	⁵ Sr
RP-4 L1134717-04	9	
RP-5 L1134717-05	10	⁶ Qc
RP-6 L1134717-06	11	
RP-7 L1134717-07	12	⁷ Gl
RP-8 L1134717-08	13	⁸ Al
RP-9 L1134717-09	14	
RP-10 L1134717-10	15	⁹ Sc
Qc: Quality Control Summary	16	
Gravimetric Analysis by Method 2540 C-2011	16	
Wet Chemistry by Method 9056A	18	
Mercury by Method 7470A	19	
Metals (ICP) by Method 6010B	20	
Metals (ICPMS) by Method 6020	21	
Gl: Glossary of Terms	23	
Al: Accreditations & Locations	24	
Sc: Sample Chain of Custody	25	

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



RP-1 L1134717-01 GW

				Collected by Andrew Pruitt	Collected date/time 08/27/19 10:15	Received date/time 08/30/19 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1338451	1	09/01/19 00:26	09/01/19 01:50	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1339798	1	09/05/19 17:31	09/05/19 17:31	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1339798	20	09/05/19 18:20	09/05/19 18:20	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1339798	50	09/06/19 08:27	09/06/19 08:27	LDC	Mt. Juliet, TN
Mercury by Method 7470A	WG1338237	1	09/03/19 18:40	09/04/19 09:24	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1338162	1	09/03/19 13:47	09/04/19 20:00	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1338174	1	09/03/19 11:17	09/04/19 10:04	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1338174	10	09/03/19 11:17	09/04/19 10:01	JPD	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

RP-2 L1134717-02 GW

				Collected by Andrew Pruitt	Collected date/time 08/27/19 09:55	Received date/time 08/30/19 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1338451	1	09/01/19 00:26	09/01/19 01:50	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1339798	1	09/05/19 18:37	09/05/19 18:37	LDC	Mt. Juliet, TN
Mercury by Method 7470A	WG1338237	1	09/03/19 18:40	09/04/19 09:26	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1338162	1	09/03/19 13:47	09/04/19 20:03	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1338174	1	09/03/19 11:17	09/04/19 10:07	JPD	Mt. Juliet, TN

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

RP-3 L1134717-03 GW

				Collected by Andrew Pruitt	Collected date/time 08/27/19 09:30	Received date/time 08/30/19 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1338451	1	09/01/19 00:26	09/01/19 01:50	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1339798	1	09/05/19 19:10	09/05/19 19:10	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1339798	20	09/05/19 19:26	09/05/19 19:26	LDC	Mt. Juliet, TN
Mercury by Method 7470A	WG1338237	1	09/03/19 18:40	09/04/19 09:28	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1338162	1	09/03/19 13:47	09/04/19 20:06	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1338174	1	09/03/19 11:17	09/04/19 10:41	JPD	Mt. Juliet, TN

RP-4 L1134717-04 GW

				Collected by Andrew Pruitt	Collected date/time 08/27/19 11:30	Received date/time 08/30/19 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1338452	1	09/01/19 00:35	09/01/19 02:15	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1339798	1	09/05/19 19:42	09/05/19 19:42	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1339798	5	09/05/19 19:59	09/05/19 19:59	LDC	Mt. Juliet, TN
Mercury by Method 7470A	WG1338237	1	09/03/19 18:40	09/04/19 09:31	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1338162	1	09/03/19 13:47	09/04/19 20:13	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1338174	1	09/03/19 11:17	09/04/19 10:17	JPD	Mt. Juliet, TN

RP-5 L1134717-05 GW

				Collected by Andrew Pruitt	Collected date/time 08/27/19 12:00	Received date/time 08/30/19 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1338452	1	09/01/19 00:35	09/01/19 02:15	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1339798	1	09/05/19 20:15	09/05/19 20:15	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1339798	5	09/05/19 20:32	09/05/19 20:32	LDC	Mt. Juliet, TN
Mercury by Method 7470A	WG1338237	1	09/03/19 18:40	09/04/19 09:37	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1338162	1	09/03/19 13:47	09/04/19 20:16	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1338174	1	09/03/19 11:17	09/04/19 10:31	JPD	Mt. Juliet, TN

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SAMPLE SUMMARY

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RP-6 L1134717-06 GW

Collected by
Andrew Pruitt

Collected date/time
08/27/19 12:25

Received date/time
08/30/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1338452	1	09/01/19 00:35	09/01/19 02:15	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1339798	1	09/05/19 20:48	09/05/19 20:48	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1339798	20	09/05/19 21:37	09/05/19 21:37	LDC	Mt. Juliet, TN
Mercury by Method 7470A	WG1338237	1	09/03/19 18:40	09/04/19 09:40	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1338162	1	09/03/19 13:47	09/04/19 20:19	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1338174	1	09/03/19 11:17	09/04/19 10:24	JPD	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

RP-7 L1134717-07 GW

Collected by
Andrew Pruitt

Collected date/time
08/27/19 12:40

Received date/time
08/30/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1338452	1	09/01/19 00:35	09/01/19 02:15	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1339798	1	09/05/19 21:54	09/05/19 21:54	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1339798	5	09/06/19 08:43	09/06/19 08:43	LDC	Mt. Juliet, TN
Mercury by Method 7470A	WG1338237	1	09/03/19 18:40	09/04/19 09:42	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1338162	1	09/03/19 13:47	09/04/19 20:21	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1338174	1	09/03/19 11:17	09/04/19 10:27	JPD	Mt. Juliet, TN

RP-8 L1134717-08 GW

Collected by
Andrew Pruitt

Collected date/time
08/27/19 13:10

Received date/time
08/30/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1338452	1	09/01/19 00:35	09/01/19 02:15	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1339798	1	09/05/19 22:10	09/05/19 22:10	LDC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1339798	5	09/05/19 22:27	09/05/19 22:27	LDC	Mt. Juliet, TN
Mercury by Method 7470A	WG1338237	1	09/03/19 18:40	09/04/19 09:44	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1338162	1	09/03/19 13:47	09/04/19 20:24	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1338174	1	09/03/19 11:17	09/04/19 10:44	JPD	Mt. Juliet, TN

RP-9 L1134717-09 GW

Collected by
Andrew Pruitt

Collected date/time
08/27/19 11:45

Received date/time
08/30/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1338452	1	09/01/19 00:35	09/01/19 02:15	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1339798	1	09/05/19 22:43	09/05/19 22:43	LDC	Mt. Juliet, TN
Mercury by Method 7470A	WG1338237	1	09/03/19 18:40	09/04/19 09:46	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1338162	1	09/03/19 13:47	09/04/19 20:27	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1338174	1	09/03/19 11:17	09/04/19 10:47	JPD	Mt. Juliet, TN

RP-10 L1134717-10 GW

Collected by
Andrew Pruitt

Collected date/time
08/27/19 11:00

Received date/time
08/30/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1338452	1	09/01/19 00:35	09/01/19 02:15	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1339798	1	09/05/19 22:59	09/05/19 22:59	LDC	Mt. Juliet, TN
Mercury by Method 7470A	WG1338237	1	09/03/19 18:40	09/04/19 09:49	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1338162	1	09/03/19 13:47	09/04/19 20:29	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1338174	1	09/03/19 11:17	09/04/19 10:50	JPD	Mt. Juliet, TN

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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

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	5640000		28200	100000	1	09/01/2019 01:50	WG1338451

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	799000		1040	20000	20	09/05/2019 18:20	WG1339798
Fluoride	2060		9.90	100	1	09/05/2019 17:31	WG1339798
Sulfate	2990000		3870	250000	50	09/06/2019 08:27	WG1339798

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	4.06		0.0490	0.200	1	09/04/2019 09:24	WG1338237

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	84.3	J	12.6	200	1	09/04/2019 20:00	WG1338162
Calcium	411000		46.3	1000	1	09/04/2019 20:00	WG1338162
Lithium	454		5.30	15.0	1	09/04/2019 20:00	WG1338162
Molybdenum	U		1.60	5.00	1	09/04/2019 20:00	WG1338162

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	09/04/2019 10:04	WG1338174
Arsenic	15.1	J	2.50	20.0	10	09/04/2019 10:01	WG1338174
Barium	11.1		0.360	5.00	1	09/04/2019 10:04	WG1338174
Beryllium	27.9		0.120	2.00	1	09/04/2019 10:04	WG1338174
Cadmium	1.08		0.160	1.00	1	09/04/2019 10:04	WG1338174
Chromium	U		5.40	20.0	10	09/04/2019 10:01	WG1338174
Cobalt	256		2.60	20.0	10	09/04/2019 10:01	WG1338174
Lead	1.54	J	0.240	2.00	1	09/04/2019 10:04	WG1338174
Selenium	10.1		0.380	2.00	1	09/04/2019 10:04	WG1338174
Thallium	0.488	J	0.190	2.00	1	09/04/2019 10:04	WG1338174

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	268000		2820	10000	1	09/01/2019 01:50	WG1338451

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	16300		51.9	1000	1	09/05/2019 18:37	WG1339798
Fluoride	92.1	J	9.90	100	1	09/05/2019 18:37	WG1339798
Sulfate	94200		77.4	5000	1	09/05/2019 18:37	WG1339798

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	09/04/2019 09:26	WG1338237

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	65.1	J	12.6	200	1	09/04/2019 20:03	WG1338162
Calcium	12400		46.3	1000	1	09/04/2019 20:03	WG1338162
Lithium	122		5.30	15.0	1	09/04/2019 20:03	WG1338162
Molybdenum	U		1.60	5.00	1	09/04/2019 20:03	WG1338162

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	09/04/2019 10:07	WG1338174
Arsenic	0.781	J	0.250	2.00	1	09/04/2019 10:07	WG1338174
Barium	39.3		0.360	5.00	1	09/04/2019 10:07	WG1338174
Beryllium	0.468	J	0.120	2.00	1	09/04/2019 10:07	WG1338174
Cadmium	U		0.160	1.00	1	09/04/2019 10:07	WG1338174
Chromium	0.788	J	0.540	2.00	1	09/04/2019 10:07	WG1338174
Cobalt	10.9		0.260	2.00	1	09/04/2019 10:07	WG1338174
Lead	0.293	J	0.240	2.00	1	09/04/2019 10:07	WG1338174
Selenium	U		0.380	2.00	1	09/04/2019 10:07	WG1338174
Thallium	U		0.190	2.00	1	09/04/2019 10:07	WG1338174

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

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Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	1970000		7050	25000	1	09/01/2019 01:50	WG1338451

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	158000		1040	20000	20	09/05/2019 19:26	WG1339798
Fluoride	773		9.90	100	1	09/05/2019 19:10	WG1339798
Sulfate	1200000		1550	100000	20	09/05/2019 19:26	WG1339798

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	09/04/2019 09:28	WG1338237

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	124	J	12.6	200	1	09/04/2019 20:06	WG1338162
Calcium	186000		46.3	1000	1	09/04/2019 20:06	WG1338162
Lithium	370		5.30	15.0	1	09/04/2019 20:06	WG1338162
Molybdenum	U		1.60	5.00	1	09/04/2019 20:06	WG1338162

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	09/04/2019 10:41	WG1338174
Arsenic	6.88		0.250	2.00	1	09/04/2019 10:41	WG1338174
Barium	16.5		0.360	5.00	1	09/04/2019 10:41	WG1338174
Beryllium	12.7		0.120	2.00	1	09/04/2019 10:41	WG1338174
Cadmium	0.516	J	0.160	1.00	1	09/04/2019 10:41	WG1338174
Chromium	2.03		0.540	2.00	1	09/04/2019 10:41	WG1338174
Cobalt	60.6		0.260	2.00	1	09/04/2019 10:41	WG1338174
Lead	1.22	J	0.240	2.00	1	09/04/2019 10:41	WG1338174
Selenium	2.23		0.380	2.00	1	09/04/2019 10:41	WG1338174
Thallium	U		0.190	2.00	1	09/04/2019 10:41	WG1338174

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	624000		2820	10000	1	09/01/2019 02:15	WG1338452

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	87100		51.9	1000	1	09/05/2019 19:42	WG1339798
Fluoride	253		9.90	100	1	09/05/2019 19:42	WG1339798
Sulfate	283000		387	25000	5	09/05/2019 19:59	WG1339798

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	09/04/2019 09:31	WG1338237

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	71.6	J	12.6	200	1	09/04/2019 20:13	WG1338162
Calcium	36300		46.3	1000	1	09/04/2019 20:13	WG1338162
Lithium	50.6		5.30	15.0	1	09/04/2019 20:13	WG1338162
Molybdenum	U		1.60	5.00	1	09/04/2019 20:13	WG1338162

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	09/04/2019 10:17	WG1338174
Arsenic	2.38		0.250	2.00	1	09/04/2019 10:17	WG1338174
Barium	71.5		0.360	5.00	1	09/04/2019 10:17	WG1338174
Beryllium	1.10	J	0.120	2.00	1	09/04/2019 10:17	WG1338174
Cadmium	0.673	J	0.160	1.00	1	09/04/2019 10:17	WG1338174
Chromium	1.24	J	0.540	2.00	1	09/04/2019 10:17	WG1338174
Cobalt	44.0		0.260	2.00	1	09/04/2019 10:17	WG1338174
Lead	0.624	J	0.240	2.00	1	09/04/2019 10:17	WG1338174
Selenium	0.512	J	0.380	2.00	1	09/04/2019 10:17	WG1338174
Thallium	0.289	J	0.190	2.00	1	09/04/2019 10:17	WG1338174

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Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	576000		2820	10000	1	09/01/2019 02:15	WG1338452

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	49200		51.9	1000	1	09/05/2019 20:15	WG1339798
Fluoride	410		9.90	100	1	09/05/2019 20:15	WG1339798
Sulfate	280000		387	25000	5	09/05/2019 20:32	WG1339798

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	09/04/2019 09:37	WG1338237

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	103	J	12.6	200	1	09/04/2019 20:16	WG1338162
Calcium	48500		46.3	1000	1	09/04/2019 20:16	WG1338162
Lithium	177		5.30	15.0	1	09/04/2019 20:16	WG1338162
Molybdenum	U		1.60	5.00	1	09/04/2019 20:16	WG1338162

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	09/04/2019 10:21	WG1338174
Arsenic	1.22	J	0.250	2.00	1	09/04/2019 10:21	WG1338174
Barium	27.6		0.360	5.00	1	09/04/2019 10:21	WG1338174
Beryllium	4.39		0.120	2.00	1	09/04/2019 10:21	WG1338174
Cadmium	0.844	J	0.160	1.00	1	09/04/2019 10:21	WG1338174
Chromium	1.02	J	0.540	2.00	1	09/04/2019 10:21	WG1338174
Cobalt	47.4		0.260	2.00	1	09/04/2019 10:21	WG1338174
Lead	1.63	J	0.240	2.00	1	09/04/2019 10:21	WG1338174
Selenium	0.479	J	0.380	2.00	1	09/04/2019 10:21	WG1338174
Thallium	U		0.190	2.00	1	09/04/2019 10:21	WG1338174

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	1850000		5640	20000	1	09/01/2019 02:15	WG1338452

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	30500		51.9	1000	1	09/05/2019 20:48	WG1339798
Fluoride	646		9.90	100	1	09/05/2019 20:48	WG1339798
Sulfate	1200000		1550	100000	20	09/05/2019 21:37	WG1339798

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	09/04/2019 09:40	WG1338237

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	556		12.6	200	1	09/04/2019 20:19	WG1338162
Calcium	272000		46.3	1000	1	09/04/2019 20:19	WG1338162
Lithium	940		5.30	15.0	1	09/04/2019 20:19	WG1338162
Molybdenum	1.66	J	1.60	5.00	1	09/04/2019 20:19	WG1338162

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	09/04/2019 10:24	WG1338174
Arsenic	3.30		0.250	2.00	1	09/04/2019 10:24	WG1338174
Barium	57.4		0.360	5.00	1	09/04/2019 10:24	WG1338174
Beryllium	7.19		0.120	2.00	1	09/04/2019 10:24	WG1338174
Cadmium	U		0.160	1.00	1	09/04/2019 10:24	WG1338174
Chromium	0.920	J	0.540	2.00	1	09/04/2019 10:24	WG1338174
Cobalt	34.3		0.260	2.00	1	09/04/2019 10:24	WG1338174
Lead	U		0.240	2.00	1	09/04/2019 10:24	WG1338174
Selenium	1.35	J	0.380	2.00	1	09/04/2019 10:24	WG1338174
Thallium	U		0.190	2.00	1	09/04/2019 10:24	WG1338174

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	354000		2820	10000	1	09/01/2019 02:15	WG1338452

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	3970		51.9	1000	1	09/05/2019 21:54	WG1339798
Fluoride	316		9.90	100	1	09/05/2019 21:54	WG1339798
Sulfate	146000		387	25000	5	09/06/2019 08:43	WG1339798

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	09/04/2019 09:42	WG1338237

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	174	J	12.6	200	1	09/04/2019 20:21	WG1338162
Calcium	22900		46.3	1000	1	09/04/2019 20:21	WG1338162
Lithium	223		5.30	15.0	1	09/04/2019 20:21	WG1338162
Molybdenum	U		1.60	5.00	1	09/04/2019 20:21	WG1338162

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	09/04/2019 10:27	WG1338174
Arsenic	0.550	J	0.250	2.00	1	09/04/2019 10:27	WG1338174
Barium	32.6		0.360	5.00	1	09/04/2019 10:27	WG1338174
Beryllium	6.83		0.120	2.00	1	09/04/2019 10:27	WG1338174
Cadmium	U		0.160	1.00	1	09/04/2019 10:27	WG1338174
Chromium	0.959	J	0.540	2.00	1	09/04/2019 10:27	WG1338174
Cobalt	12.0		0.260	2.00	1	09/04/2019 10:27	WG1338174
Lead	0.782	J	0.240	2.00	1	09/04/2019 10:27	WG1338174
Selenium	U		0.380	2.00	1	09/04/2019 10:27	WG1338174
Thallium	U		0.190	2.00	1	09/04/2019 10:27	WG1338174

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

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Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	559000		2820	10000	1	09/01/2019 02:15	WG1338452

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	26700		51.9	1000	1	09/05/2019 22:10	WG1339798
Fluoride	344		9.90	100	1	09/05/2019 22:10	WG1339798
Sulfate	250000		387	25000	5	09/05/2019 22:27	WG1339798

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	09/04/2019 09:44	WG1338237

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	150	J	12.6	200	1	09/04/2019 20:24	WG1338162
Calcium	32400		46.3	1000	1	09/04/2019 20:24	WG1338162
Lithium	205		5.30	15.0	1	09/04/2019 20:24	WG1338162
Molybdenum	18.6		1.60	5.00	1	09/04/2019 20:24	WG1338162

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	09/04/2019 10:44	WG1338174
Arsenic	5.60		0.250	2.00	1	09/04/2019 10:44	WG1338174
Barium	51.9		0.360	5.00	1	09/04/2019 10:44	WG1338174
Beryllium	1.33	J	0.120	2.00	1	09/04/2019 10:44	WG1338174
Cadmium	U		0.160	1.00	1	09/04/2019 10:44	WG1338174
Chromium	1.12	J	0.540	2.00	1	09/04/2019 10:44	WG1338174
Cobalt	45.0		0.260	2.00	1	09/04/2019 10:44	WG1338174
Lead	0.440	J	0.240	2.00	1	09/04/2019 10:44	WG1338174
Selenium	U		0.380	2.00	1	09/04/2019 10:44	WG1338174
Thallium	U		0.190	2.00	1	09/04/2019 10:44	WG1338174

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	214000		2820	10000	1	09/01/2019 02:15	WG1338452

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	18300		51.9	1000	1	09/05/2019 22:43	WG1339798
Fluoride	127		9.90	100	1	09/05/2019 22:43	WG1339798
Sulfate	36400		77.4	5000	1	09/05/2019 22:43	WG1339798

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	09/04/2019 09:46	WG1338237

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	124	J	12.6	200	1	09/04/2019 20:27	WG1338162
Calcium	21300		46.3	1000	1	09/04/2019 20:27	WG1338162
Lithium	34.6		5.30	15.0	1	09/04/2019 20:27	WG1338162
Molybdenum	24.5		1.60	5.00	1	09/04/2019 20:27	WG1338162

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	09/04/2019 10:47	WG1338174
Arsenic	0.990	J	0.250	2.00	1	09/04/2019 10:47	WG1338174
Barium	143		0.360	5.00	1	09/04/2019 10:47	WG1338174
Beryllium	U		0.120	2.00	1	09/04/2019 10:47	WG1338174
Cadmium	U		0.160	1.00	1	09/04/2019 10:47	WG1338174
Chromium	1.28	J	0.540	2.00	1	09/04/2019 10:47	WG1338174
Cobalt	2.07		0.260	2.00	1	09/04/2019 10:47	WG1338174
Lead	0.637	J	0.240	2.00	1	09/04/2019 10:47	WG1338174
Selenium	0.401	J	0.380	2.00	1	09/04/2019 10:47	WG1338174
Thallium	U		0.190	2.00	1	09/04/2019 10:47	WG1338174

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	243000		2820	10000	1	09/01/2019 02:15	WG1338452

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	58200		51.9	1000	1	09/05/2019 22:59	WG1339798
Fluoride	208		9.90	100	1	09/05/2019 22:59	WG1339798
Sulfate	24000		77.4	5000	1	09/05/2019 22:59	WG1339798

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	09/04/2019 09:49	WG1338237

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	88.9	J	12.6	200	1	09/04/2019 20:29	WG1338162
Calcium	2900		46.3	1000	1	09/04/2019 20:29	WG1338162
Lithium	24.9		5.30	15.0	1	09/04/2019 20:29	WG1338162
Molybdenum	U		1.60	5.00	1	09/04/2019 20:29	WG1338162

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	09/04/2019 10:50	WG1338174
Arsenic	1.26	J	0.250	2.00	1	09/04/2019 10:50	WG1338174
Barium	146		0.360	5.00	1	09/04/2019 10:50	WG1338174
Beryllium	2.33		0.120	2.00	1	09/04/2019 10:50	WG1338174
Cadmium	U		0.160	1.00	1	09/04/2019 10:50	WG1338174
Chromium	0.893	J	0.540	2.00	1	09/04/2019 10:50	WG1338174
Cobalt	9.52		0.260	2.00	1	09/04/2019 10:50	WG1338174
Lead	0.820	J	0.240	2.00	1	09/04/2019 10:50	WG1338174
Selenium	U		0.380	2.00	1	09/04/2019 10:50	WG1338174
Thallium	U		0.190	2.00	1	09/04/2019 10:50	WG1338174

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

Method Blank (MB)

(MB) R3446563-1 09/01/19 01:50

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

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

L1134703-20 Original Sample (OS) • Duplicate (DUP)

(OS) L1134703-20 09/01/19 01:50 • (DUP) R3446563-3 09/01/19 01:50

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Dissolved Solids	1210000	1220000	1	0.657		5

Laboratory Control Sample (LCS)

(LCS) R3446563-2 09/01/19 01:50

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Dissolved Solids	8800000	8650000	98.3	85.0-115	

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Method Blank (MB)

(MB) R3446561-1 09/01/19 02:15

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

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

L1134717-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1134717-06 09/01/19 02:15 • (DUP) R3446561-3 09/01/19 02:15

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Dissolved Solids	1850000	1860000	1	0.863		5

Laboratory Control Sample (LCS)

(LCS) R3446561-2 09/01/19 02:15

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Dissolved Solids	8800000	8730000	99.2	85.0-115	

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Method Blank (MB)

(MB) R3447799-1 09/05/19 14:37

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

L1134703-21 Original Sample (OS) • Duplicate (DUP)

(OS) L1134703-21 09/05/19 15:36 • (DUP) R3447799-3 09/05/19 15:53

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	7710	7580	1	1.68		15
Fluoride	109	107	1	1.58		15
Sulfate	8810	8730	1	0.941		15

Laboratory Control Sample (LCS)

(LCS) R3447799-2 09/05/19 14:53

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Chloride	40000	39000	97.6	80.0-120	
Fluoride	8000	8120	101	80.0-120	
Sulfate	40000	39000	97.4	80.0-120	

L1134703-21 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1134703-21 09/05/19 15:36 • (MS) R3447799-4 09/05/19 16:09 • (MSD) R3447799-5 09/05/19 16:25

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Chloride	50000	7710	57800	57500	100	99.7	1	80.0-120			0.464	15
Fluoride	5000	109	5060	5040	98.9	98.6	1	80.0-120			0.317	15
Sulfate	50000	8810	59700	59400	102	101	1	80.0-120			0.496	15

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1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3447114-1 09/04/19 09:10

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Mercury	U		0.0490	0.200

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

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

(LCS) R3447114-2 09/04/19 09:12 • (LCSD) R3447114-3 09/04/19 09:14

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%
Mercury	3.00	3.10	3.12	103	104	80.0-120			0.761	20

L1134271-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1134271-05 09/04/19 09:17 • (MS) R3447114-4 09/04/19 09:19 • (MSD) R3447114-5 09/04/19 09:21

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Mercury	3.00	U	3.05	2.95	102	98.4	1	75.0-125			3.14	20

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Method Blank (MB)

(MB) R3447317-1 09/04/19 19:41

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Boron	U		12.6	200
Calcium	U		46.3	1000
Lithium	U		5.30	15.0
Molybdenum	U		1.60	5.00

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

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

(LCS) R3447317-2 09/04/19 19:44 • (LCSD) R3447317-3 09/04/19 19:46

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Boron	1000	993	1010	99.3	101	80.0-120			2.12	20
Calcium	10000	10100	10200	101	102	80.0-120			0.968	20
Lithium	1000	990	992	99.0	99.2	80.0-120			0.191	20
Molybdenum	1000	1010	1000	101	100	80.0-120			1.13	20

L1134854-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1134854-02 09/04/19 19:49 • (MS) R3447317-5 09/04/19 19:55 • (MSD) R3447317-6 09/04/19 19:57

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	14000	14700	14800	71.5	88.2	1	75.0-125	V		1.13	20
Calcium	10000	346000	349000	351000	24.7	45.9	1	75.0-125	V	V	0.605	20
Lithium	1000	949	1940	1940	99.2	99.2	1	75.0-125			0.0498	20
Molybdenum	1000	35.1	1030	1020	99.4	98.9	1	75.0-125			0.463	20

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Method Blank (MB)

(MB) R3446981-1 09/04/19 09:01

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Antimony	U		0.754	2.00
Arsenic	U		0.250	2.00
Barium	U		0.360	5.00
Beryllium	U		0.120	2.00
Cadmium	U		0.160	1.00
Chromium	U		0.540	2.00
Cobalt	U		0.260	2.00
Lead	U		0.240	2.00
Selenium	U		0.380	2.00
Thallium	U		0.190	2.00

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

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

(LCS) R3446981-2 09/04/19 09:05 • (LCSD) R3446981-3 09/04/19 09:08

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Antimony	50.0	52.2	52.6	104	105	80.0-120			0.748	20
Arsenic	50.0	50.6	51.6	101	103	80.0-120			1.94	20
Barium	50.0	51.1	50.4	102	101	80.0-120			1.56	20
Beryllium	50.0	46.3	47.2	92.5	94.3	80.0-120			1.93	20
Cadmium	50.0	51.3	52.5	103	105	80.0-120			2.32	20
Chromium	50.0	51.3	51.7	103	103	80.0-120			0.772	20
Cobalt	50.0	51.9	52.5	104	105	80.0-120			1.15	20
Lead	50.0	52.4	50.1	105	100	80.0-120			4.44	20
Selenium	50.0	52.3	51.6	105	103	80.0-120			1.22	20
Thallium	50.0	50.8	49.5	102	99.0	80.0-120			2.65	20

L1134271-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1134271-04 09/04/19 09:11 • (MS) R3446981-5 09/04/19 09:18 • (MSD) R3446981-6 09/04/19 09:21

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Antimony	50.0	U	53.1	51.9	106	104	1	75.0-125			2.36	20
Arsenic	50.0	U	50.6	51.4	101	103	1	75.0-125			1.59	20
Barium	50.0	236	284	286	96.7	101	1	75.0-125			0.683	20
Beryllium	50.0	0.385	48.3	47.6	95.8	94.4	1	75.0-125			1.50	20
Cadmium	50.0	0.522	52.2	51.4	103	102	1	75.0-125			1.37	20
Chromium	50.0	0.558	51.0	51.9	101	103	1	75.0-125			1.89	20
Cobalt	50.0	17.2	67.6	68.7	101	103	1	75.0-125			1.57	20

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L1134271-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1134271-04 09/04/19 09:11 • (MS) R3446981-5 09/04/19 09:18 • (MSD) R3446981-6 09/04/19 09:21

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Lead	50.0	0.306	50.1	51.8	99.5	103	1	75.0-125			3.46	20
Selenium	50.0	1.03	51.4	53.5	101	105	1	75.0-125			3.93	20
Thallium	50.0	0.254	49.9	49.2	99.4	97.8	1	75.0-125			1.56	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

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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

J	The identification of the analyte is acceptable; the reported value is an estimate.
V	The sample concentration is too high to evaluate accurate spike recoveries.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

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

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

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

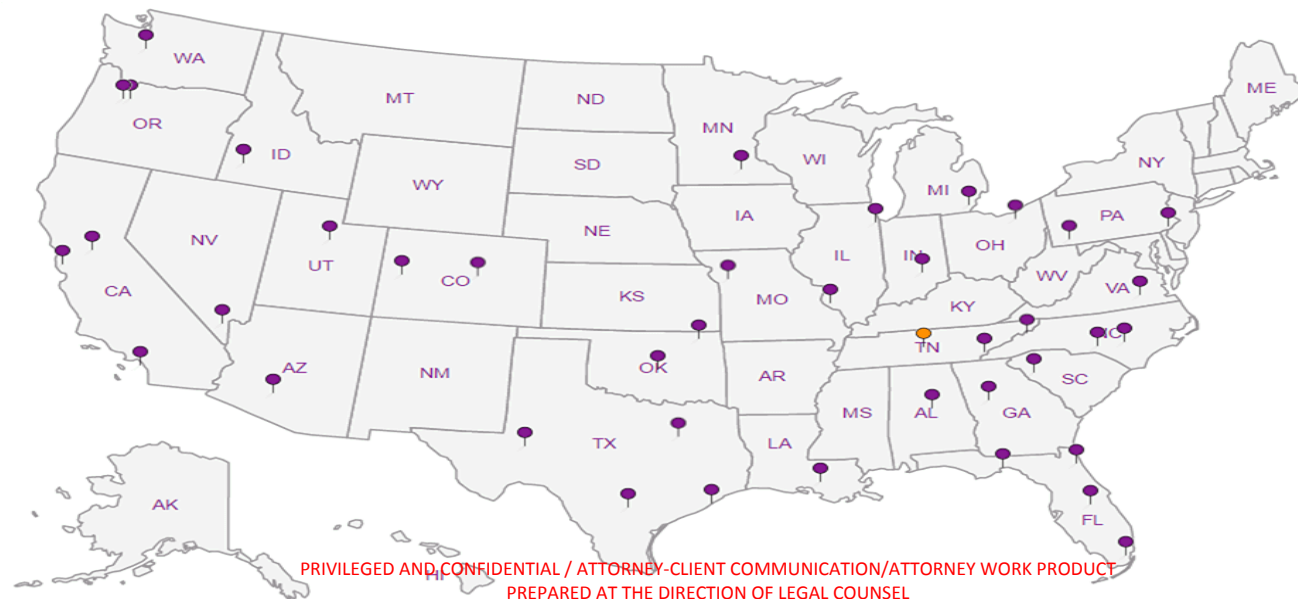
Third Party Federal Accreditations

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

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

Our Locations

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



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FTN Associates - Little Rock, AR 3 Innwood Circle, Suite 220 Little Rock, AR 72211				Billing Information: Accounts Payable 3 Innwood Circle, Suite 220 Little Rock, AR 72211				Analysis / Container / Preservative Pres Chk: L2 L2				Chain of Custody Page 1 of 1  12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859 			
				Report to: Dana Derrington				Email To: dld@ftn-assoc.com, hlf@ftn-assoc.com, ajp@ftn-assoc.com, mmv@ftn-assoc.com				CI, FI, SO4, TDS 250mlHDPE-NoPres Metals 250mlHDPE-HNO3 RA-226, RA228 1L-HDPE-Add HNO3 SDG # 1134717 Table # Acctnum: FTNLRAR Template: T138202 Prelogin: P725152 PM: 134 - Mark W. Beasley PB: 8/19/19 JL Shipped Via: FedEX Ground Remarks: Sample # (lab only)			
Project Description: Entergy White Bluff Landfill		City/State Collected: Redfield, AR		Please Circle: PT MT ☒ ET											
Phone: 501-920-9642 Fax:		Client Project # 07920-1994-002		Lab Project # FTNLRAR-ENTERGYWB											
Collected by (print): Andrew Knitt		Site/Facility ID # WB		P.O. #											
Collected by (signature): [Signature]		Rush? (Lab MUST Be Notified) ☐ Same Day ☐ Five Day ☐ Next Day ☐ 5 Day (Rad Only) ☐ Two Day ☐ 10 Day (Rad Only) ☐ Three Day		Quote # Date Results Needed											
Immediately Packed on Ice N ☐ Y ☒		No. of Cntrs													
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time										
RP-1	Grab	GW		8/27/19	1015										
RP-2	 	GW		↓	0955										
RP-3	 	GW		↓	0930										
RP-4	 	GW		↓	1130										
RP-5	 	GW		8/27/19	1200										
RP-6	 	GW		↓	1228										
RP-7	 	GW		↓	1240										
RP-8	 	GW		↓	1310										
RP-9	 	GW		↓	1145										
RP-10	↓	GW		↓	1100										
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other															
Remarks: Metals= CCR (As,Ba,Be,B,Ca,Cd,Co,Cr,Hg,Li,Mo,Pb,Sb,Se,Tl) RAD SCREEN: <0.5 mR/hr Samples returned via: ☐ UPS ☐ FedEx ☐ Courier Tracking # 1203 57M 614 / 6025 pH _____ Temp _____ Flow _____ Other _____															
Relinquished by: (Signature) [Signature]		Date: 8/29/19		Time: 1800											
Relinquished by: (Signature)		Date:		Time:											
Relinquished by: (Signature)		Date:		Time:											
Received by: (Signature)		Received by: (Signature)		Trip Blank Received: Yes ☒ No HCL/ MeOH TBR											
Temp: 13.2°C		Bottles Received: 30		If preservation required by Login: Date/Time											
Date: 8/30/19		Time: 0845		Hold:											
Condition: NCF / OK															

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September 25, 2019

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

FTN Associates - Little Rock, AR

Sample Delivery Group: L1134724
Samples Received: 08/30/2019
Project Number: 07920-1994-002
Description: Entergy White Bluff Landfill
Site: WB
Report To: Dana Derrington
3 Innwood Circle, Suite 220
Little Rock, AR 72211

Entire Report Reviewed By:



Olivia Studebaker
Project Manager

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

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Cp: Cover Page	1
Tc: Table of Contents	2
Ss: Sample Summary	3
Cn: Case Narrative	5
Sr: Sample Results	6
RP-1 L1134724-01	6
RP-2 L1134724-02	7
RP-3 L1134724-03	8
RP-4 L1134724-04	9
RP-5 L1134724-05	10
RP-6 L1134724-06	11
RP-7 L1134724-07	12
RP-8 L1134724-08	13
RP-9 L1134724-09	14
RP-10 L1134724-10	15
Qc: Quality Control Summary	16
Radiochemistry by Method 904	16
Radiochemistry by Method SM7500Ra B M	17
Gl: Glossary of Terms	18
Al: Accreditations & Locations	19
Sc: Sample Chain of Custody	20



SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



RP-1 L1134724-01 Non-Potable Water

Collected by
Andrew Pruitt

Collected date/time
08/27/19 10:15

Received date/time
08/30/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1345057	1	09/13/19 12:12	09/19/19 10:35	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1346388	1	09/16/19 08:26	09/19/19 10:35	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1346388	1	09/16/19 08:26	09/16/19 17:54	RGT	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

RP-2 L1134724-02 Non-Potable Water

Collected by
Andrew Pruitt

Collected date/time
08/27/19 09:55

Received date/time
08/30/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1345057	1	09/13/19 12:12	09/19/19 10:35	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1346388	1	09/16/19 08:26	09/19/19 10:35	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1346388	1	09/16/19 08:26	09/16/19 17:54	RGT	Mt. Juliet, TN

RP-3 L1134724-03 Non-Potable Water

Collected by
Andrew Pruitt

Collected date/time
08/27/19 09:30

Received date/time
08/30/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1345057	1	09/13/19 12:12	09/19/19 10:35	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1346388	1	09/16/19 08:26	09/19/19 10:35	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1346388	1	09/16/19 08:26	09/16/19 17:54	RGT	Mt. Juliet, TN

RP-4 L1134724-04 Non-Potable Water

Collected by
Andrew Pruitt

Collected date/time
08/27/19 11:30

Received date/time
08/30/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1345057	1	09/13/19 12:12	09/19/19 10:35	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1346388	1	09/16/19 08:26	09/19/19 10:35	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1346388	1	09/16/19 08:26	09/16/19 17:54	RGT	Mt. Juliet, TN

RP-5 L1134724-05 Non-Potable Water

Collected by
Andrew Pruitt

Collected date/time
08/27/19 12:00

Received date/time
08/30/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1345057	1	09/13/19 12:12	09/19/19 10:35	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1346388	1	09/16/19 08:26	09/19/19 10:35	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1346388	1	09/16/19 08:26	09/16/19 17:54	RGT	Mt. Juliet, TN

RP-6 L1134724-06 Non-Potable Water

Collected by
Andrew Pruitt

Collected date/time
08/27/19 12:25

Received date/time
08/30/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1345057	1	09/13/19 12:12	09/20/19 13:05	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1346388	1	09/16/19 08:26	09/20/19 13:05	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1346388	1	09/16/19 08:26	09/16/19 17:54	RGT	Mt. Juliet, TN

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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



RP-7 L1134724-07 Non-Potable Water

Collected by
Andrew Pruitt

Collected date/time
08/27/19 12:40

Received date/time
08/30/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1345057	1	09/13/19 12:12	09/20/19 13:05	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1346388	1	09/16/19 08:26	09/20/19 13:05	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1346388	1	09/16/19 08:26	09/16/19 17:54	RGT	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

RP-8 L1134724-08 Non-Potable Water

Collected by
Andrew Pruitt

Collected date/time
08/27/19 13:10

Received date/time
08/30/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1345057	1	09/13/19 12:12	09/20/19 13:05	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1346388	1	09/16/19 08:26	09/20/19 13:05	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1346388	1	09/16/19 08:26	09/16/19 17:54	RGT	Mt. Juliet, TN

RP-9 L1134724-09 Non-Potable Water

Collected by
Andrew Pruitt

Collected date/time
08/27/19 11:45

Received date/time
08/30/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1345057	1	09/13/19 12:12	09/20/19 13:05	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1346388	1	09/16/19 08:26	09/20/19 13:05	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1346388	1	09/16/19 08:26	09/16/19 17:55	RGT	Mt. Juliet, TN

RP-10 L1134724-10 Non-Potable Water

Collected by
Andrew Pruitt

Collected date/time
08/27/19 11:00

Received date/time
08/30/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1345057	1	09/13/19 12:12	09/20/19 13:05	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1346388	1	09/16/19 08:26	09/20/19 13:05	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1346388	1	09/16/19 08:26	09/16/19 17:55	RGT	Mt. Juliet, TN

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All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Olivia Studebaker
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	11.4		0.788	0.991	09/19/2019 10:35	WG1345057
(T) Barium	112			62.0-143	09/19/2019 10:35	WG1345057
(T) Yttrium	109			79.0-136	09/19/2019 10:35	WG1345057

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	13.7		1.41	1.24	09/19/2019 10:35	WG1346388

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	2.32		0.624	0.247	09/16/2019 17:54	WG1346388
(T) Barium-133	82.4			30.0-143	09/16/2019 17:54	WG1346388



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.36		0.529	1.01	09/19/2019 10:35	WG1345057
(T) Barium	95.6			62.0-143	09/19/2019 10:35	WG1345057
(T) Yttrium	109			79.0-136	09/19/2019 10:35	WG1345057

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.13		0.844	1.22	09/19/2019 10:35	WG1346388

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.774		0.315	0.205	09/16/2019 17:54	WG1346388
(T) Barium-133	92.3			30.0-143	09/16/2019 17:54	WG1346388

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Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	5.56		0.668	0.846	09/19/2019 10:35	WG1345057
(T) Barium	111			62.0-143	09/19/2019 10:35	WG1345057
(T) Yttrium	111			79.0-136	09/19/2019 10:35	WG1345057

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	6.74		1.12	1.23	09/19/2019 10:35	WG1346388

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	1.18		0.450	0.383	09/16/2019 17:54	WG1346388
(T) Barium-133	77.7			30.0-143	09/16/2019 17:54	WG1346388



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	2.79		0.611	0.865	09/19/2019 10:35	WG1345057
(T) Barium	98.7			62.0-143	09/19/2019 10:35	WG1345057
(T) Yttrium	117			79.0-136	09/19/2019 10:35	WG1345057

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	3.17		0.886	1.13	09/19/2019 10:35	WG1346388

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.380		0.275	0.262	09/16/2019 17:54	WG1346388
(T) Barium-133	76.6			30.0-143	09/16/2019 17:54	WG1346388



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	2.08		0.555	0.824	09/19/2019 10:35	WG1345057
(T) Barium	98.4			62.0-143	09/19/2019 10:35	WG1345057
(T) Yttrium	108			79.0-136	09/19/2019 10:35	WG1345057

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.29		0.846	1.24	09/19/2019 10:35	WG1346388

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.212		0.291	0.411	09/16/2019 17:54	WG1346388
(T) Barium-133	79.1			30.0-143	09/16/2019 17:54	WG1346388



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	2.20		0.573	0.852	09/20/2019 13:05	WG1345057
(T) Barium	104			62.0-143	09/20/2019 13:05	WG1345057
(T) Yttrium	109			79.0-136	09/20/2019 13:05	WG1345057

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	3.31		1.03	1.15	09/20/2019 13:05	WG1346388

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	1.11		0.452	0.293	09/16/2019 17:54	WG1346388
(T) Barium-133	72.6			30.0-143	09/16/2019 17:54	WG1346388



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	2.09		0.524	0.737	09/20/2019 13:05	WG1345057
(T) Barium	110			62.0-143	09/20/2019 13:05	WG1345057
(T) Yttrium	105			79.0-136	09/20/2019 13:05	WG1345057

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	3.77		1.06	0.941	09/20/2019 13:05	WG1346388

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	1.67		0.537	0.204	09/16/2019 17:54	WG1346388
(T) Barium-133	71.6			30.0-143	09/16/2019 17:54	WG1346388



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	2.55		0.594	0.855	09/20/2019 13:05	WG1345057
(T) Barium	99.6			62.0-143	09/20/2019 13:05	WG1345057
(T) Yttrium	111			79.0-136	09/20/2019 13:05	WG1345057

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	3.01		0.892	1.13	09/20/2019 13:05	WG1346388

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.451		0.298	0.275	09/16/2019 17:54	WG1346388
(T) Barium-133	76.1			30.0-143	09/16/2019 17:54	WG1346388



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.890		0.543	0.929	09/20/2019 13:05	WG1345057
(T) Barium	101			62.0-143	09/20/2019 13:05	WG1345057
(T) Yttrium	111			79.0-136	09/20/2019 13:05	WG1345057

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.36		0.926	1.39	09/20/2019 13:05	WG1346388

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.467		0.383	0.458	09/16/2019 17:55	WG1346388
(T) Barium-133	74.3			30.0-143	09/16/2019 17:55	WG1346388



Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	2.38		0.587	1.05	09/20/2019 13:05	WG1345057
(T) Barium	108			62.0-143	09/20/2019 13:05	WG1345057
(T) Yttrium	115			79.0-136	09/20/2019 13:05	WG1345057

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.90		0.921	1.34	09/20/2019 13:05	WG1346388

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.521		0.334	0.29	09/16/2019 17:55	WG1346388
(T) Barium-133	75.2			30.0-143	09/16/2019 17:55	WG1346388



Method Blank (MB)

(MB) R3453883-1 09/19/19 10:35

Analyte	MB Result pCi/l	MB Qualifier	MB MDA pCi/l
Radium-228	-0.137		0.424
(T) Barium	108		
(T) Yttrium	109		

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3453883-2 09/19/19 10:35

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.64	113	80.0-120	
(T) Barium			111		
(T) Yttrium			107		

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[L1134724-01,02,03,04,05,06,07,08,09,10](#)

Method Blank (MB)

(MB) R3452304-5 09/16/19 18:00

Analyte	MB Result pCi/l	MB Qualifier	MB MDA pCi/l
Radium-226	0.0202		0.0667
(T) Barium-133	89.9		

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1138571-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1138571-03 09/17/19 08:19 • (DUP) R3452304-4 09/16/19 17:51

Analyte	Original Result pCi/l	DUP Result pCi/l	Dilution	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-226	0.000	0.0456	1	200	0.136		20	3
(T) Barium-133	70.4	45.1						

Laboratory Control Sample (LCS)

(LCS) R3452304-1 09/16/19 17:51

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.02	4.14	82.4	80.0-120	
(T) Barium-133			92.1		

L1138571-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1138571-01 09/17/19 08:19 • (MS) R3452304-2 09/16/19 17:51 • (MSD) R3452304-3 09/16/19 17:51

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-226	20.1	-0.0564	16.2	16.0	80.4	79.4	1	75.0-125			1.37		20
(T) Barium-133		64.4			88.0	87.4							

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Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier Description

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

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

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

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

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

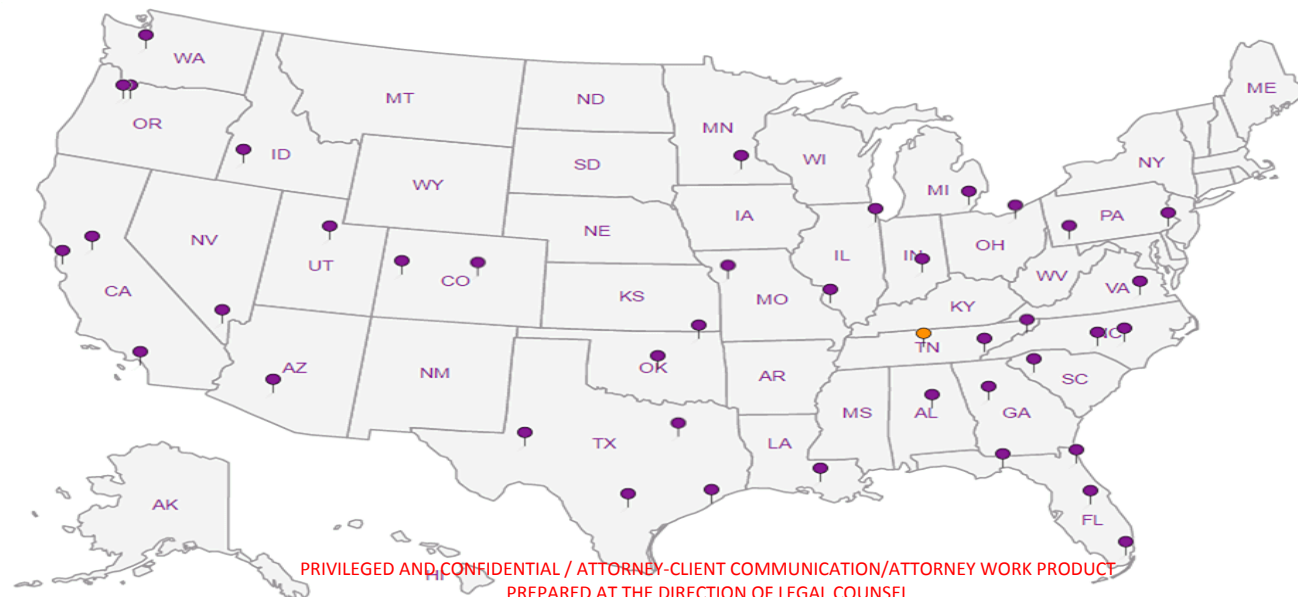
Third Party Federal Accreditations

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

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

Our Locations

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



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FTN Associates - Little Rock, AR			Billing Information:			Accounts Payable			Pres Chk			Analysis / Contaminant / Preservative			Pace Analytical® National Center for Testing & Innovation		
3 Innwood Circle, Suite 220 Little Rock, AR 72211			3 Innwood Circle, Suite 220 Little Rock, AR 72211			Email To: dld@ftn-assoc.com, hlf@ftn-assoc.com, ajp@ftn-assoc.com, mmv@ftn-assoc.com						12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859					
Report to: Dana Derrington			City/State Collected: Redfield, AR			Please Circle: PT MT <u>CT</u> ET											
Project Description: Entergy White Bluff Landfill			Client Project # 07920-1994-002			Lab Project # FTNLRAR-ENTERGYWB											
Phone: 501-920-9642			Site/Facility ID # WB			P.O. #											
Fax:			Rush? (Lab MUST Be Notified)			Quote #											
Collected by (print): Andrew Knitt			Same Day _____ Five Day _____			Date Results Needed											
Collected by (signature): [Signature]			Next Day _____ 5 Day (Rad Only) _____														
Immediately _____			Two Day _____ 10 Day (Rad Only) _____														
Packed on Ice N _____ Y <u>✓</u>			Three Day _____														
Sample ID			Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	CI, FI, SO4, TDS 250mlHDPE-NoPres	Metals 250mlHDPE-HNO3	RA-226, RA228 1L-HDPE-Add HNO3						
RP-1			Grab	GW		8/27/19	1015	3	X	X	X					01	
RP-2				GW			0955	3	X	X	X					02	
RP-3				GW			0930	3	X	X	X					03	
RP-4				GW		↓	1130	3	X	X	X					04	
RP-5				GW		8/27/19	1200	3	X	X	X					05	
RP-6				GW			1228	3	X	X	X					06	
RP-7				GW			1240	3	X	X	X					07	
RP-8				GW			1310	3	X	X	X					08	
RP-9				GW			1145	3	X	X	X					09	
RP-10			↓	GW		↓	1100	3	X	X	X					10	
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other _____			Remarks:Metals= CCR (As,Ba,Be,B,Ca,Cd,Co,Cr,Hg,Li,Mo,Pb,Sb,Se,Tl)			RAD SCREEN: <0.5 mR/hr			pH _____ Temp _____			Flow _____ Other _____			Sample Receipt Checklist COC Seal Present/Intact: NP <u>✓</u> Y N COC Signed/Accurate: <u>✓</u> Y N Bottles arrive intact: <u>✓</u> Y N Correct bottles used: <u>✓</u> Y N Sufficient volume sent: <u>✓</u> Y N If Applicable VOA Zero Headpace: _____ Y N Preservation Correct/Checked: <u>✓</u> Y N RAD Screen <0.5 mR/hr: <u>✓</u> Y N		
Samples returned via: ___ UPS ___ FedEx ___ Courier _____			Tracking #			1203 5774 614 / 6025											
Relinquished by: (Signature) [Signature]			Date: 9/29/19	Time: 1800	Received by: (Signature)			Trip Blank Received: Yes / No HCL / MeOH TBR									
Relinquished by: (Signature)			Date:	Time:	Received by: (Signature)			Temp 23.2°C Bottles Received: 30						If preservation required by Login: Date/Time			
Relinquished by: (Signature)			Date:	Time:	Received by: (Signature)			Date: 8/30/19 Time: 0845						Hold: Condition: NCF / OK			

December 02, 2019

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

FTN Associates - Little Rock, AR

Sample Delivery Group: L1163452
Samples Received: 11/21/2019
Project Number: 07920-1994-002
Description: Entergy White Bluff Landfill

Report To: Dana Derrington
3 Innwood Circle, Suite 220
Little Rock, AR 72211

Entire Report Reviewed By:



Mark W. Beasley
Project Manager

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

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Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	5	
Sr: Sample Results	6	³ Ss
RP-1 L1163452-01	6	
RP-2 L1163452-02	7	⁴ Cn
RP-3 L1163452-03	8	⁵ Sr
RP-4 L1163452-04	9	
RP-5 L1163452-05	10	⁶ Qc
RP-6 L1163452-06	11	
RP-7 L1163452-07	12	⁷ Gl
RP-8 L1163452-08	13	⁸ Al
RP-9 L1163452-09	14	
RP-10 L1163452-10	15	⁹ Sc
Qc: Quality Control Summary	16	
Gravimetric Analysis by Method 2540 C-2011	16	
Wet Chemistry by Method 9056A	18	
Mercury by Method 7470A	20	
Metals (ICP) by Method 6010B	21	
Metals (ICPMS) by Method 6020	23	
Gl: Glossary of Terms	25	
Al: Accreditations & Locations	26	
Sc: Sample Chain of Custody	27	

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



RP-1 L1163452-01 GW

				Collected by Andrew Pruitt	Collected date/time 11/19/19 13:05	Received date/time 11/21/19 08:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1385868	1	11/25/19 14:21	11/25/19 14:58	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1389065	1	11/30/19 20:52	11/30/19 20:52	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1389065	50	11/30/19 21:03	11/30/19 21:03	MCG	Mt. Juliet, TN
Mercury by Method 7470A	WG1385082	1	11/25/19 11:34	11/25/19 18:45	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1385226	1	11/26/19 07:14	11/26/19 12:40	TRB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1385251	1	11/26/19 11:24	11/27/19 12:10	TM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1385251	5	11/26/19 11:24	11/27/19 12:20	TM	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

RP-2 L1163452-02 GW

				Collected by Andrew Pruitt	Collected date/time 11/19/19 12:40	Received date/time 11/21/19 08:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1385868	1	11/25/19 14:21	11/25/19 14:58	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1389065	1	11/30/19 21:14	11/30/19 21:14	MCG	Mt. Juliet, TN
Mercury by Method 7470A	WG1385082	1	11/25/19 11:34	11/25/19 18:52	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1385226	1	11/26/19 07:14	11/26/19 12:43	TRB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1385251	1	11/26/19 11:24	11/27/19 11:15	TM	Mt. Juliet, TN

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

RP-3 L1163452-03 GW

				Collected by Andrew Pruitt	Collected date/time 11/19/19 13:35	Received date/time 11/21/19 08:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1385869	1	11/24/19 15:36	11/24/19 16:18	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1389065	1	11/30/19 21:24	11/30/19 21:24	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1389065	20	11/30/19 21:35	11/30/19 21:35	MCG	Mt. Juliet, TN
Mercury by Method 7470A	WG1385082	1	11/25/19 11:34	11/25/19 18:55	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1385226	1	11/26/19 07:14	11/26/19 12:46	TRB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1385251	1	11/26/19 11:24	11/27/19 11:19	TM	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1385251	5	11/26/19 11:24	11/27/19 12:27	TM	Mt. Juliet, TN

RP-4 L1163452-04 GW

				Collected by Andrew Pruitt	Collected date/time 11/19/19 14:20	Received date/time 11/21/19 08:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1385869	1	11/24/19 15:36	11/24/19 16:18	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1389065	1	11/30/19 21:46	11/30/19 21:46	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1389065	5	11/30/19 21:57	11/30/19 21:57	MCG	Mt. Juliet, TN
Mercury by Method 7470A	WG1385082	1	11/25/19 11:34	11/25/19 18:57	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1385226	1	11/26/19 07:14	11/26/19 12:48	TRB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1385251	1	11/26/19 11:24	11/27/19 11:22	TM	Mt. Juliet, TN

RP-5 L1163452-05 GW

				Collected by Andrew Pruitt	Collected date/time 11/19/19 16:00	Received date/time 11/21/19 08:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1385869	1	11/24/19 15:36	11/24/19 16:18	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1389065	1	11/30/19 22:08	11/30/19 22:08	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1389065	5	11/30/19 22:41	11/30/19 22:41	MCG	Mt. Juliet, TN
Mercury by Method 7470A	WG1385082	1	11/25/19 11:34	11/25/19 18:59	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1385226	1	11/26/19 07:14	11/26/19 12:51	TRB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1385251	1	11/26/19 11:24	11/27/19 11:25	TM	Mt. Juliet, TN

PRIVILEGED AND CONFIDENTIAL / ATTORNEY-CLIENT COMMUNICATION / ATTORNEY WORK PRODUCT
PREPARED AT THE DIRECTION OF LEGAL COUNSEL

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



RP-6 L1163452-06 GW

Collected by
Andrew Pruitt

Collected date/time
11/19/19 16:20

Received date/time
11/21/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1385869	1	11/24/19 15:36	11/24/19 16:18	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1389065	1	11/30/19 22:52	11/30/19 22:52	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1389065	20	11/30/19 23:03	11/30/19 23:03	MCG	Mt. Juliet, TN
Mercury by Method 7470A	WG1385082	1	11/25/19 11:34	11/25/19 19:02	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1385226	1	11/26/19 07:14	11/26/19 12:55	TRB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1385251	1	11/26/19 11:24	11/27/19 11:30	TM	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

RP-7 L1163452-07 GW

Collected by
Andrew Pruitt

Collected date/time
11/19/19 15:00

Received date/time
11/21/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1385869	1	11/24/19 15:36	11/24/19 16:18	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1389065	1	11/30/19 23:14	11/30/19 23:14	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1389065	5	11/30/19 23:24	11/30/19 23:24	MCG	Mt. Juliet, TN
Mercury by Method 7470A	WG1385082	1	11/25/19 11:34	11/25/19 19:04	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1385226	1	11/26/19 07:14	11/26/19 12:57	TRB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1385251	1	11/26/19 11:24	11/27/19 11:34	TM	Mt. Juliet, TN

RP-8 L1163452-08 GW

Collected by
Andrew Pruitt

Collected date/time
11/19/19 17:00

Received date/time
11/21/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1385869	1	11/24/19 15:36	11/24/19 16:18	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1389065	1	11/30/19 23:35	11/30/19 23:35	MCG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1389065	5	11/30/19 23:46	11/30/19 23:46	MCG	Mt. Juliet, TN
Mercury by Method 7470A	WG1385082	1	11/25/19 11:34	11/25/19 19:07	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1385226	1	11/26/19 07:14	11/26/19 13:00	TRB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1385251	1	11/26/19 11:24	11/27/19 11:37	TM	Mt. Juliet, TN

RP-9 L1163452-09 GW

Collected by
Andrew Pruitt

Collected date/time
11/19/19 15:35

Received date/time
11/21/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1385869	1	11/24/19 15:36	11/24/19 16:18	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1389065	1	11/30/19 23:57	11/30/19 23:57	MCG	Mt. Juliet, TN
Mercury by Method 7470A	WG1385082	1	11/25/19 11:34	11/25/19 19:09	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1385226	1	11/26/19 07:14	11/26/19 13:03	TRB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1385251	1	11/26/19 11:24	11/27/19 11:41	TM	Mt. Juliet, TN

RP-10 L1163452-10 GW

Collected by
Andrew Pruitt

Collected date/time
11/19/19 14:00

Received date/time
11/21/19 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1385869	1	11/24/19 15:36	11/24/19 16:18	TH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1389065	1	12/01/19 00:52	12/01/19 00:52	MCG	Mt. Juliet, TN
Mercury by Method 7470A	WG1385082	1	11/25/19 11:34	11/25/19 19:11	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1385228	1	11/26/19 10:38	11/26/19 15:10	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1385251	1	11/26/19 11:24	11/27/19 11:45	TM	Mt. Juliet, TN

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PREPARED AT THE DIRECTION OF LEGAL COUNSEL



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

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	4700000		28200	100000	1	11/25/2019 14:58	WG1385868

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	603000		2600	50000	50	11/30/2019 21:03	WG1389065
Fluoride	1510		9.90	100	1	11/30/2019 20:52	WG1389065
Sulfate	2410000		3870	250000	50	11/30/2019 21:03	WG1389065

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	3.03		0.0490	0.200	1	11/25/2019 18:45	WG1385082

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	41.2	J	12.6	200	1	11/26/2019 12:40	WG1385226
Calcium	350000		46.3	1000	1	11/26/2019 12:40	WG1385226
Lithium	422		5.30	15.0	1	11/26/2019 12:40	WG1385226
Molybdenum	U		1.60	5.00	1	11/26/2019 12:40	WG1385226

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	11/27/2019 12:10	WG1385251
Arsenic	12.2		1.25	10.0	5	11/27/2019 12:20	WG1385251
Barium	11.7		0.360	5.00	1	11/27/2019 12:10	WG1385251
Beryllium	24.5		0.120	2.00	1	11/27/2019 12:10	WG1385251
Cadmium	0.783	J	0.160	1.00	1	11/27/2019 12:10	WG1385251
Chromium	U		2.70	10.0	5	11/27/2019 12:20	WG1385251
Cobalt	194		1.30	10.0	5	11/27/2019 12:20	WG1385251
Lead	1.16	B J	0.240	2.00	1	11/27/2019 12:10	WG1385251
Selenium	16.5		0.380	2.00	1	11/27/2019 12:10	WG1385251
Thallium	0.395	J	0.190	2.00	1	11/27/2019 12:10	WG1385251

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	269000		2820	10000	1	11/25/2019 14:58	WG1385868

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	16600		51.9	1000	1	11/30/2019 21:14	WG1389065
Fluoride	U		9.90	100	1	11/30/2019 21:14	WG1389065
Sulfate	90800		77.4	5000	1	11/30/2019 21:14	WG1389065

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	11/25/2019 18:52	WG1385082

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	43.7	J	12.6	200	1	11/26/2019 12:43	WG1385226
Calcium	12600		46.3	1000	1	11/26/2019 12:43	WG1385226
Lithium	108		5.30	15.0	1	11/26/2019 12:43	WG1385226
Molybdenum	U		1.60	5.00	1	11/26/2019 12:43	WG1385226

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	11/27/2019 11:15	WG1385251
Arsenic	0.736	J	0.250	2.00	1	11/27/2019 11:15	WG1385251
Barium	36.9		0.360	5.00	1	11/27/2019 11:15	WG1385251
Beryllium	0.704	J	0.120	2.00	1	11/27/2019 11:15	WG1385251
Cadmium	U		0.160	1.00	1	11/27/2019 11:15	WG1385251
Chromium	U		0.540	2.00	1	11/27/2019 11:15	WG1385251
Cobalt	10.4		0.260	2.00	1	11/27/2019 11:15	WG1385251
Lead	0.430	B J	0.240	2.00	1	11/27/2019 11:15	WG1385251
Selenium	U		0.380	2.00	1	11/27/2019 11:15	WG1385251
Thallium	U		0.190	2.00	1	11/27/2019 11:15	WG1385251

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	1710000		7050	25000	1	11/24/2019 16:18	WG1385869

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	165000		1040	20000	20	11/30/2019 21:35	WG1389065
Fluoride	727		9.90	100	1	11/30/2019 21:24	WG1389065
Sulfate	1170000		1550	100000	20	11/30/2019 21:35	WG1389065

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	11/25/2019 18:55	WG1385082

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	110	J	12.6	200	1	11/26/2019 12:46	WG1385226
Calcium	197000		46.3	1000	1	11/26/2019 12:46	WG1385226
Lithium	375		5.30	15.0	1	11/26/2019 12:46	WG1385226
Molybdenum	U		1.60	5.00	1	11/26/2019 12:46	WG1385226

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	11/27/2019 11:19	WG1385251
Arsenic	8.92	J	1.25	10.0	5	11/27/2019 12:27	WG1385251
Barium	15.1		0.360	5.00	1	11/27/2019 11:19	WG1385251
Beryllium	13.2		0.120	2.00	1	11/27/2019 11:19	WG1385251
Cadmium	0.494	J	0.160	1.00	1	11/27/2019 11:19	WG1385251
Chromium	U		2.70	10.0	5	11/27/2019 12:27	WG1385251
Cobalt	69.9		1.30	10.0	5	11/27/2019 12:27	WG1385251
Lead	0.733	B J	0.240	2.00	1	11/27/2019 11:19	WG1385251
Selenium	4.87		0.380	2.00	1	11/27/2019 11:19	WG1385251
Thallium	U		0.190	2.00	1	11/27/2019 11:19	WG1385251

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	671000		3750	13300	1	11/24/2019 16:18	WG1385869

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	91700		51.9	1000	1	11/30/2019 21:46	WG1389065
Fluoride	216		9.90	100	1	11/30/2019 21:46	WG1389065
Sulfate	349000		387	25000	5	11/30/2019 21:57	WG1389065

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	11/25/2019 18:57	WG1385082

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	48.2	J	12.6	200	1	11/26/2019 12:48	WG1385226
Calcium	40900		46.3	1000	1	11/26/2019 12:48	WG1385226
Lithium	52.7		5.30	15.0	1	11/26/2019 12:48	WG1385226
Molybdenum	5.17		1.60	5.00	1	11/26/2019 12:48	WG1385226

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	11/27/2019 11:22	WG1385251
Arsenic	3.59		0.250	2.00	1	11/27/2019 11:22	WG1385251
Barium	65.3		0.360	5.00	1	11/27/2019 11:22	WG1385251
Beryllium	1.23	J	0.120	2.00	1	11/27/2019 11:22	WG1385251
Cadmium	0.505	J	0.160	1.00	1	11/27/2019 11:22	WG1385251
Chromium	U		0.540	2.00	1	11/27/2019 11:22	WG1385251
Cobalt	52.5		0.260	2.00	1	11/27/2019 11:22	WG1385251
Lead	0.729	B J	0.240	2.00	1	11/27/2019 11:22	WG1385251
Selenium	0.836	J	0.380	2.00	1	11/27/2019 11:22	WG1385251
Thallium	U		0.190	2.00	1	11/27/2019 11:22	WG1385251

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	510000		2820	10000	1	11/24/2019 16:18	WG1385869

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	49200		51.9	1000	1	11/30/2019 22:08	WG1389065
Fluoride	374		9.90	100	1	11/30/2019 22:08	WG1389065
Sulfate	256000		387	25000	5	11/30/2019 22:41	WG1389065

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	11/25/2019 18:59	WG1385082

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	77.5	J	12.6	200	1	11/26/2019 12:51	WG1385226
Calcium	46900		46.3	1000	1	11/26/2019 12:51	WG1385226
Lithium	173		5.30	15.0	1	11/26/2019 12:51	WG1385226
Molybdenum	U		1.60	5.00	1	11/26/2019 12:51	WG1385226

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	11/27/2019 11:26	WG1385251
Arsenic	2.39		0.250	2.00	1	11/27/2019 11:26	WG1385251
Barium	26.2		0.360	5.00	1	11/27/2019 11:26	WG1385251
Beryllium	4.84		0.120	2.00	1	11/27/2019 11:26	WG1385251
Cadmium	0.796	J	0.160	1.00	1	11/27/2019 11:26	WG1385251
Chromium	U		0.540	2.00	1	11/27/2019 11:26	WG1385251
Cobalt	46.5		0.260	2.00	1	11/27/2019 11:26	WG1385251
Lead	1.44	B J	0.240	2.00	1	11/27/2019 11:26	WG1385251
Selenium	0.626	J	0.380	2.00	1	11/27/2019 11:26	WG1385251
Thallium	U		0.190	2.00	1	11/27/2019 11:26	WG1385251

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	1740000		7050	25000	1	11/24/2019 16:18	WG1385869

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	31100		51.9	1000	1	11/30/2019 22:52	WG1389065
Fluoride	1030		9.90	100	1	11/30/2019 22:52	WG1389065
Sulfate	1270000		1550	100000	20	11/30/2019 23:03	WG1389065

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	11/25/2019 19:02	WG1385082

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	602		12.6	200	1	11/26/2019 12:55	WG1385226
Calcium	263000		46.3	1000	1	11/26/2019 12:55	WG1385226
Lithium	885		5.30	15.0	1	11/26/2019 12:55	WG1385226
Molybdenum	U		1.60	5.00	1	11/26/2019 12:55	WG1385226

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	11/27/2019 11:30	WG1385251
Arsenic	3.40		0.250	2.00	1	11/27/2019 11:30	WG1385251
Barium	40.3		0.360	5.00	1	11/27/2019 11:30	WG1385251
Beryllium	18.7		0.120	2.00	1	11/27/2019 11:30	WG1385251
Cadmium	0.181	J	0.160	1.00	1	11/27/2019 11:30	WG1385251
Chromium	U		0.540	2.00	1	11/27/2019 11:30	WG1385251
Cobalt	31.2		0.260	2.00	1	11/27/2019 11:30	WG1385251
Lead	0.636	B J	0.240	2.00	1	11/27/2019 11:30	WG1385251
Selenium	5.42		0.380	2.00	1	11/27/2019 11:30	WG1385251
Thallium	U		0.190	2.00	1	11/27/2019 11:30	WG1385251

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	324000		2820	10000	1	11/24/2019 16:18	WG1385869

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	4000		51.9	1000	1	11/30/2019 23:14	WG1389065
Fluoride	407		9.90	100	1	11/30/2019 23:14	WG1389065
Sulfate	136000		387	25000	5	11/30/2019 23:24	WG1389065

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	11/25/2019 19:04	WG1385082

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	162	J	12.6	200	1	11/26/2019 12:57	WG1385226
Calcium	21700		46.3	1000	1	11/26/2019 12:57	WG1385226
Lithium	214		5.30	15.0	1	11/26/2019 12:57	WG1385226
Molybdenum	U		1.60	5.00	1	11/26/2019 12:57	WG1385226

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	11/27/2019 11:34	WG1385251
Arsenic	0.642	J	0.250	2.00	1	11/27/2019 11:34	WG1385251
Barium	24.9		0.360	5.00	1	11/27/2019 11:34	WG1385251
Beryllium	6.97		0.120	2.00	1	11/27/2019 11:34	WG1385251
Cadmium	U		0.160	1.00	1	11/27/2019 11:34	WG1385251
Chromium	U		0.540	2.00	1	11/27/2019 11:34	WG1385251
Cobalt	9.78		0.260	2.00	1	11/27/2019 11:34	WG1385251
Lead	0.869	B J	0.240	2.00	1	11/27/2019 11:34	WG1385251
Selenium	U		0.380	2.00	1	11/27/2019 11:34	WG1385251
Thallium	U		0.190	2.00	1	11/27/2019 11:34	WG1385251



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	502000		2820	10000	1	11/24/2019 16:18	WG1385869

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	26600		51.9	1000	1	11/30/2019 23:35	WG1389065
Fluoride	254		9.90	100	1	11/30/2019 23:35	WG1389065
Sulfate	250000		387	25000	5	11/30/2019 23:46	WG1389065

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	11/25/2019 19:07	WG1385082

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	124	J	12.6	200	1	11/26/2019 13:00	WG1385226
Calcium	31100		46.3	1000	1	11/26/2019 13:00	WG1385226
Lithium	187		5.30	15.0	1	11/26/2019 13:00	WG1385226
Molybdenum	8.97		1.60	5.00	1	11/26/2019 13:00	WG1385226

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	11/27/2019 11:37	WG1385251
Arsenic	5.18		0.250	2.00	1	11/27/2019 11:37	WG1385251
Barium	40.3		0.360	5.00	1	11/27/2019 11:37	WG1385251
Beryllium	2.18		0.120	2.00	1	11/27/2019 11:37	WG1385251
Cadmium	U		0.160	1.00	1	11/27/2019 11:37	WG1385251
Chromium	U		0.540	2.00	1	11/27/2019 11:37	WG1385251
Cobalt	40.2		0.260	2.00	1	11/27/2019 11:37	WG1385251
Lead	0.364	B J	0.240	2.00	1	11/27/2019 11:37	WG1385251
Selenium	U		0.380	2.00	1	11/27/2019 11:37	WG1385251
Thallium	U		0.190	2.00	1	11/27/2019 11:37	WG1385251

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Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	176000		2820	10000	1	11/24/2019 16:18	WG1385869

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	18300		51.9	1000	1	11/30/2019 23:57	WG1389065
Fluoride	113		9.90	100	1	11/30/2019 23:57	WG1389065
Sulfate	36200		77.4	5000	1	11/30/2019 23:57	WG1389065

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	11/25/2019 19:09	WG1385082

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	84.1	J	12.6	200	1	11/26/2019 13:03	WG1385226
Calcium	16000		46.3	1000	1	11/26/2019 13:03	WG1385226
Lithium	31.3		5.30	15.0	1	11/26/2019 13:03	WG1385226
Molybdenum	15.7		1.60	5.00	1	11/26/2019 13:03	WG1385226

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	11/27/2019 11:41	WG1385251
Arsenic	2.89		0.250	2.00	1	11/27/2019 11:41	WG1385251
Barium	138		0.360	5.00	1	11/27/2019 11:41	WG1385251
Beryllium	U		0.120	2.00	1	11/27/2019 11:41	WG1385251
Cadmium	U		0.160	1.00	1	11/27/2019 11:41	WG1385251
Chromium	U		0.540	2.00	1	11/27/2019 11:41	WG1385251
Cobalt	3.86		0.260	2.00	1	11/27/2019 11:41	WG1385251
Lead	0.407	B J	0.240	2.00	1	11/27/2019 11:41	WG1385251
Selenium	U		0.380	2.00	1	11/27/2019 11:41	WG1385251
Thallium	U		0.190	2.00	1	11/27/2019 11:41	WG1385251

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	239000		2820	10000	1	11/24/2019 16:18	WG1385869

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	59700		51.9	1000	1	12/01/2019 00:52	WG1389065
Fluoride	193		9.90	100	1	12/01/2019 00:52	WG1389065
Sulfate	45500		77.4	5000	1	12/01/2019 00:52	WG1389065

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	11/25/2019 19:11	WG1385082

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	226		12.6	200	1	11/26/2019 15:10	WG1385228
Calcium	5420		46.3	1000	1	11/26/2019 15:10	WG1385228
Lithium	29.3		5.30	15.0	1	11/26/2019 15:10	WG1385228
Molybdenum	U		1.60	5.00	1	11/26/2019 15:10	WG1385228

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	11/27/2019 11:45	WG1385251
Arsenic	0.791	J	0.250	2.00	1	11/27/2019 11:45	WG1385251
Barium	116		0.360	5.00	1	11/27/2019 11:45	WG1385251
Beryllium	2.43		0.120	2.00	1	11/27/2019 11:45	WG1385251
Cadmium	U		0.160	1.00	1	11/27/2019 11:45	WG1385251
Chromium	U		0.540	2.00	1	11/27/2019 11:45	WG1385251
Cobalt	8.88		0.260	2.00	1	11/27/2019 11:45	WG1385251
Lead	0.756	B J	0.240	2.00	1	11/27/2019 11:45	WG1385251
Selenium	U		0.380	2.00	1	11/27/2019 11:45	WG1385251
Thallium	U		0.190	2.00	1	11/27/2019 11:45	WG1385251

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Method Blank (MB)

(MB) R3476454-1 11/25/19 14:58

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

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

L1163173-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1163173-01 11/25/19 14:58 • (DUP) R3476454-3 11/25/19 14:58

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Dissolved Solids	548000	552000	1	0.727		5

Laboratory Control Sample (LCS)

(LCS) R3476454-2 11/25/19 14:58

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Dissolved Solids	8800000	8460000	96.1	85.0-115	

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Method Blank (MB)

(MB) R3476006-1 11/24/19 16:18

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

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

L1163452-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1163452-06 11/24/19 16:18 • (DUP) R3476006-3 11/24/19 16:18

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Dissolved Solids	1740000	1700000	1	2.76		5

Laboratory Control Sample (LCS)

(LCS) R3476006-2 11/24/19 16:18

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Dissolved Solids	8800000	8210000	93.3	85.0-115	

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Method Blank (MB)

(MB) R3477731-1 11/30/19 08:42

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	347	⌵	51.9	1000
Fluoride	U		9.90	100
Sulfate	671	⌵	77.4	5000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1163204-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1163204-01 11/30/19 18:41 • (DUP) R3477731-3 11/30/19 18:52

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP RPD Limits %
Chloride	33000	33500	1	1.55	15
Fluoride	139	143	1	3.19	15
Sulfate	48100	48900	1	1.67	15

L1163452-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1163452-09 11/30/19 23:57 • (DUP) R3477731-6 12/01/19 00:08

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP RPD Limits %
Chloride	18300	19200	1	4.71	15
Fluoride	113	113	1	0.709	15
Sulfate	36200	36700	1	1.33	15

Laboratory Control Sample (LCS)

(LCS) R3477731-2 11/30/19 08:53

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	8090	101	80.0-120	
Sulfate	40000	39300	98.1	80.0-120	

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L1163204-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1163204-01 11/30/19 18:41 • (MS) R3477731-4 11/30/19 19:03 • (MSD) R3477731-5 11/30/19 19:14

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	33000	83600	84300	101	103	1	80.0-120			0.775	15
Fluoride	5000	139	5420	5410	106	105	1	80.0-120			0.338	15
Sulfate	50000	48100	98000	102000	99.8	108	1	80.0-120		E	3.95	15

L1163452-09 Original Sample (OS) • Matrix Spike (MS)

(OS) L1163452-09 11/30/19 23:57 • (MS) R3477731-7 12/01/19 00:19

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	18300	68100	99.6	1	80.0-120	
Fluoride	5000	113	4630	90.4	1	80.0-120	
Sulfate	50000	36200	84900	97.4	1	80.0-120	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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Method Blank (MB)

(MB) R3476173-1 11/25/19 18:24

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Mercury	U		0.0490	0.200

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

(LCS) R3476173-2 11/25/19 18:26 • (LCSD) R3476173-3 11/25/19 18:29

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%
Mercury	3.00	2.98	3.07	99.3	102	80.0-120			3.06	20

L1163299-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1163299-01 11/25/19 18:31 • (MS) R3476173-4 11/25/19 18:33 • (MSD) R3476173-5 11/25/19 18:36

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Mercury	3.00	U	3.52	3.59	117	120	1	75.0-125			2.10	20

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Method Blank (MB)

(MB) R3476441-1 11/26/19 11:05

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Boron	U		12.6	200
Calcium	U		46.3	1000
Lithium	U		5.30	15.0
Molybdenum	U		1.60	5.00

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

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

(LCS) R3476441-2 11/26/19 11:08 • (LCSD) R3476441-3 11/26/19 11:10

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Boron	1000	984	987	98.4	98.7	80.0-120			0.328	20
Calcium	10000	9930	10000	99.3	100	80.0-120			0.978	20
Lithium	1000	953	967	95.3	96.7	80.0-120			1.42	20
Molybdenum	1000	988	1010	98.8	101	80.0-120			1.78	20

L1163293-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1163293-09 11/26/19 11:13 • (MS) R3476441-5 11/26/19 11:18 • (MSD) R3476441-6 11/26/19 11:21

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	1000	ND	1040	1070	96.9	99.6	1	75.0-125			2.63	20
Calcium	10000	108000	116000	118000	84.6	101	1	75.0-125			1.41	20
Lithium	1000	29.0	968	965	93.9	93.6	1	75.0-125			0.342	20
Molybdenum	1000	6.41	1000	999	99.4	99.3	1	75.0-125			0.133	20

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Method Blank (MB)

(MB) R3476716-1 11/26/19 15:02

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Boron	U		12.6	200
Calcium	U		46.3	1000
Lithium	U		5.30	15.0
Molybdenum	U		1.60	5.00

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

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

(LCS) R3476716-2 11/26/19 15:05 • (LCSD) R3476716-3 11/26/19 15:07

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Boron	1000	985	973	98.5	97.3	80.0-120			1.22	20
Calcium	10000	10000	9970	100	99.7	80.0-120			0.432	20
Lithium	1000	964	972	96.4	97.2	80.0-120			0.830	20
Molybdenum	1000	990	981	99.0	98.1	80.0-120			0.964	20

L1163452-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1163452-10 11/26/19 15:10 • (MS) R3476716-5 11/26/19 15:15 • (MSD) R3476716-6 11/26/19 15:17

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	1000	226	1170	1190	94.6	96.5	1	75.0-125			1.61	20
Calcium	10000	5420	15100	15100	96.3	97.2	1	75.0-125			0.576	20
Lithium	1000	29.3	969	974	94.0	94.5	1	75.0-125			0.552	20
Molybdenum	1000	U	969	981	96.9	98.1	1	75.0-125			1.25	20

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Method Blank (MB)

(MB) R3476857-1 11/27/19 09:40

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Antimony	U		0.754	2.00
Arsenic	U		0.250	2.00
Barium	U		0.360	5.00
Beryllium	U		0.120	2.00
Cadmium	U		0.160	1.00
Chromium	0.565	U	0.540	2.00
Cobalt	U		0.260	2.00
Lead	0.271	U	0.240	2.00
Selenium	U		0.380	2.00
Thallium	U		0.190	2.00

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

(LCS) R3476857-2 11/27/19 09:44 • (LCSD) R3476857-3 11/27/19 09:48

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Antimony	50.0	47.8	47.7	95.6	95.5	80.0-120			0.0903	20
Arsenic	50.0	48.9	46.9	97.8	93.8	80.0-120			4.15	20
Barium	50.0	47.1	47.0	94.2	94.1	80.0-120			0.187	20
Beryllium	50.0	47.4	47.4	94.8	94.8	80.0-120			0.0165	20
Cadmium	50.0	49.1	47.9	98.1	95.7	80.0-120			2.47	20
Chromium	50.0	48.7	46.2	97.5	92.4	80.0-120			5.34	20
Cobalt	50.0	49.6	47.7	99.2	95.5	80.0-120			3.84	20
Lead	50.0	46.4	46.4	92.7	92.9	80.0-120			0.138	20
Selenium	50.0	55.6	52.3	111	105	80.0-120			6.07	20
Thallium	50.0	48.5	47.4	96.9	94.9	80.0-120			2.12	20

L1163520-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1163520-08 11/27/19 09:52 • (MS) R3476857-5 11/27/19 09:59 • (MSD) R3476857-6 11/27/19 10:03

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Antimony	50.0	ND	51.8	49.5	104	99.0	1	75.0-125			4.47	20
Arsenic	50.0	ND	50.8	51.9	102	104	1	75.0-125			2.30	20
Barium	50.0	40.3	91.6	90.4	103	100	1	75.0-125			1.30	20
Beryllium	50.0	ND	49.3	49.1	98.5	98.2	1	75.0-125			0.395	20
Cadmium	50.0	1.55	52.6	51.8	102	100	1	75.0-125			1.62	20
Chromium	50.0	ND	50.9	52.7	102	105	1	75.0-125			3.46	20
Cobalt	50.0	ND	51.7	52.6	103	105	1	75.0-125			1.71	20

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L1163520-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1163520-08 11/27/19 09:52 • (MS) R3476857-5 11/27/19 09:59 • (MSD) R3476857-6 11/27/19 10:03

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 %
Lead	50.0	ND	49.1	49.5	96.9	97.7	1	75.0-125			0.836	20
Selenium	50.0	ND	57.4	57.1	115	114	1	75.0-125			0.529	20
Thallium	50.0	ND	50.1	50.0	100	100	1	75.0-125			0.300	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

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Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
B	The same analyte is found in the associated blank.
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.

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



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

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

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

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

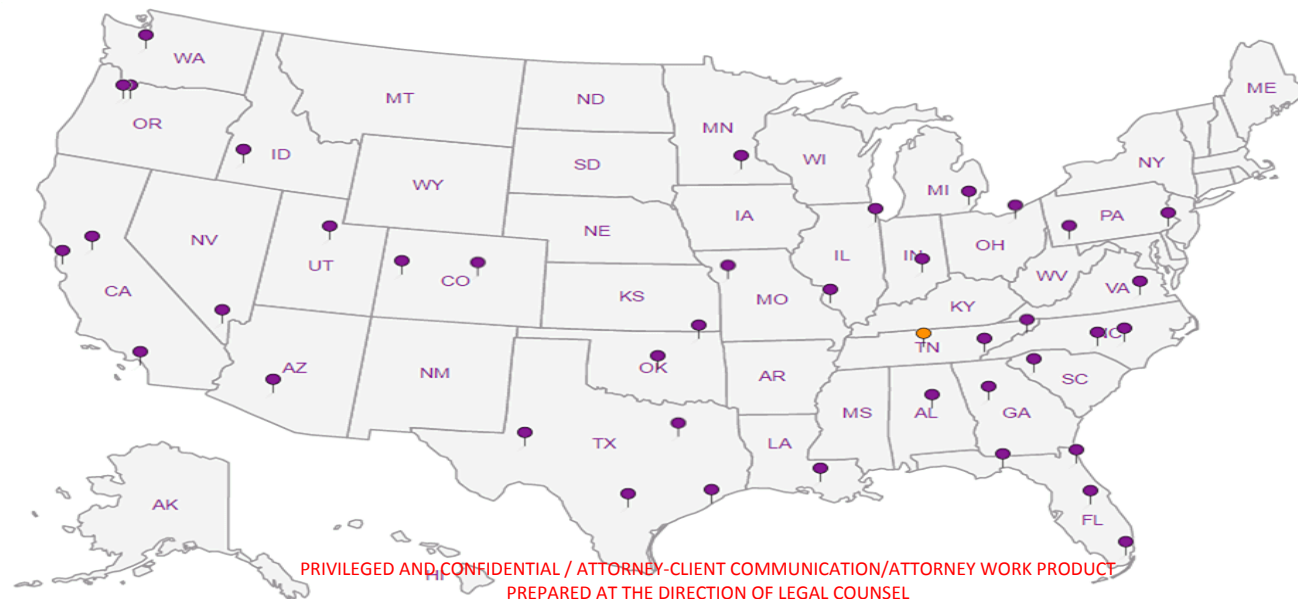
Third Party Federal Accreditations

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

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

Our Locations

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



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FTN Associates - Little Rock, AR 3 Innwood Circle, Suite 220 Little Rock, AR 72211		Billing Information:		Accounts Payable 3 Innwood Circle, Suite 220 Little Rock, AR 72211		Pres Chk		Analysis / Container / Preservative										Chain of Custody Page 1 of 1	
		Report to: Dana Derrington		Email To: dld@ftn-assoc.com, hlf@ftn-assoc.com, ajp@ftn-assoc.com, mmv@ftn-assoc.com														 12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859	
Project Description: Entergy White Bluff Landfill		City/State Collected: Redfield, AR		Please Circle: PT MT CT ET														SDG # 1163452 G155	
Phone: 501-920-9642 Fax:		Client Project # 07920-1994-002		Lab Project # FTNLRAR-ENTERGYWB														Acctnum: FTNLRAR Template: T138202 Prelogin: P740546 PM: 134 - Mark W. Beasley PB: JB 11-12-19 Shipped Via: FedEX Ground	
Collected by (print): <i>Andrew Pruitt</i>		Site/Facility ID #		P.O. #														Remarks Sample # (lab only)	
Collected by (signature): <i>Andrew Pruitt</i>		Rush? (Lab MUST Be Notified) ☐ Same Day ☐ Five Day ☐ Next Day ☐ 5 Day (Rad Only) ☐ Two Day ☐ 10 Day (Rad Only) ☐ Three Day		Quote #															
Immediately Packed on Ice N ☐ Y ☒				Date Results Needed															
Sample ID		Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Cl, FI, SO4, TDS 250ml HDPE-NoPres	Metals 250ml HDPE-HNO3	RA-226, RA228 1L-HDPE-Add HNO3									
✓ RP-1	Grab	GW			11/19/19	1305	3	X	X	X							-01		
✓ RP-2		GW				1240	3	X	X	X							02		
✓ RP-3		GW				1335	3	X	X	X							03		
✓ RP-4		GW				1420	3	X	X	X							04		
✓ RP-5		GW				1600	3	X	X	X							05		
✓ RP-6		GW				1620	3	X	X	X							06		
✓ RP-7		GW				1500	3	X	X	X							07		
✓ RP-8		GW				1700	3	X	X	X							08		
✓ RP-9		GW				1535	3	X	X	X							09		
✓ RP-10		GW				1400	3	X	X	X							10		
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other		Remarks: Metals= CCR (As,Ba,Be,B,Ca,Cd,Co,Cr,Hg,Li,Mo,Pb,Sb,Se,Tl) pH _____ Temp _____ Flow _____ Other _____										Sample Receipt Checklist COC Seal Present/Intact: ☒ Y ☐ N COC Signed/Accurate: ☒ Y ☐ N Bottles arrive intact: ☒ Y ☐ N Correct bottles used: ☒ Y ☐ N Sufficient volume sent: ☒ Y ☐ N If Applicable VOA Zero Headspace: ☒ Y ☐ N Preservation Correct/Checked: ☒ Y ☐ N RAD Screen <0.5 mR/hr: ☒ Y ☐ N							
Samples returned via: ☐ UPS ☐ FedEx ☐ Courier		Tracking # 1329 2020 887018869																	
Relinquished by: (Signature) <i>Andrew Pruitt</i>		Date: 11/20/19	Time: 1400	Received by: (Signature)		Trip Blank Received: Yes (No) ☒ HCL/MeOH TBR													
Relinquished by: (Signature)		Date:	Time:	Received by: (Signature)		Temp: °C 30 Bottles Received: 30												If preservation required by Login: Date/Time	
Relinquished by: (Signature)		Date:	Time:	Received by: (Signature) <i>Carol Henry</i>		Date: 11/21/19 Time: 8:30												Hold: Condition: NCF 16 OK	

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March 30, 2020

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Gl

⁷ A

⁸ Sc

Terracon - Little Rock, AR

Sample Delivery Group: L1202148
Samples Received: 03/24/2020
Project Number:
Description: Entergy - White Bluff Landfill

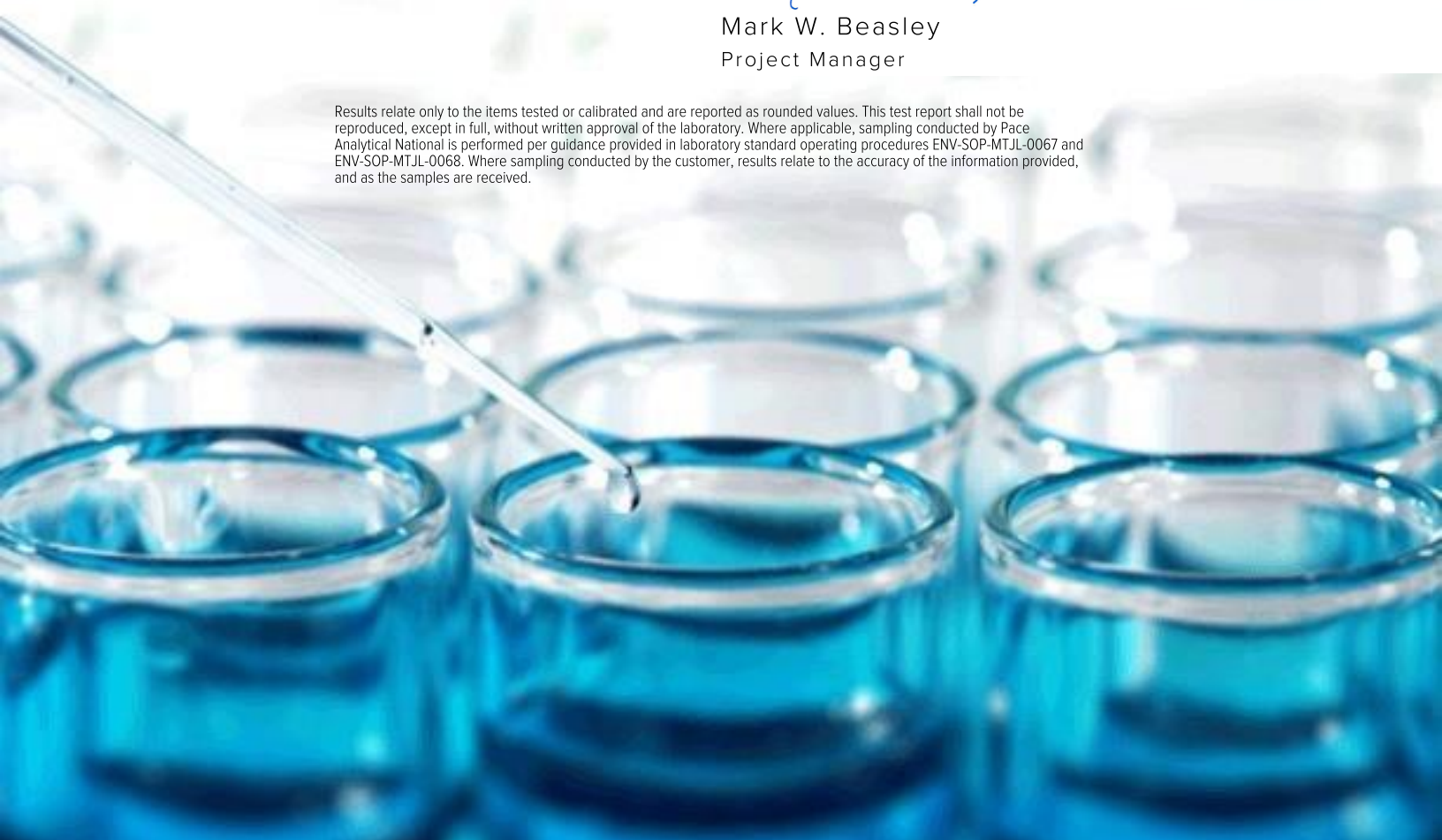
Report To: David Jaros
25809 I-30
Bryant, AR 72022

Entire Report Reviewed By:



Mark W. Beasley
Project Manager

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





Cp: Cover Page	1
Tc: Table of Contents	2
Ss: Sample Summary	3
Cn: Case Narrative	6
Sr: Sample Results	7
RP-1 L1202148-01	7
RP-2 L1202148-02	8
RP-3 L1202148-03	9
RP-4 L1202148-04	10
RP-5 L1202148-05	11
RP-6 L1202148-06	12
RP-8 L1202148-07	13
RP-9 L1202148-08	14
RP-10 L1202148-09	15
DUPE 2 L1202148-10	16
FIELD BLANK L1202148-11	17
Gl: Glossary of Terms	18
Al: Accreditations & Locations	19
Sc: Sample Chain of Custody	20



SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



RP-1 L1202148-01 GW

Collected by
Matt Acree

Collected date/time
03/21/20 12:25

Received date/time
03/24/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1449738	1	03/25/20 07:14	03/25/20 10:05	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1450058	1	03/26/20 09:00	03/26/20 09:00	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1449574	1	03/24/20 23:10	03/24/20 23:10	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1449574	100	03/24/20 23:23	03/24/20 23:23	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1449611	1	03/24/20 20:00	03/25/20 10:02	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1449643	1	03/25/20 16:32	03/25/20 21:25	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1449648	1	03/24/20 21:22	03/25/20 01:09	LAT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1449648	1	03/24/20 21:22	03/25/20 02:59	LAT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1449648	5	03/24/20 21:22	03/25/20 03:03	LAT	Mt. Juliet, TN

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Gl

7 A

8 Sc

RP-2 L1202148-02 GW

Collected by
Matt Acree

Collected date/time
03/21/20 13:39

Received date/time
03/24/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1449738	1	03/25/20 07:14	03/25/20 10:05	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1450058	1	03/26/20 09:00	03/26/20 09:00	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1449574	1	03/25/20 00:01	03/25/20 00:01	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1449611	1	03/24/20 20:00	03/25/20 10:04	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1449643	1	03/25/20 16:32	03/25/20 21:28	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1449648	1	03/24/20 21:22	03/25/20 01:13	LAT	Mt. Juliet, TN

RP-3 L1202148-03 GW

Collected by
Matt Acree

Collected date/time
03/21/20 14:55

Received date/time
03/24/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1449738	1	03/25/20 07:14	03/25/20 10:05	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1450058	1	03/26/20 09:00	03/26/20 09:00	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1449574	1	03/25/20 00:14	03/25/20 00:14	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1449574	20	03/25/20 00:27	03/25/20 00:27	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1449611	1	03/24/20 20:00	03/25/20 10:10	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1449643	1	03/25/20 16:32	03/25/20 21:31	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1449648	1	03/24/20 21:22	03/25/20 01:16	LAT	Mt. Juliet, TN

RP-4 L1202148-04 GW

Collected by
Matt Acree

Collected date/time
03/20/20 12:40

Received date/time
03/24/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1449737	1	03/25/20 07:12	03/25/20 09:41	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1450058	1	03/26/20 09:00	03/26/20 09:00	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1449574	1	03/25/20 00:40	03/25/20 00:40	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1449574	10	03/25/20 00:52	03/25/20 00:52	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1449611	1	03/24/20 20:00	03/25/20 10:12	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1449643	1	03/25/20 16:32	03/25/20 21:34	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1449648	1	03/24/20 21:22	03/25/20 01:19	LAT	Mt. Juliet, TN

RP-5 L1202148-05 GW

Collected by
Matt Acree

Collected date/time
03/20/20 14:57

Received date/time
03/24/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1449737	1	03/25/20 07:12	03/25/20 09:41	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1450058	1	03/26/20 09:00	03/26/20 09:00	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1449574	1	03/25/20 01:05	03/25/20 01:05	ELN	Mt. Juliet, TN

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



RP-5 L1202148-05 GW

Collected by
Matt Acree

Collected date/time
03/20/20 14:57

Received date/time
03/24/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1449574	5	03/25/20 07:41	03/25/20 07:41	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1449611	1	03/24/20 20:00	03/25/20 10:14	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1449643	1	03/25/20 16:32	03/25/20 21:36	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1449648	1	03/24/20 21:22	03/25/20 01:23	LAT	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Gl

⁷ A

⁸ Sc

RP-6 L1202148-06 GW

Collected by
Matt Acree

Collected date/time
03/20/20 16:15

Received date/time
03/24/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1449737	1	03/25/20 07:12	03/25/20 09:41	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1450058	1	03/26/20 09:00	03/26/20 09:00	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1449574	1	03/25/20 01:18	03/25/20 01:18	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1449574	50	03/25/20 01:31	03/25/20 01:31	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1449611	1	03/24/20 20:00	03/25/20 10:16	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1449643	1	03/25/20 16:32	03/25/20 21:39	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1449023	1	03/25/20 10:05	03/25/20 20:33	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1449023	10	03/25/20 10:05	03/25/20 21:07	LD	Mt. Juliet, TN

RP-8 L1202148-07 GW

Collected by
Matt Acree

Collected date/time
03/21/20 11:13

Received date/time
03/24/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1449738	1	03/25/20 07:14	03/25/20 10:05	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1450058	1	03/26/20 09:00	03/26/20 09:00	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1449574	1	03/25/20 01:44	03/25/20 01:44	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1449574	5	03/25/20 07:54	03/25/20 07:54	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1449611	1	03/24/20 20:00	03/25/20 10:18	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1449643	1	03/25/20 16:32	03/25/20 21:42	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1449023	1	03/25/20 10:05	03/25/20 20:36	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1449023	5	03/25/20 10:05	03/25/20 21:11	LD	Mt. Juliet, TN

RP-9 L1202148-08 GW

Collected by
Matt Acree

Collected date/time
03/20/20 14:02

Received date/time
03/24/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1449737	1	03/25/20 07:12	03/25/20 09:41	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1450058	1	03/26/20 09:00	03/26/20 09:00	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1449574	1	03/25/20 01:56	03/25/20 01:56	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1449611	1	03/24/20 20:00	03/25/20 10:20	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1449643	1	03/25/20 16:32	03/25/20 20:04	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1449023	1	03/25/20 10:05	03/25/20 20:40	LD	Mt. Juliet, TN

RP-10 L1202148-09 GW

Collected by
Matt Acree

Collected date/time
03/20/20 11:12

Received date/time
03/24/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1449737	1	03/25/20 07:12	03/25/20 09:41	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1450058	1	03/26/20 09:00	03/26/20 09:00	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1449574	1	03/25/20 02:35	03/25/20 02:35	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1449611	1	03/24/20 20:00	03/25/20 10:22	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1449643	1	03/25/20 16:32	03/25/20 20:10	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1449023	1	03/25/20 10:05	03/25/20 20:43	LD	Mt. Juliet, TN

ACCOUNT:

Terracon - Little Rock, AR

PROJECT:

SDG:

L1202148

DATE/TIME:

03/30/20 13:30

PAGE:

4 of 21

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



DUPE 2 L1202148-10 GW

Collected by
Matt Acree

Collected date/time
03/21/20 12:30

Received date/time
03/24/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1449738	1	03/25/20 07:14	03/25/20 10:05	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1450058	1	03/26/20 09:00	03/26/20 09:00	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1449574	1	03/25/20 02:47	03/25/20 02:47	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1449574	100	03/25/20 03:00	03/25/20 03:00	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1449611	1	03/24/20 20:00	03/25/20 10:24	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1449643	1	03/25/20 16:32	03/25/20 20:13	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1449023	1	03/25/20 10:05	03/25/20 21:14	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1449023	5	03/25/20 10:05	03/25/20 21:18	LD	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Gl

⁷ A

⁸ Sc

FIELD BLANK L1202148-11 GW

Collected by
Matt Acree

Collected date/time
03/21/20 12:35

Received date/time
03/24/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1449738	1	03/25/20 07:14	03/25/20 10:05	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1450058	1	03/26/20 09:00	03/26/20 09:00	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1449574	1	03/25/20 03:13	03/25/20 03:13	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1449611	1	03/24/20 20:00	03/25/20 10:26	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1449643	1	03/25/20 16:32	03/25/20 20:15	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1449023	1	03/25/20 10:05	03/25/20 20:57	LD	Mt. Juliet, TN



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

Mark W. Beasley
Project Manager





Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	4080000		14100	50000	1	03/25/2020 10:05	WG1449738

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Gl

7 A

8 Sc

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	3.65	T8	1	03/26/2020 09:00	WG1450058

Sample Narrative:

L1202148-01 WG1450058: 3.65 at 10.6C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	538000		5190	100000	100	03/24/2020 23:23	WG1449574
Fluoride	1970		9.90	100	1	03/24/2020 23:10	WG1449574
Sulfate	2560000		7740	500000	100	03/24/2020 23:23	WG1449574

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	1.94		0.0490	0.200	1	03/25/2020 10:02	WG1449611

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	45.3	B J	12.6	200	1	03/25/2020 21:25	WG1449643

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Antimony	0.821	J	0.754	2.00	1	03/25/2020 01:09	WG1449648
Arsenic	28.5		1.25	10.0	5	03/25/2020 03:03	WG1449648
Barium	9.50		0.360	5.00	1	03/25/2020 01:09	WG1449648
Beryllium	23.0		0.120	2.00	1	03/25/2020 01:09	WG1449648
Cadmium	1.07		0.160	1.00	1	03/25/2020 01:09	WG1449648
Calcium	375000		46.0	1000	1	03/25/2020 01:09	WG1449648
Chromium	4360		2.70	10.0	5	03/25/2020 03:03	WG1449648
Cobalt	288		1.30	10.0	5	03/25/2020 03:03	WG1449648
Lead	0.840	B J	0.240	2.00	1	03/25/2020 01:09	WG1449648
Molybdenum	U		0.140	5.00	1	03/25/2020 01:09	WG1449648
Selenium	10.2		0.380	2.00	1	03/25/2020 02:59	WG1449648
Thallium	0.477	J	0.190	2.00	1	03/25/2020 01:09	WG1449648
Lithium	392		0.190	2.00	1	03/25/2020 01:09	WG1449648



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	295000		2820	10000	1	03/25/2020 10:05	WG1449738

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Gl

7 A

8 Sc

Wet Chemistry by Method 9040C

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	6.22	<u>I8</u>	1	03/26/2020 09:00	WG1450058

Sample Narrative:

L1202148-02 WG1450058: 6.22 at 9C

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	16600		51.9	1000	1	03/25/2020 00:01	WG1449574
Fluoride	48.9	<u>J</u>	9.90	100	1	03/25/2020 00:01	WG1449574
Sulfate	91500		77.4	5000	1	03/25/2020 00:01	WG1449574

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	03/25/2020 10:04	WG1449611

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	64.9	<u>B J</u>	12.6	200	1	03/25/2020 21:28	WG1449643

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	03/25/2020 01:13	WG1449648
Arsenic	0.460	<u>J</u>	0.250	2.00	1	03/25/2020 01:13	WG1449648
Barium	37.9		0.360	5.00	1	03/25/2020 01:13	WG1449648
Beryllium	0.815	<u>J</u>	0.120	2.00	1	03/25/2020 01:13	WG1449648
Cadmium	0.308	<u>J</u>	0.160	1.00	1	03/25/2020 01:13	WG1449648
Calcium	12200		46.0	1000	1	03/25/2020 01:13	WG1449648
Chromium	4.53	<u>B</u>	0.540	2.00	1	03/25/2020 01:13	WG1449648
Cobalt	10.8		0.260	2.00	1	03/25/2020 01:13	WG1449648
Lead	0.480	<u>B J</u>	0.240	2.00	1	03/25/2020 01:13	WG1449648
Molybdenum	0.343	<u>J</u>	0.140	5.00	1	03/25/2020 01:13	WG1449648
Selenium	U		0.380	2.00	1	03/25/2020 01:13	WG1449648
Thallium	U		0.190	2.00	1	03/25/2020 01:13	WG1449648
Lithium	137		0.190	2.00	1	03/25/2020 01:13	WG1449648



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	1830000		5640	20000	1	03/25/2020 10:05	WG1449738

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Gl

7 A

8 Sc

Wet Chemistry by Method 9040C

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	3.52	<u>T8</u>	1	03/26/2020 09:00	WG1450058

Sample Narrative:

L1202148-03 WG1450058: 3.52 at 9.2C

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	169000		1040	20000	20	03/25/2020 00:27	WG1449574
Fluoride	812		9.90	100	1	03/25/2020 00:14	WG1449574
Sulfate	1200000		1550	100000	20	03/25/2020 00:27	WG1449574

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	03/25/2020 10:10	WG1449611

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	120	<u>B J</u>	12.6	200	1	03/25/2020 21:31	WG1449643

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	03/25/2020 01:16	WG1449648
Arsenic	3.17		0.250	2.00	1	03/25/2020 01:16	WG1449648
Barium	15.6		0.360	5.00	1	03/25/2020 01:16	WG1449648
Beryllium	13.5		0.120	2.00	1	03/25/2020 01:16	WG1449648
Cadmium	0.985	<u>J</u>	0.160	1.00	1	03/25/2020 01:16	WG1449648
Calcium	186000		46.0	1000	1	03/25/2020 01:16	WG1449648
Chromium	3.37	<u>B</u>	0.540	2.00	1	03/25/2020 01:16	WG1449648
Cobalt	65.8		0.260	2.00	1	03/25/2020 01:16	WG1449648
Lead	2.41	<u>B</u>	0.240	2.00	1	03/25/2020 01:16	WG1449648
Molybdenum	U		0.140	5.00	1	03/25/2020 01:16	WG1449648
Selenium	1.80	<u>J</u>	0.380	2.00	1	03/25/2020 01:16	WG1449648
Thallium	U		0.190	2.00	1	03/25/2020 01:16	WG1449648
Lithium	342		0.190	2.00	1	03/25/2020 01:16	WG1449648



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	699000		2820	10000	1	03/25/2020 09:41	WG1449737

Wet Chemistry by Method 9040C

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	4.57	<u>I8</u>	1	03/26/2020 09:00	WG1450058

Sample Narrative:

L1202148-04 WG1450058: 4.57 at 9.9C

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	93700		51.9	1000	1	03/25/2020 00:40	WG1449574
Fluoride	350		9.90	100	1	03/25/2020 00:40	WG1449574
Sulfate	343000		774	50000	10	03/25/2020 00:52	WG1449574

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	03/25/2020 10:12	WG1449611

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	37.5	<u>B J</u>	12.6	200	1	03/25/2020 21:34	WG1449643

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	03/25/2020 01:19	WG1449648
Arsenic	2.59		0.250	2.00	1	03/25/2020 01:19	WG1449648
Barium	71.2		0.360	5.00	1	03/25/2020 01:19	WG1449648
Beryllium	1.39	<u>J</u>	0.120	2.00	1	03/25/2020 01:19	WG1449648
Cadmium	0.575	<u>J</u>	0.160	1.00	1	03/25/2020 01:19	WG1449648
Calcium	37300		46.0	1000	1	03/25/2020 01:19	WG1449648
Chromium	5.99	<u>B</u>	0.540	2.00	1	03/25/2020 01:19	WG1449648
Cobalt	50.8		0.260	2.00	1	03/25/2020 01:19	WG1449648
Lead	0.988	<u>B J</u>	0.240	2.00	1	03/25/2020 01:19	WG1449648
Molybdenum	0.253	<u>J</u>	0.140	5.00	1	03/25/2020 01:19	WG1449648
Selenium	0.401	<u>J</u>	0.380	2.00	1	03/25/2020 01:19	WG1449648
Thallium	U		0.190	2.00	1	03/25/2020 01:19	WG1449648
Lithium	47.2		0.190	2.00	1	03/25/2020 01:19	WG1449648





Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	566000		2820	10000	1	03/25/2020 09:41	WG1449737

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Gl

7 A

8 Sc

Wet Chemistry by Method 9040C

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	3.90	<u>I8</u>	1	03/26/2020 09:00	WG1450058

Sample Narrative:

L1202148-05 WG1450058: 3.9 at 11C

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	48400		51.9	1000	1	03/25/2020 01:05	WG1449574
Fluoride	438		9.90	100	1	03/25/2020 01:05	WG1449574
Sulfate	284000		387	25000	5	03/25/2020 07:41	WG1449574

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	03/25/2020 10:14	WG1449611

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	102	<u>B J</u>	12.6	200	1	03/25/2020 21:36	WG1449643

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	03/25/2020 01:23	WG1449648
Arsenic	2.06		0.250	2.00	1	03/25/2020 01:23	WG1449648
Barium	24.7		0.360	5.00	1	03/25/2020 01:23	WG1449648
Beryllium	5.08		0.120	2.00	1	03/25/2020 01:23	WG1449648
Cadmium	1.16		0.160	1.00	1	03/25/2020 01:23	WG1449648
Calcium	50100		46.0	1000	1	03/25/2020 01:23	WG1449648
Chromium	5.72	<u>B</u>	0.540	2.00	1	03/25/2020 01:23	WG1449648
Cobalt	48.4		0.260	2.00	1	03/25/2020 01:23	WG1449648
Lead	1.52	<u>B J</u>	0.240	2.00	1	03/25/2020 01:23	WG1449648
Molybdenum	U		0.140	5.00	1	03/25/2020 01:23	WG1449648
Selenium	0.436	<u>J</u>	0.380	2.00	1	03/25/2020 01:23	WG1449648
Thallium	U		0.190	2.00	1	03/25/2020 01:23	WG1449648
Lithium	161		0.190	2.00	1	03/25/2020 01:23	WG1449648



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	1670000		5640	20000	1	03/25/2020 09:41	WG1449737

Wet Chemistry by Method 9040C

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	6.97	<u>T8</u>	1	03/26/2020 09:00	WG1450058

Sample Narrative:

L1202148-06 WG1450058: 6.97 at 12C

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	28000		51.9	1000	1	03/25/2020 01:18	WG1449574
Fluoride	493		9.90	100	1	03/25/2020 01:18	WG1449574
Sulfate	1130000		3870	250000	50	03/25/2020 01:31	WG1449574

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	03/25/2020 10:16	WG1449611

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	549		12.6	200	1	03/25/2020 21:39	WG1449643

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	03/25/2020 20:33	WG1449023
Arsenic	0.786	<u>J</u>	0.250	2.00	1	03/25/2020 20:33	WG1449023
Barium	90.7		0.360	5.00	1	03/25/2020 20:33	WG1449023
Beryllium	1.76	<u>J</u>	0.120	2.00	1	03/25/2020 20:33	WG1449023
Cadmium	U		0.160	1.00	1	03/25/2020 20:33	WG1449023
Calcium	310000		46.0	1000	1	03/25/2020 20:33	WG1449023
Chromium	1.22	<u>B J</u>	0.540	2.00	1	03/25/2020 20:33	WG1449023
Cobalt	16.0		0.260	2.00	1	03/25/2020 20:33	WG1449023
Lead	0.415	<u>J</u>	0.240	2.00	1	03/25/2020 20:33	WG1449023
Molybdenum	5.67		0.140	5.00	1	03/25/2020 20:33	WG1449023
Selenium	0.418	<u>J</u>	0.380	2.00	1	03/25/2020 20:33	WG1449023
Thallium	U		0.190	2.00	1	03/25/2020 20:33	WG1449023
Lithium	771		1.90	20.0	10	03/25/2020 21:07	WG1449023





Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	566000		2820	10000	1	03/25/2020 10:05	WG1449738

Wet Chemistry by Method 9040C

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	6.41	<u>T8</u>	1	03/26/2020 09:00	WG1450058

Sample Narrative:

L1202148-07 WG1450058: 6.41 at 13C

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	34100		51.9	1000	1	03/25/2020 01:44	WG1449574
Fluoride	260		9.90	100	1	03/25/2020 01:44	WG1449574
Sulfate	281000		387	25000	5	03/25/2020 07:54	WG1449574

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	03/25/2020 10:18	WG1449611

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	278		12.6	200	1	03/25/2020 21:42	WG1449643

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	03/25/2020 20:36	WG1449023
Arsenic	0.432	<u>J</u>	0.250	2.00	1	03/25/2020 20:36	WG1449023
Barium	115		0.360	5.00	1	03/25/2020 20:36	WG1449023
Beryllium	1.42	<u>J</u>	0.120	2.00	1	03/25/2020 20:36	WG1449023
Cadmium	0.338	<u>J</u>	0.160	1.00	1	03/25/2020 20:36	WG1449023
Calcium	65300		46.0	1000	1	03/25/2020 20:36	WG1449023
Chromium	1.58	<u>B J</u>	0.540	2.00	1	03/25/2020 20:36	WG1449023
Cobalt	34.7		0.260	2.00	1	03/25/2020 20:36	WG1449023
Lead	0.375	<u>J</u>	0.240	2.00	1	03/25/2020 20:36	WG1449023
Molybdenum	2.18	<u>J</u>	0.140	5.00	1	03/25/2020 20:36	WG1449023
Selenium	U		0.380	2.00	1	03/25/2020 20:36	WG1449023
Thallium	U		0.190	2.00	1	03/25/2020 20:36	WG1449023
Lithium	255		0.950	10.0	5	03/25/2020 21:11	WG1449023





Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	247000		2820	10000	1	03/25/2020 09:41	WG1449737

Wet Chemistry by Method 9040C

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	6.90	<u>T8</u>	1	03/26/2020 09:00	WG1450058

Sample Narrative:

L1202148-08 WG1450058: 6.9 at 11.4C

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	14000		51.9	1000	1	03/25/2020 01:56	WG1449574
Fluoride	90.1	<u>J</u>	9.90	100	1	03/25/2020 01:56	WG1449574
Sulfate	79600		77.4	5000	1	03/25/2020 01:56	WG1449574

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	03/25/2020 10:20	WG1449611

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	84.7	<u>B J</u>	12.6	200	1	03/25/2020 20:04	WG1449643

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	03/25/2020 20:40	WG1449023
Arsenic	0.336	<u>J</u>	0.250	2.00	1	03/25/2020 20:40	WG1449023
Barium	128		0.360	5.00	1	03/25/2020 20:40	WG1449023
Beryllium	0.139	<u>J</u>	0.120	2.00	1	03/25/2020 20:40	WG1449023
Cadmium	U		0.160	1.00	1	03/25/2020 20:40	WG1449023
Calcium	29000		46.0	1000	1	03/25/2020 20:40	WG1449023
Chromium	1.94	<u>B J</u>	0.540	2.00	1	03/25/2020 20:40	WG1449023
Cobalt	0.529	<u>J</u>	0.260	2.00	1	03/25/2020 20:40	WG1449023
Lead	0.317	<u>J</u>	0.240	2.00	1	03/25/2020 20:40	WG1449023
Molybdenum	20.1		0.140	5.00	1	03/25/2020 20:40	WG1449023
Selenium	U		0.380	2.00	1	03/25/2020 20:40	WG1449023
Thallium	U		0.190	2.00	1	03/25/2020 20:40	WG1449023
Lithium	22.3		0.190	2.00	1	03/25/2020 20:40	WG1449023





Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	227000		2820	10000	1	03/25/2020 09:41	WG1449737

1
Cp2
Tc3
Ss4
Cn5
Sr6
Gl7
A8
Sc

Wet Chemistry by Method 9040C

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	3.83	<u>I8</u>	1	03/26/2020 09:00	WG1450058

Sample Narrative:

L1202148-09 WG1450058: 3.83 at 10.8C

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	57900		51.9	1000	1	03/25/2020 02:35	WG1449574
Fluoride	195		9.90	100	1	03/25/2020 02:35	WG1449574
Sulfate	31700		77.4	5000	1	03/25/2020 02:35	WG1449574

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	03/25/2020 10:22	WG1449611

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	162	<u>J</u>	12.6	200	1	03/25/2020 20:10	WG1449643

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	03/25/2020 20:43	WG1449023
Arsenic	0.277	<u>J</u>	0.250	2.00	1	03/25/2020 20:43	WG1449023
Barium	150		0.360	5.00	1	03/25/2020 20:43	WG1449023
Beryllium	2.88		0.120	2.00	1	03/25/2020 20:43	WG1449023
Cadmium	0.367	<u>J</u>	0.160	1.00	1	03/25/2020 20:43	WG1449023
Calcium	4470		46.0	1000	1	03/25/2020 20:43	WG1449023
Chromium	1.06	<u>B J</u>	0.540	2.00	1	03/25/2020 20:43	WG1449023
Cobalt	10.2		0.260	2.00	1	03/25/2020 20:43	WG1449023
Lead	4.14		0.240	2.00	1	03/25/2020 20:43	WG1449023
Molybdenum	U		0.140	5.00	1	03/25/2020 20:43	WG1449023
Selenium	0.490	<u>J</u>	0.380	2.00	1	03/25/2020 20:43	WG1449023
Thallium	U		0.190	2.00	1	03/25/2020 20:43	WG1449023
Lithium	21.0		0.190	2.00	1	03/25/2020 20:43	WG1449023



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	3760000		14100	50000	1	03/25/2020 10:05	WG1449738

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Gl

7 A

8 Sc

Wet Chemistry by Method 9040C

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	3.66	<u>T8</u>	1	03/26/2020 09:00	WG1450058

Sample Narrative:

L1202148-10 WG1450058: 3.66 at 11C

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	544000		5190	100000	100	03/25/2020 03:00	WG1449574
Fluoride	1950		9.90	100	1	03/25/2020 02:47	WG1449574
Sulfate	2580000		7740	500000	100	03/25/2020 03:00	WG1449574

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	1.86		0.0490	0.200	1	03/25/2020 10:24	WG1449611

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	47.1	<u>B J</u>	12.6	200	1	03/25/2020 20:13	WG1449643

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		0.754	2.00	1	03/25/2020 21:14	WG1449023
Arsenic	11.1		1.25	10.0	5	03/25/2020 21:18	WG1449023
Barium	10.0		0.360	5.00	1	03/25/2020 21:14	WG1449023
Beryllium	21.9		0.120	2.00	1	03/25/2020 21:14	WG1449023
Cadmium	0.913	<u>J</u>	0.160	1.00	1	03/25/2020 21:14	WG1449023
Calcium	382000		46.0	1000	1	03/25/2020 21:14	WG1449023
Chromium	U		2.70	10.0	5	03/25/2020 21:18	WG1449023
Cobalt	225		1.30	10.0	5	03/25/2020 21:18	WG1449023
Lead	0.646	<u>J</u>	0.240	2.00	1	03/25/2020 21:14	WG1449023
Molybdenum	U		0.140	5.00	1	03/25/2020 21:14	WG1449023
Selenium	9.70		0.380	2.00	1	03/25/2020 21:14	WG1449023
Thallium	0.374	<u>J</u>	0.190	2.00	1	03/25/2020 21:14	WG1449023
Lithium	406		0.950	10.0	5	03/25/2020 21:18	WG1449023



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	8000	J	2820	10000	1	03/25/2020 10:05	WG1449738

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Gl

7 A

8 Sc

Wet Chemistry by Method 9040C

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	5.50	T8	1	03/26/2020 09:00	WG1450058

Sample Narrative:

L1202148-11 WG1450058: 5.5 at 12.9C

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	U		51.9	1000	1	03/25/2020 03:13	WG1449574
Fluoride	U		9.90	100	1	03/25/2020 03:13	WG1449574
Sulfate	107	J P1	77.4	5000	1	03/25/2020 03:13	WG1449574

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.0490	0.200	1	03/25/2020 10:26	WG1449611

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	16.5	B J	12.6	200	1	03/25/2020 20:15	WG1449643

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	0.800	J	0.754	2.00	1	03/25/2020 20:57	WG1449023
Arsenic	U		0.250	2.00	1	03/25/2020 20:57	WG1449023
Barium	U		0.360	5.00	1	03/25/2020 20:57	WG1449023
Beryllium	U		0.120	2.00	1	03/25/2020 20:57	WG1449023
Cadmium	U		0.160	1.00	1	03/25/2020 20:57	WG1449023
Calcium	106	J	46.0	1000	1	03/25/2020 20:57	WG1449023
Chromium	1.30	B J	0.540	2.00	1	03/25/2020 20:57	WG1449023
Cobalt	U		0.260	2.00	1	03/25/2020 20:57	WG1449023
Lead	U		0.240	2.00	1	03/25/2020 20:57	WG1449023
Molybdenum	U		0.140	5.00	1	03/25/2020 20:57	WG1449023
Selenium	U		0.380	2.00	1	03/25/2020 20:57	WG1449023
Thallium	U		0.190	2.00	1	03/25/2020 20:57	WG1449023
Lithium	0.880	B J	0.190	2.00	1	03/25/2020 20:57	WG1449023



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.
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.
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.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier Description

B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
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.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Gl

7 A

8 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

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

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

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

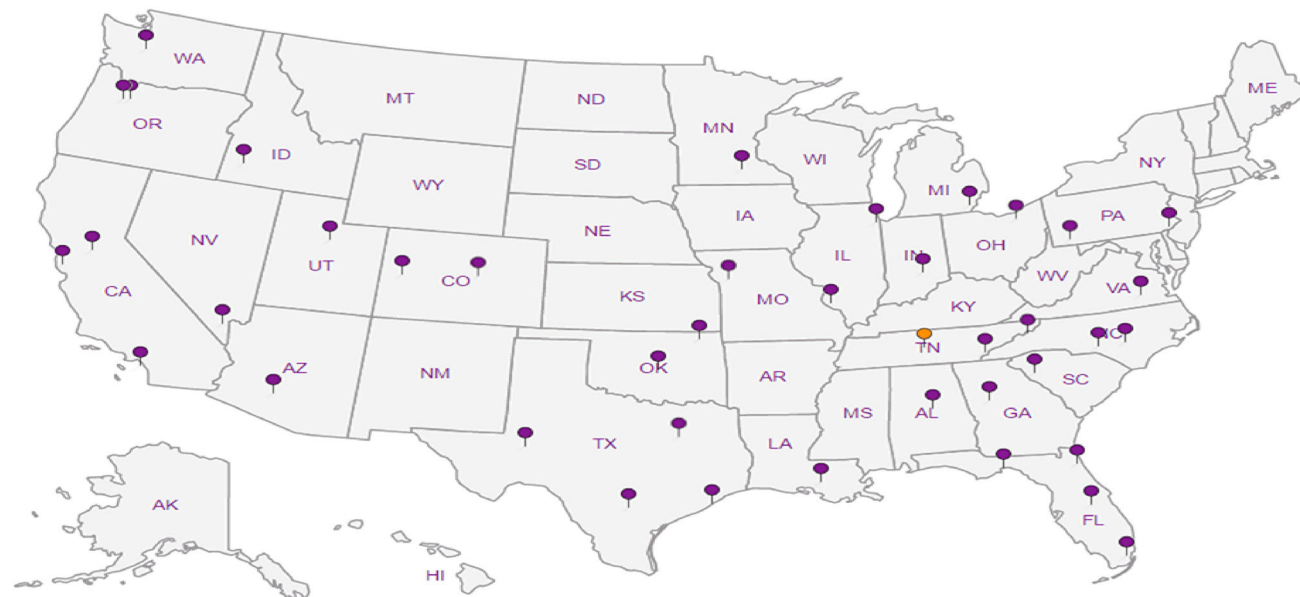
Third Party Federal Accreditations

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

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

Our Locations

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



Terracon - Little Rock, AR				Billing Information:		Chain of Custody		Page 1 of 2			
25809 I-30 Bryant, AR 72022				Accounts Payable 25809 I-30 Bryant, AR 72022		Pres Chk					
Report to: David Jaros				Email To: David.Jaros@terracon.com; House@trccompanies.							
Project Description: Entergy - White Bluff Landfill				City/State Collected: <i>Redfield AR</i>		Please Circle: PT MT CF ET					
Phone: 501-847-9292				Client Project #		Lab Project #		SDG #			
Fax:				Site/Facility ID #		GENENLAR-ENTERGYWB		G061			
Collected by (print): <i>Math Acee</i>				Rush? (Lab MUST Be Notified)		Quote #		Actnum: GENENLAR			
Collected by (signature): <i>Math Acee</i>				Same Day _____ Five Day _____ Next Day _____ 5 Day (Rad Only) _____ Two Day _____ 10 Day (Rad Only) _____ Three Day _____		Date Results Needed		Template: T164785			
Immediately _____ Packed on Ice N _____ Y ☒				Comp/Grab		Matrix *		Prelogin: P763763			
Sample ID				Depth		Date		PM: 134 - Mark W. Beasley			
RP-1				GW		3.21.20		PB:			
RP-2				GW		3.21.20		Shipped Via:			
RP-3				GW		3.21.20		Remarks			
RP-4				GW		3.21.20		Sample # (lab only)			
RP-5				GW		3.20.20					
RP-6				GW		3.20.20					
RP-8				GW		3.21.20					
RP-9				GW		3.20.20					
RP-10				GW		3.20.20					
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - Waste Water DW - Drinking Water OT - Other				pH _____ Temp _____ Flow _____ Other _____		Sample Receipt Checklist COC Seal Present/Intact: ☒ 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		Analysis / Container / Preservative RA-226/228 Combined 1L-HDPE-Add HNO3 CL, F, SO4, PH 125ml-HDPE-NOPres *Total Metals 250ml-HDPE-HNO3 TDS 250ml-HDPE-NOPres		Chain of Custody Pace Analytical® National Center for Testing & Innovation 12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 866-767-5859 Fax: 615-758-5859 SDG # 1202148 G061	
Samples returned via: ___ UPS ___ FedEx ___ Courier				Tracking #		Trip Blank Received: Yes ☒ No HCL / MeOH TBR		If preservation required by Login: Date/Time			
Relinquished by: (Signature) <i>Math Acee</i>				Date: 3.23.20 Time: 1300		Temp: 43°C 9±0.9 Date: 3/24/20 Time: 8:30		Hold:			
Relinquished by: (Signature)				Date:		Received by: (Signature)		Condition: NCF / <i>QW</i>			
Relinquished by: (Signature)				Date:		Received by: (Signature)		Condition:			

April 14, 2020

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Gl

⁷ A

⁸ Sc

Terracon - Little Rock, AR

Sample Delivery Group: L1202150
Samples Received: 03/24/2020
Project Number:
Description: Entergy - White Bluff Landfill

Report To: David Jaros
25809 I-30
Bryant, AR 72022

Entire Report Reviewed By:



Mark W. Beasley
Project Manager

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



Cp: Cover Page	1
Tc: Table of Contents	2
Ss: Sample Summary	3
Cn: Case Narrative	5
Sr: Sample Results	6
RP-1 L1202150-01	6
RP-2 L1202150-02	7
RP-3 L1202150-03	8
RP-4 L1202150-04	9
RP-5 L1202150-05	10
RP-6 L1202150-06	11
RP-8 L1202150-07	12
RP-9 L1202150-08	13
RP-10 L1202150-09	14
DUPE 2 L1202150-10	15
FIELD BLANK L1202150-11	16
Gl: Glossary of Terms	17
Al: Accreditations & Locations	18
Sc: Sample Chain of Custody	19





RP-1 L1202150-01 Non-Potable Water

Collected by
Matt Acree

Collected date/time
03/21/20 12:25

Received date/time
03/24/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1456248	1	04/06/20 16:45	04/10/20 10:45	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1453160	1	03/31/20 14:22	04/10/20 10:45	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1453160	1	03/31/20 14:22	04/06/20 16:46	RGT	Mt. Juliet, TN

¹Cp²Tc³Ss⁴Cn⁵Sr⁶Gl⁷A⁸Sc

RP-2 L1202150-02 Non-Potable Water

Collected by
Matt Acree

Collected date/time
03/21/20 13:39

Received date/time
03/24/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1456248	1	04/06/20 16:45	04/13/20 09:25	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1453160	1	03/31/20 14:22	04/13/20 09:25	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1453160	1	03/31/20 14:22	04/06/20 16:46	RGT	Mt. Juliet, TN

RP-3 L1202150-03 Non-Potable Water

Collected by
Matt Acree

Collected date/time
03/21/20 14:55

Received date/time
03/24/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1456248	1	04/06/20 16:45	04/10/20 10:45	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1453160	1	03/31/20 14:22	04/10/20 10:45	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1453160	1	03/31/20 14:22	04/06/20 16:46	RGT	Mt. Juliet, TN

RP-4 L1202150-04 Non-Potable Water

Collected by
Matt Acree

Collected date/time
03/20/20 12:40

Received date/time
03/24/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1456248	1	04/06/20 16:45	04/10/20 10:45	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1453160	1	03/31/20 14:22	04/10/20 10:45	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1453160	1	03/31/20 14:22	04/06/20 16:46	RGT	Mt. Juliet, TN

RP-5 L1202150-05 Non-Potable Water

Collected by
Matt Acree

Collected date/time
03/20/20 14:57

Received date/time
03/24/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1456248	1	04/06/20 16:45	04/10/20 10:45	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1453160	1	03/31/20 14:22	04/10/20 10:45	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1453160	1	03/31/20 14:22	04/06/20 16:46	RGT	Mt. Juliet, TN

RP-6 L1202150-06 Non-Potable Water

Collected by
Matt Acree

Collected date/time
03/20/20 16:15

Received date/time
03/24/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1456248	1	04/06/20 16:45	04/10/20 10:45	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1453160	1	03/31/20 14:22	04/10/20 10:45	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1453160	1	03/31/20 14:22	04/06/20 16:46	RGT	Mt. Juliet, TN



RP-8 L1202150-07 Non-Potable Water

Collected by
Matt Acree

Collected date/time
03/21/20 11:13

Received date/time
03/24/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1456248	1	04/06/20 16:45	04/10/20 10:45	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1453160	1	03/31/20 14:22	04/10/20 10:45	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1453160	1	03/31/20 14:22	04/06/20 16:46	RGT	Mt. Juliet, TN

¹Cp²Tc³Ss⁴Cn⁵Sr⁶Gl⁷A⁸Sc

RP-9 L1202150-08 Non-Potable Water

Collected by
Matt Acree

Collected date/time
03/20/20 14:02

Received date/time
03/24/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1456248	1	04/06/20 16:45	04/13/20 09:25	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1453160	1	03/31/20 14:22	04/13/20 09:25	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1453160	1	03/31/20 14:22	04/06/20 16:46	RGT	Mt. Juliet, TN

RP-10 L1202150-09 Non-Potable Water

Collected by
Matt Acree

Collected date/time
03/20/20 11:12

Received date/time
03/24/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1456248	1	04/06/20 16:45	04/13/20 09:25	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1453160	1	03/31/20 14:22	04/13/20 09:25	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1453160	1	03/31/20 14:22	04/06/20 16:46	RGT	Mt. Juliet, TN

DUPE 2 L1202150-10 Non-Potable Water

Collected by
Matt Acree

Collected date/time
03/21/20 12:30

Received date/time
03/24/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1456248	1	04/06/20 16:45	04/13/20 09:25	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1453160	1	03/31/20 14:22	04/13/20 09:25	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1453160	1	03/31/20 14:22	04/06/20 16:46	RGT	Mt. Juliet, TN

FIELD BLANK L1202150-11 Non-Potable Water

Collected by
Matt Acree

Collected date/time
03/21/20 12:35

Received date/time
03/24/20 08:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1456248	1	04/06/20 16:45	04/13/20 09:25	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1453160	1	03/31/20 14:22	04/13/20 09:25	JMR	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1453160	1	03/31/20 14:22	04/06/20 16:46	RGT	Mt. Juliet, TN



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Mark W. Beasley
Project Manager





Radiochemistry by Method 904

Analyte	Result pCi/l	<u>Qualifier</u>	MDL pCi/l	RDL pCi/l	Dilution	Analysis date / time	Batch
RADIUM-228	11.3		0.565		1	04/10/2020 10:45	WG1456248
(T) Barium	131			62.0-143		04/10/2020 10:45	WG1456248
(T) Yttrium	105			79.0-136		04/10/2020 10:45	WG1456248

¹ Cp² Tc³ Ss

Radiochemistry by Method Calculation

Analyte	Result pCi/l	<u>Qualifier</u>	MDL pCi/l	RDL pCi/l	Dilution	Analysis date / time	Batch
Combined Radium	13.4		0.917		1	04/10/2020 10:45	WG1453160

⁴ Cn⁵ Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	<u>Qualifier</u>	MDL pCi/l	RDL pCi/l	Dilution	Analysis date / time	Batch
RADIUM-226	2.16		0.352		1	04/06/2020 16:46	WG1453160
(T) Barium-133	87.3			30.0-143		04/06/2020 16:46	WG1453160

⁶ Gl⁷ Al⁸ Sc



Radiochemistry by Method 904

Analyte	Result pCi/l	<u>Qualifier</u>	MDL pCi/l	RDL pCi/l	Dilution	Analysis date / time	Batch
RADIUM-228	1.44		0.768		1	04/13/2020 09:25	WG1456248
(T) Barium	98.0			62.0-143		04/13/2020 09:25	WG1456248
(T) Yttrium	104			79.0-136		04/13/2020 09:25	WG1456248

¹ Cp² Tc³ Ss

Radiochemistry by Method Calculation

Analyte	Result pCi/l	<u>Qualifier</u>	MDL pCi/l	RDL pCi/l	Dilution	Analysis date / time	Batch
Combined Radium	2.11		1.02		1	04/13/2020 09:25	WG1453160

⁴ Cn⁵ Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	<u>Qualifier</u>	MDL pCi/l	RDL pCi/l	Dilution	Analysis date / time	Batch
RADIUM-226	0.673		0.249		1	04/06/2020 16:46	WG1453160
(T) Barium-133	98.3			30.0-143		04/06/2020 16:46	WG1453160

⁶ Gl⁷ Al⁸ Sc

Radiochemistry by Method 904

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	pCi/l		pCi/l	pCi/l		date / time	
RADIUM-228	4.61		0.625		1	04/10/2020 10:45	WG1456248
(T) Barium	127			62.0-143		04/10/2020 10:45	WG1456248
(T) Yttrium	105			79.0-136		04/10/2020 10:45	WG1456248

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Gl

7

Al

8

Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	pCi/l		pCi/l	pCi/l		date / time	
Combined Radium	5.93		0.952		1	04/10/2020 10:45	WG1453160

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	pCi/l		pCi/l	pCi/l		date / time	
RADIUM-226	1.33		0.327		1	04/06/2020 16:46	WG1453160
(T) Barium-133	94.0			30.0-143		04/06/2020 16:46	WG1453160



Radiochemistry by Method 904

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	pCi/l		pCi/l	pCi/l		date / time	
RADIUM-228	2.77		0.478		1	04/10/2020 10:45	WG1456248
(T) Barium	112			62.0-143		04/10/2020 10:45	WG1456248
(T) Yttrium	107			79.0-136		04/10/2020 10:45	WG1456248

¹Cp

²Tc

³Ss

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	pCi/l		pCi/l	pCi/l		date / time	
Combined Radium	3.08		0.671		1	04/10/2020 10:45	WG1453160

⁴Cn

⁵Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	pCi/l		pCi/l	pCi/l		date / time	
RADIUM-226	0.314		0.193		1	04/06/2020 16:46	WG1453160
(T) Barium-133	98.6			30.0-143		04/06/2020 16:46	WG1453160

⁶Gl

⁷Al

⁸Sc

Radiochemistry by Method 904

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	pCi/l		pCi/l	pCi/l		date / time	
RADIUM-228	2.92		0.526		1	04/10/2020 10:45	WG1456248
(T) Barium	112			62.0-143		04/10/2020 10:45	WG1456248
(T) Yttrium	103			79.0-136		04/10/2020 10:45	WG1456248

1Cp

2Tc

3Ss

4Cn

5Sr

6Gl

7Al

8Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	pCi/l		pCi/l	pCi/l		date / time	
Combined Radium	3.52		0.684		1	04/10/2020 10:45	WG1453160

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	pCi/l		pCi/l	pCi/l		date / time	
RADIUM-226	0.609		0.158		1	04/06/2020 16:46	WG1453160
(T) Barium-133	95.5			30.0-143		04/06/2020 16:46	WG1453160

Radiochemistry by Method 904

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
RADIUM-228	1.63		0.525		1	04/10/2020 10:45	WG1456248
(T) Barium	145	C1		62.0-143		04/10/2020 10:45	WG1456248
(T) Yttrium	105			79.0-136		04/10/2020 10:45	WG1456248

1Cp

2Tc

3Ss

4Cn

5Sr

6Gl

7Al

8Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Combined Radium	2.05		0.76		1	04/10/2020 10:45	WG1453160

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
RADIUM-226	0.427		0.235		1	04/06/2020 16:46	WG1453160
(T) Barium-133	96.8			30.0-143		04/06/2020 16:46	WG1453160



Radiochemistry by Method 904

Analyte	Result pCi/l	<u>Qualifier</u>	MDL pCi/l	RDL pCi/l	Dilution	Analysis date / time	Batch
RADIUM-228	2.71		0.426		1	04/10/2020 10:45	WG1456248
(T) Barium	122			62.0-143		04/10/2020 10:45	WG1456248
(T) Yttrium	113			79.0-136		04/10/2020 10:45	WG1456248

¹ Cp² Tc³ Ss

Radiochemistry by Method Calculation

Analyte	Result pCi/l	<u>Qualifier</u>	MDL pCi/l	RDL pCi/l	Dilution	Analysis date / time	Batch
Combined Radium	3.33		0.809		1	04/10/2020 10:45	WG1453160

⁴ Cn⁵ Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	<u>Qualifier</u>	MDL pCi/l	RDL pCi/l	Dilution	Analysis date / time	Batch
RADIUM-226	0.622		0.383		1	04/06/2020 16:46	WG1453160
(T) Barium-133	93.1			30.0-143		04/06/2020 16:46	WG1453160

⁶ Gl⁷ Al⁸ Sc



Radiochemistry by Method 904

Analyte	Result pCi/l	<u>Qualifier</u>	MDL pCi/l	RDL pCi/l	Dilution	Analysis date / time	Batch
RADIUM-228	0.184		0.728		1	04/13/2020 09:25	WG1456248
(T) Barium	122			62.0-143		04/13/2020 09:25	WG1456248
(T) Yttrium	114			79.0-136		04/13/2020 09:25	WG1456248

¹ Cp² Tc³ Ss

Radiochemistry by Method Calculation

Analyte	Result pCi/l	<u>Qualifier</u>	MDL pCi/l	RDL pCi/l	Dilution	Analysis date / time	Batch
Combined Radium	0.388		0.997		1	04/13/2020 09:25	WG1453160

⁴ Cn⁵ Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	<u>Qualifier</u>	MDL pCi/l	RDL pCi/l	Dilution	Analysis date / time	Batch
RADIUM-226	0.204		0.269		1	04/06/2020 16:46	WG1453160
(T) Barium-133	95.1			30.0-143		04/06/2020 16:46	WG1453160

⁶ Gl⁷ Al⁸ Sc

Radiochemistry by Method 904

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	pCi/l		pCi/l	pCi/l		date / time	
RADIUM-228	0.967		0.886		1	04/13/2020 09:25	WG1456248
(T) Barium	121			62.0-143		04/13/2020 09:25	WG1456248
(T) Yttrium	107			79.0-136		04/13/2020 09:25	WG1456248

1Cp

2Tc

3Ss

4Cn

5Sr

6Gl

7Al

8Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	pCi/l		pCi/l	pCi/l		date / time	
Combined Radium	1.14		1.17		1	04/13/2020 09:25	WG1453160

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	pCi/l		pCi/l	pCi/l		date / time	
RADIUM-226	0.172		0.284		1	04/06/2020 16:46	WG1453160
(T) Barium-133	90.0			30.0-143		04/06/2020 16:46	WG1453160



Radiochemistry by Method 904

Analyte	Result pCi/l	<u>Qualifier</u>	MDL pCi/l	RDL pCi/l	Dilution	Analysis date / time	Batch
RADIUM-228	10.7		0.893		1	04/13/2020 09:25	WG1456248
(T) Barium	129			62.0-143		04/13/2020 09:25	WG1456248
(T) Yttrium	104			79.0-136		04/13/2020 09:25	WG1456248

¹ Cp² Tc³ Ss

Radiochemistry by Method Calculation

Analyte	Result pCi/l	<u>Qualifier</u>	MDL pCi/l	RDL pCi/l	Dilution	Analysis date / time	Batch
Combined Radium	12.4		1.17		1	04/13/2020 09:25	WG1453160

⁴ Cn⁵ Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	<u>Qualifier</u>	MDL pCi/l	RDL pCi/l	Dilution	Analysis date / time	Batch
RADIUM-226	1.62		0.276		1	04/06/2020 16:46	WG1453160
(T) Barium-133	95.0			30.0-143		04/06/2020 16:46	WG1453160

⁶ Gl⁷ Al⁸ Sc



Radiochemistry by Method 904

Analyte	Result pCi/l	<u>Qualifier</u>	MDL pCi/l	RDL pCi/l	Dilution	Analysis date / time	Batch
RADIUM-228	-0.496		0.974		1	04/13/2020 09:25	WG1456248
(T) Barium	123			62.0-143		04/13/2020 09:25	WG1456248
(T) Yttrium	111			79.0-136		04/13/2020 09:25	WG1456248

¹ Cp² Tc³ Ss

Radiochemistry by Method Calculation

Analyte	Result pCi/l	<u>Qualifier</u>	MDL pCi/l	RDL pCi/l	Dilution	Analysis date / time	Batch
Combined Radium	0.000		1.69		1	04/13/2020 09:25	WG1453160

⁴ Cn⁵ Sr

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	<u>Qualifier</u>	MDL pCi/l	RDL pCi/l	Dilution	Analysis date / time	Batch
RADIUM-226	-0.0822		0.717		1	04/06/2020 16:46	WG1453160
(T) Barium-133	87.6			30.0-143		04/06/2020 16:46	WG1453160

⁶ Gl⁷ Al⁸ Sc



Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
SDG	Sample Delivery Group.
(T)	Tracer - A radioisotope of known concentration added to a solution of chemically equivalent radioisotopes at a known concentration to assist in monitoring the yield of the chemical separation.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
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.
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

C1	Tracer recovery limits have been exceeded; values are outside upper control limits.
----	---

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Gl

⁷ A

⁸ Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

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

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

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

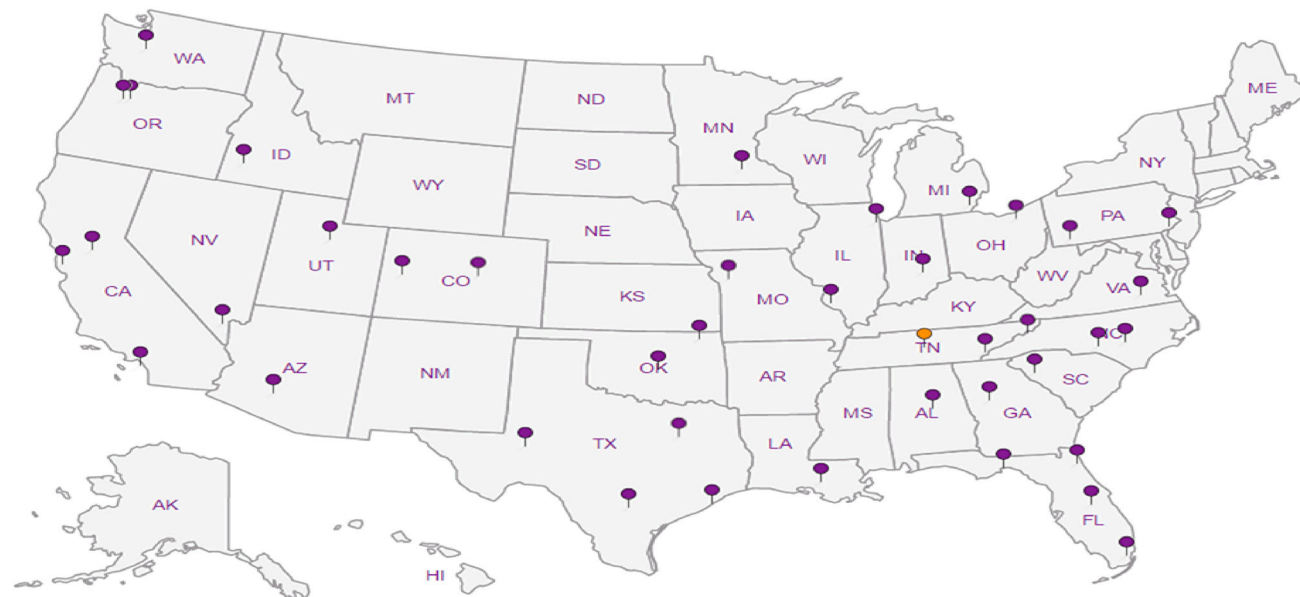
Third Party Federal Accreditations

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

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

Our Locations

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



Billing Information:

Accounts Payable
25809 1-30
Bryant, AR 72022

Terracon - Little Rock, AR

25809 1-30
Bryant, AR 72022

Email To:
David.Jaros@terracon.com; House@trccompanies.

Please Circle:
PT MT CT ET

Report to:

David Jaros

City/State

Collected:

Project
Description: Entergy - White Bluff Landfill

Lab Project #
GENENLAR-ENTERGYWB

Phone: 501-847-9292

Fax:

Collected by (print):

Collected by (signature):
[Signature]

Packed on Ice N ☒ Y ☒

Site/Facility ID #

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
Date Time

Comp/Grab Matrix * Depth

Sample ID

Sample ID

Sample ID

Sample ID

Sample ID

Sample ID

Sample ID

Sample ID

Sample ID

Sample ID

Sample ID

Sample ID

Sample ID

Sample ID

Sample ID

Sample ID

Sample ID

Sample ID

Sample ID

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

Relinquished by: (Signature)

Relinquished by: (Signature)

Relinquished by: (Signature)

Relinquished by: (Signature)

Relinquished by: (Signature)

Samples returned via:
UPS FedEx Courier

Date: 3.23.20

Date: 1330

Date: 1330

Date: 1330

Date: 1330

Date: 1330

Tracking #

Received by: (Signature)

Received by: (Signature)

Received by: (Signature)

Received by: (Signature)

Received by: (Signature)

Received by: (Signature)

Received by: (Signature)

Received by: (Signature)

Trip Blank Received: Yes (No)
HCL / MeOH

Bottles Received: 44

Temp: 9.0 ± 0.9

Date: 3/24/20

Time: 8:30

Time: 8:30

Time: 8:30

Time: 8:30

Sample Receipt Checklist

COC Seal Present/Intact: ☒ NP

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 mS/hr: ☒ Y ☒ N

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

Hold: Condition: NCF / OK

Hold: Condition: NCF / OK

Pace Analytical
National Center for Testing & Innovation

12065 Lebanon Rd
Memphis, TN 37122
Phone: 615-558-5858
Phone: 800-767-5859
Fax: 615-758-5859

SDG # 1202150

Table #

Actnum: GENENLAR

Template: T164785

Prelogin: P763763

PM-434 - Mark W. Beasley

PB:

Shipped Via:

Remarks

Sample # (lab only)

Remarks

Remarks

Remarks

Remarks

Remarks

Remarks

Remarks

Remarks

Remarks

Remarks

Remarks

Remarks

Remarks

Remarks

Remarks

Remarks

Log in #:	11202148/11202150	Client: GENENLAR	Date: 03/24	Evaluated by: Kelsey S
-----------	-------------------	------------------	-------------	------------------------

Non-Conformance (check applicable items)

Sample Integrity	Chain of Custody Clarification	
Parameter(s) past holding time	Log in Clarification Needed	If Broken Container:
Temperature not in range	Chain of custody is incomplete	Insufficient packing material around container
Improper container type	Please specify Metals requested.	Insufficient packing material inside cooler
pH not in range.	Please specify TCLP requested.	Improper handling by carrier (FedEx / UPS / Courier
Insufficient sample volume.	Received additional samples not listed on coc.	Sample was frozen
Sample is biphasic.	Sample ids on containers do not match ids on coc	Container lid not intact
Vials received with headspace.	Trip Blank not received.	If no Chain of Custody:
Broken container	Client did not "X" analysis.	Received by:
Broken container:	Chain of Custody is missing	Date/Time:
Sufficient sample remains		Temp./Cont. Rec./pH:
		Carrier:
		Tracking#

Login Comments: Times on COC do not match time on container for RP-5 COC-1457 Container-1550 and RP-9 COC-1402 Container-1358.

Client informed by:	Call	Email	Voice Mail	Date: 3/24/20	Time: 1605
TSR Initials: MB	Client Contact:				

Login Instructions:

Log per COC

June 22, 2020

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Terracon - Little Rock, AR

Sample Delivery Group: L1228143
Samples Received: 06/11/2020
Project Number: 35207046
Description: Entergy - White Bluff Landfill
Site: WHITE BLUFF
Report To: David Jaros
25809 I-30
Bryant, AR 72022

Entire Report Reviewed By:



Mark W. Beasley
Project Manager

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



Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	6	
Sr: Sample Results	7	³ Ss
RP-1 L1228143-01	7	
RP-2 L1228143-02	8	⁴ Cn
RP-3 L1228143-03	9	⁵ Sr
RP-4 L1228143-04	10	
RP-5 L1228143-05	11	⁶ Qc
RP-6 L1228143-06	12	
RP-7 L1228143-07	13	⁷ Gl
RP-8 L1228143-08	14	⁸ Al
RP-9 L1228143-09	15	
RP-10 L1228143-10	16	⁹ Sc
Qc: Quality Control Summary	17	
Gravimetric Analysis by Method 2540 C-2011	17	
Wet Chemistry by Method 9040C	18	
Wet Chemistry by Method 9056A	19	
Mercury by Method 7470A	21	
Metals (ICP) by Method 6010B	22	
Metals (ICPMS) by Method 6020	23	
Gl: Glossary of Terms	27	
Al: Accreditations & Locations	28	
Sc: Sample Chain of Custody	29	

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



RP-1 L1228143-01 GW

Collected by
Matt Acree

Collected date/time
06/10/20 13:30

Received date/time
06/11/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1492396	1	06/14/20 12:29	06/14/20 20:32	TH	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1495591	1	06/20/20 18:00	06/20/20 18:00	KEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1494058	1	06/17/20 23:47	06/17/20 23:47	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1494058	100	06/17/20 23:58	06/17/20 23:58	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1491239	1	06/12/20 09:06	06/12/20 19:40	SD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1491228	1	06/17/20 23:04	06/18/20 08:38	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1491233	1	06/17/20 18:35	06/17/20 22:16	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1491233	1	06/17/20 18:35	06/18/20 14:10	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1491233	5	06/17/20 18:35	06/18/20 15:10	JPD	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

RP-2 L1228143-02 GW

Collected by
Matt Acree

Collected date/time
06/10/20 13:50

Received date/time
06/11/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1492396	1	06/14/20 12:29	06/14/20 20:32	TH	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1495591	1	06/20/20 18:00	06/20/20 18:00	KEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1494058	1	06/18/20 00:30	06/18/20 00:30	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1491239	1	06/12/20 09:06	06/12/20 19:42	SD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1491228	1	06/17/20 23:04	06/18/20 08:46	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1491233	1	06/17/20 18:35	06/17/20 23:56	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1491233	1	06/17/20 18:35	06/18/20 14:24	JPD	Mt. Juliet, TN

RP-3 L1228143-03 GW

Collected by
Matt Acree

Collected date/time
06/10/20 10:30

Received date/time
06/11/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1492396	1	06/14/20 12:29	06/14/20 20:32	TH	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1495591	1	06/20/20 18:00	06/20/20 18:00	KEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1494058	1	06/18/20 01:14	06/18/20 01:14	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1494058	50	06/18/20 01:25	06/18/20 01:25	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1491239	1	06/12/20 09:06	06/12/20 19:44	SD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1491228	1	06/17/20 23:04	06/18/20 08:49	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1491233	1	06/17/20 18:35	06/17/20 23:59	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1491233	1	06/17/20 18:35	06/18/20 14:27	JPD	Mt. Juliet, TN

RP-4 L1228143-04 GW

Collected by
Matt Acree

Collected date/time
06/10/20 10:45

Received date/time
06/11/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1492396	1	06/14/20 12:29	06/14/20 20:32	TH	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1495591	1	06/20/20 18:00	06/20/20 18:00	KEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1494058	1	06/18/20 01:35	06/18/20 01:35	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1494058	10	06/18/20 01:46	06/18/20 01:46	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1491239	1	06/12/20 09:06	06/12/20 19:46	SD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1491228	1	06/17/20 23:04	06/18/20 08:52	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1491233	1	06/17/20 18:35	06/18/20 00:03	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1491233	1	06/17/20 18:35	06/18/20 14:31	JPD	Mt. Juliet, TN

ACCOUNT:

Terracon - Little Rock, AR

PROJECT:

35207046

SDG:

L1228143

DATE/TIME:

06/22/20 14:26

PAGE:

3 of 29

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



RP-5 L1228143-05 GW

Collected by
Matt Acree

Collected date/time
06/10/20 11:25

Received date/time
06/11/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1492396	1	06/14/20 12:29	06/14/20 20:32	TH	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1495591	1	06/20/20 18:00	06/20/20 18:00	KEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1494058	1	06/18/20 01:57	06/18/20 01:57	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1494058	5	06/18/20 02:08	06/18/20 02:08	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1491239	1	06/12/20 09:06	06/12/20 19:48	SD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1491228	1	06/17/20 23:04	06/18/20 08:54	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1491233	1	06/17/20 18:35	06/18/20 00:07	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1491233	1	06/17/20 18:35	06/18/20 14:34	JPD	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

RP-6 L1228143-06 GW

Collected by
Matt Acree

Collected date/time
06/10/20 11:40

Received date/time
06/11/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1492396	1	06/14/20 12:29	06/14/20 20:32	TH	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1495591	1	06/20/20 18:00	06/20/20 18:00	KEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1494058	1	06/18/20 02:41	06/18/20 02:41	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1494058	50	06/18/20 02:52	06/18/20 02:52	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1491239	1	06/12/20 09:06	06/12/20 19:50	SD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1491228	1	06/17/20 23:04	06/18/20 08:57	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1491237	1	06/17/20 21:39	06/18/20 01:27	LAT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1491237	1	06/17/20 21:39	06/18/20 13:01	LAT	Mt. Juliet, TN

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

RP-7 L1228143-07 GW

Collected by
Matt Acree

Collected date/time
06/10/20 12:00

Received date/time
06/11/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1492396	1	06/14/20 12:29	06/14/20 20:32	TH	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1495591	1	06/20/20 18:00	06/20/20 18:00	KEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1494058	1	06/18/20 03:02	06/18/20 03:02	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1494058	5	06/18/20 03:13	06/18/20 03:13	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1491239	1	06/12/20 09:06	06/12/20 19:52	SD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1491228	1	06/17/20 23:04	06/18/20 09:00	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1491237	1	06/17/20 21:39	06/18/20 01:14	LAT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1491237	1	06/17/20 21:39	06/18/20 12:47	LAT	Mt. Juliet, TN

RP-8 L1228143-08 GW

Collected by
Matt Acree

Collected date/time
06/10/20 12:20

Received date/time
06/11/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1492396	1	06/14/20 12:29	06/14/20 20:32	TH	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1495591	1	06/20/20 18:00	06/20/20 18:00	KEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1494058	1	06/18/20 03:24	06/18/20 03:24	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1494058	5	06/18/20 03:35	06/18/20 03:35	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1491239	1	06/12/20 09:06	06/12/20 20:00	SD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1491228	1	06/17/20 23:04	06/18/20 09:03	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1491237	1	06/17/20 21:39	06/18/20 01:31	LAT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1491237	1	06/17/20 21:39	06/18/20 13:05	LAT	Mt. Juliet, TN

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



RP-9 L1228143-09 GW

Collected by
Matt Acree

Collected date/time
06/10/20 11:10

Received date/time
06/11/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1492396	1	06/14/20 12:29	06/14/20 20:32	TH	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1495591	1	06/20/20 18:00	06/20/20 18:00	KEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1494058	1	06/18/20 03:46	06/18/20 03:46	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1491239	1	06/12/20 09:06	06/12/20 20:02	SD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1491228	1	06/17/20 23:04	06/18/20 09:05	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1491237	1	06/17/20 21:39	06/18/20 01:34	LAT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1491237	1	06/17/20 21:39	06/18/20 13:09	LAT	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

RP-10 L1228143-10 GW

Collected by
Matt Acree

Collected date/time
06/10/20 10:00

Received date/time
06/11/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1492396	1	06/14/20 12:29	06/14/20 20:32	TH	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1495591	1	06/20/20 18:00	06/20/20 18:00	KEG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1494058	1	06/18/20 04:18	06/18/20 04:18	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1491239	1	06/12/20 09:06	06/12/20 20:04	SD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1491228	1	06/17/20 23:04	06/18/20 09:08	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1491237	1	06/17/20 21:39	06/18/20 01:37	LAT	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1491237	1	06/17/20 21:39	06/18/20 13:12	LAT	Mt. Juliet, TN

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



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

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	4290000		28200	100000	1	06/14/2020 20:32	WG1492396

1
Cp2
Tc3
Ss4
Cn5
Sr6
Qc7
Gl8
Al9
Sc

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	3.72	T8	1	06/20/2020 18:00	WG1495591

Sample Narrative:

L1228143-01 WG1495591: 3.72 at 22.3C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	706000		37900	100000	100	06/17/2020 23:58	WG1494058
Fluoride	1500		64.0	150	1	06/17/2020 23:47	WG1494058
Sulfate	3420000		59400	500000	100	06/17/2020 23:58	WG1494058

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	2.61		0.100	0.200	1	06/12/2020 19:40	WG1491239

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	33.4	J	25.4	200	1	06/18/2020 08:38	WG1491228

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Antimony	U		1.32	4.00	1	06/18/2020 14:10	WG1491233
Arsenic	12.9		3.68	10.0	5	06/18/2020 15:10	WG1491233
Barium	10.9	J	7.78	20.0	1	06/18/2020 14:10	WG1491233
Beryllium	25.7		0.454	2.00	1	06/18/2020 14:10	WG1491233
Cadmium	1.07		0.478	1.00	1	06/18/2020 14:10	WG1491233
Calcium	394000		480	1000	1	06/18/2020 14:10	WG1491233
Chromium	U		7.45	10.0	5	06/18/2020 15:10	WG1491233
Cobalt	197	J5	2.38	10.0	5	06/18/2020 15:10	WG1491233
Lead	U		2.49	5.00	1	06/17/2020 22:16	WG1491233
Molybdenum	U		0.953	5.00	1	06/18/2020 14:10	WG1491233
Selenium	11.6		0.657	2.00	1	06/18/2020 14:10	WG1491233
Thallium	U		0.460	2.00	1	06/18/2020 14:10	WG1491233
Lithium	404		0.936	2.00	1	06/17/2020 22:16	WG1491233



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	274000		2820	10000	1	06/14/2020 20:32	WG1492396

Wet Chemistry by Method 9040C

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	6.11	T8	1	06/20/2020 18:00	WG1495591

Sample Narrative:

L1228143-02 WG1495591: 6.11 at 22.2C

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	17800		379	1000	1	06/18/2020 00:30	WG1494058
Fluoride	95.3	J	64.0	150	1	06/18/2020 00:30	WG1494058
Sulfate	99200		594	5000	1	06/18/2020 00:30	WG1494058

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.100	0.200	1	06/12/2020 19:42	WG1491239

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	49.0	J	25.4	200	1	06/18/2020 08:46	WG1491228

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		1.32	4.00	1	06/18/2020 14:24	WG1491233
Arsenic	0.753	J	0.735	2.00	1	06/18/2020 14:24	WG1491233
Barium	41.7		7.78	20.0	1	06/18/2020 14:24	WG1491233
Beryllium	0.962	J	0.454	2.00	1	06/18/2020 14:24	WG1491233
Cadmium	U		0.478	1.00	1	06/18/2020 14:24	WG1491233
Calcium	12700		480	1000	1	06/18/2020 14:24	WG1491233
Chromium	1.96	J	1.49	2.00	1	06/18/2020 14:24	WG1491233
Cobalt	10.3		0.477	2.00	1	06/18/2020 14:24	WG1491233
Lead	U		2.49	5.00	1	06/17/2020 23:56	WG1491233
Molybdenum	U		0.953	5.00	1	06/18/2020 14:24	WG1491233
Selenium	U		0.657	2.00	1	06/18/2020 14:24	WG1491233
Thallium	U		0.460	2.00	1	06/18/2020 14:24	WG1491233
Lithium	143		0.936	2.00	1	06/17/2020 23:56	WG1491233

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	1750000		7050	25000	1	06/14/2020 20:32	WG1492396

Wet Chemistry by Method 9040C

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	3.48	<u>T8</u>	1	06/20/2020 18:00	WG1495591

Sample Narrative:

L1228143-03 WG1495591: 3.48 at 21.9C

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	159000		19000	50000	50	06/18/2020 01:25	WG1494058
Fluoride	658		64.0	150	1	06/18/2020 01:14	WG1494058
Sulfate	1140000		29700	250000	50	06/18/2020 01:25	WG1494058

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.100	0.200	1	06/12/2020 19:44	WG1491239

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	105	<u>J</u>	25.4	200	1	06/18/2020 08:49	WG1491228

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		1.32	4.00	1	06/18/2020 14:27	WG1491233
Arsenic	4.27		0.735	2.00	1	06/18/2020 14:27	WG1491233
Barium	18.2	<u>J</u>	7.78	20.0	1	06/18/2020 14:27	WG1491233
Beryllium	13.9		0.454	2.00	1	06/18/2020 14:27	WG1491233
Cadmium	1.10		0.478	1.00	1	06/18/2020 14:27	WG1491233
Calcium	188000		480	1000	1	06/18/2020 14:27	WG1491233
Chromium	1.83	<u>J</u>	1.49	2.00	1	06/18/2020 14:27	WG1491233
Cobalt	66.6		0.477	2.00	1	06/18/2020 14:27	WG1491233
Lead	3.26	<u>J</u>	2.49	5.00	1	06/17/2020 23:59	WG1491233
Molybdenum	U		0.953	5.00	1	06/18/2020 14:27	WG1491233
Selenium	3.28		0.657	2.00	1	06/18/2020 14:27	WG1491233
Thallium	U		0.460	2.00	1	06/18/2020 14:27	WG1491233
Lithium	332		0.936	2.00	1	06/17/2020 23:59	WG1491233

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	675000		2820	10000	1	06/14/2020 20:32	WG1492396

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	3.43	T8	1	06/20/2020 18:00	WG1495591

Sample Narrative:

L1228143-04 WG1495591: 3.43 at 21.8C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	96400		379	1000	1	06/18/2020 01:35	WG1494058
Fluoride	174		64.0	150	1	06/18/2020 01:35	WG1494058
Sulfate	312000		5940	50000	10	06/18/2020 01:46	WG1494058

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.100	0.200	1	06/12/2020 19:46	WG1491239

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	32.3	J	25.4	200	1	06/18/2020 08:52	WG1491228

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Antimony	2.26	J	1.32	4.00	1	06/18/2020 14:31	WG1491233
Arsenic	16.4		0.735	2.00	1	06/18/2020 14:31	WG1491233
Barium	88.9		7.78	20.0	1	06/18/2020 14:31	WG1491233
Beryllium	1.57	J	0.454	2.00	1	06/18/2020 14:31	WG1491233
Cadmium	U		0.478	1.00	1	06/18/2020 14:31	WG1491233
Calcium	36900		480	1000	1	06/18/2020 14:31	WG1491233
Chromium	2.01		1.49	2.00	1	06/18/2020 14:31	WG1491233
Cobalt	44.7		0.477	2.00	1	06/18/2020 14:31	WG1491233
Lead	3.36	J	2.49	5.00	1	06/18/2020 00:03	WG1491233
Molybdenum	4.34	J	0.953	5.00	1	06/18/2020 14:31	WG1491233
Selenium	19.9		0.657	2.00	1	06/18/2020 14:31	WG1491233
Thallium	U		0.460	2.00	1	06/18/2020 14:31	WG1491233
Lithium	39.8		0.936	2.00	1	06/18/2020 00:03	WG1491233

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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	540000		2820	10000	1	06/14/2020 20:32	WG1492396

Wet Chemistry by Method 9040C

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	3.87	<u>T8</u>	1	06/20/2020 18:00	WG1495591

Sample Narrative:

L1228143-05 WG1495591: 3.87 at 21.9C

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	49300		379	1000	1	06/18/2020 01:57	WG1494058
Fluoride	340		64.0	150	1	06/18/2020 01:57	WG1494058
Sulfate	292000		2970	25000	5	06/18/2020 02:08	WG1494058

Mercury by Method 7470A

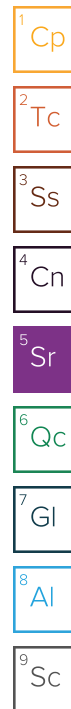
Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.100	0.200	1	06/12/2020 19:48	WG1491239

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	81.2	<u>J</u>	25.4	200	1	06/18/2020 08:54	WG1491228

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		1.32	4.00	1	06/18/2020 14:34	WG1491233
Arsenic	1.22	<u>J</u>	0.735	2.00	1	06/18/2020 14:34	WG1491233
Barium	27.2		7.78	20.0	1	06/18/2020 14:34	WG1491233
Beryllium	5.28		0.454	2.00	1	06/18/2020 14:34	WG1491233
Cadmium	1.15		0.478	1.00	1	06/18/2020 14:34	WG1491233
Calcium	49700		480	1000	1	06/18/2020 14:34	WG1491233
Chromium	3.72		1.49	2.00	1	06/18/2020 14:34	WG1491233
Cobalt	50.4		0.477	2.00	1	06/18/2020 14:34	WG1491233
Lead	2.73	<u>J</u>	2.49	5.00	1	06/18/2020 00:07	WG1491233
Molybdenum	U		0.953	5.00	1	06/18/2020 14:34	WG1491233
Selenium	U		0.657	2.00	1	06/18/2020 14:34	WG1491233
Thallium	U		0.460	2.00	1	06/18/2020 14:34	WG1491233
Lithium	147		0.936	2.00	1	06/18/2020 00:07	WG1491233





Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	1700000		7050	25000	1	06/14/2020 20:32	WG1492396

Wet Chemistry by Method 9040C

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.12	<u>T8</u>	1	06/20/2020 18:00	WG1495591

Sample Narrative:

L1228143-06 WG1495591: 7.12 at 22.3C

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	28600		379	1000	1	06/18/2020 02:41	WG1494058
Fluoride	418		64.0	150	1	06/18/2020 02:41	WG1494058
Sulfate	1110000		29700	250000	50	06/18/2020 02:52	WG1494058

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.100	0.200	1	06/12/2020 19:50	WG1491239

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	553		25.4	200	1	06/18/2020 08:57	WG1491228

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		1.32	4.00	1	06/18/2020 01:27	WG1491237
Arsenic	4.44		0.735	2.00	1	06/18/2020 01:27	WG1491237
Barium	83.3		7.78	20.0	1	06/18/2020 01:27	WG1491237
Beryllium	6.73		0.454	2.00	1	06/18/2020 13:01	WG1491237
Cadmium	0.886	<u>J</u>	0.478	1.00	1	06/18/2020 01:27	WG1491237
Calcium	322000		480	1000	1	06/18/2020 01:27	WG1491237
Chromium	5.92		1.49	2.00	1	06/18/2020 01:27	WG1491237
Cobalt	30.3		0.477	2.00	1	06/18/2020 01:27	WG1491237
Lead	2.50	<u>J</u>	2.49	5.00	1	06/18/2020 01:27	WG1491237
Molybdenum	6.82		0.953	5.00	1	06/18/2020 01:27	WG1491237
Selenium	1.74	<u>J</u>	0.657	2.00	1	06/18/2020 13:01	WG1491237
Thallium	U		0.460	2.00	1	06/18/2020 01:27	WG1491237
Lithium	733		0.936	2.00	1	06/18/2020 13:01	WG1491237

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	372000		2820	10000	1	06/14/2020 20:32	WG1492396

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	3.91	T8	1	06/20/2020 18:00	WG1495591

Sample Narrative:

L1228143-07 WG1495591: 3.91 at 22.4C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	5130		379	1000	1	06/18/2020 03:02	WG1494058
Fluoride	225		64.0	150	1	06/18/2020 03:02	WG1494058
Sulfate	176000		2970	25000	5	06/18/2020 03:13	WG1494058

Mercury by Method 7470A

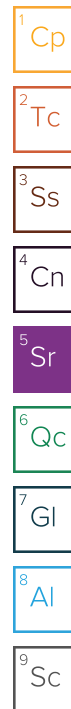
Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	U		0.100	0.200	1	06/12/2020 19:52	WG1491239

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	173	J	25.4	200	1	06/18/2020 09:00	WG1491228

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Antimony	U		1.32	4.00	1	06/18/2020 01:14	WG1491237
Arsenic	1.27	J	0.735	2.00	1	06/18/2020 01:14	WG1491237
Barium	31.9		7.78	20.0	1	06/18/2020 01:14	WG1491237
Beryllium	8.36		0.454	2.00	1	06/18/2020 12:47	WG1491237
Cadmium	0.751	J	0.478	1.00	1	06/18/2020 01:14	WG1491237
Calcium	29600		480	1000	1	06/18/2020 01:14	WG1491237
Chromium	U		1.49	2.00	1	06/18/2020 01:14	WG1491237
Cobalt	9.61		0.477	2.00	1	06/18/2020 01:14	WG1491237
Lead	3.14	J	2.49	5.00	1	06/18/2020 01:14	WG1491237
Molybdenum	U		0.953	5.00	1	06/18/2020 01:14	WG1491237
Selenium	0.809	J	0.657	2.00	1	06/18/2020 12:47	WG1491237
Thallium	U		0.460	2.00	1	06/18/2020 01:14	WG1491237
Lithium	211		0.936	2.00	1	06/18/2020 12:47	WG1491237





Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	533000		2820	10000	1	06/14/2020 20:32	WG1492396

Wet Chemistry by Method 9040C

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	6.40	<u>T8</u>	1	06/20/2020 18:00	WG1495591

Sample Narrative:

L1228143-08 WG1495591: 6.4 at 22.6C

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	36200		379	1000	1	06/18/2020 03:24	WG1494058
Fluoride	178		64.0	150	1	06/18/2020 03:24	WG1494058
Sulfate	280000		2970	25000	5	06/18/2020 03:35	WG1494058

Mercury by Method 7470A

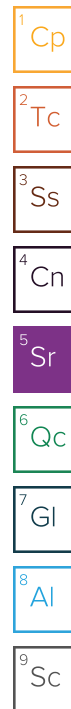
Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.100	0.200	1	06/12/2020 20:00	WG1491239

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	244		25.4	200	1	06/18/2020 09:03	WG1491228

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		1.32	4.00	1	06/18/2020 01:31	WG1491237
Arsenic	3.06		0.735	2.00	1	06/18/2020 01:31	WG1491237
Barium	111		7.78	20.0	1	06/18/2020 01:31	WG1491237
Beryllium	2.13		0.454	2.00	1	06/18/2020 13:05	WG1491237
Cadmium	0.758	<u>J</u>	0.478	1.00	1	06/18/2020 01:31	WG1491237
Calcium	68600		480	1000	1	06/18/2020 01:31	WG1491237
Chromium	1.63	<u>J</u>	1.49	2.00	1	06/18/2020 01:31	WG1491237
Cobalt	47.5		0.477	2.00	1	06/18/2020 01:31	WG1491237
Lead	U		2.49	5.00	1	06/18/2020 01:31	WG1491237
Molybdenum	4.21	<u>J</u>	0.953	5.00	1	06/18/2020 01:31	WG1491237
Selenium	U		0.657	2.00	1	06/18/2020 13:05	WG1491237
Thallium	U		0.460	2.00	1	06/18/2020 01:31	WG1491237
Lithium	219		0.936	2.00	1	06/18/2020 13:05	WG1491237





Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	219000		2820	10000	1	06/14/2020 20:32	WG1492396

Wet Chemistry by Method 9040C

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	6.66	T8	1	06/20/2020 18:00	WG1495591

Sample Narrative:

L1228143-09 WG1495591: 6.66 at 22.3C

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	18900		379	1000	1	06/18/2020 03:46	WG1494058
Fluoride	81.7	J	64.0	150	1	06/18/2020 03:46	WG1494058
Sulfate	64800		594	5000	1	06/18/2020 03:46	WG1494058

Mercury by Method 7470A

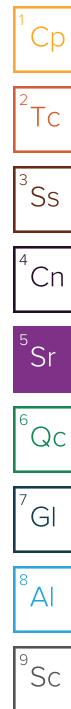
Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.100	0.200	1	06/12/2020 20:02	WG1491239

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	68.5	J	25.4	200	1	06/18/2020 09:05	WG1491228

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		1.32	4.00	1	06/18/2020 01:34	WG1491237
Arsenic	1.36	J	0.735	2.00	1	06/18/2020 01:34	WG1491237
Barium	140		7.78	20.0	1	06/18/2020 01:34	WG1491237
Beryllium	U		0.454	2.00	1	06/18/2020 13:09	WG1491237
Cadmium	0.621	J	0.478	1.00	1	06/18/2020 01:34	WG1491237
Calcium	20000		480	1000	1	06/18/2020 01:34	WG1491237
Chromium	U		1.49	2.00	1	06/18/2020 01:34	WG1491237
Cobalt	3.32		0.477	2.00	1	06/18/2020 01:34	WG1491237
Lead	U		2.49	5.00	1	06/18/2020 01:34	WG1491237
Molybdenum	12.2		0.953	5.00	1	06/18/2020 01:34	WG1491237
Selenium	U		0.657	2.00	1	06/18/2020 13:09	WG1491237
Thallium	U		0.460	2.00	1	06/18/2020 01:34	WG1491237
Lithium	29.8		0.936	2.00	1	06/18/2020 13:09	WG1491237





Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	221000		2820	10000	1	06/14/2020 20:32	WG1492396

Wet Chemistry by Method 9040C

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	3.86	T8	1	06/20/2020 18:00	WG1495591

Sample Narrative:

L1228143-10 WG1495591: 3.86 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	60400		379	1000	1	06/18/2020 04:18	WG1494058
Fluoride	175		64.0	150	1	06/18/2020 04:18	WG1494058
Sulfate	25000		594	5000	1	06/18/2020 04:18	WG1494058

Mercury by Method 7470A

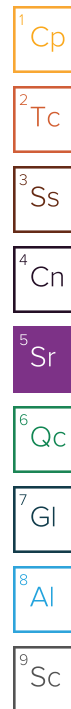
Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	U		0.100	0.200	1	06/12/2020 20:04	WG1491239

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	119	J	25.4	200	1	06/18/2020 09:08	WG1491228

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	U		1.32	4.00	1	06/18/2020 01:37	WG1491237
Arsenic	1.01	J	0.735	2.00	1	06/18/2020 01:37	WG1491237
Barium	170		7.78	20.0	1	06/18/2020 01:37	WG1491237
Beryllium	2.81		0.454	2.00	1	06/18/2020 13:12	WG1491237
Cadmium	0.741	J	0.478	1.00	1	06/18/2020 01:37	WG1491237
Calcium	3570		480	1000	1	06/18/2020 01:37	WG1491237
Chromium	U		1.49	2.00	1	06/18/2020 01:37	WG1491237
Cobalt	9.49		0.477	2.00	1	06/18/2020 01:37	WG1491237
Lead	U		2.49	5.00	1	06/18/2020 01:37	WG1491237
Molybdenum	U		0.953	5.00	1	06/18/2020 01:37	WG1491237
Selenium	U		0.657	2.00	1	06/18/2020 13:12	WG1491237
Thallium	U		0.460	2.00	1	06/18/2020 01:37	WG1491237
Lithium	20.0		0.936	2.00	1	06/18/2020 13:12	WG1491237





Method Blank (MB)

(MB) R3538960-1 06/14/20 20:32

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

L1228143-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1228143-03 06/14/20 20:32 • (DUP) R3538960-3 06/14/20 20:32

Analyte	Original Result		DUP Result		DUP RPD		<u>DUP Qualifier</u>		DUP RPD Limits	
	ug/l		ug/l		%			%	%	
Dissolved Solids	1750000		1830000	1	4.20					5

Laboratory Control Sample (LCS)

(LCS) R3538960-2 06/14/20 20:32

Analyte	Spike Amount		LCS Result		LCS Rec.		Rec. Limits		<u>LCS Qualifier</u>	
	ug/l		ug/l		%		%			
Dissolved Solids	8800000		8110000	92.2			85.0-115			

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



L1228143-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1228143-01 06/20/20 18:00 • (DUP) R3540955-2 06/20/20 18:00

Analyte	Original Result su	DUP Result su	Dilution	DUP RPD %	<u>DUP Qualifier</u>	DUP RPD Limits %
pH	3.72	3.71	1	0.269		1

Sample Narrative:

OS: 3.72 at 22.3C
DUP: 3.71 at 22.3C

L1228421-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1228421-01 06/20/20 18:00 • (DUP) R3540955-3 06/20/20 18:00

Analyte	Original Result su	DUP Result su	Dilution	DUP RPD %	<u>DUP Qualifier</u>	DUP RPD Limits %
pH	7.91	7.97	1	0.756		1

Sample Narrative:

OS: 7.91 at 22.5C
DUP: 7.97 at 22.6C

Laboratory Control Sample (LCS)

(LCS) R3540955-1 06/20/20 18:00

Analyte	Spike Amount su	LCS Result su	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
pH	10.0	9.97	99.7	99.0-101	

Sample Narrative:

LCS: 9.97 at 22.2C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3540090-1 06/17/20 20:56

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

L1228143-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1228143-02 06/18/20 00:30 • (DUP) R3540090-3 06/18/20 00:41

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	17800	17700	1	0.516		15
Fluoride	95.3	97.1	1	1.87	J	15
Sulfate	99200	98900	1	0.283		15

L1228143-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1228143-09 06/18/20 03:46 • (DUP) R3540090-6 06/18/20 03:57

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	18900	18500	1	1.81		15
Fluoride	81.7	82.7	1	1.22	J	15
Sulfate	64800	64300	1	0.771		15

Laboratory Control Sample (LCS)

(LCS) R3540090-2 06/17/20 21:06

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	39300	98.3	80.0-120	
Fluoride	8000	8030	100	80.0-120	
Sulfate	40000	39300	98.2	80.0-120	



L1228143-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1228143-02 06/18/20 00:30 • (MS) R3540090-4 06/18/20 00:52 • (MSD) R3540090-5 06/18/20 01:03

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	17800	71500	71800	107	108	1	80.0-120			0.512	15
Fluoride	5000	95.3	5230	5230	103	103	1	80.0-120			0.0306	15
Sulfate	50000	99200	149000	151000	99.6	103	1	80.0-120	E	E	1.20	15

L1228143-09 Original Sample (OS) • Matrix Spike (MS)

(OS) L1228143-09 06/18/20 03:46 • (MS) R3540090-7 06/18/20 04:08

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	18900	72100	106	1	80.0-120	
Fluoride	5000	81.7	5190	102	1	80.0-120	
Sulfate	50000	64800	114000	98.1	1	80.0-120	E

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Method Blank (MB)

(MB) R3538205-1 06/12/20 19:05

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

Laboratory Control Sample (LCS)

(LCS) R3538205-2 06/12/20 19:11

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Mercury	3.00	3.12	104	80.0-120	

L1228037-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1228037-01 06/12/20 19:13 • (MS) R3538205-3 06/12/20 19:15 • (MSD) R3538205-4 06/12/20 19:17

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Result %	MSD Result ug/l	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Mercury	3.00	U	3.18	106	3.10	103	1	75.0-125		2.41	20	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3540096-1 06/18/20 08:14

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

Laboratory Control Sample (LCS)

(LCS) R3540096-2 06/18/20 08:17

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

L1228157-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1228157-05 06/18/20 08:19 • (MS) R3540096-4 06/18/20 08:24 • (MSD) R3540096-5 06/18/20 08:27

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD	RPD Limits
	ug/l		ug/l	ug/l	%	%		%			%	%
Boron	1000	1160		1150	101	99.3	1	75.0-125			1.34	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3539936-1 06/17/20 22:08

Analyte	MB Result ug/l	<u>MB Qualifier</u>	MB MDL ug/l	MB RDL ug/l
Lead	U		2.49	5.00
Lithium	U		0.936	2.00

Method Blank (MB)

(MB) R3540236-1 06/18/20 14:03

Analyte	MB Result ug/l	<u>MB Qualifier</u>	MB MDL ug/l	MB RDL ug/l
Antimony	U		1.32	4.00
Arsenic	U		0.735	2.00
Barium	U		7.78	20.0
Beryllium	U		0.454	2.00
Cadmium	U		0.478	1.00
Calcium	U		480	1000
Chromium	U		1.49	2.00
Cobalt	U		0.477	2.00
Molybdenum	U		0.953	5.00
Selenium	U		0.657	2.00
Thallium	U		0.460	2.00

Laboratory Control Sample (LCS)

(LCS) R3539936-2 06/17/20 22:12

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Lead	50.0	50.9	102	80.0-120	
Lithium	50.0	46.5	92.9	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R3540236-2 06/18/20 14:07

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Antimony	50.0	52.7	105	80.0-120	
Arsenic	50.0	49.8	99.5	80.0-120	
Barium	50.0	51.7	103	80.0-120	
Beryllium	50.0	52.8	106	80.0-120	
Cadmium	50.0	50.6	101	80.0-120	
Calcium	5000	5150	103	80.0-120	



Laboratory Control Sample (LCS)

(LCS) R3540236-2 06/18/20 14:07

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chromium	50.0	52.5	105	80.0-120	
Cobalt	50.0	52.2	104	80.0-120	
Molybdenum	50.0	48.9	97.7	80.0-120	
Selenium	50.0	55.2	110	80.0-120	
Thallium	50.0	48.9	97.7	80.0-120	

L1228143-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1228143-01 06/17/20 22:16 • (MS) R3539936-4 06/17/20 22:23 • (MSD) R3539936-5 06/17/20 22:27

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 %
Lead	50.0	U	50.6	52.4	101	105	1	75.0-125			3.47	20
Lithium	50.0	404	443	447	77.3	86.2	1	75.0-125			0.995	20

L1228143-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1228143-01 06/18/20 14:10 • (MS) R3540236-4 06/18/20 14:17 • (MSD) R3540236-5 06/18/20 14:20

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Antimony	50.0	U	56.0	52.1	112	104	1	75.0-125			7.24	20
Barium	50.0	10.9	64.3	66.4	107	111	1	75.0-125			3.29	20
Beryllium	50.0	25.7	74.1	72.2	96.9	93.0	1	75.0-125			2.66	20
Cadmium	50.0	1.07	54.6	54.0	107	106	1	75.0-125			1.07	20
Calcium	5000	394000	394000	395000	10.7	17.2	1	75.0-125	V	V	0.0821	20
Molybdenum	50.0	U	53.6	50.4	107	101	1	75.0-125			6.26	20
Selenium	50.0	11.6	69.8	65.9	116	108	1	75.0-125			5.82	20
Thallium	50.0	U	48.7	50.7	97.5	101	1	75.0-125			4.02	20

L1228143-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1228143-01 06/18/20 15:10 • (MS) R3540236-6 06/18/20 15:14 • (MSD) R3540236-7 06/18/20 15:17

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	12.9	57.9	59.9	89.9	93.9	5	75.0-125			3.42	20
Chromium	10.0	U	47.4	45.9	94.8	91.8	5	75.0-125			3.25	20
Cobalt	10.0	197	257	266	120	138	5	75.0-125		J5	3.47	20



Method Blank (MB)

(MB) R3539934-1 06/18/20 01:08

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Antimony	U		1.32	4.00
Arsenic	U		0.735	2.00
Barium	U		7.78	20.0
Cadmium	U		0.478	1.00
Calcium	U		480	1000
Chromium	U		1.49	2.00
Cobalt	U		0.477	2.00
Lead	U		2.49	5.00
Molybdenum	U		0.953	5.00
Thallium	U		0.460	2.00

Method Blank (MB)

(MB) R3540139-1 06/18/20 12:39

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Beryllium	U		0.454	2.00
Selenium	U		0.657	2.00
Lithium	U		0.936	2.00

Laboratory Control Sample (LCS)

(LCS) R3539934-2 06/18/20 01:11

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Antimony	50.0	48.2	96.4	80.0-120	
Arsenic	50.0	50.0	100	80.0-120	
Barium	50.0	49.6	99.3	80.0-120	
Cadmium	50.0	53.7	107	80.0-120	
Calcium	5000	5200	104	80.0-120	
Chromium	50.0	51.8	104	80.0-120	
Cobalt	50.0	51.4	103	80.0-120	
Lead	50.0	53.8	108	80.0-120	
Molybdenum	50.0	51.1	102	80.0-120	
Thallium	50.0	53.2	106	80.0-120	



Laboratory Control Sample (LCS)

(LCS) R3540139-2 06/18/20 12:43

Analyte	Spike Amount		LCS Result		LCS Rec.		Rec. Limits		LCS Qualifier	
	ug/l		ug/l	%	%		%			
Beryllium	50.0		49.5	98.9	98.9		80.0-120			
Selenium	50.0		57.0	114	114		80.0-120			
Lithium	50.0		48.0	96.0	96.0		80.0-120			

L1228143-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1228143-07 06/18/20 01:14 • (MS) R3539934-4 06/18/20 01:21 • (MSD) R3539934-5 06/18/20 01:24

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	%	%		%			%			%		%	%	%	%	%
Antimony	50.0		U		49.9	99.9	49.7	99.9	99.9		99.5	1	1	75.0-125						0.417		20	
Arsenic	50.0		1.27		51.5	101	50.0	101	101		97.5	1	1	75.0-125						2.99		20	
Barium	50.0		31.9		83.6	103	82.2	103	103		101	1	1	75.0-125						1.68		20	
Cadmium	50.0		0.751		56.0	110	55.6	110	110		110	1	1	75.0-125						0.799		20	
Calcium	5000		29600		34500	97.6	34100	97.6	97.6		89.2	1	1	75.0-125						1.22		20	
Chromium	50.0		U		52.6	105	51.4	105	105		103	1	1	75.0-125						2.34		20	
Cobalt	50.0		9.61		61.8	104	60.5	104	104		102	1	1	75.0-125						2.14		20	
Lead	50.0		3.14		57.7	109	56.5	109	109		107	1	1	75.0-125						2.13		20	
Molybdenum	50.0		U		52.4	105	52.4	105	105		105	1	1	75.0-125						0.0771		20	
Thallium	50.0		U		55.5	111	54.4	111	111		109	1	1	75.0-125						1.93		20	

L1228143-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1228143-07 06/18/20 12:47 • (MS) R3540139-4 06/18/20 12:54 • (MSD) R3540139-5 06/18/20 12:58

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	%	%		%			%			%		%	%	%	%	%
Beryllium	50.0		8.36		58.6	100	58.0	100	100		99.3	1	1	75.0-125						0.896		20	
Selenium	50.0		0.809		58.4	115	57.7	115	115		114	1	1	75.0-125						1.04		20	
Lithium	50.0		211		259	95.9	258	95.9	95.9		94.4	1	1	75.0-125						0.299		20	



Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier Description

E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

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

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

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

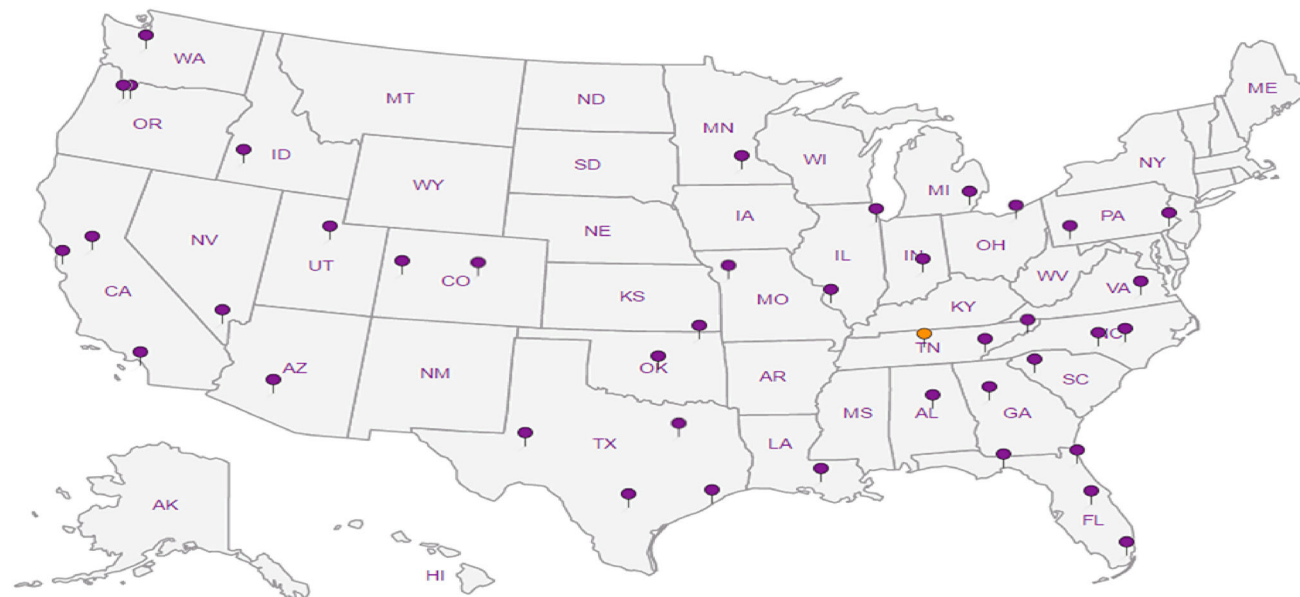
Third Party Federal Accreditations

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

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

Our Locations

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



July 10, 2020

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Terracon - Little Rock, AR

Sample Delivery Group: L1228144
Samples Received: 06/11/2020
Project Number: 35207046
Description: Entergy - White Bluff Landfill
Site: WHITE BLUFF
Report To: David Jaros
25809 I-30
Bryant, AR 72022

Entire Report Reviewed By:



Mark W. Beasley
Project Manager

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



Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	5	
Sr: Sample Results	6	³ Ss
RP-1 L1228144-01	6	
RP-2 L1228144-02	7	⁴ Cn
RP-3 L1228144-03	8	⁵ Sr
RP-4 L1228144-04	9	
RP-5 L1228144-05	10	⁶ Qc
RP-6 L1228144-06	11	
RP-7 L1228144-07	12	⁷ Gl
RP-8 L1228144-08	13	⁸ Al
RP-9 L1228144-09	14	
RP-10 L1228144-10	15	⁹ Sc
Qc: Quality Control Summary	16	
Radiochemistry by Method 904	16	
Radiochemistry by Method SM7500Ra B M	17	
Gl: Glossary of Terms	18	
Al: Accreditations & Locations	19	
Sc: Sample Chain of Custody	20	

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



RP-1 L1228144-01 Non-Potable Water

Collected by
Matt Acree

Collected date/time
06/10/20 13:30

Received date/time
06/11/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1494352	1	06/18/20 14:01	07/01/20 09:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1499573	1	07/01/20 10:31	07/02/20 18:09	RRE	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1499573	1	07/01/20 10:31	07/02/20 18:09	RRE	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

RP-2 L1228144-02 Non-Potable Water

Collected by
Matt Acree

Collected date/time
06/10/20 13:50

Received date/time
06/11/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1494352	1	06/18/20 14:01	07/01/20 09:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1499573	1	07/01/20 10:31	07/02/20 18:09	RRE	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1499573	1	07/01/20 10:31	07/02/20 18:09	RRE	Mt. Juliet, TN

RP-3 L1228144-03 Non-Potable Water

Collected by
Matt Acree

Collected date/time
06/10/20 10:30

Received date/time
06/11/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1494352	1	06/18/20 14:01	07/01/20 09:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1499573	1	07/01/20 10:31	07/02/20 18:09	RRE	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1499573	1	07/01/20 10:31	07/02/20 18:09	RRE	Mt. Juliet, TN

RP-4 L1228144-04 Non-Potable Water

Collected by
Matt Acree

Collected date/time
06/10/20 10:45

Received date/time
06/11/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1494352	1	06/18/20 14:01	07/01/20 09:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1499573	1	07/01/20 10:31	07/02/20 14:26	RRE	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1499573	1	07/01/20 10:31	07/02/20 14:26	RRE	Mt. Juliet, TN

RP-5 L1228144-05 Non-Potable Water

Collected by
Matt Acree

Collected date/time
06/10/20 11:25

Received date/time
06/11/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1494352	1	06/18/20 14:01	07/01/20 09:50	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1499573	1	07/01/20 10:31	07/02/20 14:26	RRE	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1499573	1	07/01/20 10:31	07/02/20 14:26	RRE	Mt. Juliet, TN

RP-6 L1228144-06 Non-Potable Water

Collected by
Matt Acree

Collected date/time
06/10/20 11:40

Received date/time
06/11/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1494352	1	06/18/20 14:01	07/02/20 09:45	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1499573	1	07/01/20 10:31	07/02/20 14:26	RRE	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1499573	1	07/01/20 10:31	07/02/20 14:26	RRE	Mt. Juliet, TN



RP-7 L1228144-07 Non-Potable Water

Collected by
Matt Acree

Collected date/time
06/10/20 12:00

Received date/time
06/11/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1494352	1	06/18/20 14:01	07/02/20 09:45	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1499573	1	07/01/20 10:31	07/02/20 14:26	RRE	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1499573	1	07/01/20 10:31	07/02/20 14:26	RRE	Mt. Juliet, TN

¹Cp²Tc³Ss⁴Cn⁵Sr⁶Qc⁷Gl⁸Al⁹Sc

RP-8 L1228144-08 Non-Potable Water

Collected by
Matt Acree

Collected date/time
06/10/20 12:20

Received date/time
06/11/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1494352	1	06/18/20 14:01	07/02/20 09:45	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1499573	1	07/01/20 10:31	07/02/20 14:26	RRE	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1499573	1	07/01/20 10:31	07/02/20 14:26	RRE	Mt. Juliet, TN

RP-9 L1228144-09 Non-Potable Water

Collected by
Matt Acree

Collected date/time
06/10/20 11:10

Received date/time
06/11/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1494352	1	06/18/20 14:01	07/02/20 09:45	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1499573	1	07/01/20 10:31	07/02/20 14:26	RRE	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1499573	1	07/01/20 10:31	07/02/20 14:26	RRE	Mt. Juliet, TN

RP-10 L1228144-10 Non-Potable Water

Collected by
Matt Acree

Collected date/time
06/10/20 10:00

Received date/time
06/11/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904	WG1494352	1	06/18/20 14:01	07/02/20 09:45	JMR	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG1499573	1	07/01/20 10:31	07/02/20 14:26	RRE	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG1499573	1	07/01/20 10:31	07/02/20 14:26	RRE	Mt. Juliet, TN



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Mark W. Beasley
Project Manager

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	13.8		0.912	1.26	07/01/2020 09:50	WG1494352
(T) Barium	103			62.0-143	07/01/2020 09:50	WG1494352
(T) Yttrium	83.7			79.0-136	07/01/2020 09:50	WG1494352

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	15.4		1.38	1.58	07/02/2020 18:09	WG1499573

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	1.57		0.470	0.319	07/02/2020 18:09	WG1499573
(T) Barium-133	94.3			30.0-143	07/02/2020 18:09	WG1499573

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	1.28		0.635	1.31	07/01/2020 09:50	WG1494352
(T) Barium	88.2			62.0-143	07/01/2020 09:50	WG1494352
(T) Yttrium	88.4			79.0-136	07/01/2020 09:50	WG1494352

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.50		0.869	1.62	07/02/2020 18:09	WG1499573

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.216		0.234	0.314	07/02/2020 18:09	WG1499573
(T) Barium-133	101			30.0-143	07/02/2020 18:09	WG1499573

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	4.56		1.04	1.19	07/01/2020 09:50	WG1494352
(T) Barium	98.3			62.0-143	07/01/2020 09:50	WG1494352
(T) Yttrium	78.6	C2		79.0-136	07/01/2020 09:50	WG1494352

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	5.95		1.50	1.47	07/02/2020 18:09	WG1499573

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	1.39		0.464	0.281	07/02/2020 18:09	WG1499573
(T) Barium-133	93.3			30.0-143	07/02/2020 18:09	WG1499573

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	2.07		0.925	1.2	07/01/2020 09:50	WG1494352
(T) Barium	87.9			62.0-143	07/01/2020 09:50	WG1494352
(T) Yttrium	82.5			79.0-136	07/01/2020 09:50	WG1494352

1

Cp

2

Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.86		1.24	1.4	07/02/2020 14:26	WG1499573

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.799		0.312	0.195	07/02/2020 14:26	WG1499573
(T) Barium-133	94.4			30.0-143	07/02/2020 14:26	WG1499573

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.940		0.868	1.01	07/01/2020 09:50	WG1494352
(T) Barium	99.5			62.0-143	07/01/2020 09:50	WG1494352
(T) Yttrium	82.8			79.0-136	07/01/2020 09:50	WG1494352

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.30		1.12	1.31	07/02/2020 14:26	WG1499573

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.357		0.254	0.299	07/02/2020 14:26	WG1499573
(T) Barium-133	99.3			30.0-143	07/02/2020 14:26	WG1499573

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.852		0.608	0.9	07/02/2020 09:45	WG1494352
(T) Barium	97.4			62.0-143	07/02/2020 09:45	WG1494352
(T) Yttrium	112			79.0-136	07/02/2020 09:45	WG1494352

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	1.30		0.867	1.13	07/02/2020 14:26	WG1499573

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.443		0.259	0.225	07/02/2020 14:26	WG1499573
(T) Barium-133	99.5			30.0-143	07/02/2020 14:26	WG1499573

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	3.63		0.565	0.868	07/02/2020 09:45	WG1494352
(T) Barium	86.3			62.0-143	07/02/2020 09:45	WG1494352
(T) Yttrium	107			79.0-136	07/02/2020 09:45	WG1494352

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	4.09		0.859	1.21	07/02/2020 14:26	WG1499573

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.456		0.294	0.343	07/02/2020 14:26	WG1499573
(T) Barium-133	98.4			30.0-143	07/02/2020 14:26	WG1499573

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	2.20		0.629	1.06	07/02/2020 09:45	WG1494352
(T) Barium	87.4			62.0-143	07/02/2020 09:45	WG1494352
(T) Yttrium	111			79.0-136	07/02/2020 09:45	WG1494352

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	3.18		1.01	1.32	07/02/2020 14:26	WG1499573

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.974		0.378	0.259	07/02/2020 14:26	WG1499573
(T) Barium-133	92.0			30.0-143	07/02/2020 14:26	WG1499573

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	-0.376		0.600	1.22	07/02/2020 09:45	WG1494352
(T) Barium	85.5			62.0-143	07/02/2020 09:45	WG1494352
(T) Yttrium	110			79.0-136	07/02/2020 09:45	WG1494352

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.371		0.821	1.39	07/02/2020 14:26	WG1499573

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.371		0.221	0.169	07/02/2020 14:26	WG1499573
(T) Barium-133	97.3			30.0-143	07/02/2020 14:26	WG1499573

Radiochemistry by Method 904

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	2.18		0.644	1.12	07/02/2020 09:45	WG1494352
(T) Barium	91.5			62.0-143	07/02/2020 09:45	WG1494352
(T) Yttrium	107			79.0-136	07/02/2020 09:45	WG1494352

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.49		0.866	1.34	07/02/2020 14:26	WG1499573

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.317		0.222	0.215	07/02/2020 14:26	WG1499573
(T) Barium-133	96.1			30.0-143	07/02/2020 14:26	WG1499573



Method Blank (MB)

(MB) R3547202-1 07/01/20 09:50

Analyte	MB Result pCi/l	MB Qualifier	MB MDA pCi/l
Radium-228	-0.119		0.523
(T) Barium	106		
(T) Yttrium	82.6		

L1230038-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1230038-01 07/02/20 09:45 • (DUP) R3547202-5 07/01/20 09:50

Analyte	Original Result pCi/l	DUP Result pCi/l	Dilution	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-228	0.679	-0.503	1	200	1.26		20	3
(T) Barium	88.9	94.1						
(T) Yttrium	112	85.5						

Laboratory Control Sample (LCS)

(LCS) R3547202-2 07/01/20 09:50

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.41	108	80.0-120	
(T) Barium			108		
(T) Yttrium			87.2		

L1228581-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1228581-01 07/02/20 09:45 • (MS) R3547202-3 07/01/20 09:50 • (MSD) R3547202-4 07/01/20 09:50

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	RPD %	MS RER	RPD Limits %
Radium-228	10.0	0.669	10.2	11.4	95.0	107	1	70.0-130		11.4		20
(T) Barium		88.9			102	105						
(T) Yttrium		120			84.9	80.0						



Method Blank (MB)

(MB) R3548295-1 07/02/20 18:09

MB Result		MB Qualifier		MB MDA	
pCi/l				pCi/l	
Analyte					
Radium-226		-0.0120		0.0734	
(T) Barium-133		97.3			

L1231156-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1231156-06 07/02/20 18:54 • (DUP) R3548295-5 07/02/20 18:09

Analyte	Original Result		DUP Result		DUP RER		DUP RPD Limits		DUP RER Limit	
	pCi/l		pCi/l				%			
Radium-226	0.144		0.114		1	23.2	20	3		
(T) Barium-133	94.2		102							

Laboratory Control Sample (LCS)

(LCS) R3548295-2 07/02/20 18:09

Analyte	Spike Amount		LCS Result		Rec. Limits		LCS Qualifier	
	pCi/l		pCi/l		%			
Radium-226	5.02		5.30		106	80.0-120		
(T) Barium-133					101			

L1231156-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1231156-05 07/02/20 18:54 • (MS) R3548295-3 07/02/20 18:09 • (MSD) R3548295-4 07/02/20 18:09

Analyte	Spike Amount		Original Result		MS Result		MSD Result		MS Rec.		MSD Rec.		Dilution	Rec. Limits		MS Qualifier		RPD		MS RER		RPD Limits	
	pCi/l		pCi/l		pCi/l		pCi/l		%		%			%		%		%	%		%		%
Radium-226	20.1		0.123		18.4		20.4		90.7		101		1	75.0-125		10.5		20					
(T) Barium-133			97.6				99.3				100												



Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier Description

C2	Tracer recovery limits have been exceeded; values are outside lower control limits.
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1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

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

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

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

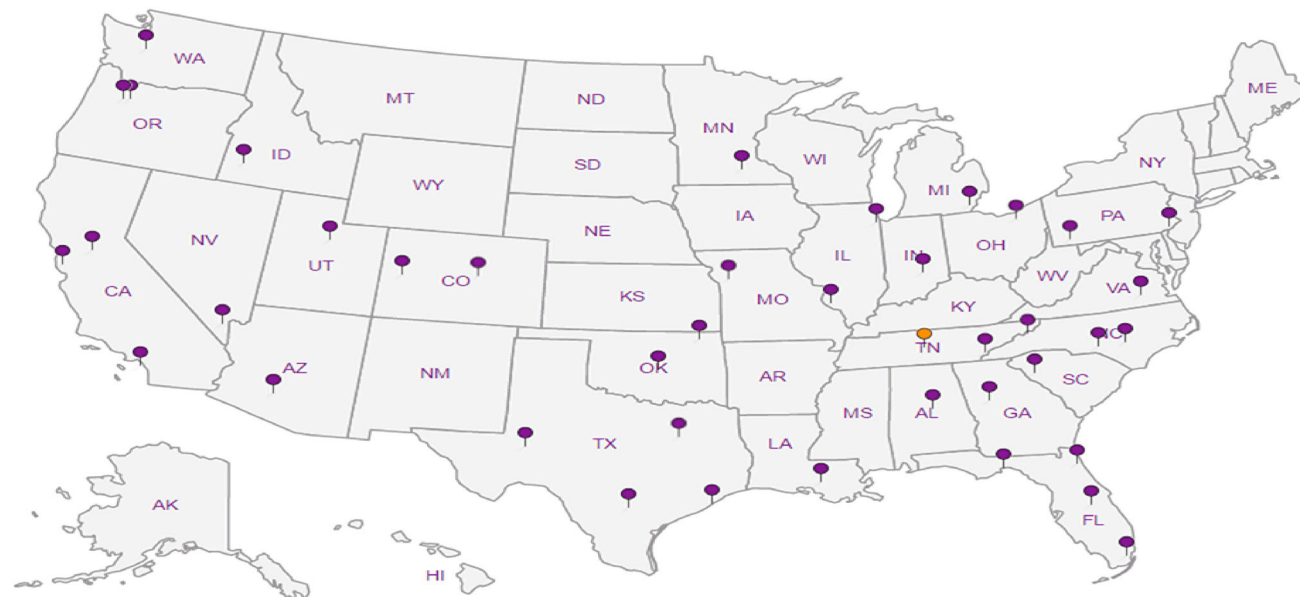
Third Party Federal Accreditations

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

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

Our Locations

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



ANALYTICAL REPORT

January 26, 2021

Revised Report

Terracon - Little Rock, AR

Sample Delivery Group: L1290269
Samples Received: 11/25/2020
Project Number:
Description: Entergy - White Bluff Landfill

Report To: David Jaros
25809 I-30
Bryant, AR 72022

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Entire Report Reviewed By:



Mark W. Beasley
Project Manager

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

Pace Analytical National

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



Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	4	
Sr: Sample Results	5	³ Ss
RP-5 L1290269-01	5	
RP-6 L1290269-02	6	⁴ Cn
Qc: Quality Control Summary	7	⁵ Sr
Gravimetric Analysis by Method 2540 C-2011	7	
Wet Chemistry by Method 9040C	8	⁶ Qc
Wet Chemistry by Method 9056A	9	
Metals (ICP) by Method 6010B	11	⁷ Gl
Metals (ICPMS) by Method 6020	12	
Gl: Glossary of Terms	13	⁸ Al
Al: Accreditations & Locations	14	
Sc: Sample Chain of Custody	15	⁹ Sc

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



RP-5 L1290269-01 GW

Collected by
Matt AcreeCollected date/time
11/24/20 15:21Received date/time
11/25/20 10:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1584420	1	12/01/20 02:31	12/01/20 06:12	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1584821	1	12/01/20 19:46	12/01/20 19:46	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1587093	1	12/06/20 00:23	12/06/20 00:23	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1587093	5	12/06/20 00:39	12/06/20 00:39	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1584781	1	12/02/20 16:59	12/03/20 18:43	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1584784	1	12/02/20 21:29	12/03/20 14:34	LD	Mt. Juliet, TN

¹Cp²Tc³Ss⁴Cn⁵Sr⁶Qc⁷Gl⁸Al⁹Sc

RP-6 L1290269-02 GW

Collected by
Matt AcreeCollected date/time
11/24/20 13:50Received date/time
11/25/20 10:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1584420	1	12/01/20 02:31	12/01/20 06:12	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1584821	1	12/01/20 19:46	12/01/20 19:46	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1587093	1	12/06/20 00:54	12/06/20 00:54	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1587093	50	12/06/20 01:09	12/06/20 01:09	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1584781	1	12/02/20 16:59	12/03/20 18:46	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1584784	1	12/02/20 21:29	12/03/20 14:38	LD	Mt. Juliet, TN



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

Mark W. Beasley
Project Manager

Report Revision History

Level II Report - Version 1: 12/07/20 16:00

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	566000		2820	10000	1	12/01/2020 06:12	WG1584420

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	3.73	T8	1	12/01/2020 19:46	WG1584821

Sample Narrative:

L1290269-01 WG1584821: 3.73 at 20.9C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	44000		379	1000	1	12/06/2020 00:23	WG1587093
Fluoride	442		64.0	150	1	12/06/2020 00:23	WG1587093
Sulfate	323000		2970	25000	5	12/06/2020 00:39	WG1587093

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	66.2	J	20.0	200	1	12/03/2020 18:43	WG1584781

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Calcium	52600		93.6	1000	1	12/03/2020 14:34	WG1584784



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	2020000		2820	10000	1	12/01/2020 06:12	WG1584420

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	5.69	T8	1	12/01/2020 19:46	WG1584821

Sample Narrative:

L1290269-02 WG1584821: 5.69 at 19.9C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	33100		379	1000	1	12/06/2020 00:54	WG1587093
Fluoride	1010		64.0	150	1	12/06/2020 00:54	WG1587093
Sulfate	1610000		29700	250000	50	12/06/2020 01:09	WG1587093

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	631		20.0	200	1	12/03/2020 18:46	WG1584781

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Calcium	309000		93.6	1000	1	12/03/2020 14:38	WG1584784

Method Blank (MB)

(MB) R3599594-1 12/01/20 06:12

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

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1290570-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1290570-01 12/01/20 06:12 • (DUP) R3599594-3 12/01/20 06:12

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Dissolved Solids	1970000	1970000	1	0.406		5

Laboratory Control Sample (LCS)

(LCS) R3599594-2 12/01/20 06:12

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Dissolved Solids	8800000	7440000	84.5	77.4-123	

L1289852-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1289852-01 12/01/20 19:46 • (DUP) R3599212-2 12/01/20 19:46

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.92	7.91	1	0.126		1

Sample Narrative:
OS: 7.92 at 18.4C
DUP: 7.91 at 18.3C

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

L1290512-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1290512-02 12/01/20 19:46 • (DUP) R3599212-3 12/01/20 19:46

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.67	7.66	1	0.130		1

Sample Narrative:
OS: 7.67 at 20.8C
DUP: 7.66 at 20.1C

Laboratory Control Sample (LCS)

(LCS) R3599212-1 12/01/20 19:46

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

Sample Narrative:
LCS: 10.05 at 18.2C

Method Blank (MB)

(MB) R3600774-1 12/05/20 09:10

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

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1292690-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1292690-01 12/05/20 17:33 • (DUP) R3600774-3 12/05/20 17:49

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	6710	6790	1	1.15		15
Fluoride	363	U	1	200	P1	15
Sulfate	1750	1780	1	0.000		15

L1291962-24 Original Sample (OS) • Duplicate (DUP)

(OS) L1291962-24 12/05/20 22:51 • (DUP) R3600774-6 12/05/20 23:06

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	1240	1240	1	0.0304		15

Laboratory Control Sample (LCS)

(LCS) R3600774-2 12/05/20 09:26

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Chloride	40000	39200	98.1	80.0-120	
Fluoride	8000	8050	101	80.0-120	
Sulfate	40000	40700	102	80.0-120	

L1292623-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1292623-01 12/05/20 18:19 • (MS) R3600774-4 12/05/20 18:35

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	ug/l	ug/l	ug/l	%		%	
Chloride	50000	6130	55600	98.9	1	80.0-120	
Fluoride	5000	85.8	5150	101	1	80.0-120	
Sulfate	50000	13100	62800	99.4	1	80.0-120	



[L1290269-01,02](#)

L1291962-26 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1291962-26 12/05/20 23:22 • (MS) R3600774-7 12/05/20 23:37 • (MSD) R3600774-8 12/05/20 23:52

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Chloride	50000	14800	64900	65500	100	101	1	80.0-120			0.876	15

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3600187-1 12/03/20 17:51

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

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

Laboratory Control Sample (LCS)

(LCS) R3600187-2 12/03/20 17:54

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Boron	1000	948	94.8	80.0-120	

⁷ Gl

L1290323-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1290323-02 12/03/20 17:57 • (MS) R3600187-4 12/03/20 18:03 • (MSD) R3600187-5 12/03/20 18:05

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Boron	1000	30.7	1000	997	97.3	96.7	1	75.0-125			0.594	20

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3599924-1 12/03/20 12:04

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Calcium	167		93.6	1000

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Laboratory Control Sample (LCS)

(LCS) R3599924-2 12/03/20 12:07

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Calcium	5000	5030	101	80.0-120	

L1290385-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1290385-03 12/03/20 12:11 • (MS) R3599924-4 12/03/20 12:18 • (MSD) R3599924-5 12/03/20 12:22

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Calcium	5000	116000	122000	123000	116	137	1	75.0-125			0.842	20



Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier Description

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

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

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

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

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Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky ^{1 6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
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Massachusetts	M-TN003	Vermont	VT2006
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Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
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A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
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Alabama	40160
ANSI National Accreditation Board	L2239

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Minnesota	006-999-465	Washington	C926
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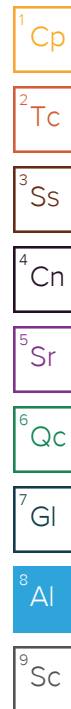
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Nevada	NV009412021-1
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Pace Analytical National 1606 E. Brazos Street Suite D Victoria, TX, 77901

Texas	T104704328-20-18
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¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable



Terracon - Little Rock, AR 25809 I-30 Bryant, AR 72022				Billing Information: Accounts Payable 25809 I-30 Bryant, AR 72022				Pres Chk <u>u</u>		Analysis / Container / Preservative										Chain of Custody Page <u> </u> of <u> </u>					
				Report to: David Jaros				Email To: David.Jaros@terracon.com; Paul.Gramling@terracon.com																 12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859	
Project Description: Entergy - White Bluff Landfill				City/State Collected: <u>Redfield, AR</u>		Please Circle: PT MT CT ET														SDG # <u>12 90269</u> G197					
Phone: 501-847-9292		Client Project # <u>35207046</u>		Lab Project # GENENLAR-ENTERGYWB																Acctnum: GENENLAR Template: T164785 Prelogin: P796026 PM: 134 - Mark W. Beasley PB: <u>76 9-4-20</u> Shipped Via: FedEX Ground					
Collected by (print): <u>Matt Arce</u>		Site/Facility ID # <u>White Bluff</u>		P.O. #																Remarks		Sample # (lab only)			
Collected by (signature): <u>Matt Arce</u>		Rush? (Lab MUST Be Notified) ☐ Same Day ☐ Five Day ☐ Next Day ☐ 5 Day (Rad Only) ☐ Two Day ☐ 10 Day (Rad Only) ☐ Three Day		Quote #				Date Results Needed																	
Immediately Packed on Ice N ☐ Y ☒																									
Sample ID		Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	*Total Metals 250mlHDPE-HNO3	Cl, F, SO4, PH 125mlHDPE-NoPres	RA-226/228 Combined 1L-HDPE-Add HNO3	TDS 250mlHDPE-NoPres														
<u>RP-5</u>			GW		<u>11/24/20</u>	<u>1521</u>	<u>4</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>														
<u>RP-6</u>			GW		<u>11/24/20</u>	<u>1350</u>	<u>4</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>														
			GW																						
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			GW																						
			GW																						

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

Remarks: **Appendix III and IV**

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
☐ UPS ☐ FedEx ☐ Courier

Tracking # 9159 8781 3234

Relinquished by: (Signature) <u>Matt Arce</u>		Date: <u>11/24/20</u>		Time: <u>1630</u>		Received by: (Signature)		Trip Blank Received: Yes ☒ No ☐ HCL / MeOH TBR	
Relinquished by: (Signature)		Date:		Time:		Received by: (Signature)		Temp: <u>41.5</u> °C Bottles Received: <u>8</u>	
Relinquished by: (Signature)		Date:		Time:		Received for lab by: (Signature) <u>Carol Cherry</u>		Date: <u>11/25/20</u> Time: <u>10:15</u>	

If preservation required by Login: Date/Time

Hold: Condition: NCF / OK

Sample Receipt Checklist

COC Seal Present/Intact: ☒ 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

ANALYTICAL REPORT

January 26, 2021

Revised Report

Terracon - Little Rock, AR

Sample Delivery Group: L1290570
Samples Received: 11/28/2020
Project Number: 35207046
Description: Entergy - White Bluff Landfill
Site: WHITE BLUFF
Report To: David Jaros
25809 I-30
Bryant, AR 72022

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Entire Report Reviewed By:



Mark W. Beasley
Project Manager

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

Pace Analytical National

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



Cp: Cover Page	1
Tc: Table of Contents	2
Ss: Sample Summary	3
Cn: Case Narrative	4
Sr: Sample Results	5
RP-3 L1290570-01	5
RP-8 L1290570-02	6
RP-9 L1290570-03	7
RP-10 L1290570-04	8
Qc: Quality Control Summary	9
Gravimetric Analysis by Method 2540 C-2011	9
Wet Chemistry by Method 9040C	10
Wet Chemistry by Method 9056A	11
Metals (ICP) by Method 6010B	13
Metals (ICPMS) by Method 6020	14
Gl: Glossary of Terms	15
Al: Accreditations & Locations	16
Sc: Sample Chain of Custody	17



SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



RP-3 L1290570-01 GW

Collected by
Matt Acree

Collected date/time
11/25/20 14:45

Received date/time
11/28/20 08:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1584420	1	12/01/20 02:31	12/01/20 06:12	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1586807	1	12/04/20 20:54	12/04/20 20:54	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1587714	1	12/07/20 19:11	12/07/20 19:11	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1587714	50	12/07/20 19:29	12/07/20 19:29	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1585687	1	12/03/20 23:24	12/04/20 08:07	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1585699	1	12/03/20 06:58	12/04/20 02:32	TM	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

RP-8 L1290570-02 GW

Collected by
Matt Acree

Collected date/time
11/25/20 12:06

Received date/time
11/28/20 08:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1584420	1	12/01/20 02:31	12/01/20 06:12	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1586807	1	12/04/20 20:54	12/04/20 20:54	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1587714	1	12/07/20 19:48	12/07/20 19:48	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1587714	10	12/08/20 11:14	12/08/20 11:14	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1585687	1	12/03/20 23:24	12/04/20 08:23	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1585699	1	12/03/20 06:58	12/04/20 02:35	TM	Mt. Juliet, TN

RP-9 L1290570-03 GW

Collected by
Matt Acree

Collected date/time
11/25/20 16:37

Received date/time
11/28/20 08:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1584420	1	12/01/20 02:31	12/01/20 06:12	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1586807	1	12/04/20 20:54	12/04/20 20:54	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1587714	1	12/07/20 20:24	12/07/20 20:24	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1587714	5	12/08/20 11:32	12/08/20 11:32	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1585687	1	12/03/20 23:24	12/04/20 08:26	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1585699	1	12/03/20 06:58	12/04/20 02:38	TM	Mt. Juliet, TN

RP-10 L1290570-04 GW

Collected by
Matt Acree

Collected date/time
11/25/20 12:50

Received date/time
11/28/20 08:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1584420	1	12/01/20 02:31	12/01/20 06:12	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1586807	1	12/04/20 20:54	12/04/20 20:54	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1587714	1	12/07/20 21:01	12/07/20 21:01	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1587714	5	12/08/20 12:09	12/08/20 12:09	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1585687	1	12/03/20 23:24	12/04/20 08:34	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1585699	1	12/03/20 06:58	12/04/20 02:42	TM	Mt. Juliet, TN

ACCOUNT:

Terracon - Little Rock, AR

PROJECT:

35207046

SDG:

L1290570

DATE/TIME:

01/26/21 13:11

PAGE:

3 of 17



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

Report Revision History

Level II Report - Version 1: 12/09/20 12:57

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	1970000		5640	20000	1	12/01/2020 06:12	WG1584420

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	3.78	T8	1	12/04/2020 20:54	WG1586807

Sample Narrative:

L1290570-01 WG1586807: 3.78 at 18.1C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	169000		19000	50000	50	12/07/2020 19:29	WG1587714
Fluoride	755		64.0	150	1	12/07/2020 19:11	WG1587714
Sulfate	1310000		29700	250000	50	12/07/2020 19:29	WG1587714

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	97.8	J	20.0	200	1	12/04/2020 08:07	WG1585687

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Calcium	177000		93.6	1000	1	12/04/2020 02:32	WG1585699



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	914000		2820	10000	1	12/01/2020 06:12	WG1584420

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	4.91	T8	1	12/04/2020 20:54	WG1586807

Sample Narrative:

L1290570-02 WG1586807: 4.91 at 18.4C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	72800		379	1000	1	12/07/2020 19:48	WG1587714
Fluoride	282		64.0	150	1	12/07/2020 19:48	WG1587714
Sulfate	533000		5940	50000	10	12/08/2020 11:14	WG1587714

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	1290		20.0	200	1	12/04/2020 08:23	WG1585687

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Calcium	96000		93.6	1000	1	12/04/2020 02:35	WG1585699



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	271000		2820	10000	1	12/01/2020 06:12	WG1584420

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	5.85	T8	1	12/04/2020 20:54	WG1586807

Sample Narrative:

L1290570-03 WG1586807: 5.85 at 18C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	22200		379	1000	1	12/07/2020 20:24	WG1587714
Fluoride	88.7	J	64.0	150	1	12/07/2020 20:24	WG1587714
Sulfate	95900		2970	25000	5	12/08/2020 11:32	WG1587714

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	134	J	20.0	200	1	12/04/2020 08:26	WG1585687

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Calcium	16900		93.6	1000	1	12/04/2020 02:38	WG1585699



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	462000		2820	10000	1	12/01/2020 06:12	WG1584420

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	3.80	T8	1	12/04/2020 20:54	WG1586807

Sample Narrative:

L1290570-04 WG1586807: 3.8 at 18.6C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	71600		379	1000	1	12/07/2020 21:01	WG1587714
Fluoride	275		64.0	150	1	12/07/2020 21:01	WG1587714
Sulfate	202000		2970	25000	5	12/08/2020 12:09	WG1587714

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	1020		20.0	200	1	12/04/2020 08:34	WG1585687

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Calcium	23600		93.6	1000	1	12/04/2020 02:42	WG1585699

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

[L1290570-01,02,03,04](#)

Method Blank (MB)

(MB) R3599594-1 12/01/20 06:12

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

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

L1290570-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1290570-01 12/01/20 06:12 • (DUP) R3599594-3 12/01/20 06:12

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Dissolved Solids	1970000	1970000	1	0.406		5

Laboratory Control Sample (LCS)

(LCS) R3599594-2 12/01/20 06:12

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Dissolved Solids	8800000	7440000	84.5	77.4-123	

⁷Gl

⁸Al

⁹Sc

L1288293-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1288293-01 12/04/20 20:54 • (DUP) R3600567-2 12/04/20 20:54

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.48	7.46	1	0.268		1

Sample Narrative:

OS: 7.48 at 18.7C
DUP: 7.46 at 18C

L1292087-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1292087-02 12/04/20 20:54 • (DUP) R3600567-3 12/04/20 20:54

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	5.45	5.45	1	0.000		1

Sample Narrative:

OS: 5.45 at 19.2C
DUP: 5.45 at 18.8C

Laboratory Control Sample (LCS)

(LCS) R3600567-1 12/04/20 20:54

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

Sample Narrative:

LCS: 10.06 at 18.2C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3601402-1 12/07/20 10:34

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

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1289961-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1289961-01 12/07/20 12:25 • (DUP) R3601402-3 12/07/20 12:44

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	4690	4500	1	4.17		15
Fluoride	162	150	1	7.57		15
Sulfate	1730	1740	1	0.439	⌵	15

L1290570-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1290570-03 12/07/20 20:24 • (DUP) R3601402-6 12/07/20 20:43

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	22200	22200	1	0.136		15
Fluoride	88.7	92.0	1	3.65	⌵	15

L1290570-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1290570-03 12/08/20 11:32 • (DUP) R3601402-8 12/08/20 11:51

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Sulfate	95900	96400	5	0.486		15

Laboratory Control Sample (LCS)

(LCS) R3601402-2 12/07/20 10:52

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Chloride	40000	39600	98.9	80.0-120	
Fluoride	8000	8190	102	80.0-120	
Sulfate	40000	39700	99.1	80.0-120	



L1289961-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1289961-03 12/07/20 13:21 • (MS) R3601402-4 12/07/20 13:39 • (MSD) R3601402-5 12/07/20 13:57

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	33700	81900	85800	96.5	104	1	80.0-120			4.64	15
Fluoride	5000	348	5280	5670	98.6	106	1	80.0-120			7.12	15
Sulfate	50000	22800	71900	75400	98.1	105	1	80.0-120			4.70	15

L1290570-04 Original Sample (OS) • Matrix Spike (MS)

(OS) L1290570-04 12/07/20 21:01 • (MS) R3601402-7 12/07/20 21:20

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	71600	122000	102	1	80.0-120	E
Fluoride	5000	275	5890	112	1	80.0-120	
Sulfate	50000	202000	246000	87.4	1	80.0-120	E

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc



Method Blank (MB)

(MB) R3600392-1 12/04/20 08:02

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

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

Laboratory Control Sample (LCS)

(LCS) R3600392-2 12/04/20 08:04

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Boron	1000	953	95.3	80.0-120	

L1290570-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1290570-01 12/04/20 08:07 • (MS) R3600392-4 12/04/20 08:12 • (MSD) R3600392-5 12/04/20 08:15

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Boron	1000	97.8	1050	1030	94.9	93.4	1	75.0-125			1.41	20

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3600234-1 12/04/20 01:50				
	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Calcium	U		93.6	1000

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

Laboratory Control Sample (LCS)

(LCS) R3600234-2 12/04/20 01:53					
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	ug/l	ug/l	%	%	
Calcium	5000	4640	92.8	80.0-120	

L1290673-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1290673-03 12/04/20 01:56 • (MS) R3600234-4 12/04/20 02:03 • (MSD) R3600234-5 12/04/20 02:06												
	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Calcium	5000	2700	7380	7340	93.8	92.8	1	75.0-125			0.647	20

7

Gl

8

Al

9

Sc



Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

MDL	Method Detection Limit.
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.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

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

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

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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
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Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky ^{1 6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
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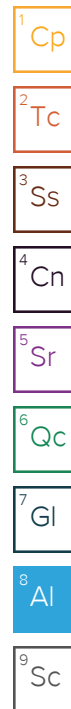
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Texas	T104704328-20-18
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¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable



Terracon - Little Rock, AR		Billing Information:		Pres		Analysis / Container / Preservative										Chain of Custody		Page ____ of ____					
25809 I-30 Bryant, AR 72022		Accounts Payable 25809 I-30 Bryant, AR 72022		Chk												Pace Analytical® National Center for Testing & Innovation							
Report to: David Jaros		Email To: David.Jaros@terracon.com;JHouse@trccompanies.														12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859		QR Code					
Project Description: Entergy - White Bluff Landfill		City/State Collected: Redfield, AR		Please Circle: PT MT CT ET												SDG # 1290570 C208							
Phone: 501-847-9292 Fax:		Client Project # 35207046		Lab Project # GENENLAR-ENTERGYWB												Acctnum: GENENLAR							
Collected by (print): Mark Acres		Site/Facility ID # White Bluff		P.O. #												Template: T164785							
Collected by (signature):		Rush? (Lab MUST Be Notified) ____ Same Day ____ Five Day ____ Next Day ____ 5 Day (Rad Only) ____ Two Day ____ 10 Day (Rad Only) ____ Three Day		Quote #												Prelogin: P763763							
Immediately Packed on Ice N ____ Y ☒				Date Results Needed												PB: 134 - Mark W. Beasley							
Sample ID		Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs											Shipped Via:					
RP-3			GW		11/25/20	1445	4											Remarks		Sample # (lab only)			
RP-8			GW		11/25/20	1206	4													- 01			
RP-9			GW		11/25/20	1637	4													02			
RP-10			GW		11/25/20	1250	4													03			
			GW																	04			
			GW																				
			GW																				
			GW																				
			GW																				
			GW																				
			GW																				
			GW																				
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other		Remarks:						pH ____ Temp ____ Flow ____ Other ____												Sample Receipt Checklist CO: Seal Present/Intact: ____ NP ____ CO: Signed/Accurate: ____ Bottles arrive intact: ____ Correct bottles used: ____ Sufficient volume sent: ____ If Applicable VOA Zero Headspace: ____ Preservation Correct/Checked: ____ RAD Screen <0.5 mR/hr: ____			
Samples returned via: ____ UPS ____ FedEx ____ Courier		Tracking # 9159 8781 3267																					
Relinquished by: (Signature) Mark Acres		Date: 11/27/20		Time: 1300		Received by: (Signature)		Trip Blank Received: Yes/No HCL / MeOH TBR															
Relinquished by: (Signature)		Date:		Time:		Received by: (Signature)		Temp: 5-10 = 5 °C Bottles Received: 16												If preservation required by Login: Date/Time			
Relinquished by: (Signature)		Date:		Time:		Received for lab by: (Signature)		Date: 11/28/20 Time: 8:15												Hold:		Condition: NCF / OK	

ANALYTICAL REPORT

January 26, 2021

Revised Report

Terracon - Little Rock, AR

Sample Delivery Group: L1292202
Samples Received: 12/03/2020
Project Number: 35207046
Description: Entergy - White Bluff Landfill

Report To: David Jaros
25809 I-30
Bryant, AR 72022

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Entire Report Reviewed By:



Mark W. Beasley
Project Manager

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

Pace Analytical National

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Cp: Cover Page	1
Tc: Table of Contents	2
Ss: Sample Summary	3
Cn: Case Narrative	4
Sr: Sample Results	5
RP-1 L1292202-01	5
RP-2 L1292202-02	6
RP-4 L1292202-03	7
DUP-1 L1292202-04	8
Qc: Quality Control Summary	9
Gravimetric Analysis by Method 2540 C-2011	9
Wet Chemistry by Method 9040C	10
Wet Chemistry by Method 9056A	12
Metals (ICP) by Method 6010B	15
Metals (ICPMS) by Method 6020	16
Gl: Glossary of Terms	17
Al: Accreditations & Locations	18
Sc: Sample Chain of Custody	19



SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



RP-1 L1292202-01 GW

Collected by
Matt Acree

Collected date/time
11/30/20 15:11

Received date/time
12/03/20 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1586521	1	12/04/20 13:53	12/04/20 14:55	CAT	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1587762	1	12/07/20 15:55	12/07/20 15:55	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1588341	1	12/09/20 10:58	12/09/20 10:58	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1588341	100	12/09/20 11:15	12/09/20 11:15	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1586788	1	12/07/20 16:55	12/08/20 11:58	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1587607	1	12/07/20 14:21	12/07/20 19:01	LD	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

RP-2 L1292202-02 GW

Collected by
Matt Acree

Collected date/time
11/30/20 17:08

Received date/time
12/03/20 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1586521	1	12/04/20 13:53	12/04/20 14:55	CAT	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1587788	1	12/07/20 15:42	12/07/20 15:42	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1588341	1	12/09/20 11:32	12/09/20 11:32	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1589056	5	12/09/20 22:37	12/09/20 22:37	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1586788	1	12/07/20 16:55	12/08/20 12:01	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1587607	1	12/07/20 14:21	12/07/20 18:23	LD	Mt. Juliet, TN

RP-4 L1292202-03 GW

Collected by
Matt Acree

Collected date/time
11/30/20 14:05

Received date/time
12/03/20 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1586521	1	12/04/20 13:53	12/04/20 14:55	CAT	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1587788	1	12/07/20 15:42	12/07/20 15:42	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1588341	1	12/09/20 11:48	12/09/20 11:48	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1588341	5	12/09/20 12:13	12/09/20 12:13	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1586788	1	12/07/20 16:55	12/08/20 12:03	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1587607	1	12/07/20 14:21	12/07/20 18:27	LD	Mt. Juliet, TN

DUP-1 L1292202-04 GW

Collected by
Matt Acree

Collected date/time
11/30/20 15:22

Received date/time
12/03/20 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1586521	1	12/04/20 13:53	12/04/20 14:55	CAT	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1587788	1	12/07/20 15:42	12/07/20 15:42	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1588341	1	12/09/20 12:29	12/09/20 12:29	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1588341	100	12/09/20 13:20	12/09/20 13:20	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1586788	1	12/07/20 16:55	12/08/20 12:06	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1587607	1	12/07/20 14:21	12/07/20 19:04	LD	Mt. Juliet, TN

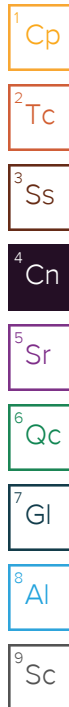


All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples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

Mark W. Beasley
Project Manager

Report Revision History

Level II Report - Version 1: 12/10/20 16:57





Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	4270000		28200	100000	1	12/04/2020 14:55	WG1586521

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	3.64	T8	1	12/07/2020 15:55	WG1587762

Sample Narrative:

L1292202-01 WG1587762: 3.64 at 19.4C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	498000		37900	100000	100	12/09/2020 11:15	WG1588341
Fluoride	1910		64.0	150	1	12/09/2020 10:58	WG1588341
Sulfate	2440000		59400	500000	100	12/09/2020 11:15	WG1588341

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	26.9	J	20.0	200	1	12/08/2020 11:58	WG1586788

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Calcium	377000		93.6	1000	1	12/07/2020 19:01	WG1587607

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	307000		2820	10000	1	12/04/2020 14:55	WG1586521

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	4.08	T8	1	12/07/2020 15:42	WG1587788

Sample Narrative:

L1292202-02 WG1587788: 4.08 at 19.4C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	19800		379	1000	1	12/09/2020 11:32	WG1588341
Fluoride	U		64.0	150	1	12/09/2020 11:32	WG1588341
Sulfate	115000		2970	25000	5	12/09/2020 22:37	WG1589056

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	42.3	J	20.0	200	1	12/08/2020 12:01	WG1586788

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Calcium	16900		93.6	1000	1	12/07/2020 18:23	WG1587607



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	547000		2820	10000	1	12/04/2020 14:55	WG1586521

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	4.96	T8	1	12/07/2020 15:42	WG1587788

Sample Narrative:

L1292202-03 WG1587788: 4.96 at 18.4C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	84500		379	1000	1	12/09/2020 11:48	WG1588341
Fluoride	127	J	64.0	150	1	12/09/2020 11:48	WG1588341
Sulfate	200000		2970	25000	5	12/09/2020 12:13	WG1588341

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	69.4	J	20.0	200	1	12/08/2020 12:03	WG1586788

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Calcium	26700		93.6	1000	1	12/07/2020 18:27	WG1587607



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	4250000		28200	100000	1	12/04/2020 14:55	WG1586521

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	3.65	T8	1	12/07/2020 15:42	WG1587788

Sample Narrative:

L1292202-04 WG1587788: 3.65 at 20.8C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	498000		37900	100000	100	12/09/2020 13:20	WG1588341
Fluoride	1920		64.0	150	1	12/09/2020 12:29	WG1588341
Sulfate	2420000		59400	500000	100	12/09/2020 13:20	WG1588341

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	22.4	J	20.0	200	1	12/08/2020 12:06	WG1586788

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Calcium	392000		93.6	1000	1	12/07/2020 19:04	WG1587607

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Method Blank (MB)

(MB) R3601215-1 12/04/20 14:55

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

L1292290-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1292290-02 12/04/20 14:55 • (DUP) R3601215-3 12/04/20 14:55

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Dissolved Solids	401000	432000	1	7.44	<u>J3</u>	5

Laboratory Control Sample (LCS)

(LCS) R3601215-2 12/04/20 14:55

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	ug/l	ug/l	%	%	
Dissolved Solids	8800000	8510000	96.7	77.4-123	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1291789-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1291789-10 12/07/20 15:55 • (DUP) R3601077-2 12/07/20 15:55

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.47	7.46	1	0.134		1

Sample Narrative:
OS: 7.47 at 18.3C
DUP: 7.46 at 18.2C

L1292202-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1292202-01 12/07/20 15:55 • (DUP) R3601077-3 12/07/20 15:55

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	3.64	3.63	1	0.275		1

Sample Narrative:
OS: 3.64 at 19.4C
DUP: 3.63 at 19C

Laboratory Control Sample (LCS)

(LCS) R3601077-1 12/07/20 15:55

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

Sample Narrative:
LCS: 10.01 at 18.4C

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

L1291219-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1291219-02 12/07/20 15:42 • (DUP) R3601069-2 12/07/20 15:42

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	6.98	6.99	1	0.143		1

Sample Narrative:
OS: 6.98 at 19.1C
DUP: 6.99 at 18.3C

L1292592-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1292592-02 12/07/20 15:42 • (DUP) R3601069-3 12/07/20 15:42

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	6.25	6.26	1	0.160		1

Sample Narrative:
OS: 6.25 at 19.7C
DUP: 6.26 at 19.5C

Laboratory Control Sample (LCS)

(LCS) R3601069-1 12/07/20 15:42

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	9.99	99.9	99.0-101	

Sample Narrative:
LCS: 9.99 at 18.3C

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3601928-1 12/09/20 03:03

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

L1291539-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1291539-01 12/09/20 04:29 • (DUP) R3601928-3 12/09/20 04:46

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	1090	1110	1	2.10		15
Fluoride	105	109	1	3.84	⌋	15
Sulfate	4750	4780	1	0.516	⌋	15

L1291875-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1291875-01 12/09/20 08:43 • (DUP) R3601928-6 12/09/20 08:59

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	8270	8280	1	0.0677		15
Fluoride	97.1	97.9	1	0.821	⌋	15
Sulfate	26400	26400	1	0.0137		15

Laboratory Control Sample (LCS)

(LCS) R3601928-2 12/09/20 03:19

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Chloride	40000	40600	102	80.0-120	
Fluoride	8000	8120	102	80.0-120	
Sulfate	40000	41000	103	80.0-120	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



L1291539-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1291539-02 12/09/20 05:03 • (MS) R3601928-4 12/09/20 05:20 • (MSD) R3601928-5 12/09/20 05:37

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	3860	49900	50100	92.1	92.4	1	80.0-120			0.253	15
Fluoride	5000	70.0	4730	4730	93.1	93.2	1	80.0-120			0.0740	15
Sulfate	50000	7130	53200	53200	92.1	92.1	1	80.0-120			0.0322	15

L1291875-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1291875-01 12/09/20 08:43 • (MS) R3601928-7 12/09/20 09:50

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	8270	57200	97.9	1	80.0-120	
Fluoride	5000	97.1	5090	99.8	1	80.0-120	
Sulfate	50000	26400	74700	96.7	1	80.0-120	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3602112-1 12/09/20 11:28

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

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

L1294172-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1294172-01 12/09/20 13:35 • (DUP) R3602112-3 12/09/20 13:52

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Sulfate	3150	3130	1	0.571	⌵	15

L1294307-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1294307-07 12/09/20 16:24 • (DUP) R3602112-6 12/09/20 16:41

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Sulfate	7190	7160	1	0.350		15

Laboratory Control Sample (LCS)

(LCS) R3602112-2 12/09/20 11:45

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

L1294307-06 Original Sample (OS) • Matrix Spike (MS)

(OS) L1294307-06 12/09/20 19:31 • (MS) R3602112-7 12/09/20 19:48

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	ug/l	ug/l	ug/l	%		%	
Sulfate	50000	12400	65800	107	1	80.0-120	



Method Blank (MB)

(MB) R3601571-1 12/08/20 11:12

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

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

Laboratory Control Sample (LCS)

(LCS) R3601571-2 12/08/20 11:14

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Boron	1000	941	94.1	80.0-120	

⁷ Gl

⁸ Al

⁹ Sc

L1292108-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1292108-01 12/08/20 11:17 • (MS) R3601571-4 12/08/20 11:22 • (MSD) R3601571-5 12/08/20 11:25

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Boron	1000	90.1	1050	1070	96.1	98.1	1	75.0-125			1.80	20



Method Blank (MB)

(MB) R3601134-1 12/07/20 17:25

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Calcium	U		93.6	1000

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS)

(LCS) R3601134-2 12/07/20 17:29

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Calcium	5000	4770	95.5	80.0-120	

L1292108-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1292108-01 12/07/20 17:32 • (MS) R3601134-4 12/07/20 17:38 • (MSD) R3601134-5 12/07/20 17:42

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Calcium	5000	15000	19700	19600	92.6	92.1	1	75.0-125			0.142	20



Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier Description

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.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

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

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

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Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky ^{1 6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
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		

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Alabama	40160
ANSI National Accreditation Board	L2239

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

California	2961	Oregon	CA300002
Minnesota	006-999-465	Washington	C926
North Dakota	R-214		

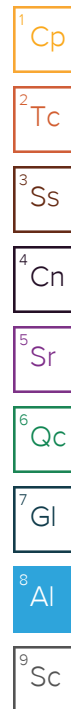
Pace Analytical National 6000 South Eastern Avenue Ste 9A Las Vegas, NV, 89119

Nevada	NV009412021-1
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Pace Analytical National 1606 E. Brazos Street Suite D Victoria, TX, 77901

Texas	T104704328-20-18
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¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable



[illegible]

ANALYTICAL REPORT

January 26, 2021

Revised Report

Terracon - Little Rock, AR

Sample Delivery Group: L1292787
Samples Received: 12/04/2020
Project Number: 35207046
Description: Entergy - Independence Landfill

Report To: David Jaros
25809 I-30
Bryant, AR 72022

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Entire Report Reviewed By:



Mark W. Beasley
Project Manager

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

Pace Analytical National

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



Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	4	
Sr: Sample Results	5	³ Ss
RP-7 L1292787-01	5	
FB-1 L1292787-02	6	⁴ Cn
Qc: Quality Control Summary	7	⁵ Sr
Gravimetric Analysis by Method 2540 C-2011	7	
Wet Chemistry by Method 9040C	8	⁶ Qc
Wet Chemistry by Method 9056A	9	
Metals (ICP) by Method 6010B	11	⁷ Gl
Metals (ICPMS) by Method 6020	12	
Gl: Glossary of Terms	13	⁸ Al
Al: Accreditations & Locations	14	
Sc: Sample Chain of Custody	15	⁹ Sc

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



RP-7 L1292787-01 GW

Collected by
Matt Acree

Collected date/time
12/02/20 10:15

Received date/time
12/04/20 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1588510	1	12/09/20 02:29	12/09/20 03:08	CAT	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1589713	1	12/10/20 21:05	12/10/20 21:05	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1589877	1	12/13/20 23:33	12/13/20 23:33	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1589877	5	12/13/20 23:49	12/13/20 23:49	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1588621	1	12/08/20 23:38	12/09/20 17:21	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1588131	1	12/08/20 10:23	12/09/20 01:17	JPD	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

FB-1 L1292787-02 GW

Collected by
Matt Acree

Collected date/time
12/02/20 10:22

Received date/time
12/04/20 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1588510	1	12/09/20 02:29	12/09/20 03:08	CAT	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1589713	1	12/10/20 21:05	12/10/20 21:05	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1589877	1	12/14/20 00:05	12/14/20 00:05	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1588621	1	12/08/20 23:38	12/09/20 17:24	EL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1588131	1	12/08/20 10:23	12/09/20 01:20	JPD	Mt. Juliet, TN



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

Mark W. Beasley
Project Manager

Report Revision History

Level II Report - Version 1: 12/15/20 15:25

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	420000		2820	10000	1	12/09/2020 03:08	WG1588510

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	3.60	T8	1	12/10/2020 21:05	WG1589713

Sample Narrative:

L1292787-01 WG1589713: 3.6 at 19.4C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	6410		379	1000	1	12/13/2020 23:33	WG1589877
Fluoride	321		64.0	150	1	12/13/2020 23:33	WG1589877
Sulfate	206000		2970	25000	5	12/13/2020 23:49	WG1589877

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	165	J	20.0	200	1	12/09/2020 17:21	WG1588621

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Calcium	32300		93.6	1000	1	12/09/2020 01:17	WG1588131



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	3000	J	2820	10000	1	12/09/2020 03:08	WG1588510

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	5.35	T8	1	12/10/2020 21:05	WG1589713

Sample Narrative:

L1292787-02 WG1589713: 5.35 at 18.8C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chloride	U		379	1000	1	12/14/2020 00:05	WG1589877
Fluoride	U		64.0	150	1	12/14/2020 00:05	WG1589877
Sulfate	U		594	5000	1	12/14/2020 00:05	WG1589877

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Boron	U		20.0	200	1	12/09/2020 17:24	WG1588621

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Calcium	U		93.6	1000	1	12/09/2020 01:20	WG1588131

Method Blank (MB)

(MB) R3601985-1 12/09/20 03:08

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

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1292762-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1292762-11 12/09/20 03:08 • (DUP) R3601985-3 12/09/20 03:08

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Dissolved Solids	6100000	6100000	1	0.131		5

L1292903-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1292903-01 12/09/20 03:08 • (DUP) R3601985-4 12/09/20 03:08

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Dissolved Solids	1730000	1720000	1	0.463		5

Laboratory Control Sample (LCS)

(LCS) R3601985-2 12/09/20 03:08

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Dissolved Solids	8800000	8640000	98.2	77.4-123	

L1292762-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1292762-01 12/10/20 21:05 • (DUP) R3602376-2 12/10/20 21:05

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.36	7.37	1	0.136		1

Sample Narrative:

OS: 7.36 at 18.3C

DUP: 7.37 at 18.4C

Laboratory Control Sample (LCS)

(LCS) R3602376-1 12/10/20 21:05

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	9.99	99.9	99.0-101	

Sample Narrative:

LCS: 9.99 at 19.7C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3603635-1 12/13/20 11:05

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

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1292787-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1292787-02 12/14/20 00:05 • (DUP) R3603635-3 12/14/20 00:21

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

L1292885-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1292885-04 12/14/20 03:00 • (DUP) R3603635-6 12/14/20 03:16

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Chloride	239000	239000	1	0.00774	E	15
Fluoride	81.4	82.6	1	1.46	J	15
Sulfate	28800	28800	1	0.291		15

Laboratory Control Sample (LCS)

(LCS) R3603635-2 12/13/20 11:21

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Chloride	40000	39100	97.7	80.0-120	
Fluoride	8000	8050	101	80.0-120	
Sulfate	40000	39400	98.4	80.0-120	



[L1292787-01,02](#)

L1292787-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1292787-02 12/14/20 00:05 • (MS) R3603635-4 12/14/20 00:37 • (MSD) R3603635-5 12/14/20 00:53

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Chloride	50000	U	44700	44900	89.4	89.8	1	80.0-120			0.453	15
Fluoride	5000	U	4470	4480	89.3	89.7	1	80.0-120			0.373	15
Sulfate	50000	U	44400	44600	88.9	89.2	1	80.0-120			0.368	15

L1292885-04 Original Sample (OS) • Matrix Spike (MS)

(OS) L1292885-04 12/14/20 03:00 • (MS) R3603635-7 12/14/20 03:32

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Chloride	50000	239000	277000	75.2	1	80.0-120	E V
Fluoride	5000	81.4	4920	96.7	1	80.0-120	
Sulfate	50000	28800	77500	97.4	1	80.0-120	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3601975-1 12/09/20 16:11

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

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

Laboratory Control Sample (LCS)

(LCS) R3601975-2 12/09/20 16:13

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Boron	1000	945	94.5	80.0-120	

⁷ Gl

⁸ Al

L1292626-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1292626-01 12/09/20 16:16 • (MS) R3601975-4 12/09/20 16:21 • (MSD) R3601975-5 12/09/20 16:24

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Boron	1000	53.4	985	978	93.1	92.4	1	75.0-125			0.721	20

⁹ Sc

Method Blank (MB)

(MB) R3601645-1 12/09/20 00:51

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Calcium	U		93.6	1000

Laboratory Control Sample (LCS)

(LCS) R3601645-2 12/09/20 00:54

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Calcium	5000	4740	94.7	80.0-120	

L1292729-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1292729-05 12/09/20 00:57 • (MS) R3601645-4 12/09/20 01:04 • (MSD) R3601645-5 12/09/20 01:07

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Calcium	5000	9500	14200	14000	94.1	90.5	1	75.0-125			1.28	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc



Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

MDL	Method Detection Limit.
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.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

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

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

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN, 37122

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

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ANSI National Accreditation Board	L2239

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North Dakota	R-214		

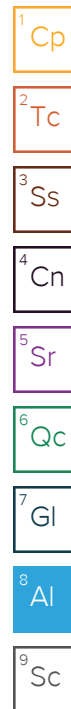
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Texas	T104704328-20-18
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¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable



[illegible]