Prepared for
Dynegy Miami Fort, LLC

Date
January 31, 2023

Project No.
1940102203-014

2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

LAWRENCEBURG ROAD LANDFILL

MIAMI FORT POWER PLANT

NORTH BEND, OHIO

CCR UNIT 113

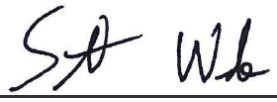
RAMBOLL Bright ideas. Sustainable change.

2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
MIAMI FORT POWER PLANT LAWRENCEBURG ROAD LANDFILL

Project name	**Miami Fort Power Plant Lawrenceburg Road Landfill**
Project no.	**1940102203-014**
Recipient	**Dynegy Miami Fort, LLC**
Document type	**Annual Groundwater Monitoring and Corrective Action Report**
Version	**FINAL**
Date	**January 31, 2023**
Prepared by	**Scott S. Woods**
Checked by	**Lauren D. Cook**
Approved by	**Brian G. Hennings**
Description	**Annual Report in Support of the CCR Rule Groundwater Monitoring Program**

Ramboll
234 W. Florida Street
Fifth Floor
Milwaukee, WI 53204
USA

T 414-837-3607
F 414-837-3608
https://ramboll.com



Scott S. Woods
Hydrogeologist

Brian G. Hennings, PG
Senior Managing Hydrogeologist

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APPENDICES

ACRONYMS AND ABBREVIATIONS

§	Section
40 C.F.R.	Title 40 of the Code of Federal Regulations
ASD	Alternate Source Demonstration
CCR	coal combustion residuals
GWPS	groundwater protection standard
LRLF	Lawrenceburg Road Landfill
MFPP	Miami Fort Power Plant
NA	not applicable
Ramboll	Ramboll Americas Engineering Solutions, Inc.
SAP	Sampling and Analysis Plan
SSI	statistically significant increase
TBD	to be determined

EXECUTIVE SUMMARY

This report has been prepared to provide the information required by Title 40 of the Code of Federal Regulations (40 C.F.R.) Section (§) 257.90(e) for the Lawrenceburg Road Landfill (LRLF) located at the Miami Fort Power Plant (MFPP) near North Bend, Ohio.

Groundwater is being monitored at the LRLF in accordance with the detection monitoring program requirements specified in 40 C.F.R. § 257.94.

No changes were made to the monitoring system in 2022 (no wells were installed or decommissioned).

No Statistically Significant Increases (SSIs) of 40 C.F.R. § 257 Appendix III parameter concentrations greater than background concentrations were determined and the LRLF remains in the Detection Monitoring Program.

1. INTRODUCTION

This report has been prepared by Ramboll Americas Engineering Solutions, Inc. (Ramboll) on behalf of Dynegy Miami Fort, LLC, to provide the information required by 40 C.F.R. § 257.90(e) for the LRLF located at the MFPP near North Bend, Ohio.

In accordance with 40 C.F.R. § 257.90(e), the owner or operator of a coal combustion residuals (CCR) unit must prepare an Annual Groundwater Monitoring and Corrective Action Report for the preceding calendar year that documents the status of the Groundwater Monitoring and Corrective Action Program for the CCR unit, summarizes key actions completed, describes any problems encountered, discusses actions to resolve the problems, and projects key activities for the upcoming year. At a minimum, the annual report must contain the following information, to the extent available:

1. A map, aerial image, or diagram showing the CCR unit and all background (or upgradient) and downgradient monitoring wells, to include the well identification numbers, that are part of the groundwater monitoring program for the CCR unit.
2. Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken.
3. In addition to all the monitoring data obtained under §§ 257.90 through 257.98, a summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs.
4. A narrative discussion of any transition between monitoring programs (*e.g.*, the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying the constituent(s) detected at a statistically significant increase relative to background levels).
5. Other information required to be included in the annual report as specified in §§ 257.90 through 257.98.
6. A section at the beginning of the annual report that provides an overview of the current status of groundwater monitoring and corrective action programs for the CCR unit. At a minimum, the summary must specify all of the following:
    i. At the start of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in §257.94 or the assessment monitoring program in §257.95.
    ii. At the end of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in §257.94 or the assessment monitoring program in §257.95.
    iii. If it was determined that there was a statistically significant increase over background for one or more constituents listed in Appendix III of §257 pursuant to §257.94(e):
        A. Identify those constituents listed in Appendix III of §257 and the names of the monitoring wells associated with such an increase.
        B. Provide the date when the assessment monitoring program was initiated for the CCR unit.

iv. If it was determined that there was a statistically significant level above the groundwater protection standard [GWPS] for one or more constituents listed in Appendix IV of §257 pursuant to §257.95(g) include all of the following:

   A. Identify those constituents listed in Appendix IV of §257 and the names of the monitoring wells associated with such an increase.

   B. Provide the date when the assessment of corrective measures was initiated for the CCR unit.

   C. Provide the date when the public meeting was held for the assessment of corrective measures for the CCR unit.

   D. Provide the date when the assessment of corrective measures was completed for the CCR unit.

v. Whether a remedy was selected pursuant to §257.97 during the current annual reporting period, and if so, the date of remedy selection.

vi. Whether remedial activities were initiated or are ongoing pursuant to § 257.98 during the current annual reporting period.

This report provides the required information for the LRLF for calendar year 2022.

2. MONITORING AND CORRECTIVE ACTION PROGRAM STATUS

No changes have occurred to the monitoring program status in calendar year 2022 and the LRLF remains in the detection monitoring program in accordance with 40 C.F.R. § 257.94.

3. KEY ACTIONS COMPLETED IN 2022

The detection monitoring program is summarized in **Table A** on the following page. The groundwater monitoring system, including the CCR unit and all background and compliance monitoring wells, is presented in **Figure 1**. No changes were made to the monitoring system in 2022. In general, one groundwater sample was collected from each background and compliance well during each monitoring event. All samples were collected and analyzed in accordance with the Multi-Site Sampling and Analysis Plan (SAP) (AECOM, 2017). Potentiometric surface maps for the third quarter of 2021 and both monitoring events in 2022 are included in **Figures 2 through 4**. All monitoring data and analytical results obtained under 40 C.F.R. § 257.90 through 257.98 (as applicable) in the third quarter of 2021 and both monitoring events in 2022 are presented in **Tables 1 and 2**. Laboratory reports for the third quarter of 2021 and both 2022 monitoring events are included in **Appendix A**.

Analytical data were evaluated in accordance with the Statistical Analysis Plan (Ramboll, 2020) to determine any SSIs of Appendix III parameters relative to background concentrations. Statistical background values are provided in **Table 3**. A background update evaluation was completed in 2022. The updated background values for SSI determination are shown on **Table 3** and were used beginning in the third quarter of 2022. The updated values for SSI determination are also shown on **Table 3**. A flow chart showing the statistical methodology for determination of background values is included as **Appendix B**. Additional information to support the background update evaluation is provided in **Appendix C**.

Table A. 2021-2022 Detection Monitoring Program Summary

Sampling Date	Analytical Data Receipt Date	Parameters Collected	SSI(s)	SSI(s) Determination Date	ASD Completion Date
September 15 - 16, 2021	September 27, 2022	Appendix III	None	January 03, 2022	NA
March 23 - 24, 2022	April 20, 2022	Appendix III	None	July 19, 2022	NA
September 21, 2022	November 17, 2022	Appendix III	None	January 31, 2023	NA

Notes:

ASD: Alternate Source Demonstration

NA: not applicable

SSI: statistically significant increase

TBD: to be determined

4. PROBLEMS ENCOUNTERED AND ACTIONS TO RESOLVE THE PROBLEMS

No problems were encountered with the Groundwater Monitoring Program during 2022. Groundwater samples were collected and analyzed in accordance with the SAP and all data were accepted.

5. KEY ACTIVITIES PLANNED FOR 2023

The following key activities are planned for 2023:

- Continuation of the detection monitoring program with semi-annual sampling scheduled for the first and third quarters of 2023.
- Complete evaluation of analytical data from the compliance wells using background data to determine whether an SSI of Appendix III parameters detected at concentrations greater than background concentrations has occurred.
- If an SSI is identified, potential alternate sources (*i.e.,* a source other than the CCR unit caused the SSI or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality) will be evaluated.
  - If an alternate source is identified to be the cause of the SSI, a written demonstration will be completed within 90 days of SSI determination and included in the 2023 Annual Groundwater Monitoring and Corrective Action Report.
  - If an alternate source(s) is not identified to be the cause of the SSI, the applicable requirements of 40 C.F.R. §§ 257.94 through 257.98 as may apply in 2023 (*e.g.,* assessment monitoring) will be met, including associated recordkeeping/notifications required by 40 C.F.R. §§ 257.105 through 257.108.
- The following documents were developed in 2022 and will be implemented beginning in the first quarter of 2023:
  - Multi-Site Quality Assurance Project Plan (Ramboll, 2022a)
  - Multi-Site Data Management Plan (Ramboll, 2022b)
  - Multi-Site Statistical Analysis Plan and Certification (Ramboll, 2022c)

6. REFERENCES

AECOM, 2017, Sampling and Analysis Plan, CCR Rule Groundwater Monitoring, Lawrenceburg Road Landfill, Unit 113, Miami Fort Power Station, Cleveland, Ohio, Job Number 60442412, Revision 0, October 17, 2017.

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2020, Statistical Analysis Plan, Miami Fort Power Station Pond System, Project No. 74922, Revision 1, May 22, 2020.

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2022a. Multi-Site Quality Assurance Project Plan. December 28, 2022.

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2022b. Multi-Site Data Management Plan. December 28, 2022.

Ramboll Americas Engineering Solutions, Inc. (Ramboll), 2022c. Multi-Site Statistical Analysis Plan, 40 C.F.R. § 257. December 28, 2022.

TABLES

TABLE 1
GROUNDWATER ELEVATIONS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
MIAMI FORT POWER PLANT
113 - LAWRENCEBURG ROAD LANDFILL
NORTH BEND, OH

Well ID	Monitored Unit	Well Screen Interval (feet BGS)	Well Type	Latitude (Decimal Degrees)	Longitude (Decimal Degrees)	Date	Depth to Groundwater (feet BMP)	Groundwater Elevation (feet NAVD88)
MW-5	UA	71.4 - 81.4	Background	39.14923	-84.79344	09/15/2021	72.59	457.92
MW-5	UA	71.4 - 81.4	Background	39.14923	-84.79344	03/23/2022	65.68	464.83
MW-5	UA	71.4 - 81.4	Background	39.14923	-84.79344	09/21/2022	72.06	458.45
MW-8	UA	60 - 70	Compliance	39.14467	-84.79601	09/15/2021	56.13	457.37
MW-8	UA	60 - 70	Compliance	39.14467	-84.79601	03/23/2022	50.15	463.35
MW-8	UA	60 - 70	Compliance	39.14467	-84.79601	09/21/2022	56.13	457.37
MW-9	UA	30 - 40	Compliance	39.14310	-84.79588	09/15/2021	24.37	457.26
MW-9	UA	30 - 40	Compliance	39.14310	-84.79588	03/23/2022	18.40	463.23
MW-9	UA	30 - 40	Compliance	39.14310	-84.79588	09/21/2022	24.54	457.09
MW-11	Other	67 - 77	Compliance	39.14256	-84.79518	09/15/2021	64.18	457.29
MW-11	Other	67 - 77	Compliance	39.14256	-84.79518	03/23/2022	58.29	463.18
MW-11	Other	67 - 77	Compliance	39.14256	-84.79518	09/21/2022	64.45	457.02
MW-12	UA	70.2 - 80.2	Compliance	39.14248	-84.79426	09/15/2021	70.07	457.31
MW-12	UA	70.2 - 80.2	Compliance	39.14248	-84.79426	03/23/2022	64.27	463.11
MW-12	UA	70.2 - 80.2	Compliance	39.14248	-84.79426	09/21/2022	70.06	457.32
MW-13	UA	76.82 - 86.82	Background	39.14838	-84.79083	09/15/2021	79.24	457.48
MW-13	UA	76.82 - 86.82	Background	39.14838	-84.79083	03/23/2022	71.24	465.48
MW-13	UA	76.82 - 86.82	Background	39.14838	-84.79083	09/21/2022	79.19	457.53
MW-14	UA	74.91 - 84.91	Compliance	39.14743	-84.79234	09/15/2021	64.73	457.40
MW-14	UA	74.91 - 84.91	Compliance	39.14743	-84.79234	03/23/2022	57.69	464.44
MW-14	UA	74.91 - 84.91	Compliance	39.14743	-84.79234	09/21/2022	64.69	457.44
MW-15	UA	68.41 - 78.41	Compliance	39.14570	-84.79393	09/15/2021	51.41	456.87
MW-15	UA	68.41 - 78.41	Compliance	39.14570	-84.79393	03/23/2022	45.29	462.99
MW-15	UA	68.41 - 78.41	Compliance	39.14570	-84.79393	09/21/2022	51.39	456.89

Notes:
BGS = below ground surface
BMP = below measuring point
NAVD88 = North American Vertical Datum of 1988
Monitored Unit Abbreviations:
UA = uppermost aquifer
Other = monitored unit not defined

TABLE 2A
2021 SECOND SEMI-ANNUAL EVENT AND 2022 FIRST SEMI-ANNUAL EVENT ANALYTICAL RESULTS - APPENDIX III PARAMETERS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
MIAMI FORT POWER PLANT
113 - LAWRENCEBURG ROAD LANDFILL
NORTH BEND, OH

Well ID	Well Type	Date	Event ID	Boron, total (mg/L)	Calcium, total (mg/L)	Chloride, total (mg/L)	Fluoride, total (mg/L)	pH (field) (SU)	Sulfate, total (mg/L)	Total Dissolved Solids (mg/L)
		Background Value(s)		*5.67*	*189*	*516*	*0.275*	*6.6/8.0*	*322*	*1,090*
MW-5	Background	09/15/2021	D9	1.75	81.2	10.7	0.248	7.3	123	415
MW-5	Background	03/24/2022	D10	1.89	101	17.4	0.224	7.3	188	520
MW-13	Background	09/15/2021	D9	0.0520	127	224	0.192	7.0	43.0	800
MW-13	Background	03/23/2022	D10	0.0794	117	287	0.208	7.0	36.5	790 J
MW-8	Compliance	09/15/2021	D9	0.0898	113	14.1	0.15 U	7.0	24.3	477
MW-8	Compliance	03/23/2022	D10	0.101	109	11.0	0.15 U	7.0	22.6	454 J
MW-9	Compliance	09/16/2021	D9	0.131	101	23.9	0.15 U	7.0	47.1	475
MW-9	Compliance	03/23/2022	D10	0.140	121	108	0.15 U	6.4	50.4	611 J
MW-9	Compliance	09/21/2022	D10R	--	--	--	--	7.5	--	--
MW-11	Compliance	09/15/2021	D9	0.0752	116	15.9	0.15 U	7.0	51.2	488
MW-11	Compliance	03/23/2022	D10	0.0756	113	16.5	0.15 U	7.0	47.2	465 J
MW-12	Compliance	09/15/2021	D9	0.0891	139	22.8	0.15 U	6.8	65.1	573
MW-12	Compliance	03/23/2022	D10	0.0969	133	21.5	0.153	6.9	66.5	541 J
MW-14	Compliance	09/15/2021	D9	0.0989	118	66.6	0.176	7.0	41.5	567
MW-14	Compliance	03/23/2022	D10	0.106	110	41.6	0.185	7.0	47.1	499 J
MW-15	Compliance	09/15/2021	D9	0.0639	96.5	26.1	0.165	7.1	44.1	404
MW-15	Compliance	03/23/2022	D10	0.0676	101	24.4	0.178	7.1	45.4	399 J

Notes:
If an event includes a resample, a statistically significant increase is confirmed if both the sample and the resample exceed the background value.
Exceedance of Background
mg/L = milligrams per liter
SU = Standard Units
– = not analyzed
U = The analyte was analyzed for, but was not detected above the level of the adjusted detection limit or quantitation limit, as appropriate. Lab reports may or may not report both the limit of detection and the limit of quantitation. Limits are provided in the electronic data deliverable. As such, the U-flagged result value provided in this table may not match the result value provided in the lab report.
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

TABLE 2B
2022 SECOND SEMI-ANNUAL EVENT ANALYTICAL RESULTS - APPENDIX III PARAMETERS
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
MIAMI FORT POWER PLANT
113 - LAWRENCEBURG ROAD LANDFILL
NORTH BEND, OH

Well ID	Well Type	Date	Event ID	Boron, total (mg/L)	Calcium, total (mg/L)	Chloride, total (mg/L)	Fluoride, total (mg/L)	pH (field) (SU)	Sulfate, total (mg/L)	Total Dissolved Solids (mg/L)
		Background Value(s)		*3.41*	*142*	*287*	*0.272*	*6.5/7.5*	*188*	*995*
MW-5	Background	09/21/2022	D11	2.45	95.3	8.02	0.220	7.5	162	494
MW-13	Background	09/21/2022	D11	0.0567	136	219	0.189	7.2	40.6	826
MW-8	Compliance	09/21/2022	D11	0.108	112	10.8	0.0938 J	7.4	23.0	474
MW-9	Compliance	09/21/2022	D11	0.127	116	70.2	0.1 J	7.5	49.9	576
MW-11	Compliance	09/21/2022	D11	0.0794	119	17.2	0.13 J	7.3	54.7	491
MW-12	Compliance	09/21/2022	D11	0.101	141	19.7	0.141 J	7.3	63.5	569
MW-14	Compliance	09/21/2022	D11	0.0800	121	78.8	0.172	7.2	45.3	607
MW-15	Compliance	09/21/2022	D11	0.0617	99.5	28.3	0.183	7.4	48.0	404

Notes:
If an event includes a resample, a statistically significant increase (SSI) is confirmed if both the sample and the resample exceed the background value.
mg/L = milligrams per liter
SU = Standard Units
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

TABLE 3
STATISTICAL BACKGROUND VALUES
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
MIAMI FORT POWER PLANT
113 - LAWRENCEBURG ROAD LANDFILL
NORTH BEND, OH

Parameter	Q1					Q3				
	Date Range	Sample Count	Percent Non-Detects	Statistical Calculation	Statistical Background Value (LPL/UPL)	Date Range	Sample Count	Percent Non-Detects	Statistical Calculation	Statistical Background Value (LPL/UPL)
Boron (mg/L)	12/11/2015 - 07/11/2017	16	19	Non-parametric UPL	5.67	11/15/2017 - 03/24/2022	20	30	Parametric UPL	3.41
Calcium (mg/L)	12/11/2015 - 07/11/2017	16	0	Parametric UPL	189	11/15/2017 - 03/24/2022	20	0	Parametric UPL	142
Chloride (mg/L)	12/11/2015 - 07/11/2017	16	0	Non-parametric UPL	516	11/15/2017 - 03/24/2022	20	0	Non-Parametric UPL	287
Fluoride (mg/L)	12/11/2015 - 07/11/2017	16	75	Non-parametric UPL	0.275	11/15/2017 - 03/24/2022	20	50	Non-Parametric UPL	0.272
pH (field) (SU)	12/11/2015 - 07/11/2017	14	0	Parametric UPL (log-transformed)	6.6/8.0	11/15/2017 - 03/24/2022	21	0	Parametric LPL/UPL	6.5/7.5
Sulfate (mg/L)	12/11/2015 - 07/11/2017	16	12	Non-parametric UPL	322	11/15/2017 - 03/24/2022	20	10	Non-Parametric UPL	188
Total Dissolved Solids (mg/L)	12/11/2015 - 07/11/2017	16	0	Parametric UPL	1,090	11/15/2017 - 03/24/2022	20	0	Parametric UPL	995

Notes:
LPL = lower prediction limit (applicable for pH only)
mg/L = milligrams per liter
SU = standard units
UPL = upper prediction limit

FIGURES

BACKGROUND WELL

COMPLIANCE WELL

40 C.F.R. § 257 REGULATED UNIT (SUBJECT UNIT)

0 150 300
Feet

MONITORING WELL LOCATION MAP

2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
LAWRENCEBURG ROAD LANDFILL
MIAMI FORT POWER PLANT
NORTH BEND, OHIO

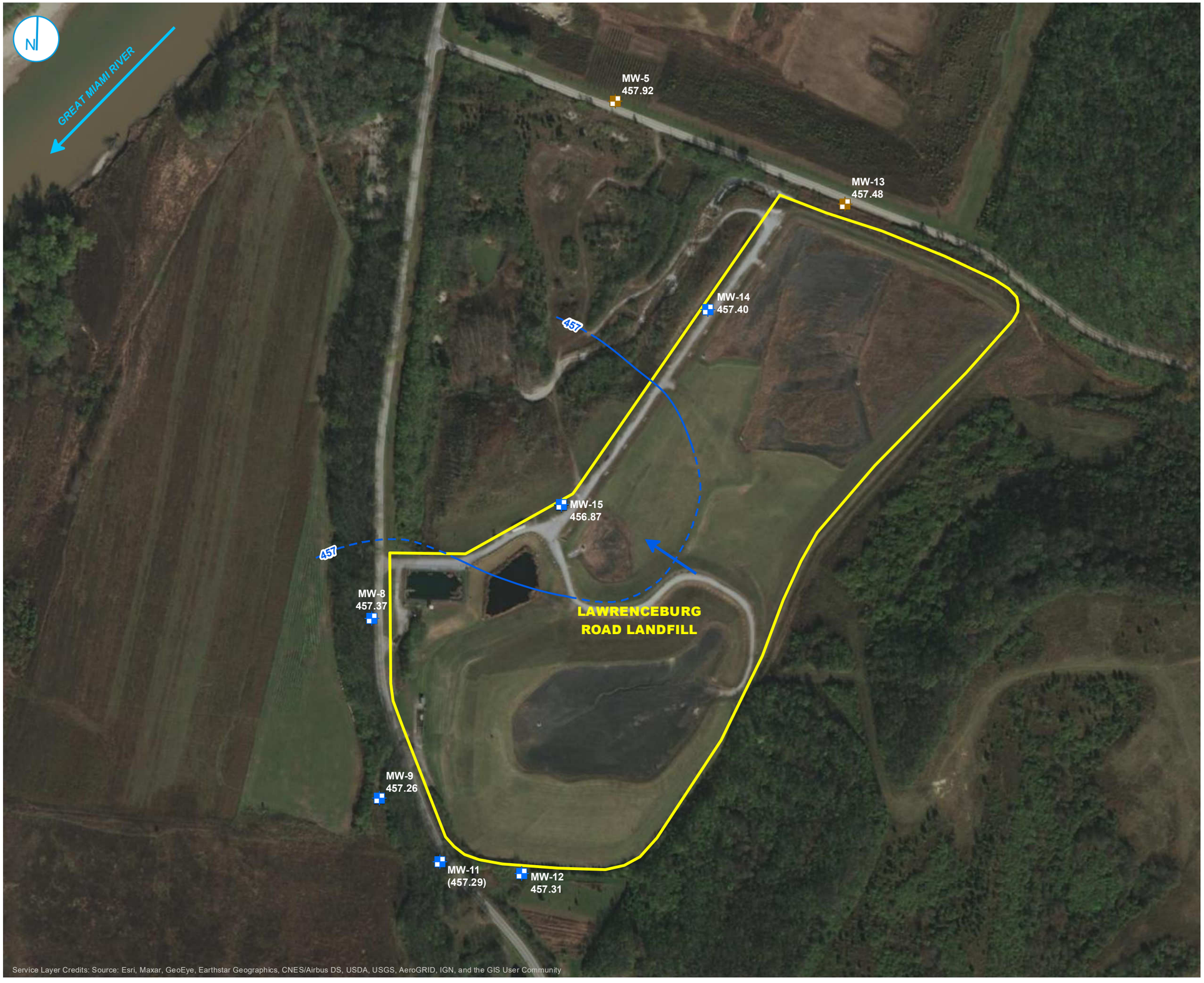
FIGURE 1

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

RAMBOLL

Y:\Mapping\Projects\22\2285\MXD\2021_AnnualGWM_CAR\Miami_Fort\LRL_113\Figure 1 MF LRL MW Location Map.mxd

PROJECT: 169000XXXX | DATED: 1/5/2022 | DESIGNER: galarmmc



BACKGROUND WELL

COMPLIANCE WELL

GROUNDWATER ELEVATION CONTOUR (1-FT CONTOUR INTERVAL, NAVD88)

INFERRED GROUNDWATER ELEVATION CONTOUR

GROUNDWATER FLOW DIRECTION

40 C.F.R. § 257 REGULATED UNIT (SUBJECT UNIT)

NOTE:
ELEVATIONS IN PARENTHESIS WERE NOT USED FOR CONTOURING.

0 150 300
Feet

POTENTIOMETRIC SURFACE MAP SEPTEMBER 15, 2021

2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
LAWRENCEBURG ROAD LANDFILL
MIAMI FORT POWER PLANT
NORTH BEND, OHIO

FIGURE 2

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

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PROJECT: 169000XXXX | DATED: 3/18/2022 | DESIGNER: galarmmc

Y:\Mapping\Projects\22\2285\MXD\GW_Contours\Round_2021\Miami_Fort\LRL_113MF LRL GWE Contours D9A4D 20210915.mxd

BACKGROUND WELL

COMPLIANCE WELL

GROUNDWATER ELEVATION CONTOUR (1-FT CONTOUR INTERVAL, NAVD88)

INFERRED GROUNDWATER ELEVATION CONTOUR

GROUNDWATER FLOW DIRECTION

40 C.F.R. § 257 REGULATED UNIT (SUBJECT UNIT)

NOTES:
1. ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.
2. ELEVATION CONTOURS SHOWN IN FEET, NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

0 150 300
Feet

POTENTIOMETRIC SURFACE MAP MARCH 23, 2022

2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
LAWRENCEBURG ROAD LANDFILL
MIAMI FORT POWER PLANT
NORTH BEND, OHIO

FIGURE 3

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

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COMPLIANCE WELL

BACKGROUND WELL

GROUNDWATER ELEVATION CONTOUR (1-FT CONTOUR INTERVAL, NAVD88)

INFERRED GROUNDWATER ELEVATION CONTOUR

GROUNDWATER FLOW DIRECTION

40 C.F.R. § 257 REGULATED UNIT (SUBJECT UNIT)

NOTES:
1. ELEVATIONS IN PARENTHESES WERE NOT USED FOR CONTOURING.
2. ELEVATION CONTOURS SHOWN IN FEET, NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

0 150 300
Feet

POTENTIOMETRIC SURFACE MAP SEPTEMBER 21, 2022

2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
LAWRENCEBURG ROAD LANDFILL
MIAMI FORT POWER PLANT
NORTH BEND, OHIO

FIGURE 4

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.

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APPENDICES

APPENDIX A
LABORATORY REPORTS

ANALYTICAL REPORT

September 27, 2021

S&ME - Nashville, TN

Sample Delivery Group:	L1405274
Samples Received:	09/17/2021
Project Number:	7217-17-003D
Description:	Miami Fort Station - North Bend, OH
Site:	LAWRENCEBURG RD. LF (UNIT 113)
Report To:	Vince Epps 862 East Crescentville Road Cincinnati, OH 45246

Entire Report Reviewed By:

Mark W. Beasley
Project Manager

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

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MW-5 L1405274-01 GW

Collected by: Bradley Puet | Collected date/time: 09/15/21 18:55 | Received date/time: 09/17/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1744744	1	09/22/21 15:46	09/22/21 19:46	VRP	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1745274	1	09/26/21 16:46	09/26/21 16:46	AMH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1744853	1	09/22/21 21:58	09/22/21 21:58	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1744853	5	09/22/21 22:09	09/22/21 22:09	ELN	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1744963	1	09/23/21 10:57	09/23/21 23:35	JPD	Mt. Juliet, TN

MW-13 L1405274-02 GW

Collected by: Bradley Puet | Collected date/time: 09/15/21 19:40 | Received date/time: 09/17/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1744744	1	09/22/21 15:46	09/22/21 19:46	VRP	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1745278	1	09/26/21 16:04	09/26/21 16:04	AMH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1744853	1	09/22/21 22:21	09/22/21 22:21	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1744853	5	09/22/21 22:32	09/22/21 22:32	ELN	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1744963	1	09/23/21 10:57	09/24/21 00:29	JPD	Mt. Juliet, TN

MW-8 L1405274-03 GW

Collected by: Bradley Puet | Collected date/time: 09/15/21 13:45 | Received date/time: 09/17/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1744744	1	09/22/21 15:46	09/22/21 19:46	VRP	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1745278	1	09/26/21 16:07	09/26/21 16:07	AMH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1744853	1	09/22/21 22:44	09/22/21 22:44	ELN	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1744963	1	09/23/21 10:57	09/24/21 00:32	JPD	Mt. Juliet, TN

MW-9 L1405274-04 GW

Collected by: Bradley Puet | Collected date/time: 09/16/21 08:40 | Received date/time: 09/17/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1744858	1	09/22/21 18:25	09/22/21 19:22	VRP	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1745278	1	09/26/21 16:11	09/26/21 16:11	AMH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1744853	1	09/22/21 23:07	09/22/21 23:07	ELN	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1744963	1	09/23/21 10:57	09/24/21 00:35	JPD	Mt. Juliet, TN

MW-11 L1405274-05 GW

Collected by: Bradley Puet | Collected date/time: 09/15/21 13:05 | Received date/time: 09/17/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1744742	1	09/22/21 15:45	09/22/21 17:55	BRG	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1745278	1	09/26/21 16:14	09/26/21 16:14	AMH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1744853	1	09/22/21 23:53	09/22/21 23:53	ELN	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1744963	1	09/23/21 10:57	09/24/21 00:38	JPD	Mt. Juliet, TN

MW-12 L1405274-06 GW

Collected by: Bradley Puet | Collected date/time: 09/15/21 15:45 | Received date/time: 09/17/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1744744	1	09/22/21 15:46	09/22/21 19:46	VRP	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1745278	1	09/26/21 16:18	09/26/21 16:18	AMH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1744853	1	09/23/21 00:27	09/23/21 00:27	ELN	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1744963	1	09/23/21 10:57	09/24/21 00:47	JPD	Mt. Juliet, TN

MW-14 L1405274-07 GW

Collected by: Bradley Puet | Collected date/time: 09/15/21 17:10 | Received date/time: 09/17/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1744742	1	09/22/21 15:45	09/22/21 17:55	BRG	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1745278	1	09/26/21 16:21	09/26/21 16:21	AMH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1744853	1	09/23/21 00:50	09/23/21 00:50	ELN	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1744963	1	09/23/21 10:57	09/24/21 00:50	JPD	Mt. Juliet, TN

MW-15 L1405274-08 GW

Collected by: Bradley Puet | Collected date/time: 09/15/21 17:50 | Received date/time: 09/17/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1744744	1	09/22/21 15:46	09/22/21 19:46	VRP	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1745278	1	09/26/21 16:31	09/26/21 16:31	AMH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1744853	1	09/23/21 01:01	09/23/21 01:01	ELN	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1744963	1	09/23/21 10:57	09/24/21 00:53	JPD	Mt. Juliet, TN

MFS_L1_SOURCE WATER CCR_TOTAL L1405274-09 GW

Collected by: Bradley Puet | Collected date/time: 09/15/21 14:40 | Received date/time: 09/17/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1744744	1	09/22/21 15:46	09/22/21 19:46	VRP	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1745278	1	09/26/21 16:35	09/26/21 16:35	AMH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1744853	1	09/23/21 01:13	09/23/21 01:13	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1744853	50	09/23/21 01:24	09/23/21 01:24	ELN	Mt. Juliet, TN
Mercury by Method 7470A	WG1742880	1	09/23/21 10:05	09/23/21 16:37	BMF	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1744963	1	09/23/21 10:57	09/24/21 00:56	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1744963	100	09/23/21 10:57	09/24/21 08:51	JPD	Mt. Juliet, TN

MFS_L1_SOURCE WATER CCR_DISS L1405274-10 GW

Collected by: Bradley Puet | Collected date/time: 09/15/21 14:40 | Received date/time: 09/17/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1742884	1	09/21/21 09:47	09/21/21 16:26	BMF	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1744734	1	09/22/21 18:42	09/23/21 02:01	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1744734	100	09/22/21 18:42	09/23/21 21:46	JPD	Mt. Juliet, TN

091521LF-DUP L1405274-11 GW

Collected by: Bradley Puet | Collected date/time: 09/15/21 00:00 | Received date/time: 09/17/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1744744	1	09/22/21 15:46	09/22/21 19:46	VRP	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1745278	1	09/26/21 16:38	09/26/21 16:38	AMH	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1744853	1	09/23/21 01:59	09/23/21 01:59	ELN	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1744963	1	09/23/21 10:57	09/24/21 00:59	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1744963	1	09/23/21 10:57	09/24/21 08:54	JPD	Mt. Juliet, TN

CASE NARRATIVE

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

Mark W. Beasley
Project Manager

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	415000		10000	1	09/22/2021 19:46	WG1744744

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity,Bicarbonate	218000		8450	20000	1	09/26/2021 16:46	WG1745274
Alkalinity,Carbonate	U		8450	20000	1	09/26/2021 16:46	WG1745274

Sample Narrative:

L1405274-01 WG1745274: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	10700		379	1000	1	09/22/2021 21:58	WG1744853
Fluoride	248		64.0	150	1	09/22/2021 21:58	WG1744853
Sulfate	123000		2970	25000	5	09/22/2021 22:09	WG1744853

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	1750		9.63	30.0	1	09/23/2021 23:35	WG1744963
Calcium	81200		93.6	1000	1	09/23/2021 23:35	WG1744963
Magnesium	26200		73.5	1000	1	09/23/2021 23:35	WG1744963
Potassium	1840	J	108	2000	1	09/23/2021 23:35	WG1744963
Sodium	11600		376	2000	1	09/23/2021 23:35	WG1744963

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	800000		20000	1	09/22/2021 19:46	WG1744744

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity,Bicarbonate	396000		8450	20000	1	09/26/2021 16:04	WG1745278
Alkalinity,Carbonate	U		8450	20000	1	09/26/2021 16:04	WG1745278

Sample Narrative:

L1405274-02 WG1745278: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	224000		1900	5000	5	09/22/2021 22:32	WG1744853
Fluoride	192		64.0	150	1	09/22/2021 22:21	WG1744853
Sulfate	43000		594	5000	1	09/22/2021 22:21	WG1744853

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	52.0		9.63	30.0	1	09/24/2021 00:29	WG1744963
Calcium	127000		93.6	1000	1	09/24/2021 00:29	WG1744963
Magnesium	35500		73.5	1000	1	09/24/2021 00:29	WG1744963
Potassium	2710		108	2000	1	09/24/2021 00:29	WG1744963
Sodium	109000		376	2000	1	09/24/2021 00:29	WG1744963

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	477000		10000	1	09/22/2021 19:46	WG1744744

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity,Bicarbonate	414000		8450	20000	1	09/26/2021 16:07	WG1745278
Alkalinity,Carbonate	U		8450	20000	1	09/26/2021 16:07	WG1745278

Sample Narrative:

L1405274-03 WG1745278: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	14100		379	1000	1	09/22/2021 22:44	WG1744853
Fluoride	77.8	J	64.0	150	1	09/22/2021 22:44	WG1744853
Sulfate	24300		594	5000	1	09/22/2021 22:44	WG1744853

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	89.8		9.63	30.0	1	09/24/2021 00:32	WG1744963
Calcium	113000		93.6	1000	1	09/24/2021 00:32	WG1744963
Magnesium	34300		73.5	1000	1	09/24/2021 00:32	WG1744963
Potassium	2800		108	2000	1	09/24/2021 00:32	WG1744963
Sodium	11700		376	2000	1	09/24/2021 00:32	WG1744963

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	475000		10000	1	09/22/2021 19:22	WG1744858

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity,Bicarbonate	359000		8450	20000	1	09/26/2021 16:11	WG1745278
Alkalinity,Carbonate	U		8450	20000	1	09/26/2021 16:11	WG1745278

Sample Narrative:

L1405274-04 WG1745278: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	23900		379	1000	1	09/22/2021 23:07	WG1744853
Fluoride	87.8	J	64.0	150	1	09/22/2021 23:07	WG1744853
Sulfate	47100		594	5000	1	09/22/2021 23:07	WG1744853

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	131		9.63	30.0	1	09/24/2021 00:35	WG1744963
Calcium	101000		93.6	1000	1	09/24/2021 00:35	WG1744963
Magnesium	22800		73.5	1000	1	09/24/2021 00:35	WG1744963
Potassium	4390		108	2000	1	09/24/2021 00:35	WG1744963
Sodium	38400		376	2000	1	09/24/2021 00:35	WG1744963

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	488000		10000	1	09/22/2021 17:55	WG1744742

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity,Bicarbonate	391000		8450	20000	1	09/26/2021 16:14	WG1745278
Alkalinity,Carbonate	U		8450	20000	1	09/26/2021 16:14	WG1745278

Sample Narrative:

L1405274-05 WG1745278: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	15900		379	1000	1	09/22/2021 23:53	WG1744853
Fluoride	120	J	64.0	150	1	09/22/2021 23:53	WG1744853
Sulfate	51200		594	5000	1	09/22/2021 23:53	WG1744853

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	75.2		9.63	30.0	1	09/24/2021 00:38	WG1744963
Calcium	116000		93.6	1000	1	09/24/2021 00:38	WG1744963
Magnesium	34000		73.5	1000	1	09/24/2021 00:38	WG1744963
Potassium	2770		108	2000	1	09/24/2021 00:38	WG1744963
Sodium	7210		376	2000	1	09/24/2021 00:38	WG1744963

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	573000		10000	1	09/22/2021 19:46	WG1744744

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity,Bicarbonate	385000		8450	20000	1	09/26/2021 16:18	WG1745278
Alkalinity,Carbonate	U		8450	20000	1	09/26/2021 16:18	WG1745278

Sample Narrative:

L1405274-06 WG1745278: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	22800		379	1000	1	09/23/2021 00:27	WG1744853
Fluoride	134	J	64.0	150	1	09/23/2021 00:27	WG1744853
Sulfate	65100		594	5000	1	09/23/2021 00:27	WG1744853

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	89.1		9.63	30.0	1	09/24/2021 00:47	WG1744963
Calcium	139000		93.6	1000	1	09/24/2021 00:47	WG1744963
Magnesium	35400		73.5	1000	1	09/24/2021 00:47	WG1744963
Potassium	2590		108	2000	1	09/24/2021 00:47	WG1744963
Sodium	10200		376	2000	1	09/24/2021 00:47	WG1744963

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	567000		10000	1	09/22/2021 17:55	WG1744742

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity,Bicarbonate	408000		8450	20000	1	09/26/2021 16:21	WG1745278
Alkalinity,Carbonate	U		8450	20000	1	09/26/2021 16:21	WG1745278

Sample Narrative:

L1405274-07 WG1745278: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	66600		379	1000	1	09/23/2021 00:50	WG1744853
Fluoride	176		64.0	150	1	09/23/2021 00:50	WG1744853
Sulfate	41500		594	5000	1	09/23/2021 00:50	WG1744853

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	98.9		9.63	30.0	1	09/24/2021 00:50	WG1744963
Calcium	118000		93.6	1000	1	09/24/2021 00:50	WG1744963
Magnesium	25600		73.5	1000	1	09/24/2021 00:50	WG1744963
Potassium	2900		108	2000	1	09/24/2021 00:50	WG1744963
Sodium	54000		376	2000	1	09/24/2021 00:50	WG1744963

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	404000		10000	1	09/22/2021 19:46	WG1744744

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity,Bicarbonate	282000		8450	20000	1	09/26/2021 16:31	WG1745278
Alkalinity,Carbonate	U		8450	20000	1	09/26/2021 16:31	WG1745278

Sample Narrative:

L1405274-08 WG1745278: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	26100		379	1000	1	09/23/2021 01:01	WG1744853
Fluoride	165		64.0	150	1	09/23/2021 01:01	WG1744853
Sulfate	44100		594	5000	1	09/23/2021 01:01	WG1744853

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	63.9		9.63	30.0	1	09/24/2021 00:53	WG1744963
Calcium	96500		93.6	1000	1	09/24/2021 00:53	WG1744963
Magnesium	20000		73.5	1000	1	09/24/2021 00:53	WG1744963
Potassium	1920	J	108	2000	1	09/24/2021 00:53	WG1744963
Sodium	12800		376	2000	1	09/24/2021 00:53	WG1744963

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	2360000		50000	1	09/22/2021 19:46	WG1744744

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity,Bicarbonate	184000		8450	20000	1	09/26/2021 16:35	WG1745278
Alkalinity,Carbonate	U		8450	20000	1	09/26/2021 16:35	WG1745278

Sample Narrative:

L1405274-09 WG1745278: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	143000		19000	50000	50	09/23/2021 01:24	WG1744853
Fluoride	605		64.0	150	1	09/23/2021 01:13	WG1744853
Sulfate	1330000		29700	250000	50	09/23/2021 01:24	WG1744853

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	09/23/2021 16:37	WG1742880

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	5.66		1.03	4.00	1	09/24/2021 00:56	WG1744963
Arsenic	7.63		0.180	2.00	1	09/24/2021 00:56	WG1744963
Barium	37.0		0.381	2.00	1	09/24/2021 00:56	WG1744963
Beryllium	U		0.190	2.00	1	09/24/2021 00:56	WG1744963
Boron	17000		963	3000	100	09/24/2021 08:51	WG1744963
Cadmium	1.02		0.150	1.00	1	09/24/2021 00:56	WG1744963
Calcium	452000		93.6	1000	1	09/24/2021 00:56	WG1744963
Chromium	2.82		1.24	2.00	1	09/24/2021 00:56	WG1744963
Cobalt	0.776	J	0.0596	2.00	1	09/24/2021 00:56	WG1744963
Lead	1.31	J	0.849	2.00	1	09/24/2021 00:56	WG1744963
Magnesium	26200		73.5	1000	1	09/24/2021 00:56	WG1744963
Molybdenum	4530		0.348	5.00	1	09/24/2021 00:56	WG1744963
Potassium	90900		108	2000	1	09/24/2021 00:56	WG1744963
Selenium	58.8		0.300	2.00	1	09/24/2021 00:56	WG1744963
Sodium	114000		376	2000	1	09/24/2021 00:56	WG1744963
Thallium	1.60	J	0.121	2.00	1	09/24/2021 00:56	WG1744963
Lithium	580		0.695	2.00	1	09/24/2021 00:56	WG1744963

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Mercury,Dissolved	U		0.100	0.200	1	09/21/2021 16:26	WG1742884

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Antimony,Dissolved	5.43		1.03	4.00	1	09/23/2021 02:01	WG1744734
Arsenic,Dissolved	2.61		0.180	2.00	1	09/23/2021 02:01	WG1744734
Barium,Dissolved	33.9		0.381	2.00	1	09/23/2021 02:01	WG1744734
Beryllium,Dissolved	U		0.190	2.00	1	09/23/2021 02:01	WG1744734
Boron,Dissolved	18300		963	3000	100	09/23/2021 21:46	WG1744734
Cadmium,Dissolved	1.08		0.150	1.00	1	09/23/2021 02:01	WG1744734
Calcium,Dissolved	444000		93.6	1000	1	09/23/2021 02:01	WG1744734
Chromium,Dissolved	U		1.24	2.00	1	09/23/2021 02:01	WG1744734
Cobalt,Dissolved	0.562	J	0.0596	2.00	1	09/23/2021 02:01	WG1744734
Lead,Dissolved	U		0.849	2.00	1	09/23/2021 02:01	WG1744734
Magnesium,Dissolved	26500		73.5	1000	1	09/23/2021 02:01	WG1744734
Molybdenum,Dissolved	4780		0.348	5.00	1	09/23/2021 02:01	WG1744734
Potassium,Dissolved	92300		108	2000	1	09/23/2021 02:01	WG1744734
Selenium,Dissolved	60.8		0.300	2.00	1	09/23/2021 02:01	WG1744734
Sodium,Dissolved	117000		376	2000	1	09/23/2021 02:01	WG1744734
Thallium,Dissolved	1.48	J	0.121	2.00	1	09/23/2021 02:01	WG1744734
Lithium,Dissolved	579		0.695	2.00	1	09/23/2021 02:01	WG1744734

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	402000		10000	1	09/22/2021 19:46	WG1744744

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity,Bicarbonate	272000		8450	20000	1	09/26/2021 16:38	WG1745278
Alkalinity,Carbonate	U		8450	20000	1	09/26/2021 16:38	WG1745278

Sample Narrative:

L1405274-11 WG1745278: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	26300		379	1000	1	09/23/2021 01:59	WG1744853
Fluoride	165		64.0	150	1	09/23/2021 01:59	WG1744853
Sulfate	44400		594	5000	1	09/23/2021 01:59	WG1744853

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	67.6		9.63	30.0	1	09/24/2021 08:54	WG1744963
Calcium	97000		93.6	1000	1	09/24/2021 00:59	WG1744963
Magnesium	20100		73.5	1000	1	09/24/2021 00:59	WG1744963
Potassium	1950	J	108	2000	1	09/24/2021 00:59	WG1744963
Sodium	12700		376	2000	1	09/24/2021 00:59	WG1744963

Method Blank (MB)

(MB) R3708153-1 09/22/21 17:55

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

L1404460-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1404460-03 09/22/21 17:55 • (DUP) R3708153-3 09/22/21 17:55

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1630000	1630000	1	0.123		5

L1405871-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1405871-03 09/22/21 17:55 • (DUP) R3708153-4 09/22/21 17:55

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1260000	1270000	1	0.633		5

Laboratory Control Sample (LCS)

(LCS) R3708153-2 09/22/21 17:55

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	9570000	109	77.4-123	

Method Blank (MB)

(MB) R3708501-1 09/22/21 19:46

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

L1405085-25 Original Sample (OS) • Duplicate (DUP)

(OS) L1405085-25 09/22/21 19:46 • (DUP) R3708501-3 09/22/21 19:46

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	591000	596000	1	0.898		5

L1405274-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1405274-02 09/22/21 19:46 • (DUP) R3708501-4 09/22/21 19:46

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	800000	816000	1	1.98		5

Laboratory Control Sample (LCS)

(LCS) R3708501-2 09/22/21 19:46

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	9690000	110	77.4-123	

Method Blank (MB)

(MB) R3708502-1 09/22/21 19:22

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

L1405622-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1405622-04 09/22/21 19:22 • (DUP) R3708502-3 09/22/21 19:22

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1420000	1420000	1	0.353		5

L1405622-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1405622-05 09/22/21 19:22 • (DUP) R3708502-4 09/22/21 19:22

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	936000	962000	1	2.74		5

Laboratory Control Sample (LCS)

(LCS) R3708502-2 09/22/21 19:22

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	9330000	106	77.4-123	

Method Blank (MB)

(MB) R3708855-2 09/26/21 14:56

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity,Bicarbonate	U		8450	20000
Alkalinity,Carbonate	U		8450	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1405256-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1405256-01 09/26/21 15:04 • (DUP) R3708855-3 09/26/21 15:12

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity,Bicarbonate	141000	140000	1	0.586		20
Alkalinity,Carbonate	U	U	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

L1405258-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1405258-07 09/26/21 16:18 • (DUP) R3708855-4 09/26/21 16:21

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity,Bicarbonate	283000	284000	1	0.427		20
Alkalinity,Carbonate	U	U	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

Method Blank (MB)

(MB) R3708859-2 09/26/21 15:47

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity,Bicarbonate	U		8450	20000
Alkalinity,Carbonate	U		8450	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1405458-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1405458-06 09/26/21 15:53 • (DUP) R3708859-3 09/26/21 16:00

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity,Bicarbonate	178000	175000	1	1.63		20
Alkalinity,Carbonate	11700	11900	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

L1405458-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1405458-09 09/26/21 17:21 • (DUP) R3708859-4 09/26/21 17:25

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity,Bicarbonate	111000	109000	1	1.50		20
Alkalinity,Carbonate	U	U	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

Method Blank (MB)

(MB) R3707689-1 09/22/21 21:23

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

L1405274-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1405274-06 09/23/21 00:27 • (DUP) R3707689-5 09/23/21 00:39

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	22800	22700	1	0.312		15
Fluoride	134	132	1	1.20	J	15
Sulfate	65100	65100	1	0.0432		15

L1405337-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1405337-02 09/23/21 02:22 • (DUP) R3707689-6 09/23/21 02:33

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	26600	26600	1	0.0417		15
Fluoride	159	160	1	0.689		15
Sulfate	56500	56600	1	0.226		15

Laboratory Control Sample (LCS)

(LCS) R3707689-2 09/22/21 21:35

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	39600	99.1	80.0-120	
Fluoride	8000	7880	98.5	80.0-120	
Sulfate	40000	40200	100	80.0-120	

L1405274-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1405274-05 09/22/21 23:53 • (MS) R3707689-3 09/23/21 00:04 • (MSD) R3707689-4 09/23/21 00:16

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	15900	68700	69100	105	106	1	80.0-120			0.577	15
Fluoride	5000	120	5520	5560	108	109	1	80.0-120			0.725	15
Sulfate	50000	51200	101000	102000	100	101	1	80.0-120	E	E	0.490	15

L1405337-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1405337-02 09/23/21 02:22 • (MS) R3707689-7 09/23/21 02:45

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	26600	77400	101	1	80.0-120	
Fluoride	5000	159	5450	106	1	80.0-120	
Sulfate	50000	56500	105000	97.3	1	80.0-120	E

QUALITY CONTROL SUMMARY

L1405274-09

Method Blank (MB)

(MB) R3708080-1 09/23/21 15:44

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

Laboratory Control Sample (LCS)

(LCS) R3708080-2 09/23/21 15:46

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	3.00	3.22	107	80.0-120	

L1405227-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1405227-02 09/23/21 15:48 • (MS) R3708080-3 09/23/21 15:50 • (MSD) R3708080-4 09/23/21 15:56

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	3.00	U	3.11	3.15	104	105	1	75.0-125			1.33	20

Method Blank (MB)

(MB) R3706960-1 09/21/21 15:31

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

Laboratory Control Sample (LCS)

(LCS) R3706960-2 09/21/21 15:37

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury,Dissolved	3.00	3.34	111	80.0-120	

L1404071-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1404071-04 09/21/21 15:39 • (MS) R3706960-3 09/21/21 15:41 • (MSD) R3706960-4 09/21/21 15:43

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury,Dissolved	3.00	U	2.42	2.34	80.7	78.1	1	75.0-125			3.27	20

Method Blank (MB)

(MB) R3707766-1 09/23/21 00:42

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Antimony,Dissolved	U		1.03	4.00
Arsenic,Dissolved	U		0.180	2.00
Barium,Dissolved	U		0.381	2.00
Beryllium,Dissolved	U		0.190	2.00
Boron,Dissolved	U		9.63	30.0
Cadmium,Dissolved	U		0.150	1.00
Calcium,Dissolved	U		93.6	1000
Chromium,Dissolved	U		1.24	2.00
Cobalt,Dissolved	U		0.0596	2.00
Lead,Dissolved	U		0.849	2.00
Magnesium,Dissolved	U		73.5	1000
Molybdenum,Dissolved	U		0.348	5.00
Potassium,Dissolved	U		108	2000
Selenium,Dissolved	U		0.300	2.00
Sodium,Dissolved	U		376	2000
Thallium,Dissolved	U		0.121	2.00
Lithium,Dissolved	U		0.695	2.00

Laboratory Control Sample (LCS)

(LCS) R3707766-2 09/23/21 00:45

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Antimony,Dissolved	50.0	46.4	92.8	80.0-120	
Arsenic,Dissolved	50.0	45.2	90.3	80.0-120	
Barium,Dissolved	50.0	44.8	89.6	80.0-120	
Beryllium,Dissolved	50.0	44.3	88.6	80.0-120	
Boron,Dissolved	500	455	91.0	80.0-120	
Cadmium,Dissolved	50.0	48.8	97.6	80.0-120	
Calcium,Dissolved	5000	4640	92.8	80.0-120	
Chromium,Dissolved	50.0	46.7	93.3	80.0-120	
Cobalt,Dissolved	50.0	47.3	94.6	80.0-120	
Lead,Dissolved	50.0	44.9	89.7	80.0-120	
Magnesium,Dissolved	5000	4640	92.9	80.0-120	
Molybdenum,Dissolved	50.0	47.5	95.1	80.0-120	
Potassium,Dissolved	5000	4480	89.5	80.0-120	
Selenium,Dissolved	50.0	47.8	95.6	80.0-120	
Sodium,Dissolved	5000	4780	95.6	80.0-120	
Thallium,Dissolved	50.0	43.2	86.5	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R3707766-2 09/23/21 00:45

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Lithium,Dissolved	50.0	46.6	93.2	80.0-120	

L1404888-30 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1404888-30 09/23/21 00:49 • (MS) R3707766-4 09/23/21 00:55 • (MSD) R3707766-5 09/23/21 00:58

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 %
Antimony,Dissolved	50.0	U	48.2	49.6	96.3	99.2	1	75.0-125			2.92	20
Arsenic,Dissolved	50.0	2.93	52.4	51.8	98.9	97.8	1	75.0-125			1.06	20
Barium,Dissolved	50.0	409	455	458	93.3	98.7	1	75.0-125			0.595	20
Beryllium,Dissolved	50.0	U	46.9	45.2	93.9	90.4	1	75.0-125			3.71	20
Boron,Dissolved	500	169	637	626	93.6	91.4	1	75.0-125			1.76	20
Cadmium,Dissolved	50.0	U	49.4	49.5	98.7	99.0	1	75.0-125			0.347	20
Calcium,Dissolved	5000	87500	93100	91900	113	89.0	1	75.0-125			1.30	20
Chromium,Dissolved	50.0	U	48.1	48.5	96.3	97.1	1	75.0-125			0.825	20
Cobalt,Dissolved	50.0	0.0660	48.9	48.7	97.7	97.2	1	75.0-125			0.457	20
Potassium,Dissolved	5000	5030	9550	9520	90.4	89.9	1	75.0-125			0.277	20
Lead,Dissolved	50.0	U	44.4	44.6	88.9	89.1	1	75.0-125			0.331	20
Magnesium,Dissolved	5000	9100	14000	13700	98.5	92.7	1	75.0-125			2.10	20
Molybdenum,Dissolved	50.0	2.67	51.4	52.1	97.5	98.8	1	75.0-125			1.25	20
Selenium,Dissolved	50.0	0.473	50.7	51.8	100	103	1	75.0-125			2.04	20
Sodium,Dissolved	5000	337000	340000	339000	59.9	22.8	1	75.0-125	V	V	0.546	20
Thallium,Dissolved	50.0	U	42.7	43.7	85.4	87.4	1	75.0-125			2.40	20
Lithium,Dissolved	50.0		63.8	61.2	90.4	85.2	1	75.0-125			4.10	20

QUALITY CONTROL SUMMARY

L1405274-01,02,03,04,05,06,07,08,09,11

Method Blank (MB)

(MB) R3708181-1 09/23/21 22:36

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Antimony	U		1.03	4.00
Arsenic	U		0.180	2.00
Barium	U		0.381	2.00
Beryllium	U		0.190	2.00
Boron	U		9.63	30.0
Cadmium	U		0.150	1.00
Calcium	U		93.6	1000
Chromium	U		1.24	2.00
Cobalt	U		0.0596	2.00
Lead	U		0.849	2.00
Magnesium	U		73.5	1000
Molybdenum	U		0.348	5.00
Potassium	U		108	2000
Selenium	U		0.300	2.00
Sodium	U		376	2000
Thallium	0.158	J	0.121	2.00
Lithium	U		0.695	2.00

Laboratory Control Sample (LCS)

(LCS) R3708181-2 09/23/21 22:39

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Antimony	50.0	49.6	99.2	80.0-120	
Arsenic	50.0	45.5	91.1	80.0-120	
Barium	50.0	45.9	91.8	80.0-120	
Beryllium	50.0	45.1	90.3	80.0-120	
Boron	500	482	96.3	80.0-120	
Cadmium	50.0	48.8	97.7	80.0-120	
Calcium	5000	4730	94.7	80.0-120	
Chromium	50.0	47.8	95.5	80.0-120	
Cobalt	50.0	47.0	93.9	80.0-120	
Lead	50.0	48.0	96.1	80.0-120	
Magnesium	5000	4650	93.0	80.0-120	
Molybdenum	50.0	46.7	93.4	80.0-120	
Potassium	5000	4500	90.0	80.0-120	
Selenium	50.0	47.0	94.0	80.0-120	
Sodium	5000	4890	97.9	80.0-120	
Thallium	50.0	46.5	93.0	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R3708181-2 09/23/21 22:39

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Lithium	50.0	45.5	90.9	80.0-120	

L1405133-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1405133-01 09/23/21 22:43 • (MS) R3708181-4 09/23/21 22:49 • (MSD) R3708181-5 09/23/21 22:52

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Antimony	50.0	U	51.5	50.3	103	101	1	75.0-125			2.36	20
Arsenic	50.0	U	47.4	45.8	94.9	91.5	1	75.0-125			3.58	20
Barium	50.0	70.8	116	114	90.7	85.6	1	75.0-125			2.20	20
Beryllium	50.0	U	48.9	47.7	97.8	95.4	1	75.0-125			2.47	20
Boron	500	47.5	559	547	102	100	1	75.0-125			2.06	20
Cadmium	50.0	U	50.7	48.7	101	97.4	1	75.0-125			4.13	20
Calcium	5000	165000	168000	169000	58.0	73.5	1	75.0-125	V	V	0.458	20
Chromium	50.0	U	49.0	46.9	98.0	93.8	1	75.0-125			4.35	20
Cobalt	50.0	U	47.7	45.9	95.4	91.7	1	75.0-125			3.92	20
Potassium	5000	1940	6510	6310	91.3	87.4	1	75.0-125			3.07	20
Lead	50.0	U	47.8	46.5	95.6	93.0	1	75.0-125			2.74	20
Magnesium	5000	21500	25800	26600	85.0	102	1	75.0-125			3.19	20
Molybdenum	50.0	U	48.8	47.0	97.6	93.9	1	75.0-125			3.84	20
Selenium	50.0	0.549	49.2	48.7	97.2	96.2	1	75.0-125			1.03	20
Sodium	5000	22000	26800	27000	95.9	100	1	75.0-125			0.749	20
Thallium	50.0	U	46.5	45.1	92.9	90.2	1	75.0-125			3.03	20
Lithium	50.0	8.06	56.7	56.2	97.2	96.4	1	75.0-125			0.769	20

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

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

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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

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

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

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

Chain of Custody Page 1 of 2

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SDG # L1405274

G025

Acctnum: LITENGNTN

Template: T164916

Prelogin: P867721

PM: 134 - Mark W. Beasley

PB: CS 8/20/21

Shipped Via: Courier

Company Name/Address:
S&ME - Nashville, TN

862 East Crescentville Road
Cincinnati, OH 45246

Billing Information:
Accounts Payable
658 Grassmere Park Dr, Ste 100
Nashville, TN 37211

Pres Chk

Report to:
Vince Epps

Email To:
vepps@smeinc.com;vgallagher@smeinc.com

Project Description:
Miami Fort Station - North Bend, OH

City/State Collected: North Bend, OH

Please Circle: PT MT CT (ET)

Phone: **513-771-8471**

Client Project #
7217-17-003D

Lab Project #
LITENGNTN-MIAMI

Collected by (print):
Bradley Puet

Site/Facility ID #
LAWRENCEBURG RD. LF (UNIT

P.O. #

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 #

Date Results Needed

Immediately Packed on Ice N ___ Y X

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	ALKBI/CA, Cl, F, SO4 125mlHDPE-NoPres	B, Ca, K, Mg, Na 250mlHDPE-HNO3	CCR Metals + K,Na,Mg 250mlHDPE-HNO3	Diss Metals (FF) 250mlHDPE-HNO3	TDS 250mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-5	G	GW	—	9/15/21	1855	3	X	X			X		-01
MW-13		GW	—	9/15/21	1940	3	X	X			X		-02
MW-8		GW	—	9/15/21	1345	3	X	X			X		-03
MW-9		GW	—	9/16/21	0840	3	X	X			X		-04
MW-11		GW	—	9/15/21	1305	3	X	X			X		-05
MW-12		GW	—	9/15/21	1545	3	X	X			X		-06
MW-14		GW	—	9/15/21	1710	3	X	X			X		-07
MW-15		GW	—	9/15/21	1750	3	X	X			X		-08
MFS_L1_SOURCE WATER CCR_TOTAL		GW	—	9/15/21	1440	3	X		X		X		-09
MFS_L1_SOURCE WATER CCR_DISS		GW	—	9/15/21	1440	1				X			-10

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

Remarks:***Log rad to same SDG as different dash #'s as EX 10 day TAT***

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: __ UPS __ FedEx X Courier _____

Tracking #

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

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
	9/16/21	1500		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
				3.5 3.1 3.4 32
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:
				9-17-21 0900

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Company Name/Address:
S&ME - Nashville, TN

862 East Crescentville Road
Cincinnati, OH 45246

Billing Information:
Accounts Payable
658 Grassmere Park Dr, Ste 100
Nashville, TN 37211

Pres Chk

Report to:
Vince Epps

Email To:
vepps@smeinc.com;vgallagher@smeinc.com

Project Description:
Miami Fort Station - North Bend, OH

City/State Collected: North Bend, OH

Please Circle: PT MT CT (ET)

Phone: **513-771-8471**

Client Project #
7217-17-003D

Lab Project #
LITENGNTN-MIAMI

Collected by (print):
Bradley Puet

Collected by (signature):
Brad Puet

Immediately Packed on Ice N ___ Y X

Site/Facility ID #
LAWRENCEBURG RD. LF (UNIT

P.O. #

Quote #

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

Date Results Needed

No. of Cntrs

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	ALKBI/CA, Cl, F, SO4 125mlHDPE-NoPres	B, Ca, K, Mg, Na 250mlHDPE-HNO3	CCR Metals + K,Na,Mg 250mlHDPE-HNO3	Diss Metals (FF) 250mlHDPE-HNO3	TDS 250mlHDPE-NoPres
0915ZILF-DUP	Grab	GW	—			3	X	X			X

Chain of Custody Page 2 of 2

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SDG # L1405274

Table #

Acctnum: **LITENGNTN**

Template: **T164916**

Prelogin: **P867721**

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

PB: VB 9/20/21

Shipped Via: **Courier**

Remarks	Sample # (lab only)
	-11

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

Remarks:*Log rad to same SDG as different dash #'s as EX 10 day TAT*****

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx X Courier _____

Tracking #

Sample Receipt Checklist

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

Relinquished by : (Signature)	Date: 9/16/21	Time: 1500	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.5 -1 = 2.4 °C Bottles Received: 32	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 9-17-21 Time: 0900	Hold: Condition: NCF / OK

ANALYTICAL REPORT

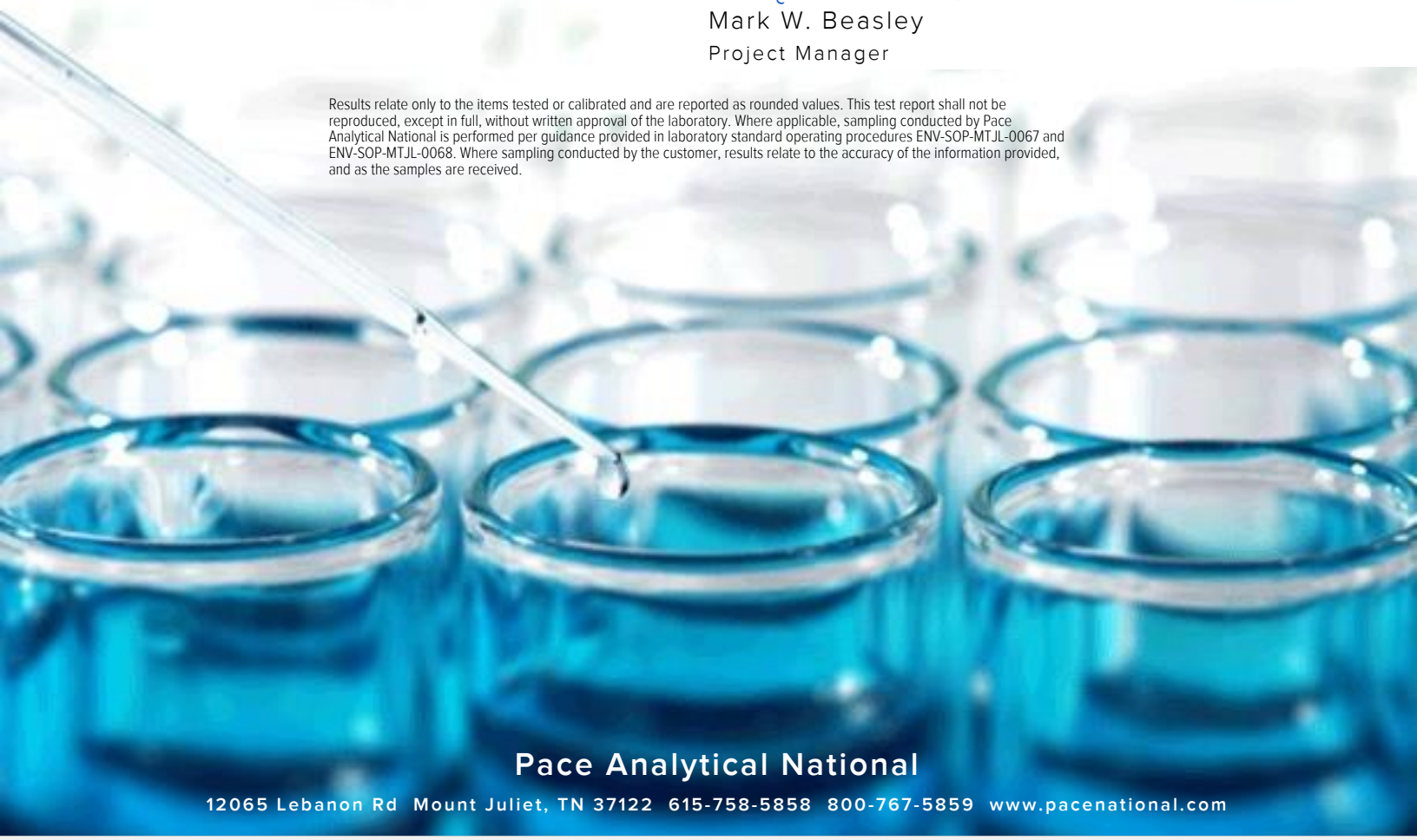
April 04, 2022

S&ME - Nashville, TN

Sample Delivery Group:	L1475494
Samples Received:	03/25/2022
Project Number:	7217-17-003D
Description:	Miami Fort Station - North Bend, OH
Site:	LAWRENCEBURG RD. LF (UNIT 113)
Report To:	Vince Epps 862 East Crescentville Road Cincinnati, OH 45246

Entire Report Reviewed By:

Mark W. Beasley
Project Manager



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

TABLE OF CONTENTS

MW-5 L1475494-01 GW

Collected by: Victoria Gallagher | Collected date/time: 03/24/22 09:45 | Received date/time: 03/25/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1840888	1	03/30/22 17:26	03/30/22 18:00	MMF	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1838920	1	03/29/22 08:00	03/29/22 08:00	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1839607	1	03/28/22 21:50	03/28/22 21:50	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1839607	5	03/28/22 22:08	03/28/22 22:08	ST	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1838733	1	03/31/22 07:55	03/31/22 18:03	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1838733	10	03/31/22 07:55	04/01/22 13:33	JPD	Mt. Juliet, TN

MW-13 L1475494-02 GW

Collected by: Victoria Gallagher | Collected date/time: 03/23/22 16:20 | Received date/time: 03/25/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1840672	1	03/30/22 13:08	03/30/22 16:34	MMF	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1838920	1	03/29/22 08:04	03/29/22 08:04	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1839607	1	03/28/22 22:26	03/28/22 22:26	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1839607	5	03/28/22 22:44	03/28/22 22:44	ST	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1838733	1	03/31/22 07:55	03/31/22 18:07	LD	Mt. Juliet, TN

MW-8 L1475494-03 GW

Collected by: Victoria Gallagher | Collected date/time: 03/23/22 11:35 | Received date/time: 03/25/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1840672	1	03/30/22 13:08	03/30/22 16:34	MMF	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1838920	1	03/29/22 08:19	03/29/22 08:19	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1839607	1	03/28/22 23:02	03/28/22 23:02	ST	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1838733	1	03/31/22 07:55	03/31/22 18:19	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1838733	1	03/31/22 07:55	04/01/22 13:37	JPD	Mt. Juliet, TN

MW-9 L1475494-04 GW

Collected by: Victoria Gallagher | Collected date/time: 03/23/22 12:00 | Received date/time: 03/25/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1840672	1	03/30/22 13:08	03/30/22 16:34	MMF	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1838920	1	03/29/22 08:23	03/29/22 08:23	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1839607	1	03/29/22 00:13	03/29/22 00:13	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1839607	5	03/29/22 00:31	03/29/22 00:31	ST	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1838733	1	03/31/22 07:55	03/31/22 18:23	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1838733	1	03/31/22 07:55	04/01/22 14:04	JPD	Mt. Juliet, TN

MW-11 L1475494-05 GW

Collected by: Victoria Gallagher | Collected date/time: 03/23/22 12:40 | Received date/time: 03/25/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1840672	1	03/30/22 13:08	03/30/22 16:34	MMF	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1838920	1	03/29/22 08:27	03/29/22 08:27	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1839607	1	03/29/22 00:49	03/29/22 00:49	ST	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1838733	1	03/31/22 07:55	03/31/22 18:27	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1838733	1	03/31/22 07:55	04/01/22 14:08	JPD	Mt. Juliet, TN

MW-12 L1475494-06 GW

Collected by: Victoria Gallagher | Collected date/time: 03/23/22 13:20 | Received date/time: 03/25/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1840672	1	03/30/22 13:08	03/30/22 16:34	MMF	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1838920	1	03/29/22 08:30	03/29/22 08:30	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1839607	1	03/29/22 01:25	03/29/22 01:25	ST	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1838733	1	03/31/22 07:55	03/31/22 18:31	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1838733	1	03/31/22 07:55	04/01/22 14:12	JPD	Mt. Juliet, TN

MW-14 L1475494-07 GW

Collected by: Victoria Gallagher | Collected date/time: 03/23/22 15:20 | Received date/time: 03/25/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1840672	1	03/30/22 13:08	03/30/22 16:34	MMF	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1838920	1	03/29/22 08:34	03/29/22 08:34	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1839607	1	03/29/22 02:01	03/29/22 02:01	ST	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1838733	1	03/31/22 07:55	03/31/22 18:34	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1838733	1	03/31/22 07:55	04/01/22 14:15	JPD	Mt. Juliet, TN

MW-15 L1475494-08 GW

Collected by: Victoria Gallagher | Collected date/time: 03/23/22 14:10 | Received date/time: 03/25/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1840672	1	03/30/22 13:08	03/30/22 16:34	MMF	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1838920	1	03/29/22 08:38	03/29/22 08:38	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1839607	1	03/29/22 02:54	03/29/22 02:54	ST	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1838733	1	03/31/22 07:55	03/31/22 18:38	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1838733	1	03/31/22 07:55	04/01/22 14:19	JPD	Mt. Juliet, TN

MFS_L1_SOURCE WATER CCR_TOTAL L1475494-09 GW

Collected by: Victoria Gallagher | Collected date/time: 03/23/22 10:15 | Received date/time: 03/25/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1840598	1	03/30/22 11:34	03/30/22 14:14	MMF	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1838920	1	03/29/22 08:42	03/29/22 08:42	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1839607	1	03/29/22 04:06	03/29/22 04:06	ST	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1839607	50	03/29/22 04:24	03/29/22 04:24	ST	Mt. Juliet, TN
Mercury by Method 7470A	WG1839245	1	03/31/22 12:25	04/01/22 15:25	MRW	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1838733	1	03/31/22 07:55	03/31/22 18:42	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1838733	1	03/31/22 07:55	04/01/22 14:54	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1838733	100	03/31/22 07:55	04/01/22 14:23	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1838733	5	03/31/22 07:55	04/01/22 15:01	JPD	Mt. Juliet, TN

MFS_L1_SOURCE WATER CCR_DISS L1475494-10 GW

Collected by: Victoria Gallagher | Collected date/time: 03/23/22 10:15 | Received date/time: 03/25/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1839250	1	03/30/22 09:43	03/31/22 10:47	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1838720	1	03/30/22 11:15	03/31/22 17:26	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1838720	100	03/30/22 11:15	03/31/22 23:49	LD	Mt. Juliet, TN

CASE NARRATIVE

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

Mark W. Beasley
Project Manager

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	520000		10000	1	03/30/2022 18:00	WG1840888

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity,Bicarbonate	243000		8450	20000	1	03/29/2022 08:00	WG1838920
Alkalinity,Carbonate	U		8450	20000	1	03/29/2022 08:00	WG1838920

Sample Narrative:

L1475494-01 WG1838920: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	17400		379	1000	1	03/28/2022 21:50	WG1839607
Fluoride	224		64.0	150	1	03/28/2022 21:50	WG1839607
Sulfate	188000		2970	25000	5	03/28/2022 22:08	WG1839607

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	1890		96.3	300	10	04/01/2022 13:33	WG1838733
Calcium	101000		93.6	1000	1	03/31/2022 18:03	WG1838733
Magnesium	33100		73.5	1000	1	03/31/2022 18:03	WG1838733
Potassium	2190		108	2000	1	03/31/2022 18:03	WG1838733
Sodium	16300		376	2000	1	03/31/2022 18:03	WG1838733

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	790000		20000	1	03/30/2022 16:34	WG1840672

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity,Bicarbonate	406000		8450	20000	1	03/29/2022 08:04	WG1838920
Alkalinity,Carbonate	U		8450	20000	1	03/29/2022 08:04	WG1838920

Sample Narrative:

L1475494-02 WG1838920: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	287000		1900	5000	5	03/28/2022 22:44	WG1839607
Fluoride	208		64.0	150	1	03/28/2022 22:26	WG1839607
Sulfate	36500		594	5000	1	03/28/2022 22:26	WG1839607

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	79.4		9.63	30.0	1	03/31/2022 18:07	WG1838733
Calcium	117000		93.6	1000	1	03/31/2022 18:07	WG1838733
Magnesium	35100		73.5	1000	1	03/31/2022 18:07	WG1838733
Potassium	3110		108	2000	1	03/31/2022 18:07	WG1838733
Sodium	138000		376	2000	1	03/31/2022 18:07	WG1838733

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	454000		10000	1	03/30/2022 16:34	WG1840672

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity,Bicarbonate	421000		8450	20000	1	03/29/2022 08:19	WG1838920
Alkalinity,Carbonate	U		8450	20000	1	03/29/2022 08:19	WG1838920

Sample Narrative:

L1475494-03 WG1838920: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	11000		379	1000	1	03/28/2022 23:02	WG1839607
Fluoride	117	J	64.0	150	1	03/28/2022 23:02	WG1839607
Sulfate	22600		594	5000	1	03/28/2022 23:02	WG1839607

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	101		9.63	30.0	1	04/01/2022 13:37	WG1838733
Calcium	109000		93.6	1000	1	03/31/2022 18:19	WG1838733
Magnesium	34100		73.5	1000	1	03/31/2022 18:19	WG1838733
Potassium	2610		108	2000	1	03/31/2022 18:19	WG1838733
Sodium	9630		376	2000	1	03/31/2022 18:19	WG1838733

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	611000		13300	1	03/30/2022 16:34	WG1840672

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity,Bicarbonate	383000		8450	20000	1	03/29/2022 08:23	WG1838920
Alkalinity,Carbonate	U		8450	20000	1	03/29/2022 08:23	WG1838920

Sample Narrative:

L1475494-04 WG1838920: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	108000		1900	5000	5	03/29/2022 00:31	WG1839607
Fluoride	109	J	64.0	150	1	03/29/2022 00:13	WG1839607
Sulfate	50400		594	5000	1	03/29/2022 00:13	WG1839607

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	140		9.63	30.0	1	04/01/2022 14:04	WG1838733
Calcium	121000		93.6	1000	1	03/31/2022 18:23	WG1838733
Magnesium	27000		73.5	1000	1	03/31/2022 18:23	WG1838733
Potassium	4710		108	2000	1	03/31/2022 18:23	WG1838733
Sodium	59600		376	2000	1	03/31/2022 18:23	WG1838733

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	465000		10000	1	03/30/2022 16:34	WG1840672

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity,Bicarbonate	387000		8450	20000	1	03/29/2022 08:27	WG1838920
Alkalinity,Carbonate	U		8450	20000	1	03/29/2022 08:27	WG1838920

Sample Narrative:

L1475494-05 WG1838920: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	16500		379	1000	1	03/29/2022 00:49	WG1839607
Fluoride	127	J	64.0	150	1	03/29/2022 00:49	WG1839607
Sulfate	47200		594	5000	1	03/29/2022 00:49	WG1839607

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	75.6		9.63	30.0	1	04/01/2022 14:08	WG1838733
Calcium	113000		93.6	1000	1	03/31/2022 18:27	WG1838733
Magnesium	33300		73.5	1000	1	03/31/2022 18:27	WG1838733
Potassium	2790		108	2000	1	03/31/2022 18:27	WG1838733
Sodium	7990		376	2000	1	03/31/2022 18:27	WG1838733

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	541000		10000	1	03/30/2022 16:34	WG1840672

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity,Bicarbonate	426000		8450	20000	1	03/29/2022 08:30	WG1838920
Alkalinity,Carbonate	U		8450	20000	1	03/29/2022 08:30	WG1838920

Sample Narrative:

L1475494-06 WG1838920: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	21500		379	1000	1	03/29/2022 01:25	WG1839607
Fluoride	153		64.0	150	1	03/29/2022 01:25	WG1839607
Sulfate	66500		594	5000	1	03/29/2022 01:25	WG1839607

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	96.9		9.63	30.0	1	04/01/2022 14:12	WG1838733
Calcium	133000		93.6	1000	1	03/31/2022 18:31	WG1838733
Magnesium	35400		73.5	1000	1	03/31/2022 18:31	WG1838733
Potassium	2380		108	2000	1	03/31/2022 18:31	WG1838733
Sodium	10700		376	2000	1	03/31/2022 18:31	WG1838733

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	499000		10000	1	03/30/2022 16:34	WG1840672

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity,Bicarbonate	377000		8450	20000	1	03/29/2022 08:34	WG1838920
Alkalinity,Carbonate	U		8450	20000	1	03/29/2022 08:34	WG1838920

Sample Narrative:

L1475494-07 WG1838920: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	41600		379	1000	1	03/29/2022 02:01	WG1839607
Fluoride	185		64.0	150	1	03/29/2022 02:01	WG1839607
Sulfate	47100		594	5000	1	03/29/2022 02:01	WG1839607

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	106		9.63	30.0	1	04/01/2022 14:15	WG1838733
Calcium	110000		93.6	1000	1	03/31/2022 18:34	WG1838733
Magnesium	24900		73.5	1000	1	03/31/2022 18:34	WG1838733
Potassium	2540		108	2000	1	03/31/2022 18:34	WG1838733
Sodium	40100		376	2000	1	03/31/2022 18:34	WG1838733

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	399000		10000	1	03/30/2022 16:34	WG1840672

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity,Bicarbonate	297000		8450	20000	1	03/29/2022 08:38	WG1838920
Alkalinity,Carbonate	U		8450	20000	1	03/29/2022 08:38	WG1838920

Sample Narrative:

L1475494-08 WG1838920: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	24400		379	1000	1	03/29/2022 02:54	WG1839607
Fluoride	178		64.0	150	1	03/29/2022 02:54	WG1839607
Sulfate	45400		594	5000	1	03/29/2022 02:54	WG1839607

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	67.6		9.63	30.0	1	04/01/2022 14:19	WG1838733
Calcium	101000		93.6	1000	1	03/31/2022 18:38	WG1838733
Magnesium	22200		73.5	1000	1	03/31/2022 18:38	WG1838733
Potassium	2020		108	2000	1	03/31/2022 18:38	WG1838733
Sodium	13100		376	2000	1	03/31/2022 18:38	WG1838733

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	2570000		50000	1	03/30/2022 14:14	WG1840598

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity,Bicarbonate	207000		8450	20000	1	03/29/2022 08:42	WG1838920
Alkalinity,Carbonate	U		8450	20000	1	03/29/2022 08:42	WG1838920

Sample Narrative:

L1475494-09 WG1838920: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	232000		19000	50000	50	03/29/2022 04:24	WG1839607
Fluoride	506		64.0	150	1	03/29/2022 04:06	WG1839607
Sulfate	1430000		29700	250000	50	03/29/2022 04:24	WG1839607

Mercury by Method 7470A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Mercury	0.107	J	0.100	0.200	1	04/01/2022 15:25	WG1839245

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	2.51	J	1.03	4.00	1	03/31/2022 18:42	WG1838733
Arsenic	41.8		0.900	10.0	5	04/01/2022 15:01	WG1838733
Barium	50.4		0.381	2.00	1	03/31/2022 18:42	WG1838733
Beryllium	1.02	J	0.190	2.00	1	04/01/2022 14:54	WG1838733
Boron	14200		963	3000	100	04/01/2022 14:23	WG1838733
Cadmium	0.902	J	0.150	1.00	1	03/31/2022 18:42	WG1838733
Calcium	425000		93.6	1000	1	03/31/2022 18:42	WG1838733
Chromium	15.9	B	6.20	10.0	5	04/01/2022 15:01	WG1838733
Cobalt	3.23	J	0.298	10.0	5	04/01/2022 15:01	WG1838733
Lead	13.7		0.849	2.00	1	03/31/2022 18:42	WG1838733
Magnesium	28800		73.5	1000	1	03/31/2022 18:42	WG1838733
Molybdenum	7290		0.348	5.00	1	03/31/2022 18:42	WG1838733
Potassium	118000		108	2000	1	03/31/2022 18:42	WG1838733
Selenium	39.0		0.300	2.00	1	03/31/2022 18:42	WG1838733
Sodium	167000		376	2000	1	03/31/2022 18:42	WG1838733
Thallium	2.12		0.121	2.00	1	03/31/2022 18:42	WG1838733
Lithium	937		0.695	2.00	1	04/01/2022 14:54	WG1838733

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Mercury,Dissolved	U		0.100	0.200	1	03/31/2022 10:47	WG1839250

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Antimony,Dissolved	2.52	J	1.03	4.00	1	03/31/2022 17:26	WG1838720
Arsenic,Dissolved	4.21		0.180	2.00	1	03/31/2022 17:26	WG1838720
Barium,Dissolved	28.3		0.381	2.00	1	03/31/2022 17:26	WG1838720
Beryllium,Dissolved	U		0.190	2.00	1	03/31/2022 17:26	WG1838720
Boron,Dissolved	14000		963	3000	100	03/31/2022 23:49	WG1838720
Cadmium,Dissolved	1.08		0.150	1.00	1	03/31/2022 17:26	WG1838720
Calcium,Dissolved	435000		93.6	1000	1	03/31/2022 17:26	WG1838720
Chromium,Dissolved	2.41		1.24	2.00	1	03/31/2022 17:26	WG1838720
Cobalt,Dissolved	0.957	J	0.0596	2.00	1	03/31/2022 17:26	WG1838720
Lead,Dissolved	U		0.849	2.00	1	03/31/2022 17:26	WG1838720
Magnesium,Dissolved	30700		73.5	1000	1	03/31/2022 17:26	WG1838720
Molybdenum,Dissolved	7330		0.348	5.00	1	03/31/2022 17:26	WG1838720
Potassium,Dissolved	125000		108	2000	1	03/31/2022 17:26	WG1838720
Selenium,Dissolved	35.0		0.300	2.00	1	03/31/2022 17:26	WG1838720
Sodium,Dissolved	180000		376	2000	1	03/31/2022 17:26	WG1838720
Thallium,Dissolved	1.78	J	0.121	2.00	1	03/31/2022 17:26	WG1838720
Lithium,Dissolved	813		0.695	2.00	1	03/31/2022 17:26	WG1838720

Method Blank (MB)

(MB) R3776296-1 03/30/22 14:14

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

L1475417-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1475417-06 03/30/22 14:14 • (DUP) R3776296-3 03/30/22 14:14

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	486000	490000	1	0.820		5

Laboratory Control Sample (LCS)

(LCS) R3776296-2 03/30/22 14:14

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	8550000	97.2	77.4-123	

Method Blank (MB)

(MB) R3776299-1 03/30/22 16:34

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

L1474903-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1474903-03 03/30/22 16:34 • (DUP) R3776299-3 03/30/22 16:34

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	719000	731000	1	1.66		5

L1474936-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1474936-01 03/30/22 16:34 • (DUP) R3776299-4 03/30/22 16:34

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	872000	910000	1	4.26		5

Laboratory Control Sample (LCS)

(LCS) R3776299-2 03/30/22 16:34

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	8490000	96.5	77.4-123	

Method Blank (MB)

(MB) R3776297-1 03/30/22 18:00

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

L1475120-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1475120-02 03/30/22 18:00 • (DUP) R3776297-3 03/30/22 18:00

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	573000	603000	1	4.99		5

L1475207-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1475207-09 03/30/22 18:00 • (DUP) R3776297-4 03/30/22 18:00

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	841000	869000	1	3.27		5

Laboratory Control Sample (LCS)

(LCS) R3776297-2 03/30/22 18:00

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	8300000	94.3	77.4-123	

QUALITY CONTROL SUMMARY

L1475494-01,02,03,04,05,06,07,08,09

Method Blank (MB)

(MB) R3775037-2 03/29/22 07:23

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity,Bicarbonate	U		8450	20000
Alkalinity,Carbonate	U		8450	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1475419-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1475419-01 03/29/22 07:51 • (DUP) R3775037-3 03/29/22 07:56

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity,Bicarbonate	47800	45300	1	5.33		20
Alkalinity,Carbonate	U	U	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

L1475589-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1475589-03 03/29/22 09:06 • (DUP) R3775037-4 03/29/22 09:09

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity,Bicarbonate	180000	181000	1	0.623		20
Alkalinity,Carbonate	U	U	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5

DUP: Endpoint pH 4.5

Method Blank (MB)

(MB) R3775362-1 03/28/22 19:31

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

L1475473-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1475473-02 03/28/22 21:15 • (DUP) R3775362-3 03/28/22 21:32

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	13500	13600	1	0.0531		15
Fluoride	U	U	1	0.000		15
Sulfate	6620	6480	1	2.17		15

L1475545-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1475545-07 03/29/22 05:36 • (DUP) R3775362-6 03/29/22 05:53

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	431	432	1	0.371	J	15
Fluoride	U	U	1	0.000		15
Sulfate	U	U	1	0.000		15

Laboratory Control Sample (LCS)

(LCS) R3775362-2 03/28/22 19:49

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	40700	102	80.0-120	
Fluoride	8000	8380	105	80.0-120	
Sulfate	40000	40600	101	80.0-120	

L1475494-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1475494-07 03/29/22 02:01 • (MS) R3775362-4 03/29/22 02:19 • (MSD) R3775362-5 03/29/22 02:36

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 %
Chloride	50000	41600	90000	89700	96.8	96.3	1	80.0-120			0.270	15
Fluoride	5000	185	5030	5040	97.0	97.2	1	80.0-120			0.169	15
Sulfate	50000	47100	95500	96200	96.9	98.1	1	80.0-120			0.653	15

L1475545-07 Original Sample (OS) • Matrix Spike (MS)

(OS) L1475545-07 03/29/22 05:36 • (MS) R3775362-7 03/29/22 06:11

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	431	50300	99.7	1	80.0-120	
Fluoride	5000	U	5060	101	1	80.0-120	
Sulfate	50000	U	49500	99.0	1	80.0-120	

Method Blank (MB)

(MB) R3776946-1 04/01/22 14:49

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

Laboratory Control Sample (LCS)

(LCS) R3776946-2 04/01/22 14:55

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	3.00	3.53	118	80.0-120	

L1475417-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1475417-02 04/01/22 14:57 • (MS) R3776946-3 04/01/22 14:59 • (MSD) R3776946-4 04/01/22 15:01

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	3.00	U	3.40	3.46	113	115	1	75.0-125			1.51	20

Method Blank (MB)

(MB) R3776184-1 03/31/22 10:09

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

Laboratory Control Sample (LCS)

(LCS) R3776184-2 03/31/22 10:11

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury,Dissolved	3.00	2.87	95.6	80.0-120	

L1474981-12 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1474981-12 03/31/22 10:15 • (MS) R3776184-3 03/31/22 10:17 • (MSD) R3776184-4 03/31/22 10:19

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury,Dissolved	3.00	U	2.20	2.10	73.3	70.0	1	75.0-125	J6	J6	4.49	20

Method Blank (MB)

(MB) R3776301-1 03/31/22 16:56

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Antimony,Dissolved	U		1.03	4.00
Arsenic,Dissolved	U		0.180	2.00
Barium,Dissolved	U		0.381	2.00
Beryllium,Dissolved	U		0.190	2.00
Cadmium,Dissolved	U		0.150	1.00
Calcium,Dissolved	U		93.6	1000
Chromium,Dissolved	U		1.24	2.00
Cobalt,Dissolved	U		0.0596	2.00
Lead,Dissolved	U		0.849	2.00
Magnesium,Dissolved	U		73.5	1000
Molybdenum,Dissolved	U		0.348	5.00
Potassium,Dissolved	U		108	2000
Selenium,Dissolved	U		0.300	2.00
Sodium,Dissolved	U		376	2000
Thallium,Dissolved	U		0.121	2.00
Lithium,Dissolved	U		0.695	2.00

Method Blank (MB)

(MB) R3776301-6 03/31/22 23:26

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Boron,Dissolved	U		9.63	30.0

Laboratory Control Sample (LCS)

(LCS) R3776301-2 03/31/22 16:59

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Antimony,Dissolved	50.0	48.9	97.8	80.0-120	
Arsenic,Dissolved	50.0	47.4	94.7	80.0-120	
Barium,Dissolved	50.0	46.1	92.1	80.0-120	
Beryllium,Dissolved	50.0	47.7	95.4	80.0-120	
Cadmium,Dissolved	50.0	51.1	102	80.0-120	
Calcium,Dissolved	5000	4950	99.0	80.0-120	
Chromium,Dissolved	50.0	51.6	103	80.0-120	
Cobalt,Dissolved	50.0	51.6	103	80.0-120	
Lead,Dissolved	50.0	47.5	95.0	80.0-120	
Magnesium,Dissolved	5000	4960	99.1	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R3776301-2 03/31/22 16:59

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Molybdenum,Dissolved	50.0	46.8	93.7	80.0-120	
Potassium,Dissolved	5000	4780	95.5	80.0-120	
Selenium,Dissolved	50.0	48.3	96.7	80.0-120	
Sodium,Dissolved	5000	4940	98.7	80.0-120	
Thallium,Dissolved	50.0	47.9	95.8	80.0-120	
Lithium,Dissolved	50.0	45.6	91.1	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R3776301-7 03/31/22 23:29

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron,Dissolved	500	496	99.1	80.0-120	

L1475221-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1475221-08 03/31/22 17:03 • (MS) R3776301-4 03/31/22 17:09 • (MSD) R3776301-5 03/31/22 17:13

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Antimony,Dissolved	50.0	U	50.9	50.5	102	101	1	75.0-125			0.820	20
Arsenic,Dissolved	50.0	0.249	47.7	48.3	95.0	96.1	1	75.0-125			1.17	20
Barium,Dissolved	50.0	49.1	95.8	98.0	93.3	97.8	1	75.0-125			2.33	20
Beryllium,Dissolved	50.0	U	47.5	45.9	95.1	91.8	1	75.0-125			3.50	20
Cadmium,Dissolved	50.0	U	52.6	51.8	105	104	1	75.0-125			1.38	20
Calcium,Dissolved	5000	124000	129000	128000	98.5	84.3	1	75.0-125			0.552	20
Chromium,Dissolved	50.0	U	49.4	50.9	98.7	102	1	75.0-125			2.99	20
Cobalt,Dissolved	50.0	U	49.4	50.2	98.7	100	1	75.0-125			1.68	20
Lead,Dissolved	50.0	1.44	50.7	50.0	98.5	97.2	1	75.0-125			1.31	20
Magnesium,Dissolved	5000	23100	27800	27600	94.4	90.6	1	75.0-125			0.681	20
Molybdenum,Dissolved	50.0	U	49.8	48.1	99.7	96.2	1	75.0-125			3.52	20
Potassium,Dissolved	5000	1890	6750	6570	97.2	93.8	1	75.0-125			2.60	20
Selenium,Dissolved	50.0	U	52.3	50.7	105	101	1	75.0-125			3.06	20
Sodium,Dissolved	5000	17400	22600	22400	104	98.6	1	75.0-125			1.22	20
Thallium,Dissolved	50.0	U	47.4	46.5	94.8	93.0	1	75.0-125			1.88	20
Lithium,Dissolved	50.0	5.06	50.3	49.1	90.5	88.1	1	75.0-125			2.46	20

L1475221-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1475221-08 03/31/22 23:33 • (MS) R3776301-9 03/31/22 23:39 • (MSD) R3776301-10 03/31/22 23:43

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,Dissolved	500	52.1	550	549	99.7	99.4	1	75.0-125			0.215	20

Method Blank (MB)

(MB) R3776313-1 03/31/22 17:33

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Antimony	U		1.03	4.00
Arsenic	U		0.180	2.00
Barium	U		0.381	2.00
Boron	U		9.63	30.0
Cadmium	U		0.150	1.00
Calcium	114	J	93.6	1000
Chromium	1.79	J	1.24	2.00
Cobalt	U		0.0596	2.00
Lead	U		0.849	2.00
Magnesium	85.3	J	73.5	1000
Molybdenum	1.91	J	0.348	5.00
Potassium	U		108	2000
Selenium	U		0.300	2.00
Sodium	U		376	2000
Thallium	U		0.121	2.00

Method Blank (MB)

(MB) R3776615-1 04/01/22 13:03

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Beryllium	U		0.190	2.00
Lithium	U		0.695	2.00

Laboratory Control Sample (LCS)

(LCS) R3776313-2 03/31/22 17:37

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Antimony	50.0	47.5	94.9	80.0-120	
Arsenic	50.0	47.2	94.3	80.0-120	
Barium	50.0	46.8	93.5	80.0-120	
Boron	500	485	97.0	80.0-120	
Cadmium	50.0	51.2	102	80.0-120	
Calcium	5000	4980	99.5	80.0-120	
Chromium	50.0	49.2	98.5	80.0-120	
Cobalt	50.0	49.2	98.5	80.0-120	
Lead	50.0	47.5	95.1	80.0-120	
Magnesium	5000	4900	97.9	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R3776313-2 03/31/22 17:37

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Molybdenum	50.0	48.6	97.2	80.0-120	
Potassium	5000	4540	90.9	80.0-120	
Selenium	50.0	53.6	107	80.0-120	
Sodium	5000	4980	99.5	80.0-120	
Thallium	50.0	47.1	94.2	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R3776615-2 04/01/22 13:07

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Beryllium	50.0	52.4	105	80.0-120	
Lithium	50.0	49.7	99.3	80.0-120	

L1475431-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1475431-01 03/31/22 17:40 • (MS) R3776313-4 03/31/22 17:48 • (MSD) R3776313-5 03/31/22 17:52

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Antimony	50.0	U	49.1	48.1	98.1	96.1	1	75.0-125			2.06	20
Arsenic	50.0	0.297	46.6	48.8	92.6	97.0	1	75.0-125			4.63	20
Barium	50.0	20.5	68.3	66.2	95.8	91.5	1	75.0-125			3.20	20
Boron	500	16.7	505	503	97.6	97.3	1	75.0-125			0.352	20
Cadmium	50.0	U	52.1	52.3	104	105	1	75.0-125			0.540	20
Calcium	5000	1160	5960	6030	96.0	97.6	1	75.0-125			1.30	20
Chromium	50.0	2.08	50.3	52.3	96.5	100	1	75.0-125			3.77	20
Cobalt	50.0	0.631	49.9	52.1	98.6	103	1	75.0-125			4.15	20
Lead	50.0	U	48.8	49.4	97.7	98.8	1	75.0-125			1.14	20
Magnesium	5000	694	5620	5690	98.5	99.9	1	75.0-125			1.26	20
Molybdenum	50.0	0.829	48.8	48.1	95.9	94.5	1	75.0-125			1.46	20
Potassium	5000	1350	6070	5900	94.3	91.0	1	75.0-125			2.81	20
Selenium	50.0	U	53.6	52.4	107	105	1	75.0-125			2.15	20
Sodium	5000	1110	5880	5890	95.5	95.7	1	75.0-125			0.162	20
Thallium	50.0	U	46.7	48.3	93.4	96.6	1	75.0-125			3.37	20

L1475431-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1475431-01 04/01/22 13:10 • (MS) R3776615-4 04/01/22 13:18 • (MSD) R3776615-5 04/01/22 13:22

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 %
Beryllium	50.0	U	54.2	53.7	108	107	1	75.0-125			0.856	20
Lithium	50.0		52.3	51.2	105	102	1	75.0-125			1.98	20

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
B	The same analyte is found in the associated blank.
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.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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

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

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

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

Company Name/Address:
S&ME - Nashville, TN
862 East Crescentville Road
Cincinnati, OH 45246

Billing Information:
Accounts Payable
658 Grassmere Park Dr, Ste 100
Nashville, TN 37211

Pres Chk

Report to: **Vince Epps**

Email To: vepps@smeinc.com;vgallagher@smeinc.com

Project Description: **Miami Fort Station - North Bend, OH**

City/State Collected: North Bend, OH

Please Circle: PT MT CT (ET)

Phone: **513-771-8471**

Client Project # **7217-17-003D**

Lab Project # **LITENGNTN-MIAMI**

Collected by (print): Victoria Gallagher

Site/Facility ID # **LAWRENCEBURG RD. LF (UNIT**

P.O. #

Collected by (signature): Victoria Gallagher

Immediately Packed on Ice N ___ Y X

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

Quote #

Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	ALKBI/CA, Cl, F, SO4 125mlHDPE-NoPres	B, Ca, K, Mg, Na 250mlHDPE-HNO3	CCR Metals + K,Na,Mg 250mlHDPE-HNO3	Diss Metals (FF) 250mlHDPE-HNO3	TDS 250mlHDPE-NoPres						
								L2									
MW-5		GW		3/24/22	0945	3	1	1			1						
MW-13		GW		3/23/22	1620	3	1	1			1						
MW-8		GW		3/23/22	1135	3	1	1			1						
MW-9		GW		3/23/22	1200	3	1	1			1						
MW-11		GW		3/23/22	1240	3	1	1			1						
MW-12		GW		3/23/22	1320	3	1	1			1						
MW-14		GW		3/23/22	1520	3	1	1			1						
MW-15		GW		3/23/22	1410	3	1	1			1						
MFS_L1_SOURCE WATER CCR_TOTAL		GW		3/23/22	1015	3	1		1		1						
MFS_L1_SOURCE WATER CCR_DISS		GW		3/23/22	1015	1				1							

Chain of Custody Page ___ of ___

Pace
PEOPLE ADVANCING SCIENCE

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

SDG # L1475494
E044

Acctnum: **LITENGNTN**
Template: **T164916**
Prelogin: **P908920**
PM: **134 - Mark W. Beasley**
PB: BF 2/28/22
Shipped Via: **Courier**

Remarks | Sample # (lab only)

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

Remarks:*Log rad to same SDG as different dash #'s as EX 10 day TAT*****

pH _____ Temp _____
Flow _____ Other _____

Samples returned via: __ UPS __ FedEx X Courier _____

Tracking #

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

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
Vicki Gallagher	3/24/22	1600			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.0 °C Bottles Received: 28	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 3/25/22 Time: 0900	Hold: / Condition: NCF / OK

ANALYTICAL REPORT

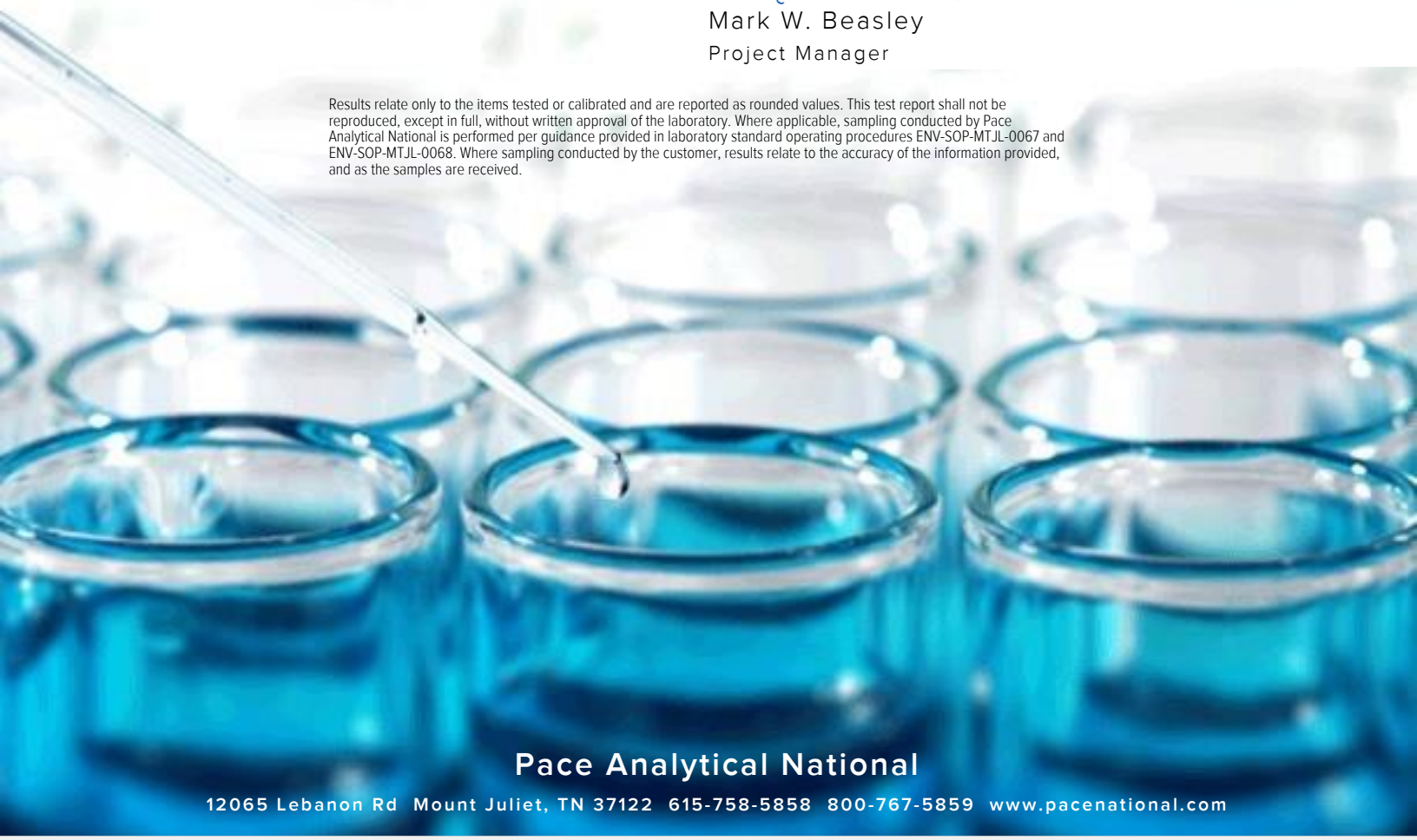
October 11, 2022

S&ME - Nashville, TN

Sample Delivery Group:	L1538941
Samples Received:	09/23/2022
Project Number:	7217-17-003D
Description:	Miami Fort Station - North Bend, OH
Site:	LAWRENCEBURG RD. LF (UNIT 113)
Report To:	Vince Epps 862 East Crescentville Road Cincinnati, OH 45246

Entire Report Reviewed By:

Mark W. Beasley
Project Manager



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

TABLE OF CONTENTS

MW-5 L1538941-01 GW

Collected by: Victoria Gallagher | Collected date/time: 09/21/22 16:40 | Received date/time: 09/23/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1933829	1	09/28/22 13:21	09/28/22 17:02	MMF	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1935141	1	10/01/22 09:05	10/01/22 09:05	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1931581	1	09/26/22 03:43	09/26/22 03:43	GEB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1940041	1	10/10/22 10:25	10/10/22 16:39	LD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1940041	20	10/10/22 10:25	10/10/22 17:30	LD	Mt. Juliet, TN

MW-13 L1538941-02 GW

Collected by: Victoria Gallagher | Collected date/time: 09/21/22 17:25 | Received date/time: 09/23/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1933829	1	09/28/22 13:21	09/28/22 17:02	MMF	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1935141	1	10/01/22 09:10	10/01/22 09:10	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1931581	1	09/26/22 04:00	09/26/22 04:00	GEB	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1931581	5	09/26/22 04:17	09/26/22 04:17	GEB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1940041	1	10/10/22 10:25	10/10/22 17:14	LD	Mt. Juliet, TN

MW-8 L1538941-03 GW

Collected by: Victoria Gallagher | Collected date/time: 09/21/22 13:05 | Received date/time: 09/23/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1933829	1	09/28/22 13:21	09/28/22 17:02	MMF	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1935141	1	10/01/22 09:13	10/01/22 09:13	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1931581	1	09/26/22 04:34	09/26/22 04:34	GEB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1935211	1	10/06/22 14:27	10/07/22 15:32	JPD	Mt. Juliet, TN

MW-9 L1538941-04 GW

Collected by: Victoria Gallagher | Collected date/time: 09/21/22 15:05 | Received date/time: 09/23/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1933829	1	09/28/22 13:21	09/28/22 17:02	MMF	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1935141	1	10/01/22 09:17	10/01/22 09:17	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1931581	1	09/26/22 04:51	09/26/22 04:51	GEB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1935211	1	10/06/22 14:27	10/07/22 15:35	JPD	Mt. Juliet, TN

MW-11 L1538941-05 GW

Collected by: Victoria Gallagher | Collected date/time: 09/21/22 16:00 | Received date/time: 09/23/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1933829	1	09/28/22 13:21	09/28/22 17:02	MMF	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1935141	1	10/01/22 09:21	10/01/22 09:21	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1931581	1	09/26/22 05:08	09/26/22 05:08	GEB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1935211	1	10/06/22 14:27	10/07/22 15:38	JPD	Mt. Juliet, TN

MW-12 L1538941-06 GW

Collected by: Victoria Gallagher | Collected date/time: 09/21/22 14:20 | Received date/time: 09/23/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1933829	1	09/28/22 13:21	09/28/22 17:02	MMF	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1935141	1	10/01/22 09:25	10/01/22 09:25	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1931581	1	09/26/22 05:25	09/26/22 05:25	GEB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1935211	1	10/06/22 14:27	10/07/22 15:42	JPD	Mt. Juliet, TN

MW-14 L1538941-07 GW

Collected by: Victoria Gallagher | Collected date/time: 09/21/22 11:55 | Received date/time: 09/23/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1933829	1	09/28/22 13:21	09/28/22 17:02	MMF	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1935141	1	10/01/22 09:37	10/01/22 09:37	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1931581	1	09/26/22 06:49	09/26/22 06:49	GEB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1935211	1	10/06/22 14:27	10/07/22 16:43	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1935211	1	10/06/22 14:27	10/09/22 16:56	LD	Mt. Juliet, TN

MW-15 L1538941-08 GW

Collected by: Victoria Gallagher | Collected date/time: 09/21/22 11:00 | Received date/time: 09/23/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1933829	1	09/28/22 13:21	09/28/22 17:02	MMF	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1935141	1	10/01/22 09:40	10/01/22 09:40	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1931589	1	09/26/22 19:44	09/26/22 19:44	LBR	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1935211	1	10/06/22 14:27	10/07/22 16:47	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1935211	1	10/06/22 14:27	10/09/22 16:59	LD	Mt. Juliet, TN

MFS_L1_SOURCE WATER CCR_TOTAL L1538941-09 GW

Collected by: Victoria Gallagher | Collected date/time: 09/21/22 13:40 | Received date/time: 09/23/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1933829	1	09/28/22 13:21	09/28/22 17:02	MMF	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1935141	1	10/01/22 09:47	10/01/22 09:47	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1931589	1	09/26/22 20:00	09/26/22 20:00	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1933140	10	09/28/22 04:08	09/28/22 04:08	GEB	Mt. Juliet, TN
Mercury by Method 7470A	WG1933909	1	10/07/22 08:34	10/09/22 13:02	ABL	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1935211	1	10/06/22 14:27	10/07/22 16:50	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1935211	100	10/06/22 14:27	10/09/22 17:02	LD	Mt. Juliet, TN

MFS_L1_SOURCE WATER CCR_DISS L1538941-10 GW

Collected by: Victoria Gallagher | Collected date/time: 09/21/22 13:40 | Received date/time: 09/23/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7470A	WG1933913	1	09/30/22 10:23	10/02/22 09:26	AKB	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1934571	1	09/30/22 15:18	10/01/22 09:52	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1934571	100	09/30/22 15:18	10/01/22 12:13	JPD	Mt. Juliet, TN

DUP L1538941-11 GW

Collected by: Victoria Gallagher | Collected date/time: 09/21/22 00:00 | Received date/time: 09/23/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1933829	1	09/28/22 13:21	09/28/22 17:02	MMF	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1935141	1	10/01/22 09:52	10/01/22 09:52	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1931589	1	09/26/22 20:32	09/26/22 20:32	LBR	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1935211	1	10/06/22 14:27	10/07/22 16:53	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1935211	5	10/06/22 14:27	10/09/22 17:06	LD	Mt. Juliet, TN

CASE NARRATIVE

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

Mark W. Beasley
Project Manager

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	494000		10000	1	09/28/2022 17:02	WG1933829

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity,Bicarbonate	235000		8450	20000	1	10/01/2022 09:05	WG1935141
Alkalinity,Carbonate	U		8450	20000	1	10/01/2022 09:05	WG1935141

Sample Narrative:

L1538941-01 WG1935141: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	8020		379	1000	1	09/26/2022 03:43	WG1931581
Fluoride	220		64.0	150	1	09/26/2022 03:43	WG1931581
Sulfate	162000		594	5000	1	09/26/2022 03:43	WG1931581

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	2450		193	600	20	10/10/2022 17:30	WG1940041
Calcium	95300		93.6	1000	1	10/10/2022 16:39	WG1940041
Magnesium	30700		73.5	1000	1	10/10/2022 16:39	WG1940041
Potassium	2240		108	2000	1	10/10/2022 16:39	WG1940041
Sodium	12800		376	2000	1	10/10/2022 16:39	WG1940041

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	826000		20000	1	09/28/2022 17:02	WG1933829

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity,Bicarbonate	393000		8450	20000	1	10/01/2022 09:10	WG1935141
Alkalinity,Carbonate	U		8450	20000	1	10/01/2022 09:10	WG1935141

Sample Narrative:

L1538941-02 WG1935141: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	219000		1900	5000	5	09/26/2022 04:17	WG1931581
Fluoride	189		64.0	150	1	09/26/2022 04:00	WG1931581
Sulfate	40600		594	5000	1	09/26/2022 04:00	WG1931581

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	56.7		9.63	30.0	1	10/10/2022 17:14	WG1940041
Calcium	136000		93.6	1000	1	10/10/2022 17:14	WG1940041
Magnesium	38600		73.5	1000	1	10/10/2022 17:14	WG1940041
Potassium	2940		108	2000	1	10/10/2022 17:14	WG1940041
Sodium	108000		376	2000	1	10/10/2022 17:14	WG1940041

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	474000		10000	1	09/28/2022 17:02	WG1933829

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity,Bicarbonate	374000		8450	20000	1	10/01/2022 09:13	WG1935141
Alkalinity,Carbonate	U		8450	20000	1	10/01/2022 09:13	WG1935141

Sample Narrative:

L1538941-03 WG1935141: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	10800		379	1000	1	09/26/2022 04:34	WG1931581
Fluoride	93.8	J	64.0	150	1	09/26/2022 04:34	WG1931581
Sulfate	23000		594	5000	1	09/26/2022 04:34	WG1931581

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	108		9.63	30.0	1	10/07/2022 15:32	WG1935211
Calcium	112000		93.6	1000	1	10/07/2022 15:32	WG1935211
Magnesium	36200		73.5	1000	1	10/07/2022 15:32	WG1935211
Potassium	2980		108	2000	1	10/07/2022 15:32	WG1935211
Sodium	10600		376	2000	1	10/07/2022 15:32	WG1935211

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	576000		13300	1	09/28/2022 17:02	WG1933829

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity,Bicarbonate	368000		8450	20000	1	10/01/2022 09:17	WG1935141
Alkalinity,Carbonate	U		8450	20000	1	10/01/2022 09:17	WG1935141

Sample Narrative:

L1538941-04 WG1935141: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	70200		379	1000	1	09/26/2022 04:51	WG1931581
Fluoride	100	J	64.0	150	1	09/26/2022 04:51	WG1931581
Sulfate	49900		594	5000	1	09/26/2022 04:51	WG1931581

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	127		9.63	30.0	1	10/07/2022 15:35	WG1935211
Calcium	116000		93.6	1000	1	10/07/2022 15:35	WG1935211
Magnesium	26900		73.5	1000	1	10/07/2022 15:35	WG1935211
Potassium	4940		108	2000	1	10/07/2022 15:35	WG1935211
Sodium	62400		376	2000	1	10/07/2022 15:35	WG1935211

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	491000		10000	1	09/28/2022 17:02	WG1933829

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity,Bicarbonate	393000		8450	20000	1	10/01/2022 09:21	WG1935141
Alkalinity,Carbonate	U		8450	20000	1	10/01/2022 09:21	WG1935141

Sample Narrative:

L1538941-05 WG1935141: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	17200		379	1000	1	09/26/2022 05:08	WG1931581
Fluoride	130	J	64.0	150	1	09/26/2022 05:08	WG1931581
Sulfate	54700		594	5000	1	09/26/2022 05:08	WG1931581

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	79.4		9.63	30.0	1	10/07/2022 15:38	WG1935211
Calcium	119000		93.6	1000	1	10/07/2022 15:38	WG1935211
Magnesium	36600		73.5	1000	1	10/07/2022 15:38	WG1935211
Potassium	3140		108	2000	1	10/07/2022 15:38	WG1935211
Sodium	7960		376	2000	1	10/07/2022 15:38	WG1935211

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	569000		10000	1	09/28/2022 17:02	WG1933829

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity,Bicarbonate	448000		8450	20000	1	10/01/2022 09:25	WG1935141
Alkalinity,Carbonate	U		8450	20000	1	10/01/2022 09:25	WG1935141

Sample Narrative:

L1538941-06 WG1935141: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	19700		379	1000	1	09/26/2022 05:25	WG1931581
Fluoride	141	J	64.0	150	1	09/26/2022 05:25	WG1931581
Sulfate	63500		594	5000	1	09/26/2022 05:25	WG1931581

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	101		9.63	30.0	1	10/07/2022 15:42	WG1935211
Calcium	141000		93.6	1000	1	10/07/2022 15:42	WG1935211
Magnesium	38000		73.5	1000	1	10/07/2022 15:42	WG1935211
Potassium	2800		108	2000	1	10/07/2022 15:42	WG1935211
Sodium	11900		376	2000	1	10/07/2022 15:42	WG1935211

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	607000		13300	1	09/28/2022 17:02	WG1933829

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity,Bicarbonate	387000		8450	20000	1	10/01/2022 09:37	WG1935141
Alkalinity,Carbonate	U		8450	20000	1	10/01/2022 09:37	WG1935141

Sample Narrative:

L1538941-07 WG1935141: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	78800		379	1000	1	09/26/2022 06:49	WG1931581
Fluoride	172		64.0	150	1	09/26/2022 06:49	WG1931581
Sulfate	45300		594	5000	1	09/26/2022 06:49	WG1931581

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	80.0		9.63	30.0	1	10/09/2022 16:56	WG1935211
Calcium	121000		93.6	1000	1	10/07/2022 16:43	WG1935211
Magnesium	29700		73.5	1000	1	10/07/2022 16:43	WG1935211
Potassium	3300		108	2000	1	10/07/2022 16:43	WG1935211
Sodium	55300		376	2000	1	10/07/2022 16:43	WG1935211

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	404000		10000	1	09/28/2022 17:02	WG1933829

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Alkalinity,Bicarbonate	282000		8450	20000	1	10/01/2022 09:40	WG1935141
Alkalinity,Carbonate	U		8450	20000	1	10/01/2022 09:40	WG1935141

Sample Narrative:

L1538941-08 WG1935141: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Chloride	28300		379	1000	1	09/26/2022 19:44	WG1931589
Fluoride	183		64.0	150	1	09/26/2022 19:44	WG1931589
Sulfate	48000		594	5000	1	09/26/2022 19:44	WG1931589

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Boron	61.7		9.63	30.0	1	10/09/2022 16:59	WG1935211
Calcium	99500		93.6	1000	1	10/07/2022 16:47	WG1935211
Magnesium	21800		73.5	1000	1	10/07/2022 16:47	WG1935211
Potassium	2370		108	2000	1	10/07/2022 16:47	WG1935211
Sodium	16300		376	2000	1	10/07/2022 16:47	WG1935211

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	1860000		50000	1	09/28/2022 17:02	WG1933829

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity,Bicarbonate	187000		8450	20000	1	10/01/2022 09:47	WG1935141
Alkalinity,Carbonate	U		8450	20000	1	10/01/2022 09:47	WG1935141

Sample Narrative:

L1538941-09 WG1935141: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	39400		379	1000	1	09/26/2022 20:00	WG1931589
Fluoride	544		64.0	150	1	09/26/2022 20:00	WG1931589
Sulfate	963000		5940	50000	10	09/28/2022 04:08	WG1933140

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	10/09/2022 13:02	WG1933909

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Antimony	3.69	J	1.03	4.00	1	10/07/2022 16:50	WG1935211
Arsenic	4.69		0.180	2.00	1	10/07/2022 16:50	WG1935211
Barium	33.9		0.381	2.00	1	10/07/2022 16:50	WG1935211
Beryllium	U		0.190	2.00	1	10/07/2022 16:50	WG1935211
Boron	13000		963	3000	100	10/09/2022 17:02	WG1935211
Cadmium	0.339	J	0.150	1.00	1	10/07/2022 16:50	WG1935211
Calcium	411000		93.6	1000	1	10/07/2022 16:50	WG1935211
Chromium	5.44		1.24	2.00	1	10/07/2022 16:50	WG1935211
Cobalt	U		0.0596	2.00	1	10/07/2022 16:50	WG1935211
Lead	U		0.849	2.00	1	10/07/2022 16:50	WG1935211
Magnesium	24000		73.5	1000	1	10/07/2022 16:50	WG1935211
Molybdenum	2550		34.8	500	100	10/09/2022 17:02	WG1935211
Potassium	45400		108	2000	1	10/07/2022 16:50	WG1935211
Selenium	134		0.300	2.00	1	10/07/2022 16:50	WG1935211
Sodium	59600		376	2000	1	10/07/2022 16:50	WG1935211
Thallium	1.01	J	0.121	2.00	1	10/07/2022 16:50	WG1935211
Lithium	224		69.5	200	100	10/09/2022 17:02	WG1935211

Mercury by Method 7470A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Mercury,Dissolved	U		0.100	0.200	1	10/02/2022 09:26	WG1933913

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Antimony,Dissolved	2.73	J	1.03	4.00	1	10/01/2022 09:52	WG1934571
Arsenic,Dissolved	0.772	J	0.180	2.00	1	10/01/2022 09:52	WG1934571
Barium,Dissolved	30.7		0.381	2.00	1	10/01/2022 09:52	WG1934571
Beryllium,Dissolved	U		0.190	2.00	1	10/01/2022 09:52	WG1934571
Boron,Dissolved	12700		963	3000	100	10/01/2022 12:13	WG1934571
Cadmium,Dissolved	0.670	J	0.150	1.00	1	10/01/2022 09:52	WG1934571
Calcium,Dissolved	395000		93.6	1000	1	10/01/2022 09:52	WG1934571
Chromium,Dissolved	U		1.24	2.00	1	10/01/2022 09:52	WG1934571
Cobalt,Dissolved	0.147	J	0.0596	2.00	1	10/01/2022 09:52	WG1934571
Lead,Dissolved	U		0.849	2.00	1	10/01/2022 09:52	WG1934571
Magnesium,Dissolved	23600		73.5	1000	1	10/01/2022 09:52	WG1934571
Molybdenum,Dissolved	3740		34.8	500	100	10/01/2022 12:13	WG1934571
Potassium,Dissolved	83700		108	2000	1	10/01/2022 09:52	WG1934571
Selenium,Dissolved	93.5		0.300	2.00	1	10/01/2022 09:52	WG1934571
Sodium,Dissolved	105000		376	2000	1	10/01/2022 09:52	WG1934571
Thallium,Dissolved	1.27	J	0.121	2.00	1	10/01/2022 09:52	WG1934571
Lithium,Dissolved	483		69.5	200	100	10/01/2022 12:13	WG1934571

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	559000		10000	1	09/28/2022 17:02	WG1933829

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity,Bicarbonate	451000		8450	20000	1	10/01/2022 09:52	WG1935141
Alkalinity,Carbonate	U		8450	20000	1	10/01/2022 09:52	WG1935141

Sample Narrative:

L1538941-11 WG1935141: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	19600		379	1000	1	09/26/2022 20:32	WG1931589
Fluoride	160		64.0	150	1	09/26/2022 20:32	WG1931589
Sulfate	64600		594	5000	1	09/26/2022 20:32	WG1931589

Metals (ICPMS) by Method 6020

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Boron	109	J	48.2	150	5	10/09/2022 17:06	WG1935211
Calcium	142000		93.6	1000	1	10/07/2022 16:53	WG1935211
Magnesium	38600		73.5	1000	1	10/07/2022 16:53	WG1935211
Potassium	2810		108	2000	1	10/07/2022 16:53	WG1935211
Sodium	11800		376	2000	1	10/07/2022 16:53	WG1935211

Method Blank (MB)

(MB) R3844656-1 09/28/22 17:02

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

L1538852-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1538852-01 09/28/22 17:02 • (DUP) R3844656-3 09/28/22 17:02

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Dissolved Solids	1180000	1150000	1	1.89		5

L1538852-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1538852-02 09/28/22 17:02 • (DUP) R3844656-4 09/28/22 17:02

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Dissolved Solids	4220000	4000000	1	5.36	J3	5

Laboratory Control Sample (LCS)

(LCS) R3844656-2 09/28/22 17:02

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Dissolved Solids	8800000	8650000	98.3	77.3-123	

Method Blank (MB)

(MB) R3843648-2 10/01/22 08:50

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity,Bicarbonate	U		8450	20000
Alkalinity,Carbonate	U		8450	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1538922-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1538922-01 10/01/22 08:58 • (DUP) R3843648-3 10/01/22 09:01

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity,Bicarbonate	250000	254000	1	1.74		20
Alkalinity,Carbonate	U	U	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

L1538970-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1538970-01 10/01/22 09:56 • (DUP) R3843648-4 10/01/22 10:01

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity,Bicarbonate	67400	70900	1	5.07		20
Alkalinity,Carbonate	U	U	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5

DUP: Endpoint pH 4.5

QUALITY CONTROL SUMMARY

L1538941-01,02,03,04,05,06,07

Method Blank (MB)

(MB) R3841221-1 09/25/22 19:25

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

L1538941-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1538941-06 09/26/22 05:25 • (DUP) R3841221-5 09/26/22 05:42

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	19700	19700	1	0.0899		15
Fluoride	141	140	1	0.782	J	15
Sulfate	63500	63500	1	0.0340		15

Laboratory Control Sample (LCS)

(LCS) R3841221-2 09/25/22 19:42

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	39800	99.5	80.0-120	
Fluoride	8000	8200	102	80.0-120	
Sulfate	40000	40500	101	80.0-120	

L1537741-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1537741-01 09/25/22 22:55 • (MS) R3841221-3 09/25/22 23:12 • (MSD) R3841221-4 09/26/22 00:03

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	238000	291000	284000	105	91.6	20	80.0-120			2.40	15
Fluoride	5000	5320	8840	9470	70.4	83.0	20	80.0-120	J6		6.87	15
Sulfate	50000	1040000	1050000	1050000	11.5	19.4	20	80.0-120	V	V	0.378	15

L1538941-06 Original Sample (OS) • Matrix Spike (MS)

(OS) L1538941-06 09/26/22 05:25 • (MS) R3841221-6 09/26/22 05:58

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	19700	69000	98.6	1	80.0-120	
Fluoride	5000	141	5260	102	1	80.0-120	

L1538941-06 Original Sample (OS) • Matrix Spike (MS)

(OS) L1538941-06 09/26/22 05:25 • (MS) R3841221-6 09/26/22 05:58

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Sulfate	50000	63500	111000	95.5	1	80.0-120	

Method Blank (MB)

(MB) R3842036-1 09/26/22 11:18

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

L1538922-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1538922-01 09/26/22 14:42 • (DUP) R3842036-3 09/26/22 14:58

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	9160	9190	1	0.342		15
Fluoride	161	153	1	5.22		15
Sulfate	77000	76200	1	0.996		15

L1538932-24 Original Sample (OS) • Duplicate (DUP)

(OS) L1538932-24 09/26/22 16:49 • (DUP) R3842036-6 09/26/22 17:05

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	4080	4090	1	0.147		15
Fluoride	137	139	1	1.38	J	15
Sulfate	48000	48100	1	0.0608		15

Laboratory Control Sample (LCS)

(LCS) R3842036-2 09/26/22 11:34

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	39200	98.1	80.0-120	
Fluoride	8000	8240	103	80.0-120	
Sulfate	40000	40200	100	80.0-120	

L1538922-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1538922-01 09/26/22 14:42 • (MS) R3842036-4 09/26/22 15:14 • (MSD) R3842036-5 09/26/22 15:29

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	9160	58200	59300	98.1	100	1	80.0-120			1.83	15
Fluoride	5000	161	5080	5220	98.3	101	1	80.0-120			2.72	15
Sulfate	50000	77000	124000	124000	94.2	94.4	1	80.0-120			0.0516	15

L1538932-24 Original Sample (OS) • Matrix Spike (MS)

(OS) L1538932-24 09/26/22 16:49 • (MS) R3842036-7 09/26/22 17:21

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	4080	53900	99.6	1	80.0-120	
Fluoride	5000	137	5120	99.6	1	80.0-120	
Sulfate	50000	48000	97200	98.3	1	80.0-120	

Method Blank (MB)

(MB) R3842500-1 09/27/22 19:42

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

L1538933-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1538933-04 09/28/22 01:24 • (DUP) R3842500-3 09/28/22 01:38

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfate	8800	8610	1	2.27		15

L1539801-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1539801-02 09/28/22 06:37 • (DUP) R3842500-5 09/28/22 06:52

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfate	3950	4040	1	2.17	J	15

Laboratory Control Sample (LCS)

(LCS) R3842500-2 09/27/22 19:57

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Sulfate	40000	38000	94.9	80.0-120	

L1538933-04 Original Sample (OS) • Matrix Spike (MS)

(OS) L1538933-04 09/28/22 01:24 • (MS) R3842500-4 09/28/22 01:53

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Sulfate	50000	8800	55600	93.7	1	80.0-120	

L1539801-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1539801-02 09/28/22 06:37 • (MS) R3842500-6 09/28/22 07:07 • (MSD) R3842500-7 09/28/22 07:21

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 %
Sulfate	50000	3950	50700	50300	93.5	92.7	1	80.0-120			0.786	15

Method Blank (MB)

(MB) R3846339-1 10/09/22 12:33

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

Laboratory Control Sample (LCS)

(LCS) R3846339-2 10/09/22 12:35

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	3.00	2.70	90.0	80.0-120	

L1538951-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1538951-05 10/09/22 12:37 • (MS) R3846339-3 10/09/22 12:44 • (MSD) R3846339-4 10/09/22 12:46

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	3.00	U	2.86	2.99	95.3	99.7	1	75.0-125			4.44	20

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

Method Blank (MB)

(MB) R3843748-1 10/02/22 08:48

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

Laboratory Control Sample (LCS)

(LCS) R3843748-2 10/02/22 08:51

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury,Dissolved	3.00	3.31	110	80.0-120	

L1537432-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1537432-04 10/02/22 08:53 • (MS) R3843748-3 10/02/22 08:55 • (MSD) R3843748-4 10/02/22 08:57

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 %
Mercury,Dissolved	3.00	U	3.13	3.41	104	114	1	75.0-125			8.56	20

QUALITY CONTROL SUMMARY

L1538941-10

Method Blank (MB)

(MB) R3843589-1 10/01/22 09:32

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Antimony,Dissolved	U		1.03	4.00
Arsenic,Dissolved	U		0.180	2.00
Barium,Dissolved	U		0.381	2.00
Beryllium,Dissolved	U		0.190	2.00
Cadmium,Dissolved	U		0.150	1.00
Calcium,Dissolved	U		93.6	1000
Chromium,Dissolved	U		1.24	2.00
Cobalt,Dissolved	U		0.0596	2.00
Lead,Dissolved	U		0.849	2.00
Magnesium,Dissolved	U		73.5	1000
Molybdenum,Dissolved	U		0.348	5.00
Potassium,Dissolved	U		108	2000
Selenium,Dissolved	U		0.300	2.00
Sodium,Dissolved	U		376	2000
Thallium,Dissolved	U		0.121	2.00

Method Blank (MB)

(MB) R3843634-1 10/01/22 11:53

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Boron,Dissolved	U		9.63	30.0
Lithium,Dissolved	U		0.695	2.00

Laboratory Control Sample (LCS)

(LCS) R3843589-2 10/01/22 09:35

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Antimony,Dissolved	50.0	44.5	89.0	80.0-120	
Arsenic,Dissolved	50.0	49.5	99.0	80.0-120	
Barium,Dissolved	50.0	45.6	91.1	80.0-120	
Beryllium,Dissolved	50.0	47.7	95.3	80.0-120	
Cadmium,Dissolved	50.0	49.0	98.0	80.0-120	
Calcium,Dissolved	5000	4840	96.9	80.0-120	
Chromium,Dissolved	50.0	49.1	98.2	80.0-120	
Cobalt,Dissolved	50.0	48.8	97.6	80.0-120	
Lead,Dissolved	50.0	47.6	95.1	80.0-120	
Magnesium,Dissolved	5000	4920	98.4	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R3843589-2 10/01/22 09:35

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Molybdenum,Dissolved	50.0	46.2	92.5	80.0-120	
Potassium,Dissolved	5000	4900	98.1	80.0-120	
Selenium,Dissolved	50.0	51.7	103	80.0-120	
Sodium,Dissolved	5000	4920	98.3	80.0-120	
Thallium,Dissolved	50.0	47.0	94.0	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R3843634-2 10/01/22 11:56

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron,Dissolved	50.0	49.3	98.6	80.0-120	
Lithium,Dissolved	50.0	44.3	88.6	80.0-120	

L1537716-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1537716-01 10/01/22 09:39 • (MS) R3843589-4 10/01/22 09:45 • (MSD) R3843589-5 10/01/22 09:48

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Antimony,Dissolved	50.0	U	46.3	46.3	92.7	92.6	1	75.0-125			0.0986	20
Arsenic,Dissolved	50.0	3.56	53.4	53.1	99.7	99.1	1	75.0-125			0.503	20
Barium,Dissolved	50.0	430	481	480	101	100	1	75.0-125	E	E	0.105	20
Beryllium,Dissolved	50.0	U	47.3	47.5	94.5	95.0	1	75.0-125			0.497	20
Cadmium,Dissolved	50.0	U	48.8	48.0	97.6	96.0	1	75.0-125			1.61	20
Calcium,Dissolved	5000	97300	102000	101000	88.8	65.4	1	75.0-125		V	1.16	20
Chromium,Dissolved	50.0	U	49.9	47.4	99.8	94.8	1	75.0-125			5.16	20
Cobalt,Dissolved	50.0	0.227	48.3	47.0	96.1	93.5	1	75.0-125			2.71	20
Lead,Dissolved	50.0	U	47.2	46.3	94.4	92.6	1	75.0-125			1.96	20
Magnesium,Dissolved	5000	43600	48000	48000	87.6	89.0	1	75.0-125			0.140	20
Molybdenum,Dissolved	50.0	1.69	50.4	49.9	97.4	96.4	1	75.0-125			1.00	20
Potassium,Dissolved	5000	2970	7670	7480	94.0	90.2	1	75.0-125			2.47	20
Selenium,Dissolved	50.0	U	51.4	52.3	103	105	1	75.0-125			1.78	20
Sodium,Dissolved	5000	132000	134000	134000	50.5	53.5	1	75.0-125	V	V	0.108	20
Thallium,Dissolved	50.0	U	47.3	45.8	94.6	91.7	1	75.0-125			3.15	20

L1537716-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1537716-01 10/01/22 12:00 • (MS) R3843634-4 10/01/22 12:06 • (MSD) R3843634-5 10/01/22 12:10

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron,Dissolved	50.0	363	414	423	102	119	1	75.0-125			2.09	20
Lithium,Dissolved	50.0	22.6	64.2	64.4	83.2	83.6	1	75.0-125			0.310	20

Method Blank (MB)

(MB) R3846089-1 10/07/22 15:12

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Antimony	U		1.03	4.00
Arsenic	U		0.180	2.00
Barium	U		0.381	2.00
Beryllium	U		0.190	2.00
Boron	U		9.63	30.0
Cadmium	U		0.150	1.00
Calcium	U		93.6	1000
Chromium	U		1.24	2.00
Cobalt	U		0.0596	2.00
Lead	U		0.849	2.00
Magnesium	U		73.5	1000
Molybdenum	U		0.348	5.00
Potassium	U		108	2000
Selenium	3.13		0.300	2.00
Sodium	U		376	2000
Thallium	U		0.121	2.00
Lithium	U		0.695	2.00

Laboratory Control Sample (LCS)

(LCS) R3846089-2 10/07/22 15:16

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Antimony	50.0	45.8	91.5	80.0-120	
Arsenic	50.0	51.8	104	80.0-120	
Barium	50.0	50.1	100	80.0-120	
Beryllium	50.0	51.2	102	80.0-120	
Boron	50.0	54.8	110	80.0-120	
Cadmium	50.0	53.6	107	80.0-120	
Calcium	5000	5090	102	80.0-120	
Chromium	50.0	52.8	106	80.0-120	
Cobalt	50.0	53.1	106	80.0-120	
Lead	50.0	52.1	104	80.0-120	
Magnesium	5000	5330	107	80.0-120	
Molybdenum	50.0	49.4	98.8	80.0-120	
Potassium	5000	5180	104	80.0-120	
Selenium	50.0	56.0	112	80.0-120	
Sodium	5000	5370	107	80.0-120	
Thallium	50.0	51.2	102	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R3846089-2 10/07/22 15:16

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Lithium	50.0	50.6	101	80.0-120	

L1538951-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1538951-05 10/07/22 15:19 • (MS) R3846089-4 10/07/22 15:25 • (MSD) R3846089-5 10/07/22 15:29

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	45.9	46.6	91.8	93.3	1	75.0-125			1.57	20
Arsenic	50.0	5.88	55.8	57.9	99.9	104	1	75.0-125			3.63	20
Barium	50.0	110	158	157	97.3	94.9	1	75.0-125			0.763	20
Beryllium	50.0	U	50.3	49.5	101	99.0	1	75.0-125			1.55	20
Boron	50.0	1090	1160	1150	2310	2300	1	75.0-125	E	E	0.311	20
Cadmium	50.0	U	52.8	53.6	106	107	1	75.0-125			1.41	20
Calcium	5000	51000	55700	55400	94.0	89.1	1	75.0-125			0.443	20
Chromium	50.0	U	50.5	51.1	101	102	1	75.0-125			1.22	20
Cobalt	50.0	0.144	50.7	51.9	101	103	1	75.0-125			2.17	20
Lead	50.0	U	50.3	50.5	101	101	1	75.0-125			0.376	20
Magnesium	5000	28000	32700	32500	94.0	90.0	1	75.0-125			0.614	20
Molybdenum	50.0	1.18	50.9	51.0	99.5	99.7	1	75.0-125			0.136	20
Potassium	5000	2490	7360	7340	97.3	97.0	1	75.0-125			0.229	20
Selenium	50.0	U	55.0	54.4	110	109	1	75.0-125			1.22	20
Sodium	5000	134000	138000	137000	87.8	52.6	1	75.0-125		V	1.28	20
Thallium	50.0	U	49.6	49.7	99.2	99.3	1	75.0-125			0.0984	20
Lithium	50.0	42.6	91.5	90.3	97.9	95.4	1	75.0-125			1.39	20

QUALITY CONTROL SUMMARY

L1538941-01,02

Method Blank (MB)

(MB) R3846740-1 10/10/22 14:12

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Boron	U		9.63	30.0
Calcium	U		93.6	1000
Magnesium	U		73.5	1000
Potassium	U		108	2000
Sodium	U		376	2000

Laboratory Control Sample (LCS)

(LCS) R3846740-2 10/10/22 14:15

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	500	509	102	80.0-120	
Calcium	5000	5000	100	80.0-120	
Magnesium	5000	5190	104	80.0-120	
Potassium	5000	5000	100	80.0-120	
Sodium	5000	5170	103	80.0-120	

L1536511-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1536511-06 10/10/22 14:19 • (MS) R3846740-4 10/10/22 14:25 • (MSD) R3846740-5 10/10/22 14:28

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	500	129	633	648	101	104	1	75.0-125	E	E	2.28	20
Calcium	5000	94900	97300	99100	47.9	84.2	1	75.0-125	V		1.85	20
Magnesium	5000	18100	22900	23300	96.0	106	1	75.0-125			2.10	20
Potassium	5000	1550	6360	6440	96.2	97.7	1	75.0-125			1.18	20
Sodium	5000	63700	64800	68300	21.5	91.0	1	75.0-125	V		5.22	20

L1536551-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1536551-04 10/10/22 14:32 • (MS) R3846740-6 10/10/22 14:35 • (MSD) R3846740-7 10/10/22 14:38

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	500	89.2	589	588	100	99.7	1	75.0-125	E	E	0.278	20
Calcium	5000	26000	30300	30400	86.2	87.1	1	75.0-125			0.157	20
Magnesium	5000	15000	19900	19700	98.5	94.7	1	75.0-125			0.969	20
Potassium	5000	685	5700	5500	100	96.3	1	75.0-125			3.48	20
Sodium	5000	8940	14000	13800	101	96.3	1	75.0-125			1.62	20

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

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

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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

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

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

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

Company Name/Address:
S&ME - Nashville, TN

862 East Crescentville Road
Cincinnati, OH 45246

Billing Information:
Accounts Payable
658 Grassmere Park Dr, Ste 100
Nashville, TN 37211

Pres Chk

Report to: **Vince Epps**

Email To: **vepps@smeinc.com;vgallagher@smeinc.com**

Project Description: **Miami Fort Station - North Bend, OH**

City/State Collected: North Bend, OH

Please Circle: PT MT CT (ET)

Phone: **513-771-8471**

Client Project # **7217-17-003D**

Lab Project # **LITENGNTN-MIAMI**

Collected by (print): Victoria Gallagher

Site/Facility ID # **LAWRENCEBURG RD. LF (UNIT**

P.O. #

Collected by (signature): Victoria Gallagher

Immediately Packed on Ice N ___ Y X

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

Quote #

Date Results Needed

No. of Cntrs

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	ALKBI/CA, Cl, F, SO4 125mlHDPE-NoPres	B, Ca, K, Mg, Na 250mlHDPE-HNO3	CCR Metals + K,Na,Mg 250mlHDPE-HNO3	Diss Metals (FF) 250mlHDPE-HNO3	TDS 250mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-5		GW		9/21/22	1640	3	1	1			1		01
MW-13		GW		9/21/22	1725	3	1	1			1		02
MW-8		GW		9/21/22	1305	3	1	1			1		03
MW-9		GW		9/21/22	1505	3	1	1			1		04
MW-11		GW		9/21/22	1600	3	1	1			1		05
MW-12		GW		9/21/22	1420	3	1	1			1		06
MW-14		GW		9/21/22	1155	3	1	1			1		07
MW-15		GW		9/21/22	1100	3	1	1			1		08
MFS_L1_SOURCE WATER CCR_TOTAL		GW		9/21/22	1340	3	1		1		1		09
MFS_L1_SOURCE WATER CCR_DISS		GW		9/21/22	1340	1				1			10

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

Remarks:*Log rad to same SDG as different dash #'s as EX 10 day TAT*****

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: __ UPS __ FedEx X Courier _____

Tracking # 6053 3807 0810

Relinquished by : (Signature) Victoria Gallagher — Date: — Time: — Received by: (Signature)

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

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

Trip Blank Received: Yes / No HCL / MeoH TBR

Temp: 3.4/3.6 °C Bottles Received: 31

Date: 9/23/22 Time: 0900

If preservation required by Login: Date/Time

Hold: — Condition: NCF / OK

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

Chain of Custody Page 1 of 2

Pace
PEOPLE ADVANCING SCIENCE

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

SDG # L1538941
B169

Acctnum: **LITENGNTN**
Template: **T164916**
Prelogin: **P950058**
PM: **134 - Mark W. Beasley**
PB: 9/10/22 CAM
Shipped Via: **Courier**

Chain of Custody Page 2 of 2

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN

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

Company Name/Address:	**S&ME - Nashville, TN** 862 East Crescentville Road Cincinnati, OH 45246
Billing Information:	Accounts Payable 658 Grassmere Park Dr, Ste 100 Nashville, TN 37211
Pres Chk	
Report to:	Vince Epps
Email To:	vepps@smeinc.com;vgallagher@smeinc.com
Project Description:	Miami Fort Station - North Bend, OH
City/State Collected:	North Bend, OH
Please Circle:	PT MT CT (ET)
Phone:	513-771-8471
Client Project #	7217-17-003D
Lab Project #	LITENGNTN-MIAMI
Collected by (print):	Victoria Gallagher
Site/Facility ID #	LAWRENCEBURG RD. LF (UNIT
P.O. #	
Collected by (signature):	
Immediately Packed on Ice N ___ Y X	
Rush? (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day	Date Results Needed
Quote #	

SDG # L1538941

Table #

Acctnum: LITENGNTN

Template: T164916

Prelogin: P950058

PM: 134 - Mark W. Beasley

PB 9/9/22 cam

Shipped Via: Courier

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Analysis / Container / Preservative: ALKBI/CA, Cl, F, SO4 125mlHDPE-NoPres	B, Ca, K, Mg, Na 250mlHDPE-HNO3	CCR Metals + K,Na,Mg 250mlHDPE-HNO3	Diss Metals (FF) 250mlHDPE-HNO3	TDS 250mlHDPE-NoPres	Remarks	Sample # (lab only)
DUP		GW				3	1	1			1		11

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

Remarks:*Log rad to same SDG as different dash #'s as EX 10 day TAT*****

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: __ UPS __ FedEx X Courier _____

Tracking #

Sample Receipt Checklist

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

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

Trip Blank Received: Yes / No HCL / MeoH TBR

Temp: °C Bottles Received: 31

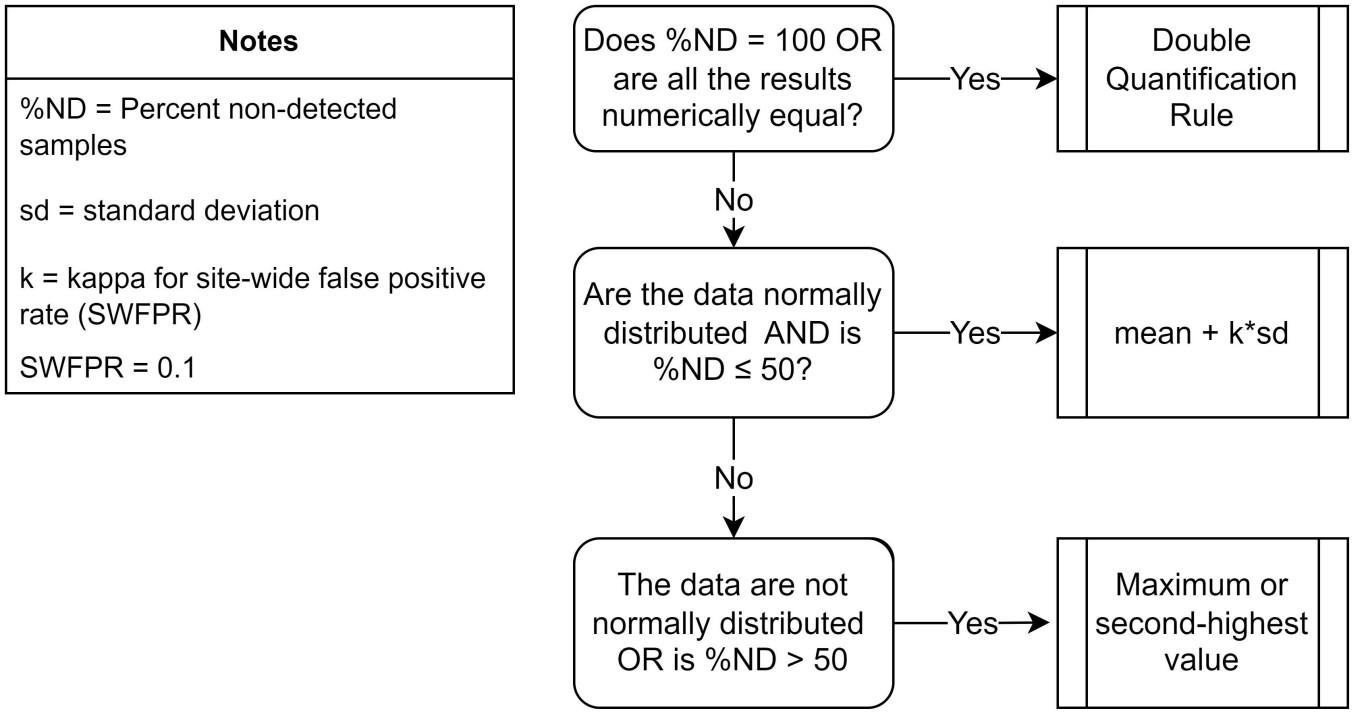
Date: 9/9/22 Time: 0900

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

APPENDIX B
STATISTICAL METHODOLGY FOR DETERMINATION OF BACKGROUND VALUES



When data are not normally distributed or %ND > 50, the maximum value is used if the background sample size is < 60. Where the background sample size is ≥ 60, the achievable per-constituent false positive rates for the maximum and second-highest background values will be compared, and the background value with the achievable per-constituent false positive rate that is closest to, but does not exceed, the target per-constituent false positive rate of 0.015% is used.

APPENDIX C
BACKGROUND UPDATE SUPPORTING INFORMATION

APPENDIX C
BACKGROUND UPDATE SUPPORTING INFORMATION
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
MIAMI FORT POWER PLANT
113 - LAWRENCEBURG ROAD LANDFILL
NORTH BEND, OH

Parameter	Statistic	Previous	New
Boron, total	Sample Count	16	20
	Percent Non-Detect	19	30
	Date Range	12/11/2015 - 07/11/2017	11/15/2017 - 03/24/2022
	Data Normality	Non-Normal	Normal
	Trend	No Trend	No Trend
	Variance	Equal Variance (Log)	
	Population Statistics	Wilcoxon Rank-Sum Test	
	Population Conclusion	Same Populations	
Calcium, total	Sample Count	16	20
	Percent Non-Detect	0	0
	Date Range	12/11/2015 - 07/11/2017	11/15/2017 - 03/24/2022
	Data Normality	Normal	Normal
	Trend	No Trend	No Trend
	Variance	Equal Variance	Equal Variance
	Population Statistics	Pooled Variance T-Test	Pooled Variance T-Test
	Population Conclusion	Different Populations	Different Populations
Chloride, total	Sample Count	16	20
	Percent Non-Detect	0	0
	Date Range	12/11/2015 - 07/11/2017	11/15/2017 - 03/24/2022
	Data Normality	Non-Normal	Non-Normal
	Trend	No Trend	No Trend
	Variance	Equal Variance	Equal Variance
	Population Statistics	Wilcoxon Rank-Sum Test	Wilcoxon Rank-Sum Test
	Population Conclusion	Same Populations	Same Populations
Fluoride, total	Sample Count	16	20
	Percent Non-Detect	75	50
	Date Range	12/11/2015 - 07/11/2017	11/15/2017 - 03/24/2022
	Data Normality	Non-Normal	Non-Normal
	Trend	Upward	Downward
	Variance	Equal Variance	
	Population Statistics	Wilcoxon Rank-Sum Test	
	Population Conclusion	Same Populations	
pH (field)	Sample Count	14	21
	Percent Non-Detect	0	0
	Date Range	12/11/2015 - 07/11/2017	11/15/2017 - 03/24/2022
	Data Normality	Log Normal	Normal
	Trend	No Trend	No Trend
	Variance	Equal Variance	
	Population Statistics	Pooled Variance T-Test (Log-Transformed)	
	Population Conclusion	Different Populations	
Sulfate, total	Sample Count	16	20
	Percent Non-Detect	12	10
	Date Range	12/11/2015 - 07/11/2017	11/15/2017 - 03/24/2022
	Data Normality	Non-Normal	Non-Normal
	Trend	No Trend	No Trend
	Variance	Unequal Variance	

APPENDIX C
BACKGROUND UPDATE SUPPORTING INFORMATION
2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
MIAMI FORT POWER PLANT
113 - LAWRENCEBURG ROAD LANDFILL
NORTH BEND, OH

Parameter	Statistic	Previous	New
	Population Statistics	Wilcoxon Rank-Sum Test	
	Population Conclusion	Same Populations	
Total Dissolved Solids	Sample Count	16	20
	Percent Non-Detect	0	0
	Date Range	12/11/2015 - 07/11/2017	11/15/2017 - 03/24/2022
	Data Normality	Normal	Normal
	Trend	No Trend	No Trend
	Variance	Equal Variance	
	Population Statistics	Pooled Variance T-Test	
	Population Conclusion	Same Populations	

Conclusion:
New data were used to calculated updated background values.