

APPENDIX E
LABORATORY ANALYTICAL RESULTS



Element Materials Technology Lafayette
2417 W. Pinhook Road
Lafayette, LA 70508-3344
TEL: (337) 235-0483 FAX: (337) 233-6540
Website: www.element.com

September 20, 2019

Greg Miller
ICON Environmental Services
2049 Commercial Drive
Port Allen, LA 70767
TEL: (225) 344-8490
FAX (225) 344-6654

RE: Grand River Levert/9326-025-0100

Order No.: 19081522

Dear Greg Miller:

Element Materials Technology Lafayette received 16 sample(s) on 8/30/2019 for the analyses presented in the following report.

In accordance with your instructions Element Lafayette conducted the analysis shown on the following pages on samples submitted by your company. The results related only to the items tested. Unless otherwise noted, all analyses were conducted using EPA approved methodologies and all test results meet all requirements of TNI. All relevant sampling information is on the attached Chain-of-Custody form.

All soil data, except for 29-B, are on a wet-weight basis unless otherwise indicated in the units field as –dry.

LELAP Certification No.: 01997. TCEQ Certification No.: T104704261. LDHH Certification No.: LA180028. ISDH Certification No.: C-LA-01. A scope of accredited parameters is available upon request. A "#" by the test method or analyte indicates this parameter is outside the scope of accreditation.

Estimated uncertainty is available upon request. This report shall not be reproduced except in full, without the written approval of the laboratory.

If you have any questions regarding these test results, please feel free to call.

A handwritten signature in blue ink that reads 'Cristina Thibeaux'.

Cristina Thibeaux
Customer Service Supervisor
2417 W. Pinhook Road
Lafayette, LA 70508-3344



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Case Narrative

WO#: 19081522
Date: 9/20/2019

CLIENT: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

Unless specified by the client, a duplicate or MS/MSD, wherever applicable, is randomly selected and analyzed from each analytical batch provided sample volume is sufficient. The sample chosen for duplicate or MS/MSD may or may not be a sample submitted in this workorder. A method blank and/or a lab control sample (LCS)/lab control sample duplicate (LCSD), wherever applicable, are processed as a quality control check for each analytical batch. When the matrix QC data is not available due to insufficient sample volume or when the results indicate possible matrix effect, the validity of the batch is determined by the method blank and LCS/LCSD.

The results of the laboratory internal quality control data are provided in the QC Summary Report section of the report for your review. Laboratory-related QC exceptions that may impact the validity of data are discussed in the case narrative. Sample-related QC exceptions are flagged either in the results page(s) or in the QC report page(s). End users should consider QC exceptions when evaluating sample data against data quality objectives.

Any other exceptions associated with this report will be footnoted in the results page(s) or the QC summary page(s).



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Analytical Report

(consolidated)

WO#: **19081522**

Date Reported **9/20/2019**

CLIENT: ICON Environmental Services **Collection Date:** 8/29/2019 11:00:00 AM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-001 **Matrix:** SOIL
Client Sample ID HA-1 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	56.5	0.100		meq/100g	1	9/13/2019
					LDNR 29-B	LDNR 29-B Analyst: MRM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	1.31	0.10		mmhos/cm	1	9/10/2019 1:51:00 PM
					LDNR 29-B	Analyst: BXL
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	3.66	0.10		%	1	9/13/2019
					LDNR 29-B	LDNR 29-B Analyst: MRM
HEM, OIL & GREASE						
					SW9071B	Analyst: BXL
HEM, Oil & Grease	9.36	0.05		% dry wt	1	9/4/2019 10:21:00 AM
NOTES:						
Note - Constant weight could not be attained for the Oil & Grease residue in the sample analysis.						
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	5.40	0.10			1	9/13/2019
Soluble Calcium	2.59	0.02		meq/L	1	9/13/2019
Soluble Magnesium	1.32	0.05		meq/L	1	9/13/2019
Soluble Sodium	7.54	0.25		meq/L	1	9/13/2019
					LDNR 29-B	LDNR 29-B Analyst: STS
TPH-D/O IN SOIL BY SW8015						
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	14,000	1,000		mg/Kg	20	9/9/2019 11:11:00 PM
TPH (Oil Range)	16,400	1,000		mg/Kg	20	9/9/2019 11:11:00 PM
Surr: 4-Terphenyl-d14	0	33 - 152	SD	%Rec	20	9/9/2019 11:11:00 PM
NOTES:						
SD - Surrogate diluted out due to dilution.						
					SW8015B	SW3550C Analyst: AB
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.107	0.107		mg/Kg-dry	1	9/10/2019 7:36:39 AM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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WO#: **19081522**

Date Reported **9/20/2019**

CLIENT: ICON Environmental Services **Collection Date:** 8/29/2019 11:00:00 AM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-001 **Matrix:** SOIL
Client Sample ID HA-1 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Arsenic	5.90	1.93		mg/Kg-dry	1	9/12/2019 6:23:50 PM
Barium	228	9.67		mg/Kg-dry	10	9/12/2019 6:33:59 PM
Cadmium	0.658	0.484		mg/Kg-dry	1	9/12/2019 6:23:50 PM
Chromium	17.9	0.967		mg/Kg-dry	1	9/12/2019 6:23:50 PM
Lead	21.5	0.967		mg/Kg-dry	1	9/12/2019 6:23:50 PM
Selenium	< 3.87	3.87		mg/Kg-dry	1	9/12/2019 6:23:50 PM
Strontium	251	9.67		mg/Kg-dry	10	9/12/2019 6:33:59 PM
Zinc	80.3	0.967		mg/Kg-dry	1	9/12/2019 6:23:50 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	539	47.2		mg/Kg-dry	1	9/12/2019 9:51:56 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: ASR
Percent Moisture	45.7	1.00		wt%	1	9/3/2019 11:05:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
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R	RPD outside accepted recovery limits	RL Reporting Limit
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WO#: 19081522

Date Reported 9/20/2019

CLIENT: ICON Environmental Services **Collection Date:** 8/29/2019 11:05:00 AM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-002 **Matrix:** SOIL
Client Sample ID HA-1 (2-4')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY					LDNR 29-B	LDNR 29-B Analyst: MRM
Cation Exchange Capacity	55.3	0.100		meq/100g	1	9/13/2019
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: BXL
Electrical Conductivity	1.55	0.10		mmhos/cm	1	9/10/2019 1:51:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE					LDNR 29-B	LDNR 29-B Analyst: MRM
Exchangeable Sodium %	8.85	0.10		%	1	9/13/2019
HEM, OIL & GREASE						
					SW9071B	Analyst: BXL
HEM, Oil & Grease	0.16	0.05		% dry wt	1	9/4/2019 10:21:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO					LDNR 29-B	LDNR 29-B Analyst: STS
Sodium Adsorption Ratio	13.0	0.10	*		1	9/13/2019
Soluble Calcium	1.03	0.02		meq/L	1	9/13/2019
Soluble Magnesium	0.52	0.05		meq/L	1	9/13/2019
Soluble Sodium	11.4	0.25		meq/L	1	9/13/2019
TPH-D/O IN SOIL BY SW8015						
TPH DRO/ORO IN SOIL BY SW8015					SW8015B	SW3550C Analyst: AB
TPH (Diesel Range)	103	50.0		mg/Kg	1	9/10/2019 2:44:00 AM
TPH (Oil Range)	139	50.0		mg/Kg	1	9/10/2019 2:44:00 AM
Surr: 4-Terphenyl-d14	111	33 - 152		%Rec	1	9/10/2019 2:44:00 AM
29B METALS						
MERCURY IN SOIL OR SLUDGE					29B/SW7471A	SW7471A Analyst: BXB
Mercury	< 0.0996	0.0996		mg/Kg-dry	1	9/10/2019 7:38:57 AM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B Analyst: STS

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
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WO#: **19081522**

Date Reported **9/20/2019**

CLIENT: ICON Environmental Services **Collection Date:** 8/29/2019 11:05:00 AM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-002 **Matrix:** SOIL
Client Sample ID HA-1 (2-4')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Arsenic	8.61	1.98		mg/Kg-dry	1	9/12/2019 6:47:26 PM
Barium	345	9.89		mg/Kg-dry	10	9/12/2019 6:44:02 PM
Cadmium	0.633	0.494		mg/Kg-dry	1	9/12/2019 6:47:26 PM
Chromium	21.0	0.989		mg/Kg-dry	1	9/12/2019 6:47:26 PM
Lead	17.2	0.989		mg/Kg-dry	1	9/12/2019 6:47:26 PM
Selenium	< 3.96	3.96		mg/Kg-dry	1	9/12/2019 6:47:26 PM
Strontium	262	9.89		mg/Kg-dry	10	9/12/2019 6:44:02 PM
Zinc	71.0	0.989		mg/Kg-dry	1	9/12/2019 6:47:26 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	573	47.7		mg/Kg-dry	1	9/19/2019 10:52:16 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: ASR
Percent Moisture	37.7	1.00		wt%	1	9/3/2019 11:05:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
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Date Reported 9/20/2019

CLIENT: ICON Environmental Services **Collection Date:** 8/29/2019 1:15:00 PM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-003 **Matrix:** SOIL
Client Sample ID HA-2 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY					LDNR 29-B	LDNR 29-B Analyst: MRM
Cation Exchange Capacity	35.7	0.100		meq/100g	1	9/13/2019
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: BXL
Electrical Conductivity	0.94	0.10		mmhos/cm	1	9/10/2019 1:51:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE					LDNR 29-B	LDNR 29-B Analyst: MRM
Exchangeable Sodium %	1.62	0.10		%	1	9/13/2019
HEM, OIL & GREASE						
					SW9071B	Analyst: BXL
HEM, Oil & Grease	12.4	0.05		% dry wt	1	9/4/2019 10:21:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO					LDNR 29-B	LDNR 29-B Analyst: STS
Sodium Adsorption Ratio	3.01	0.10			1	9/13/2019
Soluble Calcium	3.15	0.02		meq/L	1	9/13/2019
Soluble Magnesium	1.30	0.05		meq/L	1	9/13/2019
Soluble Sodium	4.49	0.25		meq/L	1	9/13/2019
TPH-D/O IN SOIL BY SW8015						
TPH DRO/ORO IN SOIL BY SW8015					SW8015B	SW3550C Analyst: AB
TPH (Diesel Range)	13,900	1,000		mg/Kg	20	9/9/2019 11:28:00 PM
TPH (Oil Range)	16,600	1,000		mg/Kg	20	9/9/2019 11:28:00 PM
Surr: 4-Terphenyl-d14	0	33 - 152	SD	%Rec	20	9/9/2019 11:28:00 PM
NOTES:						
SD - Surrogate diluted out due to dilution.						
29B METALS						
MERCURY IN SOIL OR SLUDGE					29B/SW7471A	SW7471A Analyst: BXB
Mercury	2.08	0.107		mg/Kg-dry	1	9/10/2019 7:41:15 AM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
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	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
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WO#: **19081522**

Date Reported **9/20/2019**

CLIENT: ICON Environmental Services **Collection Date:** 8/29/2019 1:15:00 PM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-003 **Matrix:** SOIL
Client Sample ID HA-2 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Arsenic	23.4	1.85	*	mg/Kg-dry	1	9/12/2019 6:50:37 PM
Barium	3,630	9.23		mg/Kg-dry	10	9/12/2019 6:53:57 PM
Cadmium	7.52	0.462		mg/Kg-dry	1	9/12/2019 6:50:37 PM
Chromium	435	9.23		mg/Kg-dry	10	9/12/2019 6:53:57 PM
Lead	707	9.23	*	mg/Kg-dry	10	9/12/2019 6:53:57 PM
Selenium	< 3.69	3.69		mg/Kg-dry	1	9/12/2019 6:50:37 PM
Strontium	336	9.23		mg/Kg-dry	10	9/12/2019 6:53:57 PM
Zinc	1,350	9.23	*	mg/Kg-dry	10	9/12/2019 6:53:57 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	265,000	48.7	*	mg/Kg-dry	1	9/12/2019 10:06:27 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: ASR
Percent Moisture	42.6	1.00		wt%	1	9/3/2019 11:05:00 AM

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WO#: 19081522

Date Reported 9/20/2019

CLIENT: ICON Environmental Services **Collection Date:** 8/29/2019 1:20:00 PM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-004 **Matrix:** SOIL
Client Sample ID HA-2 (2-4')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY					LDNR 29-B	LDNR 29-B Analyst: MRM
Cation Exchange Capacity	65.5	0.100		meq/100g	1	9/13/2019
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: BXL
Electrical Conductivity	1.46	0.10		mmhos/cm	1	9/10/2019 1:51:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE					LDNR 29-B	LDNR 29-B Analyst: MRM
Exchangeable Sodium %	8.11	0.10		%	1	9/13/2019
HEM, OIL & GREASE						
					SW9071B	Analyst: BXL
HEM, Oil & Grease	2.13	0.05		% dry wt	1	9/4/2019 10:21:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO					LDNR 29-B	LDNR 29-B Analyst: STS
Sodium Adsorption Ratio	10.8	0.10			1	9/13/2019
Soluble Calcium	1.44	0.02		meq/L	1	9/13/2019
Soluble Magnesium	0.72	0.05		meq/L	1	9/13/2019
Soluble Sodium	11.2	0.25		meq/L	1	9/13/2019
TPH-D/O IN SOIL BY SW8015						
TPH DRO/ORO IN SOIL BY SW8015					SW8015B	SW3550C Analyst: AB
TPH (Diesel Range)	1,800	250		mg/Kg	5	9/9/2019 11:44:00 PM
TPH (Oil Range)	2,330	250		mg/Kg	5	9/9/2019 11:44:00 PM
Surr: 4-Terphenyl-d14	0	33 - 152	SD	%Rec	5	9/9/2019 11:44:00 PM
NOTES:						
SD - Surrogate diluted out due to dilution.						
29B METALS						
MERCURY IN SOIL OR SLUDGE					29B/SW7471A	SW7471A Analyst: BXB
Mercury	< 0.0984	0.0984		mg/Kg-dry	1	9/10/2019 7:43:54 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
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WO#: **19081522**

Date Reported **9/20/2019**

CLIENT: ICON Environmental Services **Collection Date:** 8/29/2019 1:20:00 PM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-004 **Matrix:** SOIL
Client Sample ID HA-2 (2-4')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Arsenic	7.57	1.92		mg/Kg-dry	1	9/12/2019 7:05:44 PM
Barium	1,030	9.62		mg/Kg-dry	10	9/12/2019 7:09:00 PM
Cadmium	0.741	0.481		mg/Kg-dry	1	9/12/2019 7:05:44 PM
Chromium	19.8	0.962		mg/Kg-dry	1	9/12/2019 7:05:44 PM
Lead	20.5	0.962		mg/Kg-dry	1	9/12/2019 7:05:44 PM
Selenium	< 3.85	3.85		mg/Kg-dry	1	9/12/2019 7:05:44 PM
Strontium	263	9.62		mg/Kg-dry	10	9/12/2019 7:09:00 PM
Zinc	67.5	0.962		mg/Kg-dry	1	9/12/2019 7:05:44 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	3,900	48.4		mg/Kg-dry	1	9/12/2019 10:19:21 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: ASR
Percent Moisture	48.4	1.00		wt%	1	9/3/2019 11:05:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
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Date Reported 9/20/2019

CLIENT: ICON Environmental Services **Collection Date:** 8/29/2019 2:40:00 PM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-005 **Matrix:** SOIL
Client Sample ID HA-3 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY					LDNR 29-B	LDNR 29-B Analyst: MRM
Cation Exchange Capacity	64.2	0.100		meq/100g	1	9/13/2019
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: BXL
Electrical Conductivity	0.56	0.10		mmhos/cm	1	9/10/2019 1:51:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE					LDNR 29-B	LDNR 29-B Analyst: MRM
Exchangeable Sodium %	1.89	0.10		%	1	9/13/2019
HEM, OIL & GREASE						
					SW9071B	Analyst: BXL
HEM, Oil & Grease	0.11	0.05		% dry wt	1	9/4/2019 10:21:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO					LDNR 29-B	LDNR 29-B Analyst: STS
Sodium Adsorption Ratio	2.65	0.10			1	9/13/2019
Soluble Calcium	1.59	0.02		meq/L	1	9/13/2019
Soluble Magnesium	0.75	0.05		meq/L	1	9/13/2019
Soluble Sodium	2.87	0.25		meq/L	1	9/13/2019
TPH-D/O IN SOIL BY SW8015						
TPH DRO/ORO IN SOIL BY SW8015					SW8015B	SW3550C Analyst: AB
TPH (Diesel Range)	101	50.0		mg/Kg	1	9/10/2019 3:01:00 AM
TPH (Oil Range)	199	50.0		mg/Kg	1	9/10/2019 3:01:00 AM
Surr: 4-Terphenyl-d14	99.6	33 - 152		%Rec	1	9/10/2019 3:01:00 AM
29B METALS						
MERCURY IN SOIL OR SLUDGE					29B/SW7471A	SW7471A Analyst: BXB
Mercury	0.135	0.109		mg/Kg-dry	1	9/10/2019 7:46:33 AM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B Analyst: STS

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



Element Materials Technology Lafayette
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Analytical Report

(consolidated)

WO#: **19081522**

Date Reported **9/20/2019**

CLIENT: ICON Environmental Services **Collection Date:** 8/29/2019 2:40:00 PM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-005 **Matrix:** SOIL
Client Sample ID HA-3 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Arsenic	13.8	1.95	*	mg/Kg-dry	1	9/12/2019 7:12:42 PM
Barium	4,250	0.973		mg/Kg-dry	1	9/12/2019 7:12:42 PM
Cadmium	0.817	0.486		mg/Kg-dry	1	9/12/2019 7:12:42 PM
Chromium	33.1	0.973		mg/Kg-dry	1	9/12/2019 7:12:42 PM
Lead	47.2	0.973		mg/Kg-dry	1	9/12/2019 7:12:42 PM
Selenium	< 3.89	3.89		mg/Kg-dry	1	9/12/2019 7:12:42 PM
Strontium	175	0.973		mg/Kg-dry	1	9/12/2019 7:12:42 PM
Zinc	90.5	0.973		mg/Kg-dry	1	9/12/2019 7:12:42 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	16,700	45.9		mg/Kg-dry	1	9/19/2019 11:13:11 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: ASR
Percent Moisture	37.2	1.00		wt%	1	9/3/2019 11:05:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
M	Matrix Interference	ND Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U	Analyte not detected	W Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: 19081522

Date Reported 9/20/2019

CLIENT: ICON Environmental Services **Collection Date:** 8/29/2019 2:45:00 PM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-006 **Matrix:** SOIL
Client Sample ID HA-3 (2-4')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY					LDNR 29-B	LDNR 29-B Analyst: MRM
Cation Exchange Capacity	56.7	0.100		meq/100g	1	9/13/2019
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: BXL
Electrical Conductivity	1.66	0.10		mmhos/cm	1	9/10/2019 1:51:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE					LDNR 29-B	LDNR 29-B Analyst: MRM
Exchangeable Sodium %	7.67	0.10		%	1	9/13/2019
HEM, OIL & GREASE						
					SW9071B	Analyst: BXL
HEM, Oil & Grease	0.60	0.05		% dry wt	1	9/4/2019 10:21:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO					LDNR 29-B	LDNR 29-B Analyst: STS
Sodium Adsorption Ratio	8.27	0.10			1	9/13/2019
Soluble Calcium	2.34	0.02		meq/L	1	9/13/2019
Soluble Magnesium	1.15	0.05		meq/L	1	9/13/2019
Soluble Sodium	10.9	0.25		meq/L	1	9/13/2019
TPH-D/O IN SOIL BY SW8015						
TPH DRO/ORO IN SOIL BY SW8015					SW8015B	SW3550C Analyst: AB
TPH (Diesel Range)	109	50.0		mg/Kg	1	9/10/2019 3:17:00 AM
TPH (Oil Range)	152	50.0		mg/Kg	1	9/10/2019 3:17:00 AM
Surr: 4-Terphenyl-d14	114	33 - 152		%Rec	1	9/10/2019 3:17:00 AM
29B METALS						
MERCURY IN SOIL OR SLUDGE					29B/SW7471A	SW7471A Analyst: BXB
Mercury	< 0.107	0.107		mg/Kg-dry	1	9/10/2019 7:49:13 AM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B Analyst: STS

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
M	Matrix Interference	ND Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U	Analyte not detected	W Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: **19081522**

Date Reported **9/20/2019**

CLIENT: ICON Environmental Services **Collection Date:** 8/29/2019 2:45:00 PM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-006 **Matrix:** SOIL
Client Sample ID HA-3 (2-4')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Arsenic	4.62	1.82		mg/Kg-dry	1	9/12/2019 7:16:14 PM
Barium	951	0.912		mg/Kg-dry	1	9/12/2019 7:16:14 PM
Cadmium	< 0.456	0.456		mg/Kg-dry	1	9/12/2019 7:16:14 PM
Chromium	17.1	0.912		mg/Kg-dry	1	9/12/2019 7:16:14 PM
Lead	18.5	0.912		mg/Kg-dry	1	9/12/2019 7:16:14 PM
Selenium	< 3.65	3.65		mg/Kg-dry	1	9/12/2019 7:16:14 PM
Strontium	79.5	0.912		mg/Kg-dry	1	9/12/2019 7:16:14 PM
Zinc	69.9	0.912		mg/Kg-dry	1	9/12/2019 7:16:14 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	2,260	49.7		mg/Kg-dry	1	9/12/2019 10:26:18 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: ASR
Percent Moisture	38.3	1.00		wt%	1	9/3/2019 11:05:00 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit
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S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
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WO#: 19081522

Date Reported 9/20/2019

CLIENT: ICON Environmental Services **Collection Date:** 8/29/2019 2:50:00 PM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-007 **Matrix:** SOIL
Client Sample ID HA-3 (4-6')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	
29B SALTS							
CATION EXCHANGE CAPACITY					LDNR 29-B	LDNR 29-B	Analyst: MRM
Cation Exchange Capacity	50.3	0.100		meq/100g	1	9/13/2019	
29B SALTS							
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B		Analyst: BXL
Electrical Conductivity	2.83	0.10		mmhos/cm	1	9/10/2019 1:51:00 PM	
29B SALTS							
EXCHANGEABLE SODIUM PERCENTAGE					LDNR 29-B	LDNR 29-B	Analyst: MRM
Exchangeable Sodium %	13.8	0.10		%	1	9/13/2019	
HEM, OIL & GREASE							
					SW9071B		Analyst: BXL
HEM, Oil & Grease	0.09	0.05		% dry wt	1	9/4/2019 10:21:00 AM	
29B SALTS							
SODIUM ADSORPTION RATIO					LDNR 29-B	LDNR 29-B	Analyst: STS
Sodium Adsorption Ratio	15.1	0.10	*		1	9/13/2019	
Soluble Calcium	2.46	0.02		meq/L	1	9/13/2019	
Soluble Magnesium	1.28	0.05		meq/L	1	9/13/2019	
Soluble Sodium	20.6	0.25		meq/L	1	9/13/2019	
TPH-D/O IN SOIL BY SW8015							
TPH DRO/ORO IN SOIL BY SW8015					SW8015B	SW3550C	Analyst: AB
TPH (Diesel Range)	< 50.0	50.0		mg/Kg	1	9/10/2019 3:34:00 AM	
TPH (Oil Range)	61.4	50.0		mg/Kg	1	9/10/2019 3:34:00 AM	
Surr: 4-Terphenyl-d14	148	33 - 152		%Rec	1	9/10/2019 3:34:00 AM	
29B METALS							
MERCURY IN SOIL OR SLUDGE					29B/SW7471A	SW7471A	Analyst: BXB
Mercury	< 0.105	0.105		mg/Kg-dry	1	9/10/2019 8:45:28 AM	
29B METALS							
METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B	Analyst: STS

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: **19081522**

Date Reported **9/20/2019**

CLIENT: ICON Environmental Services **Collection Date:** 8/29/2019 2:50:00 PM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-007 **Matrix:** SOIL
Client Sample ID HA-3 (4-6')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Arsenic	4.40	1.82		mg/Kg-dry	1	9/12/2019 7:19:44 PM
Barium	314	0.910		mg/Kg-dry	1	9/12/2019 7:19:44 PM
Cadmium	0.501	0.455		mg/Kg-dry	1	9/12/2019 7:19:44 PM
Chromium	18.5	0.910		mg/Kg-dry	1	9/12/2019 7:19:44 PM
Lead	17.9	0.910		mg/Kg-dry	1	9/12/2019 7:19:44 PM
Selenium	< 3.64	3.64		mg/Kg-dry	1	9/12/2019 7:19:44 PM
Strontium	61.0	0.910		mg/Kg-dry	1	9/12/2019 7:19:44 PM
Zinc	72.6	0.910		mg/Kg-dry	1	9/12/2019 7:19:44 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	490	48.3		mg/Kg-dry	1	9/12/2019 10:29:41 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: ASR
Percent Moisture	37.3	1.00		wt%	1	9/3/2019 11:05:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
M	Matrix Interference	ND Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U	Analyte not detected	W Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: 19081522

Date Reported 9/20/2019

CLIENT: ICON Environmental Services **Collection Date:** 8/29/2019 2:55:00 PM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-008 **Matrix:** SOIL
Client Sample ID HA-3 (6-8')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY					LDNR 29-B	LDNR 29-B Analyst: MRM
Cation Exchange Capacity	52.8	0.100		meq/100g	1	9/13/2019
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: BXL
Electrical Conductivity	3.62	0.10		mmhos/cm	1	9/10/2019 1:51:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE					LDNR 29-B	LDNR 29-B Analyst: MRM
Exchangeable Sodium %	11.0	0.10		%	1	9/13/2019
HEM, OIL & GREASE						
					SW9071B	Analyst: BXL
HEM, Oil & Grease	0.07	0.05		% dry wt	1	9/4/2019 10:21:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO					LDNR 29-B	LDNR 29-B Analyst: STS
Sodium Adsorption Ratio	12.9	0.10	*		1	9/13/2019
Soluble Calcium	4.48	0.02		meq/L	1	9/13/2019
Soluble Magnesium	2.54	0.05		meq/L	1	9/13/2019
Soluble Sodium	24.2	0.25		meq/L	1	9/13/2019
TPH-D/O IN SOIL BY SW8015						
TPH DRO/ORO IN SOIL BY SW8015					SW8015B	SW3550C Analyst: AB
TPH (Diesel Range)	145	50.0		mg/Kg	1	9/10/2019 3:50:00 AM
TPH (Oil Range)	110	50.0		mg/Kg	1	9/10/2019 3:50:00 AM
Surr: 4-Terphenyl-d14	121	33 - 152		%Rec	1	9/10/2019 3:50:00 AM
29B METALS						
MERCURY IN SOIL OR SLUDGE					29B/SW7471A	SW7471A Analyst: BXB
Mercury	< 0.101	0.101		mg/Kg-dry	1	9/10/2019 8:47:47 AM
INORGANIC ANIONS IN LEACHATE BY IC						
					SW9056A	Analyst: SGP

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit
	S	SPD Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 19081522

Date Reported 9/20/2019

CLIENT: ICON Environmental Services **Collection Date:** 8/29/2019 2:55:00 PM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-008 **Matrix:** SOIL
Client Sample ID HA-3 (6-8')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN LEACHATE BY IC				SW9056A		Analyst: SGP
Chloride	321	5.00		mg/L	20	9/12/2019 10:33:31 AM
29B METALS METALS IN SOIL OR SLUDGE BY ICP				SW6010B SW3050B		Analyst: STS
Arsenic	8.77	1.85		mg/Kg-dry	1	9/12/2019 7:23:44 PM
Barium	535	0.925		mg/Kg-dry	1	9/12/2019 7:23:44 PM
Cadmium	0.546	0.462		mg/Kg-dry	1	9/12/2019 7:23:44 PM
Chromium	17.6	0.925		mg/Kg-dry	1	9/12/2019 7:23:44 PM
Lead	15.8	0.925		mg/Kg-dry	1	9/12/2019 7:23:44 PM
Selenium	< 3.70	3.70		mg/Kg-dry	1	9/12/2019 7:23:44 PM
Strontium	56.5	0.925		mg/Kg-dry	1	9/12/2019 7:23:44 PM
Zinc	64.8	0.925		mg/Kg-dry	1	9/12/2019 7:23:44 PM
29B METALS TRUE TOTAL BARIUM				LDNR 29-B		Analyst: STS
True Total Barium	821	46.4		mg/Kg-dry	1	9/12/2019 10:33:34 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: ASR
Percent Moisture	37.9	1.00		wt%	1	9/3/2019 11:05:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
M	Matrix Interference	ND Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U	Analyte not detected	W Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: 19081522

Date Reported 9/20/2019

CLIENT: ICON Environmental Services **Collection Date:** 8/30/2019 10:25:00 AM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-009 **Matrix:** SOIL
Client Sample ID HA-4 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	44.1	0.100		meq/100g	1	9/13/2019
					LDNR 29-B	LDNR 29-B Analyst: MRM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.57	0.10		mmhos/cm	1	9/10/2019 1:51:00 PM
					LDNR 29-B	Analyst: BXL
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.15	0.10		%	1	9/13/2019
					LDNR 29-B	LDNR 29-B Analyst: MRM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	0.85	0.10			1	9/13/2019
Soluble Calcium	4.10	0.02		meq/L	1	9/13/2019
Soluble Magnesium	0.62	0.05		meq/L	1	9/13/2019
Soluble Sodium	1.30	0.25		meq/L	1	9/13/2019
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.108	0.108		mg/Kg-dry	1	9/10/2019 8:57:47 AM
					29B/SW7471A	SW7471A Analyst: BXB
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	12.1	1.86	*	mg/Kg-dry	1	9/12/2019 7:26:56 PM
Barium	384	9.28		mg/Kg-dry	10	9/12/2019 7:30:18 PM
Cadmium	0.770	0.464		mg/Kg-dry	1	9/12/2019 7:26:56 PM
Chromium	12.7	0.928		mg/Kg-dry	1	9/12/2019 7:26:56 PM
Lead	13.9	0.928		mg/Kg-dry	1	9/12/2019 7:26:56 PM
Selenium	< 3.71	3.71		mg/Kg-dry	1	9/12/2019 7:26:56 PM
Strontium	372	9.28		mg/Kg-dry	10	9/12/2019 7:30:18 PM
Zinc	153	9.28		mg/Kg-dry	10	9/12/2019 7:30:18 PM
					SW6010B	SW3050B Analyst: STS
29B METALS						
TRUE TOTAL BARIUM						
					LDNR 29-B	Analyst: STS

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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WO#: **19081522**

Date Reported **9/20/2019**

CLIENT: ICON Environmental Services **Collection Date:** 8/30/2019 10:25:00 AM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-009 **Matrix:** SOIL
Client Sample ID HA-4 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS				LDNR 29-B		Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	754	47.3		mg/Kg-dry	1	9/12/2019 10:37:38 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: ASR
Percent Moisture	21.8	1.00		wt%	1	9/3/2019 11:05:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
M	Matrix Interference	ND Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U	Analyte not detected	W Sample container temperature is out of limit as specified at testcode



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WO#: 19081522

Date Reported 9/20/2019

CLIENT: ICON Environmental Services
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-010
Client Sample ID HA-4 (2-4')

Collection Date: 8/30/2019 10:30:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	
29B SALTS							
CATION EXCHANGE CAPACITY					LDNR 29-B	LDNR 29-B	Analyst: MRM
Cation Exchange Capacity	48.6	0.100		meq/100g	1	9/13/2019	
29B SALTS							
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B		Analyst: BXL
Electrical Conductivity	3.67	0.10		mmhos/cm	1	9/10/2019 1:51:00 PM	
29B SALTS							
EXCHANGEABLE SODIUM PERCENTAGE					LDNR 29-B	LDNR 29-B	Analyst: MRM
Exchangeable Sodium %	11.3	0.10		%	1	9/13/2019	
29B SALTS							
SODIUM ADSORPTION RATIO					LDNR 29-B	LDNR 29-B	Analyst: STS
Sodium Adsorption Ratio	12.9	0.10	*		1	9/13/2019	
Soluble Calcium	5.96	0.02		meq/L	1	9/13/2019	
Soluble Magnesium	2.61	0.05		meq/L	1	9/13/2019	
Soluble Sodium	26.8	0.25		meq/L	1	9/13/2019	
29B METALS							
MERCURY IN SOIL OR SLUDGE					29B/SW7471A	SW7471A	Analyst: BXB
Mercury	< 0.107	0.107		mg/Kg-dry	1	9/10/2019 9:05:20 AM	
29B METALS							
METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B	Analyst: STS
Arsenic	8.67	1.95		mg/Kg-dry	1	9/12/2019 7:33:50 PM	
Barium	236	0.975		mg/Kg-dry	1	9/12/2019 7:33:50 PM	
Cadmium	0.575	0.487		mg/Kg-dry	1	9/12/2019 7:33:50 PM	
Chromium	13.2	0.975		mg/Kg-dry	1	9/12/2019 7:33:50 PM	
Lead	13.7	0.975		mg/Kg-dry	1	9/12/2019 7:33:50 PM	
Selenium	< 3.90	3.90		mg/Kg-dry	1	9/12/2019 7:33:50 PM	
Strontium	90.4	0.975		mg/Kg-dry	1	9/12/2019 7:33:50 PM	
Zinc	65.4	0.975		mg/Kg-dry	1	9/12/2019 7:33:50 PM	
29B METALS							
TRUE TOTAL BARIUM					LDNR 29-B		Analyst: STS

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: **19081522**

Date Reported **9/20/2019**

CLIENT: ICON Environmental Services **Collection Date:** 8/30/2019 10:30:00 AM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-010 **Matrix:** SOIL
Client Sample ID HA-4 (2-4')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS				LDNR 29-B		Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	408	49.6		mg/Kg-dry	1	9/12/2019 10:41:43 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: ASR
Percent Moisture	30.6	1.00		wt%	1	9/3/2019 11:05:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
M	Matrix Interference	ND Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U	Analyte not detected	W Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: 19081522

Date Reported 9/20/2019

CLIENT: ICON Environmental Services
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-011
Client Sample ID HA-4 (4-6')

Collection Date: 8/30/2019 10:35:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	33.3	0.100		meq/100g	1	9/13/2019
					LDNR 29-B	LDNR 29-B Analyst: MRM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	6.23	0.10	*	mmhos/cm	1	9/10/2019 1:51:00 PM
					LDNR 29-B	Analyst: BXL
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	12.9	0.10		%	1	9/13/2019
					LDNR 29-B	LDNR 29-B Analyst: MRM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	15.5	0.10	*		1	9/13/2019
Soluble Calcium	10.2	0.02		meq/L	1	9/13/2019
Soluble Magnesium	5.59	0.05		meq/L	1	9/13/2019
Soluble Sodium	43.7	0.25		meq/L	1	9/13/2019
					LDNR 29-B	LDNR 29-B Analyst: STS
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.104	0.104		mg/Kg-dry	1	9/10/2019 9:07:39 AM
					29B/SW7471A	SW7471A Analyst: BXB
INORGANIC ANIONS IN LEACHATE BY IC						
					SW9056A	Analyst: SGP
Chloride	352	12.5		mg/L	50	9/12/2019 10:47:14 AM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	10.2	1.88	*	mg/Kg-dry	1	9/12/2019 7:47:29 PM
Barium	210	0.938		mg/Kg-dry	1	9/12/2019 7:47:29 PM
Cadmium	0.544	0.469		mg/Kg-dry	1	9/12/2019 7:47:29 PM
Chromium	11.8	0.938		mg/Kg-dry	1	9/12/2019 7:47:29 PM
Lead	12.4	0.938		mg/Kg-dry	1	9/12/2019 7:47:29 PM
Selenium	< 3.75	3.75		mg/Kg-dry	1	9/12/2019 7:47:29 PM
Strontium	52.3	0.938		mg/Kg-dry	1	9/12/2019 7:47:29 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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WO#: **19081522**

Date Reported **9/20/2019**

CLIENT: ICON Environmental Services **Collection Date:** 8/30/2019 10:35:00 AM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-011 **Matrix:** SOIL
Client Sample ID HA-4 (4-6')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B Analyst: STS
Zinc	54.6	0.938		mg/Kg-dry	1	9/12/2019 7:47:29 PM
29B METALS TRUE TOTAL BARIUM					LDNR 29-B	Analyst: STS
True Total Barium	285	47.7		mg/Kg-dry	1	9/12/2019 10:45:37 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: ASR
Percent Moisture	28.0	1.00		wt%	1	9/3/2019 11:05:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
M	Matrix Interference	ND Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U	Analyte not detected	W Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: 19081522

Date Reported 9/20/2019

CLIENT: ICON Environmental Services **Collection Date:** 8/30/2019 10:40:00 AM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-012 **Matrix:** SOIL
Client Sample ID HA-4 (6-8')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	51.3	0.100		meq/100g	1	9/13/2019
LDNR 29-B LDNR 29-B Analyst: MRM						
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	6.54	0.10	*	mmhos/cm	1	9/10/2019 1:51:00 PM
LDNR 29-B Analyst: BXL						
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	7.54	0.10		%	1	9/13/2019
LDNR 29-B LDNR 29-B Analyst: MRM						
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	8.55	0.10			1	9/13/2019
Soluble Calcium	17.9	0.02		meq/L	1	9/13/2019
Soluble Magnesium	10.1	0.05		meq/L	1	9/13/2019
Soluble Sodium	32.0	0.25		meq/L	1	9/13/2019
LDNR 29-B LDNR 29-B Analyst: STS						
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.108	0.108		mg/Kg-dry	1	9/10/2019 9:17:46 AM
29B/SW7471A SW7471A Analyst: BXB						
INORGANIC ANIONS IN LEACHATE BY IC						
SW9056A Analyst: SGP						
Chloride	515	12.5		mg/L	50	9/12/2019 11:00:58 AM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
SW6010B SW3050B Analyst: STS						
Arsenic	6.49	1.91		mg/Kg-dry	1	9/12/2019 7:50:59 PM
Barium	243	0.957		mg/Kg-dry	1	9/12/2019 7:50:59 PM
Cadmium	0.794	0.478		mg/Kg-dry	1	9/12/2019 7:50:59 PM
Chromium	19.2	0.957		mg/Kg-dry	1	9/12/2019 7:50:59 PM
Lead	17.5	0.957		mg/Kg-dry	1	9/12/2019 7:50:59 PM
Selenium	< 3.83	3.83		mg/Kg-dry	1	9/12/2019 7:50:59 PM
Strontium	54.5	0.957		mg/Kg-dry	1	9/12/2019 7:50:59 PM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
M	Matrix Interference	ND Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U	Analyte not detected	W Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: **19081522**

Date Reported **9/20/2019**

CLIENT: ICON Environmental Services **Collection Date:** 8/30/2019 10:40:00 AM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-012 **Matrix:** SOIL
Client Sample ID HA-4 (6-8')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Zinc	78.9	0.957		mg/Kg-dry	1	9/12/2019 7:50:59 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	431	48.4		mg/Kg-dry	1	9/12/2019 10:49:22 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: ASR
Percent Moisture	34.5	1.00		wt%	1	9/3/2019 11:05:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
M	Matrix Interference	ND Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U	Analyte not detected	W Sample container temperature is out of limit as specified at testcode



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WO#: 19081522

Date Reported 9/20/2019

CLIENT: ICON Environmental Services
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-013
Client Sample ID HA-5 (0-2')

Collection Date: 8/30/2019 11:35:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	59.3	0.100		meq/100g	1	9/13/2019
					LDNR 29-B	LDNR 29-B Analyst: MRM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	2.94	0.10		mmhos/cm	1	9/10/2019 1:51:00 PM
					LDNR 29-B	Analyst: BXL
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	4.74	0.10		%	1	9/13/2019
					LDNR 29-B	LDNR 29-B Analyst: MRM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	5.94	0.10			1	9/13/2019
Soluble Calcium	7.81	0.02		meq/L	1	9/13/2019
Soluble Magnesium	4.47	0.05		meq/L	1	9/13/2019
Soluble Sodium	14.7	0.25		meq/L	1	9/13/2019
					LDNR 29-B	LDNR 29-B Analyst: STS
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.106	0.106		mg/Kg-dry	1	9/10/2019 9:20:04 AM
					29B/SW7471A	SW7471A Analyst: BXB
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	6.44	1.85		mg/Kg-dry	1	9/12/2019 7:54:27 PM
Barium	207	0.927		mg/Kg-dry	1	9/12/2019 7:54:27 PM
Cadmium	0.528	0.463		mg/Kg-dry	1	9/12/2019 7:54:27 PM
Chromium	19.7	0.927		mg/Kg-dry	1	9/12/2019 7:54:27 PM
Lead	18.2	0.927		mg/Kg-dry	1	9/12/2019 7:54:27 PM
Selenium	< 3.71	3.71		mg/Kg-dry	1	9/12/2019 7:54:27 PM
Strontium	60.2	0.927		mg/Kg-dry	1	9/12/2019 7:54:27 PM
Zinc	82.2	0.927		mg/Kg-dry	1	9/12/2019 7:54:27 PM
					SW6010B	SW3050B Analyst: STS
29B METALS						
TRUE TOTAL BARIUM						
					LDNR 29-B	Analyst: STS

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: **19081522**

Date Reported **9/20/2019**

CLIENT: ICON Environmental Services **Collection Date:** 8/30/2019 11:35:00 AM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-013 **Matrix:** SOIL
Client Sample ID HA-5 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS				LDNR 29-B		Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	337	48.5		mg/Kg-dry	1	9/12/2019 10:53:18 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: ASR
Percent Moisture	35.8	1.00		wt%	1	9/3/2019 11:05:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
M	Matrix Interference	ND Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U	Analyte not detected	W Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: 19081522

Date Reported 9/20/2019

CLIENT: ICON Environmental Services
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-014
Client Sample ID HA-5 (2-4')

Collection Date: 8/30/2019 11:40:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	
29B SALTS							
CATION EXCHANGE CAPACITY					LDNR 29-B	LDNR 29-B	Analyst: MRM
Cation Exchange Capacity	61.6	0.100		meq/100g	1	9/13/2019	
29B SALTS							
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B		Analyst: BXL
Electrical Conductivity	2.83	0.10		mmhos/cm	1	9/10/2019 1:51:00 PM	
29B SALTS							
EXCHANGEABLE SODIUM PERCENTAGE					LDNR 29-B	LDNR 29-B	Analyst: MRM
Exchangeable Sodium %	5.35	0.10		%	1	9/13/2019	
29B SALTS							
SODIUM ADSORPTION RATIO					LDNR 29-B	LDNR 29-B	Analyst: STS
Sodium Adsorption Ratio	6.02	0.10			1	9/13/2019	
Soluble Calcium	7.28	0.02		meq/L	1	9/13/2019	
Soluble Magnesium	4.06	0.05		meq/L	1	9/13/2019	
Soluble Sodium	14.3	0.25		meq/L	1	9/13/2019	
29B METALS							
MERCURY IN SOIL OR SLUDGE					29B/SW7471A	SW7471A	Analyst: BXB
Mercury	< 0.104	0.104		mg/Kg-dry	1	9/10/2019 9:22:22 AM	
29B METALS							
METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B	Analyst: STS
Arsenic	6.09	1.96		mg/Kg-dry	1	9/12/2019 7:57:56 PM	
Barium	263	0.982		mg/Kg-dry	1	9/12/2019 7:57:56 PM	
Cadmium	0.570	0.491		mg/Kg-dry	1	9/12/2019 7:57:56 PM	
Chromium	22.6	0.982		mg/Kg-dry	1	9/12/2019 7:57:56 PM	
Lead	17.6	0.982		mg/Kg-dry	1	9/12/2019 7:57:56 PM	
Selenium	< 3.93	3.93		mg/Kg-dry	1	9/12/2019 7:57:56 PM	
Strontium	62.1	0.982		mg/Kg-dry	1	9/12/2019 7:57:56 PM	
Zinc	92.3	0.982		mg/Kg-dry	1	9/12/2019 7:57:56 PM	
29B METALS							
TRUE TOTAL BARIUM					LDNR 29-B		Analyst: STS

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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WO#: **19081522**

Date Reported **9/20/2019**

CLIENT: ICON Environmental Services **Collection Date:** 8/30/2019 11:40:00 AM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-014 **Matrix:** SOIL
Client Sample ID HA-5 (2-4')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS				LDNR 29-B		Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	425	49.6		mg/Kg-dry	1	9/12/2019 11:05:01 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: ASR
Percent Moisture	33.3	1.00		wt%	1	9/3/2019 11:05:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
M	Matrix Interference	ND Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U	Analyte not detected	W Sample container temperature is out of limit as specified at testcode



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WO#: 19081522

Date Reported 9/20/2019

CLIENT: ICON Environmental Services **Collection Date:** 8/30/2019 11:45:00 AM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-015 **Matrix:** SOIL
Client Sample ID HA-5 (4-6')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	56.6	0.100		meq/100g	1	9/13/2019
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	3.52	0.10		mmhos/cm	1	9/10/2019 1:51:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	6.05	0.10		%	1	9/13/2019
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	5.85	0.10			1	9/13/2019
Soluble Calcium	9.80	0.02		meq/L	1	9/13/2019
Soluble Magnesium	5.37	0.05		meq/L	1	9/13/2019
Soluble Sodium	16.1	0.25		meq/L	1	9/13/2019
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.101	0.101		mg/Kg-dry	1	9/10/2019 9:24:41 AM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	334	5.00		mg/L	20	9/12/2019 11:14:43 AM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	3.99	1.92		mg/Kg-dry	1	9/12/2019 8:01:24 PM
Barium	397	0.960		mg/Kg-dry	1	9/12/2019 8:01:24 PM
Cadmium	0.519	0.480		mg/Kg-dry	1	9/12/2019 8:01:24 PM
Chromium	20.1	0.960		mg/Kg-dry	1	9/12/2019 8:01:24 PM
Lead	18.9	0.960		mg/Kg-dry	1	9/12/2019 8:01:24 PM
Selenium	< 3.84	3.84		mg/Kg-dry	1	9/12/2019 8:01:24 PM
Strontium	64.5	0.960		mg/Kg-dry	1	9/12/2019 8:01:24 PM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
M	Matrix Interference	ND Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U	Analyte not detected	W Sample container temperature is out of limit as specified at testcode



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WO#: **19081522**

Date Reported **9/20/2019**

CLIENT: ICON Environmental Services **Collection Date:** 8/30/2019 11:45:00 AM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-015 **Matrix:** SOIL
Client Sample ID HA-5 (4-6')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B Analyst: STS
Zinc	78.4	0.960		mg/Kg-dry	1	9/12/2019 8:01:24 PM
29B METALS TRUE TOTAL BARIUM					LDNR 29-B	Analyst: STS
True Total Barium	892	49.7		mg/Kg-dry	1	9/12/2019 11:09:15 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: ASR
Percent Moisture	35.6	1.00		wt%	1	9/3/2019 11:05:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
M	Matrix Interference	ND Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U	Analyte not detected	W Sample container temperature is out of limit as specified at testcode



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WO#: 19081522

Date Reported 9/20/2019

CLIENT: ICON Environmental Services
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-016
Client Sample ID HA-5 (6-7')

Collection Date: 8/30/2019 11:50:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	66.0	0.100		meq/100g	1	9/13/2019
					LDNR 29-B	LDNR 29-B Analyst: MRM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	6.12	0.10	*	mmhos/cm	1	9/10/2019 1:51:00 PM
					LDNR 29-B	Analyst: BXL
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	5.33	0.10		%	1	9/13/2019
					LDNR 29-B	LDNR 29-B Analyst: MRM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	6.37	0.10			1	9/13/2019
Soluble Calcium	20.0	0.02		meq/L	1	9/13/2019
Soluble Magnesium	11.2	0.05		meq/L	1	9/13/2019
Soluble Sodium	25.2	0.25		meq/L	1	9/13/2019
					LDNR 29-B	LDNR 29-B Analyst: STS
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.107	0.107		mg/Kg-dry	1	9/10/2019 9:26:59 AM
					29B/SW7471A	SW7471A Analyst: BXB
INORGANIC ANIONS IN LEACHATE BY IC						
					SW9056A	Analyst: SGP
Chloride	699	12.5		mg/L	50	9/12/2019 11:28:26 AM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	8.22	1.89		mg/Kg-dry	1	9/12/2019 8:04:50 PM
Barium	267	0.944		mg/Kg-dry	1	9/12/2019 8:04:50 PM
Cadmium	< 0.472	0.472		mg/Kg-dry	1	9/12/2019 8:04:50 PM
Chromium	18.1	0.944		mg/Kg-dry	1	9/12/2019 8:04:50 PM
Lead	14.1	0.944		mg/Kg-dry	1	9/12/2019 8:04:50 PM
Selenium	< 3.77	3.77		mg/Kg-dry	1	9/12/2019 8:04:50 PM
Strontium	68.2	0.944		mg/Kg-dry	1	9/12/2019 8:04:50 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: **19081522**

Date Reported **9/20/2019**

CLIENT: ICON Environmental Services **Collection Date:** 8/30/2019 11:50:00 AM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-016 **Matrix:** SOIL
Client Sample ID HA-5 (6-7')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	66.5	0.944		mg/Kg-dry	1	9/12/2019 8:04:50 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	402	49.5		mg/Kg-dry	1	9/12/2019 11:12:49 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: ASR
Percent Moisture	44.9	1.00		wt%	1	9/3/2019 11:05:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
M	Matrix Interference	ND Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U	Analyte not detected	W Sample container temperature is out of limit as specified at testcode



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: 31449

Sample ID: LCS-D31449	SampType: LCS	TestCode: 8015_DO_S	Units: mg/Kg	Prep Date: 9/4/2019	RunNo: 81826						
Client ID: LCSS	Batch ID: 31449	TestNo: SW8015B	SW3550C	Analysis Date: 9/6/2019	SeqNo: 2050074						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)
 Surr: 4-Terphenyl-d14

83.2
 3.18
 10.0
 100.0
 0
 83.2
 63.4
 109
 95.4
 33
 152

Sample ID: LCSD-D31449	SampType: LCSD	TestCode: 8015_DO_S	Units: mg/Kg	Prep Date: 9/4/2019	RunNo: 81826						
Client ID: LCSS02	Batch ID: 31449	TestNo: SW8015B	SW3550C	Analysis Date: 9/6/2019	SeqNo: 2050075						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)
 Surr: 4-Terphenyl-d14

70.5
 2.83
 10.0
 100.0
 0
 70.5
 63.4
 109
 83.21
 16.6
 21.9
 85.1
 33
 152
 0
 40

Sample ID: MB-31449	SampType: MBLK	TestCode: 8015_DO_S	Units: mg/Kg	Prep Date: 9/4/2019	RunNo: 81826						
Client ID: PBS	Batch ID: 31449	TestNo: SW8015B	SW3550C	Analysis Date: 9/6/2019	SeqNo: 2050078						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)
 TPH (Oil Range)
 Surr: 4-Terphenyl-d14

< 10.0
 < 10.0
 2.88
 10.0
 10.0
 3.330
 86.6
 33
 152

Sample ID: 19081453-001BMS-M	SampType: MS	TestCode: 8015_DO_S	Units: mg/Kg	Prep Date: 9/4/2019	RunNo: 81826						
Client ID: ZZZZZZ	Batch ID: 31449	TestNo: SW8015B	SW3550C	Analysis Date: 9/9/2019	SeqNo: 2051673						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:
 * Value exceeds Maximum Contaminant Level.
 ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: 31449

Sample ID: 19081453-001BMS-M	SampType: MS	TestCode: 8015_DO_S	Units: mg/Kg	Prep Date: 9/4/2019	RunNo: 81826						
Client ID: ZZZZZZ	Batch ID: 31449	TestNo: SW8015B	SW3550C	Analysis Date: 9/9/2019	SeqNo: 2051673						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Oil Range)	5,060	500	100.0	7,350	-2,290	14.5	174				SD
Surr: 4-Terphenyl-d14	0		3.330		0	33	152				SD

Sample ID: 19081453-001BMSD-	SampType: MSD	TestCode: 8015_DO_S	Units: mg/Kg	Prep Date: 9/4/2019	RunNo: 81826						
Client ID: ZZZZZZ	Batch ID: 31449	TestNo: SW8015B	SW3550C	Analysis Date: 9/9/2019	SeqNo: 2051674						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Oil Range)	5,440	500	100.0	7,350	-1,910	14.5	174	5,064	7.13	48.8	SD
Surr: 4-Terphenyl-d14	0		3.330		0	33	152		0	40	SD

NOTES:
 SD - Surrogate and matrix spike diluted out due to dilution.

Sample ID: LCSD-M31449	SampType: LCSD	TestCode: 8015_DO_S	Units: mg/Kg	Prep Date: 9/4/2019	RunNo: 81826						
Client ID: LCSS02	Batch ID: 31449	TestNo: SW8015B	SW3550C	Analysis Date: 9/9/2019	SeqNo: 2051694						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Oil Range)	96.5	10.0	100.0	0	96.5	63.9	120	82.11	16.1	20.7	
Surr: 4-Terphenyl-d14	3.51		3.330		105	33	152		0	40	

Sample ID: LCS-M31449	SampType: LCS	TestCode: 8015_DO_S	Units: mg/Kg	Prep Date: 9/4/2019	RunNo: 81826						
Client ID: LCSS	Batch ID: 31449	TestNo: SW8015B	SW3550C	Analysis Date: 9/9/2019	SeqNo: 2051695						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: 31449

Sample ID: LCS-M31449	SampType: LCS	TestCode: 8015_DO_S	Units: mg/Kg	Prep Date: 9/4/2019	RunNo: 81826						
Client ID: LCSS	Batch ID: 31449	TestNo: SW8015B	SW3550C	Analysis Date: 9/9/2019	SeqNo: 2051695						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range)
 Surr: 4-Terphenyl-d14

82.1
 3.36
 10.0
 3.330
 100.0
 3.330
 0
 82.1
 101
 63.9
 33
 120
 152

Sample ID: 19081453-001BMS-D	SampType: MS	TestCode: 8015_DO_S	Units: mg/Kg	Prep Date: 9/4/2019	RunNo: 81826						
Client ID: ZZZZZ	Batch ID: 31449	TestNo: SW8015B	SW3550C	Analysis Date: 9/9/2019	SeqNo: 2051696						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)
 Surr: 4-Terphenyl-d14

5,020
 0
 500
 3.330
 100.0
 3.330
 8,839
 -3,820
 0
 23.4
 33
 123
 152
 SD
 SD

Sample ID: 19081453-001BMSD-	SampType: MSD	TestCode: 8015_DO_S	Units: mg/Kg	Prep Date: 9/4/2019	RunNo: 81826						
Client ID: ZZZZZ	Batch ID: 31449	TestNo: SW8015B	SW3550C	Analysis Date: 9/9/2019	SeqNo: 2051697						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)
 Surr: 4-Terphenyl-d14

3,730
 0
 500
 3.330
 100.0
 3.330
 8,839
 -5,110
 0
 23.4
 33
 123
 5,018
 29.4
 0
 35.6
 40
 SD
 SD

NOTES:
 SD - Surrogate and matrix spike diluted out due to dilution.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: 31495

Sample ID: MB-31495	SampType: MBLK	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 9/9/2019	RunNo: 81873						
Client ID: PBS	Batch ID: 31495	TestNo: 29B/SW7471 SW7471A		Analysis Date: 9/10/2019	SeqNo: 2051184						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury < 0.100 0.100

Sample ID: LCS-31495	SampType: LCS	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 9/9/2019	RunNo: 81873						
Client ID: LCSS	Batch ID: 31495	TestNo: 29B/SW7471 SW7471A		Analysis Date: 9/10/2019	SeqNo: 2051185						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.985 0.100 0.8330 0 118 80 120

Sample ID: LCSD-31495	SampType: LCSD	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 9/9/2019	RunNo: 81873						
Client ID: LCSS02	Batch ID: 31495	TestNo: 29B/SW7471 SW7471A		Analysis Date: 9/10/2019	SeqNo: 2051186						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.993 0.100 0.8330 0 119 80 120 0.9848 0.861 20

Sample ID: 19081451-001AMS	SampType: MS	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 9/9/2019	RunNo: 81873						
Client ID: ZZZZZZ	Batch ID: 31495	TestNo: 29B/SW7471 SW7471A		Analysis Date: 9/10/2019	SeqNo: 2051190						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 1.07 0.105 0.8736 0.04108 117 75 125

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: 31495

Sample ID: 19081451-001AMSD	SampType: MSD	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 9/9/2019	RunNo: 81873						
Client ID: ZZZZZZ	Batch ID: 31495	TestNo: 29B/SW7471 SW7471A		Analysis Date: 9/10/2019	SeqNo: 2051191						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.06	0.104	0.8644	0.04108	118	75	125	1.066	0.284	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: 31496

Sample ID: MB-31496	SampType: MBLK	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 9/9/2019	RunNo: 81873						
Client ID: PBS	Batch ID: 31496	TestNo: 29B/SW7471 SW7471A		Analysis Date: 9/10/2019	SeqNo: 2051228						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	< 0.100	0.100									

Sample ID: LCS-31496	SampType: LCS	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 9/9/2019	RunNo: 81873						
Client ID: LCSS	Batch ID: 31496	TestNo: 29B/SW7471 SW7471A		Analysis Date: 9/10/2019	SeqNo: 2051229						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.876	0.100	0.8330	0	105	80	120				

Sample ID: LCSD-31496	SampType: LCSD	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 9/9/2019	RunNo: 81873						
Client ID: LCSS02	Batch ID: 31496	TestNo: 29B/SW7471 SW7471A		Analysis Date: 9/10/2019	SeqNo: 2051230						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.878	0.100	0.8330	0	105	80	120	0.8764	0.136	20	

Sample ID: 19081522-009AMS	SampType: MS	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 9/9/2019	RunNo: 81873						
Client ID: HA-4 (0-2')	Batch ID: 31496	TestNo: 29B/SW7471 SW7471A		Analysis Date: 9/10/2019	SeqNo: 2051232						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.952	0.107	0.8895	0	107	75	125				

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: 31496

Sample ID: 19081522-009AMSD	SampType: MSD	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 9/9/2019	RunNo: 81873						
Client ID: HA-4 (0-2')	Batch ID: 31496	TestNo: 29B/SW7471 SW7471A		Analysis Date: 9/10/2019	SeqNo: 2051233						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.967	0.108	0.9009	0	107	75	125	0.9519	1.61	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: 31505

Sample ID:	SampType:	TestCode:	Units:	Prep Date:	RunNo:						
LCSS-31505	LCS	6010_S_29B	mg/Kg-dry	9/10/2019	81981						
Client ID:	Batch ID:	TestNo:		Analysis Date:	SeqNo:						
LCSS	31505	SW6010B	SW3050B	9/12/2019	2053609						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	52.1	2.00	50.00	0	104	80	120				
Barium	52.2	1.00	50.00	0	104	80	120				
Cadmium	51.4	0.500	50.00	0	103	80	120				
Chromium	51.5	1.00	50.00	0	103	80	120				
Lead	51.6	1.00	50.00	0	103	80	120				
Selenium	53.4	4.00	50.00	0	107	80	120				
Strontium	52.5	1.00	50.00	0	105	80	120				
Zinc	52.0	1.00	50.00	0	104	80	120				

Sample ID:	SampType:	TestCode:	Units:	Prep Date:	RunNo:						
LCSD-31505	LCSD	6010_S_29B	mg/Kg-dry	9/10/2019	81981						
Client ID:	Batch ID:	TestNo:		Analysis Date:	SeqNo:						
LCSS02	31505	SW6010B	SW3050B	9/12/2019	2053610						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	50.7	2.00	50.00	0	101	80	120	52.07	2.73	20	
Barium	52.1	1.00	50.00	0	104	80	120	52.25	0.287	20	
Cadmium	51.5	0.500	50.00	0	103	80	120	51.41	0.233	20	
Chromium	51.6	1.00	50.00	0	103	80	120	51.50	0.252	20	
Lead	51.1	1.00	50.00	0	102	80	120	51.57	0.896	20	
Selenium	53.4	4.00	50.00	0	107	80	120	53.44	0.112	20	
Strontium	52.4	1.00	50.00	0	105	80	120	52.49	0.0762	20	
Zinc	52.2	1.00	50.00	0	104	80	120	52.02	0.422	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: 31505

Sample ID: MB-31505	SampType: MBLK	TestCode: 6010_S_29B	Units: mg/Kg-dry	Prep Date: 9/10/2019	RunNo: 81981						
Client ID: PBS	Batch ID: 31505	TestNo: SW6010B	SW3050B	Analysis Date: 9/12/2019	SeqNo: 2053611						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	< 2.00	2.00									
Barium	< 1.00	1.00									
Cadmium	< 0.500	0.500									
Chromium	< 1.00	1.00									
Lead	< 1.00	1.00									
Selenium	< 4.00	4.00									
Strontium	< 1.00	1.00									
Zinc	< 1.00	1.00									

Sample ID: 19081522-001AMS	SampType: MS	TestCode: 6010_S_29B	Units: mg/Kg-dry	Prep Date: 9/10/2019	RunNo: 81981						
Client ID: HA-1 (0-2')	Batch ID: 31505	TestNo: SW6010B	SW3050B	Analysis Date: 9/12/2019	SeqNo: 2053616						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	56.0	1.98	49.60	5.901	101	75	125				
Cadmium	48.1	0.496	49.60	0.6578	95.7	75	125				
Chromium	75.5	0.992	49.60	17.93	116	75	125				
Lead	71.2	0.992	49.60	21.53	100	75	125				
Selenium	40.3	3.97	49.60	0	81.3	75	125				
Zinc	140	0.992	49.60	80.26	121	75	125				

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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 Website: www.element.com

QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: 31505

Sample ID: 19081522-001AMSD	SampType: MSD	TestCode: 6010_S_29B	Units: mg/Kg-dry	Prep Date: 9/10/2019	RunNo: 81981						
Client ID: HA-1 (0-2')	Batch ID: 31505	TestNo: SW6010B	SW3050B	Analysis Date: 9/12/2019	SeqNo: 2053617						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	50.2	1.84	46.07	5.901	96.1	75	125	56.02	11.0	20	
Cadmium	43.6	0.461	46.07	0.6578	93.3	75	125	48.12	9.76	20	
Chromium	66.4	0.921	46.07	17.93	105	75	125	75.50	12.8	20	
Lead	63.6	0.921	46.07	21.53	91.4	75	125	71.23	11.3	20	
Selenium	34.7	3.69	46.07	0	75.3	75	125	40.31	14.9	20	
Zinc	123	0.921	46.07	80.26	93.6	75	125	140.1	12.7	20	

Sample ID: 19081522-001AMS	SampType: MS	TestCode: 6010_S_29B	Units: mg/Kg-dry	Prep Date: 9/10/2019	RunNo: 81981						
Client ID: HA-1 (0-2')	Batch ID: 31505	TestNo: SW6010B	SW3050B	Analysis Date: 9/12/2019	SeqNo: 2053619						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	283	9.92	49.60	228.3	109	75	125				
Strontium	319	9.92	49.60	251.4	135	75	125				S

Sample ID: 19081522-001AMSD	SampType: MSD	TestCode: 6010_S_29B	Units: mg/Kg-dry	Prep Date: 9/10/2019	RunNo: 81981						
Client ID: HA-1 (0-2')	Batch ID: 31505	TestNo: SW6010B	SW3050B	Analysis Date: 9/12/2019	SeqNo: 2053620						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	248	9.21	46.07	228.3	43.7	75	125	282.5	12.9	20	S
Strontium	284	9.21	46.07	251.4	70.9	75	125	318.6	11.4	20	S

NOTES:

S - Analyte concentration in native sample was too high for accurate spike recovery(ies). The method is in control as indicated by the laboratory control sample (LCS).

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits	RL Reporting Limit
	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: 31523

Sample ID: MB-31523	SampType: MBLK	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 9/11/2019	RunNo: 81994						
Client ID: PBS	Batch ID: 31523	TestNo: LDNR 29-B		Analysis Date: 9/12/2019	SeqNo: 2054019						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

True Total Barium < 50.0 50.0

Sample ID: LCS-31523	SampType: LCS	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 9/11/2019	RunNo: 81994						
Client ID: LCSS	Batch ID: 31523	TestNo: LDNR 29-B		Analysis Date: 9/12/2019	SeqNo: 2054020						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

True Total Barium 9,960 50.0 10,000 0 99.6 75 125

Sample ID: LCSD-31523	SampType: LCSD	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 9/11/2019	RunNo: 81994						
Client ID: LCSS02	Batch ID: 31523	TestNo: LDNR 29-B		Analysis Date: 9/12/2019	SeqNo: 2054021						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

True Total Barium 10,100 50.0 10,000 0 101 75 125 9,960 1.25 20

Sample ID: 19081522-001AMS	SampType: MS	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 9/11/2019	RunNo: 81994						
Client ID: HA-1 (0-2')	Batch ID: 31523	TestNo: LDNR 29-B		Analysis Date: 9/12/2019	SeqNo: 2054023						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

True Total Barium 10,300 47.5 9,497 538.7 103 75 125

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: 31523

Sample ID: 19081522-001AMSD	SampType: MSD	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 9/11/2019	RunNo: 81994						
Client ID: HA-1 (0-2')	Batch ID: 31523	TestNo: LDNR 29-B		Analysis Date: 9/12/2019	SeqNo: 2054024						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	9,600	45.5	9,099	538.7	99.6	75	125	10,280	6.80	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: 31540

Sample ID: 19081522-010ADUP	SampType: DUP	TestCode: SAR_S	Units:	Prep Date: 9/12/2019	RunNo: 82019						
Client ID: HA-4 (2-4')	Batch ID: 31540	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 9/13/2019	SeqNo: 2054526						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium Adsorption Ratio	12.9	0.10						12.94	0.44	20	*
Soluble Calcium	5.90	0.02						5.96	1.01	20	
Soluble Magnesium	2.61	0.05						2.61	0.06	20	
Soluble Sodium	26.6	0.25						26.79	0.80	20	

Sample ID: 19090043-003ADUP	SampType: DUP	TestCode: SAR_S	Units:	Prep Date: 9/12/2019	RunNo: 82019						
Client ID: ZZZZZZ	Batch ID: 31540	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 9/13/2019	SeqNo: 2054536						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium Adsorption Ratio	18.1	0.10						18.07	0.02	20	*
Soluble Calcium	18.4	0.02						18.48	0.62	20	
Soluble Magnesium	7.41	0.05						7.46	0.64	20	
Soluble Sodium	64.9	0.25						65.08	0.33	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: 31551

Sample ID: 19081522-010ADUP	SampType: DUP	TestCode: ESP_S	Units: %	Prep Date: 9/12/2019	RunNo: 82038						
Client ID: HA-4 (2-4')	Batch ID: 31551	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 9/13/2019	SeqNo: 2055063						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Exchangeable Sodium %	11.5	0.10						11.33	1.40	20	

Sample ID: 19090043-003ADUP	SampType: DUP	TestCode: ESP_S	Units: %	Prep Date: 9/12/2019	RunNo: 82038						
Client ID: ZZZZZZ	Batch ID: 31551	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 9/13/2019	SeqNo: 2055094						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Exchangeable Sodium %	20.8	0.10						23.38	11.9	20	*

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: 31552

Sample ID: 19081522-010ADUP	SampType: DUP	TestCode: CEC	Units: meq/100g	Prep Date: 9/12/2019	RunNo: 82038						
Client ID: HA-4 (2-4')	Batch ID: 31552	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 9/13/2019	SeqNo: 2055003						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cation Exchange Capacity	50.5	0.100						48.59	3.91	20	

Sample ID: lcs-31552	SampType: LCS	TestCode: CEC	Units: meq/100g	Prep Date: 9/12/2019	RunNo: 82038						
Client ID: LCSS	Batch ID: 31552	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 9/13/2019	SeqNo: 2055010						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cation Exchange Capacity	21.5	0.100	25.00	0	86.1	76	124				

Sample ID: lcsd-31552	SampType: LCSD	TestCode: CEC	Units: meq/100g	Prep Date: 9/12/2019	RunNo: 82038						
Client ID: LCSS02	Batch ID: 31552	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 9/13/2019	SeqNo: 2055011						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cation Exchange Capacity	20.8	0.100	25.00	0	83.4	76	124	21.53	3.21	20	

Sample ID: 19090043-003ADUP	SampType: DUP	TestCode: CEC	Units: meq/100g	Prep Date: 9/12/2019	RunNo: 82038						
Client ID: ZZZZZZ	Batch ID: 31552	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 9/13/2019	SeqNo: 2055050						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cation Exchange Capacity	22.9	0.100						21.22	7.70	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522

20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: 31593

Sample ID: MB-31593	SampType: MBLK	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 9/18/2019	RunNo: 82188						
Client ID: PBS	Batch ID: 31593	TestNo: LDNR 29-B		Analysis Date: 9/19/2019	SeqNo: 2058271						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	< 50.0	50.0									

Sample ID: LCS-31593	SampType: LCS	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 9/18/2019	RunNo: 82188						
Client ID: LCSS	Batch ID: 31593	TestNo: LDNR 29-B		Analysis Date: 9/19/2019	SeqNo: 2058272						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	10,200	50.0	10,000	0	102	75	125				

Sample ID: LCSD-31593	SampType: LCSD	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 9/18/2019	RunNo: 82188						
Client ID: LCSS02	Batch ID: 31593	TestNo: LDNR 29-B		Analysis Date: 9/19/2019	SeqNo: 2058273						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	10,300	50.0	10,000	0	103	75	125	10,230	0.682	20	

Sample ID: 19090514-001AMS	SampType: MS	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 9/18/2019	RunNo: 82188						
Client ID: ZZZZZZ	Batch ID: 31593	TestNo: LDNR 29-B		Analysis Date: 9/20/2019	SeqNo: 2058294						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	11,200	48.4	9,671	1,410	102	75	125				

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: 31593

Sample ID: 19090514-001AMSD	SampType: MSD	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 9/18/2019	RunNo: 82188						
Client ID: ZZZZZZ	Batch ID: 31593	TestNo: LDNR 29-B		Analysis Date: 9/20/2019	SeqNo: 2058295						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	11,800	49.4	9,881	1,410	105	75	125	11,240	4.74	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: R81713

Sample ID: MB-R81713	SampType: MBLK	TestCode: HEM_S	Units: % dry wt	Prep Date:	RunNo: 81713						
Client ID: PBS	Batch ID: R81713	TestNo: SW9071B		Analysis Date: 9/4/2019	SeqNo: 2048710						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
HEM, Oil & Grease	< 0.05	0.05									

Sample ID: LCS-R81713	SampType: LCS	TestCode: HEM_S	Units: % dry wt	Prep Date:	RunNo: 81713						
Client ID: LCSS	Batch ID: R81713	TestNo: SW9071B		Analysis Date: 9/4/2019	SeqNo: 2048711						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
HEM, Oil & Grease	0.22	0.05	0.20	0	110	70	130				

Sample ID: LCSD-R81713	SampType: LCSD	TestCode: HEM_S	Units: % dry wt	Prep Date:	RunNo: 81713						
Client ID: LCSS02	Batch ID: R81713	TestNo: SW9071B		Analysis Date: 9/4/2019	SeqNo: 2048712						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
HEM, Oil & Grease	0.21	0.05	0.20	0	107	70	130	0.22	2.53	40	

Sample ID: 19081360-001AMS	SampType: MS	TestCode: HEM_S	Units: % dry wt	Prep Date:	RunNo: 81713						
Client ID: ZZZZZZ	Batch ID: R81713	TestNo: SW9071B		Analysis Date: 9/4/2019	SeqNo: 2048713						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
HEM, Oil & Grease	0.24	0.05	0.23	0	107	70	130				

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: R81713

Sample ID: 19081360-001ADUP	SampType: DUP	TestCode: HEM_S	Units: % dry wt	Prep Date:	RunNo: 81713						
Client ID: ZZZZZZ	Batch ID: R81713	TestNo: SW9071B		Analysis Date: 9/4/2019	SeqNo: 2048714						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
HEM, Oil & Grease	< 0.05	0.05						0	0	40	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: R81745

Sample ID: 19081522-010ADUP	SampType: DUP	TestCode: PMOIST	Units: wt%	Prep Date:	RunNo: 81745						
Client ID: HA-4 (2-4')	Batch ID: R81745	TestNo: LDNR 29-B		Analysis Date: 9/3/2019	SeqNo: 2047229						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture	28.5	1.00						30.60	7.11	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: R81891

Sample ID: MB-R81891	SampType: MBLK	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 81891						
Client ID: PBS	Batch ID: R81891	TestNo: LDNR 29-B		Analysis Date: 9/10/2019	SeqNo: 2051705						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity < 0.10 0.10

Sample ID: LCS1-R81891	SampType: LCS1	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 81891						
Client ID: ZZZZZ	Batch ID: R81891	TestNo: LDNR 29-B		Analysis Date: 9/10/2019	SeqNo: 2051706						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 0.40 0.10 0.38 0 104 90.07 109.9

Sample ID: LCS2-R81891	SampType: LCS2	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 81891						
Client ID: ZZZZZ	Batch ID: R81891	TestNo: LDNR 29-B		Analysis Date: 9/10/2019	SeqNo: 2051707						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 49.7 0.10 53.00 0 93.8 90 110

Sample ID: 19081522-010ADUP	SampType: DUP	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 81891						
Client ID: HA-4 (2-4')	Batch ID: R81891	TestNo: LDNR 29-B		Analysis Date: 9/10/2019	SeqNo: 2051718						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 3.42 0.10 3.67 7.05 20

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: R81891

Sample ID: 19090043-003ADUP	SampType: DUP	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 81891						
Client ID: ZZZZZZ	Batch ID: R81891	TestNo: LDNR 29-B		Analysis Date: 9/10/2019	SeqNo: 2051729						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Electrical Conductivity	9.61	0.10						9.60	0.10	20	*

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: R81984

Sample ID: MBLK	SampType: MBLK	TestCode: 9056_LEACH	Units: mg/L	Prep Date:	RunNo: 81984						
Client ID: PBW	Batch ID: R81984	TestNo: SW9056A		Analysis Date: 9/12/2019	SeqNo: 2053779						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	< 0.250	0.250									

Sample ID: LCS	SampType: LCS	TestCode: 9056_LEACH	Units: mg/L	Prep Date:	RunNo: 81984						
Client ID: LCSW	Batch ID: R81984	TestNo: SW9056A		Analysis Date: 9/12/2019	SeqNo: 2053780						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	10.0	0.250	10.00	0	100	80	120				

Sample ID: LCSD	SampType: LCSD	TestCode: 9056_LEACH	Units: mg/L	Prep Date:	RunNo: 81984						
Client ID: LCSS02	Batch ID: R81984	TestNo: SW9056A		Analysis Date: 9/12/2019	SeqNo: 2053781						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	10.0	0.250	10.00	0	100	80	120	10.01	0.0507	15	

Sample ID: 19090291-003DMS	SampType: MS	TestCode: 9056_LEACH	Units: mg/L	Prep Date:	RunNo: 81984						
Client ID: ZZZZZZ	Batch ID: R81984	TestNo: SW9056A		Analysis Date: 9/12/2019	SeqNo: 2053785						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	99.9	2.50	50.00	50.84	98.2	80	120				

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: R81984

Sample ID: 19090291-003DMSD	SampType: MSD	TestCode: 9056_LEACH	Units: mg/L	Prep Date:	RunNo: 81984						
Client ID: ZZZZZZ	Batch ID: R81984	TestNo: SW9056A		Analysis Date: 9/12/2019	SeqNo: 2053786						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	100	2.50	50.00	50.84	98.4	80	120	99.93	0.0998	15	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

Sample Log-In Check List

Client Name: **ICON_ENV** Work Order Number: **19081522** RcptNo: **1**

Logged by:	Tammy Thibodeaux	8/30/2019 4:26:00 PM	<i>Tammy Thibodeaux</i>
Completed By:	Tammy Thibodeaux	8/30/2019 5:49:31 PM	<i>Tammy Thibodeaux</i>
Reviewed By:	Caitlin Duplantis	9/16/2019 9:37:51 AM	<i>Caitlin Duplantis</i>

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
 2. How was the sample delivered? Client

Log In

3. Coolers are present? Yes No NA
 4. Shipping container/cooler in good condition? Yes No
 Custody seals intact on shipping container/cooler? Yes No Not Present
 No. Seal Date: Signed By:
 5. Was an attempt made to cool the samples? Yes No NA
 6. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
 7. Sample(s) in proper container(s)? Yes No
 8. Sufficient sample volume for indicated test(s)? Yes No
 9. Are samples (except VOA and ONG) properly preserved? Yes No
 10. Was preservative added to bottles? Yes No NA
 11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes No No VOA Vials
 12. Were any sample containers received broken? Yes No
 13. Does paperwork match bottle labels? Yes No
 (Note discrepancies on chain of custody)
 14. Are matrices correctly identified on Chain of Custody? Yes No
 15. Is it clear what analyses were requested? Yes No
 16. Were all holding times able to be met? Yes No
 (If no, notify customer for authorization.)

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

18. Additional remarks:
 Improper error correction(s) made by client.

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.9	Good	Not Present			



element™

Chain of Custody

Laboratory Number: 19081522

Company Name: Contact Name: Address: City, State Zip: Phone Number: Fax Number: E-mail Address:	Client Information: Name: <u>ICON</u> Contact: <u>Jason Sills</u> Address: <u>2049 Commercial Rd</u> City, State Zip: <u>Roanoke VA 24067</u> Phone Number: <u>225-3448890</u> Ext: Fax Number: E-mail Address:	Billing Information: PO Number: Quote Number: Required QC Level: Bill Monthly: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Ext:	Project Name/Number: <u>Grand Pines Levert</u> <u>9326-025-0100</u> Sampler's Signature: Shipping Method: <u>UPS / FedEx / NOW</u> <u>DHL / Element / Hand / Mail</u>	Page <u>1</u> of <u>2</u> Matrix Code DW = Drinking Water WW = Waste Water GW = Ground Water AQ = Aqueous OT = Other SL = Sludge SOL = Solid O = Oil SO = Soil F = Food SW = Swab NG = Natural Gas NGL = Natural Gas Liquid PW = Produced Water CF = Completion Fluid
---	---	---	---	---

Which Regulations Apply: <input type="checkbox"/> RCRA <input type="checkbox"/> Drinking Water <input type="checkbox"/> POTW <input type="checkbox"/> Distribution <input type="checkbox"/> NPDES <input type="checkbox"/> Special <input type="checkbox"/> USDA/FDA <input type="checkbox"/> State <input type="checkbox"/> RECAP/RISC <input type="checkbox"/> Other	Turn Time <input type="checkbox"/> Standard RUSH <input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> Other	Collection Information		Matrix	Quantity	Container Type P=Plastic, G=Glass, V=Vial	Pres. HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₃	Requested Tests										Comments
		Date	Time					Grab / Composite	EC (298)	SAR (293)	ESP (98)	CEC (298)	% moisture	metals 298	TPH-D/D	HEM 06	Residue CI	
		8-29-19	1100	GRAB	SD	2	P	none	X	X	X	X	X	X	X	X		Metals As, Ba, TTBa Cd, Cr, Se, Sr, Pb Zn, Hg Dry weight required
			1105			2												
			1315			2												
			1320			2												
			1400			2												
			1445			2												
			1450			2												
		X	1555			2	X							X	X	X		
		8-30-19	1025	X	X	1	P	X	X	X	X	X	X	X	X	X		

	Relinquished by	Date/Time	Received by	Date/Time	Field Notes:
1		8/30/19 1626		8/30/19 1626	
2					Received at lab on ice?
3					<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Temp: <u>0.9</u>

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions. IR10

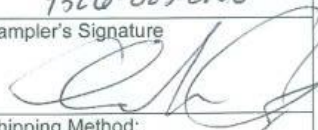
9301 Innovation Drive, Suite 115 Daleville, IN 47334-0569 USA P 765-378-4103 F 765-378-4109	629 Washington St. Suite 300 Columbus, IN 47201-6231 USA P 812-375-0531 F 812-375-0731	2121 East Washington Boulevard Fort Wayne, IN 46803-1328 USA P 260-471-7000 F 260-471-7777	909 Executive Dr Warsaw, IN 46580-2368 USA P 574-267-3305 F 574-269-6569	3371 Cleveland Road, Suite 100A South Bend, IN 46628-9780 USA P 574-277-0707 F 574-273-5699	2417 W. Pinhook Rd Lafayette, LA 70508-3344 USA P 337-235-0483 F 337-233-6540
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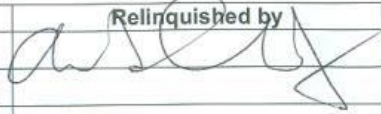
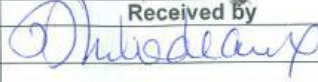
element™

Chain of Custody

Laboratory Number: **19081522**

Company Name: Contact Name: Address: City, State Zip: Phone Number: Fax Number: E-mail Address:	Client Information:	Billing Information:	PO Number:	Project Name/Number: Grand River-Levert	Page 2 of 2
	SAME Ext:		Quote Number:	9326-025-0100	Matrix Code
	ION Ext:		Required QC Level:	 Sampler's Signature	DW = Drinking Water WW = Waste Water GW = Ground Water AQ = Aqueous OT = Other SL = Sludge SOL = Solid O = Oil SO = Soil F = Food SW = Swab NG = Natural Gas NGL = Natural Gas Liquid PW = Produced Water CF = Completion Fluid
			Bill Monthly	Shipping Method:	
			<input type="checkbox"/> Yes <input type="checkbox"/> No	UPS / FedEx / NOW DHL / Element / Hand Mail	

Which Regulations Apply:	Turn Time	Collection Information	Container	Pres.	Requested Tests								Comments	
					Quantity	Type	HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₃	EC (2+0)	SAR (2+0)	ESP (2+0)	CEC (2+0)	0.05mols/mole		(2+0) metals
<input type="checkbox"/> RCRA <input type="checkbox"/> POTW <input type="checkbox"/> NPDES <input type="checkbox"/> USDA/FDA <input type="checkbox"/> RECAP/RISC <input type="checkbox"/> Drinking Water <input type="checkbox"/> Distribution <input type="checkbox"/> Special <input type="checkbox"/> State <input type="checkbox"/> Other	<input type="checkbox"/> Standard <input checked="" type="checkbox"/> RUSH <input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> Other	Date: 8-30-19 Time: 1030 Grab / Composite: GRAB Matrix: SO	1	P	NOX	X	X	X	X	X	X	X	SAME metals page 1	
Sample ID/Description														
HA-4 (2-4)														
HA-4 (4-6)														
HA-4 (6-8)														
HA-5 (0-2)														
HA-5 (2-4)														
HA-5 (4-6)														
HA-5 (6-7)			X	X	X	X	X	X	X	X	X	X		

	Relinquished by	Date/Time	Received by	Date/Time	Field Notes:
1		8/30/19 1030		8/30/19 1030	
2					Received at lab on ice?
3					<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Temp: 0.9

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

9301 Innovation Drive, Suite 115 Daleville, IN 47334-0569 USA P 765-378-4103 F 765-378-4109

629 Washington St. Suite 300 Columbus, IN 47201-6231 USA P 812-375-0531 F 812-375-0731

2121 East Washington Boulevard Fort Wayne, IN 46803-1328 USA P 260-471-7000 F 260-471-7777

909 Executive Dr Warsaw, IN 46580-2368 USA P 574-267-3305 F 574-269-6569

3371 Cleveland Road, Suite 100A South Bend, IN 46628-9780 USA P 574-277-0707 F 574-277-5699

2417 W. Pinhook Rd Lafayette, LA 70508-3344 USA P 337-235-0483 F 337-233-6540

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Hydro-Environmental Technology, Inc.
1009.A62 August Levert-Bayou Sorrel, LA

SGS Job Number: LA57952X

Sampling Date: 08/29/19



Report to:

Hydro-Environmental Technology
P.O. BOX 60295
Lafayette, LA 70596
labdata@hetinc.us

ATTN: Stewart L Stover, Jr.

Total number of pages in report: 12



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Ron Benjamin
Ron Benjamin
Lab Director

Client Service contact: Ralph Frye 337-237-4775

Certifications: LDEQ(2048), LDHH(LA150012), AR(14-045-04), AZ(AZ0805), FL(E87657), IL(200082), KY(#31), NC(487), SC(73004001), NJ(LA007), TX(T104704186-18-16), WV(257)

This report shall not be reproduced, except in its entirety, without the written approval of SGS.
Test results relate only to samples analyzed.

SGS North America Inc. • 500 Ambassador Caffery • Scott, LA 70583 • tel: 337-237-4775

Table of Contents

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3

-1-

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3.1: Chain of Custody	9



Sample Summary

Hydro-Environmental Technology, Inc.

Job No: LA57952X

1009.A62 August Levert-Bayou Sorrel, LA

Sample Number	Collected		Matrix			Client Sample ID
	Date	Time By	Received	Code	Type	
LA57952-3X	08/29/19	13:15 DJW	09/25/19	SO	Soil	HA-2 (0-2)

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Subcontract Lab Data

Report of Analysis

SGS North America
 Client Sample ID: LA57952-3X
 HA-2 (0-2)



Core Mineralogy, Inc.
 Analytical Consulting Services

X-Ray Diffraction Analysis Results

100 Jared Drive
 Broussard, LA 70518
 Phone: (337) 984-0500
 e-mail: mansourr@coremineral.com
www.coremineral.com

Analyst: Mansour Rahmatian (M.S.)
 CMI Job # 1902602XRDB&C
 Date Reported: 9/27/2019

Sampled on : 8/29/2019 @ 1:15 PM
 Sample Submitted to CMI Labs on: 9/26/2019 @ 9:55 AM
 Attention: Ralph Fyfe

Sample ID	Sample Description	CMI Sample #	Bulk Mineralogy (Whole Sample), Weight %						Weight % Clay						Relative % Clay																																																										
HA-2 (0-2)		14732	Quartz (SiO2)	24.2	1.5	2.5	Plagioclase (NaAlSi3O8)	ND	ND	ND	CaIcite (CaCO3)	ND	Pyrite (FeS)	ND	Fe Dolomite (FeMgCa(CO3)2)	6.9	64.9	Total Clay	18.2	14.0	32.8	Illite (K ₁₋₅ Al ₄ (Si _{7-6.5} Al _{1-1.5})O ₂₀ (OH) ₄)	18.2	14.0	32.8	Kaolinite [Al ₂ Si ₄ O ₁₀ (OH) ₈]	14.0	14.0	32.8	Chlorite [(Mg,Fe,Al) ₆ (Si,Al) ₄ O ₁₀ (OH) ₈]	14.0	14.0	32.8	Smectite (Ca,Na) _x (Al,Mg,Fe) ₄ (Si,Al) ₈ O ₂₀ (OH) ₄ .nH ₂ O	14.0	14.0	32.8	Mix-Layered Illite-Smectite	14.0	14.0	32.8	% Illite layers in mixed layer I/S clay	14.0	14.0	32.8	Total	100	100	100	Illite (K ₁₋₅ Al ₄ (Si _{7-6.5} Al _{1-1.5})O ₂₀ (OH) ₄)	28.0	21.6	50.5	Kaolinite [Al ₂ Si ₄ O ₁₀ (OH) ₈]	21.6	21.6	50.5	Chlorite [(Mg,Fe,Al) ₆ (Si,Al) ₄ O ₁₀ (OH) ₈]	21.6	21.6	50.5	Smectite (Ca,Na) _x (Al,Mg,Fe) ₄ (Si,Al) ₈ O ₂₀ (OH) ₄ .nH ₂ O	21.6	21.6	50.5	Mix-Layered Illite-Smectite	21.6	21.6	50.5	Total	100	100	100

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ND = Not Detected

Limitation of Liability: These analysis, opinions or interpretations are based on observation and materials supplied by the client and they represent the best judgment of Core Mineralogy, Inc., (all errors and omissions excepted); but Core Mineralogy, Inc. and its officers and employees shall not be liable for any loss or damage resulting from the furnishing of the data reported herein: and Core Mineralogy, Inc. makes no warranties, expressed or implied, whether of fitness for a particular purpose, merchantability or otherwise, as to the accuracy of the data reported.

Date / Time: 9/25/2019 1:41:13 PM

CSR: AMYJ

Job #: LA57952X

Client Project: 1009.A62 August Levert-Bayou Sorrel, LA

Deliverable: COMMB

TAT: Due 10/7/2019

Sub Lab: Core Mineralogy, Inc.

Address: 100 Jared Drive

City: Broussard

State: LA

Zip: 70518

Contact: Mansour Rahmatian

Phone: (337) 984-0500

SGS Sample #	Client Sample Description	Analysis	Location	Sampled By	Date Sampled	Time Sampled	Aliquot
LA57952-3X	HA-2 (0-2)	SXRD (X-Ray Diffraction)		DJW	8/29/2019	1:15:00 PM	

14732

Comments: X-Ray Diffraction. Send 4oz jar.

Mansour Rahmatian

Sample Management Receipt:

Date:

9, 26, 2019 @ 9:55 AM

1-Use w/



CHAIN OF CUSTODY

Client / Reporting Information Company Name: SGS North America Inc. Street Address: 500 Ambassador Caffery Parkway City: Scott State: LA Zip: 70583 Project Contact: ralph.five@sgs.com Phone #: 800-304-5227 Sampler(s) Name(s): DJW		Project Information Project Name: 1009.A62 August Levert-Bayou Sorrel, LA Billing Information (if different from Report to): Company Name: Street Address: City: State: Zip: Attention: Project Manager:		Requested Analysis (see TEST CODE sheet) Matrix Codes: DW - Drinking Water GW - Ground Water MW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment O - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WPF - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank LAB USE ONLY	
Field ID / Point of Collection: HA-2 (0-2) Date: 8/29/19 Time: 1:15:00 PM Matrix: DJW SO		Collection: Date: Time: Matrix: # of bottles: 8/29/19 1:15:00 PM DJW SO		Number of preserved bottles: ENCORE MEOH DI Water NONE H2SO4 HNO3 HNOH HCl	
SCS Sample #: 3X Field ID / Point of Collection: HA-2 (0-2) Date: 8/29/19 Time: 1:15:00 PM Matrix: DJW SO		Approved By (SGS PM): / Date: <input type="checkbox"/> Sld. 10 Business Days <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY <input checked="" type="checkbox"/> other Due 10/7/2019 Emergency & Rush T/A data available VIA Lablink		Data Deliverable Information: <input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> TRRP <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> EDD Format <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> Other <input type="checkbox"/> REDT1 (Level 3+4) <input checked="" type="checkbox"/> COMMB <input type="checkbox"/> Commercial "C" Commercial "A" = Results Only Commercial "B" = Results + OC Summary	
Turnaround Time (Business days): Received By (SGS PM): / Date: Date Time:		Turnaround Time (Business days): Received By (SGS PM): / Date: Date Time:		Comments / Special Instructions: X-Ray Diffraction. Send 4oz jar.	
Relinquished by sampler: Date Time:		Relinquished by: Date Time:		Relinquished By: Date Time:	
Relinquished by sampler: Date Time:		Relinquished by: Date Time:		Relinquished By: Date Time:	
Relinquished by: Date Time:		Relinquished by: Date Time:		Relinquished By: Date Time:	



Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody



HYDRO-ENVIRONMENTAL TECHNOLOGY, INC.
 Environmental Consultants
 P.O. Box 60295
 Lafayette, LA 70596-0295
 Phone (337) 261-1963 FAX (337) 261-1953

LA 57952

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert
 Project Number: 1009 A62
 Project Location: Bayou Sorrel, LA
 Laboratory: SGS
 Collected By: DJW
 Company: Hydro-Environmental Technology, Inc.
 Date: 8/29/2019

Sample I.D.	Type	Date/Time Sampled	Containers	Analysis Requested/Method	Comments
1 HA-1 (0-2)	SO	8/29/2019 1100	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*, Oil and Grease	4°C
2 HA-1 (2-4)	SO	8/29/2019 1105	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*, Oil and Grease	4°C
3 HA-2 (0-2)	SO	8/29/2019 1315	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*, Oil and Grease	4°C
4 HA-2 (2-4)	SO	8/29/2019 1320	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*, Oil and Grease	4°C
5 HA-3 (0-2)	SO	8/29/2019 1440	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*, Oil and Grease	4°C
6 HA-3 (2-4)	SO	8/29/2019 1445	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*, Oil and Grease	4°C
7 HA-3 (4-6)	SO	8/29/2019 1450	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*, Oil and Grease	4°C

HOLD for possible analysis
 Metals*, Arsenic, Barium, True Total Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver, Zinc

Relinquished By: *André White* 8/25/19 800
 Date/Time: 8/25/19 800
 Received By: *Mark Reed*
 Date/Time: 9-25-19 09:15

Analysis Due: Verball: *Moellec Temp: 52 MW19 2-12 Floor*
Client d/10

LA57952X: Chain of Custody
 Page 1 of 4



HYDRO-ENVIRONMENTAL TECHNOLOGY, INC.
 Environmental Consultants
 P.O. Box 60295
 Lafayette, LA 70596-0295
 Phone (337) 261-1963 FAX (337) 261-1953

LA 57952

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert Laboratory: SGS
 Project Number: 1009.A62 Collected By: DJW
 Project Location: Bayou Sorrel, LA Company: Hydro-Environmental Technology, Inc.
 Date: 8/29/2019

Sample I.D.	Type	Date/Time Sampled	Containers	Analysis Requested/Method	Comments
HA-3 (6-8)	SO	8/29/2019 1455	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*; Oil and Grease	4°C
HA-4 (0-2)	SO	8/30/2019 1025	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*; Oil and Grease	4°C
HA-4 (2-4)	SO	8/30/2019 1030	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*; Oil and Grease	4°C
HA-4 (4-6)	SO	8/30/2019 1035	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*; Oil and Grease	4°C
HA-4 (6-8)	SO	8/30/2019 1040	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*; Oil and Grease	4°C
HA-5 (0-2)	SO	8/30/2019 1135	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*; Oil and Grease	4°C
HA-5 (2-4)	SO	8/30/2019 1140	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*; Oil and Grease	4°C
HOLD for possible analysis Metals*: Arsenic, Barium, True Total Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver, Zinc					
Relinquished By:	Date/Time:		Received By:	Date/Time:	
Relinquished By:	Date/Time:		Received By:	Date/Time:	
Analysis Due:	Verbal:		Written:		

LA57952X: Chain of Custody
 Page 2 of 4



HYDRO-ENVIRONMENTAL TECHNOLOGY, INC.
 Environmental Consultants
 P.O. Box 60295
 Lafayette, LA 70596-0295
 Phone (337) 261-1963 FAX (337) 261-1953

LA 57952

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert Laboratory: SGS
 Project Number: 1009_A62 Collected By: DJW
 Project Location: Bayou Sireel, LA Company: Hydro-Environmental Technology, Inc.
 Date: 8/29/2019

Sample I.D.	Type	Date/Time Sampled	Containers	Analysis Requested/Method	Comments
HA-5 (4-6)	SO	8/30/2019 1145	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*; Oil and Grease	4°C
HA-5 (6-7)	SO	8/30/2019 1150	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*; Oil and Grease	4°C
Metals*: Arsenic, Barium, True Total Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver, Zinc					
Relinquished By: <i>Paul White</i> Received By: <i>Mark Reed</i> Date/Time: 8/25/19 800 Date/Time: 9/25/19 800 Relinquished By: <i>Mark Reed</i> Received By: <i>Mark Reed</i> Date/Time: 9/25/19 9:15 Date/Time: 9/25-19 09:15 Analysis Due: Verbal: Written:					

LA57952X: Chain of Custody
 Page 3 of 4

SGS Sample Receipt Summary

Job Number: LA57952

Client: HYDRO - ENV.

Project: AUGUST LEVERT

Date / Time Received: 9/25/2019 9:15:00 AM

Delivery Method: Client

Airbill #s: _____

Cooler Temps (Initial/Adjusted): #1: (5.2/5.2); DV439

Cooler Security		<u>Y or N</u>		<u>Y or N</u>
1. Custody Seals Present:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/> <input type="checkbox"/>
2. Custody Seals Intact:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	4. Smp Dates/Time OK	<input checked="" type="checkbox"/> <input type="checkbox"/>

Cooler Temperature		<u>Y or N</u>
1. Temp criteria achieved:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Thermometer ID:	<u>DV439;</u>	
3. Cooler media:	<u>Ice (direct contact)</u>	
4. No. Coolers:	<u>1</u>	

Quality Control Preservation	<u>Y or N</u>	<u>N/A</u>
1. Trip Blank present / cooler:	<input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Trip Blank listed on COC:	<input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Samples preserved properly:	<input checked="" type="checkbox"/> <input type="checkbox"/>	
4. VOCs headspace free:	<input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/>

Sample Integrity - Documentation		<u>Y or N</u>
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Sample Integrity - Condition		<u>Y or N</u>
1. Sample recvd within HT:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Condition of sample:	<u>Intact</u>	

Sample Integrity - Instructions		<u>Y or N</u>	<u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments

3.1
3



Element Materials Technology Lafayette
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Lafayette, LA 70508-3344
TEL: (337) 235-0483 FAX: (337) 233-6540
Website: www.element.com

October 11, 2019

Greg Miller
ICON Environmental Services
2049 Commercial Drive
Port Allen, LA 70767
TEL: (225) 344-8490
FAX: (225) 344-6654

RE: Levert-Grand River

Order No.: 19091178

Dear Greg Miller:

Element Materials Technology Lafayette received 11 sample(s) on 9/27/2019 for the analyses presented in the following report.

In accordance with your instructions Element Lafayette conducted the analysis shown on the following pages on samples submitted by your company. The results related only to the items tested. Unless otherwise noted, all analyses were conducted using EPA approved methodologies and all test results meet all requirements of TNI. All relevant sampling information is on the attached Chain-of-Custody form.

All soil data, except for 29-B, are on a wet-weight basis unless otherwise indicated in the units field as -dry.

LELAP Certification No.: 01997. TCEQ Certification No.: T104704261. LDHH Certification No.: LA180028. ISDH Certification No.: C-LA-01. A scope of accredited parameters is available upon request. A "#" by the test method or analyte indicates this parameter is outside the scope of accreditation.

Estimated uncertainty is available upon request. This report shall not be reproduced except in full, without the written approval of the laboratory.

If you have any questions regarding these test results, please feel free to call.

A handwritten signature in blue ink that reads 'Cristina Thibeaux'.

Cristina Thibeaux
Customer Service Supervisor
2417 W. Pinhook Road
Lafayette, LA 70508-3344



Element Materials Technology Lafayette
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Case Narrative

WO#: 19091178
Date: 10/11/2019

CLIENT: ICON Environmental Services
Project: Levert-Grand River

Unless specified by the client, a duplicate or MS/MSD, wherever applicable, is randomly selected and analyzed from each analytical batch provided sample volume is sufficient. The sample chosen for duplicate or MS/MSD may or may not be a sample submitted in this workorder. A method blank and/or a lab control sample (LCS)/lab control sample duplicate (LCSD), wherever applicable, are processed as a quality control check for each analytical batch. When the matrix QC data is not available due to insufficient sample volume or when the results indicate possible matrix effect, the validity of the batch is determined by the method blank and LCS/LCSD.

The results of the laboratory internal quality control data are provided in the QC Summary Report section of the report for your review. Laboratory-related QC exceptions that may impact the validity of data are discussed in the case narrative. Sample-related QC exceptions are flagged either in the results page(s) or in the QC report page(s). End users should consider QC exceptions when evaluating sample data against data quality objectives.

Any other exceptions associated with this report will be footnoted in the results page(s) or the QC summary page(s).

Note: Due to limited sample, the following Lab IDs were prepared for Leachate Chloride, using less than 100g of the soil (dry wt basis). The amount of the extraction fluid was proportionally reduced to yield a 1:4 sample to fluid ratio.

19091178-002A had insufficient volume for leachate. Used 44.6g

19091178-008A had insufficient volume for leachate. Used 96.2g



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Analytical Report

(consolidated)

WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/25/2019 11:05:00 AM
Project: Levert-Grand River
Lab ID: 19091178-001 **Matrix:** SOIL
Client Sample ID LT-1 0-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	70.5	0.100		meq/100g	1	10/9/2019
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	2.08	0.10		mmhos/cm	1	10/3/2019 12:05:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	5.29	0.10		%	1	10/9/2019
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	7.87	0.10			1	10/5/2019
Soluble Calcium	3.46	0.02		meq/L	1	10/5/2019
Soluble Magnesium	1.99	0.05		meq/L	1	10/5/2019
Soluble Sodium	13.0	0.25		meq/L	1	10/5/2019
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.103	0.103		mg/Kg-dry	1	10/7/2019 1:58:09 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	10.4	1.96	*	mg/Kg-dry	1	10/4/2019 8:12:44 PM
Barium	247	0.981		mg/Kg-dry	1	10/4/2019 8:12:44 PM
Cadmium	0.628	0.490		mg/Kg-dry	1	10/4/2019 8:12:44 PM
Chromium	21.6	0.981		mg/Kg-dry	1	10/4/2019 8:12:44 PM
Lead	19.2	0.981		mg/Kg-dry	1	10/4/2019 8:12:44 PM
Selenium	< 3.92	3.92		mg/Kg-dry	1	10/4/2019 8:12:44 PM
Strontium	93.8	0.981		mg/Kg-dry	1	10/4/2019 8:12:44 PM
Zinc	88.0	0.981		mg/Kg-dry	1	10/4/2019 8:12:44 PM
29B METALS						
TRUE TOTAL BARIUM						

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- E Value above quantitation range
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

(consolidated)

WO#: **19091178**

Date Reported: **10/11/2019**

CLIENT: ICON Environmental Services **Collection Date:** 9/25/2019 11:05:00 AM
Project: Levert-Grand River
Lab ID: 19091178-001 **Matrix:** SOIL
Client Sample ID LT-1 0-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS				LDNR 29-B		Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	394	47.8		mg/Kg-dry	1	10/4/2019 10:35:55 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: BXL
Percent Moisture	33.1	1.00		wt%	1	9/30/2019 11:10:00 AM

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | M Matrix Interference |
| ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| RL Reporting Limit | S Spike Recovery outside accepted recovery limits |
| SDL Sample detection limit | U Analyte not detected |
| W Sample container temperature is out of limit as specified at testcode | |



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Analytical Report

(consolidated)

WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/25/2019 11:15:00 AM
Project: Levert-Grand River
Lab ID: 19091178-002 **Matrix:** SOIL
Client Sample ID LT-1 6-8

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	84.5	0.100		meq/100g	1	10/9/2019
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	6.58	0.10	*	mmhos/cm	1	10/3/2019 12:05:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	7.82	0.10		%	1	10/9/2019
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	12.0	0.10			1	10/5/2019
Soluble Calcium	13.3	0.02		meq/L	1	10/5/2019
Soluble Magnesium	7.02	0.05		meq/L	1	10/5/2019
Soluble Sodium	38.2	0.25		meq/L	1	10/5/2019
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.109	0.109		mg/Kg-dry	1	10/7/2019 2:00:27 PM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	632	12.5		mg/L	50	10/10/2019 12:16:50 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	5.05	1.92		mg/Kg-dry	1	10/4/2019 8:18:06 PM
Barium	353	0.959		mg/Kg-dry	1	10/4/2019 8:18:06 PM
Cadmium	< 0.480	0.480		mg/Kg-dry	1	10/4/2019 8:18:06 PM
Chromium	21.6	0.959		mg/Kg-dry	1	10/4/2019 8:18:06 PM
Lead	17.1	0.959		mg/Kg-dry	1	10/4/2019 8:18:06 PM
Selenium	< 3.84	3.84		mg/Kg-dry	1	10/4/2019 8:18:06 PM
Strontium	82.0	0.959		mg/Kg-dry	1	10/4/2019 8:18:06 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- E Value above quantitation range
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

(consolidated)

WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/25/2019 11:15:00 AM
Project: Levert-Grand River
Lab ID: 19091178-002 **Matrix:** SOIL
Client Sample ID LT-1 6-8

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	76.0	0.959		mg/Kg-dry	1	10/4/2019 8:18:06 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	408	49.1		mg/Kg-dry	1	10/4/2019 10:40:13 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: BXL
Percent Moisture	38.1	1.00		wt%	1	9/30/2019 11:10:00 AM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/25/2019 11:30:00 AM
Project: Levert-Grand River
Lab ID: 19091178-003 **Matrix:** SOIL
Client Sample ID LT-1 12-14

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B	Analyst: BXL	
Electrical Conductivity	17.2	0.10	*	mmhos/cm	1	10/3/2019 12:05:00 PM
PERCENT MOISTURE				LDNR 29-B	Analyst: BXL	
Percent Moisture	21.5	1.00		wt%	1	9/30/2019 11:10:00 AM

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | M Matrix Interference |
| ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| RL Reporting Limit | S Spike Recovery outside accepted recovery limits |
| SDL Sample detection limit | U Analyte not detected |
| W Sample container temperature is out of limit as specified at testcode | |



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Analytical Report

(consolidated)

WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/26/2019 8:25:00 AM
Project: Levert-Grand River
Lab ID: 19091178-004 **Matrix:** SOIL
Client Sample ID LT-2 0-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	109	0.100		meq/100g	1	10/9/2019
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	1.25	0.10		mmhos/cm	1	10/3/2019 12:05:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	6.28	0.10		%	1	10/9/2019
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	8.51	0.10			1	10/5/2019
Soluble Calcium	1.33	0.02		meq/L	1	10/5/2019
Soluble Magnesium	0.87	0.05		meq/L	1	10/5/2019
Soluble Sodium	8.93	0.25		meq/L	1	10/5/2019
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.103	0.103		mg/Kg-dry	1	10/7/2019 2:02:45 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	8.90	1.95		mg/Kg-dry	1	10/4/2019 8:23:28 PM
Barium	249	0.977		mg/Kg-dry	1	10/4/2019 8:23:28 PM
Cadmium	< 0.489	0.489		mg/Kg-dry	1	10/4/2019 8:23:28 PM
Chromium	22.7	0.977		mg/Kg-dry	1	10/4/2019 8:23:28 PM
Lead	19.9	0.977		mg/Kg-dry	1	10/4/2019 8:23:28 PM
Selenium	< 3.91	3.91		mg/Kg-dry	1	10/4/2019 8:23:28 PM
Strontium	94.0	0.977		mg/Kg-dry	1	10/4/2019 8:23:28 PM
Zinc	90.7	0.977		mg/Kg-dry	1	10/4/2019 8:23:28 PM
29B METALS						
TRUE TOTAL BARIUM						

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
RL	Reporting Limit
SDL	Sample detection limit
W	Sample container temperature is out of limit as specified at testcode

E	Value above quantitation range
M	Matrix Interference
R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limits
U	Analyte not detected



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Analytical Report

(consolidated)

WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/26/2019 8:25:00 AM
Project: Levert-Grand River
Lab ID: 19091178-004 **Matrix:** SOIL
Client Sample ID LT-2 0-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS				LDNR 29-B		Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	360	49.7		mg/Kg-dry	1	10/4/2019 10:44:52 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: BXL
Percent Moisture	33.1	1.00		wt%	1	9/30/2019 11:10:00 AM

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | M Matrix Interference |
| ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| RL Reporting Limit | S Spike Recovery outside accepted recovery limits |
| SDL Sample detection limit | U Analyte not detected |
| W Sample container temperature is out of limit as specified at testcode | |



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Analytical Report

(consolidated)

WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/26/2019 8:35:00 AM
Project: Levert-Grand River
Lab ID: 19091178-005 **Matrix:** SOIL
Client Sample ID LT-2 4-8

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	135	0.100		meq/100g	1	10/9/2019
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	2.62	0.10		mmhos/cm	1	10/3/2019 12:05:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	7.38	0.10		%	1	10/9/2019
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	11.1	0.10			1	10/5/2019
Soluble Calcium	3.27	0.02		meq/L	1	10/5/2019
Soluble Magnesium	1.81	0.05		meq/L	1	10/5/2019
Soluble Sodium	17.7	0.25		meq/L	1	10/5/2019
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.101	0.101		mg/Kg-dry	1	10/7/2019 2:05:04 PM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	152	5.00		mg/L	20	10/10/2019 12:30:34 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	5.77	1.96		mg/Kg-dry	1	10/4/2019 8:28:49 PM
Barium	277	0.982		mg/Kg-dry	1	10/4/2019 8:28:49 PM
Cadmium	0.697	0.491		mg/Kg-dry	1	10/4/2019 8:28:49 PM
Chromium	17.2	0.982		mg/Kg-dry	1	10/4/2019 8:28:49 PM
Lead	17.4	0.982		mg/Kg-dry	1	10/4/2019 8:28:49 PM
Selenium	< 3.93	3.93		mg/Kg-dry	1	10/4/2019 8:28:49 PM
Strontium	94.5	0.982		mg/Kg-dry	1	10/4/2019 8:28:49 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- E Value above quantitation range
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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 Website: www.element.com

Analytical Report

(consolidated)

WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/26/2019 8:35:00 AM
Project: Levert-Grand River
Lab ID: 19091178-005 **Matrix:** SOIL
Client Sample ID LT-2 4-8

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	68.2	0.982		mg/Kg-dry	1	10/4/2019 8:28:49 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	365	47.7		mg/Kg-dry	1	10/4/2019 10:49:40 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: BXL
Percent Moisture	42.9	1.00		wt%	1	9/30/2019 11:10:00 AM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/26/2019 8:55:00 AM
Project: Levert-Grand River
Lab ID: 19091178-006 **Matrix:** SOIL
Client Sample ID LT-2 12-16

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: BXL
Electrical Conductivity	6.01	0.10	*	mmhos/cm	1	10/3/2019 12:05:00 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: BXL
Percent Moisture	31.1	1.00		wt%	1	9/30/2019 11:10:00 AM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/26/2019 4:20:00 PM
Project: Levert-Grand River
Lab ID: 19091178-007 **Matrix:** SOIL
Client Sample ID LT-3 0-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	86.1	0.100		meq/100g	1	10/9/2019
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.61	0.10		mmhos/cm	1	10/3/2019 12:05:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	6.11	0.10		%	1	10/9/2019
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	6.05	0.10			1	10/5/2019
Soluble Calcium	0.68	0.02		meq/L	1	10/5/2019
Soluble Magnesium	0.43	0.05		meq/L	1	10/5/2019
Soluble Sodium	4.52	0.25		meq/L	1	10/5/2019
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.101	0.101		mg/Kg-dry	1	10/7/2019 2:07:22 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	7.15	1.86		mg/Kg-dry	1	10/4/2019 8:34:54 PM
Barium	245	0.929		mg/Kg-dry	1	10/4/2019 8:34:54 PM
Cadmium	< 0.465	0.465		mg/Kg-dry	1	10/4/2019 8:34:54 PM
Chromium	35.5	0.929		mg/Kg-dry	1	10/4/2019 8:34:54 PM
Lead	18.8	0.929		mg/Kg-dry	1	10/4/2019 8:34:54 PM
Selenium	< 3.72	3.72		mg/Kg-dry	1	10/4/2019 8:34:54 PM
Strontium	76.9	0.929		mg/Kg-dry	1	10/4/2019 8:34:54 PM
Zinc	85.0	0.929		mg/Kg-dry	1	10/4/2019 8:34:54 PM
29B METALS						
TRUE TOTAL BARIUM						

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
RL	Reporting Limit
SDL	Sample detection limit
W	Sample container temperature is out of limit as specified at testcode

E	Value above quantitation range
M	Matrix Interference
R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limits
U	Analyte not detected



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WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/26/2019 4:20:00 PM
Project: Levert-Grand River
Lab ID: 19091178-007 **Matrix:** SOIL
Client Sample ID LT-3 0-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS				LDNR 29-B		Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	361	47.5		mg/Kg-dry	1	10/4/2019 10:54:28 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: BXL
Percent Moisture	31.6	1.00		wt%	1	9/30/2019 11:10:00 AM

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | M Matrix Interference |
| ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| RL Reporting Limit | S Spike Recovery outside accepted recovery limits |
| SDL Sample detection limit | U Analyte not detected |
| W Sample container temperature is out of limit as specified at testcode | |



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(consolidated)

WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/26/2019 4:30:00 PM
Project: Levert-Grand River
Lab ID: 19091178-008 **Matrix:** SOIL
Client Sample ID LT-3 4-8

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	72.7	0.100		meq/100g	1	10/9/2019
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.67	0.10		mmhos/cm	1	10/3/2019 12:05:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	6.81	0.10		%	1	10/9/2019
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	6.94	0.10			1	10/5/2019
Soluble Calcium	0.61	0.02		meq/L	1	10/5/2019
Soluble Magnesium	0.40	0.05		meq/L	1	10/5/2019
Soluble Sodium	4.92	0.25		meq/L	1	10/5/2019
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.106	0.106		mg/Kg-dry	1	10/7/2019 2:14:46 PM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	37.9	1.25		mg/L	5	10/10/2019 12:44:17 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	8.59	1.96		mg/Kg-dry	1	10/4/2019 8:40:16 PM
Barium	573	0.980		mg/Kg-dry	1	10/4/2019 8:40:16 PM
Cadmium	< 0.490	0.490		mg/Kg-dry	1	10/4/2019 8:40:16 PM
Chromium	21.9	0.980		mg/Kg-dry	1	10/4/2019 8:40:16 PM
Lead	18.7	0.980		mg/Kg-dry	1	10/4/2019 8:40:16 PM
Selenium	< 3.92	3.92		mg/Kg-dry	1	10/4/2019 8:40:16 PM
Strontium	97.0	0.980		mg/Kg-dry	1	10/4/2019 8:40:16 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- E Value above quantitation range
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

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WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/26/2019 4:30:00 PM
Project: Levert-Grand River
Lab ID: 19091178-008 **Matrix:** SOIL
Client Sample ID LT-3 4-8

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	77.1	0.980		mg/Kg-dry	1	10/4/2019 8:40:16 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	1,240	48.5		mg/Kg-dry	1	10/4/2019 11:08:19 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: BXL
Percent Moisture	38.3	1.00		wt%	1	9/30/2019 11:10:00 AM

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | M Matrix Interference |
| ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| RL Reporting Limit | S Spike Recovery outside accepted recovery limits |
| SDL Sample detection limit | U Analyte not detected |
| W Sample container temperature is out of limit as specified at testcode | |



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WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/27/2019 12:30:00 PM
Project: Levert-Grand River
Lab ID: 19091178-009 **Matrix:** SOIL
Client Sample ID HA-6 0-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	74.1	0.100		meq/100g	1	10/9/2019
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.49	0.10		mmhos/cm	1	10/3/2019 12:05:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	0.58	0.10		%	1	10/9/2019
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.12	0.10			1	10/5/2019
Soluble Calcium	1.94	0.02		meq/L	1	10/5/2019
Soluble Magnesium	1.29	0.05		meq/L	1	10/5/2019
Soluble Sodium	1.43	0.25		meq/L	1	10/5/2019
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.106	0.106		mg/Kg-dry	1	10/7/2019 2:17:05 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	7.37	1.91		mg/Kg-dry	1	10/4/2019 8:45:38 PM
Barium	257	0.957		mg/Kg-dry	1	10/4/2019 8:45:38 PM
Cadmium	< 0.479	0.479		mg/Kg-dry	1	10/4/2019 8:45:38 PM
Chromium	23.7	0.957		mg/Kg-dry	1	10/4/2019 8:45:38 PM
Lead	23.9	0.957		mg/Kg-dry	1	10/4/2019 8:45:38 PM
Selenium	< 3.83	3.83		mg/Kg-dry	1	10/4/2019 8:45:38 PM
Strontium	54.9	0.957		mg/Kg-dry	1	10/4/2019 8:45:38 PM
Zinc	101	0.957		mg/Kg-dry	1	10/4/2019 8:45:38 PM
29B METALS						
TRUE TOTAL BARIUM						

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/27/2019 12:30:00 PM
Project: Levert-Grand River
Lab ID: 19091178-009 **Matrix:** SOIL
Client Sample ID HA-6 0-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS				LDNR 29-B		Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	365	45.7		mg/Kg-dry	1	10/4/2019 11:12:39 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: BXL
Percent Moisture	39.6	1.00		wt%	1	9/30/2019 11:10:00 AM

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | M Matrix Interference |
| ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| RL Reporting Limit | S Spike Recovery outside accepted recovery limits |
| SDL Sample detection limit | U Analyte not detected |
| W Sample container temperature is out of limit as specified at testcode | |



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Analytical Report

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WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/27/2019 12:35:00 PM
Project: Levert-Grand River
Lab ID: 19091178-010 **Matrix:** SOIL
Client Sample ID HA-6 2-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	78.2	0.100		meq/100g	1	10/9/2019
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.77	0.10		mmhos/cm	1	10/3/2019 12:05:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.11	0.10		%	1	10/9/2019
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.75	0.10			1	10/5/2019
Soluble Calcium	2.68	0.02		meq/L	1	10/5/2019
Soluble Magnesium	1.74	0.05		meq/L	1	10/5/2019
Soluble Sodium	2.60	0.25		meq/L	1	10/5/2019
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.0998	0.0998		mg/Kg-dry	1	10/7/2019 2:19:46 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	7.69	1.99		mg/Kg-dry	1	10/4/2019 8:50:59 PM
Barium	336	0.996		mg/Kg-dry	1	10/4/2019 8:50:59 PM
Cadmium	< 0.498	0.498		mg/Kg-dry	1	10/4/2019 8:50:59 PM
Chromium	26.1	0.996		mg/Kg-dry	1	10/4/2019 8:50:59 PM
Lead	20.8	0.996		mg/Kg-dry	1	10/4/2019 8:50:59 PM
Selenium	< 3.98	3.98		mg/Kg-dry	1	10/4/2019 8:50:59 PM
Strontium	59.1	0.996		mg/Kg-dry	1	10/4/2019 8:50:59 PM
Zinc	98.6	0.996		mg/Kg-dry	1	10/4/2019 8:50:59 PM
29B METALS						
TRUE TOTAL BARIUM						

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
RL	Reporting Limit
SDL	Sample detection limit
W	Sample container temperature is out of limit as specified at testcode

E	Value above quantitation range
M	Matrix Interference
R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limits
U	Analyte not detected



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Analytical Report

(consolidated)

WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/27/2019 12:35:00 PM
Project: Levert-Grand River
Lab ID: 19091178-010 **Matrix:** SOIL
Client Sample ID HA-6 2-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS				LDNR 29-B		Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	486	46.4		mg/Kg-dry	1	10/4/2019 11:17:17 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: BXL
Percent Moisture	39.3	1.00		wt%	1	9/30/2019 11:10:00 AM

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | M Matrix Interference |
| ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| RL Reporting Limit | S Spike Recovery outside accepted recovery limits |
| SDL Sample detection limit | U Analyte not detected |
| W Sample container temperature is out of limit as specified at testcode | |



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Analytical Report

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WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/27/2019 12:40:00 PM
Project: Levert-Grand River
Lab ID: 19091178-011 **Matrix:** SOIL
Client Sample ID HA-6 4-6

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	73.4	0.100		meq/100g	1	10/9/2019
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	1.16	0.10		mmhos/cm	1	10/3/2019 12:05:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.62	0.10		%	1	10/9/2019
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	2.41	0.10			1	10/5/2019
Soluble Calcium	3.85	0.02		meq/L	1	10/5/2019
Soluble Magnesium	2.24	0.05		meq/L	1	10/5/2019
Soluble Sodium	4.21	0.25		meq/L	1	10/5/2019
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.103	0.103		mg/Kg-dry	1	10/7/2019 2:22:29 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	6.42	1.89		mg/Kg-dry	1	10/4/2019 8:56:20 PM
Barium	460	0.944		mg/Kg-dry	1	10/4/2019 8:56:20 PM
Cadmium	0.482	0.472		mg/Kg-dry	1	10/4/2019 8:56:20 PM
Chromium	20.1	0.944		mg/Kg-dry	1	10/4/2019 8:56:20 PM
Lead	20.4	0.944		mg/Kg-dry	1	10/4/2019 8:56:20 PM
Selenium	< 3.78	3.78		mg/Kg-dry	1	10/4/2019 8:56:20 PM
Strontium	61.3	0.944		mg/Kg-dry	1	10/4/2019 8:56:20 PM
Zinc	86.0	0.944		mg/Kg-dry	1	10/4/2019 8:56:20 PM
29B METALS						
TRUE TOTAL BARIUM						

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- E Value above quantitation range
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

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WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/27/2019 12:40:00 PM
Project: Levert-Grand River
Lab ID: 19091178-011 **Matrix:** SOIL
Client Sample ID HA-6 4-6

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS				LDNR 29-B		Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	614	47.1		mg/Kg-dry	1	10/4/2019 11:22:06 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: BXL
Percent Moisture	42.0	1.00		wt%	1	9/30/2019 11:10:00 AM

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | M Matrix Interference |
| ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| RL Reporting Limit | S Spike Recovery outside accepted recovery limits |
| SDL Sample detection limit | U Analyte not detected |
| W Sample container temperature is out of limit as specified at testcode | |



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QC SUMMARY REPORT

WO#: 19091178
 11-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River

BatchID: 31780

Sample ID: MB-31780	SampType: MBLK	TestCode: 6010_S_29B	Units: mg/Kg-dry	Prep Date: 10/3/2019	RunNo: 82641						
Client ID: PBS	Batch ID: 31780	TestNo: SW6010B	SW3050B	Analysis Date: 10/4/2019	SeqNo: 2068938						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	< 2.00	2.00									
Barium	< 1.00	1.00									
Cadmium	< 0.500	0.500									
Chromium	< 1.00	1.00									
Lead	< 1.00	1.00									
Selenium	< 4.00	4.00									
Strontium	< 1.00	1.00									
Zinc	< 1.00	1.00									

Sample ID: LCS-31780	SampType: LCS	TestCode: 6010_S_29B	Units: mg/Kg-dry	Prep Date: 10/3/2019	RunNo: 82641						
Client ID: LCSS	Batch ID: 31780	TestNo: SW6010B	SW3050B	Analysis Date: 10/4/2019	SeqNo: 2068939						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	53.2	2.00	50.00	0	106	80	120				
Barium	52.4	1.00	50.00	0	105	80	120				
Cadmium	52.0	0.500	50.00	0	104	80	120				
Chromium	52.2	1.00	50.00	0	104	80	120				
Lead	53.8	1.00	50.00	0	108	80	120				
Selenium	55.6	4.00	50.00	0	111	80	120				
Strontium	53.7	1.00	50.00	0	107	80	120				
Zinc	52.8	1.00	50.00	0	106	80	120				

Qualifiers:	* Value exceeds Maximum Contaminant Level.	E Value above quantitation range	H Holding times for preparation or analysis exceed
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
	U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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 Website: www.element.com

QC SUMMARY REPORT

WO#: 19091178
 11-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River

BatchID: 31780

Sample ID: LCSD-31780	SampType: LCSD	TestCode: 6010_S_29B	Units: mg/Kg-dry	Prep Date: 10/3/2019	RunNo: 82641						
Client ID: LCSS02	Batch ID: 31780	TestNo: SW6010B	SW3050B	Analysis Date: 10/4/2019	SeqNo: 2068940						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	55.6	2.00	50.00	0	111	80	120	53.18	4.36	20	
Barium	53.6	1.00	50.00	0	107	80	120	52.43	2.23	20	
Cadmium	53.3	0.500	50.00	0	107	80	120	52.02	2.43	20	
Chromium	53.5	1.00	50.00	0	107	80	120	52.15	2.48	20	
Lead	53.8	1.00	50.00	0	108	80	120	53.85	0.111	20	
Selenium	55.4	4.00	50.00	0	111	80	120	55.59	0.288	20	
Strontium	53.9	1.00	50.00	0	108	80	120	53.66	0.520	20	
Zinc	54.0	1.00	50.00	0	108	80	120	52.82	2.21	20	

Sample ID: 19091162-017AMS	SampType: MS	TestCode: 6010_S_29B	Units: mg/Kg-dry	Prep Date: 10/3/2019	RunNo: 82641						
Client ID: ZZZZZ	Batch ID: 31780	TestNo: SW6010B	SW3050B	Analysis Date: 10/4/2019	SeqNo: 2068946						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	54.5	1.95	48.84	6.529	98.2	75	125				
Barium	200	0.977	48.84	142.1	118	75	125				
Cadmium	46.9	0.488	48.84	0.4684	95.0	75	125				
Chromium	69.9	0.977	48.84	16.90	108	75	125				
Lead	62.4	0.977	48.84	14.38	98.4	75	125				
Selenium	37.3	3.91	48.84	0	76.4	75	125				
Strontium	94.4	0.977	48.84	38.72	114	75	125				
Zinc	127	0.977	48.84	76.99	103	75	125				

Qualifiers:

* Value exceeds Maximum Contaminant Level.	E Value above quantitation range	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 19091178
 11-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River

BatchID: 31780

Sample ID: 19091162-017AMSD	SampType: MSD	TestCode: 6010_S_29B	Units: mg/Kg-dry	Prep Date: 10/3/2019	RunNo: 82641						
Client ID: ZZZZZZ	Batch ID: 31780	TestNo: SW6010B	SW3050B	Analysis Date: 10/4/2019	SeqNo: 2068947						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	54.6	1.99	49.77	6.529	96.5	75	125	54.48	0.137	20	
Barium	198	0.995	49.77	142.1	113	75	125	199.6	0.705	20	
Cadmium	47.9	0.498	49.77	0.4684	95.3	75	125	46.86	2.14	20	
Chromium	71.1	0.995	49.77	16.90	109	75	125	69.86	1.80	20	
Lead	64.0	0.995	49.77	14.38	99.8	75	125	62.45	2.50	20	
Selenium	36.9	3.98	49.77	0	74.2	75	125	37.32	1.02	20	S
Strontium	95.6	0.995	49.77	38.72	114	75	125	94.38	1.32	20	
Zinc	128	0.995	49.77	76.99	103	75	125	127.3	0.948	20	

NOTES:

S - Spike recovery indicates matrix interference. The method is in control as indicated by the Lab Control Sample.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	E Value above quantitation range	H Holding times for preparation or analysis exceed
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
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QC SUMMARY REPORT

WO#: 19091178
 11-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River

BatchID: 31782

Sample ID: MB-31782	SampType: MBLK	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 10/3/2019	RunNo: 82641
Client ID: PBS	Batch ID: 31782	TestNo: LDNR 29-B		Analysis Date: 10/4/2019	SeqNo: 2068971
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

True Total Barium < 50.0 50.0

Sample ID: LCS-31782	SampType: LCS	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 10/3/2019	RunNo: 82641
Client ID: LCSS	Batch ID: 31782	TestNo: LDNR 29-B		Analysis Date: 10/4/2019	SeqNo: 2068972
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

True Total Barium 5,500 50.0 5,000 0 110 75 125

Sample ID: LCSD-31782	SampType: LCSD	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 10/3/2019	RunNo: 82641
Client ID: LCSS02	Batch ID: 31782	TestNo: LDNR 29-B		Analysis Date: 10/4/2019	SeqNo: 2068973
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

True Total Barium 5,460 50.0 5,000 0 109 75 125 5,495 0.639 20

Sample ID: 19091162-017AMS	SampType: MS	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 10/3/2019	RunNo: 82641
Client ID: ZZZZZZ	Batch ID: 31782	TestNo: LDNR 29-B		Analysis Date: 10/4/2019	SeqNo: 2068975
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

True Total Barium 5,590 46.3 4,625 503.9 110 75 125

Qualifiers:

* Value exceeds Maximum Contaminant Level.	E Value above quantitation range	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 19091178
 11-Oct-19

Client: ICON Environmental Services

Project: Levert-Grand River

BatchID: 31782

Sample ID: 19091162-017AMSD	SampType: MSD	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 10/3/2019	RunNo: 82641						
Client ID: ZZZZZZ	Batch ID: 31782	TestNo: LDNR 29-B		Analysis Date: 10/4/2019	SeqNo: 2068976						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	5,740	47.2	4,717	503.9	111	75	125	5,592	2.54	20	

Qualifiers:	* Value exceeds Maximum Contaminant Level.	E Value above quantitation range	H Holding times for preparation or analysis exceed
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
	U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 19091178
 11-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River

BatchID: 31809

Sample ID: 19091177-061ADUP	SampType: DUP	TestCode: SAR_S	Units:	Prep Date: 10/4/2019	RunNo: 82687						
Client ID: ZZZZZ	Batch ID: 31809	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 10/5/2019	SeqNo: 2070124						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium Adsorption Ratio	3.76	0.10						3.83	1.71	20	
Soluble Calcium	9.20	0.02						9.47	2.94	20	
Soluble Magnesium	13.9	0.05						14.18	2.17	20	
Soluble Sodium	12.8	0.25						13.17	2.95	20	

Sample ID: 19091220-001ADUP	SampType: DUP	TestCode: SAR_S	Units:	Prep Date: 10/4/2019	RunNo: 82687						
Client ID: ZZZZZ	Batch ID: 31809	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 10/5/2019	SeqNo: 2070142						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium Adsorption Ratio	0.90	0.10						0.90	0.01	20	
Soluble Calcium	3.49	0.02						3.49	0.11	20	
Soluble Magnesium	1.29	0.05						1.30	0.51	20	
Soluble Sodium	1.39	0.25						1.39	0.13	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.	E Value above quantitation range	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 19091178
 11-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River

BatchID: 31817

Sample ID: MB-31817	SampType: MBLK	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 10/7/2019	RunNo: 82686						
Client ID: PBS	Batch ID: 31817	TestNo: 29B/SW7471	SW7471A	Analysis Date: 10/7/2019	SeqNo: 2069803						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury < 0.100 0.100

Sample ID: LCS-31817	SampType: LCS	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 10/7/2019	RunNo: 82686						
Client ID: LCSS	Batch ID: 31817	TestNo: 29B/SW7471	SW7471A	Analysis Date: 10/7/2019	SeqNo: 2069804						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.933 0.100 0.8330 0 112 80 120

Sample ID: LCSD-31817	SampType: LCSD	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 10/7/2019	RunNo: 82686						
Client ID: LCSS02	Batch ID: 31817	TestNo: 29B/SW7471	SW7471A	Analysis Date: 10/7/2019	SeqNo: 2069805						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.932 0.100 0.8330 0 112 80 120 0.9331 0.0797 20

Sample ID: 19091162-025AMS	SampType: MS	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 10/7/2019	RunNo: 82686						
Client ID: ZZZZZ	Batch ID: 31817	TestNo: 29B/SW7471	SW7471A	Analysis Date: 10/7/2019	SeqNo: 2069807						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 1.02 0.107 0.8892 0.04077 110 75 125

Qualifiers:

* Value exceeds Maximum Contaminant Level.	E Value above quantitation range	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 19091178
 11-Oct-19

Client: ICON Environmental Services

Project: Levert-Grand River

BatchID: 31817

Sample ID: 19091162-025AMSD	SampType: MSD	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 10/7/2019	RunNo: 82686						
Client ID: ZZZZZZ	Batch ID: 31817	TestNo: 29B/SW7471 SW7471A	Analysis Date: 10/7/2019	SeqNo: 2069808							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.02	0.106	0.8852	0.04077	111	75	125	1.023	0.147	20	

Qualifiers:	* Value exceeds Maximum Contaminant Level.	E Value above quantitation range	H Holding times for preparation or analysis exceed
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
	U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 19091178
 11-Oct-19

Client: ICON Environmental Services

Project: Levert-Grand River

BatchID: 31856

Sample ID: 19091220-001ADUP	SampType: DUP	TestCode: ESP_S	Units: %	Prep Date: 10/8/2019	RunNo: 82772						
Client ID: ZZZZZZ	Batch ID: 31856	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 10/9/2019	SeqNo: 2072697						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Exchangeable Sodium %	0.71	0.10						0.72	0.79	20	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	E	Value above quantitation range	H	Holding times for preparation or analysis exceed
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 19091178
 11-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River

BatchID: 31857

Sample ID: LCS-31857	SampType: LCS	TestCode: CEC	Units: meq/100g	Prep Date: 10/2/2019	RunNo: 82772						
Client ID: LCSS	Batch ID: 31857	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 10/9/2019	SeqNo: 2072674						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Cation Exchange Capacity	20.2	0.100	25.00	0	80.7	76	124				
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Sample ID: LCSD-31857	SampType: LCSD	TestCode: CEC	Units: meq/100g	Prep Date: 10/2/2019	RunNo: 82772						
Client ID: LCSS02	Batch ID: 31857	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 10/9/2019	SeqNo: 2072675						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Cation Exchange Capacity	20.0	0.100	25.00	0	79.9	76	124	20.18	0.997	20	
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Sample ID: 19091220-001ADUP	SampType: DUP	TestCode: CEC	Units: meq/100g	Prep Date: 10/8/2019	RunNo: 82772						
Client ID: ZZZZZ	Batch ID: 31857	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 10/9/2019	SeqNo: 2072680						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Cation Exchange Capacity	24.2	0.100						23.65	2.33	20	
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Qualifiers:

* Value exceeds Maximum Contaminant Level.	E Value above quantitation range	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 19091178

11-Oct-19

Client: ICON Environmental Services

Project: Levert-Grand River

BatchID: R82540

Sample ID: 19091177-061ADUP	SampType: DUP	TestCode: PMOIST	Units: wt%	Prep Date:	RunNo: 82540						
Client ID: ZZZZZZ	Batch ID: R82540	TestNo: LDNR 29-B		Analysis Date: 9/30/2019	SeqNo: 2066543						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture	20.9	1.00						20.60	1.45	20	

Qualifiers:	* Value exceeds Maximum Contaminant Level.	E Value above quantitation range	H Holding times for preparation or analysis exceed
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
	U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 19091178
 11-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River

BatchID: R82618

Sample ID: MB-R82618	SampType: MBLK	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 82618						
Client ID: PBS	Batch ID: R82618	TestNo: LDNR 29-B		Analysis Date: 10/3/2019	SeqNo: 2068548						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity < 0.10 0.10

Sample ID: LCS1-R82618	SampType: LCS1	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 82618						
Client ID: ZZZZZ	Batch ID: R82618	TestNo: LDNR 29-B		Analysis Date: 10/3/2019	SeqNo: 2068549						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 0.40 0.10 0.38 0 103 90.07 109.9

Sample ID: LCS2-R82618	SampType: LCS2	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 82618						
Client ID: ZZZZZ	Batch ID: R82618	TestNo: LDNR 29-B		Analysis Date: 10/3/2019	SeqNo: 2068550						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 52.2 0.10 53.00 0 98.5 90 110

Sample ID: 19091177-061ADUP	SampType: DUP	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 82618						
Client ID: ZZZZZ	Batch ID: R82618	TestNo: LDNR 29-B		Analysis Date: 10/3/2019	SeqNo: 2068552						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 3.76 0.10 3.83 1.84 20

Qualifiers:

* Value exceeds Maximum Contaminant Level.	E Value above quantitation range	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 19091178
 11-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River

BatchID: R82799

Sample ID: MBLK	SampType: MBLK	TestCode: 9056_LEACH	Units: mg/L	Prep Date:	RunNo: 82799
Client ID: PBW	Batch ID: R82799	TestNo: SW9056A		Analysis Date: 10/10/2019	SeqNo: 2073868
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride < 0.250 0.250

Sample ID: LCS	SampType: LCS	TestCode: 9056_LEACH	Units: mg/L	Prep Date:	RunNo: 82799
Client ID: LCSW	Batch ID: R82799	TestNo: SW9056A		Analysis Date: 10/10/2019	SeqNo: 2073869
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride 9.95 0.250 10.00 0 99.5 80 120

Sample ID: LCSD	SampType: LCSD	TestCode: 9056_LEACH	Units: mg/L	Prep Date:	RunNo: 82799
Client ID: LCSS02	Batch ID: R82799	TestNo: SW9056A		Analysis Date: 10/10/2019	SeqNo: 2073870
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride 9.89 0.250 10.00 0 98.9 80 120 9.946 0.598 15

Sample ID: 19100060-025AMS	SampType: MS	TestCode: 9056_LEACH	Units: mg/L	Prep Date:	RunNo: 82799
Client ID: ZZZZZ	Batch ID: R82799	TestNo: SW9056A		Analysis Date: 10/10/2019	SeqNo: 2073879
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride 31.4 0.250 5.000 27.15 84.4 80 120 E

Qualifiers:

* Value exceeds Maximum Contaminant Level.	E Value above quantitation range	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 19091178
 11-Oct-19

Client: ICON Environmental Services

Project: Levert-Grand River

BatchID: R82799

Sample ID: 19100060-025AMSD	SampType: MSD	TestCode: 9056_LEACH	Units: mg/L	Prep Date:	RunNo: 82799						
Client ID: ZZZZZZ	Batch ID: R82799	TestNo: SW9056A	Analysis Date: 10/10/2019	SeqNo: 2073880							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	31.3	0.250	5.000	27.15	82.6	80	120	31.37	0.295	15	E

Qualifiers:

* Value exceeds Maximum Contaminant Level.	E Value above quantitation range	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

Sample Log-In Check List

Client Name: **ICON_ENV**

Work Order Number: **19091178**

RcptNo: **1**

Logged by:	Danielle Hollier	9/27/2019 3:45:00 PM	<i>Danielle Hollier</i>
Completed By:	Danielle Hollier	9/27/2019 5:03:56 PM	<i>Danielle Hollier</i>
Reviewed By:	Caitlin Duplantis	10/11/2019 8:58:51 AM	<i>Caitlin Duplantis</i>

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
 2. How was the sample delivered? Element

Log In

3. Coolers are present? Yes No NA
 4. Shipping container/cooler in good condition? Yes No
 Custody seals intact on shipping container/cooler? Yes No Not Present
 No. Seal Date: Signed By:
 5. Was an attempt made to cool the samples? Yes No NA
 6. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
Not required
 7. Sample(s) in proper container(s)? Yes No
 8. Sufficient sample volume for indicated test(s)? Yes No
 9. Are samples (except VOA and ONG) properly preserved? Yes No
 10. Was preservative added to bottles? Yes No NA
 11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes No No VOA Vials
 12. Were any sample containers received broken? Yes No
 13. Does paperwork match bottle labels? Yes No
 (Note discrepancies on chain of custody)
 14. Are matrices correctly identified on Chain of Custody? Yes No
 15. Is it clear what analyses were requested? Yes No
 16. Were all holding times able to be met? Yes No
 (If no, notify customer for authorization.)

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

18. Additional remarks: Improper error correction(s) made by client

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
-----------	---------	-----------	-------------	---------	-----------	-----------



Chain of Custody

Laboratory Number: **19091178**

Client Information:		Billing Information:		PO Number:	Project Name/Number:	Page of
Company Name: ICON		Billing Information: SAME		Quote Number:	LEVERT-GRAND RIVER	Matrix Code
Address:				Required QC Level:	Sampler's Signature: <i>Jeffrey Miller</i>	DW = Drinking Water WW = Waste Water GW = Ground Water AQ = Aqueous OT = Other SL = Sludge SOL = Solid O = Oil SO = Soil F = Food SW = Swab NG = Natural Gas NGL = Natural Gas Liquid PW = Produced Water CF = Completion Fluid
City, State Zip:		Ext:		Bill Monthly	Shipping Method:	
Phone Number:		Ext:		<input type="checkbox"/> Yes	UPS / FedEx / NOW	
Fax Number:				<input type="checkbox"/> No	DHL / Element / Hand / Mail	
E-mail Address:						

Which Regulations Apply:		Turn Time		(Rush turn times will incur a surcharge and must be pre-approved by lab.)	Container		Pres.	Requested Tests					Comments
<input type="checkbox"/> RCRA	<input type="checkbox"/> Drinking Water	<input type="checkbox"/> Standard	<input type="checkbox"/> RUSH		Quantity	Type		HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₃	E.C	% moisture	29B Metals	CEC/ESP/SAC	
<input type="checkbox"/> POTW	<input type="checkbox"/> Distribution	<input type="checkbox"/> 1 Day	<input type="checkbox"/> 2 Day		P=Plastic, G=Glass, V=Vial								
<input type="checkbox"/> NPDES	<input type="checkbox"/> Special	<input type="checkbox"/> Other											
<input type="checkbox"/> USDA/FDA	<input type="checkbox"/> State												
<input type="checkbox"/> RECAP/RISC	<input type="checkbox"/> Other												
Sample ID/Description		Collection Information			Matrix								
Date	Time	Grab / Composite											
LT-1	0-4	9.25.19	1105	G	SO	1	P	-	X	X	X	X	
LT-1	6-8	9.25.19	1115						X	X	X	X	
LT-1	12-14	9.25.19	1130						X	X			
LT-2	0-4	9.26.19	0825						X	X	X	X	
LT-2	4-8	9.26.19	0835						X	X	X	X	
LT-2	12-16	9.26.19	0855						X	X			
LT-3	0-4	9.26.19	1620						X	X	X		
LT-3	4-8	9.26.19	1630	✓	✓	✓	✓	✓	X	X	X	X	

	Relinquished by	Date/Time	Received by	Date/Time	Field Notes:
1	<i>Jeffrey Miller</i>	9.27.19/1430	<i>Kate C.</i>	9.27.19/1430	
2	<i>Kate C.</i>	9.27.19/1545	<i>[Signature]</i>	9.27.19/1545	Received at lab on ice?
3					<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Temp:

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

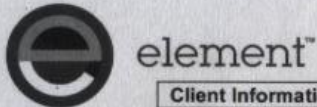
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Columbus, IN
47201 USA
P 812-375-0531
F 812-375-0731

328 Ley Road, Suite 100
Fort Wayne, IN
46825 USA
P 260-471-7000
F 260-471-7777

909 Executive Dr
Warsaw, IN
46580 USA
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F 574-269-6569

3371 Cleveland Road, Suite 100A
South Bend, IN
46628 USA
P 574-277-0707
F 574-273-5699

2417 W. Pinhook Rd
Lafayette, LA
70508 USA
P 337-235-0483
F 337-233-6540



Chain of Custody

Laboratory Number: **1909 1175**

Client Information:		Billing Information:		PO Number:	Project Name/Number:	Page of
Company Name: ICON		Billing Information: SAME		Quote Number:	LEVERT - GRAND RIVER	Matrix Code
Contact Name:				Required QC Level	Sampler's Signature: <i>Jeffrey Miller</i>	DW = Drinking Water WW = Waste Water GW = Ground Water AQ = Aqueous OT = Other SL = Sludge SOL = Solid O = Oil SO = Soil F = Food SW = Swab NG = Natural Gas NGL = Natural Gas Liquid PW = Produced Water CF = Completion Fluid
Address:				Bill Monthly	Shipping Method:	
City, State Zip:				<input type="checkbox"/> Yes	UPS / FedEx / NOW	
Phone Number:		Ext:		<input type="checkbox"/> No	DHL / Element / Hand / Mail	
Fax Number:						
E-mail Address:						

Which Regulations Apply:		Turn Time		(Rush turn times will incur a surcharge and must be pre-approved by lab.)	Container		Pres.	Requested Tests				Comments
<input type="checkbox"/> RCRA	<input type="checkbox"/> Drinking Water	<input type="checkbox"/> Standard	<input type="checkbox"/> RUSH		Quantity	Type P=Plastic, G=Glass, V=Vial	HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₃	E.C	% moisture	29B Metals	CEC/ESP/SAR	
<input type="checkbox"/> POTW	<input type="checkbox"/> Distribution	<input type="checkbox"/> 1 Day	<input type="checkbox"/> 2 Day									
<input type="checkbox"/> NPDES	<input type="checkbox"/> Special	<input type="checkbox"/> Other										
<input type="checkbox"/> USDA/FDA	<input type="checkbox"/> State											
<input type="checkbox"/> RECAP/RISC	<input type="checkbox"/> Other											
Collection Information				Grab / Composite	Matrix							
Sample ID/Description	Date	Time										
HA-G 0-2	9.27.19	1230	G	SO	↓	↓	↓	X	X	X	X	
HA-G 2-4	9.27.19	1235	↓	↓	↓	↓	X	X	X	X		
HA-C 4-6	9.27.19	1240	↓	↓	↓	↓	X	X	X	X		

	Relinquished by	Date/Time	Received by	Date/Time	Field Notes:
1	<i>Jeffrey Miller</i>	9.27.19/1430	<i>Kathy L.</i>	9.27.19/1430	
2	<i>Kathy L.</i>	9.27.19/1545		9.27.19 1915	Received at lab on ice? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Temp:
3					

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

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47201 USA
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Lafayette, LA
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The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Hydro-Environmental Technology, Inc.
1009.A62 August Levert-Bayou Sorrel, LA

SGS Job Number: LA57952

Sampling Dates: 08/29/19 - 08/30/19



Report to:

Hydro-Environmental Technology
P.O. BOX 60295
Lafayette, LA 70596
labdata@hetinc.us

ATTN: Stewart L Stover, Jr.

Total number of pages in report: 96



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Ron Benjamin
Ron Benjamin
Lab Director

Client Service contact: Ralph Frye 337-237-4775

Certifications: LDEQ(2048), LDHH(LA150012), AR(14-045-04), AZ(AZ0805), FL(E87657), IL(200082), KY(#31), NC(487), SC(73004001), NJ(LA007), TX(T104704186-18-16), WV(257)

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Test results relate only to samples analyzed.

SGS North America Inc. • 500 Ambassador Caffery • Scott, LA 70583 • tel: 337-237-4775

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Sample Summary

Hydro-Environmental Technology, Inc.

Job No: LA57952

1009.A62 August Levert-Bayou Sorrel, LA

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
LA57952-1	08/29/19	11:00 DJW	09/25/19	SO	Soil	HA-1 (0-2)
LA57952-1A	08/29/19	11:00 DJW	09/25/19	SO	Soil	HA-1 (0-2)
LA57952-1B	08/29/19	11:00 DJW	09/25/19	SO	Soil	HA-1 (0-2)
LA57952-2	08/29/19	11:05 DJW	09/25/19	SO	Soil	HA-1 (2-4)
LA57952-2A	08/29/19	11:05 DJW	09/25/19	SO	Soil	HA-1 (2-4)
LA57952-2B	08/29/19	11:05 DJW	09/25/19	SO	Soil	HA-1 (2-4)
LA57952-3	08/29/19	13:15 DJW	09/25/19	SO	Soil	HA-2 (0-2)
LA57952-3A	08/29/19	13:15 DJW	09/25/19	SO	Soil	HA-2 (0-2)
LA57952-3B	08/29/19	13:15 DJW	09/25/19	SO	Soil	HA-2 (0-2)
LA57952-3C	08/29/19	13:15 DJW	09/25/19	SO	Soil	HA-2 (0-2)
LA57952-4	08/29/19	13:20 DJW	09/25/19	SO	Soil	HA-2 (2-4)
LA57952-4A	08/29/19	13:20 DJW	09/25/19	SO	Soil	HA-2 (2-4)
LA57952-4B	08/29/19	13:20 DJW	09/25/19	SO	Soil	HA-2 (2-4)

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



Sample Summary
(continued)

Hydro-Environmental Technology, Inc.

Job No: LA57952

1009.A62 August Levert-Bayou Sorrel, LA

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
LA57952-5	08/29/19	14:40 DJW	09/25/19	SO	Soil	HA-3 (0-2)
LA57952-5A	08/29/19	14:40 DJW	09/25/19	SO	Soil	HA-3 (0-2)
LA57952-5B	08/29/19	14:40 DJW	09/25/19	SO	Soil	HA-3 (0-2)
LA57952-5C	08/29/19	14:40 DJW	09/25/19	SO	Soil	HA-3 (0-2)
LA57952-6	08/29/19	14:45 DJW	09/25/19	SO	Soil	HA-3 (2-4)
LA57952-6A	08/29/19	14:45 DJW	09/25/19	SO	Soil	HA-3 (2-4)
LA57952-6B	08/29/19	14:45 DJW	09/25/19	SO	Soil	HA-3 (2-4)
LA57952-7	08/29/19	14:50 DJW	09/25/19	SO	Soil	HA-3 (4-6)
LA57952-7A	08/29/19	14:50 DJW	09/25/19	SO	Soil	HA-3 (4-6)
LA57952-7B	08/29/19	14:50 DJW	09/25/19	SO	Soil	HA-3 (4-6)
LA57952-8	08/29/19	14:55 DJW	09/25/19	SO	Soil	HA-3 (6-8)
LA57952-8A	08/29/19	14:55 DJW	09/25/19	SO	Soil	HA-3 (6-8)
LA57952-8B	08/29/19	14:55 DJW	09/25/19	SO	Soil	HA-3 (6-8)

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



Sample Summary (continued)

Hydro-Environmental Technology, Inc.

Job No: LA57952

1009.A62 August Levert-Bayou Sorrel, LA

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
LA57952-9	08/30/19	10:25 DJW	09/25/19	SO	Soil	HA-4 (0-2)
LA57952-9A	08/30/19	10:25 DJW	09/25/19	SO	Soil	HA-4 (0-2)
LA57952-9B	08/30/19	10:25 DJW	09/25/19	SO	Soil	HA-4 (0-2)
LA57952-9C	08/30/19	10:25 DJW	09/25/19	SO	Soil	HA-4 (0-2)
LA57952-10	08/30/19	10:30 DJW	09/25/19	SO	Soil	HA-4 (2-4)
LA57952-10A	08/30/19	10:30 DJW	09/25/19	SO	Soil	HA-4 (2-4)
LA57952-10B	08/30/19	10:30 DJW	09/25/19	SO	Soil	HA-4 (2-4)
LA57952-11	08/30/19	10:35 DJW	09/25/19	SO	Soil	HA-4 (4-6)
LA57952-11A	08/30/19	10:35 DJW	09/25/19	SO	Soil	HA-4 (4-6)
LA57952-11B	08/30/19	10:35 DJW	09/25/19	SO	Soil	HA-4 (4-6)
LA57952-12	08/30/19	10:40 DJW	09/25/19	SO	Soil	HA-4 (6-8)
LA57952-12A	08/30/19	10:40 DJW	09/25/19	SO	Soil	HA-4 (6-8)
LA57952-12B	08/30/19	10:40 DJW	09/25/19	SO	Soil	HA-4 (6-8)

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



Sample Summary
(continued)

Hydro-Environmental Technology, Inc.

Job No: LA57952

1009.A62 August Levert-Bayou Sorrel, LA

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
LA57952-13	08/30/19	11:35 DJW	09/25/19	SO	Soil	HA-5 (0-2)
LA57952-13A	08/30/19	11:35 DJW	09/25/19	SO	Soil	HA-5 (0-2)
LA57952-13B	08/30/19	11:35 DJW	09/25/19	SO	Soil	HA-5 (0-2)
LA57952-14	08/30/19	11:40 DJW	09/25/19	SO	Soil	HA-5 (2-4)
LA57952-14A	08/30/19	11:40 DJW	09/25/19	SO	Soil	HA-5 (2-4)
LA57952-14B	08/30/19	11:40 DJW	09/25/19	SO	Soil	HA-5 (2-4)
LA57952-15	08/30/19	11:45 DJW	09/25/19	SO	Soil	HA-5 (4-6)
LA57952-15A	08/30/19	11:45 DJW	09/25/19	SO	Soil	HA-5 (4-6)
LA57952-15B	08/30/19	11:45 DJW	09/25/19	SO	Soil	HA-5 (4-6)
LA57952-16	08/30/19	11:50 DJW	09/25/19	SO	Soil	HA-5 (6-7)
LA57952-16A	08/30/19	11:50 DJW	09/25/19	SO	Soil	HA-5 (6-7)
LA57952-16B	08/30/19	11:50 DJW	09/25/19	SO	Soil	HA-5 (6-7)

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: HA-1 (0-2)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-1	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	5.6	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	104	10	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.5	2.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	18.4	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	13.7	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.080	0.080	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	63.1	25	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-1 (0-2)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-1A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 48.2
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	785	210	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17150

(2) Prep QC Batch: MP16523

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-1 (0-2)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-1B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 48.2
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent	51.8		%	1	09/30/19	DP	ASTM 2216
Oil And Grease	8.4	0.010	%	1	09/26/19 10:00	HD	LADNR 29B

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-1 (2-4)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-2	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 4.6	4.6	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	185	9.3	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.3	2.3	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	13.2	4.6	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	11.0	4.6	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.071	0.071	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 4.6	4.6	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 4.6	4.6	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	46.7	23	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-1 (2-4)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-2A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 51.8 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	1170	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17150

(2) Prep QC Batch: MP16523

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-1 (2-4)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-2B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 51.8 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	48.2		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-2 (0-2)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-3	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	5120	10	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.5	2.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	38.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	49.1	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.069	0.069	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	99.2	25	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-2 (0-2)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-3A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 42.6
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	25700	230	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17150

(2) Prep QC Batch: MP16523

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-2 (0-2)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-3B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 42.6
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent	57.4		%	1	09/30/19	DP	ASTM 2216
Oil And Grease	1.2	0.010	%	1	09/26/19 10:00	HD	LADNR 29B

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-2 (0-2)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-3C	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 42.6
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis, SPLP Leachate SW846 1312

Analyte	Result	MCL	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 0.10	0.10		mg/l	1	09/27/19	09/30/19 RD	SW846 6010C ¹	SW846 3010A ²
Barium	2.7	1.0		mg/l	1	09/27/19	09/30/19 RD	SW846 6010C ¹	SW846 3010A ²
Chromium	< 0.10	0.10		mg/l	1	09/27/19	09/30/19 RD	SW846 6010C ¹	SW846 3010A ²
Lead	< 0.10	0.10		mg/l	1	09/27/19	09/30/19 RD	SW846 6010C ¹	SW846 3010A ²

(1) Instrument QC Batch: MA17062

(2) Prep QC Batch: MP16445

RL = Reporting Limit
MCL = Maximum Contamination Level (not available)

Report of Analysis

Client Sample ID: HA-2 (2-4)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-4	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	560	10	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.5	2.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	15.3	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	13.9	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.074	0.074	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	51.9	25	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-2 (2-4)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-4A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 49.1
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	1920	200	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17150

(2) Prep QC Batch: MP16523

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-2 (2-4)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-4B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 49.1
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent	50.9		%	1	09/30/19	DP	ASTM 2216
Oil And Grease	0.20	0.010	%	1	09/26/19 10:00	HD	LADNR 29B

RL = Reporting Limit



Report of Analysis

Client Sample ID: HA-3 (0-2)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-5	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	7.8	5.0	mg/kg	5	10/08/19	10/10/19 RD	SW846 6010C ¹	SW846 3050B ²
Barium	277	10	mg/kg	5	10/08/19	10/10/19 RD	SW846 6010C ¹	SW846 3050B ²
Cadmium	< 2.5	2.5	mg/kg	5	10/08/19	10/10/19 RD	SW846 6010C ¹	SW846 3050B ²
Chromium	21.0	5.0	mg/kg	5	10/08/19	10/10/19 RD	SW846 6010C ¹	SW846 3050B ²
Lead	15.6	5.0	mg/kg	5	10/08/19	10/10/19 RD	SW846 6010C ¹	SW846 3050B ²
Selenium	< 5.0	5.0	mg/kg	5	10/08/19	10/10/19 RD	SW846 6010C ¹	SW846 3050B ²
Silver	< 5.0	5.0	mg/kg	5	10/08/19	10/10/19 RD	SW846 6010C ¹	SW846 3050B ²
Zinc	58.8	25	mg/kg	5	10/08/19	10/10/19 RD	SW846 6010C ¹	SW846 3050B ²

(1) Instrument QC Batch: MA17214

(2) Prep QC Batch: MP16550

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (0-2)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-5A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 59.8 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	7510	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17150

(2) Prep QC Batch: MP16523

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (0-2)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-5B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 59.8 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	40.2		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (0-2)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-5C	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 59.8 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis, SPLP Leachate SW846 1312

Analyte	Result	MCL	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 0.10	0.10		mg/l	1	09/27/19	09/30/19 RD	SW846 6010C ¹	SW846 3010A ²
Barium	< 1.0	1.0		mg/l	1	09/27/19	09/30/19 RD	SW846 6010C ¹	SW846 3010A ²

(1) Instrument QC Batch: MA17062

(2) Prep QC Batch: MP16445

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

MCL = Maximum Contamination Level (not available)

Report of Analysis

Client Sample ID: HA-3 (2-4)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-6	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	5.7	4.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	288	9.1	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.3	2.3	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	17.5	4.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	13.6	4.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.077	0.077	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 4.5	4.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 4.5	4.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	55.3	23	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (2-4)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-6A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 55.5 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	771	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17150

(2) Prep QC Batch: MP16523

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (2-4)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-6B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 55.5 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	44.5		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (4-6)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-7	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	175	10	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.5	2.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	13.8	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	10.4	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.074	0.074	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	48.5	25	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (4-6)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-7A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 54.9 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	566	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17150

(2) Prep QC Batch: MP16523

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (4-6)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-7B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 54.9 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	45.1		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (6-8)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-8	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	8.3	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	201	9.8	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.5	2.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	13.8	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	10.5	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.071	0.071	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 4.9	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 4.9	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	45.6	25	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (6-8)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-8A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 59.1 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	341	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17150

(2) Prep QC Batch: MP16523

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (6-8)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-8B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 59.1 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	40.9		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (0-2)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-9	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	12.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	217	10	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.5	2.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	10.6	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	12.1	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.077	0.077	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	144	25	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (0-2)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-9A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 72.5 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	244	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17150

(2) Prep QC Batch: MP16523

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (0-2)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-9B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 72.5 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	27.5		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (0-2)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-9C	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 72.5 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis, SPLP Leachate SW846 1312

Analyte	Result	MCL	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 0.10	0.10		mg/l	1	09/27/19	09/30/19 RD	SW846 6010C ¹	SW846 3010A ²

(1) Instrument QC Batch: MA17062

(2) Prep QC Batch: MP16445

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit
MCL = Maximum Contamination Level (not available)

Report of Analysis

Client Sample ID: HA-4 (2-4)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-10	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	5.6	4.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	99.8	9.1	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.3	2.3	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	11.8	4.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	10.4	4.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.080	0.080	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 4.5	4.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 4.5	4.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	52.1	23	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (2-4)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-10A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 66.8 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	430	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17149

(2) Prep QC Batch: MP16524

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (2-4)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-10B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 66.8 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	33.2		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (4-6)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-11	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	141	10	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.5	2.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	12.6	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	9.1	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.077	0.077	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	55.5	25	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (4-6)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-11A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 68.7 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	280	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17149

(2) Prep QC Batch: MP16524

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (4-6)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-11B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 68.7 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	31.3		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (6-8)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-12	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	5.8	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	123	9.8	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.5	2.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	15.2	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	12.7	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.074	0.074	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 4.9	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 4.9	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	56.2	25	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (6-8)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-12A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 59.7 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	195	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17149

(2) Prep QC Batch: MP16524

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (6-8)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-12B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 59.7 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	40.3		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (0-2)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-13	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	7.3	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	150	10	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.5	2.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	20.9	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	15.8	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.074	0.074	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	74.3	25	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (0-2)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-13A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 61.4 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	354	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17149

(2) Prep QC Batch: MP16524

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (0-2)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-13B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 61.4 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	38.6		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (2-4)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-14	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 4.6	4.6	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	71.3	9.3	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.3	2.3	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	16.5	4.6	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	12.7	4.6	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.074	0.074	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 4.6	4.6	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 4.6	4.6	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	65.8	23	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (2-4)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-14A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 61.5 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	189	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17149

(2) Prep QC Batch: MP16524

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (2-4)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-14B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 61.5 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	38.5		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (4-6)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-15	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	115	10	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.5	2.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	16.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	11.1	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.074	0.074	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	52.0	25	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (4-6)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-15A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 52.3 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	611	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17149

(2) Prep QC Batch: MP16524

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (4-6)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-15B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 52.3 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	47.7		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (6-7)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-16	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 4.9	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	126	9.8	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.5	2.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	11.6	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	7.9	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.080	0.080	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 4.9	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 4.9	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	37.3	25	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (6-7)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-16A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 47.8 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	370	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17149

(2) Prep QC Batch: MP16524

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (6-7)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-16B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 47.8 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	52.2		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody



HYDRO-ENVIRONMENTAL TECHNOLOGY, INC.
 Environmental Consultants
 P.O. Box 60295
 Lafayette, LA 70596-0295
 Phone (337) 261-1963 FAX (337) 261-1953

LA 57952

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert Laboratory: SGS
 Project Number: 1009 A62 Collected By: DJW
 Project Location: Bayou Sorrel, LA Company: Hydro-Environmental Technology, Inc.
 Date: 8/29/2019

Sample I.D.	Type	Date/Time Sampled	Containers	Analysis Requested/Method	Comments
1 HA-1 (0-2)	SO	8/29/2019 1100	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*, Oil and Grease	4°C
2 HA-1 (2-4)	SO	8/29/2019 1105	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*, Oil and Grease	4°C
3 HA-2 (0-2)	SO	8/29/2019 1315	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*, Oil and Grease	4°C
4 HA-2 (2-4)	SO	8/29/2019 1320	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*, Oil and Grease	4°C
5 HA-3 (0-2)	SO	8/29/2019 1440	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*, Oil and Grease	4°C
6 HA-3 (2-4)	SO	8/29/2019 1445	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*, Oil and Grease	4°C
7 HA-3 (4-6)	SO	8/29/2019 1450	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*, Oil and Grease	4°C

HOLD for possible analysis
 Metals*, Arsenic, Barium, True Total Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver, Zinc

Relinquished By: *André White* Received By: *APJ*
 Date/Time: 8/25/19 800 Date/Time: 9/25/19 800
 Relinquished By: *APJ* Received By: *Made Red*
 Date/Time: 8/25/19 805 Date/Time: 9-25-19 09:15
 Analysis Due: Verbal: *Mosslec Temp: 52 DW19 2-12 Floor*
Client d/lo



LA57952: Chain of Custody
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LA 57952

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert Laboratory: SGS
 Project Number: 1009.A62 Collected By: DJW
 Project Location: Bayou Sorrel, LA Company: Hydro-Environmental Technology, Inc.
 Date: 8/29/2019

Sample I.D.	Type	Date/Time Sampled	Containers	Analysis Requested/Method	Comments
HA-3 (6-8)	SO	8/29/2019 1455	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*; Oil and Grease	4°C
HA-4 (0-2)	SO	8/30/2019 1025	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*; Oil and Grease	4°C
HA-4 (2-4)	SO	8/30/2019 1030	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*; Oil and Grease	4°C
HA-4 (4-6)	SO	8/30/2019 1035	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*; Oil and Grease	4°C
HA-4 (6-8)	SO	8/30/2019 1040	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*; Oil and Grease	4°C
HA-5 (0-2)	SO	8/30/2019 1135	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*; Oil and Grease	4°C
HA-5 (2-4)	SO	8/30/2019 1140	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*; Oil and Grease	4°C
HOLD for possible analysis Metals*: Arsenic, Barium, True Total Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver, Zinc					
Relinquished By:	Date/Time:		Received By:	Date/Time:	
<i>[Signature]</i>	8/25/19 800		<i>[Signature]</i>	8/25/19 800	
Relinquished By:	Date/Time:		Received By:	Date/Time:	
<i>[Signature]</i>	8/25/19 915		<i>[Signature]</i>	8/25/19 09:15	
Analysis Due: Verbal:	Written:				

LA57952: Chain of Custody
 Page 2 of 4



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LA 57952

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert Laboratory: SGS
 Project Number: 1009.A62 Collected By: DJW
 Project Location: Bayou Sorrel, LA Company: Hydro-Environmental Technology, Inc.
 Date: 8/29/2019

Sample I.D.	Type	Date/Time Sampled	Containers	Analysis Requested/Method	Comments
HA-5 (4-6)	SO	8/30/2019 1145	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals; Oil and Grease	4°C
HA-5 (6-7)	SO	8/30/2019 1150	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals; Oil and Grease	4°C
Metals*: Arsenic, Barium, True Total Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver, Zinc					
Relinquished By: <i>Paul White</i> Received By: <i>Mark Reed</i> Date/Time: 9/25/19 800 Date/Time: 9/25/19 800 Relinquished By: <i>Mark Reed</i> Received By: <i>Mark Reed</i> Date/Time: 9/25/19 9:15 Date/Time: 9.25-19 09:15 Analysis Due: Verbal: Written:					

15
16

LA57952: Chain of Custody
 Page 3 of 4

SGS Sample Receipt Summary

Job Number: LA57952

Client: HYDRO - ENV.

Project: AUGUST LEVERT

Date / Time Received: 9/25/2019 9:15:00 AM

Delivery Method: Client

Airbill #s: _____

Cooler Temps (Initial/Adjusted): #1: (5.2/5.2); DV439

Cooler Security		<u>Y or N</u>		<u>Y or N</u>
1. Custody Seals Present:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/> <input type="checkbox"/>
2. Custody Seals Intact:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	4. Smp Dates/Time OK	<input checked="" type="checkbox"/> <input type="checkbox"/>

Cooler Temperature		<u>Y or N</u>
1. Temp criteria achieved:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Thermometer ID:	<u>DV439;</u>	
3. Cooler media:	<u>Ice (direct contact)</u>	
4. No. Coolers:	<u>1</u>	

Quality Control Preservation	<u>Y or N</u>	<u>N/A</u>
1. Trip Blank present / cooler:	<input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Trip Blank listed on COC:	<input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Samples preserved properly:	<input checked="" type="checkbox"/> <input type="checkbox"/>	
4. VOCs headspace free:	<input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/>

Sample Integrity - Documentation		<u>Y or N</u>
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Sample Integrity - Condition		<u>Y or N</u>
1. Sample recvd within HT:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Condition of sample:	<u>Intact</u>	

Sample Integrity - Instructions		<u>Y or N</u>	<u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Bottles received for unspecified tests:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments

3.1
3

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA57952
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16427
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 09/26/19

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.080	.0067	.0066	-0.00081	<0.080

Associated samples MP16427: LA57952-1, LA57952-2, LA57952-3, LA57952-4, LA57952-6, LA57952-7, LA57952-8, LA57952-9, LA57952-10, LA57952-11, LA57952-12, LA57952-13, LA57952-14, LA57952-15, LA57952-16

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

4.1.1
4

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16427
 Matrix Type: SOLID

Methods: SW846 7471B
 Units: mg/kg

Prep Date: 09/26/19

Metal	LA57952-1 Original MS	Spikelot HGSPIKE1 % Rec	QC Limits
Mercury	0.014 0.60	0.6 97.7	75-125

Associated samples MP16427: LA57952-1, LA57952-2, LA57952-3, LA57952-4, LA57952-6, LA57952-7, LA57952-8, LA57952-9, LA57952-10, LA57952-11, LA57952-12, LA57952-13, LA57952-14, LA57952-15, LA57952-16

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

4.1.2
4

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16427
 Matrix Type: SOLID

Methods: SW846 7471B
 Units: mg/kg

Prep Date: 09/26/19

Metal	LA57952-1 Original MSD	Spikelot HGSPIKE1	% Rec	MSD RPD	QC Limit
Mercury	0.014	0.52	0.536	94.5	14.3 20

Associated samples MP16427: LA57952-1, LA57952-2, LA57952-3, LA57952-4, LA57952-6, LA57952-7, LA57952-8, LA57952-9, LA57952-10, LA57952-11, LA57952-12, LA57952-13, LA57952-14, LA57952-15, LA57952-16

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

4.1.2
4

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA57952
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16427
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 09/26/19

Metal	LCS Result	Spikelot HGLCS10	% Rec	QC Limits
Mercury	23.3	20.3	114.8	64-136

Associated samples MP16427: LA57952-1, LA57952-2, LA57952-3, LA57952-4, LA57952-6, LA57952-7, LA57952-8, LA57952-9, LA57952-10, LA57952-11, LA57952-12, LA57952-13, LA57952-14, LA57952-15, LA57952-16

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

4.13
4

SERIAL DILUTION RESULTS SUMMARY

Login Number: LA57952
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16427
Matrix Type: SOLID

Methods: SW846 7471B
Units: ug/l

Prep Date: 09/26/19

Metal	LA57952-1 Original	SDL 1:5	%DIF	QC Limits
Mercury	0.118	0.00	100.0(a)	0-

Associated samples MP16427: LA57952-1, LA57952-2, LA57952-3, LA57952-4, LA57952-6, LA57952-7, LA57952-8, LA57952-9, LA57952-10, LA57952-11, LA57952-12, LA57952-13, LA57952-14, LA57952-15, LA57952-16

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(anr) Analyte not requested

(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

4.1.4
4

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA57952
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16432
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 09/26/19

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.72	2.4		
Antimony	0.60	.096	.33		
Arsenic	1.0	.19	.39	-0.11	<1.0
Barium	2.0	.016	1.1	-0.027	<2.0
Beryllium	0.40	.01	.04		
Boron	50	.053	2		
Cadmium	0.50	.013	.15	0.014	<0.50
Calcium	10	.81	3.9		
Chromium	1.0	.025	.11	0.011	<1.0
Cobalt	1.0	.02	.13		
Copper	1.0	.048	.31		
Iron	10	.2	3.8		
Lead	1.0	.12	.31	-0.017	<1.0
Lithium	1.0	.14	.56		
Magnesium	10	1.6	8.2		
Manganese	5.0	.005	.21		
Molybdenum	1.0	.014	.06		
Nickel	1.0	.027	.17		
Potassium	50	4.4	13		
Selenium	1.0	.13	.35	0.10	<1.0
Silver	1.0	.062	.3	0.0050	<1.0
Sodium	50	5.1	11		
Strontium	1.0	.008	.19		
Thallium	0.50	.14	.37		
Tin	5.0	.041	.29		
Titanium	1.0	.02	.18		
Vanadium	1.0	.034	.13		
Zinc	5.0	.018	1.8	-0.040	<5.0

Associated samples MP16432: LA57952-1, LA57952-2, LA57952-3, LA57952-4, LA57952-6, LA57952-7, LA57952-8, LA57952-9, LA57952-10, LA57952-11, LA57952-12, LA57952-13, LA57952-14, LA57952-15, LA57952-16

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

4.2.1
4

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16432
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 09/26/19

Metal	LA57948-1 Original MS	Spikelot ICPSPIKE1% Rec	QC Limits		
Aluminum					
Antimony					
Arsenic	6.8	102	100	95.2	75-125
Barium	35.8	126	100	90.2	75-125
Beryllium					
Boron					
Cadmium	0.090	102	100	101.9	75-125
Calcium					
Chromium	17.2	108	100	90.8	75-125
Cobalt					
Copper					
Iron					
Lead	8.9	106	100	97.1	75-125
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel					
Potassium					
Selenium	0.74	102	100	101.3	75-125
Silver	0.36	96.3	100	95.9	75-125
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Vanadium					
Zinc	16.3	110	100	93.7	75-125

Associated samples MP16432: LA57952-1, LA57952-2, LA57952-3, LA57952-4, LA57952-6, LA57952-7, LA57952-8, LA57952-9, LA57952-10, LA57952-11, LA57952-12, LA57952-13, LA57952-14, LA57952-15, LA57952-16

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16432
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 09/26/19

Metal	LA57948-1 Original MSD		Spikelot ICPSPIKE1% Rec		MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	6.8	104	100	97.2	1.9	20
Barium	35.8	131	100	95.2	3.9	20
Beryllium						
Boron						
Cadmium	0.090	103	100	102.9	1.0	20
Calcium						
Chromium	17.2	112	100	94.8	3.6	20
Cobalt						
Copper						
Iron						
Lead	8.9	107	100	98.1	0.9	20
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Potassium						
Selenium	0.74	103	100	102.3	1.0	20
Silver	0.36	99.1	100	98.7	2.9	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc	16.3	113	100	96.7	2.7	20

Associated samples MP16432: LA57952-1, LA57952-2, LA57952-3, LA57952-4, LA57952-6, LA57952-7, LA57952-8, LA57952-9, LA57952-10, LA57952-11, LA57952-12, LA57952-13, LA57952-14, LA57952-15, LA57952-16

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16432
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 09/26/19

Metal	LCS Result	Spikelot LCSMETAL11% Rec	QC Limits
Aluminum			
Antimony			
Arsenic	122	125	97.6 82-117
Barium	583	529	110.2 82-119
Beryllium			
Boron			
Cadmium	35.3	37.7	93.6 82-118
Calcium			
Chromium	48.3	58.3	82.8 82-118
Cobalt			
Copper			
Iron			
Lead	95.3	111	85.9 82-117
Lithium			
Magnesium			
Manganese			
Molybdenum			
Nickel			
Potassium			
Selenium	261	251	104.0 79-122
Silver	25.9	27.2	95.2 79-121
Sodium			
Strontium			
Thallium			
Tin			
Titanium			
Vanadium			
Zinc	289	351	82.3 80-119

Associated samples MP16432: LA57952-1, LA57952-2, LA57952-3, LA57952-4, LA57952-6, LA57952-7, LA57952-8, LA57952-9, LA57952-10, LA57952-11, LA57952-12, LA57952-13, LA57952-14, LA57952-15, LA57952-16

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16432
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: ug/l

Prep Date: 09/26/19

Metal	LA57948-1 Original	SDL 5:25	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	68.3	110	61.6 (a)	0-10
Barium	358	365	2.1	0-10
Beryllium				
Boron				
Cadmium	0.900	4.90	444.4(a)	0-10
Calcium				
Chromium	172	181	5.3	0-10
Cobalt				
Copper				
Iron				
Lead	89.2	79.4	11.0 (a)	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium	7.36	0.00	100.0(a)	0-10
Silver	3.58	0.00	100.0(a)	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	163	158	2.8	0-10

Associated samples MP16432: LA57952-1, LA57952-2, LA57952-3, LA57952-4, LA57952-6, LA57952-7, LA57952-8, LA57952-9, LA57952-10, LA57952-11, LA57952-12, LA57952-13, LA57952-14, LA57952-15, LA57952-16

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested
 (a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA57952
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16445
Matrix Type: LEACHATE

Methods: SW846 6010C
Units: mg/l

Prep Date: 09/27/19

Metal	RL	IDL	MDL	MB raw	final
Aluminum	0.10	.006	.056		
Antimony	0.10	.0014	.003		
Arsenic	0.10	.0028	.0036	0.000030	<0.10
Barium	1.0	.0001	.004	-0.00018	<1.0
Beryllium	0.10	.00006	.0003		
Boron	0.10	.00051	.03		
Cadmium	0.10	.00015	.0004		
Calcium	0.10	.019	.092		
Chromium	0.10	.00034	.002	-0.00014	<0.10
Cobalt	0.10	.00031	.0017		
Copper	0.10	.00044	.0038		
Iron	0.10	.0021	.017		
Lead	0.10	.0011	.0031	-0.00032	<0.10
Lithium	0.10	.0011	.008		
Magnesium	0.10	.016	.09		
Manganese	0.10	.00016	.0012		
Molybdenum	0.10	.00015	.001		
Nickel	0.10	.00065	.005		
Potassium	0.50	.014	.22		
Selenium	0.10	.0023	.0045		
Silver	0.10	.00041	.0028		
Sodium	0.50	.0052	.17		
Strontium	0.10	.00005	.0032		
Thallium	0.10	.0013	.0051		
Tin	0.10	.00071	.0024		
Titanium	0.10	.00028	.0024		
Vanadium	0.10	.0002	.0024		
Zinc	0.10	.0013	.0037		

Associated samples MP16445: LA57952-3C, LA57952-5C, LA57952-9C

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

4.3.1
4

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16445
 Matrix Type: LEACHATE

Methods: SW846 6010C
 Units: mg/l

Prep Date: 09/27/19 09/27/19

Metal	LA57948-5 Original MS		Spikelot ICPSPIKE1% Rec	QC Limits	LA57948-5 Original DUP		RPD	QC Limits	
Aluminum									
Antimony									
Arsenic	0.0	2.1	2.0	105.0	75-125	0.0	0.0	NC	0-20
Barium	0.0099	2.1	2.0	104.5	75-125	0.0099	0.0097	2.0	0-20
Beryllium									
Boron									
Cadmium									
Calcium									
Chromium	0.0017	2.0	2.0	99.9	75-125	0.0017	0.0016	6.1	0-20
Cobalt									
Copper									
Iron									
Lead	0.0038	2.2	2.0	109.8	75-125	0.0038	0.0040	5.1	0-20
Lithium									
Magnesium									
Manganese									
Molybdenum									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc									

Associated samples MP16445: LA57952-3C, LA57952-5C, LA57952-9C

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

4.3.2
 4

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16445
 Matrix Type: LEACHATE

Methods: SW846 6010C
 Units: mg/l

Prep Date: 09/27/19

Metal	BSP Result	Spikelot ICPSPIKE1% Rec	QC Limits
Aluminum			
Antimony			
Arsenic	1.9	2.0	95.0 80-120
Barium	2.0	2.0	100.0 80-120
Beryllium			
Boron			
Cadmium			
Calcium			
Chromium	1.9	2.0	95.0 80-120
Cobalt			
Copper			
Iron			
Lead	2.1	2.0	105.0 80-120
Lithium			
Magnesium			
Manganese			
Molybdenum			
Nickel			
Potassium			
Selenium			
Silver			
Sodium			
Strontium			
Thallium			
Tin			
Titanium			
Vanadium			
Zinc			

Associated samples MP16445: LA57952-3C, LA57952-5C, LA57952-9C

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

4.3.3
4

SERIAL DILUTION RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16445
 Matrix Type: LEACHATE

Methods: SW846 6010C
 Units: ug/l

Prep Date: 09/27/19

Metal	LA57948-5 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	0.00	0.00	NC	0-10
Barium	9.93	7.73	22.2*(a)	0-10
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium	1.65	3.11	88.5 (b)	0-10
Cobalt				
Copper				
Iron				
Lead	3.79	0.00	100.0(b)	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP16445: LA57952-3C, LA57952-5C, LA57952-9C

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested
 (a) Serial dilution indicates possible matrix interference.
 (b) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

4.3.4
4

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA57952
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16523
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 10/05/19

Metal	RL	IDL	MDL	MB raw	final
Aluminum	500	36	120		
Antimony	30	4.8	17		
Arsenic	50	9.3	20		
Barium	100	.8	56	-0.30	<100
Beryllium	20	.5	2		
Boron	2500	2.7	98		
Cadmium	25	.65	7.5		
Calcium	500	40	200		
Chromium	50	1.3	5.5		
Cobalt	50	1	6.5		
Copper	50	2.4	16		
Iron	500	9.8	190		
Lead	50	5.8	16		
Lithium	50	7.2	28		
Magnesium	500	81	410		
Manganese	250	.25	11		
Molybdenum	50	.7	3		
Nickel	50	1.4	8.5		
Potassium	2500	220	630		
Selenium	50	6.6	18		
Silver	50	3.1	15		
Sodium	2500	250	560		
Strontium	50	.4	9.5		
Thallium	25	6.9	19		
Tin	250	2.1	15		
Titanium	50	1	9		
Vanadium	50	1.7	6.5		
Zinc	250	.9	92		

Associated samples MP16523: LA57952-1A, LA57952-2A, LA57952-3A, LA57952-4A, LA57952-5A, LA57952-6A, LA57952-7A, LA57952-8A, LA57952-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

4.4.1
4

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16523
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 10/05/19

Metal	LA57789-1B Original DUP	RPD	QC Limits
Aluminum			
Antimony			
Arsenic			
Barium	1230 1220	0.8	0-20
Beryllium			
Boron			
Cadmium			
Calcium			
Chromium			
Cobalt			
Copper			
Iron			
Lead			
Lithium			
Magnesium			
Manganese			
Molybdenum			
Nickel			
Potassium			
Selenium			
Silver			
Sodium			
Strontium			
Thallium			
Tin			
Titanium			
Vanadium			
Zinc			

Associated samples MP16523: LA57952-1A, LA57952-2A, LA57952-3A, LA57952-4A, LA57952-5A, LA57952-6A, LA57952-7A, LA57952-8A, LA57952-9A

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

4.4.2
4

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16523
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 10/05/19

Metal	BSP Result	Spikelot TTBALA29	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	45000	50000	90.0	80-120
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP16523: LA57952-1A, LA57952-2A, LA57952-3A, LA57952-4A, LA57952-5A, LA57952-6A, LA57952-7A, LA57952-8A, LA57952-9A

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

4.4.3
 4

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA57952
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16524
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 10/05/19

Metal	RL	IDL	MDL	MB raw	final
Aluminum	500	30	120		
Antimony	30	7.1	17		
Arsenic	50	14	20		
Barium	100	.5	56	-1.6	<100
Beryllium	20	.3	2		
Boron	2500	2.6	98		
Cadmium	25	.75	7.5		
Calcium	500	93	200		
Chromium	50	1.7	5.5		
Cobalt	50	1.6	6.5		
Copper	50	2.2	16		
Iron	500	10	190		
Lead	50	5.4	16		
Lithium	50	5.5	28		
Magnesium	500	78	410		
Manganese	250	.8	11		
Molybdenum	50	.75	3		
Nickel	50	3.3	8.5		
Potassium	2500	68	630		
Selenium	50	12	18		
Silver	50	2.1	15		
Sodium	2500	26	560		
Strontium	50	.25	9.5		
Thallium	25	6.7	19		
Tin	250	3.6	15		
Titanium	50	1.4	9		
Vanadium	50	1	6.5		
Zinc	250	6.5	92		

Associated samples MP16524: LA57952-10A, LA57952-11A, LA57952-12A, LA57952-13A, LA57952-14A, LA57952-15A, LA57952-16A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

4.5.1
4

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16524
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 10/05/19

Metal	LA57952-10A Original DUP	RPD	QC Limits
Aluminum			
Antimony			
Arsenic			
Barium	430 428	0.5	0-20
Beryllium			
Boron			
Cadmium			
Calcium			
Chromium			
Cobalt			
Copper			
Iron			
Lead			
Lithium			
Magnesium			
Manganese			
Molybdenum			
Nickel			
Potassium			
Selenium			
Silver			
Sodium			
Strontium			
Thallium			
Tin			
Titanium			
Vanadium			
Zinc			

Associated samples MP16524: LA57952-10A, LA57952-11A, LA57952-12A, LA57952-13A, LA57952-14A, LA57952-15A, LA57952-16A

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

4.5.2
4

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16524
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 10/05/19

Metal	BSP Result	Spikelot TTBALA29	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	51800	50000	103.6	80-120
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP16524: LA57952-10A, LA57952-11A, LA57952-12A, LA57952-13A, LA57952-14A, LA57952-15A, LA57952-16A

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

4.5.3
4

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA57952
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16550
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 10/08/19

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.6	2.4		
Antimony	0.60	.14	.33		
Arsenic	1.0	.28	.39	-0.058	<1.0
Barium	2.0	.01	1.1	-0.011	<2.0
Beryllium	0.40	.006	.04		
Boron	50	.051	2		
Cadmium	0.50	.015	.15	-0.0030	<0.50
Calcium	10	1.9	3.9		
Chromium	1.0	.034	.11	-0.012	<1.0
Cobalt	1.0	.031	.13		
Copper	1.0	.044	.31		
Iron	10	.21	3.8		
Lead	1.0	.11	.31	-0.035	<1.0
Lithium	1.0	.11	.56		
Magnesium	10	1.6	8.2		
Manganese	5.0	.016	.21		
Molybdenum	1.0	.015	.06		
Nickel	1.0	.065	.17		
Potassium	50	1.4	13		
Selenium	1.0	.23	.35	-0.13	<1.0
Silver	1.0	.041	.3	0.069	<1.0
Sodium	50	.52	11		
Strontium	1.0	.005	.19		
Thallium	0.50	.13	.37		
Tin	5.0	.071	.29		
Titanium	1.0	.028	.18		
Vanadium	1.0	.02	.13		
Zinc	5.0	.13	1.8	-0.0040	<5.0

Associated samples MP16550: LA57952-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

4.6.1
4

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16550
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 10/08/19

Metal	TD45671-1 Original MS	Spikelot ICPSPIKE1% Rec	QC Limits		
Aluminum	anr				
Antimony	anr				
Arsenic	10.6	235	238	94.5	75-125
Barium	219	507	238	121.2	75-125
Beryllium	anr				
Boron					
Cadmium	1.4	226	238	94.6	75-125
Calcium	anr				
Chromium	41.0	286	238	103.1	75-125
Cobalt					
Copper	anr				
Iron					
Lead	26.1	253	238	95.5	75-125
Lithium					
Magnesium	anr				
Manganese					
Molybdenum					
Nickel	anr				
Potassium					
Selenium	0.0	221	238	93.0	75-125
Silver	0.0	232	238	97.7	75-125
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Vanadium					
Zinc	538	794	238	107.8	75-125

Associated samples MP16550: LA57952-5

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

4.6.2
4

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16550
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 10/08/19

Metal	TD45671-1 Original MSD	Spikelot ICPSPIKE1% Rec	MSD RPD	QC Limit		
Aluminum	anr					
Antimony	anr					
Arsenic	10.6	229	238	91.9	2.6	20
Barium	219	480	238	109.9	5.5	20
Beryllium	anr					
Boron						
Cadmium	1.4	218	238	91.2	3.6	20
Calcium	anr					
Chromium	41.0	266	238	94.7	7.2	20
Cobalt						
Copper	anr					
Iron						
Lead	26.1	240	238	90.1	5.3	20
Lithium						
Magnesium	anr					
Manganese						
Molybdenum						
Nickel	anr					
Potassium						
Selenium	0.0	215	238	90.5	2.8	20
Silver	0.0	228	238	96.0	1.7	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc	538	720	238	76.6	9.8	20

Associated samples MP16550: LA57952-5

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

4.6.2
 4

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16550
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 10/08/19

Metal	LCS Result	Spikelot LCSMETAL11% Rec	QC Limits
Aluminum	anr		
Antimony	anr		
Arsenic	117	125	93.6 82-117
Barium	622	529	117.6 82-119
Beryllium	anr		
Boron			
Cadmium	46.1	37.7	122.3*(a) 82-118
Calcium	anr		
Chromium	54.6	58.3	93.7 82-118
Cobalt			
Copper	anr		
Iron			
Lead	93.9	111	84.6 82-117
Lithium			
Magnesium	anr		
Manganese			
Molybdenum			
Nickel	anr		
Potassium			
Selenium	245	251	97.6 79-122
Silver	26.5	27.2	97.4 79-121
Sodium			
Strontium			
Thallium			
Tin			
Titanium			
Vanadium			
Zinc	306	351	87.2 80-119

Associated samples MP16550: LA57952-5

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested
 (a) All reported results < RL

4.6.3
4

SERIAL DILUTION RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16550
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: ug/l

Prep Date: 10/08/19

Metal	TD45671-1 Original	SDL 5:25	%DIF	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	44.7	0.00	100.0(a)	0-10
Barium	923	601	34.9*(b)	0-10
Beryllium	anr			
Boron				
Cadmium	5.86	9.13	55.8 (a)	0-10
Calcium	anr			
Chromium	173	163	5.8	0-10
Cobalt				
Copper	anr			
Iron				
Lead	110	142	28.7 (a)	0-10
Lithium				
Magnesium	anr			
Manganese				
Molybdenum				
Nickel	anr			
Potassium				
Selenium	0.00	0.00	NC	0-10
Silver	0.00	16.9	NC	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	2270	2450	8.1	0-10

Associated samples MP16550: LA57952-5

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested
 (a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
 (b) Serial dilution indicates possible matrix interference.

POST DIGESTATE SPIKE SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16550
 Matrix Type: SOLID

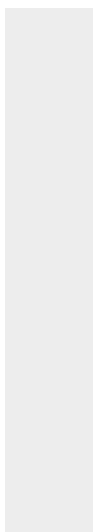
Methods: SW846 6010C
 Units: ug/l

Prep Date:

10/08/19

Metal	Sample ml	Final ml	TD45671-1 Raw	PS Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
-------	--------------	-------------	------------------	---------------	------------	-------------	----------------	---------------	-------	--------------

Antimony
 Boron
 Cobalt
 Iron
 Lithium
 Manganese
 Molybdenum
 Potassium
 Sodium
 Strontium
 Thallium
 Tin
 Titanium
 Vanadium



Associated samples MP16550: LA57952-5

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (**) Corr. sample result = Raw * (sample volume / final volume)
 (anr) Analyte not requested

4.6.5
 4

General Chemistry

5

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
 GENERAL CHEMISTRY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Oil And Grease	GP7279/GN15706	0.010	0.0	%	.01	0.093	93.0	80-120%

Associated Samples:
 Batch GP7279: LA57952-1B, LA57952-3B, LA57952-4B
 (*) Outside of QC limits

5.1
5

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: LA57952
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Moisture, Percent	GN15702	LA57952-16B	%	52.2	52.1	0.2	0-5%

Associated Samples:

Batch GN15702: LA57952-1B, LA57952-2B, LA57952-3B, LA57952-4B, LA57952-5B, LA57952-6B, LA57952-7B, LA57952-8B, LA57952-9B, LA57952-10B, LA57952-11B, LA57952-12B, LA57952-13B, LA57952-14B, LA57952-15B, LA57952-16B
(*) Outside of QC limits

5.2
5

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: LA57952
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Oil And Grease	GP7279/GN15706	LA57952-1B	%	8.4	.01	9.6	116.0	80-120%

Associated Samples:
Batch GP7279: LA57952-1B, LA57952-3B, LA57952-4B
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

5.3
5

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: LA57952
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Oil And Grease	GP7279/GN15706	LA57952-1B	%	8.4	.01	9.5	0.4	

Associated Samples:
Batch GP7279: LA57952-1B, LA57952-3B, LA57952-4B
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

5.4
5

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Hydro-Environmental Technology, Inc.

1009.A62 August Levert-Bayou Sorrel, LA

SGS Job Number: LA58075

Sampling Dates: 09/25/19 - 09/27/19



Report to:

**Hydro-Environmental Technology
P.O. BOX 60295
Lafayette, LA 70596
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ATTN: Stewart L Stover, Jr.

Total number of pages in report: 76



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Ron Benjamin
**Ron Benjamin
Lab Director**

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Certifications: LDEQ(2048), LDHH(LA150012), AR(14-045-04), AZ(AZ0805), FL(E87657), IL(200082), KY(#31), NC(487), SC(73004001), NJ(LA007), TX(T104704186-18-16), WV(257)

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Sample Summary

Hydro-Environmental Technology, Inc.

Job No: LA58075

1009.A62 August Levert-Bayou Sorrel, LA

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	

This report contains results reported as ND = Not detected. The following applies:
 Organics ND = Not detected above the RL

LA58075-1	09/25/19	13:30 RJL	09/30/19	AQ	Water	LT-1 (11-16')
LA58075-1F	09/25/19	13:30 RJL	09/30/19	AQ	Water Filtered	LT-1 (11-16')
LA58075-2	09/26/19	10:35 RJL	09/30/19	AQ	Water	LT-2 (11-16')
LA58075-2F	09/26/19	10:35 RJL	09/30/19	AQ	Water Filtered	LT-2 (11-16')
LA58075-3	09/27/19	09:30 RJL	09/30/19	AQ	Water	LT-3 (11-16')
LA58075-3F	09/27/19	09:30 RJL	09/30/19	AQ	Water Filtered	LT-3 (11-16')
LA58075-4	09/25/19	06:00 RJL	09/30/19	AQ	Trip Blank Water	TRIP BLANK
LA58075-5	09/26/19	05:30 RJL	09/30/19	AQ	Trip Blank Water	TRIP BLANK
LA58075-6	09/27/19	07:00 RJL	09/30/19	AQ	Trip Blank Water	TRIP BLANK
LA58075-7	09/25/19	12:30 RJL	09/30/19	AQ	Field Blank Water	FIELD BLANK
LA58075-8	09/26/19	08:00 RJL	09/30/19	AQ	Field Blank Water	FIELD BLANK
LA58075-9	09/27/19	09:00 RJL	09/30/19	AQ	Field Blank Water	FIELD BLANK

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: LT-1 (11-16')	
Lab Sample ID: LA58075-1	Date Sampled: 09/25/19
Matrix: AQ - Water	Date Received: 09/30/19
Method: SW846 8260B	Percent Solids: n/a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2X0084456.D	1	10/01/19 03:42	CP	n/a	n/a	V2X3794
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	0.0050	mg/l	
108-88-3	Toluene	ND	0.0050	mg/l	
100-41-4	Ethylbenzene	ND	0.0050	mg/l	
1330-20-7	Xylene (total)	ND	0.0050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	109%		81-120%
2037-26-5	Toluene-D8	99%		93-105%
460-00-4	4-Bromofluorobenzene	98%		89-107%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: LT-1 (11-16')	
Lab Sample ID: LA58075-1	Date Sampled: 09/25/19
Matrix: AQ - Water	Date Received: 09/30/19
Method: MADEP VPH REV 1.1	Percent Solids: n/a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LC052217.D	1	10/05/19 17:07	NN	n/a	n/a	GLC2378
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Volatile Petroleum Hydrocarbons (VPH)

CAS No.	Compound	Result	RL	Units	Q
	Aliphatics C6-C8 (Unadj.)	ND	0.15	mg/l	
	Aliphatics > C8-C10 (Unadj.)	ND	0.15	mg/l	
	Aromatics > C8-C10 (Unadj.)	ND	0.15	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
615-59-8	2,5-Dibromotoluene	98% ^a		70-130%
615-59-8	2,5-Dibromotoluene	97% ^b		70-130%

- (a) Recovery from Aliphatics fraction.
- (b) Recovery from Aromatics fraction.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: LT-1 (11-16')	
Lab Sample ID: LA58075-1	Date Sampled: 09/25/19
Matrix: AQ - Water	Date Received: 09/30/19
Method: MADEP EPH REV 1.1 SW846 3511	Percent Solids: n/a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X0011984.D	1	10/03/19 17:15	LS	10/01/19 15:30	OP15273	GLB2081
Run #2	Y0011984.D	1	10/03/19 17:16	LS	10/01/19 15:30	OP15273	GLB2082

Run #	Initial Volume	Final Volume
Run #1	55.8 ml	4.0 ml
Run #2	55.8 ml	4.0 ml

Louisiana EPH Ranges

CAS No.	Compound	Result	RL	Units	Q
	Aliphatics > C10-C12 (Unadj.)	ND ^a	0.13	mg/l	
	Aliphatics > C12-C16 (Unadj.)	ND ^a	0.13	mg/l	
	Aliphatics > C16-C35 (Unadj.)	ND ^a	0.13	mg/l	
	Aromatics > C10-C12 (Unadj.)	ND	0.13	mg/l	
	Aromatics > C12-C16 (Unadj.)	ND	0.13	mg/l	
	Aromatics > C16-C21 (Unadj.)	ND	0.13	mg/l	
	Aromatics > C21-C35 (Unadj.)	ND	0.13	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3386-33-2	1-Chlorooctadecane		75%	40-140%
84-15-1	o-Terphenyl	77%		40-140%
321-60-8	2-Fluorobiphenyl	70%		40-140%

(a) Result is from Run# 2

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID:	LT-1 (11-16')	Date Sampled:	09/25/19
Lab Sample ID:	LA58075-1	Date Received:	09/30/19
Matrix:	AQ - Water	Percent Solids:	n/a
Project:	1009.A62 August Levert-Bayou Sorrel, LA		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 0.010	0.010	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Barium	5.02	0.010	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Cadmium	< 0.0050	0.0050	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Calcium ^a	2080	5.0	mg/l	50	10/01/19	10/03/19	RT SW846 6020A ³	SW846 3010A ⁵
Chromium	< 0.010	0.010	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Iron	126	1.0	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Lead	< 0.010	0.010	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Magnesium	745	1.0	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Manganese	10.5	0.020	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Mercury	< 0.00020	0.00020	mg/l	1	10/01/19	10/01/19	SA SW846 7470A ¹	SW846 7470A ⁴
Potassium	6.13	1.0	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Selenium	< 0.050	0.050	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Silver	< 0.010	0.010	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Sodium ^a	3390	5.0	mg/l	50	10/01/19	10/03/19	RT SW846 6020A ³	SW846 3010A ⁵
Strontium ^a	17.0	0.10	mg/l	50	10/01/19	10/03/19	RT SW846 6020A ³	SW846 3010A ⁵
Zinc ^b	< 0.25	0.25	mg/l	50	10/01/19	10/03/19	RT SW846 6020A ³	SW846 3010A ⁵

- (1) Instrument QC Batch: MA17079
- (2) Instrument QC Batch: MA17089
- (3) Instrument QC Batch: MA17101
- (4) Prep QC Batch: MP16465
- (5) Prep QC Batch: MP16482

- (a) Elevated reporting limit due to sample result over Linear Dynamic Range.
- (b) Elevated reporting limit due to dilution required for matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID: LT-1 (11-16')	Date Sampled: 09/25/19
Lab Sample ID: LA58075-1	Date Received: 09/30/19
Matrix: AQ - Water	Percent Solids: n/a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate ^a	739	5.0	mg/l	1	10/02/19 11:45	ATX	SM18 2320B
Alkalinity, Carbonate ^a	< 5.0	5.0	mg/l	1	10/02/19 11:45	ATX	SM18 2320B
Alkalinity, Total as CaCO ₃ ^a	740	5.0	mg/l	1	10/02/19 11:45	ATX	SM 2320B-2011
Bromide ^a	32.0	6.0	mg/l	10	10/02/19 14:58	ATX	SW846 9056A
Chloride ^a	12400	700	mg/l	1000	10/02/19 15:15	ATX	SW846 9056A
Solids, Total Dissolved ^a	24900	200	mg/l	1	10/01/19	ATX	SM 2540C-2011
Specific Conductivity ^b	25000	1.0	umhos/cm	1	10/02/19 10:00	ATX	EPA 120.1
Sulfate ^a	204	10	mg/l	20	10/02/19 14:41	ATX	SW846 9056A

(a) Analysis performed at SGS Houston, TX.

(b) Conductivity results corrected to 25 degrees Celsius. Analysis performed at SGS Houston, TX.

RL = Reporting Limit

Report of Analysis

Client Sample ID: LT-1 (11-16')	Date Sampled: 09/25/19
Lab Sample ID: LA58075-1F	Date Received: 09/30/19
Matrix: AQ - Water Filtered	Percent Solids: n/a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 0.010	0.010	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Barium	4.98	0.010	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Cadmium	< 0.0050	0.0050	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Calcium ^a	1500	5.0	mg/l	50	10/01/19	10/04/19	RT SW846 6020A ³	SW846 3010A ⁵
Chromium	< 0.010	0.010	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Iron	120	1.0	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Lead	< 0.010	0.010	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Magnesium	765	1.0	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Manganese	10.0	0.020	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Mercury	< 0.00020	0.00020	mg/l	1	10/01/19	10/01/19	SA SW846 7470A ¹	SW846 7470A ⁴
Potassium	6.03	1.0	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Selenium	< 0.050	0.050	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Silver	< 0.010	0.010	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Sodium ^a	2590	5.0	mg/l	50	10/01/19	10/04/19	RT SW846 6020A ³	SW846 3010A ⁵
Strontium ^a	12.9	0.10	mg/l	50	10/01/19	10/04/19	RT SW846 6020A ³	SW846 3010A ⁵
Zinc ^b	< 0.25	0.25	mg/l	50	10/01/19	10/04/19	RT SW846 6020A ³	SW846 3010A ⁵

- (1) Instrument QC Batch: MA17079
- (2) Instrument QC Batch: MA17089
- (3) Instrument QC Batch: MA17101
- (4) Prep QC Batch: MP16465
- (5) Prep QC Batch: MP16482

- (a) Elevated reporting limit due to sample result over Linear Dynamic Range.
- (b) Elevated reporting limit due to dilution required for matrix interference.

RL = Reporting Limit

Report of Analysis

Client Sample ID: LT-2 (11-16')	
Lab Sample ID: LA58075-2	Date Sampled: 09/26/19
Matrix: AQ - Water	Date Received: 09/30/19
Method: SW846 8260B	Percent Solids: n/a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2X0084458.D	1	10/01/19 04:09	CP	n/a	n/a	V2X3794
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	0.0050	mg/l	
108-88-3	Toluene	ND	0.0050	mg/l	
100-41-4	Ethylbenzene	ND	0.0050	mg/l	
1330-20-7	Xylene (total)	ND	0.0050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	111%		81-120%
2037-26-5	Toluene-D8	98%		93-105%
460-00-4	4-Bromofluorobenzene	98%		89-107%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: LT-2 (11-16')	
Lab Sample ID: LA58075-2	Date Sampled: 09/26/19
Matrix: AQ - Water	Date Received: 09/30/19
Method: MADEP VPH REV 1.1	Percent Solids: n/a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LC052227.D	1	10/05/19 22:10	NN	n/a	n/a	GLC2378
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Volatile Petroleum Hydrocarbons (VPH)

CAS No.	Compound	Result	RL	Units	Q
	Aliphatics C6-C8 (Unadj.)	ND	0.15	mg/l	
	Aliphatics > C8-C10 (Unadj.)	ND	0.15	mg/l	
	Aromatics > C8-C10 (Unadj.)	ND	0.15	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
615-59-8	2,5-Dibromotoluene	100% ^a		70-130%
615-59-8	2,5-Dibromotoluene	101% ^b		70-130%

- (a) Recovery from Aliphatics fraction.
- (b) Recovery from Aromatics fraction.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: LT-2 (11-16')	
Lab Sample ID: LA58075-2	Date Sampled: 09/26/19
Matrix: AQ - Water	Date Received: 09/30/19
Method: MADEP EPH REV 1.1 SW846 3511	Percent Solids: n/a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X0011985.D	1	10/03/19 17:38	LS	10/01/19 15:30	OP15273	GLB2081
Run #2	Y0011985.D	1	10/03/19 17:39	LS	10/01/19 15:30	OP15273	GLB2082

Run #	Initial Volume	Final Volume
Run #1	54.0 ml	4.0 ml
Run #2	54.0 ml	4.0 ml

Louisiana EPH Ranges

CAS No.	Compound	Result	RL	Units	Q
	Aliphatics > C10-C12 (Unadj.)	ND ^a	0.14	mg/l	
	Aliphatics > C12-C16 (Unadj.)	ND ^a	0.14	mg/l	
	Aliphatics > C16-C35 (Unadj.)	ND ^a	0.14	mg/l	
	Aromatics > C10-C12 (Unadj.)	ND	0.14	mg/l	
	Aromatics > C12-C16 (Unadj.)	ND	0.14	mg/l	
	Aromatics > C16-C21 (Unadj.)	ND	0.14	mg/l	
	Aromatics > C21-C35 (Unadj.)	ND	0.14	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3386-33-2	1-Chlorooctadecane		74%	40-140%
84-15-1	o-Terphenyl	69%		40-140%
321-60-8	2-Fluorobiphenyl	61%		40-140%

(a) Result is from Run# 2

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: LT-2 (11-16')	Date Sampled: 09/26/19
Lab Sample ID: LA58075-2	Date Received: 09/30/19
Matrix: AQ - Water	Percent Solids: n/a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	0.0196	0.010	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Barium	3.14	0.010	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Cadmium	< 0.0050	0.0050	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Calcium	822	1.0	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Chromium	0.0102	0.010	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Iron	75.0	1.0	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Lead	< 0.010	0.010	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Magnesium	300	1.0	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Manganese	6.09	0.020	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Mercury	< 0.00020	0.00020	mg/l	1	10/01/19	10/01/19	SA SW846 7470A ¹	SW846 7470A ⁴
Potassium	4.59	1.0	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Selenium	< 0.050	0.050	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Silver	< 0.010	0.010	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Sodium	707	1.0	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Strontium	5.76	0.020	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Zinc	< 0.050	0.050	mg/l	10	10/01/19	10/04/19	RT SW846 6020A ³	SW846 3010A ⁵

- (1) Instrument QC Batch: MA17079
- (2) Instrument QC Batch: MA17089
- (3) Instrument QC Batch: MA17101
- (4) Prep QC Batch: MP16465
- (5) Prep QC Batch: MP16482

RL = Reporting Limit

Report of Analysis

Client Sample ID: LT-2 (11-16')	Date Sampled: 09/26/19
Lab Sample ID: LA58075-2	Date Received: 09/30/19
Matrix: AQ - Water	Percent Solids: n/a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate ^a	530	5.0	mg/l	1	10/02/19 11:45	ATX	SM18 2320B
Alkalinity, Carbonate ^a	< 5.0	5.0	mg/l	1	10/02/19 11:45	ATX	SM18 2320B
Alkalinity, Total as CaCO ₃ ^a	530	5.0	mg/l	1	10/02/19 11:45	ATX	SM 2320B-2011
Bromide ^a	< 0.60	0.60	mg/l	1	10/02/19 11:01	ATX	SW846 9056A
Chloride ^a	3640	350	mg/l	500	10/02/19 15:32	ATX	SW846 9056A
Solids, Total Dissolved ^a	8800	200	mg/l	1	10/02/19 17:45	ATX	SM 2540C-2011
Specific Conductivity ^b	9620	1.0	umhos/cm	1	10/02/19 10:00	ATX	EPA 120.1
Sulfate ^a	1.5	0.50	mg/l	1	10/02/19 11:01	ATX	SW846 9056A

(a) Analysis performed at SGS Houston, TX.

(b) Conductivity results corrected to 25 degrees Celsius. Analysis performed at SGS Houston, TX.

RL = Reporting Limit

Report of Analysis

Client Sample ID: LT-2 (11-16')	Date Sampled: 09/26/19
Lab Sample ID: LA58075-2F	Date Received: 09/30/19
Matrix: AQ - Water Filtered	Percent Solids: n/a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	0.0201	0.010	mg/l	10	10/01/19	10/02/19 RT	SW846 6020A ²	SW846 3010A ⁵
Barium	3.25	0.010	mg/l	10	10/01/19	10/02/19 RT	SW846 6020A ²	SW846 3010A ⁵
Cadmium	< 0.0050	0.0050	mg/l	10	10/01/19	10/02/19 RT	SW846 6020A ²	SW846 3010A ⁵
Calcium	879	1.0	mg/l	10	10/01/19	10/02/19 RT	SW846 6020A ²	SW846 3010A ⁵
Chromium	< 0.010	0.010	mg/l	10	10/01/19	10/02/19 RT	SW846 6020A ²	SW846 3010A ⁵
Iron	74.9	1.0	mg/l	10	10/01/19	10/02/19 RT	SW846 6020A ²	SW846 3010A ⁵
Lead	< 0.010	0.010	mg/l	10	10/01/19	10/02/19 RT	SW846 6020A ²	SW846 3010A ⁵
Magnesium	341	1.0	mg/l	10	10/01/19	10/02/19 RT	SW846 6020A ²	SW846 3010A ⁵
Manganese	6.57	0.020	mg/l	10	10/01/19	10/02/19 RT	SW846 6020A ²	SW846 3010A ⁵
Mercury	< 0.00020	0.00020	mg/l	1	10/01/19	10/01/19 SA	SW846 7470A ¹	SW846 7470A ⁴
Potassium	3.25	1.0	mg/l	10	10/01/19	10/02/19 RT	SW846 6020A ²	SW846 3010A ⁵
Selenium	< 0.050	0.050	mg/l	10	10/01/19	10/02/19 RT	SW846 6020A ²	SW846 3010A ⁵
Silver	< 0.010	0.010	mg/l	10	10/01/19	10/02/19 RT	SW846 6020A ²	SW846 3010A ⁵
Sodium	800	1.0	mg/l	10	10/01/19	10/02/19 RT	SW846 6020A ²	SW846 3010A ⁵
Strontium	6.35	0.020	mg/l	10	10/01/19	10/02/19 RT	SW846 6020A ²	SW846 3010A ⁵
Zinc	< 0.050	0.050	mg/l	10	10/01/19	10/04/19 RT	SW846 6020A ³	SW846 3010A ⁵

- (1) Instrument QC Batch: MA17079
- (2) Instrument QC Batch: MA17089
- (3) Instrument QC Batch: MA17101
- (4) Prep QC Batch: MP16465
- (5) Prep QC Batch: MP16482

RL = Reporting Limit

Report of Analysis

Client Sample ID: LT-3 (11-16')	
Lab Sample ID: LA58075-3	Date Sampled: 09/27/19
Matrix: AQ - Water	Date Received: 09/30/19
Method: SW846 8260B	Percent Solids: n/a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2X0084460.D	1	10/01/19 04:35	CP	n/a	n/a	V2X3794
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	0.0050	mg/l	
108-88-3	Toluene	ND	0.0050	mg/l	
100-41-4	Ethylbenzene	ND	0.0050	mg/l	
1330-20-7	Xylene (total)	ND	0.0050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	114%		81-120%
2037-26-5	Toluene-D8	99%		93-105%
460-00-4	4-Bromofluorobenzene	98%		89-107%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: LT-3 (11-16')	
Lab Sample ID: LA58075-3	Date Sampled: 09/27/19
Matrix: AQ - Water	Date Received: 09/30/19
Method: MADEP VPH REV 1.1	Percent Solids: n/a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LC052226.D	1	10/05/19 21:40	NN	n/a	n/a	GLC2378
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Volatile Petroleum Hydrocarbons (VPH)

CAS No.	Compound	Result	RL	Units	Q
	Aliphatics C6-C8 (Unadj.)	ND	0.15	mg/l	
	Aliphatics > C8-C10 (Unadj.)	ND	0.15	mg/l	
	Aromatics > C8-C10 (Unadj.)	ND	0.15	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
615-59-8	2,5-Dibromotoluene	96% ^a		70-130%
615-59-8	2,5-Dibromotoluene	95% ^b		70-130%

- (a) Recovery from Aliphatics fraction.
- (b) Recovery from Aromatics fraction.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: LT-3 (11-16')	
Lab Sample ID: LA58075-3	Date Sampled: 09/27/19
Matrix: AQ - Water	Date Received: 09/30/19
Method: MADEP EPH REV 1.1 SW846 3511	Percent Solids: n/a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X0011986.D	1	10/03/19 18:01	LS	10/01/19 15:30	OP15273	GLB2081
Run #2	Y0011986.D	1	10/03/19 18:02	LS	10/01/19 15:30	OP15273	GLB2082

Run #	Initial Volume	Final Volume
Run #1	54.7 ml	4.0 ml
Run #2	54.7 ml	4.0 ml

Louisiana EPH Ranges

CAS No.	Compound	Result	RL	Units	Q
	Aliphatics > C10-C12 (Unadj.)	ND ^a	0.14	mg/l	
	Aliphatics > C12-C16 (Unadj.)	ND ^a	0.14	mg/l	
	Aliphatics > C16-C35 (Unadj.)	ND ^a	0.14	mg/l	
	Aromatics > C10-C12 (Unadj.)	ND	0.14	mg/l	
	Aromatics > C12-C16 (Unadj.)	ND	0.14	mg/l	
	Aromatics > C16-C21 (Unadj.)	ND	0.14	mg/l	
	Aromatics > C21-C35 (Unadj.)	ND	0.14	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3386-33-2	1-Chlorooctadecane		73%	40-140%
84-15-1	o-Terphenyl	76%		40-140%
321-60-8	2-Fluorobiphenyl	68%		40-140%

(a) Result is from Run# 2

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: LT-3 (11-16')	Date Sampled: 09/27/19
Lab Sample ID: LA58075-3	Date Received: 09/30/19
Matrix: AQ - Water	Percent Solids: n/a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 0.010	0.010	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Barium	1.40	0.010	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Cadmium	< 0.0050	0.0050	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Calcium	298	1.0	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Chromium	0.274	0.010	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Iron	12.0	1.0	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Lead	0.0195	0.010	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Magnesium	98.0	1.0	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Manganese	2.21	0.020	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Mercury	< 0.00020	0.00020	mg/l	1	10/01/19	10/01/19	SA SW846 7470A ¹	SW846 7470A ⁴
Potassium	2.05	1.0	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Selenium	< 0.050	0.050	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Silver	< 0.010	0.010	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Sodium	580	1.0	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Strontium	2.10	0.020	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Zinc	< 0.050	0.050	mg/l	10	10/01/19	10/04/19	RT SW846 6020A ³	SW846 3010A ⁵

- (1) Instrument QC Batch: MA17079
- (2) Instrument QC Batch: MA17089
- (3) Instrument QC Batch: MA17101
- (4) Prep QC Batch: MP16465
- (5) Prep QC Batch: MP16482

RL = Reporting Limit

Report of Analysis

Client Sample ID: LT-3 (11-16')	Date Sampled: 09/27/19
Lab Sample ID: LA58075-3	Date Received: 09/30/19
Matrix: AQ - Water	Percent Solids: n/a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate ^a	499	5.0	mg/l	1	10/02/19 11:45	ATX	SM18 2320B
Alkalinity, Carbonate ^a	< 5.0	5.0	mg/l	1	10/02/19 11:45	ATX	SM18 2320B
Alkalinity, Total as CaCO ₃ ^a	500	5.0	mg/l	1	10/02/19 11:45	ATX	SM 2320B-2011
Bromide ^a	3.1	0.60	mg/l	1	10/02/19 11:18	ATX	SW846 9056A
Chloride ^a	2600	140	mg/l	200	10/02/19 13:50	ATX	SW846 9056A
Solids, Total Dissolved ^a	3720	40	mg/l	1	10/01/19	ATX	SM 2540C-2011
Specific Conductivity ^b	5100	1.0	umhos/cm	1	10/02/19 10:00	ATX	EPA 120.1
Sulfate ^a	5.9	0.50	mg/l	1	10/02/19 11:18	ATX	SW846 9056A

(a) Analysis performed at SGS Houston, TX.

(b) Conductivity results corrected to 25 degrees Celsius. Analysis performed at SGS Houston, TX.

RL = Reporting Limit

Report of Analysis

Client Sample ID: LT-3 (11-16')	Date Sampled: 09/27/19
Lab Sample ID: LA58075-3F	Date Received: 09/30/19
Matrix: AQ - Water Filtered	Percent Solids: n/a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 0.010	0.010	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Barium	1.38	0.010	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Cadmium	< 0.0050	0.0050	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Calcium	307	1.0	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Chromium	< 0.010	0.010	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Iron	6.63	1.0	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Lead	< 0.010	0.010	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Magnesium	110	1.0	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Manganese	2.30	0.020	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Mercury	< 0.00020	0.00020	mg/l	1	10/01/19	10/01/19	SA SW846 7470A ¹	SW846 7470A ⁴
Potassium	1.17	1.0	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Selenium	< 0.050	0.050	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Silver	< 0.010	0.010	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Sodium	641	1.0	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Strontium	2.26	0.020	mg/l	10	10/01/19	10/02/19	RT SW846 6020A ²	SW846 3010A ⁵
Zinc	< 0.050	0.050	mg/l	10	10/01/19	10/04/19	RT SW846 6020A ³	SW846 3010A ⁵

- (1) Instrument QC Batch: MA17079
- (2) Instrument QC Batch: MA17089
- (3) Instrument QC Batch: MA17101
- (4) Prep QC Batch: MP16465
- (5) Prep QC Batch: MP16482

RL = Reporting Limit

Report of Analysis

Client Sample ID: TRIP BLANK	
Lab Sample ID: LA58075-4	Date Sampled: 09/25/19
Matrix: AQ - Trip Blank Water	Date Received: 09/30/19
Method: SW846 8260B	Percent Solids: n/a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2X0084450.D	1	10/01/19 02:22	CP	n/a	n/a	V2X3794
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	0.0050	mg/l	
108-88-3	Toluene	ND	0.0050	mg/l	
100-41-4	Ethylbenzene	ND	0.0050	mg/l	
1330-20-7	Xylene (total)	ND	0.0050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	107%		81-120%
2037-26-5	Toluene-D8	99%		93-105%
460-00-4	4-Bromofluorobenzene	98%		89-107%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: TRIP BLANK	
Lab Sample ID: LA58075-4	Date Sampled: 09/25/19
Matrix: AQ - Trip Blank Water	Date Received: 09/30/19
Method: MADEP VPH REV 1.1	Percent Solids: n/a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LC052225.D	1	10/05/19 21:10	NN	n/a	n/a	GLC2378
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Volatile Petroleum Hydrocarbons (VPH)

CAS No.	Compound	Result	RL	Units	Q
	Aliphatics C6-C8 (Unadj.)	ND	0.15	mg/l	
	Aliphatics > C8-C10 (Unadj.)	ND	0.15	mg/l	
	Aromatics > C8-C10 (Unadj.)	ND	0.15	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
615-59-8	2,5-Dibromotoluene	90% ^a		70-130%
615-59-8	2,5-Dibromotoluene	88% ^b		70-130%

- (a) Recovery from Aliphatics fraction.
- (b) Recovery from Aromatics fraction.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TRIP BLANK	
Lab Sample ID: LA58075-5	Date Sampled: 09/26/19
Matrix: AQ - Trip Blank Water	Date Received: 09/30/19
Method: SW846 8260B	Percent Solids: n/a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2X0084452.D	1	10/01/19 02:48	CP	n/a	n/a	V2X3794
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	0.0050	mg/l	
108-88-3	Toluene	ND	0.0050	mg/l	
100-41-4	Ethylbenzene	ND	0.0050	mg/l	
1330-20-7	Xylene (total)	ND	0.0050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	109%		81-120%
2037-26-5	Toluene-D8	98%		93-105%
460-00-4	4-Bromofluorobenzene	96%		89-107%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK	Date Sampled:	09/26/19
Lab Sample ID:	LA58075-5	Date Received:	09/30/19
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	MADEP VPH REV 1.1		
Project:	1009.A62 August Levert-Bayou Sorrel, LA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LC052224.D	1	10/05/19 20:39	NN	n/a	n/a	GLC2378
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Volatile Petroleum Hydrocarbons (VPH)

CAS No.	Compound	Result	RL	Units	Q
	Aliphatics C6-C8 (Unadj.)	ND	0.15	mg/l	
	Aliphatics > C8-C10 (Unadj.)	ND	0.15	mg/l	
	Aromatics > C8-C10 (Unadj.)	ND	0.15	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
615-59-8	2,5-Dibromotoluene	92% ^a		70-130%
615-59-8	2,5-Dibromotoluene	94% ^b		70-130%

- (a) Recovery from Aliphatics fraction.
- (b) Recovery from Aromatics fraction.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: TRIP BLANK	
Lab Sample ID: LA58075-6	Date Sampled: 09/27/19
Matrix: AQ - Trip Blank Water	Date Received: 09/30/19
Method: SW846 8260B	Percent Solids: n/a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2X0084454.D	1	10/01/19 03:15	CP	n/a	n/a	V2X3794
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	0.0050	mg/l	
108-88-3	Toluene	ND	0.0050	mg/l	
100-41-4	Ethylbenzene	ND	0.0050	mg/l	
1330-20-7	Xylene (total)	ND	0.0050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	109%		81-120%
2037-26-5	Toluene-D8	99%		93-105%
460-00-4	4-Bromofluorobenzene	97%		89-107%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TRIP BLANK	Date Sampled:	09/27/19
Lab Sample ID:	LA58075-6	Date Received:	09/30/19
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	MADEP VPH REV 1.1		
Project:	1009.A62 August Levert-Bayou Sorrel, LA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LC052223.D	1	10/05/19 20:09	NN	n/a	n/a	GLC2378
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Volatile Petroleum Hydrocarbons (VPH)

CAS No.	Compound	Result	RL	Units	Q
	Aliphatics C6-C8 (Unadj.)	ND	0.15	mg/l	
	Aliphatics > C8-C10 (Unadj.)	ND	0.15	mg/l	
	Aromatics > C8-C10 (Unadj.)	ND	0.15	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
615-59-8	2,5-Dibromotoluene	88% ^a		70-130%
615-59-8	2,5-Dibromotoluene	85% ^b		70-130%

- (a) Recovery from Aliphatics fraction.
- (b) Recovery from Aromatics fraction.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	FIELD BLANK	Date Sampled:	09/25/19
Lab Sample ID:	LA58075-7	Date Received:	09/30/19
Matrix:	AQ - Field Blank Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	1009.A62 August Levert-Bayou Sorrel, LA		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2X0084462.D	1	10/01/19 05:02	CP	n/a	n/a	V2X3794
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	0.0050	mg/l	
108-88-3	Toluene	ND	0.0050	mg/l	
100-41-4	Ethylbenzene	ND	0.0050	mg/l	
1330-20-7	Xylene (total)	ND	0.0050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	113%		81-120%
2037-26-5	Toluene-D8	99%		93-105%
460-00-4	4-Bromofluorobenzene	96%		89-107%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: FIELD BLANK	
Lab Sample ID: LA58075-7	Date Sampled: 09/25/19
Matrix: AQ - Field Blank Water	Date Received: 09/30/19
Method: MADEP VPH REV 1.1	Percent Solids: n/a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LC052222.D	1	10/05/19 19:39	NN	n/a	n/a	GLC2378
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Volatile Petroleum Hydrocarbons (VPH)

CAS No.	Compound	Result	RL	Units	Q
	Aliphatics C6-C8 (Unadj.)	ND	0.15	mg/l	
	Aliphatics > C8-C10 (Unadj.)	ND	0.15	mg/l	
	Aromatics > C8-C10 (Unadj.)	ND	0.15	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
615-59-8	2,5-Dibromotoluene	87% ^a		70-130%
615-59-8	2,5-Dibromotoluene	85% ^b		70-130%

- (a) Recovery from Aliphatics fraction.
- (b) Recovery from Aromatics fraction.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID: FIELD BLANK	Date Sampled: 09/26/19
Lab Sample ID: LA58075-8	Date Received: 09/30/19
Matrix: AQ - Field Blank Water	Percent Solids: n/a
Method: SW846 8260B	
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2X0084446.D	1	10/01/19 01:28	CP	n/a	n/a	V2X3794
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	0.0050	mg/l	
108-88-3	Toluene	ND	0.0050	mg/l	
100-41-4	Ethylbenzene	ND	0.0050	mg/l	
1330-20-7	Xylene (total)	ND	0.0050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	105%		81-120%
2037-26-5	Toluene-D8	99%		93-105%
460-00-4	4-Bromofluorobenzene	96%		89-107%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	FIELD BLANK	Date Sampled:	09/26/19
Lab Sample ID:	LA58075-8	Date Received:	09/30/19
Matrix:	AQ - Field Blank Water	Percent Solids:	n/a
Method:	MADEP VPH REV 1.1		
Project:	1009.A62 August Levert-Bayou Sorrel, LA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LC052221.D	1	10/05/19 19:08	NN	n/a	n/a	GLC2378
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Volatile Petroleum Hydrocarbons (VPH)

CAS No.	Compound	Result	RL	Units	Q
	Aliphatics C6-C8 (Unadj.)	ND	0.15	mg/l	
	Aliphatics > C8-C10 (Unadj.)	ND	0.15	mg/l	
	Aromatics > C8-C10 (Unadj.)	ND	0.15	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
615-59-8	2,5-Dibromotoluene	96% ^a		70-130%
615-59-8	2,5-Dibromotoluene	94% ^b		70-130%

- (a) Recovery from Aliphatics fraction.
- (b) Recovery from Aromatics fraction.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: FIELD BLANK	
Lab Sample ID: LA58075-9	Date Sampled: 09/27/19
Matrix: AQ - Field Blank Water	Date Received: 09/30/19
Method: SW846 8260B	Percent Solids: n/a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2X0084448.D	1	10/01/19 01:55	CP	n/a	n/a	V2X3794
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	0.0050	mg/l	
108-88-3	Toluene	ND	0.0050	mg/l	
100-41-4	Ethylbenzene	ND	0.0050	mg/l	
1330-20-7	Xylene (total)	ND	0.0050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	106%		81-120%
2037-26-5	Toluene-D8	97%		93-105%
460-00-4	4-Bromofluorobenzene	98%		89-107%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: FIELD BLANK	
Lab Sample ID: LA58075-9	Date Sampled: 09/27/19
Matrix: AQ - Field Blank Water	Date Received: 09/30/19
Method: MADEP VPH REV 1.1	Percent Solids: n/a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LC052220.D	1	10/05/19 18:38	NN	n/a	n/a	GLC2378
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Volatile Petroleum Hydrocarbons (VPH)

CAS No.	Compound	Result	RL	Units	Q
	Aliphatics C6-C8 (Unadj.)	ND	0.15	mg/l	
	Aliphatics > C8-C10 (Unadj.)	ND	0.15	mg/l	
	Aromatics > C8-C10 (Unadj.)	ND	0.15	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
615-59-8	2,5-Dibromotoluene	96% ^a		70-130%
615-59-8	2,5-Dibromotoluene	94% ^b		70-130%

- (a) Recovery from Aliphatics fraction.
- (b) Recovery from Aromatics fraction.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody



HYDRO-ENVIRONMENTAL TECHNOLOGY, INC.
 Environmental Consultants
 P.O. Box 60295
 Lafayette, LA 70596-0295
 Phone (337) 261-1963 FAX (337) 261-1953

LA 58075

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert Laboratory: SGS Lafayette
 Project Number: 1009.A62 Collected By: RJL
 Project Location: Bayou Sorrel, LA Company: Hydro-Environmental Technology, Inc.
 Date: 9/25/2019

Sample I.D.	Type	Date/Time Sampled	Containers	Analysis Requested/Method	Comments
LT-1 (11-16)	AQ	9/25/2019 13:30	(6) 40mL glass HCl (3) 60mL amber HCl (2) 4oz amber (2) 250mL plastic with HNO3 (1) 500mL plastic	BTEX, EPH, VPH, Total Metals*, Dissolved Metals*, Chlorides, TDS, Specific Conductance, Cations*, Anions* HOLD: PAH	4°C Field filtered: Dissolved metals
LT-2 (11-16)	AQ	9/26/2019 10:35	(6) 40mL glass HCl (3) 60mL amber HCl (2) 250mL plastic with HNO3 (1) 500mL plastic	BTEX, EPH, VPH, Total Metals*, Dissolved Metals*, Chlorides, TDS, Specific Conductance, Cations*, Anions* HOLD: PAH	4°C Field filtered: Dissolved metals
LT-3 (11-16)	AQ	9/27/2019 9:30	(6) 40mL glass HCl (3) 60mL amber HCl (2) 4oz amber (2) 250mL plastic with HNO3 (1) 500mL plastic	BTEX, EPH, VPH, Total Metals*, Dissolved Metals*, Chlorides, TDS, Specific Conductance, Cations*, Anions* HOLD: PAH	4°C Field filtered: Dissolved metals
Trip Blank	AQ	9/25/2019 6:00	(6) 40mL glass HCl	BTEX, VPH	4°C
Trip Blank	AQ	9/26/2019 5:30	(6) 40mL glass HCl	BTEX, VPH	4°C

Metals*: arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, strontium, zinc.
 Cations: calcium, iron, magnesium, manganese, potassium, sodium
 Anions: bromide, sulfate, carbonate alkalinity, bicarbonate alkalinity
 Hold for Additional Parameters

Relinquished By: RJL Received By: Mark Reed
 Date/Time: 9-30-19 Date/Time: 9-30-19 13:55
 Relinquished By: _____ Date/Time: _____
 Date/Time: _____ Date/Time: _____
 Analysis Due: Verbal: _____
 Written: _____

① Jay SWEF DL

Notes: Temp: 3.4 4.1 11.3 19.1 11.3 19.1 11.3 19.1

Client d/6 YNW-FWD WS-6 DZ RL-37 BZ



HYDRO-ENVIRONMENTAL TECHNOLOGY, INC.
 Environmental Consultants
 P.O. Box 60295
 Lafayette, LA 70596-0295
 Phone (337) 261-1963 FAX (337) 261-1953

LA 58075

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: _____ Laboratory: SGS Lafayette
 Project Number: 1009.A62 Collected By: RJL
 Project Location: Bayou Sorrel, LA Company: Hydro-Environmental Technology, Inc.
 Date: 9/25/2019

Sample I.D.	Type	Date/Time Sampled	Containers	Analysis Requested/Method	Comments
Trip Blank	AQ	9/27/2019 7:00	(6) 40mL glass HCl	BTEX, VPH	4°C
Field Blank	AQ	9/25/2019 12:30	(6) 40mL glass HCl	BTEX, VPH	4°C
Field Blank	AQ	9/26/2019 8:00	(6) 40mL glass HCl	BTEX, VPH	4°C
Field Blank	AQ	9/27/2019 9:00	(6) 40mL glass HCl	BTEX, VPH	4°C
Metals*: arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, strontium, zinc. Cations: calcium, iron, magnesium, manganese, potassium, sodium Anions: bromide, sulfate, carbonate alkalinity, bicarbonate alkalinity Hold for Additional Parameters					
Relinquished By: <i>ES</i>	Date/Time: <u>9-30-19 13:55</u>		Received By: <i>Mark Reed</i>		Date/Time: <u>9-30-19 13:55</u>
Relinquished By:	Date/Time:		Received By:		Date/Time:
Analysis Due: Verbal:	Written:				

6
6
6
6

6
7
8
9

LA58075: Chain of Custody
 Page 2 of 3

SGS Sample Receipt Summary

Job Number: LA58075

Client: HYDRO - ENV.

Project: AUGUST LEVERT

Date / Time Received: 9/30/2019 1:55:00 PM

Delivery Method: Client

Airbill #s: _____

Cooler Temps (Initial/Adjusted): #1: (3.4/3.4); #2: (4.1/4.1); DV439

Cooler Security		<u>Y or N</u>		<u>Y or N</u>
1. Custody Seals Present:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/> <input type="checkbox"/>
2. Custody Seals Intact:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	4. Smp Dates/Time OK	<input checked="" type="checkbox"/> <input type="checkbox"/>

Cooler Temperature		<u>Y or N</u>
1. Temp criteria achieved:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Thermometer ID:	<u>DV439;</u>	
3. Cooler media:	<u>Ice (direct contact)</u>	
4. No. Coolers:	<u>2</u>	

Quality Control Preservation	<u>Y or N</u>	<u>N/A</u>
1. Trip Blank present / cooler:	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>
2. Trip Blank listed on COC:	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>
3. Samples preserved properly:	<input checked="" type="checkbox"/> <input type="checkbox"/>	
4. VOCs headspace free:	<input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>

Sample Integrity - Documentation	<u>Y or N</u>
1. Sample labels present on bottles:	<input checked="" type="checkbox"/> <input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/> <input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/> <input type="checkbox"/>

Sample Integrity - Condition	<u>Y or N</u>
1. Sample recvd within HT:	<input checked="" type="checkbox"/> <input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/> <input type="checkbox"/>
3. Condition of sample:	<u>Intact</u>

Sample Integrity - Instructions	<u>Y or N</u>	<u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/> <input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/> <input checked="" type="checkbox"/>	
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/> <input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments

3.1
3

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: LA58075
 Account: HETILAL Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2X3794-MB4	2X0084444.D	1	10/01/19	CP	n/a	n/a	V2X3794

4.1.1
4

The QC reported here applies to the following samples: Method: SW846 8260B

LA58075-1, LA58075-2, LA58075-3, LA58075-4, LA58075-5, LA58075-6, LA58075-7, LA58075-8, LA58075-9

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Limits	
17060-07-0	1,2-Dichloroethane-D4	104%	81-120%
2037-26-5	Toluene-D8	100%	93-105%
460-00-4	4-Bromofluorobenzene	95%	89-107%

Blank Spike/Blank Spike Duplicate Summary

Job Number: LA58075
 Account: HETILAL Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2X3794-BS2	2X0084438.D	1	09/30/19	CP	n/a	n/a	V2X3794
V2X3794-BSD2	2X0084440.D	1	10/01/19	CP	n/a	n/a	V2X3794

4.2.1
4

The QC reported here applies to the following samples: Method: SW846 8260B

LA58075-1, LA58075-2, LA58075-3, LA58075-4, LA58075-5, LA58075-6, LA58075-7, LA58075-8, LA58075-9

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	20	19.8	99	20.3	102	2	82-119/11
100-41-4	Ethylbenzene	20	19.0	95	19.2	96	1	82-120/11
108-88-3	Toluene	20	19.8	99	20.3	102	2	82-118/12
1330-20-7	Xylene (total)	60	58.7	98	59.7	100	2	82-122/11

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
17060-07-0	1,2-Dichloroethane-D4	100%	101%	81-120%
2037-26-5	Toluene-D8	100%	100%	93-105%
460-00-4	4-Bromofluorobenzene	98%	99%	89-107%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: LA58075
 Account: HETILAL Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
LA58059-3MS	2X0084472.D	10	10/01/19	CP	n/a	n/a	V2X3794
LA58059-3MSD	2X0084474.D	10	10/01/19	CP	n/a	n/a	V2X3794
LA58059-3	2X0084468.D	1	10/01/19	CP	n/a	n/a	V2X3794

4.3.1
4

The QC reported here applies to the following samples: Method: SW846 8260B

LA58075-1, LA58075-2, LA58075-3, LA58075-4, LA58075-5, LA58075-6, LA58075-7, LA58075-8, LA58075-9

CAS No.	Compound	LA58059-3 ug/l	Spike Q ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	76.9	200	956	440*	200	971	447*	2	41-155/14
100-41-4	Ethylbenzene	28.4	200	453	212*	200	456	214*	1	50-147/15
108-88-3	Toluene	43.8	200	598	277*	200	599	278*	0	40-153/15
1330-20-7	Xylene (total)	180	600	2300	353*	600	2290	352*	0	46-154/15

CAS No.	Surrogate Recoveries	MS	MSD	LA58059-3	Limits
17060-07-0	1,2-Dichloroethane-D4	102%	101%	100%	81-120%
2037-26-5	Toluene-D8	99%	102%	101%	93-105%
460-00-4	4-Bromofluorobenzene	102%	102%	100%	89-107%

* = Outside of Control Limits.

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- **Method Blank Summaries**
- **Blank Spike Summaries**
- **Matrix Spike and Duplicate Summaries**

Method Blank Summary

Job Number: LA58075
 Account: HETILAL Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GLC2378-MB1	LC052201.D	1	10/05/19	NN	n/a	n/a	GLC2378

5.1.1
5

The QC reported here applies to the following samples: Method: MADEP VPH REV 1.1

LA58075-1, LA58075-2, LA58075-3, LA58075-4, LA58075-5, LA58075-6, LA58075-7, LA58075-8, LA58075-9

CAS No.	Compound	Result	RL	Units	Q
	Aliphatics C6-C8 (Unadj.)	ND	30	ug/l	
	Aliphatics > C8-C10 (Unadj.)	11.2	50	ug/l	J
	Aromatics > C8-C10 (Unadj.)	13.8	50	ug/l	J

CAS No.	Surrogate Recoveries		Limits
615-59-8	2,5-Dibromotoluene	86% ^a	70-130%
615-59-8	2,5-Dibromotoluene	85% ^b	70-130%

- (a) Recovery from Aliphatics fraction.
- (b) Recovery from Aromatics fraction.

Blank Spike/Blank Spike Duplicate Summary

Job Number: LA58075
 Account: HETILAL Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GLC2378-BS1	LC052199.D	1	10/05/19	NN	n/a	n/a	GLC2378
GLC2378-BSD1	LC052200.D	1	10/05/19	NN	n/a	n/a	GLC2378

5.2.1
5

The QC reported here applies to the following samples: Method: MADEP VPH REV 1.1

LA58075-1, LA58075-2, LA58075-3, LA58075-4, LA58075-5, LA58075-6, LA58075-7, LA58075-8, LA58075-9

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
	Aliphatics C6-C8 (Unadj.)	150	153	102	152	101	1	70-130/30
	Aliphatics > C8-C10 (Unadj.)	250	268	107	265	106	1	70-130/30
	Aromatics > C8-C10 (Unadj.)	250	272	109	268	107	1	70-130/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
615-59-8	2,5-Dibromotoluene	93% ^a	99% ^a	70-130%
615-59-8	2,5-Dibromotoluene	94% ^b	100% ^b	70-130%

- (a) Recovery from Aliphatics fraction.
- (b) Recovery from Aromatics fraction.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: LA58075
 Account: HETILAL Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
LA58089-1MS	LC052205.D	20	10/05/19	NN	n/a	n/a	GLC2378
LA58089-1MSD	LC052206.D	20	10/05/19	NN	n/a	n/a	GLC2378
LA58089-1	LC052202.D	1	10/05/19	NN	n/a	n/a	GLC2378

The QC reported here applies to the following samples:

Method: MADEP VPH REV 1.1

LA58075-1, LA58075-2, LA58075-3, LA58075-4, LA58075-5, LA58075-6, LA58075-7, LA58075-8, LA58075-9

CAS No.	Compound	LA58089-1 ug/l	Spike Q ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
	Aliphatics C6-C8 (Unadj.)	58.4	3000	2360	77	3000	2480	81	5	70-130/50
	Aliphatics > C8-C10 (Unadj.)	147	5000	4240	82	5000	4160	80	2	70-130/50
	Aromatics > C8-C10 (Unadj.)	209	5000	4730	90	5000	4500	86	5	70-130/50

CAS No.	Surrogate Recoveries	MS	MSD	LA58089-1	Limits
615-59-8	2,5-Dibromotoluene	90% ^a	101% ^a	99% ^a	70-130%
615-59-8	2,5-Dibromotoluene	95% ^b	105% ^b	99% ^b	70-130%

(a) Recovery from Aliphatics fraction.

(b) Recovery from Aromatics fraction.

* = Outside of Control Limits.

GC/LC Semi-volatiles



QC Data Summaries

Includes the following where applicable:

- **Method Blank Summaries**
- **Blank Spike Summaries**
- **Matrix Spike and Duplicate Summaries**

Method Blank Summary

Job Number: LA58075
 Account: HETILAL Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP15273-MB	X0011977.D	1	10/03/19	LS	10/01/19	OP15273	GLB2081

The QC reported here applies to the following samples:

Method: MADEP EPH REV 1.1

LA58075-1, LA58075-2, LA58075-3

6.1.1
6

CAS No.	Compound	Result	RL	Units	Q
	Aromatics > C10-C12 (Unadj.)	ND	140	ug/l	
	Aromatics > C12-C16 (Unadj.)	ND	140	ug/l	
	Aromatics > C16-C21 (Unadj.)	ND	140	ug/l	
	Aromatics > C21-C35 (Unadj.)	ND	140	ug/l	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	73%	40-140%
321-60-8	2-Fluorobiphenyl	66%	40-140%

Method Blank Summary

Job Number: LA58075
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP15273-MB	Y0011977.D	1	10/03/19	LS	10/01/19	OP15273	GLB2082

The QC reported here applies to the following samples:

Method: MADEP EPH REV 1.1

LA58075-1, LA58075-2, LA58075-3

CAS No.	Compound	Result	RL	Units	Q
	Aliphatics > C10-C12 (Unadj.)	ND	140	ug/l	
	Aliphatics > C12-C16 (Unadj.)	ND	140	ug/l	
	Aliphatics > C16-C35 (Unadj.)	ND	140	ug/l	

CAS No.	Surrogate Recoveries	Results	Limits
3386-33-2	1-Chlorooctadecane	67%	40-140%

Blank Spike/Blank Spike Duplicate Summary

Job Number: LA58075
 Account: HETILAL Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP15273-BS	X0011978.D	1	10/03/19	LS	10/01/19	OP15273	GLB2081
OP15273-BSD	X0011979.D	1	10/03/19	LS	10/01/19	OP15273	GLB2081

The QC reported here applies to the following samples:

Method: MADEP EPH REV 1.1

LA58075-1, LA58075-2, LA58075-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
	Aromatics > C10-C12 (Unadj.)	463	330	71	323	70	2	40-140/30
	Aromatics > C12-C16 (Unadj.)	1390	970	70	985	71	2	40-140/30
	Aromatics > C16-C21 (Unadj.)	2310	1470	64	1450	63	1	40-140/30
	Aromatics > C21-C35 (Unadj.)	3700	2380	64	2390	65	0	40-140/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
84-15-1	o-Terphenyl	69%	69%	40-140%
321-60-8	2-Fluorobiphenyl	69%	66%	40-140%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: LA58075
 Account: HETILAL Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP15273-BS	Y0011978.D	1	10/03/19	LS	10/01/19	OP15273	GLB2082
OP15273-BSD	Y0011979.D	1	10/03/19	LS	10/01/19	OP15273	GLB2082

The QC reported here applies to the following samples:

Method: MADEP EPH REV 1.1

LA58075-1, LA58075-2, LA58075-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
	Aliphatics > C10-C12 (Unadj.)	463	284	61	266	58	7	40-140/30
	Aliphatics > C12-C16 (Unadj.)	926	579	63	543	59	6	40-140/30
	Aliphatics > C16-C35 (Unadj.)	4170	2760	66	2480	60	11	40-140/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
3386-33-2	1-Chlorooctadecane	70%	63%	40-140%

* = Outside of Control Limits.

Metals Analysis

QC Data Summaries

7

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA58075
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16465
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 10/01/19

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.20	.056	.081	-0.00095	<0.20

Associated samples MP16465: LA58075-1, LA58075-2, LA58075-3, LA58075-1F, LA58075-2F, LA58075-3F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

7.1.1
7

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA58075
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16465
 Matrix Type: AQUEOUS

Methods: SW846 7470A
 Units: ug/l

Prep Date: 10/01/19

Metal	TD45452-1 Original MS	Spikelot HGSPIKE1 % Rec	QC Limits
Mercury	0.0 2.4	5	48.0N(a) 75-125

Associated samples MP16465: LA58075-1, LA58075-2, LA58075-3, LA58075-1F, LA58075-2F, LA58075-3F

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested
 (a) Spike recovery indicates possible matrix interference or sample non-homogeneity.

7.1.2
7

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA58075
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16465
 Matrix Type: AQUEOUS

Methods: SW846 7470A
 Units: ug/l

Prep Date: 10/01/19

Metal	TD45452-1 Original MSD	Spikelot HGSPIKE1 % Rec	MSD RPD	QC Limit
Mercury	0.0	2.6	5	52.0N(a) 8.0 20

Associated samples MP16465: LA58075-1, LA58075-2, LA58075-3, LA58075-1F, LA58075-2F, LA58075-3F

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) Spike recovery indicates possible matrix interference or sample non-homogeneity.

7.12
7

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA58075
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16465
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 10/01/19

Metal	BSP Result	Spikelot HGSPIKE1 % Rec	QC Limits
Mercury	4.7	5	94.0 80-120

Associated samples MP16465: LA58075-1, LA58075-2, LA58075-3, LA58075-1F, LA58075-2F, LA58075-3F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

7.13
7

SERIAL DILUTION RESULTS SUMMARY

Login Number: LA58075
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16465
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 10/01/19

Metal	TD45452-1 Original	SDL 1:5	%DIF	QC Limits
Mercury	0.00	0.00	NC	0-

Associated samples MP16465: LA58075-1, LA58075-2, LA58075-3, LA58075-1F, LA58075-2F, LA58075-3F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

7.14
7

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA58075
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16482
Matrix Type: AQUEOUS

Methods: SW846 6020A
Units: ug/l

Prep Date: 10/01/19

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	1.4	9.3		
Antimony	1.0	.0063	.34		
Arsenic	1.0	.062	.26	-0.0077	<1.0
Barium	1.0	.0089	.46	0.088	<1.0
Beryllium	1.0	.0096	.28		
Boron	20	1.5	2.9		
Cadmium	0.50	.0081	.12	0.010	<0.50
Calcium	100	4.7	20	22.3	<100
Cerium	1.0	.0019	.16		
Chromium	1.0	.059	.15	-0.017	<1.0
Cobalt	1.0	.0082	.14		
Copper	1.0	.27	.74		
Iron	100	2.8	16	2.2	<100
Lanthanum	1.0	.0019	.41		
Lithium	2.0	.3	.61		
Lead	1.0	.0045	.13	-0.12	<1.0
Magnesium	100	1.1	11	9.8	<100
Manganese	2.0	.1	.53	-0.040	<2.0
Molybdenum	1.0	.19	.89		
Nickel	1.0	.081	.2		
Potassium	100	5	7.6	-12	<100
Selenium	5.0	.3	3.1	-0.13	<5.0
Silver	1.0	.0088	.13	-0.053	<1.0
Silicon	500	7.6	130		
Sodium	100	8.6	9.9	6.2	<100
Strontium	2.0	.063	.27	0.050	<2.0
Thallium	1.0	.03	.86		
Tin	2.0	.059	.19		
Titanium	1.0	.095	.77		
Uranium	1.0	.0019	.17		
Vanadium	1.0	.035	.1		
Zinc	5.0	1.5	1.1	0.062	<5.0

Associated samples MP16482: LA58075-1, LA58075-2, LA58075-3, LA58075-1F, LA58075-2F, LA58075-3F

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA58075
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16482
Matrix Type: AQUEOUS

Methods: SW846 6020A
Units: ug/l

Prep Date: 10/01/19

Metal	RL	IDL	MDL	MB raw	final
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Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

7.21
7

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA58075
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16482
 Matrix Type: AQUEOUS

Methods: SW846 6020A
 Units: ug/l

Prep Date: 10/01/19

Metal	LA58075-1 Original MS		Spikelot MPICPMS6 % Rec	QC Limits
Aluminum				
Antimony				
Arsenic	1.1	94.5	100	93.4 75-125
Barium	5020	3560	100	-1460.0a 75-125
Beryllium				
Boron				
Cadmium	0.0	94.6	100	94.6 75-125
Calcium	2080000	1630000	5000	-9000.0a 75-125
Cerium				
Chromium	1.8	98.5	100	96.7 75-125
Cobalt				
Copper				
Iron	126000	98600	5000	-548.0(a) 75-125
Lanthanum				
Lithium				
Lead	0.0	89.9	100	89.9 75-125
Magnesium	745000	577000	5000	-3360.0a 75-125
Manganese	10500	7920	100	-2580.0a 75-125
Molybdenum				
Nickel				
Potassium	6130	9180	5000	61.0N(b) 75-125
Selenium	0.0	386	500	77.2 75-125
Silver	2.8	98.5	100	95.7 75-125
Silicon				
Sodium	3390000	2790000	5000	-12000.0a 75-125
Strontium	17000	14100	100	-2900.0a 75-125
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	0.00	133	100	133.0N(b) 75-125

Associated samples MP16482: LA58075-1, LA58075-2, LA58075-3, LA58075-1F, LA58075-2F, LA58075-3F

7.22
7

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA58075
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16482
Matrix Type: AQUEOUS

Methods: SW846 6020A
Units: ug/l

Prep Date: 10/01/19

Metal	LA58075-1 Original MS	Spike lot MPICPMS6 % Rec	QC Limits
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Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

(b) Spike recovery indicates possible matrix interference or sample non-homogeneity.

7.22
7

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA58075
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16482
 Matrix Type: AQUEOUS

Methods: SW846 6020A
 Units: ug/l

Prep Date: 10/01/19

Metal	LA58075-1 Original MSD	Spikelot MPICPMS6 % Rec	MSD RPD	QC Limit		
Aluminum						
Antimony						
Arsenic	1.1	90.2	100	89.1	4.7	20
Barium	5020	3600	100	-1420.0a	1.1	20
Beryllium						
Boron						
Cadmium	0.0	90.7	100	90.7	4.2	20
Calcium	2080000	1670000	5000	-8200.0a	2.4	20
Cerium						
Chromium	1.8	97.6	100	95.8	0.9	20
Cobalt						
Copper						
Iron	126000	99500	5000	-530.0(a	0.9	20
Lanthanum						
Lithium						
Lead	0.0	89.9	100	89.9	0.0	20
Magnesium	745000	589000	5000	-3120.0a	2.1	20
Manganese	10500	8040	100	-2460.0a	1.5	20
Molybdenum						
Nickel						
Potassium	6130	9420	5000	65.8N(b)	2.6	20
Selenium	0.0	398	500	79.6	3.1	20
Silver	2.8	97.4	100	94.6	1.1	20
Silicon						
Sodium	3390000	2830000	5000	-11200.0a	1.4	20
Strontium	17000	14000	100	-3000.0a	0.7	20
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	0.00	103	100	103.0	25.4 (c)	20

Associated samples MP16482: LA58075-1, LA58075-2, LA58075-3, LA58075-1F, LA58075-2F, LA58075-3F

7.22
7



MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA58075
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16482
 Matrix Type: AQUEOUS

Methods: SW846 6020A
 Units: ug/l

Prep Date: 10/01/19

Metal	LA58075-1 Original MSD	Spikelet MPICPMS6 % Rec	MSD RPD	QC Limit
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Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested
 (a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
 (b) Spike recovery indicates possible matrix interference or sample non-homogeneity.
 (c) Outside control limits due to matrix interference.

7.22
7

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA58075
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16482
 Matrix Type: AQUEOUS

Methods: SW846 6020A
 Units: ug/l

Prep Date: 10/01/19

Metal	BSP Result	Spikelot MPICPMS6	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	103	100	103.0	80-120
Barium	101	100	101.0	80-120
Beryllium				
Boron				
Cadmium	102	100	102.0	80-120
Calcium	4860	5000	97.2	80-120
Cerium				
Chromium	98.0	100	98.0	80-120
Cobalt				
Copper				
Iron	4500	5000	90.0	80-120
Lanthanum				
Lithium				
Lead	103	100	103.0	80-120
Magnesium	4690	5000	93.8	80-120
Manganese	97.6	100	97.6	80-120
Molybdenum				
Nickel				
Potassium	4880	5000	97.6	80-120
Selenium	535	500	107.0	80-120
Silver	100	100	100.0	80-120
Silicon				
Sodium	4660	5000	93.2	80-120
Strontium	98.6	100	98.6	80-120
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	106	100	106.0	80-120

Associated samples MP16482: LA58075-1, LA58075-2, LA58075-3, LA58075-1F, LA58075-2F, LA58075-3F

7.23
7

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA58075
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16482
Matrix Type: AQUEOUS

Methods: SW846 6020A
Units: ug/l

Prep Date: 10/01/19

Metal	BSP Result	Spikelot MPICPMS6 % Rec	QC Limits
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Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

7.23
7

SERIAL DILUTION RESULTS SUMMARY

Login Number: LA58075
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16482
 Matrix Type: AQUEOUS

Methods: SW846 6020A
 Units: ug/l

Prep Date: 10/01/19

Metal	LA58075-1 Original	SDL 10:50%DIF	QC Limits
Aluminum			
Antimony			
Arsenic	1.09	0.00	100.0(a) 0-10
Barium	5020	3530	29.7*(b) 0-10
Beryllium			
Boron			
Cadmium	0.00	0.00	NC 0-10
Calcium	2080000	1490000	28.4*(b) 0-10
Cerium			
Chromium	1.84	0.00	100.0(a) 0-10
Cobalt			
Copper			
Iron	126000	99600	20.7*(b) 0-10
Lanthanum			
Lithium			
Lead	0.00	0.00	NC 0-10
Magnesium	745000	579000	22.3*(b) 0-10
Manganese	10500	7990	23.9*(b) 0-10
Molybdenum			
Nickel			
Potassium	6130	4530	26.0*(b) 0-10
Selenium	0.00	0.00	NC 0-10
Silver	2.83	0.00	100.0(a) 0-10
Silicon			
Sodium	3390000	2620000	22.8*(b) 0-10
Strontium	17000	12800	24.6*(b) 0-10
Thallium			
Tin			
Titanium			
Uranium			
Vanadium			
Zinc	0.00	0.00	NC 0-10

Associated samples MP16482: LA58075-1, LA58075-2, LA58075-3, LA58075-1F, LA58075-2F, LA58075-3F

7.24
7

SERIAL DILUTION RESULTS SUMMARY

Login Number: LA58075
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16482
Matrix Type: AQUEOUS

Methods: SW846 6020A
Units: ug/l

Prep Date: 10/01/19

Metal	LA58075-1 Original SDL 10:50%DIF	QC Limits
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Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
(b) Serial dilution indicates possible matrix interference.

7.24
7

POST DIGESTATE SPIKE SUMMARY

Login Number: LA58075
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16482
 Matrix Type: AQUEOUS

Methods: SW846 6020A
 Units: ug/l

Prep Date:

10/01/19

Metal	Sample ml	Final ml	LA58075-1 Raw	LA58075-1 Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Aluminum										
Antimony										
Arsenic										
Barium										
Beryllium										
Boron										
Cadmium										
Cerium										
Chromium										
Cobalt										
Copper										
Iron										
Lanthanum										
Lithium										
Lead										
Magnesium										
Manganese										
Molybdenum										
Nickel										
Potassium	0.2	10	6128	122.56	5787	0.025	2000	5000	113.3	75-125
Selenium										
Silver										
Silicon										
Thallium										
Tin										
Titanium										
Uranium										
Vanadium										
Zinc	0.04	10			92.07	0.1	10	100	92.1	75-125

Associated samples MP16482: LA58075-1, LA58075-2, LA58075-3, LA58075-1F, LA58075-2F, LA58075-3F

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (**) Corr. sample result = Raw * (sample volume / final volume)
 (anr) Analyte not requested

7.25
7

Misc. Forms

Custody Documents and Other Forms

(SGS Houston, TX)



Includes the following where applicable:

- Chain of Custody



CHAIN OF CUSTODY

TX

500 Ambassador Caffery Parkway, Scott, LA 70583
 Phone 800-304-5227 Fax 337-237-7838

FED-EX Tracking # COOL1 Bottle Order Control #
 SGS Quote # _____ SGS Job # **LA58075**

Client / Reporting Information		Project Information						Requested Analysis (see TEST CODE sheet)										Matrix Codes				
Company Name: SGS North America Inc.		Project Name: 1009.A62 August Levert-Bayou Sorrel, LA						.BRC01906 .CHLUC006 .SCON .SQUIC006 .TDS .XCARBICALK										DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED-Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB-Field Blank EQ-Equipment Blank RB-Rinse Blank TB-Trip Blank				
Street Address: 500 Ambassador Caffery Parkway		Street: 1009.A62 August Levert-Bayou Sorrel, LA																				
City State Zip: Scott LA 70583		Billing Information (if different from Report to): City State Company Name																				
Project Contact E-mail: ralph.frye@sgs.com		Project # Street Address																				
Phone # Fax #: 800-304-5227		Client Purchase Order # City State Zip																				
Sampler(s) Name(s): RJL		Project Manager Attention:																				
SGS Sample #	Field ID / Point of Collection	MEQHD1 Vial #	Collection				Number of preserved Bottles										LAB USE ONLY					
			Date	Time	Sampled by	Matrix	# of bottles	FC	NH3	NH4	HCDA	HCO3	NO3	NO2	CHLOR	TRRP						
1	LT-1 (11-16')		9/25/19	1:30:00 PM	RJL	AQ																X
2	LT-2 (11-16')		9/28/19	10:35:00 AM	RJL	AQ																X
3	LT-3 (11-16')		9/27/19	9:30:00 AM	RJL	AQ																X

Turnaround Time (Business days) _____

Approved By (SGS PM): / Date: _____

Std. 10 Business Days
 5 Day RUSH
 3 Day EMERGENCY
 2 Day EMERGENCY
 1 Day EMERGENCY
 other Due 10/10/2019
 Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

Commercial "A" (Level 1)
 Commercial "B" (Level 2)
 FULLT1 (Level 3+4)
 REDT1 (Level 3+4)
 Commercial "C"

TRRP
 EDD Format
 Other _____
 X COMMB
 Commercial "A" = Results Only
 Commercial "B" = Results + QC Summary

Comments / Special Instructions
3 Wood (100)

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by: <u>[Signature]</u>	Date/Time: <u>9/30/19</u>	Received By: <u>[Signature]</u>	Date/Time: <u>9/30/19</u>	Relinquished By: <u>[Signature]</u>	Date/Time: <u>9/30/19</u>	Received By: <u>[Signature]</u>	Date/Time: <u>9/30/19</u>
Relinquished by: <u>[Signature]</u>	Date/Time: <u>9/30/19</u>	Received By: <u>[Signature]</u>	Date/Time: <u>9/30/19</u>	Relinquished By: <u>[Signature]</u>	Date/Time: <u>9/30/19</u>	Received By: <u>[Signature]</u>	Date/Time: <u>9/30/19</u>
Relinquished by: <u>[Signature]</u>	Date/Time: <u>9/30/19</u>	Received By: <u>[Signature]</u>	Date/Time: <u>9/30/19</u>	Custody Seal #	<input type="checkbox"/> Inlet <input type="checkbox"/> Not used	<input type="checkbox"/> Preserved where applicable <input type="checkbox"/> On Ice <input type="checkbox"/> Cooler Temp.	

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LA58075: Chain of Custody
 Page 1 of 3
 SGS Houston, TX



SGS Sample Receipt Summary

Job Number: LA58075 **Client:** SGS **Project:** AUGUST LEVERT Page 1 of 2
Date / Time Received: 9/30/2019 11:35:00 PM **Delv Method:** SGS-GP **Airbill #'s:** _____
of Coolers: 1 **Therm ID:** IR-8; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (4.2/4.2);

Test Strip Lot #s: pH 1-12: 10D4281 pH 12+: _____ **Other: (Specify)** _____

Cooler Information

- | | Y | or | N |
|------------------------------|-------------------------------------|----|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> |
| 2. Custody Seals Intact: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> |
| 3. Temp criteria achieved: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> |
| 4. Cooler temp verification: | | | |
| 3. Cooler media: | Ice (Bag) | | |

Trip Blank Information

- | | Y | or | N | N/A |
|---------------------------------|--------------------------|----|--------------------------|-------------------------------------|
| 1. Trip Blank present / cooler: | <input type="checkbox"/> | | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Trip Blank listed on COC: | <input type="checkbox"/> | | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Type Of TB Received | W | or | S | N/A |
| | <input type="checkbox"/> | | <input type="checkbox"/> | <input type="checkbox"/> |

Misc. Information

Number of terracores: _____ Number of Lab Filtered Metals: _____
 Number of 5035 Field Kits: _____
 Residual Chlorine Test Strip Lot #: _____

Comments

Sample Information

- | | Y | or | N | N/A |
|---|-------------------------------------|----|-------------------------------------|-------------------------------------|
| 1. Sample labels present on bottles: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> | |
| 2. Samples preserved properly: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> | |
| 3. Sufficient volume recvd for analysis: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> | |
| 4. Condition of sample: | | | | Intact |
| 5. Sample recvd within HT: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> | |
| 6. Dates/Times/IDs on COC match Sample Label | <input checked="" type="checkbox"/> | | <input type="checkbox"/> | |
| 7. Container labeling complete: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> | |
| 8. Analysis requested is clear: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> | |
| 9. VOCs headspace free: | <input type="checkbox"/> | | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 10. Bottles received for unspecified tests | <input type="checkbox"/> | | <input checked="" type="checkbox"/> | |
| 11. COC Present: | <input checked="" type="checkbox"/> | | <input type="checkbox"/> | |
| 12. Special Instructions (compositing/filtering) clear: | <input type="checkbox"/> | | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 13. Voa Soil Kits/Jars received past 48hrs? | <input type="checkbox"/> | | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. % Solids Jar received? | <input type="checkbox"/> | | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. Residual Chlorine Present? | <input type="checkbox"/> | | <input type="checkbox"/> | <input type="checkbox"/> |

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LA58075: Chain of Custody
Page 2 of 3



Sample Receipt Log

Job #: LA58075 _____

Date / Time Received: 9/30/2019 11:35:00 PM _____

Initials: BELINDG _____

Client: SGS _____

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	LA58075-1	500ml	1	M1D	N/P	Note #2 - Preservative check not applicable.	IR-8	4.2	0	4.2
1	LA58075-2	500ml	1	M1D	N/P	Note #2 - Preservative check not applicable.	IR-8	4.2	0	4.2
1	LA58075-3	500ml	1	M1D	N/P	Note #2 - Preservative check not applicable.	IR-8	4.2	0	4.2

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LA58075: Chain of Custody
Page 3 of 3

General Chemistry

QC Data Summaries

(SGS Houston, TX)

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: LA58075
Account: ALLA - SGS Scott, LA
Project: HETILAL: 1009.A62 August Levert-Bayou Sorrel, LA

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Bicarbonate	GN1533	5.0	2.0	mg/l				
Alkalinity, Carbonate	GN1534	5.0	0.0	mg/l				
Alkalinity, Total as CaCO3	GN1532	5.0	2.0	mg/l	100	99.0	99.0	90-110%
Bromide	GP54988/GN1551	0.60	0.0	mg/l	10	10.1	101.0	90-110%
Chloride	GP54988/GN1551	0.70	0.0	mg/l	10	9.66	96.6	90-110%
Solids, Total Dissolved	GN1508	10	2.0	mg/l	500	495	99.0	88-110%
Solids, Total Dissolved	GN1543	10	0.0	mg/l	500	486	97.2	88-110%
Specific Conductivity	GN1527	1.0	<1.0	umhos/cm				
Sulfate	GP54988/GN1551	0.50	0.0	mg/l	10	10.1	101.0	90-110%

Associated Samples:

Batch GN1508: LA58075-1, LA58075-3
Batch GN1527: LA58075-1, LA58075-2, LA58075-3
Batch GN1532: LA58075-1, LA58075-2, LA58075-3
Batch GN1533: LA58075-1, LA58075-2, LA58075-3
Batch GN1534: LA58075-1, LA58075-2, LA58075-3
Batch GN1543: LA58075-2
Batch GP54988: LA58075-1, LA58075-2, LA58075-3
(*) Outside of QC limits

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DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: LA58075
Account: ALLA - SGS Scott, LA
Project: HETILAL: 1009.A62 August Levert-Bayou Sorrel, LA

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO3	GN1532	TD45496-2	mg/l	235	235	0.0	0-10%
Bromide	GP54988/GN1551	LA58075-3	mg/l	3.1	3.0	3.3	0-19%
Chloride	GP54988/GN1551	LA58075-3	mg/l	2600	2580	0.8	0-13%
Solids, Total Dissolved	GN1508	LA58057-1	mg/l	2250	1600	0.6	0-5%
Solids, Total Dissolved	GN1508	LA58057-1	mg/l	2250	377	0.3	0-5%
Solids, Total Dissolved	GN1543	TD45511-1	mg/l	836	842	0.7	0-5%
Specific Conductivity	GN1527	TD45428-7	umhos/cm	546	546	0.0	0-10%
Sulfate	GP54988/GN1551	LA58075-3	mg/l	5.9	6.0	1.7	0-20%

Associated Samples:

Batch GN1508: LA58075-1, LA58075-3
Batch GN1527: LA58075-1, LA58075-2, LA58075-3
Batch GN1532: LA58075-1, LA58075-2, LA58075-3
Batch GN1543: LA58075-2
Batch GP54988: LA58075-1, LA58075-2, LA58075-3
(*) Outside of QC limits

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MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: LA58075
Account: ALLA - SGS Scott, LA
Project: HETILAL: 1009.A62 August Levert-Bayou Sorrel, LA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Alkalinity, Total as CaCO3	GN1532	TD45496-2	mg/l	235	25	255	80.0	75-117%
Bromide	GP54988/GN1551	LA58075-3	mg/l	3.1	10	12.4	93.0	80-120%
Chloride	GP54988/GN1551	LA58075-3	mg/l	2600	2000	1930	-33.5N	80-120%
Sulfate	GP54988/GN1551	LA58075-3	mg/l	5.9	10	16.1	102.0	80-120%

Associated Samples:

Batch GN1532: LA58075-1, LA58075-2, LA58075-3

Batch GP54988: LA58075-1, LA58075-2, LA58075-3

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Hydro-Environmental Technology, Inc.
1009.A62 August Levert-Bayou Sorrel, LA

SGS Job Number: LA58073

Sampling Date: 09/25/19



Report to:

Hydro-Environmental Technology
P.O. BOX 60295
Lafayette, LA 70596
labdata@hetinc.us

ATTN: Stewart L Stover, Jr.

Total number of pages in report: 35



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Ron Benjamin
Ron Benjamin
Lab Director

Client Service contact: Ralph Frye 337-237-4775

Certifications: LDEQ(2048), LDHH(LA150012), AR(14-045-04), AZ(AZ0805), FL(E87657), IL(200082), KY(#31), NC(487), SC(73004001), NJ(LA007), TX(T104704186-18-16), WV(257)

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Test results relate only to samples analyzed.

SGS North America Inc. • 500 Ambassador Caffery • Scott, LA 70583 • tel: 337-237-4775

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Sample Summary

Hydro-Environmental Technology, Inc.

Job No: LA58073

1009.A62 August Levert-Bayou Sorrel, LA

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
LA58073-1	09/25/19	11:05 RJL	09/30/19	SO	Soil	LT-1 (0-4')
LA58073-1A	09/25/19	11:05 RJL	09/30/19	SO	Soil	LT-1 (0-4')
LA58073-2	09/25/19	12:30 RJL	09/30/19	SO	Soil	HA-6 (0-2')
LA58073-2A	09/25/19	12:30 RJL	09/30/19	SO	Soil	HA-6 (0-2')
LA58073-3	09/25/19	12:35 RJL	09/30/19	SO	Soil	HA-6 (2-4')
LA58073-3A	09/25/19	12:35 RJL	09/30/19	SO	Soil	HA-6 (2-4')
LA58073-4	09/25/19	12:40 RJL	09/30/19	SO	Soil	HA-6 (4-6')
LA58073-4A	09/25/19	12:40 RJL	09/30/19	SO	Soil	HA-6 (4-6')

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: LT-1 (0-4')	Date Sampled: 09/25/19
Lab Sample ID: LA58073-1	Date Received: 09/30/19
Matrix: SO - Soil	Percent Solids: 61.8 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 5.0	5.0	mg/kg	5	10/01/19	10/03/19 RD	SW846 6010C ²	SW846 3050B ³
Barium	150	10	mg/kg	5	10/01/19	10/03/19 RD	SW846 6010C ²	SW846 3050B ³
Cadmium	< 2.5	2.5	mg/kg	5	10/01/19	10/03/19 RD	SW846 6010C ²	SW846 3050B ³
Chromium	16.9	5.0	mg/kg	5	10/01/19	10/03/19 RD	SW846 6010C ²	SW846 3050B ³
Lead	12.8	5.0	mg/kg	5	10/01/19	10/03/19 RD	SW846 6010C ²	SW846 3050B ³
Mercury	< 0.069	0.069	mg/kg	1	10/03/19	10/03/19 SA	SW846 7471B ¹	SW846 7471B ⁴
Selenium	< 5.0	5.0	mg/kg	5	10/01/19	10/03/19 RD	SW846 6010C ²	SW846 3050B ³
Silver	< 5.0	5.0	mg/kg	5	10/01/19	10/03/19 RD	SW846 6010C ²	SW846 3050B ³
Zinc	66.5	25	mg/kg	5	10/01/19	10/03/19 RD	SW846 6010C ²	SW846 3050B ³

- (1) Instrument QC Batch: MA17116
- (2) Instrument QC Batch: MA17117
- (3) Prep QC Batch: MP16472
- (4) Prep QC Batch: MP16493

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: LT-1 (0-4')	Date Sampled: 09/25/19
Lab Sample ID: LA58073-1	Date Received: 09/30/19
Matrix: SO - Soil	Percent Solids: 61.8 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	38.2		%	1	10/04/19	CT	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: LT-1 (0-4')	
Lab Sample ID: LA58073-1A	Date Sampled: 09/25/19
Matrix: SO - Soil	Date Received: 09/30/19
	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	340	100	mg/kg	1	10/14/19	10/14/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17234

(2) Prep QC Batch: MP16596

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-6 (0-2')	Date Sampled: 09/25/19
Lab Sample ID: LA58073-2	Date Received: 09/30/19
Matrix: SO - Soil	Percent Solids: 54.3 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 4.7	4.7	mg/kg	5	10/01/19	10/03/19 RD	SW846 6010C ²	SW846 3050B ³
Barium	117	9.4	mg/kg	5	10/01/19	10/03/19 RD	SW846 6010C ²	SW846 3050B ³
Cadmium	< 2.4	2.4	mg/kg	5	10/01/19	10/03/19 RD	SW846 6010C ²	SW846 3050B ³
Chromium	15.2	4.7	mg/kg	5	10/01/19	10/03/19 RD	SW846 6010C ²	SW846 3050B ³
Lead	15.1	4.7	mg/kg	5	10/01/19	10/03/19 RD	SW846 6010C ²	SW846 3050B ³
Mercury	< 0.080	0.080	mg/kg	1	10/03/19	10/03/19 SA	SW846 7471B ¹	SW846 7471B ⁴
Selenium	< 4.7	4.7	mg/kg	5	10/01/19	10/03/19 RD	SW846 6010C ²	SW846 3050B ³
Silver	< 4.7	4.7	mg/kg	5	10/01/19	10/03/19 RD	SW846 6010C ²	SW846 3050B ³
Zinc	63.8	24	mg/kg	5	10/01/19	10/03/19 RD	SW846 6010C ²	SW846 3050B ³

- (1) Instrument QC Batch: MA17116
- (2) Instrument QC Batch: MA17117
- (3) Prep QC Batch: MP16472
- (4) Prep QC Batch: MP16493

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-6 (0-2')	Date Sampled: 09/25/19
Lab Sample ID: LA58073-2	Date Received: 09/30/19
Matrix: SO - Soil	Percent Solids: 54.3 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	45.7		%	1	10/04/19	CT	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-6 (0-2')	Date Sampled: 09/25/19
Lab Sample ID: LA58073-2A	Date Received: 09/30/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	489	100	mg/kg	1	10/14/19	10/14/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17234

(2) Prep QC Batch: MP16596

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-6 (2-4')	Date Sampled: 09/25/19
Lab Sample ID: LA58073-3	Date Received: 09/30/19
Matrix: SO - Soil	Percent Solids: 54.3 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 4.9	4.9	mg/kg	5	10/01/19	10/03/19 RD	SW846 6010C ²	SW846 3050B ³
Barium	142	9.8	mg/kg	5	10/01/19	10/03/19 RD	SW846 6010C ²	SW846 3050B ³
Cadmium	< 2.5	2.5	mg/kg	5	10/01/19	10/03/19 RD	SW846 6010C ²	SW846 3050B ³
Chromium	15.2	4.9	mg/kg	5	10/01/19	10/03/19 RD	SW846 6010C ²	SW846 3050B ³
Lead	12.1	4.9	mg/kg	5	10/01/19	10/03/19 RD	SW846 6010C ²	SW846 3050B ³
Mercury	< 0.069	0.069	mg/kg	1	10/03/19	10/03/19 SA	SW846 7471B ¹	SW846 7471B ⁴
Selenium	< 4.9	4.9	mg/kg	5	10/01/19	10/03/19 RD	SW846 6010C ²	SW846 3050B ³
Silver	< 4.9	4.9	mg/kg	5	10/01/19	10/03/19 RD	SW846 6010C ²	SW846 3050B ³
Zinc	62.1	25	mg/kg	5	10/01/19	10/03/19 RD	SW846 6010C ²	SW846 3050B ³

- (1) Instrument QC Batch: MA17116
- (2) Instrument QC Batch: MA17117
- (3) Prep QC Batch: MP16472
- (4) Prep QC Batch: MP16493

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-6 (2-4')	Date Sampled: 09/25/19
Lab Sample ID: LA58073-3	Date Received: 09/30/19
Matrix: SO - Soil	Percent Solids: 54.3 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	45.7		%	1	10/04/19	CT	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-6 (2-4')	Date Sampled: 09/25/19
Lab Sample ID: LA58073-3A	Date Received: 09/30/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	311	100	mg/kg	1	10/14/19	10/14/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17234

(2) Prep QC Batch: MP16596

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-6 (4-6')	Date Sampled: 09/25/19
Lab Sample ID: LA58073-4	Date Received: 09/30/19
Matrix: SO - Soil	Percent Solids: 40.8 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 4.9	4.9	mg/kg	5	10/01/19	10/03/19 RD	SW846 6010C ²	SW846 3050B ³
Barium	305	9.8	mg/kg	5	10/01/19	10/03/19 RD	SW846 6010C ²	SW846 3050B ³
Cadmium	< 2.5	2.5	mg/kg	5	10/01/19	10/03/19 RD	SW846 6010C ²	SW846 3050B ³
Chromium	14.4	4.9	mg/kg	5	10/01/19	10/03/19 RD	SW846 6010C ²	SW846 3050B ³
Lead	12.1	4.9	mg/kg	5	10/01/19	10/03/19 RD	SW846 6010C ²	SW846 3050B ³
Mercury	< 0.067	0.067	mg/kg	1	10/03/19	10/03/19 SA	SW846 7471B ¹	SW846 7471B ⁴
Selenium	< 4.9	4.9	mg/kg	5	10/01/19	10/03/19 RD	SW846 6010C ²	SW846 3050B ³
Silver	< 4.9	4.9	mg/kg	5	10/01/19	10/03/19 RD	SW846 6010C ²	SW846 3050B ³
Zinc	60.5	25	mg/kg	5	10/01/19	10/03/19 RD	SW846 6010C ²	SW846 3050B ³

- (1) Instrument QC Batch: MA17116
- (2) Instrument QC Batch: MA17117
- (3) Prep QC Batch: MP16472
- (4) Prep QC Batch: MP16493

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-6 (4-6')	
Lab Sample ID: LA58073-4	Date Sampled: 09/25/19
Matrix: SO - Soil	Date Received: 09/30/19
	Percent Solids: 40.8 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	59.2		%	1	10/04/19	CT	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-6 (4-6')	Date Sampled: 09/25/19
Lab Sample ID: LA58073-4A	Date Received: 09/30/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	348	100	mg/kg	1	10/14/19	10/14/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17234

(2) Prep QC Batch: MP16596

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody



HYDRO-ENVIRONMENTAL TECHNOLOGY, INC.
 Environmental Consultants
 P.O. Box 60295
 Lafayette, LA 70596-0295
 Phone (337) 261-1963 FAX (337) 261-1953

LA 58073

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert Laboratory: SGS
 Project Number: 1009.A62 Collected By: RJL
 Project Location: Bayou Sorrel, LA Company: Hydro-Environmental Technology, Inc.
 Date: 9/25/2019

Sample ID	Type	Date/Time Sampled	Containers	Analysis Requested/Method	Comments
LT-1 (0-4')	SO	9/25/2019 11:05	(1) 4 oz Glass Jar	29B Metals	4°C
LT-1 (6-8')	SO	9/25/2019 11:15	N/A	No Split	4°C
LT-2 (0-4')	SO	9/26/2019 8:25	N/A	No Split	4°C
LT-2 (4-8')	SO	9/26/2019 8:35	N/A	No Split	4°C
LT-3 (0-4')	SO	9/26/2019 16:20	N/A	No Split	4°C
LT-3 (4-8')	SO	9/26/2019 16:30	N/A	No Split	4°C
HA-6 (0-2')	SO	9/27/2019 12:30	(1) 9 oz Glass Jar	29B Metals	4°C
<p><i>Non-solc Temp: 4.1 11/4/19</i> <i>RRM-20 (2W) Metals: Arsenic, Barium, True Total Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver, Zinc</i> <i>Chet d/c</i></p>					
Requisitioned By: <i>RS</i>		Received By: <i>Mark Reed</i>			
Date/Time: 9-30-19	13:55	Date/Time: 9-30-19	13:55		
Reinquished By:		Received By:			
Date/Time:		Date/Time:			
Analysis Due: Verbal: Written:					

LA58073: Chain of Custody
 Page 1 of 3



HYDRO-ENVIRONMENTAL TECHNOLOGY, INC.
 Environmental Consultants
 P.O. Box 60295
 Lafayette, LA 70596-0295
 Phone (337) 261-1963 FAX (337) 261-1953

LA 58073

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert
 Project Number: 1009.A62
 Project Location: Bayou Sorrel, LA

Laboratory: SGS
 Collected By: RLL
 Company: Hydro-Environmental Technology, Inc.
 Date: 9/25/2019

Sample I.D.	Type	Date/Time Sampled	Containers	Analysis Requested/Method	Comments
HA-6 (2-4)	SO	9/27/2019 12:35	(1) 9 oz Glass Jar	29B Metals	4°C
HA-6 (4-6)	SO	9/27/2019 12:40	(1) 9 oz Glass Jar	29B Metals	4°C
HOLD for possible analysis Metals*: Arsenic, Barium, True Total Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver, Zinc					
Relinquished By:	Received By: <i>Mark Red</i>				
Date/Time: 9-30-19 13:55	Date/Time: 9-30-19 13:55				
Relinquished By:	Received By:				
Date/Time:	Date/Time:				
Analysis Due: Verbal:	Written:				

LA58073: Chain of Custody
 Page 2 of 3

SGS Sample Receipt Summary

Job Number: LA58073

Client: HYDRO - ENV.

Project: AUGUST LEVERT

Date / Time Received: 9/30/2019 1:55:00 PM

Delivery Method: Client

Airbill #s: _____

Cooler Temps (Initial/Adjusted): #1: (4.1/4.1); DV439

Cooler Security		<u>Y or N</u>		<u>Y or N</u>
1. Custody Seals Present:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/> <input type="checkbox"/>
2. Custody Seals Intact:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	4. Smp Dates/Time OK	<input checked="" type="checkbox"/> <input type="checkbox"/>

Cooler Temperature		<u>Y or N</u>
1. Temp criteria achieved:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Thermometer ID:	<u>DV439;</u>	
3. Cooler media:	<u>Ice (direct contact)</u>	
4. No. Coolers:	<u>1</u>	

Quality Control Preservation	<u>Y or N</u>	<u>N/A</u>
1. Trip Blank present / cooler:	<input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Trip Blank listed on COC:	<input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Samples preserved properly:	<input checked="" type="checkbox"/> <input type="checkbox"/>	
4. VOCs headspace free:	<input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/>

Sample Integrity - Documentation	<u>Y or N</u>
1. Sample labels present on bottles:	<input checked="" type="checkbox"/> <input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/> <input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/> <input type="checkbox"/>

Sample Integrity - Condition	<u>Y or N</u>
1. Sample recvd within HT:	<input checked="" type="checkbox"/> <input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/> <input type="checkbox"/>
3. Condition of sample:	<u>Intact</u>

Sample Integrity - Instructions	<u>Y or N</u>	<u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/> <input type="checkbox"/>	
2. Bottles received for unspecified tests:	<input type="checkbox"/> <input checked="" type="checkbox"/>	
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/> <input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA58073
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16472
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 10/01/19

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.72	2.4		
Antimony	0.60	.096	.33		
Arsenic	1.0	.19	.39	-0.32	<1.0
Barium	2.0	.016	1.1	-0.010	<2.0
Beryllium	0.40	.01	.04		
Boron	50	.053	2		
Cadmium	0.50	.013	.15	0.0	<0.50
Calcium	10	.81	3.9		
Chromium	1.0	.025	.11	-0.014	<1.0
Cobalt	1.0	.02	.13		
Copper	1.0	.048	.31		
Iron	10	.2	3.8		
Lead	1.0	.12	.31	-0.063	<1.0
Lithium	1.0	.14	.56		
Magnesium	10	1.6	8.2		
Manganese	5.0	.005	.21		
Molybdenum	1.0	.014	.06		
Nickel	1.0	.027	.17		
Potassium	50	4.4	13		
Selenium	1.0	.13	.35	0.0060	<1.0
Silver	1.0	.062	.3	-0.018	<1.0
Sodium	50	5.1	11		
Strontium	1.0	.008	.19		
Thallium	0.50	.14	.37		
Tin	5.0	.041	.29		
Titanium	1.0	.02	.18		
Vanadium	1.0	.034	.13		
Zinc	5.0	.018	1.8	-0.0050	<5.0

Associated samples MP16472: LA58073-1, LA58073-2, LA58073-3, LA58073-4

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

4.1.1
4

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA58073
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16472
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 10/01/19

Metal	LA58093-1 Original MS		Spikelot ICPSPIKE1% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	0.0	56.7	100	56.7N(a) 75-125
Barium	63.2	145	100	81.8 75-125
Beryllium				
Boron				
Cadmium	1.2	102	100	100.8 75-125
Calcium				
Chromium	791	747	100	-44.0(b) 75-125
Cobalt				
Copper				
Iron				
Lead	14.4	113	100	98.6 75-125
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium	1.6	80.3	100	78.7 75-125
Silver	2.2	101	100	98.8 75-125
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	1190	1090	100	-100.0(b) 75-125

Associated samples MP16472: LA58073-1, LA58073-2, LA58073-3, LA58073-4

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) Spike recovery indicates possible matrix interference or sample non-homogeneity.

(b) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA58073
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16472
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 10/01/19

Metal	LA58093-1 Original MSD		Spikelot ICPSPIKE1% Rec		MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	0.0	48.9	100	48.9N(a)	14.8	20
Barium	63.2	167	100	103.8	14.1	20
Beryllium						
Boron						
Cadmium	1.2	109	100	107.8	6.6	20
Calcium						
Chromium	791	1050	100	259.0(b)	33.7 (c)	20
Cobalt						
Copper						
Iron						
Lead	14.4	127	100	112.6	11.7	20
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Potassium						
Selenium	1.6	77.3	100	75.7	3.8	20
Silver	2.2	106	100	103.8	4.8	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc	1190	1580	100	390.0(b)	36.7 (c)	20

Associated samples MP16472: LA58073-1, LA58073-2, LA58073-3, LA58073-4

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) Spike recovery indicates possible matrix interference or sample non-homogeneity.

(b) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

(c) High RPD due to possible sample nonhomogeneity or matrix interference.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA58073
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16472
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 10/01/19

Metal	LCS Result	Spikelot LCSMETAL11% Rec	QC Limits
Aluminum			
Antimony			
Arsenic	123	125	98.4 82-117
Barium	625	529	118.1 82-119
Beryllium			
Boron			
Cadmium	52.8	37.7	140.1*(a) 82-118
Calcium			
Chromium	55.0	58.3	94.3 82-118
Cobalt			
Copper			
Iron			
Lead	126	111	113.5 82-117
Lithium			
Magnesium			
Manganese			
Molybdenum			
Nickel			
Potassium			
Selenium	270	251	107.6 79-122
Silver	26.5	27.2	97.4 79-121
Sodium			
Strontium			
Thallium			
Tin			
Titanium			
Vanadium			
Zinc	320	351	91.2 80-119

Associated samples MP16472: LA58073-1, LA58073-2, LA58073-3, LA58073-4

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested
 (a) All reported results < RL

4.13
4

SERIAL DILUTION RESULTS SUMMARY

Login Number: LA58073
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16472
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: ug/l

Prep Date: 10/01/19

Metal	LA58093-1 Original	SDL 5:25	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	0.00	0.00	NC	0-10
Barium	632	391	38.1*(a)	0-10
Beryllium				
Boron				
Cadmium	11.9	14.1	19.1 (b)	0-10
Calcium				
Chromium	7910	7570	4.4	0-10
Cobalt				
Copper				
Iron				
Lead	144	191	32.0 (b)	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium	15.8	0.00	100.0(b)	0-10
Silver	22.0	0.00	100.0(b)	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	11900	13400	12.7*(a)	0-10

Associated samples MP16472: LA58073-1, LA58073-2, LA58073-3, LA58073-4

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested
 (a) Serial dilution indicates possible matrix interference.
 (b) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

POST DIGESTATE SPIKE SUMMARY

Login Number: LA58073
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16472
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: ug/l

Prep Date:

10/01/19

Metal	Sample ml	Final ml	LA58093-1 Raw	Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Aluminum										
Antimony										
Arsenic	0.4	10			197.95	0.02	100	200	99.0	75-125
Beryllium										
Boron										
Calcium										
Cobalt										
Copper										
Iron										
Lithium										
Magnesium										
Manganese										
Molybdenum										
Nickel										
Potassium										
Sodium										
Strontium										
Thallium										
Tin										
Titanium										
Vanadium										

Associated samples MP16472: LA58073-1, LA58073-2, LA58073-3, LA58073-4

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (**) Corr. sample result = Raw * (sample volume / final volume)
 (anr) Analyte not requested

4.15
4

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA58073
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16493
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 10/03/19

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.080	.0039	.0066	0.0037	<0.080

Associated samples MP16493: LA58073-1, LA58073-2, LA58073-3, LA58073-4

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

4.2.1
4

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA58073
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16493
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 10/03/19

Metal	LA58065-3 Original MS	Spikelot HGSPIKE1 % Rec	QC Limits
Mercury	0.023 0.55	0.577 91.3	75-125

Associated samples MP16493: LA58073-1, LA58073-2, LA58073-3, LA58073-4

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

4.2.2
4

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA58073
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16493
 Matrix Type: SOLID

Methods: SW846 7471B
 Units: mg/kg

Prep Date: 10/03/19

Metal	LA58065-3 Original MSD	Spikelot HGSPIKE1 % Rec	MSD RPD	QC Limit
Mercury	0.023 0.52	0.556 89.5	5.6	20

Associated samples MP16493: LA58073-1, LA58073-2, LA58073-3, LA58073-4

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

4.2.2
 4

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA58073
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16493
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 10/03/19

Metal	LCS Result	Spikelot HGLCS10	% Rec	QC Limits
Mercury	18.4	20.3	90.6	64-136

Associated samples MP16493: LA58073-1, LA58073-2, LA58073-3, LA58073-4

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

4.2.3
4

SERIAL DILUTION RESULTS SUMMARY

Login Number: LA58073
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16493
Matrix Type: SOLID

Methods: SW846 7471B
Units: ug/l

Prep Date: 10/03/19

Metal	LA58065-3	Original	SDL 1:5	%DIF	QC Limits
Mercury	0.211	0.324	53.4	(a)	0-

Associated samples MP16493: LA58073-1, LA58073-2, LA58073-3, LA58073-4

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

4.2.4
4

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA58073
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16596
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 10/14/19

Metal	RL	IDL	MDL	MB raw	final
Aluminum	500	36	120		
Antimony	30	4.8	17		
Arsenic	50	9.3	20		
Barium	100	.8	56	-0.45	<100
Beryllium	20	.5	2		
Boron	2500	2.7	98		
Cadmium	25	.65	7.5		
Calcium	500	40	200		
Chromium	50	1.3	5.5		
Cobalt	50	1	6.5		
Copper	50	2.4	16		
Iron	500	9.8	190		
Lead	50	5.8	16		
Lithium	50	7.2	28		
Magnesium	500	81	410		
Manganese	250	.25	11		
Molybdenum	50	.7	3		
Nickel	50	1.4	8.5		
Potassium	2500	220	630		
Selenium	50	6.6	18		
Silver	50	3.1	15		
Sodium	2500	250	560		
Strontium	50	.4	9.5		
Thallium	25	6.9	19		
Tin	250	2.1	15		
Titanium	50	1	9		
Vanadium	50	1.7	6.5		
Zinc	250	.9	92		

Associated samples MP16596: LA58073-1A, LA58073-2A, LA58073-3A, LA58073-4A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

4.3.1
4

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA58073
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16596
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 10/14/19

Metal	LA58073-1A Original DUP	RPD	QC Limits
Aluminum			
Antimony			
Arsenic			
Barium	340	339	0.3 0-20
Beryllium			
Boron			
Cadmium			
Calcium			
Chromium			
Cobalt			
Copper			
Iron			
Lead			
Lithium			
Magnesium			
Manganese			
Molybdenum			
Nickel			
Potassium			
Selenium			
Silver			
Sodium			
Strontium			
Thallium			
Tin			
Titanium			
Vanadium			
Zinc			

Associated samples MP16596: LA58073-1A, LA58073-2A, LA58073-3A, LA58073-4A

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

4.3.2
4

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA58073
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16596
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 10/14/19

Metal	BSP Result	Spikelot TTBALA29	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	42800	50000	85.6	80-120
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP16596: LA58073-1A, LA58073-2A, LA58073-3A, LA58073-4A

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

4.3.3
 4



Element Materials Technology Lafayette
2417 W. Pinhook Road
Lafayette, LA 70508-3344
TEL: (337) 235-0483 FAX: (337) 233-6540
Website: www.element.com

October 17, 2019

Greg Miller
ICON Environmental Services
2049 Commercial Drive
Port Allen, LA 70767
TEL: (225) 344-8490
FAX: (225) 344-6654

RE: Levert-Grand River 9326-025-0100

Order No.: 19091181

Dear Greg Miller:

Element Materials Technology Lafayette received 5 sample(s) on 9/27/2019 for the analyses presented in the following report.

In accordance with your instructions Element Lafayette conducted the analysis shown on the following pages on samples submitted by your company. The results related only to the items tested. Unless otherwise noted, all analyses were conducted using EPA approved methodologies and all test results meet all requirements of TNI. All relevant sampling information is on the attached Chain-of-Custody form.

All soil data, except for 29-B, are on a wet-weight basis unless otherwise indicated in the units field as -dry.

LELAP Certification No.: 01997. TCEQ Certification No.: T104704261. LDHH Certification No.: LA180028. ISDH Certification No.: C-LA-01. A scope of accredited parameters is available upon request. A "#" by the test method or analyte indicates this parameter is outside the scope of accreditation.

Estimated uncertainty is available upon request. This report shall not be reproduced except in full, without the written approval of the laboratory.

If you have any questions regarding these test results, please feel free to call.

Cristina Thibeaux
Customer Service Supervisor
2417 W. Pinhook Road
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Element Materials Technology Lafayette
2417 W. Pinhook Road
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TEL: (337) 235-0483 FAX: (337) 233-6540
Website: www.element.com

Case Narrative

WO#: 19091181
Date: 10/17/2019

CLIENT: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

Unless specified by the client, a duplicate or MS/MSD, wherever applicable, is randomly selected and analyzed from each analytical batch provided sample volume is sufficient. The sample chosen for duplicate or MS/MSD may or may not be a sample submitted in this workorder. A method blank and/or a lab control sample (LCS)/lab control sample duplicate (LCSD), wherever applicable, are processed as a quality control check for each analytical batch. When the matrix QC data is not available due to insufficient sample volume or when the results indicate possible matrix effect, the validity of the batch is determined by the method blank and LCS/LCSD.

The results of the laboratory internal quality control data are provided in the QC Summary Report section of the report for your review. Laboratory-related QC exceptions that may impact the validity of data are discussed in the case narrative. Sample-related QC exceptions are flagged either in the results page(s) or in the QC report page(s). End users should consider QC exceptions when evaluating sample data against data quality objectives.

Any other exceptions associated with this report will be footnoted in the results page(s) or the QC summary page(s).



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Analytical Report

(consolidated)

WO#: 19091181

Date Reported: 10/17/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/25/2019 1:30:00 PM
Project: Levert-Grand River 9326-025-0100
Lab ID: 19091181-001 **Matrix:** AQUEOUS
Client Sample ID LT-1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH-D/O IN WATER BY SW8015					SW8015B	Analyst: AB
TPH DRO/ORO IN WATER BY SW8015					SW3511	
TPH (Diesel Range)	< 0.134	0.134		mg/L	1	10/1/2019 8:39:00 PM
TPH (Oil Range)	0.192	0.124		mg/L	1	10/1/2019 8:39:00 PM
Surr: 4-Terphenyl-d14	79.1	51.4 - 146		%Rec	1	10/1/2019 8:39:00 PM
BTEX/TPH-G IN WATER BY SW8021/8015					SW8015B	Analyst: AB
TPH-GRO IN WATER BY SW8015						
TPH (Gasoline Range)	< 0.150	0.150		mg/L	1	10/3/2019 10:33:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	75.0	70 - 130		%Rec	1	10/3/2019 10:33:00 PM
BTEX/TPH-G IN WATER BY SW8021/8015					SW8021B	Analyst: AB
BTEX IN WATER BY SW8021						
Benzene	< 0.00500	0.00500		mg/L	1	10/3/2019 10:33:00 PM
Ethylbenzene	< 0.00500	0.00500		mg/L	1	10/3/2019 10:33:00 PM
Toluene	< 0.0100	0.0100		mg/L	1	10/3/2019 10:33:00 PM
Xylenes, Total	< 0.0500	0.0500		mg/L	1	10/3/2019 10:33:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	66.6	70 - 130	SM	%Rec	1	10/3/2019 10:33:00 PM
NOTES:						
Note: Surrogate outside of control limits. Re-analysis yielded the same result, indicating a matrix effect.						
METALS IN GROUND WATER					SW7470A	Analyst: BXB
MERCURY IN GROUND WATER, TOTAL						
Mercury	< 0.000200	0.000200		mg/L	1	9/30/2019 1:34:39 PM
INORGANIC ANIONS IN WATER BY IC					SW9056A	Analyst: SGP
Chloride	8,990	125		mg/L	500	10/2/2019 11:29:11 AM
Sulfate	187	12.5		mg/L	50	10/2/2019 2:00:11 PM
METALS IN GROUND WATER					SW6010B	Analyst: STS
METALS IN WATER BY ICP, TOTALS						
Barium	3.43	0.100		mg/L	10	10/7/2019 7:31:16 PM
Cadmium	< 0.00500	0.00500		mg/L	1	10/7/2019 7:02:41 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 19091181

Date Reported: 10/17/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/25/2019 1:30:00 PM
Project: Levert-Grand River 9326-025-0100
Lab ID: 19091181-001 **Matrix:** AQUEOUS
Client Sample ID LT-1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
METALS IN GROUND WATER					SW6010B	Analyst: STS
METALS IN WATER BY ICP, TOTALS						
Calcium	1,660	5.00		mg/L	10	10/7/2019 7:31:16 PM
Chromium	< 0.0100	0.0100		mg/L	1	10/7/2019 7:02:41 PM
Iron	102	0.100		mg/L	10	10/7/2019 7:31:16 PM
Lead	< 0.0100	0.0100		mg/L	1	10/7/2019 7:02:41 PM
Magnesium	575	5.00		mg/L	10	10/7/2019 7:31:16 PM
Manganese	7.79	0.100		mg/L	10	10/7/2019 7:31:16 PM
Potassium	15.1	5.00		mg/L	1	10/7/2019 7:02:41 PM
Sodium	2,890	50.0		mg/L	10	10/7/2019 7:31:16 PM
Strontium	13.3	0.100		mg/L	10	10/7/2019 7:31:16 PM
Zinc	0.0168	0.0100		mg/L	1	10/7/2019 7:02:41 PM
METALS IN WATER BY ICP-MS, TOTAL					SW6020A	Analyst: MRM
Arsenic	< 0.00250	0.00250		mg/L	10	10/7/2019 2:07:21 PM
ALKALINITY; TOTAL, CARB, BICARB					SM2320 B	Analyst: BXB
Alkalinity, Bicarbonate (As CaCO3)	802	10.0		mgCaCO3/L	1	10/2/2019 6:48:00 AM
Alkalinity, Carbonate (As CaCO3)	< 10.0	10.0		mgCaCO3/L	1	10/2/2019 6:48:00 AM
Alkalinity, Total (As CaCO3)	802	10.0		mgCaCO3/L	1	10/2/2019 6:48:00 AM
TOTAL DISSOLVED SOLIDS					SM2540C	Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	18,800	500		mg/L	25	9/30/2019 7:49:00 AM

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 19091181

Date Reported: 10/17/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/26/2019 10:35:00 AM
Project: Levert-Grand River 9326-025-0100
Lab ID: 19091181-002 **Matrix:** AQUEOUS
Client Sample ID LT-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH-D/O IN WATER BY SW8015 SW8015B SW3511 Analyst: AB						
TPH DRO/ORO IN WATER BY SW8015						
TPH (Diesel Range)	0.529	0.139		mg/L	1	10/16/2019 2:35:00 PM
TPH (Oil Range)	0.280	0.129		mg/L	1	10/16/2019 2:35:00 PM
Surr: 4-Terphenyl-d14	101	51.4 - 146		%Rec	1	10/16/2019 2:35:00 PM
BTEX/TPH-G IN WATER BY SW8021/8015 SW8015B Analyst: CRM						
TPH-GRO IN WATER BY SW8015						
TPH (Gasoline Range)	< 0.150	0.150		mg/L	1	9/28/2019 7:39:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	81.2	70 - 130		%Rec	1	9/28/2019 7:39:00 PM
BTEX/TPH-G IN WATER BY SW8021/8015 SW8021B Analyst: CRM						
BTEX IN WATER BY SW8021						
Benzene	< 0.00500	0.00500		mg/L	1	9/28/2019 7:39:00 PM
Ethylbenzene	< 0.00500	0.00500		mg/L	1	9/28/2019 7:39:00 PM
Toluene	< 0.0100	0.0100		mg/L	1	9/28/2019 7:39:00 PM
Xylenes, Total	< 0.0500	0.0500		mg/L	1	9/28/2019 7:39:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	70.6	70 - 130		%Rec	1	9/28/2019 7:39:00 PM
MERCURY IN GROUND WATER, DISSOLVED SW7470A Analyst: BXB						
Mercury	< 0.000200	0.000200		mg/L	1	10/9/2019 8:22:40 AM
INORGANIC ANIONS IN WATER BY IC SW9056A Analyst: SGP						
Chloride	3,150	50.0		mg/L	200	10/2/2019 11:42:54 AM
Sulfate	< 5.00	5.00		mg/L	20	10/2/2019 2:13:55 PM
NOTES: Note: Sample was analyzed at a dilution due to matrix interference. The reporting limit was raised accordingly.						
METALS IN WATER BY ICP, DISSOLVED SW6010B Analyst: STS						
Barium	3.20	0.100		mg/L	10	10/7/2019 9:38:15 PM
Cadmium	< 0.00500	0.00500		mg/L	1	10/7/2019 9:33:50 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 19091181

Date Reported: 10/17/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/26/2019 10:35:00 AM
Project: Levert-Grand River 9326-025-0100
Lab ID: 19091181-002 **Matrix:** AQUEOUS
Client Sample ID LT-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
METALS IN WATER BY ICP, DISSOLVED				SW6010B		Analyst: STS
Calcium	892	5.00		mg/L	10	10/7/2019 9:38:15 PM
Chromium	< 0.0100	0.0100		mg/L	1	10/7/2019 9:33:50 PM
Iron	82.0	0.100		mg/L	10	10/7/2019 9:38:15 PM
Lead	< 0.0100	0.0100		mg/L	1	10/7/2019 9:33:50 PM
Magnesium	326	5.00		mg/L	10	10/7/2019 9:38:15 PM
Manganese	6.34	0.100		mg/L	10	10/7/2019 9:38:15 PM
Potassium	7.20	5.00		mg/L	1	10/7/2019 9:33:50 PM
Selenium	0.0654	0.0200		mg/L	1	10/7/2019 9:33:50 PM
Sodium	781	100		mg/L	10	10/7/2019 9:38:15 PM
Strontium	6.42	0.100		mg/L	10	10/7/2019 9:38:15 PM
Zinc	< 0.0100	0.0100		mg/L	1	10/7/2019 9:33:50 PM
METALS IN WATER BY ICP-MS, DISSOLVED				SW6020A		Analyst: MRM
Arsenic	0.0193	0.00250		mg/L	10	10/15/2019 12:19:44 PM
ALKALINITY; TOTAL, CARB, BICARB				SM2320 B		Analyst: BXB
Alkalinity, Bicarbonate (As CaCO3)	610	10.0		mgCaCO3/L	1	10/2/2019 6:48:00 AM
Alkalinity, Carbonate (As CaCO3)	< 10.0	10.0		mgCaCO3/L	1	10/2/2019 6:48:00 AM
Alkalinity, Total (As CaCO3)	610	10.0		mgCaCO3/L	1	10/2/2019 6:48:00 AM
TOTAL DISSOLVED SOLIDS				SM2540C		Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	7,380	500		mg/L	25	9/30/2019 1:41:00 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
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Analytical Report

(consolidated)

WO#: 19091181

Date Reported: 10/17/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/27/2019 9:30:00 AM
Project: Levert-Grand River 9326-025-0100
Lab ID: 19091181-003 **Matrix:** AQUEOUS
Client Sample ID LT-3

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH-D/O IN WATER BY SW8015						
TPH DRO/ORO IN WATER BY SW8015						
TPH (Diesel Range)	0.154	0.133		mg/L	1	10/7/2019 1:22:00 PM
TPH (Oil Range)	0.197	0.123		mg/L	1	10/7/2019 1:22:00 PM
Surr: 4-Terphenyl-d14	64.1	51.4 - 146		%Rec	1	10/7/2019 1:22:00 PM
BTEX/TPH-G IN WATER BY SW8021/8015						
TPH-GRO IN WATER BY SW8015						
TPH (Gasoline Range)	< 0.150	0.150		mg/L	1	9/28/2019 8:06:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	84.8	70 - 130		%Rec	1	9/28/2019 8:06:00 PM
BTEX/TPH-G IN WATER BY SW8021/8015						
BTEX IN WATER BY SW8021						
Benzene	< 0.00500	0.00500		mg/L	1	9/28/2019 8:06:00 PM
Ethylbenzene	< 0.00500	0.00500		mg/L	1	9/28/2019 8:06:00 PM
Toluene	< 0.0100	0.0100		mg/L	1	9/28/2019 8:06:00 PM
Xylenes, Total	< 0.0500	0.0500		mg/L	1	9/28/2019 8:06:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	95.0	70 - 130		%Rec	1	9/28/2019 8:06:00 PM
MERCURY IN GROUND WATER, DISSOLVED						
Mercury	< 0.000200	0.000200		mg/L	1	10/9/2019 8:30:39 AM
INORGANIC ANIONS IN WATER BY IC						
Chloride	1,410	25.0		mg/L	100	10/2/2019 11:56:38 AM
Sulfate	4.57	1.25		mg/L	5	10/2/2019 2:27:38 PM
METALS IN WATER BY ICP, DISSOLVED						
Barium	1.22	0.100		mg/L	10	10/7/2019 9:56:05 PM
Cadmium	< 0.00500	0.00500		mg/L	1	10/7/2019 9:42:52 PM
Calcium	282	5.00		mg/L	10	10/7/2019 9:56:05 PM
Chromium	< 0.0100	0.0100		mg/L	1	10/7/2019 9:42:52 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 19091181

Date Reported: 10/17/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/27/2019 9:30:00 AM
Project: Levert-Grand River 9326-025-0100
Lab ID: 19091181-003 **Matrix:** AQUEOUS
Client Sample ID LT-3

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
METALS IN WATER BY ICP, DISSOLVED				SW6010B		Analyst: STS
Iron	5.64	0.100		mg/L	10	10/7/2019 9:56:05 PM
Lead	< 0.0100	0.0100		mg/L	1	10/7/2019 9:42:52 PM
Magnesium	98.4	0.500		mg/L	1	10/7/2019 9:42:52 PM
Manganese	2.09	0.100		mg/L	10	10/7/2019 9:56:05 PM
Potassium	< 5.00	5.00		mg/L	1	10/7/2019 9:42:52 PM
Selenium	0.0796	0.0200		mg/L	1	10/7/2019 9:42:52 PM
Sodium	602	100		mg/L	10	10/7/2019 9:56:05 PM
Strontium	2.04	0.100		mg/L	10	10/7/2019 9:56:05 PM
Zinc	< 0.0100	0.0100		mg/L	1	10/7/2019 9:42:52 PM
METALS IN WATER BY ICP-MS, DISSOLVED				SW6020A		Analyst: MRM
Arsenic	< 0.00250	0.00250		mg/L	10	10/15/2019 12:22:32 PM
ALKALINITY; TOTAL, CARB, BICARB				SM2320 B		Analyst: BXB
Alkalinity, Bicarbonate (As CaCO3)	520	10.0		mgCaCO3/L	1	10/2/2019 6:48:00 AM
Alkalinity, Carbonate (As CaCO3)	< 10.0	10.0		mgCaCO3/L	1	10/2/2019 6:48:00 AM
Alkalinity, Total (As CaCO3)	520	10.0		mgCaCO3/L	1	10/2/2019 6:48:00 AM
TOTAL DISSOLVED SOLIDS				SM2540C		Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	3,260	200		mg/L	10	9/30/2019 1:41:00 PM

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 19091181

Date Reported: 10/17/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/26/2019
Project: Levert-Grand River 9326-025-0100
Lab ID: 19091181-004 **Matrix:** AQUEOUS
Client Sample ID Blind Dup

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH-D/O IN WATER BY SW8015					SW8015B	Analyst: AB
TPH DRO/ORO IN WATER BY SW8015					SW3511	
TPH (Diesel Range)	< 0.132	0.132		mg/L	1	10/7/2019 1:53:00 PM
TPH (Oil Range)	0.168	0.122		mg/L	1	10/7/2019 1:53:00 PM
Surr: 4-Terphenyl-d14	54.6	51.4 - 146		%Rec	1	10/7/2019 1:53:00 PM
BTEX/TPH-G IN WATER BY SW8021/8015					SW8015B	Analyst: CRM
TPH-GRO IN WATER BY SW8015						
TPH (Gasoline Range)	< 0.150	0.150		mg/L	1	9/28/2019 8:33:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	81.2	70 - 130		%Rec	1	9/28/2019 8:33:00 PM
BTEX/TPH-G IN WATER BY SW8021/8015					SW8021B	Analyst: CRM
BTEX IN WATER BY SW8021						
Benzene	< 0.00500	0.00500		mg/L	1	9/28/2019 8:33:00 PM
Ethylbenzene	< 0.00500	0.00500		mg/L	1	9/28/2019 8:33:00 PM
Toluene	< 0.0100	0.0100		mg/L	1	9/28/2019 8:33:00 PM
Xylenes, Total	< 0.0500	0.0500		mg/L	1	9/28/2019 8:33:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	85.4	70 - 130		%Rec	1	9/28/2019 8:33:00 PM
MERCURY IN GROUND WATER, DISSOLVED					SW7470A	Analyst: BXB
Mercury	< 0.000200	0.000200		mg/L	1	10/9/2019 8:32:57 AM
INORGANIC ANIONS IN WATER BY IC					SW9056A	Analyst: SGP
Chloride	3,140	50.0		mg/L	200	10/2/2019 12:10:21 PM
Sulfate	< 5.00	5.00		mg/L	20	10/2/2019 2:41:23 PM
NOTES:						
Note: Sample was analyzed at a dilution due to matrix interference. The reporting limit was raised accordingly.						
METALS IN WATER BY ICP, DISSOLVED					SW6010B	Analyst: STS
Barium	2.74	0.100		mg/L	10	10/7/2019 10:28:58 PM
Cadmium	< 0.00500	0.00500		mg/L	1	10/7/2019 10:24:43 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 19091181

Date Reported: 10/17/2019

CLIENT: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100
Lab ID: 19091181-004
Client Sample ID Blind Dup

Collection Date: 9/26/2019

Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
METALS IN WATER BY ICP, DISSOLVED				SW6010B		Analyst: STS
Calcium	775	5.00		mg/L	10	10/7/2019 10:28:58 PM
Chromium	< 0.0100	0.0100		mg/L	1	10/7/2019 10:24:43 PM
Iron	70.3	0.100		mg/L	10	10/7/2019 10:28:58 PM
Lead	< 0.0100	0.0100		mg/L	1	10/7/2019 10:24:43 PM
Magnesium	282	5.00		mg/L	10	10/7/2019 10:28:58 PM
Manganese	5.69	0.100		mg/L	10	10/7/2019 10:28:58 PM
Potassium	7.06	5.00		mg/L	1	10/7/2019 10:24:43 PM
Selenium	0.0508	0.0200		mg/L	1	10/7/2019 10:24:43 PM
Sodium	717	100		mg/L	10	10/7/2019 10:28:58 PM
Strontium	5.57	0.100		mg/L	10	10/7/2019 10:28:58 PM
Zinc	0.0108	0.0100		mg/L	1	10/7/2019 10:24:43 PM
METALS IN WATER BY ICP-MS, DISSOLVED				SW6020A		Analyst: MRM
Arsenic	0.0179	0.00250		mg/L	10	10/15/2019 12:25:20 PM
ALKALINITY; TOTAL, CARB, BICARB				SM2320 B		Analyst: BXB
Alkalinity, Bicarbonate (As CaCO3)	575	10.0		mgCaCO3/L	1	10/2/2019 6:48:00 AM
Alkalinity, Carbonate (As CaCO3)	< 10.0	10.0		mgCaCO3/L	1	10/2/2019 6:48:00 AM
Alkalinity, Total (As CaCO3)	575	10.0		mgCaCO3/L	1	10/2/2019 6:48:00 AM
TOTAL DISSOLVED SOLIDS				SM2540C		Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	8,350	500		mg/L	25	9/30/2019 1:41:00 PM

Qualifiers:
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 RL Reporting Limit
 SDL Sample detection limit
 W Sample container temperature is out of limit as specified at testcode

M Matrix Interference
 R RPD outside accepted recovery limits
 S Spike Recovery outside accepted recovery limits
 U Analyte not detected



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Analytical Report

(consolidated)

WO#: 19091181

Date Reported: 10/17/2019

CLIENT: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100
Lab ID: 19091181-005
Client Sample ID Trip Blank

Collection Date: 9/25/2019

Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
BTEX/TPH-G IN WATER BY SW8021/8015				SW8015B	Analyst: CRM	
TPH-GRO IN WATER BY SW8015						
TPH (Gasoline Range)	< 0.150	0.150		mg/L	1	9/28/2019 9:00:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	84.2	70 - 130		%Rec	1	9/28/2019 9:00:00 PM
BTEX/TPH-G IN WATER BY SW8021/8015				SW8021B	Analyst: CRM	
BTEX IN WATER BY SW8021						
Benzene	< 0.00500	0.00500		mg/L	1	9/28/2019 9:00:00 PM
Ethylbenzene	< 0.00500	0.00500		mg/L	1	9/28/2019 9:00:00 PM
Toluene	< 0.0100	0.0100		mg/L	1	9/28/2019 9:00:00 PM
Xylenes, Total	< 0.0500	0.0500		mg/L	1	9/28/2019 9:00:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	93.8	70 - 130		%Rec	1	9/28/2019 9:00:00 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: 31722

Sample ID: LCSD-31722	SampType: LCSD	TestCode: HG_W_7470A	Units: mg/L	Prep Date: 9/30/2019	RunNo: 82462						
Client ID: LCSS02	Batch ID: 31722	TestNo: SW7470A		Analysis Date: 9/30/2019	SeqNo: 2064311						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	0.0119	0.000200	0.01000	0	119	80	120	0.01174	1.05	20
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Sample ID: 19091085-018CMS	SampType: MS	TestCode: HG_W_7470A	Units: mg/L	Prep Date: 9/30/2019	RunNo: 82462						
Client ID: ZZZZZZ	Batch ID: 31722	TestNo: SW7470A		Analysis Date: 9/30/2019	SeqNo: 2064318						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	0.0120	0.000200	0.01000	0	120	75	125
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Sample ID: 19091085-018CMSD	SampType: MSD	TestCode: HG_W_7470A	Units: mg/L	Prep Date: 9/30/2019	RunNo: 82462						
Client ID: ZZZZZZ	Batch ID: 31722	TestNo: SW7470A		Analysis Date: 9/30/2019	SeqNo: 2064321						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	0.0120	0.000200	0.01000	0	120	75	125	0.01196	0.684	20
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Sample ID: MB-31722	SampType: MBLK	TestCode: HG_W_7470A	Units: mg/L	Prep Date: 9/30/2019	RunNo: 82462						
Client ID: PBW	Batch ID: 31722	TestNo: SW7470A		Analysis Date: 9/30/2019	SeqNo: 2064333						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	< 0.000200	0.000200
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Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: 31722

Sample ID: LCS-31722	SampType: LCS	TestCode: HG_W_7470A	Units: mg/L	Prep Date: 9/30/2019	RunNo: 82462						
Client ID: LCSW	Batch ID: 31722	TestNo: SW7470A	Analysis Date: 9/30/2019	SeqNo: 2064334							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0117	0.000200	0.01000	0	117	80	120				

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: 31727

Sample ID: LCS-D31727	SampType: LCS	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 9/30/2019	RunNo: 82516						
Client ID: LCSW	Batch ID: 31727	TestNo: SW8015B	SW3511	Analysis Date: 10/1/2019	SeqNo: 2065785						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range) 1.70 0.138 1.824 0 93.5 70 130
 Surr: 4-Terphenyl-d14 0.0427 0.06079 70.2 51.4 146

Sample ID: LCSD-D31727	SampType: LCSD	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 9/30/2019	RunNo: 82516						
Client ID: LCSS02	Batch ID: 31727	TestNo: SW8015B	SW3511	Analysis Date: 10/1/2019	SeqNo: 2065786						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range) 1.79 0.136 1.800 0 99.5 70 130 1.705 4.95 14.1
 Surr: 4-Terphenyl-d14 0.0424 0.05999 70.7 51.4 146 0 40

Sample ID: LCSD-M31727	SampType: LCSD	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 9/30/2019	RunNo: 82516						
Client ID: LCSS02	Batch ID: 31727	TestNo: SW8015B	SW3511	Analysis Date: 10/1/2019	SeqNo: 2065787						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range) 1.66 0.127 1.812 0 91.4 70 130 1.549 6.63 23.2
 Surr: 4-Terphenyl-d14 0.0393 0.06038 65.1 51.4 146 0 40

Sample ID: LCS-M31727	SampType: LCS	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 9/30/2019	RunNo: 82516						
Client ID: LCSW	Batch ID: 31727	TestNo: SW8015B	SW3511	Analysis Date: 10/1/2019	SeqNo: 2065788						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range) 1.55 0.127 1.816 0 85.3 70 130

Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits RL Reporting Limit S Spike Recovery outside accepted recovery limits
 SDL Sample detection limit U Analyte not detected W Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: 31727

Sample ID: LCS-M31727	SampType: LCS	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 9/30/2019	RunNo: 82516						
Client ID: LCSW	Batch ID: 31727	TestNo: SW8015B	SW3511	Analysis Date: 10/1/2019	SeqNo: 2065788						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Surr: 4-Terphenyl-d14 0.0393 0.06053 64.9 51.4 146

Sample ID: MB-31727	SampType: MBLK	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 9/30/2019	RunNo: 82516						
Client ID: PBW	Batch ID: 31727	TestNo: SW8015B	SW3511	Analysis Date: 10/1/2019	SeqNo: 2065789						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range) < 0.138 0.138
 TPH (Oil Range) < 0.127 0.127

Surr: 4-Terphenyl-d14 0.0351 0.06046 58.1 51.4 146

Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits RL Reporting Limit S Spike Recovery outside accepted recovery limits
 SDL Sample detection limit U Analyte not detected W Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: 31763

Sample ID: LCS-D31763	SampType: LCS	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 10/2/2019	RunNo: 82673						
Client ID: LCSW	Batch ID: 31763	TestNo: SW8015B	SW3511	Analysis Date: 10/4/2019	SeqNo: 2069681						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	2.03	0.136	1.794	0	113	70	130				
Surr: 4-Terphenyl-d14	0.0492		0.05979		82.3	51.4	146				

Sample ID: LCSD-D31763	SampType: LCSD	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 10/2/2019	RunNo: 82673						
Client ID: LCSS02	Batch ID: 31763	TestNo: SW8015B	SW3511	Analysis Date: 10/4/2019	SeqNo: 2069682						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	2.06	0.135	1.786	0	115	70	130	2.028	1.54	14.1
Surr: 4-Terphenyl-d14	0.0468		0.05954		78.6	51.4	146		0	40

Sample ID: LCSD-M31763	SampType: LCSD	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 10/2/2019	RunNo: 82673						
Client ID: LCSS02	Batch ID: 31763	TestNo: SW8015B	SW3511	Analysis Date: 10/4/2019	SeqNo: 2069683						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range)	1.74	0.125	1.793	0	97.2	70	130	1.668	4.41	23.2
Surr: 4-Terphenyl-d14	0.0442		0.05975		74.0	51.4	146		0	40

Sample ID: LCS-M31763	SampType: LCS	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 10/2/2019	RunNo: 82673						
Client ID: LCSW	Batch ID: 31763	TestNo: SW8015B	SW3511	Analysis Date: 10/4/2019	SeqNo: 2069684						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range)	1.67	0.124	1.775	0	94.0	70	130			
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Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: 31763

Sample ID: LCS-M31763	SampType: LCS	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 10/2/2019	RunNo: 82673						
Client ID: LCSW	Batch ID: 31763	TestNo: SW8015B	SW3511	Analysis Date: 10/4/2019	SeqNo: 2069684						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Surr: 4-Terphenyl-d14 0.0416 0.05917 70.4 51.4 146

Sample ID: MB-31763	SampType: MBLK	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 10/2/2019	RunNo: 82673						
Client ID: PBW	Batch ID: 31763	TestNo: SW8015B	SW3511	Analysis Date: 10/4/2019	SeqNo: 2069685						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range) < 0.136 0.136
 TPH (Oil Range) < 0.125 0.125
 Surr: 4-Terphenyl-d14 0.0503 0.05959 84.4 51.4 146

Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits RL Reporting Limit S Spike Recovery outside accepted recovery limits
 SDL Sample detection limit U Analyte not detected W Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: 31801

Sample ID: MB-31801	SampType: MBLK	TestCode: 6020A_W	Units: mg/L	Prep Date: 10/4/2019	RunNo: 82688
Client ID: PBW	Batch ID: 31801	TestNo: SW6020A		Analysis Date: 10/7/2019	SeqNo: 2070044
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Arsenic < 0.000250 0.000250

Sample ID: LCS-31801	SampType: LCS	TestCode: 6020A_W	Units: mg/L	Prep Date: 10/4/2019	RunNo: 82688
Client ID: LCSW	Batch ID: 31801	TestNo: SW6020A		Analysis Date: 10/7/2019	SeqNo: 2070045
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Arsenic 0.494 0.00500 0.500 0 98.8 80 120

Sample ID: LCSD-31801	SampType: LCSD	TestCode: 6020A_W	Units: mg/L	Prep Date: 10/4/2019	RunNo: 82688
Client ID: LCSS02	Batch ID: 31801	TestNo: SW6020A		Analysis Date: 10/7/2019	SeqNo: 2070046
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Arsenic 0.479 0.00500 0.500 0 95.7 80 120 0.494 3.15 20

Sample ID: 19091181-001CMS	SampType: MS	TestCode: 6020A_W	Units: mg/L	Prep Date: 10/4/2019	RunNo: 82688
Client ID: LT-1	Batch ID: 31801	TestNo: SW6020A		Analysis Date: 10/7/2019	SeqNo: 2070053
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Arsenic 0.500 0.00500 0.500 0.00210 99.5 75 125

Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits RL Reporting Limit S Spike Recovery outside accepted recovery limits
 SDL Sample detection limit U Analyte not detected W Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: 31801

Sample ID: 19091181-001CMSD	SampType: MSD	TestCode: 6020A_W	Units: mg/L	Prep Date: 10/4/2019	RunNo: 82688						
Client ID: LT-1	Batch ID: 31801	TestNo: SW6020A		Analysis Date: 10/7/2019	SeqNo: 2070054						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.482	0.00500	0.500	0.00210	96.0	75	125	0.500	3.59	20	

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: 31811

Sample ID: MB-31811	SampType: MBLK	TestCode: 6010_W	Units: mg/L	Prep Date: 10/4/2019	RunNo: 82692
Client ID: PBW	Batch ID: 31811	TestNo: SW6010B		Analysis Date: 10/7/2019	SeqNo: 2070547

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	< 0.0100	0.0100									
Cadmium	< 0.00500	0.00500									
Calcium	< 0.500	0.500									
Chromium	< 0.0100	0.0100									
Iron	< 0.0100	0.0100									
Lead	< 0.0100	0.0100									
Magnesium	< 0.500	0.500									
Manganese	< 0.0100	0.0100									
Potassium	< 5.00	5.00									
Sodium	< 10.0	10.0									
Strontium	< 0.0100	0.0100									
Zinc	< 0.0100	0.0100									

Sample ID: LCS-31811	SampType: LCS	TestCode: 6010_W	Units: mg/L	Prep Date: 10/4/2019	RunNo: 82692
Client ID: LCSW	Batch ID: 31811	TestNo: SW6010B		Analysis Date: 10/7/2019	SeqNo: 2070548

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.535	0.0100	0.5000	0	107	80	120				
Cadmium	0.529	0.00500	0.5000	0	106	80	120				
Calcium	52.0	0.500	50.00	0	104	80	120				
Chromium	0.534	0.0100	0.5000	0	107	80	120				
Iron	0.532	0.0100	0.5000	0	106	80	120				
Lead	0.534	0.0100	0.5000	0	107	80	120				
Magnesium	52.5	0.500	50.00	0	105	80	120				
Manganese	0.535	0.0100	0.5000	0	107	80	120				

Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits RL Reporting Limit S Spike Recovery outside accepted recovery limits
 SDL Sample detection limit U Analyte not detected W Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: 31811

Sample ID: LCS-31811	SampType: LCS	TestCode: 6010_W	Units: mg/L	Prep Date: 10/4/2019	RunNo: 82692						
Client ID: LCSW	Batch ID: 31811	TestNo: SW6010B	Analysis Date: 10/7/2019	SeqNo: 2070548							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	49.3	5.00	50.00	0	98.6	80	120				
Sodium	51.6	10.0	50.00	0	103	80	120				
Strontium	0.543	0.0100	0.5000	0	109	80	120				
Zinc	0.535	0.0100	0.5000	0	107	80	120				

Sample ID: LCSD-31811	SampType: LCSD	TestCode: 6010_W	Units: mg/L	Prep Date: 10/4/2019	RunNo: 82692						
Client ID: LCSS02	Batch ID: 31811	TestNo: SW6010B	Analysis Date: 10/7/2019	SeqNo: 2070549							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.525	0.0100	0.5000	0	105	80	120	0.5352	1.98	20	
Cadmium	0.529	0.00500	0.5000	0	106	80	120	0.5288	0.0378	20	
Calcium	51.3	0.500	50.00	0	103	80	120	51.95	1.20	20	
Chromium	0.525	0.0100	0.5000	0	105	80	120	0.5339	1.70	20	
Iron	0.525	0.0100	0.5000	0	105	80	120	0.5322	1.36	20	
Lead	0.525	0.0100	0.5000	0	105	80	120	0.5339	1.70	20	
Magnesium	51.9	0.500	50.00	0	104	80	120	52.50	1.19	20	
Manganese	0.526	0.0100	0.5000	0	105	80	120	0.5347	1.74	20	
Potassium	48.8	5.00	50.00	0	97.7	80	120	49.29	0.897	20	
Sodium	51.6	10.0	50.00	0	103	80	120	51.64	0.0194	20	
Strontium	0.537	0.0100	0.5000	0	107	80	120	0.5434	1.24	20	
Zinc	0.526	0.0100	0.5000	0	105	80	120	0.5352	1.73	20	

Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits RL Reporting Limit S Spike Recovery outside accepted recovery limits
 SDL Sample detection limit U Analyte not detected W Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: 31811

Sample ID: 19091181-001CMS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 10/4/2019	RunNo: 82692						
Client ID: LT-1	Batch ID: 31811	TestNo: SW6010B	Analysis Date: 10/7/2019	SeqNo: 2070555							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	0.460	0.00500	0.5000	0	92.0	75	125				
Chromium	0.451	0.0100	0.5000	0	90.3	75	125				
Lead	0.412	0.0100	0.5000	0	82.4	75	125				
Potassium	112	5.00	50.00	15.11	194	75	125				S
Zinc	0.468	0.0100	0.5000	0.01680	90.2	75	125				

Sample ID: 19091181-001CMSD	SampType: MSD	TestCode: 6010_W	Units: mg/L	Prep Date: 10/4/2019	RunNo: 82692						
Client ID: LT-1	Batch ID: 31811	TestNo: SW6010B	Analysis Date: 10/7/2019	SeqNo: 2070556							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	0.446	0.00500	0.5000	0	89.2	75	125	0.4601	3.16	20	
Chromium	0.440	0.0100	0.5000	0	88.1	75	125	0.4514	2.49	20	
Lead	0.398	0.0100	0.5000	0	79.6	75	125	0.4120	3.46	20	
Potassium	108	5.00	50.00	15.11	185	75	125	112.2	4.00	20	S
Zinc	0.492	0.0100	0.5000	0.01680	95.1	75	125	0.4678	5.06	20	

NOTES:
 S - Spike recovery indicates matrix interference. The method is in control as indicated by the Lab Control Sample.

Sample ID: 19091181-001CMS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 10/4/2019	RunNo: 82692						
Client ID: LT-1	Batch ID: 31811	TestNo: SW6010B	Analysis Date: 10/7/2019	SeqNo: 2070558							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	4.10	0.100	0.5000	3.430	134	75	125				S
Calcium	1,790	5.00	50.00	1,655	262	75	125				S

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as sj



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 Website: www.element.com

QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: 31811

Sample ID: 19091181-001CMS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 10/4/2019	RunNo: 82692						
Client ID: LT-1	Batch ID: 31811	TestNo: SW6010B	Analysis Date: 10/7/2019	SeqNo: 2070558							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	107	0.100	0.5000	101.9	960	75	125				S
Magnesium	665	5.00	50.00	575.1	180	75	125				S
Manganese	8.56	0.100	0.5000	7.786	155	75	125				S
Sodium	3,120	100	50.00	2,892	450	75	125				S
Strontium	14.4	0.100	0.5000	13.31	216	75	125				S

Sample ID: 19091181-001CMSD	SampType: MSD	TestCode: 6010_W	Units: mg/L	Prep Date: 10/4/2019	RunNo: 82692						
Client ID: LT-1	Batch ID: 31811	TestNo: SW6010B	Analysis Date: 10/7/2019	SeqNo: 2070559							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	3.98	0.100	0.5000	3.430	110	75	125	4.098	2.97	20	
Calcium	1,810	5.00	50.00	1,655	304	75	125	1,786	1.17	20	S
Iron	104	0.100	0.5000	101.9	380	75	125	106.7	2.76	20	S
Magnesium	654	5.00	50.00	575.1	158	75	125	665.0	1.62	20	S
Manganese	8.44	0.100	0.5000	7.786	131	75	125	8.559	1.40	20	S
Sodium	3,070	100	50.00	2,892	360	75	125	3,117	1.45	20	S
Strontium	14.1	0.100	0.5000	13.31	150	75	125	14.39	2.32	20	S

NOTES:

S - Analyte concentration in native sample was too high for accurate spike recovery(ies). The method is in control as indicated by the laboratory control sample (LCS).

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: 31829

Sample ID: 19091181-002CPDS	SampType: PDS	TestCode: HG_D_7470A	Units: mg/L	Prep Date:	RunNo: 82743						
Client ID: LT-2	Batch ID: 31829	TestNo: SW7470A		Analysis Date: 10/9/2019	SeqNo: 2072194						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	6.07	0.000200	0.0100	-0.0163	44.3	80	120				S
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Sample ID: 19091181-002CPDSD	SampType: PDSD	TestCode: HG_D_7470A	Units: mg/L	Prep Date:	RunNo: 82743						
Client ID: LT-2	Batch ID: 31829	TestNo: SW7470A		Analysis Date: 10/9/2019	SeqNo: 2072195						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	0.00603	0.000200	0.01370	0	44.0	80	120	0.006066	0.526	20	S
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Sample ID: MB-31829	SampType: MBLK	TestCode: HG_D_7470A	Units: mg/L	Prep Date: 10/8/2019	RunNo: 82743						
Client ID: PBW	Batch ID: 31829	TestNo: SW7470A		Analysis Date: 10/9/2019	SeqNo: 2072201						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	< 0.000200	0.000200									
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Sample ID: LCS-31829	SampType: LCS	TestCode: HG_D_7470A	Units: mg/L	Prep Date: 10/8/2019	RunNo: 82743						
Client ID: LCSW	Batch ID: 31829	TestNo: SW7470A		Analysis Date: 10/9/2019	SeqNo: 2072202						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	0.00973	0.000200	0.01000	0	97.3	80	120				
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Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: 31829

Sample ID: LCSD-31829	SampType: LCSD	TestCode: HG_D_7470A	Units: mg/L	Prep Date: 10/8/2019	RunNo: 82743						
Client ID: LCSS02	Batch ID: 31829	TestNo: SW7470A	Analysis Date: 10/9/2019	SeqNo: 2072203							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	0.00975	0.000200	0.01000	0	97.5	80	120	0.009726	0.199	20	
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Sample ID: 19091181-002CMS	SampType: MS	TestCode: HG_D_7470A	Units: mg/L	Prep Date: 10/8/2019	RunNo: 82743						
Client ID: LT-2	Batch ID: 31829	TestNo: SW7470A	Analysis Date: 10/9/2019	SeqNo: 2072205							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	0.00368	0.000200	0.01000	0	36.8	75	125				S
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Sample ID: 19091181-002CMSD	SampType: MSD	TestCode: HG_D_7470A	Units: mg/L	Prep Date: 10/8/2019	RunNo: 82743						
Client ID: LT-2	Batch ID: 31829	TestNo: SW7470A	Analysis Date: 10/9/2019	SeqNo: 2072206							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	0.00380	0.000200	0.01000	0	38.0	75	125	0.003677	3.40	20	S
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NOTES:

S - Spike recoveries were outside of QC limits in MS/MSD and PDS/PDSD, suggesting matrix effect. The method is in control as indicated by the Lab Control Sample(s).

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82429

Sample ID: MBLK	SampType: MBLK	TestCode: 8021_BTEX_	Units: mg/L	Prep Date:	RunNo: 82429						
Client ID: PBW	Batch ID: R82429	TestNo: SW8021B		Analysis Date: 9/28/2019	SeqNo: 2063922						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	< 0.00500	0.00500									
Ethylbenzene	< 0.00500	0.00500									
Toluene	< 0.0100	0.0100									
Xylenes, Total	< 0.0500	0.0500									
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0479		0.05000		95.8	70	130				

Sample ID: BTEX LCS	SampType: LCS	TestCode: 8021_BTEX_	Units: mg/L	Prep Date:	RunNo: 82429						
Client ID: LCSW	Batch ID: R82429	TestNo: SW8021B		Analysis Date: 9/28/2019	SeqNo: 2063923						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.0461	0.00500	0.05000	0	92.2	72	120				
Ethylbenzene	0.0471	0.00500	0.05000	0	94.2	76	129				
Toluene	0.0452	0.0100	0.05000	0	90.4	78	120				
Xylenes, Total	0.136	0.0500	0.1500	0	90.9	75	125				
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0488		0.05000		97.6	70	130				

Sample ID: BTEX LCSD	SampType: lcscd	TestCode: 8021_BTEX_	Units: mg/L	Prep Date:	RunNo: 82429						
Client ID: LCSS02	Batch ID: R82429	TestNo: SW8021B		Analysis Date: 9/28/2019	SeqNo: 2063924						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.0475	0.00500	0.05000	0	95.0	72	120	0.04610	2.99	20	
Ethylbenzene	0.0490	0.00500	0.05000	0	98.0	76	129	0.04710	3.95	20	

Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits RL Reporting Limit S Spike Recovery outside accepted recovery limits
 SDL Sample detection limit U Analyte not detected W Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82429

Sample ID: BTEX LCSD	SampType: lcSD	TestCode: 8021_BTEX_	Units: mg/L	Prep Date:	RunNo: 82429						
Client ID: LCSS02	Batch ID: R82429	TestNo: SW8021B	Analysis Date: 9/28/2019	SeqNo: 2063924							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Toluene	0.0468	0.0100	0.05000	0	93.6	78	120	0.04520	3.48	20	
Xylenes, Total	0.142	0.0500	0.1500	0	95.0	75	125	0.1364	4.37	20	
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0495		0.05000		99.0	70	130		0	20	

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82431

Sample ID: GAS LCS	SampType: LCS	TestCode: 8015_G_W	Units: mg/L	Prep Date:	RunNo: 82431						
Client ID: LCSW	Batch ID: R82431	TestNo: SW8015B		Analysis Date: 9/28/2019	SeqNo: 2063940						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Gasoline Range) 11.9 0.150 12.50 0 95.0 80 130

Sample ID: GAS LCSD	SampType: LCSD	TestCode: 8015_G_W	Units: mg/L	Prep Date:	RunNo: 82431						
Client ID: LCSS02	Batch ID: R82431	TestNo: SW8015B		Analysis Date: 9/28/2019	SeqNo: 2063941						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Gasoline Range) 11.9 0.150 12.50 0 95.2 80 130 11.87 0.238 20

Sample ID: MBLK	SampType: MBLK	TestCode: 8015_G_W	Units: mg/L	Prep Date:	RunNo: 82431						
Client ID: PBW	Batch ID: R82431	TestNo: SW8015B		Analysis Date: 9/28/2019	SeqNo: 2063942						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Gasoline Range) < 0.150 0.150
 Surr: alpha, alpha, alpha-Trifluorotoluene 0.0428 0.05000 85.6 70 130

Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits RL Reporting Limit S Spike Recovery outside accepted recovery limits
 SDL Sample detection limit U Analyte not detected W Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82434

Sample ID: MB-R82434	SampType: MBLK	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 82434						
Client ID: PBW	Batch ID: R82434	TestNo: SM2540C		Analysis Date: 9/30/2019	SeqNo: 2064920						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) < 20.0 20.0

Sample ID: LCS-R82434	SampType: LCS	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 82434						
Client ID: LCSW	Batch ID: R82434	TestNo: SM2540C		Analysis Date: 9/30/2019	SeqNo: 2064921						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 997 20.0 1,000 0 99.7 85 115

Sample ID: LCSD-R82434	SampType: LCSD	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 82434						
Client ID: LCSS02	Batch ID: R82434	TestNo: SM2540C		Analysis Date: 9/30/2019	SeqNo: 2064922						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 993 20.0 1,000 0 99.3 85 115 997.0 0.402 10

Sample ID: 19091176-007ADUP	SampType: DUP	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 82434						
Client ID: ZZZZZ	Batch ID: R82434	TestNo: SM2540C		Analysis Date: 9/30/2019	SeqNo: 2064943						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 465 20.0 463.0 0.431 10

Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits RL Reporting Limit S Spike Recovery outside accepted recovery limits
 SDL Sample detection limit U Analyte not detected W Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82434

Sample ID: 19091176-007ADUP	SampType: DUP	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 82434						
Client ID: ZZZZZZ	Batch ID: R82434	TestNo: SM2540C		Analysis Date: 9/30/2019	SeqNo: 2064943						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: 19091181-001DDUP	SampType: DUP	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 82434						
Client ID: LT-1	Batch ID: R82434	TestNo: SM2540C		Analysis Date: 9/30/2019	SeqNo: 2064944						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filterable)	18,800	500						18,800	0	10	

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82461

Sample ID: MB-R82461	SampType: MBLK	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 82461						
Client ID: PBW	Batch ID: R82461	TestNo: SM2540C		Analysis Date: 9/30/2019	SeqNo: 2065448						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) < 20.0 20.0

Sample ID: LCS-R82461	SampType: LCS	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 82461						
Client ID: LCSW	Batch ID: R82461	TestNo: SM2540C		Analysis Date: 9/30/2019	SeqNo: 2065449						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 1,000 20.0 1,000 0 100 85 115

Sample ID: LCSD-R82461	SampType: LCSD	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 82461						
Client ID: LCSS02	Batch ID: R82461	TestNo: SM2540C		Analysis Date: 9/30/2019	SeqNo: 2065450						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 1,000 20.0 1,000 0 100 85 115 1,004 0.199 10

Sample ID: 19091194-004ADUP	SampType: DUP	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 82461						
Client ID: ZZZZZ	Batch ID: R82461	TestNo: SM2540C		Analysis Date: 9/30/2019	SeqNo: 2065471						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 267 20.0 268.0 0.374 10

Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits RL Reporting Limit S Spike Recovery outside accepted recovery limits
 SDL Sample detection limit U Analyte not detected W Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82461

Sample ID: 19091194-004ADUP	SampType: DUP	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 82461						
Client ID: ZZZZZZ	Batch ID: R82461	TestNo: SM2540C		Analysis Date: 9/30/2019	SeqNo: 2065471						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: 19091194-005ADUP	SampType: DUP	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 82461						
Client ID: ZZZZZZ	Batch ID: R82461	TestNo: SM2540C		Analysis Date: 9/30/2019	SeqNo: 2065472						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filterable)	401	20.0						401.0	0	10	

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82510

Sample ID: MB-R82510	SampType: MBLK	TestCode: ALK	Units: mgCaCO3/L	Prep Date:	RunNo: 82510						
Client ID: PBW	Batch ID: R82510	TestNo: SM2320 B		Analysis Date: 10/2/2019	SeqNo: 2065561						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	< 10.0	10.0									
Alkalinity, Carbonate (As CaCO3)	< 10.0	10.0									
Alkalinity, Total (As CaCO3)	< 10.0	10.0									

Sample ID: LCS-R82510	SampType: LCS	TestCode: ALK	Units: mgCaCO3/L	Prep Date:	RunNo: 82510						
Client ID: LCSW	Batch ID: R82510	TestNo: SM2320 B		Analysis Date: 10/2/2019	SeqNo: 2065562						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	50.0	10.0	50.00	0	100	80	120				

Sample ID: 19091196-004ADUP	SampType: DUP	TestCode: ALK	Units: mgCaCO3/L	Prep Date:	RunNo: 82510						
Client ID: ZZZZZ	Batch ID: R82510	TestNo: SM2320 B		Analysis Date: 10/2/2019	SeqNo: 2065577						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	110	10.0						115.0	4.44	20	
Alkalinity, Carbonate (As CaCO3)	< 10.0	10.0						0	0	20	
Alkalinity, Total (As CaCO3)	110	10.0						115.0	4.44	20	

Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits RL Reporting Limit S Spike Recovery outside accepted recovery limits
 SDL Sample detection limit U Analyte not detected W Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82561

Sample ID: MBLK	SampType: MBLK	TestCode: 9056_W	Units: mg/L	Prep Date:	RunNo: 82561						
Client ID: PBW	Batch ID: R82561	TestNo: SW9056A		Analysis Date: 10/2/2019	SeqNo: 2067028						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride	< 0.250	0.250									
Sulfate	< 0.250	0.250									

Sample ID: LCS	SampType: LCS	TestCode: 9056_W	Units: mg/L	Prep Date:	RunNo: 82561						
Client ID: LCSW	Batch ID: R82561	TestNo: SW9056A		Analysis Date: 10/2/2019	SeqNo: 2067029						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride	10.1	0.250	10.00	0	101	80	120				
Sulfate	10.1	0.250	10.00	0	101	80	120				

Sample ID: LCSD	SampType: LCSD	TestCode: 9056_W	Units: mg/L	Prep Date:	RunNo: 82561						
Client ID: LCSS02	Batch ID: R82561	TestNo: SW9056A		Analysis Date: 10/2/2019	SeqNo: 2067030						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride	10.1	0.250	10.00	0	101	80	120	10.07	0.134	15	
Sulfate	9.82	0.250	10.00	0	98.2	80	120	10.11	2.91	15	

Sample ID: 19100032-006AMS	SampType: MS	TestCode: 9056_W	Units: mg/L	Prep Date:	RunNo: 82561						
Client ID: ZZZZZ	Batch ID: R82561	TestNo: SW9056A		Analysis Date: 10/2/2019	SeqNo: 2067035						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride	1,950	25.0	500.0	1,493	90.9	80	120				
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Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82561

Sample ID: 19100032-006AMS	SampType: MS	TestCode: 9056_W	Units: mg/L	Prep Date:	RunNo: 82561						
Client ID: ZZZZZ	Batch ID: R82561	TestNo: SW9056A		Analysis Date: 10/2/2019	SeqNo: 2067035						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sulfate	741	25.0	500.0	242.9	99.6	80	120				
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Sample ID: 19100032-006AMSD	SampType: MSD	TestCode: 9056_W	Units: mg/L	Prep Date:	RunNo: 82561						
Client ID: ZZZZZ	Batch ID: R82561	TestNo: SW9056A		Analysis Date: 10/2/2019	SeqNo: 2067036						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride	1,950	25.0	500.0	1,493	91.7	80	120	1,947	0.205	15	
Sulfate	748	25.0	500.0	242.9	101	80	120	740.7	1.01	15	

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82601

Sample ID: GAS LCS	SampType: LCS	TestCode: 8015_G_W	Units: mg/L	Prep Date:	RunNo: 82601						
Client ID: LCSW	Batch ID: R82601	TestNo: SW8015B		Analysis Date: 10/3/2019	SeqNo: 2068201						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Gasoline Range)
 Surr: alpha, alpha, alpha-Trifluorotoluene

10.9
 0.0622
 0.150
 12.50
 0
 87.5
 80
 130
 0.05000
 124
 70
 130

Sample ID: GAS LCSD	SampType: LCSD	TestCode: 8015_G_W	Units: mg/L	Prep Date:	RunNo: 82601						
Client ID: LCSS02	Batch ID: R82601	TestNo: SW8015B		Analysis Date: 10/3/2019	SeqNo: 2068202						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Gasoline Range)
 Surr: alpha, alpha, alpha-Trifluorotoluene

11.1
 0.0618
 0.150
 12.50
 0
 89.0
 80
 130
 0.05000
 124
 70
 130
 10.94
 1.73
 20
 0
 20

Sample ID: MB	SampType: MBLK	TestCode: 8015_G_W	Units: mg/L	Prep Date:	RunNo: 82601						
Client ID: PBW	Batch ID: R82601	TestNo: SW8015B		Analysis Date: 10/3/2019	SeqNo: 2068203						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Gasoline Range)
 Surr: alpha, alpha, alpha-Trifluorotoluene

< 0.150
 0.0426
 0.150
 0.05000
 85.2
 70
 130

Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
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 SDL Sample detection limit U Analyte not detected W Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82637

Sample ID: MB	SampType: MBLK	TestCode: 8021_BTEX_	Units: mg/L	Prep Date:	RunNo: 82637						
Client ID: PBW	Batch ID: R82637	TestNo: SW8021B		Analysis Date: 10/3/2019	SeqNo: 2068856						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	< 0.00500	0.00500									
Ethylbenzene	< 0.00500	0.00500									
Toluene	< 0.0100	0.0100									
Xylenes, Total	< 0.0500	0.0500									
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0482		0.05000		96.4	70	130				

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82711-1

Sample ID: MB	SampType: MBLK	TestCode: 6010-D	Units: mg/L	Prep Date:	RunNo: 82711						
Client ID: PBW	Batch ID: R82711-1	TestNo: SW6010B		Analysis Date: 10/7/2019	SeqNo: 2071072						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	< 0.0100	0.0100									
Cadmium	< 0.00500	0.00500									
Calcium	< 0.500	0.500									
Chromium	< 0.0100	0.0100									
Iron	< 0.0100	0.0100									
Lead	< 0.0100	0.0100									
Magnesium	< 0.500	0.500									
Manganese	< 0.0100	0.0100									
Potassium	< 5.00	5.00									
Selenium	< 0.0200	0.0200									
Sodium	< 10.0	10.0									
Strontium	< 0.0100	0.0100									
Zinc	< 0.0100	0.0100									

Sample ID: LCS	SampType: LCS	TestCode: 6010-D	Units: mg/L	Prep Date:	RunNo: 82711						
Client ID: LCSW	Batch ID: R82711-1	TestNo: SW6010B		Analysis Date: 10/7/2019	SeqNo: 2071073						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.529	0.0100	0.5000	0	106	80	120				
Cadmium	0.525	0.00500	0.5000	0	105	80	120				
Calcium	50.6	0.500	50.00	0	101	80	120				
Chromium	0.531	0.0100	0.5000	0	106	80	120				
Iron	0.528	0.0100	0.5000	0	106	80	120				
Lead	0.521	0.0100	0.5000	0	104	80	120				
Magnesium	51.1	0.500	50.00	0	102	80	120				

Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits RL Reporting Limit S Spike Recovery outside accepted recovery limits
 SDL Sample detection limit U Analyte not detected W Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82711-1

Sample ID: LCS	SampType: LCS	TestCode: 6010-D	Units: mg/L	Prep Date:	RunNo: 82711						
Client ID: LCSW	Batch ID: R82711-1	TestNo: SW6010B		Analysis Date: 10/7/2019	SeqNo: 2071073						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.528	0.0100	0.5000	0	106	80	120				
Potassium	49.3	5.00	50.00	0	98.6	80	120				
Selenium	0.541	0.0200	0.5000	0	108	80	120				
Sodium	50.8	10.0	50.00	0	102	80	120				
Strontium	0.533	0.0100	0.5000	0	107	80	120				
Zinc	0.532	0.0100	0.5000	0	106	80	120				

Sample ID: LCSD	SampType: LCSD	TestCode: 6010-D	Units: mg/L	Prep Date:	RunNo: 82711						
Client ID: LCSS02	Batch ID: R82711-1	TestNo: SW6010B		Analysis Date: 10/7/2019	SeqNo: 2071074						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.525	0.0100	0.5000	0	105	80	120	0.5287	0.721	20	
Cadmium	0.523	0.00500	0.5000	0	105	80	120	0.5249	0.420	20	
Calcium	50.6	0.500	50.00	0	101	80	120	50.58	0.119	20	
Chromium	0.526	0.0100	0.5000	0	105	80	120	0.5307	0.871	20	
Iron	0.524	0.0100	0.5000	0	105	80	120	0.5280	0.780	20	
Lead	0.518	0.0100	0.5000	0	104	80	120	0.5213	0.635	20	
Magnesium	51.1	0.500	50.00	0	102	80	120	51.14	0.137	20	
Manganese	0.524	0.0100	0.5000	0	105	80	120	0.5278	0.646	20	
Potassium	49.5	5.00	50.00	0	99.0	80	120	49.28	0.445	20	
Selenium	0.538	0.0200	0.5000	0	108	80	120	0.5406	0.408	20	
Sodium	51.4	10.0	50.00	0	103	80	120	50.75	1.27	20	
Strontium	0.533	0.0100	0.5000	0	107	80	120	0.5333	0.0563	20	
Zinc	0.528	0.0100	0.5000	0	106	80	120	0.5322	0.717	20	

Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits RL Reporting Limit S Spike Recovery outside accepted recovery limits
 SDL Sample detection limit U Analyte not detected W Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82711-1

Sample ID:	19091181-003CMS	SampType:	MS	TestCode:	6010-D	Units:	mg/L	Prep Date:	RunNo:	82711	
Client ID:	LT-3	Batch ID:	R82711-1	TestNo:	SW6010B	Analysis Date:	10/7/2019	SeqNo:	2071078		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	0.470	0.00500	0.5000	0	94.0	75	125				
Chromium	0.480	0.0100	0.5000	0	96.1	75	125				
Lead	0.453	0.0100	0.5000	0	90.5	75	125				
Magnesium	142	0.500	50.00	98.43	88.1	75	125				
Potassium	71.2	5.00	50.00	3.996	134	75	125				S
Selenium	0.555	0.0200	0.5000	0.07960	95.1	75	125				
Zinc	0.483	0.0100	0.5000	0	96.5	75	125				

Sample ID:	19091181-003CMSD	SampType:	MSD	TestCode:	6010-D	Units:	mg/L	Prep Date:	RunNo:	82711	
Client ID:	LT-3	Batch ID:	R82711-1	TestNo:	SW6010B	Analysis Date:	10/7/2019	SeqNo:	2071079		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	0.469	0.00500	0.5000	0	93.7	75	125	0.4698	0.256	20	
Chromium	0.479	0.0100	0.5000	0	95.7	75	125	0.4804	0.375	20	
Lead	0.454	0.0100	0.5000	0	90.8	75	125	0.4526	0.265	20	
Magnesium	143	0.500	50.00	98.43	88.7	75	125	142.5	0.210	20	
Potassium	71.4	5.00	50.00	3.996	135	75	125	71.23	0.238	20	S
Selenium	0.559	0.0200	0.5000	0.07960	95.9	75	125	0.5553	0.682	20	
Zinc	0.482	0.0100	0.5000	0	96.4	75	125	0.4826	0.0829	20	

NOTES:
 S - Spike recovery indicates matrix interference. The method is in control as indicated by the Lab Control Sample.

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82711-1

Sample ID: 19091181-003CMS	SampType: MS	TestCode: 6010-D	Units: mg/L	Prep Date:	RunNo: 82711						
Client ID: LT-3	Batch ID: R82711-1	TestNo: SW6010B	Analysis Date: 10/7/2019	SeqNo: 2071081							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	1.61	0.100	0.5000	1.219	79.0	75	125				
Calcium	313	5.00	50.00	281.7	62.0	75	125				S
Iron	5.72	0.100	0.5000	5.642	16.2	75	125				S
Manganese	2.38	0.100	0.5000	2.091	57.6	75	125				S
Sodium	580	100	50.00	601.8	-43.6	75	125				S
Strontium	2.41	0.100	0.5000	2.041	72.8	75	125				S

Sample ID: 19091181-003CMSD	SampType: MSD	TestCode: 6010-D	Units: mg/L	Prep Date:	RunNo: 82711						
Client ID: LT-3	Batch ID: R82711-1	TestNo: SW6010B	Analysis Date: 10/7/2019	SeqNo: 2071085							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	1.62	0.100	0.5000	1.219	80.4	75	125	1.614	0.433	20	
Calcium	308	5.00	50.00	281.7	52.8	75	125	312.7	1.48	20	S
Iron	5.79	0.100	0.5000	5.642	29.0	75	125	5.723	1.11	20	S
Manganese	2.41	0.100	0.5000	2.091	63.6	75	125	2.379	1.25	20	S
Sodium	583	100	50.00	601.8	-37.4	75	125	580.0	0.533	20	S
Strontium	2.40	0.100	0.5000	2.041	72.2	75	125	2.405	0.125	20	S

NOTES:
 S - Spike recovery indicates matrix interference. The method is in control as indicated by the Lab Control Sample.

Qualifiers:	H Holding times for preparation or analysis exceeded	M Matrix Interference	ND Not Detected at the Reporting Limit
	R RPD outside accepted recovery limits	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected	W Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82905

Sample ID: MBLK	SampType: MBLK	TestCode: 6020A_D	Units: mg/L	Prep Date:	RunNo: 82905
Client ID: PBW	Batch ID: R82905	TestNo: SW6020A		Analysis Date: 10/15/2019	SeqNo: 2075968
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Arsenic < 0.000250 0.000250

Sample ID: LCS	SampType: LCS	TestCode: 6020A_D	Units: mg/L	Prep Date:	RunNo: 82905
Client ID: LCSW	Batch ID: R82905	TestNo: SW6020A		Analysis Date: 10/15/2019	SeqNo: 2075969
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Arsenic 0.0192 0.000250 0.0200 0 95.8 80 120

Sample ID: LCSD	SampType: LCSD	TestCode: 6020A_D	Units: mg/L	Prep Date:	RunNo: 82905
Client ID: LCSS02	Batch ID: R82905	TestNo: SW6020A		Analysis Date: 10/15/2019	SeqNo: 2075970
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Arsenic 0.0200 0.000250 0.0200 0 100 80 120 0.0192 4.33 20

Sample ID: 19100080-005EMS	SampType: MS	TestCode: 6020A_D	Units: mg/L	Prep Date:	RunNo: 82905
Client ID: ZZZZZZ	Batch ID: R82905	TestNo: SW6020A		Analysis Date: 10/15/2019	SeqNo: 2075979
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Arsenic 0.216 0.00250 0.200 0.0237 96.2 75 125

Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits RL Reporting Limit S Spike Recovery outside accepted recovery limits
 SDL Sample detection limit U Analyte not detected W Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82905

Sample ID: 19100080-005EMSD	SampType: MSD	TestCode: 6020A_D	Units: mg/L	Prep Date:	RunNo: 82905						
Client ID: ZZZZZZ	Batch ID: R82905	TestNo: SW6020A		Analysis Date: 10/15/2019	SeqNo: 2075980						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.213	0.00250	0.200	0.0237	94.9	75	125	0.216	1.25	20	

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as sj



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

Sample Log-In Check List

Client Name: **ICON_ENV**

Work Order Number: **19091181**

RcptNo: **1**

Logged by:	Danielle Hollier	9/27/2019 3:45:00 PM	<i>Danielle Hollier</i>
Completed By:	Danielle Hollier	9/27/2019 5:17:10 PM	<i>Danielle Hollier</i>
Reviewed By:	Caitlin Duplantis	10/3/2019 11:55:16 AM	<i>Caitlin Duplantis</i>

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
 2. How was the sample delivered? Element

Log In

3. Coolers are present? Yes No NA
 4. Shipping container/cooler in good condition? Yes No
 Custody seals intact on shipping container/cooler? Yes No Not Present
 No. Seal Date: Signed By:
 5. Was an attempt made to cool the samples? Yes No NA
 6. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
 7. Sample(s) in proper container(s)? Yes No
 8. Sufficient sample volume for indicated test(s)? Yes No
 9. Are samples (except VOA and ONG) properly preserved? Yes No
 10. Was preservative added to bottles? Yes No NA
 11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes No No VOA Vials
 12. Were any sample containers received broken? Yes No
 13. Does paperwork match bottle labels? Yes No
 (Note discrepancies on chain of custody)
 14. Are matrices correctly identified on Chain of Custody? Yes No
 15. Is it clear what analyses were requested? Yes No
 16. Were all holding times able to be met? Yes No
 (If no, notify customer for authorization.)

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

18. Additional remarks:

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.7	Good	Not Present			



Chain of Custody

Laboratory Number: 19091131

Client Information:		Billing Information:		PO Number:	Project Name/Number:	Page of
Company Name: ICON		Billing Information: SAME		Quote Number:	LEVERT-GRAND RIVER	Matrix Code
Contact Name:				Required QC Level:	9326-025-0160	DW = Drinking Water
Address:				Bill Monthly:	Sampler's Signature: <i>[Signature]</i>	WW = Waste Water
City, State Zip:				<input type="checkbox"/> Yes		GW = Ground Water
Phone Number:		Ext:		<input type="checkbox"/> No	Shipping Method:	AQ = Aqueous
Fax Number:					UPS / FedEx / NOW	OT = Other
E-mail Address:					DHL / Element / Hand / Mail	SL = Sludge SOL = Solid
						O = Oil SO = Soil
						F = Food SW = Swab
						NG = Natural Gas
						NGL = Natural Gas Liquid
						PW = Produced Water
						CF = Completion Fluid

Sample ID/Description	Collection Information			Matrix	Quantity	Container Type P=Plastic, G=Glass, V=Vial	Pres. HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₃	Requested Tests							Comments
	Date	Time	Grab / Composite					TPS	Chlorides	BTEX	TPH-G	TPH-D+O	Total Metals	Dissolved Metals	
LT-1	9.25.19	1330	G	AQ	7	PV	HCl/HNO ₃	X	X	X	X	X	X	X	
LT-2	9.26.19	1035						X	X	X	X	X	X	X	
LT-3	9.27.19	0930						X	X	X	X	X	X	X	
Blind Dup	9.26.19	-						X	X	X	X	X	X	X	
Trip Blank	9-25-19				3	V	HCl			X	X				

DH 9.27-19

Relinquished by	Date/Time	Received by	Date/Time	Field Notes:
<i>[Signature]</i>	9.27.19/1430	<i>[Signature]</i>	9.27.19/1430	
<i>[Signature]</i>	9.27.19/1545	<i>[Signature]</i>	9-27-19 1545	Received at lab on ice? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Temp: 1.7 ^u

IR 10

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

- 8800 North US 31
Columbus, IN
47201 USA
P 812-375-0531
F 812-375-0731
- 328 Ley Road, Suite 100
Fort Wayne, IN
46825 USA
P 260-471-7000
F 260-471-7777
- 909 Executive Dr
Warsaw, IN
46580 USA
P 574-267-3305
F 574-269-6569
- 3371 Cleveland Road, Suite 100A
South Bend, IN
46628 USA
P 574-277-0707
F 574-273-5699
- 2417 W. Pinhook Rd
Lafayette, LA
70508 USA
P 337-235-0483
F 337-233-6540

10/25/2019

Hydro Environmental Technology, Inc.
Mr. Stewart Stover, Jr.
91 Apollo Rd
Scott, LA, 70583

Ref: Report Number: 19-282-0002
Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Dear Mr. Stewart Stover, Jr.:

Waypoint Analytical Louisiana, Inc. received sample(s) on 10/8/2019 for the analyses presented in the following report. The above referenced project has been analyzed per your instructions. Unless otherwise noted, the analyses were performed in our laboratory in accordance with Standard Methods, The Solid Waste Manual SW-846, EPA Methods for Chemical Analysis of Water and Wastes and /or 40 CFR part 136.

Certain parameters (chlorine, pH, dissolved oxygen, sulfite...) are required to be analyzed within 15 minutes of sampling. Usually, but not always, any field parameter analyzed at the laboratory is outside of this holding time. Refer to sample analysis time for confirmation of holding time compliance. Analyses reported which indicate "Field" for these parameters were analyzed by the client in the field. Results for solid samples are reported on an as received or "wet weight" basis unless otherwise specified.

The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, method validations, instrumentation maintenance and calibration for all parameters (NELAP and non-NELAP) were performed in accordance with guidelines established by the USEPA (including 40 CFR 136 Method Update Rule May 2012) and NELAC unless otherwise indicated. Any parameter for which the laboratory is not officially NELAP accredited is indicated by a '~' symbol. These are not included in the scope because NELAP accreditation is either not available or has not been applied for. Additional certifications may be held/are available for parameters, where NELAP accreditation is not required or applicable. A full list of certifications is available upon request.

All quality control measures undertaken in accordance with Waypoint Analytical Louisiana, Inc. CompQAP990807A and revisions under the terms of the Louisiana Environmental Laboratory Accreditation Program (Certificate #02041) are within acceptance ranges established in that document with the exception of the items indicated and/or discussed in a Case Narrative.

The results are shown on the attached analysis sheet(s). Be aware that the time analyzed for certain samples (e.g. - BOD, CBOD, etc.) refer to the time the sample batch was begun and not necessarily to the time an individual sample was begun. Thank you for allowing Waypoint Analytical Louisiana, Inc. to serve you. Should I be of further assistance, if you have any questions or need additional information please contact me or client services.

Sincerely,



Anthony J. Albert
Laboratory Director

Laboratory's liability in any claim relating to analyses performed shall be limited to, at laboratory's option, repeating the analysis in question at laboratory's expense, or the refund of the charges paid for performance of said analysis. This report may be reproduced in full only with the written permission of the laboratory and/or the entity to which it is addressed. Results contained herein relate only to the sample(s) submitted to the laboratory.

LELAP Accreditation # 04023 Ridgeland, MS
LELAP Accreditation # 04015 Memphis, TN
LELAP Accreditation # 02041 Marrero, LA

Sample Summary Table

Report Number: 19-282-0002
Client Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Lab No	Client Sample ID	Matrix	Date Collected	Date Received	Method	Lab ID
68345	LT-1 (12-14')	Solids	09/25/2019 11:30	10/08/2019 17:00		
68346	LT-1 (12-14')	TCLP	09/25/2019 11:30	10/08/2019 17:00	6010D	WP MTN
68346	LT-1 (12-14')	TCLP	09/25/2019 11:30	10/08/2019 17:00	9056	WP MTN
68346	LT-1 (12-14')	TCLP	09/25/2019 11:30	10/08/2019 17:00	1312	WP MTN
68347	HA-6 (0-2')	Solids	09/27/2019 12:30	10/08/2019 17:00		
68348	HA-6 (2-4')	Solids	09/27/2019 12:35	10/08/2019 17:00		
68349	HA-6 (4-6')	Solids	09/27/2019 12:40	10/08/2019 17:00		

Client: Hydro Environmental Technology, Inc.
Project: August Levert
Lab Report Number: 19-282-0002
Date: 10/10/2019

CASE NARRATIVE

Methods

Methods reported as 29B are from the Laboratory Procedures for Analysis of Exploration & Production Waste – LDNR Office of Conservation Injection and Mining Division – Revised 11/2011.

Results

- 6010D/7471A metals are reported AR - As Received by adjusting the data using the percent moisture result.
- True Total Barium results are reported dry weight.
- Oil & Grease results reported dry weight.
- TX1006 results are reported as received.
- Samples for TX1006 were collected using the bulk container option.
- PAH results reported as received



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09996

Hydro Environmental Technology, Inc.
 Mr. Stewart Stover, Jr.
 91 Apollo Rd
 Scott , LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 10/25/2019
 Received : 10/08/2019

Anthony J. Albert
 Laboratory Director

Report Number : **19-282-0002**

REPORT OF ANALYSIS

Lab No : **68345**
 Sample ID : **LT-1 (12-14')**

Matrix: **Solids**
 Sampled: **9/25/2019 11:30**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	21.3	%		1	10/10/19 15:20	MJM	SW-DRYWT
% Saturation (Sat Paste)	33.5	%		1	10/18/19 14:00	APB	29B
Alkalinity (Sat Paste)	1.6	meq/L		1	10/23/19 08:40	APB	29B
Chloride (Sat Paste)	197	meq/L	0.010	1	10/19/19 03:00	MJM	29B
Chloride	1830	mg/Kg	80.0	20	10/21/19 23:42	MJM	9056
Electrical Conductivity (Sat Paste)	19.0	mmhos/cm		1	10/18/19 14:00	APB	29B
pH (Sat Paste)	7.17	s.u.		1	10/18/19 14:00	APB	29B
Sulfate (Sat Paste)	4.43	meq/L	0.010	1	10/19/19 03:00	MJM	29B
Calcium (Sat Paste)	57.5	meq/L	25.0	500	10/22/19 09:54	APB	29B
Magnesium (Sat Paste)	27.4	meq/L	4.10	50	10/22/19 16:57	APB	29B
Sodium (Sat Paste)	97.6	meq/L	21.5	500	10/21/19 16:21	APB	29B

Qualifiers/	DF	Dilution Factor	L	Limit Exceeded
Definitions	MQL	Method Quantitation Limit		



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 Mr. Stewart Stover, Jr.
 91 Apollo Rd
 Scott, LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 10/25/2019
 Received : 10/08/2019

Anthony J. Albert
 Laboratory Director

Report Number : **19-282-0002**

REPORT OF ANALYSIS

Lab No : **68346**
 Sample ID : **LT-1 (12-14')**

Matrix: **TCLP**
 Sampled: **9/25/2019 11:30**

Test	Results	Units	ML	DF	Date / Time Analyzed	By	Analytical Method
SPLP Chloride	92.9	mg/L	4.00	10	10/23/19 21:25	CCR	9056
SPLP Extraction	SPLP			1	10/21/19 14:19	SAJ	1312 ~
SPLP Sodium	56.7	mg/L	0.500	1	10/23/19 11:21	BKN	6010D

Qualifiers/Definitions	DF	Dilution Factor	L	Limit Exceeded
	DF	Dilution Factor		
	ML	Method Quantitation Limit		



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 91 Apollo Rd
 Scott , LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 10/25/2019
 Received : 10/08/2019

Anthony J. Albert
 Laboratory Director

Report Number : **19-282-0002**

REPORT OF ANALYSIS

Lab No : **68347**
 Sample ID : **HA-6 (0-2')**

Matrix: **Solids**
 Sampled: **9/27/2019 12:30**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	45.1	%		1	10/10/19 15:20	MJM	SW-DRYWT
% Saturation (Sat Paste)	118	%		1	10/18/19 14:00	APB	29B
Alkalinity (Sat Paste)	1.6	meq/L		1	10/23/19 08:40	APB	29B
Chloride (Sat Paste)	1.98	meq/L	0.010	1	10/19/19 03:14	MJM	29B
Chloride	29.7	mg/Kg	4.00	1	10/21/19 23:57	MJM	9056
Electrical Conductivity (Sat Paste)	0.580	mmhos/cm		1	10/18/19 14:00	APB	29B
pH (Sat Paste)	7.01	s.u.		1	10/18/19 14:00	APB	29B
Sulfate (Sat Paste)	1.76	meq/L	0.010	1	10/19/19 03:14	MJM	29B
Cation Exchange Capacity	51.7	meq/100g	0.100	50	10/21/19 14:25		29B
Exchangeable Sodium Percentage	0.752	%	0.100	1	10/18/19 14:00		CALCULATION~
Sodium Adsorption Ratio (Sat Paste)	1.22	Calc	0.430	10	10/21/19 16:22		29B
Calcium (Sat Paste)	2.21	meq/L	0.500	10	10/22/19 09:55	APB	29B
Magnesium (Sat Paste)	1.24	meq/L	0.820	10	10/22/19 10:39	APB	29B
Sodium (Sat Paste)	1.60	meq/L	0.430	10	10/21/19 16:22	APB	29B

Qualifiers/ Definitions	DF	Dilution Factor	L	Limit Exceeded
	MQL	Method Quantitation Limit		



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Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 10/25/2019
 Received : 10/08/2019

Anthony J. Albert
 Laboratory Director

Report Number : **19-282-0002**

REPORT OF ANALYSIS

Lab No : **68348**
 Sample ID : **HA-6 (2-4')**

Matrix: **Solids**
 Sampled: **9/27/2019 12:35**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	43.5	%		1	10/10/19 15:20	MJM	SW-DRYWT
% Saturation (Sat Paste)	129	%		1	10/18/19 14:00	APB	29B
Alkalinity (Sat Paste)	0.8	meq/L		1	10/23/19 08:40	APB	29B
Chloride (Sat Paste)	4.43	meq/L	0.010	1	10/19/19 03:29	MJM	29B
Chloride	73.8	mg/Kg	4.00	1	10/22/19 00:11	MJM	9056
Electrical Conductivity (Sat Paste)	0.890	mmhos/cm		1	10/18/19 14:00	APB	29B
pH (Sat Paste)	6.93	s.u.		1	10/18/19 14:00	APB	29B
Sulfate (Sat Paste)	2.97	meq/L	0.010	1	10/19/19 03:29	MJM	29B
Cation Exchange Capacity	54.3	meq/100g	0.100	50	10/21/19 14:26		29B
Exchangeable Sodium Percentage	1.21	%	0.100	1	10/18/19 14:00		CALCULATION~
Sodium Adsorption Ratio (Sat Paste)	2.01	Calc	0.430	10	10/21/19 16:22		29B
Calcium (Sat Paste)	2.77	meq/L	0.500	10	10/22/19 09:56	APB	29B
Magnesium (Sat Paste)	1.64	meq/L	0.820	10	10/22/19 10:40	APB	29B
Sodium (Sat Paste)	2.98	meq/L	0.430	10	10/21/19 16:22	APB	29B

Qualifiers/ Definitions	DF	Dilution Factor	L	Limit Exceeded
	MQL	Method Quantitation Limit		



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Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 10/25/2019
 Received : 10/08/2019

Anthony J. Albert
 Laboratory Director

Report Number : **19-282-0002**

REPORT OF ANALYSIS

Lab No : **68349**
 Sample ID : **HA-6 (4-6')**

Matrix: **Solids**
 Sampled: **9/27/2019 12:40**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	44.9	%		1	10/10/19 15:20	MJM	SW-DRYWT
% Saturation (Sat Paste)	140	%		1	10/18/19 14:00	APB	29B
Alkalinity (Sat Paste)	1.2	meq/L		1	10/23/19 08:40	APB	29B
Chloride (Sat Paste)	5.50	meq/L	0.010	1	10/19/19 03:43	MJM	29B
Chloride	124	mg/Kg	4.00	1	10/22/19 00:54	MJM	9056
Electrical Conductivity (Sat Paste)	1.03	mmhos/cm		1	10/18/19 14:00	APB	29B
pH (Sat Paste)	7.45	s.u.		1	10/18/19 14:00	APB	29B
Sulfate (Sat Paste)	2.72	meq/L	0.010	1	10/19/19 03:43	MJM	29B
Calcium (Sat Paste)	3.50	meq/L	1.00	20	10/22/19 09:57	APB	29B
Magnesium (Sat Paste)	2.01	meq/L	1.64	20	10/22/19 10:40	APB	29B
Sodium (Sat Paste)	3.20	meq/L	0.860	20	10/21/19 16:23	APB	29B

**Qualifiers/
 Definitions**

DF Dilution Factor L Limit Exceeded

Quality Control Data

Client ID: Hydro Environmental Technology, Inc.

Project Description: August Levert

Report No: 19-282-0002

QC Prep: A58958

QC Analytical Batch(es): A59043

QC Prep Batch Method: LA 29B CEC (PREP)

Analysis Method: 29B

Analysis Description: Cation Exchange Capacity

Lab Reagent Blank LRB-A58958 Matrix: SOL
 Associated Lab Samples: 68347, 68348

Parameter	Units	Blank Result	ML	Analyzed
Total Sodium CEC	mg/Kg	< 100	100	10/21/19 14:06

Duplicate A 68318-A58905-DUP-A58958

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Total Sodium CEC	mg/Kg	3130	3330	6.1	30.0	10/21/19 14:08

Quality Control Data

Client ID: Hydro Environmental Technology, Inc.

Project Description: August Levert

Report No: 19-282-0002

QC Prep: A58959

QC Analytical Batch(es): A59044

QC Prep Batch Method: 29B

Analysis Method: 29B

Analysis Description: Exchangeable Sodium Percentage

Duplicate A 68318-A58905-DUP-A58959

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Total Sodium ESP	meq/100g	3.61	3.63	0.5	20.0	10/21/19 14:18

Quality Control Data

Client ID: Hydro Environmental Technology, Inc.
Project Description: August Levert
Report No: 19-282-0002

QC Analytical Batch: A59085
Analysis Method: 29B
Analysis Description: Alkalinity

Duplicate A 68332-A58906-A59000-DUP

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Alkalinity (Sat Paste)	meq/L	0.8	0.8	0.0	30.0	10/23/19 08:40

Quality Control Data

Client ID: Hydro Environmental Technology, Inc.

Project Description: August Levert

Report No: 19-282-0002

QC Prep: A59000	QC Analytical Batch(es): A59085,A59029,A59030,A59045
QC Prep Batch Method: 29B	Analysis Method: 29B
	Analysis Description: Alkalinity

Duplicate A 68332-A58906-DUP-A59000

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Alkalinity (Sat Paste)	meq/L	0.8	0.8	0.0	30.0	10/23/19 08:40

Quality Control Data

Client ID: Hydro Environmental Technology, Inc.

Project Description: August Levert

Report No: 19-282-0002

QC Prep: A59000	QC Analytical Batch(es): A59085,A59029,A59030,A59045
QC Prep Batch Method: 29B	Analysis Method: 29B
	Analysis Description: Anions by Ion Chromatography

Duplicate A 68332-A58906-DUP-A59000

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Chloride (Sat Paste)	meq/L	61.5	65.7	6.6	30.0	10/19/19 12:46
Sulfate (Sat Paste)	meq/L	0.139	0.146	4.9	30.0	10/19/19 12:46

Quality Control Data

Client ID: Hydro Environmental Technology, Inc.

Project Description: August Levert

Report No: 19-282-0002

QC Prep: A59000	QC Analytical Batch(es): A59085,A59029,A59030,A59045
QC Prep Batch Method: 29B	Analysis Method: 29B
	Analysis Description: Saturated Paste Extraction

Duplicate A 68332-A58906-DUP-A59000

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
% Saturation (Sat Paste)	%	48.8	47.7	2.2	30.0	10/18/19 14:00
Electrical Conductivity (Sat Paste)	nmhos/cm	6.23	6.61	5.9	30.0	10/18/19 14:00
pH (Sat Paste)	s.u.	6.75	6.69	0.8	30.0	10/18/19 14:00

Quality Control Data

Client ID: Hydro Environmental Technology, Inc.

Project Description: August Levert

Report No: 19-282-0002

QC Prep: A59000

QC Analytical Batch(es): A59085,A59029,A59030,A59045

QC Prep Batch Method: 29B

Analysis Method: 29B

Analysis Description: Saturated Paste Extraction

Duplicate A 68332-A58906-DUP-A59000

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Calcium (Sat Paste)	meq/L	24.9	27.5	9.9	30.0	10/22/19 09:41
Magnesium (Sat Paste)	meq/L	13.4	14.7	9.2	30.0	10/22/19 10:27
Sodium (Sat Paste)	meq/L	16.9	17.8	5.1	30.0	10/21/19 16:09

Quality Control Data

Client ID: Hydro Environmental Technology, Inc.

Project Description: August Levert

Report No: 19-282-0002

QC Prep: L460148

QC Analytical Batch(es): L460752

QC Prep Batch Method: 3005A

Analysis Method: 6010D

Analysis Description: Metals Analysis (SPLP)

Lab Reagent Blank

LRB-L460148

Matrix: TCL

Associated Lab Samples: 68346

Parameter	Units	Blank Result	MQL	Analyzed
SPLP Sodium	mg/L	<0.500	0.500	10/23/19 11:16

Laboratory Control Sample

LCS-L460148

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
SPLP Sodium	mg/L	10.0	9.09	90.9	80-120

Matrix Spike & Matrix Spike Duplicate

A 68346-MS-L460148

A 68346-MSD-L460148

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
SPLP Sodium	mg/L	56.7	50.0	50.0	104	105	94.6	96.6	75-125	0.9	20

Quality Control Data

Client ID: Hydro Environmental Technology, Inc.

Project Description: August Levert

Report No: 19-282-0002

QC Prep: A58922

QC Analytical Batch(es): A59032

QC Prep Batch Method: SW-9056 (PREP)

Analysis Method: 9056

Analysis Description: Anions by Ion Chromatography

Lab Reagent Blank LRB-A58922 Matrix: SOL
Associated Lab Samples: 68345, 68347, 68348, 68349

Parameter	Units	Blank Result	MQL	Analyzed
Chloride	mg/Kg	< 4.00	4.00	10/21/19 19:24

Laboratory Control Sample LCS-A58922

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Chloride	mg/Kg	500	523	105	80-120

Matrix Spike & Matrix Spike Duplicate A 68348-MS-A58922 A 68348-MSD-A58922

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Chloride	mg/Kg	73.8	447	447	542	552	105	107	80-120	1.8	15.0

Quality Control Data

Client ID: Hydro Environmental Technology, Inc.

Project Description: August Levert

Report No: 19-282-0002

QC Prep: L460533

QC Analytical Batch(es): L460680

QC Prep Batch Method: SW-9056 (PREP)

Analysis Method: 9056

Analysis Description: Anions by Ion Chromatography (SPLP)

Lab Reagent Blank

LRB-L460533

Matrix: TCL

Associated Lab Samples: 68346

Parameter	Units	Blank Result	MQL	Analyzed
SPLP Chloride	mg/L	<0.400	0.400	10/23/19 11:34

Laboratory Control Sample

LCS-L460533

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
SPLP Chloride	mg/L	55.6	54.3	97.7	90-110

Matrix Spike & Matrix Spike Duplicate

L 97048-MS-L460533

L 97048-MSD-L460533

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
SPLP Chloride	mg/L	40.2	55.6	55.6	92.2	93.3	93.6	95.5	80-120	1.1	15

Quality Control Data

Client ID: Hydro Environmental Technology, Inc.
Project Description: August Levert
Report No: 19-282-0002

QC Analytical Batch: A58920
Analysis Method: SW-DRYWT
Analysis Description: Dry Weight Determination

Duplicate A 68348-DUP

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
% Moisture	%	43.5	44.5	2.2	20.0	10/10/19 15:20

Cooler Receipt Form

Customer Number: **09996**

Customer Name: **Hydro Environmental Technology, Inc.**

Report Number: **19-282-0002**

Shipping Method

Fed Ex US Postal Lab Other :
 UPS Client Courier Thermometer ID:

Shipping container/cooler uncompromised?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Number of coolers received	<input type="text" value="1"/>		
Custody seals intact on shipping container/cooler?	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> Not Required
Custody seals intact on sample bottles?	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> Not Required
Chain of Custody (COC) present?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
COC agrees with sample label(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
COC properly completed	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Samples in proper containers?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Sample containers intact?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Sufficient sample volume for indicated test(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
All samples received within holding time?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Cooler temperature in compliance?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Cooler/Samples arrived at the laboratory on ice. Samples were considered acceptable as cooling process had begun.	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Water - Sample containers properly preserved	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
Water - VOA vials free of headspace	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
Trip Blanks received with VOAs	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
Soil VOA method 5035 – compliance criteria met	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
<input type="checkbox"/> High concentration container (48 hr)	<input type="checkbox"/> Low concentration EnCore samplers (48 hr)		
<input type="checkbox"/> High concentration pre-weighed (methanol -14 d)	<input type="checkbox"/> Low conc pre-weighed vials (Sod Bis -14 d)		
Special precautions or instructions included?	<input type="radio"/> Yes	<input checked="" type="radio"/> No	

Comments:

Signature:

Date & Time:



HYDRO-ENVIRONMENTAL TECH
Environmental Consult:
 P.O. Box 60295
 Lafayette, LA 70596-02
 Phone (337) 261-1963 FAX (337)



Hydro Environmental Technology, Inc.
 August Levert

19-282-0002
 09996
 10-09-2019
 10:41:22

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert **Laboratory:** Waypoint
Project Number: 1009.A62 **Collected By:** RJL
Project Location: Bayou Sorrel, LA **Company:** Hydro-Environmental Technology, Inc.
Date: 9/25/2019

Sample I.D.	Type	Date/Time Sampled		Containers	Analysis Requested/Method	Comments
LT-1 (0-4')	SO	9/25/2019	11:05	N/A	No Split	4°C
LT-1 (6-8')	SO	9/25/2019	11:15	N/A	No Split	4°C
68345, 68346 LT-1 (12-14')	SO	9/25/2019	11:30	(1) 9oz Glass Jar	EC, Chlorides, pH, % Moisture, Cations*, Anions*, SPLP Chloride, SPLP Sodium	4°C
LT-2 (0-4')	SO	9/26/2019	8:25	N/A	No Split	4°C
LT-2 (4-8')	SO	9/26/2019	8:35	N/A	No Split	4°C
LT-2 (12-16')	SO	9/26/2019	8:55	N/A	No Split	4°C
LT-3 (0-4')	SO	9/26/2019	16:20	N/A	No Split	4°C

HOLD for possible analysis of SPLP Chloride and Sodium and additional parameters
 Cations*: Soluble Calcium, Magnesium, and Sodium
 Anions*: Cl, SO4, HCO3

Relinquished By: <i>[Signature]</i>	Received By: <i>[Signature]</i>
Date/Time: 10/8/19 1305	Date/Time: 10-8-19 1305
Relinquished By: <i>[Signature]</i>	Received By: <i>[Signature]</i>
Date/Time: 10-8-19 / 1700	Date/Time: 10/8/19 1700
Analysis Due: Verbal:	Written:



HYDRO-ENVIRONMENTAL TECHNOLOGY, INC.
 Environmental Consultants
 P.O. Box 60295
 Lafayette, LA 70596-0295
 Phone (337) 261-1963 FAX (337) 261-1953

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert
Project Number: 1009.A62
Project Location: Bayou Sorrel, LA
Laboratory: Waypoint
Collected By: RJL
Company: Hydro-Environmental Technology, Inc.
Date: 9/25/2019

Sample I.D.	Type	Date/Time Sampled		Containers	Analysis Requested/Method	Comments
LT-3 (4-8')	SO	9/26/2019	16:30	N/A	No Split	4°C
HA-6 (0-2') 68347	SO	9/27/2019	12:30	(1) 16 oz Glass Jar	EC, SAR, ESP, CEC, Chlorides, pH, % Moisture, Cations*, Anions*	4°C
HA-6 (2-4') 68348	SO	9/27/2019	12:35	(1) 16 oz Glass Jar	EC, SAR, ESP, CEC, Chlorides, pH, % Moisture, Cations*, Anions*	4°C
HA-6 (4-6') 68349	SO	9/27/2019	12:40	(1) 16 oz Glass Jar	EC, Chlorides, pH, % Moisture, Cations*, Anions*	4°C

HOLD for possible analysis of SPLP Chloride and Sodium and additional parameters
 Cations*: Soluble Calcium, Magnesium, and Sodium
 Anions*: Cl, SO4, HCO3

Relinquished By: <i>[Signature]</i>	Received By: <i>[Signature]</i>
Date/Time: 10/8/19 1305	Date/Time: 10-8-19 1305
Relinquished By: <i>[Signature]</i>	Received By: <i>[Signature]</i>
Date/Time: 10-8-19 / 1700	Date/Time: 10/8/19 1700
Analysis Due: Verbal:	Written:



Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

October 28, 2019

Mr. Greg Miller
ICON Environmental Services
2049 Commercial Drive
Port Allen, LA 70767

RE: Project: 9326-025-0100
Pace Project No.: 30328257

Dear Mr. Miller:

Enclosed are the analytical results for sample(s) received by the laboratory on October 07, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jacquelyn Collins
jacquelyn.collins@pacelabs.com
(724)850-5612
Project Manager

Enclosures

cc: Mr. Derek Pourciau



REPORT OF LABORATORY ANALYSIS

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Page 1 of 12

August Levert_BP Plan_000627



CERTIFICATIONS

Project: 9326-025-0100
Pace Project No.: 30328257

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: 9326-025-0100
Pace Project No.: 30328257

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30328257001	LT-1	Water	09/25/19 13:30	10/07/19 09:30
30328257002	LT-2	Water	09/26/19 10:35	10/07/19 09:30
30328257003	LT-3	Water	09/27/19 09:30	10/07/19 09:30
30328257004	Blind Dup	Water	09/26/19 00:01	10/07/19 09:30

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SAMPLE ANALYTE COUNT

Project: 9326-025-0100
Pace Project No.: 30328257

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30328257001	LT-1	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
30328257002	LT-2	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
30328257003	LT-3	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
30328257004	Blind Dup	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA

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PROJECT NARRATIVE

Project: 9326-025-0100
Pace Project No.: 30328257

Method: EPA 903.1
Description: 903.1 Radium 226
Client: ICON Environmental Services
Date: October 28, 2019

General Information:

4 samples were analyzed for EPA 903.1. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 9326-025-0100
Pace Project No.: 30328257

Method: EPA 904.0
Description: 904.0 Radium 228
Client: ICON Environmental Services
Date: October 28, 2019

General Information:

4 samples were analyzed for EPA 904.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 9326-025-0100
 Pace Project No.: 30328257

Sample: LT-1		Lab ID: 30328257001	Collected: 09/25/19 13:30	Received: 10/07/19 09:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	2.65 ± 1.00 (0.883)		pCi/L	10/23/19 13:25	13982-63-3	
Radium-228	EPA 904.0	3.63 ± 0.954 (0.927)		pCi/L	10/23/19 16:38	15262-20-1	
		C:NA T:86%					
		C:52% T:92%					

Sample: LT-2		Lab ID: 30328257002	Collected: 09/26/19 10:35	Received: 10/07/19 09:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	3.20 ± 1.03 (0.535)		pCi/L	10/23/19 13:25	13982-63-3	
Radium-228	EPA 904.0	1.57 ± 0.602 (0.880)		pCi/L	10/23/19 16:38	15262-20-1	
		C:NA T:83%					
		C:54% T:87%					

Sample: LT-3		Lab ID: 30328257003	Collected: 09/27/19 09:30	Received: 10/07/19 09:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	1.06 ± 0.613 (0.653)		pCi/L	10/23/19 13:25	13982-63-3	
Radium-228	EPA 904.0	1.07 ± 0.634 (1.15)		pCi/L	10/23/19 16:38	15262-20-1	
		C:NA T:85%					
		C:48% T:76%					

Sample: Blind Dup		Lab ID: 30328257004	Collected: 09/26/19 00:01	Received: 10/07/19 09:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	3.26 ± 1.10 (0.871)		pCi/L	10/23/19 13:25	13982-63-3	
Radium-228	EPA 904.0	1.58 ± 0.660 (1.05)		pCi/L	10/23/19 16:38	15262-20-1	
		C:NA T:85%					
		C:54% T:86%					

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 9326-025-0100
 Pace Project No.: 30328257

QC Batch: 365772 Analysis Method: EPA 903.1
 QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
 Associated Lab Samples: 30328257001, 30328257002, 30328257003, 30328257004

METHOD BLANK: 1774266 Matrix: Water
 Associated Lab Samples: 30328257001, 30328257002, 30328257003, 30328257004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.463 ± 0.368 (0.478) C:NA T:91%	pCi/L	10/23/19 13:12	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 9326-025-0100
 Pace Project No.: 30328257

QC Batch: 365773 Analysis Method: EPA 904.0
 QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
 Associated Lab Samples: 30328257001, 30328257002, 30328257003, 30328257004

METHOD BLANK: 1774268 Matrix: Water
 Associated Lab Samples: 30328257001, 30328257002, 30328257003, 30328257004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.157 ± 0.414 (0.925) C:61% T:87%	pCi/L	10/23/19 16:36	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 9326-025-0100
Pace Project No.: 30328257

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.
ND - Not Detected at or above adjusted reporting limit.
TNTC - Too Numerous To Count
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
PQL - Practical Quantitation Limit.
RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.
S - Surrogate
1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
LCS(D) - Laboratory Control Sample (Duplicate)
MS(D) - Matrix Spike (Duplicate)
DUP - Sample Duplicate
RPD - Relative Percent Difference
NC - Not Calculable.
SG - Silica Gel - Clean-Up
U - Indicates the compound was analyzed for, but not detected.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Act - Activity
Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.
Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.
(MDC) - Minimum Detectable Concentration
Trac - Tracer Recovery (%)
Carr - Carrier Recovery (%)
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
TNI - The NELAC Institute.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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WO# : 30328257

N-OF-CUSTODY / Analytical Request Document

-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.



30328257

Section A
 Required Client Information:
 Company: ICON Environmental
 Address: 2029 Cammwood Dr.
 Email To: Dan Allen LA 70767
 Phone: 225-344-5490
 Requested Due Date/TAT: _____
 Fax: _____

Section C
 Invoice Information:
 Report To: _____
 Copy To: _____
 Project Name: 936-025-0100
 Project Number: Levert - Grand River
 Purchase Order No.: _____

Section D
 Required Client Information:
 Company Name: _____
 Address: _____
 Pace Quote Reference: _____
 Pace Project Manager: _____
 Pace Profile #: _____

Section E
 REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER

Site Location: _____
 STATE: _____

Page: _____ of _____
 223671

ITEM #	Section D Required Client Information	Matrix Codes MATRIX I CODE Drinking Water Waste Water Product Soil/Solid Oil Wipe Air Tissue Other	Matrix Code (see valid codes to left)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives Unpreserved H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₃ Methanol Other	Requested Analysis Filtered (Y/N)	Pace Project No./ Lab I.D.
				COMPOSITE START	COMPOSITE END/GRAB					
1	LT-1		GM	9.25.0	1330					02A
2	LT-2		GM	9.26.0	1035					02B
3	LT-3		GM	9.27.0	0930					023
4	Blind Dup		GM	9.26.0						024
5										
6										
7										
8										
9										
10										
11										
12										

Section F
 ADDITIONAL COMMENTS
Jeffrey Miller / Icon 10.2.09 1200 FEDEX
Jeffrey Miller 10/27/09 10:30 1010719

Section G
 RELINQUISHED BY / AFFILIATION
 DATE TIME

Section H
 ACCEPTED BY / AFFILIATION
 DATE TIME

Section I
 RECEIVED ON
 Temp In °C
 Received on Ice (Y/N)
 Custody Sealed Cooler (Y/N)
 Samples Intact (Y/N)

Section J
 SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: JEFFREY MILLER
 SIGNATURE of SAMPLER: Jeffrey Miller
 DATE Signed (MM/DD/YY): 10.2.09

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Pittsburgh Lab Sample Condition Upon Receipt

30328257



Client Name: Iron Environmental Project # _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: 776440593282/40576463

Label <u>OP</u>
LIMS Login <u>OP</u>

Custody Seal on Cooler/Box Present: yes no Seals Intact: yes no

Thermometer Used N/A Type of Ice: Wet Blue None

Cooler Temperature Observed Temp _____ °C Correction Factor: _____ °C Final Temp: _____ °C

Temp should be above freezing to 6°C

Comments:	Yes	No	N/A	pH paper Lot#	Date and Initials of person examining contents:
				<u>1003581</u>	<u>10/07/15 OAB</u>
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Chain of Custody Relinquished:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Sample Labels match COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
-Includes date/time/ID Matrix: <u>WT</u>					
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Short Hold Time Analysis (<72hr remaining):	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
-Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Orthophosphate field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Hex Cr Aqueous sample field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Organic Samples checked for dechlorination:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
All containers have been checked for preservation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix				<u>PHL2</u>	
All containers meet method preservation requirements.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed <u>OAB</u>	Date/time of preservation
				Lot # of added preservative	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Trip Blank Present:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Trip Blank Custody Seals Present	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Rad Samples Screened < 0.5 mrem/hr	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed <u>OAB</u>	Date: <u>10/07/15</u>

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

10/16/2019

Hydro Environmental Technology, Inc.
Mr. Stewart Stover, Jr.
91 Apollo Rd
Scott, LA, 70583

Ref: Analytical Testing
Lab Report Number: 19-269-0012
Client Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Dear Mr. Stewart Stover, Jr.:
Waypoint Analytical, LLC. received sample(s) on 9/26/2019 for the analyses presented in the following report.

The above referenced project has been analyzed per your instructions. The analyses were performed in accordance with the applicable analytical method. Where the laboratory was not responsible for the sampling stage (refer to the chain of custody) results apply to the sample as received.

The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, method validations, instrumentation maintenance and calibration for all parameters (NELAP and non-NELAP) were performed in accordance with guidelines established by the USEPA (including 40 CFR 136 Method Update Rule August 2017) and NELAC unless otherwise indicated. Any parameter for which the laboratory is not officially NELAP accredited is indicated by a '~' symbol. These are not included in the scope because NELAP accreditation is either not available or has not been applied for. Additional certifications may be held/are available for parameters, where NELAP accreditation is not required or applicable. A full list of certifications is available upon request.

Certain parameters (chlorine, pH, dissolved oxygen, sulfite...) are required to be analyzed within 15 minutes of sampling. Usually, but not always, any field parameter analyzed at the laboratory is outside of this holding time. Refer to sample analysis time for confirmation of holding time compliance.

The results are shown on the attached Report of Analysis(s). Results for solid matrices are reported on an as-received basis unless otherwise indicated. This report shall not be reproduced except in full and relates only to the samples included in this report.

Please do not hesitate to contact me or client services if you have any questions or need additional information.

Sincerely,



Nathan Pera
Project Manager

Laboratory's liability in any claim relating to analyses performed shall be limited to, at laboratory's option, repeating the analysis in question at laboratory's expense, or the refund of the charges paid for performance of said analysis.

Alabama #40750	Louisiana #04015	VA NELAP #460181	Texas #T104704180	Arkansas #88-0650
Mississippi	California #2904	NC #415	Oklahoma #9311	SC #84002
Kentucky #90047	Tennessee #TN02027	EPA #TN00012	Kentucky UST #80215	PA DEP #68-03195



Sample Summary Table

Report Number: 19-269-0012
Client Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Lab No	Client Sample ID	Matrix	Date Collected	Date Received	Method	Lab ID
97048	HA-3 (6-8)	Solid	08/29/2019 14:55	09/26/2019		
97394	HA-1 (0-2)	Solids	08/29/2019 11:00	09/26/2019		
97394	HA-1 (0-2)	Solids	08/29/2019 11:00	09/26/2019	29B	WLA
97394	HA-1 (0-2)	Solids	08/29/2019 11:00	09/26/2019	29B	WLA
97394	HA-1 (0-2)	Solids	08/29/2019 11:00	09/26/2019	29B	WLA
97394	HA-1 (0-2)	Solids	08/29/2019 11:00	09/26/2019	SW-DRYWT	WLA
97394	HA-1 (0-2)	Solids	08/29/2019 11:00	09/26/2019	29B	WLA
97394	HA-1 (0-2)	Solids	08/29/2019 11:00	09/26/2019	29B	WLA
97394	HA-1 (0-2)	Solids	08/29/2019 11:00	09/26/2019	29B	WLA
97395	HA-1 (2-4)	Solids	08/29/2019 11:05	09/26/2019		
97395	HA-1 (2-4)	Solids	08/29/2019 11:05	09/26/2019	29B	WLA
97395	HA-1 (2-4)	Solids	08/29/2019 11:05	09/26/2019	29B	WLA
97395	HA-1 (2-4)	Solids	08/29/2019 11:05	09/26/2019	29B	WLA
97395	HA-1 (2-4)	Solids	08/29/2019 11:05	09/26/2019	29B	WLA
97395	HA-1 (2-4)	Solids	08/29/2019 11:05	09/26/2019	29B	WLA
97395	HA-1 (2-4)	Solids	08/29/2019 11:05	09/26/2019	29B	WLA
97395	HA-1 (2-4)	Solids	08/29/2019 11:05	09/26/2019	29B	WLA
97395	HA-1 (2-4)	Solids	08/29/2019 11:05	09/26/2019	SW-DRYWT	WLA
97396	HA-2 (0-2)	Solids	08/29/2019 13:15	09/26/2019		
97396	HA-2 (0-2)	Solids	08/29/2019 13:15	09/26/2019	SW-DRYWT	WLA
97396	HA-2 (0-2)	Solids	08/29/2019 13:15	09/26/2019	29B	WLA
97396	HA-2 (0-2)	Solids	08/29/2019 13:15	09/26/2019	29B	WLA
97396	HA-2 (0-2)	Solids	08/29/2019 13:15	09/26/2019	29B	WLA
97396	HA-2 (0-2)	Solids	08/29/2019 13:15	09/26/2019	29B	WLA
97396	HA-2 (0-2)	Solids	08/29/2019 13:15	09/26/2019	29B	WLA
97396	HA-2 (0-2)	Solids	08/29/2019 13:15	09/26/2019	29B	WLA
97396	HA-2 (0-2)	Solids	08/29/2019 13:15	09/26/2019	29B	WLA
97396	HA-2 (0-2)	Solids	08/29/2019 13:15	09/26/2019	29B	WLA
97397	HA-2 (2-4)	Solids	08/29/2019 13:20	09/26/2019		

WLA: Waypoint Analytical - LA, Marrero, LA, Certification: #25187 - Louisiana

Sample Summary Table

Report Number: 19-269-0012
Client Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Lab No	Client Sample ID	Matrix	Date Collected	Date Received	Method	Lab ID
97397	HA-2 (2-4)	Solids	08/29/2019 13:20	09/26/2019	29B	WLA
97397	HA-2 (2-4)	Solids	08/29/2019 13:20	09/26/2019	29B	WLA
97397	HA-2 (2-4)	Solids	08/29/2019 13:20	09/26/2019	29B	WLA
97397	HA-2 (2-4)	Solids	08/29/2019 13:20	09/26/2019	29B	WLA
97397	HA-2 (2-4)	Solids	08/29/2019 13:20	09/26/2019	29B	WLA
97397	HA-2 (2-4)	Solids	08/29/2019 13:20	09/26/2019	SW-DRYWT	WLA
97397	HA-2 (2-4)	Solids	08/29/2019 13:20	09/26/2019	29B	WLA
97398	HA-3 (0-2)	Solids	08/29/2019 14:40	09/26/2019		
97398	HA-3 (0-2)	Solids	08/29/2019 14:40	09/26/2019	SW-DRYWT	WLA
97398	HA-3 (0-2)	Solids	08/29/2019 14:40	09/26/2019	29B	WLA
97398	HA-3 (0-2)	Solids	08/29/2019 14:40	09/26/2019	29B	WLA
97398	HA-3 (0-2)	Solids	08/29/2019 14:40	09/26/2019	29B	WLA
97398	HA-3 (0-2)	Solids	08/29/2019 14:40	09/26/2019	29B	WLA
97398	HA-3 (0-2)	Solids	08/29/2019 14:40	09/26/2019	29B	WLA
97398	HA-3 (0-2)	Solids	08/29/2019 14:40	09/26/2019	29B	WLA
97398	HA-3 (0-2)	Solids	08/29/2019 14:40	09/26/2019	29B	WLA
97399	HA-3 (2-4)	Solids	08/29/2019 14:45	09/26/2019		
97399	HA-3 (2-4)	Solids	08/29/2019 14:45	09/26/2019	SW-DRYWT	WLA
97399	HA-3 (2-4)	Solids	08/29/2019 14:45	09/26/2019	29B	WLA
97399	HA-3 (2-4)	Solids	08/29/2019 14:45	09/26/2019	29B	WLA
97399	HA-3 (2-4)	Solids	08/29/2019 14:45	09/26/2019	29B	WLA
97399	HA-3 (2-4)	Solids	08/29/2019 14:45	09/26/2019	29B	WLA
97399	HA-3 (2-4)	Solids	08/29/2019 14:45	09/26/2019	29B	WLA
97399	HA-3 (2-4)	Solids	08/29/2019 14:45	09/26/2019	29B	WLA
97399	HA-3 (2-4)	Solids	08/29/2019 14:45	09/26/2019	29B	WLA
97400	HA-3 (4-6)	Solids	08/29/2019 14:50	09/26/2019		
97400	HA-3 (4-6)	Solids	08/29/2019 14:50	09/26/2019	SW-DRYWT	WLA
97400	HA-3 (4-6)	Solids	08/29/2019 14:50	09/26/2019	29B	WLA

WLA: Waypoint Analytical - LA, Marrero, LA, Certification: #25187 - Louisiana

Sample Summary Table

Report Number: 19-269-0012
Client Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Lab No	Client Sample ID	Matrix	Date Collected	Date Received	Method	Lab ID
97400	HA-3 (4-6)	Solids	08/29/2019 14:50	09/26/2019	29B	WLA
97400	HA-3 (4-6)	Solids	08/29/2019 14:50	09/26/2019	29B	WLA
97400	HA-3 (4-6)	Solids	08/29/2019 14:50	09/26/2019	29B	WLA
97401	HA-3 (6-8)	Solids	08/29/2019 14:55	09/26/2019		
97401	HA-3 (6-8)	Solids	08/29/2019 14:55	09/26/2019	SW-DRYWT	WLA
97401	HA-3 (6-8)	Solids	08/29/2019 14:55	09/26/2019	29B	WLA
97401	HA-3 (6-8)	Solids	08/29/2019 14:55	09/26/2019	29B	WLA
97401	HA-3 (6-8)	Solids	08/29/2019 14:55	09/26/2019	29B	WLA
97401	HA-3 (6-8)	Solids	08/29/2019 14:55	09/26/2019	29B	WLA
97401	HA-3 (6-8)	Solids	08/29/2019 14:55	09/26/2019	29B	WLA
97402	HA-4 (0-2)	Solids	08/30/2019 10:25	09/26/2019		
97402	HA-4 (0-2)	Solids	08/30/2019 10:25	09/26/2019	29B	WLA
97402	HA-4 (0-2)	Solids	08/30/2019 10:25	09/26/2019	SW-DRYWT	WLA
97402	HA-4 (0-2)	Solids	08/30/2019 10:25	09/26/2019	29B	WLA
97402	HA-4 (0-2)	Solids	08/30/2019 10:25	09/26/2019	29B	WLA
97402	HA-4 (0-2)	Solids	08/30/2019 10:25	09/26/2019	29B	WLA
97402	HA-4 (0-2)	Solids	08/30/2019 10:25	09/26/2019	29B	WLA
97402	HA-4 (0-2)	Solids	08/30/2019 10:25	09/26/2019	29B	WLA
97402	HA-4 (0-2)	Solids	08/30/2019 10:25	09/26/2019	29B	WLA
97402	HA-4 (0-2)	Solids	08/30/2019 10:25	09/26/2019	29B	WLA
97403	HA-4 (2-4)	Solids	08/30/2019 10:30	09/26/2019		
97403	HA-4 (2-4)	Solids	08/30/2019 10:30	09/26/2019	SW-DRYWT	WLA
97403	HA-4 (2-4)	Solids	08/30/2019 10:30	09/26/2019	29B	WLA
97403	HA-4 (2-4)	Solids	08/30/2019 10:30	09/26/2019	29B	WLA
97403	HA-4 (2-4)	Solids	08/30/2019 10:30	09/26/2019	29B	WLA
97403	HA-4 (2-4)	Solids	08/30/2019 10:30	09/26/2019	29B	WLA
97403	HA-4 (2-4)	Solids	08/30/2019 10:30	09/26/2019	29B	WLA
97403	HA-4 (2-4)	Solids	08/30/2019 10:30	09/26/2019	29B	WLA
97403	HA-4 (2-4)	Solids	08/30/2019 10:30	09/26/2019	29B	WLA
97404	HA-4 (4-6)	Solids	08/30/2019 10:35	09/26/2019		

WLA: Waypoint Analytical - LA, Marrero, LA, Certification: #25187 - Louisiana

Sample Summary Table

Report Number: 19-269-0012
Client Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Lab No	Client Sample ID	Matrix	Date Collected	Date Received	Method	Lab ID
97404	HA-4 (4-6)	Solids	08/30/2019 10:35	09/26/2019	SW-DRYWT	WLA
97404	HA-4 (4-6)	Solids	08/30/2019 10:35	09/26/2019	29B	WLA
97404	HA-4 (4-6)	Solids	08/30/2019 10:35	09/26/2019	29B	WLA
97404	HA-4 (4-6)	Solids	08/30/2019 10:35	09/26/2019	29B	WLA
97404	HA-4 (4-6)	Solids	08/30/2019 10:35	09/26/2019	29B	WLA
97405	HA-4 (6-8)	Solids	08/30/2019 10:40	09/26/2019		
97405	HA-4 (6-8)	Solids	08/30/2019 10:40	09/26/2019	SW-DRYWT	WLA
97405	HA-4 (6-8)	Solids	08/30/2019 10:40	09/26/2019	29B	WLA
97405	HA-4 (6-8)	Solids	08/30/2019 10:40	09/26/2019	29B	WLA
97405	HA-4 (6-8)	Solids	08/30/2019 10:40	09/26/2019	29B	WLA
97405	HA-4 (6-8)	Solids	08/30/2019 10:40	09/26/2019	29B	WLA
97405	HA-4 (6-8)	Solids	08/30/2019 10:40	09/26/2019	29B	WLA
97406	HA-5 (0-2)	Solids	08/30/2019 11:35	09/26/2019		
97406	HA-5 (0-2)	Solids	08/30/2019 11:35	09/26/2019	SW-DRYWT	WLA
97406	HA-5 (0-2)	Solids	08/30/2019 11:35	09/26/2019	29B	WLA
97406	HA-5 (0-2)	Solids	08/30/2019 11:35	09/26/2019	29B	WLA
97406	HA-5 (0-2)	Solids	08/30/2019 11:35	09/26/2019	29B	WLA
97406	HA-5 (0-2)	Solids	08/30/2019 11:35	09/26/2019	29B	WLA
97406	HA-5 (0-2)	Solids	08/30/2019 11:35	09/26/2019	29B	WLA
97406	HA-5 (0-2)	Solids	08/30/2019 11:35	09/26/2019	29B	WLA
97406	HA-5 (0-2)	Solids	08/30/2019 11:35	09/26/2019	29B	WLA
97407	HA-5 (2-4)	Solids	08/30/2019 11:40	09/26/2019		
97407	HA-5 (2-4)	Solids	08/30/2019 11:40	09/26/2019	SW-DRYWT	WLA
97407	HA-5 (2-4)	Solids	08/30/2019 11:40	09/26/2019	29B	WLA
97407	HA-5 (2-4)	Solids	08/30/2019 11:40	09/26/2019	29B	WLA
97407	HA-5 (2-4)	Solids	08/30/2019 11:40	09/26/2019	29B	WLA
97407	HA-5 (2-4)	Solids	08/30/2019 11:40	09/26/2019	29B	WLA
97407	HA-5 (2-4)	Solids	08/30/2019 11:40	09/26/2019	29B	WLA
97407	HA-5 (2-4)	Solids	08/30/2019 11:40	09/26/2019	29B	WLA

WLA: Waypoint Analytical - LA, Marrero, LA, Certification: #25187 - Louisiana

Sample Summary Table

Report Number: 19-269-0012
Client Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Lab No	Client Sample ID	Matrix	Date Collected	Date Received	Method	Lab ID
97407	HA-5 (2-4)	Solids	08/30/2019 11:40	09/26/2019	29B	WLA
97408	HA-5 (4-6)	Solids	08/30/2019 11:45	09/26/2019		
97408	HA-5 (4-6)	Solids	08/30/2019 11:45	09/26/2019	SW-DRYWT	WLA
97408	HA-5 (4-6)	Solids	08/30/2019 11:45	09/26/2019	29B	WLA
97408	HA-5 (4-6)	Solids	08/30/2019 11:45	09/26/2019	29B	WLA
97408	HA-5 (4-6)	Solids	08/30/2019 11:45	09/26/2019	29B	WLA
97408	HA-5 (4-6)	Solids	08/30/2019 11:45	09/26/2019	29B	WLA
97409	HA-5 (6-7)	Solids	08/30/2019 11:50	09/26/2019		
97409	HA-5 (6-7)	Solids	08/30/2019 11:50	09/26/2019	SW-DRYWT	WLA
97409	HA-5 (6-7)	Solids	08/30/2019 11:50	09/26/2019	29B	WLA
97409	HA-5 (6-7)	Solids	08/30/2019 11:50	09/26/2019	29B	WLA
97409	HA-5 (6-7)	Solids	08/30/2019 11:50	09/26/2019	29B	WLA
97409	HA-5 (6-7)	Solids	08/30/2019 11:50	09/26/2019	29B	WLA

Client: Hydro Environmental Technology, Inc.
Project: August Levert
Lab Report Number: 19-269-0012
Date: 10/24/2019

CASE NARRATIVE

Methods

Methods reported as 29B are from the Laboratory Procedures for Analysis of Exploration & Production Waste – LDNR Office of Conservation Injection and Mining Division – Revised 11/2011.

Results

- 6010B/7471A metals are reported AR - As Received by adjusting the data using the percent moisture result.
- True Total Barium results are reported dry weight.
- Oil & Grease results reported dry weight.
- TX1006 results are reported as received.
- Samples for TX1006 were collected using the bulk container option.
- PAH results reported as received

Texas Method for TPH (LA) Method TX1006 LA

Sample 97394 (HA-1 (0-2))

QC Batch No: L456247

The analysis for this sample was performed outside the method required holding time.



2790 Whitten Road, Memphis, TN 38133
 Main 901.213.2400 ° Fax 901.213.2440
 www.waypointanalytical.com

09996

Hydro Environmental Technology, Inc.
 Mr. Stewart Stover, Jr.
 91 Apollo Rd
 Scott , LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 10/28/2019
 Received : 09/26/2019

Nathan Pera, IV
 Project Manager

Report Number : **19-269-0012**

REPORT OF ANALYSIS

Lab No : **97048**
 Sample ID : **HA-3 (6-8)**

Matrix: **Solid**
 Sampled: **8/29/2019 14:55**

Test	Results	Units	ML	DF	Date / Time Analyzed	By	Analytical Method
SPLP Extraction	SPLP			1	10/21/19 14:19	SAJ	1312
SPLP Chloride	40.2	mg/L	0.400	1	10/23/19 21:36	CCR	9056
SPLP Sodium	197	mg/L	5.00	10	10/24/19 14:17	BKN	6010D

Qualifiers/ Definitions	DF	Dilution Factor	H	Beyond holding time
	L	Limit Exceeded	ML	Method Quantitation Limit

09996

Hydro Environmental Technology, Inc.
Mr. Stewart Stover, Jr.
91 Apollo Rd
Scott , LA 70583

Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 10/28/2019
Received : 09/26/2019



Nathan Pera, IV
Project Manager

Report Number : **19-269-0012**

REPORT OF ANALYSIS

Lab No : **97394**
Sample ID : **HA-1 (0-2)**

Matrix: **Solids**
Sampled: **8/29/2019 11:00**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Moisture	52.6	%		1	10/03/19 10:10	MJM	SW-DRYWT
% Saturation (Sat Paste)	90.6	%		1	10/07/19 11:15	MJM	29B
Alkalinity (Sat Paste)	1.2	meq/L		1	10/09/19 10:40	APB	29B
Chloride (Sat Paste)	5.88	meq/L	0.010	1	10/09/19 11:41	MJM	29B
Chloride	45.1 H	mg/Kg	4.00	1	09/30/19 18:30	CCR	9056A
Electrical Conductivity (Sat Paste)	1.50	mmhos/cm		1	10/07/19 11:15	MJM	29B
pH (Sat Paste)	6.74	s.u.		1	10/07/19 11:15	MJM	29B
Cation Exchange Capacity (CEC)	48.3	meq/100g	0.100	100	10/09/19 15:39		29B
Exchangeable Sodium Percentage (ESP)	2.39	%	0.100	1	10/07/19 11:15		CALCULATION~
Sodium Adsorption Ratio (Sat Paste)	4.96	Calc	0.500	10	10/08/19 15:21		29B
Calcium (Sat Paste)	3.69	meq/L	0.500	10	10/08/19 16:05	APB	29B
Magnesium (Sat Paste)	1.69	meq/L	0.820	10	10/08/19 17:05	APB	29B
Sodium (Sat Paste)	8.13	meq/L	0.860	20	10/08/19 15:21	APB	29B
Sulfate (Sat Paste)	7.15	meq/L	0.010	1	10/09/19 11:41	MJM	29B

Analytical Method: TX1006 LA **Prep Batch(es):** **L456246** 09/26/19 08:00
Prep Method: TX1006

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<25.0 H	mg/Kg	25.0	1	09/27/19 02:36	MMK	L456247
Aliphatic >C8-C10	<25.0 H	mg/Kg	25.0	1	09/27/19 02:36	MMK	L456247
Aromatic >C8-C10	<25.0 H	mg/Kg	25.0	1	09/27/19 04:13	MMK	L456247

Qualifiers/Definitions DF Dilution Factor H Beyond holding time
MQL Method Quantitation Limit



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Hydro Environmental Technology, Inc.
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 91 Apollo Rd
 Scott, LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 10/28/2019
 Received : 09/26/2019

Nathan Pera, IV
 Project Manager

Report Number : **19-269-0012**

REPORT OF ANALYSIS

Lab No : **97394**
 Sample ID : **HA-1 (0-2)**

Matrix: **Solids**
 Sampled: **8/29/2019 11:00**

Analytical Method: TX1006 LA **Prep Batch(es):** **L456246** 09/26/19 08:00
Prep Method: TX1006

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<25.0 H	mg/Kg	25.0	1	09/27/19 02:36	MMK	L456247
Aromatic >C10-C12	<25.0 H	mg/Kg	25.0	1	09/27/19 04:13	MMK	L456247
Aliphatic >C12-C16	54.4 H	mg/Kg	25.0	1	09/27/19 02:36	MMK	L456247
Aromatic >C12-C16	60.0 H	mg/Kg	25.0	1	09/27/19 04:13	MMK	L456247
Aromatic >C16-C21	159 H	mg/Kg	25.0	1	09/27/19 04:13	MMK	L456247
Aliphatic >C16-C35	449 H	mg/Kg	25.0	1	09/27/19 02:36	MMK	L456247
Aromatic >C21-C35	875 H	mg/Kg	25.0	1	09/27/19 04:13	MMK	L456247
Surrogate: OTP Surrogate	96.5		Limits: 70-130%	1	09/27/19 04:13	MMK	L456247

Qualifiers/ Definitions	DF	Dilution Factor	H	Beyond holding time
	MQL	Method Quantitation Limit		

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Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 10/28/2019
Received : 09/26/2019



Nathan Pera, IV
Project Manager

Report Number : **19-269-0012**

REPORT OF ANALYSIS

Lab No : **97395**
Sample ID : **HA-1 (2-4)**

Matrix: **Solids**
Sampled: **8/29/2019 11:05**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Moisture	44.7	%		1	10/03/19 10:10	MJM	SW-DRYWT
% Saturation (Sat Paste)	116	%		1	10/07/19 11:15	MJM	29B
Alkalinity (Sat Paste)	2.0	meq/L		1	10/09/19 10:40	APB	29B
Chloride (Sat Paste)	15.0	meq/L	0.010	1	10/09/19 00:43	MJM	29B
Chloride	121 H	mg/Kg	4.00	1	10/01/19 12:31	CCR	9056A
Electrical Conductivity (Sat Paste)	2.72	mmhos/cm		1	10/07/19 11:15	MJM	29B
pH (Sat Paste)	7.48	s.u.		1	10/07/19 11:15	MJM	29B
Cation Exchange Capacity (CEC)	48.7	meq/100g	0.100	100	10/09/19 15:39		29B
Exchangeable Sodium Percentage (ESP)	6.09	%	0.100	1	10/07/19 11:15		CALCULATION~
Sodium Adsorption Ratio (Sat Paste)	14.8	Calc	0.500	10	10/08/19 15:46		29B
Calcium (Sat Paste)	2.13	meq/L	0.500	10	10/08/19 16:06	APB	29B
Magnesium (Sat Paste)	0.991	meq/L	0.820	10	10/08/19 17:05	APB	29B
Sodium (Sat Paste)	18.5	meq/L	2.15	50	10/08/19 15:46	APB	29B
Sulfate (Sat Paste)	7.92	meq/L	0.010	1	10/09/19 00:43	MJM	29B

Analytical Method: TX1006 LA **Prep Batch(es):** **L456246** 09/26/19 08:00
Prep Method: TX1006

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<25.0	mg/Kg	25.0	1	09/26/19 14:09	MMK	L456247
Aliphatic >C8-C10	<25.0	mg/Kg	25.0	1	09/26/19 14:09	MMK	L456247
Aromatic >C8-C10	<25.0	mg/Kg	25.0	1	09/26/19 19:04	MMK	L456247

Qualifiers/Definitions DF Dilution Factor H Beyond holding time
MQL Method Quantitation Limit

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Project August Levert
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Nathan Pera, IV
Project Manager

Report Number : **19-269-0012**

REPORT OF ANALYSIS

Lab No : **97395**
Sample ID : **HA-1 (2-4)**

Matrix: **Solids**
Sampled: **8/29/2019 11:05**

Analytical Method: TX1006 LA **Prep Batch(es):** L456246 09/26/19 08:00
Prep Method: TX1006

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<25.0	mg/Kg	25.0	1	09/26/19 14:09	MMK	L456247
Aromatic >C10-C12	<25.0	mg/Kg	25.0	1	09/26/19 19:04	MMK	L456247
Aliphatic >C12-C16	<25.0	mg/Kg	25.0	1	09/26/19 14:09	MMK	L456247
Aromatic >C12-C16	<25.0	mg/Kg	25.0	1	09/26/19 19:04	MMK	L456247
Aromatic >C16-C21	<25.0	mg/Kg	25.0	1	09/26/19 19:04	MMK	L456247
Aliphatic >C16-C35	<25.0	mg/Kg	25.0	1	09/26/19 14:09	MMK	L456247
Aromatic >C21-C35	<25.0	mg/Kg	25.0	1	09/26/19 19:04	MMK	L456247
Surrogate: OTP Surrogate		91.6	Limits: 70-130%	1	09/26/19 19:04	MMK	L456247

Qualifiers/	DF	Dilution Factor	H	Beyond holding time
Definitions	MQL	Method Quantitation Limit		

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Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 10/28/2019
Received : 09/26/2019



Nathan Pera, IV
Project Manager

Report Number : **19-269-0012**

REPORT OF ANALYSIS

Lab No : **97396**
Sample ID : **HA-2 (0-2)**

Matrix: **Solids**
Sampled: **8/29/2019 13:15**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Moisture	58.7	%		1	10/03/19 10:10	MJM	SW-DRYWT
% Saturation (Sat Paste)	107	%		1	10/07/19 11:15	MJM	29B
Alkalinity (Sat Paste)	1.4	meq/L		1	10/09/19 10:40	APB	29B
Chloride (Sat Paste)	2.50	meq/L	0.010	1	10/09/19 00:57	MJM	29B
Chloride	12.0 H	mg/Kg	4.00	1	10/01/19 12:43	CCR	9056A
Electrical Conductivity (Sat Paste)	0.877	mmhos/cm		1	10/07/19 11:15	MJM	29B
pH (Sat Paste)	6.69	s.u.		1	10/07/19 11:15	MJM	29B
Cation Exchange Capacity (CEC)	54.3	meq/100g	0.100	100	10/09/19 15:40		29B
Exchangeable Sodium Percentage (ESP)	0.897	%	0.100	1	10/07/19 11:15		CALCULATION~
Sodium Adsorption Ratio (Sat Paste)	2.95	Calc	0.430	10	10/08/19 15:22		29B
Calcium (Sat Paste)	2.04	meq/L	0.500	10	10/08/19 16:07	APB	29B
Magnesium (Sat Paste)	1.07	meq/L	0.820	10	10/08/19 17:06	APB	29B
Sodium (Sat Paste)	3.68	meq/L	0.430	10	10/08/19 15:22	APB	29B
Sulfate (Sat Paste)	4.51	meq/L	0.010	1	10/09/19 00:57	MJM	29B

Analytical Method: TX1006 LA **Prep Batch(es):** **L456246** 09/26/19 08:00
Prep Method: TX1006

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<25.0	mg/Kg	25.0	1	09/26/19 14:41	MMK	L456247
Aliphatic >C8-C10	<25.0	mg/Kg	25.0	1	09/26/19 14:41	MMK	L456247
Aromatic >C8-C10	<25.0	mg/Kg	25.0	1	09/26/19 19:36	MMK	L456247

Qualifiers/Definitions DF Dilution Factor H Beyond holding time
MQL Method Quantitation Limit



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Report Date : 10/28/2019
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Nathan Pera, IV
 Project Manager

Report Number : **19-269-0012**

REPORT OF ANALYSIS

Lab No : **97396**
 Sample ID : **HA-2 (0-2)**

Matrix: **Solids**
 Sampled: **8/29/2019 13:15**

Analytical Method: TX1006 LA **Prep Batch(es):** **L456246** 09/26/19 08:00
Prep Method: TX1006

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<25.0	mg/Kg	25.0	1	09/26/19 14:41	MMK	L456247
Aromatic >C10-C12	<25.0	mg/Kg	25.0	1	09/26/19 19:36	MMK	L456247
Aliphatic >C12-C16	<25.0	mg/Kg	25.0	1	09/26/19 14:41	MMK	L456247
Aromatic >C12-C16	<25.0	mg/Kg	25.0	1	09/26/19 19:36	MMK	L456247
Aromatic >C16-C21	32.8	mg/Kg	25.0	1	09/26/19 19:36	MMK	L456247
Aliphatic >C16-C35	<25.0	mg/Kg	25.0	1	09/26/19 14:41	MMK	L456247
Aromatic >C21-C35	104	mg/Kg	25.0	1	09/26/19 19:36	MMK	L456247
Surrogate: OTP Surrogate		95.1	Limits: 70-130%	1	09/26/19 19:36	MMK	L456247

Qualifiers/Definitions	DF	Dilution Factor	H	Beyond holding time
	MQL	Method Quantitation Limit		

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Received : 09/26/2019



Nathan Pera, IV
Project Manager

Report Number : **19-269-0012**

REPORT OF ANALYSIS

Lab No : **97397**
Sample ID : **HA-2 (2-4)**

Matrix: **Solids**
Sampled: **8/29/2019 13:20**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Moisture	45.4	%		1	10/03/19 10:10	MJM	SW-DRYWT
% Saturation (Sat Paste)	116	%		1	10/07/19 11:15	MJM	29B
Alkalinity (Sat Paste)	3.8	meq/L		1	10/09/19 10:40	APB	29B
Chloride (Sat Paste)	3.01	meq/L	0.010	1	10/09/19 01:12	MJM	29B
Chloride	33.1 H	mg/Kg	4.00	1	10/01/19 12:54	CCR	9056A
Electrical Conductivity (Sat Paste)	2.42	mmhos/cm		1	10/07/19 11:15	MJM	29B
pH (Sat Paste)	7.91	s.u.		1	10/07/19 11:15	MJM	29B
Cation Exchange Capacity (CEC)	44.8	meq/100g	0.100	100	10/09/19 15:41		29B
Exchangeable Sodium Percentage (ESP)	3.27	%	0.100	1	10/07/19 11:15		CALCULATION~
Sodium Adsorption Ratio (Sat Paste)	10.0	Calc	0.500	10	10/08/19 15:47		29B
Calcium (Sat Paste)	4.38	meq/L	0.500	10	10/08/19 16:08	APB	29B
Magnesium (Sat Paste)	1.53	meq/L	0.820	10	10/08/19 17:07	APB	29B
Sodium (Sat Paste)	17.2	meq/L	2.15	50	10/08/19 15:47	APB	29B
Sulfate (Sat Paste)	14.7	meq/L	0.010	1	10/09/19 01:12	MJM	29B

Analytical Method: TX1006 LA **Prep Batch(es):** **L456246** 09/26/19 08:00
Prep Method: TX1006

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<25.0	mg/Kg	25.0	1	09/26/19 15:14	MMK	L456247
Aliphatic >C8-C10	<25.0	mg/Kg	25.0	1	09/26/19 15:14	MMK	L456247
Aromatic >C8-C10	<25.0	mg/Kg	25.0	1	09/26/19 20:08	MMK	L456247

Qualifiers/Definitions DF Dilution Factor H Beyond holding time
MQL Method Quantitation Limit



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Project August Levert
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Report Date : 10/28/2019
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Nathan Pera, IV
 Project Manager

Report Number : **19-269-0012**

REPORT OF ANALYSIS

Lab No : **97397**
 Sample ID : **HA-2 (2-4)**

Matrix: **Solids**
 Sampled: **8/29/2019 13:20**

Analytical Method: TX1006 LA **Prep Batch(es):** L456246 09/26/19 08:00
Prep Method: TX1006

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<25.0	mg/Kg	25.0	1	09/26/19 15:14	MMK	L456247
Aromatic >C10-C12	<25.0	mg/Kg	25.0	1	09/26/19 20:08	MMK	L456247
Aliphatic >C12-C16	<25.0	mg/Kg	25.0	1	09/26/19 15:14	MMK	L456247
Aromatic >C12-C16	<25.0	mg/Kg	25.0	1	09/26/19 20:08	MMK	L456247
Aromatic >C16-C21	<25.0	mg/Kg	25.0	1	09/26/19 20:08	MMK	L456247
Aliphatic >C16-C35	<25.0	mg/Kg	25.0	1	09/26/19 15:14	MMK	L456247
Aromatic >C21-C35	<25.0	mg/Kg	25.0	1	09/26/19 20:08	MMK	L456247
Surrogate: OTP Surrogate	93.7		Limits: 70-130%	1	09/26/19 20:08	MMK	L456247

Qualifiers/Definitions	DF	Dilution Factor	H	Beyond holding time
	MQL	Method Quantitation Limit		

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Nathan Pera, IV
Project Manager

Report Number : **19-269-0012**

REPORT OF ANALYSIS

Lab No : **97398**
Sample ID : **HA-3 (0-2)**

Matrix: **Solids**
Sampled: **8/29/2019 14:40**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Moisture	42.8	%		1	10/03/19 10:10	MJM	SW-DRYWT
% Saturation (Sat Paste)	116	%		1	10/07/19 11:15	MJM	29B
Alkalinity (Sat Paste)	1.4	meq/L		1	10/09/19 10:40	APB	29B
Chloride (Sat Paste)	2.76	meq/L	0.010	1	10/09/19 01:26	MJM	29B
Chloride	25.1 H	mg/Kg	4.00	1	10/01/19 13:05	CCR	9056A
Electrical Conductivity (Sat Paste)	0.696	mmhos/cm		1	10/07/19 11:15	MJM	29B
pH (Sat Paste)	7.28	s.u.		1	10/07/19 11:15	MJM	29B
Cation Exchange Capacity (CEC)	55.2	meq/100g	0.100	100	10/09/19 15:41		29B
Exchangeable Sodium Percentage (ESP)	1.91	%	0.100	1	10/07/19 11:15		CALCULATION~
Sodium Adsorption Ratio (Sat Paste)	4.39	Calc	0.430	10	10/08/19 15:23		29B
Calcium (Sat Paste)	1.62	meq/L	0.500	10	10/08/19 16:08	APB	29B
Magnesium (Sat Paste)	<0.820	meq/L	0.820	10	10/08/19 17:07	APB	29B
Sodium (Sat Paste)	3.95	meq/L	0.430	10	10/08/19 15:23	APB	29B
Sulfate (Sat Paste)	1.59	meq/L	0.010	1	10/09/19 01:26	MJM	29B

Analytical Method: TX1006 LA **Prep Batch(es):** **L456246** 09/26/19 08:00
Prep Method: TX1006

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<25.0	mg/Kg	25.0	1	09/26/19 15:47	MMK	L456247
Aliphatic >C8-C10	<25.0	mg/Kg	25.0	1	09/26/19 15:47	MMK	L456247
Aromatic >C8-C10	<25.0	mg/Kg	25.0	1	09/26/19 20:40	MMK	L456247

Qualifiers/Definitions DF Dilution Factor H Beyond holding time
MQL Method Quantitation Limit



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Nathan Pera, IV
 Project Manager

Report Number : **19-269-0012**

REPORT OF ANALYSIS

Lab No : **97398**
 Sample ID : **HA-3 (0-2)**

Matrix: **Solids**
 Sampled: **8/29/2019 14:40**

Analytical Method: TX1006 LA **Prep Batch(es):** **L456246** 09/26/19 08:00
Prep Method: TX1006

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<25.0	mg/Kg	25.0	1	09/26/19 15:47	MMK	L456247
Aromatic >C10-C12	<25.0	mg/Kg	25.0	1	09/26/19 20:40	MMK	L456247
Aliphatic >C12-C16	<25.0	mg/Kg	25.0	1	09/26/19 15:47	MMK	L456247
Aromatic >C12-C16	<25.0	mg/Kg	25.0	1	09/26/19 20:40	MMK	L456247
Aromatic >C16-C21	<25.0	mg/Kg	25.0	1	09/26/19 20:40	MMK	L456247
Aliphatic >C16-C35	<25.0	mg/Kg	25.0	1	09/26/19 15:47	MMK	L456247
Aromatic >C21-C35	<25.0	mg/Kg	25.0	1	09/26/19 20:40	MMK	L456247
Surrogate: OTP Surrogate	95.8		Limits: 70-130%	1	09/26/19 20:40	MMK	L456247

Qualifiers/ Definitions	DF	Dilution Factor	H	Beyond holding time
	MQL	Method Quantitation Limit		



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Report Date : 10/28/2019
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Nathan Pera, IV
 Project Manager

Report Number : **19-269-0012**

REPORT OF ANALYSIS

Lab No : **97399**
 Sample ID : **HA-3 (2-4)**

Matrix: **Solids**
 Sampled: **8/29/2019 14:45**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Moisture	44.3	%		1	10/03/19 10:10	MJM	SW-DRYWT
% Saturation (Sat Paste)	126	%		1	10/07/19 11:15	MJM	29B
Alkalinity (Sat Paste)	1.8	meq/L		1	10/09/19 10:40	APB	29B
Chloride (Sat Paste)	14.7	meq/L	0.010	1	10/09/19 01:41	MJM	29B
Chloride	218 H	mg/Kg	4.00	1	10/01/19 13:16	CCR	9056A
Electrical Conductivity (Sat Paste)	1.96	mmhos/cm		1	10/07/19 11:15	MJM	29B
pH (Sat Paste)	7.05	s.u.		1	10/07/19 11:15	MJM	29B
Cation Exchange Capacity (CEC)	54.3	meq/100g	0.100	100	10/09/19 15:43		29B
Exchangeable Sodium Percentage (ESP)	4.27	%	0.100	1	10/07/19 11:15		CALCULATION~
Sodium Adsorption Ratio (Sat Paste)	10.1	Calc	0.500	10	10/08/19 15:25		29B
Calcium (Sat Paste)	2.68	meq/L	0.500	10	10/08/19 16:10	APB	29B
Magnesium (Sat Paste)	1.10	meq/L	0.820	10	10/08/19 17:08	APB	29B
Sodium (Sat Paste)	13.9	meq/L	0.860	20	10/08/19 15:25	APB	29B
Sulfate (Sat Paste)	1.47	meq/L	0.010	1	10/09/19 01:41	MJM	29B

Qualifiers/ Definitions	DF	Dilution Factor	H	Beyond holding time
	L	Limit Exceeded	MQL	Method Quantitation Limit



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Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 10/28/2019
 Received : 09/26/2019

Nathan Pera, IV
 Project Manager

Report Number : **19-269-0012**

REPORT OF ANALYSIS

Lab No : **97400**
 Sample ID : **HA-3 (4-6)**

Matrix: **Solids**
 Sampled: **8/29/2019 14:50**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Moisture	45.3	%		1	10/03/19 10:10	MJM	SW-DRYWT
% Saturation (Sat Paste)	144	%		1	10/07/19 11:15	MJM	29B
Alkalinity (Sat Paste)	1.6	meq/L		1	10/09/19 10:40	APB	29B
Chloride (Sat Paste)	26.1	meq/L	0.010	1	10/09/19 01:55	MJM	29B
Chloride	398 H	mg/Kg	4.00	1	10/01/19 13:27	CCR	9056A
Electrical Conductivity (Sat Paste)	3.07	mmhos/cm		1	10/07/19 11:15	MJM	29B
pH (Sat Paste)	7.32	s.u.		1	10/07/19 11:15	MJM	29B
Calcium (Sat Paste)	3.01	meq/L	0.500	10	10/08/19 16:11	APB	29B
Magnesium (Sat Paste)	1.36	meq/L	0.820	10	10/08/19 17:09	APB	29B
Sodium (Sat Paste)	22.5	meq/L	2.15	50	10/08/19 15:48	APB	29B
Sulfate (Sat Paste)	0.844	meq/L	0.010	1	10/09/19 01:55	MJM	29B

Qualifiers/ Definitions	DF	Dilution Factor	H	Beyond holding time
	L	Limit Exceeded	MQL	Method Quantitation Limit



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Hydro Environmental Technology, Inc.
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Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 10/28/2019
 Received : 09/26/2019

Nathan Pera, IV
 Project Manager

Report Number : **19-269-0012**

REPORT OF ANALYSIS

Lab No : **97401**
 Sample ID : **HA-3 (6-8)**

Matrix: **Solids**
 Sampled: **8/29/2019 14:55**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Moisture	37.5	%		1	10/03/19 10:10	MJM	SW-DRYWT
% Saturation (Sat Paste)	120	%		1	10/07/19 11:15	MJM	29B
Alkalinity (Sat Paste)	1.8	meq/L		1	10/09/19 10:40	APB	29B
Chloride (Sat Paste)	38.3	meq/L	0.010	1	10/09/19 02:09	MJM	29B
Chloride	721 H	mg/Kg	4.00	1	10/01/19 13:38	CCR	9056A
Electrical Conductivity (Sat Paste)	4.45	mmhos/cm		1	10/07/19 11:15	MJM	29B
pH (Sat Paste)	7.08	s.u.		1	10/07/19 11:15	MJM	29B
Calcium (Sat Paste)	8.02	meq/L	0.500	10	10/08/19 16:11	APB	29B
Magnesium (Sat Paste)	3.45	meq/L	0.820	10	10/08/19 17:09	APB	29B
Sodium (Sat Paste)	34.6	meq/L	2.15	50	10/08/19 15:26	APB	29B
Sulfate (Sat Paste)	3.21	meq/L	0.010	1	10/09/19 02:09	MJM	29B

Analytical Method: TX1006 LA **Prep Batch(es):** **L456246** 09/26/19 08:00
Prep Method: TX1006

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<25.0	mg/Kg	25.0	1	09/26/19 16:21	MMK	L456247
Aliphatic >C8-C10	<25.0	mg/Kg	25.0	1	09/26/19 16:21	MMK	L456247
Aromatic >C8-C10	<25.0	mg/Kg	25.0	1	09/26/19 21:12	MMK	L456247
Aliphatic >C10-C12	<25.0	mg/Kg	25.0	1	09/26/19 16:21	MMK	L456247
Aromatic >C10-C12	<25.0	mg/Kg	25.0	1	09/26/19 21:12	MMK	L456247
Aliphatic >C12-C16	<25.0	mg/Kg	25.0	1	09/26/19 16:21	MMK	L456247
Aromatic >C12-C16	<25.0	mg/Kg	25.0	1	09/26/19 21:12	MMK	L456247

Qualifiers/Definitions DF Dilution Factor H Beyond holding time
 MQL Method Quantitation Limit



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Project August Levert
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Report Date : 10/28/2019
 Received : 09/26/2019

Nathan Pera, IV
 Project Manager

Report Number : **19-269-0012**

REPORT OF ANALYSIS

Lab No : **97401**
 Sample ID : **HA-3 (6-8)**

Matrix: **Solids**
 Sampled: **8/29/2019 14:55**

Analytical Method: TX1006 LA **Prep Batch(es):** **L456246** 09/26/19 08:00
Prep Method: TX1006

Test	Results	Units	ML	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C16-C21	<25.0	mg/Kg	25.0	1	09/26/19 21:12	MMK	L456247
Aliphatic >C16-C35	<25.0	mg/Kg	25.0	1	09/26/19 16:21	MMK	L456247
Aromatic >C21-C35	<25.0	mg/Kg	25.0	1	09/26/19 21:12	MMK	L456247
Surrogate: OTP Surrogate	90.3		Limits: 70-130%	1	09/26/19 21:12	MMK	L456247

Qualifiers/Definitions	DF	Dilution Factor	H	Beyond holding time
	ML	Method Quantitation Limit		

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Nathan Pera, IV
Project Manager

Report Number : **19-269-0012**

REPORT OF ANALYSIS

Lab No : **97402**
Sample ID : **HA-4 (0-2)**

Matrix: **Solids**
Sampled: **8/30/2019 10:25**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Moisture	25.0	%		1	10/03/19 10:10	MJM	SW-DRYWT
% Saturation (Sat Paste)	82.9	%		1	10/07/19 11:15	MJM	29B
Alkalinity (Sat Paste)	3.8	meq/L		1	10/09/19 10:40	APB	29B
Chloride (Sat Paste)	0.390	meq/L	0.010	1	10/09/19 02:24	MJM	29B
Chloride	<4.00 H	mg/Kg	4.00	1	10/01/19 13:49	CCR	9056A
Electrical Conductivity (Sat Paste)	0.490	mmhos/cm		1	10/07/19 11:15	MJM	29B
pH (Sat Paste)	7.88	s.u.		1	10/07/19 11:15	MJM	29B
Cation Exchange Capacity (CEC)	28.7	meq/100g	0.100	20	10/09/19 14:56		29B
Exchangeable Sodium Percentage (ESP)	0.574	%	0.100	1	10/07/19 11:15		CALCULATION~
Sodium Adsorption Ratio (Sat Paste)	<0.430	Calc	0.430	10	10/08/19 15:27		29B
Calcium (Sat Paste)	4.11	meq/L	0.500	10	10/08/19 16:12	APB	29B
Magnesium (Sat Paste)	<0.820	meq/L	0.820	10	10/08/19 17:10	APB	29B
Sodium (Sat Paste)	0.459	meq/L	0.430	10	10/08/19 15:27	APB	29B
Sulfate (Sat Paste)	0.676	meq/L	0.010	1	10/09/19 02:24	MJM	29B

Qualifiers/ Definitions	DF	Dilution Factor	H	Beyond holding time
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Nathan Pera, IV
 Project Manager

Report Number : **19-269-0012**

REPORT OF ANALYSIS

Lab No : **97403**
 Sample ID : **HA-4 (2-4)**

Matrix: **Solids**
 Sampled: **8/30/2019 10:30**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Moisture	33.6	%		1	10/03/19 10:10	MJM	SW-DRYWT
% Saturation (Sat Paste)	113	%		1	10/07/19 11:15	MJM	29B
Alkalinity (Sat Paste)	1.6	meq/L		1	10/09/19 10:40	APB	29B
Chloride (Sat Paste)	12.8	meq/L	0.010	1	10/09/19 02:38	MJM	29B
Chloride	280 H	mg/Kg	4.00	1	10/01/19 14:00	CCR	9056A
Electrical Conductivity (Sat Paste)	4.40	mmhos/cm		1	10/07/19 11:15	MJM	29B
pH (Sat Paste)	7.33	s.u.		1	10/07/19 11:15	MJM	29B
Cation Exchange Capacity (CEC)	37.3	meq/100g	0.100	50	10/09/19 15:43		29B
Exchangeable Sodium Percentage (ESP)	3.42	%	0.100	1	10/07/19 11:15		CALCULATION~
Sodium Adsorption Ratio (Sat Paste)	12.2	Calc	2.15	50	10/08/19 15:28		29B
Calcium (Sat Paste)	14.7	meq/L	2.50	50	10/08/19 16:50	APB	29B
Magnesium (Sat Paste)	4.71	meq/L	4.10	50	10/08/19 17:11	APB	29B
Sodium (Sat Paste)	38.1	meq/L	2.15	50	10/08/19 15:28	APB	29B
Sulfate (Sat Paste)	35.4	meq/L	0.010	1	10/09/19 02:38	MJM	29B

Qualifiers/ Definitions	DF	Dilution Factor	H	Beyond holding time
	L	Limit Exceeded	MQL	Method Quantitation Limit



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Nathan Pera, IV
 Project Manager

Report Number : **19-269-0012**

REPORT OF ANALYSIS

Lab No : **97404**
 Sample ID : **HA-4 (4-6)**

Matrix: **Solids**
 Sampled: **8/30/2019 10:35**

Test	Results	Units	ML	DF	Date / Time Analyzed	By	Analytical Method
Moisture	26.6	%		1	10/03/19 10:25	MJM	SW-DRYWT
% Saturation (Sat Paste)	80.6	%		1	10/07/19 11:15	MJM	29B
Alkalinity (Sat Paste)	1.2	meq/L		1	10/09/19 10:40	APB	29B
Chloride (Sat Paste)	63.2	meq/L	0.010	1	10/09/19 03:50	MJM	29B
Chloride	1180 H	mg/Kg	40.0	10	10/02/19 10:00	CCR	9056A
Electrical Conductivity (Sat Paste)	7.59	mmhos/cm		1	10/07/19 11:15	MJM	29B
pH (Sat Paste)	7.30	s.u.		1	10/07/19 11:15	MJM	29B
Calcium (Sat Paste)	18.0	meq/L	1.00	20	10/08/19 16:16	APB	29B
Magnesium (Sat Paste)	7.54	meq/L	1.64	20	10/08/19 17:14	APB	29B
Sodium (Sat Paste)	65.2	meq/L	4.30	100	10/08/19 15:31	APB	29B
Sulfate (Sat Paste)	13.0	meq/L	0.010	1	10/09/19 03:50	MJM	29B

Qualifiers/ Definitions	DF	Dilution Factor	H	Beyond holding time
	L	Limit Exceeded	ML	Method Quantitation Limit

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Nathan Pera, IV
Project Manager

Report Number : **19-269-0012**

REPORT OF ANALYSIS

Lab No : **97405**
Sample ID : **HA-4 (6-8)**

Matrix: **Solids**
Sampled: **8/30/2019 10:40**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Moisture	38.4	%		1	10/03/19 10:25	MJM	SW-DRYWT
% Saturation (Sat Paste)	116	%		1	10/07/19 11:15	MJM	29B
Alkalinity (Sat Paste)	1.4	meq/L		1	10/09/19 10:40	APB	29B
Chloride (Sat Paste)	58.8	meq/L	0.010	1	10/09/19 04:04	MJM	29B
Chloride	1300 H	mg/Kg	40.0	10	10/02/19 10:12	CCR	9056A
Electrical Conductivity (Sat Paste)	6.25	mmhos/cm		1	10/07/19 11:15	MJM	29B
pH (Sat Paste)	7.46	s.u.		1	10/07/19 11:15	MJM	29B
Calcium (Sat Paste)	18.9	meq/L	1.00	20	10/08/19 16:17	APB	29B
Magnesium (Sat Paste)	9.14	meq/L	1.64	20	10/08/19 17:15	APB	29B
Sodium (Sat Paste)	35.4	meq/L	4.30	100	10/08/19 15:32	APB	29B
Sulfate (Sat Paste)	2.39	meq/L	0.010	1	10/09/19 04:04	MJM	29B

**Qualifiers/
Definitions**

DF	Dilution Factor	H	Beyond holding time
L	Limit Exceeded	MQL	Method Quantitation Limit

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Project August Levert
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Report Number : **19-269-0012**

REPORT OF ANALYSIS

Nathan Pera, IV
Project Manager

Lab No : **97406**
Sample ID : **HA-5 (0-2)**

Matrix: **Solids**
Sampled: **8/30/2019 11:35**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Moisture	39.6	%		1	10/03/19 10:25	MJM	SW-DRYWT
% Saturation (Sat Paste)	127	%		1	10/07/19 11:15	MJM	29B
Alkalinity (Sat Paste)	1.8	meq/L		1	10/09/19 10:40	APB	29B
Chloride (Sat Paste)	24.0	meq/L	0.010	1	10/09/19 04:18	MJM	29B
Chloride	517 H	mg/Kg	4.00	1	10/01/19 14:56	CCR	9056A
Electrical Conductivity (Sat Paste)	3.02	mmhos/cm		1	10/07/19 11:15	MJM	29B
pH (Sat Paste)	7.62	s.u.		1	10/07/19 11:15	MJM	29B
Cation Exchange Capacity (CEC)	50.4	meq/100g	0.100	100	10/09/19 15:45		29B
Exchangeable Sodium Percentage (ESP)	2.86	%	0.100	1	10/07/19 11:15		CALCULATION~
Sodium Adsorption Ratio (Sat Paste)	6.07	Calc	0.500	10	10/08/19 15:32		29B
Calcium (Sat Paste)	8.30	meq/L	0.500	10	10/08/19 16:18	APB	29B
Magnesium (Sat Paste)	4.24	meq/L	0.820	10	10/08/19 17:16	APB	29B
Sodium (Sat Paste)	15.2	meq/L	0.860	20	10/08/19 15:32	APB	29B
Sulfate (Sat Paste)	2.79	meq/L	0.010	1	10/09/19 04:18	MJM	29B

Qualifiers/ Definitions	DF	Dilution Factor	H	Beyond holding time
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Nathan Pera, IV
Project Manager

Report Number : **19-269-0012**

REPORT OF ANALYSIS

Lab No : **97407**
Sample ID : **HA-5 (2-4)**

Matrix: **Solids**
Sampled: **8/30/2019 11:40**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Moisture	37.9	%		1	10/03/19 10:25	MJM	SW-DRYWT
% Saturation (Sat Paste)	114	%		1	10/07/19 11:15	MJM	29B
Alkalinity (Sat Paste)	1.2	meq/L		1	10/09/19 10:40	APB	29B
Chloride (Sat Paste)	26.0	meq/L	0.010	1	10/09/19 04:33	MJM	29B
Chloride	587 H	mg/Kg	4.00	1	10/01/19 15:07	CCR	9056A
Electrical Conductivity (Sat Paste)	3.08	mmhos/cm		1	10/07/19 11:15	MJM	29B
pH (Sat Paste)	7.42	s.u.		1	10/07/19 11:15	MJM	29B
Cation Exchange Capacity (CEC)	54.8	meq/100g	0.100	100	10/09/19 15:45		29B
Exchangeable Sodium Percentage (ESP)	3.55	%	0.100	1	10/07/19 11:15		CALCULATION~
Sodium Adsorption Ratio (Sat Paste)	6.30	Calc	0.500	10	10/08/19 15:48		29B
Calcium (Sat Paste)	8.67	meq/L	0.500	10	10/08/19 16:19	APB	29B
Magnesium (Sat Paste)	4.56	meq/L	0.820	10	10/08/19 17:16	APB	29B
Sodium (Sat Paste)	16.2	meq/L	2.15	50	10/08/19 15:48	APB	29B
Sulfate (Sat Paste)	3.34	meq/L	0.010	1	10/09/19 04:33	MJM	29B

Qualifiers/ Definitions	DF	Dilution Factor	H	Beyond holding time
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Nathan Pera, IV
 Project Manager

Report Number : **19-269-0012**

REPORT OF ANALYSIS

Lab No : **97408**
 Sample ID : **HA-5 (4-6)**

Matrix: **Solids**
 Sampled: **8/30/2019 11:45**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Moisture	38.0	%		1	10/03/19 10:25	MJM	SW-DRYWT
% Saturation (Sat Paste)	122	%		1	10/07/19 11:15	MJM	29B
Alkalinity (Sat Paste)	1.2	meq/L		1	10/09/19 10:40	APB	29B
Chloride (Sat Paste)	40.4	meq/L	0.010	1	10/09/19 04:47	MJM	29B
Chloride	849 H	mg/Kg	4.00	1	10/01/19 15:18	CCR	9056A
Electrical Conductivity (Sat Paste)	4.41	mmhos/cm		1	10/07/19 11:15	MJM	29B
pH (Sat Paste)	7.53	s.u.		1	10/07/19 11:15	MJM	29B
Calcium (Sat Paste)	13.8	meq/L	2.50	50	10/08/19 16:35	APB	29B
Magnesium (Sat Paste)	7.53	meq/L	0.820	10	10/08/19 17:17	APB	29B
Sodium (Sat Paste)	24.7	meq/L	2.15	50	10/08/19 15:34	APB	29B
Total Arsenic	2.58	mg/Kg AR	2.00	1	10/10/19 04:09	BKN	6010D
Total Barium	151	mg/Kg AR	1.00	1	10/10/19 04:09	BKN	6010D
True Total Barium	425	mg/Kg	50.0	1	10/09/19 13:55	BKN	29B
Total Cadmium	0.244	mg/Kg AR	0.200	1	10/10/19 04:09	BKN	6010D
Total Chromium	12.2	mg/Kg AR	0.500	1	10/10/19 04:09	BKN	6010D
Total Lead	11.5	mg/Kg AR	0.600	1	10/10/19 04:09	BKN	6010D
Mercury (Total)	0.0396 H	mg/Kg AR	0.0133	1	10/09/19 14:19	TJS	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	10/10/19 04:09	BKN	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	10/10/19 04:09	BKN	6010D
Total Zinc	47.8	mg/Kg AR	2.50	1	10/10/19 04:09	BKN	6010D
Sulfate (Sat Paste)	3.17	meq/L	0.010	1	10/09/19 04:47	MJM	29B

Qualifiers/ Definitions	DF	Dilution Factor	H	Beyond holding time
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Nathan Pera, IV
 Project Manager

Report Number : **19-269-0012**

REPORT OF ANALYSIS

Lab No : **97409**
 Sample ID : **HA-5 (6-7)**

Matrix: **Solids**
 Sampled: **8/30/2019 11:50**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Moisture	48.0	%		1	10/03/19 10:25	MJM	SW-DRYWT
% Saturation (Sat Paste)	125	%		1	10/07/19 11:15	MJM	29B
Alkalinity (Sat Paste)	0.8	meq/L		1	10/09/19 10:40	APB	29B
Chloride (Sat Paste)	67.8	meq/L	0.010	1	10/09/19 05:01	MJM	29B
Chloride	1470 H	mg/Kg	40.0	10	10/01/19 16:03	CCR	9056A
Electrical Conductivity (Sat Paste)	7.22	mmhos/cm		1	10/07/19 11:15	MJM	29B
pH (Sat Paste)	7.22	s.u.		1	10/07/19 11:15	MJM	29B
Calcium (Sat Paste)	13.1	meq/L	2.50	50	10/08/19 16:35	APB	29B
Magnesium (Sat Paste)	14.7	meq/L	0.820	10	10/08/19 17:18	APB	29B
Sodium (Sat Paste)	30.3	meq/L	4.30	100	10/08/19 15:35	APB	29B
Total Arsenic	2.16	mg/Kg AR	2.00	1	10/10/19 04:14	BKN	6010D
Total Barium	122	mg/Kg AR	1.00	1	10/10/19 04:14	BKN	6010D
True Total Barium	344	mg/Kg	50.0	1	10/09/19 14:10	BKN	29B
Total Cadmium	<0.200	mg/Kg AR	0.200	1	10/10/19 04:14	BKN	6010D
Total Chromium	11.4	mg/Kg AR	0.500	1	10/10/19 04:14	BKN	6010D
Total Lead	8.39	mg/Kg AR	0.600	1	10/10/19 04:14	BKN	6010D
Mercury (Total)	0.0315 H	mg/Kg AR	0.0133	1	10/09/19 14:20	TJS	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	10/10/19 04:14	BKN	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	10/10/19 04:14	BKN	6010D
Total Zinc	36.0	mg/Kg AR	2.50	1	10/10/19 04:14	BKN	6010D
Sulfate (Sat Paste)	3.68	meq/L	0.010	1	10/09/19 05:01	MJM	29B

Qualifiers/ Definitions	DF	Dilution Factor	H	Beyond holding time
	L	Limit Exceeded	MQL	Method Quantitation Limit

Quality Control Data

Client ID: Hydro Environmental Technology, Inc.

Project Description: August Levert

Report No: 19-269-0012

QC Prep: L457450

QC Analytical Batch(es): L458083

QC Prep Batch Method: LA 29B BA (PREP)

Analysis Method: 29B

Analysis Description: True Total Barium

Matrix Spike & Matrix Spike Duplicate L 97408-L457246-MS-L457450 L 97408-L457246-MSD-L457450

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
True Total Barium	mg/Kg	425	8130	8470	9220	10100	108	114	75-125	9.1	20.0

Quality Control Data

Client ID: Hydro Environmental Technology, Inc.

Project Description: August Levert

Report No: 19-269-0012

QC Prep: A58799

QC Analytical Batch(es): A58897

QC Prep Batch Method: LA 29B CEC (PREP)

Analysis Method: 29B

Analysis Description: Cation Exchange Capacity

Lab Reagent Blank

LRB-A58799

Matrix: SOL

Associated Lab Samples: 97394, 97395, 97396, 97397, 97398, 97399, 97402, 97403, 97406, 97407

Parameter	Units	Blank Result	ML	Analyzed
Total Sodium CEC	mg/Kg	< 100	100	10/09/19 14:51

Duplicate

L 97403-A58774-DUP-A58799

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Total Sodium CEC	mg/Kg	8570	8680	1.2	30.0	10/09/19 15:44

Quality Control Data

Client ID: Hydro Environmental Technology, Inc.

Project Description: August Levert

Report No: 19-269-0012

QC Prep: A58800

QC Analytical Batch(es): A58898

QC Prep Batch Method: 29B

Analysis Method: 29B

Analysis Description: Exchangeable Sodium Percentage

Duplicate L 97403-A58774-DUP-A58800

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Total Sodium ESP	meq/100g	5.58	5.57	0.1	20.0	10/09/19 15:10

Quality Control Data

Client ID: Hydro Environmental Technology, Inc.
Project Description: August Levert
Report No: 19-269-0012

QC Analytical Batch: A58880
Analysis Method: 29B
Analysis Description: Alkalinity

Duplicate L 97403-A58774-A58801-DUP

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Alkalinity (Sat Paste)	meq/L	1.6	1.6	0.0	30.0	10/09/19 10:40

Quality Control Data

Client ID: Hydro Environmental Technology, Inc.

Project Description: August Levert

Report No: 19-269-0012

QC Prep: A58801	QC Analytical Batch(es): A58880,A58852,A58850,A58878
QC Prep Batch Method: 29B	Analysis Method: 29B
	Analysis Description: Alkalinity

Duplicate L 97403-A58774-DUP-A58801

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Alkalinity (Sat Paste)	meq/L	1.6	1.8	11.7	30.0	10/09/19 10:40

Quality Control Data

Client ID: Hydro Environmental Technology, Inc.

Project Description: August Levert

Report No: 19-269-0012

QC Prep: A58801	QC Analytical Batch(es): A58880,A58852,A58850,A58878
QC Prep Batch Method: 29B	Analysis Method: 29B
	Analysis Description: Anions by Ion Chromatography

Duplicate L 97403-A58774-DUP-A58801

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Chloride (Sat Paste)	meq/L	12.8	12.4	3.1	30.0	10/09/19 03:35
Sulfate (Sat Paste)	meq/L	35.4	37.0	4.4	30.0	10/09/19 03:35

Quality Control Data

Client ID: Hydro Environmental Technology, Inc.

Project Description: August Levert

Report No: 19-269-0012

QC Prep: A58801	QC Analytical Batch(es): A58880,A58852,A58850,A58878
QC Prep Batch Method: 29B	Analysis Method: 29B
	Analysis Description: Saturated Paste Extraction

Duplicate L 97403-A58774-DUP-A58801

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
% Saturation (Sat Paste)	%	113	114	0.8	30.0	10/07/19 11:15
Electrical Conductivity (Sat Paste)	nmhos/cm	4.40	4.37	0.6	30.0	10/07/19 11:15
pH (Sat Paste)	s.u.	7.33	7.26	0.9	30.0	10/07/19 11:15

Quality Control Data

Client ID: Hydro Environmental Technology, Inc.

Project Description: August Levert

Report No: 19-269-0012

QC Prep: A58801

QC Analytical Batch(es): A58880,A58852,A58850,A58878

QC Prep Batch Method: 29B

Analysis Method: 29B

Analysis Description: Saturated Paste Extraction

Duplicate L 97403-A58774-DUP-A58801

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Calcium (Sat Paste)	meq/L	14.7	15.8	7.2	30.0	10/08/19 16:51
Magnesium (Sat Paste)	meq/L	4.71	4.53	3.8	30.0	10/08/19 17:14
Sodium (Sat Paste)	meq/L	38.1	34.5	9.9	30.0	10/08/19 15:30

Quality Control Data

Client ID: Hydro Environmental Technology, Inc.
Project Description: August Levert
Report No: 19-269-0012

QC Prep: L457468 **QC Analytical Batch(es):** L458261
QC Prep Batch Method: 3050B **Analysis Method:** 6010D
Analysis Description: Metals Analysis

Lab Reagent Blank LRB-L457468 Matrix: SOL
Associated Lab Samples: 97408, 97409

Parameter	Units	Blank Result	MQL	Analyzed
Total Barium	mg/Kg AR	< 0.999	0.999	10/10/19 04:04
Total Arsenic	mg/Kg AR	< 2.00	2.00	10/10/19 04:04
Total Cadmium	mg/Kg AR	< 0.199	0.199	10/10/19 04:04
Total Chromium	mg/Kg AR	< 0.499	0.499	10/10/19 04:04
Total Lead	mg/Kg AR	< 0.599	0.599	10/10/19 04:04
Total Selenium	mg/Kg AR	< 0.999	0.999	10/10/19 04:04
Total Silver	mg/Kg AR	< 0.499	0.499	10/10/19 04:04
Total Zinc	mg/Kg AR	< 2.50	2.50	10/10/19 04:04

Laboratory Control Sample LCS-L457468

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Total Barium	mg/Kg AR	100	106	106	80-120
Total Arsenic	mg/Kg AR	10.0	10.5	105	80-120
Total Cadmium	mg/Kg AR	10.0	10.9	109	80-120
Total Chromium	mg/Kg AR	100	107	107	80-120
Total Lead	mg/Kg AR	10.0	11.2	112	80-120
Total Selenium	mg/Kg AR	10.0	11.0	110	80-120
Total Silver	mg/Kg AR	10.0	10.2	102	80-120
Total Zinc	mg/Kg AR	100	108	108	80-120

Matrix Spike & Matrix Spike Duplicate L 97409-L457246-MS-L457468 L 97409-L457246-MSD-L457468

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Total Barium	mg/Kg AR	122	51.8	51.0	169	170	90.7	94.1	75-125	0.5	20.0
Total Arsenic	mg/Kg AR	2.16	5.18	5.10	6.37	6.23	81.2	79.8	75-125	2.2	20.0

Quality Control Data

Client ID: Hydro Environmental Technology, Inc.

Project Description: August Levert

Report No: 19-269-0012

QC Prep: L457468

QC Analytical Batch(es): L458261

QC Prep Batch Method: 3050B

Analysis Method: 6010D

Analysis Description: Metals Analysis

Matrix Spike & Matrix Spike Duplicate L 97409-L457246-MS-L457468 L 97409-L457246-MSD-L457468

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Total Cadmium	mg/Kg AR	< 0.200	5.18	5.10	4.82	4.65	93.0	91.2	75-125	3.5	20.0
Total Chromium	mg/Kg AR	11.4	51.8	51.0	60.3	59.2	94.4	93.7	75-125	1.8	20.0
Total Lead	mg/Kg AR	8.39	5.18	5.10	13.0	12.7	89.0	84.5	75-125	2.3	20.0
Total Selenium	mg/Kg AR	< 1.00	5.18	5.10	4.90	4.75	94.6	93.1	75-125	3.1	20.0
Total Silver	mg/Kg AR	< 0.500	5.18	5.10	4.89	4.73	94.4	92.7	75-125	3.3	20.0
Total Zinc	mg/Kg AR	36.0	51.8	51.0	83.0	82.1	90.7	90.4	75-125	1.0	20.0

Quality Control Data

Client ID: Hydro Environmental Technology, Inc.
Project Description: August Levert
Report No: 19-269-0012

QC Prep: L460148 **QC Analytical Batch(es):** L460752
QC Prep Batch Method: 3005A **Analysis Method:** 6010D
Analysis Description: Metals Analysis (SPLP)

Lab Reagent Blank LRB-L460148 Matrix: TCL
Associated Lab Samples: 97048

Parameter	Units	Blank Result	MQL	Analyzed
SPLP Sodium	mg/L	< 0.500	0.500	10/23/19 11:16

Laboratory Control Sample LCS-L460148

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
SPLP Sodium	mg/L	10.0	9.09	90.9	80-120

Matrix Spike & Matrix Spike Duplicate A 68346-MS-L460148 A 68346-MSD-L460148

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
SPLP Sodium	mg/L	56.7	50.0	50.0	104	105	94.6	96.6	75-125	0.9	20.0

Quality Control Data

Client ID: Hydro Environmental Technology, Inc.
Project Description: August Levert
Report No: 19-269-0012

QC Prep: L457897 **QC Analytical Batch(es):** L458179
QC Prep Batch Method: 7471A **Analysis Method:** 7471A
Analysis Description: Solids Total Mercury Analysis - CVAA

Lab Reagent Blank LRB-L457897 Matrix: SOL
Associated Lab Samples: 97408, 97409

Parameter	Units	Blank Result	MQL	Analyzed
Mercury (Total)	mg/Kg AR	< 0.0160	0.0160	10/09/19 14:13

Laboratory Control Sample LCS-L457897

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Mercury (Total)	mg/Kg AR	0.400	0.434	109	80-120

Matrix Spike & Matrix Spike Duplicate L 97409-L457246-MS-L457897 L 97409-L457246-MSD-L457897

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Mercury (Total)	mg/Kg AR	0.0315	0.204	0.195	0.250	0.233	107	103	80-120	7.0	20.0

Quality Control Data

Client ID: Hydro Environmental Technology, Inc.

Project Description: August Levert

Report No: 19-269-0012

QC Prep: L460533	QC Analytical Batch(es): L460680
QC Prep Batch Method: SW-9056 (PREP)	Analysis Method: 9056
	Analysis Description: Anions by Ion Chromatography (SPLP)

Lab Reagent Blank LRB-L460533 Matrix: TCL
Associated Lab Samples: 97048

Parameter	Units	Blank Result	MQL	Analyzed
SPLP Chloride	mg/L	< 0.400	0.400	10/23/19 11:34

Laboratory Control Sample LCS-L460533

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
SPLP Chloride	mg/L	55.6	54.3	97.7	90-110

Matrix Spike & Matrix Spike Duplicate L 97048-MS-L460533 L 97048-MSD-L460533

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
SPLP Chloride	mg/L	40.2	55.6	55.6	92.2	93.3	93.6	95.5	80-120	1.1	15.0

Quality Control Data

Client ID: Hydro Environmental Technology, Inc.
Project Description: August Levert
Report No: 19-269-0012

QC Prep: L456111 **QC Analytical Batch(es):** L456546
QC Prep Batch Method: SW-9056A (PREP) **Analysis Method:** 9056A
Analysis Description: Anions by Ion Chromatography

Lab Reagent Blank LRB-L456111 Matrix: SOL
Associated Lab Samples: 97394, 97395, 97396, 97397, 97398, 97399, 97400, 97401, 97402, 97403, 97404, 97405, 97406, 97407, 97408, 97409

Parameter	Units	Blank Result	MQL	Analyzed
Chloride	mg/Kg	< 4.00	4.00	09/30/19 17:34

Laboratory Control Sample LCS-L456111

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Chloride	mg/Kg	500	501	100	80-120

Matrix Spike & Matrix Spike Duplicate L 97409-MS-L456111 L 97409-MSD-L456111

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Chloride	mg/Kg	1470	472	491	1850	1890	80.4	85.5	80-120	2.1	15.0

Quality Control Data

Client ID: Hydro Environmental Technology, Inc.

Project Description: August Levert

Report No: 19-269-0012

QC Analytical Batch: A58802
Analysis Method: SW-DRYWT
Analysis Description: Dry Weight Determination

Duplicate L 97395-DUP

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Moisture	%	44.7	46.4	3.7	20.0	10/03/19 10:10

Quality Control Data

Client ID: Hydro Environmental Technology, Inc.
Project Description: August Levert
Report No: 19-269-0012

QC Analytical Batch: A58803
Analysis Method: SW-DRYWT
Analysis Description: Dry Weight Determination

Duplicate L 97406-DUP

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Moisture	%	39.6	39.7	0.2	20.0	10/03/19 10:25

Quality Control Data

Client ID: Hydro Environmental Technology, Inc.
Project Description: August Levert
Report No: 19-269-0012

QC Prep: L456246 **QC Analytical Batch(es):** L456247
QC Prep Batch Method: TX1006 **Analysis Method:** TX1006 LA
Analysis Description: Texas Method for TPH (LA)

Lab Reagent Blank LRB-L456246 Matrix: SOL
Associated Lab Samples: 97394, 97395, 97396, 97397, 97398, 97401

Parameter	Units	Blank Result	SQL	Analyzed	% Recovery	% Rec Limits
Aliphatic >C6-C8	mg/Kg	<25.0	25.0	09/26/19 13:03		
Aliphatic >C8-C10	mg/Kg	<25.0	25.0	09/26/19 13:03		
Aliphatic >C10-C12	mg/Kg	<25.0	25.0	09/26/19 13:03		
Aliphatic >C12-C16	mg/Kg	<25.0	25.0	09/26/19 13:03		
Aliphatic >C16-C35	mg/Kg	<25.0	25.0	09/26/19 13:03		
Aromatic >C8-C10	mg/Kg	<25.0	25.0	09/26/19 17:59		
Aromatic >C10-C12	mg/Kg	<25.0	25.0	09/26/19 17:59		
Aromatic >C12-C16	mg/Kg	<25.0	25.0	09/26/19 17:59		
Aromatic >C16-C21	mg/Kg	<25.0	25.0	09/26/19 17:59		
Aromatic >C21-C35	mg/Kg	<25.0	25.0	09/26/19 17:59		
OTP Surrogate (S)				09/26/19 17:59	97.5	70-130

Laboratory Control Sample LCS-L456246

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
OTP Surrogate (S)				89.5	70-130

Matrix Spike & Matrix Spike Duplicate L 97394-MS-L456246 L 97394-MSD-L456246

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	Max RPD
OTP Surrogate (S)							110	71.9	70-130	

Cooler Receipt Form

Customer Number: **09996**

Customer Name: **Hydro Environmental Technology, Inc.**

Report Number: **19-269-0012**

Shipping Method

Fed Ex
 US Postal
 Lab
 Other :
 UPS
 Client
 Courier
 Thermometer ID: #45

Shipping container/cooler uncompromised?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Number of coolers received	<input type="text" value="1"/>		
Custody seals intact on shipping container/cooler?	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> Not Required
Custody seals intact on sample bottles?	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> Not Required
Chain of Custody (COC) present?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
COC agrees with sample label(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
COC properly completed	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Samples in proper containers?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Sample containers intact?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Sufficient sample volume for indicated test(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
All samples received within holding time?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Cooler temperature in compliance?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Cooler/Samples arrived at the laboratory on ice. Samples were considered acceptable as cooling process had begun.	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Water - Sample containers properly preserved	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
Water - VOA vials free of headspace	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
Trip Blanks received with VOAs	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
Soil VOA method 5035 – compliance criteria met	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
<input type="checkbox"/> High concentration container (48 hr)		<input type="checkbox"/> Low concentration EnCore samplers (48 hr)	
<input type="checkbox"/> High concentration pre-weighed (methanol -14 d)		<input type="checkbox"/> Low conc pre-weighed vials (Sod Bis -14 d)	
Special precautions or instructions included?	<input type="radio"/> Yes	<input checked="" type="radio"/> No	

Comments:

Signature:

Date & Time:



Hydro Environmental Technology, Inc.
August Levert

19-269-0012
09996
09-26-2019
09:01:14

ENVIRONMENTAL TECHNOLOGY, INC.
Environmental Consultants
P.O. Box 60295
Lafayette, LA 70596-0295
(337) 261-1963 FAX (337) 261-1953



SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert
Project Number: 1009.A62
Project Location: Bayou Sorrel, LA

Laboratory: Waypoint
Collected By: DJW
Company: Hydro-Environmental Technology, Inc.
Date: 8/29/2019

Sample I.D.	Type	Date/Time Sampled	Containers	Analysis Requested/Method	Comments
HA-1 (0-2)	SO	8/29/2019 1100	(1) 16 oz Glass Jar	EC, SAR, ESP, CEC, Chlorides, pH, % Moisture, Cations*, Anions* <i>TX 1006</i>	4°C
HA-1 (2-4)	SO	8/29/2019 1105	(1) 16 oz Glass Jar	EC, SAR, ESP, CEC, Chlorides, pH, % Moisture, Cations*, Anions* <i>TX 1006</i>	4°C
HA-2 (0-2)	SO	8/29/2019 1315	(1) 16 oz Glass Jar	EC, SAR, ESP, CEC, Chlorides, pH, % Moisture, Cations*, Anions* <i>TX 1006</i>	4°C
HA-2 (2-4)	SO	8/29/2019 1320	(1) 16 oz Glass Jar	EC, SAR, ESP, CEC, Chlorides, pH, % Moisture, Cations*, Anions* <i>TX 1006</i>	4°C
HA-3 (0-2)	SO	8/29/2019 1440	(1) 16 oz Glass Jar	EC, SAR, ESP, CEC, Chlorides, pH, % Moisture, Cations*, Anions* <i>TX 1006</i>	4°C
HA-3 (2-4)	SO	8/29/2019 1445	(1) 16 oz Glass Jar	EC, SAR, ESP, CEC, Chlorides, pH, % Moisture, Cations*, Anions*	4°C
HA-3 (4-6)	SO	8/29/2019 1450	(1) 16 oz Glass Jar	EC, Chlorides, pH, % Moisture, Cations*, Anions*	4°C

HOLD for possible analysis of SPLP Chloride and Sodium and additional parameters
Cations*: Soluble Calcium, Magnesium, and Sodium
Anions*: Cl, SO4, HCO3
Metals*: Arsenic, Barium, True Total Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver, Zinc

Relinquished By: <i>[Signature]</i> Date/Time: 9-25-19 / 800	Received By: <i>R. Jude Bandari</i> Date/Time: 9/25/19 - 0800
Relinquished By: <i>R. Jude Bandari</i> Date/Time: 9/25/19 - 1130 shipped via FedEx	Received By: <i>[Signature]</i> Date/Time: 9/26/19 619
Analysis Due: Verbal: <i>Cold Temp 10 at 45 min</i>	Written: <i>[Signature]</i>



SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert
Project Number: 1009.A62
Project Location: Bayou Sorrel, LA

Laboratory: Waypoint
Collected By: DJW
Company: Hydro-Environmental Technology, Inc.
Date: 8/29/2019

Sample I.D.	Type	Date/Time Sampled	Containers	Analysis Requested/Method	Comments
HA-3 (6-8)	SO	8/29/2019 1455	(1) 16 oz Glass Jar	EC, Chlorides, pH, % Moisture, Cations*, Anions* <i>TX 1006</i>	4°C
HA-4 (0-2)	SO	8/30/2019 1025	(1) 16 oz Glass Jar	EC, SAR, ESP, CEC, Chlorides, pH, % Moisture, Cations*, Anions*	4°C
HA-4 (2-4)	SO	8/30/2019 1030	(1) 16 oz Glass Jar	EC, SAR, ESP, CEC, Chlorides, pH, % Moisture, Cations*, Anions*	4°C
HA-4 (4-6)	SO	8/30/2019 1035	(1) 16 oz Glass Jar	EC, Chlorides, pH, % Moisture, Cations*, Anions*	4°C
HA-4 (6-8)	SO	8/30/2019 1040	(1) 16 oz Glass Jar	EC, Chlorides, pH, % Moisture, Cations*, Anions*	4°C
HA-5 (0-2)	SO	8/30/2019 1135	(1) 16 oz Glass Jar	EC, SAR, ESP, CEC, Chlorides, pH, % Moisture, Cations*, Anions*	4°C
HA-5 (2-4)	SO	8/30/2019 1140	(1) 16 oz Glass Jar	EC, SAR, ESP, CEC, Chlorides, pH, % Moisture, Cations*, Anions*	4°C

HOLD for possible analysis of SPLP Chloride and Sodium and additional parameters
Cations*: Soluble Calcium, Magnesium, and Sodium
Anions*: Cl, SO4, HCO3
Metals*: Arsenic, Barium, True Total Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver, Zinc


Relinquished By: <i>[Signature]</i>	Received By: <i>R. Josh Barber</i>
Date/Time: 9-25-19 / 800	Date/Time: 9/25/19 - 0800
Relinquished By: <i>R. Josh Barber</i>	Received By: <i>[Signature]</i>
Date/Time: 9/25/19 - 1130 shipped via FedEx	Date/Time: 9/26/19 0619
Analysis Due: Verbal: <i>Cooler Temp 10 OCT 45 MAT</i>	Written:



HYDRO-ENVIRONMENTAL TECHNOLOGY, INC.
 Environmental Consultants
 P.O. Box 60295
 Lafayette, LA 70596-0295
 Phone (337) 261-1963 FAX (337) 261-1953

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert	Laboratory: Waypoint
Project Number: 1009.A62	Collected By: DJW
Project Location: Bayou Sorrel, LA	Company: Hydro-Environmental Technology, Inc.
	Date: 8/29/2019

Sample I.D.	Type	Date/Time Sampled	Containers	Analysis Requested/Method	Comments
HA-5 (4-6)	SO	8/30/2019 1145	(1) 16 oz Glass Jar	EC, Chlorides, pH, % Moisture, Cations*, Anions*, Metals*	4°C
HA-5 (6-7)	SO	8/30/2019 1150	(1) 16 oz Glass Jar	EC, Chlorides, pH, % Moisture, Cations*, Anions*, Metals*	4°C
					

HOLD for possible analysis of SPLP Chloride and Sodium and additional parameters
 Cations*: Soluble Calcium, Magnesium, and Sodium
 Anions*: Cl, SO4, HCO3
 Metals*: Arsenic, Barium, True Total Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver, Zinc

Relinquished By: <i>[Signature]</i> Date/Time: 9-25-19 / 800	Received By: <i>[Signature]</i> Date/Time: 9/25/19 - 0800
Relinquished By: <i>[Signature]</i> Date/Time: 9/25/19 - 1130 Shipped via FedEx	Received By: <i>[Signature]</i> Date/Time: 9/26/19 1019
Analysis Due: Verbal: Cooler Temp 110 at 45 KAT	Written:

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Hydro-Environmental Technology, Inc.
1009.A62 August Levert-Bayou Sorrel, LA

SGS Job Number: LA58074X

Sampling Dates: 09/25/19 - 09/27/19



Report to:

Hydro-Environmental Technology
P.O. BOX 60295
Lafayette, LA 70596
labdata@hetinc.us

ATTN: Stewart L Stover, Jr.

Total number of pages in report: 141



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Ron Benjamin
Ron Benjamin
Lab Director

Client Service contact: Ralph Frye 337-237-4775

Certifications: LDEQ(2048), LDHH(LA150012), AR(14-045-04), AZ(AZ0805), FL(E87657), IL(200082), KY(#31), NC(487), SC(73004001), NJ(LA007), TX(T104704186-18-16), WV(257)

This report shall not be reproduced, except in its entirety, without the written approval of SGS.
Test results relate only to samples analyzed.

SGS North America Inc. • 500 Ambassador Caffery • Scott, LA 70583 • tel: 337-237-4775

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-1-

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3.1: Chain of Custody	140



Sample Summary

Hydro-Environmental Technology, Inc.

Job No: LA58074X

1009.A62 August Levert-Bayou Sorrel, LA

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
LA58074-1	09/25/19	13:30 RJL	09/30/19	AQ	Water	LT-1 (11-16')
LA58074-2	09/26/19	10:35 RJL	09/30/19	AQ	Water	LT-2 (11-16')
LA58074-3	09/27/19	09:30 RJL	09/30/19	AQ	Water	LT-3 (11-16')

Subcontract Lab Data

Report of Analysis

SGS NORTH AMERICA INC.

**PO # 579946
LA58074X**

**STANDARD LEVEL IV
REPORT OF ANALYSIS**

WORK ORDER #19-10011-OR

December 12, 2019

**EBERLINE ANALYTICAL/OAK RIDGE LABORATORY
OAK RIDGE, TN**

0001



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VIII	Analytical Data (Radium-226)	0046
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0002



Eberline Services – Oak Ridge Laboratory
LABORATORY DATA SUPPORT CHECKLIST
MP-001-3

Eberline Services Work Order # 19-10011

The checklist items listed below are to be initialed by appropriate staff upon completion/verification.

Date for Partial	Initials	Date	Initials	Checklist Items
		10/2/19	JB	Sample Log-In
		12/11/19	JB	Data Compilation
		12/5/19	ML	First Technical Data Review
		12/6/19	JB	Second Technical Data Review
		12/11/19	EYT	Data Entry/Electronic Deliverable
		12/11/19	EYT	Case Narrative
		12/12/19	JB	Electronic Deliverable Proof
		12/12/19	JB	Samples Analyzed within Holding Time Yes? <input checked="" type="checkbox"/> No? <input type="checkbox"/>
		12/12/19	JB	QA/QC Review
		12/12/19	EYT	Client in Possession of Data Electronic or Hard Copy
				Invoiced by Laboratory

Technical/Clerical Corrections, Signatures Needed, Problems, Etc	Date/Initials

Date package approved by:


Laboratory Manager


Date

Copy No. _____

Radiochemistry Services

0003

SECTION I
CHAIN OF CUSTODY
& pH CHECK

0004





CHAIN OF CUSTODY

Client / Reporting Information Company Name: SGS North America Inc. Street Address: 500 Ambassador Caffery Parkway City: Scott State: LA Zip: 70583 Project Contact: raiph.tyee@sgs.com E-mail: Phone #: 800-304-5227 Fax #: _____ Sampler(s) Name(s): RJL Project Manager: _____		Project Information Project Name: 1009.A62 August Levert-Bayou Sorrel, LA Street: _____ City: _____ State: _____ Zip: _____ Billing Information (if different from Report to): Company Name: _____ Street Address: _____ City: _____ State: _____ Zip: _____ Attention: _____		Requested Analysis (see TEST CODE sheet) <div style="text-align: center; font-size: 2em; font-weight: bold;">REC'D OCT 02 2019</div> <div style="text-align: center; font-size: 2em; font-weight: bold;">09:1001</div>		Matrix Codes DW - Drinking Water GW - Ground Water SW - Surface Water SO - Soil SE - Sludge SED - Sediment LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank																											
Turnaround Time (Business days) <input type="checkbox"/> Std. 10 Business Days <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input checked="" type="checkbox"/> other Due 11/4/2019 <small>Emergency & Rush T/A data available VIA Lablink</small>		Approved By (SGS PM) / Date: _____ _____		Data Deliverable Information <input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> REDT1 (Level 3+4) <input checked="" type="checkbox"/> Commercial "C" COMMIB <small>Commercial "A" = Results Only Commercial "B" = Results + QC Summary</small>																													
Collection <table border="1"> <thead> <tr> <th>MEQ/ID Vial #</th> <th>Date</th> <th>Time</th> <th>Sampled by</th> <th>Matrix</th> <th># of bottles</th> <th>Number of Preserved Bottles</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>9/25/19</td> <td>1:30:00 PM</td> <td>RJL</td> <td>AQ</td> <td></td> <td>ENCORE MEOH DI Water NONE H2SO4 HNO3 H2O</td> </tr> <tr> <td>2</td> <td>9/26/19</td> <td>10:35:00 AM</td> <td>RJL</td> <td>AQ</td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>9/27/19</td> <td>9:30:00 AM</td> <td>RJL</td> <td>AQ</td> <td></td> <td></td> </tr> </tbody> </table>		MEQ/ID Vial #	Date	Time	Sampled by	Matrix	# of bottles	Number of Preserved Bottles	1	9/25/19	1:30:00 PM	RJL	AQ		ENCORE MEOH DI Water NONE H2SO4 HNO3 H2O	2	9/26/19	10:35:00 AM	RJL	AQ			3	9/27/19	9:30:00 AM	RJL	AQ			Comments / Special Instructions RA-226 RA-228 TDS X X X		Matrix Codes DW - Drinking Water GW - Ground Water SW - Surface Water SO - Soil SE - Sludge SED - Sediment LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank	
MEQ/ID Vial #	Date	Time	Sampled by	Matrix	# of bottles	Number of Preserved Bottles																											
1	9/25/19	1:30:00 PM	RJL	AQ		ENCORE MEOH DI Water NONE H2SO4 HNO3 H2O																											
2	9/26/19	10:35:00 AM	RJL	AQ																													
3	9/27/19	9:30:00 AM	RJL	AQ																													
Relinquished by Sampler: Date Tim: _____ Relinquished by Sampler: Date Time: _____ Relinquished by: _____ Date Time: _____		Relinquished By: Date Time: _____ Relinquished By: _____ Date Time: _____ Relinquished By: _____ Date Time: _____		Received By: Date Time: _____ Received By: _____ Date Time: _____ Received By: _____ Date Time: _____																													

456

0005

2

REC'D OCT 02 2019

Date / Time: 9/30/2019 3:52:55 PM
CSR: ralph
Job #: LA58074X
Client Project: 1009.A62 August Levert+Bayou Sorrel, LA
Deliverable: COMMB
TAT: Due 11/4/2019

Sub Lab: Eberline Analytical
Address: 601 Scarboro Road
City: Oak Ridge
State: TN
Zip: 37830
Contact: Kathy Shaulis
Phone: (865) 483-4621

19-10011

SGS Sample #	Client Sample Description	Analysis	Location	Sampled By	Date Sampled	Time Sampled	Aliquot
4 LA58074-1	LI-1 (11-16)	RA-226 .RA-228 .IDS	OL	RJL	9/25/2019	1:30:00 PM	
5 LA58074-2	LI-2 (11-16)	RA-226 .RA-228 .IDS	OL	RJL	9/26/2019	10:35:00 AM	
6 LA58074-3	LI-3 (11-16)	RA-226 .RA-228 .IDS	OL	RJL	9/27/2019	9:30:00 AM	

Comments:


Sample Management Receipt: Kathy Shaulis

Date: 10-2-19 0845

6-1000ml HNO3
3-250ml wsg

0006



	<h1>Internal Chain of Custody</h1>	Work Order #	19-10011
		Lab Deadline	10/22/2019
		Analysis	Ra226 - Level 4
		Sample Matrix	Water

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
Use container #3 for TDS.	04	40	Q1.2
	05	50	Q1.2
	06	50	Q1.2

	Location (circle one)					Initials	Date
	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage					<i>[Handwritten Signature]</i>	10/31/19 070
Relinquished by	Sample Storage		Prep				
Received by	Sample Storage		Prep	Separations		<i>[Handwritten Signature]</i>	11/11/19 070
Relinquished by	Sample Storage		Prep	Separations			
Received by	Sample Storage		Prep	Separations	Count Room	<i>[Handwritten Signature]</i>	11/20/19 1015
Relinquished by	Sample Storage		Prep	Separations	Count Room		
Received by	Sample Storage		Prep	Separations	Count Room		
Relinquished by	Sample Storage		Prep	Separations	Count Room		
Received by	Sample Storage		Prep	Separations	Count Room		
Relinquished by	Sample Storage		Prep	Separations	Count Room		
Received by	Sample Storage		Prep	Separations	Count Room		
Relinquished by	Sample Storage		Prep	Separations	Count Room		
Received by	Sample Storage		Prep	Separations	Count Room		
Relinquished by	Sample Storage		Prep	Separations	Count Room		

Printed: 10/22/2019 11:43 AM
0007



Internal Chain of Custody

Work Order #	19-10011
Lab Deadline	10/22/2019
Analysis	Ra228 - Level 4
Sample Matrix	Water

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
Use container #3 for TDS.	04	40	Q1.2
	05	50	Q1.2
	06	50	Q1.2

	Location (circle one)						Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room			
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	Handwritten initials	10/21/19 0710	
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	DB	11/4/19 0815	
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	DB	11/26/19 1015	
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	KP	11/20/19 1015	
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	KB	11/24/19 1718	
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	DB	11/27/19 0825	
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	DB	12/2/19 1240	
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	KB	12/2/19 1249	
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	KB	12/2/19 1452	
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room			
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room			
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room			
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room			

Printed: 10/22/19 11:43 AM
0008



Internal Chain of Custody

Work Order #	19-10011
Lab Deadline	10/2/2019
Analysis	TDS - Level 4
Sample Matrix	Water



Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
Use container #3 for TDS.	04	40	Q1.2
	05	50	Q1.2
	06	50	Q1.2


	Location (circle one)					Initials	Date
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room	Mn	30 OCT 19
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	Mn	30 OCT 19 0330
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		

Printed: 10/2/2019 11:43 AM

0009



2

	Sample Receiving Report (Volumes, pH, & CPM)	Internal Work Order
		19-10011
		Received By RSPENCER

FR	ClientID	# Btls	Comments	Matrix	Storage	Rec Vol Ttl	CPM Max
01	LCS	0		WA	Q1.2		
02	BLANK	0		WA	Q1.2		
03	DUP	0		WA	Q1.2		
04	LT-1 11-16	3		WA	Q1.2	2.25	40
			Container Number	pH Orig	pH Final	Volume (L)	CPM
			1	7	<2	1.0000	40
			2	7	<2	1.0000	20
			3	7	7	0.2500	30
05	LT-2- 11-16	3		WA	Q1.2	2.25	50
			Container Number	pH Orig	pH Final	Volume (L)	CPM
			1	7	<2	1.0000	30
			2	7	<2	1.0000	20
			3	7	7	0.2500	50
06	LT-3 11-16	3		WA	Q1.2	2.25	50
			Container Number	pH Orig	pH Final	Volume (L)	CPM
			1	7	<2	1.0000	10
			2	7	<2	1.0000	50
			3	7	7	0.2500	30

*Vej
10/2/19*

Received by: *Randolph Spencer* Date: *10-2-19*

MP-001, Rev 5
Effective: 11/22/02

0010



SECTION II
SAMPLE ACKNOWLEDGEMENT

0011





Eberline Services – Oak Ridge Laboratory

SAMPLE RECEIPT CHECKLIST
MP-001-2

WORK ORDER # 19-10011

SAMPLE MATRIX/MATRICES:

(CIRCLE ONE OR BOTH)

AQUEOUS NON-AQUEOUS

(CIRCLE EITHER YES, NO, OR N/A)

WERE SAMPLES:

Received in good condition?	<u>Y</u>	N	
If aqueous, properly preserved	<u>Y</u> *	N	N/A

WERE CHAIN OF CUSTODY SEALS:

Present on outside of package?	<u>Y</u>	N
Unbroken on outside of package?	<u>Y</u>	N
Present on samples?	<u>Y</u>	N
Unbroken on samples?	<u>Y</u>	N
Was chain of custody present upon sample receipt?	<u>Y</u>	N

IF THE RESPONSE TO ANY OF THE ABOVE IS NO, A DISCREPANT SAMPLE RECEIPT REPORT (DSR) HAS BEEN ISSUED.

REMARKS: * Containers #1 + 2 preserved at receipt. Containers #3
remain at pH = 7 for TDS analysis. 8/10/19

SIGNATURE: Randolph Spencer DATE: 10-2-19

Copy No. _____

Radiochemistry Services

0013



SECTION III
CASE NARRATIVE

0014





EBERLINE ANALYTICAL CORPORATION
 601 SCARBORO ROAD
 OAK RIDGE, TENNESSEE 37830
 PHONE (865) 481-0683
 FAX (865) 483-4621

2

EBS-OR-46477

December 12, 2019

Ralph Frye
 SGS North America Inc.
 500 Ambassador Caffery Parkway
 Scott, LA 70583

CASE NARRATIVE
 LA Certificate #05005
 Work Order # 19-10011-OR

SAMPLE RECEIPT

This work order contains three water samples received 10/2/2019. Samples were analyzed for Radium-226/228 and Total Dissolved Solids.

<u>CLIENT ID</u>	<u>LAB ID</u>
LT-1 11-16	19-10011-04
LT-2 11-16	19-10011-05
LT-3 11-16	19-10011-06

ANALYTICAL METHODS

Radium-226 was analyzed using EPA Method 903.0 Modified. Radium-228 was analyzed using EPA Method 904.0. Total Dissolved Solids were performed using Standard Methods 2540C.

ANALYTICAL RESULTS

Combined Standard Uncertainty is reported at 1-sigma value.

Minimum Detectable Activity (MDA) values for data represented in this report are sample-specific. MDA measurements are determined based on factors and conditions including instrument settings, aliquot size and matrix type.

SPECIAL CIRCUMSTANCES

Analysis of sample fraction -04 (Client ID: LT-1 11-16) was problematic due to elemental interferences causing no chemical recovery. Reanalysis was not possible due to inadequate remaining sample volume. Client was informed by email of this situation. Per client agreement, sample fraction -04 (Client ID: LT-1 11-16) is not included in the final report.

ANALYTICAL RESULTS CONTINUED

RADIUM-226

Samples were prepared by removing representative aliquots followed by mixed acid digestions as appropriate. This was followed by precipitations of Radium/Barium Sulfate. Precipitates were dissolved in alkaline EDTA. Radium was selectively precipitated and mounted on micro-porous filter media. Samples were counted by alpha spectroscopy using an energy specific region of interest for Radium-226. The final result was corrected for inherent self-absorption from elemental Barium. Chemical recovery was calculated by the use of a Barium-133 tracer, which was determined by HPGe gamma spectroscopy.

Samples demonstrated acceptable results for all Radium-226 analyses. Chemical recovery was acceptable for all samples. The Radium-226 method blank demonstrated an acceptable result. Results for the Radium-226 duplicate demonstrated an acceptable relative percent difference and normalized difference. Results for the Radium-226 laboratory control sample demonstrated an acceptable percent recovery.

RADIUM-228

Following alpha spectroscopy analysis of Radium-226, Barium/Radium Sulfate precipitates were redissolved and allowed for sufficient ingrowth of the Actinium-228 daughter. After ingrowth, Actinium-228 was selectively precipitated. Precipitates were filtered and beta emissions for Actinium-228 were counted on a gas proportional counter. Chemical recovery was determined by the use of a Barium-133 tracer, the activity of which was determined by HPGe gamma spectroscopy and an elemental Yttrium carrier by gravimetric measurements. The product of these two recoveries was used to calculate chemical yield.

Samples demonstrated acceptable results for all Radium-228 analyses. Chemical recovery was acceptable for all samples. The Radium-228 method blank demonstrated an acceptable result. Results for the Radium-228 duplicate demonstrated a high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. Results for the Radium-228 laboratory control sample demonstrated an acceptable percent recovery.

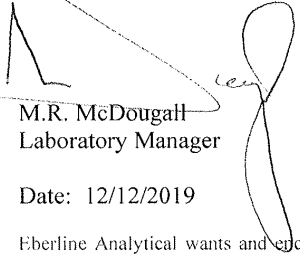
TOTAL DISSOLVED SOLIDS (TDS)

A volumetric aliquot of each sample was filtered through 0.45µm filter media into a tared 250ml beaker. Samples were dried on a hot plate and allowed to cool. The TDS content was determined by reweighing tared beakers.

Sample fractions -05 & -06 (Client IDs: LT-2 11-16 and LT-3 11-16), demonstrated Total Dissolved Solids content of 6,323.0 and 3,342.0 mg/L, respectively.

CERTIFICATION OF ACCURACY

I certify that this data report is in compliance with the terms and conditions of the Purchase Order, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the cognizant project manager or his/her designee to be accurate as verified by the following signature.



M.R. McDougall
Laboratory Manager

Date: 12/12/2019

Eberline Analytical wants and encourages your feedback regarding our performance providing radioanalytical services. Please visit <http://eberlineanalytical.com/> to provide us with feedback on our services.

SECTION IV
ANALYTICAL RESULTS SUMMARY

0018



Eberline Analytical Final Report of Analysis			Report To:					Work Order Details:					
			Ralph Frye					SDG:	19-10011				
			SGS North America Inc					Purchase Order:	579946				
			500 Amb. Caffery Pkwy					Analysis Category:	ENVIRONMENTAL				
Scott, LA 70583					Sample Matrix:	WA							
Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
19-10011-01	LCS	KNOWN	10/02/19 00:00	10/2/2019	11/26/2019	19-10011	Radium-226	EPA 903.0 Modified	1.01E+01	4.63E-01			pCi/l
19-10011-01	LCS	SPIKE	10/02/19 00:00	10/2/2019	11/26/2019	19-10011	Radium-226	EPA 903.0 Modified	1.03E+01	1.48E+00	2.63E+00	3.71E-01	pCi/l
19-10011-02	MBL	BLANK	10/02/19 00:00	10/2/2019	11/26/2019	19-10011	Radium-226	EPA 903.0 Modified	9.21E-02	2.23E-01	2.24E-01	4.29E-01	pCi/l
19-10011-03	DUP	LT-2 11-16	09/26/19 10:35	10/2/2019	11/26/2019	19-10011	Radium-226	EPA 903.0 Modified	2.62E+00	6.72E-01	8.70E-01	3.60E-01	pCi/l
19-10011-05	DO	LT-2 11-16	09/26/19 10:35	10/2/2019	11/26/2019	19-10011	Radium-226	EPA 903.0 Modified	2.43E+00	5.92E-01	7.83E-01	2.90E-01	pCi/l
19-10011-06	TRG	LT-3 11-16	09/27/19 09:30	10/2/2019	11/26/2019	19-10011	Radium-226	EPA 903.0 Modified	7.69E-01	2.28E-01	2.80E-01	1.40E-01	pCi/l
19-10011-01	LCS	KNOWN	10/02/19 00:00	10/2/2019	12/2/2019	19-10011	Radium-228	EPA 904.0	9.00E+00	4.59E-01			pCi/l
19-10011-01	LCS	SPIKE	10/02/19 00:00	10/2/2019	12/2/2019	19-10011	Radium-228	EPA 904.0	8.75E+00	6.95E-01	2.10E+00	7.32E-01	pCi/l
19-10011-02	MBL	BLANK	10/02/19 00:00	10/2/2019	12/2/2019	19-10011	Radium-228	EPA 904.0	3.22E-02	3.36E-01	3.36E-01	7.19E-01	pCi/l
19-10011-03	DUP	LT-2 11-16	09/26/19 10:35	10/2/2019	12/2/2019	19-10011	Radium-228	EPA 904.0	2.88E+00	5.20E-01	8.34E-01	8.03E-01	pCi/l
19-10011-05	DO	LT-2 11-16	09/26/19 10:35	10/2/2019	12/2/2019	19-10011	Radium-228	EPA 904.0	2.07E+00	4.56E-01	6.53E-01	7.47E-01	pCi/l
19-10011-06	TRG	LT-3 11-16	09/27/19 09:30	10/2/2019	12/2/2019	19-10011	Radium-228	EPA 904.0	1.51E+00	5.30E-01	6.31E-01	9.84E-01	pCi/l
19-10011-05	TRG	LT-2 11-16	09/26/19 10:35	10/2/2019	12/3/2019	19-10011	TDS	SM2540C	6.32E+03				mg/l
19-10011-06	TRG	LT-3 11-16	09/27/19 09:30	10/2/2019	12/3/2019	19-10011	TDS	SM2540C	3.34E+03				mg/l

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (1-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original



EBERLINE ANALYTICAL CORPORATION
 601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 FAX 865/483-4621

0019

SGS

23 of 141
 LAS8074X

SECTION V
ANALYTICAL STANDARDS

0020



CERTIFICATE OF CALIBRATION ALPHA STANDARD SOLUTION

Ra-5
QA/QC REVIEWED
 Date 2/8/94 Initials WT

2

Radionuclide:	Ra-226	Customer:	TMA EBERLINE
Half Life:	1600 ± 7 years	P.O.No.:	VH1888
Catalog No.:	7226	Reference Date:	February 1 1994 12:00 PST.
Source No.:	453-26	Contained Radioactivity: (Ra-226)	1.001 μCi.
		Contained Radioactivity: (Ra-226)	37.0 kBq.

Description of Solution

a. Mass of solution:	5.1864 g (in a 5 ml Flame Sealed Ampoule)
b. Chemical form:	Ra(NO3)2 in 1 N HNO3
c. Carrier content:	None added
d. Density:	1.0318 g/ml @ 20°C.

Radioimpurities: None detected (other than daughters)

Radioactive Daughters: Rn-222, Po-218, At-218, Pb-214, Bi-214, Po-214, Tl-210, Pb-210, Bi-210, Po-210 and Tl-206.

Radionuclide Concentration: (Ra-226) 0.1929 μCi/g.

Method of Calibration

Weighed aliquots of the solution were assayed using gamma spectrometry:
 Energy peak(s) integrated under: 186 keV.
 Branching ratio(s) used: 0.0351 gamma rays per decay.

Uncertainty of Measurement

- | | |
|--|-------|
| a. Systematic uncertainty in instrument calibration: | ±3.4% |
| b. Random uncertainty in assay: | ±3.1% |
| c. Random uncertainty in weighing(s): | ±0.2% |
| d. Total uncertainty at the 99% confidence level: | ±4.6% |

NIST Traceability

This calibration is implicitly traceable to the National Institute of Standards and Technology.

Leak Test(s)

See reverse side for Leak Test(s) applied to this source.

Notes

1. Nuclear data were taken from "Table of Radioactive Isotopes", edited by Virginia S. Shirley, 1986.
2. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (As in NRC Regulatory Guide 4.15).



ISOTOPE PRODUCTS LABORATORIES
 1800 North Keystone Street
 Burbank, California 91504
 (818) 843 - 7000

Anna H. Kuen
 QUALITY CONTROL
Feb. 3, 1994
 Date Signed

0021



QUALITY CONTROL PROGRAM
MP 009

Rev.8; 11/01/03
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE SOLUTIONS
PRIMARY DILUTION RECERTIFICATION
MP 009

SOLUTION REFERENCE # IPL 453-26 CURRENT DATE 9/12/2019 0:00
SOLUTION # Ra-5

Principal Radionuclide ²²⁶Radium Half Life, Years 1.600E+03 Half Life, Days 5.844E+05

Radionuclide ²²⁶Radium Reference Date 2/1/1994 0:00
Certified Activity 1.001E+00 μCi
Certified Concentration $\mu\text{Ci per gram}$

Ampoule /Solution Gross Weight, Grams
Empty Ampoule Weight, Grams
Solution Net Weight, Grams
Total Activity in Ampoule 1.0010 μCi

Chemical Composition of Standard Solution
²²⁶Ra(NO₃)₂ in 1M HNO₃

Dilution Instructions: Dilution Solvent Used 1M HNO₃

Dilute to a volume of 1000.00 milliliters

Certified Total Activity of 1.0010 μCi Which Equals 2.222E+06 dpm at the date listed above

And after dilution the activity of this solution is 2.222E+03 dpm/ml
This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: September 9, 2020

Verified & Approved By [Signature]

Date: 9/12/2019

QC Approval [Signature]

Date: 9/16/19

0022





QUALITY CONTROL PROGRAM
MP 009

Rev.8; 11/01/03
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE STANDARD SOLUTIONS
SECONDARY DILUTION RECERTIFICATION

Solution Reference # MP 009 IPL-453-26 Date 9/12/2019 0:00
Solution # Ra-5b

Principal Radionuclide ²²⁶Radium Half Life, Years 1.600E+03 Half Life, Days 5.844E+05

Radionuclide of Interest ²²⁶Radium Reference Date 2/1/1994 0:00
Parent Solution Conc. 2.22E+03 dpm/ml

Chemical Composition of Standard Solution

²²⁶Ra(NO₃)₂ in 1M HNO₃

Dilution Instructions: Dilution Solvent Used 1M HNO₃

SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution: 20.0000 ml
Total Activity: 4.4440E+04 dpm Final Activity Concentration: 4.4440E+01 dpm/ml
Final Volume: 1000.00 ml

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

NOTES:

Expiration Date: 9-Sep-20

Verified & Approved By [Signature]

Date: 9/12/2019 0:00

QC Approval [Signature]

Date: 9/16/19

0023





ANALYTICS #411 Rec'd 2/15/06 R. Prentiss

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 · U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

2

CERTIFICATE OF CALIBRATION Standard Radionuclide Source

72325-207

Ra²²⁸

Ra-228 5 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared gravimetrically from a calibrated master solution. The master solution was calibrated using a germanium gamma spectrometer system.

Radionuclide purity and calibration were checked using a germanium gamma spectrometer system. The nuclear decay rate and assay date for this source are given below.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

ISOTOPE:	Ra-228
ACTIVITY (dps):	4.022 E3
HALF-LIFE:	5.75 years
CALIBRATION DATE:	February 10, 2006 12:00 EST
RELATIVE EXPANDED UNCERTAINTY (k=2):	4.0%

Impurities: γ -impurities <0.1%

5.10721 grams 0.1M HCl solution with 50 μ g/g Ba carrier.

P O NUMBER 00003181, Item 1

SOURCE PREPARED BY: *M. Taskaeva*
M. Taskaeva, Radiochemist

Q A APPROVED: *W.M. [Signature]* 2/13-06

0024



28 of 141

LA58074X



QUALITY CONTROL PROGRAM
MP-009

Rev.8; 1/10/03
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE SOLUTIONS
RECERTIFICATION
MP 009

SOLUTION REFERENCE # Analytics 7235-207 CURRENT DATE 2/5/2019 0:00
SOLUTION # Ra-12

Principal Radionuclide ²²⁶Ra Half Life, Years 5.750E+00 Half Life, Days 2.100E+03

Radionuclide ²²⁶Ra Reference Date 2/10/2006 0:00
Certified Activity 1.087E-01 μCi
Certified Concentration μCi per gram

Ampoule /Solution Gross 9.0741 Weight, Grams
Empty Ampoule 3.9858 Weight, Grams
Solution Net 5.0883 Weight, Grams
Total Activity in Ampoule 0.1087 μCi

Chemical Composition of Standard Solution
²²⁶Ra(NO₃)₂ in 0.5 M HCl

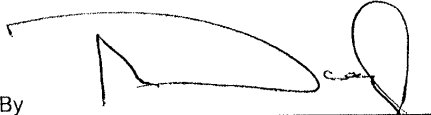
Dilution Instructions: Dilution Solvent Used 0.5 M HCl

Dilute to a volume of 991.00 Kg

Certified Total Activity of 0.1087 μCi Which Equals 2.413E+05 dpm at the date listed above

And after dilution the activity of this solution is 2.435E+02 dpm/ml
This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: January 31, 2020

Recertified By 

Date: 2/5/19

QC Approval 

Date: 2/5/19

0025



Ba-6
(# 6a)

National Institute of Standards & Technology Certificate

Standard Reference Material 4251C Barium-133 Radioactivity Standard

ORIGINAL

2

This Standard Reference Material (SRM) consists of radioactive barium-133 chloride, non-radioactive barium chloride, and hydrochloric acid dissolved in 5 mL of distilled water. The solution is contained in a flame-sealed NIST borosilicate-glass ampoule. The SRM is intended for the calibration of ionization chambers and solid-state gamma-ray spectrometry systems.

Radiological Hazard

The SRM ampoule contains barium-133 with a total activity of approximately 2.5 MBq. Barium-133 decays by electron capture and during the decay process X-rays and gamma rays with energies from 4 to 400 keV are emitted. Most of these photons escape from the SRM ampoule and can represent a radiation hazard. Approximate unshielded dose rates at several distances (as of the reference time) are given in note [a]*. Appropriate shielding and/or distance should be used to minimize personnel exposure. The SRM should be used only by persons qualified to handle radioactive material.

Chemical Hazard

The SRM ampoule contains hydrochloric acid (HCl) with a concentration of 1 mole per liter of water. The solution is corrosive and represents a health hazard if it comes in contact with eyes or skin. If the ampoule is to be opened to transfer the solution, the recommended procedure is given on page 2. The ampoule should be opened only by persons qualified to handle both radioactive material and strong acid solution.

Storage and Handling

The SRM should be stored and used at a temperature between 5 and 65 °C. The solution in an unopened ampoule should remain stable and homogeneous until at least June 2004.

The ampoule (or any subsequent container) should always be clearly marked as containing radioactive material. If the ampoule is transported it should be packed, marked, labeled, and shipped in accordance with the applicable national, international, and carrier regulations. The solution in the ampoule is a dangerous good (hazardous material) both because of the radioactivity and because of the strong acid.

Preparation

This Standard Reference Material was prepared in the Physics Laboratory, Ionizing Radiation Division, Radioactivity Group, J.M.R. Hutchinson, Group Leader. The overall technical direction and physical measurements leading to certification were provided by L.L. Lucas of the Radioactivity Group and D.B. Golas, Nuclear Energy Institute Research Associate.

The support aspects involved in the preparation, certification, and issuance of this SRM were coordinated through the Standard Reference Materials Program by N.M. Trahey.

Gaithersburg, Maryland 20899
October 1994

Thomas E. Gills, Chief
Standard Reference Materials Program



QUALITY CONTROL PROGRAM
QCP-009

Rev.8; 11/10/03
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE STANDARD SOLUTIONS
SECONDARY DILUTION RECERTIFICATION

Solution Reference # QCP-009-1-A NIST SRM4251C Date 4/26/19
Solution # Ba-6a

Principal Radionuclide ¹³³Ba Half Life, Years 1.048E+01 Half Life, Days 3.828E+03

Radionuclide of Interest ¹³³Ba Reference Date 9/1/1993 0:00
Parent Solution Conc. 1.48E+05 dpm/ml

Chemical Composition of Standard Solution
¹³³BaCl₂ in 1M HCl

Dilution Instructions: Dilution Solvent Used 1M HCl

SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution: 25.0000 ml
Total Activity: 3.6950E+06 dpm Final Activity Concentration: 3.6950E+03 dpm/ml
Final Volume: 1000.00 ml

NOTES: This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: April 25, 2020

Verified & Approved By [Signature] Date: 4/26/19
QC Approval [Signature] Date: 4/26/19

0027



SECTION VI
QUALITY CONTROL SAMPLE RESULTS SUMMARY

0028



IWO	Analysis	Run	Activity Units	Aliquot Units	Client Name
19-10011	Ra226	1	pCi	I	SGS North America Inc.

Laboratory Control Sample

Analyte	LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
RA-226	102.01%	25.62%	100.00%	4.60%	1.01E+01	4.63E-01	1.03E+01	2.63E+00	Ra-5b	4.40E+01	4.60E+00	5.08E-01

Matrix Spike

Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

Duplicate Results

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Duplicate Result	Duplicate CSU	LCS Relative Bias	LCS % R	MS % R	MS ND	Rep RPD	Rep ND
RA-226	0.32	7.50	2.43E+00	7.83E-01	2.62E+00	8.70E-01	1.02	OK			OK	OK

QC Summary

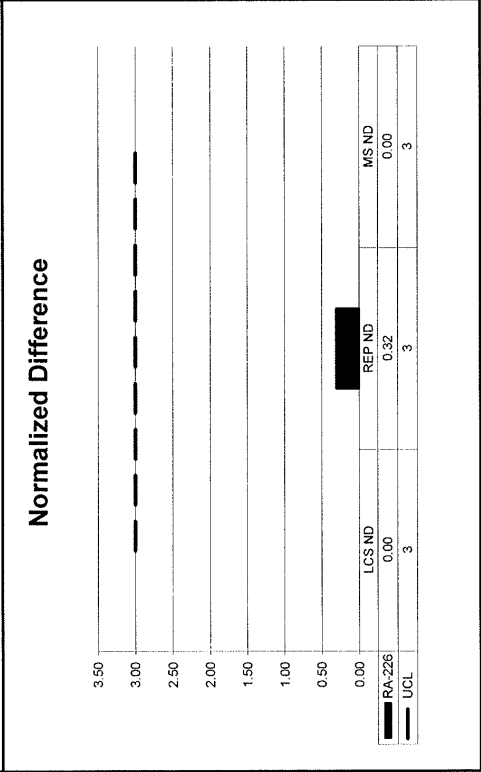
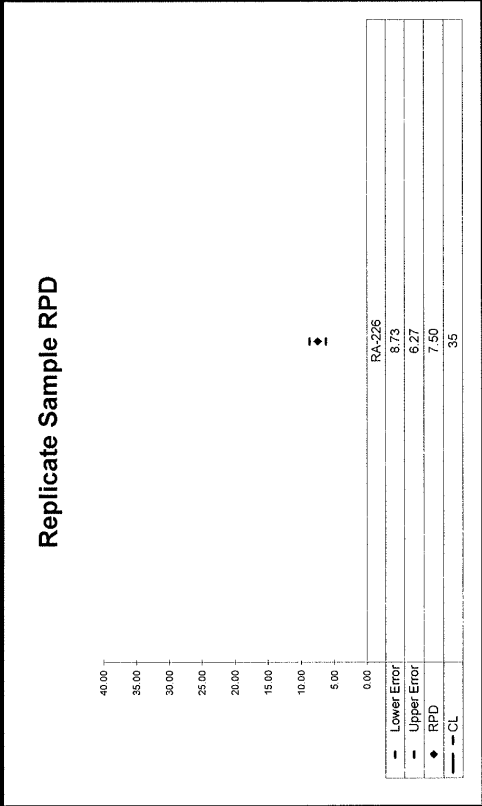
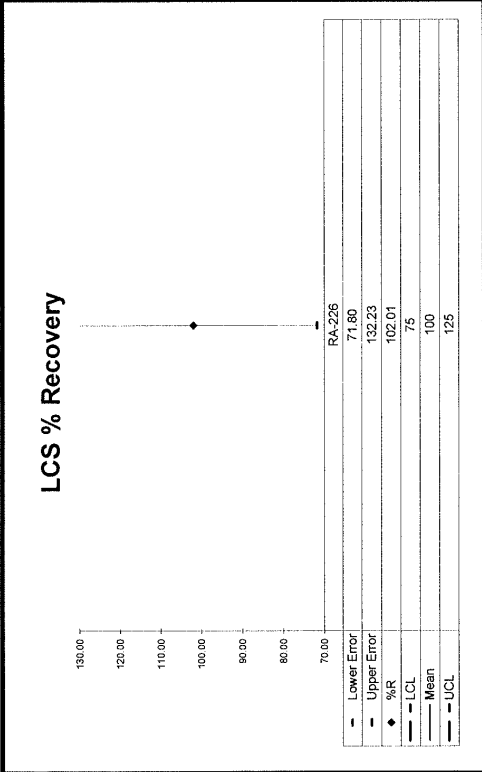
Analyte	Normalized Difference	RPD	Original Result	Original CSU	Duplicate Result	Duplicate CSU	LCS Relative Bias	LCS % R	MS % R	MS ND	Rep RPD	Rep ND
RA-226	0.32	7.50	2.43E+00	7.83E-01	2.62E+00	8.70E-01	1.02	OK			OK	OK

0029

Version



WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
19-10011	Ra226	1	pCi	I	SGS North America Inc.



No Matrix Spike

Version

0030



WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
19-10011	Ra228	1	pCi	I	SGS North America Inc.

Laboratory Control Sample												
Analyte	LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
RA-228	97.20%	24.00%	100.00%	5.10%	9.00E+00	4.59E-01	8.75E+00	2.10E+00	Ra-12	4.61E+01	5.10E+00	4.34E-01

Matrix Spike													
Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

Duplicate Results												
Analyte	Normalized Difference	RPD	Original Result	Original CSU	Duplicate Result	Duplicate CSU	LCS Relative Bias	LCS % R	MS % R	MS ND	Rep RPD	Rep ND
RA-228	1.51	32.91	2.07E+00	6.53E-01	2.88E+00	8.34E-01	0.97	OK	NA		NA	OK

QC Summary

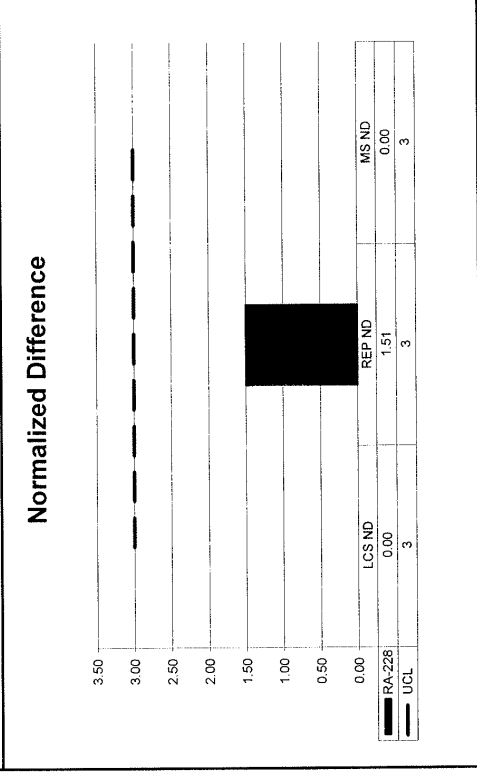
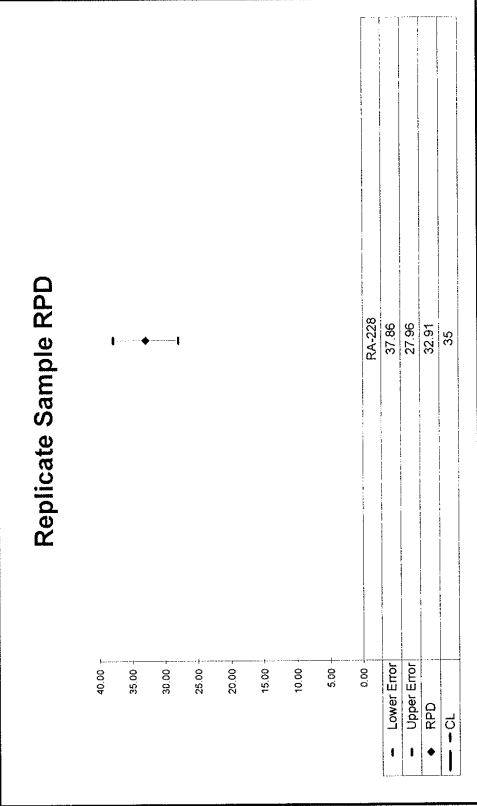
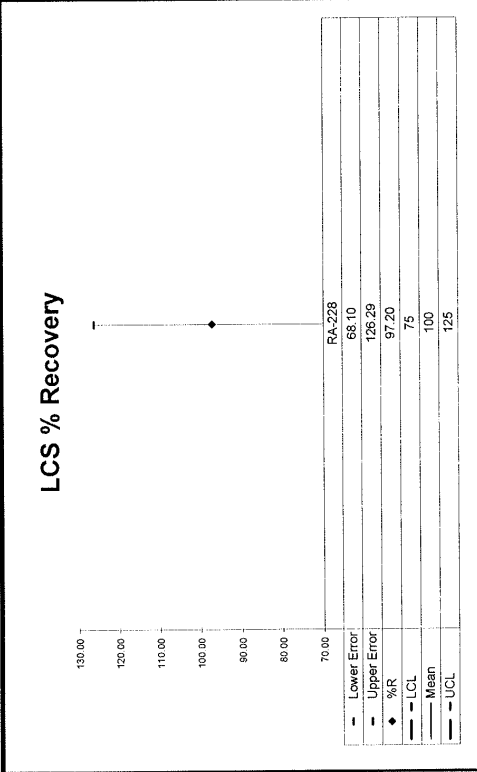
Duplicate Results

0031

Version



WO	Analysis	Run	Activity Units	Allquot Units	Client Name
19-10011	Ra228	1	pCi	I	SGS North America Inc.



No Matrix Spike

Version

0032



SECTION VII
LABORATORY TECHNICIAN'S NOTES

0033



RA-226 NOTES

0034



 EBERLINE SERVICES Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	19-10011
		Analysis Code	Ra226
		Run Number	1



#	Date	Dept	User	Notes
1	10/31/19 11:02	PREP	JHARVEY	ALIQUOTED AND ADDED SPIKES AND TRACERS- PH'D SAMPLES- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMPLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS

J Harvey
10/31/19

0035



 EBERLINE <small>SERVICES</small> Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	19-10011
		Analysis Code	Ra226
		Run Number	1



#	Date	Dept	User	Notes
1	10/31/19 11:02	PREP	JHARVEY	ALIQUOTED AND ADDED SPIKES AND TRACERS- PH'D SAMPLES- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMPLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS
2	11/26/19 10:12	CHEM	DBUSH	ADDED EDTA TO SAMPLES AND LET SIT. ADDED AMMONIUM SULFATE AND ACETIC ACID TO SAMPLES. FILTERED ONTO TARED FILTER PAPERS, LET DRY UNDER HEAT LAMP, REWEIGHED, AND SUBMITTED TO COUNT.

DBush
11/26/19

0036



2

Reagent ID		Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
021318P		Ammonium Hydroxide	Reagent Grade	JHARVEY	10/31/2019
020921D12		Barium Carrier	1 mg/ml	JHARVEY	10/31/2019
020825D01		Lead Carrier	166 mg/ml	JHARVEY	10/31/2019
021679P		Nitric Acid	Reagent Grade	JHARVEY	10/31/2019
021302D03		Ammonium Sulfate	200 mg/ml	JHARVEY	10/31/2019
020912P		Acetic Acid	Reagent Grade	DBUSH	11/26/2019
020416D03		Ammonium Sulfate	200 mg/ml	DBUSH	11/26/2019
021573S		EDTA	0.25M	DBUSH	11/26/2019

0037



Alpha I

Date	Sample #	Client	Load time	Coast time	Analysis	Tech
11/22/19	1911019A (2-4)	UWOR	1204	2h50 =	Am ²⁴¹	KB
11/22/19	1911019A (1-3)	UWOR	1207	2hr 50 =	Am ²⁴³	KB
11/23/19	System XXXX	Lab	1525	16.40 hr	NA	KB
11/23/19	Daily Pulser	Lab	0806	10 mins	NA	KB
11/23/19	1911014A (4-6)	USA	0820	2h50 =	Uu	KB
11/25/19	Daily Pulser	Lab	0529	10 min	Na	KP
11/25/19	1909129A (1-6)	Zion	0829	2hr 50min	Am ²⁴¹	KP
11/25/19	1911046A (1-3,5)	UWOR	1129	2h50 =	Rale	KB
11/25/19	1911049A (1-2)	AMO	1129	2h50 =	Th	KB
11/25/19	1911060A (8,10,12,14)	UWOR	1425	2h50 =	Uu	KB
11/26/19	Daily Pulser	Lab	0509	10 min	Na	KP
11/26/19	1909129A (1-6)	Zion	0826	2hr 50min	Am ²⁴³	KP
11/26/19	1911046A (3,5)	UWOR	1119	2h50 =	Th	KB
11/26/19	1911051A (1-2)	UWOR	1120	2h50 =	Th	KB
11/26/19	1910011A (1-6)	sgs/NAmerica	1415	2h50 =	Rale	KB

RA-228 NOTES

0039



 EBERLINE <small>SERVICES</small> Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	19-10011
		Analysis Code	Ra228
		Run Number	1

2

#	Date	Dept	User	Notes
1	10/31/19 11:02	PREP	JHARVEY	ALIQOTED AND ADDED SPIKES AND TRACERS- PH'D SAMPLES- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMPLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS

J. Harvey
10/31/19

0040



 EBERLINE <small>SERVICES</small> Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	19-10011
		Analysis Code	Ra228
		Run Number	1



#	Date	Dept	User	Notes
1	10/31/19 11:02	PREP	JHARVEY	ALIQOTED AND ADDED SPIKES AND TRACERS- PH'D SAMPLES- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMPLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS
2	12/02/19 12:34	CHEM	DBUSH	ADDED FILTER PAPERS FROM COUNT ROOM TO LABELED C-TUBES, FILLED WITH EDTA SOLUTION AND LET SIT OVERNIGHT. REMOVED FILTER FROM EDTA-ADDED 2MLS YTTRIUM 9MG/ML CARRIER ADDED 18N NAOH TO SAMPLES AND RECORDED T1. HOT BATHED FOR 15 MIN, CENTRIFUGED AND DISCARDED SUPERNANT. ADDED 6N HNO3, DI WATER, AND 10N NAOH. HOT BATHED FOR 15 MIN, CENTRIFUGED AND DISCARDED SUPERNANT. ADDED 1N HNO3, DI WATER, AND AMMONIUM OXALATE. FILTERED ONTO TARED FILTER PAPERS. LET DRY UNDER HEAT LAMP, REWEIGHED AND SUBMITTED TO COUNT.


DBush

12/2/19

0041



2

 EBERLINE SERVICES Reagents Used in an Analysis		Internal Work Order		
		19-10011		
		Analysis Code		Run
		Ra228		1
Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
021318P	Ammonium Hydroxide	Reagent Grade	JHARVEY	10/31/2019
020921D12	Barium Carrier	1 mg/ml	JHARVEY	10/31/2019
020825D01	Lead Carrier	166 mg/ml	JHARVEY	10/31/2019
021679P	Nitric Acid	Reagent Grade	JHARVEY	10/31/2019
021302D03	Ammonium Sulfate	200 mg/ml	JHARVEY	10/31/2019
021198D01	Ammonium Oxalate	5%	DBUSH	12/2/2019
021573S	EDTA	0.25M	DBUSH	12/2/2019
020241D07	Nitric Acid	1N	DBUSH	12/2/2019
020774D19	Nitric Acid	6N	DBUSH	12/2/2019
020241D06	Sodium Hydroxide	10M	DBUSH	12/2/2019
021257D01	Sodium Hydroxide	18M	DBUSH	12/2/2019
021548S	Yttrium Carrier	9 mg/ml	DBUSH	12/2/2019

0042



Aqua LB4110

13


Date	Sample #	Client	Load time	Count time	Analysis	Tech
12/1/19	Weekly Bkgd	Lab	1149	12 hrs	XB	KP
12/2/19	Daily Bkgd/QC	Lab	0513/0617	1hr/30min	XB	KP
12/2/19	Cross Talk	Lab	0655	5 min	XB	KP
12/2/19	Cross Talk	Lab	0705	5 min	XB	KP
12/2/19	1911047SX ^(1-4,6,7,10,12,14,16)	UCOR	0714	2hrs	SP90	KP
12/2/19	1911046AB(1-4)	UCOR	0715	2hrs	XB	KP
12/2/19	1911083AB(4B-6E)	Auxier	0920	2hrs	XB	KP
12/2/19	1911083AB(8D-9B)	Auxier	1132	2hrs	XB	KP
12/2/19	191114RA(1-4)	USA	1249	2hrs	Pa8	ICB
12/2/19	1910011RA(1-6)	665 N. America	1250	2hrs	Pa8	ICB

0043

TDS NOTES

0044



 EBERLINE <small>SERVICES</small> Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	19-10011
		Analysis Code	TDS
		Run Number	1



#	Date	Dept	User	Notes
1	10/03/19 03:10	PREP	MHIGHTOWER	Filtered sample into tared beaker, dried, re-weighed

Mu 70CT19

0045



SECTION VIII
ANALYTICAL DATA (RADIUM-226)

0046



Work Order	19-10011
Analysis Code	Ra226
Run	1
Date Received	10/2/2019
Lab Deadline	10/22/2019
Client	SGS North America Inc.
Project	ENV
Report Level	4
Activity Units	pCi
Aliquot Units	l
Matrix	WA
Method	EPA 903.0 Modified
Instrument Type	Alpha Spectroscopy
Radiometric Tracer	Ba-133
Radiometric Sol#	Ba-6a
Tracer Act (dpm/g)	440.49
Carrier	
Carrier Conc (mg/ml)	

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		10/02/19 00:00	1.0000E+00
02	MBL	BLANK		10/02/19 00:00	1.0000E+00
03	DUP	LT-2 11-16	50	09/26/19 10:35	1.0000E+00
04	TRG	LT-1 11-16	40	09/25/19 13:30	1.0000E+00
05	DO	LT-2 11-16	50	09/26/19 10:35	1.0000E+00
06	TRG	LT-3 11-16	50	09/27/19 09:30	1.0000E+00

0047

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
 ** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Internal Fraction	Sample Desc	Tracer Aliquot (g)	Tracer Total ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	Grav Carrier Added (ml)	Grav Filter Tare (g)	Grav Filter Final (g)	Grav Filter Net (g)	Grav % Rec	Mean % Rec	SAF 1*	SAF 2*
01	LCS	2.2056	971.5	532.0	121.56		0.0200	0.0301	0.0101		110.00	3.00^	1.00
02	MBL	2.1958	967.2	514.0	117.97		0.0200	0.0301	0.0101		110.00	3.00^	1.00
03	DUP	2.1961	967.4	401.0	92.03		0.0198	0.0273	0.0075		92.03	2.64	1.00
04	TRG	2.1929	966.0	13.8	3.17		0.0198	0.0268	0.0070		3.17	2.50	1.00
05	DO	2.1871	963.4	427.0	98.40		0.0198	0.0265	0.0067		98.40	2.40	1.00
06	TRG	2.1843	962.2	399.0	92.06		0.0200	0.0231	0.0031		92.06	0.40	1.00

0048

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep 10 Date/Time	Sep 10 By	Sep 11 Date/Time	Sep 11 By
01	LCS			10/31/19 07:11	JHARVEY	11/26/19 09:27	DBUSH		
02	MBL			10/31/19 07:11	JHARVEY	11/26/19 09:27	DBUSH		
03	DUP			10/31/19 07:11	JHARVEY	11/26/19 09:27	DBUSH		
04	TRG			10/31/19 07:11	JHARVEY	11/26/19 09:27	DBUSH		
05	DO			10/31/19 07:11	JHARVEY	11/26/19 09:27	DBUSH		
06	TRG			10/31/19 07:11	JHARVEY	11/26/19 09:27	DBUSH		

0049

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

0050

	Run	1
	Analysis Code	Ra226
Eberline Analytical Work Order	19-10011	
Client	SGS North America Inc.	

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	RA-226	LCS	LCS	pCi/l	1.03E+01	1.48E+00	3.71E-01	1.01E+01	102.01	OK		OK	
02	RA-226	MBL	BLANK	pCi/l	9.21E-02	2.23E-01	4.29E-01					OK	OK
03	RA-226	DUP	LT-2 11-16	pCi/l	2.62E+00	6.72E-01	3.60E-01				OK	OK	
04	RA-226	TRG	LT-1 11-16	pCi/l	-3.96E+00	3.00E+00	1.18E+01					INV	
05	RA-226	DO	LT-2 11-16	pCi/l	2.43E+00	5.92E-01	2.90E-01					OK	
06	RA-226	TRG	LT-3 11-16	pCi/l	7.69E-01	2.28E-01	1.40E-01					OK	



Preliminary Data Report & Analytical Calculations
Work Order: 19-10011-Ra226-1

	Run	1
Analysis Code	Ra226	
Eberline Analytical Work Order	19-10011	
Client	SGS North America Inc.	

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep 10 Date/Time	Sep 11 Date/Time
01	RA-226	LCS	10/02/19 00:00	1.00E+00	100.00	0.00	110.00		11/26/2019 9:27	
02	RA-226	MBL	10/02/19 00:00	1.00E+00	100.00	0.00	110.00		11/26/2019 9:27	
03	RA-226	DUP	09/26/19 10:35	1.00E+00	92.03	0.00	92.03		11/26/2019 9:27	
04	RA-226	TRG	09/25/19 13:30	1.00E+00	3.17	0.00	3.17		11/26/2019 9:27	
05	RA-226	DO	09/26/19 10:35	1.00E+00	98.40	0.00	98.40		11/26/2019 9:27	
06	RA-226	TRG	09/27/19 09:30	1.00E+00	92.06	0.00	92.06		11/26/2019 9:27	

0051

		1
Run		
Analysis Code		Ra226
Eberline Analytical Work Order		19-10011
Client		SGS North America Inc.

0052

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	RA-226	LCS	11/26/19 14:14		A_Spec	Alpha_003	170.02	1.96 E+02	9.00 E-03	15.2
02	RA-226	MBL	11/26/19 14:14		A_Spec	Alpha_004	170	2.09 E+00	2.30 E-02	18
03	RA-226	DUP	11/26/19 14:14		A_Spec	Alpha_010	170	6.23 E+01	1.60 E-02	18.1
04	RA-226	TRG	11/26/19 14:14		A_Spec	Alpha_011	170	-3.42 E+00	2.60 E-02	18.1
05	RA-226	DO	11/26/19 14:14		A_Spec	Alpha_012	170	6.86 E+01	1.40 E-02	18.3
06	RA-226	TRG	11/26/19 14:14		A_Spec	Alpha_014	170.02	4.73 E+01	1.60 E-02	17.7

Spike and Tracer Worksheet

Internal Work Order		Run	Analysis Code		Date	Technician		Technician Initials		Witness Initials	
19-10011		1	Ra226		10/31/2019 7:07	JHARVEY					
LCS & Matrix Spikes		LCS		MS	MSD	LCS	MS	LCS	MSD		
Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	Volume Used (g)	Volume Used (g)	Volume Used (g)	Known pCi	Error Estimate	Added pCi	Error Estimate
Ra-226	Ra-5b	43.950	10/31/2019	0.500	0.5080		10.06	0.463	0.000	0.00	0.000
C-99 MS		C-2a	22093.636	7/5/2014	0.1						

Balance Printer Tapes											
Tracers						Tracer					
fraction	Isotope	Sol #	Activity dpm/g	Solution Date	Volume Used (g)	Approx Addition					
01	Ba-133	Ba-6a	440.490	10/31/2019	2.2056	2.3000					
02	Ba-133	Ba-6a	440.490	10/31/2019	2.1958	2.3000					
03	Ba-133	Ba-6a	440.490	10/31/2019	2.1961	2.3000					
04	Ba-133	Ba-6a	440.490	10/31/2019	2.1929	2.3000					
05	Ba-133	Ba-6a	440.490	10/31/2019	2.1871	2.3000					
06	Ba-133	Ba-6a	440.490	10/31/2019	2.1843	2.3000					
Matrix Spike											

0054



KB
11/26/19

2

Sample Description: SPIKE
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00002619
 Batch Identification: 1910011A-RA
 Sample Identification: 01
 Sample Geometry: Shelf 2
 Procedure Description: Ra

Detector Name: Alpha_003
 Chamber Serial Number:
 Detector Serial Number: 3
 Env. Background: System Bkgd 266572
 Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 liter
 Generic Mult. Factor: 3.000E+000 Generic Div. Factor: 1.000E+000
 Sample Date/Time: 11/26/2019 10:16:41 AM
 Acquisition Date/Time: 11/26/2019 2:14:35 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Chem. Recovery Factor: 1.0000 +/- 0.0000
 Counting Efficiency: 0.1522 +/- 0.0027 on 2/22/2019 4:02:55 PM
 Effective Efficiency: 0.1522 +/- 0.0027

Control Certificate Name: Ra226_Ra-5b
 Chem. Recov. of Control: RA-226 0.340063 +/- 0.027100
 Peak Match Tolerance: 0.350 MeV

----- PEAK AREA REPORT -----						
Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
RA-224	5.528	11.43	67.75	3.57	0.00E+000	3.0
RA-226	4.626	196.47	14.05	1.53	0.00E+000	6.3

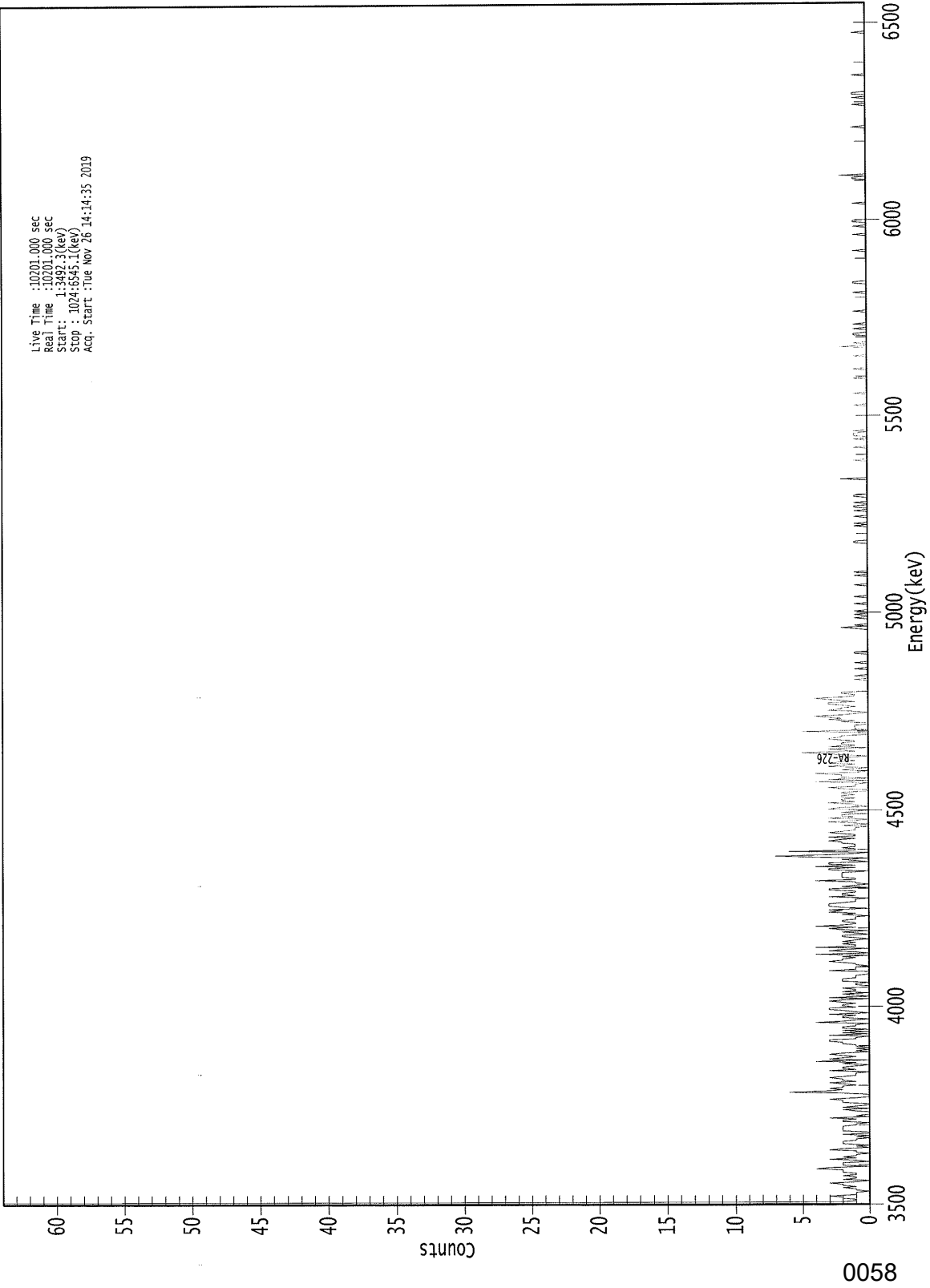
----- NUCLIDE ANALYSIS RESULTS -----					
Nuclide	Id Conf.	Energy (keV)	Activity (pCi/liter)	MDA (pCi/liter)	
RA-224	0.968	5685.50*	6.28E-001 +/- 4.26E-001	5.18E-001 +/-	1.80E-002
RA-226	0.968	4785.00*	1.03E+001 +/- 1.48E+000	3.71E-001 +/-	1.29E-002

AG
11/27/19

0057



0000261998.CNF



 ***** S P E C T R A L D A T A R E P O R T *****



Sample Title: 01

Elapsed Live time: 10201
 Elapsed Real Time: 10201

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	10201	10201	2	1	1	2	2	3
9:	1	1	1	0	1	1	2	1
17:	2	2	3	1	0	2	1	1
25:	2	1	1	2	2	2	4	3
33:	0	2	2	2	0	1	3	1
41:	2	1	1	0	1	1	3	2
49:	0	1	0	2	2	2	1	1
57:	0	1	0	2	0	0	2	2
65:	2	2	2	1	1	0	2	2
73:	1	3	0	1	0	0	0	1
81:	2	0	2	1	0	0	2	2
89:	2	3	1	0	0	0	2	6
97:	3	2	3	2	2	1	2	3
105:	1	2	2	3	2	1	1	1
113:	0	3	1	2	2	1	0	2
121:	1	4	0	3	2	1	2	3
129:	2	0	1	0	1	0	1	1
137:	2	2	3	3	1	1	0	3
145:	0	2	0	2	0	2	2	1
153:	1	0	4	2	1	0	2	2
161:	1	3	0	1	2	3	3	1
169:	2	2	1	2	3	2	0	3
177:	0	1	2	0	2	1	1	2
185:	0	0	1	1	0	2	2	2
193:	1	1	1	0	0	0	3	1
201:	1	1	0	1	1	2	3	2
209:	2	1	2	0	4	0	1	3
217:	2	0	4	1	1	2	1	2
225:	1	0	1	2	2	0	1	2
233:	0	2	3	1	4	2	1	1
241:	2	2	1	1	1	0	2	1
249:	3	2	3	0	2	3	3	3
257:	2	1	1	1	0	3	1	2
265:	2	1	1	3	3	0	2	1
273:	0	1	1	4	1	1	2	2
281:	2	2	2	0	3	3	1	4
289:	1	3	3	0	1	2	0	4
297:	7	3	1	0	6	1	1	2
305:	1	1	1	2	2	3	2	1
313:	3	1	1	2	3	2	1	1
321:	1	0	2	0	1	3	1	0
329:	3	1	2	2	0	2	1	0
337:	3	2	0	1	1	3	1	2
345:	2	1	2	2	1	2	2	0
353:	0	2	3	1	1	1	0	4
361:	0	3	0	2	2	2	4	1

0059



369: 0 2 1 0 3 2 1 3

Sample Title: 01



Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	2	1	2	2	1	0	2	3
385:	5	1	2	3	0	3	1	2
393:	2	1	1	3	3	2	2	0
401:	0	1	5	0	1	1	1	1
409:	0	0	2	1	3	2	3	4
417:	2	1	0	1	3	2	2	1
425:	2	3	3	1	2	3	4	2
433:	1	1	2	2	0	0	0	0
441:	0	0	0	0	0	0	1	0
449:	0	1	0	0	0	0	0	1
457:	0	0	0	0	1	0	0	0
465:	0	0	0	0	1	1	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	1	2	0	1	0	0	0
497:	0	0	1	0	0	1	0	0
505:	1	0	0	0	0	0	1	0
513:	0	0	0	0	1	0	0	0
521:	0	0	0	0	0	0	1	0
529:	0	0	0	0	0	0	1	0
537:	0	1	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	1	1	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	1	0	1	0	0	0	0	0
585:	1	0	0	0	0	1	0	0
593:	1	1	0	0	1	0	0	0
601:	0	1	1	0	0	0	0	0
609:	0	0	0	0	0	0	0	0
617:	2	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	1	0	0	0	0	0	0	0
641:	0	0	0	1	0	0	0	0
649:	0	0	1	0	0	1	1	1
657:	0	1	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	1
681:	0	0	0	0	0	0	0	0
689:	0	1	0	0	0	0	0	0
697:	0	0	0	0	0	0	1	0
705:	0	0	0	0	0	0	1	0
713:	0	0	0	0	0	0	0	0
721:	0	1	0	0	0	0	0	0
729:	0	2	0	0	1	0	0	0
737:	0	0	0	1	1	0	0	0
745:	1	0	0	0	1	0	0	0
753:	0	0	0	0	0	0	0	1
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	1
777:	0	0	0	0	0	0	0	1
785:	1	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

0060



801: 0 0 0 0 0 0 0 0 0

Sample Title: 01

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	1	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	1	0	0	0	0	0	0
833:	1	0	0	0	1	1	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	1	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	1	1	0	2	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	1	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	1	0	0	0	0	0	1	0
945:	0	1	1	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	1	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	1	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



0061





11/26/19

2

Sample Description: BLANK
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00002619
 Batch Identification: 1910011A-RA
 Sample Identification: 02
 Sample Geometry: Shelf 2
 Procedure Description: Ra

Detector Name: Alpha_004
 Chamber Serial Number:
 Detector Serial Number: 4
 Env. Background: System Bkgd 266573
 Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 liter
 Generic Mult. Factor: 3.000E+000 Generic Div. Factor: 1.000E+000
 Sample Date/Time: 11/26/2019 10:16:41 AM
 Acquisition Date/Time: 11/26/2019 2:14:36 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Chem. Recovery Factor: 1.0000 +/- 0.0000
 Counting Efficiency: 0.1804 +/- 0.0031 on 2/22/2019 4:02:54 PM
 Effective Efficiency: 0.1804 +/- 0.0031

Peak Match Tolerance: 0.350 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
RA-224	5.384	-0.36	604.11	1.36	0.00E+000	2.9
RA-226	4.672	2.09	242.10	3.91	0.00E+000	2.9

 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/liter)	MDA (pCi/liter)
RA-224	0.888	5685.50*	-1.67E-002 +/- 1.01E-001	3.18E-001 +/- 1.07E-002
RA-226	0.983	4785.00*	9.21E-002 +/- 2.23E-001	4.29E-001 +/- 1.44E-002

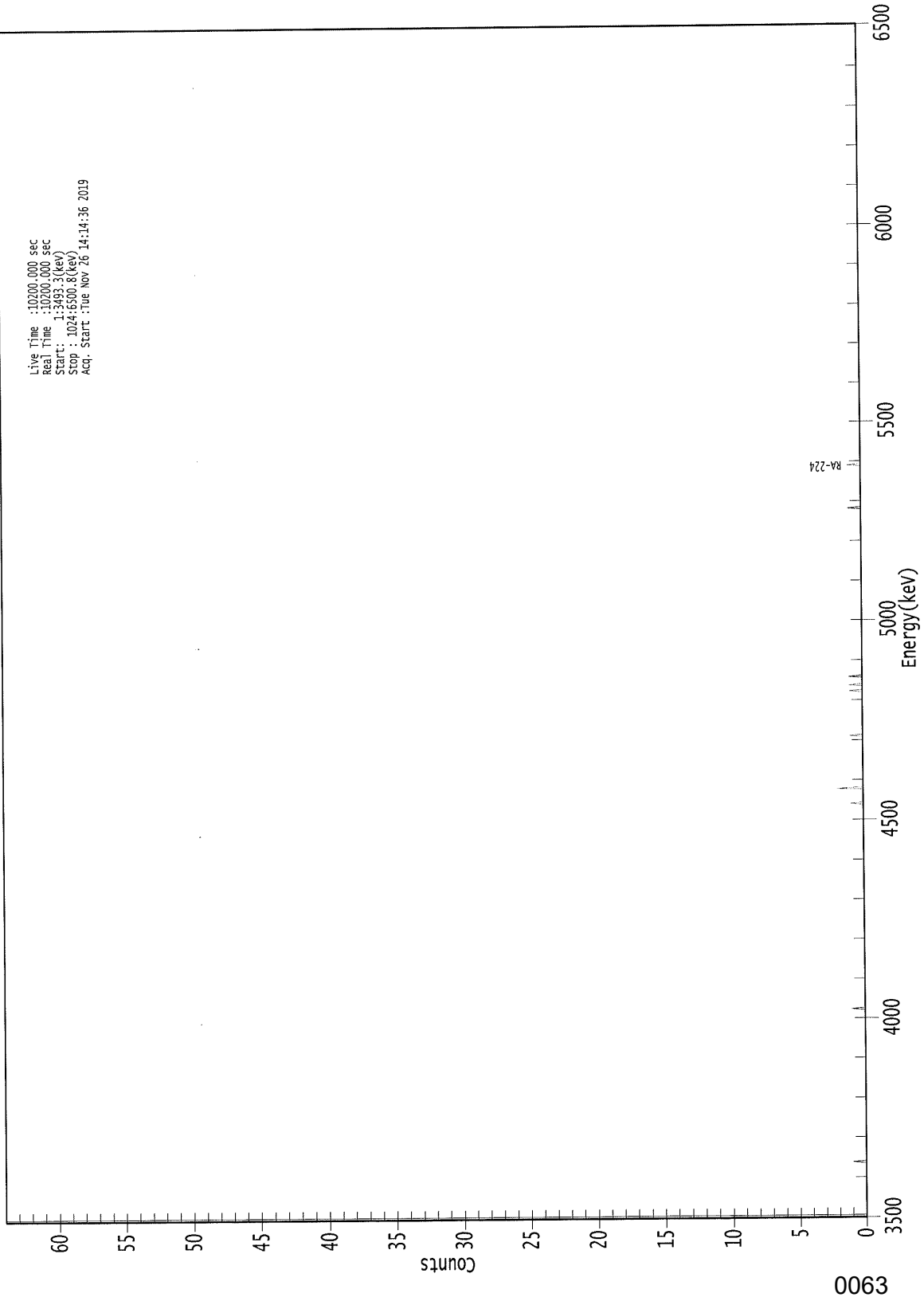
AG
 11/27/19

0062



0000261993.CNF

Live Time :10200.000 sec
Real Time :10200.000 sec
Start: 1:3493.3(keV)
Stop : 1024:6500.8(keV)
Acq. Start :Tue Nov 26 14:14:36 2019



ROI Type: 1

0063



 ***** S P E C T R A L D A T A R E P O R T *****



Sample Title: 02

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	10200	10200	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	1
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	1	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	1	0	0	0	0	0
361:	0	0	0	0	0	0	0	2

0064



369: 0 0 0 0 0 0 0 0 0

Sample Title: 02

2

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	0	0	0	0	0	0	0
385:	0	0	0	0	0	0	0	0
393:	0	0	0	0	0	0	0	0
401:	0	0	0	0	0	0	0	0
409:	0	0	0	0	1	0	0	0
417:	0	0	0	0	0	0	0	0
425:	0	0	0	0	0	0	0	0
433:	0	0	0	0	0	0	0	0
441:	0	0	0	0	0	0	0	0
449:	0	0	1	0	0	0	0	1
457:	0	0	0	0	0	0	1	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	1	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	1	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

0065



801: 0 0 0 0 0 0 0 0 0

Sample Title: 02

Channel								
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

2

0066





MS
11/26/19

2

Sample Description: LT-2 11-16 DUP
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00002619
 Batch Identification: 1910011A-RA
 Sample Identification: 03
 Sample Geometry: Shelf 2
 Procedure Description: Ra

Detector Name: Alpha_010
 Chamber Serial Number:
 Detector Serial Number: 10
 Env. Background: System Bkgd 266574
 Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 liter
 Generic Mult. Factor: 2.640E+000 Generic Div. Factor: 1.000E+000
 Sample Date/Time: 9/26/2019 10:16:41 AM
 Acquisition Date/Time: 11/26/2019 2:14:37 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Chem. Recovery Factor: 0.9203 +/- 0.0000
 Counting Efficiency: 0.1809 +/- 0.0031 on 2/22/2019 4:02:52 PM
 Effective Efficiency: 0.1665 +/- 0.0029

Peak Match Tolerance: 0.350 MeV

----- PEAK AREA REPORT -----						
Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
RA-224	5.540	10.11	71.21	2.89	0.00E+000	4.4
RA-226	4.594	62.28	25.46	2.72	0.00E+000	8.8

----- NUCLIDE ANALYSIS RESULTS -----				
Nuclide	Id Conf.	Energy (keV)	Activity (pCi/liter)	MDA (pCi/liter)
RA-224	0.973	5685.50*	4.56E-001 +/- 3.25E-001	3.95E-001 +/- 1.36E-002
RA-226	0.953	4785.00*	2.62E+000 +/- 6.72E-001	3.60E-001 +/- 1.21E-002

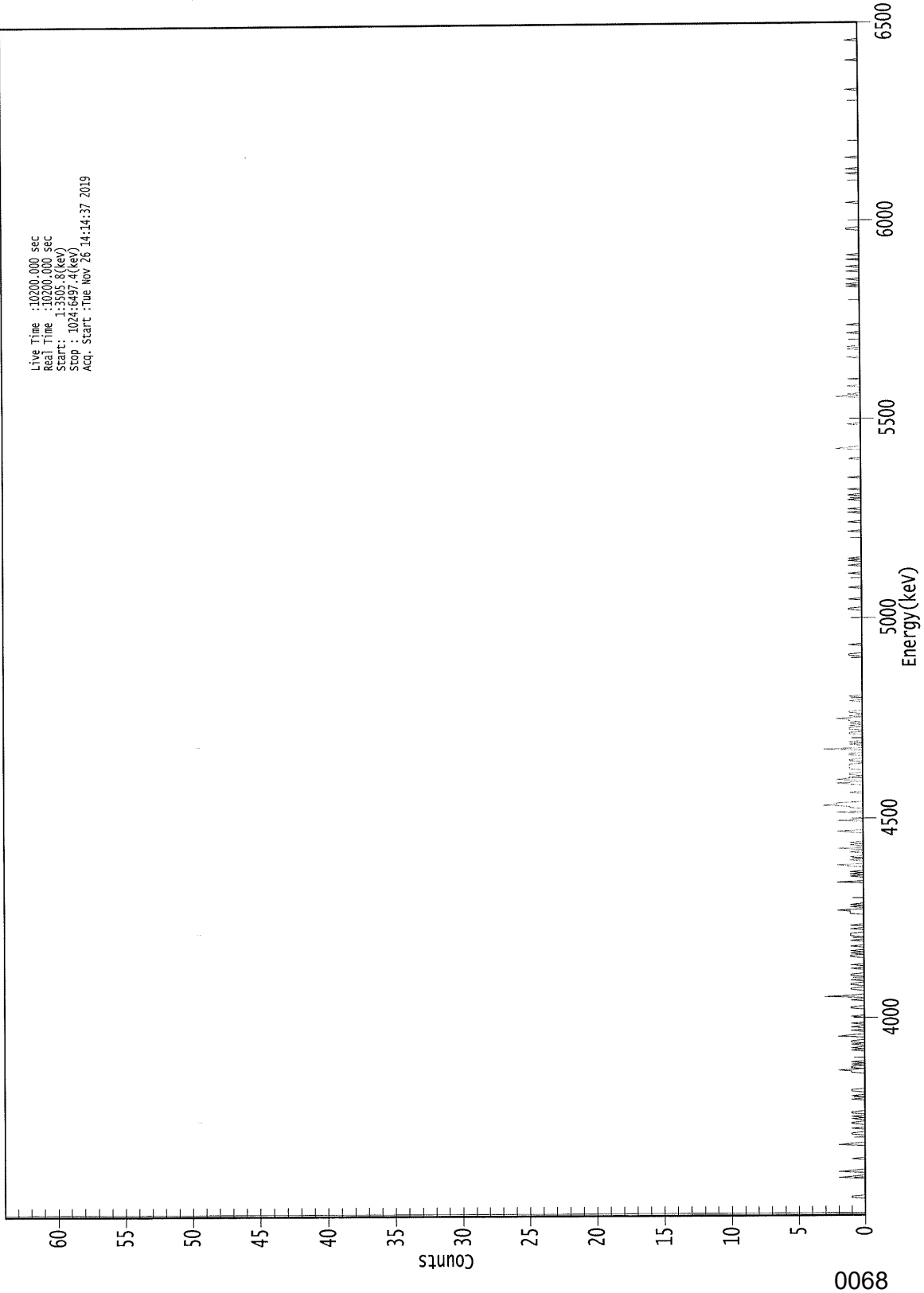
AG
11/27/19

0067



0000261994.CNF

Live Time :10200.000 sec
Real Time :10200.000 sec
Start : 1-3305 8(kev)
Stop : 1024-6497 4(kev)
Acq. Start :Tue Nov 26 14:14:37 2019



ROI Type: 1

0068

2

 ***** S P E C T R A L D A T A R E P O R T *****



Sample Title: 03

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	10200	10200	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	1
17:	1	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	2	1	0	0	0	2	1	0
41:	0	0	0	0	0	0	0	0
49:	1	0	0	0	0	0	0	0
57:	0	0	0	0	2	1	0	0
65:	0	0	0	0	0	1	1	0
73:	0	0	1	0	0	0	1	1
81:	0	0	1	0	1	0	0	1
89:	1	0	0	0	0	0	0	0
97:	0	0	0	1	0	0	1	0
105:	0	0	1	1	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	1	1	2	0	1	1
129:	0	1	0	1	0	0	0	0
137:	0	0	0	0	0	1	0	1
145:	0	0	1	0	1	1	0	0
153:	0	2	1	0	0	0	1	0
161:	0	1	0	0	1	0	0	0
169:	0	0	1	0	0	0	0	0
177:	0	1	1	0	0	0	0	0
185:	1	0	0	3	1	0	0	0
193:	0	1	1	0	0	1	1	0
201:	0	1	0	0	0	1	1	0
209:	0	0	0	1	0	0	1	0
217:	0	0	0	0	0	1	1	0
225:	1	0	1	0	0	0	1	0
233:	0	0	0	1	0	0	0	1
241:	1	1	0	0	0	1	0	0
249:	1	0	0	0	0	0	0	0
257:	0	0	1	1	1	2	0	0
265:	1	0	1	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	2	0	0
289:	0	0	1	0	1	0	1	0
297:	0	0	0	1	2	0	0	0
305:	1	0	0	1	0	0	0	1
313:	0	0	2	0	0	1	0	1
321:	0	0	0	0	0	0	0	0
329:	1	2	0	0	0	0	0	0
337:	0	0	2	0	0	0	0	0
345:	0	2	0	0	0	1	1	3
353:	2	2	0	0	0	0	0	0
361:	0	0	1	0	0	0	0	0

0069



369: 0 1 2 0 0 2 1 1

Sample Title: 03

2

Channel	1	2	3	4	5	6	7	8
377:	0	1	1	0	0	0	1	1
385:	1	1	1	0	0	1	1	0
393:	0	0	1	1	0	0	0	3
401:	0	0	0	1	0	1	0	0
409:	0	0	0	0	1	1	0	0
417:	1	1	0	1	0	1	0	1
425:	1	2	0	1	0	0	1	1
433:	0	0	0	0	0	0	0	0
441:	1	0	0	0	1	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	1
481:	1	0	0	0	0	0	0	0
489:	1	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	1	1
521:	0	0	0	0	0	0	0	1
529:	0	0	0	0	0	0	0	0
537:	0	1	0	0	0	0	0	0
545:	0	0	0	0	0	1	0	0
553:	0	0	0	0	1	0	0	0
561:	1	0	1	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	1	0	0	0	0	0	0
593:	0	1	0	0	0	0	0	0
601:	0	1	0	0	1	0	0	0
609:	0	0	0	0	1	0	0	0
617:	1	0	0	0	0	1	0	0
625:	0	0	0	0	0	0	0	1
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	1
649:	0	0	0	0	0	0	0	0
657:	2	1	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	1	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	2	0	1
705:	0	0	0	0	0	0	1	0
713:	0	0	0	0	1	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	1
737:	0	0	0	0	0	0	1	0
745:	1	0	0	0	0	0	0	0
753:	0	0	0	0	1	0	0	0
761:	0	0	0	1	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	1	0	1	0

0070



801: 0 0 1 0 0 0 0 0 0

Sample Title: 03

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	1	0	0	0	1	0	0
817:	0	0	0	1	0	0	0	1
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	1	1	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	1	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	1	0	0
897:	0	1	0	0	0	0	0	0
905:	0	0	0	1	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	1	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	1	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	1
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

2

0071





KB
11/26/19

2

Sample Description: LT-2 11-16 DUP
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00002619
 Batch Identification: 1910011A-RA
 Sample Identification: 05
 Sample Geometry: Shelf 2
 Procedure Description: Ra

Detector Name: Alpha_012
 Chamber Serial Number:
 Detector Serial Number: 12
 Env. Background: System Bkgd 266576
 Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 liter
 Generic Mult. Factor: 2.400E+000 Generic Div. Factor: 1.000E+000
 Sample Date/Time: 9/26/2019 10:16:41 AM
 Acquisition Date/Time: 11/26/2019 2:14:39 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Chem. Recovery Factor: 0.9840 +/- 0.0000
 Counting Efficiency: 0.1827 +/- 0.0031 on 2/22/2019 4:02:49 PM
 Effective Efficiency: 0.1798 +/- 0.0031

Peak Match Tolerance: 0.350 MeV

----- PEAK AREA REPORT -----						
Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
RA-224	5.539	5.94	101.81	3.06	0.00E+000	3.0
RA-226	4.575	68.62	24.14	2.38	0.00E+000	5.2

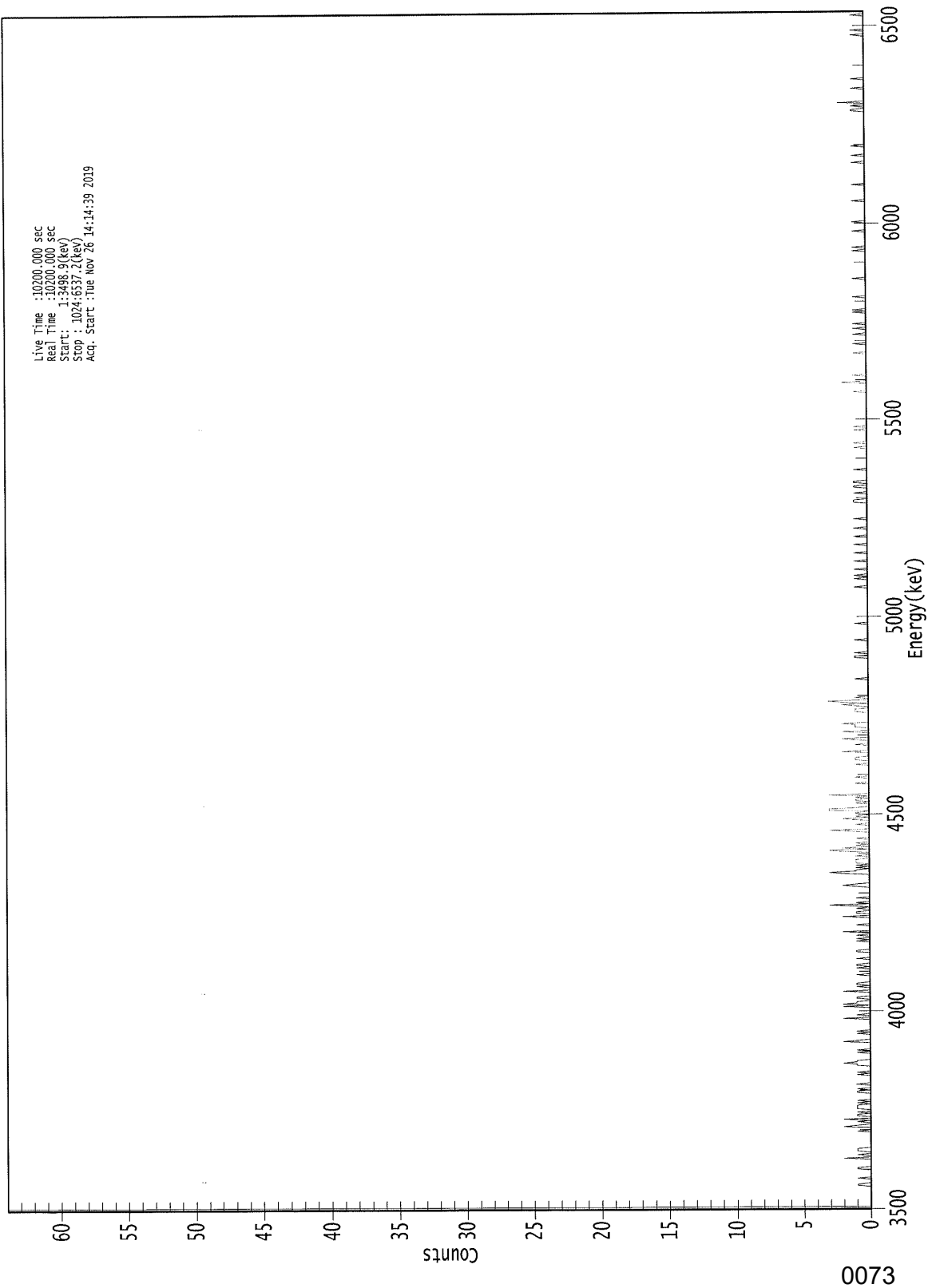
----- NUCLIDE ANALYSIS RESULTS -----				
Nuclide	Id Conf.	Energy (keV)	Activity (pCi/liter)	MDA (pCi/liter)
RA-224	0.972	5685.50*	2.25E-001 +/- 2.30E-001	3.39E-001 +/- 1.16E-002
RA-226	0.944	4785.00*	2.43E+000 +/- 5.92E-001	2.90E-001 +/- 9.76E-003

AG
11/27/19

0072



0000261997.CNF



 ***** S P E C T R A L D A T A R E P O R T *****



Sample Title: 05

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	10200	10200	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	1	1	0	0
25:	0	0	1	0	0	0	0	0
33:	0	0	1	1	0	0	0	0
41:	0	0	0	2	0	0	1	0
49:	0	1	1	1	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	1	0	0	0	2	1
73:	0	0	1	0	2	0	0	1
81:	1	0	1	0	0	1	1	1
89:	1	0	1	0	1	0	0	0
97:	0	0	0	1	1	0	1	0
105:	0	0	1	0	0	0	0	0
113:	0	0	1	0	1	0	0	0
121:	0	0	1	1	2	1	1	0
129:	0	0	0	0	0	1	0	1
137:	0	0	0	0	0	0	2	1
145:	0	0	0	0	0	1	0	1
153:	0	0	0	0	0	0	0	0
161:	0	0	2	0	0	1	0	0
169:	0	0	0	0	2	0	2	1
177:	1	0	0	1	1	0	0	0
185:	0	2	0	0	0	1	0	1
193:	1	0	0	0	0	0	0	1
201:	0	0	0	0	0	1	0	1
209:	1	0	0	0	0	1	0	0
217:	0	0	0	1	1	0	0	0
225:	0	0	0	0	1	0	1	0
233:	0	1	0	0	2	0	0	0
241:	0	0	1	0	0	0	0	0
249:	0	2	0	0	1	1	0	0
257:	1	0	1	3	0	1	0	0
265:	0	1	0	0	0	0	0	0
273:	0	0	0	1	2	1	0	0
281:	0	0	0	0	0	0	2	3
289:	1	1	0	1	0	1	0	1
297:	1	1	1	0	0	1	0	0
305:	0	2	3	0	2	0	1	0
313:	1	0	0	0	1	0	0	0
321:	0	0	1	3	0	0	0	0
329:	1	0	0	0	1	2	0	1
337:	0	1	1	0	3	3	1	0
345:	0	0	1	0	1	1	0	1
353:	0	3	0	0	0	0	0	0
361:	0	0	0	1	0	0	0	0

0074



369: 1 0 0 0 0 0 0 0 0

Sample Title: 05



Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	0	0	1	0	0	0	1
385:	1	1	0	0	0	0	2	0
393:	0	0	0	0	1	0	0	0
401:	1	2	0	0	0	0	0	2
409:	0	0	0	1	1	1	2	0
417:	0	0	0	0	0	0	0	0
425:	1	1	1	0	0	1	2	0
433:	2	3	0	0	1	0	0	0
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	1	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	1	1
473:	0	0	1	0	0	0	0	0
481:	0	0	0	0	0	1	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	1	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	1	0	0	0	0	0
537:	0	1	0	0	1	0	0	0
545:	0	1	0	0	0	0	0	0
553:	1	0	0	0	0	0	0	1
561:	0	0	0	0	0	0	1	0
569:	0	0	0	0	0	1	0	0
577:	0	0	0	0	1	0	0	0
585:	0	0	0	0	1	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	1	1	1	0	0	0
609:	0	0	1	0	0	0	0	1
617:	1	0	0	1	1	0	0	0
625:	0	0	0	0	0	0	1	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	1	0	0	0	1	0	0
657:	0	0	0	0	0	0	0	0
665:	1	0	0	1	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	1	0	0	0	0	0	0
705:	0	2	0	0	0	0	0	1
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	1	0	0	0	0	0
737:	0	0	1	0	0	0	0	0
745:	0	0	1	0	0	0	0	1
753:	0	0	0	1	0	0	0	0
761:	0	0	0	0	0	1	0	1
769:	0	0	0	0	0	0	0	0
777:	0	0	1	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	1	0	0	0	0	0

0075



801: 0 0 0 0 0 0 0 0 0

Sample Title: 05

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	1	0	0	1	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	1	0	0	0	0
841:	0	0	0	1	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	1	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	1	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	1	0
897:	0	0	0	0	1	0	0	0
905:	0	0	0	0	1	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	1	1	0	0	1	0
945:	0	2	0	0	0	0	0	0
953:	0	0	0	0	0	1	0	0
961:	0	0	0	0	0	1	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	1	0	0	0	1	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	1	0	0	0	0

2

0076





YB
11/26/19

2

Sample Description: LT-3 11-16
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00002619
 Batch Identification: 1910011A-RA
 Sample Identification: 06
 Sample Geometry: Shelf 2
 Procedure Description: Ra

Detector Name: Alpha_014
 Chamber Serial Number:
 Detector Serial Number: 14
 Env. Background: System Bkgd 266577
 Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 liter
 Sample Date/Time: 9/27/2019 10:16:41 AM
 Acquisition Date/Time: 11/26/2019 2:14:40 PM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Chem. Recovery Factor: 0.9206 +/- 0.0000
 Counting Efficiency: 0.1769 +/- 0.0030 on 2/22/2019 4:02:58 PM
 Effective Efficiency: 0.1628 +/- 0.0028

Peak Match Tolerance: 0.350 MeV

 PEAK AREA REPORT

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
RA-224	5.526	5.47	96.55	1.53	0.00E+000	2.9
RA-226	4.604	47.28	29.45	2.72	0.00E+000	2.9

 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/liter)	MDA (pCi/liter)
RA-224	0.967	5685.50*	9.55E-002 +/- 9.22E-002	1.24E-001 +/- 4.27E-003
RA-226	0.958	4785.00*	7.69E-001 +/- 2.28E-001	1.40E-001 +/- 4.71E-003

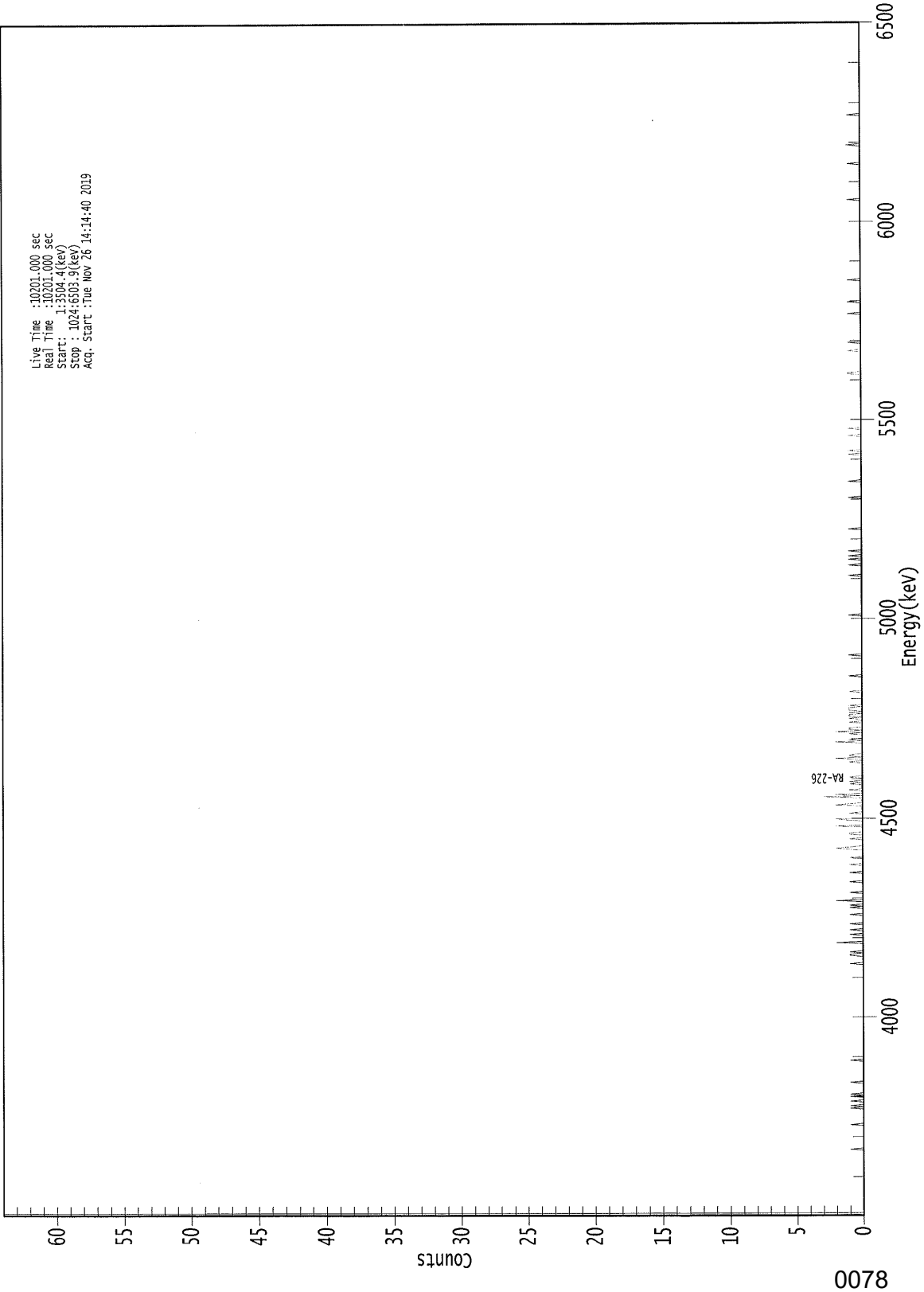
AG
11/27/19

0077



0000261996.CNF

Live Time : 10201.000 sec
Real Time : 10201.000 sec
Start : 1:3504 4(kev)
Stop : 1024:6503 9(kev)
Acq. Start : Tue Nov 26 14:14:40 2019



0078



 ***** S P E C T R A L D A T A R E P O R T *****



Sample Title: 06

Elapsed Live time: 10201
 Elapsed Real Time: 10201

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	10201	10201	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	1	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	1	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	1	0	1	0	0
97:	0	1	0	0	0	1	0	1
105:	0	0	0	0	0	0	0	0
113:	0	1	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	1	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	1
217:	0	0	0	0	0	0	1	1
225:	0	1	0	0	0	0	0	0
233:	0	2	0	0	0	0	0	0
241:	1	0	0	0	1	0	0	0
249:	0	1	0	0	0	0	0	0
257:	0	1	0	0	0	0	0	1
265:	0	1	0	0	0	2	0	0
273:	0	0	0	0	1	0	0	0
281:	0	0	0	0	0	1	0	0
289:	0	0	0	0	0	1	0	0
297:	0	0	0	0	1	0	0	0
305:	0	0	1	0	0	0	0	0
313:	0	1	2	1	0	0	0	0
321:	0	0	1	0	0	0	1	1
329:	0	0	0	0	0	2	0	0
337:	0	0	1	2	0	0	0	0
345:	1	0	0	0	0	0	0	2
353:	1	0	0	0	0	0	3	0
361:	2	0	0	0	1	0	0	0

0079



369: 0 1 0 1 0 0 0 1

Sample Title: 06



Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	0	0	0	0	0	0	0
385:	0	0	0	0	1	0	0	2
393:	0	1	1	0	0	0	0	0
401:	0	0	0	0	0	2	0	1
409:	0	0	0	0	1	0	2	0
417:	1	1	0	0	0	0	1	0
425:	0	1	0	1	1	0	1	0
433:	1	1	1	0	1	0	0	0
441:	0	0	0	0	0	0	0	0
449:	1	0	0	0	0	0	0	0
457:	0	0	0	0	0	1	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	1
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	1	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	1	0	0	0	0
553:	0	0	0	0	1	0	0	0
561:	0	1	0	0	1	0	0	0
569:	1	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	1	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	0	0	0	0	0	0	1	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	1	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	1	0	0	1	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	1	0	0	0	0
673:	0	1	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	1	1	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	1	0	0	0
745:	0	0	0	1	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	1	0	0	0
777:	0	0	0	0	0	0	1	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

0080



801: 0 1 0 0 0 0 0 0 0

Sample Title: 06



Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	1	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	1	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	1	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	1
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0

0081





2

QA SUMMARY REPORT

Review Of QA Results - Pulser Check

Date : 11/26/2019
Time : 5:30:26 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha_001	21f	ALL	Not Done	
Alpha_002	21f	ALL	Not Done	
Alpha_003	21f	ALL	Passed	11/26/2019 5:08:50 AM
Alpha_004	21f	ALL	Passed	11/26/2019 5:08:51 AM
Alpha_005	21f	ALL	Not Done	
Alpha_006	21f	ALL	Not Done	
Alpha_007	21f	ALL	Not Done	
Alpha_008	21f	ALL	Not Done	
Alpha_009	21f	ALL	Not Done	
Alpha_010	21f	ALL	Passed	11/26/2019 5:08:52 AM
Alpha_011	21f	ALL	Passed	11/26/2019 5:08:53 AM
Alpha_012	21f	ALL	Passed	11/26/2019 5:08:54 AM
Alpha_013	21f	ALL	Not Done	
Alpha_014	21f	ALL	Passed	11/26/2019 5:08:55 AM
Alpha_015	21f	ALL	Not Done	
Alpha_016	21f	ALL	Not Done	
Alpha_033	Alpha Analyst100DC	ALL	Not Done	
Alpha_034	Alpha Analyst100DC	ALL	Not Done	
Alpha_035	Alpha Analyst100DC	Peak CPS	Action	11/26/2019 5:08:56 AM
Alpha_036	Alpha Analyst100DC	Peak FWHM	Action	11/26/2019 5:08:57 AM
Alpha_037	Alpha Analyst100DC	ALL	Passed	11/26/2019 5:08:59 AM
Alpha_038	Alpha Analyst100DC	ALL	Passed	11/26/2019 5:09:01 AM
Alpha_039	Alpha Analyst100DC	Peak FWHM	Action	11/26/2019 5:09:02 AM
Alpha_040	Alpha Analyst100DC	Peak FWHM	Action	11/26/2019 5:09:04 AM
Alpha_041	Alpha Analyst100DC	ALL	Passed	11/26/2019 5:09:06 AM
Alpha_042	Alpha Analyst100DC	ALL	Passed	11/26/2019 5:09:07 AM
Alpha_043	Alpha Analyst100DC	ALL	Passed	11/26/2019 5:09:09 AM
Alpha_044	Alpha Analyst100DC	ALL	Not Done	
Alpha_045	Alpha Analyst100DC	ALL	Passed	11/26/2019 5:09:10 AM
Alpha_046	Alpha Analyst100DC	ALL	Passed	11/26/2019 5:09:12 AM
Alpha_047	Alpha Analyst100DC	ALL	Passed	11/26/2019 5:09:14 AM
Alpha_048	Alpha Analyst100DC	ALL	Passed	11/26/2019 5:09:15 AM
Alpha_049	Alpha Analyst100DC	ALL	Passed	11/26/2019 5:09:17 AM
Alpha_050	Alpha Analyst100DC	ALL	Passed	11/26/2019 5:09:19 AM
Alpha_051	Alpha Analyst100DC	ALL	Not Done	
Alpha_052	Alpha Analyst100DC	ALL	Not Done	
Alpha_053	Alpha Analyst100DC	Peak FWHM	Action	11/26/2019 5:09:21 AM
Alpha_054	Alpha Analyst100DC	ALL	Passed	11/22/2019 4:15:13 AM
Alpha_055	Alpha Analyst100DC	ALL	Passed	11/26/2019 5:09:23 AM
Alpha_056	Alpha Analyst100DC	ALL	Passed	11/26/2019 5:09:26 AM
Alpha_057	Alpha Analyst100DC	ALL	Passed	11/26/2019 5:09:28 AM
Alpha_058	Alpha Analyst100DC	ALL	Passed	11/26/2019 5:09:31 AM

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LA58074X

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha 059	Alpha Analyst100DC	ALL	Passed	11/26/2019 5:09:33 AM
Alpha 060	Alpha Analyst100DC	ALL	Passed	11/26/2019 5:09:36 AM

2

APPROVED BY: KP

APPROVAL DATE: 11/26/19

0083



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*****
*****      L I B R A R Y  L I S T I N G  R E P O R T      *****
*****

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Nuclide Library Title: Radium

Nuclide Library Description: Ra-226, Po-218, Rn-222

Nuclide Name	Half-Life (Seconds)	Energy (keV)	Energy Uncert. (keV)	Yield (%)	Yield Uncert. (Abs.+)
PO-218	5.049E+010	6003.000*	0.000	99.9800	0.0000
RN-222	5.049E+010	5490.000*	0.000	99.9200	0.0000
RA-226	5.049E+010	4785.000*	0.000	100.0000	0.0000

* = key line

TOTALS: 3 Nuclides 3 Energy Lines

0084



SECTION IX
ANALYTICAL DATA (RADIUM-228)

0085



Work Order	19-10011
Analysis Code	Ra228
Run	1
Date Received	10/2/2019
Lab Deadline	10/22/2019
Client	SGS North America Inc.
Project	ENV
Report Level	4
Activity Units	pCi
Aliquot Units	I
Matrix	WA
Method	EPA 904.0
Instrument Type	Alpha/Beta GPC
Radiometric Tracer	Ba-133
Radiometric Sol#	Ba-6a
Tracer Act (dpm/g)	437.95
Carrier	Yttrium
Carrier Conc (mg/ml)	27.917

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		10/02/19 00:00	1.0000E+00
02	MBL	BLANK		10/02/19 00:00	1.0000E+00
03	DUP	LT-2 11-16	50	09/26/19 10:35	1.0000E+00
04	TRG	LT-1 11-16	40	09/25/19 13:30	1.0000E+00
05	DO	LT-2 11-16	50	09/26/19 10:35	1.0000E+00
06	TRG	LT-3 11-16	50	09/27/19 09:30	1.0000E+00

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
 ** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

0086



Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep 10 Date/Time	Sep 10 By	Sep 11 Date/Time	Sep 11 By
01	LCS			12/02/19 10:02	DBUSH	11/26/19 09:27	DBUSH	12/02/19 11:08	DBUSH
02	MBL			12/02/19 10:02	DBUSH	11/26/19 09:27	DBUSH	12/02/19 11:08	DBUSH
03	DUP			12/02/19 10:02	DBUSH	11/26/19 09:27	DBUSH	12/02/19 11:08	DBUSH
04	TRG			12/02/19 10:02	DBUSH	11/26/19 09:27	DBUSH	12/02/19 11:08	DBUSH
05	DO			12/02/19 10:02	DBUSH	11/26/19 09:27	DBUSH	12/02/19 11:08	DBUSH
06	TRG			12/02/19 10:02	DBUSH	11/26/19 09:27	DBUSH	12/02/19 11:08	DBUSH

0088

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Run		Client	SGS North America Inc.
		Eberline Analytical Work Order	19-10011
		Analysis Code	Ra228

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	RA-228	LCS	LCS	pCi/l	8.75E+00	6.95E-01	7.32E-01	9.00E+00	97.20	OK		OK	OK
02	RA-228	MBL	BLANK	pCi/l	3.22E-02	3.36E-01	7.19E-01					OK	OK
03	RA-228	DUP	LT-2 11-16	pCi/l	2.88E+00	5.20E-01	8.03E-01				NA	OK	OK
04	RA-228	TRG	LT-1 11-16	pCi/l	3.87E+00	1.30E+01	2.74E+01					INV	
05	RA-228	DO	LT-2 11-16	pCi/l	2.07E+00	4.56E-01	7.47E-01					OK	OK
06	RA-228	TRG	LT-3 11-16	pCi/l	1.51E+00	5.30E-01	9.84E-01					OK	OK

8900

Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
01	LCS	LCS	10/02/19 00:00	1.0000	2.2056	965.9425	532.0000	122.27	1.00	1.00
02	MBL	BLANK	10/02/19 00:00	1.0000	2.1958	961.6506	514.0000	118.66	1.00	1.00
03	DUP	LT-2 11-16	09/26/19 10:35	1.0000	2.1961	961.7820	401.0000	92.56	1.00	1.00
04	TRG	LT-1 11-16	09/25/19 13:30	1.0000	2.1929	960.3806	13.8000	3.19	1.00	1.00
05	DO	LT-2 11-16	09/26/19 10:35	1.0000	2.1871	957.8404	427.0000	98.97	1.00	1.00
06	TRG	LT-3 11-16	09/27/19 09:30	1.0000	2.1843	956.6142	399.0000	92.60	1.00	1.00

0092

Spike and Tracer Worksheet

Internal Work Order				Run				Analysis Code				Date				Technician				Technician Initials				Witness Initials			
19-10011				1				Ra228				12/2/2019 10:01				DBUSH				DB							
LCS & Matrix Spikes																											
Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	LCS Volume Used (g)	MS Volume Used (g)	LCSD Volume Used (g)	MSD Volume Used (g)	LCS Known pCi	MS Added pCi	LCSD Known pCi	MSD Added pCi	Error Estimate	LCS Error Estimate	MS Error Estimate	LCSD Error Estimate	MSD Error Estimate										
Ra-228	Ra-12	46.100	12/2/2019	0.430	0.4335				9.00	0.00	0.459	0.00	0.000	0.00	0.000	0.00	0.000	0.00	0.000								
Tracers																											
fraction	Isotope	Sol #	Activity dpm/g	Solution Date	Volume Used (g)	Approx Addition																					
01	Ba-133	Ba-6a	437.950	12/2/2019	2.2056	2.3100																					
02	Ba-133	Ba-6a	437.950	12/2/2019	2.1958	2.3100																					
03	Ba-133	Ba-6a	437.950	12/2/2019	2.1961	2.3100																					
04	Ba-133	Ba-6a	437.950	12/2/2019	2.1929	2.3100																					
05	Ba-133	Ba-6a	437.950	12/2/2019	2.1871	2.3100																					
06	Ba-133	Ba-6a	437.950	12/2/2019	2.1843	2.3100																					
Balance Printer Tapes																											
Tracer												LCS															
Matrix Spike																											

0093

Version 2.0 08/99

Aliquot Worksheet

Work Order		Run		Analysis Code		Rpt Units		Lab Deadline		Technician	
19-10011		1		Ra228		liters		10/22/2019		JHARVEY	

Lab Fraction	Client ID	Sample Type	Muffle Data Ratio Post/Pre	Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
				No of Dilis	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq
01	LCS	LCS				1.0000E+00	1.0000E+00					
02	BLANK	MBL				1.0000E+00	1.0000E+00					
03	LT-2 11-16	DUP				1.0000E+00	1.0000E+00					
04	LT-1 11-16	TRG				1.0000E+00	1.0000E+00					
05	LT-2 11-16	DO				1.0000E+00	1.0000E+00					
06	LT-3 11-16	TRG				1.0000E+00	1.0000E+00					

Comments

Technician: J Harvey Date: 10/31/19

0094

Gravimetric Worksheet

Work Order	Run	Analysis Code	Gravimetric Carrier	Carrier Conc (mg/ml)	Technician
19-10011	1	Ra228	Yttrium	27.9170	DBUSH

TRetec Fraction	Sample Client ID	Sample Type	Carrier Data		Filter Data			Gravimetric % Recovery
			Carrier Added (ml)		Filter Tare (g)	Filter Final (g)	Filter Net (g)	
01	LCS	LCS	2.0000		0.0838	0.1373	0.0535	95.82
02	BLANK	MBL	2.0000		0.0838	0.1365	0.0527	94.39
03	DUP	DUP	2.0000		0.0836	0.1391	0.0555	99.40
04	LT-1 11-16	TRG	2.0000		0.0845	0.1386	0.0541	96.89
05	LT-2 11-16	DO	2.0500		0.0837	0.1406	0.0569	99.42
06	LT-3 11-16	TRG	2.1000		0.0840	0.1419	0.0579	98.76

0095

Technician: *DBush* Date: 12/2/19

YAD
12/2/19

Detector ID	Sample ID	Alpha	Beta	Count Time	Voltage	TOD
C1	1910011-01	34	926	120	1410	12/2/2019 12:50:41 PM
C2	1910011-02	12	129	120	1410	12/2/2019 12:50:42 PM
C3	1910011-03	18	374	120	1410	12/2/2019 12:50:42 PM
C4	1910011-04	27	183	120	1410	12/2/2019 12:50:42 PM
D3	1910011-05	14	318	120	1410	12/2/2019 12:50:42 PM
D4	1910011-06	26	328	120	1410	12/2/2019 12:50:42 PM

0096



GPC Detector Report
(ALL Backgrounds)

LP
12/2/19

Detector	Alpha/Beta	Calibration Date	Count Date	Bkg CPM	PFW	LCL	Mean	UCL
LB4110A - A1	Alpha	11/2/2017	12/2/2019	1.00E-01	P	-4.19E-02	1.11E-01	2.64E-01
LB4110A - A2	Alpha	11/2/2017	12/2/2019	6.67E-02	P	-3.39E-02	1.21E-01	2.75E-01
LB4110A - A3	Alpha	11/2/2017	12/2/2019	1.00E-01	P	-3.64E-02	1.19E-01	2.74E-01
LB4110A - A4	Alpha	11/2/2017	12/2/2019	1.67E-02	P	-3.96E-02	1.21E-01	2.81E-01
LB4110A - B1	Alpha	11/2/2017	12/2/2019	3.33E-02	P	-3.92E-02	1.41E-01	3.21E-01
LB4110A - B2	Alpha	11/2/2017	12/2/2019	1.50E-01	P	-2.81E-02	1.60E-01	3.49E-01
LB4110A - B3	Alpha	11/2/2017	12/2/2019	8.33E-02	P	-4.85E-02	9.64E-02	2.41E-01
LB4110A - B4	Alpha	11/2/2017	12/2/2019	1.00E-01	P	-4.28E-02	9.73E-02	2.37E-01
LB4110A - C1	Alpha	11/2/2017	12/2/2019	6.67E-02	P	-5.35E-02	9.66E-02	2.47E-01
LB4110A - C2	Alpha	11/2/2017	12/2/2019	8.33E-02	P	-1.44E-01	1.02E-01	3.48E-01
LB4110A - C3	Alpha	11/2/2017	12/2/2019	5.00E-02	P	-5.17E-02	7.06E-02	1.93E-01
LB4110A - C4	Alpha	11/2/2017	12/2/2019	1.33E-01	P	-5.52E-02	1.22E-01	2.99E-01
LB4110A - D1	Alpha	11/2/2017	12/2/2019	2.17E-01	P	-3.87E-02	1.59E-01	3.57E-01
LB4110A - D2	Alpha	11/2/2017	12/2/2019	5.00E-02	P	-4.07E-02	1.07E-01	2.54E-01
LB4110A - D3	Alpha	11/2/2017	12/2/2019	6.67E-02	P	-5.09E-02	1.19E-01	2.90E-01
LB4110A - D4	Alpha	11/2/2017	12/2/2019	1.17E-01	P	-7.01E-03	1.65E-01	3.37E-01
LB4110A - E1	Alpha	11/2/2017	3/23/2018	0.00E+00	P	-4.29E-02	1.10E-01	2.62E-01
LB4110A - E2	Alpha	11/2/2017	3/23/2018	0.00E+00	P	-3.09E-02	6.37E-02	1.58E-01
LB4110A - E3	Alpha	11/2/2017	3/23/2018	0.00E+00	P	-8.81E-02	9.11E-02	2.70E-01
LB4110A - E4	Alpha	11/2/2017	3/23/2018	0.00E+00	P	-4.55E-02	7.04E-02	1.86E-01
LB4110A - F1	Alpha	11/2/2017	12/2/2019	6.67E-02	P	-4.55E-02	7.73E-02	2.00E-01
LB4110A - F2	Alpha	11/2/2017	12/2/2019	3.33E-02	P	-4.63E-02	5.33E-02	1.53E-01
LB4110A - F3	Alpha	11/2/2017	12/2/2019	6.67E-02	P	-4.82E-02	6.93E-02	1.87E-01
LB4110A - F4	Alpha	11/2/2017	12/2/2019	8.33E-02	P	-4.13E-02	6.71E-02	1.75E-01
LB4110A - G1	Alpha	11/2/2017	12/2/2019	1.00E-01	P	-4.49E-02	6.88E-02	1.83E-01
LB4110A - G2	Alpha	11/2/2017	12/2/2019	6.67E-02	P	-4.05E-02	8.18E-02	2.04E-01
LB4110A - G3	Alpha	11/2/2017	12/2/2019	1.00E-01	P	-4.23E-02	8.55E-02	2.13E-01
LB4110A - G4	Alpha	11/2/2017	12/2/2019	3.33E-02	P	-4.02E-02	8.58E-02	2.12E-01

0097



GPC Detector Report
(ALL Backgrounds)

LP
12/2/19

Detector	Alpha/Beta	Calibration Date	Count Date	Bkg CPM	PFW	LCL	Mean	UCL
LB4110A - A1	Beta	11/2/2017	12/2/2019	1.02E+00	P	8.77E-01	1.36E+00	1.85E+00
LB4110A - A2	Beta	11/2/2017	12/2/2019	1.42E+00	P	9.96E-01	1.57E+00	2.15E+00
LB4110A - A3	Beta	11/2/2017	12/2/2019	1.43E+00	P	9.98E-01	1.47E+00	1.94E+00
LB4110A - A4	Beta	11/2/2017	12/2/2019	1.55E+00	P	9.76E-01	1.44E+00	1.91E+00
LB4110A - B1	Beta	11/2/2017	12/2/2019	1.57E+00	P	1.02E+00	1.50E+00	1.99E+00
LB4110A - B2	Beta	11/2/2017	12/2/2019	1.25E+00	P	7.21E-01	1.44E+00	2.17E+00
LB4110A - B3	Beta	11/2/2017	12/2/2019	1.42E+00	P	9.21E-01	1.36E+00	1.81E+00
LB4110A - B4	Beta	11/2/2017	12/2/2019	1.12E+00	P	7.89E-01	1.33E+00	1.87E+00
LB4110A - C1	Beta	11/2/2017	12/2/2019	1.05E+00	P	-1.62E+00	1.67E+00	4.96E+00
LB4110A - C2	Beta	11/2/2017	12/2/2019	1.05E+00	P	-5.01E+00	2.05E+00	9.11E+00
LB4110A - C3	Beta	11/2/2017	12/2/2019	1.08E+00	P	3.13E-01	1.72E+00	3.12E+00
LB4110A - C4	Beta	11/2/2017	12/2/2019	1.43E+00	P	8.22E-01	1.27E+00	1.71E+00
LB4110A - D1	Beta	11/2/2017	12/2/2019	1.00E+00	P	1.06E-01	1.47E+00	2.83E+00
LB4110A - D2	Beta	11/2/2017	12/2/2019	3.90E+00	F	-2.11E+01	2.69E+00	2.64E+01
LB4110A - D3	Beta	11/2/2017	12/2/2019	1.08E+00	P	-2.19E+00	1.75E+00	5.69E+00
LB4110A - D4	Beta	11/2/2017	12/2/2019	1.67E+00	P	9.60E-01	1.46E+00	1.97E+00
LB4110A - E1	Beta	11/2/2017	3/23/2018	3.33E-02	P	7.66E-01	1.32E+00	1.88E+00
LB4110A - E2	Beta	11/2/2017	3/23/2018	1.67E-02	P	5.45E-01	9.58E-01	1.37E+00
LB4110A - E3	Beta	11/2/2017	3/23/2018	6.67E-02	P	4.98E-01	1.20E+00	1.91E+00
LB4110A - E4	Beta	11/2/2017	3/23/2018	0.00E+00	P	5.67E-01	1.04E+00	1.50E+00
LB4110A - F1	Beta	11/2/2017	12/2/2019	1.35E+00	P	7.76E-01	1.29E+00	1.80E+00
LB4110A - F2	Beta	11/2/2017	12/2/2019	7.83E-01	P	4.19E-01	9.21E-01	1.42E+00
LB4110A - F3	Beta	11/2/2017	12/2/2019	9.67E-01	P	3.72E-01	1.17E+00	1.97E+00
LB4110A - F4	Beta	11/2/2017	12/2/2019	1.08E+00	P	1.30E-01	1.20E+00	2.27E+00
LB4110A - G1	Beta	11/2/2017	12/2/2019	1.32E+00	P	5.94E-01	1.23E+00	1.86E+00
LB4110A - G2	Beta	11/2/2017	12/2/2019	1.67E+00	P	1.05E+00	1.71E+00	2.38E+00
LB4110A - G3	Beta	11/2/2017	12/2/2019	1.13E+00	P	6.41E-01	1.34E+00	2.03E+00
LB4110A - G4	Beta	11/2/2017	12/2/2019	1.17E+00	P	-1.24E+00	1.41E+00	4.06E+00

0098



GPC Detector Report
(ALL Efficiencies)

KP
12/2/19

Detector	Alpha/Beta	Calibration Date	Count Date	Eff	PFW	LCL	Mean	UCL
LB4110A - A1	Alpha	11/2/2017	12/2/2019	0.2320	P	0.2132	0.2279	0.2427
LB4110A - A2	Alpha	11/2/2017	12/2/2019	0.2018	P	0.1887	0.2076	0.2264
LB4110A - A3	Alpha	11/2/2017	12/2/2019	0.1944	P	0.1830	0.1983	0.2136
LB4110A - A4	Alpha	11/2/2017	12/2/2019	0.2278	P	0.2061	0.2257	0.2454
LB4110A - B1	Alpha	11/2/2017	12/2/2019	0.2157	P	0.2031	0.2222	0.2413
LB4110A - B2	Alpha	11/2/2017	12/2/2019	0.1982	P	0.1863	0.1997	0.2131
LB4110A - B3	Alpha	11/2/2017	12/2/2019	0.2423	P	0.2207	0.2349	0.2491
LB4110A - B4	Alpha	11/2/2017	12/2/2019	0.2315	P	0.2077	0.2236	0.2395
LB4110A - C1	Alpha	11/2/2017	12/2/2019	0.2023	P	0.1946	0.2066	0.2185
LB4110A - C2	Alpha	11/2/2017	12/2/2019	0.2059	P	0.0042	0.2189	0.4336
LB4110A - C3	Alpha	11/2/2017	12/2/2019	0.2268	P	0.2211	0.2387	0.2563
LB4110A - C4	Alpha	11/2/2017	12/2/2019	0.2256	P	0.2013	0.2161	0.2308
LB4110A - D1	Alpha	11/2/2017	12/2/2019	0.1992	P	0.1927	0.2179	0.2432
LB4110A - D2	Alpha	11/2/2017	12/2/2019	0.2317	P	0.2138	0.2422	0.2706
LB4110A - D3	Alpha	11/2/2017	12/2/2019	0.2434	P	0.2309	0.2491	0.2674
LB4110A - D4	Alpha	11/2/2017	12/2/2019	0.1896	P	0.1702	0.1922	0.2141
LB4110A - E1	Alpha	11/2/2017	3/23/2018	0.0000	F	0.1687	0.2258	0.2830
LB4110A - E2	Alpha	11/2/2017	3/23/2018	0.0000	F	0.1518	0.2051	0.2584
LB4110A - E3	Alpha	11/2/2017	3/23/2018	0.0000	F	0.1547	0.2075	0.2603
LB4110A - E4	Alpha	11/2/2017	3/23/2018	0.0000	F	0.1747	0.2355	0.2963
LB4110A - F1	Alpha	11/2/2017	12/2/2019	0.2182	P	0.1680	0.2132	0.2584
LB4110A - F2	Alpha	11/2/2017	12/2/2019	0.1786	P	0.1497	0.1814	0.2131
LB4110A - F3	Alpha	11/2/2017	12/2/2019	0.2205	P	0.1841	0.2285	0.2729
LB4110A - F4	Alpha	11/2/2017	12/2/2019	0.2145	P	0.1720	0.2121	0.2522
LB4110A - G1	Alpha	11/2/2017	12/2/2019	0.1851	P	0.1747	0.1925	0.2104
LB4110A - G2	Alpha	11/2/2017	12/2/2019	0.1822	P	0.1716	0.1943	0.2169
LB4110A - G3	Alpha	11/2/2017	12/2/2019	0.2142	P	0.2022	0.2192	0.2363
LB4110A - G4	Alpha	11/2/2017	12/2/2019	0.1854	P	0.1670	0.1902	0.2133

0099



GPC Detector Report
(ALL Efficiencies)

KP
12/2/19

Detector	Alpha/Beta	Calibration Date	Count Date	Eff	PFW	LCL	Mean	UCL
LB4110A - A1	Beta	11/2/2017	12/2/2019	0.5601	P	0.5069	0.5472	0.5875
LB4110A - A2	Beta	11/2/2017	12/2/2019	0.4353	P	0.3991	0.4549	0.5108
LB4110A - A3	Beta	11/2/2017	12/2/2019	0.4730	P	0.4373	0.4779	0.5185
LB4110A - A4	Beta	11/2/2017	12/2/2019	0.5577	P	0.5026	0.5447	0.5868
LB4110A - B1	Beta	11/2/2017	12/2/2019	0.5016	P	0.4820	0.5354	0.5889
LB4110A - B2	Beta	11/2/2017	12/2/2019	0.4949	P	0.4682	0.4983	0.5284
LB4110A - B3	Beta	11/2/2017	12/2/2019	0.5968	P	0.5536	0.5844	0.6151
LB4110A - B4	Beta	11/2/2017	12/2/2019	0.5545	P	0.5119	0.5497	0.5876
LB4110A - C1	Beta	11/2/2017	12/2/2019	0.4778	P	0.4496	0.4789	0.5082
LB4110A - C2	Beta	11/2/2017	12/2/2019	0.4958	P	0.4748	0.5152	0.5556
LB4110A - C3	Beta	11/2/2017	12/2/2019	0.5795	P	0.5454	0.5904	0.6355
LB4110A - C4	Beta	11/2/2017	12/2/2019	0.5280	P	0.4905	0.5243	0.5581
LB4110A - D1	Beta	11/2/2017	12/2/2019	0.5737	F	0.5753	0.6315	0.6878
LB4110A - D2	Beta	11/2/2017	12/2/2019	0.5827	P	0.5218	0.6143	0.7067
LB4110A - D3	Beta	11/2/2017	12/2/2019	0.6035	P	0.5812	0.6385	0.6957
LB4110A - D4	Beta	11/2/2017	12/2/2019	0.4880	P	0.4498	0.4962	0.5427
LB4110A - E1	Beta	11/2/2017	3/23/2018	0.0436	F	0.4162	0.5409	0.6655
LB4110A - E2	Beta	11/2/2017	3/23/2018	0.0428	F	0.3730	0.4913	0.6097
LB4110A - E3	Beta	11/2/2017	3/23/2018	0.0551	F	0.3852	0.4994	0.6137
LB4110A - E4	Beta	11/2/2017	3/23/2018	0.0569	F	0.4534	0.5890	0.7247
LB4110A - F1	Beta	11/2/2017	12/2/2019	0.5421	P	0.4547	0.5327	0.6107
LB4110A - F2	Beta	11/2/2017	12/2/2019	0.4497	P	0.4153	0.4554	0.4955
LB4110A - F3	Beta	11/2/2017	12/2/2019	0.5653	P	0.4877	0.5895	0.6913
LB4110A - F4	Beta	11/2/2017	12/2/2019	0.5415	P	0.4600	0.5390	0.6181
LB4110A - G1	Beta	11/2/2017	12/2/2019	0.4419	P	0.4242	0.4518	0.4795
LB4110A - G2	Beta	11/2/2017	12/2/2019	0.4397	P	0.4061	0.4644	0.5228
LB4110A - G3	Beta	11/2/2017	12/2/2019	0.5142	P	0.4847	0.5285	0.5724
LB4110A - G4	Beta	11/2/2017	12/2/2019	0.4360	P	0.3985	0.4606	0.5228

0100



SECTION X
BARIUM-133 ANALYTICAL TRACER DATA

0101



JCP
11/26/19

2

Analysis Report for 1910011-01
SPIKE

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1910011-01
 Sample Description : SPIKE
 Sample Type : RA RECOVERY

 Sample Size : 1.000E+00 units
 Facility : Countroom

 Sample Taken On : 11/26/2019 9:23:08AM
 Acquisition Started : 11/26/2019 10:15:20AM

 Procedure : BAFIL
 Operator : Administrator
 Detector Name : GE1
 Geometry : BAFIL
 Live Time : 900.0 seconds
 Real Time : 900.3 seconds

 Dead Time : 0.03 %

 Peak Locate Threshold : 2.50
 Peak Locate Range (in channels) : 1 - 4096
 Peak Area Range (in channels) : 18 - 4096
 Identification Energy Tolerance : 2.500 keV

 Energy Calibration Used Done On : 10/12/2019
 Efficiency Calibration Used Done On : 10/12/2019
 Efficiency Calibration Description :

 Sample Number : 92026

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2019 10:30:23AM
 Peak Analysis From Channel : 1
 Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
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0102

Analysis Report for 1910011-01

SPIKE



	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	1	30.58	25 -	39	31.06	2.45E+03	109.57	3.67E+02	2.34
m	2	35.13	25 -	39	35.61	5.69E+02	67.42	3.22E+02	1.91
	3	52.56	49 -	57	53.03	7.63E+01	40.69	2.09E+02	2.25
M	4	61.89	58 -	71	62.35	2.38E+02	52.00	2.71E+02	2.64
m	5	65.81	58 -	71	66.26	1.01E+02	46.92	2.64E+02	2.47
	6	81.07	75 -	88	81.51	1.01E+03	88.09	4.13E+02	2.25
M	7	111.78	108 -	122	112.20	1.90E+02	43.28	1.95E+02	2.25
m	8	115.38	108 -	122	115.80	4.97E+01	42.87	1.73E+02	2.26
	9	160.16	157 -	162	160.54	3.08E+01	27.93	1.31E+02	1.25
M	10	276.17	271 -	282	276.46	6.99E+01	24.17	5.14E+01	2.64
m	11	279.93	271 -	282	280.22	1.27E+01	15.14	3.45E+01	2.40
	12	302.77	299 -	307	303.04	1.72E+02	43.85	1.91E+02	1.63
M	13	333.69	329 -	345	333.93	6.07E+01	22.89	4.73E+01	2.69
m	14	338.79	329 -	345	339.03	2.87E+01	25.83	4.66E+01	3.26
	15	356.01	350 -	361	356.24	6.90E+02	56.50	5.42E+01	2.06
	16	365.30	362 -	371	365.52	4.00E+01	20.98	4.00E+01	5.90
M	17	384.17	380 -	396	384.38	1.48E+02	33.65	2.85E+01	2.82
m	18	387.11	380 -	396	387.32	1.66E+02	35.47	1.75E+01	2.07
m	19	390.78	380 -	396	390.98	6.45E+01	35.46	2.52E+01	3.63
M	20	415.04	410 -	423	415.23	3.16E+01	17.39	1.62E+01	2.50
m	21	418.04	410 -	423	418.23	2.30E+01	19.45	3.61E+01	2.50
	22	437.18	432 -	442	437.34	8.32E+01	25.65	4.15E+01	2.13
	23	451.78	449 -	454	451.94	8.00E+00	7.87	6.00E+00	2.05
M	24	464.62	463 -	472	464.77	7.74E+00	6.26	3.75E+00	2.30
m	25	467.85	463 -	472	468.00	2.79E+01	14.19	1.92E+01	2.30
	26	489.72	486 -	493	489.84	7.09E+00	8.72	7.82E+00	1.79
	27	771.08	768 -	774	771.00	5.50E+00	7.78	7.00E+00	2.59
	28	1014.06	1011 -	1016	1013.80	5.00E+00	4.47	0.00E+00	2.41

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/26/2019 10:30:23AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000091321.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M 1	30.58	2.45E+03	109.57			2.45E+03	1.10E+02

0103



Analysis Report for 1910011-01

SPIKE

2

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
m	2	35.13	5.69E+02	67.42			5.69E+02	6.74E+01
	3	52.56	7.63E+01	40.69			7.63E+01	4.07E+01
M	4	61.89	2.38E+02	52.00	2.44E+01	2.57E+00	2.14E+02	5.21E+01
m	5	65.81	1.01E+02	46.92	2.44E+01	2.57E+00	7.70E+01	4.70E+01
	6	81.07	1.01E+03	88.09			1.01E+03	8.81E+01
M	7	111.78	1.90E+02	43.28			1.90E+02	4.33E+01
m	8	115.38	4.97E+01	42.87			4.97E+01	4.29E+01
	9	160.16	3.08E+01	27.93			3.08E+01	2.79E+01
M	10	276.17	6.99E+01	24.17			6.99E+01	2.42E+01
m	11	279.93	1.27E+01	15.14			1.27E+01	1.51E+01
	12	302.77	1.72E+02	43.85			1.72E+02	4.38E+01
M	13	333.69	6.07E+01	22.89			6.07E+01	2.29E+01
m	14	338.79	2.87E+01	25.83	6.72E-01	1.25E+00	2.80E+01	2.59E+01
	15	356.01	6.90E+02	56.50			6.90E+02	5.65E+01
	16	365.30	4.00E+01	20.98			4.00E+01	2.10E+01
M	17	384.17	1.48E+02	33.65			1.48E+02	3.36E+01
m	18	387.11	1.66E+02	35.47			1.66E+02	3.55E+01
m	19	390.78	6.45E+01	35.46			6.45E+01	3.55E+01
M	20	415.04	3.16E+01	17.39			3.16E+01	1.74E+01
m	21	418.04	2.30E+01	19.45			2.30E+01	1.94E+01
	22	437.18	8.32E+01	25.65			8.32E+01	2.57E+01
	23	451.78	8.00E+00	7.87			8.00E+00	7.87E+00
M	24	464.62	7.74E+00	6.26			7.74E+00	6.26E+00
m	25	467.85	2.79E+01	14.19			2.79E+01	1.42E+01
	26	489.72	7.09E+00	8.72			7.09E+00	8.72E+00
	27	771.08	5.50E+00	7.78			5.50E+00	7.78E+00
	28	1014.06	5.00E+00	4.47			5.00E+00	4.47E+00

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/units)	Activity Uncertainty
SN-113	0.93	255.12	1.93		
		391.69 *	61.90	5.01E+01	2.80E+01

0104

Analysis Report for 1910011-01

SPIKE

2

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/units)	Activity Uncertainty
I-129	0.87	29.78 *	57.00	6.96E+01	3.18E+00
		33.60 *	13.20	1.06E+02	1.27E+01
		39.58	7.52		
BA-133	1.00	81.00 *	34.06	5.21E+02	6.91E+01
		302.84 *	18.33	4.86E+02	1.84E+02
		356.01 *	62.05	5.54E+02	7.77E+01
HG-203	0.98	279.19 *	77.30	8.54E+00	1.05E+01
TH-234	0.95	63.29 *	3.80	5.84E+02	1.46E+02
AM-241	0.86	59.54 *	35.90	6.18E+01	1.55E+01

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 2.500 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/units)	Wt mean Activity Uncertainty	Comments
SN-113	0.933	5.01E+01	2.80E+01	
I-129	0.870	7.18E+01	3.08E+00	
BA-133	1.000	5.32E+02	4.97E+01	
HG-203	0.986	8.54E+00	1.05E+01	
? TH-234	0.951	5.84E+02	1.46E+02	
X NP-237	0.668			
? AM-241	0.868	6.18E+01	1.55E+01	

? = nuclide is part of an undetermined solution

X = nuclide rejected by the interference analysis

@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

0105

Analysis Report for 1910011-01
SPIKE

2

UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2019 10:30:23AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	3	52.56	8.47606E-02	26.67	
m	5	65.81	8.55340E-02	30.52	Sum
M	7	111.78	2.11592E-01	11.36	Sum
m	8	115.38	5.51783E-02	43.16	Sum
	9	160.16	3.41667E-02	45.41	Sum
M	10	276.17	7.76410E-02	17.29	
M	13	333.69	6.74463E-02	18.86	Sum
m	14	338.79	3.11290E-02	46.15	Sum
	16	365.30	4.44444E-02	26.22	Sum
M	17	384.17	1.64048E-01	11.39	Sum
m	18	387.11	1.84123E-01	10.70	Sum
M	20	415.04	3.51145E-02	27.51	
m	21	418.04	2.55726E-02	42.25	Sum
	22	437.18	9.24893E-02	15.41	Sum
	23	451.78	8.88889E-03	49.21	Sum
M	24	464.62	8.60423E-03	40.45	
m	25	467.85	3.09892E-02	25.43	
	26	489.72	7.87879E-03	61.47	
	27	771.08	6.11111E-03	70.71	
	28	1014.06	5.55556E-03	44.72	

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

0106



Analysis Report for 1910011-01
SPIKE

2

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/units)	Nuclide MDA (pCi/units)	Activity (pCi/units)	Dec. Level (pCi/units)
FE-55	5.89	24.50	1.49E-04	1.49E-04	0.00E+00	0.00E+00
CO-57	122.06	85.51	1.62E+01	1.62E+01	2.53E+00	7.58E+00
	136.48	10.60	1.50E+02		-5.68E+01	7.04E+01
NI-59	6.92	29.80	2.91E-04	2.91E-04	0.00E+00	0.00E+00
MO-93	16.59	52.90	1.39E-01	1.39E-01	-5.22E-02	6.47E-02
	18.60	10.00	1.85E+00		3.50E+00	8.84E-01
NB-93M	16.57	9.43	7.74E-01	7.74E-01	-2.91E-01	3.61E-01
CD-109	88.03	3.72	2.91E+02	2.91E+02	-2.09E+02	1.38E+02
+ SN-113	255.12	1.93	8.20E+02	3.02E+01	-2.25E+02	3.74E+02
	391.69	* 61.90	3.02E+01		5.01E+01	1.40E+01
SN-119M	23.87	16.10	3.38E+00	3.38E+00	1.97E+00	1.63E+00
	25.10	22.70	3.39E+00		-7.56E-01	1.65E+00
+ I-129	29.78	* 57.00	3.88E+00	3.88E+00	6.96E+01	1.90E+00
	33.60	* 13.20	2.54E+01		1.06E+02	1.24E+01
	39.58	7.52	3.44E+01		1.32E+01	1.66E+01
+ BA-133	81.00	* 34.06	5.31E+01	2.97E+01	5.21E+02	2.58E+01
	302.84	* 18.33	1.71E+02		4.86E+02	8.15E+01
	356.01	* 62.05	2.97E+01		5.54E+02	1.37E+01
CE-139	165.85	80.35	2.35E+01	2.35E+01	-1.45E+01	1.10E+01
CE-144	133.54	10.80	1.41E+02	1.41E+02	3.29E+01	6.59E+01
+ HG-203	279.19	* 77.30	2.75E+01	2.75E+01	8.54E+00	1.28E+01
PB-210	46.50	4.25	5.89E+01	5.89E+01	-1.52E+01	2.78E+01
TH-231	25.64	14.70	5.63E+00	5.63E+00	-1.26E+00	2.73E+00
	84.21	6.40	3.44E+02		9.24E+02	1.68E+02
PA-234M	9.89	89.00	5.79E-04	5.79E-04	0.00E+00	0.00E+00
	21.72	64.90	6.02E-01		9.28E-01	2.91E-01
	37.93	23.75	1.64E+01		-5.43E-01	8.00E+00
	131.42	20.40	7.08E+01		1.19E+00	3.31E+01
+ TH-234	63.29	* 3.80	2.96E+02	2.96E+02	5.84E+02	1.44E+02
NP-237	29.37	* 14.00	1.58E+01	1.58E+01	2.83E+02	7.75E+00
	86.50	12.60	9.20E+01		-2.43E+01	4.39E+01
U-237	97.08	16.30	6.93E+01	4.25E+01	-5.06E+01	3.27E+01
	101.07	26.30	4.25E+01		-1.95E+01	2.00E+01
	114.00	12.30	2.06E+02		5.22E+02	9.99E+01
	208.01	22.00	9.88E+01		2.40E+00	4.64E+01
+ AM-241	59.54	* 35.90	3.13E+01	3.13E+01	6.18E+01	1.53E+01
AM-243	74.67	66.00	1.28E+01	1.28E+01	1.21E+00	6.08E+00

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction

0107

SGS

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LA58074X

August Levert_BP Plan_000800

LP
11/26/19

2

Analysis Report for 1910011-02
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GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1910011-02
Sample Description	: BLANK
Sample Type	: RA RECOVERY
Sample Size	: 1.000E+00 units
Facility	: Countroom
Sample Taken On	: 11/26/2019 9:23:16AM
Acquisition Started	: 11/26/2019 10:16:58AM
Procedure	: BAFIL
Operator	: Administrator
Detector Name	: GE2
Geometry	: BAFIL
Live Time	: 900.0 seconds
Real Time	: 900.2 seconds
Dead Time	: 0.02 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 29 - 4096
Identification Energy Tolerance	: 2.500 keV
Energy Calibration Used Done On	: 10/19/2019
Efficiency Calibration Used Done On	: 9/14/2019
Efficiency Calibration Description	:
Sample Number	: 92027

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2019 10:32:01AM
 Peak Analysis From Channel : 1
 Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
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Analysis Report for 1910011-02

BLANK

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	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	35.85	36 -	40	36.18	2.82E+02	69.60	2.74E+02	1.63
	2	52.85	50 -	56	53.16	5.21E+01	33.40	1.66E+02	1.07
M	3	62.12	58 -	69	62.43	1.60E+02	38.03	1.46E+02	1.91
m	4	66.11	58 -	69	66.41	8.46E+01	34.03	1.66E+02	1.93
	5	81.33	77 -	86	81.61	9.18E+02	73.61	2.47E+02	1.64
	6	112.01	108 -	116	112.26	1.15E+02	47.70	2.81E+02	1.90
	7	161.02	157 -	166	161.21	5.74E+01	34.81	1.41E+02	2.91
	8	276.37	272 -	280	276.44	7.42E+01	23.02	3.55E+01	1.57
	9	295.73	291 -	300	295.77	2.28E+01	14.97	1.64E+01	5.27
M	10	303.18	300 -	310	303.22	1.64E+02	26.44	1.18E+01	1.53
m	11	307.68	300 -	310	307.72	2.25E+01	14.04	2.26E+01	1.92
	12	333.61	330 -	337	333.62	3.44E+01	26.76	9.72E+01	1.42
	13	356.42	351 -	361	356.40	5.82E+02	51.96	4.91E+01	1.91
M	14	381.04	380 -	394	381.00	7.24E+00	6.87	8.94E+00	1.51
m	15	384.20	380 -	394	384.15	9.65E+01	23.14	1.37E+01	1.67
m	16	387.14	380 -	394	387.10	1.21E+02	26.67	1.16E+01	1.67
m	17	390.90	380 -	394	390.85	2.39E+01	17.76	1.04E+01	1.68
M	18	414.83	411 -	420	414.75	2.58E+01	15.54	2.26E+01	2.26
m	19	418.53	411 -	420	418.45	9.31E+00	8.94	8.63E+00	1.86
	20	437.42	434 -	441	437.32	6.37E+01	19.39	2.07E+01	1.59
	21	511.33	507 -	514	511.16	2.80E+01	12.65	8.00E+00	1.96
	22	686.36	683 -	688	686.02	5.57E+00	6.08	2.86E+00	2.68
	23	707.46	702 -	710	707.10	8.64E+00	8.02	4.73E+00	3.11
	24	827.76	824 -	830	827.29	5.21E+00	6.34	3.57E+00	1.95

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/26/2019 10:32:01AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000091322.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	35.85	2.82E+02	69.60	1.30E+01	1.13E+00	2.69E+02	6.96E+01
	2	52.85	5.21E+01	33.40			5.21E+01	3.34E+01
M	3	62.12	1.60E+02	38.03	2.70E+00	1.55E+00	1.57E+02	3.81E+01
m	4	66.11	8.46E+01	34.03	9.95E+00	4.57E+00	7.47E+01	3.43E+01
	5	81.33	9.18E+02	73.61			9.18E+02	7.36E+01

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LA58074X

August Levert_BP Plan_000802

Analysis Report for 1910011-02

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Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
6	112.01	1.15E+02	47.70	7.99E-01	1.93E+00	1.14E+02	4.77E+01
7	161.02	5.74E+01	34.81			5.74E+01	3.48E+01
8	276.37	7.42E+01	23.02			7.42E+01	2.30E+01
9	295.73	2.28E+01	14.97	1.26E+00	1.39E+00	2.16E+01	1.50E+01
M 10	303.18	1.64E+02	26.44			1.64E+02	2.64E+01
m 11	307.68	2.25E+01	14.04			2.25E+01	1.40E+01
12	333.61	3.44E+01	26.76			3.44E+01	2.68E+01
13	356.42	5.82E+02	51.96			5.82E+02	5.20E+01
M 14	381.04	7.24E+00	6.87			7.24E+00	6.87E+00
m 15	384.20	9.65E+01	23.14			9.65E+01	2.31E+01
m 16	387.14	1.21E+02	26.67			1.21E+02	2.67E+01
m 17	390.90	2.39E+01	17.76			2.39E+01	1.78E+01
M 18	414.83	2.58E+01	15.54			2.58E+01	1.55E+01
m 19	418.53	9.31E+00	8.94			9.31E+00	8.94E+00
20	437.42	6.37E+01	19.39			6.37E+01	1.94E+01
21	511.33	2.80E+01	12.65	1.83E+01	1.28E+00	9.68E+00	1.27E+01
22	686.36	5.57E+00	6.08			5.57E+00	6.08E+00
23	707.46	8.64E+00	8.02			8.64E+00	8.02E+00
24	827.76	5.21E+00	6.34			5.21E+00	6.34E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/units)	Activity Uncertainty
SN-113	0.95	255.12	1.93		
		391.69 *	61.90	1.58E+01	1.18E+01
BA-133	0.99	81.00 *	34.06	5.65E+02	7.37E+01
		302.84 *	18.33	5.82E+02	2.00E+02
		356.01 *	62.05	4.65E+02	6.63E+01
PA-234M	0.98	9.89	89.00		
		21.72	64.90		
		37.93 *	23.75	5.80E+00	1.50E+00
		131.42	20.40		
TH-234	0.96	63.29 *	3.80	3.30E+02	8.10E+01

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Analysis Report for 1910011-02
BLANK

2

* = Energy line found in the spectrum.
- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 2,500 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2,000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/units)	Wt mean Activity Uncertainty	Comments
SN-113	0.950	1.58E+01	1.18E+01	
BA-133	0.996	5.14E+02	4.79E+01	
PA-234M	0.987	5.80E+00	1.50E+00	
TH-234	0.966	3.30E+02	8.10E+01	

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2,000sigma

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LA58074X

August Levert_BP Plan_000804

Analysis Report for 1910011-02
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UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2019 10:32:01AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	2	52.85	5.78889E-02		
m	4	66.11	8.29844E-02		
	6	112.01	1.26567E-01	Tol.	U-237
	7	161.02	6.38108E-02	Sum	
	8	276.37	8.24879E-02		
	9	295.73	2.39450E-02		
m	11	307.68	2.50317E-02		
	12	333.61	3.82195E-02		
M	14	381.04	8.04005E-03		
m	15	384.20	1.07210E-01	Sum	
m	16	387.14	1.34683E-01		
M	18	414.83	2.87205E-02		
m	19	418.53	1.03444E-02	Sum	
	20	437.42	7.07357E-02	Sum	
	21	511.33	1.07588E-02		
	22	686.36	6.19048E-03		
	23	707.46	9.59596E-03		
	24	827.76	5.79365E-03		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.00sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

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Analysis Report for 1910011-02

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/units)	Nuclide MDA (pCi/units)	Activity (pCi/units)	Dec. Level (pCi/units)
FE-55	5.89	24.50	4.58E-09	4.58E-09	0.00E+00	0.00E+00
CO-57	122.06	85.51	2.27E+01	2.27E+01	-1.95E+01	1.05E+01
	136.48	10.60	2.26E+02		1.44E+02	1.04E+02
NI-59	6.92	29.80	2.55E-08	2.55E-08	0.00E+00	0.00E+00
MO-93	16.59	52.90	9.74E-05	9.74E-05	0.00E+00	0.00E+00
	18.60	10.00	1.34E-03		0.00E+00	0.00E+00
NB-93M	16.57	9.43	5.41E-04	5.41E-04	0.00E+00	0.00E+00
CD-109	88.03	3.72	2.83E+02	2.83E+02	1.27E+02	1.32E+02
+ SN-113	255.12	1.93	1.10E+03	2.06E+01	-2.19E+02	4.93E+02
	391.69	* 61.90	2.06E+01		1.58E+01	9.42E+00
SN-119M	23.87	16.10	5.80E-03	5.80E-03	0.00E+00	0.00E+00
	25.10	22.70	5.92E-03		0.00E+00	0.00E+00
I-129	29.78	57.00	4.31E-01	4.31E-01	-1.02E+00	2.12E-01
	33.60	13.20	5.33E+00		5.27E-01	2.63E+00
	39.58	7.52	3.97E+00		-1.17E+00	1.82E+00
+ BA-133	81.00	* 34.06	4.40E+01	2.75E+01	5.65E+02	2.11E+01
	302.84	* 18.33	8.68E+01		5.82E+02	3.86E+01
	356.01	* 62.05	2.75E+01		4.65E+02	1.26E+01
CE-139	165.85	80.35	3.20E+01	3.20E+01	-1.59E+00	1.47E+01
CE-144	133.54	10.80	2.07E+02	2.07E+02	-4.79E+01	9.54E+01
HG-203	279.19	77.30	3.42E+01	3.42E+01	3.72E+01	1.58E+01
PB-210	46.50	4.25	1.82E+01	1.82E+01	-1.30E+00	8.44E+00
TH-231	25.64	14.70	1.06E-02	1.06E-02	0.00E+00	0.00E+00
	84.21	6.40	4.32E+02		1.75E+03	2.11E+02
+ PA-234M	9.89	89.00	4.30E-07	4.30E-07	0.00E+00	0.00E+00
	21.72	64.90	7.08E-04		0.00E+00	0.00E+00
	37.93	* 23.75	2.24E+00		5.80E+00	1.09E+00
	131.42	20.40	1.15E+02		1.74E+00	5.34E+01
+ TH-234	63.29	* 3.80	1.64E+02	1.64E+02	3.30E+02	7.93E+01
NP-237	29.37	14.00	1.60E+00	1.60E+00	-3.81E+00	7.86E-01
	86.50	12.60	8.40E+01		4.03E+01	3.93E+01
U-237	97.08	16.30	7.85E+01	4.88E+01	2.57E+01	3.64E+01
	101.07	26.30	4.88E+01		-1.52E+01	2.25E+01
	114.00	12.30	2.76E+02		3.75E+02	1.33E+02
	208.01	22.00	1.39E+02		3.55E+01	6.42E+01
AM-241	59.54	35.90	1.11E+01	1.11E+01	-6.08E+00	5.32E+00
AM-243	74.67	66.00	1.05E+01	1.05E+01	1.55E+00	4.94E+00

+ = Nuclide identified during the nuclide identification

* = Energy line found in the spectrum

> = MDA value not calculated

@ = Half-life too short to be able to perform the decay correction

0113

SGS

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LA58074X

August Levert_BP Plan_000806

KP
11/26/19

2

Analysis Report for 1910011-03
LT-2 11-16

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1910011-03
 Sample Description : LT-2 11-16
 Sample Type : RA RECOVERY

 Sample Size : 1.000E+00 units
 Facility : Countroom

 Sample Taken On : 11/26/2019 9:23:30AM
 Acquisition Started : 11/26/2019 10:21:50AM

 Procedure : BAFIL
 Operator : Administrator
 Detector Name : GE3
 Geometry : BAFIL
 Live Time : 900.0 seconds
 Real Time : 901.9 seconds

 Dead Time : 0.21 %

 Peak Locate Threshold : 2.50
 Peak Locate Range (in channels) : 1 - 4096
 Peak Area Range (in channels) : 9 - 4096
 Identification Energy Tolerance : 2.500 keV

 Energy Calibration Used Done On : 10/19/2019
 Efficiency Calibration Used Done On : 10/19/2019
 Efficiency Calibration Description :

 Sample Number : 92028

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2019 10:36:54AM
 Peak Analysis From Channel : 1
 Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
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0114

Analysis Report for 1910011-03

LT-2 11-16



	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	1	20.99	17 -	39	21.41	1.08E+02	37.91	2.14E+02	2.32
m	2	30.96	17 -	39	31.37	2.13E+03	98.35	1.57E+02	1.90
m	3	35.18	17 -	39	35.59	5.47E+02	83.15	1.61E+02	2.24
	4	53.54	50 -	57	53.94	5.25E+01	42.57	2.65E+02	1.83
M	5	61.78	58 -	72	62.18	2.45E+02	46.10	1.95E+02	2.42
m	6	66.25	58 -	72	66.64	9.66E+01	42.59	1.79E+02	2.44
	7	81.16	77 -	86	81.54	8.11E+02	73.67	3.05E+02	2.11
	8	101.86	98 -	105	102.23	3.35E+01	31.18	1.39E+02	1.45
M	9	111.85	108 -	120	112.21	1.98E+02	36.73	1.14E+02	2.02
m	10	115.93	108 -	120	116.29	5.21E+01	35.40	1.23E+02	2.29
	11	276.31	273 -	280	276.57	4.34E+01	25.22	7.93E+01	1.64
M	12	302.94	289 -	311	303.19	1.53E+02	28.23	3.89E+01	2.05
m	13	306.57	289 -	311	306.81	2.16E+01	22.20	3.66E+01	2.06
	14	333.46	329 -	338	333.69	3.96E+01	25.50	7.07E+01	2.67
	15	356.23	350 -	360	356.44	4.30E+02	46.20	5.66E+01	2.29
M	16	384.30	380 -	395	384.50	9.55E+01	30.07	4.90E+01	2.78
m	17	387.32	380 -	395	387.52	1.29E+02	31.46	2.94E+01	2.06
m	18	391.59	380 -	395	391.78	4.82E+01	19.44	2.00E+01	1.84
M	19	414.72	410 -	428	414.90	3.66E+01	18.57	2.09E+01	2.84
m	20	417.92	410 -	428	418.10	1.79E+01	19.00	1.65E+01	2.85
m	21	422.54	410 -	428	422.71	1.62E+01	15.65	1.22E+01	2.85
m	22	426.17	410 -	428	426.34	7.06E+00	8.31	5.26E+00	2.36
	23	437.04	433 -	440	437.20	8.80E+01	20.00	8.00E+00	2.11
	24	467.56	464 -	473	467.70	1.36E+01	15.26	2.68E+01	2.83
	25	609.47	606 -	611	609.53	7.33E+00	6.71	3.33E+00	1.19
	26	693.82	690 -	697	693.82	1.10E+01	6.63	0.00E+00	1.32
	27	710.61	707 -	713	710.60	5.00E+00	4.47	0.00E+00	1.24

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/26/2019 10:36:54AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000091323.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	1	20.99	1.08E+02	37.91	6.42E+00	2.56E+00	1.02E+02	3.80E+01
m	2	30.96	2.13E+03	98.35			2.13E+03	9.84E+01

0115



Analysis Report for 1910011-03

LT-2 11-16



Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
m 3	35.18	5.47E+02	83.15			5.47E+02	8.31E+01
4	53.54	5.25E+01	42.57			5.25E+01	4.26E+01
M 5	61.78	2.45E+02	46.10	1.78E+00	6.71E-01	2.44E+02	4.61E+01
m 6	66.25	9.66E+01	42.59			9.66E+01	4.26E+01
7	81.16	8.11E+02	73.67			8.11E+02	7.37E+01
8	101.86	3.35E+01	31.18			3.35E+01	3.12E+01
M 9	111.85	1.98E+02	36.73			1.98E+02	3.67E+01
m 10	115.93	5.21E+01	35.40			5.21E+01	3.54E+01
11	276.31	4.34E+01	25.22			4.34E+01	2.52E+01
M 12	302.94	1.53E+02	28.23			1.53E+02	2.82E+01
m 13	306.57	2.16E+01	22.20			2.16E+01	2.22E+01
14	333.46	3.96E+01	25.50	1.88E-01	6.40E-01	3.94E+01	2.55E+01
15	356.23	4.30E+02	46.20			4.30E+02	4.62E+01
M 16	384.30	9.55E+01	30.07			9.55E+01	3.01E+01
m 17	387.32	1.29E+02	31.46			1.29E+02	3.15E+01
18	391.59	4.82E+01	19.44			4.82E+01	1.94E+01
M 19	414.72	3.66E+01	18.57			3.66E+01	1.86E+01
m 20	417.92	1.79E+01	19.00			1.79E+01	1.90E+01
m 21	422.54	1.62E+01	15.65			1.62E+01	1.57E+01
m 22	426.17	7.06E+00	8.31			7.06E+00	8.31E+00
23	437.04	8.80E+01	20.00			8.80E+01	2.00E+01
24	467.56	1.36E+01	15.26			1.36E+01	1.53E+01
25	609.47	7.33E+00	6.71	1.95E+00	9.42E-01	5.38E+00	6.77E+00
26	693.82	1.10E+01	6.63			1.10E+01	6.63E+00
27	710.61	5.00E+00	4.47			5.00E+00	4.47E+00

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.00sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/units)	Activity Uncertainty
SN-113	0.95	255.12	1.93		
		391.69 *	61.90	4.07E+01	1.71E+01
I-129	0.86	29.78 *	57.00	2.89E+01	1.34E+00
		33.60 *	13.20	5.35E+01	8.15E+00

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Analysis Report for 1910011-03
 LT-2 11-16



Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/units)	Activity Uncertainty
I-129	0.86	39.58	7.52		
BA-133	0.99	81.00 *	34.06	4.01E+02	5.36E+01
		302.84 *	18.33	5.04E+02	1.73E+02
		356.01 *	62.05	3.88E+02	6.37E+01
TH-234	0.94	63.29 *	3.80	5.43E+02	1.06E+02
AM-241	0.87	59.54 *	35.90	5.75E+01	1.12E+01

* = Energy line found in the spectrum.
 - = Manually added nuclide.
 ? = Manually edited nuclide.
 @ = Energy line not used for Weighted Mean Activity
 Energy Tolerance : 2.500 keV
 Nuclide confidence index threshold = 0.30
 Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/units)	Wt mean Activity Uncertainty	Comments
SN-113	0.955	4.07E+01	1.71E+01	
I-129	0.868	2.96E+01	1.32E+00	
BA-133	0.999	4.01E+02	3.99E+01	
? TH-234	0.943	5.43E+02	1.06E+02	
X NP-237	0.745			
? AM-241	0.879	5.75E+01	1.12E+01	

? = nuclide is part of an undetermined solution
 X = nuclide rejected by the interference analysis
 @ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

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Analysis Report for 1910011-03
LT-2 11-16

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UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2019 10:36:54AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M 1	20.99	1.13132E-01	18.66	Tol.	MO-93 PA-234M
4	53.54	5.83273E-02	40.54		
m 6	66.25	1.07336E-01	22.04	Sum	
8	101.86	3.72168E-02	46.54	Tol.	U-237
M 9	111.85	2.20459E-01	9.26	Sum	
m 10	115.93	5.79184E-02	33.96	Sum	
11	276.31	4.81928E-02	29.07		
m 13	306.57	2.39692E-02	51.46		
14	333.46	4.38202E-02	32.33	Sum	
M 16	384.30	1.06102E-01	15.74	Sum	
m 17	387.32	1.43659E-01	12.17	Sum	
M 19	414.72	4.07145E-02	25.34		
m 20	417.92	1.98423E-02	53.20	Sum	
m 21	422.54	1.80529E-02	48.17	Sum	
m 22	426.17	7.83920E-03	58.87	Sum	
23	437.04	9.77778E-02	11.36	Sum	
24	467.56	1.51235E-02	56.07		
25	609.47	5.98209E-03	62.91		
26	693.82	1.22222E-02	30.15	Sum	
27	710.61	5.55556E-03	44.72	Sum	

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

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LA58074X

August Levert_BP Plan_000811

Analysis Report for 1910011-03

LT-2 11-16

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/units)	Nuclide MDA (pCi/units)	Activity (pCi/units)	Dec. Level (pCi/units)
FE-55	5.89	24.50	6.04E-06	6.04E-06	0.00E+00	0.00E+00
CO-57	122.06	85.51	1.67E+01	1.67E+01	-2.95E+00	7.77E+00
	136.48	10.60	1.63E+02		8.32E+00	7.63E+01
NI-59	6.92	29.80	6.33E-05	6.33E-05	-2.56E-04	2.37E-05
MO-93	16.59	52.90	3.31E-02	3.31E-02	-6.11E-03	1.55E-02
	18.60	10.00	3.99E-01		-5.24E-02	1.90E-01
NB-93M	16.57	9.43	1.85E-01	1.85E-01	-3.40E-02	8.66E-02
CD-109	88.03	3.72	2.66E+02	2.66E+02	-1.38E+02	1.26E+02
+ SN-113	255.12	1.93	9.85E+02	3.85E+01	4.11E+02	4.49E+02
	391.69	* 61.90	3.85E+01		4.07E+01	1.81E+01
SN-119M	23.87	16.10	8.92E-01	7.64E-01	-4.75E-01	4.25E-01
	25.10	22.70	7.64E-01		-5.27E+00	3.63E-01
+ I-129	29.78	* 57.00	1.95E+00	1.95E+00	2.89E+01	9.56E-01
	33.60	* 13.20	1.40E+01		5.35E+01	6.89E+00
	39.58	7.52	1.19E+01		-2.18E+00	5.58E+00
+ BA-133	81.00	* 34.06	3.94E+01	3.27E+01	4.01E+02	1.90E+01
	302.84	* 18.33	2.39E+02		5.04E+02	1.15E+02
	356.01	* 62.05	3.27E+01		3.88E+02	1.51E+01
CE-139	165.85	80.35	2.80E+01	2.80E+01	-6.24E+00	1.31E+01
CE-144	133.54	10.80	1.71E+02	1.71E+02	1.49E+02	8.04E+01
HG-203	279.19	77.30	3.62E+01	3.62E+01	5.61E+00	1.70E+01
PB-210	46.50	4.25	3.67E+01	3.67E+01	-3.82E+00	1.72E+01
TH-231	25.64	14.70	1.30E+00	1.30E+00	-8.95E+00	6.18E-01
	84.21	6.40	3.03E+02		-4.78E+01	1.48E+02
PA-234M	9.89	89.00	1.18E-03	1.18E-03	1.48E-03	5.61E-04
	21.72	64.90	1.52E-01		1.37E-01	7.29E-02
	37.93	23.75	6.58E+00		1.49E+01	3.19E+00
	131.42	20.40	8.30E+01		-4.32E+00	3.88E+01
+ TH-234	63.29	* 3.80	2.21E+02	2.21E+02	5.43E+02	1.07E+02
NP-237	29.37	* 14.00	7.93E+00	7.93E+00	1.18E+02	3.89E+00
	86.50	12.60	7.82E+01		-1.79E-01	3.70E+01
U-237	97.08	16.30	6.57E+01	4.80E+01	-1.53E+01	3.08E+01
	101.07	26.30	4.80E+01		3.06E+01	2.26E+01
	114.00	12.30	2.24E+02		5.57E+02	1.09E+02
	208.01	22.00	1.12E+02		3.52E+01	5.24E+01
+ AM-241	59.54	* 35.90	2.34E+01	2.34E+01	5.75E+01	1.14E+01
AM-243	74.67	66.00	1.11E+01	1.11E+01	-8.88E-03	5.24E+00

- + = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

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SGS

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LA58074X

August Levert_BP Plan_000812

KP
11/26/19

2

Analysis Report for 1910011-05
LT-2 11-16

GAMMA SPECTRUM ANALYSIS

Sample Identification : 1910011-05
 Sample Description : LT-2 11-16
 Sample Type : RA RECOVERY

 Sample Size : 1.000E+00 units
 Facility : Countroom

 Sample Taken On : 11/26/2019 9:23:54AM
 Acquisition Started : 11/26/2019 10:34:04AM

 Procedure : BAFIL
 Operator : Administrator
 Detector Name : GE2
 Geometry : BAFIL
 Live Time : 900.0 seconds
 Real Time : 900.2 seconds

 Dead Time : 0.02 %

 Peak Locate Threshold : 2.50
 Peak Locate Range (in channels) : 1 - 4096
 Peak Area Range (in channels) : 29 - 4096
 Identification Energy Tolerance : 2.500 keV

 Energy Calibration Used Done On : 10/19/2019
 Efficiency Calibration Used Done On : 9/14/2019
 Efficiency Calibration Description :

 Sample Number : 92030

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2019 10:49:14AM
 Peak Analysis From Channel : 1
 Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
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0120

Analysis Report for 1910011-05

LT-2 11-16

2

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	35.82	36 -	38	36.15	2.39E+02	49.18	2.61E+02	1.61
	2	53.36	50 -	57	53.68	5.53E+01	34.35	1.59E+02	2.78
M	3	62.06	58 -	71	62.37	1.50E+02	35.07	1.10E+02	1.74
m	4	66.38	58 -	71	66.68	8.17E+01	30.43	1.28E+02	1.76
M	5	77.71	77 -	86	78.00	1.43E+01	7.19	2.59E+01	1.11
m	6	81.40	77 -	86	81.68	7.03E+02	56.21	9.66E+01	1.49
	7	111.72	107 -	114	111.97	1.68E+02	39.75	1.51E+02	1.80
	8	160.36	157 -	166	160.55	4.66E+01	36.28	1.65E+02	4.30
	9	203.63	196 -	211	203.77	5.15E+01	44.23	1.71E+02	10.21
	10	227.33	222 -	233	227.45	2.42E+01	30.07	9.77E+01	8.21
	11	276.63	273 -	280	276.70	5.34E+01	27.28	8.92E+01	1.22
M	12	303.19	299 -	314	303.23	1.45E+02	26.08	2.22E+01	1.68
m	13	307.36	299 -	314	307.40	2.28E+01	20.90	2.89E+01	2.11
	14	334.18	330 -	338	334.18	5.77E+01	28.58	9.06E+01	1.63
	15	339.78	338 -	343	339.79	1.15E+01	13.00	2.11E+01	4.64
M	16	352.90	351 -	361	352.89	1.56E+01	8.90	6.05E+00	2.39
m	17	356.40	351 -	361	356.39	5.13E+02	46.04	1.27E+01	1.56
M	18	383.89	380 -	396	383.84	8.82E+01	23.28	9.63E+00	1.84
m	19	387.28	380 -	396	387.23	1.23E+02	30.82	5.07E+00	1.84
m	20	391.73	380 -	396	391.68	3.07E+01	14.07	8.07E-01	1.85
M	21	414.95	410 -	421	414.87	2.07E+01	12.13	1.35E+01	1.70
m	22	418.23	410 -	421	418.15	1.29E+01	11.63	1.10E+01	1.70
	23	437.65	433 -	442	437.55	8.07E+01	22.29	2.45E+01	1.51
	24	468.21	464 -	470	468.08	1.41E+01	8.73	3.88E+00	1.72
	25	980.89	978 -	982	980.29	7.00E+00	5.29	0.00E+00	2.10

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/26/2019 10:49:14AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000091322.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	35.82	2.39E+02	49.18	1.30E+01	1.13E+00	2.26E+02	4.92E+01
	2	53.36	5.53E+01	34.35			5.53E+01	3.44E+01
M	3	62.06	1.50E+02	35.07	2.70E+00	1.55E+00	1.47E+02	3.51E+01
m	4	66.38	8.17E+01	30.43	2.49E+00	1.31E+00	7.92E+01	3.05E+01

0121

Analysis Report for 1910011-05

LT-2 11-16



	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	5	77.71	1.43E+01	7.19			1.43E+01	7.19E+00
m	6	81.40	7.03E+02	56.21			7.03E+02	5.62E+01
	7	111.72	1.68E+02	39.75	7.99E-01	1.93E+00	1.67E+02	3.98E+01
	8	160.36	4.66E+01	36.28			4.66E+01	3.63E+01
	9	203.63	5.15E+01	44.23			5.15E+01	4.42E+01
	10	227.33	2.42E+01	30.07			2.42E+01	3.01E+01
	11	276.63	5.34E+01	27.28			5.34E+01	2.73E+01
M	12	303.19	1.45E+02	26.08			1.45E+02	2.61E+01
m	13	307.36	2.28E+01	20.90			2.28E+01	2.09E+01
	14	334.18	5.77E+01	28.58			5.77E+01	2.86E+01
	15	339.78	1.15E+01	13.00	3.29E-01	1.31E+00	1.11E+01	1.31E+01
M	16	352.90	1.56E+01	8.90	4.00E+00	1.24E+00	1.16E+01	8.99E+00
m	17	356.40	5.13E+02	46.04			5.13E+02	4.60E+01
M	18	383.89	8.82E+01	23.28			8.82E+01	2.33E+01
m	19	387.28	1.23E+02	30.82			1.23E+02	3.08E+01
m	20	391.73	3.07E+01	14.07			3.07E+01	1.41E+01
M	21	414.95	2.07E+01	12.13			2.07E+01	1.21E+01
m	22	418.23	1.29E+01	11.63			1.29E+01	1.16E+01
	23	437.65	8.07E+01	22.29			8.07E+01	2.23E+01
	24	468.21	1.41E+01	8.73			1.41E+01	8.73E+00
	25	980.89	7.00E+00	5.29			7.00E+00	5.29E+00

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.00sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/units)	Activity Uncertainty
SN-113	0.96	255.12	1.93		
		391.69 *	61.90	2.02E+01	9.41E+00
BA-133	0.99	81.00 *	34.06	4.34E+02	5.66E+01
		302.84 *	18.33	5.16E+02	1.82E+02
		356.01 *	62.05	4.10E+02	5.86E+01
PA-234M	0.98	9.89	89.00		
		21.72	64.90		
		37.93 *	23.75	4.85E+00	1.06E+00

0122



Analysis Report for 1910011-05
LT-2 11-16

2

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/units)	Activity Uncertainty
PA-234M	0.98	131.42	20.40		
TH-234	0.96	63.29 *	3.80	3.08E+02	7.44E+01

* = Energy line found in the spectrum.
 - = Manually added nuclide.
 ? = Manually edited nuclide.
 @ = Energy line not used for Weighted Mean Activity
 Energy Tolerance : 2.500 keV
 Nuclide confidence index threshold = 0.30
 Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/units)	Wt mean Activity Uncertainty	Comments
SN-113	0.965	2.02E+01	9.41E+00	
BA-133	0.996	4.27E+02	3.97E+01	
PA-234M	0.986	4.85E+00	1.06E+00	
TH-234	0.962	3.08E+02	7.44E+01	

? = nuclide is part of an undetermined solution
 X = nuclide rejected by the interference analysis
 @ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

0123

Analysis Report for 1910011-05
LT-2 11-16

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UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2019 10:49:14AM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
	2	53.36	6.14979E-02	31.03	
m	4	66.38	8.80332E-02	19.22	
M	5	77.71	1.58654E-02	25.19	
	7	111.72	1.85257E-01	11.93	Tol. U-237
	8	160.36	5.18260E-02	38.89	Sum
	9	203.63	5.72668E-02	42.91	
	10	227.33	2.68417E-02	62.23	
	11	276.63	5.93424E-02	25.54	
m	13	307.36	2.53156E-02	45.88	
	14	334.18	6.40939E-02	24.78	
	15	339.78	1.23612E-02	58.72	Sum
M	16	352.90	1.28654E-02	38.81	
M	18	383.89	9.79737E-02	13.20	Sum
m	19	387.28	1.36211E-01	12.57	
M	21	414.95	2.29784E-02	29.34	
m	22	418.23	1.43066E-02	45.16	Sum
	23	437.65	8.97073E-02	13.81	Sum
	24	468.21	1.56250E-02	31.05	
	25	980.89	7.77778E-03	37.80	

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

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LA58074X

August Levert_BP Plan_000817

Analysis Report for 1910011-05

LT-2 11-16

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/units)	Nuclide MDA (pCi/units)	Activity (pCi/units)	Dec. Level (pCi/units)
FE-55	5.89	24.50	4.58E-09	4.58E-09	0.00E+00	0.00E+00
CO-57	122.06	85.51	2.27E+01	2.27E+01	1.04E+01	1.05E+01
	136.48	10.60	2.15E+02		-1.11E+02	9.91E+01
NI-59	6.92	29.80	2.55E-08	2.55E-08	0.00E+00	0.00E+00
MO-93	16.59	52.90	9.74E-05	9.74E-05	0.00E+00	0.00E+00
	18.60	10.00	1.34E-03		0.00E+00	0.00E+00
NB-93M	16.57	9.43	5.41E-04	5.41E-04	0.00E+00	0.00E+00
CD-109	88.03	3.72	2.59E+02	2.59E+02	4.25E+01	1.20E+02
+ SN-113	255.12	1.93	1.15E+03	1.48E+01	2.45E+02	5.20E+02
	391.69	* 61.90	1.48E+01		2.02E+01	6.52E+00
SN-119M	23.87	16.10	5.80E-03	5.80E-03	0.00E+00	0.00E+00
	25.10	22.70	5.92E-03		0.00E+00	0.00E+00
I-129	29.78	57.00	4.13E-01	4.13E-01	-5.21E-01	2.02E-01
	33.60	13.20	4.87E+00		-2.88E+00	2.40E+00
	39.58	7.52	4.05E+00		1.11E+00	1.86E+00
+ BA-133	81.00	* 34.06	3.92E+01	1.96E+01	4.34E+02	1.88E+01
	302.84	* 18.33	1.55E+02		5.16E+02	7.27E+01
	356.01	* 62.05	1.96E+01		4.10E+02	8.73E+00
CE-139	165.85	80.35	3.66E+01	3.66E+01	-8.97E+00	1.69E+01
CE-144	133.54	10.80	1.94E+02	1.94E+02	-1.32E+02	8.91E+01
HG-203	279.19	77.30	3.84E+01	3.84E+01	3.68E+01	1.79E+01
PB-210	46.50	4.25	1.84E+01	1.84E+01	1.77E+00	8.52E+00
TH-231	25.64	14.70	1.06E-02	1.06E-02	0.00E+00	0.00E+00
	84.21	6.40	3.87E+02		1.26E+03	1.89E+02
+ PA-234M	9.89	89.00	4.30E-07	4.30E-07	0.00E+00	0.00E+00
	21.72	64.90	7.08E-04		0.00E+00	0.00E+00
	37.93	* 23.75	2.07E+00		4.85E+00	1.00E+00
	131.42	20.40	1.07E+02		-3.73E+01	4.94E+01
+ TH-234	63.29	* 3.80	1.79E+02	1.79E+02	3.08E+02	8.67E+01
NP-237	29.37	14.00	1.53E+00	1.53E+00	-1.94E+00	7.52E-01
	86.50	12.60	8.12E+01		2.56E+01	3.79E+01
U-237	97.08	16.30	7.30E+01	5.23E+01	-4.83E+01	3.36E+01
	101.07	26.30	5.23E+01		2.33E+01	2.42E+01
	114.00	12.30	2.80E+02		-3.16E+01	1.35E+02
	208.01	22.00	1.35E+02		1.03E+02	6.23E+01
AM-241	59.54	35.90	1.11E+01	1.11E+01	-7.69E+00	5.30E+00
AM-243	74.67	66.00	9.87E+00	9.87E+00	2.21E+00	4.61E+00

- + = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

0125

SGS

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LA58074X

August Levert_BP Plan_000818

KP
11/26/19



Analysis Report for 1910011-06
LT-3 11-16

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 1910011-06
Sample Description	: LT-3 11-16
Sample Type	: RA RECOVERY
Sample Size	: 1.000E+00 units
Facility	: Countroom
Sample Taken On	: 11/26/2019 9:24:13AM
Acquisition Started	: 11/26/2019 10:37:58AM
Procedure	: BAFIL
Operator	: Administrator
Detector Name	: GE3
Geometry	: BAFIL
Live Time	: 900.0 seconds
Real Time	: 902.0 seconds
Dead Time	: 0.22 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 9 - 4096
Identification Energy Tolerance	: 2.500 keV
Energy Calibration Used Done On	: 10/19/2019
Efficiency Calibration Used Done On	: 10/19/2019
Efficiency Calibration Description	:
Sample Number	: 92032

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 11/26/2019 10:53:03AM
 Peak Analysis From Channel : 1
 Peak Analysis To Channel : 4096

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>ROI start</i>	<i>ROI end</i>	<i>Peak Centroid</i>	<i>Net Peak Area</i>	<i>Net Area Uncertainty</i>	<i>Continuum Counts</i>	<i>FWHM (keV)</i>
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Analysis Report for 1910011-06

LT-3 11-16



	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	1	21.08	18 -	40	21.50	9.82E+01	34.73	1.79E+02	2.10
m	2	30.96	18 -	40	31.37	1.87E+03	92.55	1.61E+02	1.85
m	3	35.32	18 -	40	35.73	4.32E+02	55.73	1.47E+02	2.15
	4	52.68	49 -	57	53.08	7.46E+01	42.01	2.27E+02	3.29
M	5	61.85	58 -	69	62.25	2.31E+02	44.90	1.98E+02	2.13
m	6	66.06	58 -	69	66.45	1.09E+02	43.41	2.45E+02	2.03
m	7	81.26	77 -	87	81.65	7.79E+02	62.38	1.41E+02	2.04
M	8	112.02	107 -	121	112.38	1.78E+02	40.93	1.65E+02	2.29
m	9	115.68	107 -	121	116.04	3.44E+01	36.98	1.39E+02	2.29
	10	242.25	237 -	248	242.54	2.92E+01	28.91	8.95E+01	8.88
	11	276.75	273 -	279	277.02	4.06E+01	24.20	7.69E+01	2.52
M	12	302.96	292 -	311	303.20	1.16E+02	28.78	6.41E+01	2.29
m	13	308.09	292 -	311	308.34	1.59E+01	20.51	7.48E+01	3.02
	14	333.79	331 -	337	334.01	7.31E+01	22.96	4.37E+01	2.25
m	15	356.28	350 -	362	356.49	4.70E+02	44.18	2.54E+01	2.10
M	16	384.03	380 -	396	384.23	9.33E+01	30.43	3.33E+01	2.41
m	17	387.16	380 -	396	387.35	1.67E+02	33.55	2.12E+01	2.24
m	18	391.45	380 -	396	391.64	3.87E+01	23.66	1.10E+01	2.57
	19	404.21	402 -	407	404.39	7.55E+00	7.87	6.91E+00	2.80
	20	417.57	410 -	424	417.74	6.33E+01	24.68	3.75E+01	6.26
	21	437.32	433 -	440	437.49	9.63E+01	22.54	2.14E+01	2.00
	22	468.27	464 -	471	468.41	1.56E+01	14.42	2.47E+01	1.39
	23	473.40	472 -	476	473.54	6.70E+00	7.66	6.60E+00	1.75
	24	489.87	486 -	492	490.00	8.00E+00	5.66	0.00E+00	1.47
	25	859.96	857 -	862	859.86	7.00E+00	5.29	0.00E+00	2.99
	26	866.71	864 -	868	866.60	5.00E+00	4.47	0.00E+00	1.70

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 11/26/2019 10:53:03AM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000091323.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	1	21.08	9.82E+01	34.73	6.42E+00	2.56E+00	9.18E+01	3.48E+01
m	2	30.96	1.87E+03	92.55			1.87E+03	9.26E+01
m	3	35.32	4.32E+02	55.73			4.32E+02	5.57E+01

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Analysis Report for 1910011-06

LT-3 11-16



Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	4	52.68	7.46E+01	42.01		7.46E+01	4.20E+01
M	5	61.85	2.31E+02	44.90	1.78E+00	2.29E+02	4.49E+01
m	6	66.06	1.09E+02	43.41		1.09E+02	4.34E+01
m	7	81.26	7.79E+02	62.38		7.79E+02	6.24E+01
M	8	112.02	1.78E+02	40.93		1.78E+02	4.09E+01
m	9	115.68	3.44E+01	36.98		3.44E+01	3.70E+01
	10	242.25	2.92E+01	28.91		2.92E+01	2.89E+01
	11	276.75	4.06E+01	24.20		4.06E+01	2.42E+01
M	12	302.96	1.16E+02	28.78		1.16E+02	2.88E+01
m	13	308.09	1.59E+01	20.51		1.59E+01	2.05E+01
	14	333.79	7.31E+01	22.96	1.88E-01	6.40E-01	7.29E+01
m	15	356.28	4.70E+02	44.18		4.70E+02	4.42E+01
M	16	384.03	9.33E+01	30.43		9.33E+01	3.04E+01
m	17	387.16	1.67E+02	33.55		1.67E+02	3.36E+01
m	18	391.45	3.87E+01	23.66		3.87E+01	2.37E+01
	19	404.21	7.55E+00	7.87		7.55E+00	7.87E+00
	20	417.57	6.33E+01	24.68		6.33E+01	2.47E+01
	21	437.32	9.63E+01	22.54		9.63E+01	2.25E+01
	22	468.27	1.56E+01	14.42		1.56E+01	1.44E+01
	23	473.40	6.70E+00	7.66		6.70E+00	7.66E+00
	24	489.87	8.00E+00	5.66		8.00E+00	5.66E+00
	25	859.96	7.00E+00	5.29		7.00E+00	5.29E+00
	26	866.71	5.00E+00	4.47		5.00E+00	4.47E+00

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/units)	Activity Uncertainty
SN-113	0.95	255.12	1.93		
		391.69 *	61.90	3.27E+01	2.04E+01
I-129	0.86	29.78 *	57.00	2.54E+01	1.26E+00
		33.60 *	13.20	4.30E+01	5.55E+00
		39.58	7.52		
BA-133	0.99	81.00 *	34.06	3.87E+02	4.90E+01

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Analysis Report for 1910011-06
 LT-3 11-16



Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/units)	Activity Uncertainty
BA-133	0.99	302.84 *		18.33	3.82E+02	1.46E+02
		356.01 *		62.05	4.24E+02	6.61E+01
HG-203	0.85	279.19 *		77.30	3.24E+01	2.17E+01
TH-234	0.94	63.29 *		3.80	5.12E+02	1.04E+02
AM-241	0.87	59.54 *		35.90	5.42E+01	1.10E+01

* = Energy line found in the spectrum.
 - = Manually added nuclide.
 ? = Manually edited nuclide.
 @ = Energy line not used for Weighted Mean Activity
 Energy Tolerance : 2.500 keV
 Nuclide confidence index threshold = 0.30
 Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/units)	Wt mean Activity Uncertainty	Comments
SN-113	0.954	3.27E+01	2.04E+01	
I-129	0.866	2.62E+01	1.23E+00	
BA-133	0.998	3.99E+02	3.80E+01	
HG-203	0.859	3.24E+01	2.17E+01	
? TH-234	0.948	5.12E+02	1.04E+02	
X NP-237	0.745			
? AM-241	0.872	5.42E+01	1.10E+01	

? = nuclide is part of an undetermined solution
 X = nuclide rejected by the interference analysis
 @ = nuclide contains energy lines not used in Weighted Mean Activity
 Errors quoted at 2.000sigma

0129



Analysis Report for 1910011-06
 LT-3 11-16



UNIDENTIFIED PEAKS

Peak Locate Performed on : 11/26/2019 10:53:03AM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M 1	21.08	1.01998E-01	18.97	Tol.	MO-93 PA-234M
	4	52.68	8.29433E-02		
m 6	66.06	1.21440E-01	19.86	Sum	
M 8	112.02	1.97874E-01	11.49	Sum	
m 9	115.68	3.81895E-02	53.80	Sum	
	10	242.25	3.24850E-02		
m 13	308.09	1.76629E-02	64.50	Sum	
	14	333.79	8.10421E-02		
M 16	384.03	1.03649E-01	16.31	Sum	
m 17	387.16	1.85004E-01	10.08	Sum	
	19	404.21	8.38384E-03		
	20	417.57	7.02778E-02	Sum	
	21	437.32	1.06973E-01	Sum	
	22	468.27	1.73810E-02		
	23	473.40	7.44444E-03	Sum	
	24	489.87	8.88889E-03		
	25	859.96	7.77778E-03		
	26	866.71	5.55556E-03		

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

0130



Analysis Report for 1910011-06
LT-3 11-16

2

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/units)	Nuclide MDA (pCi/units)	Activity (pCi/units)	Dec. Level (pCi/units)
FE-55	5.89	24.50	6.04E-06	6.04E-06	0.00E+00	0.00E+00
CO-57	122.06	85.51	1.69E+01	1.69E+01	9.02E-01	7.89E+00
	136.48	10.60	1.51E+02		-3.35E+01	6.99E+01
NI-59	6.92	29.80	4.33E-05	4.33E-05	-2.50E-04	1.37E-05
MO-93	16.59	52.90	3.23E-02	3.23E-02	4.23E-03	1.51E-02
	18.60	10.00	4.00E-01		-4.02E-03	1.90E-01
NB-93M	16.57	9.43	1.80E-01	1.80E-01	2.36E-02	8.43E-02
CD-109	88.03	3.72	2.49E+02	2.49E+02	-9.97E+01	1.17E+02
+ SN-113	255.12	1.93	9.46E+02	3.42E+01	-5.46E+02	4.30E+02
	391.69	* 61.90	3.42E+01		3.27E+01	1.60E+01
SN-119M	23.87	16.10	9.01E-01	7.94E-01	-6.00E-01	4.30E-01
	25.10	22.70	7.94E-01		-4.36E+00	3.79E-01
+ I-129	29.78	* 57.00	1.97E+00	1.97E+00	2.54E+01	9.64E-01
	33.60	* 13.20	1.44E+01		4.30E+01	7.05E+00
	39.58	7.52	1.03E+01		-1.98E+00	4.79E+00
+ BA-133	81.00	* 34.06	3.50E+01	3.17E+01	3.87E+02	1.68E+01
	302.84	* 18.33	2.47E+02		3.82E+02	1.19E+02
	356.01	* 62.05	3.17E+01		4.24E+02	1.46E+01
CE-139	165.85	80.35	3.07E+01	3.07E+01	-6.39E-01	1.45E+01
CE-144	133.54	10.80	1.41E+02	1.41E+02	4.15E+01	6.56E+01
+ HG-203	279.19	* 77.30	2.92E+01	2.92E+01	3.24E+01	1.35E+01
PB-210	46.50	4.25	3.61E+01	3.61E+01	7.50E+00	1.69E+01
TH-231	25.64	14.70	1.35E+00	1.35E+00	-7.41E+00	6.44E-01
	84.21	6.40	3.16E+02		9.82E+02	1.54E+02
PA-234M	9.89	89.00	1.17E-03	1.17E-03	1.63E-03	5.54E-04
	21.72	64.90	1.57E-01		1.58E-01	7.51E-02
	37.93	23.75	6.38E+00		1.65E+01	3.09E+00
	131.42	20.40	6.96E+01		-2.11E+00	3.21E+01
+ TH-234	63.29	* 3.80	2.07E+02	2.07E+02	5.12E+02	1.01E+02
NP-237	29.37	* 14.00	8.00E+00	8.00E+00	1.03E+02	3.93E+00
	86.50	12.60	7.28E+01		-1.01E+01	3.43E+01
U-237	97.08	16.30	7.51E+01	4.85E+01	1.35E+01	3.55E+01
	101.07	26.30	4.85E+01		6.27E-01	2.29E+01
	114.00	12.30	2.18E+02		5.20E+02	1.06E+02
	208.01	22.00	1.08E+02		-3.53E+01	5.05E+01
+ AM-241	59.54	* 35.90	2.20E+01	2.20E+01	5.42E+01	1.07E+01
AM-243	74.67	66.00	1.15E+01	1.15E+01	-3.04E+00	5.45E+00

- + = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

0131

SECTION XI
ANALYTICAL DATA (TOTAL DISSOLVED SOLIDS)

0132



136 of 141

LA58074X

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody



HYDRO-ENVIRONMENTAL TECHNOLOGY, INC.
 Environmental Consultants
 P.O. Box 60295
 Lafayette, LA 70596-0295
 Phone (337) 261-1963 FAX (337) 261-1953

LA 58074

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: _____ Laboratory: Eberline
 August Levert _____ Collected By: R.J.L.
 Project Number: 1009.A62 Company: Hydro-Environmental Technology, Inc.
 Project Location: Bayou Sorrel, LA Date: 9/25/2019

Sample I.D.	Type	Date/Time Sampled	Containers	Analysis Requested/Method	Comments
LT-1 (11-16')	AQ	9/25/2019 13:30	(1) 250ml plastic, (2) liter plastic with HNO3	Radium 226/228, TDS	4°C
LT-2 (11-16')	AQ	9/26/2019 10:35	(1) 250ml plastic, (2) liter plastic with HNO3	Radium 226/228, TDS	4°C
LT-3 (11-16')	AQ	9/27/2019 9:30	(1) 250ml plastic, (2) liter plastic with HNO3	Radium 226/228, TDS	4°C
<p><i>Notes: Top: 3.4, 4.1 DU439 (OK)</i></p> <p><i>Client d/c</i></p>					
Relinquished By: <u>B. J. Lee</u>		Received By: <u>Mark Reel</u>			
Date/Time: <u>9-30-19 13:55</u>		Date/Time: <u>9-30-19 13:55</u>			
Relinquished By:		Received By:			
Date/Time:		Date/Time:			
Analysis Due: Verbal:		Written:			

LA58074X: Chain of Custody
 Page 1 of 2

SGS Sample Receipt Summary

Job Number: LA58074

Client: HYDRO - ENV.

Project: AUGUST LEVERT

Date / Time Received: 9/30/2019 1:55:00 PM

Delivery Method: Client

Airbill #s: _____

Cooler Temps (Initial/Adjusted): #1: (3.4/3.4); #2: (4.1/4.1); DV439

Cooler Security		<u>Y or N</u>		<u>Y or N</u>
1. Custody Seals Present:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/> <input type="checkbox"/>
2. Custody Seals Intact:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	4. Smp Dates/Time OK	<input checked="" type="checkbox"/> <input type="checkbox"/>

Cooler Temperature		<u>Y or N</u>
1. Temp criteria achieved:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Thermometer ID:	<u>DV439;</u>	
3. Cooler media:	<u>Ice (direct contact)</u>	
4. No. Coolers:	<u>2</u>	

Quality Control Preservation	<u>Y or N</u>	<u>N/A</u>
1. Trip Blank present / cooler:	<input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>
2. Trip Blank listed on COC:	<input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>
3. Samples preserved properly:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. VOCs headspace free:	<input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>

Sample Integrity - Documentation		<u>Y or N</u>
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Sample Integrity - Condition		<u>Y or N</u>
1. Sample recvd within HT:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Condition of sample:	<u>Intact</u>	

Sample Integrity - Instructions		<u>Y or N</u>	<u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments

3.1
3

LA58074X: Chain of Custody
Page 2 of 2



Element Materials Technology Lafayette
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Lafayette, LA 70508-3344
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July 08, 2022

Greg Miller
ICON Environmental Services
2049 Commercial Drive
Port Allen, LA 70767
TEL: (225) 344-8490
FAX (225) 344-6654

RE: Grand River - Levert

Order No.: 22061147

Dear Greg Miller:

Element Materials Technology Lafayette received 2 sample(s) on 6/24/2022 for the analyses presented in the following report.

In accordance with your instructions, Element Lafayette either conducted or subcontracted these analyses. Subcontracted analyses will be identified in the accompanying case narrative. All relevant sampling information can be found on the attached Chain-of-Custody form. Unless otherwise noted, all analyses were conducted using EPA approved methodologies and all test results meet the applicable requirements of TNI. Reported results relate only to the items tested.

Where applicable, all soil data, except for 29-B, are reported on a wet-weight basis unless otherwise indicated in the units field as –dry.

LELAP Certification No.: 01997. TCEQ Certification No.: T104704261. LDHH Certification No.: LA023. ISDH Certification No.: C-LA-01. NDELCP Certification No.: R-226. A scope of accredited parameters is available upon request. A "#" by the test method or analyte indicates this parameter is outside the scope of accreditation. PA registration No.: 68-05967.

Estimated uncertainty is available upon request. This report shall not be reproduced, except in full, without the written approval of the laboratory.

If you have any questions regarding these test results, please feel free to call.

A handwritten signature in blue ink that reads 'Cristina Thibeaux'.

Cristina Thibeaux
Customer Service Supervisor



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Lafayette, LA 70508-3344
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Case Narrative

WO#: 22061147
Date: 7/8/2022

CLIENT: ICON Environmental Services

Project: Grand River - Levert

Unless specified by the client, a duplicate or MS/MSD, wherever applicable, is randomly selected and analyzed from each analytical batch provided sample volume is sufficient. The sample chosen for duplicate or MS/MSD may or may not be a sample submitted in this workorder. A method blank and/or a lab control sample (LCS)/lab control sample duplicate (LCSD), wherever applicable, are processed as a quality control check for each analytical batch. When the matrix QC data is not available due to insufficient sample volume or when the results indicate possible matrix effect, the validity of the batch is determined by the method blank and LCS/LCSD.

The results of the laboratory internal quality control data are provided in the QC Summary Report section of the report for your review. Laboratory-related QC exceptions that may impact the validity of data are discussed in the case narrative. Sample-related QC exceptions are flagged either in the results page(s) or in the QC report page(s). End users should consider QC exceptions when evaluating sample data against data quality objectives.

Any other exceptions associated with this report will be footnoted in the results page(s) or the QC summary page(s).



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Analytical Report

(consolidated)

WO#: 22061147

Date Reported: 7/8/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/22/2022 3:00:00 PM
Project: Grand River - Levert
Lab ID: 22061147-001 **Matrix:** AQUEOUS
Client Sample ID LT-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH-D/O IN WATER BY SW8015					SW8015B	Analyst: CRM
TPH DRO/ORO IN WATER BY SW8015					SW3511	
TPH (Diesel Range)	< 0.127	0.127		mg/L	1	6/30/2022 1:07:00 AM
TPH (Oil Range)	< 0.117	0.117		mg/L	1	6/30/2022 1:07:00 AM
Surr: 4-Terphenyl-d14	50.9	51.4 - 146	SM	%Rec	1	6/30/2022 1:07:00 AM
BTEX/TPH-G IN WATER BY SW8021/8015					SW8015B	Analyst: LG
TPH-GRO IN WATER BY SW8015B						
TPH (Gasoline Range)	< 0.150	0.150		mg/L	1	6/30/2022 6:51:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	93.0	70 - 130		%Rec	1	6/30/2022 6:51:00 PM
BTEX/TPH-G IN WATER BY SW8021/8015					SW8021B	Analyst: LG
BTEX IN WATER BY SW8021B						
Benzene	< 0.00500	0.00500		mg/L	1	6/30/2022 6:51:00 PM
Ethylbenzene	< 0.00500	0.00500		mg/L	1	6/30/2022 6:51:00 PM
m,p-Xylene	< 0.0100	0.0100		mg/L	1	6/30/2022 6:51:00 PM
o-Xylene	< 0.00500	0.00500		mg/L	1	6/30/2022 6:51:00 PM
Toluene	< 0.0100	0.0100		mg/L	1	6/30/2022 6:51:00 PM
Xylenes, Total	< 0.0500	0.0500		mg/L	1	6/30/2022 6:51:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	83.4	70 - 130		%Rec	1	6/30/2022 6:51:00 PM
RCRA METALS - SW6010/7470A					SW7470A	Analyst: BXB
MERCURY IN GROUND WATER, TOTAL						
Mercury	< 0.000200	0.000200		mg/L	1	6/29/2022 11:48:00 AM
INORGANIC ANIONS IN WATER BY IC					SW9056A	Analyst: SGP
Chloride	98.8	12.5		mg/L	50	6/30/2022 10:37:50 AM
Sulfate	< 0.250	0.250		mg/L	1	6/30/2022 12:28:09 PM
RCRA METALS - SW6010/7470A					SW6010B	Analyst: MRM
METALS IN WATER BY ICP, TOTALS						
Barium	0.680	0.0100		mg/L	1	6/29/2022 12:30:47 PM
Cadmium	< 0.00500	0.00500		mg/L	1	6/29/2022 12:30:47 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061147

Date Reported: 7/8/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/22/2022 3:00:00 PM
Project: Grand River - Levert
Lab ID: 22061147-001 **Matrix:** AQUEOUS
Client Sample ID LT-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
RCRA METALS - SW6010/7470A					SW6010B	Analyst: MRM
METALS IN WATER BY ICP, TOTALS						
Calcium	150	0.500		mg/L	1	6/29/2022 12:30:47 PM
Chromium	< 0.0100	0.0100		mg/L	1	6/29/2022 12:30:47 PM
Iron	33.2	0.0100		mg/L	1	6/29/2022 12:30:47 PM
Lead	< 0.0100	0.0100		mg/L	1	6/29/2022 12:30:47 PM
Magnesium	51.2	0.500		mg/L	1	6/29/2022 12:30:47 PM
Manganese	1.46	0.0500		mg/L	1	6/29/2022 12:30:47 PM
Potassium	< 5.00	5.00		mg/L	1	6/29/2022 12:30:47 PM
Sodium	52.4	5.00		mg/L	1	6/29/2022 12:30:47 PM
Strontium	0.993	0.0100		mg/L	1	6/29/2022 12:30:47 PM
Zinc	0.0116	0.0100		mg/L	1	6/29/2022 12:30:47 PM
RCRA METALS - SW6010/7470A					SW6020A	Analyst: MRB
METALS IN WATER BY ICP-MS, TOTAL						
Arsenic	16.4	2.50		µg/L	10	6/28/2022 12:08:52 PM
ALKALINITY; TOTAL, CARB, BICARB					SM2320 B	Analyst: AD
Alkalinity, Bicarbonate (As CaCO ₃)	485	20.0		mgCaCO ₃ /L	1	7/5/2022 8:57:00 AM
Alkalinity, Carbonate (As CaCO ₃)	< 20.0	20.0		mgCaCO ₃ /L	1	7/5/2022 8:57:00 AM
Alkalinity, Phenolphthalein	< 20.0	20.0		mgCaCO ₃ /L	1	7/5/2022 8:57:00 AM
Alkalinity, Total (As CaCO ₃)	485	20.0		mgCaCO ₃ /L	1	7/5/2022 8:57:00 AM
TOTAL DISSOLVED SOLIDS					SM2540C	Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	875	50.0		mg/L	5	6/27/2022 8:06:00 AM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061147

Date Reported: 7/8/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/22/2022 11:20:00 AM
Project: Grand River - Levert
Lab ID: 22061147-002 **Matrix:** AQUEOUS
Client Sample ID LT-5

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH-D/O IN WATER BY SW8015					SW8015B	Analyst: CRM
TPH DRO/ORO IN WATER BY SW8015					SW3511	
TPH (Diesel Range)	0.302	0.128		mg/L	1	6/30/2022 1:38:00 AM
TPH (Oil Range)	0.311	0.119		mg/L	1	6/30/2022 1:38:00 AM
Surr: 4-Terphenyl-d14	154	51.4 - 146	SM	%Rec	1	6/30/2022 1:38:00 AM
BTEX/TPH-G IN WATER BY SW8021/8015					SW8015B	Analyst: LG
TPH-GRO IN WATER BY SW8015B						
TPH (Gasoline Range)	< 0.150	0.150		mg/L	1	6/30/2022 7:18:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	92.6	70 - 130		%Rec	1	6/30/2022 7:18:00 PM
BTEX/TPH-G IN WATER BY SW8021/8015					SW8021B	Analyst: LG
BTEX IN WATER BY SW8021B						
Benzene	< 0.00500	0.00500		mg/L	1	6/30/2022 7:18:00 PM
Ethylbenzene	< 0.00500	0.00500		mg/L	1	6/30/2022 7:18:00 PM
m,p-Xylene	< 0.0100	0.0100		mg/L	1	6/30/2022 7:18:00 PM
o-Xylene	< 0.00500	0.00500		mg/L	1	6/30/2022 7:18:00 PM
Toluene	< 0.0100	0.0100		mg/L	1	6/30/2022 7:18:00 PM
Xylenes, Total	< 0.0500	0.0500		mg/L	1	6/30/2022 7:18:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	83.8	70 - 130		%Rec	1	6/30/2022 7:18:00 PM
RCRA METALS - SW6010/7470A					SW7470A	Analyst: BXB
MERCURY IN GROUND WATER, TOTAL						
Mercury	< 0.000200	0.000200		mg/L	1	6/29/2022 11:50:18 AM
INORGANIC ANIONS IN WATER BY IC					SW9056A	Analyst: SGP
Chloride	196	12.5		mg/L	50	6/30/2022 10:51:37 AM
Sulfate	< 0.250	0.250		mg/L	1	6/30/2022 12:41:57 PM
RCRA METALS - SW6010/7470A					SW6010B	Analyst: MRM
METALS IN WATER BY ICP, TOTALS						
Barium	0.627	0.0100		mg/L	1	6/29/2022 12:33:04 PM
Cadmium	< 0.00500	0.00500		mg/L	1	6/29/2022 12:33:04 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061147

Date Reported: 7/8/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/22/2022 11:20:00 AM
Project: Grand River - Levert
Lab ID: 22061147-002 **Matrix:** AQUEOUS
Client Sample ID LT-5

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
RCRA METALS - SW6010/7470A					SW6010B	Analyst: MRM
METALS IN WATER BY ICP, TOTALS						
Calcium	167	0.500		mg/L	1	6/29/2022 12:33:04 PM
Chromium	< 0.0100	0.0100		mg/L	1	6/29/2022 12:33:04 PM
Iron	28.4	0.0100		mg/L	1	6/29/2022 12:33:04 PM
Lead	< 0.0100	0.0100		mg/L	1	6/29/2022 12:33:04 PM
Magnesium	60.7	0.500		mg/L	1	6/29/2022 12:33:04 PM
Manganese	1.96	0.0500		mg/L	1	6/29/2022 12:33:04 PM
Potassium	< 5.00	5.00		mg/L	1	6/29/2022 12:33:04 PM
Sodium	72.1	5.00		mg/L	1	6/29/2022 12:33:04 PM
Strontium	1.18	0.0100		mg/L	1	6/29/2022 12:33:04 PM
Zinc	0.0172	0.0100		mg/L	1	6/29/2022 12:33:04 PM
RCRA METALS - SW6010/7470A					SW6020A	Analyst: MRB
METALS IN WATER BY ICP-MS, TOTAL						
Arsenic	28.0	2.50		µg/L	10	6/28/2022 12:11:40 PM
ALKALINITY; TOTAL, CARB, BICARB					SM2320 B	Analyst: AD
Alkalinity, Bicarbonate (As CaCO3)	465	20.0		mgCaCO3/L	1	7/5/2022 8:57:00 AM
Alkalinity, Carbonate (As CaCO3)	< 20.0	20.0		mgCaCO3/L	1	7/5/2022 8:57:00 AM
Alkalinity, Phenolphthalein	< 20.0	20.0		mgCaCO3/L	1	7/5/2022 8:57:00 AM
Alkalinity, Total (As CaCO3)	465	20.0		mgCaCO3/L	1	7/5/2022 8:57:00 AM
TOTAL DISSOLVED SOLIDS					SM2540C	Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	925	50.0		mg/L	5	6/27/2022 8:06:00 AM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: 44238

Sample ID	MB-44238	SampType:	MBLK	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/26/2022	RunNo:	111000					
Client ID:	PBW	Batch ID:	44238	TestNo:	SW6010B			Analysis Date:	6/29/2022	SeqNo:	2741068					
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium		< 0.0100		0.0100												
Cadmium		< 0.00500		0.00500												
Calcium		< 0.500		0.500												
Chromium		< 0.0100		0.0100												
Iron		< 0.0100		0.0100												
Lead		< 0.0100		0.0100												
Magnesium		< 0.500		0.500												
Manganese		< 0.0500		0.0500												
Potassium		< 5.00		5.00												
Sodium		< 10.0		10.0												
Strontium		< 0.0100		0.0100												
Zinc		< 0.0100		0.0100												

Sample ID	LCS-44238	SampType:	LCS	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/26/2022	RunNo:	111000					
Client ID:	LCSW	Batch ID:	44238	TestNo:	SW6010B			Analysis Date:	6/29/2022	SeqNo:	2741068					
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium		0.511		0.0100		0.5000		0		102	80	120				
Cadmium		0.507		0.00500		0.5000		0		101	80	120				
Calcium		52.1		0.500		50.00		0		104	80	120				
Chromium		0.518		0.0100		0.5000		0		104	80	120				
Iron		0.508		0.0100		0.5000		0		102	80	120				
Lead		0.506		0.0100		0.5000		0		101	80	120				
Magnesium		52.0		0.500		50.00		0		104	80	120				
Manganese		0.545		0.0500		0.5000		0		109	80	120				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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 Website: www.element.com

QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: 44238

Sample ID	LCS-44238	SampType:	LCS	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/26/2022	RunNo:	111000
Client ID:	LCSW	Batch ID:	44238	TestNo:	SW6010B			Analysis Date:	6/29/2022	SeqNo:	2741069
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	52.0	5.00	50.00	0	104	80	120				
Sodium	53.0	10.0	50.00	0	106	80	120				
Strontium	0.515	0.0100	0.5000	0	103	80	120				
Zinc	0.506	0.0100	0.5000	0	101	80	120				

Sample ID	LCSD-44238	SampType:	LCSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/26/2022	RunNo:	111000
Client ID:	LCSS02	Batch ID:	44238	TestNo:	SW6010B			Analysis Date:	6/29/2022	SeqNo:	2741070
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.505	0.0100	0.5000	0	101	80	120	0.5111	1.15	20	
Cadmium	0.501	0.00500	0.5000	0	100	80	120	0.5072	1.13	20	
Calcium	49.7	0.500	50.00	0	99.4	80	120	52.15	4.80	20	
Chromium	0.510	0.0100	0.5000	0	102	80	120	0.5179	1.46	20	
Iron	0.502	0.0100	0.5000	0	100	80	120	0.5082	1.25	20	
Lead	0.504	0.0100	0.5000	0	101	80	120	0.5059	0.374	20	
Magnesium	49.7	0.500	50.00	0	99.4	80	120	51.96	4.48	20	
Manganese	0.544	0.0500	0.5000	0	109	80	120	0.5449	0.0716	20	
Potassium	49.6	5.00	50.00	0	99.3	80	120	52.03	4.69	20	
Sodium	52.2	10.0	50.00	0	104	80	120	52.99	1.59	20	
Strontium	0.509	0.0100	0.5000	0	102	80	120	0.5147	1.20	20	
Zinc	0.505	0.0100	0.5000	0	101	80	120	0.5057	0.162	20	

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: 44238

Sample ID	22061144-002DMS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 6/26/2022	RunNo: 111000					
Client ID:	ZZZZZZ	Batch ID: 44238	TestNo: SW6010B	Analysis Date: 6/29/2022	SeqNo: 2741073						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	1.20	0.0100	0.5000	0.6984	100	75	125				
Cadmium	0.518	0.00500	0.5000	0.001440	103	75	125				
Calcium	156	0.500	50.00	104.6	104	75	125				
Chromium	0.517	0.0100	0.5000	0	103	75	125				
Iron	2.72	0.0100	0.5000	2.224	100	75	125				
Lead	0.502	0.0100	0.5000	0	100	75	125				
Magnesium	90.3	0.500	50.00	37.82	105	75	125				
Manganese	1.04	0.0500	0.5000	0.5445	99.7	75	125				
Potassium	58.8	5.00	50.00	5.309	107	75	125				
Sodium	250	10.0	50.00	195.9	108	75	125				
Strontium	1.15	0.0100	0.5000	0.6420	102	75	125				
Zinc	0.517	0.0100	0.5000	0	103	75	125				

Sample ID	22061144-002DMSD	SampType: MSD	TestCode: 6010_W	Units: mg/L	Prep Date: 6/26/2022	RunNo: 111000					
Client ID:	ZZZZZZ	Batch ID: 44238	TestNo: SW6010B	Analysis Date: 6/29/2022	SeqNo: 2741078						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	1.20	0.0100	0.5000	0.6984	101	75	125	1.200	0.201	20	
Cadmium	0.514	0.00500	0.5000	0.001440	102	75	125	0.5177	0.793	20	
Calcium	158	0.500	50.00	104.6	107	75	125	156.4	1.12	20	
Chromium	0.510	0.0100	0.5000	0	102	75	125	0.5166	1.30	20	
Iron	2.75	0.0100	0.5000	2.224	106	75	125	2.724	1.12	20	
Lead	0.499	0.0100	0.5000	0	99.9	75	125	0.5023	0.567	20	
Magnesium	90.9	0.500	50.00	37.82	106	75	125	90.32	0.604	20	
Manganese	1.04	0.0500	0.5000	0.5445	99.6	75	125	1.043	0.0355	20	

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: 44238

Sample ID	22061144-002DMSD	SampType:	MSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/26/2022	RunNo:	111000
Client ID:	ZZZZZZ	Batch ID:	44238	TestNo:	SW6010B			Analysis Date:	6/29/2022	SeqNo:	2741078
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	58.9	5.00	50.00	5.309	107	75	125	58.78	0.186	20	
Sodium	254	10.0	50.00	195.9	117	75	125	250.0	1.67	20	
Strontium	1.16	0.0100	0.5000	0.6420	104	75	125	1.152	0.647	20	
Zinc	0.518	0.0100	0.5000	0	104	75	125	0.5167	0.288	20	

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: 44239

Sample ID	MB-44239	SampType:	MBLK	TestCode:	6020A_W	Units:	µg/L	Prep Date:	6/26/2022	RunNo:	110960			
Client ID:	PBW	Batch ID:	44239	TestNo:	SW6020A			Analysis Date:	6/28/2022	SeqNo:	2739892			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		< 0.250		0.250										

Sample ID	LCS-44239	SampType:	LCS	TestCode:	6020A_W	Units:	µg/L	Prep Date:	6/26/2022	RunNo:	110960			
Client ID:	LCSW	Batch ID:	44239	TestNo:	SW6020A			Analysis Date:	6/28/2022	SeqNo:	2739893			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		502		5.00	500.0	0		100	80	120				

Sample ID	LCSD-44239	SampType:	LCSD	TestCode:	6020A_W	Units:	µg/L	Prep Date:	6/26/2022	RunNo:	110960			
Client ID:	LCSS02	Batch ID:	44239	TestNo:	SW6020A			Analysis Date:	6/28/2022	SeqNo:	2739894			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		495		5.00	500.0	0		98.9	80	120	502.1	1.51	20	

Sample ID	22061144-002DMS	SampType:	MS	TestCode:	6020A_W	Units:	µg/L	Prep Date:	6/26/2022	RunNo:	110960			
Client ID:	ZZZZZZ	Batch ID:	44239	TestNo:	SW6020A			Analysis Date:	6/28/2022	SeqNo:	2739897			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		522		5.00	500.0	24.30		99.6	75	125				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
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 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: 44239

Sample ID	22061144-002DMSD	SampType:	MSD	TestCode:	6020A_W	Units:	µg/L	Prep Date:	6/26/2022	RunNo:	110960		
Client ID:	ZZZZZZ	Batch ID:	44239	TestNo:	SW6020A			Analysis Date:	6/28/2022	SeqNo:	2739898		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		513		5.00	500.0	24.30	97.7	75	125	522.1	1.81	20	

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
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 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: 44247

Sample ID	22061144-003cdup	SampType:	DUP	TestCode:	8015_DO_W_	Units:	mg/L	Prep Date:	6/27/2022	RunNo:	111018
Client ID:	ZZZZZZ	Batch ID:	44247	TestNo:	SW8015B		SW3511	Analysis Date:	6/30/2022	SeqNo:	2741477
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel Range)	0.195	0.126						0.1957	0.292	40	
TPH (Oil Range)	< 0.117	0.117						0	0	40	
Surr: 4-Terphenyl-d14	0.0929		0.05558		167	51.4	146		0	0	SM

Sample ID	LCSD-D44247	SampType:	LCSD	TestCode:	8015_DO_W_	Units:	mg/L	Prep Date:	6/27/2022	RunNo:	111018
Client ID:	LCSS02	Batch ID:	44247	TestNo:	SW8015B		SW3511	Analysis Date:	6/29/2022	SeqNo:	2741482
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel Range)	1.72	0.128	1.691	0	102	70	130	2.035	16.8	14.1	R
Surr: 4-Terphenyl-d14	0.0740		0.05635		131	51.4	146		0	40	

NOTES:
 R - LCS/LCSD RPD above the control limit. Recovery of the analyte was within the acceptance limits in both LCS/LCSD.

Sample ID	LCSD-M44247	SampType:	LCSD	TestCode:	8015_DO_W_	Units:	mg/L	Prep Date:	6/27/2022	RunNo:	111018
Client ID:	LCSS02	Batch ID:	44247	TestNo:	SW8015B		SW3511	Analysis Date:	6/29/2022	SeqNo:	2741483
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Oil Range)	2.11	0.119	1.700	0	124	70	130	1.849	13.4	23.2	
Surr: 4-Terphenyl-d14	0.0902		0.05665		159	51.4	146		0	40	S

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: 44247

Sample ID	LCS-M44247	SampType:	LCS	TestCode:	8015_DO_W_	Units:	mg/L	Prep Date:	6/27/2022	RunNo:	111018			
Client ID:	LCSW	Batch ID:	44247	TestNo:	SW8015B	SW3511		Analysis Date:	6/29/2022	SeqNo:	2741484			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Oil Range)		1.85		0.119	1.693	0		109	70	130				
Surr: 4-Terphenyl-d14		0.0789			0.05643			140	51.4	146				

Sample ID	MB-44247	SampType:	MBLK	TestCode:	8015_DO_W_	Units:	mg/L	Prep Date:	6/27/2022	RunNo:	111018			
Client ID:	PBW	Batch ID:	44247	TestNo:	SW8015B	SW3511		Analysis Date:	6/29/2022	SeqNo:	2741485			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel Range)		< 0.137		0.137										
TPH (Oil Range)		< 0.127		0.127										
Surr: 4-Terphenyl-d14		0.0844			0.06035			140	51.4	146				

Sample ID	LCS-D44247	SampType:	LCS	TestCode:	8015_DO_W_	Units:	mg/L	Prep Date:	6/27/2022	RunNo:	111018			
Client ID:	LCSW	Batch ID:	44247	TestNo:	SW8015B	SW3511		Analysis Date:	7/5/2022	SeqNo:	2744423			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel Range)		2.04		0.128	1.691	0		120	70	130				
Surr: 4-Terphenyl-d14		0.0717			0.05637			127	51.4	146				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: 44263

Sample ID	MB-44263	SampType:	MBLK	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/28/2022	RunNo:	110997			
Client ID:	PBW	Batch ID:	44263	TestNo:	SW7470A			Analysis Date:	6/29/2022	SeqNo:	2740864			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		< 0.000200		0.000200										

Sample ID	LCS-44263	SampType:	LCS	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/28/2022	RunNo:	110997			
Client ID:	LCSW	Batch ID:	44263	TestNo:	SW7470A			Analysis Date:	6/29/2022	SeqNo:	2740865			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.00982		0.000200	0.01000	0		98.2	80	120				

Sample ID	LCSD-44263	SampType:	LCSD	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/28/2022	RunNo:	110997			
Client ID:	LCSS02	Batch ID:	44263	TestNo:	SW7470A			Analysis Date:	6/29/2022	SeqNo:	2740866			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.00964		0.000200	0.01000	0		96.4	80	120	0.009817	1.86	20	

Sample ID	22061144-003DMS	SampType:	MS	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/28/2022	RunNo:	110997			
Client ID:	ZZZZZZ	Batch ID:	44263	TestNo:	SW7470A			Analysis Date:	6/29/2022	SeqNo:	2740868			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.0101		0.000200	0.01000	0		101	75	125				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: 44263

Sample ID	22061144-003DMSD	SampType:	MSD	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/28/2022	RunNo:	110997											
Client ID:	ZZZZZZ	Batch ID:	44263	TestNo:	SW7470A			Analysis Date:	6/29/2022	SeqNo:	2740869											
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC		LowLimit		HighLimit		RPD Ref Val		%RPD		RPDLimit		Qual
Mercury		0.0104		0.000200		0.01000		0		104		75		125		0.01013		2.53		20		

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: R110912

Sample ID	MB-R110912	SampType:	MBLK	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	110912					
Client ID:	PBW	Batch ID:	R110912	TestNo:	SM2540C			Analysis Date:	6/27/2022	SeqNo:	2739682					
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) < 10.0 10.0

Sample ID	LCS-R110912	SampType:	LCS	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	110912					
Client ID:	LCSW	Batch ID:	R110912	TestNo:	SM2540C			Analysis Date:	6/27/2022	SeqNo:	2739683					
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 1,000 10.0 1,000 0 100 85 115

Sample ID	LCSD-R110912	SampType:	LCSD	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	110912					
Client ID:	LCSS02	Batch ID:	R110912	TestNo:	SM2540C			Analysis Date:	6/27/2022	SeqNo:	2739684					
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 1,020 10.0 1,000 0 102 85 115 1,003 1.29 10

Sample ID	22061144-001ADUP	SampType:	DUP	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	110912					
Client ID:	ZZZZZZ	Batch ID:	R110912	TestNo:	SM2540C			Analysis Date:	6/27/2022	SeqNo:	2739686					
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 248 10.0 245.0 1.22 10

Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits RL Reporting Limit S Spike Recovery outside accepted recovery limits
 SDL Sample detection limit U Analyte not detected W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: R110912

Sample ID	22061144-001ADUP	SampType:	DUP	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	110912			
Client ID:	ZZZZZZ	Batch ID:	R110912	TestNo:	SM2540C			Analysis Date:	6/27/2022	SeqNo:	2739686			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	22061147-002ADUP	SampType:	DUP	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	110912			
Client ID:	LT-5	Batch ID:	R110912	TestNo:	SM2540C			Analysis Date:	6/27/2022	SeqNo:	2739692			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filterable)		895		50.0							925.0	3.30	10	

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: R111048

Sample ID	MBLK	SampType:	MBLK	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	111048			
Client ID:	PBW	Batch ID:	R111048	TestNo:	SW9056A			Analysis Date:	6/30/2022	SeqNo:	2742263			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		< 0.250		0.250										
Sulfate		< 0.250		0.250										

Sample ID	LCS	SampType:	LCS	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	111048			
Client ID:	LCSW	Batch ID:	R111048	TestNo:	SW9056A			Analysis Date:	6/30/2022	SeqNo:	2742264			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		10.1		0.250	10.00	0		101	80	120				
Sulfate		9.62		0.250	10.00	0		96.2	80	120				

Sample ID	LCSD	SampType:	LCSD	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	111048			
Client ID:	LCSS02	Batch ID:	R111048	TestNo:	SW9056A			Analysis Date:	6/30/2022	SeqNo:	2742265			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		10.1		0.250	10.00	0		101	80	120	10.09	0.302	15	
Sulfate		9.59		0.250	10.00	0		95.9	80	120	9.618	0.281	15	

Sample ID	22061329-001DMS	SampType:	MS	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	111048			
Client ID:	ZZZZZZ	Batch ID:	R111048	TestNo:	SW9056A			Analysis Date:	6/30/2022	SeqNo:	2742268			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		5.29		0.250	5.000	0.2302		101	80	120				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: R111048

Sample ID	22061329-001DMS	SampType:	MS	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	111048					
Client ID:	ZZZZZZ	Batch ID:	R111048	TestNo:	SW9056A			Analysis Date:	6/30/2022	SeqNo:	2742268					
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate		5.54		0.250		5.000		0.6550		97.7	80	120				

Sample ID	22061329-001DMSD	SampType:	MSD	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	111048					
Client ID:	ZZZZZZ	Batch ID:	R111048	TestNo:	SW9056A			Analysis Date:	6/30/2022	SeqNo:	2742269					
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		5.48		0.250		5.000		0.2302		105	80	120	5.286	3.67	15	
Sulfate		5.54		0.250		5.000		0.6550		97.7	80	120	5.539	0.0239	15	

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: R111049

Sample ID	BTEX LCS	SampType: LCS	TestCode: 8021_BTEX_	Units: mg/L	Prep Date:	RunNo: 111049					
Client ID:	LCSW	Batch ID: R111049	TestNo: SW8021B	Analysis Date: 6/30/2022	SeqNo: 2742329						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.0465	0.00500	0.05000	0	93.0	72	120				
Ethylbenzene	0.0490	0.00500	0.05000	0	98.0	76	129				
m,p-Xylene	0.0985	0.0100	0.1000	0	98.5	75	125				
o-Xylene	0.0469	0.00500	0.05000	0	93.8	75	125				
Toluene	0.0471	0.0100	0.05000	0	94.2	78	120				
Xylenes, Total	0.146	0.0500	0.1500	0	97.0	75	125				
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0454		0.05000		90.8	70	130				

Sample ID	BTEX LCSD	SampType: LCSD	TestCode: 8021_BTEX_	Units: mg/L	Prep Date:	RunNo: 111049					
Client ID:	LCSS02	Batch ID: R111049	TestNo: SW8021B	Analysis Date: 6/30/2022	SeqNo: 2742330						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.0475	0.00500	0.05000	0	95.0	72	120	0.04650	2.13	20	
Ethylbenzene	0.0500	0.00500	0.05000	0	100	76	129	0.04900	2.02	20	
m,p-Xylene	0.101	0.0100	0.1000	0	101	75	125	0.09850	2.51	20	
o-Xylene	0.0477	0.00500	0.05000	0	95.4	75	125	0.04690	1.69	20	
Toluene	0.0479	0.0100	0.05000	0	95.8	78	120	0.04710	1.68	20	
Xylenes, Total	0.149	0.0500	0.1500	0	99.1	75	125	0.1455	2.18	20	
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0435		0.05000		87.0	70	130		0	20	

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: R111049

Sample ID	MBLK ACID	SampType:	MBLK	TestCode:	8021_BTEX_	Units:	mg/L	Prep Date:		RunNo:	111049			
Client ID:	PBW	Batch ID:	R111049	TestNo:	SW8021B			Analysis Date:	6/30/2022	SeqNo:	2742331			
Analyte		Result		PQL		SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene		< 0.00500		0.00500										
Ethylbenzene		< 0.00500		0.00500										
m,p-Xylene		< 0.0100		0.0100										
o-Xylene		< 0.00500		0.00500										
Toluene		< 0.0100		0.0100										
Xylenes, Total		< 0.0500		0.0500										
Surr: alpha, alpha, alpha-Trifluorotoluene		0.0408				0.05000		81.6	70	130				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: R111052

Sample ID	GAS LCS	SampType: LCS	TestCode: 8015_G_W	Units:	Prep Date:	RunNo: 111052					
Client ID:	LCSW	Batch ID: R111052	TestNo: SW8015B		Analysis Date: 6/30/2022	SeqNo: 2742411					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline Range)	14.7	0.150	12.50	0	118	80	130				
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0635		0.05000		127	70	130				

Sample ID	GAS LCSD	SampType: LCSD	TestCode: 8015_G_W	Units:	Prep Date:	RunNo: 111052					
Client ID:	LCSS02	Batch ID: R111052	TestNo: SW8015B		Analysis Date: 6/30/2022	SeqNo: 2742412					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline Range)	14.1	0.150	12.50	0	113	80	130	14.74	4.31	20	
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0621		0.05000		124	70	130		0	20	

Sample ID	MBLK ACID	SampType: MBLK	TestCode: 8015_G_W	Units: mg/L	Prep Date:	RunNo: 111052					
Client ID:	PBW	Batch ID: R111052	TestNo: SW8015B		Analysis Date: 6/30/2022	SeqNo: 2742413					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline Range)	< 0.150	0.150									
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0465		0.05000		93.0	70	130				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: R111094

Sample ID MB-R111094	SampType: MBLK	TestCode: ALK	Units: mgCaCO3/L	Prep Date:	RunNo: 111094						
Client ID: PBW	Batch ID: R111094	TestNo: SM2320 B		Analysis Date: 7/5/2022	SeqNo: 2743209						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	< 20.0	20.0									
Alkalinity, Carbonate (As CaCO3)	< 20.0	20.0									
Alkalinity, Phenolphthalein	< 20.0	20.0									
Alkalinity, Total (As CaCO3)	< 20.0	20.0									

Sample ID LCS-R111094	SampType: LCS	TestCode: ALK	Units: mgCaCO3/L	Prep Date:	RunNo: 111094						
Client ID: LCSW	Batch ID: R111094	TestNo: SM2320 B		Analysis Date: 7/5/2022	SeqNo: 2743210						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	49.0	20.0	50.00	0	98.0	80	120				

Sample ID 22061144-003ADUP	SampType: DUP	TestCode: ALK	Units: mgCaCO3/L	Prep Date:	RunNo: 111094						
Client ID: ZZZZZZ	Batch ID: R111094	TestNo: SM2320 B		Analysis Date: 7/5/2022	SeqNo: 2743214						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	300	20.0						312.5	4.08	20	
Alkalinity, Carbonate (As CaCO3)	< 20.0	20.0						0	0	20	
Alkalinity, Phenolphthalein	< 20.0	20.0						0	0	20	
Alkalinity, Total (As CaCO3)	300	20.0						312.5	4.08	20	

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected




ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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Sample Log-In Check List

Client Name: **ICON_ENV** Work Order Number: **22061147** RcptNo: **1**

Logged by:	Rhonda David	6/24/2022 1:12:00 PM	
Completed By:	Rhonda David	6/24/2022 2:53:50 PM	
Reviewed By:	Buffy Bryant	6/25/2022 1:16:15 PM	

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
 2. How was the sample delivered? Element

Log In

3. Coolers are present? Yes No NA
 4. Shipping container/cooler in good condition? Yes No
 Custody seals intact on shipping container/cooler? Yes No Not Present
 No. Seal Date: Signed By:
 5. Was an attempt made to cool the samples? Yes No NA
 6. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
 7. Sample(s) in proper container(s)? Yes No
 8. Sufficient sample volume for indicated test(s)? Yes No
 9. Are samples (except VOA and ONG) properly preserved? Yes No
 10. Was preservative added to bottles? Yes No NA
 11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes No No VOA Vials
 12. Were any sample containers received broken? Yes No
 13. Does paperwork match bottle labels? Yes No
 (Note discrepancies on chain of custody)
 14. Are matrices correctly identified on Chain of Custody? Yes No
 15. Is it clear what analyses were requested? Yes No
 16. Were all holding times able to be met? Yes No
 (If no, notify customer for authorization.)

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

18. Additional remarks:

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Not Present			



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July 11, 2022

Greg Miller
ICON Environmental Services
2049 Commercial Drive
Port Allen, LA 70767
TEL: (225) 344-8490
FAX (225) 344-6654

RE: Grand River - Levert 9326-025-0100

Order No.: 22061154

Dear Greg Miller:

Element Materials Technology Lafayette received 24 sample(s) on 6/24/2022 for the analyses presented in the following report.

In accordance with your instructions, Element Lafayette either conducted or subcontracted these analyses. Subcontracted analyses will be identified in the accompanying case narrative. All relevant sampling information can be found on the attached Chain-of-Custody form. Unless otherwise noted, all analyses were conducted using EPA approved methodologies and all test results meet the applicable requirements of TNI. Reported results relate only to the items tested.

Where applicable, all soil data, except for 29-B, are reported on a wet-weight basis unless otherwise indicated in the units field as –dry.

LELAP Certification No.: 01997. TCEQ Certification No.: T104704261. LDHH Certification No.: LA023. ISDH Certification No.: C-LA-01. NDELCP Certification No.: R-226. A scope of accredited parameters is available upon request. A "#" by the test method or analyte indicates this parameter is outside the scope of accreditation. PA registration No.: 68-05967.

Estimated uncertainty is available upon request. This report shall not be reproduced, except in full, without the written approval of the laboratory.

If you have any questions regarding these test results, please feel free to call.

Cristina Thibeaux
Customer Service Supervisor



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Website: www.element.com

Case Narrative

WO#: 22061154

Date: 7/11/2022

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

Unless specified by the client, a duplicate or MS/MSD, wherever applicable, is randomly selected and analyzed from each analytical batch provided sample volume is sufficient. The sample chosen for duplicate or MS/MSD may or may not be a sample submitted in this workorder. A method blank and/or a lab control sample (LCS)/lab control sample duplicate (LCSD), wherever applicable, are processed as a quality control check for each analytical batch. When the matrix QC data is not available due to insufficient sample volume or when the results indicate possible matrix effect, the validity of the batch is determined by the method blank and LCS/LCSD.

The results of the laboratory internal quality control data are provided in the QC Summary Report section of the report for your review. Laboratory-related QC exceptions that may impact the validity of data are discussed in the case narrative. Sample-related QC exceptions are flagged either in the results page(s) or in the QC report page(s). End users should consider QC exceptions when evaluating sample data against data quality objectives.

Any other exceptions associated with this report will be footnoted in the results page(s) or the QC summary page(s).



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Analytical Report

(consolidated)

WO#: **22061154**

Date Reported: **7/11/2022**

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-001
Client Sample ID SB-9 2-4'

Collection Date: 6/22/2022 10:30:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH-D/O IN SOIL BY SW8015					SW8015B	Analyst: EH
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	1,210	100		mg/Kg	10	7/5/2022 10:57:00 AM
TPH (Oil Range)	632	120		mg/Kg	10	7/5/2022 10:57:00 AM
Surr: 4-Terphenyl-d14	103	33 - 152		%Rec	10	7/5/2022 10:57:00 AM
29B METALS					SW6010B	Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	12.7	1.92	*	mg/Kg-dry	1	6/30/2022 5:25:56 PM
Barium	3,570	14.4		mg/Kg-dry	1	6/30/2022 5:25:56 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	160,000	48.3	*	mg/Kg-dry	1	7/5/2022 4:15:03 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	39.6	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- B Analyte detected in the associated Method Blank
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

(consolidated)

WO#: **22061154**

Date Reported: **7/11/2022**

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-002
Client Sample ID SB-10 0-2'

Collection Date: 6/22/2022 11:35:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH-D/O IN SOIL BY SW8015				SW8015B	Analyst: EH	
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	142	10.0		mg/Kg	1	7/5/2022 11:11:00 AM
TPH (Oil Range)	157	12.0		mg/Kg	1	7/5/2022 11:11:00 AM
Surr: 4-Terphenyl-d14	80.9	33 - 152		%Rec	1	7/5/2022 11:11:00 AM
29B METALS				SW6010B	SW3050B	Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	6.35	2.00		mg/Kg-dry	1	6/30/2022 5:32:46 PM
Barium	3,370	15.0		mg/Kg-dry	1	6/30/2022 5:32:46 PM
29B METALS				LDNR 29-B	Analyst: MRM	
TRUE TOTAL BARIUM						
True Total Barium	21,600	49.7		mg/Kg-dry	1	7/5/2022 4:21:53 PM
PERCENT MOISTURE				LDNR 29-B	Analyst: HXW	
Percent Moisture	59.8	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| H Holding times for preparation or analysis exceeded | M Matrix Interference |
| ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| RL Reporting Limit | S Spike Recovery outside accepted recovery limits |
| SDL Sample detection limit | U Analyte not detected |
| W Sample container temperature is out of limit as specified at testcode | |



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Analytical Report

(consolidated)

WO#: 22061154

Date Reported: 7/11/2022

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-003
Client Sample ID SB-10 2-4'

Collection Date: 6/22/2022 11:35:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH-D/O IN SOIL BY SW8015					SW8015B	Analyst: EH
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	4,800	200		mg/Kg	20	7/5/2022 11:25:00 AM
TPH (Oil Range)	4,800	240		mg/Kg	20	7/5/2022 11:25:00 AM
Surr: 4-Terphenyl-d14	130	33 - 152		%Rec	20	7/5/2022 11:25:00 AM
29B METALS					SW6010B SW3050B	Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	4.22	1.96		mg/Kg-dry	1	6/30/2022 5:35:03 PM
Barium	2,320	14.7		mg/Kg-dry	1	6/30/2022 5:35:03 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	64,500	49.6	*	mg/Kg-dry	1	7/5/2022 4:24:10 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	44.0	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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Analytical Report

(consolidated)

WO#: 22061154

Date Reported: 7/11/2022

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-004
Client Sample ID SB-10 4-6'

Collection Date: 6/22/2022 12:00:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH-D/O IN SOIL BY SW8015					SW8015B	Analyst: EH
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	149	10.0		mg/Kg	1	7/5/2022 11:39:00 AM
TPH (Oil Range)	149	12.0		mg/Kg	1	7/5/2022 11:39:00 AM
Surr: 4-Terphenyl-d14	75.2	33 - 152		%Rec	1	7/5/2022 11:39:00 AM
29B METALS					SW6010B	Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP					SW3050B	
Arsenic	5.92	2.00		mg/Kg-dry	1	6/30/2022 5:37:19 PM
Barium	485	15.0		mg/Kg-dry	1	6/30/2022 5:37:19 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	2,620	48.3		mg/Kg-dry	1	7/5/2022 4:26:26 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	51.5	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode
- B Analyte detected in the associated Method Blank
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

(consolidated)

WO#: 22061154

Date Reported: 7/11/2022

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-005
Client Sample ID SB-11 0-2'

Collection Date: 6/22/2022 1:45:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
HEM, OIL & GREASE					SW9071B	Analyst: HXW
HEM, Oil & Grease	< 0.05	0.05		% dry wt	1	6/27/2022 1:34:00 PM
TPH-D/O IN SOIL BY SW8015					SW8015B	Analyst: EH
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	141	10.0		mg/Kg	1	7/5/2022 11:53:00 AM
TPH (Oil Range)	123	12.0		mg/Kg	1	7/5/2022 11:53:00 AM
Surr: 4-Terphenyl-d14	56.8	33 - 152		%Rec	1	7/5/2022 11:53:00 AM
29B METALS					29B/SW7471A SW7471A	Analyst: BXB
MERCURY IN SOIL OR SLUDGE						
Mercury	0.523	0.108		mg/Kg-dry	1	7/6/2022 10:01:32 AM
29B METALS					SW6010B SW3050B	Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	8.47	1.91		mg/Kg-dry	1	6/30/2022 5:39:36 PM
Barium	3,740	14.3		mg/Kg-dry	1	6/30/2022 5:39:36 PM
Cadmium	1.65	0.477		mg/Kg-dry	1	6/30/2022 5:39:36 PM
Chromium	196	0.955		mg/Kg-dry	1	6/30/2022 5:39:36 PM
Lead	122	0.955		mg/Kg-dry	1	6/30/2022 5:39:36 PM
Strontium	223	0.955		mg/Kg-dry	1	6/30/2022 5:39:36 PM
Zinc	273	0.955		mg/Kg-dry	1	6/30/2022 5:39:36 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	102,000	46.9	*	mg/Kg-dry	1	7/5/2022 4:33:18 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	61.9	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- B Analyte detected in the associated Method Blank
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

(consolidated)

WO#: 22061154

Date Reported: 7/11/2022

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-006
Client Sample ID SB-11 2-4'

Collection Date: 6/22/2022 1:45:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
HEM, OIL & GREASE					SW9071B	Analyst: HXW
HEM, Oil & Grease	0.14	0.05		% dry wt	1	6/27/2022 1:34:00 PM
TPH-D/O IN SOIL BY SW8015					SW8015B	Analyst: EH
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	7,870	500		mg/Kg	50	7/5/2022 12:07:00 PM
TPH (Oil Range)	4,560	600		mg/Kg	50	7/5/2022 12:07:00 PM
Surr: 4-Terphenyl-d14	0	33 - 152	SD	%Rec	50	7/5/2022 12:07:00 PM
NOTES:						
SD - Surrogate diluted out due to dilution.						
29B METALS					29B/SW7471A	Analyst: BXB
MERCURY IN SOIL OR SLUDGE					SW7471A	
Mercury	2.10	0.102		mg/Kg-dry	1	7/6/2022 10:14:34 AM
29B METALS					SW6010B	Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP					SW3050B	
Arsenic	28.1	1.97	*	mg/Kg-dry	1	6/30/2022 5:41:53 PM
Barium	2,040	14.7		mg/Kg-dry	1	6/30/2022 5:41:53 PM
Cadmium	8.98	0.491		mg/Kg-dry	1	6/30/2022 5:41:53 PM
Chromium	327	0.983		mg/Kg-dry	1	6/30/2022 5:41:53 PM
Lead	779	0.983	*	mg/Kg-dry	1	6/30/2022 5:41:53 PM
Strontium	449	0.983		mg/Kg-dry	1	6/30/2022 5:41:53 PM
Zinc	1,390	0.983	*	mg/Kg-dry	1	6/30/2022 5:41:53 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	320,000	466	*	mg/Kg-dry	10	7/5/2022 6:25:36 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	44.1	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- B Analyte detected in the associated Method Blank
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

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WO#: 22061154

Date Reported: 7/11/2022

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-007
Client Sample ID SB-12 0-2'

Collection Date: 6/22/2022 2:30:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
HEM, OIL & GREASE					SW9071B	Analyst: HXW
HEM, Oil & Grease	< 0.05	0.05		% dry wt	1	6/27/2022 1:34:00 PM
TPH-D/O IN SOIL BY SW8015					SW8015B	Analyst: EH
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	29.2	10.0		mg/Kg	1	7/5/2022 12:21:00 PM
TPH (Oil Range)	85.3	12.0		mg/Kg	1	7/5/2022 12:21:00 PM
Surr: 4-Terphenyl-d14	74.0	33 - 152		%Rec	1	7/5/2022 12:21:00 PM
29B METALS					29B/SW7471A SW7471A	Analyst: BXB
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.109	0.109		mg/Kg-dry	1	7/6/2022 10:17:15 AM
29B METALS					SW6010B SW3050B	Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	5.34	2.00		mg/Kg-dry	1	6/30/2022 5:48:46 PM
Barium	1,350	15.0		mg/Kg-dry	1	6/30/2022 5:48:46 PM
Cadmium	0.844	0.499		mg/Kg-dry	1	6/30/2022 5:48:46 PM
Chromium	22.3	0.999		mg/Kg-dry	1	6/30/2022 5:48:46 PM
Lead	23.2	0.999		mg/Kg-dry	1	6/30/2022 5:48:46 PM
Strontium	99.6	0.999		mg/Kg-dry	1	6/30/2022 5:48:46 PM
Zinc	109	0.999		mg/Kg-dry	1	6/30/2022 5:48:46 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	6,510	50.1		mg/Kg-dry	1	7/5/2022 4:37:52 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	65.8	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- B Analyte detected in the associated Method Blank
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

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WO#: 22061154

Date Reported: 7/11/2022

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-008
Client Sample ID SB-12 2-4'

Collection Date: 6/22/2022 2:30:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
HEM, OIL & GREASE					SW9071B	Analyst: HXW
HEM, Oil & Grease	0.21	0.05		% dry wt	1	6/27/2022 1:34:00 PM
TPH-D/O IN SOIL BY SW8015					SW8015B	Analyst: EH
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	4,920	500		mg/Kg	50	7/5/2022 1:15:00 PM
TPH (Oil Range)	1,440	600		mg/Kg	50	7/5/2022 1:15:00 PM
Surr: 4-Terphenyl-d14	139	33 - 152		%Rec	50	7/5/2022 1:15:00 PM
29B METALS					29B/SW7471A SW7471A	Analyst: BXB
MERCURY IN SOIL OR SLUDGE						
Mercury	2.06	0.108		mg/Kg-dry	1	7/6/2022 10:19:56 AM
29B METALS					SW6010B SW3050B	Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	61.3	1.93	*	mg/Kg-dry	1	6/30/2022 5:51:04 PM
Barium	1,470	14.5		mg/Kg-dry	1	6/30/2022 5:51:04 PM
Cadmium	12.9	0.483	*	mg/Kg-dry	1	6/30/2022 5:51:04 PM
Chromium	172	0.965		mg/Kg-dry	1	6/30/2022 5:51:04 PM
Lead	1,060	0.965	*	mg/Kg-dry	1	6/30/2022 5:51:04 PM
Strontium	505	0.965		mg/Kg-dry	1	6/30/2022 5:51:04 PM
Zinc	2,080	0.965	*	mg/Kg-dry	1	6/30/2022 5:51:04 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	323,000	476	*	mg/Kg-dry	10	7/5/2022 6:27:55 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	22.8	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- B Analyte detected in the associated Method Blank
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

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WO#: **22061154**

Date Reported: **7/11/2022**

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-009
Client Sample ID SB-13 0-2'

Collection Date: 6/22/2022 3:30:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Arsenic	6.65	1.96		mg/Kg-dry	1	6/30/2022 5:53:23 PM
Barium	408	14.7		mg/Kg-dry	1	6/30/2022 5:53:23 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	3,990	49.9		mg/Kg-dry	1	7/5/2022 4:42:26 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	42.5	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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Analytical Report

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WO#: **22061154**

Date Reported: **7/11/2022**

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-010
Client Sample ID SB-13 2-4'

Collection Date: 6/22/2022 3:30:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Arsenic	5.14	2.00		mg/Kg-dry	1	6/30/2022 5:55:40 PM
Barium	197	15.0		mg/Kg-dry	1	6/30/2022 5:55:40 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	1,390	48.2		mg/Kg-dry	1	7/5/2022 4:44:43 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	38.0	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode
- B Analyte detected in the associated Method Blank
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

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WO#: 22061154

Date Reported: 7/11/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 10:15:00 AM
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-011 **Matrix:** SOIL
Client Sample ID SB-14 0-2'

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Arsenic	3.38	1.96		mg/Kg-dry	1	6/30/2022 5:57:58 PM
Barium	247	14.7		mg/Kg-dry	1	6/30/2022 5:57:58 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	4,050	46.6		mg/Kg-dry	1	7/5/2022 4:47:00 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	39.2	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode		



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WO#: 22061154

Date Reported: 7/11/2022

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-012
Client Sample ID SB-14 2-4'

Collection Date: 6/23/2022 10:15:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Arsenic	5.17	1.96		mg/Kg-dry	1	6/30/2022 6:00:16 PM
Barium	929	14.7		mg/Kg-dry	1	6/30/2022 6:00:16 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	6,640	48.5		mg/Kg-dry	1	7/5/2022 4:49:17 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	36.7	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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Analytical Report

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WO#: **22061154**

Date Reported: **7/11/2022**

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-013
Client Sample ID SB-14 6-8'

Collection Date: 6/23/2022 10:30:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Arsenic	4.46	1.95		mg/Kg-dry	1	6/30/2022 6:02:35 PM
Barium	530	14.7		mg/Kg-dry	1	6/30/2022 6:02:35 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	3,360	46.6		mg/Kg-dry	1	7/5/2022 4:51:34 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	53.3	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| H Holding times for preparation or analysis exceeded | M Matrix Interference |
| ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| RL Reporting Limit | S Spike Recovery outside accepted recovery limits |
| SDL Sample detection limit | U Analyte not detected |
| W Sample container temperature is out of limit as specified at testcode | |



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Analytical Report

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WO#: 22061154

Date Reported: 7/11/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 10:40:00 AM
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-014 **Matrix:** SOIL
Client Sample ID SB-15 0-2'

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Arsenic	5.65	1.98		mg/Kg-dry	1	6/30/2022 6:04:53 PM
Barium	258	14.9		mg/Kg-dry	1	6/30/2022 6:04:53 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	762	48.4		mg/Kg-dry	1	7/5/2022 4:53:50 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	34.3	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: 22061154

Date Reported: 7/11/2022

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-015
Client Sample ID SB-15 2-4'

Collection Date: 6/23/2022 10:40:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Arsenic	4.99	1.95		mg/Kg-dry	1	6/30/2022 6:07:11 PM
Barium	297	14.6		mg/Kg-dry	1	6/30/2022 6:07:11 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	1,470	48.5		mg/Kg-dry	1	7/5/2022 5:00:40 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	34.1	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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Analytical Report

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WO#: **22061154**

Date Reported: **7/11/2022**

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-016
Client Sample ID SB-16 0-2'

Collection Date: 6/23/2022 11:20:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Arsenic	7.06	2.00		mg/Kg-dry	1	6/30/2022 6:09:29 PM
Barium	1,010	15.0		mg/Kg-dry	1	6/30/2022 6:09:29 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	4,960	49.2		mg/Kg-dry	1	7/5/2022 5:02:57 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	39.8	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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 Website: www.element.com

Analytical Report

(consolidated)

WO#: 22061154

Date Reported: 7/11/2022

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-017
Client Sample ID SB-16 2-4'

Collection Date: 6/23/2022 11:20:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Arsenic	4.76	1.99		mg/Kg-dry	1	6/30/2022 6:16:20 PM
Barium	350	14.9		mg/Kg-dry	1	6/30/2022 6:16:20 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	723	45.8		mg/Kg-dry	1	7/5/2022 5:05:14 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	37.0	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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Analytical Report

(consolidated)

WO#: **22061154**

Date Reported: **7/11/2022**

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-018
Client Sample ID SB-16 6-8'

Collection Date: 6/23/2022 11:35:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Arsenic	4.23	1.99		mg/Kg-dry	1	6/30/2022 6:18:38 PM
Barium	438	14.9		mg/Kg-dry	1	6/30/2022 6:18:38 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	1,170	49.2		mg/Kg-dry	1	7/5/2022 5:07:30 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	46.5	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: **22061154**

Date Reported: **7/11/2022**

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-019
Client Sample ID SB-17 0-2'

Collection Date: 6/23/2022 2:15:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
HEM, OIL & GREASE					SW9071B	Analyst: HXW
HEM, Oil & Grease	2.20	0.05		% dry wt	1	6/27/2022 1:34:00 PM
TPH-D/O IN SOIL BY SW8015					SW8015B	Analyst: EH
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	5,440	500		mg/Kg	50	7/5/2022 1:43:00 PM
TPH (Oil Range)	5,290	600		mg/Kg	50	7/5/2022 1:43:00 PM
Surr: 4-Terphenyl-d14	146	33 - 152		%Rec	50	7/5/2022 1:43:00 PM

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| H Holding times for preparation or analysis exceeded | M Matrix Interference |
| ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| RL Reporting Limit | S Spike Recovery outside accepted recovery limits |
| SDL Sample detection limit | U Analyte not detected |
| W Sample container temperature is out of limit as specified at testcode | |



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Analytical Report

(consolidated)

WO#: **22061154**

Date Reported: **7/11/2022**

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-020
Client Sample ID SB-21 0-2'

Collection Date: 6/23/2022 3:10:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Arsenic	5.58	2.00		mg/Kg-dry	1	6/30/2022 6:20:56 PM
Barium	1,370	15.0		mg/Kg-dry	1	6/30/2022 6:20:56 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	6,910	49.9		mg/Kg-dry	1	7/5/2022 5:09:46 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	31.7	1.00		wt%	1	6/27/2022 12:45:00 PM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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Analytical Report

(consolidated)

WO#: 22061154

Date Reported: 7/11/2022

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-021
Client Sample ID SB-22 0-2'

Collection Date: 6/23/2022 3:20:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Arsenic	6.92	1.98		mg/Kg-dry	1	6/30/2022 6:23:14 PM
Barium	546	14.8		mg/Kg-dry	1	6/30/2022 6:23:14 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	3,150	49.4		mg/Kg-dry	1	7/5/2022 5:12:03 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	35.6	1.00		wt%	1	6/27/2022 12:45:00 PM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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Analytical Report

(consolidated)

WO#: 22061154

Date Reported: 7/11/2022

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-022
Client Sample ID SB-23 0-2'

Collection Date: 6/23/2022 3:25:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Arsenic	4.30	1.99		mg/Kg-dry	1	7/7/2022 4:06:48 PM
Barium	202	14.9		mg/Kg-dry	1	7/7/2022 4:06:48 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	492	235		mg/Kg-dry	1	7/7/2022 2:51:19 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	34.2	1.00		wt%	1	6/27/2022 12:45:00 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: **22061154**

Date Reported: **7/11/2022**

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-023
Client Sample ID SB-24 0-2'

Collection Date: 6/23/2022 3:30:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS				SW6010B	SW3050B	Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	3.21	1.93		mg/Kg-dry	1	7/7/2022 4:13:38 PM
Barium	179	14.5		mg/Kg-dry	1	7/7/2022 4:13:38 PM
29B METALS				LDNR 29-B		Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	537	248		mg/Kg-dry	1	7/7/2022 3:02:46 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: HXW
Percent Moisture	34.9	1.00		wt%	1	6/27/2022 12:45:00 PM

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| H Holding times for preparation or analysis exceeded | M Matrix Interference |
| ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| RL Reporting Limit | S Spike Recovery outside accepted recovery limits |
| SDL Sample detection limit | U Analyte not detected |
| W Sample container temperature is out of limit as specified at testcode | |



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Analytical Report

(consolidated)

WO#: **22061154**

Date Reported: **7/11/2022**

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-024
Client Sample ID SB-15 6-8'

Collection Date: 6/23/2022 11:00:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS				SW6010B	SW3050B	Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	6.07	2.00		mg/Kg-dry	1	7/7/2022 4:25:10 PM
Barium	217	15.0		mg/Kg-dry	1	7/7/2022 4:25:10 PM
29B METALS				LDNR 29-B		Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	618	237		mg/Kg-dry	1	7/7/2022 3:05:02 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: HXW
Percent Moisture	41.6	1.00		wt%	1	6/27/2022 12:45:00 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: 44249-1

Sample ID	LCS-D44249	SampType:	LCS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	LCSS	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743740			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	89.4	10.0	100.0	0	89.4	63.4	109
Surr: 4-Terphenyl-d14	3.32		3.333		99.7	33	152

Sample ID	LCSD-D44249	SampType:	LCSD	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	LCSS02	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743741			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	87.0	10.0	100.0	0	87.0	63.4	109	89.37	2.72	21.9
Surr: 4-Terphenyl-d14	3.23		3.333		96.9	33	152		0	40

Sample ID	MB-44249	SampType:	MBLK	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	PBS	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743742			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	< 10.0	10.0					
TPH (Oil Range)	< 12.0	12.0					
Surr: 4-Terphenyl-d14	2.80		3.333		84.0	33	152

Sample ID	LCS-M44249	SampType:	LCS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	LCSS	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743776			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits	
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit	
U Analyte not detected	W Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: 44249-1

Sample ID	LCS-M44249	SampType:	LCS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	LCSS	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743776			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range)	90.2	12.0	100.0	0	90.2	63.9	120							
Surr: 4-Terphenyl-d14	3.27		3.333		98.2	33	152							

Sample ID	LCSD-M44249	SampType:	LCSD	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	LCSS02	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743843			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range)	99.1	12.0	100.0	0	99.1	63.9	120	90.15	9.41	20.7
Surr: 4-Terphenyl-d14	3.46		3.333		104	33	152		0	40

Sample ID	22061062-001AMS-	SampType:	MS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	ZZZZZ	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743893			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	77.6	10.0	100.0	11.79	65.8	23.4	123			
Surr: 4-Terphenyl-d14	3.13		3.333		93.9	33	152			

Sample ID	22061062-001AMS-	SampType:	MS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	ZZZZZ	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743894			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range)	103	12.0	100.0	15.91	87.6	14.5	174			
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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: 44249-1

Sample ID	22061062-001AMS-	SampType:	MS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	ZZZZZZ	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743894			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Surr: 4-Terphenyl-d14 3.07 3.333 92.0 33 152

Sample ID	22061062-001AMSD	SampType:	MSD	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	ZZZZZZ	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743895			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range) 84.4 10.0 100.0 11.79 72.7 23.4 123 77.62 8.41 35.6
 Surr: 4-Terphenyl-d14 2.93 3.333 88.0 33 152 0 40

Sample ID	22061062-001AMSD	SampType:	MSD	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	ZZZZZZ	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743979			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range) 100 12.0 100.0 15.91 84.2 14.5 174 103.5 3.34 48.8
 Surr: 4-Terphenyl-d14 2.93 3.333 87.8 33 152 0 40

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceed
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: 44272

Sample ID	MB-44272	SampType:	MBLK	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	6/29/2022	RunNo:	111046		
Client ID:	PBS	Batch ID:	44272	TestNo:	SW6010B	SW3050B		Analysis Date:	6/30/2022	SeqNo:	2742152		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		< 2.00		2.00									
Barium		< 15.0		15.0									
Cadmium		< 0.500		0.500									
Chromium		< 1.00		1.00									
Lead		< 1.00		1.00									
Strontium		< 1.00		1.00									
Zinc		< 1.00		1.00									

Sample ID	LCS-44272	SampType:	LCS	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	6/29/2022	RunNo:	111046		
Client ID:	LCSS	Batch ID:	44272	TestNo:	SW6010B	SW3050B		Analysis Date:	6/30/2022	SeqNo:	2742157		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		45.2		2.00	50.00	0	90.4	80	120				
Barium		52.1		15.0	50.00	0	104	80	120				
Cadmium		44.3		0.500	50.00	0	88.6	80	120				
Chromium		46.3		1.00	50.00	0	92.6	80	120				
Lead		45.5		1.00	50.00	0	91.1	80	120				
Strontium		46.0		1.00	50.00	0	92.0	80	120				
Zinc		43.3		1.00	50.00	0	86.6	80	120				

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: 44272

Sample ID	LCSD-44272	SampType:	LCSD	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	6/29/2022	RunNo:	111046
Client ID:	LCSS02	Batch ID:	44272	TestNo:	SW6010B	SW3050B		Analysis Date:	6/30/2022	SeqNo:	2742158
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	47.6	2.00	50.00	0	95.2	80	120	45.18	5.23	20	
Barium	54.5	15.0	50.00	0	109	80	120	52.12	4.48	20	
Cadmium	46.1	0.500	50.00	0	92.2	80	120	44.32	3.94	20	
Chromium	48.8	1.00	50.00	0	97.5	80	120	46.30	5.17	20	
Lead	47.3	1.00	50.00	0	94.6	80	120	45.54	3.76	20	
Strontium	48.2	1.00	50.00	0	96.4	80	120	46.02	4.63	20	
Zinc	45.3	1.00	50.00	0	90.6	80	120	43.28	4.53	20	

Sample ID	22061154-001AMS	SampType:	MS	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	6/29/2022	RunNo:	111046
Client ID:	SB-9 2-4'	Batch ID:	44272	TestNo:	SW6010B	SW3050B		Analysis Date:	6/30/2022	SeqNo:	2742160
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	58.3	2.00	50.05	12.69	91.2	75	125				
Barium	4,400	15.0	50.05	3,566	1,660	75	125				S
Cadmium	50.5	0.500	50.05	4.752	91.3	75	125				
Chromium	235	1.00	50.05	234.6	-0.0975	75	125				S
Lead	386	1.00	50.05	360.9	50.5	75	125				S
Strontium	279	1.00	50.05	259.2	39.7	75	125				S
Zinc	890	1.00	50.05	746.1	287	75	125				S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: 44272

Sample ID	22061154-001AMSD	SampType:	MSD	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	6/29/2022	RunNo:	111046
Client ID:	SB-9 2-4'	Batch ID:	44272	TestNo:	SW6010B	SW3050B		Analysis Date:	6/30/2022	SeqNo:	2742161
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	52.7	2.00	50.00	12.69	80.1	75	125	58.33	10.1	20	
Barium	4,000	15.0	50.00	3,566	860	75	125	4,398	9.58	20	S
Cadmium	46.1	0.500	50.00	4.752	82.7	75	125	50.46	9.00	20	
Chromium	202	1.00	50.00	234.6	-65.8	75	125	234.5	15.1	20	S
Lead	355	1.00	50.00	360.9	-11.5	75	125	386.2	8.36	20	S
Strontium	245	1.00	50.00	259.2	-29.0	75	125	279.0	13.1	20	S
Zinc	829	1.00	50.00	746.1	166	75	125	889.5	7.01	20	S

NOTES:

S - Spike recovery indicates matrix interference. The method is in control as indicated by the Lab Control Sample.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceeded
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
	U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: 44284

Sample ID	22061154-005AMS	SampType: MS	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 6/30/2022	RunNo: 111172
Client ID:	SB-11 0-2'	Batch ID: 44284	TestNo: 29B/SW7471 SW7471A	Analysis Date: 7/6/2022	SeqNo: 2744976	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury 1.39 0.101 0.8418 0.5233 103 75 125

Sample ID	22061154-005AMSD	SampType: MSD	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 6/30/2022	RunNo: 111172
Client ID:	SB-11 0-2'	Batch ID: 44284	TestNo: 29B/SW7471 SW7471A	Analysis Date: 7/6/2022	SeqNo: 2744977	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury 1.50 0.109 0.9061 0.5233 108 75 125 1.394 7.26 20

Sample ID	MB-44284	SampType: MBLK	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 6/30/2022	RunNo: 111172
Client ID:	PBS	Batch ID: 44284	TestNo: 29B/SW7471 SW7471A	Analysis Date: 7/6/2022	SeqNo: 2745040	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury < 0.100 0.100

Sample ID	LCS-44284	SampType: LCS	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 6/30/2022	RunNo: 111172
Client ID:	LCSS	Batch ID: 44284	TestNo: 29B/SW7471 SW7471A	Analysis Date: 7/6/2022	SeqNo: 2745041	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury 0.987 0.100 0.8330 0 119 80 120

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: 44284

Sample ID	LCSD-44284	SampType:	LCSD	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	6/30/2022	RunNo:	111172		
Client ID:	LCSS02	Batch ID:	44284	TestNo:	29B/SW7471 SW7471A			Analysis Date:	7/6/2022	SeqNo:	2745042		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.989		0.100	0.8330	0	119	80	120	0.9873	0.200	20	

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceede
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
	U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: 44298

Sample ID	MB-44298	SampType:	MBLK	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	6/30/2022	RunNo:	111137
Client ID:	PBS	Batch ID:	44298	TestNo:	LDNR 29-B			Analysis Date:	7/5/2022	SeqNo:	2744127
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

True Total Barium < 50.0 50.0

Sample ID	LCS-44298	SampType:	LCS	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	6/30/2022	RunNo:	111137
Client ID:	LCSS	Batch ID:	44298	TestNo:	LDNR 29-B			Analysis Date:	7/5/2022	SeqNo:	2744128
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

True Total Barium 4,720 50.0 5,000 0 94.4 75 125

Sample ID	LCSD-44298	SampType:	LCSD	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	6/30/2022	RunNo:	111137
Client ID:	LCSS02	Batch ID:	44298	TestNo:	LDNR 29-B			Analysis Date:	7/5/2022	SeqNo:	2744129
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

True Total Barium 4,670 50.0 5,000 0 93.3 75 125 4,718 1.11 20

Sample ID	22061154-001AMS	SampType:	MS	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	6/30/2022	RunNo:	111137
Client ID:	SB-9 2-4'	Batch ID:	44298	TestNo:	LDNR 29-B			Analysis Date:	7/5/2022	SeqNo:	2744131
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

True Total Barium 159,000 49.2 4,921 160,000 -29.3 75 125 S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceed
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: 44298

Sample ID	22061154-001AMSD	SampType:	MSD	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	6/30/2022	RunNo:	111137		
Client ID:	SB-9 2-4'	Batch ID:	44298	TestNo:	LDNR 29-B			Analysis Date:	7/5/2022	SeqNo:	2744132		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium		175,000		49.9	4,990	160,000	297	75	125	158,500	9.75	20	S

NOTES:

S - Analyte concentration in native sample was too high for accurate spike recovery(ies). The method is in control as indicated by the laboratory control sample (LCS).

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceede
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: 44320

Sample ID	MB-44320	SampType:	MBLK	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/1/2022	RunNo:	111187
Client ID:	PBS	Batch ID:	44320	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2746392
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

True Total Barium < 250 250

Sample ID	LCS-44320	SampType:	LCS	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/1/2022	RunNo:	111187
Client ID:	LCSS	Batch ID:	44320	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2746393
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

True Total Barium 5,130 250 5,000 0 103 75 125

Sample ID	LCSD-44320	SampType:	LCSD	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/1/2022	RunNo:	111187
Client ID:	LCSS02	Batch ID:	44320	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2746394
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

True Total Barium 5,130 250 5,000 0 103 75 125 5,126 0.0673 20

Sample ID	22061154-022AMS	SampType:	MS	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/1/2022	RunNo:	111187
Client ID:	SB-23 0-2'	Batch ID:	44320	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2746398
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

True Total Barium 5,280 241 4,826 492.4 99.2 75 125

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceed
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: 44320

Sample ID	22061154-022AMSD	SampType:	MSD	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/1/2022	RunNo:	111187
Client ID:	SB-23 0-2'	Batch ID:	44320	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2746399
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	5,370	233	4,660	492.4	105	75	125	5,282	1.57	20	

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceede
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
	U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: 44342

Sample ID	MB-44342	SampType:	MBLK	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111187		
Client ID:	PBS	Batch ID:	44342	TestNo:	SW6010B	SW3050B		Analysis Date:	7/7/2022	SeqNo:	2746425		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	< 2.00	2.00											
Barium	< 15.0	15.0											

Sample ID	LCS-44342	SampType:	LCS	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111187		
Client ID:	LCSS	Batch ID:	44342	TestNo:	SW6010B	SW3050B		Analysis Date:	7/7/2022	SeqNo:	2746426		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	45.4	2.00	50.00	0	90.9	80	120						
Barium	54.4	15.0	50.00	0	109	80	120						

Sample ID	LCSD-44342	SampType:	LCSD	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111187		
Client ID:	LCSS02	Batch ID:	44342	TestNo:	SW6010B	SW3050B		Analysis Date:	7/7/2022	SeqNo:	2746427		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	44.4	2.00	50.00	0	88.7	80	120	45.43	2.40	20		
Barium	53.3	15.0	50.00	0	107	80	120	54.36	2.02	20		

Sample ID	22061154-022AMS	SampType:	MS	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111187		
Client ID:	SB-23 0-2'	Batch ID:	44342	TestNo:	SW6010B	SW3050B		Analysis Date:	7/7/2022	SeqNo:	2746429		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	33.6	1.91	47.70	4.301	61.4	75	125						S
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Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceeded
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: 44342

Sample ID	22061154-022AMS	SampType:	MS	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111187		
Client ID:	SB-23 0-2'	Batch ID:	44342	TestNo:	SW6010B	SW3050B		Analysis Date:	7/7/2022	SeqNo:	2746429		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium		218		14.3	47.70	201.5	34.9	75	125				S

Sample ID	22061154-022AMSD	SampType:	MSD	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111187		
Client ID:	SB-23 0-2'	Batch ID:	44342	TestNo:	SW6010B	SW3050B		Analysis Date:	7/7/2022	SeqNo:	2746430		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		29.2		1.99	49.78	4.301	50.0	75	125	33.60	14.1	20	S
Barium		171		14.9	49.78	201.5	-62.1	75	125	218.2	24.5	20	RS

NOTES:

S - Spike recovery indicates matrix interference. The method is in control as indicated by the Lab Control Sample.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceeded
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
	U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: R110920

Sample ID	MB-R110920	SampType:	MBLK	TestCode:	HEM_S	Units:	% dry wt	Prep Date:		RunNo:	110920		
Client ID:	PBS	Batch ID:	R110920	TestNo:	SW9071B			Analysis Date:	6/27/2022	SeqNo:	2741721		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

HEM, Oil & Grease

< 0.05

0.05

Sample ID	LCS-R110920	SampType:	LCS	TestCode:	HEM_S	Units:	% dry wt	Prep Date:		RunNo:	110920		
Client ID:	LCSS	Batch ID:	R110920	TestNo:	SW9071B			Analysis Date:	6/27/2022	SeqNo:	2741722		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

HEM, Oil & Grease

0.24

0.05

0.20

0

120

70

130

Sample ID	LCSD-R110920	SampType:	LCSD	TestCode:	HEM_S	Units:	% dry wt	Prep Date:		RunNo:	110920		
Client ID:	LCSS02	Batch ID:	R110920	TestNo:	SW9071B			Analysis Date:	6/27/2022	SeqNo:	2741723		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

HEM, Oil & Grease

0.24

0.05

0.20

0

120

70

130

0.24

0

40

Sample ID	22061154-005AMS	SampType:	MS	TestCode:	HEM_S	Units:	% dry wt	Prep Date:		RunNo:	110920		
Client ID:	SB-11 0-2'	Batch ID:	R110920	TestNo:	SW9071B			Analysis Date:	6/27/2022	SeqNo:	2741724		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

HEM, Oil & Grease

0.33

0.05

0.52

0.03

56.5

70

130

S

NOTES:

S - Spike recovery indicates matrix interference. The method is in control as indicated by the LCS/LCSD.

Qualifiers:

- | | | |
|--|---|--|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank | H Holding times for preparation or analysis exceed |
| M Matrix Interference | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| RL Reporting Limit | S Spike Recovery outside accepted recovery limits | SDL Sample detection limit |
| U Analyte not detected | W Sample container temperature is out of limit as specified at testcode | |



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: R110920

Sample ID	22061154-005ADUP	SampType:	DUP	TestCode:	HEM_S	Units:	% dry wt	Prep Date:		RunNo:	110920		
Client ID:	SB-11 0-2'	Batch ID:	R110920	TestNo:	SW9071B			Analysis Date:	6/27/2022	SeqNo:	2741726		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
HEM, Oil & Grease		< 0.05		0.05						0	0	40	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceede
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: R111103

Sample ID	22061119-001ADUP	SampType:	DUP	TestCode:	PMOIST_29B	Units:	wt%	Prep Date:		RunNo:	111103		
Client ID:	ZZZZZZ	Batch ID:	R111103	TestNo:	LDNR 29-B			Analysis Date:	6/24/2022	SeqNo:	2743455		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture		17.8		1.00						17.30	2.85	20	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceede
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: R111104

Sample ID	22061154-020ADUP	SampType:	DUP	TestCode:	PMOIST_29B	Units:	wt%	Prep Date:		RunNo:	111104		
Client ID:	SB-21 0-2'	Batch ID:	R111104	TestNo:	LDNR 29-B			Analysis Date:	6/27/2022	SeqNo:	2743402		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture		32.3		1.00						31.70	1.88	20	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceede
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		






Sample Log-In Check List

Client Name: **ICON_ENV**

Work Order Number: **22061154**

RcptNo: **1**

Logged by:	Rhonda David	6/24/2022 3:20:00 PM	
Completed By:	Rhonda David	6/24/2022 4:06:42 PM	
Reviewed By:	Cristina Thibeaux	6/29/2022 2:54:42 PM	

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
2. How was the sample delivered? Client

Log In

3. Coolers are present? Yes No NA
4. Shipping container/cooler in good condition? Yes No
- Custody seals intact on shipping container/cooler? Yes No Not Present
- No. Seal Date: Signed By:
5. Was an attempt made to cool the samples? Yes No NA
6. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
7. Sample(s) in proper container(s)? Yes No
8. Sufficient sample volume for indicated test(s)? Yes No
9. Are samples (except VOA and ONG) properly preserved? Yes No
10. Was preservative added to bottles? Yes No NA
11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes No No VOA Vials
12. Were any sample containers received broken? Yes No
13. Does paperwork match bottle labels? Yes No
 (Note discrepancies on chain of custody)
14. Are matrices correctly identified on Chain of Custody? Yes No
15. Is it clear what analyses were requested? Yes No
16. Were all holding times able to be met? Yes No
 (If no, notify customer for authorization.)

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

18. Additional remarks:
 Improper error correction(s) made by client

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.3	Good	Not Present			



Chain of Custody

Laboratory Number: **22061154**

Client Information:
 Company Name: **ICON**
 Contact Name: **Jason Sills**
 Address: **2049 Commercial Dr.**
 City, State Zip: **Port Allen, LA 70767**
 Phone Number: **225.344.8490**
 Fax Number: **225.344.6654**
 E-mail Address: **jsills@iconenv.com**

Billing Information:
 Billing Information: **same**
 PO Number:
 Quote Number:
 Required QC Level:
 Bill Monthly: Yes No
 Ext:

Project Name/Number:
Grand River - Levert
9326-025-0100

Sampler's Signature:
Kahn Ball

Shipping Method:
 UPS / FedEx / NOW
 DHL / Element / Hand / Mail

Matrix Code
 DW = Drinking Water
 WW = Waste Water
 GW = Ground Water
 AQ = Aqueous
 OT = Other
 SL = Sludge SOL = Solid
 O = Oil SO = Soil
 F = Food SW = Swab
 NG = Natural Gas
 NGL = Natural Gas Liquid
 PW = Produced Water
 CF = Completion Fluid

Page | of **3**

Sample ID/Description	Turn Time	Which Regulations Apply: <input type="checkbox"/> RCRA <input type="checkbox"/> POTW <input type="checkbox"/> NPDES <input type="checkbox"/> USDA/FDA <input type="checkbox"/> RECAP/RISC	Type P=Plastic, V=Vial	Quantity	Pres. HCl, HNO ₃ , H ₂ SO ₄ NaOH, Na ₂ SO ₄	Requested Tests	Comments
SB-9	2-4'	<input checked="" type="checkbox"/> Standard <input checked="" type="checkbox"/> RUSH	G	1	---	29B Metals	29B Metals
SB-10	0-2'	<input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> Other	G	1	---	HEN O&G	As, Ba, TTBa, Cd, Cr, Sr, Zn, Pb, Hg
SB-10	2-4'		G	1	---	TPH O&G	
SB-10	4-6'		G	1	---	29B Metals	
SB-11	0-2'		G	1	---	As, Ba, TTBa	
SB-11	2-4'		G	1	---	29B Metals	
SB-12	0-2'		G	1	---	29B Metals	
SB-12	2-4'		G	1	---	29B Metals	
SB-13	0-2'		G	1	---	29B Metals	

Relinquished by: *Kahn Ball* **Date/Time:** *6.24.22 / 1530*

Received by: *Markus Lee* **Date/Time:** *6/24/22 1530*

Field Notes:
 Received at lab on ice? Yes No **Temp:** *4.3°*

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

8800 North US 31
 Columbus, IN 47201 USA
 P 812-375-0631
 F 812-375-0731

328 Lay Road, Suite 100
 Fort Wayne, IN 46825 USA
 P 260-471-7000
 F 260-471-7777

909 Executive Dr
 Warsaw, IN 46580 USA
 P 574-267-1305
 F 574-269-6569

3371 Cleveland Road, Suite 100A
 South Bend, IN 46628 USA
 P 574-277-0707
 F 574-273-5699

2417 W. Pinhook Rd
 Lafayette, LA 70508 USA
 P 337-235-0483
 F 337-233-6540



Chain of Custody

Laboratory Number: **22061154**

Client Information: Company Name: **ICON** PO Number: **Grand River-Levert**
 Address: **SAME** Quote Number: **9324-025-0100**
 City, State Zip: Ext: **9324-025-0100** Required QC Level: **Hand / Mail**
 Phone Number: Ext: **Hand / Mail** Bill Monthly: Yes No
 Fax Number: Ext: **Hand / Mail** Shipping Method: **UPS / FedEx / NOW**
 E-mail Address: Ext: **Hand / Mail** DHL / Element / Hand / Mail

Page 2 of 3

Matrix Code

- DW = Drinking Water
- WW = Waste Water
- GW = Ground Water
- AQ = Aqueous
- OT = Other
- SL = Sludge
- D = Oil
- F = Food
- NG = Natural Gas
- NGL = Natural Gas Liquid
- PW = Produced Water
- CF = Completion Fluid
- SOL = Solid
- SO = Soil
- SW = Swab

Sample ID/Description	Which Regulations Apply: <input type="checkbox"/> RCRA <input type="checkbox"/> POTW <input type="checkbox"/> NPDES <input type="checkbox"/> USDA/FDA <input type="checkbox"/> RECAP/RISC	Turn Time <input checked="" type="checkbox"/> Standard <input type="checkbox"/> RUSH <input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> Other	Collection Information			Container Type Quantity	Pres. HCl, HNO ₃ , H ₂ SO ₄ NaOH, Na ₂ SO ₄	Requested Tests	Comments		
			(Rush turn times will incur a surcharge and must be pre-approved by lab.)		G=Glass, V=Vial					As, Ba, TTR _x	90 Moisture
			Date	Time							
SB-13	2-4'	6.23.22	1530	G	P	—					
SB-14	0-2'	6.23.22	1015	G	P	—					
SB-14	2-4'	6.23.22	1015	G	P	—					
SB-14	6-8'	6.23.22	1030	G	P	—					
SB-15	0-2'	6.23.22	1040	G	P	—					
SB-15	2-4'	6.23.22	1040	G	P	—					
SB-15	6-8'	6.23.22	1100	G	P	—					
SB-16	0-2'	6.23.22	1120	G	P	—					
SB-16	2-4'	6.23.22	1120	G	P	—					

Relinquished by: *Kath Bell* **Date/Time:** *6.24.22 / 1520*
Received by: *Martin* **Date/Time:** *6/24/22 1520*
 Field Notes: **Received at lab on ice?** Yes No **Temp:** *4.9°*

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples.

8800 North US 31
Columbus, IN
47201 USA
P 812-375-0531
F 812-375-0731

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Fort Wayne, IN
46825 USA
P 260-471-7000
F 260-471-7777

905 Executive Dr
Warsaw, IN
46580 USA
P 574-297-3305
F 574-269-6569

3371 Cleveland Road, Suite 100A
South Bend, IN
46628 USA
P 574-277-0707
F 574-273-5599

2417 W. Pinhook Rd
Lafayette, LA
70508 USA
P 337-235-0683
F 337-233-6540



Chain of Custody

Laboratory Number: **22061154**

Client Information: Company Name: **ICON** PO Number: **Grand River-Levert** Page 3 of 3
 Contact Name: **SAME** Quote Number: **9326-025-0100** Matrix Code
 Address: **REQUIRED QC Level**
 City, State Zip: **Ext:** Bill Monthly Yes No
 Phone Number: **Ext:** Shipping Method: **UPS / FedEx / NOW**
 Fax Number: **Ext:** **DHL / Element (Hand) / Mail**
 E-mail Address: **Ext:**

Which Regulations Apply:
 RCRA Drinking Water Standard RUSH
 POTW Distribution 1 Day
 NPDES Special 2 Day
 USDA/FDA State Other
 RECAP/RISC Other

Turn Time
 Standard RUSH
 1 Day 2 Day Other

Sample ID/Description
 SB-16 6-8' 6.23.22 1135 G SO
 SB-17 0-2' 6.23.22 1415 G SO
 SB-21 0-2' 6.23.22 1510 G SO
 SB-22 0-2' 6.23.22 1520 G SO
 SB-23 0-2' 6.23.22 1525 G SO
 SB-24 0-2' 6.23.22 1530 G SO

Requested Tests
 HEN 05 G
 TPH 05 C
 % Moisture
 As, Ba, Tba
 HCl, HNO₃, H₂SO₄
 NaOH, Na₂S₂O₃
 G=Glass, V=Vial
 P=Plastic
 Type
 Quantity

Comments
 Received at lab on ice? Yes No Temp: **4.3°**

Project Name/Number: Grand River-Levert
Sampler's Signature: *Kateri Balle*
Shipping Method: UPS / FedEx / NOW
 DHL / Element (Hand) / Mail

Matrix Code
 DW = Drinking Water
 WW = Waste Water
 GW = Ground Water
 AQ = Aqueous
 OT = Other
 SL = Sludge
 O = Oil
 F = Food
 NG = Natural Gas
 NGL = Natural Gas Liquid
 PW = Produced Water
 CF = Completion Fluid

Sample ID/Description	Date	Time	Grab / Composite	Matrix	Quantity	Container Type	Pres. HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₃	Requested Tests	Comments
SB-16	6.23.22	1135	G	SO	1	P		HEN 05 G TPH 05 C	
SB-17	6.23.22	1415	G	SO	1	G		X	
SB-21	6.23.22	1510	G	SO	1	P		X	
SB-22	6.23.22	1520	G	SO	1	P		X	
SB-23	6.23.22	1525	G	SO	1	P		X	
SB-24	6.23.22	1530	G	SO	1	P		X	

Relinquished by: *Kateri Balle* **Date/Time:** 6.24.22 / 1520
Received by: *Y. Matic* **Date/Time:** 6/24/22 1520
 Field Notes: Received at lab on ice? Yes No Temp: **4.3°**

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

8800 North US 31
 Columbus, IN 47201 USA
 P 812-375-0531
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325 Ley Road, Suite 100
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 P 260-471-7000
 F 260-471-7777

909 Executive Dr
 Warsaw, IN 46980 USA
 P 574-267-3305
 F 574-269-5569

3371 Cleveland Road, Suite 100A
 South Bend, IN 46628 USA
 P 574-277-0707
 F 574-273-5099

2417 W. Pinhook Rd
 Lafayette, LA 70508 USA
 P 337-235-0483
 F 337-233-6940

7/13/2022

Hydro-Environmental Technology, Inc.
Mr. Stewart Stover, Jr.
91 Apollo Rd
Scott, LA, 70583

Ref: Report Number: 22-179-0017
Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Dear Mr. Stewart Stover, Jr.:

Waypoint Analytical Louisiana, Inc. received sample(s) on 6/28/2022 for the analyses presented in the following report. The above referenced project has been analyzed per your instructions. Unless otherwise noted, the analyses were performed in our laboratory in accordance with Standard Methods, The Solid Waste Manual SW-846, EPA Methods for Chemical Analysis of Water and Wastes and /or 40 CFR part 136.

Certain parameters (chlorine, pH, dissolved oxygen, sulfite...) are required to be analyzed within 15 minutes of sampling. Usually, but not always, any field parameter analyzed at the laboratory is outside of this holding time. Refer to sample analysis time for confirmation of holding time compliance. Analyses reported which indicate "Field" for these parameters were analyzed by the client in the field. Results for solid samples are reported on an as received or "wet weight" basis unless otherwise specified.

The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, method validations, instrumentation maintenance and calibration for all parameters (NELAP and non-NELAP) were performed in accordance with guidelines established by the USEPA (including 40 CFR 136 Method Update Rule May 2021) and NELAC unless otherwise indicated. Any parameter for which the laboratory is not officially NELAP accredited is indicated by a '~' symbol. These are not included in the scope because NELAP accreditation is either not available or has not been applied for. Additional certifications may be held/are available for parameters, where NELAP accreditation is not required or applicable. A full list of certifications is available upon request.

All quality control measures undertaken in accordance with Waypoint Analytical Louisiana, Inc. CompQAP990807A and revisions under the terms of the Louisiana Environmental Laboratory Accreditation Program (Certificate #02041) are within acceptance ranges established in that document with the exception of the items indicated and/or discussed in a Case Narrative.

The results are shown on the attached analysis sheet(s). Be aware that the time analyzed for certain samples (e.g. - BOD, CBOD, etc.) refer to the time the sample batch was begun and not necessarily to the time an individual sample was begun. Thank you for allowing Waypoint Analytical Louisiana, Inc. to serve you. Should I be of further assistance, if you have any questions or need additional information please contact me or client services.

Sincerely,



Amy Jackson
Project Manager

Laboratory's liability in any claim relating to analyses performed shall be limited to, at laboratory's option, repeating the analysis in question at laboratory's expense, or the refund of the charges paid for performance of said analysis. This report may be reproduced in full only with the written permission of the laboratory and/or the entity to which it is addressed. Results contained herein relate only to the sample(s) submitted to the laboratory.





5041 Taravella Road, Marrero, LA 70072
 Main 504-371-8557 ° Fax 504-371-8560
 www.waypointanalytical.com

Certification Summary

Laboratory ID: WP MLA: Waypoint Analytical Louisiana, Inc., Marrero, LA

State	Program	Lab ID	Expiration Date
Georgia	State Program	02041	06/30/2023
Louisiana	State Program - NELAP	02041	06/30/2023

Laboratory ID: WP MTN: Waypoint Analytical, LLC., Memphis, TN

State	Program	Lab ID	Expiration Date
Alabama	State Program	40750	02/28/2023
Arkansas	State Program	88-0650	02/07/2023
California	State Program	2904	06/30/2023
Florida	State Program - NELAP	E871157	06/30/2023
Georgia	State Program	C044	02/18/2023
Georgia	State Program	04015	06/30/2023
Illinois	State Program - NELAP	200078	10/10/2022
Kentucky	State Program	80215	06/30/2022
Kentucky	State Program	KY90047	12/31/2022
Louisiana	State Program - NELAP	LA037	12/31/2022
Louisiana	State Program - NELAP	04015	06/30/2023
Mississippi	State Program	MS	02/11/2023
North Carolina	State Program	415	12/31/2022
Pennsylvania	State Program - NELAP	68-03195	05/31/2023
South Carolina	State Program	84002	06/30/2022
Tennessee	State Program	02027	02/11/2023
Texas	State Program - NELAP	T104704180	09/30/2022
Virginia	State Program	00106	06/30/2023
Virginia	State Program - NELAP	460181	09/14/2022

Sample Summary Table

Report Number: 22-179-0017
Client Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Lab No	Client Sample ID	Matrix	Date Collected	Date Received	Method	Lab ID
70466	LT-4 (12-14)	Solids	06/22/2022 12:25	06/28/2022		
70466	LT-4 (12-14)	Solids	06/22/2022 12:25	06/28/2022	6010D	WP MTN
70466	LT-4 (12-14)	Solids	06/22/2022 12:25	06/28/2022	29B	WP MTN
70466	LT-4 (12-14)	Solids	06/22/2022 12:25	06/28/2022	7471A	WP MTN
70467	LT-4 (16-18)	Solids	06/22/2022 12:30	06/28/2022		
70468	LT-4 (20-22)	Solids	06/22/2022 12:35	06/28/2022		
70469	LT-5 (0-2)	Solids	06/23/2022 09:05	06/28/2022		
70469	LT-5 (0-2)	Solids	06/23/2022 09:05	06/28/2022	7471A	WP MTN
70469	LT-5 (0-2)	Solids	06/23/2022 09:05	06/28/2022	6010D	WP MTN
70469	LT-5 (0-2)	Solids	06/23/2022 09:05	06/28/2022	29B	WP MTN
70470	LT-5 (4-6)	Solids	06/23/2022 09:10	06/28/2022		
70470	LT-5 (4-6)	Solids	06/23/2022 09:10	06/28/2022	7471A	WP MTN
70470	LT-5 (4-6)	Solids	06/23/2022 09:10	06/28/2022	6010D	WP MTN
70470	LT-5 (4-6)	Solids	06/23/2022 09:10	06/28/2022	29B	WP MTN
70471	LT-5 (16-18)	Solids	06/23/2022 09:25	06/28/2022		
70472	LT-5 (22-24)	Solids	06/23/2022 09:40	06/28/2022		
70473	LT-6 (0-2)	Solids	06/23/2022 14:15	06/28/2022		
70473	LT-6 (0-2)	Solids	06/23/2022 14:15	06/28/2022	7471A	WP MTN
70473	LT-6 (0-2)	Solids	06/23/2022 14:15	06/28/2022	6010D	WP MTN
70473	LT-6 (0-2)	Solids	06/23/2022 14:15	06/28/2022	29B	WP MTN
70474	LT-6 (4-6)	Solids	06/23/2022 14:20	06/28/2022		
70474	LT-6 (4-6)	Solids	06/23/2022 14:20	06/28/2022	7471A	WP MTN
70474	LT-6 (4-6)	Solids	06/23/2022 14:20	06/28/2022	6010D	WP MTN
70474	LT-6 (4-6)	Solids	06/23/2022 14:20	06/28/2022	29B	WP MTN
70475	LT-6 (24-26)	Solids	06/23/2022 14:55	06/28/2022		

WP MTN - Memphis, TN: Waypoint Analytical - TN, Memphis, TN



Client: Hydro-Environmental Technology, Inc.
Project: August Levert
Lab Report Number: 22-179-0017
Date: 7/13/2022

CASE NARRATIVE

Methods

Methods reported as 29B are from the Laboratory Procedures for Analysis of Exploration & Production Waste – LDNR Office of Conservation Injection and Mining Division – Revised 11/2011.

Results

- 6010D/7471A metals are performed on the As-Received sample and are reported As-Received (not corrected for dry weight).
- True Total Barium results are reported dry weight
- Oil & Grease results are reported dry weight
- VPH/EPH results reported as received
- PAH results reported as received



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 Main 504-371-8557 ° Fax 504-371-8560
 www.waypointanalytical.com

09996

Hydro-Environmental Technology, Inc.
 Mr. Stewart Stover, Jr.
 91 Apollo Rd
 Scott, LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 07/13/2022
 Received : 06/28/2022

Report Number : **22-179-0017**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70466**
 Sample ID : **LT-4 (12-14)**

Matrix: **Solids**
 Sampled: **6/22/2022 12:25**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	32.4	%		1	06/29/22 15:28	BXH	SW-DRYWT
% Saturation (Sat Paste)	68.5	%		1	07/05/22 11:41	BMB	29B
Alkalinity (Sat Paste)	1.8	meq/L		1	07/08/22 10:00	APB	29B
Chloride (Sat Paste)	1.64	meq/L	0.050	5	07/07/22 10:17	MJM	29B
Chloride	27.8	mg/Kg	4.00	1	07/07/22 15:46	MJM	9056
Electrical Conductivity (Sat Paste)	0.502	mmhos/cm		1	07/05/22 11:41	BMB	29B
pH (Sat Paste)	7.95	s.u.		1	07/05/22 11:41	BMB	29B
Sulfate (Sat Paste)	1.00	meq/L	0.050	5	07/07/22 10:17	MJM	29B
Calcium (Sat Paste)	2.94	meq/L	0.250	5	07/06/22 14:34	BMB	29B
Magnesium (Sat Paste)	1.12	meq/L	0.410	5	07/06/22 13:27	BMB	29B
Sodium (Sat Paste)	1.23	meq/L	0.215	5	07/06/22 13:02	BMB	29B
Total Arsenic	2.90	mg/Kg AR	2.00	1	07/08/22 22:36	TJS	6010D
Total Barium	161	mg/Kg AR	1.00	1	07/08/22 22:36	TJS	6010D
True Total Barium	<500	mg/Kg	500	1	07/06/22 14:56	TJS	29B
Total Cadmium	<0.200	mg/Kg AR	0.200	1	07/08/22 22:36	TJS	6010D
Total Chromium	9.09	mg/Kg AR	0.500	1	07/08/22 22:36	TJS	6010D
Total Lead	7.45	mg/Kg AR	0.600	1	07/08/22 22:36	TJS	6010D
Mercury (Total)	0.0343	mg/Kg AR	0.0133	1	07/12/22 15:14	ZMT	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/08/22 22:36	TJS	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/08/22 22:36	TJS	6010D
Total Zinc	34.1	mg/Kg AR	2.50	1	07/08/22 22:36	TJS	6010D

Qualifiers/Definitions	B	Analyte detected in blank	DF	Dilution Factor
	J	Estimated value	MQL	Method Quantitation Limit



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Hydro-Environmental Technology, Inc.
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 91 Apollo Rd
 Scott , LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 07/13/2022
 Received : 06/28/2022

Report Number : **22-179-0017**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70467**
 Sample ID : **LT-4 (16-18)**

Matrix: **Solids**
 Sampled: **6/22/2022 12:30**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	28.1	%		1	06/29/22 15:28	BXH	SW-DRYWT
% Saturation (Sat Paste)	81.2	%		1	07/05/22 11:41	BMB	29B
Alkalinity (Sat Paste)	2.5	meq/L		1	07/08/22 10:00	APB	29B
Chloride (Sat Paste)	1.46	meq/L	0.050	5	07/07/22 10:30	MJM	29B
Chloride	22.8	mg/Kg	4.00	1	07/07/22 15:59	MJM	9056
Electrical Conductivity (Sat Paste)	0.503	mmhos/cm		1	07/05/22 11:41	BMB	29B
pH (Sat Paste)	8.08	s.u.		1	07/05/22 11:41	BMB	29B
Sulfate (Sat Paste)	0.574	meq/L	0.050	5	07/07/22 10:30	MJM	29B
Calcium (Sat Paste)	2.53	meq/L	0.250	5	07/06/22 14:35	BMB	29B
Magnesium (Sat Paste)	1.03	meq/L	0.410	5	07/06/22 13:27	BMB	29B
Sodium (Sat Paste)	1.62	meq/L	0.215	5	07/06/22 13:03	BMB	29B

Qualifiers/ Definitions				
B	Analyte detected in blank	DF	Dilution Factor	
J	Estimated value	MQL	Method Quantitation Limit	



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Report Date : 07/13/2022
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Report Number : **22-179-0017**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70468**
 Sample ID : **LT-4 (20-22)**

Matrix: **Solids**
 Sampled: **6/22/2022 12:35**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	47.8	%		1	06/29/22 15:28	BXH	SW-DRYWT
% Saturation (Sat Paste)	163	%		1	07/05/22 11:41	BMB	29B
Alkalinity (Sat Paste)	2.9	meq/L		1	07/08/22 10:00	APB	29B
Chloride (Sat Paste)	1.81	meq/L	0.050	5	07/07/22 10:43	MJM	29B
Chloride	48.1	mg/Kg	4.00	1	07/07/22 16:36	MJM	9056
Electrical Conductivity (Sat Paste)	0.635	mmhos/cm		1	07/05/22 11:41	BMB	29B
pH (Sat Paste)	7.98	s.u.		1	07/05/22 11:41	BMB	29B
Sulfate (Sat Paste)	0.996	meq/L	0.050	5	07/07/22 10:43	MJM	29B
Calcium (Sat Paste)	2.93	meq/L	0.500	10	07/06/22 14:36	BMB	29B
Magnesium (Sat Paste)	1.28	meq/L	0.820	10	07/06/22 13:28	BMB	29B
Sodium (Sat Paste)	2.34	meq/L	0.430	10	07/06/22 13:04	BMB	29B

Qualifiers/Definitions				
B	Analyte detected in blank	DF	Dilution Factor	
J	Estimated value	MQL	Method Quantitation Limit	



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Report Number : **22-179-0017**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70469**
 Sample ID : **LT-5 (0-2)**

Matrix: **Solids**
 Sampled: **6/23/2022 9:05**

Test	Results	Units	SQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	30.0	%		1	06/29/22 15:28	BXH	SW-DRYWT
% Saturation (Sat Paste)	152	%		1	07/05/22 11:41	BMB	29B
Alkalinity (Sat Paste)	1.8	meq/L		1	07/08/22 10:00	APB	29B
Chloride (Sat Paste)	3.66	meq/L	0.050	5	07/07/22 10:56	MJM	29B
Chloride	93.4	mg/Kg	4.00	1	07/07/22 16:48	MJM	9056
Electrical Conductivity (Sat Paste)	0.760	mmhos/cm		1	07/05/22 11:41	BMB	29B
pH (Sat Paste)	7.75	s.u.		1	07/05/22 11:41	BMB	29B
Sulfate (Sat Paste)	1.51	meq/L	0.050	5	07/07/22 10:56	MJM	29B
Cation Exchange Capacity	63.0	meq/100g	0.100	20	07/12/22 09:17		29B
Exchangeable Sodium Percentage	1.55	%	0.100	1	07/05/22 11:41		CALCULATION
Sodium Adsorption Ratio (Sat Paste)	2.46	Calc	0.430	10	07/06/22 13:04		29B
Calcium (Sat Paste)	2.46	meq/L	0.500	10	07/06/22 14:37	BMB	29B
Magnesium (Sat Paste)	1.28	meq/L	0.820	10	07/06/22 13:29	BMB	29B
Sodium (Sat Paste)	3.36	meq/L	0.430	10	07/06/22 13:04	BMB	29B
Total Arsenic	4.36	mg/Kg AR	2.00	1	07/08/22 22:42	TJS	6010D
Total Barium	139	mg/Kg AR	1.00	1	07/08/22 22:42	TJS	6010D
True Total Barium	<500	mg/Kg	500	1	07/06/22 15:02	TJS	29B
Total Cadmium	0.340	mg/Kg AR	0.200	1	07/08/22 22:42	TJS	6010D
Total Chromium	15.5	mg/Kg AR	0.500	1	07/08/22 22:42	TJS	6010D
Total Lead	12.7	mg/Kg AR	0.600	1	07/08/22 22:42	TJS	6010D
Mercury (Total)	0.0327	mg/Kg AR	0.0133	1	07/12/22 15:16	ZMT	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/08/22 22:42	TJS	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/08/22 22:42	TJS	6010D

Qualifiers/	B	Analyte detected in blank	DF	Dilution Factor
Definitions	J	Estimated value	SQL	Method Quantitation Limit



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REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70469**
 Sample ID : **LT-5 (0-2)**

Matrix: **Solids**
 Sampled: **6/23/2022 9:05**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Zinc	58.4	mg/Kg AR	2.50	1	07/08/22 22:42	TJS	6010D

Qualifiers/Definitions				
B	Analyte detected in blank	DF	Dilution Factor	
J	Estimated value	MQL	Method Quantitation Limit	



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REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70470**
 Sample ID : **LT-5 (4-6)**

Matrix: **Solids**
 Sampled: **6/23/2022 9:10**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	38.4	%		1	06/29/22 15:28	BXH	SW-DRYWT
% Saturation (Sat Paste)	155	%		1	07/05/22 11:41	BMB	29B
Alkalinity (Sat Paste)	2.0	meq/L		1	07/08/22 10:00	APB	29B
Chloride (Sat Paste)	3.72	meq/L	0.050	5	07/07/22 11:09	MJM	29B
Chloride	84.9	mg/Kg	4.00	1	07/07/22 17:00	MJM	9056
Electrical Conductivity (Sat Paste)	0.729	mmhos/cm		1	07/05/22 11:41	BMB	29B
pH (Sat Paste)	7.91	s.u.		1	07/05/22 11:41	BMB	29B
Sulfate (Sat Paste)	0.919	meq/L	0.050	5	07/07/22 11:09	MJM	29B
Calcium (Sat Paste)	2.41	meq/L	0.500	10	07/06/22 14:38	BMB	29B
Magnesium (Sat Paste)	1.28	meq/L	0.820	10	07/06/22 13:30	BMB	29B
Sodium (Sat Paste)	2.93	meq/L	0.430	10	07/06/22 13:05	BMB	29B
Total Arsenic	4.31	mg/Kg AR	2.00	1	07/08/22 22:47	TJS	6010D
Total Barium	120	mg/Kg AR	1.00	1	07/08/22 22:47	TJS	6010D
True Total Barium	<500	mg/Kg	500	1	07/06/22 15:07	TJS	29B
Total Cadmium	0.281	mg/Kg AR	0.200	1	07/08/22 22:47	TJS	6010D
Total Chromium	11.8	mg/Kg AR	0.500	1	07/08/22 22:47	TJS	6010D
Total Lead	10.9	mg/Kg AR	0.600	1	07/08/22 22:47	TJS	6010D
Mercury (Total)	0.0345	mg/Kg AR	0.0133	1	07/12/22 15:20	ZMT	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/08/22 22:47	TJS	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/08/22 22:47	TJS	6010D
Total Zinc	44.2	mg/Kg AR	2.50	1	07/08/22 22:47	TJS	6010D

Qualifiers/Definitions	B	Analyte detected in blank	DF	Dilution Factor
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Report Number : **22-179-0017**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70471**
 Sample ID : **LT-5 (16-18)**

Matrix: **Solids**
 Sampled: **6/23/2022 9:25**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	25.2	%		1	06/29/22 15:28	BXH	SW-DRYWT
% Saturation (Sat Paste)	35.3	%		1	07/05/22 11:41	BMB	29B
Alkalinity (Sat Paste)	1.2	meq/L		1	07/08/22 10:00	APB	29B
Chloride (Sat Paste)	4.37	meq/L	0.050	5	07/07/22 11:21	MJM	29B
Chloride	39.2	mg/Kg	4.00	1	07/07/22 17:13	MJM	9056
Electrical Conductivity (Sat Paste)	0.727	mmhos/cm		1	07/05/22 11:41	BMB	29B
pH (Sat Paste)	7.62	s.u.		1	07/05/22 11:41	BMB	29B
Sulfate (Sat Paste)	0.737	meq/L	0.050	5	07/07/22 11:21	MJM	29B
Calcium (Sat Paste)	2.92	meq/L	0.500	10	07/06/22 14:38	BMB	29B
Magnesium (Sat Paste)	1.54	meq/L	0.820	10	07/06/22 13:30	BMB	29B
Sodium (Sat Paste)	1.73	meq/L	0.430	10	07/06/22 13:06	BMB	29B

Qualifiers/ Definitions				
B	Analyte detected in blank	DF	Dilution Factor	
J	Estimated value	MQL	Method Quantitation Limit	



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Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

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REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70472**
 Sample ID : **LT-5 (22-24)**

Matrix: **Solids**
 Sampled: **6/23/2022 9:40**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	36.9	%		1	06/29/22 15:28	BXH	SW-DRYWT
% Saturation (Sat Paste)	136	%		1	07/05/22 11:41	BMB	29B
Alkalinity (Sat Paste)	3.3	meq/L		1	07/08/22 10:00	APB	29B
Chloride (Sat Paste)	3.23	meq/L	0.050	5	07/07/22 11:34	MJM	29B
Chloride	67.4	mg/Kg	4.00	1	07/07/22 17:25	MJM	9056
Electrical Conductivity (Sat Paste)	0.781	mmhos/cm		1	07/05/22 11:41	BMB	29B
pH (Sat Paste)	8.06	s.u.		1	07/05/22 11:41	BMB	29B
Sulfate (Sat Paste)	0.756	meq/L	0.050	5	07/07/22 11:34	MJM	29B
Calcium (Sat Paste)	2.94	meq/L	0.500	10	07/06/22 14:39	BMB	29B
Magnesium (Sat Paste)	1.58	meq/L	0.820	10	07/06/22 13:31	BMB	29B
Sodium (Sat Paste)	2.61	meq/L	0.430	10	07/06/22 13:07	BMB	29B

Qualifiers/Definitions				
B	Analyte detected in blank	DF	Dilution Factor	
J	Estimated value	MQL	Method Quantitation Limit	

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Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 07/13/2022
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Report Number : **22-179-0017**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70473**
Sample ID : **LT-6 (0-2)**

Matrix: **Solids**
Sampled: **6/23/2022 14:15**

Test	Results	Units	ML	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	32.6	%		1	06/29/22 15:28	BXH	SW-DRYWT
% Saturation (Sat Paste)	140	%		1	07/05/22 11:41	BMB	29B
Alkalinity (Sat Paste)	0.1	meq/L		1	07/08/22 10:00	APB	29B
Chloride (Sat Paste)	0.536	meq/L	0.100	10	07/08/22 09:15	MJM	29B
Chloride	34.4	mg/Kg	4.00	1	07/07/22 17:37	MJM	9056
Electrical Conductivity (Sat Paste)	1.46	mmhos/cm		1	07/05/22 11:41	BMB	29B
pH (Sat Paste)	5.23	s.u.		1	07/05/22 11:41	BMB	29B
Sulfate (Sat Paste)	16.7	meq/L	0.100	10	07/08/22 09:15	MJM	29B
Cation Exchange Capacity	63.0	meq/100g	0.100	20	07/12/22 09:18		29B
Exchangeable Sodium Percentage	0.4	%	0.1	1	07/12/22 09:18		CALCULATION
Sodium Adsorption Ratio (Sat Paste)	0.443	Calc	0.430	10	07/06/22 13:07		29B
Calcium (Sat Paste)	9.92	meq/L	0.500	10	07/06/22 14:40	BMB	29B
Magnesium (Sat Paste)	4.72	meq/L	0.820	10	07/06/22 13:32	BMB	29B
Sodium (Sat Paste)	1.20	meq/L	0.430	10	07/06/22 13:07	BMB	29B
Total Arsenic	3.87	mg/Kg AR	2.00	1	07/08/22 22:52	TJS	6010D
Total Barium	138	mg/Kg AR	1.00	1	07/08/22 22:52	TJS	6010D
True Total Barium	<500	mg/Kg	500	1	07/06/22 15:12	TJS	29B
Total Cadmium	0.301	mg/Kg AR	0.200	1	07/08/22 22:52	TJS	6010D
Total Chromium	13.4	mg/Kg AR	0.500	1	07/08/22 22:52	TJS	6010D
Total Lead	11.6	mg/Kg AR	0.600	1	07/08/22 22:52	TJS	6010D
Mercury (Total)	0.0421	mg/Kg AR	0.0133	1	07/12/22 15:21	ZMT	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/08/22 22:52	TJS	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/08/22 22:52	TJS	6010D

Qualifiers/ B Analyte detected in blank
Definitions J Estimated value

DF Dilution Factor
MQL Method Quantitation Limit



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REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70473**
 Sample ID : **LT-6 (0-2)**

Matrix: **Solids**
 Sampled: **6/23/2022 14:15**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Zinc	53.7	mg/Kg AR	2.50	1	07/08/22 22:52	TJS	6010D

Qualifiers/Definitions				
B	Analyte detected in blank	DF	Dilution Factor	
J	Estimated value	MQL	Method Quantitation Limit	



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REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70474**
 Sample ID : **LT-6 (4-6)**

Matrix: **Solids**
 Sampled: **6/23/2022 14:20**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	33.1	%		1	06/29/22 15:28	BXH	SW-DRYWT
% Saturation (Sat Paste)	155	%		1	07/05/22 11:41	BMB	29B
Alkalinity (Sat Paste)	1.0	meq/L		1	07/08/22 10:00	APB	29B
Chloride (Sat Paste)	1.61	meq/L	0.200	20	07/08/22 09:28	MJM	29B
Chloride	57.4	mg/Kg	4.00	1	07/07/22 18:27	MJM	9056
Electrical Conductivity (Sat Paste)	2.59	mmhos/cm		1	07/05/22 11:41	BMB	29B
pH (Sat Paste)	7.19	s.u.		1	07/05/22 11:41	BMB	29B
Sulfate (Sat Paste)	31.8	meq/L	0.200	20	07/08/22 09:28	MJM	29B
Calcium (Sat Paste)	17.4	meq/L	1.00	20	07/06/22 14:41	BMB	29B
Magnesium (Sat Paste)	11.1	meq/L	1.64	20	07/06/22 13:33	BMB	29B
Sodium (Sat Paste)	3.54	meq/L	0.860	20	07/06/22 13:08	BMB	29B
Total Arsenic	3.41	mg/Kg AR	2.00	1	07/08/22 22:58	TJS	6010D
Total Barium	114	mg/Kg AR	1.00	1	07/08/22 22:58	TJS	6010D
True Total Barium	<500	mg/Kg	500	1	07/06/22 15:18	TJS	29B
Total Cadmium	0.269	mg/Kg AR	0.200	1	07/08/22 22:58	TJS	6010D
Total Chromium	14.2	mg/Kg AR	0.500	1	07/08/22 22:58	TJS	6010D
Total Lead	11.7	mg/Kg AR	0.600	1	07/08/22 22:58	TJS	6010D
Mercury (Total)	0.0430	mg/Kg AR	0.0133	1	07/12/22 15:23	ZMT	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/08/22 22:58	TJS	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/08/22 22:58	TJS	6010D
Total Zinc	53.6	mg/Kg AR	2.50	1	07/08/22 22:58	TJS	6010D

Qualifiers/Definitions	B	Analyte detected in blank	DF	Dilution Factor
	J	Estimated value	MQL	Method Quantitation Limit



5041 Taravella Road, Marrero, LA 70072
 Main 504-371-8557 ° Fax 504-371-8560
 www.waypointanalytical.com

09996

Hydro-Environmental Technology, Inc.
 Mr. Stewart Stover, Jr.
 91 Apollo Rd
 Scott , LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 07/13/2022
 Received : 06/28/2022

Report Number : **22-179-0017**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70475**
 Sample ID : **LT-6 (24-26)**

Matrix: **Solids**
 Sampled: **6/23/2022 14:55**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	30.6	%		1	06/29/22 15:28	BXH	SW-DRYWT
% Saturation (Sat Paste)	129	%		1	07/05/22 11:41	BMB	29B
Alkalinity (Sat Paste)	2.4	meq/L		1	07/08/22 10:00	APB	29B
Chloride (Sat Paste)	6.91	meq/L	0.050	5	07/07/22 12:13	MJM	29B
Chloride	157	mg/Kg	4.00	1	07/07/22 18:39	MJM	9056
Electrical Conductivity (Sat Paste)	1.08	mmhos/cm		1	07/05/22 11:41	BMB	29B
pH (Sat Paste)	8.18	s.u.		1	07/05/22 11:41	BMB	29B
Sulfate (Sat Paste)	0.368	meq/L	0.050	5	07/07/22 12:13	MJM	29B
Calcium (Sat Paste)	3.80	meq/L	0.500	10	07/06/22 14:42	BMB	29B
Magnesium (Sat Paste)	1.80	meq/L	0.820	10	07/06/22 13:33	BMB	29B
Sodium (Sat Paste)	3.46	meq/L	0.430	10	07/06/22 13:09	BMB	29B

Qualifiers/ Definitions	B	Analyte detected in blank	DF	Dilution Factor
-------------------------	---	---------------------------	----	-----------------

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0017

QC Prep: L624875 **QC Analytical Batch(es):** L625345
QC Prep Batch Method: LA 29B BA (PREP) **Analysis Method:** 29B
Analysis Description: True Total Barium

Lab Reagent Blank LRB-L624875 Matrix: SOL
Associated Lab Samples: 70466, 70469, 70470, 70473, 70474

Parameter	Units	Blank Result	MQL	Analyzed
True Total Barium	mg/Kg	< 500	500	07/06/22 14:51

Laboratory Control Sample LCS-L624875

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
True Total Barium	mg/Kg	9800	9930	101	80-120

Matrix Spike & Matrix Spike Duplicate A 70094-A74760-MS-L624875 A 70094-A74760-MSD-L624875

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
True Total Barium	mg/Kg	< 500	7750	9170	7740	9080	100	99.0	75-125	15.9	20.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-179-0017

QC Prep: A74935

QC Analytical Batch(es): A75037

QC Prep Batch Method: LA 29B CEC (PREP)

Analysis Method: 29B

Analysis Description: Cation Exchange Capacity

Lab Reagent Blank

LRB-A74935

Matrix: SOL

Associated Lab Samples: 70469, 70473

Parameter	Units	Blank Result	MLQ	Analyzed
Total Sodium CEC	mg/Kg	< 100	100	07/12/22 09:17

Duplicate

A 70503-A74932-DUP-A74935

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Total Sodium CEC	mg/Kg	12400	12500	0.8	30.0	07/12/22 09:29

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-179-0017

QC Prep: A74940

QC Analytical Batch(es): A75038

QC Prep Batch Method: 29B

Analysis Method: 29B

Analysis Description: Exchangeable Sodium Percentage

Duplicate A 70503-A74932-DUP-A74940

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Total Sodium ESP	meq/100g	0.494	0.489	1.0	30.0	07/12/22 09:40

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-179-0017

QC Prep: A74863	QC Analytical Batch(es): A74890,A74893,A74888,A74889
QC Prep Batch Method: 29B	Analysis Method: 29B
	Analysis Description: Alkalinity

Duplicate A 70485-A74859-DUP-A74863

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Alkalinity (Sat Paste)	meq/L	0.5	0.6	18.1	30.0	07/08/22 10:00

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-179-0017

QC Prep: A74863 **QC Analytical Batch(es):** A74890,A74893,A74888,A74889
QC Prep Batch Method: 29B **Analysis Method:** 29B
Analysis Description: Anions by Ion Chromatography

Duplicate A 70485-A74859-DUP-A74863

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Chloride (Sat Paste)	meq/L	45.1	50.2	10.7	30.0	07/07/22 14:47
Sulfate (Sat Paste)	meq/L	0.509	0.510	0.1	30.0	07/07/22 14:47

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-179-0017

QC Prep: A74863 **QC Analytical Batch(es):** A74890,A74893,A74888,A74889
QC Prep Batch Method: 29B **Analysis Method:** 29B
Analysis Description: Saturated Paste Extraction

Duplicate A 70485-A74859-DUP-A74863

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
% Saturation (Sat Paste)	%	28.2	27.9	1.0	30.0	07/05/22 11:41
Electrical Conductivity (Sat Paste)	nmhos/cm	4.96	5.52	10.6	30.0	07/05/22 11:41
pH (Sat Paste)	s.u.	7.62	7.63	0.1	30.0	07/05/22 11:41

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-179-0017

QC Prep: A74863 **QC Analytical Batch(es):** A74890,A74893,A74888,A74889
QC Prep Batch Method: 29B **Analysis Method:** 29B
Analysis Description: Saturated Paste Extraction

Duplicate A 70485-A74859-DUP-A74863

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Calcium (Sat Paste)	meq/L	21.4	21.9	2.3	30.0	07/06/22 14:51
Magnesium (Sat Paste)	meq/L	9.16	10.0	8.7	30.0	07/06/22 13:41
Sodium (Sat Paste)	meq/L	14.7	15.5	5.2	30.0	07/06/22 13:18

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0017

QC Prep: L625560 **QC Analytical Batch(es):** L625990
QC Prep Batch Method: 3050B **Analysis Method:** 6010D
Analysis Description: Metals Analysis

Lab Reagent Blank LRB-L625560 Matrix: SOL
Associated Lab Samples: 70466, 70469, 70470, 70473, 70474

Parameter	Units	Blank Result	MQL	Analyzed
Total Arsenic	mg/Kg AR	< 2.00	2.00	07/08/22 22:21
Total Barium	mg/Kg AR	< 0.999	0.999	07/08/22 22:21
Total Cadmium	mg/Kg AR	< 0.199	0.199	07/08/22 22:21
Total Chromium	mg/Kg AR	< 0.499	0.499	07/08/22 22:21
Total Lead	mg/Kg AR	< 0.599	0.599	07/08/22 22:21
Total Selenium	mg/Kg AR	< 0.999	0.999	07/08/22 22:21
Total Silver	mg/Kg AR	< 0.499	0.499	07/08/22 22:21
Total Zinc	mg/Kg AR	< 2.50	2.50	07/08/22 22:21

Laboratory Control Sample LCS-L625560

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Total Arsenic	mg/Kg AR	10.0	10.7	107	80-120
Total Barium	mg/Kg AR	100	102	102	80-120
Total Cadmium	mg/Kg AR	10.0	10.3	103	80-120
Total Chromium	mg/Kg AR	100	109	109	80-120
Total Lead	mg/Kg AR	10.0	10.7	107	80-120
Total Selenium	mg/Kg AR	10.0	10.1	101	80-120
Total Silver	mg/Kg AR	10.0	10.6	106	80-120
Total Zinc	mg/Kg AR	100	106	106	80-120

Matrix Spike & Matrix Spike Duplicate A 70474-A74859-MS-L625560 A 70474-A74859-MSD-L625560

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Total Arsenic	mg/Kg AR	3.41	6.60	6.51	9.38	8.68	90.0	81.0	75-125	7.7	20.0
Total Barium	mg/Kg AR	114	66.0	65.1	177	169	95.0	84.0	75-125	4.6	20.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-179-0017

QC Prep: L625560

QC Analytical Batch(es): L625990

QC Prep Batch Method: 3050B

Analysis Method: 6010D

Analysis Description: Metals Analysis

Matrix Spike & Matrix Spike Duplicate A 70474-A74859-MS-L625560 A 70474-A74859-MSD-L625560

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Total Cadmium	mg/Kg AR	0.269	6.60	6.51	6.29	5.84	91.0	86.0	75-125	7.4	20.0
Total Chromium	mg/Kg AR	14.2	66.0	65.1	79.4	74.8	99.0	93.0	75-125	5.9	20.0
Total Lead	mg/Kg AR	11.7	6.60	6.51	18.7	17.1	106	83.0	75-125	8.9	20.0
Total Selenium	mg/Kg AR	< 1.00	6.60	6.51	5.44	5.23	82.0	80.0	75-125	3.9	20.0
Total Silver	mg/Kg AR	< 0.500	6.60	6.51	6.37	5.86	96.0	90.0	75-125	8.3	20.0
Total Zinc	mg/Kg AR	53.6	66.0	65.1	119	110	99.0	87.0	75-125	7.8	20.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0017

QC Prep: L625741 **QC Analytical Batch(es):** L626374
QC Prep Batch Method: 7471A **Analysis Method:** 7471A
Analysis Description: Solids Total Mercury Analysis - CVAA

Lab Reagent Blank LRB-L625741 Matrix: SOL
Associated Lab Samples: 70466, 70469, 70470, 70473, 70474

Parameter	Units	Blank Result	MQL	Analyzed
Mercury (Total)	mg/Kg AR	< 0.160	0.160	07/12/22 15:11

Laboratory Control Sample LCS-L625741

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Mercury (Total)	mg/Kg AR	0.400	0.394	99.0	80-120

Matrix Spike & Matrix Spike Duplicate A 70474-A74859-MS-L625741 A 70474-A74859-MSD-L625741

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Mercury (Total)	mg/Kg AR	0.0430	0.262	0.251	0.292	0.276	95.0	93.0	80-120	5.6	20.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0017

QC Prep: A74920 **QC Analytical Batch(es):** A74983
QC Prep Batch Method: SW-9056 (PREP) **Analysis Method:** 9056
Analysis Description: Anions by Ion Chromatography

Lab Reagent Blank LRB-A74920 Matrix: SOL
Associated Lab Samples: 70466, 70467, 70468, 70469, 70470, 70471, 70472, 70473, 70474, 70475

Parameter	Units	Blank Result	MQL	Analyzed
Chloride	mg/Kg	< 4.00	4.00	07/07/22 15:22

Laboratory Control Sample LCS-A74920

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Chloride	mg/Kg	500	509	102	80-120

Matrix Spike & Matrix Spike Duplicate A 70467-MS-A74920 A 70467-MSD-A74920

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Chloride	mg/Kg	22.8	470	481	511	525	104	104	80-120	2.7	15.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0017

QC Analytical Batch: A74860
Analysis Method: SW-DRYWT
Analysis Description: Dry Weight Determination

Duplicate A 70466-DUP

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
% Moisture	%	32.4	27.2	17.4	20.0	06/29/22 15:28

Shipment Receipt Form

Customer Number: **09996**

Customer Name: **Hydro-Environmental Technology, Inc.**

Report Number: **22-179-0017**

Shipping Method

Fed Ex US Postal Lab Other :
 UPS Client Courier Thermometer ID:

Shipping container/cooler uncompromised?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Number of coolers/boxes received	<input type="text" value="1"/>		
Custody seals intact on shipping container/cooler?	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> Not Present
Custody seals intact on sample bottles?	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> Not Present
Chain of Custody (COC) present?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
COC agrees with sample label(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
COC properly completed	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Samples in proper containers?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Sample containers intact?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Sufficient sample volume for indicated test(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
All samples received within holding time?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Cooler temperature in compliance?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Cooler/Samples arrived at the laboratory on ice. Samples were considered acceptable as cooling process had begun.	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Water - Sample containers properly preserved	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
Water - VOA vials free of headspace	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
Trip Blanks received with VOAs	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
Soil VOA method 5035 – compliance criteria met	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
<input type="checkbox"/> High concentration container (48 hr)	<input type="checkbox"/> Low concentration EnCore samplers (48 hr)		
<input type="checkbox"/> High concentration pre-weighed (methanol -14 d)	<input type="checkbox"/> Low conc pre-weighed vials (Sod Bis -14 d)		
Special precautions or instructions included?	<input type="radio"/> Yes	<input checked="" type="radio"/> No	

Comments:

Signature:

Date & Time:



HYDRO-ENVIRONMENTAL TECHNOLOGY, INC.
 Environmental Cons
 P.O. Box 6029
 Lafayette, LA 70596
 Phone (337) 261-1963 FAX (337) 261-1964



22-179-0017
 09996
 06-28-2022
 15:03:38

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert **Laboratory:** _____ **Waypoint:** _____
Project Number: 1009.A62 **Collected By:** TRW
Project Location: Bayou Sorrel, LA **Company:** Hydro-Environmental Technology, Inc.
Date: 6/22/2022

Sample I.D.	Type	Date/Time Sampled		Containers	Analysis Requested/Method	Comments
LT-4 (8-10)	SO	6/22/2022	12:20	No Split	NA	NA
LT-4 (12-14) 70466	SO	6/22/2022	12:25	(1) 16 oz Glass Jar	EC, Chlorides, pH, Metals*, % Moisture, Cations*, Anions*	4°C
LT-4 (16-18) 70467	SO	6/22/2022	12:30	(1) 16 oz Glass Jar	EC, Chlorides, pH, % Moisture, Cations*, Anions*	4°C
LT-4 (20-22) 70468	SO	6/22/2022	12:35	(1) 16 oz Glass Jar	EC, Chlorides, pH, % Moisture, Cations*, Anions*	4°C
LT-5 (0-2) 70469	SO	6/23/2022	9:05	(1) 16 oz Glass Jar	EC, SAR, ESP, CEC, Chlorides, Metals*, pH, % Moisture, Cations*, Anions*	4°C
LT-5 (4-6) 70470	SO	6/23/2022	9:10	(1) 16 oz Glass Jar	EC, Chlorides, pH, Metals*, % Moisture, Cations*, Anions*	4°C
LT-5 (8-10)	SO	6/23/2022	9:15	No Split	NA	NA

HOLD for possible analysis of SPLP Chloride and Sodium and additional parameters
 Cations*: Soluble Calcium, Magnesium, and Sodium
 Anions*: Cl, SO4, HCO3
 Metals*: Arsenic, Barium, True Total Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver, Zinc

Relinquished By: <i>[Signature]</i>	Received By: <i>P. Howard</i>
Date/Time: 6/24/22 1340	Date/Time: 6/24/22 1340
Relinquished By: <i>P. Howard</i>	Received By: <i>[Signature]</i>
Date/Time: 6/27/22 10:15	Date/Time: 6/27/22 1015
Analysis Due: Verbal:	Written:

Reli: *[Signature]* 6/28/22 830
 Rec'd by: *[Signature]* 6-28-22 0830
 Page 1 of 2



HYDRO-ENVIRONMENTAL TECHNOLOGY, INC.
Environmental Consultants
P.O. Box 60295
Lafayette, LA 70596-0295
Phone (337) 261-1963 FAX (337) 261-1953

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert **Laboratory:** Waypoint
Project Number: 1009.A62 **Collected By:** TRW
Project Location: Bayou Sorrel, LA **Company:** Hydro-Environmental Technology, Inc.
Date: 6/22/2022

Sample I.D.	Type	Date/Time Sampled		Containers	Analysis Requested/Method	Comments
LT-5 (16-18) 70471	SO	6/23/2022	9:25	(1) 16 oz Glass Jar	EC, Chlorides, pH, % Moisture, Cations*, Anions*	4°C
LT-5 (22-24) 70472	SO	6/23/2022	9:40	(1) 16 oz Glass Jar	EC, Chlorides, pH, % Moisture, Cations*, Anions*	4°C
LT-6 (0-2) 70473	SO	6/23/2022	14:15	(1) 16 oz Glass Jar	EC, SAR, ESP, CEC, Chlorides, Metals*, pH, % Moisture, Cations*, Anions*	4°C
LT-6 (4-6) 70474	SO	6/23/2022	14:20	(1) 16 oz Glass Jar	EC, Chlorides, pH, Metals*, % Moisture, Cations*, Anions*	4°C
LT-6 (6-8)	SO	6/23/2022	14:25	No Split	NA	NA
LT-6 (16-18)	SO	6/23/2022	14:45	No Split	NA	NA
LT-6 (24-26) 70475	SO	6/23/2022	14:55	(1) 16 oz Glass Jar	EC, Chlorides, pH, % Moisture, Cations*, Anions*	4°C

HOLD for possible analysis of SPLP Chloride and Sodium and additional parameters

Cations*: Soluble Calcium, Magnesium, and Sodium

Anions*: Cl, SO₄, HCO₃

Metals*: Arsenic, Barium, True Total Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver, Zinc

Relinquished By: <i>T. Adwick</i>	Received By: <i>P. Howard</i>
Date/Time: <i>6/24/22 1340</i>	Date/Time: <i>6/24/22 1340</i>
Relinquished By: <i>P. Howard</i>	Received By: <i>[Signature]</i>
Date/Time: <i>6/27/22 10:15</i>	Date/Time: <i>6/27/22 1015</i>
Analysis Due: Verbal:	Written:

Reli: *[Signature]* 6/28/22 830 Rec'd by: *[Signature]* 6/28/22 0830
 Page 31 of 31 Page 2 of 2



Element Materials Technology Lafayette
2417 W. Pinhook Road
Lafayette, LA 70508-3344
TEL: (337) 235-0483 FAX: (337) 233-6540
Website: www.element.com

July 14, 2022

Greg Miller
ICON Environmental Services
2049 Commercial Drive
Port Allen, LA 70767
TEL: (225) 344-8490
FAX (225) 344-6654

RE: Levert-Grand River/9326-025-0100

Order No.: 22061340

Dear Greg Miller:

Element Materials Technology Lafayette received 33 sample(s) on 6/29/2022 for the analyses presented in the following report.

In accordance with your instructions, Element Lafayette either conducted or subcontracted these analyses. Subcontracted analyses will be identified in the accompanying case narrative. All relevant sampling information can be found on the attached Chain-of-Custody form. Unless otherwise noted, all analyses were conducted using EPA approved methodologies and all test results meet the applicable requirements of TNI. Reported results relate only to the items tested.

Where applicable, all soil data, except for 29-B, are reported on a wet-weight basis unless otherwise indicated in the units field as –dry.

LELAP Certification No.: 01997. TCEQ Certification No.: T104704261. LDHH Certification No.: LA023. ISDH Certification No.: C-LA-01. NDELCP Certification No.: R-226. A scope of accredited parameters is available upon request. A "#" by the test method or analyte indicates this parameter is outside the scope of accreditation. PA registration No.: 68-05967.

Estimated uncertainty is available upon request. This report shall not be reproduced, except in full, without the written approval of the laboratory.

If you have any questions regarding these test results, please feel free to call.

A handwritten signature in blue ink that reads 'Cristina Thibeaux'.

Cristina Thibeaux
Customer Service Supervisor



Element Materials Technology Lafayette
2417 W. Pinhook Road
Lafayette, LA 70508-3344
TEL: (337) 235-0483 FAX: (337) 233-6540
Website: www.element.com

Case Narrative

WO#: 22061340
Date: 7/14/2022

CLIENT: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

Unless specified by the client, a duplicate or MS/MSD, wherever applicable, is randomly selected and analyzed from each analytical batch provided sample volume is sufficient. The sample chosen for duplicate or MS/MSD may or may not be a sample submitted in this workorder. A method blank and/or a lab control sample (LCS)/lab control sample duplicate (LCSD), wherever applicable, are processed as a quality control check for each analytical batch. When the matrix QC data is not available due to insufficient sample volume or when the results indicate possible matrix effect, the validity of the batch is determined by the method blank and LCS/LCSD.

The results of the laboratory internal quality control data are provided in the QC Summary Report section of the report for your review. Laboratory-related QC exceptions that may impact the validity of data are discussed in the case narrative. Sample-related QC exceptions are flagged either in the results page(s) or in the QC report page(s). End users should consider QC exceptions when evaluating sample data against data quality objectives.

Any other exceptions associated with this report will be footnoted in the results page(s) or the QC summary page(s).

Note: Due to limited sample, the following Lab IDs were prepared for Leachate Chloride, using less than 100g of the soil (dry wt basis). The amount of the extraction fluid was proportionally reduced to yield a 1:4 sample to fluid ratio.

22061340-004A: INSUFFICIENT VOLUME USE 82.2g
22061340-014A: INSUFFICIENT VOLUME USE 98.4g
22061340-020A: INSUFFICIENT VOLUME USE 95.5g
22061340-021A: INSUFFICIENT VOLUME USE 90.9g
22061340-023A: INSUFFICIENT VOLUME USE 75.6g



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

Analytical Report

(consolidated)

WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/22/2022 12:20:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-001 **Matrix:** SOIL
Client Sample ID LT-4 (8-10')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	68.3	0.100		meq/100g	1	7/13/2022
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.72	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.02	0.10		%	1	7/13/2022
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.14	0.10			1	7/12/2022
Soluble Calcium	2.79	0.02		meq/L	1	7/12/2022
Soluble Magnesium	1.40	0.05		meq/L	1	7/12/2022
Soluble Sodium	1.66	0.25		meq/L	1	7/12/2022
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.0998	0.0998		mg/Kg-dry	1	7/8/2022 7:41:27 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC						
Chloride	83.8	5.56		mg/Kg-dry	20	7/7/2022 5:28:12 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	2.18	1.99		mg/Kg-dry	1	7/7/2022 5:03:27 PM
Barium	192	14.9		mg/Kg-dry	1	7/7/2022 5:03:27 PM
Cadmium	< 0.496	0.496		mg/Kg-dry	1	7/7/2022 5:03:27 PM
Chromium	14.0	0.993		mg/Kg-dry	1	7/7/2022 5:03:27 PM
Lead	12.1	0.993		mg/Kg-dry	1	7/7/2022 5:03:27 PM
Selenium	< 3.97	3.97		mg/Kg-dry	1	7/7/2022 5:03:27 PM
Strontium	39.2	0.993		mg/Kg-dry	1	7/7/2022 5:03:27 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



Element Materials Technology Lafayette
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Analytical Report

(consolidated)

WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/22/2022 12:20:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-001 **Matrix:** SOIL
Client Sample ID LT-4 (8-10')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	48.0	0.993		mg/Kg-dry	1	7/7/2022 5:03:27 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	375	47.9		mg/Kg-dry	1	7/12/2022 1:59:49 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	42.2	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/22/2022 12:25:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-002 **Matrix:** SOIL
Client Sample ID LT-4 (12-14')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION						
						Analyst: HXW
Electrical Conductivity	0.81	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
29B METALS						
MERCURY IN SOIL OR SLUDGE						
						Analyst: BXB
Mercury	< 0.0946	0.0946		mg/Kg-dry	1	7/8/2022 7:43:45 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC						
						Analyst: SGP
Chloride	33.6	2.45		mg/Kg-dry	20	7/7/2022 5:42:00 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
						Analyst: MRM
Arsenic	4.06	1.99		mg/Kg-dry	1	7/7/2022 5:05:47 PM
Barium	265	14.9		mg/Kg-dry	1	7/7/2022 5:05:47 PM
Cadmium	< 0.498	0.498		mg/Kg-dry	1	7/7/2022 5:05:47 PM
Chromium	11.2	0.996		mg/Kg-dry	1	7/7/2022 5:05:47 PM
Lead	9.42	0.996		mg/Kg-dry	1	7/7/2022 5:05:47 PM
Selenium	< 3.98	3.98		mg/Kg-dry	1	7/7/2022 5:05:47 PM
Strontium	35.9	0.996		mg/Kg-dry	1	7/7/2022 5:05:47 PM
Zinc	45.0	0.996		mg/Kg-dry	1	7/7/2022 5:05:47 PM
29B METALS						
TRUE TOTAL BARIUM						
						Analyst: MRM
True Total Barium	409	49.6		mg/Kg-dry	1	7/12/2022 2:02:07 PM
PERCENT MOISTURE						
						Analyst: HXW
Percent Moisture	28.9	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/22/2022 12:30:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-003 **Matrix:** SOIL
Client Sample ID LT-4 (16-18')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: HXW
Electrical Conductivity	0.67	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC				SW9056A		Analyst: SGP
Chloride	34.4	1.28		mg/Kg-dry	10	7/7/2022 5:55:47 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: HXW
Percent Moisture	26.8	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/22/2022 12:35:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-004 **Matrix:** SOIL
Client Sample ID LT-4 (20-22')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: HXW
Electrical Conductivity	0.77	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
INORGANIC ANIONS IN LEACHATE BY IC				SW9056A		Analyst: SGP
Chloride	21.6	2.50		mg/L	10	7/12/2022 5:27:33 PM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC				SW9056A		Analyst: SGP
Chloride	49.7	3.96		mg/Kg-dry	20	7/7/2022 6:09:35 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: HXW
Percent Moisture	41.5	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 9:05:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-005 **Matrix:** SOIL
Client Sample ID LT-5 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	71.6	0.100		meq/100g	1	7/13/2022
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.96	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	2.24	0.10		%	1	7/13/2022
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.96	0.10			1	7/12/2022
Soluble Calcium	2.82	0.02		meq/L	1	7/12/2022
Soluble Magnesium	1.71	0.05		meq/L	1	7/12/2022
Soluble Sodium	2.96	0.25		meq/L	1	7/12/2022
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.104	0.104		mg/Kg-dry	1	7/8/2022 7:46:03 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC						
Chloride	146	6.08		mg/Kg-dry	20	7/7/2022 6:23:23 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	4.38	1.99		mg/Kg-dry	1	7/7/2022 5:08:05 PM
Barium	166	14.9		mg/Kg-dry	1	7/7/2022 5:08:05 PM
Cadmium	< 0.497	0.497		mg/Kg-dry	1	7/7/2022 5:08:05 PM
Chromium	16.0	0.993		mg/Kg-dry	1	7/7/2022 5:08:05 PM
Lead	14.2	0.993		mg/Kg-dry	1	7/7/2022 5:08:05 PM
Selenium	< 3.97	3.97		mg/Kg-dry	1	7/7/2022 5:08:05 PM
Strontium	32.4	0.993		mg/Kg-dry	1	7/7/2022 5:08:05 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 9:05:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-005 **Matrix:** SOIL
Client Sample ID LT-5 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	58.7	0.993		mg/Kg-dry	1	7/7/2022 5:08:05 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	411	47.5		mg/Kg-dry	1	7/12/2022 2:04:24 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	28.3	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 9:10:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-006 **Matrix:** SOIL
Client Sample ID LT-5 (4-6')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	81.2	0.100		meq/100g	1	7/13/2022
29B SALTS					LDNR 29-B	Analyst: HXW
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	1.02	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.72	0.10		%	1	7/13/2022
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.57	0.10			1	7/12/2022
Soluble Calcium	3.43	0.02		meq/L	1	7/12/2022
Soluble Magnesium	1.94	0.05		meq/L	1	7/12/2022
Soluble Sodium	2.57	0.25		meq/L	1	7/12/2022
29B METALS					29B/SW7471A	SW7471A Analyst: BXB
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.0962	0.0962		mg/Kg-dry	1	7/8/2022 7:48:22 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC					SW9056A	Analyst: SGP
Chloride	153	7.62		mg/Kg-dry	20	7/7/2022 6:37:10 PM
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	5.67	1.99		mg/Kg-dry	1	7/7/2022 5:10:24 PM
Barium	200	15.0		mg/Kg-dry	1	7/7/2022 5:10:24 PM
Cadmium	< 0.498	0.498		mg/Kg-dry	1	7/7/2022 5:10:24 PM
Chromium	16.4	0.997		mg/Kg-dry	1	7/7/2022 5:10:24 PM
Lead	15.3	0.997		mg/Kg-dry	1	7/7/2022 5:10:24 PM
Selenium	< 3.99	3.99		mg/Kg-dry	1	7/7/2022 5:10:24 PM
Strontium	41.9	0.997		mg/Kg-dry	1	7/7/2022 5:10:24 PM

Qualifiers:	B Analyte detected in the associated Method Blank	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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Analytical Report

(consolidated)

WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 9:10:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-006 **Matrix:** SOIL
Client Sample ID LT-5 (4-6')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	65.0	0.997		mg/Kg-dry	1	7/7/2022 5:10:24 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	341	49.1		mg/Kg-dry	1	7/12/2022 2:06:42 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	37.4	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 9:15:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-007 **Matrix:** SOIL
Client Sample ID LT-5 (8-10')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	51.3	0.100		meq/100g	1	7/13/2022
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.71	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.26	0.10		%	1	7/13/2022
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.19	0.10			1	7/12/2022
Soluble Calcium	2.28	0.02		meq/L	1	7/12/2022
Soluble Magnesium	1.34	0.05		meq/L	1	7/12/2022
Soluble Sodium	1.61	0.25		meq/L	1	7/12/2022
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.0947	0.0947		mg/Kg-dry	1	7/8/2022 7:56:07 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC						
Chloride	88.7	3.94		mg/Kg-dry	20	7/7/2022 6:50:58 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	4.36	1.91		mg/Kg-dry	1	7/12/2022 11:35:48 AM
Barium	447	1.91		mg/Kg-dry	1	7/12/2022 11:35:48 AM
Cadmium	< 0.478	0.478		mg/Kg-dry	1	7/12/2022 11:35:48 AM
Chromium	12.5	0.956		mg/Kg-dry	1	7/12/2022 11:35:48 AM
Lead	11.6	0.956		mg/Kg-dry	1	7/12/2022 11:35:48 AM
Selenium	< 3.83	3.83		mg/Kg-dry	1	7/12/2022 11:35:48 AM
Strontium	44.3	0.956		mg/Kg-dry	1	7/12/2022 11:35:48 AM

Qualifiers:
 B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 RL Reporting Limit
 SDL Sample detection limit
 W Sample container temperature is out of limit as specified at testcode

E Value above quantitation range
 M Matrix Interference
 R RPD outside accepted recovery limits
 S Spike Recovery outside accepted recovery limits
 U Analyte not detected



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Analytical Report

(consolidated)

WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 9:15:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-007 **Matrix:** SOIL
Client Sample ID LT-5 (8-10')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	50.5	0.956		mg/Kg-dry	1	7/12/2022 11:35:48 AM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	691	48.4		mg/Kg-dry	1	7/12/2022 2:08:58 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	32.7	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B Analyte detected in the associated Method Blank	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 9:25:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-008 **Matrix:** SOIL
Client Sample ID LT-5 (16-18')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: HXW
Electrical Conductivity	0.64	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC				SW9056A		Analyst: SGP
Chloride	39.8	1.04		mg/Kg-dry	10	7/7/2022 7:32:20 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: HXW
Percent Moisture	20.6	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 9:40:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-009 **Matrix:** SOIL
Client Sample ID LT-5 (22-24')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: HXW
Electrical Conductivity	1.06	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
INORGANIC ANIONS IN LEACHATE BY IC				SW9056A		Analyst: SGP
Chloride	28.0	2.50		mg/L	10	7/12/2022 5:41:21 PM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC				SW9056A		Analyst: SGP
Chloride	77.7	3.00		mg/Kg-dry	20	7/7/2022 7:46:08 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: HXW
Percent Moisture	31.7	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



Element Materials Technology Lafayette
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Analytical Report

(consolidated)

WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 2:15:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-010 **Matrix:** SOIL
Client Sample ID LT-6 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	70.8	0.100		meq/100g	1	7/13/2022
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	2.33	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	0.49	0.10		%	1	7/13/2022
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	0.38	0.10			1	7/12/2022
Soluble Calcium	15.2	0.02		meq/L	1	7/12/2022
Soluble Magnesium	6.52	0.05		meq/L	1	7/12/2022
Soluble Sodium	1.27	0.25		meq/L	1	7/12/2022
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.103	0.103		mg/Kg-dry	1	7/8/2022 7:58:26 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC						
Chloride	30.8	12.9		mg/Kg-dry	50	7/7/2022 7:59:56 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	5.58	2.00		mg/Kg-dry	1	7/12/2022 11:42:41 AM
Barium	213	2.00		mg/Kg-dry	1	7/12/2022 11:42:41 AM
Cadmium	< 0.499	0.499		mg/Kg-dry	1	7/12/2022 11:42:41 AM
Chromium	17.6	0.999		mg/Kg-dry	1	7/12/2022 11:42:41 AM
Lead	16.6	0.999		mg/Kg-dry	1	7/12/2022 11:42:41 AM
Selenium	< 3.99	3.99		mg/Kg-dry	1	7/12/2022 11:42:41 AM
Strontium	38.3	0.999		mg/Kg-dry	1	7/12/2022 11:42:41 AM

Qualifiers:

B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 RL Reporting Limit
 SDL Sample detection limit
 W Sample container temperature is out of limit as specified at testcode

E Value above quantitation range
 M Matrix Interference
 R RPD outside accepted recovery limits
 S Spike Recovery outside accepted recovery limits
 U Analyte not detected



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 2:15:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-010 **Matrix:** SOIL
Client Sample ID LT-6 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	73.2	0.999		mg/Kg-dry	1	7/12/2022 11:42:41 AM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	356	49.8		mg/Kg-dry	1	7/12/2022 2:15:53 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	25.6	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 2:20:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-011 **Matrix:** SOIL
Client Sample ID LT-6 (4-6')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	77.6	0.100		meq/100g	1	7/13/2022
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	3.32	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.34	0.10		%	1	7/13/2022
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	0.87	0.10			1	7/12/2022
Soluble Calcium	18.6	0.02		meq/L	1	7/12/2022
Soluble Magnesium	12.1	0.05		meq/L	1	7/12/2022
Soluble Sodium	3.43	0.25		meq/L	1	7/12/2022
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.105	0.105		mg/Kg-dry	1	7/8/2022 8:00:44 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC						
Chloride	78.7	14.7		mg/Kg-dry	50	7/7/2022 8:13:44 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	4.91	1.94		mg/Kg-dry	1	7/12/2022 11:44:58 AM
Barium	181	1.94		mg/Kg-dry	1	7/12/2022 11:44:58 AM
Cadmium	< 0.485	0.485		mg/Kg-dry	1	7/12/2022 11:44:58 AM
Chromium	19.7	0.969		mg/Kg-dry	1	7/12/2022 11:44:58 AM
Lead	16.5	0.969		mg/Kg-dry	1	7/12/2022 11:44:58 AM
Selenium	< 3.88	3.88		mg/Kg-dry	1	7/12/2022 11:44:58 AM
Strontium	43.8	0.969		mg/Kg-dry	1	7/12/2022 11:44:58 AM

Qualifiers:	B Analyte detected in the associated Method Blank	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 2:20:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-011 **Matrix:** SOIL
Client Sample ID LT-6 (4-6')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	74.4	0.969		mg/Kg-dry	1	7/12/2022 11:44:58 AM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	418	49.5		mg/Kg-dry	1	7/12/2022 2:18:10 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	28.8	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 2:25:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-012 **Matrix:** SOIL
Client Sample ID LT-6 (6-8')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	73.0	0.100		meq/100g	1	7/13/2022
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	1.24	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.50	0.10		%	1	7/13/2022
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.28	0.10			1	7/12/2022
Soluble Calcium	4.99	0.02		meq/L	1	7/12/2022
Soluble Magnesium	2.70	0.05		meq/L	1	7/12/2022
Soluble Sodium	2.50	0.25		meq/L	1	7/12/2022
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.106	0.106		mg/Kg-dry	1	7/8/2022 8:03:28 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC						
Chloride	95.5	6.54		mg/Kg-dry	20	7/7/2022 8:27:31 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	4.96	2.00		mg/Kg-dry	1	7/12/2022 11:51:50 AM
Barium	161	2.00		mg/Kg-dry	1	7/12/2022 11:51:50 AM
Cadmium	< 0.499	0.499		mg/Kg-dry	1	7/12/2022 11:51:50 AM
Chromium	18.9	0.998		mg/Kg-dry	1	7/12/2022 11:51:50 AM
Lead	15.4	0.998		mg/Kg-dry	1	7/12/2022 11:51:50 AM
Selenium	< 3.99	3.99		mg/Kg-dry	1	7/12/2022 11:51:50 AM
Strontium	40.0	0.998		mg/Kg-dry	1	7/12/2022 11:51:50 AM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 2:25:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-012 **Matrix:** SOIL
Client Sample ID LT-6 (6-8')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	76.8	0.998		mg/Kg-dry	1	7/12/2022 11:51:50 AM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	430	49.8		mg/Kg-dry	1	7/12/2022 2:20:27 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	33.4	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 2:45:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-013 **Matrix:** SOIL
Client Sample ID LT-6 (16-18')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: HXW
Electrical Conductivity	3.77	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC				SW9056A		Analyst: SGP
Chloride	364	30.2		mg/Kg-dry	100	7/7/2022 8:41:19 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: HXW
Percent Moisture	51.7	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 2:55:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-014 **Matrix:** SOIL
Client Sample ID LT-6 (24-26')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: HXW
Electrical Conductivity	0.95	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
INORGANIC ANIONS IN LEACHATE BY IC				SW9056A		Analyst: SGP
Chloride	59.3	2.50		mg/L	10	7/12/2022 5:55:09 PM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC				SW9056A		Analyst: SGP
Chloride	259	7.42		mg/Kg-dry	20	7/7/2022 8:55:06 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: HXW
Percent Moisture	33.2	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/27/2022 11:30:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-015 **Matrix:** SOIL
Client Sample ID LT-7 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	29.4	0.100		meq/100g	1	7/13/2022
29B SALTS					LDNR 29-B	Analyst: HXW
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.52	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.24	0.10		%	1	7/13/2022
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	0.52	0.10			1	7/12/2022
Soluble Calcium	2.81	0.02		meq/L	1	7/12/2022
Soluble Magnesium	1.18	0.05		meq/L	1	7/12/2022
Soluble Sodium	0.74	0.25		meq/L	1	7/12/2022
29B METALS					29B/SW7471A	SW7471A Analyst: BXB
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.104	0.104		mg/Kg-dry	1	7/8/2022 8:05:46 AM
INORGANIC ANIONS IN LEACHATE BY IC					SW9056A	Analyst: SGP
Chloride	4.84	1.25		mg/L	5	7/12/2022 6:08:56 PM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC					SW9056A	Analyst: SGP
Chloride	17.5	1.66		mg/Kg-dry	10	7/7/2022 9:08:55 PM
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	4.47	2.00		mg/Kg-dry	1	7/12/2022 11:54:07 AM
Barium	144	2.00		mg/Kg-dry	1	7/12/2022 11:54:07 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- E Value above quantitation range
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

(consolidated)

WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/27/2022 11:30:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-015 **Matrix:** SOIL
Client Sample ID LT-7 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Cadmium	< 0.500	0.500		mg/Kg-dry	1	7/12/2022 11:54:07 AM
Chromium	12.2	1.00		mg/Kg-dry	1	7/12/2022 11:54:07 AM
Lead	9.71	1.00		mg/Kg-dry	1	7/12/2022 11:54:07 AM
Selenium	< 4.00	4.00		mg/Kg-dry	1	7/12/2022 11:54:07 AM
Strontium	26.7	1.00		mg/Kg-dry	1	7/12/2022 11:54:07 AM
Zinc	48.0	1.00		mg/Kg-dry	1	7/12/2022 11:54:07 AM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	234	46.9		mg/Kg-dry	1	7/12/2022 2:22:44 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	17.4	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/27/2022 11:35:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-016 **Matrix:** SOIL
Client Sample ID LT-7 (4-6')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	20.7	0.100		meq/100g	1	7/13/2022
29B SALTS					LDNR 29-B	Analyst: HXW
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.24	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.28	0.10		%	1	7/13/2022
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	0.44	0.10			1	7/12/2022
Soluble Calcium	1.21	0.02		meq/L	1	7/12/2022
Soluble Magnesium	0.52	0.05		meq/L	1	7/12/2022
Soluble Sodium	0.41	0.25		meq/L	1	7/12/2022
29B METALS					29B/SW7471A	SW7471A Analyst: BXB
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.0991	0.0991		mg/Kg-dry	1	7/8/2022 8:08:08 AM
INORGANIC ANIONS IN LEACHATE BY IC					SW9056A	Analyst: SGP
Chloride	2.47	1.25		mg/L	5	7/12/2022 6:22:44 PM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC					SW9056A	Analyst: SGP
Chloride	7.83	0.718		mg/Kg-dry	5	7/7/2022 9:22:42 PM
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	4.79	1.98		mg/Kg-dry	1	7/12/2022 11:56:24 AM
Barium	141	1.98		mg/Kg-dry	1	7/12/2022 11:56:24 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- E Value above quantitation range
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



Element Materials Technology Lafayette
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Analytical Report

(consolidated)

WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/27/2022 11:35:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-016 **Matrix:** SOIL
Client Sample ID LT-7 (4-6')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Cadmium	< 0.494	0.494		mg/Kg-dry	1	7/12/2022 11:56:24 AM
Chromium	9.62	0.988		mg/Kg-dry	1	7/12/2022 11:56:24 AM
Lead	7.58	0.988		mg/Kg-dry	1	7/12/2022 11:56:24 AM
Selenium	< 3.95	3.95		mg/Kg-dry	1	7/12/2022 11:56:24 AM
Strontium	28.7	0.988		mg/Kg-dry	1	7/12/2022 11:56:24 AM
Zinc	35.4	0.988		mg/Kg-dry	1	7/12/2022 11:56:24 AM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	220	48.1		mg/Kg-dry	1	7/12/2022 2:25:01 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	24.2	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/27/2022 11:40:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-017 **Matrix:** SOIL
Client Sample ID LT-7 (8-10')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	27.8	0.100		meq/100g	1	7/13/2022
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.47	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.30	0.10		%	1	7/13/2022
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	0.50	0.10			1	7/12/2022
Soluble Calcium	2.15	0.02		meq/L	1	7/12/2022
Soluble Magnesium	0.97	0.05		meq/L	1	7/12/2022
Soluble Sodium	0.63	0.25		meq/L	1	7/12/2022
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.106	0.106		mg/Kg-dry	1	7/8/2022 8:10:26 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC						
Chloride	8.98	1.41		mg/Kg-dry	10	7/7/2022 9:36:30 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	4.06	1.95		mg/Kg-dry	1	7/12/2022 11:58:40 AM
Barium	160	1.95		mg/Kg-dry	1	7/12/2022 11:58:40 AM
Cadmium	< 0.486	0.486		mg/Kg-dry	1	7/12/2022 11:58:40 AM
Chromium	12.5	0.973		mg/Kg-dry	1	7/12/2022 11:58:40 AM
Lead	10.3	0.973		mg/Kg-dry	1	7/12/2022 11:58:40 AM
Selenium	< 3.89	3.89		mg/Kg-dry	1	7/12/2022 11:58:40 AM
Strontium	36.0	0.973		mg/Kg-dry	1	7/12/2022 11:58:40 AM

Qualifiers:
 B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 RL Reporting Limit
 SDL Sample detection limit
 W Sample container temperature is out of limit as specified at testcode

E Value above quantitation range
 M Matrix Interference
 R RPD outside accepted recovery limits
 S Spike Recovery outside accepted recovery limits
 U Analyte not detected



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Analytical Report

(consolidated)

WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/27/2022 11:40:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-017 **Matrix:** SOIL
Client Sample ID LT-7 (8-10')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	50.2	0.973		mg/Kg-dry	1	7/12/2022 11:58:40 AM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	270	46.0		mg/Kg-dry	1	7/12/2022 2:27:18 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	25.6	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/27/2022 11:50:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-018 **Matrix:** SOIL
Client Sample ID LT-7 (16-18')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: HXW
Electrical Conductivity	0.62	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC				SW9056A		Analyst: SGP
Chloride	40.3	2.64		mg/Kg-dry	10	7/8/2022 12:00:38 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: HXW
Percent Moisture	40.7	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B Analyte detected in the associated Method Blank	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/27/2022 11:55:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-019 **Matrix:** SOIL
Client Sample ID LT-7 (20-22')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: HXW
Electrical Conductivity	0.58	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC					SW9056A	Analyst: SGP
Chloride	43.2	2.06		mg/Kg-dry	10	7/8/2022 12:14:26 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	41.5	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B Analyte detected in the associated Method Blank	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/27/2022 12:00:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-020 **Matrix:** SOIL
Client Sample ID LT-7 (24-26')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: HXW
Electrical Conductivity	0.60	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
INORGANIC ANIONS IN LEACHATE BY IC					SW9056A	Analyst: SGP
Chloride	13.9	2.50		mg/L	10	7/12/2022 6:36:32 PM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC					SW9056A	Analyst: SGP
Chloride	35.6	1.92		mg/Kg-dry	10	7/8/2022 12:28:14 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	35.4	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode		



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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/27/2022 1:15:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-021 **Matrix:** SOIL
Client Sample ID LT-7 (36-38')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: HXW
Electrical Conductivity	0.82	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
INORGANIC ANIONS IN LEACHATE BY IC					SW9056A	Analyst: SGP
Chloride	16.1	1.25		mg/L	5	7/12/2022 6:50:19 PM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC					SW9056A	Analyst: SGP
Chloride	36.3	2.22		mg/Kg-dry	10	7/8/2022 12:42:01 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	39.0	1.00		wt%	1	6/30/2022 2:15:00 PM

Qualifiers:	B Analyte detected in the associated Method Blank	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 9:00:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-022 **Matrix:** SOIL
Client Sample ID LT-8 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	18.8	0.100		meq/100g	1	7/13/2022
29B SALTS					LDNR 29-B	Analyst: HXW
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.40	0.10		mmhos/cm	1	7/7/2022 9:57:00 AM
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.46	0.10		%	1	7/13/2022
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	0.47	0.10			1	7/12/2022
Soluble Calcium	1.96	0.02		meq/L	1	7/12/2022
Soluble Magnesium	0.80	0.05		meq/L	1	7/12/2022
Soluble Sodium	0.56	0.25		meq/L	1	7/12/2022
29B METALS					29B/SW7471A	SW7471A Analyst: BXB
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.107	0.107		mg/Kg-dry	1	7/8/2022 8:12:44 AM
INORGANIC ANIONS IN LEACHATE BY IC					SW9056A	Analyst: SGP
Chloride	2.79	1.25		mg/L	5	7/12/2022 7:04:07 PM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC					SW9056A	Analyst: SGP
Chloride	10.1	1.65		mg/Kg-dry	10	7/8/2022 1:23:23 PM
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	2.61	2.00		mg/Kg-dry	1	7/12/2022 12:00:56 PM
Barium	119	2.00		mg/Kg-dry	1	7/12/2022 12:00:56 PM

Qualifiers:
 B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 RL Reporting Limit
 SDL Sample detection limit
 W Sample container temperature is out of limit as specified at testcode

E Value above quantitation range
 M Matrix Interference
 R RPD outside accepted recovery limits
 S Spike Recovery outside accepted recovery limits
 U Analyte not detected



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Analytical Report

(consolidated)

WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 9:00:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-022 **Matrix:** SOIL
Client Sample ID LT-8 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Cadmium	< 0.500	0.500		mg/Kg-dry	1	7/12/2022 12:00:56 PM
Chromium	9.35	0.999		mg/Kg-dry	1	7/12/2022 12:00:56 PM
Lead	7.02	0.999		mg/Kg-dry	1	7/12/2022 12:00:56 PM
Selenium	< 4.00	4.00		mg/Kg-dry	1	7/12/2022 12:00:56 PM
Strontium	25.7	0.999		mg/Kg-dry	1	7/12/2022 12:00:56 PM
Zinc	35.3	0.999		mg/Kg-dry	1	7/12/2022 12:00:56 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	208	49.0		mg/Kg-dry	1	7/12/2022 2:29:34 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	25.7	1.00		wt%	1	6/30/2022 2:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 9:05:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-023 **Matrix:** SOIL
Client Sample ID LT-8 (4-6')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	16.2	0.100		meq/100g	1	7/13/2022
29B SALTS					LDNR 29-B	Analyst: HXW
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.48	0.10		mmhos/cm	1	7/7/2022 9:57:00 AM
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.55	0.10		%	1	7/13/2022
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	0.60	0.10			1	7/12/2022
Soluble Calcium	2.26	0.02		meq/L	1	7/12/2022
Soluble Magnesium	0.92	0.05		meq/L	1	7/12/2022
Soluble Sodium	0.76	0.25		meq/L	1	7/12/2022
29B METALS					29B/SW7471A	SW7471A Analyst: BXB
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.0928	0.0928		mg/Kg-dry	1	7/8/2022 8:15:03 AM
INORGANIC ANIONS IN LEACHATE BY IC					SW9056A	Analyst: SGP
Chloride	1.84	1.25		mg/L	5	7/12/2022 7:17:54 PM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC					SW9056A	Analyst: SGP
Chloride	7.00	1.46		mg/Kg-dry	10	7/8/2022 1:37:10 PM
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	3.96	1.98		mg/Kg-dry	1	7/12/2022 12:03:14 PM
Barium	133	1.98		mg/Kg-dry	1	7/12/2022 12:03:14 PM

Qualifiers:
 B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 RL Reporting Limit
 SDL Sample detection limit
 W Sample container temperature is out of limit as specified at testcode

E Value above quantitation range
 M Matrix Interference
 R RPD outside accepted recovery limits
 S Spike Recovery outside accepted recovery limits
 U Analyte not detected



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Analytical Report

(consolidated)

WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 9:05:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-023 **Matrix:** SOIL
Client Sample ID LT-8 (4-6')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Cadmium	< 0.496	0.496		mg/Kg-dry	1	7/12/2022 12:03:14 PM
Chromium	9.68	0.992		mg/Kg-dry	1	7/12/2022 12:03:14 PM
Lead	6.76	0.992		mg/Kg-dry	1	7/12/2022 12:03:14 PM
Selenium	< 3.97	3.97		mg/Kg-dry	1	7/12/2022 12:03:14 PM
Strontium	26.0	0.992		mg/Kg-dry	1	7/12/2022 12:03:14 PM
Zinc	34.6	0.992		mg/Kg-dry	1	7/12/2022 12:03:14 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	203	46.4		mg/Kg-dry	1	7/12/2022 2:31:51 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	24.9	1.00		wt%	1	6/30/2022 2:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 9:10:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-024 **Matrix:** SOIL
Client Sample ID LT-8 (8-10')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	21.3	0.100		meq/100g	1	7/13/2022
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.42	0.10		mmhos/cm	1	7/7/2022 9:57:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.50	0.10		%	1	7/13/2022
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	0.81	0.10			1	7/12/2022
Soluble Calcium	1.53	0.02		meq/L	1	7/12/2022
Soluble Magnesium	0.66	0.05		meq/L	1	7/12/2022
Soluble Sodium	0.85	0.25		meq/L	1	7/12/2022
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.104	0.104		mg/Kg-dry	1	7/8/2022 8:17:21 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC						
Chloride	17.4	1.55		mg/Kg-dry	10	7/8/2022 1:50:56 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	4.16	1.96		mg/Kg-dry	1	7/12/2022 12:05:30 PM
Barium	147	1.96		mg/Kg-dry	1	7/12/2022 12:05:30 PM
Cadmium	< 0.491	0.491		mg/Kg-dry	1	7/12/2022 12:05:30 PM
Chromium	10.9	0.982		mg/Kg-dry	1	7/12/2022 12:05:30 PM
Lead	8.18	0.982		mg/Kg-dry	1	7/12/2022 12:05:30 PM
Selenium	< 3.93	3.93		mg/Kg-dry	1	7/12/2022 12:05:30 PM
Strontium	31.4	0.982		mg/Kg-dry	1	7/12/2022 12:05:30 PM

Qualifiers:
 B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 RL Reporting Limit
 SDL Sample detection limit
 W Sample container temperature is out of limit as specified at testcode

E Value above quantitation range
 M Matrix Interference
 R RPD outside accepted recovery limits
 S Spike Recovery outside accepted recovery limits
 U Analyte not detected



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Analytical Report

(consolidated)

WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 9:10:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-024 **Matrix:** SOIL
Client Sample ID LT-8 (8-10')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	41.9	0.982		mg/Kg-dry	1	7/12/2022 12:05:30 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	261	46.7		mg/Kg-dry	1	7/12/2022 2:34:08 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	27.4	1.00		wt%	1	6/30/2022 2:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 9:20:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-025 **Matrix:** SOIL
Client Sample ID LT-8 (16-18')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: HXW
Electrical Conductivity	0.50	0.10		mmhos/cm	1	7/7/2022 9:57:00 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC				SW9056A		Analyst: SGP
Chloride	25.3	1.33		mg/Kg-dry	10	7/8/2022 2:04:43 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: HXW
Percent Moisture	26.1	1.00		wt%	1	6/30/2022 2:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 9:25:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-026 **Matrix:** SOIL
Client Sample ID LT-8 (20-22')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: HXW
Electrical Conductivity	0.34	0.10		mmhos/cm	1	7/7/2022 9:57:00 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC				SW9056A		Analyst: SGP
Chloride	14.6	0.604		mg/Kg-dry	5	7/8/2022 2:18:31 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: HXW
Percent Moisture	22.7	1.00		wt%	1	6/30/2022 2:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 9:30:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-027 **Matrix:** SOIL
Client Sample ID LT-8 (24-26')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: HXW
Electrical Conductivity	0.44	0.10		mmhos/cm	1	7/7/2022 9:57:00 AM
INORGANIC ANIONS IN LEACHATE BY IC					SW9056A	Analyst: SGP
Chloride	11.9	2.50		mg/L	10	7/12/2022 7:31:41 PM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC					SW9056A	Analyst: SGP
Chloride	17.7	1.71		mg/Kg-dry	10	7/8/2022 2:32:18 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	29.6	1.00		wt%	1	6/30/2022 2:15:00 PM

Qualifiers:	B Analyte detected in the associated Method Blank	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 9:45:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-028 **Matrix:** SOIL
Client Sample ID LT-8 (36-38')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: HXW
Electrical Conductivity	0.56	0.10		mmhos/cm	1	7/7/2022 9:57:00 AM
INORGANIC ANIONS IN LEACHATE BY IC					SW9056A	Analyst: SGP
Chloride	12.6	2.50		mg/L	10	7/12/2022 8:13:02 PM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC					SW9056A	Analyst: SGP
Chloride	43.2	1.77		mg/Kg-dry	10	7/8/2022 2:46:06 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	28.7	1.00		wt%	1	6/30/2022 2:15:00 PM

Qualifiers:	B Analyte detected in the associated Method Blank	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 1:30:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-029 **Matrix:** SOIL
Client Sample ID LT-9 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	24.5	0.100		meq/100g	1	7/13/2022
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.39	0.10		mmhos/cm	1	7/7/2022 9:57:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.20	0.10		%	1	7/13/2022
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	0.54	0.10			1	7/12/2022
Soluble Calcium	1.93	0.02		meq/L	1	7/12/2022
Soluble Magnesium	0.84	0.05		meq/L	1	7/12/2022
Soluble Sodium	0.63	0.25		meq/L	1	7/12/2022
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.0935	0.0935		mg/Kg-dry	1	7/8/2022 8:24:43 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC						
Chloride	10.2	1.54		mg/Kg-dry	10	7/8/2022 2:59:54 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	5.08	1.97		mg/Kg-dry	1	7/12/2022 12:07:47 PM
Barium	137	1.97		mg/Kg-dry	1	7/12/2022 12:07:47 PM
Cadmium	< 0.494	0.494		mg/Kg-dry	1	7/12/2022 12:07:47 PM
Chromium	10.5	0.987		mg/Kg-dry	1	7/12/2022 12:07:47 PM
Lead	8.00	0.987		mg/Kg-dry	1	7/12/2022 12:07:47 PM
Selenium	< 3.95	3.95		mg/Kg-dry	1	7/12/2022 12:07:47 PM
Strontium	26.5	0.987		mg/Kg-dry	1	7/12/2022 12:07:47 PM

Qualifiers:
 B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 RL Reporting Limit
 SDL Sample detection limit
 W Sample container temperature is out of limit as specified at testcode

E Value above quantitation range
 M Matrix Interference
 R RPD outside accepted recovery limits
 S Spike Recovery outside accepted recovery limits
 U Analyte not detected



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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 1:30:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-029 **Matrix:** SOIL
Client Sample ID LT-9 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	41.6	0.987		mg/Kg-dry	1	7/12/2022 12:07:47 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	196	45.9		mg/Kg-dry	1	7/12/2022 2:36:25 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	25.9	1.00		wt%	1	6/30/2022 2:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 1:35:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-030 **Matrix:** SOIL
Client Sample ID LT-9 (4-6')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	25.5	0.100		meq/100g	1	7/13/2022
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.41	0.10		mmhos/cm	1	7/7/2022 9:57:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.41	0.10		%	1	7/13/2022
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	0.62	0.10			1	7/12/2022
Soluble Calcium	1.87	0.02		meq/L	1	7/12/2022
Soluble Magnesium	0.79	0.05		meq/L	1	7/12/2022
Soluble Sodium	0.72	0.25		meq/L	1	7/12/2022
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.105	0.105		mg/Kg-dry	1	7/8/2022 8:27:01 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC						
Chloride	8.15	1.52		mg/Kg-dry	10	7/8/2022 3:13:41 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	3.89	1.96		mg/Kg-dry	1	7/12/2022 12:10:04 PM
Barium	156	1.96		mg/Kg-dry	1	7/12/2022 12:10:04 PM
Cadmium	< 0.489	0.489		mg/Kg-dry	1	7/12/2022 12:10:04 PM
Chromium	11.5	0.978		mg/Kg-dry	1	7/12/2022 12:10:04 PM
Lead	9.44	0.978		mg/Kg-dry	1	7/12/2022 12:10:04 PM
Selenium	< 3.91	3.91		mg/Kg-dry	1	7/12/2022 12:10:04 PM
Strontium	32.5	0.978		mg/Kg-dry	1	7/12/2022 12:10:04 PM

Qualifiers:	B Analyte detected in the associated Method Blank	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 1:35:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-030 **Matrix:** SOIL
Client Sample ID LT-9 (4-6')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	46.0	0.978		mg/Kg-dry	1	7/12/2022 12:10:04 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	245	49.2		mg/Kg-dry	1	7/12/2022 2:50:20 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	26.6	1.00		wt%	1	6/30/2022 2:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 1:40:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-031 **Matrix:** SOIL
Client Sample ID LT-9 (8-10')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	24.3	0.100		meq/100g	1	7/13/2022
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.49	0.10		mmhos/cm	1	7/7/2022 9:57:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.25	0.10		%	1	7/13/2022
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	0.70	0.10			1	7/12/2022
Soluble Calcium	1.78	0.02		meq/L	1	7/12/2022
Soluble Magnesium	0.77	0.05		meq/L	1	7/12/2022
Soluble Sodium	0.79	0.25		meq/L	1	7/12/2022
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.0949	0.0949		mg/Kg-dry	1	7/8/2022 8:29:19 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC						
Chloride	25.6	1.61		mg/Kg-dry	10	7/8/2022 3:27:29 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	5.61	1.99		mg/Kg-dry	1	7/12/2022 12:12:21 PM
Barium	149	1.99		mg/Kg-dry	1	7/12/2022 12:12:21 PM
Cadmium	< 0.497	0.497		mg/Kg-dry	1	7/12/2022 12:12:21 PM
Chromium	10.4	0.995		mg/Kg-dry	1	7/12/2022 12:12:21 PM
Lead	9.01	0.995		mg/Kg-dry	1	7/12/2022 12:12:21 PM
Selenium	< 3.98	3.98		mg/Kg-dry	1	7/12/2022 12:12:21 PM
Strontium	35.1	0.995		mg/Kg-dry	1	7/12/2022 12:12:21 PM

Qualifiers:	B Analyte detected in the associated Method Blank	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 1:40:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-031 **Matrix:** SOIL
Client Sample ID LT-9 (8-10')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	44.1	0.995		mg/Kg-dry	1	7/12/2022 12:12:21 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	180	47.0		mg/Kg-dry	1	7/13/2022 3:21:16 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	25.4	1.00		wt%	1	6/30/2022 2:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 1:45:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-032 **Matrix:** SOIL
Client Sample ID LT-9 (12-14')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: HXW
Electrical Conductivity	0.48	0.10		mmhos/cm	1	7/7/2022 9:57:00 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC					SW9056A	Analyst: SGP
Chloride	31.8	1.41		mg/Kg-dry	10	7/8/2022 4:50:10 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	26.4	1.00		wt%	1	6/30/2022 2:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 1:55:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-033 **Matrix:** SOIL
Client Sample ID LT-9 (20-22')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: HXW
Electrical Conductivity	0.43	0.10		mmhos/cm	1	7/7/2022 9:57:00 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC					SW9056A	Analyst: SGP
Chloride	18.9	2.87		mg/Kg-dry	20	7/8/2022 5:03:58 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	28.3	1.00		wt%	1	6/30/2022 2:15:00 PM

Qualifiers:	B Analyte detected in the associated Method Blank	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44342

Sample ID	MB-44342	SampType:	MBLK	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111187
Client ID:	PBS	Batch ID:	44342	TestNo:	SW6010B	SW3050B		Analysis Date:	7/7/2022	SeqNo:	2746425
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Arsenic		< 2.00		2.00							
Barium		< 15.0		15.0							
Cadmium		< 0.500		0.500							
Chromium		< 1.00		1.00							
Lead		< 1.00		1.00							
Selenium		< 4.00		4.00							
Strontium		< 1.00		1.00							
Zinc		< 1.00		1.00							

Sample ID	LCS-44342	SampType:	LCS	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111187
Client ID:	LCSS	Batch ID:	44342	TestNo:	SW6010B	SW3050B		Analysis Date:	7/7/2022	SeqNo:	2746426
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Arsenic		45.4		2.00	50.00	0	90.9	80	120		
Barium		54.4		15.0	50.00	0	109	80	120		
Cadmium		45.7		0.500	50.00	0	91.5	80	120		
Chromium		47.0		1.00	50.00	0	94.1	80	120		
Lead		45.6		1.00	50.00	0	91.3	80	120		
Selenium		42.3		4.00	50.00	0	84.5	80	120		
Strontium		47.6		1.00	50.00	0	95.2	80	120		
Zinc		44.1		1.00	50.00	0	88.2	80	120		

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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 Website: www.element.com

QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44342

Sample ID	LCSD-44342	SampType:	LCSD	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111187
Client ID:	LCSS02	Batch ID:	44342	TestNo:	SW6010B		SW3050B	Analysis Date:	7/7/2022	SeqNo:	2746427
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	44.4	2.00	50.00	0	88.7	80	120	45.43	2.40	20	
Barium	53.3	15.0	50.00	0	107	80	120	54.36	2.02	20	
Cadmium	44.6	0.500	50.00	0	89.3	80	120	45.75	2.46	20	
Chromium	45.8	1.00	50.00	0	91.5	80	120	47.03	2.76	20	
Lead	44.6	1.00	50.00	0	89.3	80	120	45.63	2.21	20	
Selenium	40.8	4.00	50.00	0	81.6	80	120	42.25	3.52	20	
Strontium	46.3	1.00	50.00	0	92.6	80	120	47.61	2.84	20	
Zinc	42.9	1.00	50.00	0	85.7	80	120	44.12	2.88	20	

Sample ID	22061154-022AMS	SampType:	MS	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111187
Client ID:	ZZZZZZ	Batch ID:	44342	TestNo:	SW6010B		SW3050B	Analysis Date:	7/7/2022	SeqNo:	2746429
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	33.6	1.91	47.70	4.301	61.4	75	125				S
Barium	218	14.3	47.70	201.5	34.9	75	125				S
Cadmium	31.4	0.477	47.70	0.3852	65.1	75	125				S
Chromium	48.4	0.954	47.70	15.35	69.3	75	125				S
Lead	43.5	0.954	47.70	14.76	60.2	75	125				S
Selenium	25.6	3.82	47.70	0.1221	53.4	75	125				S
Strontium	87.5	0.954	47.70	58.39	61.1	75	125				S
Zinc	94.7	0.954	47.70	66.48	59.2	75	125				S

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44342

Sample ID	22061154-022AMSD	SampType:	MSD	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111187
Client ID:	ZZZZZZ	Batch ID:	44342	TestNo:	SW6010B	SW3050B		Analysis Date:	7/7/2022	SeqNo:	2746430
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	29.2	1.99	49.78	4.301	50.0	75	125	33.60	14.1	20	S
Barium	171	14.9	49.78	201.5	-62.1	75	125	218.2	24.5	20	RS
Cadmium	26.9	0.498	49.78	0.3852	53.3	75	125	31.45	15.5	20	S
Chromium	39.3	0.996	49.78	15.35	48.1	75	125	48.40	20.7	20	RS
Lead	37.1	0.996	49.78	14.76	44.9	75	125	43.46	15.8	20	S
Selenium	23.7	3.98	49.78	0.1221	47.5	75	125	25.62	7.57	20	S
Strontium	70.2	0.996	49.78	58.39	23.8	75	125	87.52	21.9	20	RS
Zinc	77.0	0.996	49.78	66.48	21.1	75	125	94.73	20.7	20	RS

NOTES:

S - Spike recovery indicates matrix interference. The method is in control as indicated by the Lab Control Sample.

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44353

Sample ID	MB-44353	SampType:	MBLK	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	7/6/2022	RunNo:	111229
Client ID:	PBS	Batch ID:	44353	TestNo:	29B/SW7471 SW7471A	Analysis Date:	7/8/2022	SeqNo:	2747064		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Mercury		< 0.100		0.100							

Sample ID	LCS-44353	SampType:	LCS	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	7/6/2022	RunNo:	111229
Client ID:	LCSS	Batch ID:	44353	TestNo:	29B/SW7471 SW7471A	Analysis Date:	7/8/2022	SeqNo:	2747065		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Mercury		0.842		0.100	0.8330	0	101	80	120		

Sample ID	LCSD-44353	SampType:	LCSD	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	7/6/2022	RunNo:	111229
Client ID:	LCSS02	Batch ID:	44353	TestNo:	29B/SW7471 SW7471A	Analysis Date:	7/8/2022	SeqNo:	2747066		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Mercury		0.834		0.100	0.8330	0	100	80	120	0.8418	0.879 20

Sample ID	22070024-001AMS	SampType:	MS	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	7/6/2022	RunNo:	111229
Client ID:	ZZZZZZ	Batch ID:	44353	TestNo:	29B/SW7471 SW7471A	Analysis Date:	7/8/2022	SeqNo:	2747068		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Mercury		0.867		0.0964	0.8031	0.1616	87.8	75	125		

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44353

Sample ID	22070024-001AMSD	SampType:	MSD	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	7/6/2022	RunNo:	111229		
Client ID:	ZZZZZZ	Batch ID:	44353	TestNo:	29B/SW7471 SW7471A			Analysis Date:	7/8/2022	SeqNo:	2747069		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.923		0.102	0.8512	0.1616	89.4	75	125	0.8669	6.23	20	

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44357

Sample ID	MB-44357	SampType:	MBLK	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/6/2022	RunNo:	111346			
Client ID:	PBS	Batch ID:	44357	TestNo:	LDNR 29-B			Analysis Date:	7/12/2022	SeqNo:	2750063			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium		< 50.0		50.0										

Sample ID	LCS-44357	SampType:	LCS	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/6/2022	RunNo:	111346			
Client ID:	LCSS	Batch ID:	44357	TestNo:	LDNR 29-B			Analysis Date:	7/12/2022	SeqNo:	2750064			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium		5,090		50.0	5,000	0		102	75	125				

Sample ID	LCSD-44357	SampType:	LCSD	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/6/2022	RunNo:	111346			
Client ID:	LCSS02	Batch ID:	44357	TestNo:	LDNR 29-B			Analysis Date:	7/12/2022	SeqNo:	2750065			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium		5,120		50.0	5,000	0		102	75	125	5,087	0.611	20	

Sample ID	22061295-001AMS	SampType:	MS	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/6/2022	RunNo:	111346			
Client ID:	ZZZZZZ	Batch ID:	44357	TestNo:	LDNR 29-B			Analysis Date:	7/12/2022	SeqNo:	2750069			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium		42,900		49.8	4,978	36,910		120	75	125				

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44357

Sample ID	22061295-001AMSD	SampType:	MSD	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/6/2022	RunNo:	111346		
Client ID:	ZZZZZZ	Batch ID:	44357	TestNo:	LDNR 29-B			Analysis Date:	7/12/2022	SeqNo:	2750070		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium		40,900		48.3	4,831	36,910	83.1	75	125	42,870	4.65	20	

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44387

Sample ID	22061340-001ADUP	SampType:	DUP	TestCode:	SAR_S	Units:		Prep Date:	7/8/2022	RunNo:	111393		
Client ID:	LT-4 (8-10')	Batch ID:	44387	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/12/2022	SeqNo:	2751135		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium Adsorption Ratio		1.13		0.10						1.14	0.88	20	
Soluble Calcium		2.76		0.02						2.79	1.08	20	
Soluble Magnesium		1.39		0.05						1.40	0.72	20	
Soluble Sodium		1.62		0.25						1.66	2.44	20	

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44395

Sample ID	MB-44395	SampType:	MBLK	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/11/2022	RunNo:	111346
Client ID:	PBS	Batch ID:	44395	TestNo:	SW6010B	SW3050B		Analysis Date:	7/12/2022	SeqNo:	2750113
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Arsenic		< 2.00		2.00							
Barium		< 2.00		2.00							
Cadmium		< 0.500		0.500							
Chromium		< 1.00		1.00							
Lead		< 1.00		1.00							
Selenium		< 4.00		4.00							
Strontium		< 1.00		1.00							
Zinc		< 1.00		1.00							

Sample ID	LCS-44395	SampType:	LCS	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/11/2022	RunNo:	111346
Client ID:	LCSS	Batch ID:	44395	TestNo:	SW6010B	SW3050B		Analysis Date:	7/12/2022	SeqNo:	2750114
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Arsenic		46.9		2.00	50.00	0	93.9	80	120		
Barium		50.2		2.00	50.00	0	100	80	120		
Cadmium		47.4		0.500	50.00	0	94.8	80	120		
Chromium		48.6		1.00	50.00	0	97.1	80	120		
Lead		48.2		1.00	50.00	0	96.5	80	120		
Selenium		44.2		4.00	50.00	0	88.5	80	120		
Strontium		47.8		1.00	50.00	0	95.6	80	120		
Zinc		46.2		1.00	50.00	0	92.4	80	120		

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44395

Sample ID	LCSD-44395	SampType:	LCSD	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/11/2022	RunNo:	111346
Client ID:	LCSS02	Batch ID:	44395	TestNo:	SW6010B	SW3050B		Analysis Date:	7/12/2022	SeqNo:	2750115
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	48.8	2.00	50.00	0	97.5	80	120	46.94	3.81	20	
Barium	50.3	2.00	50.00	0	101	80	120	50.18	0.231	20	
Cadmium	47.9	0.500	50.00	0	95.8	80	120	47.40	1.06	20	
Chromium	49.2	1.00	50.00	0	98.4	80	120	48.56	1.30	20	
Lead	48.5	1.00	50.00	0	97.1	80	120	48.25	0.616	20	
Selenium	42.5	4.00	50.00	0	85.0	80	120	44.24	4.04	20	
Strontium	48.3	1.00	50.00	0	96.7	80	120	47.78	1.17	20	
Zinc	46.8	1.00	50.00	0	93.7	80	120	46.22	1.33	20	

Sample ID	22061340-007AMS	SampType:	MS	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/11/2022	RunNo:	111346
Client ID:	LT-5 (8-10')	Batch ID:	44395	TestNo:	SW6010B	SW3050B		Analysis Date:	7/12/2022	SeqNo:	2750117
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	44.0	1.99	49.73	4.357	79.6	75	125				
Barium	557	1.99	49.73	447.4	221	75	125				S
Cadmium	42.0	0.497	49.73	0.1951	84.0	75	125				
Chromium	59.5	0.995	49.73	12.55	94.4	75	125				
Lead	52.4	0.995	49.73	11.63	82.0	75	125				
Selenium	34.8	3.98	49.73	0	69.9	75	125				S
Strontium	92.3	0.995	49.73	44.32	96.4	75	125				
Zinc	97.5	0.995	49.73	50.46	94.6	75	125				

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44395

Sample ID	22061340-007AMSD	SampType:	MSD	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/11/2022	RunNo:	111346
Client ID:	LT-5 (8-10')	Batch ID:	44395	TestNo:	SW6010B	SW3050B		Analysis Date:	7/12/2022	SeqNo:	2750118
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	43.1	2.00	49.97	4.357	77.5	75	125	43.95	2.03	20	
Barium	550	2.00	49.97	447.4	205	75	125	557.3	1.40	20	S
Cadmium	41.0	0.500	49.97	0.1951	81.7	75	125	41.96	2.21	20	
Chromium	58.1	0.999	49.97	12.55	91.1	75	125	59.49	2.39	20	
Lead	52.2	0.999	49.97	11.63	81.1	75	125	52.39	0.454	20	
Selenium	35.6	4.00	49.97	0	71.3	75	125	34.77	2.36	20	S
Strontium	90.3	0.999	49.97	44.32	92.1	75	125	92.26	2.12	20	
Zinc	95.6	0.999	49.97	50.46	90.3	75	125	97.50	2.01	20	

NOTES:
 S - Spike recovery indicates matrix interference. The method is in control as indicated by the Lab Control Sample.

Qualifiers:	B Analyte detected in the associated Method Blank	E Value above quantitation range	H Holding times for preparation or analysis exceeded
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
	U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44400

Sample ID	22061340-015ADUP	SampType:	DUP	TestCode:	ESP_S	Units:	%	Prep Date:	7/11/2022	RunNo:	111394		
Client ID:	LT-7 (0-2')	Batch ID:	44400	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/13/2022	SeqNo:	2751195		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Exchangeable Sodium %		1.28		0.10						1.24	3.17	20	

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44401

Sample ID	22061340-015ADUP	SampType:	DUP	TestCode:	CEC	Units:	meq/100g	Prep Date:	7/11/2022	RunNo:	111394
Client ID:	LT-7 (0-2')	Batch ID:	44401	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/13/2022	SeqNo:	2751182
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Cation Exchange Capacity		27.8		0.100						29.40	5.45 20

Sample ID	LCS-44401	SampType:	LCS	TestCode:	CEC	Units:	meq/100g	Prep Date:	7/11/2022	RunNo:	111394
Client ID:	LCSS	Batch ID:	44401	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/13/2022	SeqNo:	2751183
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Cation Exchange Capacity		4.70		0.100	4.350	0	108	76	124		

Sample ID	LCSD-44401	SampType:	LCSD	TestCode:	CEC	Units:	meq/100g	Prep Date:	7/11/2022	RunNo:	111394
Client ID:	LCSS02	Batch ID:	44401	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/13/2022	SeqNo:	2751184
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Cation Exchange Capacity		4.79		0.100	4.350	0	110	76	124	4.700	1.90 20

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44417

Sample ID	MB-44417	SampType:	MBLK	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/12/2022	RunNo:	111396
Client ID:	PBS	Batch ID:	44417	TestNo:	LDNR 29-B			Analysis Date:	7/13/2022	SeqNo:	2751290
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
True Total Barium		< 50.0		50.0							

Sample ID	LCS-44417	SampType:	LCS	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/12/2022	RunNo:	111396
Client ID:	LCSS	Batch ID:	44417	TestNo:	LDNR 29-B			Analysis Date:	7/13/2022	SeqNo:	2751291
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
True Total Barium		5,160		50.0	5,000	0	103	75	125		

Sample ID	LCSD-44417	SampType:	LCSD	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/12/2022	RunNo:	111396
Client ID:	LCSS02	Batch ID:	44417	TestNo:	LDNR 29-B			Analysis Date:	7/13/2022	SeqNo:	2751292
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
True Total Barium		5,120		50.0	5,000	0	102	75	125	5,160	0.749 20

Sample ID	22061340-031AMS	SampType:	MS	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/12/2022	RunNo:	111396
Client ID:	LT-9 (8-10')	Batch ID:	44417	TestNo:	LDNR 29-B			Analysis Date:	7/13/2022	SeqNo:	2751294
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
True Total Barium		5,150		48.2	4,817	179.7	103	75	125		

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44417

Sample ID	22061340-031AMSD	SampType:	MSD	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/12/2022	RunNo:	111396		
Client ID:	LT-9 (8-10')	Batch ID:	44417	TestNo:	LDNR 29-B			Analysis Date:	7/13/2022	SeqNo:	2751295		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium		5,270		49.5	4,950	179.7	103	75	125	5,146	2.38	20	

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111112

Sample ID	22061340-002ADUP	SampType:	DUP	TestCode:	PMOIST_29B	Units:	wt%	Prep Date:		RunNo:	111112		
Client ID:	LT-4 (12-14')	Batch ID:	R111112	TestNo:	LDNR 29-B			Analysis Date:	6/30/2022	SeqNo:	2743526		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture		23.6		1.00						28.90	20.2	20	R

NOTES:
 R - High RPD due to suspected sample non-homogeneity.

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111113

Sample ID	22061340-025ADUP	SampType:	DUP	TestCode:	PMOIST_29B	Units:	wt%	Prep Date:		RunNo:	111113		
Client ID:	LT-8 (16-18')	Batch ID:	R111113	TestNo:	LDNR 29-B			Analysis Date:	6/30/2022	SeqNo:	2743550		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture		26.9		1.00						26.10	3.02	20	

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111182

Sample ID	MB-R111182	SampType:	MBLK	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	111182
Client ID:	PBS	Batch ID:	R111182	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2745522
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Electrical Conductivity		< 0.10		0.10							

Sample ID	LCS1-R111182	SampType:	LCS1	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	111182
Client ID:	ZZZZZ	Batch ID:	R111182	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2745523
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Electrical Conductivity		0.48		0.10	0.50	0	95.8	90	110		

Sample ID	LCS2-R111182	SampType:	LCS2	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	111182
Client ID:	ZZZZZ	Batch ID:	R111182	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2745524
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Electrical Conductivity		50.8		0.10	53.00	0	95.8	90	110		

Sample ID	22061340-002ADUP	SampType:	DUP	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	111182
Client ID:	LT-4 (12-14')	Batch ID:	R111182	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2745527
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Electrical Conductivity		0.82		0.10						0.81	1.35 20

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111183

Sample ID	MB-R111183	SampType:	MBLK	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	111183
Client ID:	PBS	Batch ID:	R111183	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2745549
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Electrical Conductivity		< 0.10		0.10							

Sample ID	LCS1-R111183	SampType:	LCS1	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	111183
Client ID:	ZZZZZ	Batch ID:	R111183	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2745550
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Electrical Conductivity		0.49		0.10	0.50	0	96.4	90	110		

Sample ID	LCS2-R111183	SampType:	LCS2	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	111183
Client ID:	ZZZZZ	Batch ID:	R111183	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2745551
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Electrical Conductivity		50.9		0.10	53.00	0	96.0	90	110		

Sample ID	22061340-025ADUP	SampType:	DUP	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	111183
Client ID:	LT-8 (16-18')	Batch ID:	R111183	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2745556
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Electrical Conductivity		0.50		0.10						0.50	0.20 20

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111183

Sample ID	22070051-001ADUP	SampType:	DUP	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	111183											
Client ID:	ZZZZZZ	Batch ID:	R111183	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2745566											
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC		LowLimit		HighLimit		RPD Ref Val		%RPD		RPDLimit		Qual
Electrical Conductivity		0.88		0.10												0.88		0.91		20		

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111264

Sample ID	MBLK	SampType:	MBLK	TestCode:	9056_S	Units:	mg/Kg-dry	Prep Date:		RunNo:	111264			
Client ID:	PBS	Batch ID:	R111264	TestNo:	SW9056A			Analysis Date:	7/7/2022	SeqNo:	2748105			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		< 0.250		0.250										

Sample ID	LCS	SampType:	LCS	TestCode:	9056_S	Units:	mg/Kg-dry	Prep Date:		RunNo:	111264			
Client ID:	LCSS	Batch ID:	R111264	TestNo:	SW9056A			Analysis Date:	7/7/2022	SeqNo:	2748106			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		10.2		0.250	10.00	0		102	80	120				

Sample ID	LCSD	SampType:	LCSD	TestCode:	9056_S	Units:	mg/Kg-dry	Prep Date:		RunNo:	111264			
Client ID:	LCSS02	Batch ID:	R111264	TestNo:	SW9056A			Analysis Date:	7/7/2022	SeqNo:	2748107			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		10.2		0.250	10.00	0		102	80	120	10.21	0.229	15	

Sample ID	22070248-009BMS	SampType:	MS	TestCode:	9056_S	Units:	mg/Kg-dry	Prep Date:		RunNo:	111264			
Client ID:	ZZZZZZ	Batch ID:	R111264	TestNo:	SW9056A			Analysis Date:	7/7/2022	SeqNo:	2748110			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		16.2		0.250	5.000	11.22		100	80	120				

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111264

Sample ID	22070248-009BMSD	SampType:	MSD	TestCode:	9056_S	Units:	mg/Kg-dry	Prep Date:		RunNo:	111264											
Client ID:	ZZZZZZ	Batch ID:	R111264	TestNo:	SW9056A			Analysis Date:	7/7/2022	SeqNo:	2748111											
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC		LowLimit		HighLimit		RPD Ref Val		%RPD		RPDLimit		Qual
Chloride		16.3		0.250		5.000		11.22		102		80		120		16.24		0.603		15		

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111265

Sample ID	MBLK	SampType:	MBLK	TestCode:	9056_S	Units:	mg/Kg-dry	Prep Date:		RunNo:	111265			
Client ID:	PBS	Batch ID:	R111265	TestNo:	SW9056A			Analysis Date:	7/8/2022	SeqNo:	2748154			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		< 0.250		0.250										

Sample ID	LCS	SampType:	LCS	TestCode:	9056_S	Units:	mg/Kg-dry	Prep Date:		RunNo:	111265			
Client ID:	LCSS	Batch ID:	R111265	TestNo:	SW9056A			Analysis Date:	7/8/2022	SeqNo:	2748155			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		10.1		0.250	10.00	0		101	80	120				

Sample ID	LCSD	SampType:	LCSD	TestCode:	9056_S	Units:	mg/Kg-dry	Prep Date:		RunNo:	111265			
Client ID:	LCSS02	Batch ID:	R111265	TestNo:	SW9056A			Analysis Date:	7/8/2022	SeqNo:	2748156			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		10.1		0.250	10.00	0		101	80	120	10.08	0.214	15	

Sample ID	22070310-004AMS	SampType:	MS	TestCode:	9056_S	Units:	mg/Kg-dry	Prep Date:		RunNo:	111265			
Client ID:	ZZZZZZ	Batch ID:	R111265	TestNo:	SW9056A			Analysis Date:	7/8/2022	SeqNo:	2748162			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		8.30		0.250	5.000	3.744		91.0	80	120				

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111265

Sample ID	22070310-004AMSD	SampType:	MSD	TestCode:	9056_S	Units:	mg/Kg-dry	Prep Date:		RunNo:	111265											
Client ID:	ZZZZZZ	Batch ID:	R111265	TestNo:	SW9056A			Analysis Date:	7/8/2022	SeqNo:	2748163											
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC		LowLimit		HighLimit		RPD Ref Val		%RPD		RPDLimit		Qual
Chloride		8.43		0.250		5.000		3.744		93.8		80		120		8.295		1.65		15		

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111265-1

Sample ID	MBLK	SampType:	MBLK	TestCode:	9056_S	Units:	mg/Kg-dry	Prep Date:		RunNo:	111265			
Client ID:	PBS	Batch ID:	R111265-1	TestNo:	SW9056A			Analysis Date:	7/8/2022	SeqNo:	2748183			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		< 0.250		0.250										

Sample ID	LCS	SampType:	LCS	TestCode:	9056_S	Units:	mg/Kg-dry	Prep Date:		RunNo:	111265			
Client ID:	LCSS	Batch ID:	R111265-1	TestNo:	SW9056A			Analysis Date:	7/8/2022	SeqNo:	2748184			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		10.1		0.250	10.00	0		101	80	120				

Sample ID	LCSD	SampType:	LCSD	TestCode:	9056_S	Units:	mg/Kg-dry	Prep Date:		RunNo:	111265			
Client ID:	LCSS02	Batch ID:	R111265-1	TestNo:	SW9056A			Analysis Date:	7/8/2022	SeqNo:	2748185			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		10.1		0.250	10.00	0		101	80	120	10.08	0.0378	15	

Sample ID	22070034-001AMS	SampType:	MS	TestCode:	9056_S	Units:	mg/Kg-dry	Prep Date:		RunNo:	111265			
Client ID:	ZZZZZZ	Batch ID:	R111265-1	TestNo:	SW9056A			Analysis Date:	7/8/2022	SeqNo:	2748192			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		246		5.00	100.0	151.2		94.7	80	120				

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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 Website: www.element.com

QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111265-1

Sample ID	22070034-001AMSD	SampType:	MSD	TestCode:	9056_S	Units:	mg/Kg-dry	Prep Date:		RunNo:	111265		
Client ID:	ZZZZZZ	Batch ID:	R111265-1	TestNo:	SW9056A			Analysis Date:	7/8/2022	SeqNo:	2748193		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		246		5.00	100.0	151.2	95.1	80	120	245.9	0.143	15	

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111351

Sample ID	MBLK	SampType:	MBLK	TestCode:	9056_LEACH	Units:	mg/L	Prep Date:		RunNo:	111351			
Client ID:	PBW	Batch ID:	R111351	TestNo:	SW9056A			Analysis Date:	7/12/2022	SeqNo:	2750391			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		< 0.250		0.250										

Sample ID	LCS	SampType:	LCS	TestCode:	9056_LEACH	Units:	mg/L	Prep Date:		RunNo:	111351			
Client ID:	LCSW	Batch ID:	R111351	TestNo:	SW9056A			Analysis Date:	7/12/2022	SeqNo:	2750392			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		9.95		0.250	10.00	0		99.5	80	120				

Sample ID	LCSD	SampType:	LCSD	TestCode:	9056_LEACH	Units:	mg/L	Prep Date:		RunNo:	111351			
Client ID:	LCSS02	Batch ID:	R111351	TestNo:	SW9056A			Analysis Date:	7/12/2022	SeqNo:	2750393			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		9.99		0.250	10.00	0		99.9	80	120	0	200	15	R

Sample ID	22070307-008AMS	SampType:	MS	TestCode:	9056_LEACH	Units:	mg/L	Prep Date:		RunNo:	111351			
Client ID:	ZZZZZZ	Batch ID:	R111351	TestNo:	SW9056A			Analysis Date:	7/12/2022	SeqNo:	2750411			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		27.3		1.25	25.00	2.410		99.4	80	120				

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111351

Sample ID	22070307-008AMSD	SampType:	MSD	TestCode:	9056_LEACH	Units:	mg/L	Prep Date:		RunNo:	111351		
Client ID:	ZZZZZZ	Batch ID:	R111351	TestNo:	SW9056A			Analysis Date:	7/12/2022	SeqNo:	2750412		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		27.8		1.25	25.00	2.410	101	80	120	27.25	1.89	15	

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |






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 Website: www.element.com

Sample Log-In Check List

Client Name: **ICON_ENV**

Work Order Number: **22061340**

RcptNo: **1**

Logged by:	Rhonda David	6/29/2022 2:50:00 PM	
Completed By:	Rhonda David	6/30/2022 8:06:38 AM	
Reviewed By:	Buffy Bryant	7/9/2022 1:37:14 PM	

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
2. How was the sample delivered? Element

Log In

3. Coolers are present? Yes No NA
4. Shipping container/cooler in good condition? Yes No
- Custody seals intact on shipping container/cooler? Yes No Not Present
- No. Seal Date: Signed By:
5. Was an attempt made to cool the samples? Yes No NA
6. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
- Not required**
7. Sample(s) in proper container(s)? Yes No
8. Sufficient sample volume for indicated test(s)? Yes No
9. Are samples (except VOA and ONG) properly preserved? Yes No
10. Was preservative added to bottles? Yes No NA
11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes No No VOA Vials
12. Were any sample containers received broken? Yes No
13. Does paperwork match bottle labels? Yes No
(Note discrepancies on chain of custody)
14. Are matrices correctly identified on Chain of Custody? Yes No
15. Is it clear what analyses were requested? Yes No
16. Were all holding times able to be met? Yes No
(If no, notify customer for authorization.)

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

18. Additional remarks:
 Improper error correction(s) made by client
 Samplers signature missing on page 5 of COC.

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
-----------	---------	-----------	-------------	---------	-----------	-----------



Chain of Custody

Laboratory Number: **22061340**

Client Information:
 Company Name: **Iron Env**
 Contact Name: **J Sills**
 Address: **709A Commercial Dr**
 City, State Zip: **Port Allen La-70767**
 Phone Number: **725 3448490**
 Fax Number:
 E-mail Address:

Billing Information:
 PO Number:
 Quote Number:
 Required QC Level:
 Bill Monthly: Yes No
 Ext:

Project Name/Number: **Levert - Grand River**
Matrix Code:
 9326-025-0100
 Sampler's Signature: *[Signature]*
 Shipping Method: **UPS / FedEx / NOW**
 DHL / Element / Hand / Mail

Page 1 of 5

DW = Drinking Water
 WW = Waste Water
 GW = Ground Water
 AQ = Aqueous
 OT = Other
 SL = Sludge SOL = Solid
 O = Oil SO = Soil
 F = Food SW = Swab
 NG = Natural Gas
 NGL = Natural Gas Liquid
 PW = Produced Water
 CF = Completion Fluid

Sample ID/Description	Which Regulations Apply: <input type="checkbox"/> RCRA <input type="checkbox"/> Drinking Water <input type="checkbox"/> POTW <input type="checkbox"/> Distribution <input type="checkbox"/> NPDES <input type="checkbox"/> Special <input type="checkbox"/> USDA/FDA <input type="checkbox"/> State <input type="checkbox"/> RECAP/RISC <input type="checkbox"/> Other	Turn Time <input type="checkbox"/> Standard <input type="checkbox"/> RUSH <input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> Other	Collection Information		Rush turn times will incur a surcharge and must be pre-approved by (lab.)	Container Type Quantity	Pres. HCl, HNO ₃ , H ₂ SO ₄ NaOH, Na ₂ S ₂ O ₃	Requested Tests	Comments	
			Date							Matrix
			Date	Time						
LT-1 (8-10)			6-22-22	1220	G	50L				
LT-4 (2-14)			1225							
LT-4 (16-18)			1230							
LT-4 (20-22)			1235							
LT-5 (0-2)			6-23-22	905						
LT-5 (4-6)			910							
LT-5 (8-10)			915							
LT-5 (16-18)			925							
LT-5 (22-24)			940							

Relinquished by: *[Signature]* **Date/Time:** 6-29-22 0930

Received by: *[Signature]* **Date/Time:** 6-29-22 0930

Field Notes: Received at lab on ice? Yes No Temp: **1450**

328 Ley Road, Suite 100
 Fort Wayne, IN 46825 USA
 P 260-471-7000
 F 260-471-7777

909 Executive Dr
 Warsaw, IN 46580 USA
 P 574-267-3305
 F 574-269-6589

3371 Cleveland Road, Suite 100A
 South Bend, IN 46628 USA
 P 574-277-0707
 F 574-273-6699

2417 W. Pinhook Rd
 Lafayette, LA 70506 USA
 P 337-235-0483
 F 337-233-6540



Chain of Custody

Laboratory Number: **22061340**

Client Information: **Iron Fan** PO Number: **Levert-Grand Aves** Project Name/Number: **Levert-Grand Aves** Page **2** of **5**
 Billing Information: **same** Quote Number: **Levert-Grand Aves** Matrix Code
 Turn Time: Standard RUSH 1 Day 2 Day Other Other
 Collection Information: Date: **6-23-22** Time: **1415** Matrix: **SOL**
 Date: **6-23-22** Time: **1420** Matrix: **SOL**
 Date: **6-23-22** Time: **1445** Matrix: **SOL**
 Date: **6-23-22** Time: **1455** Matrix: **SOL**
 Rush turn times will incur a surcharge and must be pre-approved by lab.

Sample ID/Description	Collection Information		Turn Time	Rush turn times will incur a surcharge and must be pre-approved by lab.	Container	Pres.	Requested Tests	Comments
	Date	Time						
LT-6 (0-2)	6-23-22	1415	G		P	HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₃	298 Metals % Moisture leach test	
LT-6 (1-6)		1420						
LT-6 (6-8)		1425						
LT-6 (10-18)		1445						
LT-6 (24-26)		1455						

Relinquished by: **Matthew Bennett** Date/Time: **6-22-22 0930** Received by: **Matthew Bennett** Date/Time: **6-22-22 0930**
 Received at lab on ice? Yes No Temp: **NO**
 Field Notes:

8600 North US 31
 Columbus, IN 47201 USA
 P 812-375-0531
 F 812-375-0731

328 Ley Road, Suite 100
 Fort Wayne, IN 46825 USA
 P 260-471-7000
 F 260-471-7777

909 Executive Dr
 Warsaw, IN 46580 USA
 P 574-267-3305
 F 574-269-8569

3371 Cleveland Road, Suite 100A
 South Bend, IN 46623 USA
 P 574-277-0707
 F 574-273-5699

2417 W. Pinhook Rd
 Lafayette, LA 70508 USA
 P 337-235-0463
 F 337-233-6540



Chain of Custody

Laboratory Number: **23061340**

Company Name: **Leon Env**
 Contact Name: **Joan Sills**
 Address: **2019 Commercial Dr**
 City, State Zip: **Port Allen La 70267**
 Phone Number: **225 344 8490**
 Fax Number:
 E-mail Address:

Billing Information:
 PO Number:
 Quote Number:
 Required QC Level
 Bill Monthly
 Yes
 No

Project Name/Number:
Levert - Grand River
 Matrix Code
 DW = Drinking Water
 WW = Waste Water
 GW = Ground Water
 AQ = Aqueous
 BY = Other
 SL = Sludge SOL = Solid
 SO = Soil
 O = Oil
 F = Food SW = Swab
 NG = Natural Gas
 NGL = Natural Gas Liquid
 PW = Produced Water
 CF = Completion Fluid

Sampler's Signature
 Shipping Method:
 UPS / FedEx / NOW
 DHL / Element / Hand / Mail

Page **3** of **5**
ES

Sample ID/Description	Which Regulations Apply:		Turn Time <input type="checkbox"/> Standard <input type="checkbox"/> RUSH <input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> Other	Collection Information			Rush turn times will incur a surcharge and must be pre-approved by (lab.)	Container Type G=Glass, V=Vial	Pres. HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ SO ₃	Requested Tests	Comments
	ReCAP/RISC			Date		Matrix					
	RCRA	POTW		Time	Grab / Composite						
LT-7 (0-2)	<input type="checkbox"/>	<input type="checkbox"/>	6-27-22	130	61	500	P	-	CEC		
LT-7 (4-6)	<input type="checkbox"/>	<input type="checkbox"/>	135						CEC	X Metformin	
LT-7 (8-10)	<input type="checkbox"/>	<input type="checkbox"/>	140						CEC	X 298 Metformin	
LT-7 (16-18)	<input type="checkbox"/>	<input type="checkbox"/>	150						CEC	X Metformin	
LT-7 (20-22)	<input type="checkbox"/>	<input type="checkbox"/>	155						CEC	X Metformin	
LT-7 (24-26)	<input type="checkbox"/>	<input type="checkbox"/>	1700						CEC	X Metformin	
LT-7 (30-38)	<input type="checkbox"/>	<input type="checkbox"/>	1715						CEC	X Metformin	
LT-8 (0-2)	<input type="checkbox"/>	<input type="checkbox"/>	6-28-22	900					CEC	X Metformin	
LT-8 (4-6)	<input type="checkbox"/>	<input type="checkbox"/>	905						CEC	X Metformin	

Relinquished by	Date/Time	Received by	Date/Time	Field Notes:
<i>[Signature]</i>	6-29-22 0930	<i>[Signature]</i>	6-29-22 0930	
<i>[Signature]</i>	6-29-22 1450	<i>[Signature]</i>	6-29-22 1450	Received at lab on ice? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Temp:

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

3800 North US 31
 Columbus, IN
 47201 USA
 P 812-375-0531
 F 812-375-0731

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 Fort Wayne, IN
 46825 USA
 P 260-471-7000
 F 260-471-7777

909 Executive Dr
 Warsaw, IN
 46590 USA
 P 574-267-3305
 F 574-269-6569

3371 Cleveland Road, Suite 100A
 South Bend, IN
 46628 USA
 P 574-277-0707
 F 574-273-5699

2417 W. Pinhook Rd
 Lafayette, LA
 70508 USA
 P 337-235-0463
 F 337-233-6540



Chain of Custody

Laboratory Number: **22061340**

Client Information:
 Company Name: **Icon Env**
 Contact Name: _____
 Address: _____
 City, State Zip: _____
 Phone Number: _____
 Fax Number: _____
 E-mail Address: _____

Billing Information:
 PO Number: _____
 Quote Number: _____
 Required QC Level: _____
 Bill Monthly: Yes No

Project Name/Number: **Levert-Grand hives**
Sampler's Signature: _____
Shipping Method: **UPS / FedEx / NOW**
DHL / Element / Hand / Mail

Matrix Code:
 DW = Drinking Water
 VVW = Waste Water
 GIW = Ground Water
 AQ = Aqueous
 OT = Other
 SL = Sludge
 O = Oil
 F = Food
 NG = Natural Gas
 NGL = Natural Gas Liquid
 PW = Produced Water
 CF = Completion Fluid

Page 4 of 5

Sample ID/Description	Which Regulations Apply:		Turn Time <input type="checkbox"/> Standard <input type="checkbox"/> RUSH <input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> Other	(Rush turn times will incur a surcharge and must be pre-approved by lab.)	Container Type Plastic, V=Vial	Pres. HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₃	Requested Tests	Comments
	Collection Information							
	Date	Time						
LT-8 (8-10')	6-28-22	910	G	SOL	Quantity	1	SCMbk Chmbrk	
LT-8 (16-18')		920						
LT-8 (20-22')		925						
LT-8 (24-26')		930						
LT-8 (36-38')		945						
LT-9 (0-2')		1330						
LT-9 (4-6')		1335						
LT-9 (8-10')		1340						
LT-9 (12-14')		1345						

Relinquished by: _____ **Date/Time:** 6-28-22 0930

Received by: _____ **Date/Time:** 6-29-22 0930

Field Notes: Received at lab on ice? Yes No Temp: _____

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

8800 North US 31
 Columbus, IN 47201 USA
 P 812-375-0531
 F 812-375-0731

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 Fort Wayne, IN 46825 USA
 P 260-471-7000
 F 260-471-7777

909 Executive Dr
 Warsaw, IN 46580 USA
 P 574-267-3305
 F 574-269-6569

3371 Cleveland Road, Suite 100A
 South Bend, IN 46628 USA
 P 574-277-0707
 F 574-273-5699

2417 W. Pinhook Rd
 Lafayette, LA 70506 USA
 P 337-235-0483
 F 337-233-8640



Chain of Custody

Laboratory Number: **22061340**

Client Information: *Tean Env* **Billing Information:** PO Number: *Levert-Grand hives*

Company Name: *Tean Env* **Quote Number:** *Levert-Grand hives*

Contact Name: *[Signature]* **Required QC Level:** Bill Monthly Yes No

Address: *[Signature]* **Ext:** *[Signature]* **Shipping Method:** UPS / FedEx / NOW Yes No
DHL / Element / Hand / Mail

City, State Zip: *[Signature]* **Ext:** *[Signature]*

Phone Number: *[Signature]* **Ext:** *[Signature]*

Fax Number: *[Signature]* **Ext:** *[Signature]*

E-mail Address: *[Signature]*

Page 5 of 5
Matrix Code
 DW = Drinking Water
 WW = Waste Water
 GW = Ground Water
 AQ = Aqueous
 OT = Other
 SL = Sludge
 O = Oil
 F = Food
 NG = Natural Gas
 P/W = Produced Water
 CF = Completion Fluid
 SOL = Solid
 SO = Soil
 SW = Swab
 NL = Natural Gas Liquid

Sample ID/Description	Which Regulations Apply: <input type="checkbox"/> RCRA <input type="checkbox"/> POTW <input type="checkbox"/> NPDES <input type="checkbox"/> USDA/FDA <input type="checkbox"/> RECAP/RISC	Turn Time <input type="checkbox"/> Standard <input type="checkbox"/> RUSH <input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> Other	Collection Information		Rush turn times will incur a surcharge and must be pre-approved by lab.)	Container Type G=Glass, V=Vial P=Plastic	Pres. HCl, HNO ₃ , H ₂ SO ₄ NaOH, Na ₂ S ₂ O ₃	Requested Tests	Comments	
			Date	Time						
<i>UT-9 (W-22)</i>			<i>6/28/22</i>	<i>1355</i>		<i>P</i>		<i>X</i>	<i>EC</i>	
<i>[Signature]</i>								<i>X</i>	<i>Skimble Chloride</i>	
								<i>X</i>	<i>KMashure</i>	

Relinquished by	Date/Time	Received by	Date/Time	Field Notes:
<i>[Signature]</i>	<i>6-29-22 0930</i>	<i>[Signature]</i>	<i>6-29-22 0930</i>	<i>no</i>
<i>[Signature]</i>	<i>6-29-22 1450</i>	<i>[Signature]</i>	<i>6-29-22 1450</i>	

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

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 47201 USA
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 F 260-471-7777

909 Executive Dr
 Warsaw, IN
 46580 USA
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 F 574-269-6569

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 South Bend, IN
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July 15, 2022

Greg Miller
ICON Environmental Services
2049 Commercial Drive
Port Allen, LA 70767
TEL: (225) 344-8490
FAX (225) 344-6654

RE: Grand River Levert 9326-025-0100

Order No.: 22061196

Dear Greg Miller:

Element Materials Technology Lafayette received 13 sample(s) on 6/28/2022 for the analyses presented in the following report.

In accordance with your instructions, Element Lafayette either conducted or subcontracted these analyses. Subcontracted analyses will be identified in the accompanying case narrative. All relevant sampling information can be found on the attached Chain-of-Custody form. Unless otherwise noted, all analyses were conducted using EPA approved methodologies and all test results meet the applicable requirements of TNI. Reported results relate only to the items tested.

Where applicable, all soil data, except for 29-B, are reported on a wet-weight basis unless otherwise indicated in the units field as –dry.

LELAP Certification No.: 01997. TCEQ Certification No.: T104704261. LDHH Certification No.: LA023. ISDH Certification No.: C-LA-01. NDELCP Certification No.: R-226. A scope of accredited parameters is available upon request. A "#" by the test method or analyte indicates this parameter is outside the scope of accreditation. PA registration No.: 68-05967.

Estimated uncertainty is available upon request. This report shall not be reproduced, except in full, without the written approval of the laboratory.

If you have any questions regarding these test results, please feel free to call.

Cristina Thibeaux
Customer Service Supervisor



Element Materials Technology Lafayette
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TEL: (337) 235-0483 FAX: (337) 233-6540
Website: www.element.com

Case Narrative

WO#: 22061196

Date: 7/15/2022

CLIENT: ICON Environmental Services
Project: Grand River Levert 9326-025-0100

Unless specified by the client, a duplicate or MS/MSD, wherever applicable, is randomly selected and analyzed from each analytical batch provided sample volume is sufficient. The sample chosen for duplicate or MS/MSD may or may not be a sample submitted in this workorder. A method blank and/or a lab control sample (LCS)/lab control sample duplicate (LCSD), wherever applicable, are processed as a quality control check for each analytical batch. When the matrix QC data is not available due to insufficient sample volume or when the results indicate possible matrix effect, the validity of the batch is determined by the method blank and LCS/LCSD.

The results of the laboratory internal quality control data are provided in the QC Summary Report section of the report for your review. Laboratory-related QC exceptions that may impact the validity of data are discussed in the case narrative. Sample-related QC exceptions are flagged either in the results page(s) or in the QC report page(s). End users should consider QC exceptions when evaluating sample data against data quality objectives.

Any other exceptions associated with this report will be footnoted in the results page(s) or the QC summary page(s).



Element Materials Technology Lafayette
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Analytical Report

(consolidated)

WO#: 22061196

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/21/2022 10:40:00 AM
Project: Grand River Levert 9326-025-0100
Lab ID: 22061196-001 **Matrix:** SOIL
Client Sample ID SB 1 0-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	74.3	0.100		meq/100g	1	7/8/2022
29B SALTS					LDNR 29-B	Analyst: JMI
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.52	0.10		mmhos/cm	1	7/1/2022 11:00:00 AM
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	0.77	0.10		%	1	7/8/2022
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.13	0.10			1	7/5/2022
Soluble Calcium	2.06	0.02		meq/L	1	7/5/2022
Soluble Magnesium	1.03	0.05		meq/L	1	7/5/2022
Soluble Sodium	1.40	0.25		meq/L	1	7/5/2022
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	3.85	1.98		mg/Kg-dry	1	7/7/2022 4:27:28 PM
Barium	3,050	14.9		mg/Kg-dry	1	7/7/2022 4:27:28 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	51,900	235	*	mg/Kg-dry	1	7/7/2022 3:07:19 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	41.2	1.00		wt%	1	6/28/2022 12:00:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061196

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/21/2022 10:40:00 AM
Project: Grand River Levert 9326-025-0100
Lab ID: 22061196-002 **Matrix:** SOIL
Client Sample ID SB 1 2-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	77.4	0.100		meq/100g	1	7/8/2022
29B SALTS					LDNR 29-B	Analyst: JMI
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	1.14	0.10		mmhos/cm	1	7/1/2022 11:00:00 AM
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.62	0.10		%	1	7/8/2022
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.99	0.10			1	7/5/2022
Soluble Calcium	4.68	0.02		meq/L	1	7/5/2022
Soluble Magnesium	2.27	0.05		meq/L	1	7/5/2022
Soluble Sodium	3.71	0.25		meq/L	1	7/5/2022
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	6.57	1.98		mg/Kg-dry	1	7/7/2022 4:29:46 PM
Barium	2,600	14.8		mg/Kg-dry	1	7/7/2022 4:29:46 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	33,700	242		mg/Kg-dry	1	7/7/2022 3:09:36 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	44.2	1.00		wt%	1	6/28/2022 12:00:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061196

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/21/2022 11:40:00 AM
Project: Grand River Levert 9326-025-0100
Lab ID: 22061196-003 **Matrix:** SOIL
Client Sample ID SB 3 0-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	25.8	0.100		meq/100g	1	7/8/2022
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.78	0.10		mmhos/cm	1	7/1/2022 11:00:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.11	0.10		%	1	7/8/2022
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.22	0.10			1	7/5/2022
Soluble Calcium	3.70	0.02		meq/L	1	7/5/2022
Soluble Magnesium	1.62	0.05		meq/L	1	7/5/2022
Soluble Sodium	1.99	0.25		meq/L	1	7/5/2022
TPH-D/O IN SOIL BY SW8015						
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	1,430	100		mg/Kg	10	7/5/2022 5:02:00 PM
TPH (Oil Range)	229	120		mg/Kg	10	7/5/2022 5:02:00 PM
Surr: 4-Terphenyl-d14	103	33 - 152		%Rec	10	7/5/2022 5:02:00 PM
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	1.12	0.107		mg/Kg-dry	1	7/6/2022 10:30:18 AM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	12.0	2.00	*	mg/Kg-dry	1	7/7/2022 4:32:05 PM
Barium	4,510	15.0		mg/Kg-dry	1	7/7/2022 4:32:05 PM
Cadmium	0.654	0.499		mg/Kg-dry	1	7/7/2022 4:32:05 PM
Chromium	481	0.999		mg/Kg-dry	1	7/7/2022 4:32:05 PM
Lead	302	0.999		mg/Kg-dry	1	7/7/2022 4:32:05 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- B Analyte detected in the associated Method Blank
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

(consolidated)

WO#: 22061196

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/21/2022 11:40:00 AM
Project: Grand River Levert 9326-025-0100
Lab ID: 22061196-003 **Matrix:** SOIL
Client Sample ID SB 3 0-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Strontium	219	0.999		mg/Kg-dry	1	7/7/2022 4:32:05 PM
Zinc	207	0.999		mg/Kg-dry	1	7/7/2022 4:32:05 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	412,000	2,350	*	mg/Kg-dry	10	7/7/2022 9:15:50 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	33.7	1.00		wt%	1	6/28/2022 12:00:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061196

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/21/2022 11:40:00 AM
Project: Grand River Levert 9326-025-0100
Lab ID: 22061196-004 **Matrix:** SOIL
Client Sample ID SB 3 2-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	60.5	0.100		meq/100g	1	7/8/2022
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.59	0.10		mmhos/cm	1	7/1/2022 11:00:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	2.56	0.10		%	1	7/8/2022
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	2.45	0.10			1	7/5/2022
Soluble Calcium	1.60	0.02		meq/L	1	7/5/2022
Soluble Magnesium	0.81	0.05		meq/L	1	7/5/2022
Soluble Sodium	2.69	0.25		meq/L	1	7/5/2022
TPH-D/O IN SOIL BY SW8015						
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	10.4	10.0		mg/Kg	1	7/5/2022 5:16:00 PM
TPH (Oil Range)	13.8	12.0		mg/Kg	1	7/5/2022 5:16:00 PM
Surr: 4-Terphenyl-d14	94.3	33 - 152		%Rec	1	7/5/2022 5:16:00 PM
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.106	0.106		mg/Kg-dry	1	7/6/2022 10:38:06 AM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	3.22	1.98		mg/Kg-dry	1	7/7/2022 4:34:24 PM
Barium	1,110	14.8		mg/Kg-dry	1	7/7/2022 4:34:24 PM
Cadmium	< 0.495	0.495		mg/Kg-dry	1	7/7/2022 4:34:24 PM
Chromium	17.7	0.989		mg/Kg-dry	1	7/7/2022 4:34:24 PM
Lead	14.8	0.989		mg/Kg-dry	1	7/7/2022 4:34:24 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- B Analyte detected in the associated Method Blank
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

(consolidated)

WO#: 22061196

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services
Project: Grand River Levert 9326-025-0100
Lab ID: 22061196-004
Client Sample ID SB 3 2-4

Collection Date: 6/21/2022 11:40:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Strontium	53.8	0.989		mg/Kg-dry	1	7/7/2022 4:34:24 PM
Zinc	61.1	0.989		mg/Kg-dry	1	7/7/2022 4:34:24 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	12,100	236		mg/Kg-dry	1	7/7/2022 3:14:10 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	36.9	1.00		wt%	1	6/28/2022 12:00:00 PM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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Analytical Report

(consolidated)

WO#: 22061196

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services
Project: Grand River Levert 9326-025-0100
Lab ID: 22061196-005
Client Sample ID SB 4 0-2

Collection Date: 6/21/2022 12:10:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	7.91	0.100		meq/100g	1	7/8/2022
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.64	0.10		mmhos/cm	1	7/1/2022 11:00:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.38	0.10		%	1	7/8/2022
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.07	0.10			1	7/5/2022
Soluble Calcium	2.87	0.02		meq/L	1	7/5/2022
Soluble Magnesium	1.17	0.05		meq/L	1	7/5/2022
Soluble Sodium	1.52	0.25		meq/L	1	7/5/2022
TPH-D/O IN SOIL BY SW8015						
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	771	50.0		mg/Kg	5	7/5/2022 5:30:00 PM
TPH (Oil Range)	121	60.0		mg/Kg	5	7/5/2022 5:30:00 PM
Surr: 4-Terphenyl-d14	66.1	33 - 152		%Rec	5	7/5/2022 5:30:00 PM
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	1.24	0.0981		mg/Kg-dry	1	7/6/2022 10:45:47 AM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	13.3	1.98	*	mg/Kg-dry	1	7/7/2022 4:36:42 PM
Barium	4,230	14.9		mg/Kg-dry	1	7/7/2022 4:36:42 PM
Cadmium	0.611	0.496		mg/Kg-dry	1	7/7/2022 4:36:42 PM
Chromium	220	0.992		mg/Kg-dry	1	7/7/2022 4:36:42 PM
Lead	266	0.992		mg/Kg-dry	1	7/7/2022 4:36:42 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- B Analyte detected in the associated Method Blank
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

(consolidated)

WO#: **22061196**

Date Reported: **7/15/2022**

CLIENT: ICON Environmental Services
Project: Grand River Levert 9326-025-0100
Lab ID: 22061196-005
Client Sample ID SB 4 0-2

Collection Date: 6/21/2022 12:10:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Strontium	200	0.992		mg/Kg-dry	1	7/7/2022 4:36:42 PM
Zinc	186	0.992		mg/Kg-dry	1	7/7/2022 4:36:42 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	439,000	2,350	*	mg/Kg-dry	10	7/7/2022 9:18:09 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	23.5	1.00		wt%	1	6/28/2022 12:00:00 PM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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Analytical Report

(consolidated)

WO#: 22061196

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services
Project: Grand River Levert 9326-025-0100
Lab ID: 22061196-006
Client Sample ID SB 4 2-4

Collection Date: 6/21/2022 12:10:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	
29B SALTS							
CATION EXCHANGE CAPACITY					LDNR 29-B	LDNR 29-B	Analyst: MRM
Cation Exchange Capacity	29.0	0.100		meq/100g	1	7/8/2022	
29B SALTS							
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B		Analyst: JMI
Electrical Conductivity	0.73	0.10		mmhos/cm	1	7/1/2022 11:00:00 AM	
29B SALTS							
EXCHANGEABLE SODIUM PERCENTAGE					LDNR 29-B	LDNR 29-B	Analyst: MRM
Exchangeable Sodium %	2.37	0.10		%	1	7/8/2022	
29B SALTS							
SODIUM ADSORPTION RATIO					LDNR 29-B	LDNR 29-B	Analyst: MRM
Sodium Adsorption Ratio	2.71	0.10			1	7/5/2022	
Soluble Calcium	1.99	0.02		meq/L	1	7/5/2022	
Soluble Magnesium	1.03	0.05		meq/L	1	7/5/2022	
Soluble Sodium	3.33	0.25		meq/L	1	7/5/2022	
TPH-D/O IN SOIL BY SW8015							
TPH DRO/ORO IN SOIL BY SW8015					SW8015B		Analyst: EH
TPH (Diesel Range)	1,350	100		mg/Kg	10	7/5/2022 5:44:00 PM	
TPH (Oil Range)	234	120		mg/Kg	10	7/5/2022 5:44:00 PM	
Surr: 4-Terphenyl-d14	95.0	33 - 152		%Rec	10	7/5/2022 5:44:00 PM	
29B METALS							
MERCURY IN SOIL OR SLUDGE					29B/SW7471A	SW7471A	Analyst: BXB
Mercury	0.548	0.106		mg/Kg-dry	1	7/6/2022 10:48:26 AM	
29B METALS							
METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B	Analyst: MRM
Arsenic	9.00	1.90		mg/Kg-dry	1	7/7/2022 4:39:00 PM	
Barium	3,610	14.2		mg/Kg-dry	1	7/7/2022 4:39:00 PM	
Cadmium	0.496	0.474		mg/Kg-dry	1	7/7/2022 4:39:00 PM	
Chromium	67.4	0.949		mg/Kg-dry	1	7/7/2022 4:39:00 PM	
Lead	146	0.949		mg/Kg-dry	1	7/7/2022 4:39:00 PM	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- B Analyte detected in the associated Method Blank
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

(consolidated)

WO#: **22061196**

Date Reported: **7/15/2022**

CLIENT: ICON Environmental Services
Project: Grand River Levert 9326-025-0100
Lab ID: 22061196-006
Client Sample ID SB 4 2-4

Collection Date: 6/21/2022 12:10:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Strontium	112	0.949		mg/Kg-dry	1	7/7/2022 4:39:00 PM
Zinc	127	0.949		mg/Kg-dry	1	7/7/2022 4:39:00 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	434,000	2,390	*	mg/Kg-dry	10	7/7/2022 9:20:27 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	28.3	1.00		wt%	1	6/28/2022 12:00:00 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061196

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/21/2022 2:10:00 PM
Project: Grand River Levert 9326-025-0100
Lab ID: 22061196-007 **Matrix:** SOIL
Client Sample ID SB 5 2-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	63.1	0.100		meq/100g	1	7/8/2022
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.34	0.10		mmhos/cm	1	7/1/2022 11:00:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	0.90	0.10		%	1	7/8/2022
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.02	0.10			1	7/5/2022
Soluble Calcium	1.41	0.02		meq/L	1	7/5/2022
Soluble Magnesium	0.73	0.05		meq/L	1	7/5/2022
Soluble Sodium	1.05	0.25		meq/L	1	7/5/2022
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	4.73	2.00		mg/Kg-dry	1	7/7/2022 4:41:19 PM
Barium	4,460	15.0		mg/Kg-dry	1	7/7/2022 4:41:19 PM
29B METALS						
TRUE TOTAL BARIUM						
True Total Barium	116,000	244	*	mg/Kg-dry	1	7/7/2022 3:25:41 PM
PERCENT MOISTURE						
Percent Moisture	33.4	1.00		wt%	1	6/28/2022 12:00:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061196

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services
Project: Grand River Levert 9326-025-0100
Lab ID: 22061196-008
Client Sample ID SB 5 4-6

Collection Date: 6/21/2022 2:20:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS					LDNR 29-B	LDNR 29-B
CATION EXCHANGE CAPACITY						Analyst: MRM
Cation Exchange Capacity	66.6	0.100		meq/100g	1	7/8/2022
29B SALTS					LDNR 29-B	Analyst: JMI
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.32	0.10		mmhos/cm	1	7/1/2022 11:00:00 AM
29B SALTS					LDNR 29-B	LDNR 29-B
EXCHANGEABLE SODIUM PERCENTAGE						Analyst: MRM
Exchangeable Sodium %	1.52	0.10		%	1	7/8/2022
29B SALTS					LDNR 29-B	LDNR 29-B
SODIUM ADSORPTION RATIO						Analyst: MRM
Sodium Adsorption Ratio	1.14	0.10			1	7/5/2022
Soluble Calcium	1.10	0.02		meq/L	1	7/5/2022
Soluble Magnesium	0.59	0.05		meq/L	1	7/5/2022
Soluble Sodium	1.05	0.25		meq/L	1	7/5/2022
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Arsenic	3.41	1.98		mg/Kg-dry	1	7/7/2022 4:43:37 PM
Barium	2,580	14.9		mg/Kg-dry	1	7/7/2022 4:43:37 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	16,900	237		mg/Kg-dry	1	7/7/2022 3:27:58 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	34.4	1.00		wt%	1	6/28/2022 12:00:00 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- B Analyte detected in the associated Method Blank
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

(consolidated)

WO#: 22061196

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/21/2022 2:50:00 PM
Project: Grand River Levert 9326-025-0100
Lab ID: 22061196-009 **Matrix:** SOIL
Client Sample ID SB 6 2-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	
29B SALTS							
CATION EXCHANGE CAPACITY					LDNR 29-B	LDNR 29-B	Analyst: MRM
Cation Exchange Capacity	79.0	0.100		meq/100g	1	7/8/2022	
29B SALTS							
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B		Analyst: JMI
Electrical Conductivity	1.45	0.10		mmhos/cm	1	7/1/2022 11:00:00 AM	
29B SALTS							
EXCHANGEABLE SODIUM PERCENTAGE					LDNR 29-B	LDNR 29-B	Analyst: MRM
Exchangeable Sodium %	1.57	0.10		%	1	7/8/2022	
29B SALTS							
SODIUM ADSORPTION RATIO					LDNR 29-B	LDNR 29-B	Analyst: MRM
Sodium Adsorption Ratio	1.34	0.10			1	7/5/2022	
Soluble Calcium	6.86	0.02		meq/L	1	7/5/2022	
Soluble Magnesium	4.05	0.05		meq/L	1	7/5/2022	
Soluble Sodium	3.14	0.25		meq/L	1	7/5/2022	
29B METALS							
METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B	Analyst: MRM
Arsenic	4.71	1.99		mg/Kg-dry	1	7/7/2022 4:47:16 PM	
Barium	692	14.9		mg/Kg-dry	1	7/7/2022 4:47:16 PM	
29B METALS							
TRUE TOTAL BARIUM					LDNR 29-B		Analyst: MRM
True Total Barium	3,770	241		mg/Kg-dry	1	7/7/2022 3:30:15 PM	
PERCENT MOISTURE							
PERCENT MOISTURE					LDNR 29-B		Analyst: HXW
Percent Moisture	26.2	1.00		wt%	1	6/28/2022 12:00:00 PM	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061196

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services
Project: Grand River Levert 9326-025-0100
Lab ID: 22061196-010
Client Sample ID SB 6 4-6

Collection Date: 6/21/2022 2:55:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	70.4	0.100		meq/100g	1	7/8/2022
29B SALTS					LDNR 29-B	Analyst: JMI
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	1.38	0.10		mmhos/cm	1	7/1/2022 11:00:00 AM
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	2.16	0.10		%	1	7/8/2022
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.66	0.10			1	7/5/2022
Soluble Calcium	6.14	0.02		meq/L	1	7/5/2022
Soluble Magnesium	3.18	0.05		meq/L	1	7/5/2022
Soluble Sodium	3.59	0.25		meq/L	1	7/5/2022
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	3.69	2.00		mg/Kg-dry	1	7/7/2022 4:54:14 PM
Barium	700	15.0		mg/Kg-dry	1	7/7/2022 4:54:14 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	5,430	245		mg/Kg-dry	1	7/7/2022 3:32:32 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	34.1	1.00		wt%	1	6/28/2022 12:00:00 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- B Analyte detected in the associated Method Blank
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

(consolidated)

WO#: 22061196

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services
Project: Grand River Levert 9326-025-0100
Lab ID: 22061196-011
Client Sample ID SB 7 2-4

Collection Date: 6/21/2022 3:25:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	65.2	0.100		meq/100g	1	7/8/2022
29B SALTS					LDNR 29-B	Analyst: JMI
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.72	0.10		mmhos/cm	1	7/1/2022 11:00:00 AM
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.44	0.10		%	1	7/8/2022
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.67	0.10			1	7/5/2022
Soluble Calcium	2.59	0.02		meq/L	1	7/5/2022
Soluble Magnesium	1.45	0.05		meq/L	1	7/5/2022
Soluble Sodium	2.38	0.25		meq/L	1	7/5/2022
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	4.13	1.99		mg/Kg-dry	1	7/7/2022 4:56:32 PM
Barium	295	14.9		mg/Kg-dry	1	7/7/2022 4:56:32 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	1,840	246		mg/Kg-dry	1	7/7/2022 3:34:49 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	34.9	1.00		wt%	1	6/28/2022 12:00:00 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- B Analyte detected in the associated Method Blank
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

(consolidated)

WO#: 22061196

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services
Project: Grand River Levert 9326-025-0100
Lab ID: 22061196-012
Client Sample ID SB 8 0-2

Collection Date: 6/21/2022 3:50:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS					LDNR 29-B	LDNR 29-B
CATION EXCHANGE CAPACITY						Analyst: MRM
Cation Exchange Capacity	74.5	0.100		meq/100g	1	7/8/2022
29B SALTS					LDNR 29-B	Analyst: JMI
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.63	0.10		mmhos/cm	1	7/1/2022 11:00:00 AM
29B SALTS					LDNR 29-B	LDNR 29-B
EXCHANGEABLE SODIUM PERCENTAGE						Analyst: MRM
Exchangeable Sodium %	0.73	0.10		%	1	7/8/2022
29B SALTS					LDNR 29-B	LDNR 29-B
SODIUM ADSORPTION RATIO						Analyst: MRM
Sodium Adsorption Ratio	1.06	0.10			1	7/5/2022
Soluble Calcium	3.01	0.02		meq/L	1	7/5/2022
Soluble Magnesium	1.57	0.05		meq/L	1	7/5/2022
Soluble Sodium	1.61	0.25		meq/L	1	7/5/2022
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Arsenic	3.96	1.99		mg/Kg-dry	1	7/7/2022 4:58:50 PM
Barium	1,350	14.9		mg/Kg-dry	1	7/7/2022 4:58:50 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	42,200	249	*	mg/Kg-dry	1	7/7/2022 3:37:05 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	33.2	1.00		wt%	1	6/28/2022 12:00:00 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- B Analyte detected in the associated Method Blank
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

(consolidated)

WO#: 22061196

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services
Project: Grand River Levert 9326-025-0100
Lab ID: 22061196-013
Client Sample ID SB 8 2-4

Collection Date: 6/21/2022 3:50:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	
29B SALTS							
CATION EXCHANGE CAPACITY					LDNR 29-B	LDNR 29-B	Analyst: MRM
Cation Exchange Capacity	70.1	0.100		meq/100g	1	7/8/2022	
29B SALTS							
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B		Analyst: JMI
Electrical Conductivity	0.31	0.10		mmhos/cm	1	7/1/2022 11:00:00 AM	
29B SALTS							
EXCHANGEABLE SODIUM PERCENTAGE					LDNR 29-B	LDNR 29-B	Analyst: MRM
Exchangeable Sodium %	1.01	0.10		%	1	7/8/2022	
29B SALTS							
SODIUM ADSORPTION RATIO					LDNR 29-B	LDNR 29-B	Analyst: MRM
Sodium Adsorption Ratio	1.16	0.10			1	7/5/2022	
Soluble Calcium	1.13	0.02		meq/L	1	7/5/2022	
Soluble Magnesium	0.60	0.05		meq/L	1	7/5/2022	
Soluble Sodium	1.08	0.25		meq/L	1	7/5/2022	
29B METALS							
METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B	Analyst: MRM
Arsenic	4.22	1.98		mg/Kg-dry	1	7/7/2022 5:01:07 PM	
Barium	245	14.9		mg/Kg-dry	1	7/7/2022 5:01:07 PM	
29B METALS							
TRUE TOTAL BARIUM					LDNR 29-B		Analyst: MRM
True Total Barium	1,390	245		mg/Kg-dry	1	7/7/2022 3:39:23 PM	
PERCENT MOISTURE							
PERCENT MOISTURE					LDNR 29-B		Analyst: HXW
Percent Moisture	33.9	1.00		wt%	1	6/28/2022 12:00:00 PM	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- B Analyte detected in the associated Method Blank
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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QC SUMMARY REPORT

WO#: 22061196
 15-Jul-22

Client: ICON Environmental Services
Project: Grand River Levert 9326-025-0100

BatchID: 44249-1

Sample ID	LCS-D44249	SampType:	LCS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	LCSS	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743740			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	89.4	10.0	100.0	0	89.4	63.4	109
Surr: 4-Terphenyl-d14	3.32		3.333		99.7	33	152

Sample ID	LCSD-D44249	SampType:	LCSD	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	LCSS02	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743741			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	87.0	10.0	100.0	0	87.0	63.4	109	89.37	2.72	21.9
Surr: 4-Terphenyl-d14	3.23		3.333		96.9	33	152		0	40

Sample ID	MB-44249	SampType:	MBLK	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	PBS	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743742			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	< 10.0	10.0					
TPH (Oil Range)	< 12.0	12.0					
Surr: 4-Terphenyl-d14	2.80		3.333		84.0	33	152

Sample ID	LCS-M44249	SampType:	LCS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	LCSS	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743776			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceed
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
	U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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 Website: www.element.com

QC SUMMARY REPORT

WO#: 22061196
 15-Jul-22

Client: ICON Environmental Services
Project: Grand River Levert 9326-025-0100

BatchID: 44249-1

Sample ID	LCS-M44249	SampType:	LCS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	LCSS	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743776			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range)	90.2	12.0	100.0	0	90.2	63.9	120							
Surr: 4-Terphenyl-d14	3.27		3.333		98.2	33	152							

Sample ID	LCSD-M44249	SampType:	LCSD	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	LCSS02	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743843			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range)	99.1	12.0	100.0	0	99.1	63.9	120	90.15	9.41	20.7
Surr: 4-Terphenyl-d14	3.46		3.333		104	33	152		0	40

Sample ID	22061062-001AMS-	SampType:	MS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	ZZZZZZ	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743893			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	77.6	10.0	100.0	11.79	65.8	23.4	123			
Surr: 4-Terphenyl-d14	3.13		3.333		93.9	33	152			

Sample ID	22061062-001AMS-	SampType:	MS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	ZZZZZZ	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743894			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range)	103	12.0	100.0	15.91	87.6	14.5	174			
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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 22061196
 15-Jul-22

Client: ICON Environmental Services
Project: Grand River Levert 9326-025-0100

BatchID: 44249-1

Sample ID	22061062-001AMS-	SampType:	MS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	ZZZZZZ	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743894			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Surr: 4-Terphenyl-d14 3.07 3.333 92.0 33 152

Sample ID	22061062-001AMSD	SampType:	MSD	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	ZZZZZZ	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743895			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range) 84.4 10.0 100.0 11.79 72.7 23.4 123 77.62 8.41 35.6
 Surr: 4-Terphenyl-d14 2.93 3.333 88.0 33 152 0 40

Sample ID	22061062-001AMSD	SampType:	MSD	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	ZZZZZZ	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743979			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range) 100 12.0 100.0 15.91 84.2 14.5 174 103.5 3.34 48.8
 Surr: 4-Terphenyl-d14 2.93 3.333 87.8 33 152 0 40

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceed
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
	U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 22061196
 15-Jul-22

Client: ICON Environmental Services
Project: Grand River Levert 9326-025-0100

BatchID: 44312

Sample ID	22061196-001ADUP	SampType:	DUP	TestCode:	ESP_S	Units:	%	Prep Date:	7/1/2022	RunNo:	111277		
Client ID:	SB 1 0-2	Batch ID:	44312	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/8/2022	SeqNo:	2748482		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Exchangeable Sodium %		0.91		0.10						0.77	16.7	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceede
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
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QC SUMMARY REPORT

WO#: 22061196
 15-Jul-22

Client: ICON Environmental Services
Project: Grand River Levert 9326-025-0100

BatchID: 44313

Sample ID	22061196-001ADUP	SampType:	DUP	TestCode:	CEC	Units:	meq/100g	Prep Date:	7/1/2022	RunNo:	111277
Client ID:	SB 1 0-2	Batch ID:	44313	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/8/2022	SeqNo:	2748449
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Cation Exchange Capacity		69.6		0.100						74.28	6.53 20

Sample ID	LCS-44313	SampType:	LCS	TestCode:	CEC	Units:	meq/100g	Prep Date:	7/1/2022	RunNo:	111277
Client ID:	LCSS	Batch ID:	44313	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/8/2022	SeqNo:	2748450
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Cation Exchange Capacity		4.29		0.100	4.350	0	98.6	76	124		

Sample ID	LCSD-44313	SampType:	LCSD	TestCode:	CEC	Units:	meq/100g	Prep Date:	7/1/2022	RunNo:	111277
Client ID:	LCSS02	Batch ID:	44313	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/8/2022	SeqNo:	2748451
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Cation Exchange Capacity		4.39		0.100	4.350	0	101	76	124	4.290	2.30 20

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceeded
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 22061196
 15-Jul-22

Client: ICON Environmental Services
Project: Grand River Levert 9326-025-0100

BatchID: 44320

Sample ID	MB-44320	SampType:	MBLK	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/1/2022	RunNo:	111187		
Client ID:	PBS	Batch ID:	44320	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2746392		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

True Total Barium < 250 250

Sample ID	LCS-44320	SampType:	LCS	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/1/2022	RunNo:	111187		
Client ID:	LCSS	Batch ID:	44320	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2746393		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

True Total Barium 5,130 250 5,000 0 103 75 125

Sample ID	LCSD-44320	SampType:	LCSD	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/1/2022	RunNo:	111187		
Client ID:	LCSS02	Batch ID:	44320	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2746394		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

True Total Barium 5,130 250 5,000 0 103 75 125 5,126 0.0673 20

Sample ID	22061154-022AMS	SampType:	MS	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/1/2022	RunNo:	111187		
Client ID:	ZZZZZ	Batch ID:	44320	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2746398		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

True Total Barium 5,280 241 4,826 492.4 99.2 75 125

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceed
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
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QC SUMMARY REPORT

WO#: 22061196
 15-Jul-22

Client: ICON Environmental Services
Project: Grand River Levert 9326-025-0100

BatchID: 44320

Sample ID	22061154-022AMSD	SampType:	MSD	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/1/2022	RunNo:	111187		
Client ID:	ZZZZZZ	Batch ID:	44320	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2746399		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium		5,370		233	4,660	492.4	105	75	125	5,282	1.57	20	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceede
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
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QC SUMMARY REPORT

WO#: 22061196
 15-Jul-22

Client: ICON Environmental Services
Project: Grand River Levert 9326-025-0100

BatchID: 44321

Sample ID	22061196-005adup	SampType:	DUP	TestCode:	SAR_S	Units:		Prep Date:	7/1/2022	RunNo:	111222
Client ID:	SB 4 0-2	Batch ID:	44321	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/5/2022	SeqNo:	2746959
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium Adsorption Ratio	1.09	0.10						1.07	1.85	20	
Soluble Calcium	2.89	0.02						2.87	0.69	20	
Soluble Magnesium	1.17	0.05						1.17	0	20	
Soluble Sodium	1.55	0.25						1.52	1.95	20	

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceeded
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
	U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 22061196
 15-Jul-22

Client: ICON Environmental Services
Project: Grand River Levert 9326-025-0100

BatchID: 44327

Sample ID	MB-44327	SampType:	MBLK	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111172
Client ID:	PBS	Batch ID:	44327	TestNo:	29B/SW7471 SW7471A			Analysis Date:	7/6/2022	SeqNo:	2744983
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Mercury < 0.100 0.100

Sample ID	LCS-44327	SampType:	LCS	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111172
Client ID:	LCSS	Batch ID:	44327	TestNo:	29B/SW7471 SW7471A			Analysis Date:	7/6/2022	SeqNo:	2744984
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Mercury 0.831 0.100 0.8330 0 99.7 80 120

Sample ID	LCSD-44327	SampType:	LCSD	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111172
Client ID:	LCSS02	Batch ID:	44327	TestNo:	29B/SW7471 SW7471A			Analysis Date:	7/6/2022	SeqNo:	2744985
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Mercury 0.832 0.100 0.8330 0 99.9 80 120 0.8305 0.152 20

Sample ID	22061196-003AMS	SampType:	MS	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111172
Client ID:	SB 3 0-2	Batch ID:	44327	TestNo:	29B/SW7471 SW7471A			Analysis Date:	7/7/2022	SeqNo:	2745043
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Mercury 2.09 0.200 0.8309 1.123 116 75 125

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceed
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RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
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QC SUMMARY REPORT

WO#: 22061196
 15-Jul-22

Client: ICON Environmental Services
Project: Grand River Levert 9326-025-0100

BatchID: 44327

Sample ID	22061196-003AMSD	SampType:	MSD	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111172
Client ID:	SB 3 0-2	Batch ID:	44327	TestNo:	29B/SW7471 SW7471A			Analysis Date:	7/7/2022	SeqNo:	2745044
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.96	0.195	0.8107	1.123	103	75	125	2.090	6.45	20	

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceede
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
	U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 22061196
 15-Jul-22

Client: ICON Environmental Services
Project: Grand River Levert 9326-025-0100

BatchID: 44342

Sample ID	MB-44342	SampType:	MBLK	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111187		
Client ID:	PBS	Batch ID:	44342	TestNo:	SW6010B	SW3050B		Analysis Date:	7/7/2022	SeqNo:	2746425		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	< 2.00	2.00											
Barium	< 15.0	15.0											
Cadmium	< 0.500	0.500											
Chromium	< 1.00	1.00											
Lead	< 1.00	1.00											
Strontium	< 1.00	1.00											
Zinc	< 1.00	1.00											

Sample ID	LCS-44342	SampType:	LCS	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111187		
Client ID:	LCSS	Batch ID:	44342	TestNo:	SW6010B	SW3050B		Analysis Date:	7/7/2022	SeqNo:	2746426		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	45.4	2.00	50.00	0	90.9	80	120						
Barium	54.4	15.0	50.00	0	109	80	120						
Cadmium	45.7	0.500	50.00	0	91.5	80	120						
Chromium	47.0	1.00	50.00	0	94.1	80	120						
Lead	45.6	1.00	50.00	0	91.3	80	120						
Strontium	47.6	1.00	50.00	0	95.2	80	120						
Zinc	44.1	1.00	50.00	0	88.2	80	120						

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 22061196
 15-Jul-22

Client: ICON Environmental Services
Project: Grand River Levert 9326-025-0100

BatchID: 44342

Sample ID	LCSD-44342	SampType:	LCSD	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111187
Client ID:	LCSS02	Batch ID:	44342	TestNo:	SW6010B		SW3050B	Analysis Date:	7/7/2022	SeqNo:	2746427
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	44.4	2.00	50.00	0	88.7	80	120	45.43	2.40	20	
Barium	53.3	15.0	50.00	0	107	80	120	54.36	2.02	20	
Cadmium	44.6	0.500	50.00	0	89.3	80	120	45.75	2.46	20	
Chromium	45.8	1.00	50.00	0	91.5	80	120	47.03	2.76	20	
Lead	44.6	1.00	50.00	0	89.3	80	120	45.63	2.21	20	
Strontium	46.3	1.00	50.00	0	92.6	80	120	47.61	2.84	20	
Zinc	42.9	1.00	50.00	0	85.7	80	120	44.12	2.88	20	

Sample ID	22061154-022AMS	SampType:	MS	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111187
Client ID:	ZZZZZZ	Batch ID:	44342	TestNo:	SW6010B		SW3050B	Analysis Date:	7/7/2022	SeqNo:	2746429
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	33.6	1.91	47.70	4.301	61.4	75	125				S
Barium	218	14.3	47.70	201.5	34.9	75	125				S
Cadmium	31.4	0.477	47.70	0.3852	65.1	75	125				S
Chromium	48.4	0.954	47.70	15.35	69.3	75	125				S
Lead	43.5	0.954	47.70	14.76	60.2	75	125				S
Strontium	87.5	0.954	47.70	58.39	61.1	75	125				S
Zinc	94.7	0.954	47.70	66.48	59.2	75	125				S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceed
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 22061196
 15-Jul-22

Client: ICON Environmental Services
Project: Grand River Levert 9326-025-0100

BatchID: 44342

Sample ID	22061154-022AMSD	SampType:	MSD	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111187
Client ID:	ZZZZZZ	Batch ID:	44342	TestNo:	SW6010B		SW3050B	Analysis Date:	7/7/2022	SeqNo:	2746430
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	29.2	1.99	49.78	4.301	50.0	75	125	33.60	14.1	20	S
Barium	171	14.9	49.78	201.5	-62.1	75	125	218.2	24.5	20	RS
Cadmium	26.9	0.498	49.78	0.3852	53.3	75	125	31.45	15.5	20	S
Chromium	39.3	0.996	49.78	15.35	48.1	75	125	48.40	20.7	20	RS
Lead	37.1	0.996	49.78	14.76	44.9	75	125	43.46	15.8	20	S
Strontium	70.2	0.996	49.78	58.39	23.8	75	125	87.52	21.9	20	RS
Zinc	77.0	0.996	49.78	66.48	21.1	75	125	94.73	20.7	20	RS

NOTES:

S - Spike recovery indicates matrix interference. The method is in control as indicated by the Lab Control Sample.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceeded
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
	U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

QC SUMMARY REPORT

WO#: 22061196
 15-Jul-22

Client: ICON Environmental Services
Project: Grand River Levert 9326-025-0100

BatchID: R111055

Sample ID	MB-R111054	SampType:	MBLK	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	111055		
Client ID:	PBS	Batch ID:	R111055	TestNo:	LDNR 29-B			Analysis Date:	7/1/2022	SeqNo:	2742511		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity < 0.10 0.10

Sample ID	LCS1-R111054	SampType:	LCS1	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	111055		
Client ID:	ZZZZZ	Batch ID:	R111055	TestNo:	LDNR 29-B			Analysis Date:	7/1/2022	SeqNo:	2742512		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 0.54 0.10 0.50 0 107 90 110

Sample ID	LCS2-R111054	SampType:	LCS2	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	111055		
Client ID:	ZZZZZ	Batch ID:	R111055	TestNo:	LDNR 29-B			Analysis Date:	7/1/2022	SeqNo:	2742513		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 53.3 0.10 53.00 0 101 90 110

Sample ID	22061196-005ADUP	SampType:	DUP	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	111055		
Client ID:	SB 4 0-2	Batch ID:	R111055	TestNo:	LDNR 29-B			Analysis Date:	7/1/2022	SeqNo:	2742519		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 0.63 0.10 0.64 0.47 20

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceed
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 22061196
 15-Jul-22

Client: ICON Environmental Services
Project: Grand River Levert 9326-025-0100

BatchID: R111104

Sample ID	22061154-020ADUP	SampType:	DUP	TestCode:	PMOIST_29B	Units:	wt%	Prep Date:		RunNo:	111104		
Client ID:	ZZZZZZ	Batch ID:	R111104	TestNo:	LDNR 29-B			Analysis Date:	6/27/2022	SeqNo:	2743402		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture		32.3		1.00						31.70	1.88	20	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceede
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		

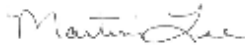




Sample Log-In Check List

Client Name: **ICON_ENV**

Work Order Number: **22061196**

RcptNo: **1**

Logged by: Martin Lee	6/28/2022 8:45:00 AM	
Completed By: Rhonda David	6/28/2022 11:01:15 AM	
Reviewed By: Buffy Bryant	7/9/2022 12:55:27 PM	

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
2. How was the sample delivered? Client

Log In

3. Coolers are present? Yes No NA
4. Shipping container/cooler in good condition? Yes No
- Custody seals intact on shipping container/cooler? Yes No Not Present
- No. Seal Date: Signed By:
5. Was an attempt made to cool the samples? Yes No NA
6. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
7. Sample(s) in proper container(s)? Yes No
8. Sufficient sample volume for indicated test(s)? Yes No
9. Are samples (except VOA and ONG) properly preserved? Yes No
10. Was preservative added to bottles? Yes No NA
11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes No No VOA Vials
12. Were any sample containers received broken? Yes No
13. Does paperwork match bottle labels? Yes No
(Note discrepancies on chain of custody)
14. Are matrices correctly identified on Chain of Custody? Yes No
15. Is it clear what analyses were requested? Yes No
16. Were all holding times able to be met? Yes No
(If no, notify customer for authorization.)

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

18. Additional remarks:

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.3	Good	Not Present			



Chain of Custody

Laboratory Number: 22061196

Page 1 of 2
Matrix Code
 DW = Drinking Water
 WW = Waste Water
 GW = Ground Water
 AQ = Aqueous
 OT = Other
 SL = Sludge
 SO = Soil
 O = Oil
 F = Food
 NG = Natural Gas
 PW = Produced Water
 CF = Completion Fluid

Project Name/Number:
Grand River - Levert
9326-025-0100

Sampler's Signature

Shipping Method:
 UPS / FedEx / NOW
 DHL / Element (Hand) Mail

PO Number:
 Quote Number:
 Required QC Level

Bill Monthly
 Yes
 No

Billing Information:
SAME

Ext:

Client Information:
ICAN Environmental
Jason Sills
2049 Commercial Dr.
Port Allen, LA 70767
Ext: 225.344.8490
225.344.6654
jills@icanenv.com

Company Name:
ICAN Environmental
 Contact Name:
Jason Sills
 Address:
2049 Commercial Dr.
 City, State Zip:
Port Allen, LA 70767
 Phone Number:
225.344.8490
 Fax Number:
225.344.6654
 E-mail Address:
jills@icanenv.com

Sample ID/Description	Turn Time		Collection Information		Container	Pres.	Requested Tests			Comments				
	Date	Time	Date	Time			Type	Quantity	HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₃		As, Ba, TTBa	TPH D ₉₀	CEC/ESP/SAR	29 B Metals
SB-1	0-2'	6.21.22	10:40	G	P	---	---	---	---	---	---	Metals		
SB-1	2-4'	6.21.22	10:40	G	P	---	---	---	---	---	---	As, Ba, TTBa, Cd, Cr, Sr, Zn, Fe, Hg, Pb		
SB-3	0-2'	6.21.22	11:40	G	G	---	---	---	---	---	---	(RB)		
SB-3	2-4'	6.21.22	11:40	G	G	---	---	---	---	---	---			
SB-4	0-2'	6.21.22	12:10	G	G	---	---	---	---	---	---			
SB-4	2-4'	6.21.22	12:10	G	G	---	---	---	---	---	---			
SB-5	2-4'	6.21.22	14:10	G	P	---	---	---	---	---	---			
SB-5	4-6'	6.21.22	14:20	G	P	---	---	---	---	---	---			
SB-6	2-4'	6.21.22	14:50	G	P	---	---	---	---	---	---			

Relinquished by	Date/Time	Received by	Date/Time
<u>Kathie Bogle</u>	<u>6.27.22/1645</u>	<u>Kathie Bogle</u>	<u>6.27.22/1645</u>
<u>Kathie Bogle</u>	<u>6.28.22/0845</u>	<u>Martine</u>	<u>6/28/22 0845</u>
			Received at lab on ice? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Temp: <u>5.3</u>

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

8900 North US 31
 Columbus, IN
 47201 USA
 P 812-375-0531
 F 812-375-0731

328 Ley Road, Suite 100
 Fort Wayne, IN
 46825 USA
 P 260-471-7000
 F 260-471-7777

909 Executive Dr
 Warsaw, IN
 46580 USA
 P 574-267-3205
 F 574-269-6569

3371 Cleveland Road, Suite 100A
 South Bend, IN
 46628 USA
 P 574-277-0707
 F 574-273-5699

2417 W. Pinhook Rd
 Lafayette, LA
 70508 USA
 P 337-235-0483
 F 337-233-6540



Chain of Custody

Laboratory Number: 22061196

Company Name: ICON PO Number: Grand River-Level Page 2 of 2
 Contact Name: SAME Quote Number: 9326-025-0100 Matrix Code: DW = Drinking Water
 Address: _____ GW = Waste Water
 City, State Zip: _____ Required QC Level: _____ SW = Ground Water
 Phone Number: _____ Ext: _____ Bill Monthly: Yes No
 Fax Number: _____ Shipping Method: UPS / FedEx / NOW
 E-mail Address: _____ Ext: _____ DHL / Element Hand / Mail
 Sampler's Signature: _____

Sample ID/Description	Which Regulations Apply: <input type="checkbox"/> RCRA <input type="checkbox"/> POTW <input type="checkbox"/> NPDES <input type="checkbox"/> USDA/FDA <input type="checkbox"/> RECAP/RISC	Turn Time <input checked="" type="checkbox"/> Standard <input type="checkbox"/> RUSH <input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> Other	Collection Information		Rush turn times will incur a surcharge and must be pre-approved by lab.)	Container Type Quantity	Pres. HCl, HNO ₃ , H ₂ SO ₄ NaOH, Na ₂ S ₂ O ₃	Requested Tests	Comments		
			Date	Time						Grab / Composite	Matrix
			Requested Tests								
SB-6	4-6'	6.21.22	1455	G	SO	1	P	EC	CEC/ESP/SR		
SB-7	2-4'	6.21.22	1525	G	SO	1	P	As, Ba, TTBa	90 Moisture		
SB-8	0-2'	6.21.22	1550	G	SO	1	P				
SB-8	2-4'	6.21.22	1550	G	SO	1	P				

Retinquished by	Date/Time	Received by	Date/Time	Field Notes:
<u>Kathy Bell</u>	<u>6.27.22/1645</u>	<u>Kathy Bell</u>	<u>6.27.22/1645</u>	Received at lab on ice?
<u>Martine Lee</u>	<u>6.28.22/0845</u>	<u>Martine Lee</u>	<u>6/28/22 0845</u>	<input type="checkbox"/> Yes <input type="checkbox"/> No Temp:

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Website: www.element.com

July 15, 2022

Greg Miller
ICON Environmental Services
2049 Commercial Drive
Port Allen, LA 70767
TEL: (225) 344-8490
FAX (225) 344-6654

RE: Levert-Grand River/9326-025-0100

Order No.: 22061336

Dear Greg Miller:

Element Materials Technology Lafayette received 2 sample(s) on 6/29/2022 for the analyses presented in the following report.

In accordance with your instructions, Element Lafayette either conducted or subcontracted these analyses. Subcontracted analyses will be identified in the accompanying case narrative. All relevant sampling information can be found on the attached Chain-of-Custody form. Unless otherwise noted, all analyses were conducted using EPA approved methodologies and all test results meet the applicable requirements of TNI. Reported results relate only to the items tested.

Where applicable, all soil data, except for 29-B, are reported on a wet-weight basis unless otherwise indicated in the units field as –dry.

LELAP Certification No.: 01997. TCEQ Certification No.: T104704261. LDHH Certification No.: LA023. ISDH Certification No.: C-LA-01. NDELCP Certification No.: R-226. A scope of accredited parameters is available upon request. A "#" by the test method or analyte indicates this parameter is outside the scope of accreditation. PA registration No.: 68-05967.

Estimated uncertainty is available upon request. This report shall not be reproduced, except in full, without the written approval of the laboratory.

If you have any questions regarding these test results, please feel free to call.

A handwritten signature in blue ink that reads 'Cristina Thibeaux'.

Cristina Thibeaux
Customer Service Supervisor



Element Materials Technology Lafayette
2417 W. Pinhook Road
Lafayette, LA 70508-3344
TEL: (337) 235-0483 FAX: (337) 233-6540
Website: www.element.com

Case Narrative

WO#: 22061336
Date: 7/15/2022

CLIENT: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

Unless specified by the client, a duplicate or MS/MSD, wherever applicable, is randomly selected and analyzed from each analytical batch provided sample volume is sufficient. The sample chosen for duplicate or MS/MSD may or may not be a sample submitted in this workorder. A method blank and/or a lab control sample (LCS)/lab control sample duplicate (LCSD), wherever applicable, are processed as a quality control check for each analytical batch. When the matrix QC data is not available due to insufficient sample volume or when the results indicate possible matrix effect, the validity of the batch is determined by the method blank and LCS/LCSD.

The results of the laboratory internal quality control data are provided in the QC Summary Report section of the report for your review. Laboratory-related QC exceptions that may impact the validity of data are discussed in the case narrative. Sample-related QC exceptions are flagged either in the results page(s) or in the QC report page(s). End users should consider QC exceptions when evaluating sample data against data quality objectives.

Any other exceptions associated with this report will be footnoted in the results page(s) or the QC summary page(s).



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Analytical Report

(consolidated)

WO#: 22061336

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 11:45:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061336-001 **Matrix:** AQUEOUS
Client Sample ID LT-8

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH-D/O IN WATER BY SW8015					SW8015B	Analyst: CRM
TPH DRO/ORO IN WATER BY SW8015					SW3511	
TPH (Diesel Range)	< 0.131	0.131		mg/L	1	7/1/2022 9:37:00 PM
TPH (Oil Range)	< 0.121	0.121		mg/L	1	7/1/2022 9:37:00 PM
Surr: 4-Terphenyl-d14	27.8	51.4 - 146	S	%Rec	1	7/1/2022 9:37:00 PM
NOTES:						
S: Surrogate outside of control limits. Re-extraction was not possible due to insufficient sample or holding time constraints.						
BTEX/TPH-G IN WATER BY SW8021/8015					SW8015B	Analyst: LG
TPH-GRO IN WATER BY SW8015B						
TPH (Gasoline Range)	< 0.150	0.150		mg/L	1	6/30/2022 7:46:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	91.2	70 - 130		%Rec	1	6/30/2022 7:46:00 PM
BTEX/TPH-G IN WATER BY SW8021/8015					SW8021B	Analyst: LG
BTEX IN WATER BY SW8021B						
Benzene	< 0.00500	0.00500		mg/L	1	6/30/2022 7:46:00 PM
Ethylbenzene	< 0.00500	0.00500		mg/L	1	6/30/2022 7:46:00 PM
Toluene	< 0.0100	0.0100		mg/L	1	6/30/2022 7:46:00 PM
Xylenes, Total	< 0.0500	0.0500		mg/L	1	6/30/2022 7:46:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	82.8	70 - 130		%Rec	1	6/30/2022 7:46:00 PM
MERCURY IN GROUND WATER, TOTAL					SW7470A	Analyst: BXB
Mercury	< 0.000200	0.000200		mg/L	1	7/1/2022 8:43:45 AM
INORGANIC ANIONS IN WATER BY IC					SW9056A	Analyst: SGP
Chloride	58.0	12.5		mg/L	50	6/30/2022 11:05:25 AM
Sulfate	< 0.250	0.250		mg/L	1	6/30/2022 12:55:45 PM
METALS IN WATER BY ICP, TOTALS					SW6010B	Analyst: MRM
Barium	0.729	0.0100		mg/L	1	7/7/2022 11:36:46 AM
Cadmium	< 0.00500	0.00500		mg/L	1	7/7/2022 11:36:46 AM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061336

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 11:45:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061336-001 **Matrix:** AQUEOUS
Client Sample ID LT-8

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
METALS IN WATER BY ICP, TOTALS				SW6010B		Analyst: MRM
Calcium	220	0.500		mg/L	1	7/7/2022 11:36:46 AM
Chromium	< 0.0100	0.0100		mg/L	1	7/7/2022 11:36:46 AM
Iron	36.1	0.0500		mg/L	1	7/7/2022 11:36:46 AM
Lead	< 0.0100	0.0100		mg/L	1	7/7/2022 11:36:46 AM
Magnesium	63.0	0.500		mg/L	1	7/7/2022 11:36:46 AM
Manganese	0.761	0.0100		mg/L	1	7/7/2022 11:36:46 AM
Potassium	10.1	5.00		mg/L	1	7/7/2022 11:36:46 AM
Sodium	46.0	10.0		mg/L	1	7/7/2022 11:36:46 AM
Strontium	1.41	0.0100		mg/L	1	7/7/2022 11:36:46 AM
Zinc	< 0.0100	0.0100		mg/L	1	7/7/2022 11:36:46 AM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A		Analyst: MRB
Arsenic	0.301	0.00250		mg/L	10	7/6/2022 11:09:49 AM
ALKALINITY; TOTAL, CARB, BICARB				SM2320 B		Analyst: AD
Alkalinity, Bicarbonate (As CaCO3)	808	20.0		mgCaCO3/L	1	7/5/2022 8:57:00 AM
Alkalinity, Carbonate (As CaCO3)	< 20.0	20.0		mgCaCO3/L	1	7/5/2022 8:57:00 AM
Alkalinity, Total (As CaCO3)	808	20.0		mgCaCO3/L	1	7/5/2022 8:57:00 AM
TOTAL DISSOLVED SOLIDS				SM2540C		Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	920	50.0		mg/L	5	7/5/2022 6:51:00 AM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061336

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 3:10:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061336-002 **Matrix:** AQUEOUS
Client Sample ID LT-9

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH-D/O IN WATER BY SW8015					SW8015B	Analyst: CRM
TPH DRO/ORO IN WATER BY SW8015					SW3511	
TPH (Diesel Range)	< 0.131	0.131		mg/L	1	7/1/2022 10:09:00 PM
TPH (Oil Range)	< 0.121	0.121		mg/L	1	7/1/2022 10:09:00 PM
Surr: 4-Terphenyl-d14	31.9	51.4 - 146	S	%Rec	1	7/1/2022 10:09:00 PM
NOTES: S: Surrogate outside of control limits. Re-extraction was not possible due to insufficient sample or holding time constraints.						
BTEX/TPH-G IN WATER BY SW8021/8015					SW8015B	Analyst: LG
TPH-GRO IN WATER BY SW8015B						
TPH (Gasoline Range)	< 0.150	0.150		mg/L	1	6/30/2022 8:13:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	93.6	70 - 130		%Rec	1	6/30/2022 8:13:00 PM
BTEX/TPH-G IN WATER BY SW8021/8015					SW8021B	Analyst: LG
BTEX IN WATER BY SW8021B						
Benzene	< 0.00500	0.00500		mg/L	1	6/30/2022 8:13:00 PM
Ethylbenzene	< 0.00500	0.00500		mg/L	1	6/30/2022 8:13:00 PM
Toluene	< 0.0100	0.0100		mg/L	1	6/30/2022 8:13:00 PM
Xylenes, Total	< 0.0500	0.0500		mg/L	1	6/30/2022 8:13:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	84.2	70 - 130		%Rec	1	6/30/2022 8:13:00 PM
MERCURY IN GROUND WATER, TOTAL					SW7470A	Analyst: BXB
Mercury	< 0.000200	0.000200		mg/L	1	7/1/2022 8:46:04 AM
INORGANIC ANIONS IN WATER BY IC					SW9056A	Analyst: SGP
Chloride	88.7	12.5		mg/L	50	6/30/2022 11:19:12 AM
Sulfate	< 0.250	0.250		mg/L	1	6/30/2022 1:09:33 PM
METALS IN WATER BY ICP, TOTALS					SW6010B	Analyst: MRM
Barium	0.696	0.0100		mg/L	1	7/7/2022 11:39:03 AM
Cadmium	< 0.00500	0.00500		mg/L	1	7/7/2022 11:39:03 AM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061336

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 3:10:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061336-002 **Matrix:** AQUEOUS
Client Sample ID LT-9

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
METALS IN WATER BY ICP, TOTALS				SW6010B		Analyst: MRM
Calcium	212	0.500		mg/L	1	7/7/2022 11:39:03 AM
Chromium	< 0.0100	0.0100		mg/L	1	7/7/2022 11:39:03 AM
Iron	36.7	0.0500		mg/L	1	7/7/2022 11:39:03 AM
Lead	< 0.0100	0.0100		mg/L	1	7/7/2022 11:39:03 AM
Magnesium	58.2	0.500		mg/L	1	7/7/2022 11:39:03 AM
Manganese	0.788	0.0100		mg/L	1	7/7/2022 11:39:03 AM
Potassium	9.63	5.00		mg/L	1	7/7/2022 11:39:03 AM
Sodium	44.9	10.0		mg/L	1	7/7/2022 11:39:03 AM
Strontium	1.31	0.0100		mg/L	1	7/7/2022 11:39:03 AM
Zinc	0.0117	0.0100		mg/L	1	7/7/2022 11:39:03 AM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A		Analyst: MRB
Arsenic	0.281	0.00250		mg/L	10	7/6/2022 11:12:37 AM
ALKALINITY; TOTAL, CARB, BICARB				SM2320 B		Analyst: AD
Alkalinity, Bicarbonate (As CaCO3)	780	20.0		mgCaCO3/L	1	7/5/2022 8:57:00 AM
Alkalinity, Carbonate (As CaCO3)	< 20.0	20.0		mgCaCO3/L	1	7/5/2022 8:57:00 AM
Alkalinity, Total (As CaCO3)	780	20.0		mgCaCO3/L	1	7/5/2022 8:57:00 AM
TOTAL DISSOLVED SOLIDS				SM2540C		Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	965	50.0		mg/L	5	7/5/2022 6:51:00 AM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44289

Sample ID	MB-44289	SampType:	MBLK	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/30/2022	RunNo:	111044			
Client ID:	PBW	Batch ID:	44289	TestNo:	SW7470A			Analysis Date:	7/1/2022	SeqNo:	2741976			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		< 0.000200		0.000200										

Sample ID	LCS-44289	SampType:	LCS	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/30/2022	RunNo:	111044			
Client ID:	LCSW	Batch ID:	44289	TestNo:	SW7470A			Analysis Date:	7/1/2022	SeqNo:	2741977			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.00877		0.000200	0.01000	0		87.7	80	120				

Sample ID	LCSD-44289	SampType:	LCSD	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/30/2022	RunNo:	111044			
Client ID:	LCSS02	Batch ID:	44289	TestNo:	SW7470A			Analysis Date:	7/1/2022	SeqNo:	2741978			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.00881		0.000200	0.01000	0		88.1	80	120	0.008774	0.416	20	

Sample ID	22061332-016BMS	SampType:	MS	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/30/2022	RunNo:	111044			
Client ID:	ZZZZZZ	Batch ID:	44289	TestNo:	SW7470A			Analysis Date:	7/1/2022	SeqNo:	2741980			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.00856		0.000200	0.01000	0		85.6	75	125				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44289

Sample ID	22061332-016BMSD	SampType:	MSD	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/30/2022	RunNo:	111044											
Client ID:	ZZZZZZ	Batch ID:	44289	TestNo:	SW7470A			Analysis Date:	7/1/2022	SeqNo:	2741981											
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC		LowLimit		HighLimit		RPD Ref Val		%RPD		RPDLimit		Qual
Mercury		0.00852		0.000200		0.01000		0		85.2		75		125		0.008560		0.470		20		

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

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 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44290

Sample ID	MB-44290	SampType:	MBLK	TestCode:	6020A_W	Units:	mg/L	Prep Date:	6/30/2022	RunNo:	111154			
Client ID:	PBW	Batch ID:	44290	TestNo:	SW6020A			Analysis Date:	7/6/2022	SeqNo:	2744579			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		< 0.000250		0.000250										

Sample ID	LCS-44290	SampType:	LCS	TestCode:	6020A_W	Units:	mg/L	Prep Date:	6/30/2022	RunNo:	111154			
Client ID:	LCSW	Batch ID:	44290	TestNo:	SW6020A			Analysis Date:	7/6/2022	SeqNo:	2744580			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.518		0.00500	0.500	0		104	80	120				

Sample ID	LCSD-44290	SampType:	LCSD	TestCode:	6020A_W	Units:	mg/L	Prep Date:	6/30/2022	RunNo:	111154			
Client ID:	LCSS02	Batch ID:	44290	TestNo:	SW6020A			Analysis Date:	7/6/2022	SeqNo:	2744581			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.515		0.00500	0.500	0		103	80	120	0.518	0.552	20	

Sample ID	22061332-004BMS	SampType:	MS	TestCode:	6020A_W	Units:	mg/L	Prep Date:	6/30/2022	RunNo:	111154			
Client ID:	ZZZZZZ	Batch ID:	44290	TestNo:	SW6020A			Analysis Date:	7/6/2022	SeqNo:	2744591			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.508		0.00500	0.500	0.000181		102	75	125				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44290

Sample ID	22061332-004BMSD	SampType:	MSD	TestCode:	6020A_W	Units:	mg/L	Prep Date:	6/30/2022	RunNo:	111154		
Client ID:	ZZZZZZ	Batch ID:	44290	TestNo:	SW6020A			Analysis Date:	7/6/2022	SeqNo:	2744592		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.507		0.00500	0.500	0.000181	101	75	125	0.508	0.133	20	

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

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 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44291

Sample ID	MB-44291	SampType:	MBLK	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/30/2022	RunNo:	111187					
Client ID:	PBW	Batch ID:	44291	TestNo:	SW6010B			Analysis Date:	7/7/2022	SeqNo:	2745982					
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium		< 0.0100		0.0100												
Cadmium		< 0.00500		0.00500												
Calcium		< 0.500		0.500												
Chromium		< 0.0100		0.0100												
Iron		< 0.0500		0.0500												
Lead		< 0.0100		0.0100												
Magnesium		< 0.500		0.500												
Manganese		< 0.0100		0.0100												
Potassium		< 5.00		5.00												
Sodium		< 10.0		10.0												
Strontium		< 0.0100		0.0100												
Zinc		< 0.0100		0.0100												

Sample ID	LCS-44291	SampType:	LCS	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/30/2022	RunNo:	111187					
Client ID:	LCSW	Batch ID:	44291	TestNo:	SW6010B			Analysis Date:	7/7/2022	SeqNo:	2745983					
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium		0.493		0.0100		0.5000		0		98.5	80	120				
Cadmium		0.481		0.00500		0.5000		0		96.2	80	120				
Calcium		49.2		0.500		50.00		0		98.4	80	120				
Chromium		0.487		0.0100		0.5000		0		97.3	80	120				
Iron		0.490		0.0500		0.5000		0		98.0	80	120				
Lead		0.479		0.0100		0.5000		0		95.7	80	120				
Magnesium		48.9		0.500		50.00		0		97.8	80	120				
Manganese		0.483		0.0100		0.5000		0		96.7	80	120				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44291

Sample ID	LCS-44291	SampType:	LCS	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/30/2022	RunNo:	111187					
Client ID:	LCSW	Batch ID:	44291	TestNo:	SW6010B			Analysis Date:	7/7/2022	SeqNo:	2745983					
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium		49.4		5.00		50.00		0		98.7	80	120				
Sodium		49.4		10.0		50.00		0		98.9	80	120				
Strontium		0.490		0.0100		0.5000		0		98.1	80	120				
Zinc		0.469		0.0100		0.5000		0		93.8	80	120				

Sample ID	LCSD-44291	SampType:	LCSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/30/2022	RunNo:	111187					
Client ID:	LCSS02	Batch ID:	44291	TestNo:	SW6010B			Analysis Date:	7/7/2022	SeqNo:	2745984					
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium		0.495		0.0100		0.5000		0		98.9	80	120	0.4926	0.442		20
Cadmium		0.485		0.00500		0.5000		0		97.0	80	120	0.4812	0.787		20
Calcium		49.7		0.500		50.00		0		99.3	80	120	49.21	0.948		20
Chromium		0.490		0.0100		0.5000		0		98.0	80	120	0.4866	0.660		20
Iron		0.497		0.0500		0.5000		0		99.5	80	120	0.4902	1.48		20
Lead		0.479		0.0100		0.5000		0		95.9	80	120	0.4786	0.140		20
Magnesium		49.4		0.500		50.00		0		98.8	80	120	48.92	0.986		20
Manganese		0.488		0.0100		0.5000		0		97.6	80	120	0.4835	0.949		20
Potassium		49.8		5.00		50.00		0		99.7	80	120	49.36	0.959		20
Sodium		50.2		10.0		50.00		0		100	80	120	49.45	1.47		20
Strontium		0.495		0.0100		0.5000		0		98.9	80	120	0.4903	0.891		20
Zinc		0.487		0.0100		0.5000		0		97.4	80	120	0.4692	3.67		20

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44291

Sample ID	22061331-004BMS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 6/30/2022	RunNo: 111187					
Client ID:	ZZZZZZ	Batch ID: 44291	TestNo: SW6010B	Analysis Date: 7/7/2022	SeqNo: 2745989						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.616	0.0100	0.5000	0.1365	95.8	75	125				
Cadmium	0.493	0.00500	0.5000	0	98.6	75	125				
Calcium	70.2	0.500	50.00	19.80	101	75	125				
Chromium	0.496	0.0100	0.5000	0.001330	99.0	75	125				
Iron	0.553	0.0500	0.5000	0.07676	95.3	75	125				
Lead	0.481	0.0100	0.5000	0	96.3	75	125				
Magnesium	58.9	0.500	50.00	8.822	100	75	125				
Manganese	0.648	0.0100	0.5000	0.1563	98.3	75	125				
Potassium	52.7	5.00	50.00	2.638	100	75	125				
Sodium	104	10.0	50.00	53.58	102	75	125				
Strontium	0.663	0.0100	0.5000	0.1602	101	75	125				
Zinc	0.485	0.0100	0.5000	0	97.0	75	125				

Sample ID	22061331-004BMSD	SampType: MSD	TestCode: 6010_W	Units: mg/L	Prep Date: 6/30/2022	RunNo: 111187					
Client ID:	ZZZZZZ	Batch ID: 44291	TestNo: SW6010B	Analysis Date: 7/7/2022	SeqNo: 2745989						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.611	0.0100	0.5000	0.1365	94.8	75	125	0.6157	0.824	20	
Cadmium	0.489	0.00500	0.5000	0	97.8	75	125	0.4931	0.798	20	
Calcium	69.7	0.500	50.00	19.80	99.8	75	125	70.20	0.707	20	
Chromium	0.492	0.0100	0.5000	0.001330	98.2	75	125	0.4964	0.829	20	
Iron	0.549	0.0500	0.5000	0.07676	94.4	75	125	0.5534	0.833	20	
Lead	0.478	0.0100	0.5000	0	95.6	75	125	0.4814	0.742	20	
Magnesium	58.6	0.500	50.00	8.822	99.6	75	125	58.87	0.421	20	
Manganese	0.642	0.0100	0.5000	0.1563	97.1	75	125	0.6477	0.929	20	

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44291

Sample ID	22061331-004BMSD	SampType: MSD	TestCode: 6010_W	Units: mg/L	Prep Date: 6/30/2022	RunNo: 111187					
Client ID:	ZZZZZZ	Batch ID: 44291	TestNo: SW6010B	Analysis Date: 7/7/2022	SeqNo: 2745990						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	52.7	5.00	50.00	2.638	100	75	125	52.75	0.0999	20	
Sodium	103	10.0	50.00	53.58	99.6	75	125	104.4	0.955	20	
Strontium	0.657	0.0100	0.5000	0.1602	99.3	75	125	0.6629	0.932	20	
Zinc	0.477	0.0100	0.5000	0	95.4	75	125	0.4850	1.60	20	

Sample ID	22061332-004BMS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 6/30/2022	RunNo: 111187					
Client ID:	ZZZZZZ	Batch ID: 44291	TestNo: SW6010B	Analysis Date: 7/7/2022	SeqNo: 2746027						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.608	0.0100	0.5000	0.1353	94.6	75	125				
Cadmium	0.487	0.00500	0.5000	0	97.5	75	125				
Calcium	69.6	0.500	50.00	19.70	99.8	75	125				
Chromium	0.490	0.0100	0.5000	0.001340	97.8	75	125				
Iron	0.547	0.0500	0.5000	0.07701	93.9	75	125				
Lead	0.473	0.0100	0.5000	0	94.6	75	125				
Magnesium	58.3	0.500	50.00	8.742	99.1	75	125				
Manganese	0.639	0.0100	0.5000	0.1554	96.8	75	125				
Potassium	52.4	5.00	50.00	2.527	99.8	75	125				
Sodium	103	10.0	50.00	52.30	102	75	125				
Strontium	0.656	0.0100	0.5000	0.1592	99.3	75	125				
Zinc	0.478	0.0100	0.5000	0	95.7	75	125				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44291

Sample ID	22061332-004BMSD	SampType:	MSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/30/2022	RunNo:	111187
Client ID:	ZZZZZZ	Batch ID:	44291	TestNo:	SW6010B			Analysis Date:	7/7/2022	SeqNo:	2746029
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.588	0.0100	0.5000	0.1353	90.6	75	125	0.6080	3.34	20	
Cadmium	0.472	0.00500	0.5000	0	94.3	75	125	0.4873	3.26	20	
Calcium	67.1	0.500	50.00	19.70	94.8	75	125	69.60	3.65	20	
Chromium	0.473	0.0100	0.5000	0.001340	94.4	75	125	0.4904	3.59	20	
Iron	0.525	0.0500	0.5000	0.07701	89.7	75	125	0.5467	3.99	20	
Lead	0.464	0.0100	0.5000	0	92.8	75	125	0.4728	1.91	20	
Magnesium	56.3	0.500	50.00	8.742	95.1	75	125	58.28	3.46	20	
Manganese	0.618	0.0100	0.5000	0.1554	92.6	75	125	0.6393	3.33	20	
Potassium	50.9	5.00	50.00	2.527	96.7	75	125	52.40	2.93	20	
Sodium	97.6	10.0	50.00	52.30	90.6	75	125	103.4	5.77	20	
Strontium	0.632	0.0100	0.5000	0.1592	94.5	75	125	0.6559	3.76	20	
Zinc	0.459	0.0100	0.5000	0	91.8	75	125	0.4785	4.13	20	

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44300

Sample ID	lcsd-d44300	SampType: LCS	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 6/30/2022	RunNo: 111100					
Client ID:	LCSS02	Batch ID: 44300	TestNo: SW8015B	SW3511	Analysis Date: 7/1/2022	SeqNo: 2743229					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel Range)	1.93	0.130	1.710	0	113	70	130	1.887	2.18	14.1	
Surr: 4-Terphenyl-d14	0.0879		0.05701		154	51.4	146		0	40	S

NOTES:
 S - Surrogate recovery(ies) outside of the control limits. However, recovery(ies) of the target analytes are within the limits.

Sample ID	lcsd-m44300	SampType: LCS	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 6/30/2022	RunNo: 111100					
Client ID:	LCSS02	Batch ID: 44300	TestNo: SW8015B	SW3511	Analysis Date: 7/1/2022	SeqNo: 2743230					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Oil Range)	1.85	0.120	1.711	0	108	70	130	1.914	3.13	23.2	
Surr: 4-Terphenyl-d14	0.0745		0.05704		131	51.4	146		0	40	

Sample ID	lcs-m44300	SampType: LCS	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 6/30/2022	RunNo: 111100					
Client ID:	LCSSW	Batch ID: 44300	TestNo: SW8015B	SW3511	Analysis Date: 7/1/2022	SeqNo: 2743231					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Oil Range)	1.91	0.119	1.706	0	112	70	130				
Surr: 4-Terphenyl-d14	0.0813		0.05686		143	51.4	146				

Sample ID	mb-44300	SampType: MBLK	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 6/30/2022	RunNo: 111100					
Client ID:	PBW	Batch ID: 44300	TestNo: SW8015B	SW3511	Analysis Date: 7/1/2022	SeqNo: 2743232					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44300

Sample ID mb-44300	SampType: MBLK	TestCode: 8015_DO_W_ Units: mg/L				Prep Date: 6/30/2022			RunNo: 111100		
Client ID: PBW	Batch ID: 44300	TestNo: SW8015B SW3511		Analysis Date: 7/1/2022			SeqNo: 2743232				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel Range)	< 0.129	0.129									
TPH (Oil Range)	< 0.119	0.119									
Surr: 4-Terphenyl-d14	0.0498		0.05672		87.9	51.4	146				

Sample ID lcs-d44300	SampType: LCS	TestCode: 8015_DO_W_ Units: mg/L				Prep Date: 6/30/2022			RunNo: 111100		
Client ID: LCSW	Batch ID: 44300	TestNo: SW8015B SW3511		Analysis Date: 7/5/2022			SeqNo: 2744421				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel Range)	1.89	0.127	1.680	0	112	70	130				
Surr: 4-Terphenyl-d14	0.0739		0.05600		132	51.4	146				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111048

Sample ID	MBLK	SampType:	MBLK	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	111048			
Client ID:	PBW	Batch ID:	R111048	TestNo:	SW9056A			Analysis Date:	6/30/2022	SeqNo:	2742263			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		< 0.250		0.250										
Sulfate		< 0.250		0.250										

Sample ID	LCS	SampType:	LCS	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	111048			
Client ID:	LCSW	Batch ID:	R111048	TestNo:	SW9056A			Analysis Date:	6/30/2022	SeqNo:	2742264			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		10.1		0.250	10.00	0		101	80	120				
Sulfate		9.62		0.250	10.00	0		96.2	80	120				

Sample ID	LCSD	SampType:	LCSD	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	111048			
Client ID:	LCSS02	Batch ID:	R111048	TestNo:	SW9056A			Analysis Date:	6/30/2022	SeqNo:	2742265			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		10.1		0.250	10.00	0		101	80	120	10.09	0.302	15	
Sulfate		9.59		0.250	10.00	0		95.9	80	120	9.618	0.281	15	

Sample ID	22061329-001DMS	SampType:	MS	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	111048			
Client ID:	ZZZZZ	Batch ID:	R111048	TestNo:	SW9056A			Analysis Date:	6/30/2022	SeqNo:	2742268			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		5.29		0.250	5.000	0.2302		101	80	120				

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111048

Sample ID	22061329-001DMS	SampType:	MS	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	111048					
Client ID:	ZZZZZZ	Batch ID:	R111048	TestNo:	SW9056A			Analysis Date:	6/30/2022	SeqNo:	2742268					
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate		5.54		0.250		5.000		0.6550		97.7	80	120				

Sample ID	22061329-001DMSD	SampType:	MSD	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	111048					
Client ID:	ZZZZZZ	Batch ID:	R111048	TestNo:	SW9056A			Analysis Date:	6/30/2022	SeqNo:	2742269					
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		5.48		0.250		5.000		0.2302		105	80	120	5.286	3.67	15	
Sulfate		5.54		0.250		5.000		0.6550		97.7	80	120	5.539	0.0239	15	

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111049

Sample ID BTEX LCS	SampType: LCS	TestCode: 8021_BTEX_	Units: mg/L	Prep Date:	RunNo: 111049						
Client ID: LCSW	Batch ID: R111049	TestNo: SW8021B	Analysis Date: 6/30/2022	SeqNo: 2742329							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.0465	0.00500	0.05000	0	93.0	72	120				
Ethylbenzene	0.0490	0.00500	0.05000	0	98.0	76	129				
Toluene	0.0471	0.0100	0.05000	0	94.2	78	120				
Xylenes, Total	0.146	0.0500	0.1500	0	97.0	75	125				
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0454		0.05000		90.8	70	130				

Sample ID BTEX LCSD	SampType: LCSD	TestCode: 8021_BTEX_	Units: mg/L	Prep Date:	RunNo: 111049						
Client ID: LCSS02	Batch ID: R111049	TestNo: SW8021B	Analysis Date: 6/30/2022	SeqNo: 2742330							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.0475	0.00500	0.05000	0	95.0	72	120	0.04650	2.13	20	
Ethylbenzene	0.0500	0.00500	0.05000	0	100	76	129	0.04900	2.02	20	
Toluene	0.0479	0.0100	0.05000	0	95.8	78	120	0.04710	1.68	20	
Xylenes, Total	0.149	0.0500	0.1500	0	99.1	75	125	0.1455	2.18	20	
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0435		0.05000		87.0	70	130		0	20	

Sample ID MBLK ACID	SampType: MBLK	TestCode: 8021_BTEX_	Units: mg/L	Prep Date:	RunNo: 111049						
Client ID: PBW	Batch ID: R111049	TestNo: SW8021B	Analysis Date: 6/30/2022	SeqNo: 2742331							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	< 0.00500	0.00500									
Ethylbenzene	< 0.00500	0.00500									

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111049

Sample ID	MBLK ACID	SampType:	MBLK	TestCode:	8021_BTEX_	Units:	mg/L	Prep Date:		RunNo:	111049			
Client ID:	PBW	Batch ID:	R111049	TestNo:	SW8021B			Analysis Date:	6/30/2022	SeqNo:	2742331			
Analyte		Result		PQL		SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Toluene		< 0.0100		0.0100										
Xylenes, Total		< 0.0500		0.0500										
Surr: alpha, alpha, alpha-Trifluorotoluene		0.0408				0.05000		81.6	70	130				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111052

Sample ID	GAS LCS	SampType: LCS	TestCode: 8015_G_W	Units:	Prep Date:	RunNo: 111052					
Client ID:	LCSW	Batch ID: R111052	TestNo: SW8015B		Analysis Date: 6/30/2022	SeqNo: 2742411					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline Range)	14.7	0.150	12.50	0	118	80	130				
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0635		0.05000		127	70	130				

Sample ID	GAS LCSD	SampType: LCSD	TestCode: 8015_G_W	Units:	Prep Date:	RunNo: 111052					
Client ID:	LCSS02	Batch ID: R111052	TestNo: SW8015B		Analysis Date: 6/30/2022	SeqNo: 2742412					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline Range)	14.1	0.150	12.50	0	113	80	130	14.74	4.31	20	
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0621		0.05000		124	70	130		0	20	

Sample ID	MBLK ACID	SampType: MBLK	TestCode: 8015_G_W	Units: mg/L	Prep Date:	RunNo: 111052					
Client ID:	PBW	Batch ID: R111052	TestNo: SW8015B		Analysis Date: 6/30/2022	SeqNo: 2742413					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline Range)	< 0.150	0.150									
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0465		0.05000		93.0	70	130				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111091

Sample ID	MB-R111091	SampType:	MBLK	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	111091					
Client ID:	PBW	Batch ID:	R111091	TestNo:	SM2540C			Analysis Date:	7/5/2022	SeqNo:	2744533					
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) < 10.0 10.0

Sample ID	LCS-R111091	SampType:	LCS	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	111091					
Client ID:	LCSW	Batch ID:	R111091	TestNo:	SM2540C			Analysis Date:	7/5/2022	SeqNo:	2744534					
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 1,010 10.0 1,000 0 101 85 115

Sample ID	LCSD-R111091	SampType:	LCSD	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	111091					
Client ID:	LCSS02	Batch ID:	R111091	TestNo:	SM2540C			Analysis Date:	7/5/2022	SeqNo:	2744535					
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 1,010 10.0 1,000 0 101 85 115 1,014 0.296 10

Sample ID	22061331-004ADUP	SampType:	DUP	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	111091					
Client ID:	ZZZZZZ	Batch ID:	R111091	TestNo:	SM2540C			Analysis Date:	7/5/2022	SeqNo:	2744541					
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 275 10.0 292.0 6.00 10

Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits RL Reporting Limit S Spike Recovery outside accepted recovery limits
 SDL Sample detection limit U Analyte not detected W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111091

Sample ID	22061331-004ADUP	SampType:	DUP	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	111091
Client ID:	ZZZZZZ	Batch ID:	R111091	TestNo:	SM2540C			Analysis Date:	7/5/2022	SeqNo:	2744541
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Sample ID	22061331-009ADUP	SampType:	DUP	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	111091
Client ID:	ZZZZZZ	Batch ID:	R111091	TestNo:	SM2540C			Analysis Date:	7/5/2022	SeqNo:	2744557
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Total Dissolved Solids (Residue, Filterable)		354		10.0						357.0	0.844 10

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111094

Sample ID	MB-R111094	SampType:	MBLK	TestCode:	ALK	Units:	mgCaCO3/L	Prep Date:		RunNo:	111094
Client ID:	PBW	Batch ID:	R111094	TestNo:	SM2320 B			Analysis Date:	7/5/2022	SeqNo:	2743209
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Alkalinity, Bicarbonate (As CaCO3)		< 20.0		20.0							
Alkalinity, Carbonate (As CaCO3)		< 20.0		20.0							
Alkalinity, Total (As CaCO3)		< 20.0		20.0							

Sample ID	LCS-R111094	SampType:	LCS	TestCode:	ALK	Units:	mgCaCO3/L	Prep Date:		RunNo:	111094
Client ID:	LCSW	Batch ID:	R111094	TestNo:	SM2320 B			Analysis Date:	7/5/2022	SeqNo:	2743210
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Alkalinity, Total (As CaCO3)		49.0		20.0	50.00	0	98.0	80	120		

Sample ID	22061144-003ADUP	SampType:	DUP	TestCode:	ALK	Units:	mgCaCO3/L	Prep Date:		RunNo:	111094
Client ID:	ZZZZZZ	Batch ID:	R111094	TestNo:	SM2320 B			Analysis Date:	7/5/2022	SeqNo:	2743214
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Alkalinity, Bicarbonate (As CaCO3)		300		20.0						312.5	4.08 20
Alkalinity, Carbonate (As CaCO3)		< 20.0		20.0						0	0 20
Alkalinity, Total (As CaCO3)		300		20.0						312.5	4.08 20

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

Sample Log-In Check List

Client Name: **ICON_ENV** Work Order Number: **22061336** RcptNo: **1**

Logged by:	Tammy Thibodeaux	6/29/2022 2:50:00 PM	<i>Tammy Thibodeaux</i>
Completed By:	Tammy Thibodeaux	6/29/2022 6:23:39 PM	<i>Tammy Thibodeaux</i>
Reviewed By:	Buffy Bryant	7/9/2022 1:00:28 PM	<i>Buffy Bryant</i>

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
 2. How was the sample delivered? Element

Log In

3. Coolers are present? Yes No NA
 4. Shipping container/cooler in good condition? Yes No
 Custody seals intact on shipping container/cooler? Yes No Not Present
 No. Seal Date: Signed By:
 5. Was an attempt made to cool the samples? Yes No NA
 6. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
 7. Sample(s) in proper container(s)? Yes No
 8. Sufficient sample volume for indicated test(s)? Yes No
 9. Are samples (except VOA and ONG) properly preserved? Yes No
 10. Was preservative added to bottles? Yes No NA
 11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes No No VOA Vials
 12. Were any sample containers received broken? Yes No
 13. Does paperwork match bottle labels? Yes No
 (Note discrepancies on chain of custody)
 14. Are matrices correctly identified on Chain of Custody? Yes No
 15. Is it clear what analyses were requested? Yes No
 16. Were all holding times able to be met? Yes No
 (If no, notify customer for authorization.)

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

18. Additional remarks:

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.8	Good	Not Present			



Chain of Custody

Laboratory Number: 22001334

Client Information:
 Ikon Env
 J Gills
 2049 Commercial Dr
 Port Allen La 70767
 225 344 8440

Billing Information:
 PO Number:
 Quote Number:
 Required QC Level:
 Bill Monthly: Yes No
 Ext:

Project Name/Number:
 Levert - Grand River
 0326-025-0100

Sampler's Signature:
[Signature]

Shipping Method:
 UPS + FedEx / NOW
 DHL / Element / Hand / Mail

Matrix Code:
 DW = Drinking Water
 WW = Waste Water
 GW = Ground Water
 AQ = Aqueous
 OT = Other
 SL = Sludge
 SOL = Solid
 O = Oil
 SO = Soil
 F = Food
 SW = Swab
 NG = Natural Gas
 NGL = Natural Gas Liquid
 PW = Produced Water
 CF = Completion Fluid

Page 1 of 1

Sample ID/Description	Turn Time		Rush turn times will incur a surcharge and must be pre-approved by (lab.)	Container		Pres. HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₃	Requested Tests	Comments
	Standard	RUSH		Quantity	Type			
	<input type="checkbox"/>	<input type="checkbox"/>						
LT-8	<input type="checkbox"/>	<input type="checkbox"/>	6:25:22 145	9	PV	↓	↓	Mutals As Pa Cd Cr Fe Mn Pb Sr Zn Hg
LT-9	<input type="checkbox"/>	<input type="checkbox"/>	1510	↓	↓	↓	↓	Autions Na Ca K Mg
	<input type="checkbox"/>	<input type="checkbox"/>						Autions Anions AlK Carbonate AlK Bicarbonate Sulfate

Relinquished by	Date/Time	Received by	Date/Time	Field Notes:
<i>[Signature]</i>	6-29-22 0930	<i>[Signature]</i>	6-29-22 0930	Received at lab on ice? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Temp: 2.8 °C
<i>[Signature]</i>	6-29-22 1450	<i>[Signature]</i>	6-29-22 1450	

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

3600 North US 31
 Columbus, IN
 47201 USA
 P 812-375-9531
 F 812-375-9731

328 Ley Road, Suite 100
 Fort Wayne, IN
 46825 USA
 P 260-471-7000
 F 260-471-7777

909 Executive Dr
 Warsaw, IN
 46580 USA
 P 574-267-3305
 F 574-269-5569

3371 Cleveland Road, Suite 100A
 South Bend, IN
 46628 USA
 P 574-277-0707
 F 574-273-5699

2417 W. Pinhook Rd
 Lafayette, LA
 70508 USA
 P 337-235-0483
 F 337-233-6640

7/15/2022

Hydro-Environmental Technology, Inc.
Mr. Stewart Stover, Jr.
91 Apollo Rd
Scott, LA, 70583

Ref: Report Number: 22-179-0010
Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Dear Mr. Stewart Stover, Jr.:

Waypoint Analytical Louisiana, Inc. received sample(s) on 6/28/2022 for the analyses presented in the following report. The above referenced project has been analyzed per your instructions. Unless otherwise noted, the analyses were performed in our laboratory in accordance with Standard Methods, The Solid Waste Manual SW-846, EPA Methods for Chemical Analysis of Water and Wastes and /or 40 CFR part 136.

Certain parameters (chlorine, pH, dissolved oxygen, sulfite...) are required to be analyzed within 15 minutes of sampling. Usually, but not always, any field parameter analyzed at the laboratory is outside of this holding time. Refer to sample analysis time for confirmation of holding time compliance. Analyses reported which indicate "Field" for these parameters were analyzed by the client in the field. Results for solid samples are reported on an as received or "wet weight" basis unless otherwise specified.

The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, method validations, instrumentation maintenance and calibration for all parameters (NELAP and non-NELAP) were performed in accordance with guidelines established by the USEPA (including 40 CFR 136 Method Update Rule May 2021) and NELAC unless otherwise indicated. Any parameter for which the laboratory is not officially NELAP accredited is indicated by a '~' symbol. These are not included in the scope because NELAP accreditation is either not available or has not been applied for. Additional certifications may be held/are available for parameters, where NELAP accreditation is not required or applicable. A full list of certifications is available upon request.

All quality control measures undertaken in accordance with Waypoint Analytical Louisiana, Inc. CompQAP990807A and revisions under the terms of the Louisiana Environmental Laboratory Accreditation Program (Certificate #02041) are within acceptance ranges established in that document with the exception of the items indicated and/or discussed in a Case Narrative.

The results are shown on the attached analysis sheet(s). Be aware that the time analyzed for certain samples (e.g. - BOD, CBOD, etc.) refer to the time the sample batch was begun and not necessarily to the time an individual sample was begun. Thank you for allowing Waypoint Analytical Louisiana, Inc. to serve you. Should I be of further assistance, if you have any questions or need additional information please contact me or client services.

Sincerely,



Amy Jackson
Project Manager

Laboratory's liability in any claim relating to analyses performed shall be limited to, at laboratory's option, repeating the analysis in question at laboratory's expense, or the refund of the charges paid for performance of said analysis. This report may be reproduced in full only with the written permission of the laboratory and/or the entity to which it is addressed. Results contained herein relate only to the sample(s) submitted to the laboratory.



Certification Summary

Laboratory ID: WP MLA: Waypoint Analytical Louisiana, Inc., Marrero, LA

State	Program	Lab ID	Expiration Date
Georgia	State Program	02041	06/30/2023
Louisiana	State Program - NELAP	02041	06/30/2023

Laboratory ID: WP MTN: Waypoint Analytical, LLC., Memphis, TN

State	Program	Lab ID	Expiration Date
Alabama	State Program	40750	02/28/2023
Arkansas	State Program	88-0650	02/07/2023
California	State Program	2904	06/30/2023
Florida	State Program - NELAP	E871157	06/30/2023
Georgia	State Program	C044	02/18/2023
Georgia	State Program	04015	06/30/2023
Illinois	State Program - NELAP	200078	10/10/2022
Kentucky	State Program	80215	06/30/2022
Kentucky	State Program	KY90047	12/31/2022
Louisiana	State Program - NELAP	LA037	12/31/2022
Louisiana	State Program - NELAP	04015	06/30/2023
Mississippi	State Program	MS	02/11/2023
North Carolina	State Program	415	12/31/2022
Pennsylvania	State Program - NELAP	68-03195	05/31/2023
South Carolina	State Program	84002	06/30/2022
Tennessee	State Program	02027	02/11/2023
Texas	State Program - NELAP	T104704180	09/30/2022
Virginia	State Program	00106	06/30/2023
Virginia	State Program - NELAP	460181	09/14/2022

Laboratory ID: WP RMS: Waypoint Analytical Mississippi, Inc., Ridgeland, MS

State	Program	Lab ID	Expiration Date
Arkansas	State Program	88-1409	02/01/2023
Kentucky	State Program	KY98013	12/31/2022
Louisiana	State Program - NELAP	04023	06/30/2023
North Carolina	State Program	694	12/31/2022

Sample Summary Table

Report Number: 22-179-0010
Client Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Lab No	Client Sample ID	Matrix	Date Collected	Date Received	Method	Lab ID
70440	LT-4 (13-18)	Groundwater	06/22/2022 15:00	06/28/2022		
70440	LT-4 (13-18)	Groundwater	06/22/2022 15:00	06/28/2022	8270D SIM	WP MTN
70440	LT-4 (13-18)	Groundwater	06/22/2022 15:00	06/28/2022	8260B	WP RMS
70440	LT-4 (13-18)	Groundwater	06/22/2022 15:00	06/28/2022	MAVPH LA	WP RMS
70440	LT-4 (13-18)	Groundwater	06/22/2022 15:00	06/28/2022	7470A	WP RMS
70440	LT-4 (13-18)	Groundwater	06/22/2022 15:00	06/28/2022	MAEPH LA	WP RMS
70440	LT-4 (13-18)	Groundwater	06/22/2022 15:00	06/28/2022	6020B	WP RMS
70441	LT-4 (13-18)	Aqueous	06/22/2022 15:00	06/28/2022	7470A	WP RMS
70441	LT-4 (13-18)	Aqueous	06/22/2022 15:00	06/28/2022	6020B	WP RMS
70442	LT-5 (13-23)	Groundwater	06/23/2022 11:20	06/28/2022		
70442	LT-5 (13-23)	Groundwater	06/23/2022 11:20	06/28/2022	8270D SIM	WP MTN
70442	LT-5 (13-23)	Groundwater	06/23/2022 11:20	06/28/2022	7470A	WP RMS
70442	LT-5 (13-23)	Groundwater	06/23/2022 11:20	06/28/2022	6020B	WP RMS
70442	LT-5 (13-23)	Groundwater	06/23/2022 11:20	06/28/2022	8260B	WP RMS
70442	LT-5 (13-23)	Groundwater	06/23/2022 11:20	06/28/2022	MAVPH LA	WP RMS
70442	LT-5 (13-23)	Groundwater	06/23/2022 11:20	06/28/2022	MAEPH LA	WP RMS
70443	LT-5 (13-23)	Aqueous	06/23/2022 11:20	06/28/2022	7470A	WP RMS
70443	LT-5 (13-23)	Aqueous	06/23/2022 11:20	06/28/2022	6020B	WP RMS
70444	Field Blank	Groundwater	06/22/2022 14:00	06/28/2022	8260B	WP RMS
70444	Field Blank	Groundwater	06/22/2022 14:00	06/28/2022	MAVPH LA	WP RMS
70445	Field Blank	Groundwater	06/23/2022 10:00	06/28/2022	8260B	WP RMS
70445	Field Blank	Groundwater	06/23/2022 10:00	06/28/2022	MAVPH LA	WP RMS
70446	Trip Blank	Groundwater	06/22/2022 07:00	06/28/2022	8260B	WP RMS
70446	Trip Blank	Groundwater	06/22/2022 07:00	06/28/2022	MAVPH LA	WP RMS
70447	Trip Blank	Groundwater	06/23/2022 06:40	06/28/2022	8260B	WP RMS

WP MTN - Memphis, TN: Waypoint Analytical - TN, Memphis, TN

WP RMS - Ridgeland, MS: Waypoint Analytical - Mississippi, Inc., Ridgeland, MS

Sample Summary Table

Report Number: 22-179-0010
Client Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Lab No	Client Sample ID	Matrix	Date Collected	Date Received	Method	Lab ID
70447	Trip Blank	Groundwater	06/23/2022 06:40	06/28/2022	MAVPH LA	WP RMS

Client: Hydro-Environmental Technology, Inc.
Project: August Levert
Lab Report Number: 22-179-0010
Date: 7/15/2022

CASE NARRATIVE

Metals Analyses Method 6020B

Sample 70442 (LT-5 (13-23))

Analyte: Calcium

QC Batch No: L625962/L624533

The matrix spike and/or the matrix spike duplicate was outside quality control acceptance ranges. A dilution test was performed and passed quality control acceptance ranges. No matrix interference is suspected.

Sample 70442 (LT-5 (13-23))

Analyte: Iron

QC Batch No: L625962/L624533

The matrix spike and/or the matrix spike duplicate was outside quality control acceptance ranges. A post digestion spike was performed and passed quality control acceptance ranges. No matrix interference is suspected.

Sample 70442 (LT-5 (13-23))

Analyte: Magnesium

QC Batch No: L625962/L624533

The matrix spike and/or the matrix spike duplicate was outside quality control acceptance ranges. A dilution test was performed and passed quality control acceptance ranges. No matrix interference is suspected.

Sample 70442 (LT-5 (13-23))

Analyte: Manganese

QC Batch No: L625476/L624533

The matrix spike and/or the matrix spike duplicate was outside quality control acceptance ranges. A dilution test was performed and passed quality control acceptance ranges. No matrix interference is suspected.

Sample 70442 (LT-5 (13-23))

Analyte: Strontium

QC Batch No: L625962/L624533

The matrix spike and/or the matrix spike duplicate was outside quality control acceptance ranges. A dilution test was performed and passed quality control acceptance ranges. No matrix interference is suspected.



5041 Taravella Road, Marrero, LA 70072
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09996

Hydro-Environmental Technology, Inc.
 Mr. Stewart Stover, Jr.
 91 Apollo Rd
 Scott, LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 07/15/2022
 Received : 06/28/2022

Report Number : **22-179-0010**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70440**
 Sample ID : **LT-4 (13-18)**

Matrix: **Groundwater**
 Sampled: **6/22/2022 15:00**

Analytical Method: 6020B **Prep Batch(es):** **L624533** 06/30/22 15:29
Prep Method: 3005A

Test	Results	Units	ML	DF	Date / Time Analyzed	By	Analytical Batch
Cadmium	<0.0010	mg/L	0.0010	1	07/06/22 22:37	JTR	L625476
Calcium	148	mg/L	4.00	20	07/08/22 21:28	FDS	L625476
Chromium	0.001	mg/L	0.001	1	07/06/22 22:37	JTR	L625476
Iron	32.9	mg/L	2.00	20	07/08/22 21:28	FDS	L625476
Lead	0.0017	mg/L	0.0010	1	07/06/22 22:37	JTR	L625476
Magnesium	54.6	mg/L	2.00	20	07/08/22 21:28	FDS	L625476
Manganese	1.53	mg/L	0.001	1	07/06/22 22:37	JTR	L625476
Potassium	0.929	mg/L	0.100	1	07/06/22 22:37	JTR	L625476
Selenium	<0.001	mg/L	0.001	1	07/06/22 22:37	JTR	L625476
Silver	<0.0010	mg/L	0.0010	1	07/06/22 22:37	JTR	L625476
Sodium	54.0	mg/L	2.00	20	07/12/22 00:17	FDS	L625476
Strontium	0.967	mg/L	0.020	20	07/08/22 21:28	FDS	L625476
Zinc	<0.010	mg/L	0.010	1	07/06/22 22:37	JTR	L625476

Analytical Method: 7470A **Prep Batch(es):** **L624613** 07/01/22 12:30
Prep Method: 7470A

Test	Results	Units	ML	DF	Date / Time Analyzed	By	Analytical Batch
Mercury	<0.00020	mg/L	0.00020	1	07/01/22 16:44	ZMT	L624796

Qualifiers/Definitions DF Dilution Factor ML Method Quantitation Limit



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Hydro-Environmental Technology, Inc.
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 91 Apollo Rd
 Scott, LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 07/15/2022
 Received : 06/28/2022

Report Number : **22-179-0010**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70440**
 Sample ID : **LT-4 (13-18)**

Matrix: **Groundwater**
 Sampled: **6/22/2022 15:00**

Analytical Method: 8260B **Prep Batch(es):** **L624933** 07/01/22 08:24
Prep Method: 5030B

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Benzene	<0.001	mg/L	0.001	1	07/01/22 13:54	HRS	L624958
Toluene	<0.002	mg/L	0.002	1	07/01/22 13:54	HRS	L624958
Ethylbenzene	<0.001	mg/L	0.001	1	07/01/22 13:54	HRS	L624958
Xylene (Total)	<0.001	mg/L	0.001	1	07/01/22 13:54		L624958
o-Xylene	<0.001	mg/L	0.001	1	07/01/22 13:54	HRS	L624958
m,p-Xylene	<0.002	mg/L	0.002	1	07/01/22 13:54	HRS	L624958
Surrogate: 4-Bromofluorobenzene	93.4		Limits: 71-137%	1	07/01/22 13:54	HRS	L624958
Surrogate: Dibromofluoromethane	85.8		Limits: 70-128%	1	07/01/22 13:54	HRS	L624958
Surrogate: 1,2-Dichloroethane - d4	86.0		Limits: 63-136%	1	07/01/22 13:54	HRS	L624958
Surrogate: Toluene-d8	89.0		Limits: 70-130%	1	07/01/22 13:54	HRS	L624958

Analytical Method: EPA-300.0 **Prep Batch(es):** **A74886** 06/30/22 09:20
Prep Method: EPA-300.0 (PREP)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Chloride	102	mg/L	2.00	1	06/30/22 11:40	MJM	A74887
Bromide (Br)	0.553	mg/L	0.500	1	06/30/22 11:40	MJM	A74887
Sulfate	<2.50	mg/L	2.50	1	06/30/22 11:40	MJM	A74887

Qualifiers/Definitions DF Dilution Factor MQL Method Quantitation Limit



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Hydro-Environmental Technology, Inc.
 Mr. Stewart Stover, Jr.
 91 Apollo Rd
 Scott, LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 07/15/2022
 Received : 06/28/2022

Report Number : 22-179-0010

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : 70440
 Sample ID : LT-4 (13-18)

Matrix: Groundwater
 Sampled: 6/22/2022 15:00

Analytical Method: MAEPH LA **Prep Batch(es):** L624729 07/01/22 12:50
Prep Method: MAEPH LA (Aqueous)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<0.130	mg/L	0.130	1	07/09/22 21:17	MMK	L625932
Aromatic >C10-C12	<0.130	mg/L	0.130	1	07/09/22 14:48	MMK	L625932
Aliphatic >C12-C16	<0.130	mg/L	0.130	1	07/09/22 21:17	MMK	L625932
Aromatic >C12-C16	<0.130	mg/L	0.130	1	07/09/22 14:48	MMK	L625932
Aromatic >C16-C21	<0.130	mg/L	0.130	1	07/09/22 14:48	MMK	L625932
Aliphatic >C16-C35	<0.217	mg/L	0.217	1	07/09/22 21:17	MMK	L625932
Aromatic >C21-C35	<0.152	mg/L	0.152	1	07/09/22 14:48	MMK	L625932
Surrogate: Chlorooctadecane	54.8		Limits: 40-140%	1	07/09/22 21:17	MMK	MAEPH LA
Surrogate: OTP Surrogate	93.1		Limits: 40-140%	1	07/09/22 14:48	MMK	MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L625592 07/05/22 16:19
Prep Method: MAVPH LA (Aqueous)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<0.015	mg/L	0.015	1	07/06/22 01:56	HRS	L625593
Aliphatic >C8-C10	<0.030	mg/L	0.030	1	07/06/22 01:56	HRS	L625593
Aromatic >C8-C10	<0.020	mg/L	0.020	1	07/06/22 01:56	HRS	L625593
Surrogate: 2,5-Dibromotoluene	86.0		Limits: 50-150%	1	07/06/22 01:56	HRS	MAVPH LA

Qualifiers/Definitions DF Dilution Factor MQL Method Quantitation Limit



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Hydro-Environmental Technology, Inc.
 Mr. Stewart Stover, Jr.
 91 Apollo Rd
 Scott, LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 07/15/2022
 Received : 06/28/2022

Report Number : **22-179-0010**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70441**
 Sample ID : **LT-4 (13-18)**

Matrix: **Aqueous**
 Sampled: **6/22/2022 15:00**

Analytical Method: 6020B **Prep Batch(es):** **L624528** 06/30/22 15:29
Prep Method: 3005A

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Dissolved Arsenic	0.0146	mg/L	0.0010	1	07/06/22 22:16	JTR	L625476
Dissolved Barium	0.669	mg/L	0.001	1	07/06/22 22:16	JTR	L625476
Dissolved Cadmium	<0.0010	mg/L	0.0010	1	07/06/22 22:16	JTR	L625476
Dissolved Calcium	140	mg/L	4.00	20	07/08/22 21:11	FDS	L625476
Dissolved Chromium	<0.001	mg/L	0.001	1	07/06/22 22:16	JTR	L625476
Dissolved Iron	30.2	mg/L	2.00	20	07/08/22 21:11	FDS	L625476
Dissolved Lead	<0.0010	mg/L	0.0010	1	07/06/22 22:16	JTR	L625476
Dissolved Magnesium	53.6	mg/L	2.00	20	07/08/22 21:11	FDS	L625476
Dissolved Manganese	1.43	mg/L	0.001	1	07/06/22 22:16	JTR	L625476
Dissolved Potassium	0.833	mg/L	0.100	1	07/06/22 22:16	JTR	L625476
Dissolved Selenium	<0.001	mg/L	0.001	1	07/06/22 22:16	JTR	L625476
Dissolved Silver	<0.0010	mg/L	0.0010	1	07/06/22 22:16	JTR	L625476
Dissolved Sodium	49.5	mg/L	2.00	20	07/11/22 23:51	FDS	L625476
Dissolved Strontium	0.934	mg/L	0.020	20	07/08/22 21:11	FDS	L625476
Dissolved Zinc	<0.010	mg/L	0.010	1	07/06/22 22:16	JTR	L625476

Analytical Method: 7470A **Prep Batch(es):** **L624898** 07/05/22 11:30
Prep Method: 7470A

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Dissolved Mercury	<0.00020	mg/L	0.00020	1	07/05/22 14:38	ZMT	L625065

Qualifiers/Definitions DF Dilution Factor MQL Method Quantitation Limit



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09996

Hydro-Environmental Technology, Inc.
 Mr. Stewart Stover, Jr.
 91 Apollo Rd
 Scott, LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 07/15/2022
 Received : 06/28/2022

Report Number : **22-179-0010**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70442**
 Sample ID : **LT-5 (13-23)**

Matrix: **Groundwater**
 Sampled: **6/23/2022 11:20**

Analytical Method: 6020B **Prep Batch(es):** **L624533** 06/30/22 15:29
Prep Method: 3005A

Test	Results	Units	ML	DF	Date / Time Analyzed	By	Analytical Batch
Cadmium	<0.0010	mg/L	0.0010	1	07/06/22 22:43	JTR	L625476
Calcium	149	mg/L	4.00	20	07/08/22 21:32	FDS	L625476
Chromium	0.001	mg/L	0.001	1	07/06/22 22:43	JTR	L625476
Iron	25.3	mg/L	2.00	20	07/08/22 21:32	FDS	L625476
Lead	<0.0010	mg/L	0.0010	1	07/06/22 22:43	JTR	L625476
Magnesium	58.6	mg/L	2.00	20	07/08/22 21:32	FDS	L625476
Manganese	1.90	mg/L	0.001	1	07/06/22 22:43	JTR	L625476
Potassium	2.94	mg/L	0.100	1	07/06/22 22:43	JTR	L625476
Selenium	<0.001	mg/L	0.001	1	07/06/22 22:43	JTR	L625476
Silver	<0.0010	mg/L	0.0010	1	07/06/22 22:43	JTR	L625476
Sodium	60.5	mg/L	2.00	20	07/12/22 00:21	FDS	L625476
Strontium	1.12	mg/L	0.020	20	07/08/22 21:32	FDS	L625476
Zinc	<0.010	mg/L	0.010	1	07/06/22 22:43	JTR	L625476

Analytical Method: 7470A **Prep Batch(es):** **L624613** 07/01/22 12:30
Prep Method: 7470A

Test	Results	Units	ML	DF	Date / Time Analyzed	By	Analytical Batch
Mercury	<0.00020	mg/L	0.00020	1	07/01/22 16:50	ZMT	L624796

Qualifiers/Definitions DF Dilution Factor ML Method Quantitation Limit

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Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 07/15/2022
Received : 06/28/2022



Report Number : **22-179-0010**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70442**
Sample ID : **LT-5 (13-23)**

Matrix: **Groundwater**
Sampled: **6/23/2022 11:20**

Analytical Method: 8260B **Prep Batch(es):** **L624933** 07/01/22 08:24
Prep Method: 5030B

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Benzene	<0.001	mg/L	0.001	1	07/01/22 14:14	HRS	L624958
Toluene	<0.002	mg/L	0.002	1	07/01/22 14:14	HRS	L624958
Ethylbenzene	<0.001	mg/L	0.001	1	07/01/22 14:14	HRS	L624958
Xylene (Total)	<0.001	mg/L	0.001	1	07/01/22 14:14		L624958
o-Xylene	<0.001	mg/L	0.001	1	07/01/22 14:14	HRS	L624958
m,p-Xylene	<0.002	mg/L	0.002	1	07/01/22 14:14	HRS	L624958
Surrogate: 4-Bromofluorobenzene	94.6		Limits: 71-137%	1	07/01/22 14:14	HRS	L624958
Surrogate: Dibromofluoromethane	84.0		Limits: 70-128%	1	07/01/22 14:14	HRS	L624958
Surrogate: 1,2-Dichloroethane - d4	84.4		Limits: 63-136%	1	07/01/22 14:14	HRS	L624958
Surrogate: Toluene-d8	87.2		Limits: 70-130%	1	07/01/22 14:14	HRS	L624958

Analytical Method: EPA-300.0 **Prep Batch(es):** **A74886** 06/30/22 09:20
Prep Method: EPA-300.0 (PREP)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Chloride	206	mg/L	2.00	1	06/30/22 11:52	MJM	A74887
Bromide (Br)	0.687	mg/L	0.500	1	06/30/22 11:52	MJM	A74887
Sulfate	<2.50	mg/L	2.50	1	06/30/22 11:52	MJM	A74887

Qualifiers/Definitions DF Dilution Factor MQL Method Quantitation Limit

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Project August Levert
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Report Number : **22-179-0010**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70442**
Sample ID : **LT-5 (13-23)**

Matrix: **Groundwater**
Sampled: **6/23/2022 11:20**

Analytical Method: MAEPH LA **Prep Batch(es):** L624729 07/01/22 12:50
Prep Method: MAEPH LA (Aqueous)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<0.136	mg/L	0.136	1	07/09/22 21:41	MMK	L625932
Aromatic >C10-C12	<0.136	mg/L	0.136	1	07/09/22 15:13	MMK	L625932
Aliphatic >C12-C16	<0.136	mg/L	0.136	1	07/09/22 21:41	MMK	L625932
Aromatic >C12-C16	<0.136	mg/L	0.136	1	07/09/22 15:13	MMK	L625932
Aromatic >C16-C21	<0.136	mg/L	0.136	1	07/09/22 15:13	MMK	L625932
Aliphatic >C16-C35	0.324	mg/L	0.227	1	07/09/22 21:41	MMK	L625932
Aromatic >C21-C35	<0.159	mg/L	0.159	1	07/09/22 15:13	MMK	L625932
Surrogate: Chlorooctadecane	61.7		Limits: 40-140%	1	07/09/22 21:41	MMK	MAEPH LA
Surrogate: OTP Surrogate	83.3		Limits: 40-140%	1	07/09/22 15:13	MMK	MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L625592 07/05/22 16:19
Prep Method: MAVPH LA (Aqueous)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<0.015	mg/L	0.015	1	07/06/22 02:37	HRS	L625593
Aliphatic >C8-C10	<0.030	mg/L	0.030	1	07/06/22 02:37	HRS	L625593
Aromatic >C8-C10	<0.020	mg/L	0.020	1	07/06/22 02:37	HRS	L625593
Surrogate: 2,5-Dibromotoluene	74.9		Limits: 50-150%	1	07/06/22 02:37	HRS	MAVPH LA

Qualifiers/Definitions DF Dilution Factor MQL Method Quantitation Limit



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Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 07/15/2022
 Received : 06/28/2022

Report Number : **22-179-0010**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70443**
 Sample ID : **LT-5 (13-23)**

Matrix: **Aqueous**
 Sampled: **6/23/2022 11:20**

Analytical Method: 6020B **Prep Batch(es):** **L624528** 06/30/22 15:29
Prep Method: 3005A

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Dissolved Arsenic	0.0231	mg/L	0.0010	1	07/06/22 22:22	JTR	L625476
Dissolved Barium	0.612	mg/L	0.001	1	07/06/22 22:22	JTR	L625476
Dissolved Cadmium	<0.0010	mg/L	0.0010	1	07/06/22 22:22	JTR	L625476
Dissolved Calcium	157	mg/L	4.00	20	07/08/22 21:15	FDS	L625476
Dissolved Chromium	<0.001	mg/L	0.001	1	07/06/22 22:22	JTR	L625476
Dissolved Iron	23.8	mg/L	2.00	20	07/08/22 21:15	FDS	L625476
Dissolved Lead	<0.0010	mg/L	0.0010	1	07/06/22 22:22	JTR	L625476
Dissolved Magnesium	57.8	mg/L	2.00	20	07/08/22 21:15	FDS	L625476
Dissolved Manganese	1.90	mg/L	0.001	1	07/06/22 22:22	JTR	L625476
Dissolved Potassium	2.83	mg/L	0.100	1	07/06/22 22:22	JTR	L625476
Dissolved Selenium	<0.001	mg/L	0.001	1	07/06/22 22:22	JTR	L625476
Dissolved Silver	<0.0010	mg/L	0.0010	1	07/06/22 22:22	JTR	L625476
Dissolved Sodium	65.5	mg/L	2.00	20	07/12/22 00:04	FDS	L625476
Dissolved Strontium	1.14	mg/L	0.020	20	07/08/22 21:15	FDS	L625476
Dissolved Zinc	<0.010	mg/L	0.010	1	07/06/22 22:22	JTR	L625476

Analytical Method: 7470A **Prep Batch(es):** **L624898** 07/05/22 11:30
Prep Method: 7470A

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Dissolved Mercury	<0.00020	mg/L	0.00020	1	07/05/22 14:40	ZMT	L625065

Qualifiers/Definitions DF Dilution Factor MQL Method Quantitation Limit

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Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 07/15/2022
Received : 06/28/2022



Report Number : **22-179-0010**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70444**
Sample ID : **Field Blank**

Matrix: **Groundwater**
Sampled: **6/22/2022 14:00**

Analytical Method: 8260B **Prep Batch(es):** L624933 07/01/22 08:24
Prep Method: 5030B

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Benzene	<0.001	mg/L	0.001	1	07/01/22 12:32	HRS	L624958
Toluene	<0.002	mg/L	0.002	1	07/01/22 12:32	HRS	L624958
Ethylbenzene	<0.001	mg/L	0.001	1	07/01/22 12:32	HRS	L624958
Xylene (Total)	<0.001	mg/L	0.001	1	07/01/22 12:32		L624958
o-Xylene	<0.001	mg/L	0.001	1	07/01/22 12:32	HRS	L624958
m,p-Xylene	<0.002	mg/L	0.002	1	07/01/22 12:32	HRS	L624958
Surrogate: 4-Bromofluorobenzene	94.4		Limits: 71-137%	1	07/01/22 12:32	HRS	L624958
Surrogate: Dibromofluoromethane	85.2		Limits: 70-128%	1	07/01/22 12:32	HRS	L624958
Surrogate: 1,2-Dichloroethane - d4	86.2		Limits: 63-136%	1	07/01/22 12:32	HRS	L624958
Surrogate: Toluene-d8	87.0		Limits: 70-130%	1	07/01/22 12:32	HRS	L624958

Analytical Method: MAVPH LA **Prep Batch(es):** L625592 07/05/22 16:19
Prep Method: MAVPH LA (Aqueous)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<0.015	mg/L	0.015	1	07/05/22 20:26	HRS	L625593
Aliphatic >C8-C10	<0.030	mg/L	0.030	1	07/05/22 20:26	HRS	L625593
Aromatic >C8-C10	<0.020	mg/L	0.020	1	07/05/22 20:26	HRS	L625593
Surrogate: 2,5-Dibromotoluene	94.0		Limits: 50-150%	1	07/05/22 20:26	HRS	MAVPH LA

Qualifiers/Definitions DF Dilution Factor MQL Method Quantitation Limit

09996

Hydro-Environmental Technology, Inc.
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Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 07/15/2022
Received : 06/28/2022



Report Number : **22-179-0010**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70445**
Sample ID : **Field Blank**

Matrix: **Groundwater**
Sampled: **6/23/2022 10:00**

Analytical Method: 8260B **Prep Batch(es):** L624933 07/01/22 08:24
Prep Method: 5030B

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Benzene	<0.001	mg/L	0.001	1	07/01/22 12:52	HRS	L624958
Toluene	<0.002	mg/L	0.002	1	07/01/22 12:52	HRS	L624958
Ethylbenzene	<0.001	mg/L	0.001	1	07/01/22 12:52	HRS	L624958
Xylene (Total)	<0.001	mg/L	0.001	1	07/01/22 12:52		L624958
o-Xylene	<0.001	mg/L	0.001	1	07/01/22 12:52	HRS	L624958
m,p-Xylene	<0.002	mg/L	0.002	1	07/01/22 12:52	HRS	L624958
Surrogate: 4-Bromofluorobenzene	96.0		Limits: 71-137%	1	07/01/22 12:52	HRS	L624958
Surrogate: Dibromofluoromethane	81.6		Limits: 70-128%	1	07/01/22 12:52	HRS	L624958
Surrogate: 1,2-Dichloroethane - d4	86.4		Limits: 63-136%	1	07/01/22 12:52	HRS	L624958
Surrogate: Toluene-d8	88.8		Limits: 70-130%	1	07/01/22 12:52	HRS	L624958

Analytical Method: MAVPH LA **Prep Batch(es):** L625592 07/05/22 16:19
Prep Method: MAVPH LA (Aqueous)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<0.015	mg/L	0.015	1	07/05/22 21:08	HRS	L625593
Aliphatic >C8-C10	<0.030	mg/L	0.030	1	07/05/22 21:08	HRS	L625593
Aromatic >C8-C10	<0.020	mg/L	0.020	1	07/05/22 21:08	HRS	L625593
Surrogate: 2,5-Dibromotoluene	90.5		Limits: 50-150%	1	07/05/22 21:08	HRS	MAVPH LA

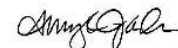
Qualifiers/Definitions DF Dilution Factor MQL Method Quantitation Limit

09996

Hydro-Environmental Technology, Inc.
Mr. Stewart Stover, Jr.
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Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 07/15/2022
Received : 06/28/2022



Report Number : **22-179-0010**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70446**
Sample ID : **Trip Blank**

Matrix: **Groundwater**
Sampled: **6/22/2022 7:00**

Analytical Method: 8260B **Prep Batch(es):** L624933 07/01/22 08:24
Prep Method: 5030B

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Benzene	<0.001	mg/L	0.001	1	07/01/22 13:13	HRS	L624958
Toluene	<0.002	mg/L	0.002	1	07/01/22 13:13	HRS	L624958
Ethylbenzene	<0.001	mg/L	0.001	1	07/01/22 13:13	HRS	L624958
Xylene (Total)	<0.001	mg/L	0.001	1	07/01/22 13:13		L624958
o-Xylene	<0.001	mg/L	0.001	1	07/01/22 13:13	HRS	L624958
m,p-Xylene	<0.002	mg/L	0.002	1	07/01/22 13:13	HRS	L624958
Surrogate: 4-Bromofluorobenzene	89.6		Limits: 71-137%	1	07/01/22 13:13	HRS	L624958
Surrogate: Dibromofluoromethane	82.8		Limits: 70-128%	1	07/01/22 13:13	HRS	L624958
Surrogate: 1,2-Dichloroethane - d4	83.2		Limits: 63-136%	1	07/01/22 13:13	HRS	L624958
Surrogate: Toluene-d8	90.6		Limits: 70-130%	1	07/01/22 13:13	HRS	L624958

Analytical Method: MAVPH LA **Prep Batch(es):** L625592 07/05/22 16:19
Prep Method: MAVPH LA (Aqueous)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<0.015	mg/L	0.015	1	07/05/22 21:49	HRS	L625593
Aliphatic >C8-C10	<0.030	mg/L	0.030	1	07/05/22 21:49	HRS	L625593
Aromatic >C8-C10	<0.020	mg/L	0.020	1	07/05/22 21:49	HRS	L625593
Surrogate: 2,5-Dibromotoluene	84.7		Limits: 50-150%	1	07/05/22 21:49	HRS	MAVPH LA

Qualifiers/Definitions DF Dilution Factor MQL Method Quantitation Limit

09996

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Bayou Sorrel, LA

Report Date : 07/15/2022
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Report Number : **22-179-0010**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70447**
Sample ID : **Trip Blank**

Matrix: **Groundwater**
Sampled: **6/23/2022 6:40**

Analytical Method: 8260B **Prep Batch(es):** L624933 07/01/22 08:24
Prep Method: 5030B

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Benzene	<0.001	mg/L	0.001	1	07/01/22 13:33	HRS	L624958
Toluene	<0.002	mg/L	0.002	1	07/01/22 13:33	HRS	L624958
Ethylbenzene	<0.001	mg/L	0.001	1	07/01/22 13:33	HRS	L624958
Xylene (Total)	<0.001	mg/L	0.001	1	07/01/22 13:33		L624958
o-Xylene	<0.001	mg/L	0.001	1	07/01/22 13:33	HRS	L624958
m,p-Xylene	<0.002	mg/L	0.002	1	07/01/22 13:33	HRS	L624958
Surrogate: 4-Bromofluorobenzene	92.6		Limits: 71-137%	1	07/01/22 13:33	HRS	L624958
Surrogate: Dibromofluoromethane	85.4		Limits: 70-128%	1	07/01/22 13:33	HRS	L624958
Surrogate: 1,2-Dichloroethane - d4	91.0		Limits: 63-136%	1	07/01/22 13:33	HRS	L624958
Surrogate: Toluene-d8	82.6		Limits: 70-130%	1	07/01/22 13:33	HRS	L624958

Analytical Method: MAVPH LA **Prep Batch(es):** L625592 07/05/22 16:19
Prep Method: MAVPH LA (Aqueous)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<0.015	mg/L	0.015	1	07/05/22 22:30	HRS	L625593
Aliphatic >C8-C10	<0.030	mg/L	0.030	1	07/05/22 22:30	HRS	L625593
Aromatic >C8-C10	<0.020	mg/L	0.020	1	07/05/22 22:30	HRS	L625593
Surrogate: 2,5-Dibromotoluene	67.0		Limits: 50-150%	1	07/05/22 22:30	HRS	MAVPH LA

Qualifiers/Definitions DF Dilution Factor MQL Method Quantitation Limit

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-179-0010

QC Analytical Batch: A74938
Analysis Method: 2320B-2011
Analysis Description: Alkalinity

Lab Reagent Blank LRB Matrix: AQU
Associated Lab Samples: 70440, 70442

Parameter	Units	Blank Result	MLQ	Analyzed
Alkalinity (as CaCO3)	mg/L	< 10	10	07/06/22 11:00

Duplicate A 70435-DUP

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Alkalinity (as CaCO3)	mg/L	210	210	0.0	25	07/06/22 11:00

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-179-0010

QC Analytical Batch: A74866
Analysis Method: 2510B-2011
Analysis Description: Conductivity

Lab Reagent Blank LRB Matrix: AQU
Associated Lab Samples: 70440, 70442

Parameter	Units	Blank Result	MQL	Analyzed
Conductivity	µmhos/cm	< 1.00	1.00	06/30/22 14:00

Laboratory Control Sample

LCS

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Conductivity	µmhos/cm	1410	1390	99.0	95-105

Duplicate A 70435-DUP

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Conductivity	µmhos/cm	1600	1600	0.0	20.0	06/30/22 14:00

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0010

QC Analytical Batch: A74822
Analysis Method: 2540C-2011
Analysis Description: Total Dissolved Solids (TDS)

Lab Reagent Blank LRB Matrix: AQU
Associated Lab Samples: 70440, 70442

Parameter	Units	Blank Result	MLQ	Analyzed
Total Dissolved Solids	mg/L	< 10	10	06/28/22 15:15

Duplicate A 70435-DUP

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Total Dissolved Solids	mg/L	1070	1050	1.8	10	06/28/22 15:15

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0010

QC Prep: L624528 **QC Analytical Batch(es):** L625476,L626214
QC Prep Batch Method: 3005A **Analysis Method:** 6020B
Analysis Description: Metals Analyses

Lab Reagent Blank LRB-L624528 Matrix: AQU
Associated Lab Samples: 70441, 70443

Parameter	Units	Blank Result	MQL	Analyzed
Dissolved Arsenic	mg/L	<0.0010	0.0010	07/06/22 21:54
Dissolved Barium	mg/L	<0.001	0.001	07/06/22 21:54
Dissolved Calcium	mg/L	<0.200	0.200	07/06/22 21:54
Dissolved Cadmium	mg/L	<0.0010	0.0010	07/06/22 21:54
Dissolved Chromium	mg/L	<0.001	0.001	07/06/22 21:54
Dissolved Iron	mg/L	<0.100	0.100	07/06/22 21:54
Dissolved Lead	mg/L	<0.0010	0.0010	07/06/22 21:54
Dissolved Magnesium	mg/L	<0.100	0.100	07/06/22 21:54
Dissolved Manganese	mg/L	<0.001	0.001	07/06/22 21:54
Dissolved Potassium	mg/L	<0.100	0.100	07/06/22 21:54
Dissolved Selenium	mg/L	<0.001	0.001	07/06/22 21:54
Dissolved Silver	mg/L	<0.0010	0.0010	07/06/22 21:54
Dissolved Sodium	mg/L	<0.100	0.100	07/11/22 23:38
Dissolved Strontium	mg/L	<0.001	0.001	07/06/22 21:54
Dissolved Zinc	mg/L	<0.010	0.010	07/06/22 21:54

Laboratory Control Sample & LCSD LCS-L624528 LCSD-L624528

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS %Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD
Dissolved Arsenic	mg/L	0.0500	0.0503	0.0491	101	98.0	80-120	2.4	20
Dissolved Barium	mg/L	0.100	0.098	0.098	98.0	99.0	80-120	0.3	20
Dissolved Calcium	mg/L	10.0	8.88	8.93	89.0	89.0	80-120	0.5	20
Dissolved Cadmium	mg/L	0.0100	0.0098	0.0096	99.0	97.0	80-120	2.0	20
Dissolved Chromium	mg/L	0.100	0.102	0.096	102	96.0	80-120	5.8	20
Dissolved Iron	mg/L	10.0	9.28	9.12	93.0	91.0	80-120	1.7	20
Dissolved Lead	mg/L	0.0500	0.0482	0.0480	96.0	96.0	80-120	0.4	20

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-179-0010

QC Prep: L624528

QC Analytical Batch(es): L625476,L626214

QC Prep Batch Method: 3005A

Analysis Method: 6020B

Analysis Description: Metals Analyses

Laboratory Control Sample & LCSD LCS-L624528 LCSD-L624528

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS %Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD
Dissolved Magnesium	mg/L	10.0	9.16	9.27	92.0	93.0	80-120	1.1	20
Dissolved Manganese	mg/L	0.100	0.107	0.102	107	102	80-120	4.7	20
Dissolved Potassium	mg/L	10.0	9.16	9.44	92.0	94.0	80-120	3.0	20
Dissolved Selenium	mg/L	0.100	0.099	0.098	99.0	99.0	80-120	0.2	20
Dissolved Silver	mg/L	0.0100	0.0098	0.0097	98.0	97.0	80-120	0.9	20
Dissolved Sodium	mg/L	10.0	9.32	9.42	93.0	94.0	80-120	1.0	20
Dissolved Strontium	mg/L	0.100	0.092	0.096	92.0	96.0	80-120	4.4	20
Dissolved Zinc	mg/L	0.500	0.517	0.502	103	100	80-120	2.9	20

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0010

QC Prep: L624533 **QC Analytical Batch(es):** L625476,L625962,L626214
QC Prep Batch Method: 3005A **Analysis Method:** 6020B
Analysis Description: Metals Analyses

Lab Reagent Blank LRB-L624533 Matrix: AQU
Associated Lab Samples: 70440, 70442

Parameter	Units	Blank Result	MQL	Analyzed
Arsenic	mg/L	<0.0010	0.0010	07/06/22 22:29
Barium	mg/L	<0.001	0.001	07/06/22 22:29
Calcium	mg/L	<0.200	0.200	07/06/22 22:29
Cadmium	mg/L	<0.0010	0.0010	07/06/22 22:29
Chromium	mg/L	<0.001	0.001	07/06/22 22:29
Iron	mg/L	<0.100	0.100	07/06/22 22:29
Lead	mg/L	<0.0010	0.0010	07/06/22 22:29
Magnesium	mg/L	<0.100	0.100	07/06/22 22:29
Manganese	mg/L	<0.001	0.001	07/06/22 22:29
Potassium	mg/L	<0.100	0.100	07/06/22 22:29
Selenium	mg/L	<0.001	0.001	07/06/22 22:29
Silver	mg/L	<0.0010	0.0010	07/06/22 22:29
Sodium	mg/L	<0.100	0.100	07/12/22 00:09
Strontium	mg/L	<0.001	0.001	07/08/22 21:20
Zinc	mg/L	<0.010	0.010	07/06/22 22:29

Laboratory Control Sample LCS-L624533

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Arsenic	mg/L	0.0500	0.0514	103	80-120
Barium	mg/L	0.100	0.101	101	80-120
Calcium	mg/L	10.0	9.13	91.0	80-120
Cadmium	mg/L	0.0100	0.0095	96.0	80-120
Chromium	mg/L	0.100	0.101	101	80-120
Iron	mg/L	10.0	9.38	94.0	80-120
Lead	mg/L	0.0500	0.0486	97.0	80-120
Magnesium	mg/L	10.0	8.92	89.0	80-120

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0010

QC Prep: L624533 **QC Analytical Batch(es):** L625476,L625962,L626214
QC Prep Batch Method: 3005A **Analysis Method:** 6020B
Analysis Description: Metals Analyses

Laboratory Control Sample LCS-L624533

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Manganese	mg/L	0.100	0.104	104	80-120
Potassium	mg/L	10.0	9.51	95.0	80-120
Selenium	mg/L	0.100	0.103	103	80-120
Silver	mg/L	0.0100	0.0098	98.0	80-120
Sodium	mg/L	10.0	9.47	95.0	80-120
Strontium	mg/L	0.100	0.096	97.0	80-120
Zinc	mg/L	0.500	0.498	100	80-120

Matrix Spike & Matrix Spike Duplicate A 70442-MS-L624533 A 70442-MSD-L624533

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Arsenic	mg/L	0.0236	0.0500	0.0500	0.0701	0.0718	93.0	96.0	75-125	2.3	20
Barium	mg/L	0.599	0.100	0.100	0.683	0.722	84.0	123	75-125	5.5	20
Calcium	mg/L	149	10.0	10.0	155	159	60.0*	100	75-125	2.5	20
Cadmium	mg/L	<0.0010	0.0100	0.0100	0.0097	0.0098	98.0	99.0	75-125	0.8	20
Chromium	mg/L	0.001	0.100	0.100	0.099	0.101	98.0	100	75-125	1.0	20
Iron	mg/L	25.3	10.0	10.0	32.5	33.9	72.0*	86.0	75-125	4.2	20
Lead	mg/L	<0.0010	0.0500	0.0500	0.0502	0.0520	98.0	102	75-125	3.5	20
Magnesium	mg/L	58.6	10.0	10.0	64.2	66.3	56.0*	77.0	75-125	3.2	20
Manganese	mg/L	1.90	0.100	0.100	1.95	2.08	50.0*	180*	75-125	6.4	20
Potassium	mg/L	2.94	10.0	10.0	12.2	12.6	93.0	97.0	75-125	3.2	20
Selenium	mg/L	<0.001	0.100	0.100	0.095	0.096	95.0	97.0	75-125	1.4	20
Silver	mg/L	<0.0010	0.0100	0.0100	0.0094	0.0096	95.0	96.0	75-125	1.3	20
Sodium	mg/L	60.5	10.0	10.0	69.9	71.3	94.0	108	75-125	1.9	20
Strontium	mg/L	1.12	0.100	0.100	1.12	1.24	0.0*	120	75-125	10.1	20

* QC Fail

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Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-179-0010

QC Prep: L624533

QC Analytical Batch(es): L625476,L625962,L626214

QC Prep Batch Method: 3005A

Analysis Method: 6020B

Analysis Description: Metals Analyses

Matrix Spike & Matrix Spike Duplicate A 70442-MS-L624533 A 70442-MSD-L624533

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Zinc	mg/L	<0.010	0.500	0.500	0.483	0.494	95.0	97.0	75-125	2.2	20

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0010

QC Prep: L624613 **QC Analytical Batch(es):** L624796
QC Prep Batch Method: 7470A **Analysis Method:** 7470A
Analysis Description: Total Aqueous Mercury Analysis - CVAA

Lab Reagent Blank LRB-L624613 Matrix: AQU
Associated Lab Samples: 70440, 70442

Parameter	Units	Blank Result	MQL	Analyzed
Mercury	mg/L	<0.00020	0.00020	07/01/22 17:48

Laboratory Control Sample LCS-L624613

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Mercury	mg/L	0.00400	0.00448	112	80-120

Matrix Spike & Matrix Spike Duplicate Q 97212-MS-L624613 Q 97212-MSD-L624613

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Mercury	mg/L	<0.00020	0.00400	0.00400	0.00383	0.00373	96.0	93.0	80-120	2.6	20

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0010

QC Prep: L624898 **QC Analytical Batch(es):** L625065
QC Prep Batch Method: 7470A **Analysis Method:** 7470A
Analysis Description: Total Aqueous Mercury Analysis - CVAA

Lab Reagent Blank LRB-L624898 Matrix: AQU
Associated Lab Samples: 70441, 70443

Parameter	Units	Blank Result	MQL	Analyzed
Dissolved Mercury	mg/L	<0.00020	0.00020	07/05/22 13:58

Laboratory Control Sample & LCSD LCS-L624898 LCSD-L624898

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS %Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD
Dissolved Mercury	mg/L	0.00400	0.00367	0.00350	92.0	88.0	80-120	4.7	20

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0010

QC Prep: L624933 **QC Analytical Batch(es):** L624958
QC Prep Batch Method: 5030B **Analysis Method:** 8260B
Analysis Description: Volatile Organic Compounds - GC/MS

Lab Reagent Blank LRB-L624933 Matrix: AQU
Associated Lab Samples: 70440, 70442, 70444, 70445, 70446, 70447

Parameter	Units	Blank Result	ML	Analyzed	% Recovery	% Rec Limits
Benzene	mg/L	<0.001	0.001	07/01/22 11:51		
Ethylbenzene	mg/L	<0.001	0.001	07/01/22 11:51		
Toluene	mg/L	<0.002	0.002	07/01/22 11:51		
o-Xylene	mg/L	<0.001	0.001	07/01/22 11:51		
m,p-Xylene	mg/L	<0.002	0.002	07/01/22 11:51		
4-Bromofluorobenzene (S)				07/01/22 11:51	99.0	71-137
Dibromofluoromethane (S)				07/01/22 11:51	84.2	70-128
1,2-Dichloroethane - d4 (S)				07/01/22 11:51	88.4	63-136
Toluene-d8 (S)				07/01/22 11:51	85.2	70-130

Laboratory Control Sample LCS-L624933

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Benzene	mg/L	0.100	0.086	86.3	70-130
Ethylbenzene	mg/L	0.100	0.090	90.9	80-120
Toluene	mg/L	0.100	0.084	84.0	80-120
o-Xylene	mg/L	0.100	0.104	104	70-130
m,p-Xylene	mg/L	0.200	0.178	89.0	75-125
4-Bromofluorobenzene (S)				92.2	71-137
Dibromofluoromethane (S)				81.4	70-128
1,2-Dichloroethane - d4 (S)				82.0	63-136
Toluene-d8 (S)				90.8	70-130

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0010

QC Prep: L624933 **QC Analytical Batch(es):** L624958
QC Prep Batch Method: 5030B **Analysis Method:** 8260B
Analysis Description: Volatile Organic Compounds - GC/MS

Matrix Spike & Matrix Spike Duplicate L 85339-MS-L624933 L 85339-MSD-L624933

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Benzene	mg/L	0.049	0.100	0.100	0.107	0.126	57.7*	76.7	58-143	16.3	30
Ethylbenzene	mg/L	0.001	0.100	0.100	0.080	0.096	79.2	95.2	65-141	18.0	30
Toluene	mg/L	<0.002	0.100	0.100	0.078	0.078	77.4	78.3	64-145	1.1	30
o-Xylene	mg/L	<0.001	0.100	0.100	0.093	0.112	93.9	112	65-142	17.5	30
m,p-Xylene	mg/L	0.004	0.200	0.200	0.156	0.186	75.5	90.5	61-149	17.5	30
4-Bromofluorobenzene (S)							94.0	97.6	71-137		
Dibromofluoromethane (S)							82.2	81.6	70-128		
1,2-Dichloroethane - d4 (S)							81.0	84.4	63-136		
Toluene-d8 (S)							90.4	83.6	70-130		

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0010

QC Prep: L624307 **QC Analytical Batch(es):** L624714
QC Prep Batch Method: 3511 **Analysis Method:** 8270D SIM
Analysis Description: Semivolatile Organic Compounds - GC/MS (SIM)

Lab Reagent Blank LRB-L624307 Matrix: AQU
Associated Lab Samples: 70440, 70442

Parameter	Units	Blank Result	MQL	Analyzed
2-Methylnaphthalene	µg/L	< 0.0200	0.0200	07/01/22 02:37
Acenaphthene	µg/L	< 0.0200	0.0200	07/01/22 02:37
Acenaphthylene	µg/L	< 0.0200	0.0200	07/01/22 02:37
Anthracene	µg/L	< 0.0200	0.0200	07/01/22 02:37
Benzo(a)anthracene	µg/L	< 0.0200	0.0200	07/01/22 02:37
Benzo(a)pyrene	µg/L	< 0.0200	0.0200	07/01/22 02:37
Benzo(b)fluoranthene	µg/L	< 0.0200	0.0200	07/01/22 02:37
Benzo(k)fluoranthene	µg/L	< 0.0200	0.0200	07/01/22 02:37
Chrysene	µg/L	< 0.0200	0.0200	07/01/22 02:37
Dibenz(a,h)anthracene	µg/L	< 0.0200	0.0200	07/01/22 02:37
Fluoranthene	µg/L	< 0.0200	0.0200	07/01/22 02:37
Fluorene	µg/L	< 0.0200	0.0200	07/01/22 02:37
Indeno(1,2,3-cd)pyrene	µg/L	< 0.0200	0.0200	07/01/22 02:37
Naphthalene	µg/L	< 0.0200	0.0200	07/01/22 02:37
Phenanthrene	µg/L	< 0.0200	0.0200	07/01/22 02:37
Pyrene	µg/L	< 0.0200	0.0200	07/01/22 02:37

Laboratory Control Sample LCS-L624307

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
2-Methylnaphthalene	µg/L	3.03	3.16	104	60-140
Acenaphthene	µg/L	3.03	3.00	99.0	60-140
Acenaphthylene	µg/L	3.03	3.09	102	60-140
Anthracene	µg/L	3.03	3.19	105	60-140
Benzo(a)anthracene	µg/L	3.03	2.98	98.3	60-140
Benzo(a)pyrene	µg/L	3.03	3.11	103	60-140
Benzo(b)fluoranthene	µg/L	3.03	3.39	112	60-140

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0010

QC Prep: L624307 **QC Analytical Batch(es):** L624714
QC Prep Batch Method: 3511 **Analysis Method:** 8270D SIM
Analysis Description: Semivolatile Organic Compounds - GC/MS (SIM)

Laboratory Control Sample LCS-L624307

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Benzo(k)fluoranthene	µg/L	3.03	2.68	88.4	60-140
Chrysene	µg/L	3.03	3.25	107	60-140
Dibenz(a,h)anthracene	µg/L	3.03	2.91	96.0	60-140
Fluoranthene	µg/L	3.03	2.95	97.3	60-140
Fluorene	µg/L	3.03	2.94	97.0	60-140
Indeno(1,2,3-cd)pyrene	µg/L	3.03	2.68	88.4	60-140
Naphthalene	µg/L	3.03	2.98	98.3	60-140
Phenanthrene	µg/L	3.03	2.96	97.6	60-140
Pyrene	µg/L	3.03	2.92	96.3	60-140

Matrix Spike & Matrix Spike Duplicate A 70353-MS-L624307 A 70353-MSD-L624307

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
2-Methylnaphthalene	µg/L	< 0.0200	3.03	3.03	3.21	3.12	106	103	60-140	2.8	30.0
Acenaphthene	µg/L	< 0.0200	3.03	3.03	2.95	2.97	97.3	98.0	60-140	0.6	30.0
Acenaphthylene	µg/L	< 0.0200	3.03	3.03	2.97	3.07	98.0	101	60-140	3.3	30.0
Anthracene	µg/L	0.0486	3.03	3.03	3.15	3.07	102	99.7	60-140	2.5	30.0
Benzo(a)anthracene	µg/L	< 0.0200	3.03	3.03	2.66	2.73	87.7	90.0	60-140	2.5	30.0
Benzo(a)pyrene	µg/L	< 0.0200	3.03	3.03	2.59	2.52	85.4	83.1	60-140	2.7	30.0
Benzo(b)fluoranthene	µg/L	< 0.0200	3.03	3.03	2.68	2.78	88.4	91.7	60-140	3.6	30.0
Benzo(k)fluoranthene	µg/L	< 0.0200	3.03	3.03	2.23	2.16	73.5	71.2	60-140	3.1	30.0
Chrysene	µg/L	< 0.0200	3.03	3.03	2.77	2.68	91.4	88.4	60-140	3.3	30.0
Dibenz(a,h)anthracene	µg/L	< 0.0200	3.03	3.03	2.21	2.15	72.9	70.9	60-140	2.7	30.0
Fluoranthene	µg/L	< 0.0200	3.03	3.03	2.82	2.82	93.0	93.0	60-140	0.0	30.0
Fluorene	µg/L	< 0.0200	3.03	3.03	2.82	2.85	93.0	94.0	60-140	1.0	30.0
Indeno(1,2,3-cd)pyrene	µg/L	< 0.0200	3.03	3.03	2.15	2.06	70.9	67.9	60-140	4.2	30.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-179-0010

QC Prep: L624307

QC Analytical Batch(es): L624714

QC Prep Batch Method: 3511

Analysis Method: 8270D SIM

Analysis Description: Semivolatile Organic Compounds - GC/MS (SIM)

Matrix Spike & Matrix Spike Duplicate A 70353-MS-L624307 A 70353-MSD-L624307

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Naphthalene	µg/L	< 0.0200	3.03	3.03	3.05	2.98	101	98.3	60-140	2.3	30.0
Phenanthrene	µg/L	< 0.0200	3.03	3.03	2.89	2.85	95.3	94.0	60-140	1.3	30.0
Pyrene	µg/L	< 0.0200	3.03	3.03	2.82	2.84	93.0	93.7	60-140	0.7	30.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0010

QC Prep: A74886 **QC Analytical Batch(es):** A74887
QC Prep Batch Method: EPA-300.0 (PREP) **Analysis Method:** EPA-300.0
Analysis Description: Anions by Ion Chromatography

Lab Reagent Blank LRB-A74886 Matrix: AQU
Associated Lab Samples: 70440, 70442

Parameter	Units	Blank Result	MQL	Analyzed
Bromide (Br)	mg/L	< 0.100	0.100	06/30/22 10:35
Chloride	mg/L	< 0.400	0.400	06/30/22 10:35
Sulfate	mg/L	< 0.500	0.500	06/30/22 10:35

Laboratory Control Sample LCS-A74886

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Bromide (Br)	mg/L	12.5	12.4	99.2	90-110
Chloride	mg/L	50.0	52.6	105	90-110
Sulfate	mg/L	62.5	64.8	104	90-110

Matrix Spike & Matrix Spike Duplicate A 70435-MS-A74886 A 70435-MSD-A74886

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Bromide (Br)	mg/L	< 1.00	125	125	123	123	98.4	98.4	80-120	0.0	20.0
Chloride	mg/L	200	500	500	721	723	104	105	80-120	0.2	20.0
Sulfate	mg/L	52.4	625	625	697	698	103	103	80-120	0.1	20.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0010

QC Prep: L624729 **QC Analytical Batch(es):** L625932
QC Prep Batch Method: MAEPH LA (Aqueous) **Analysis Method:** MAEPH LA
Analysis Description: MADEP EPH Rev 1.1

Lab Reagent Blank LRB-L624729 Matrix: AQU
Associated Lab Samples: 70440, 70442

Parameter	Units	Blank Result	MQL	Analyzed	% Recovery	% Rec Limits
Aliphatic >C10-C12	mg/L	<0.120	0.120	07/08/22 20:30		
Aliphatic >C12-C16	mg/L	<0.120	0.120	07/08/22 20:30		
Aliphatic >C16-C35	mg/L	<0.200	0.200	07/08/22 20:30		
Aromatic >C10-C12	mg/L	<0.120	0.120	07/09/22 02:58		
Aromatic >C12-C16	mg/L	<0.120	0.120	07/09/22 02:58		
Aromatic >C16-C21	mg/L	<0.120	0.120	07/09/22 02:58		
Aromatic >C21-C35	mg/L	<0.140	0.140	07/09/22 02:58		
Chlorooctadecane (S)				07/08/22 20:30	64.5	40-140
OTP Surrogate (S)				07/09/22 02:58	77.0	40-140

Laboratory Control Sample & LCS LCS-L624729 LCS-L624729

Parameter	Units	Spike Conc.	LCS Result	LCS	LCSD Result	LCSD % Rec	% Rec Limits	RPD	Max RPD
Aliphatic >C12-C16	mg/L	0.400	0.262	0.256	65.5	64.0	40-140	2.3	25
Aliphatic >C16-C35	mg/L	1.20	0.760	0.607	63.3	50.5	40-140	22.3	25
Aromatic >C10-C12	mg/L	0.400	0.244	0.311	61.0	77.7	40-140	24.1	25
Aromatic >C12-C16	mg/L	0.800	0.584	0.807	73.0	101	40-140	32.0*	25
Aromatic >C16-C21	mg/L	0.400	0.295	0.487	73.7	122	40-140	49.1*	25
Chlorooctadecane (S)					55.0	45.8	40-140		
OTP Surrogate (S)					83.0	106	40-140		

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0010

QC Prep: L625592 **QC Analytical Batch(es):** L625593
QC Prep Batch Method: MAVPH LA (Aqueous) **Analysis Method:** MAVPH LA
Analysis Description: MADEP VPH Rev 1.1

Lab Reagent Blank LRB-L625592 Matrix: AQU
Associated Lab Samples: 70440, 70442, 70444, 70445, 70446, 70447

Parameter	Units	Blank Result	MLQ	Analyzed	% Recovery	% Rec Limits
Aliphatic >C6-C8	mg/L	<0.015	0.015	07/05/22 18:23		
Aromatic >C8-C10	mg/L	<0.020	0.020	07/05/22 18:23		
Aliphatic >C8-C10	mg/L	<0.030	0.030	07/05/22 18:23		
2,5-Dibromotoluene (S)				07/05/22 18:23	81.4	50-150

Laboratory Control Sample & LCSD LCS-L625592 LCSD-L625592

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS %Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD
Aliphatic >C6-C8	mg/L	0.300	0.351	0.366	117	122	70-130	4.1	30
Aromatic >C8-C10	mg/L	0.400	0.404	0.429	101	107	70-130	6.0	30
Aliphatic >C8-C10	mg/L	0.600	0.706	0.737	118	123	70-130	4.2	30
2,5-Dibromotoluene (S)					115	115	50-150		

Shipment Receipt Form

Customer Number: **09996**

Customer Name: **Hydro-Environmental Technology, Inc.**

Report Number: **22-179-0010**

Shipping Method

Fed Ex US Postal Lab Other :
 UPS Client Courier Thermometer ID:

Shipping container/cooler uncompromised?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Number of coolers/boxes received	<input type="text" value="1"/>		
Custody seals intact on shipping container/cooler?	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> Not Present
Custody seals intact on sample bottles?	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> Not Present
Chain of Custody (COC) present?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
COC agrees with sample label(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
COC properly completed	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Samples in proper containers?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Sample containers intact?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Sufficient sample volume for indicated test(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
All samples received within holding time?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Cooler temperature in compliance?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Cooler/Samples arrived at the laboratory on ice. Samples were considered acceptable as cooling process had begun.	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Water - Sample containers properly preserved	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> N/A
Water - VOA vials free of headspace	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
Trip Blanks received with VOAs	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
Soil VOA method 5035 – compliance criteria met	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
<input type="checkbox"/> High concentration container (48 hr)	<input type="checkbox"/> Low concentration EnCore samplers (48 hr)		
<input type="checkbox"/> High concentration pre-weighed (methanol -14 d)	<input type="checkbox"/> Low conc pre-weighed vials (Sod Bis -14 d)		
Special precautions or instructions included?	<input type="radio"/> Yes	<input checked="" type="radio"/> No	

Comments:

Signature:

Date & Time:



HYDRO-ENVIRONMENTAL TECHI
Environmental Consult:
P.O. Box 60295
Lafayette, LA 70596-02
Phone (337) 261-1963 FAX (337)



Hydro-Environmental Technology, Inc.
 August Levert

22-179-0010
 09996
 06-28-2022
 12:44:59

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert **Laboratory:** Waypoint
Project Number: 1009.A62 **Collected By:** TW
Project Location: Bayou Sorrel, LA **Company:** Hydro-Environmental Technology, Inc.
Date: 6/22/2022

Sample I.D.	Type	Date/Time Sampled		Containers	Analysis Requested/Method	Comments
LT-4 (13-18) <i>70440-70441</i>	AQ	6/22/2022	15:00	(6) 40mL amber HCL (3) 40mL amber (2) 250mL amber HCL (2) 250mL plastic Nitric (1) Liter Plastic	BTEX, VPH, EPH, Chlorides, TDS, Specific Conductance, Cations*, Anions*, Total and Dissolved Metals*	4°C Dissolved Metals Field Filtered
LT-5 (13-23) <i>70442-70443</i>	AQ	6/23/2022	11:20	(6) 40mL amber HCL (3) 40mL amber (2) 250mL amber HCL (2) 250mL plastic Nitric (1) Liter Plastic	BTEX, VPH, EPH, Chlorides, TDS, Specific Conductance, Cations*, Anions*, Total and Dissolved Metals*	4°C Dissolved Metals Field Filtered
Field Blank <i>70444</i>	AQ	6/22/2022	14:00	(2) 40mL amber HCL	BTEX, VPH	4°C
Field Blank <i>70445</i>	AQ	6/23/2022	10:00	(2) 40mL amber HCL	BTEX, VPH	4°C
Trip Blank <i>70446</i>	AQ	6/22/2022	7:00	(2) 40mL amber HCL	BTEX, VPH	4°C

*Metals: Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver, Strontium, Zinc
 *Cations: Calcium, Iron, Magnesium, Manganese, Potassium, Sodium
 *Anions: Sulfate, Carbonate Alkalinity, Bicarbonate Alkalinity, Bromide
 Hold For Additional Anlysis

Relinquished By: <i>Todd Will</i>	Received By: <i>P. Howard</i>
Date/Time: <i>6/24/22 1340</i>	Date/Time: <i>6/24/22 1340</i>
Relinquished By: <i>P. Howard</i>	Received By: <i>[Signature]</i>
Date/Time: <i>6/27/22 10:15</i>	Date/Time: <i>6/27/22 1015</i>
Analysis Due: Verbal:	Written:

Rel: *[Signature]* *6/28/22 830* *[Signature]* *6-28-22 0830*



HYDRO-ENVIRONMENTAL TECHNOLOGY, INC.
 Environmental Consultants
 P.O. Box 60295
 Lafayette, LA 70596-0295
 Phone (337) 261-1963 FAX (337) 261-1953

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert **Laboratory:** Waypoint
Project Number: 1009.A62 **Collected By:** TW
Project Location: Bayou Sorrel, LA **Company:** Hydro-Environmental Technology, Inc.
Date: 6/22/2022

Sample I.D.	Type	Date/Time Sampled		Containers	Analysis Requested/Method	Comments
Trip Blank <i>70447</i>	AQ	6/23/2022	6:40	(2) 40mL amber HCL	BTEX, VPH	4°C

*Metals: Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver, Strontium, Zinc
 *Cations: Calcium, Iron, Magnesium, Manganese, Potassium, Sodium
 *Anions: Sulfate, Carbonate Alkalinity, Bicarbonate Alkalinity, Bromide
 Hold For Additional Analysis

Relinquished By: <i>Todd White</i>	Received By: <i>P. Howard</i>
Date/Time: <i>6/24/22 1340</i>	Date/Time: <i>6/24/22 1340</i>
Relinquished By: <i>P. Howard</i>	Received By: <i>[Signature]</i>
Date/Time: <i>6/27/22 10:15</i>	Date/Time: <i>6/27/22 1015</i>
Analysis Due: Verbal:	Written:

Rel: [Signature] 6/27/22 0830 *Rec'd by: [Signature] 6-28-22 0830*

7/21/2022

Hydro-Environmental Technology, Inc.
Mr. Stewart Stover, Jr.
91 Apollo Rd
Scott, LA, 70583

Ref: Report Number: 22-181-0066
Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Dear Mr. Stewart Stover, Jr.:

Waypoint Analytical Louisiana, Inc. received sample(s) on 6/30/2022 for the analyses presented in the following report. The above referenced project has been analyzed per your instructions. Unless otherwise noted, the analyses were performed in our laboratory in accordance with Standard Methods, The Solid Waste Manual SW-846, EPA Methods for Chemical Analysis of Water and Wastes and /or 40 CFR part 136.

Certain parameters (chlorine, pH, dissolved oxygen, sulfite...) are required to be analyzed within 15 minutes of sampling. Usually, but not always, any field parameter analyzed at the laboratory is outside of this holding time. Refer to sample analysis time for confirmation of holding time compliance. Analyses reported which indicate "Field" for these parameters were analyzed by the client in the field. Results for solid samples are reported on an as received or "wet weight" basis unless otherwise specified.

The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, method validations, instrumentation maintenance and calibration for all parameters (NELAP and non-NELAP) were performed in accordance with guidelines established by the USEPA (including 40 CFR 136 Method Update Rule May 2021) and NELAC unless otherwise indicated. Any parameter for which the laboratory is not officially NELAP accredited is indicated by a '~' symbol. These are not included in the scope because NELAP accreditation is either not available or has not been applied for. Additional certifications may be held/are available for parameters, where NELAP accreditation is not required or applicable. A full list of certifications is available upon request.

All quality control measures undertaken in accordance with Waypoint Analytical Louisiana, Inc. CompQAP990807A and revisions under the terms of the Louisiana Environmental Laboratory Accreditation Program (Certificate #02041) are within acceptance ranges established in that document with the exception of the items indicated and/or discussed in a Case Narrative.

The results are shown on the attached analysis sheet(s). Be aware that the time analyzed for certain samples (e.g. - BOD, CBOD, etc.) refer to the time the sample batch was begun and not necessarily to the time an individual sample was begun. Thank you for allowing Waypoint Analytical Louisiana, Inc. to serve you. Should I be of further assistance, if you have any questions or need additional information please contact me or client services.

Sincerely,



Amy Jackson
Project Manager

Laboratory's liability in any claim relating to analyses performed shall be limited to, at laboratory's option, repeating the analysis in question at laboratory's expense, or the refund of the charges paid for performance of said analysis. This report may be reproduced in full only with the written permission of the laboratory and/or the entity to which it is addressed. Results contained herein relate only to the sample(s) submitted to the laboratory.





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Certification Summary

Laboratory ID: WP MLA: Waypoint Analytical Louisiana, Inc., Marrero, LA

State	Program	Lab ID	Expiration Date
Georgia	State Program	02041	06/30/2023
Louisiana	State Program - NELAP	02041	06/30/2023

Laboratory ID: WP MTN: Waypoint Analytical, LLC., Memphis, TN

State	Program	Lab ID	Expiration Date
Alabama	State Program	40750	02/28/2023
Arkansas	State Program	88-0650	02/07/2023
California	State Program	2904	06/30/2023
Florida	State Program - NELAP	E871157	06/30/2023
Georgia	State Program	C044	02/18/2023
Georgia	State Program	04015	06/30/2023
Illinois	State Program - NELAP	200078	10/10/2022
Kentucky	State Program	80215	06/30/2022
Kentucky	State Program	KY90047	12/31/2022
Louisiana	State Program - NELAP	LA037	12/31/2022
Louisiana	State Program - NELAP	04015	06/30/2023
Mississippi	State Program	MS	02/11/2023
North Carolina	State Program	415	12/31/2022
Pennsylvania	State Program - NELAP	68-03195	05/31/2023
South Carolina	State Program	84002	06/30/2022
Tennessee	State Program	02027	02/11/2023
Texas	State Program - NELAP	T104704180	09/30/2022
Virginia	State Program	00106	06/30/2023
Virginia	State Program - NELAP	460181	09/14/2022

Sample Summary Table

Report Number: 22-181-0066
Client Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Lab No	Client Sample ID	Matrix	Date Collected	Date Received	Method	Lab ID
70730	LT-8 (14-24)	Groundwater	06/28/2022 11:45	06/30/2022 16:00		
70730	LT-8 (14-24)	Groundwater	06/28/2022 11:45	06/30/2022 16:00	8260B	WP MTN
70730	LT-8 (14-24)	Groundwater	06/28/2022 11:45	06/30/2022 16:00	6020B	WP MTN
70730	LT-8 (14-24)	Groundwater	06/28/2022 11:45	06/30/2022 16:00	MAEPH LA	WP MTN
70730	LT-8 (14-24)	Groundwater	06/28/2022 11:45	06/30/2022 16:00	8270D SIM	WP MTN
70730	LT-8 (14-24)	Groundwater	06/28/2022 11:45	06/30/2022 16:00	MAVPH LA	WP MTN
70730	LT-8 (14-24)	Groundwater	06/28/2022 11:45	06/30/2022 16:00	7470A	WP MTN
70731	LT-8 (14-24)	Aqueous	06/28/2022 11:45	06/30/2022 16:00	7470A	WP MTN
70731	LT-8 (14-24)	Aqueous	06/28/2022 11:45	06/30/2022 16:00	6020B	WP MTN
70732	LT-9 (8-18)	Groundwater	06/28/2022 15:10	06/30/2022 16:00		
70732	LT-9 (8-18)	Groundwater	06/28/2022 15:10	06/30/2022 16:00	7470A	WP MTN
70732	LT-9 (8-18)	Groundwater	06/28/2022 15:10	06/30/2022 16:00	6020B	WP MTN
70732	LT-9 (8-18)	Groundwater	06/28/2022 15:10	06/30/2022 16:00	MAVPH LA	WP MTN
70732	LT-9 (8-18)	Groundwater	06/28/2022 15:10	06/30/2022 16:00	8260B	WP MTN
70732	LT-9 (8-18)	Groundwater	06/28/2022 15:10	06/30/2022 16:00	MAEPH LA	WP MTN
70732	LT-9 (8-18)	Groundwater	06/28/2022 15:10	06/30/2022 16:00	8270D SIM	WP MTN
70733	LT-9 (8-18)	Aqueous	06/28/2022 15:10	06/30/2022 16:00	7470A	WP MTN
70733	LT-9 (8-18)	Aqueous	06/28/2022 15:10	06/30/2022 16:00	6020B	WP MTN
70734	Field Blank	Aqueous	06/28/2022 11:30	06/30/2022 16:00	8260B	WP MTN
70734	Field Blank	Aqueous	06/28/2022 11:30	06/30/2022 16:00	MAVPH LA	WP MTN
70735	Trip Blank	Aqueous	06/28/2022 07:00	06/30/2022 16:00	8260B	WP MTN
70735	Trip Blank	Aqueous	06/28/2022 07:00	06/30/2022 16:00	MAVPH LA	WP MTN



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Client: Hydro-Environmental Technology, Inc.
Project: August Levert
Lab Report Number: 22-181-0066
Date: 7/21/2022

CASE NARRATIVE

Metals Analyses Method 6020B

Sample 97890 (MW#C)

Analyte: Calcium

QC Batch No: L625962/L624865

Target analyte(s) was identified in the method blank associated with this project. Per laboratory protocol any associated affected sample result is flagged "B" to indicate that it was detected in the method blank.



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09996

Hydro-Environmental Technology, Inc.
 Mr. Stewart Stover, Jr.
 91 Apollo Rd
 Scott, LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 07/21/2022
 Received : 06/30/2022

Report Number : **22-181-0066**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70730**
 Sample ID : **LT-8 (14-24)**

Matrix: **Groundwater**
 Sampled: **6/28/2022 11:45**

Analytical Method: 6020B **Prep Batch(es):** **L624871** 07/05/22 09:20
Prep Method: 3005A

Test	Results	Units	ML	DF	Date / Time Analyzed	By	Analytical Batch
Cadmium	<0.0010	mg/L	0.0010	1	07/07/22 04:39	JTR	L625544
Calcium	198	mg/L	4.00	20	07/09/22 01:15	FDS	L625544
Chromium	0.001	mg/L	0.001	1	07/07/22 04:39	JTR	L625544
Iron	36.5	mg/L	2.00	20	07/09/22 01:15	FDS	L625544
Lead	<0.0010	mg/L	0.0010	1	07/07/22 04:39	JTR	L625544
Magnesium	61.4	mg/L	2.00	20	07/09/22 01:15	FDS	L625544
Manganese	0.761	mg/L	0.001	1	07/07/22 04:39	JTR	L625544
Potassium	8.48	mg/L	0.100	1	07/07/22 04:39	JTR	L625544
Selenium	<0.001	mg/L	0.001	1	07/07/22 04:39	JTR	L625544
Silver	<0.0010	mg/L	0.0010	1	07/07/22 04:39	JTR	L625544
Sodium	43.1	mg/L	2.00	20	07/12/22 01:00	FDS	L625544
Strontium	1.33	mg/L	0.020	20	07/09/22 01:15	FDS	L625544
Zinc	<0.010	mg/L	0.010	1	07/07/22 04:39	JTR	L625544

Analytical Method: 7470A **Prep Batch(es):** **L625525** 07/07/22 12:00
Prep Method: 7470A

Test	Results	Units	ML	DF	Date / Time Analyzed	By	Analytical Batch
Mercury	<0.00020	mg/L	0.00020	1	07/08/22 12:44	ZMT	L625859

Qualifiers/Definitions DF Dilution Factor ML Method Quantitation Limit



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Hydro-Environmental Technology, Inc.
 Mr. Stewart Stover, Jr.
 91 Apollo Rd
 Scott, LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 07/21/2022
 Received : 06/30/2022

Report Number : **22-181-0066**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70730**
 Sample ID : **LT-8 (14-24)**

Matrix: **Groundwater**
 Sampled: **6/28/2022 11:45**

Analytical Method: 8260B **Prep Batch(es):** **L625465** 07/06/22 08:38
Prep Method: 5030B

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Benzene	<0.001	mg/L	0.001	1	07/06/22 17:02	HRS	L625515
Toluene	0.003	mg/L	0.002	1	07/06/22 17:02	HRS	L625515
Ethylbenzene	<0.001	mg/L	0.001	1	07/06/22 17:02	HRS	L625515
Xylene (Total)	<0.001	mg/L	0.001	1	07/06/22 17:02		L625515
o-Xylene	<0.001	mg/L	0.001	1	07/06/22 17:02	HRS	L625515
m,p-Xylene	<0.002	mg/L	0.002	1	07/06/22 17:02	HRS	L625515
Surrogate: 4-Bromofluorobenzene	97.2		Limits: 71-137%	1	07/06/22 17:02	HRS	L625515
Surrogate: Dibromofluoromethane	83.0		Limits: 70-128%	1	07/06/22 17:02	HRS	L625515
Surrogate: 1,2-Dichloroethane - d4	83.0		Limits: 63-136%	1	07/06/22 17:02	HRS	L625515
Surrogate: Toluene-d8	78.6		Limits: 70-130%	1	07/06/22 17:02	HRS	L625515

Analytical Method: EPA-300.0 **Prep Batch(es):** **A75058** 07/12/22 15:30
Prep Method: EPA-300.0 (PREP)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Chloride	55.5	mg/L	4.00	1	07/12/22 17:11	MJM	A75092
Bromide (Br)	1.30	mg/L	1.00	1	07/12/22 17:11	MJM	A75092
Sulfate	<5.00	mg/L	5.00	1	07/12/22 17:11	MJM	A75092

Qualifiers/Definitions DF Dilution Factor MQL Method Quantitation Limit



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Hydro-Environmental Technology, Inc.
 Mr. Stewart Stover, Jr.
 91 Apollo Rd
 Scott, LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 07/21/2022
 Received : 06/30/2022

Report Number : **22-181-0066**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70730**
 Sample ID : **LT-8 (14-24)**

Matrix: **Groundwater**
 Sampled: **6/28/2022 11:45**

Analytical Method: MAEPH LA **Prep Batch(es):** L625820 07/08/22 13:30
Prep Method: MAEPH LA (Aqueous)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<0.120	mg/L	0.120	1	07/19/22 14:48	NFP	L627740
Aromatic >C10-C12	<0.120	mg/L	0.120	1	07/19/22 06:08	NFP	L627740
Aliphatic >C12-C16	<0.120	mg/L	0.120	1	07/19/22 14:48	NFP	L627740
Aromatic >C12-C16	<0.120	mg/L	0.120	1	07/19/22 06:08	NFP	L627740
Aromatic >C16-C21	<0.120	mg/L	0.120	1	07/19/22 06:08	NFP	L627740
Aliphatic >C16-C35	<0.200	mg/L	0.200	1	07/19/22 14:48	NFP	L627740
Aromatic >C21-C35	<0.140	mg/L	0.140	1	07/19/22 06:08	NFP	L627740
Surrogate: Chlorooctadecane	53.9		Limits: 40-140%	1	07/19/22 14:48	NFP	MAEPH LA
Surrogate: OTP Surrogate	53.6		Limits: 40-140%	1	07/19/22 06:08	NFP	MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L625592 07/05/22 16:19
Prep Method: MAVPH LA (Aqueous)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<0.015	mg/L	0.015	1	07/06/22 03:18	HRS	L625593
Aliphatic >C8-C10	<0.030	mg/L	0.030	1	07/06/22 03:18	HRS	L625593
Aromatic >C8-C10	<0.020	mg/L	0.020	1	07/06/22 03:18	HRS	L625593
Surrogate: 2,5-Dibromotoluene	79.9		Limits: 50-150%	1	07/06/22 03:18	HRS	MAVPH LA

Qualifiers/Definitions DF Dilution Factor MQL Method Quantitation Limit



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 91 Apollo Rd
 Scott, LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 07/21/2022
 Received : 06/30/2022

Report Number : **22-181-0066**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70731**
 Sample ID : **LT-8 (14-24)**

Matrix: **Aqueous**
 Sampled: **6/28/2022 11:45**

Analytical Method: 6020B **Prep Batch(es):** L624865 07/05/22 08:57
Prep Method: 3005A

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Dissolved Arsenic	0.231	mg/L	0.0200	20	07/09/22 00:54	FDS	L625544
Dissolved Barium	0.717	mg/L	0.001	1	07/07/22 03:34	JTR	L625544
Dissolved Cadmium	<0.0010	mg/L	0.0010	1	07/07/22 03:34	JTR	L625544
Dissolved Calcium	203	mg/L	4.00	20	07/09/22 00:54	FDS	L625544
Dissolved Chromium	<0.001	mg/L	0.001	1	07/07/22 03:34	JTR	L625544
Dissolved Iron	34.2	mg/L	2.00	20	07/09/22 00:54	FDS	L625544
Dissolved Lead	<0.0010	mg/L	0.0010	1	07/07/22 03:34	JTR	L625544
Dissolved Magnesium	62.8	mg/L	2.00	20	07/09/22 00:54	FDS	L625544
Dissolved Manganese	0.733	mg/L	0.001	1	07/07/22 03:34	JTR	L625544
Dissolved Potassium	8.24	mg/L	0.100	1	07/07/22 03:34	JTR	L625544
Dissolved Selenium	0.001	mg/L	0.001	1	07/07/22 03:34	JTR	L625544
Dissolved Silver	<0.0010	mg/L	0.0010	1	07/07/22 03:34	JTR	L625544
Dissolved Sodium	40.6	mg/L	2.00	20	07/12/22 01:56	FDS	L625544
Dissolved Strontium	1.30	mg/L	0.020	20	07/09/22 00:54	FDS	L625544
Dissolved Zinc	<0.010	mg/L	0.010	1	07/07/22 03:34	JTR	L625544

Analytical Method: 7470A **Prep Batch(es):** L625523 07/07/22 12:00
Prep Method: 7470A

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Dissolved Mercury	<0.00020	mg/L	0.00020	1	07/08/22 12:00	ZMT	L625859

Qualifiers/Definitions DF Dilution Factor MQL Method Quantitation Limit



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09996

Hydro-Environmental Technology, Inc.
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 Scott, LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 07/21/2022
 Received : 06/30/2022

Report Number : **22-181-0066**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70732**
 Sample ID : **LT-9 (8-18)**

Matrix: **Groundwater**
 Sampled: **6/28/2022 15:10**

Analytical Method: 6020B **Prep Batch(es):** **L624871** 07/05/22 09:20
Prep Method: 3005A

Test	Results	Units	ML	DF	Date / Time Analyzed	By	Analytical Batch
Cadmium	<0.0010	mg/L	0.0010	1	07/07/22 04:45	JTR	L625544
Calcium	202	mg/L	4.00	20	07/09/22 01:29	FDS	L625544
Chromium	0.001	mg/L	0.001	1	07/07/22 04:45	JTR	L625544
Iron	37.4	mg/L	2.00	20	07/09/22 01:29	FDS	L625544
Lead	<0.0010	mg/L	0.0010	1	07/07/22 04:45	JTR	L625544
Magnesium	62.1	mg/L	2.00	20	07/09/22 01:29	FDS	L625544
Manganese	0.822	mg/L	0.001	1	07/07/22 04:45	JTR	L625544
Potassium	8.57	mg/L	0.100	1	07/07/22 04:45	JTR	L625544
Selenium	<0.001	mg/L	0.001	1	07/07/22 04:45	JTR	L625544
Silver	<0.0010	mg/L	0.0010	1	07/07/22 04:45	JTR	L625544
Sodium	44.6	mg/L	2.00	20	07/12/22 01:04	FDS	L625544
Strontium	1.32	mg/L	0.020	20	07/09/22 01:29	FDS	L625544
Zinc	<0.010	mg/L	0.010	1	07/07/22 04:45	JTR	L625544

Analytical Method: 7470A **Prep Batch(es):** **L625525** 07/07/22 12:00
Prep Method: 7470A

Test	Results	Units	ML	DF	Date / Time Analyzed	By	Analytical Batch
Mercury	<0.00020	mg/L	0.00020	1	07/08/22 12:46	ZMT	L625859

Qualifiers/Definitions DF Dilution Factor ML Method Quantitation Limit



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Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 07/21/2022
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Report Number : **22-181-0066**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70732**
 Sample ID : **LT-9 (8-18)**

Matrix: **Groundwater**
 Sampled: **6/28/2022 15:10**

Analytical Method: 8260B **Prep Batch(es):** L625465 07/06/22 08:38
Prep Method: 5030B

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Benzene	<0.001	mg/L	0.001	1	07/06/22 17:43	HRS	L625515
Toluene	<0.002	mg/L	0.002	1	07/06/22 17:43	HRS	L625515
Ethylbenzene	<0.001	mg/L	0.001	1	07/06/22 17:43	HRS	L625515
Xylene (Total)	<0.001	mg/L	0.001	1	07/06/22 17:43		L625515
o-Xylene	<0.001	mg/L	0.001	1	07/06/22 17:43	HRS	L625515
m,p-Xylene	<0.002	mg/L	0.002	1	07/06/22 17:43	HRS	L625515
Surrogate: 4-Bromofluorobenzene	97.2		Limits: 71-137%	1	07/06/22 17:43	HRS	L625515
Surrogate: Dibromofluoromethane	84.0		Limits: 70-128%	1	07/06/22 17:43	HRS	L625515
Surrogate: 1,2-Dichloroethane - d4	87.8		Limits: 63-136%	1	07/06/22 17:43	HRS	L625515
Surrogate: Toluene-d8	78.6		Limits: 70-130%	1	07/06/22 17:43	HRS	L625515

Analytical Method: EPA-300.0 **Prep Batch(es):** A75058 07/12/22 15:30
Prep Method: EPA-300.0 (PREP)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Chloride	88.4	mg/L	2.00	1	07/12/22 17:49	MJM	A75092
Bromide (Br)	0.912	mg/L	0.500	1	07/12/22 17:49	MJM	A75092
Sulfate	<2.50	mg/L	2.50	1	07/12/22 17:49	MJM	A75092

Qualifiers/Definitions DF Dilution Factor MQL Method Quantitation Limit

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Bayou Sorrel, LA

Report Date : 07/21/2022
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Report Number : **22-181-0066**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70732**
Sample ID : **LT-9 (8-18)**

Matrix: **Groundwater**
Sampled: **6/28/2022 15:10**

Analytical Method: MAEPH LA **Prep Batch(es):** L625820 07/08/22 13:30
Prep Method: MAEPH LA (Aqueous)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<0.120	mg/L	0.120	1	07/19/22 15:13	NFP	L627740
Aromatic >C10-C12	<0.120	mg/L	0.120	1	07/19/22 06:32	NFP	L627740
Aliphatic >C12-C16	<0.120	mg/L	0.120	1	07/19/22 15:13	NFP	L627740
Aromatic >C12-C16	<0.120	mg/L	0.120	1	07/19/22 06:32	NFP	L627740
Aromatic >C16-C21	<0.120	mg/L	0.120	1	07/19/22 06:32	NFP	L627740
Aliphatic >C16-C35	<0.200	mg/L	0.200	1	07/19/22 15:13	NFP	L627740
Aromatic >C21-C35	<0.140	mg/L	0.140	1	07/19/22 06:32	NFP	L627740
Surrogate: Chlorooctadecane	61.5		Limits: 40-140%	1	07/19/22 15:13	NFP	MAEPH LA
Surrogate: OTP Surrogate	56.9		Limits: 40-140%	1	07/19/22 06:32	NFP	MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L625592 07/05/22 16:19
Prep Method: MAVPH LA (Aqueous)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<0.015	mg/L	0.015	1	07/06/22 03:59	HRS	L625593
Aliphatic >C8-C10	<0.030	mg/L	0.030	1	07/06/22 03:59	HRS	L625593
Aromatic >C8-C10	<0.020	mg/L	0.020	1	07/06/22 03:59	HRS	L625593
Surrogate: 2,5-Dibromotoluene	77.8		Limits: 50-150%	1	07/06/22 03:59	HRS	MAVPH LA

Qualifiers/Definitions DF Dilution Factor MQL Method Quantitation Limit



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Report Number : **22-181-0066**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70733**
 Sample ID : **LT-9 (8-18)**

Matrix: **Aqueous**
 Sampled: **6/28/2022 15:10**

Analytical Method: 6020B **Prep Batch(es):** **L624865** 07/05/22 08:57
Prep Method: 3005A

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Dissolved Arsenic	0.258	mg/L	0.0200	20	07/09/22 00:58	FDS	L625544
Dissolved Barium	0.733	mg/L	0.001	1	07/07/22 03:40	JTR	L625544
Dissolved Cadmium	<0.0010	mg/L	0.0010	1	07/07/22 03:40	JTR	L625544
Dissolved Calcium	217	mg/L	4.00	20	07/09/22 00:58	FDS	L625544
Dissolved Chromium	<0.001	mg/L	0.001	1	07/07/22 03:40	JTR	L625544
Dissolved Iron	40.2	mg/L	2.00	20	07/09/22 00:58	FDS	L625544
Dissolved Lead	<0.0010	mg/L	0.0010	1	07/07/22 03:40	JTR	L625544
Dissolved Magnesium	61.9	mg/L	2.00	20	07/09/22 00:58	FDS	L625544
Dissolved Manganese	0.811	mg/L	0.001	1	07/07/22 03:40	JTR	L625544
Dissolved Potassium	8.57	mg/L	0.100	1	07/07/22 03:40	JTR	L625544
Dissolved Selenium	<0.001	mg/L	0.001	1	07/07/22 03:40	JTR	L625544
Dissolved Silver	<0.0010	mg/L	0.0010	1	07/07/22 03:40	JTR	L625544
Dissolved Sodium	44.8	mg/L	2.00	20	07/12/22 02:00	FDS	L625544
Dissolved Strontium	1.41	mg/L	0.020	20	07/09/22 00:58	FDS	L625544
Dissolved Zinc	<0.010	mg/L	0.010	1	07/07/22 03:40	JTR	L625544

Analytical Method: 7470A **Prep Batch(es):** **L625523** 07/07/22 12:00
Prep Method: 7470A

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Dissolved Mercury	<0.00020	mg/L	0.00020	1	07/08/22 12:06	ZMT	L625859

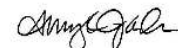
Qualifiers/Definitions DF Dilution Factor MQL Method Quantitation Limit

09996

Hydro-Environmental Technology, Inc.
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Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

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Report Number : **22-181-0066**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70734**
Sample ID : **Field Blank**

Matrix: **Aqueous**
Sampled: **6/28/2022 11:30**

Analytical Method: 8260B **Prep Batch(es):** L625465 07/06/22 08:38
Prep Method: 5030B

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Benzene	<0.001	mg/L	0.001	1	07/06/22 18:24	HRS	L625515
Toluene	<0.002	mg/L	0.002	1	07/06/22 18:24	HRS	L625515
Ethylbenzene	<0.001	mg/L	0.001	1	07/06/22 18:24	HRS	L625515
Xylene (Total)	<0.001	mg/L	0.001	1	07/06/22 18:24		L625515
o-Xylene	<0.001	mg/L	0.001	1	07/06/22 18:24	HRS	L625515
m,p-Xylene	<0.002	mg/L	0.002	1	07/06/22 18:24	HRS	L625515
Surrogate: 4-Bromofluorobenzene	94.2		Limits: 71-137%	1	07/06/22 18:24	HRS	L625515
Surrogate: Dibromofluoromethane	88.4		Limits: 70-128%	1	07/06/22 18:24	HRS	L625515
Surrogate: 1,2-Dichloroethane - d4	88.0		Limits: 63-136%	1	07/06/22 18:24	HRS	L625515
Surrogate: Toluene-d8	80.2		Limits: 70-130%	1	07/06/22 18:24	HRS	L625515

Analytical Method: MAVPH LA **Prep Batch(es):** L625592 07/05/22 16:19
Prep Method: MAVPH LA (Aqueous)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<0.015	mg/L	0.015	1	07/06/22 00:34	HRS	L625593
Aliphatic >C8-C10	<0.030	mg/L	0.030	1	07/06/22 00:34	HRS	L625593
Aromatic >C8-C10	<0.020	mg/L	0.020	1	07/06/22 00:34	HRS	L625593
Surrogate: 2,5-Dibromotoluene	83.8		Limits: 50-150%	1	07/06/22 00:34	HRS	MAVPH LA

Qualifiers/Definitions DF Dilution Factor MQL Method Quantitation Limit

09996

Hydro-Environmental Technology, Inc.
Mr. Stewart Stover, Jr.
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Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 07/21/2022
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Report Number : **22-181-0066**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70735**
Sample ID : **Trip Blank**

Matrix: **Aqueous**
Sampled: **6/28/2022 7:00**

Analytical Method: 8260B **Prep Batch(es):** L625465 07/06/22 08:38
Prep Method: 5030B

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Benzene	<0.001	mg/L	0.001	1	07/06/22 18:44	HRS	L625515
Toluene	<0.002	mg/L	0.002	1	07/06/22 18:44	HRS	L625515
Ethylbenzene	<0.001	mg/L	0.001	1	07/06/22 18:44	HRS	L625515
Xylene (Total)	<0.001	mg/L	0.001	1	07/06/22 18:44		L625515
o-Xylene	<0.001	mg/L	0.001	1	07/06/22 18:44	HRS	L625515
m,p-Xylene	<0.002	mg/L	0.002	1	07/06/22 18:44	HRS	L625515
Surrogate: 4-Bromofluorobenzene	100		Limits: 71-137%	1	07/06/22 18:44	HRS	L625515
Surrogate: Dibromofluoromethane	86.2		Limits: 70-128%	1	07/06/22 18:44	HRS	L625515
Surrogate: 1,2-Dichloroethane - d4	89.0		Limits: 63-136%	1	07/06/22 18:44	HRS	L625515
Surrogate: Toluene-d8	84.4		Limits: 70-130%	1	07/06/22 18:44	HRS	L625515

Analytical Method: MAVPH LA **Prep Batch(es):** L625592 07/05/22 16:19
Prep Method: MAVPH LA (Aqueous)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<0.015	mg/L	0.015	1	07/06/22 01:15	HRS	L625593
Aliphatic >C8-C10	<0.030	mg/L	0.030	1	07/06/22 01:15	HRS	L625593
Aromatic >C8-C10	<0.020	mg/L	0.020	1	07/06/22 01:15	HRS	L625593
Surrogate: 2,5-Dibromotoluene	75.8		Limits: 50-150%	1	07/06/22 01:15	HRS	MAVPH LA

Qualifiers/Definitions DF Dilution Factor MQL Method Quantitation Limit

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-181-0066

QC Analytical Batch: A74938
Analysis Method: 2320B-2011
Analysis Description: Alkalinity

Lab Reagent Blank LRB Matrix: AQU
Associated Lab Samples: 70730, 70732

Parameter	Units	Blank Result	MLQ	Analyzed
Alkalinity (as CaCO3)	mg/L	< 10	10	07/06/22 11:00

Duplicate A 70435-DUP

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Alkalinity (as CaCO3)	mg/L	210	210	0.0	25	07/06/22 11:00

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-181-0066

QC Analytical Batch: A74963
Analysis Method: 2510B-2011
Analysis Description: Conductivity

Lab Reagent Blank LRB Matrix: AQU
Associated Lab Samples: 70730, 70732

Parameter	Units	Blank Result	MQL	Analyzed
Conductivity	µmhos/cm	< 1.00	1.00	07/11/22 15:53

Laboratory Control Sample

LCS

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Conductivity	µmhos/cm	1410	1410	100	95-105

Duplicate A 70579-DUP

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Conductivity	µmhos/cm	35.2	35.2	0.0	20.0	07/11/22 15:53

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-181-0066

QC Analytical Batch: A74894
Analysis Method: 2540C-2011
Analysis Description: Total Dissolved Solids (TDS)

Lab Reagent Blank LRB Matrix: AQU
Associated Lab Samples: 70730, 70732

Parameter	Units	Blank Result	ML	Analyzed
Total Dissolved Solids	mg/L	< 10	10	07/01/22 15:10

Duplicate A 70730-DUP

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Total Dissolved Solids	mg/L	951	949	0.2	10	07/01/22 15:10

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-181-0066

QC Prep: L624865 **QC Analytical Batch(es):** L625544,L625962,L626214
QC Prep Batch Method: 3005A **Analysis Method:** 6020B
Analysis Description: Metals Analyses

Lab Reagent Blank LRB-L624865 Matrix: AQU
Associated Lab Samples: 70731, 70733

Parameter	Units	Blank Result	MQL	Analyzed
Dissolved Arsenic	mg/L	<0.0010	0.0010	07/07/22 03:12
Dissolved Barium	mg/L	<0.001	0.001	07/07/22 03:12
Dissolved Calcium	mg/L	1.40	0.200	07/09/22 00:41
Dissolved Cadmium	mg/L	<0.0010	0.0010	07/07/22 03:12
Dissolved Chromium	mg/L	<0.001	0.001	07/07/22 03:12
Dissolved Iron	mg/L	<0.100	0.100	07/07/22 03:12
Dissolved Lead	mg/L	<0.0010	0.0010	07/07/22 03:12
Dissolved Magnesium	mg/L	0.124	0.100	07/07/22 03:12
Dissolved Manganese	mg/L	<0.001	0.001	07/07/22 03:12
Dissolved Potassium	mg/L	<0.100	0.100	07/07/22 03:12
Dissolved Selenium	mg/L	<0.001	0.001	07/07/22 03:12
Dissolved Silver	mg/L	<0.0010	0.0010	07/07/22 03:12
Dissolved Sodium	mg/L	<0.100	0.100	07/12/22 01:34
Dissolved Strontium	mg/L	0.003	0.001	07/07/22 03:12
Dissolved Zinc	mg/L	<0.010	0.010	07/07/22 03:12

Laboratory Control Sample & LCSD LCS-L624865 LCSD-L624865

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS %Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD
Dissolved Arsenic	mg/L	0.0500	0.0479	0.0507	96.0	101	80-120	5.6	20
Dissolved Barium	mg/L	0.100	0.101	0.099	101	99.0	80-120	1.7	20
Dissolved Calcium	mg/L	10.0	10.6	9.67	106	97.0	80-120	9.1	20
Dissolved Cadmium	mg/L	0.0100	0.0095	0.0092	95.0	93.0	80-120	2.3	20
Dissolved Chromium	mg/L	0.100	0.100	0.094	100	95.0	80-120	5.6	20
Dissolved Iron	mg/L	10.0	9.11	9.23	91.0	92.0	80-120	1.3	20
Dissolved Lead	mg/L	0.0500	0.0473	0.0478	95.0	96.0	80-120	1.0	20

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-181-0066

QC Prep: L624865

QC Analytical Batch(es): L625544,L625962,L626214

QC Prep Batch Method: 3005A

Analysis Method: 6020B

Analysis Description: Metals Analyses

Laboratory Control Sample & LCSD LCS-L624865 LCSD-L624865

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS %Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD
Dissolved Magnesium	mg/L	10.0	8.91	8.86	89.0	89.0	80-120	0.5	20
Dissolved Manganese	mg/L	0.100	0.105	0.104	105	104	80-120	0.9	20
Dissolved Potassium	mg/L	10.0	9.05	9.20	91.0	92.0	80-120	1.6	20
Dissolved Selenium	mg/L	0.100	0.097	0.102	98.0	102	80-120	4.5	20
Dissolved Silver	mg/L	0.0100	0.0099	0.0096	100	96.0	80-120	3.1	20
Dissolved Sodium	mg/L	10.0	9.15	9.24	92.0	92.0	80-120	0.9	20
Dissolved Strontium	mg/L	0.100	0.094	0.097	95.0	97.0	80-120	2.2	20
Dissolved Zinc	mg/L	0.500	0.528	0.491	106	98.0	80-120	7.2	20

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-181-0066

QC Prep: L624871 **QC Analytical Batch(es):** L625544,L625962,L626214
QC Prep Batch Method: 3005A **Analysis Method:** 6020B
Analysis Description: Metals Analyses

Lab Reagent Blank LRB-L624871 Matrix: AQU
Associated Lab Samples: 70730, 70732

Parameter	Units	Blank Result	MQL	Analyzed
Arsenic	mg/L	<0.0010	0.0010	07/07/22 04:21
Barium	mg/L	<0.001	0.001	07/07/22 04:21
Calcium	mg/L	<0.200	0.200	07/07/22 04:21
Cadmium	mg/L	<0.0010	0.0010	07/07/22 04:21
Chromium	mg/L	<0.001	0.001	07/07/22 04:21
Iron	mg/L	<0.100	0.100	07/07/22 04:21
Lead	mg/L	<0.0010	0.0010	07/07/22 04:21
Magnesium	mg/L	<0.100	0.100	07/07/22 04:21
Manganese	mg/L	<0.001	0.001	07/07/22 04:21
Potassium	mg/L	<0.100	0.100	07/07/22 04:21
Selenium	mg/L	<0.001	0.001	07/07/22 04:21
Silver	mg/L	<0.0010	0.0010	07/07/22 04:21
Sodium	mg/L	<0.100	0.100	07/12/22 00:42
Strontium	mg/L	<0.001	0.001	07/07/22 04:21
Zinc	mg/L	<0.010	0.010	07/07/22 04:21

Laboratory Control Sample LCS-L624871

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Arsenic	mg/L	0.0500	0.0504	101	80-120
Barium	mg/L	0.100	0.103	103	80-120
Calcium	mg/L	10.0	9.32	93.0	80-120
Cadmium	mg/L	0.0100	0.0099	99.0	80-120
Chromium	mg/L	0.100	0.103	103	80-120
Iron	mg/L	10.0	9.72	97.0	80-120
Lead	mg/L	0.0500	0.0496	99.0	80-120
Magnesium	mg/L	10.0	9.15	92.0	80-120

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-181-0066

QC Prep: L624871 **QC Analytical Batch(es):** L625544,L625962,L626214
QC Prep Batch Method: 3005A **Analysis Method:** 6020B
Analysis Description: Metals Analyses

Laboratory Control Sample LCS-L624871

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Manganese	mg/L	0.100	0.109	109	80-120
Potassium	mg/L	10.0	9.72	97.0	80-120
Selenium	mg/L	0.100	0.102	102	80-120
Silver	mg/L	0.0100	0.0099	99.0	80-120
Sodium	mg/L	10.0	9.45	95.0	80-120
Strontium	mg/L	0.100	0.096	97.0	80-120
Zinc	mg/L	0.500	0.524	105	80-120

Matrix Spike & Matrix Spike Duplicate Q 97890-MS-L624871 Q 97890-MSD-L624871

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Arsenic	mg/L	<0.0010	0.0500	0.0500	0.0516	0.0511	103	102	75-125	0.9	20
Barium	mg/L	0.028	0.100	0.100	0.133	0.131	104	102	75-125	1.5	20
Calcium	mg/L	8.97	10.0	10.0	18.3	18.0	93.0	90.0	75-125	1.6	20
Cadmium	mg/L	<0.0010	0.0100	0.0100	0.0101	0.0101	101	101	75-125	0.0	20
Chromium	mg/L	0.003	0.100	0.100	0.103	0.104	100	101	75-125	0.9	20
Iron	mg/L	<0.100	10.0	10.0	9.83	9.33	98.0	93.0	75-125	5.2	20
Lead	mg/L	<0.0010	0.0500	0.0500	0.0504	0.0495	101	99.0	75-125	1.8	20
Magnesium	mg/L	2.84	10.0	10.0	12.6	11.9	98.0	91.0	75-125	5.7	20
Manganese	mg/L	0.006	0.100	0.100	0.115	0.114	108	107	75-125	0.8	20
Potassium	mg/L	0.875	10.0	10.0	10.8	10.2	99.0	93.0	75-125	5.7	20
Selenium	mg/L	<0.001	0.100	0.100	0.100	0.101	100	101	75-125	0.9	20
Silver	mg/L	<0.0010	0.0100	0.0100	0.0102	0.0095	102	96.0	75-125	6.5	20
Sodium	mg/L	38.0	10.0	10.0	50.0	48.0	120	100	75-125	4.0	20
Strontium	mg/L	0.058	0.100	0.100	0.156	0.153	98.0	95.0	75-125	1.9	20

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-181-0066

QC Prep: L624871

QC Analytical Batch(es): L625544,L625962,L626214

QC Prep Batch Method: 3005A

Analysis Method: 6020B

Analysis Description: Metals Analyses

Matrix Spike & Matrix Spike Duplicate Q 97890-MS-L624871 Q 97890-MSD-L624871

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Zinc	mg/L	<0.010	0.500	0.500	0.524	0.520	103	103	75-125	0.7	20

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-181-0066

QC Prep: L625523

QC Analytical Batch(es): L625859

QC Prep Batch Method: 7470A

Analysis Method: 7470A

Analysis Description: Total Aqueous Mercury Analysis - CVAA

Lab Reagent Blank

LRB-L625523

Matrix: AQU

Associated Lab Samples: 70731, 70733

Parameter	Units	Blank Result	MLQ	Analyzed
Dissolved Mercury	mg/L	<0.00020	0.00020	07/08/22 11:46

Laboratory Control Sample & LCSD

LCS-L625523

LCSD-L625523

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS %Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD
Dissolved Mercury	mg/L	0.00400	0.00432	0.00436	108	109	80-120	0.9	20

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-181-0066

QC Prep: L625525 **QC Analytical Batch(es):** L625859
QC Prep Batch Method: 7470A **Analysis Method:** 7470A
Analysis Description: Total Aqueous Mercury Analysis - CVAA

Lab Reagent Blank LRB-L625525 Matrix: AQU
Associated Lab Samples: 70730, 70732

Parameter	Units	Blank Result	MQL	Analyzed
Mercury	mg/L	<0.00020	0.00020	07/08/22 12:08

Laboratory Control Sample LCS-L625525

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Mercury	mg/L	0.00400	0.00437	109	80-120

Matrix Spike & Matrix Spike Duplicate G 85137-MS-L625525 G 85137-MSD-L625525

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Mercury	mg/L	<0.00020	0.00800	0.00800	0.00800	0.00740	100	93.0	80-120	7.7	20

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-181-0066

QC Prep: L625465 **QC Analytical Batch(es):** L625515
QC Prep Batch Method: 5030B **Analysis Method:** 8260B
Analysis Description: Volatile Organic Compounds - GC/MS

Lab Reagent Blank LRB-L625465 Matrix: AQU
Associated Lab Samples: 70730, 70732, 70734, 70735

Parameter	Units	Blank Result	MQL	Analyzed	% Recovery	% Rec Limits
Benzene	mg/L	<0.001	0.001	07/06/22 11:53		
Ethylbenzene	mg/L	<0.001	0.001	07/06/22 11:53		
Toluene	mg/L	<0.002	0.002	07/06/22 11:53		
o-Xylene	mg/L	<0.001	0.001	07/06/22 11:53		
m,p-Xylene	mg/L	<0.002	0.002	07/06/22 11:53		
4-Bromofluorobenzene (S)				07/06/22 11:53	93.8	71-137
Dibromofluoromethane (S)				07/06/22 11:53	83.0	70-128
1,2-Dichloroethane - d4 (S)				07/06/22 11:53	84.0	63-136
Toluene-d8 (S)				07/06/22 11:53	81.6	70-130

Laboratory Control Sample LCS-L625465

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Benzene	mg/L	0.100	0.088	88.8	70-130
Ethylbenzene	mg/L	0.100	0.088	88.7	80-120
Toluene	mg/L	0.100	0.089	89.3	80-120
o-Xylene	mg/L	0.100	0.101	101	70-130
m,p-Xylene	mg/L	0.200	0.178	89.0	75-125
4-Bromofluorobenzene (S)				86.4	71-137
Dibromofluoromethane (S)				79.6	70-128
1,2-Dichloroethane - d4 (S)				77.4	63-136
Toluene-d8 (S)				94.4	70-130

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-181-0066

QC Prep: L625465 **QC Analytical Batch(es):** L625515
QC Prep Batch Method: 5030B **Analysis Method:** 8260B
Analysis Description: Volatile Organic Compounds - GC/MS

Matrix Spike & Matrix Spike Duplicate A 70732-MS-L625465 A 70732-MSD-L625465

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Benzene	mg/L	<0.001	0.100	0.100	0.091	0.092	91.2	92.8	58-143	1.7	30
Ethylbenzene	mg/L	<0.001	0.100	0.100	0.092	0.095	92.2	95.2	65-141	3.2	30
Toluene	mg/L	<0.002	0.100	0.100	0.089	0.093	88.8	92.9	64-145	4.4	30
o-Xylene	mg/L	<0.001	0.100	0.100	0.097	0.105	97.9	105	65-142	6.9	30
m,p-Xylene	mg/L	<0.002	0.200	0.200	0.177	0.181	88.5	90.5	61-149	2.2	30
4-Bromofluorobenzene (S)							80.2	83.0	71-137		
Dibromofluoromethane (S)							81.6	77.6	70-128		
1,2-Dichloroethane - d4 (S)							79.0	77.0	63-136		
Toluene-d8 (S)							79.8	84.8	70-130		

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-181-0066

QC Prep: L625125 **QC Analytical Batch(es):** L626071
QC Prep Batch Method: 3511 **Analysis Method:** 8270D SIM
Analysis Description: Semivolatile Organic Compounds - GC/MS (SIM)

Lab Reagent Blank LRB-L625125 Matrix: AQU
Associated Lab Samples: 70730, 70732

Parameter	Units	Blank Result	MQL	Analyzed
2-Methylnaphthalene	µg/L	< 0.0200	0.0200	07/08/22 15:16
Acenaphthene	µg/L	< 0.0200	0.0200	07/08/22 15:16
Acenaphthylene	µg/L	< 0.0200	0.0200	07/08/22 15:16
Anthracene	µg/L	< 0.0200	0.0200	07/08/22 15:16
Benzo(a)anthracene	µg/L	< 0.0200	0.0200	07/08/22 15:16
Benzo(a)pyrene	µg/L	< 0.0200	0.0200	07/08/22 15:16
Benzo(b)fluoranthene	µg/L	< 0.0200	0.0200	07/08/22 15:16
Benzo(k)fluoranthene	µg/L	< 0.0200	0.0200	07/08/22 15:16
Chrysene	µg/L	< 0.0200	0.0200	07/08/22 15:16
Dibenz(a,h)anthracene	µg/L	< 0.0200	0.0200	07/08/22 15:16
Fluoranthene	µg/L	< 0.0200	0.0200	07/08/22 15:16
Fluorene	µg/L	< 0.0200	0.0200	07/08/22 15:16
Indeno(1,2,3-cd)pyrene	µg/L	< 0.0200	0.0200	07/08/22 15:16
Naphthalene	µg/L	< 0.0200	0.0200	07/08/22 15:16
Phenanthrene	µg/L	< 0.0200	0.0200	07/08/22 15:16
Pyrene	µg/L	< 0.0200	0.0200	07/08/22 15:16

Laboratory Control Sample & LCSD LCS-L625125 LCSD-L625125

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS %Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD
2-Methylnaphthalene	µg/L	3.03	3.33	3.26	110	108	60-140	2.1	20.0
Acenaphthene	µg/L	3.03	2.81	2.95	92.7	97.3	60-140	4.8	20.0
Acenaphthylene	µg/L	3.03	2.98	3.10	98.3	102	60-140	3.9	20.0
Anthracene	µg/L	3.03	3.06	3.34	101	110	60-140	8.7	20.0
Benzo(a)anthracene	µg/L	3.03	3.14	3.05	104	101	60-140	2.9	20.0
Benzo(a)pyrene	µg/L	3.03	3.14	3.20	104	106	60-140	1.8	20.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-181-0066

QC Prep: L625125 **QC Analytical Batch(es):** L626071
QC Prep Batch Method: 3511 **Analysis Method:** 8270D SIM
Analysis Description: Semivolatile Organic Compounds - GC/MS (SIM)

Laboratory Control Sample & LCSD LCS-L625125 LCSD-L625125

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS %Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD
Benzo(b)fluoranthene	µg/L	3.03	3.41	2.68	113	88.4	60-140	23.9*	20.0
Benzo(k)fluoranthene	µg/L	3.03	2.85	3.58	94.0	118	60-140	22.7*	20.0
Chrysene	µg/L	3.03	3.09	3.29	102	109	60-140	6.2	20.0
Dibenz(a,h)anthracene	µg/L	3.03	3.17	3.21	105	106	60-140	1.2	20.0
Fluoranthene	µg/L	3.03	2.94	3.10	97.0	102	60-140	5.2	20.0
Fluorene	µg/L	3.03	2.71	2.72	89.4	89.7	60-140	0.3	20.0
Indeno(1,2,3-cd)pyrene	µg/L	3.03	2.85	3.15	94.0	104	60-140	10.0	20.0
Naphthalene	µg/L	3.03	3.09	2.94	102	97.0	60-140	4.9	20.0
Phenanthrene	µg/L	3.03	3.12	3.09	103	102	60-140	0.9	20.0
Pyrene	µg/L	3.03	3.02	3.20	99.6	106	60-140	5.7	20.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-181-0066

QC Prep: A75058 **QC Analytical Batch(es):** A75092
QC Prep Batch Method: EPA-300.0 (PREP) **Analysis Method:** EPA-300.0
Analysis Description: Anions by Ion Chromatography

Lab Reagent Blank LRB-A75058 Matrix: AQU
Associated Lab Samples: 70730, 70732

Parameter	Units	Blank Result	MQL	Analyzed
Bromide (Br)	mg/L	< 0.100	0.100	07/12/22 16:45
Chloride	mg/L	< 0.400	0.400	07/12/22 16:45
Sulfate	mg/L	< 0.500	0.500	07/12/22 16:45

Laboratory Control Sample LCS-A75058

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Bromide (Br)	mg/L	12.5	11.6	92.8	90-110
Chloride	mg/L	50.0	50.9	102	90-110
Sulfate	mg/L	62.5	64.1	103	90-110

Matrix Spike & Matrix Spike Duplicate A 70730-MS-A75058 A 70730-MSD-A75058

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Bromide (Br)	mg/L	1.30	125	125	117	117	92.5	92.5	80-120	0.0	20.0
Chloride	mg/L	55.5	500	500	570	569	103	103	80-120	0.1	20.0
Sulfate	mg/L	< 5.00	625	625	638	636	102	102	80-120	0.3	20.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-181-0066

QC Prep: L625820 **QC Analytical Batch(es):** L627740
QC Prep Batch Method: MAEPH LA (Aqueous) **Analysis Method:** MAEPH LA
Analysis Description: MADEP EPH Rev 1.1

Lab Reagent Blank LRB-L625820 Matrix: AQU
Associated Lab Samples: 70730, 70732

Parameter	Units	Blank Result	MQL	Analyzed	% Recovery	% Rec Limits
Aliphatic >C10-C12	mg/L	<0.080	0.120	07/19/22 12:43		
Aliphatic >C12-C16	mg/L	<0.080	0.120	07/19/22 12:43		
Aliphatic >C16-C35	mg/L	<0.133	0.200	07/19/22 12:43		
Aromatic >C10-C12	mg/L	<0.080	0.120	07/19/22 04:55		
Aromatic >C12-C16	mg/L	<0.080	0.120	07/19/22 04:55		
Aromatic >C16-C21	mg/L	<0.080	0.120	07/19/22 04:55		
Aromatic >C21-C35	mg/L	<0.093	0.140	07/19/22 04:55		
Chlorooctadecane (S)				07/19/22 12:43	61.9	40-140
OTP Surrogate (S)				07/19/22 04:55	84.4	40-140

Laboratory Control Sample & LCS LCS-L625820 LCS-L625820

Parameter	Units	Spike Conc.	LCS Result	LCS Result	LCS %Rec	LCS % Rec	% Rec Limits	RPD	Max RPD
Aliphatic >C12-C16	mg/L	0.400	0.299	0.244	74.7	61.0	40-140	20.2	25
Aliphatic >C16-C35	mg/L	1.20	0.948	0.768	79.0	64.0	40-140	20.9	25
Aromatic >C10-C12	mg/L	0.400	0.280	0.270	70.0	67.5	40-140	3.6	25
Aromatic >C12-C16	mg/L	0.800	0.677	0.646	84.6	80.7	40-140	4.6	25
Aromatic >C16-C21	mg/L	0.400	0.410	0.355	103	88.7	40-140	14.3	25
Chlorooctadecane (S)					81.5	57.9	40-140		
OTP Surrogate (S)					85.3	81.3	40-140		

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-181-0066

QC Prep: L625592 **QC Analytical Batch(es):** L625593
QC Prep Batch Method: MAVPH LA (Aqueous) **Analysis Method:** MAVPH LA
Analysis Description: MADEP VPH Rev 1.1

Lab Reagent Blank LRB-L625592 Matrix: AQU
Associated Lab Samples: 70730, 70732, 70734, 70735

Parameter	Units	Blank Result	MQL	Analyzed	% Recovery	% Rec Limits
Aliphatic >C6-C8	mg/L	<0.015	0.015	07/05/22 18:23		
Aromatic >C8-C10	mg/L	<0.020	0.020	07/05/22 18:23		
Aliphatic >C8-C10	mg/L	<0.030	0.030	07/05/22 18:23		
2,5-Dibromotoluene (S)				07/05/22 18:23	81.4	50-150

Laboratory Control Sample & LCSD LCS-L625592 LCSD-L625592

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS %Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD
Aliphatic >C6-C8	mg/L	0.300	0.351	0.366	117	122	70-130	4.1	30
Aromatic >C8-C10	mg/L	0.400	0.404	0.429	101	107	70-130	6.0	30
Aliphatic >C8-C10	mg/L	0.600	0.706	0.737	118	123	70-130	4.2	30
2,5-Dibromotoluene (S)					115	115	50-150		

Shipment Receipt Form

Customer Number: **09996**

Customer Name: **Hydro-Environmental Technology, Inc.**

Report Number: **22-181-0066**

Shipping Method

Fed Ex US Postal Lab Other :
 UPS Client Courier Thermometer ID:

Shipping container/cooler uncompromised?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Number of coolers/boxes received	<input type="text" value="1"/>		
Custody seals intact on shipping container/cooler?	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> Not Present
Custody seals intact on sample bottles?	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> Not Present
Chain of Custody (COC) present?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
COC agrees with sample label(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
COC properly completed	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Samples in proper containers?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Sample containers intact?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Sufficient sample volume for indicated test(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
All samples received within holding time?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Cooler temperature in compliance?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Cooler/Samples arrived at the laboratory on ice. Samples were considered acceptable as cooling process had begun.	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Water - Sample containers properly preserved	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> N/A
Water - VOA vials free of headspace	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> N/A
Trip Blanks received with VOAs	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> N/A
Soil VOA method 5035 – compliance criteria met	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
<input type="checkbox"/> High concentration container (48 hr)	<input type="checkbox"/> Low concentration EnCore samplers (48 hr)		
<input type="checkbox"/> High concentration pre-weighed (methanol -14 d)	<input type="checkbox"/> Low conc pre-weighed vials (Sod Bis -14 d)		
Special precautions or instructions included?	<input type="radio"/> Yes	<input checked="" type="radio"/> No	

Comments:

Signature:

Date & Time:



HYDRO-ENVIRONMENTAL TECH
Environmental Consul
P.O. Box 60295
Lafayette, LA 70596-0
Phone (337) 261-1963 FAX (337) 261-1964



22-181-0066
 09996
 07-01-2022
 09:47:25

Hydro-Environmental Technology, Inc.
 August Levert

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert **Laboratory:** Waypoint
Project Number: 1009.A62 **Collected By:** TW & DCC
Project Location: Bayou Sorrel, LA **Company:** Hydro-Environmental Technology, Inc.
Date: 6/28/2022

Sample I.D.	Type	Date/Time Sampled		Containers	Analysis Requested/Method	Comments
LT-8 (14-24) <i>70730-70731</i>	AQ	6/28/2022	11:45	(6) 40mL amber HCL (3) 40mL amber (2) 250mL amber HCL (2) 250mL plastic Nitric (1) Liter Plastic	BTEX, VPH, EPH, Chlorides, TDS, Specific Conductance, Cations*, Anions*, Total and Dissolved Metals*	4°C Dissolved Metals Field Filtered
LT-9 (8-18) <i>70732-70733</i>	AQ	6/28/2022	15:10	(6) 40mL amber HCL (3) 40mL amber (2) 250mL amber HCL (2) 250mL plastic Nitric (1) Liter Plastic	BTEX, VPH, EPH, Chlorides, TDS, Specific Conductance, Cations*, Anions*, Total and Dissolved Metals*	4°C Dissolved Metals Field Filtered
Field Blank <i>70735</i>	AQ	6/28/2022	11:30	(2) 40mL amber HCL	BTEX, VPH	4°C
Trip Blank <i>70734</i>	AQ	6/28/2022	7:00	(2) 40mL amber HCL	BTEX, VPH	4°C

*Metals: Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver, Strontium, Zinc
 *Cations: Calcium, Iron, Magnesium, Manganese, Potassium, Sodium
 *Anions: Sulfate, Carbonate Alkalinity, Bicarbonate Alkalinity, Bromide
 Hold For Additional Anlysis

Relinquished By: <i>Tactt/WH</i>	Received By: <i>[Signature]</i>
Date/Time: <i>6/30/22 1105</i>	Date/Time: <i>6/30/22 1105</i>
Relinquished By: <i>[Signature]</i>	Received By: <i>[Signature]</i>
Date/Time: <i>6/30/22 1600</i>	Date/Time: <i>6-30-22 1600</i>
Analysis Due: Verbal:	Written:

7/21/2022

Hydro-Environmental Technology, Inc.
Mr. Stewart Stover, Jr.
91 Apollo Rd
Scott, LA, 70583

Ref: Report Number: 22-181-0067
Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Dear Mr. Stewart Stover, Jr.:

Waypoint Analytical Louisiana, Inc. received sample(s) on 6/30/2022 for the analyses presented in the following report. The above referenced project has been analyzed per your instructions. Unless otherwise noted, the analyses were performed in our laboratory in accordance with Standard Methods, The Solid Waste Manual SW-846, EPA Methods for Chemical Analysis of Water and Wastes and /or 40 CFR part 136.

Certain parameters (chlorine, pH, dissolved oxygen, sulfite...) are required to be analyzed within 15 minutes of sampling. Usually, but not always, any field parameter analyzed at the laboratory is outside of this holding time. Refer to sample analysis time for confirmation of holding time compliance. Analyses reported which indicate "Field" for these parameters were analyzed by the client in the field. Results for solid samples are reported on an as received or "wet weight" basis unless otherwise specified.

The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, method validations, instrumentation maintenance and calibration for all parameters (NELAP and non-NELAP) were performed in accordance with guidelines established by the USEPA (including 40 CFR 136 Method Update Rule May 2021) and NELAC unless otherwise indicated. Any parameter for which the laboratory is not officially NELAP accredited is indicated by a '~' symbol. These are not included in the scope because NELAP accreditation is either not available or has not been applied for. Additional certifications may be held/are available for parameters, where NELAP accreditation is not required or applicable. A full list of certifications is available upon request.

All quality control measures undertaken in accordance with Waypoint Analytical Louisiana, Inc. CompQAP990807A and revisions under the terms of the Louisiana Environmental Laboratory Accreditation Program (Certificate #02041) are within acceptance ranges established in that document with the exception of the items indicated and/or discussed in a Case Narrative.

The results are shown on the attached analysis sheet(s). Be aware that the time analyzed for certain samples (e.g. - BOD, CBOD, etc.) refer to the time the sample batch was begun and not necessarily to the time an individual sample was begun. Thank you for allowing Waypoint Analytical Louisiana, Inc. to serve you. Should I be of further assistance, if you have any questions or need additional information please contact me or client services.

Total Mercury analysis by method 7471A was omitted from the original report. Results for all requested total mercury analyses are included in this revised report.

Sincerely,



Amy Jackson
Project Manager

Laboratory's liability in any claim relating to analyses performed shall be limited to, at laboratory's option, repeating the analysis in question at laboratory's expense, or the refund of the charges paid for performance of said analysis. This report may be reproduced in full only with the written permission of the laboratory and/or the entity to which it is addressed. Results contained herein relate only to the sample(s) submitted to the laboratory.





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Certification Summary

Laboratory ID: WP MLA: Waypoint Analytical Louisiana, Inc., Marrero, LA

State	Program	Lab ID	Expiration Date
Georgia	State Program	02041	06/30/2023
Louisiana	State Program - NELAP	02041	06/30/2023

Laboratory ID: WP MTN: Waypoint Analytical, LLC., Memphis, TN

State	Program	Lab ID	Expiration Date
Alabama	State Program	40750	02/28/2023
Arkansas	State Program	88-0650	02/07/2023
California	State Program	2904	06/30/2023
Florida	State Program - NELAP	E871157	06/30/2023
Georgia	State Program	C044	02/18/2023
Georgia	State Program	04015	06/30/2023
Illinois	State Program - NELAP	200078	10/10/2022
Kentucky	State Program	80215	06/30/2022
Kentucky	State Program	KY90047	12/31/2022
Louisiana	State Program - NELAP	LA037	12/31/2022
Louisiana	State Program - NELAP	04015	06/30/2023
Mississippi	State Program	MS	02/11/2023
North Carolina	State Program	415	12/31/2022
Pennsylvania	State Program - NELAP	68-03195	05/31/2023
South Carolina	State Program	84002	06/30/2022
Tennessee	State Program	02027	02/11/2023
Texas	State Program - NELAP	T104704180	09/30/2022
Virginia	State Program	00106	06/30/2023
Virginia	State Program - NELAP	460181	09/14/2022

Sample Summary Table

Report Number: 22-181-0067
Client Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Lab No	Client Sample ID	Matrix	Date Collected	Date Received	Method	Lab ID
70739	LT-7 (0-2)	Solids	06/27/2022 11:30	06/30/2022 16:00		
70739	LT-7 (0-2)	Solids	06/27/2022 11:30	06/30/2022 16:00	6010D	WP MTN
70739	LT-7 (0-2)	Solids	06/27/2022 11:30	06/30/2022 16:00	29B	WP MTN
70739	LT-7 (0-2)	Solids	06/27/2022 11:30	06/30/2022 16:00	7471A	WP MTN
70740	LT-7 (4-6)	Solids	06/27/2022 11:35	06/30/2022 16:00		
70740	LT-7 (4-6)	Solids	06/27/2022 11:35	06/30/2022 16:00	6010D	WP MTN
70740	LT-7 (4-6)	Solids	06/27/2022 11:35	06/30/2022 16:00	7471A	WP MTN
70740	LT-7 (4-6)	Solids	06/27/2022 11:35	06/30/2022 16:00	29B	WP MTN
70741	LT-7 (16-18)	Solids	06/27/2022 11:50	06/30/2022 16:00		
70742	LT-7 (20-22)	Solids	06/27/2022 11:55	06/30/2022 16:00		
70743	LT-7 (24-26)	Solids	06/27/2022 12:00	06/30/2022 16:00		
70744	LT-7 (36-38)	Solids	06/27/2022 13:15	06/30/2022 16:00		
70745	LT-8 (8-10)	Solids	06/28/2022 09:10	06/30/2022 16:00		
70745	LT-8 (8-10)	Solids	06/28/2022 09:10	06/30/2022 16:00	6010D	WP MTN
70745	LT-8 (8-10)	Solids	06/28/2022 09:10	06/30/2022 16:00	29B	WP MTN
70745	LT-8 (8-10)	Solids	06/28/2022 09:10	06/30/2022 16:00	7471A	WP MTN
70746	LT-8 (16-18)	Solids	06/28/2022 09:20	06/30/2022 16:00		
70747	LT-8 (20-22)	Solids	06/28/2022 09:25	06/30/2022 16:00		
70748	LT-8 (24-26)	Solids	06/28/2022 09:30	06/30/2022 16:00		
70749	LT-8 (36-38)	Solids	06/28/2022 09:45	06/30/2022 16:00		
70750	LT-9 (4-6)	Solids	06/28/2022 13:35	06/30/2022 16:00		
70750	LT-9 (4-6)	Solids	06/28/2022 13:35	06/30/2022 16:00	7471A	WP MTN
70750	LT-9 (4-6)	Solids	06/28/2022 13:35	06/30/2022 16:00	6010D	WP MTN
70750	LT-9 (4-6)	Solids	06/28/2022 13:35	06/30/2022 16:00	29B	WP MTN
70751	LT-9 (8-10)	Solids	06/28/2022 13:40	06/30/2022 16:00		
70751	LT-9 (8-10)	Solids	06/28/2022 13:40	06/30/2022 16:00	7471A	WP MTN

WP MTN - Memphis, TN: Waypoint Analytical - TN, Memphis, TN

Sample Summary Table

Report Number: 22-181-0067
Client Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Lab No	Client Sample ID	Matrix	Date Collected	Date Received	Method	Lab ID
70751	LT-9 (8-10)	Solids	06/28/2022 13:40	06/30/2022 16:00	6010D	WP MTN
70751	LT-9 (8-10)	Solids	06/28/2022 13:40	06/30/2022 16:00	29B	WP MTN
70752	LT-9 (12-14)	Solids	06/28/2022 13:45	06/30/2022 16:00		
70753	LT-9 (20-22)	Solids	06/28/2022 13:55	06/30/2022 16:00		

Client: Hydro-Environmental Technology, Inc.
Project: August Levert
Lab Report Number: 22-181-0067
Date: 7/20/2022

CASE NARRATIVE

Methods

Methods reported as 29B are from the Laboratory Procedures for Analysis of Exploration & Production Waste – LDNR Office of Conservation Injection and Mining Division – Revised 11/2011.

Results

- 6010D/7471A metals are reported AR - As Received by adjusting the data using the percent moisture result.
- True Total Barium results are reported dry weight
- Oil & Grease results reported dry weight
- TX1006 results are reported as received
- VPH/EPH results reported as received
- PAH results reported as received



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Hydro-Environmental Technology, Inc.
 Mr. Stewart Stover, Jr.
 91 Apollo Rd
 Scott , LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 07/21/2022
 Received : 06/30/2022

Report Number : **22-181-0067**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70739**
 Sample ID : **LT-7 (0-2)**

Matrix: **Solids**
 Sampled: **6/27/2022 11:30**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	18.9	%		1	07/11/22 09:50	APB	SW-DRYWT
% Saturation (Sat Paste)	62.7	%		1	07/13/22 11:18	JMB	29B
Alkalinity (Sat Paste)	2.5	meq/L		1	07/15/22 15:50	BMB	29B
Chloride (Sat Paste)	0.548	meq/L	0.050	5	07/14/22 17:13	MJM	29B
Chloride	8.81	mg/Kg	4.00	1	07/14/22 16:10	MJM	9056
Electrical Conductivity (Sat Paste)	0.470	mmhos/cm		1	07/13/22 11:18	JMB	29B
pH (Sat Paste)	7.58	s.u.		1	07/13/22 11:18	JMB	29B
Sulfate (Sat Paste)	0.616	meq/L	0.050	5	07/14/22 17:13	MJM	29B
Cation Exchange Capacity	23.1	meq/100g	0.100	10	07/14/22 13:20		29B
Exchangeable Sodium Percentage	0.4	%	0.1	1	07/14/22 15:08		CALCULATION
Sodium Adsorption Ratio (Sat Paste)	0.679	Calc	0.215	5	07/14/22 13:52		29B
Calcium (Sat Paste)	2.63	meq/L	0.250	5	07/15/22 09:08	APB	29B
Magnesium (Sat Paste)	1.39	meq/L	0.410	5	07/14/22 14:32	APB	29B
Sodium (Sat Paste)	0.963	meq/L	0.215	5	07/14/22 13:52	APB	29B
Total Arsenic	4.64	mg/Kg AR	2.00	1	07/15/22 17:11	TJS	6010D
Total Barium	121	mg/Kg AR	1.00	1	07/15/22 17:11	TJS	6010D
True Total Barium	2910	mg/Kg	500	1	07/20/22 14:08	TJS	29B
Total Cadmium	<0.200	mg/Kg AR	0.200	1	07/15/22 17:11	TJS	6010D
Total Chromium	11.4	mg/Kg AR	0.500	1	07/15/22 17:11	TJS	6010D
Total Lead	9.06	mg/Kg AR	0.600	1	07/15/22 17:11	TJS	6010D
Mercury (Total)	0.0182	mg/Kg AR	0.0133	1	07/21/22 16:02	JTR	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/15/22 17:11	TJS	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/15/22 17:11	TJS	6010D

Qualifiers/	B	Analyte detected in blank	DF	Dilution Factor
Definitions	J	Estimated value	MQL	Method Quantitation Limit



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Hydro-Environmental Technology, Inc.
 Mr. Stewart Stover, Jr.
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 Scott , LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 07/21/2022
 Received : 06/30/2022

Report Number : **22-181-0067**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70739**
 Sample ID : **LT-7 (0-2)**

Matrix: **Solids**
 Sampled: **6/27/2022 11:30**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Zinc	42.8	mg/Kg AR	2.50	1	07/15/22 17:11	TJS	6010D

Qualifiers/ Definitions				
B	Analyte detected in blank	DF	Dilution Factor	
J	Estimated value	MQL	Method Quantitation Limit	



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Hydro-Environmental Technology, Inc.
 Mr. Stewart Stover, Jr.
 91 Apollo Rd
 Scott , LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 07/21/2022
 Received : 06/30/2022

Report Number : **22-181-0067**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70740**
 Sample ID : **LT-7 (4-6)**

Matrix: **Solids**
 Sampled: **6/27/2022 11:35**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	23.5	%		1	07/11/22 09:50	APB	SW-DRYWT
% Saturation (Sat Paste)	58.0	%		1	07/13/22 11:18	JMB	29B
Alkalinity (Sat Paste)	1.8	meq/L		1	07/15/22 15:50	BMB	29B
Chloride (Sat Paste)	0.386	meq/L	0.050	5	07/14/22 17:26	MJM	29B
Chloride	6.08	mg/Kg	4.00	1	07/14/22 16:22	MJM	9056
Electrical Conductivity (Sat Paste)	0.268	mmhos/cm		1	07/13/22 11:18	JMB	29B
pH (Sat Paste)	7.74	s.u.		1	07/13/22 11:18	JMB	29B
Sulfate (Sat Paste)	0.270	meq/L	0.050	5	07/14/22 17:26	MJM	29B
Calcium (Sat Paste)	1.41	meq/L	0.100	2	07/15/22 09:09	APB	29B
Magnesium (Sat Paste)	0.544	meq/L	0.164	2	07/14/22 14:32	APB	29B
Sodium (Sat Paste)	0.609	meq/L	0.086	2	07/14/22 13:53	APB	29B
Total Arsenic	5.05	mg/Kg AR	2.00	1	07/15/22 17:26	TJS	6010D
Total Barium	104	mg/Kg AR	1.00	1	07/15/22 17:26	TJS	6010D
True Total Barium	<500	mg/Kg	500	1	07/20/22 14:24	TJS	29B
Total Cadmium	<0.200	mg/Kg AR	0.200	1	07/15/22 17:26	TJS	6010D
Total Chromium	8.56	mg/Kg AR	0.500	1	07/15/22 17:26	TJS	6010D
Total Lead	6.29	mg/Kg AR	0.600	1	07/15/22 17:26	TJS	6010D
Mercury (Total)	0.0215	mg/Kg AR	0.0133	1	07/21/22 16:03	JTR	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/15/22 17:26	TJS	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/15/22 17:26	TJS	6010D
Total Zinc	31.3	mg/Kg AR	2.50	1	07/15/22 17:26	TJS	6010D

Qualifiers/Definitions	B	Analyte detected in blank	DF	Dilution Factor
	J	Estimated value	MQL	Method Quantitation Limit



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Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 07/21/2022
 Received : 06/30/2022

Report Number : **22-181-0067**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70741**
 Sample ID : **LT-7 (16-18)**

Matrix: **Solids**
 Sampled: **6/27/2022 11:50**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	43.4	%		1	07/11/22 09:50	APB	SW-DRYWT
% Saturation (Sat Paste)	113	%		1	07/13/22 11:18	JMB	29B
Alkalinity (Sat Paste)	3.4	meq/L		1	07/15/22 15:50	BMB	29B
Chloride (Sat Paste)	1.26	meq/L	0.050	5	07/14/22 17:39	MJM	29B
Chloride	22.3	mg/Kg	4.00	1	07/14/22 16:59	MJM	9056
Electrical Conductivity (Sat Paste)	0.701	mmhos/cm		1	07/13/22 11:18	JMB	29B
pH (Sat Paste)	7.90	s.u.		1	07/13/22 11:18	JMB	29B
Sulfate (Sat Paste)	1.42	meq/L	0.050	5	07/14/22 17:39	MJM	29B
Calcium (Sat Paste)	2.93	meq/L	0.500	10	07/15/22 09:09	APB	29B
Magnesium (Sat Paste)	1.23	meq/L	0.820	10	07/14/22 14:33	APB	29B
Sodium (Sat Paste)	1.66	meq/L	0.430	10	07/14/22 13:54	APB	29B

Qualifiers/Definitions				
	B	Analyte detected in blank	DF	Dilution Factor
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Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 07/21/2022
 Received : 06/30/2022

Report Number : **22-181-0067**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70742**
 Sample ID : **LT-7 (20-22)**

Matrix: **Solids**
 Sampled: **6/27/2022 11:55**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	54.1	%		1	07/11/22 09:50	APB	SW-DRYWT
% Saturation (Sat Paste)	93.2	%		1	07/13/22 11:18	JMB	29B
Alkalinity (Sat Paste)	3.0	meq/L		1	07/15/22 15:50	BMB	29B
Chloride (Sat Paste)	2.38	meq/L	0.050	5	07/14/22 17:52	MJM	29B
Chloride	25.0	mg/Kg	4.00	1	07/14/22 17:12	MJM	9056
Electrical Conductivity (Sat Paste)	0.963	mmhos/cm		1	07/13/22 11:18	JMB	29B
pH (Sat Paste)	7.81	s.u.		1	07/13/22 11:18	JMB	29B
Sulfate (Sat Paste)	1.95	meq/L	0.050	5	07/14/22 17:52	MJM	29B
Calcium (Sat Paste)	4.01	meq/L	0.500	10	07/15/22 09:10	APB	29B
Magnesium (Sat Paste)	1.63	meq/L	0.820	10	07/14/22 14:34	APB	29B
Sodium (Sat Paste)	2.26	meq/L	0.430	10	07/14/22 13:55	APB	29B

Qualifiers/ Definitions				
B	Analyte detected in blank	DF	Dilution Factor	
J	Estimated value	MQL	Method Quantitation Limit	



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Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 07/21/2022
 Received : 06/30/2022

Report Number : **22-181-0067**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70743**
 Sample ID : **LT-7 (24-26)**

Matrix: **Solids**
 Sampled: **6/27/2022 12:00**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	38.8	%		1	07/11/22 09:50	APB	SW-DRYWT
% Saturation (Sat Paste)	98.1	%		1	07/13/22 11:18	JMB	29B
Alkalinity (Sat Paste)	4.0	meq/L		1	07/15/22 15:50	BMB	29B
Chloride (Sat Paste)	1.34	meq/L	0.050	5	07/14/22 18:05	MJM	29B
Chloride	22.8	mg/Kg	4.00	1	07/14/22 17:24	MJM	9056
Electrical Conductivity (Sat Paste)	0.705	mmhos/cm		1	07/13/22 11:18	JMB	29B
pH (Sat Paste)	8.03	s.u.		1	07/13/22 11:18	JMB	29B
Sulfate (Sat Paste)	1.00	meq/L	0.050	5	07/14/22 18:05	MJM	29B
Calcium (Sat Paste)	3.06	meq/L	0.500	10	07/15/22 09:11	APB	29B
Magnesium (Sat Paste)	1.16	meq/L	0.820	10	07/14/22 14:35	APB	29B
Sodium (Sat Paste)	1.55	meq/L	0.430	10	07/14/22 13:55	APB	29B

Qualifiers/Definitions				
B	Analyte detected in blank	DF	Dilution Factor	
J	Estimated value	MQL	Method Quantitation Limit	



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 91 Apollo Rd
 Scott , LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 07/21/2022
 Received : 06/30/2022

Report Number : **22-181-0067**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70744**
 Sample ID : **LT-7 (36-38)**

Matrix: **Solids**
 Sampled: **6/27/2022 13:15**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	38.7	%		1	07/11/22 09:50	APB	SW-DRYWT
% Saturation (Sat Paste)	95.7	%		1	07/13/22 11:18	JMB	29B
Alkalinity (Sat Paste)	4.6	meq/L		1	07/15/22 15:50	BMB	29B
Chloride (Sat Paste)	3.41	meq/L	0.050	5	07/14/22 18:17	MJM	29B
Chloride	38.9	mg/Kg	4.00	1	07/14/22 17:37	MJM	9056
Electrical Conductivity (Sat Paste)	1.07	mmhos/cm		1	07/13/22 11:18	JMB	29B
pH (Sat Paste)	8.00	s.u.		1	07/13/22 11:18	JMB	29B
Sulfate (Sat Paste)	1.36	meq/L	0.050	5	07/14/22 18:17	MJM	29B
Calcium (Sat Paste)	3.97	meq/L	0.500	10	07/15/22 09:12	APB	29B
Magnesium (Sat Paste)	1.99	meq/L	0.820	10	07/14/22 14:36	APB	29B
Sodium (Sat Paste)	2.12	meq/L	0.430	10	07/14/22 13:58	APB	29B

Qualifiers/ Definitions				
B	Analyte detected in blank	DF	Dilution Factor	
J	Estimated value	MQL	Method Quantitation Limit	



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Hydro-Environmental Technology, Inc.
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Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 07/21/2022
 Received : 06/30/2022

Report Number : **22-181-0067**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70745**
 Sample ID : **LT-8 (8-10)**

Matrix: **Solids**
 Sampled: **6/28/2022 9:10**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	24.3	%		1	07/11/22 09:50	APB	SW-DRYWT
% Saturation (Sat Paste)	58.4	%		1	07/13/22 11:18	JMB	29B
Alkalinity (Sat Paste)	2.2	meq/L		1	07/15/22 15:50	BMB	29B
Chloride (Sat Paste)	1.15	meq/L	0.050	5	07/14/22 18:30	MJM	29B
Chloride	11.0	mg/Kg	4.00	1	07/14/22 17:49	MJM	9056
Electrical Conductivity (Sat Paste)	0.490	mmhos/cm		1	07/13/22 11:18	JMB	29B
pH (Sat Paste)	7.91	s.u.		1	07/13/22 11:18	JMB	29B
Sulfate (Sat Paste)	0.867	meq/L	0.050	5	07/14/22 18:30	MJM	29B
Calcium (Sat Paste)	1.91	meq/L	0.250	5	07/15/22 09:13	APB	29B
Magnesium (Sat Paste)	0.781	meq/L	0.410	5	07/14/22 14:36	APB	29B
Sodium (Sat Paste)	1.10	meq/L	0.215	5	07/14/22 13:59	APB	29B
Total Arsenic	4.34	mg/Kg AR	2.00	1	07/15/22 17:31	TJS	6010D
Total Barium	109	mg/Kg AR	1.00	1	07/15/22 17:31	TJS	6010D
True Total Barium	<500	mg/Kg	500	1	07/20/22 14:29	TJS	29B
Total Cadmium	0.202	mg/Kg AR	0.200	1	07/15/22 17:31	TJS	6010D
Total Chromium	8.97	mg/Kg AR	0.500	1	07/15/22 17:31	TJS	6010D
Total Lead	7.05	mg/Kg AR	0.600	1	07/15/22 17:31	TJS	6010D
Mercury (Total)	0.0288	mg/Kg AR	0.0133	1	07/21/22 16:04	JTR	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/15/22 17:31	TJS	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/15/22 17:31	TJS	6010D
Total Zinc	34.9	mg/Kg AR	2.50	1	07/15/22 17:31	TJS	6010D

Qualifiers/Definitions	B	Analyte detected in blank	DF	Dilution Factor
	J	Estimated value	MQL	Method Quantitation Limit



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Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 07/21/2022
 Received : 06/30/2022

Report Number : **22-181-0067**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70746**
 Sample ID : **LT-8 (16-18)**

Matrix: **Solids**
 Sampled: **6/28/2022 9:20**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	24.2	%		1	07/11/22 09:50	APB	SW-DRYWT
% Saturation (Sat Paste)	49.7	%		1	07/13/22 11:18	JMB	29B
Alkalinity (Sat Paste)	2.0	meq/L		1	07/15/22 15:50	BMB	29B
Chloride (Sat Paste)	1.32	meq/L	0.050	5	07/14/22 18:43	MJM	29B
Chloride	17.8	mg/Kg	4.00	1	07/14/22 18:01	MJM	9056
Electrical Conductivity (Sat Paste)	0.488	mmhos/cm		1	07/13/22 11:18	JMB	29B
pH (Sat Paste)	7.91	s.u.		1	07/13/22 11:18	JMB	29B
Sulfate (Sat Paste)	0.810	meq/L	0.050	5	07/14/22 18:43	MJM	29B
Calcium (Sat Paste)	1.88	meq/L	0.250	5	07/15/22 09:14	APB	29B
Magnesium (Sat Paste)	0.815	meq/L	0.410	5	07/14/22 14:37	APB	29B
Sodium (Sat Paste)	0.923	meq/L	0.215	5	07/14/22 14:00	APB	29B

Qualifiers/Definitions				
B	Analyte detected in blank	DF	Dilution Factor	
J	Estimated value	MQL	Method Quantitation Limit	



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Project August Levert
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 Bayou Sorrel, LA

Report Date : 07/21/2022
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Report Number : **22-181-0067**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70747**
 Sample ID : **LT-8 (20-22)**

Matrix: **Solids**
 Sampled: **6/28/2022 9:25**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	27.6	%		1	07/11/22 09:50	APB	SW-DRYWT
% Saturation (Sat Paste)	50.2	%		1	07/13/22 11:18	JMB	29B
Alkalinity (Sat Paste)	2.0	meq/L		1	07/15/22 15:50	BMB	29B
Chloride (Sat Paste)	1.04	meq/L	0.050	5	07/14/22 18:56	MJM	29B
Chloride	16.5	mg/Kg	4.00	1	07/15/22 10:14	MJM	9056
Electrical Conductivity (Sat Paste)	0.422	mmhos/cm		1	07/13/22 11:18	JMB	29B
pH (Sat Paste)	7.88	s.u.		1	07/13/22 11:18	JMB	29B
Sulfate (Sat Paste)	0.492	meq/L	0.050	5	07/14/22 18:56	MJM	29B
Calcium (Sat Paste)	1.49	meq/L	0.250	5	07/15/22 09:14	APB	29B
Magnesium (Sat Paste)	0.647	meq/L	0.410	5	07/14/22 14:38	APB	29B
Sodium (Sat Paste)	0.940	meq/L	0.215	5	07/14/22 14:01	APB	29B

Qualifiers/Definitions				
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REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70748**
 Sample ID : **LT-8 (24-26)**

Matrix: **Solids**
 Sampled: **6/28/2022 9:30**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	28.5	%		1	07/11/22 09:50	APB	SW-DRYWT
% Saturation (Sat Paste)	78.0	%		1	07/13/22 11:18	JMB	29B
Alkalinity (Sat Paste)	3.4	meq/L		1	07/15/22 15:50	BMB	29B
Chloride (Sat Paste)	0.944	meq/L	0.050	5	07/14/22 19:09	MJM	29B
Chloride	10.7	mg/Kg	4.00	1	07/15/22 10:26	MJM	9056
Electrical Conductivity (Sat Paste)	0.662	mmhos/cm		1	07/13/22 11:18	JMB	29B
pH (Sat Paste)	7.91	s.u.		1	07/13/22 11:18	JMB	29B
Sulfate (Sat Paste)	1.42	meq/L	0.050	5	07/14/22 19:09	MJM	29B
Calcium (Sat Paste)	2.68	meq/L	0.500	10	07/15/22 09:15	APB	29B
Magnesium (Sat Paste)	1.29	meq/L	0.820	10	07/14/22 14:39	APB	29B
Sodium (Sat Paste)	1.31	meq/L	0.430	10	07/14/22 14:02	APB	29B

Qualifiers/ Definitions				
B	Analyte detected in blank	DF	Dilution Factor	
J	Estimated value	MQL	Method Quantitation Limit	



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Report Number : **22-181-0067**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70749**
 Sample ID : **LT-8 (36-38)**

Matrix: **Solids**
 Sampled: **6/28/2022 9:45**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	32.3	%		1	07/11/22 09:50	APB	SW-DRYWT
% Saturation (Sat Paste)	80.2	%		1	07/13/22 11:18	JMB	29B
Alkalinity (Sat Paste)	2.9	meq/L		1	07/15/22 15:50	BMB	29B
Chloride (Sat Paste)	2.02	meq/L	0.050	5	07/14/22 20:01	MJM	29B
Chloride	31.5	mg/Kg	4.00	1	07/15/22 10:38	MJM	9056
Electrical Conductivity (Sat Paste)	0.695	mmhos/cm		1	07/13/22 11:18	JMB	29B
pH (Sat Paste)	7.94	s.u.		1	07/13/22 11:18	JMB	29B
Sulfate (Sat Paste)	0.783	meq/L	0.050	5	07/14/22 20:01	MJM	29B
Calcium (Sat Paste)	2.81	meq/L	0.500	10	07/15/22 09:18	APB	29B
Magnesium (Sat Paste)	1.28	meq/L	0.820	10	07/14/22 14:41	APB	29B
Sodium (Sat Paste)	1.28	meq/L	0.430	10	07/14/22 14:02	APB	29B

Qualifiers/Definitions				
B	Analyte detected in blank	DF	Dilution Factor	
J	Estimated value	MQL	Method Quantitation Limit	



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REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70750**
 Sample ID : **LT-9 (4-6)**

Matrix: **Solids**
 Sampled: **6/28/2022 13:35**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	27.1	%		1	07/11/22 09:50	APB	SW-DRYWT
% Saturation (Sat Paste)	70.6	%		1	07/13/22 11:18	JMB	29B
Alkalinity (Sat Paste)	2.5	meq/L		1	07/15/22 15:50	BMB	29B
Chloride (Sat Paste)	0.312	meq/L	0.050	5	07/14/22 20:13	MJM	29B
Chloride	4.75	mg/Kg	4.00	1	07/15/22 10:51	MJM	9056
Electrical Conductivity (Sat Paste)	0.496	mmhos/cm		1	07/13/22 11:18	JMB	29B
pH (Sat Paste)	7.84	s.u.		1	07/13/22 11:18	JMB	29B
Sulfate (Sat Paste)	1.19	meq/L	0.050	5	07/14/22 20:13	MJM	29B
Calcium (Sat Paste)	2.45	meq/L	0.250	5	07/15/22 09:19	APB	29B
Magnesium (Sat Paste)	1.06	meq/L	0.410	5	07/14/22 14:42	APB	29B
Sodium (Sat Paste)	0.940	meq/L	0.215	5	07/14/22 14:03	APB	29B
Total Arsenic	3.96	mg/Kg AR	2.00	1	07/15/22 17:36	TJS	6010D
Total Barium	121	mg/Kg AR	1.00	1	07/15/22 17:36	TJS	6010D
True Total Barium	<500	mg/Kg	500	1	07/20/22 14:34	TJS	29B
Total Cadmium	0.246	mg/Kg AR	0.200	1	07/15/22 17:36	TJS	6010D
Total Chromium	10.1	mg/Kg AR	0.500	1	07/15/22 17:36	TJS	6010D
Total Lead	8.06	mg/Kg AR	0.600	1	07/15/22 17:36	TJS	6010D
Mercury (Total)	0.0496	mg/Kg AR	0.0133	1	07/21/22 16:06	JTR	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/15/22 17:36	TJS	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/15/22 17:36	TJS	6010D
Total Zinc	40.3	mg/Kg AR	2.50	1	07/15/22 17:36	TJS	6010D

Qualifiers/Definitions	B	Analyte detected in blank	DF	Dilution Factor
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 Bayou Sorrel, LA

Report Date : 07/21/2022
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Report Number : **22-181-0067**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70751**
 Sample ID : **LT-9 (8-10)**

Matrix: **Solids**
 Sampled: **6/28/2022 13:40**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	27.5	%		1	07/11/22 09:50	APB	SW-DRYWT
% Saturation (Sat Paste)	47.1	%		1	07/13/22 11:18	JMB	29B
Alkalinity (Sat Paste)	2.2	meq/L		1	07/15/22 15:50	BMB	29B
Chloride (Sat Paste)	1.78	meq/L	0.050	5	07/14/22 20:26	MJM	29B
Chloride	19.1	mg/Kg	4.00	1	07/15/22 11:03	MJM	9056
Electrical Conductivity (Sat Paste)	0.574	mmhos/cm		1	07/13/22 11:18	JMB	29B
pH (Sat Paste)	7.81	s.u.		1	07/13/22 11:18	JMB	29B
Sulfate (Sat Paste)	0.691	meq/L	0.050	5	07/14/22 20:26	MJM	29B
Calcium (Sat Paste)	2.19	meq/L	0.250	5	07/15/22 09:19	APB	29B
Magnesium (Sat Paste)	0.972	meq/L	0.410	5	07/14/22 14:42	APB	29B
Sodium (Sat Paste)	1.10	meq/L	0.215	5	07/14/22 14:04	APB	29B
Total Arsenic	3.89	mg/Kg AR	2.00	1	07/15/22 17:41	TJS	6010D
Total Barium	94.4	mg/Kg AR	1.00	1	07/15/22 17:41	TJS	6010D
True Total Barium	<500	mg/Kg	500	1	07/20/22 14:40	TJS	29B
Total Cadmium	<0.200	mg/Kg AR	0.200	1	07/15/22 17:41	TJS	6010D
Total Chromium	8.10	mg/Kg AR	0.500	1	07/15/22 17:41	TJS	6010D
Total Lead	6.25	mg/Kg AR	0.600	1	07/15/22 17:41	TJS	6010D
Mercury (Total)	0.0313	mg/Kg AR	0.0133	1	07/21/22 16:07	JTR	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/15/22 17:41	TJS	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/15/22 17:41	TJS	6010D
Total Zinc	31.8	mg/Kg AR	2.50	1	07/15/22 17:41	TJS	6010D

Qualifiers/Definitions				
	B	Analyte detected in blank	DF	Dilution Factor
	J	Estimated value	MQL	Method Quantitation Limit



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Report Number : **22-181-0067**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70752**
 Sample ID : **LT-9 (12-14)**

Matrix: **Solids**
 Sampled: **6/28/2022 13:45**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	25.8	%		1	07/11/22 09:50	APB	SW-DRYWT
% Saturation (Sat Paste)	52.7	%		1	07/13/22 11:18	JMB	29B
Alkalinity (Sat Paste)	2.0	meq/L		1	07/15/22 15:50	BMB	29B
Chloride (Sat Paste)	1.72	meq/L	0.050	5	07/14/22 20:39	MJM	29B
Chloride	23.8	mg/Kg	4.00	1	07/15/22 11:15	MJM	9056
Electrical Conductivity (Sat Paste)	0.525	mmhos/cm		1	07/13/22 11:18	JMB	29B
pH (Sat Paste)	7.67	s.u.		1	07/13/22 11:18	JMB	29B
Sulfate (Sat Paste)	0.687	meq/L	0.050	5	07/14/22 20:39	MJM	29B
Calcium (Sat Paste)	2.04	meq/L	0.250	5	07/15/22 09:20	APB	29B
Magnesium (Sat Paste)	0.839	meq/L	0.410	5	07/14/22 14:43	APB	29B
Sodium (Sat Paste)	0.923	meq/L	0.215	5	07/14/22 14:05	APB	29B

Qualifiers/Definitions				
B	Analyte detected in blank	DF	Dilution Factor	
J	Estimated value	MQL	Method Quantitation Limit	



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Report Number : **22-181-0067**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70753**
 Sample ID : **LT-9 (20-22)**

Matrix: **Solids**
 Sampled: **6/28/2022 13:55**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	35.8	%		1	07/11/22 09:50	APB	SW-DRYWT
% Saturation (Sat Paste)	90.9	%		1	07/13/22 11:18	JMB	29B
Alkalinity (Sat Paste)	3.4	meq/L		1	07/15/22 15:50	BMB	29B
Chloride (Sat Paste)	1.15	meq/L	0.050	5	07/14/22 20:52	MJM	29B
Chloride	20.9	mg/Kg	4.00	1	07/15/22 11:28	MJM	9056
Electrical Conductivity (Sat Paste)	0.659	mmhos/cm		1	07/13/22 11:18	JMB	29B
pH (Sat Paste)	7.89	s.u.		1	07/13/22 11:18	JMB	29B
Sulfate (Sat Paste)	0.970	meq/L	0.050	5	07/14/22 20:52	MJM	29B
Calcium (Sat Paste)	2.56	meq/L	0.250	5	07/15/22 09:21	APB	29B
Magnesium (Sat Paste)	1.26	meq/L	0.410	5	07/14/22 14:44	APB	29B
Sodium (Sat Paste)	1.16	meq/L	0.215	5	07/14/22 14:05	APB	29B

Qualifiers/ Definitions	B	Analyte detected in blank	DF	Dilution Factor
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Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-181-0067

QC Prep: L627143

QC Analytical Batch(es): L627775

QC Prep Batch Method: LA 29B BA (PREP)

Analysis Method: 29B

Analysis Description: True Total Barium

Lab Reagent Blank

LRB-L627143

Matrix: SOL

Associated Lab Samples: 70739, 70740, 70745, 70750, 70751

Parameter	Units	Blank Result	MQL	Analyzed
True Total Barium	mg/Kg	< 500	500	07/20/22 13:57

Laboratory Control Sample

LCS-L627143

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
True Total Barium	mg/Kg	9710	10600	109	80-120

Matrix Spike & Matrix Spike Duplicate

A 70739-A74934-MS-L627143

A 70739-A74934-MSD-L627143

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
True Total Barium	mg/Kg	2910	7190	7140	8030	7840	71.0*	69.0*	75-125	2.3	20.0

* QC Fail

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-181-0067

QC Prep: A75034

QC Analytical Batch(es): A75090

QC Prep Batch Method: LA 29B CEC (PREP)

Analysis Method: 29B

Analysis Description: Cation Exchange Capacity

Lab Reagent Blank

LRB-A75034

Matrix: SOL

Associated Lab Samples: 70739

Parameter	Units	Blank Result	ML	Analyzed
Total Sodium CEC	mg/Kg	< 100	100	07/14/22 13:18

Duplicate

A 70739-A74934-DUP-A75034

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Total Sodium CEC	mg/Kg	5320	5150	3.2	30.0	07/14/22 13:21

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-181-0067

QC Prep: A75035

QC Analytical Batch(es): A75091

QC Prep Batch Method: 29B

Analysis Method: 29B

Analysis Description: Exchangeable Sodium Percentage

Duplicate A 70739-A74934-DUP-A75035

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Total Sodium ESP	meq/100g	< 0.180	< 0.180	0.0	30.0	07/14/22 15:09

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-181-0067

QC Prep: A75036

QC Analytical Batch(es): A75064,A75093,A75063,A75113

QC Prep Batch Method: 29B

Analysis Method: 29B

Analysis Description: Alkalinity

Duplicate A 70782-A74968-DUP-A75036

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Alkalinity (Sat Paste)	meq/L	3.5	4.0	13.3	30.0	07/15/22 15:50

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-181-0067

QC Prep: A75036 **QC Analytical Batch(es):** A75064,A75093,A75063,A75113
QC Prep Batch Method: 29B **Analysis Method:** 29B
Analysis Description: Anions by Ion Chromatography

Duplicate A 70782-A74968-DUP-A75036

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Chloride (Sat Paste)	meq/L	5.58	7.01	22.7	30.0	07/14/22 21:18
Sulfate (Sat Paste)	meq/L	< 0.500	< 0.500	0.0	30.0	07/14/22 21:18

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-181-0067

QC Prep: A75036

QC Analytical Batch(es): A75064,A75093,A75063,A75113

QC Prep Batch Method: 29B

Analysis Method: 29B

Analysis Description: Saturated Paste Extraction

Duplicate A 70782-A74968-DUP-A75036

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
% Saturation (Sat Paste)	%	69.4	69.7	0.4	30.0	07/13/22 11:18
Electrical Conductivity (Sat Paste)	nmhos/cm	6.07	7.47	20.6	30.0	07/13/22 11:18
pH (Sat Paste)	s.u.	8.18	8.19	0.1	30.0	07/13/22 11:18

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-181-0067

QC Prep: A75036

QC Analytical Batch(es): A75064,A75093,A75063,A75113

QC Prep Batch Method: 29B

Analysis Method: 29B

Analysis Description: Saturated Paste Extraction

Duplicate A 70782-A74968-DUP-A75036

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Calcium (Sat Paste)	meq/L	13.7	15.9	14.8	30.0	07/15/22 10:42
Magnesium (Sat Paste)	meq/L	< 4.10	< 4.10	0.0	30.0	07/14/22 14:50
Sodium (Sat Paste)	meq/L	51.1	62.6	20.2	30.0	07/14/22 14:12

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-181-0067

QC Prep: L626614 **QC Analytical Batch(es):** L627194
QC Prep Batch Method: 3050B **Analysis Method:** 6010D
Analysis Description: Metals Analysis

Lab Reagent Blank LRB-L626614 Matrix: SOL
Associated Lab Samples: 70739, 70740, 70745, 70750, 70751

Parameter	Units	Blank Result	MQL	Analyzed
Total Arsenic	mg/Kg AR	< 0.480	2.00	07/15/22 17:05
Total Barium	mg/Kg AR	< 0.259	0.999	07/15/22 17:05
Total Cadmium	mg/Kg AR	< 0.039	0.199	07/15/22 17:05
Total Chromium	mg/Kg AR	< 0.471	0.499	07/15/22 17:05
Total Lead	mg/Kg AR	< 0.359	0.599	07/15/22 17:05
Total Selenium	mg/Kg AR	< 0.639	0.999	07/15/22 17:05
Total Silver	mg/Kg AR	< 0.319	0.499	07/15/22 17:05
Total Zinc	mg/Kg AR	< 1.62	2.50	07/15/22 17:05

Laboratory Control Sample LCS-L626614

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Total Arsenic	mg/Kg AR	10.0	11.6	116	80-120
Total Barium	mg/Kg AR	100	111	111	80-120
Total Cadmium	mg/Kg AR	10.0	11.2	112	80-120
Total Chromium	mg/Kg AR	100	117	117	80-120
Total Lead	mg/Kg AR	10.0	11.4	114	80-120
Total Selenium	mg/Kg AR	10.0	11.0	110	80-120
Total Silver	mg/Kg AR	10.0	11.1	111	80-120
Total Zinc	mg/Kg AR	100	116	116	80-120

Matrix Spike & Matrix Spike Duplicate A 70751-A74934-MS-L626614 A 70751-A74934-MSD-L626614

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Total Arsenic	mg/Kg AR	3.89	7.16	6.90	11.1	11.2	101	106	75-125	0.8	20.0
Total Barium	mg/Kg AR	94.4	71.6	69.0	173	174	110	115	75-125	0.5	20.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-181-0067

QC Prep: L626614

QC Analytical Batch(es): L627194

QC Prep Batch Method: 3050B

Analysis Method: 6010D

Analysis Description: Metals Analysis

Matrix Spike & Matrix Spike Duplicate A 70751-A74934-MS-L626614 A 70751-A74934-MSD-L626614

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Total Cadmium	mg/Kg AR	< 0.200	7.16	6.90	7.17	7.11	98.0	101	75-125	0.8	20.0
Total Chromium	mg/Kg AR	8.10	71.6	69.0	83.5	82.1	105	107	75-125	1.6	20.0
Total Lead	mg/Kg AR	6.25	7.16	6.90	13.5	13.5	101	105	75-125	0.0	20.0
Total Selenium	mg/Kg AR	< 1.00	7.16	6.90	6.60	6.85	92.0	99.0	75-125	3.7	20.0
Total Silver	mg/Kg AR	< 0.500	7.16	6.90	7.05	6.99	99.0	101	75-125	0.8	20.0
Total Zinc	mg/Kg AR	31.8	71.6	69.0	105	105	102	106	75-125	0.0	20.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-181-0067

QC Prep: L627731 **QC Analytical Batch(es):** L628068
QC Prep Batch Method: 7471A **Analysis Method:** 7471A
Analysis Description: Solids Total Mercury Analysis - CVAA

Lab Reagent Blank LRB-L627731 Matrix: SOL
Associated Lab Samples: 70739, 70740, 70745, 70750, 70751

Parameter	Units	Blank Result	MQL	Analyzed
Mercury (Total)	mg/Kg AR	< 0.160	0.160	07/21/22 15:59

Laboratory Control Sample LCS-L627731

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Mercury (Total)	mg/Kg AR	0.400	0.394	99.0	80-120

Matrix Spike & Matrix Spike Duplicate A 70751-A74934-MS-L627731 A 70751-A74934-MSD-L627731

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Mercury (Total)	mg/Kg AR	0.0313	0.257	0.284	0.288	0.302	100	95.0	80-120	4.7	20.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-181-0067

QC Prep: A75095 **QC Analytical Batch(es):** A75146
QC Prep Batch Method: SW-9056 (PREP) **Analysis Method:** 9056
Analysis Description: Anions by Ion Chromatography

Lab Reagent Blank LRB-A75095 Matrix: SOL
Associated Lab Samples: 70739, 70740, 70741, 70742, 70743, 70744, 70745, 70746, 70747, 70748, 70749, 70750, 70751, 70752, 70753

Parameter	Units	Blank Result	MQL	Analyzed
Chloride	mg/Kg	< 3.33	4.00	07/14/22 15:45

Laboratory Control Sample LCS-A75095

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Chloride	mg/Kg	500	503	101	80-120

Matrix Spike & Matrix Spike Duplicate A 70740-MS-A75095 A 70740-MSD-A75095

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Chloride	mg/Kg	6.08	479	477	490	487	101	101	80-120	0.6	15.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-181-0067

QC Analytical Batch: A75029
Analysis Method: SW-DRYWT
Analysis Description: Dry Weight Determination

Duplicate A 70748-DUP

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
% Moisture	%	28.5	27.1	5.0	20.0	07/11/22 09:50

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-181-0067

QC Analytical Batch: A75033
Analysis Method: SW-DRYWT
Analysis Description: Dry Weight Determination

Duplicate A 70739-DUP

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
% Moisture	%	18.9	18.5	2.1	20.0	07/11/22 09:50

Shipment Receipt Form

Customer Number: **09996**

Customer Name: **Hydro-Environmental Technology, Inc.**

Report Number: **22-181-0067**

Shipping Method

Fed Ex US Postal Lab Other :
 UPS Client Courier Thermometer ID:

Shipping container/cooler uncompromised? Yes No

Number of coolers/boxes received

Custody seals intact on shipping container/cooler? Yes No Not Present

Custody seals intact on sample bottles? Yes No Not Present

Chain of Custody (COC) present? Yes No

COC agrees with sample label(s)? Yes No

COC properly completed Yes No

Samples in proper containers? Yes No

Sample containers intact? Yes No

Sufficient sample volume for indicated test(s)? Yes No

All samples received within holding time? Yes No

Cooler temperature in compliance? Yes No

Cooler/Samples arrived at the laboratory on ice. Samples were considered acceptable as cooling process had begun. Yes No

Water - Sample containers properly preserved Yes No N/A

Water - VOA vials free of headspace Yes No N/A

Trip Blanks received with VOAs Yes No N/A

Soil VOA method 5035 – compliance criteria met Yes No N/A

High concentration container (48 hr) Low concentration EnCore samplers (48 hr)
 High concentration pre-weighed (methanol -14 d) Low conc pre-weighed vials (Sod Bis -14 d)

Special precautions or instructions included? Yes No

Comments:

Signature: Date & Time:



HYDRO-ENVIRONMENTAL TECHNOLOGY, INC.
Environmental Consultants
 P.O. Box 60295
 Lafayette, LA 70596-0295
 Phone (337) 261-1963 FAX (337) 261-1964



22-181-0067
 09996
 07-01-2022
 12:43:18

Hydro-Environmental Technology, Inc.
 August Levert

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert **Laboratory:** Waypoint
Project Number: 1009.A62 **Collected By:** TRW & DCC
Project Location: Bayou Sorrel, LA **Company:** Hydro-Environmental Technology, Inc.
Date: 6/27/2022

Sample I.D.	Type	Date/Time Sampled	Containers	Analysis Requested/Method	Comments
LT-7 (0-2) 70739	SO	6/27/2022 11:30	(1) 8 oz Glass Jar	EC, SAR, ESP, CEC, Chlorides, Metals*, pH, % Moisture, Cations*, Anions*	4°C
LT-7 (4-6) 70740	SO	6/27/2022 11:35	(1) 8 oz Glass Jar	EC, Chlorides, pH, Metals*, % Moisture, Cations*, Anions*	4°C
LT-7 (8-10)	SO	6/27/2022 11:40	No Split	NA	NA
LT-7 (16-18) 70741	SO	6/27/2022 11:50	(1) 8 oz Glass Jar	EC, Chlorides, pH, % Moisture, Cations*, Anions*	4°C
LT-7 (20-22) 70742	SO	6/27/2022 11:55	(1) 8 oz Glass Jar	EC, Chlorides, pH, % Moisture, Cations*, Anions*	4°C
LT-7 (24-26) 70743	SO	6/27/2022 12:00	(1) 8 oz Glass Jar	EC, Chlorides, pH, % Moisture, Cations*, Anions*	4°C
LT-7 (36-38) 70744	SO	6/27/2022 13:15	(1) 8 oz Glass Jar	EC, Chlorides, pH, % Moisture, Cations*, Anions*	4°C

HOLD for possible analysis of SPLP Chloride and Sodium and additional parameters
 Cations*: Soluble Calcium, Magnesium, and Sodium
 Anions*: Cl, SO4, HCO3
 Metals*: Arsenic, Barium, True Total Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver, Zinc

Relinquished By: <i>[Signature]</i>	Received By: <i>[Signature]</i>
Date/Time: 6/30/22 1105	Date/Time: 6/30/22 1105
Relinquished By: <i>[Signature]</i>	Received By: <i>[Signature]</i>
Date/Time: 6/30/22 1600	Date/Time: 6-30-22 1600
Analysis Due: Verbal:	Written:



HYDRO-ENVIRONMENTAL TECHNOLOGY, INC.
 Environmental Consultants
 P.O. Box 60295
 Lafayette, LA 70596-0295
 Phone (337) 261-1963 FAX (337) 261-1953

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert **Laboratory:** Waypoint
Project Number: 1009.A62 **Collected By:** TRW & DCC
Project Location: Bayou Sorrel, LA **Company:** Hydro-Environmental Technology, Inc.
Date: 6/27/2022

Sample I.D.	Type	Date/Time Sampled		Containers	Analysis Requested/Method	Comments
LT-8 (0-2)	SO	6/28/2022	9:00	No Split	NA	NA
LT-8 (4-6)	SO	6/28/2022	9:05	No Split	NA	NA
LT-8 (8-10) 70745	SO	6/28/2022	9:10	(1) 8 oz Glass Jar	EC, Chlorides, pH, Metals*, % Moisture, Cations*, Anions*	4°C
LT-8 (16-18) 70746	SO	6/28/2022	9:20	(1) 8 oz Glass Jar	EC, Chlorides, pH, % Moisture, Cations*, Anions*	4°C
LT-8 (20-22) 70747	SO	6/28/2022	9:25	(1) 8 oz Glass Jar	EC, Chlorides, pH, % Moisture, Cations*, Anions*	4°C
LT-8 (24-26) 70748	SO	6/28/2022	9:30	(1) 8 oz Glass Jar	EC, Chlorides, pH, % Moisture, Cations*, Anions*	4°C
LT-8 (36-38) 70749	SO	6/28/2022	9:45	(1) 8 oz Glass Jar	EC, Chlorides, pH, % Moisture, Cations*, Anions*	4°C

HOLD for possible analysis of SPLP Chloride and Sodium and additional parameters
 Cations*: Soluble Calcium, Magnesium, and Sodium
 Anions*: Cl, SO4, HCO3
 Metals*: Arsenic, Barium, True Total Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver, Zinc

Relinquished By: <i>[Signature]</i>	Received By: <i>[Signature]</i>
Date/Time: 6/30/22	Date/Time: 6/30/22 1105
Relinquished By: <i>[Signature]</i>	Received By: <i>[Signature]</i>
Date/Time: 6/30/22 1600	Date/Time: 6-30-22 1600
Analysis Due: Verbal:	Written:



HYDRO-ENVIRONMENTAL TECHNOLOGY, INC.
 Environmental Consultants
 P.O. Box 60295
 Lafayette, LA 70596-0295
 Phone (337) 261-1963 FAX (337) 261-1953

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert
Project Number: 1009.A62
Project Location: Bayou Sorrel, LA
Laboratory: Waypoint
Collected By: TRW & DCC
Company: Hydro-Environmental Technology, Inc.
Date: 6/27/2022

Sample I.D.	Type	Date/Time Sampled		Containers	Analysis Requested/Method	Comments
LT-9 (0-2)	SO	6/28/2022	13:30	No Split	NA	NA
LT-9 (4-6) 70750	SO	6/28/2022	13:35	(1) 8 oz Glass Jar	EC, Chlorides, pH, Metals*, % Moisture, Cations*, Anions*	4°C
LT-9 (8-10) 70751	SO	6/28/2022	13:40	(1) 8 oz Glass Jar	EC, Chlorides, pH, Metals*, % Moisture, Cations*, Anions*	4°C
LT-9 (12-14) 70752	SO	6/28/2022	13:45	(1) 8 oz Glass Jar	EC, Chlorides, pH, % Moisture, Cations*, Anions*	4°C
LT-9 (20-22) 70753	SO	6/28/2022	13:55	(1) 8 oz Glass Jar	EC, Chlorides, pH, % Moisture, Cations*, Anions*	4°C
						4°C
						4°C

HOLD for possible analysis of SPLP Chloride and Sodium and additional parameters
 Cations*: Soluble Calcium, Magnesium, and Sodium
 Anions*: Cl, SO4, HCO3
 Metals*: Arsenic, Barium, True Total Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver, Zinc

Relinquished By: <i>T. Wright</i>	Received By: <i>[Signature]</i>
Date/Time: 6/30/22 1105	Date/Time: 6/30/22 1105
Relinquished By: <i>[Signature]</i>	Received By: <i>[Signature]</i>
Date/Time: 6/30/22 1800	Date/Time: 6-30-22 1600
Analysis Due: Verbal:	Written:

7/26/2022

Hydro-Environmental Technology, Inc.
Mr. Stewart Stover, Jr.
91 Apollo Rd
Scott, LA, 70583

Ref: Report Number: 22-202-0001
Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Dear Mr. Stewart Stover, Jr.:

Waypoint Analytical Louisiana, Inc. received sample(s) on 6/28/2022 for the analyses presented in the following report. The above referenced project has been analyzed per your instructions. Unless otherwise noted, the analyses were performed in our laboratory in accordance with Standard Methods, The Solid Waste Manual SW-846, EPA Methods for Chemical Analysis of Water and Wastes and /or 40 CFR part 136.

Certain parameters (chlorine, pH, dissolved oxygen, sulfite...) are required to be analyzed within 15 minutes of sampling. Usually, but not always, any field parameter analyzed at the laboratory is outside of this holding time. Refer to sample analysis time for confirmation of holding time compliance. Analyses reported which indicate "Field" for these parameters were analyzed by the client in the field. Results for solid samples are reported on an as received or "wet weight" basis unless otherwise specified.

The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, method validations, instrumentation maintenance and calibration for all parameters (NELAP and non-NELAP) were performed in accordance with guidelines established by the USEPA (including 40 CFR 136 Method Update Rule May 2021) and NELAC unless otherwise indicated. Any parameter for which the laboratory is not officially NELAP accredited is indicated by a '~' symbol. These are not included in the scope because NELAP accreditation is either not available or has not been applied for. Additional certifications may be held/are available for parameters, where NELAP accreditation is not required or applicable. A full list of certifications is available upon request.

All quality control measures undertaken in accordance with Waypoint Analytical Louisiana, Inc. CompQAP990807A and revisions under the terms of the Louisiana Environmental Laboratory Accreditation Program (Certificate #02041) are within acceptance ranges established in that document with the exception of the items indicated and/or discussed in a Case Narrative.

The results are shown on the attached analysis sheet(s). Be aware that the time analyzed for certain samples (e.g. - BOD, CBOD, etc.) refer to the time the sample batch was begun and not necessarily to the time an individual sample was begun. Thank you for allowing Waypoint Analytical Louisiana, Inc. to serve you. Should I be of further assistance, if you have any questions or need additional information please contact me or client services.

Sincerely,



Amy Jackson
Project Manager

Laboratory's liability in any claim relating to analyses performed shall be limited to, at laboratory's option, repeating the analysis in question at laboratory's expense, or the refund of the charges paid for performance of said analysis. This report may be reproduced in full only with the written permission of the laboratory and/or the entity to which it is addressed. Results contained herein relate only to the sample(s) submitted to the laboratory.





5041 Taravella Road, Marrero, LA 70072
Main 504-371-8557 ° Fax 504-371-8560
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Certification Summary

Laboratory ID: WP MLA: Waypoint Analytical Louisiana, Inc., Marrero, LA

<u>State</u>	<u>Program</u>	<u>Lab ID</u>	<u>Expiration Date</u>
Georgia	State Program	02041	06/30/2023
Louisiana	State Program - NELAP	02041	06/30/2023

Sample Summary Table

Report Number: 22-202-0001
Client Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Lab No	Client Sample ID	Matrix	Date Collected	Date Received	Method	Lab ID
71734	SB-03 (0-2)	Solids	06/21/2022 11:40	06/28/2022	X-RAY SXR XRD EDX	Core Min
71735	SB-04 (0-2)	Solids	06/21/2022 12:10	06/28/2022	X-RAY SXR XRD EDX	Core Min
71736	SB-11 (2-4)	Solids	06/22/2022 13:45	06/28/2022	X-RAY SXR XRD EDX	Core Min
71737	SB-12 (2-4)	Solids	06/22/2022 14:30	06/28/2022	X-RAY SXR XRD EDX	Core Min

Waypoint Analytical
 Report # 22-202-0001
 Hydro-Environmental Technology



Core Mineralogy, Inc.
 Analytical Consulting Services

www.coremineral.com
 100 Jared Drive
 Broussard, LA 70518
 Phone: (337) 984-0500
 e-mail: mansourr@coremineral.com
 Analyst: Mansour Rahmatian (M.S.)
 CMI # 22072202 EDXXRD
 Date Reported: 7/26/2022

Semi Quantitative X-Ray Diffraction (XRD) &
 Energy Dispersive X-Ray Spectrometry (EDX)

Sample Submitted to CMI Labs on: 7/22/2022 @ 8:45 AM
 Attention: Amy Jackson

Sample ID	Client Sample ID	Lab #	Sampling Date	Sampling Time	CMI Sample #	Semi Quantitative Weight Percent Elemental Composition by EDX Normalized to 100%																	Mineral Phases Identified by XRD															
						Carbon (C)	Oxygen (O)	Sodium (Na)	Magnesium (Mg)	Aluminum (Al)	Silicon (Si)	Phosphorus (P)	Sulfur (S)	Chlorine (Cl)	Potassium (K)	Calcium (Ca)	Chromium (Cr)	Manganese (Mn)	Iron (Fe)	Zinc (Zn)	Strontium (Sr)	Barium (Ba)	Titanium (Ti)	Total	Quartz (SiO ₂)	K-Feldspars (KAlSi ₃ O ₈)	Plagioclase (NaAlSi ₃ O ₈)	Calcite (CaCO ₃)	Pyrite (FeS ₂)	Fe Dolomite (FeMgCa(CO ₃) ₂)	Barium Sulfide (BaS)	Barite (BaSO ₄)	Witherite (BaCO ₃)	Barium Chloride (BaCl ₂)	Baria (BaO)	Barium Peroxide (BaO ₂)	Total Clay	Total
SB-03 (0-2)	71734	6/21/22	11:40	17778	2.17	32.64	0.26	0.35	2.47	8.66	ND	9.07	0.04	0.63	1.87	ND	ND	3.01	ND	ND	38.84	ND	100	19.5	0.5	0.6	3.0	ND	ND	ND	64.1	ND	ND	ND	ND	ND	12.3	100
SB-04 (0-2)	71735	6/21/22	12:10	17779	2.27	31.41	0.16	0.21	1.66	7.09	ND	10.03	0.02	0.48	1.67	ND	ND	2.05	ND	ND	42.96	ND	100	13.3	0.3	1.2	3.6	ND	ND	ND	73.4	ND	ND	ND	ND	ND	8.2	100
SB-11 (2-4)	71736	6/22/22	13:45	17780	3.90	35.68	0.27	0.72	5.19	13.25	ND	6.46	0.03	1.31	1.68	ND	ND	3.41	0.42	ND	27.68	ND	100	17.8	1.4	1.0	2.6	ND	ND	ND	44.9	ND	ND	ND	ND	ND	32.3	100
SB-12 (2-4)	71737	6/22/22	14:30	17781	2.67	32.53	0.20	0.31	2.56	8.77	ND	9.14	0.01	0.62	1.46	ND	ND	2.20	0.41	ND	39.14	ND	100	18.3	0.3	1.4	3.0	ND	ND	ND	66.0	ND	ND	ND	ND	ND	11.1	100

ND = None Detected

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Limitation of Liability: These analysis, opinions or interpretations are based on observation and materials supplied by the client and they represent the best judgment of Core Mineralogy, Inc., (all errors and omissions excepted); but Core Mineralogy, Inc. and its officers and employees shall not be liable for any loss or damage resulting from the furnishing of the data reported herein: and Core Mineralogy, Inc. makes no warranties, expressed or implied, whether of fitness for a particular purpose, merchantability or otherwise, as to the accuracy of the data reported. Core Mineralogy, Inc. disclaims any liability in the use of these data, including possible infringement of patent.



5041 Taravella Road, Marrero, LA 70072
 Main 504-371-8557 ° Fax 504-371-8560
 www.waypointanalytical.com

07/21/2022 17:08:21

Page 1 of 1

Export Batch Report
Export Batch Id : 8053EXP

Created: 7/21/2022 17:08:12
Computer: WPALMS-094
User: Christina R. Varuso
Project Manager: Amy Jackson

To: Core Mineralogy, Inc.
 100 Jared Drive
 Broussard, LA 70518
 337-984-0500

From: Waypoint Analytical Louisiana, Inc.
 5041 Taravella Rd.
 Marrero, LA 70072
 504-371-8557

Report No	Due Date	Sample Date	Customer Sample No	Rush	Lab No	Method No	Fee Code	Description
22-202-0001	08/01/2022	06/21/2022 11:40	SB-03 (0-2)		71734	X-RAY SXRDXRD EDX		X-Ray X-Ray Diffraction (XRD) & X-Ray Spectrometry (EDX) 17718
22-202-0001	08/01/2022	06/21/2022 12:10	SB-04 (0-2)		71735	X-RAY SXRDXRD EDX		X-Ray X-Ray Diffraction (XRD) & X-Ray Spectrometry (EDX) 17779
22-202-0001	08/01/2022	06/22/2022 13:45	SB-11 (2-4)		71736	X-RAY SXRDXRD EDX		X-Ray X-Ray Diffraction (XRD) & X-Ray Spectrometry (EDX) 17780
22-202-0001	08/01/2022	06/22/2022 14:30	SB-12 (2-4)		71737	X-RAY SXRDXRD EDX		X-Ray X-Ray Diffraction (XRD) & X-Ray Spectrometry (EDX) 17781

Sampled By	Method of Shipment	Blank / Cooler Temp.	
Remarks			
Relinquished By (sign) <i>[Signature]</i>	Date / Time 7-21-22 1710	Received By (sign) ERIC MUCHIRI	Date / Time 7/22/22 8AM
Relinquished By (sign)	Date / Time	Received By (sign)	Date / Time

Page 2 of 2

Shipment Receipt Form

Customer Number: **09996**

Customer Name: **Hydro-Environmental Technology, Inc.**

Report Number: **22-202-0001**

Shipping Method

Fed Ex US Postal Lab Other :
 UPS Client Courier Thermometer ID:

Shipping container/cooler uncompromised?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Number of coolers/boxes received	<input type="text" value="1"/>		
Custody seals intact on shipping container/cooler?	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> Not Present
Custody seals intact on sample bottles?	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> Not Present
Chain of Custody (COC) present?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
COC agrees with sample label(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
COC properly completed	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Samples in proper containers?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Sample containers intact?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Sufficient sample volume for indicated test(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
All samples received within holding time?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Cooler temperature in compliance?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Cooler/Samples arrived at the laboratory on ice. Samples were considered acceptable as cooling process had begun.	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Water - Sample containers properly preserved	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> N/A
Water - VOA vials free of headspace	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> N/A
Trip Blanks received with VOAs	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> N/A
Soil VOA method 5035 – compliance criteria met	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
<input type="checkbox"/> High concentration container (48 hr)		<input type="checkbox"/> Low concentration EnCore samplers (48 hr)	
<input type="checkbox"/> High concentration pre-weighed (methanol -14 d)		<input type="checkbox"/> Low conc pre-weighed vials (Sod Bis -14 d)	
Special precautions or instructions included?	<input type="radio"/> Yes	<input checked="" type="radio"/> No	

Comments:

Signature:

Date & Time:



HYDRO-ENVIRONMENTAL TECI
 Environmental Consult
 P.O. Box 60295
 Lafayette, LA 70596-0295
 Phone (337) 261-1963 FAX (337) 261-1964



22-202-0001
 09996
 07-21-2022
 10:10:14

Hydro-Environmental Technology, Inc.
 August Levert

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert Laboratory: Waypoint
 Project Number: 1009.A62 Collected By: DW/DCC
 Project Location: Bayou Sorrel, LA Company: Hydro-Environmental Technology, Inc.
 Date: 2022 06-21

Sample I.D.	Type	Date/Time Sampled	Containers	Analysis Requested/Method	Comments
SB-01 (0-2) 70494	SO	6/21/2022 1040	1 x 16oz	EC, ESP, SAR, CEC Chlorides, pH, % Moisture, Cations*, Anions*, Bromide, Metals*, 29B Oil and Grease	4°C
SB-01 (2-4) 70495	SO	6/21/2022 1040	1 x 16oz	EC, ESP, SAR, CEC Chlorides, pH, % Moisture, Cations*, Anions*, Bromide, Metals*, 29B Oil and Grease	4°C
SB-02 (0-2) 70496	SO	6/21/2022 1110	1 x 16oz	EC, ESP, SAR, CEC Chlorides, pH, % Moisture, Cations*, Anions*, Bromide, Metals*, 29B Oil and Grease	4°C
SB-02 (2-4) 70497	SO	6/21/2022 1110	1 x 16oz	EC, ESP, SAR, CEC Chlorides, pH, % Moisture, Cations*, Anions*, Bromide, Metals*, 29B Oil and Grease	4°C
* 71734 SB-03 (0-2) 70498	SO	6/21/2022 1140	1 x 16oz 2 x Terracore	EC, ESP, SAR, CEC Chlorides, pH, % Moisture, Cations*, Anions*, Bromide, Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-03 (2-4) 70499	SO	6/21/2022 1140	1 x 16oz 2 x Terracore	EC, ESP, SAR, CEC Chlorides, pH, % Moisture, Cations*, Anions*, Bromide, Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
* 71735 SB-04 (0-2) 70500 70498	SO	6/21/2022 1210	1 x 16oz 2 x Terracore	EC, ESP, SAR, CEC Chlorides, pH, % Moisture, Cations*, Anions*, Bromide, Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-04 (2-4) 70501	SO	6/21/2022 1210	1 x 16oz 2 x Terracore	EC, ESP, SAR, CEC Chlorides, pH, % Moisture, Cations*, Anions*, Bromide, Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-04 (4-6) 70502	SO	6/21/2022 1230	1 x 16oz 2 x Terracore	EC, ESP, SAR, CEC Chlorides, pH, % Moisture, Cations*, Anions*, Bromide, Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-05 (2-4) 70503	SO	6/21/2022 1410	1 x 16oz 2 x Terracore	EC, ESP, SAR, CEC Chlorides, pH, % Moisture, Cations*, Anions*, Bromide, Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH

* Per Brent Pooler, XAD requested on SB-3(0-2), SB4(0-2), SB-11(2-4), & SB-12(2-4) - CEV HOLD for possible analysis of SPLP Chloride and Sodium and additional parameters
 Cations*: Soluble Calcium, Magnesium, and Sodium
 Anions*: Cl, SO4, HCO3
 VPH Analysis added per DCC 6/24/22 @ 3:02pm

Relinquished By: [Signature] Received By: P. Howard
 Date/Time: 6/23/22 1340 Date/Time: 6/24/22 1340
 Relinquished By: P. Howard Received By: [Signature]
 Date/Time: 6/27/22 10:15 Date/Time: 6/27/22 10:15
 Analysis Due: Verbal: Written:

Rel: [Signature] 6/28/22 830 Rec'd by: [Signature] 6-28-22 0830



HYDRO-ENVIRONMENTAL TECHNOLOGY, INC.
 Environmental Consultants
 P.O. Box 60295
 Lafayette, LA 70596-0295
 Phone (337) 261-1963 FAX (337) 261-1953

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert	Laboratory: Waypoint
Project Number: 1009.A62	Collected By: DW/DCC
Project Location: Bayou Sorrel, LA	Company: Hydro-Environmental Technology, Inc.
	Date: 2022 06-21

Sample I.D.	Type	Date/Time Sampled	Containers	Analysis Requested/Method	Comments
SB-05 (4-6) <i>70504</i>	SO	6/21/2022 1420	1 x 16oz 2 x Terracore <i>VPH</i>	EC, ESP, SAR, CEC Chlorides, pH, % Moisture, Cations*, Anions*, Bromide, Metals*, EPH (Ma), . 29B Oil and Grease	4°C HOLD: PAH
SB-06 (2-4) <i>70505</i>	SO	6/21/2022 1450	1 x 16oz 2 x Terracore <i>VPH</i>	EC, ESP, SAR, CEC Chlorides, pH, % Moisture, Cations*, Anions*, Bromide, Metals*, EPH (Ma), . 29B Oil and Grease	4°C HOLD: PAH
SB-06 (4-6) <i>70506</i>	SO	6/21/2022 1455	1 x 16oz 2 x Terracore <i>VPH</i>	EC, ESP, SAR, CEC Chlorides, pH, % Moisture, Cations*, Anions*, Bromide, Metals*, EPH (Ma), . 29B Oil and Grease	4°C HOLD: PAH
SB-07 (2-4) <i>70507</i>	SO	6/21/2022 1525	1 x 16oz 2 x Terracore <i>VPH</i>	EC, ESP, SAR, CEC Chlorides, pH, % Moisture, Cations*, Anions*, Bromide, Metals*, EPH (Ma), . 29B Oil and Grease	4°C HOLD: PAH
SB-07 (4-6) <i>70508</i>	SO	6/21/2022 1530	1 x 16oz 2 x Terracore <i>VPH</i>	EC, ESP, SAR, CEC Chlorides, pH, % Moisture, Cations*, Anions*, Bromide, Metals*, EPH (Ma), . 29B Oil and Grease	4°C HOLD: PAH
SB-08 (0-2) <i>70509</i>	SO	6/21/2022 1550	1 x 16oz 2 x Terracore <i>VPH</i>	EC, ESP, SAR, CEC Chlorides, pH, % Moisture, Cations*, Anions*, Bromide, Metals*, EPH (Ma), . 29B Oil and Grease	4°C HOLD: PAH
SB-08 (2-4) <i>70510</i>	SO	6/21/2022 1550	1 x 16oz 2 x Terracore <i>VPH</i>	EC, ESP, SAR, CEC Chlorides, pH, % Moisture, Cations*, Anions*, Bromide, Metals*, EPH (Ma), . 29B Oil and Grease	4°C HOLD: PAH
SB-09 (0-2) <i>70511</i>	SO	6/22/2022 1030	1 x 16oz 2 x Terracore <i>VPH</i>	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-09 (2-4) <i>70512</i>	SO	6/22/2022 1030	1 x 16oz 2 x Terracore <i>VPH</i>	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-09 (4-6) <i>70513</i>	SO	6/22/2022 1515	1 x 16oz 2 x Terracore <i>VPH</i>	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH

HOLD for possible analysis of SPLP Chloride and Sodium and additional parameters
 Cations*: Soluble Calcium, Magnesium, and Sodium
 Anions*: Cl, SO4, HCO3

VPH ANALYSIS added per DCC 6/24/22 @ 3:02pm

Relinquished By: <i>[Signature]</i> Date/Time: <i>6/29/22 1340</i>	Received By: <i>P. Howard</i> Date/Time: <i>6/24/22 1340</i>
Relinquished By: <i>P. Howard</i> Date/Time: <i>6/27/22 10:15</i>	Received By: <i>[Signature]</i> Date/Time: <i>6/27/22 1015</i>
Analysis Due: Verbal:	Written:

Rel: [Signature] 6/26/22 830 *Rec'd by 6-28-22 0830*



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 Environmental Consultants
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 Phone (337) 261-1963 FAX (337) 261-1953

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert	Laboratory: Waypoint
Project Number: 1009.A62	Collected By: DW/DCC
Project Location: Bayou Sorrel, LA	Company: Hydro-Environmental Technology, Inc.
	Date: 2022 06-21

Sample I.D.	Type	Date/Time Sampled	Containers	Analysis Requested/Method	Comments
SB-09 (6-8) 70514	SO	6/22/2022 1515	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-10 (0-2) 70515	SO	6/22/2022 1135	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-10 (2-4) 70516	SO	6/22/2022 1135	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-10 (4-6) 70517	SO	6/22/2022 1200	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-10 (6-8) 70518	SO	6/22/2022 1200	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-11 (0-2) 70519	SO	6/22/2022 1345	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
* 71736 SB-11 (2-4) 70520	SO	6/22/2022 1345	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-12 (0-2) 70521	SO	6/22/2022 1430	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
* 71737 SB-12 (2-4) 70522	SO	6/22/2022 1430	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-13 (0-2) 70523	SO	6/22/2022 1530	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-13 (2-4) 70524	SO	6/22/2022 1530	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-13 (4-6) 70525	SO	6/22/2022 1550	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH

HOLD for possible analysis of SPLP Chloride and Sodium and additional parameters
 Cations*: Soluble Calcium, Magnesium, and Sodium
 Anions*: Cl, SO4, HCO3

VPH analysis added per DCC
 6/24/22 13:02pm

Relinquished By: Date/Time: 6/24/22 1340	Received By: P. Hawaw Date/Time: 6/24/22 1340
Relinquished By: P. Hawaw Date/Time: 6/27/22 10:15	Received By: Date/Time: 6/27/22 1015
Analysis Due: Verbal:	Written:

Del: 6/28/22 830
 Rec'd By: 6-28-22 0830



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SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert Laboratory: Waypoint
 Project Number: 1009.A62 Collected By: DW/DCC
 Project Location: Bayou Sorrel, LA Company: Hydro-Environmental Technology, Inc.
 Date: 2022 06-21

Sample I.D.	Type	Date/Time Sampled	Containers	Analysis Requested/Method	Comments
SB-13 (6-8) 70526	SO	6/22/2022 1550	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-14 (0-2) 70527	SO	6/23/2022 1015	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-14 (2-4) 70528	SO	6/23/2022 1015	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-14 (4-6) 70529	SO	6/23/2022 1030	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-14 (6-8) 70530	SO	6/23/2022 1030	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-15 (0-2) 70531	SO	6/23/2022 1040	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-15 (2-4) 70532	SO	6/23/2022 1040	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-15 (4-6) 70533	SO	6/23/2022 1100	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-15 (6-8) 70534	SO	6/23/2022 1100	1 x 16oz 2 x Encore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-16 (0-2) 70535	SO	6/23/2022 1120	1 x 16oz 2 x Encore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH

HOLD for possible analysis of SPLP Chloride and Sodium and additional parameters
 Cations*: Soluble Calcium, Magnesium, and Sodium
 Anions*: Cl, SO4, HCO3

VPH added
 per DCC
 6/24/22 @ 3:02pm

Relinquished By: [Signature] Date/Time: 6/24/22 1340	Received By: P. Howard Date/Time: 6/24/22 1340
Relinquished By: P. Howard Date/Time: 6/27/22 1015	Received By: [Signature] Date/Time: 6/27/22 1015
Analysis Due: Verbal:	Written:

Relinquished By: [Signature] 6/26/22 830

Received By: [Signature] 6-28-22 0830



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SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert
Project Number: 1009.A62
Project Location: Bayou Sorrel, LA
Laboratory: Waypoint
Collected By: DW/DCC
Company: Hydro-Environmental Technology, Inc.
Date: 2022 06-21

Sample I.D.	Type	Date/Time Sampled	Containers	Analysis Requested/Method	Comments
SB-16 (2-4) 70536	SO	6/23/2022 1120	1 x 16oz VPH 2 x Encore	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-16 (4-6) 70537	SO	6/23/2022 1135	1 x 16oz VPH 2 x Encore	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-16 (6-8) 70538	SO	6/23/2022 1135	1 x 16oz VPH 2 x Encore	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-17 (0-2) 70539	SO	6/23/2022 1415	1 x 16oz VPH 2 x Encore	EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-18 (0-2) 70540	SO	6/23/2022 1425	1 x 16oz VPH 2 x Encore	EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-19 (0-2) 70541	SO	6/23/2022 1435	1 x 16oz VPH 2 x Encore	EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-20 (0-2) 70542	SO	6/23/2022 1445	1 x 16oz VPH 2 x Encore	EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-21 (0-2) 70543	SO	6/23/2022 1510	1 x 16oz VPH 2 x Encore	EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-22 (0-2) 70544	SO	6/23/2022 1520	1 x 16oz VPH 2 x Encore	EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-23 (0-2) 70545	SO	6/23/2022 1525	1 x 16oz VPH 2 x Encore	EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH

HOLD for possible analysis of SPLP Chloride and Sodium and additional parameters
 Cations*: Soluble Calcium, Magnesium, and Sodium
 Anions*: Cl, SO4, HCO3

VPH ANALYSIS
 Added per DCC
 6/24/22 @ 3:02 pm

Relinquished By: <i>[Signature]</i>	Received By: <i>P. Howard</i>
Date/Time: 6/24/22 1340	Date/Time: 6/24/22 1340
Relinquished By: <i>P. Howard</i>	Received By: <i>[Signature]</i>
Date/Time: 6/27/22 10:15	Date/Time: 6/27/22 10:15
Analysis Due: Verbal:	Written:

Rel: *[Signature]* 6/28/22 830

Rec'd By: *[Signature]* 6-28-22 830



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 P.O. Box 60295
 Lafayette, LA 70596-0295
 Phone (337) 261-1963 FAX (337) 261-1953

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert
 Project Number: 1009.A62
 Project Location: Bayou Sorrel, LA
 Laboratory: Waypoint
 Collected By: DW/DCC
 Company: Hydro-Environmental Technology, Inc.
 Date: 2022 06-21

Sample I.D.	Type	Date/Time Sampled	Containers	Analysis Requested/Method	Comments
SB-24 (0-2) 70546	SO	6/23/2022 1530	1 x 16oz 2 x Encore VPH	EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
HA-01R (2-4) 70547	SO	6/23/2022 1455	1 x 16oz	SAR	4°C
Trip Blank 70548	Water	6/21/2022 0700	3 x 40ml	VPH (Ma)	4°C
Field Blank 70549	Water	6/21/2022 0800	3 x 40ml	VPH (Ma)	4°C
Field Blank 70550	Water	6/22/2022 0800	3 x 40ml	VPH (Ma)	4°C
Field Blank 70551	Water	6/23/2022 0800	3 x 40ml	VPH (Ma)	4°C

HOLD for possible analysis of SPLP Chloride and Sodium and additional parameters
 Cations*: Soluble Calcium, Magnesium, and Sodium
 Anions*: Cl, SO4, HCO3

VPH ANALYSIS
 ADDED PER DCC
 6/24/22 @ 3:02pm

Relinquished By: [Signature] Date/Time: 6/22/22 1340
 Received By: P. Howard Date/Time: 6/24/22 1340
 Relinquished By: P. Howard Date/Time: 6/27/22 10:15
 Received By: [Signature] Date/Time: 6/27/22 1015
 Analysis Due: Verbal: Written:

Rel: [Signature] 6/28/22 870

Rec'd by: [Signature] 6-28-22 0830



Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

July 28, 2022

Mr. Greg Miller
ICON Environmental Services
2049 Commercial Drive
Port Allen, LA 70767

RE: Project: Levert - Grand River
Pace Project No.: 30502618

Dear Mr. Miller:

Enclosed are the analytical results for sample(s) received by the laboratory on July 05, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sean L. Meredith
sean.meredith@pacelabs.com
(724)850-5600
Project Manager

Enclosures

cc: Mr. Derek Pourciau, ICON Environmental Services



REPORT OF LABORATORY ANALYSIS

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August Levert_BP Plan_001210



CERTIFICATIONS

Project: Levert - Grand River
Pace Project No.: 30502618

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Lvert - Grand River
Pace Project No.: 30502618

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30502618001	LT-4	Water	06/22/22 15:00	07/05/22 10:05
30502618002	LT-5	Water	06/23/22 11:20	07/05/22 10:05
30502618003	LT-8	Water	06/28/22 11:45	07/05/22 10:05
30502618004	LT-9	Water	06/28/22 15:10	07/05/22 10:05

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Lvert - Grand River
Pace Project No.: 30502618

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30502618001	LT-4	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
30502618002	LT-5	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
30502618003	LT-8	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
30502618004	LT-9	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Lvert - Grand River
Pace Project No.: 30502618

Method: EPA 903.1
Description: 903.1 Radium 226
Client: ICON Environmental Services
Date: July 28, 2022

General Information:

4 samples were analyzed for EPA 903.1 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Lvert - Grand River
Pace Project No.: 30502618

Method: EPA 904.0
Description: 904.0 Radium 228
Client: ICON Environmental Services
Date: July 28, 2022

General Information:

4 samples were analyzed for EPA 904.0 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Levert - Grand River
 Pace Project No.: 30502618

Sample: LT-4		Lab ID: 30502618001	Collected: 06/22/22 15:00	Received: 07/05/22 10:05	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg							
Radium-226	EPA 903.1	0.0498 ± 0.352 (0.702)		pCi/L	07/28/22 12:52	13982-63-3	
Pace Analytical Services - Greensburg							
Radium-228	EPA 904.0	0.563 ± 0.510 (1.03)		pCi/L	07/25/22 18:16	15262-20-1	

Sample: LT-5		Lab ID: 30502618002	Collected: 06/23/22 11:20	Received: 07/05/22 10:05	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg							
Radium-226	EPA 903.1	0.310 ± 0.407 (0.677)		pCi/L	07/28/22 12:52	13982-63-3	
Pace Analytical Services - Greensburg							
Radium-228	EPA 904.0	0.662 ± 0.505 (0.994)		pCi/L	07/25/22 18:16	15262-20-1	

Sample: LT-8		Lab ID: 30502618003	Collected: 06/28/22 11:45	Received: 07/05/22 10:05	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg							
Radium-226	EPA 903.1	0.825 ± 0.574 (0.773)		pCi/L	07/28/22 12:52	13982-63-3	
Pace Analytical Services - Greensburg							
Radium-228	EPA 904.0	0.591 ± 0.476 (0.948)		pCi/L	07/25/22 18:17	15262-20-1	

Sample: LT-9		Lab ID: 30502618004	Collected: 06/28/22 15:10	Received: 07/05/22 10:05	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg							
Radium-226	EPA 903.1	0.810 ± 0.476 (0.572)		pCi/L	07/28/22 12:52	13982-63-3	
Pace Analytical Services - Greensburg							
Radium-228	EPA 904.0	0.458 ± 0.498 (1.04)		pCi/L	07/25/22 18:17	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Lvert - Grand River
 Pace Project No.: 30502618

QC Batch: 518680 Analysis Method: EPA 904.0
 QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
 Laboratory: Pace Analytical Services - Greensburg
 Associated Lab Samples: 30502618001, 30502618002, 30502618003, 30502618004

METHOD BLANK: 2514501 Matrix: Water
 Associated Lab Samples: 30502618001, 30502618002, 30502618003, 30502618004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.378 ± 0.329 (0.662) C:77% T:95%	pCi/L	07/25/22 13:52	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Lvert - Grand River
 Pace Project No.: 30502618

QC Batch: 518679	Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1	Analysis Description: 903.1 Radium-226
	Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 30502618001, 30502618002, 30502618003, 30502618004

METHOD BLANK: 2514500 Matrix: Water
 Associated Lab Samples: 30502618001, 30502618002, 30502618003, 30502618004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.133 ± 0.262 (0.626) C:NA T:92%	pCi/L	07/28/22 11:55	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Levert - Grand River
Pace Project No.: 30502618

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.
ND - Not Detected at or above adjusted reporting limit.
TNTC - Too Numerous To Count
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
PQL - Practical Quantitation Limit.
RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.
S - Surrogate
1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
LCS(D) - Laboratory Control Sample (Duplicate)
MS(D) - Matrix Spike (Duplicate)
DUP - Sample Duplicate
RPD - Relative Percent Difference
NC - Not Calculable.
SG - Silica Gel - Clean-Up
U - Indicates the compound was analyzed for, but not detected.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.
Act - Activity
Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.
Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.
(MDC) - Minimum Detectable Concentration
Trac - Tracer Recovery (%)
Carr - Carrier Recovery (%)
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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WO#: 30502618



30502618

CHAIN-OF-CUSTODY FORM



Environmental Services, Inc.

2049 Commercial Drive

Port Allen, LA 70767

(225) 344-8490 fax (225) 344-6654

Project Name/Number: Levert - Grand Dunes

Sampler: Chase Silbert Transporter: FedEx

Bottles: 8

ANALYTICAL REQUESTS

Sample Description	Matrix (See Code)	Date	Time (24:00)	Type (Comp., Grab)	Containers (Number)	Turnaround (See code)	Comments/Field Results
LT-4	WT	6-22-22	1500	Grab	7	STD	1001
LT-5	↓	6-23-22	1100	↓	↓	↓	0.62
LT-8	↓	6-28-22	1145	↓	↓	↓	0.03
LT-9	↓	6-28-22	1510	↓	↓	↓	0.04

Please e-mail results to
 gregm@iconenv.com
 dfourclau@iconenv.com

Relinquished by:	Company:	Received by:	Company:	Date:	Time:
<i>[Signature]</i>	Iron	<i>[Signature]</i>		6-23-22	10:05
Relinquished by:	Company:	Received by:	Company:	Date:	Time:
Relinquished by:	Company:	Received by:	Company:	Date:	Time:

Matrix: W = water, S = solid, SL = sludge, L = liquid, CT = charcoal tube, CN = canister, A = airbag
 Turnaround: 24 = 24 hr, 48 = 48 hr, 3D = 3 days, 1 wk = 1 week, 2 wk = 2 weeks, STD = standard

Pittsburgh Lab Sample Condition Upon Receipt



Client Name: ICON Environmental Project # _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Label <u>JA</u>
LIMS Login <u>VPIE</u>

Tracking #: 7772 7787 9610

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no

Thermometer Used _____ Type of Ice: Wet Blue None
 Cooler Temperature Observed Temp _____ °C Correction Factor: _____ °C Final Temp: _____ °C

Temp should be above freezing to 6°C

Comments:	Yes	No	N/A	pH paper Lot#	Date and Initials of person examining contents:
				<u>1004611</u>	<u>7-5-22 JA</u>
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1.	
Chain of Custody Filled Out:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2.	<u>no container preservative type on COC</u>
Chain of Custody Relinquished:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3.	
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4.	
Sample Labels match COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.	
-Includes date/time/ID Matrix: <u>WT</u>					
Samples Arrived within Hold Time: <u>21/22</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	6.	<u>Unpreserved - 003 + 004 (one bottle each)</u>
Short Hold Time Analysis (<72hr remaining):	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.	<u>collected 6-28-22, received 7-5-22</u>
Rush Turn Around Time Requested:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	8.	
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9.	
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.	
-Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11.	
Orthophosphate field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12.	
Hex Cr Aqueous sample field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	13.	
Organic Samples checked for dechlorination:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.	
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	15.	
All containers have been checked for preservation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16.	<u>Added 2.5 mL HNO3 to 003 (one bottle), 004 (one bottle)</u>
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix					
All containers meet method preservation requirements.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Initial when completed	<u>JA</u> Date/time of preservation <u>7-5-22 10:32</u>
				Lot # of added preservative	<u>D122-0625</u>
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	17.	
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	18.	
Trip Blank Custody Seals Present	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Rad Samples Screened < 0.5 mrem/hr	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed	<u>JA</u> Date: <u>7-5-22</u> Survey Meter SN: <u>1563</u>

Client Notification/ Resolution:
 Person Contacted: _____ Date/Time: _____ Contacted By: _____
 Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)
 *PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

W0#: 30502618
 PM: SM1
 CLIENT: ICON
 Due Date: 07/26/22



Pace Greensburg Lab - Sample Container Count

WO#: 30502618

PM: SM1 Due Date: 07/26/22

CLIENT: ICON

Profile Number

966

Client

ICON Environmental
Levert - Grand River

Notes

Sample Line Item	Matrix	AG1H	AG1S	AG1T	AG2U	AG3S	AG3U	AG5U	AG5T	BG1U	BG2U	BP1N	BP1U	BP2S	BP2U	BP3C	BP3N	BP3S	BP3U	DG9S	GCUB	VG9H	VG9T	VG9U	VOAK	WGFU	WGKU	ZPLC
1	WT											2																
2	WT											2																
3	WT											2																
4	WT											2																
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

Container Codes

Code	Description
3JN	1 Gallon Jug with HNO3
AG5U	100mL amber glass unpreserved
AG5T	100mL amber glass Na Thiosulfate
3JN	1 Gallon Jug
AG1S	1L amber glass H2SO4
AG1H	1L amber glass HCl
AG1T	1L amber glass Na Thiosulfate
BG1U	1L clear glass unpreserved
AG3S	250mL amber glass H2SO4
AG3U	250mL amber glass unpreserved
DG9S	40mL amber VOA vial H2SO4
VG9U	40mL clear VOA vial
VG9T	40mL clear VOA vial Na Thiosulfate
VG9H	40mL clear VOA vial HCl
JGFU	4oz amber wide jar
WGFU	4oz wide jar unpreserved
BG2U	500mL clear glass unpreserved
AG2U	500mL amber glass unpreserved
WGKU	8oz wide jar unpreserved

Glass

Code	Description	Material
GCUB	1 Gallon Cubitainer	EZI
12GN	1/2 Gallon Cubitainer	VOAK
SP5T	120mL Coliform Na Thiosulfate	I
BP1N	1L plastic HNO3	ZPLC
BP1U	1L plastic unpreserved	WT
BP3S	250mL plastic H2SO4	SL
BP3N	250mL plastic HNO3	OL
BP3U	250mL plastic unpreserved	WP
BP3C	250ml plastic NaOH	
BP2S	500mL plastic H2SO4	
BP2U	500mL plastic unpreserved	

Plastic / Misc.

Code	Description	Material
5g	Encore	
	Kit for Volatile Solid	
	Wipe/Swab	
	Ziploc Bag	
	Water	
	Solid	
	Non-aqueous liquid	
	Wipe	

8/2/2022

Hydro-Environmental Technology, Inc.
Mr. Stewart Stover, Jr.
91 Apollo Rd
Scott, LA, 70583

Ref: Report Number: 22-179-0021
Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Dear Mr. Stewart Stover, Jr.:

Waypoint Analytical Louisiana, Inc. received sample(s) on 6/28/2022 for the analyses presented in the following report. The above referenced project has been analyzed per your instructions. Unless otherwise noted, the analyses were performed in our laboratory in accordance with Standard Methods, The Solid Waste Manual SW-846, EPA Methods for Chemical Analysis of Water and Wastes and /or 40 CFR part 136.

Certain parameters (chlorine, pH, dissolved oxygen, sulfite...) are required to be analyzed within 15 minutes of sampling. Usually, but not always, any field parameter analyzed at the laboratory is outside of this holding time. Refer to sample analysis time for confirmation of holding time compliance. Analyses reported which indicate "Field" for these parameters were analyzed by the client in the field. Results for solid samples are reported on an as received or "wet weight" basis unless otherwise specified.

The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, method validations, instrumentation maintenance and calibration for all parameters (NELAP and non-NELAP) were performed in accordance with guidelines established by the USEPA (including 40 CFR 136 Method Update Rule May 2021) and NELAC unless otherwise indicated. Any parameter for which the laboratory is not officially NELAP accredited is indicated by a '~' symbol. These are not included in the scope because NELAP accreditation is either not available or has not been applied for. Additional certifications may be held/are available for parameters, where NELAP accreditation is not required or applicable. A full list of certifications is available upon request.

All quality control measures undertaken in accordance with Waypoint Analytical Louisiana, Inc. CompQAP990807A and revisions under the terms of the Louisiana Environmental Laboratory Accreditation Program (Certificate #02041) are within acceptance ranges established in that document with the exception of the items indicated and/or discussed in a Case Narrative.

The results are shown on the attached analysis sheet(s). Be aware that the time analyzed for certain samples (e.g. - BOD, CBOD, etc.) refer to the time the sample batch was begun and not necessarily to the time an individual sample was begun. Thank you for allowing Waypoint Analytical Louisiana, Inc. to serve you. Should I be of further assistance, if you have any questions or need additional information please contact me or client services.

Sincerely,



Amy Jackson
Project Manager

Laboratory's liability in any claim relating to analyses performed shall be limited to, at laboratory's option, repeating the analysis in question at laboratory's expense, or the refund of the charges paid for performance of said analysis. This report may be reproduced in full only with the written permission of the laboratory and/or the entity to which it is addressed. Results contained herein relate only to the sample(s) submitted to the laboratory.



Certification Summary

Laboratory ID: WP MLA: Waypoint Analytical Louisiana, Inc., Marrero, LA

State	Program	Lab ID	Expiration Date
Georgia	State Program	02041	06/30/2023
Louisiana	State Program - NELAP	02041	06/30/2023

Laboratory ID: WP MTN: Waypoint Analytical, LLC., Memphis, TN

State	Program	Lab ID	Expiration Date
Alabama	State Program	40750	02/28/2023
Arkansas	State Program	88-0650	02/07/2023
California	State Program	2904	06/30/2023
Florida	State Program - NELAP	E871157	06/30/2023
Georgia	State Program	C044	02/18/2023
Georgia	State Program	04015	06/30/2023
Illinois	State Program - NELAP	200078	10/10/2022
Kentucky	State Program	80215	06/30/2023
Kentucky	State Program	KY90047	12/31/2022
Louisiana	State Program - NELAP	LA037	12/31/2022
Louisiana	State Program - NELAP	04015	06/30/2023
Mississippi	State Program	MS	02/11/2023
North Carolina	State Program	415	12/31/2022
Pennsylvania	State Program - NELAP	68-03195	05/31/2023
South Carolina	State Program	84002	06/30/2022
Tennessee	State Program	02027	02/11/2023
Texas	State Program - NELAP	T104704180	09/30/2022
Virginia	State Program	00106	06/30/2023
Virginia	State Program - NELAP	460181	09/14/2022

Laboratory ID: WP RMS: Waypoint Analytical Mississippi, Inc., Ridgeland, MS

State	Program	Lab ID	Expiration Date
Arkansas	State Program	88-1409	02/01/2023
Kentucky	State Program	KY98013	12/31/2022
Louisiana	State Program - NELAP	04023	06/30/2023
North Carolina	State Program	694	12/31/2022

Sample Summary Table

Report Number: 22-179-0021
Client Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Lab No	Client Sample ID	Matrix	Date Collected	Date Received	Method	Lab ID
70494	SB-01 (0-2)	Solids	06/21/2022 10:40	06/28/2022		
70494	SB-01 (0-2)	Solids	06/21/2022 10:40	06/28/2022	7471A	WP MTN
70494	SB-01 (0-2)	Solids	06/21/2022 10:40	06/28/2022	29B	WP MTN
70494	SB-01 (0-2)	Solids	06/21/2022 10:40	06/28/2022	6010D	WP MTN
70495	SB-01 (2-4)	Solids	06/21/2022 10:40	06/28/2022		
70495	SB-01 (2-4)	Solids	06/21/2022 10:40	06/28/2022	7471A	WP MTN
70495	SB-01 (2-4)	Solids	06/21/2022 10:40	06/28/2022	6010D	WP MTN
70495	SB-01 (2-4)	Solids	06/21/2022 10:40	06/28/2022	29B	WP MTN
70496	SB-02 (0-2)	Solids	06/21/2022 11:10	06/28/2022		
70496	SB-02 (0-2)	Solids	06/21/2022 11:10	06/28/2022	29B	WP MTN
70496	SB-02 (0-2)	Solids	06/21/2022 11:10	06/28/2022	6010D	WP MTN
70496	SB-02 (0-2)	Solids	06/21/2022 11:10	06/28/2022	7471A	WP MTN
70497	SB-02 (2-4)	Solids	06/21/2022 11:10	06/28/2022		
70497	SB-02 (2-4)	Solids	06/21/2022 11:10	06/28/2022	29B	WP MTN
70497	SB-02 (2-4)	Solids	06/21/2022 11:10	06/28/2022	7471A	WP MTN
70497	SB-02 (2-4)	Solids	06/21/2022 11:10	06/28/2022	6010D	WP MTN
70498	SB-03 (0-2)	Solids	06/21/2022 11:40	06/28/2022		
70498	SB-03 (0-2)	Solids	06/21/2022 11:40	06/28/2022	8270D SIM	WP MTN
70498	SB-03 (0-2)	Solids	06/21/2022 11:40	06/28/2022	29B	WP MTN
70498	SB-03 (0-2)	Solids	06/21/2022 11:40	06/28/2022	7471A	WP MTN
70498	SB-03 (0-2)	Solids	06/21/2022 11:40	06/28/2022	6010D	WP MTN
70498	SB-03 (0-2)	Solids	06/21/2022 11:40	06/28/2022	MAEPH LA	WP RMS
70498	SB-03 (0-2)	Solids	06/21/2022 11:40	06/28/2022	MAVPH LA	WP RMS
70499	SB-03 (2-4)	Solids	06/21/2022 11:40	06/28/2022		
70499	SB-03 (2-4)	Solids	06/21/2022 11:40	06/28/2022	6010D	WP MTN
70499	SB-03 (2-4)	Solids	06/21/2022 11:40	06/28/2022	8270D SIM	WP MTN

WP MTN - Memphis, TN: Waypoint Analytical - TN, Memphis, TN

WP RMS - Ridgeland, MS: Waypoint Analytical - Mississippi, Inc., Ridgeland, MS

Sample Summary Table

Report Number: 22-179-0021
Client Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Lab No	Client Sample ID	Matrix	Date Collected	Date Received	Method	Lab ID
70499	SB-03 (2-4)	Solids	06/21/2022 11:40	06/28/2022	7471A	WP MTN
70499	SB-03 (2-4)	Solids	06/21/2022 11:40	06/28/2022	29B	WP MTN
70499	SB-03 (2-4)	Solids	06/21/2022 11:40	06/28/2022	MAVPH LA	WP RMS
70499	SB-03 (2-4)	Solids	06/21/2022 11:40	06/28/2022	MAEPH LA	WP RMS
70500	SB-04 (0-2)	Solids	06/21/2022 12:10	06/28/2022		
70500	SB-04 (0-2)	Solids	06/21/2022 12:10	06/28/2022	6010D	WP MTN
70500	SB-04 (0-2)	Solids	06/21/2022 12:10	06/28/2022	7471A	WP MTN
70500	SB-04 (0-2)	Solids	06/21/2022 12:10	06/28/2022	29B	WP MTN
70500	SB-04 (0-2)	Solids	06/21/2022 12:10	06/28/2022	8270D SIM	WP MTN
70500	SB-04 (0-2)	Solids	06/21/2022 12:10	06/28/2022	MAEPH LA	WP RMS
70500	SB-04 (0-2)	Solids	06/21/2022 12:10	06/28/2022	MAVPH LA	WP RMS
70501	SB-04 (2-4)	Solids	06/21/2022 12:10	06/28/2022		
70501	SB-04 (2-4)	Solids	06/21/2022 12:10	06/28/2022	8270D SIM	WP MTN
70501	SB-04 (2-4)	Solids	06/21/2022 12:10	06/28/2022	7471A	WP MTN
70501	SB-04 (2-4)	Solids	06/21/2022 12:10	06/28/2022	6010D	WP MTN
70501	SB-04 (2-4)	Solids	06/21/2022 12:10	06/28/2022	29B	WP MTN
70501	SB-04 (2-4)	Solids	06/21/2022 12:10	06/28/2022	MAVPH LA	WP RMS
70501	SB-04 (2-4)	Solids	06/21/2022 12:10	06/28/2022	MAEPH LA	WP RMS
70502	SB-04 (4-6)	Solids	06/21/2022 12:30	06/28/2022		
70502	SB-04 (4-6)	Solids	06/21/2022 12:30	06/28/2022	7471A	WP MTN
70502	SB-04 (4-6)	Solids	06/21/2022 12:30	06/28/2022	6010D	WP MTN
70502	SB-04 (4-6)	Solids	06/21/2022 12:30	06/28/2022	8270D SIM	WP MTN
70502	SB-04 (4-6)	Solids	06/21/2022 12:30	06/28/2022	29B	WP MTN
70502	SB-04 (4-6)	Solids	06/21/2022 12:30	06/28/2022	MAVPH LA	WP RMS
70502	SB-04 (4-6)	Solids	06/21/2022 12:30	06/28/2022	MAEPH LA	WP RMS
70503	SB-05 (2-4)	Solids	06/21/2022 14:10	06/28/2022		

WP MTN - Memphis, TN: Waypoint Analytical - TN, Memphis, TN

WP RMS - Ridgeland, MS: Waypoint Analytical - Mississippi, Inc., Ridgeland, MS

Sample Summary Table

Report Number: 22-179-0021
Client Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Lab No	Client Sample ID	Matrix	Date Collected	Date Received	Method	Lab ID
70503	SB-05 (2-4)	Solids	06/21/2022 14:10	06/28/2022	8270D SIM	WP MTN
70503	SB-05 (2-4)	Solids	06/21/2022 14:10	06/28/2022	7471A	WP MTN
70503	SB-05 (2-4)	Solids	06/21/2022 14:10	06/28/2022	6010D	WP MTN
70503	SB-05 (2-4)	Solids	06/21/2022 14:10	06/28/2022	29B	WP MTN
70503	SB-05 (2-4)	Solids	06/21/2022 14:10	06/28/2022	MAEPH LA	WP RMS
70503	SB-05 (2-4)	Solids	06/21/2022 14:10	06/28/2022	MAVPH LA	WP RMS
70504	SB-05 (4-6)	Solids	06/21/2022 14:20	06/28/2022		
70504	SB-05 (4-6)	Solids	06/21/2022 14:20	06/28/2022	6010D	WP MTN
70504	SB-05 (4-6)	Solids	06/21/2022 14:20	06/28/2022	29B	WP MTN
70504	SB-05 (4-6)	Solids	06/21/2022 14:20	06/28/2022	7471A	WP MTN
70504	SB-05 (4-6)	Solids	06/21/2022 14:20	06/28/2022	8270D SIM	WP MTN
70504	SB-05 (4-6)	Solids	06/21/2022 14:20	06/28/2022	MAVPH LA	WP RMS
70504	SB-05 (4-6)	Solids	06/21/2022 14:20	06/28/2022	MAEPH LA	WP RMS
70505	SB-06 (2-4)	Solids	06/21/2022 14:50	06/28/2022		
70505	SB-06 (2-4)	Solids	06/21/2022 14:50	06/28/2022	8270D SIM	WP MTN
70505	SB-06 (2-4)	Solids	06/21/2022 14:50	06/28/2022	6010D	WP MTN
70505	SB-06 (2-4)	Solids	06/21/2022 14:50	06/28/2022	7471A	WP MTN
70505	SB-06 (2-4)	Solids	06/21/2022 14:50	06/28/2022	29B	WP MTN
70505	SB-06 (2-4)	Solids	06/21/2022 14:50	06/28/2022	MAVPH LA	WP RMS
70505	SB-06 (2-4)	Solids	06/21/2022 14:50	06/28/2022	MAEPH LA	WP RMS
70506	SB-06 (4-6)	Solids	06/21/2022 14:55	06/28/2022		
70506	SB-06 (4-6)	Solids	06/21/2022 14:55	06/28/2022	8270D SIM	WP MTN
70506	SB-06 (4-6)	Solids	06/21/2022 14:55	06/28/2022	6010D	WP MTN
70506	SB-06 (4-6)	Solids	06/21/2022 14:55	06/28/2022	7471A	WP MTN
70506	SB-06 (4-6)	Solids	06/21/2022 14:55	06/28/2022	29B	WP MTN
70506	SB-06 (4-6)	Solids	06/21/2022 14:55	06/28/2022	MAVPH LA	WP RMS

WP MTN - Memphis, TN: Waypoint Analytical - TN, Memphis, TN

WP RMS - Ridgeland, MS: Waypoint Analytical - Mississippi, Inc., Ridgeland, MS

Sample Summary Table

Report Number: 22-179-0021
Client Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Lab No	Client Sample ID	Matrix	Date Collected	Date Received	Method	Lab ID
70506	SB-06 (4-6)	Solids	06/21/2022 14:55	06/28/2022	MAEPH LA	WP RMS
70507	SB-07 (2-4)	Solids	06/21/2022 15:25	06/28/2022		
70507	SB-07 (2-4)	Solids	06/21/2022 15:25	06/28/2022	8270D SIM	WP MTN
70507	SB-07 (2-4)	Solids	06/21/2022 15:25	06/28/2022	7471A	WP MTN
70507	SB-07 (2-4)	Solids	06/21/2022 15:25	06/28/2022	29B	WP MTN
70507	SB-07 (2-4)	Solids	06/21/2022 15:25	06/28/2022	6010D	WP MTN
70507	SB-07 (2-4)	Solids	06/21/2022 15:25	06/28/2022	MAVPH LA	WP RMS
70507	SB-07 (2-4)	Solids	06/21/2022 15:25	06/28/2022	MAEPH LA	WP RMS
70508	SB-07 (4-6)	Solids	06/21/2022 15:30	06/28/2022		
70508	SB-07 (4-6)	Solids	06/21/2022 15:30	06/28/2022	8270D SIM	WP MTN
70508	SB-07 (4-6)	Solids	06/21/2022 15:30	06/28/2022	7471A	WP MTN
70508	SB-07 (4-6)	Solids	06/21/2022 15:30	06/28/2022	6010D	WP MTN
70508	SB-07 (4-6)	Solids	06/21/2022 15:30	06/28/2022	29B	WP MTN
70508	SB-07 (4-6)	Solids	06/21/2022 15:30	06/28/2022	MAVPH LA	WP RMS
70508	SB-07 (4-6)	Solids	06/21/2022 15:30	06/28/2022	MAEPH LA	WP RMS
70509	SB-08 (0-2)	Solids	06/21/2022 15:50	06/28/2022		
70509	SB-08 (0-2)	Solids	06/21/2022 15:50	06/28/2022	8270D SIM	WP MTN
70509	SB-08 (0-2)	Solids	06/21/2022 15:50	06/28/2022	7471A	WP MTN
70509	SB-08 (0-2)	Solids	06/21/2022 15:50	06/28/2022	6010D	WP MTN
70509	SB-08 (0-2)	Solids	06/21/2022 15:50	06/28/2022	29B	WP MTN
70509	SB-08 (0-2)	Solids	06/21/2022 15:50	06/28/2022	MAVPH LA	WP RMS
70509	SB-08 (0-2)	Solids	06/21/2022 15:50	06/28/2022	MAEPH LA	WP RMS
70510	SB-08 (2-4)	Solids	06/21/2022 15:50	06/28/2022		
70510	SB-08 (2-4)	Solids	06/21/2022 15:50	06/28/2022	8270D SIM	WP MTN
70510	SB-08 (2-4)	Solids	06/21/2022 15:50	06/28/2022	7471A	WP MTN
70510	SB-08 (2-4)	Solids	06/21/2022 15:50	06/28/2022	6010D	WP MTN

WP MTN - Memphis, TN: Waypoint Analytical - TN, Memphis, TN

WP RMS - Ridgeland, MS: Waypoint Analytical - Mississippi, Inc., Ridgeland, MS

Sample Summary Table

Report Number: 22-179-0021
Client Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Lab No	Client Sample ID	Matrix	Date Collected	Date Received	Method	Lab ID
70510	SB-08 (2-4)	Solids	06/21/2022 15:50	06/28/2022	29B	WP MTN
70510	SB-08 (2-4)	Solids	06/21/2022 15:50	06/28/2022	MAVPH LA	WP RMS
70510	SB-08 (2-4)	Solids	06/21/2022 15:50	06/28/2022	MAEPH LA	WP RMS
70511	SB-09 (0-2)	Solids	06/22/2022 10:30	06/28/2022		
70511	SB-09 (0-2)	Solids	06/22/2022 10:30	06/28/2022	8270D SIM	WP MTN
70511	SB-09 (0-2)	Solids	06/22/2022 10:30	06/28/2022	7471A	WP MTN
70511	SB-09 (0-2)	Solids	06/22/2022 10:30	06/28/2022	6010D	WP MTN
70511	SB-09 (0-2)	Solids	06/22/2022 10:30	06/28/2022	29B	WP MTN
70511	SB-09 (0-2)	Solids	06/22/2022 10:30	06/28/2022	MAVPH LA	WP RMS
70511	SB-09 (0-2)	Solids	06/22/2022 10:30	06/28/2022	MAEPH LA	WP RMS
70512	SB-09 (2-4)	Solids	06/22/2022 10:30	06/28/2022		
70512	SB-09 (2-4)	Solids	06/22/2022 10:30	06/28/2022	8270D SIM	WP MTN
70512	SB-09 (2-4)	Solids	06/22/2022 10:30	06/28/2022	7471A	WP MTN
70512	SB-09 (2-4)	Solids	06/22/2022 10:30	06/28/2022	6010D	WP MTN
70512	SB-09 (2-4)	Solids	06/22/2022 10:30	06/28/2022	29B	WP MTN
70512	SB-09 (2-4)	Solids	06/22/2022 10:30	06/28/2022	MAVPH LA	WP RMS
70512	SB-09 (2-4)	Solids	06/22/2022 10:30	06/28/2022	MAEPH LA	WP RMS
70513	SB-09 (4-6)	Solids	06/22/2022 15:15	06/28/2022		
70513	SB-09 (4-6)	Solids	06/22/2022 15:15	06/28/2022	7471A	WP MTN
70513	SB-09 (4-6)	Solids	06/22/2022 15:15	06/28/2022	6010D	WP MTN
70513	SB-09 (4-6)	Solids	06/22/2022 15:15	06/28/2022	29B	WP MTN
70513	SB-09 (4-6)	Solids	06/22/2022 15:15	06/28/2022	8270D SIM	WP MTN
70513	SB-09 (4-6)	Solids	06/22/2022 15:15	06/28/2022	MAVPH LA	WP RMS
70513	SB-09 (4-6)	Solids	06/22/2022 15:15	06/28/2022	MAEPH LA	WP RMS
70514	SB-09 (6-8)	Solids	06/22/2022 15:15	06/28/2022		
70514	SB-09 (6-8)	Solids	06/22/2022 15:15	06/28/2022	8270D SIM	WP MTN

WP MTN - Memphis, TN: Waypoint Analytical - TN, Memphis, TN

WP RMS - Ridgeland, MS: Waypoint Analytical - Mississippi, Inc., Ridgeland, MS

Sample Summary Table

Report Number: 22-179-0021
Client Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Lab No	Client Sample ID	Matrix	Date Collected	Date Received	Method	Lab ID
70514	SB-09 (6-8)	Solids	06/22/2022 15:15	06/28/2022	7471A	WP MTN
70514	SB-09 (6-8)	Solids	06/22/2022 15:15	06/28/2022	6010D	WP MTN
70514	SB-09 (6-8)	Solids	06/22/2022 15:15	06/28/2022	29B	WP MTN
70514	SB-09 (6-8)	Solids	06/22/2022 15:15	06/28/2022	MAVPH LA	WP RMS
70514	SB-09 (6-8)	Solids	06/22/2022 15:15	06/28/2022	MAEPH LA	WP RMS
70515	SB-10 (0-2)	Solids	06/22/2022 11:35	06/28/2022		
70515	SB-10 (0-2)	Solids	06/22/2022 11:35	06/28/2022	8270D SIM	WP MTN
70515	SB-10 (0-2)	Solids	06/22/2022 11:35	06/28/2022	7471A	WP MTN
70515	SB-10 (0-2)	Solids	06/22/2022 11:35	06/28/2022	6010D	WP MTN
70515	SB-10 (0-2)	Solids	06/22/2022 11:35	06/28/2022	29B	WP MTN
70515	SB-10 (0-2)	Solids	06/22/2022 11:35	06/28/2022	MAVPH LA	WP RMS
70515	SB-10 (0-2)	Solids	06/22/2022 11:35	06/28/2022	MAEPH LA	WP RMS
70516	SB-10 (2-4)	Solids	06/22/2022 11:35	06/28/2022		
70516	SB-10 (2-4)	Solids	06/22/2022 11:35	06/28/2022	8270D SIM	WP MTN
70516	SB-10 (2-4)	Solids	06/22/2022 11:35	06/28/2022	7471A	WP MTN
70516	SB-10 (2-4)	Solids	06/22/2022 11:35	06/28/2022	6010D	WP MTN
70516	SB-10 (2-4)	Solids	06/22/2022 11:35	06/28/2022	29B	WP MTN
70516	SB-10 (2-4)	Solids	06/22/2022 11:35	06/28/2022	MAVPH LA	WP RMS
70516	SB-10 (2-4)	Solids	06/22/2022 11:35	06/28/2022	MAEPH LA	WP RMS
70517	SB-10 (4-6)	Solids	06/22/2022 12:00	06/28/2022		
70517	SB-10 (4-6)	Solids	06/22/2022 12:00	06/28/2022	8270D SIM	WP MTN
70517	SB-10 (4-6)	Solids	06/22/2022 12:00	06/28/2022	7471A	WP MTN
70517	SB-10 (4-6)	Solids	06/22/2022 12:00	06/28/2022	6010D	WP MTN
70517	SB-10 (4-6)	Solids	06/22/2022 12:00	06/28/2022	29B	WP MTN
70517	SB-10 (4-6)	Solids	06/22/2022 12:00	06/28/2022	MAVPH LA	WP RMS
70517	SB-10 (4-6)	Solids	06/22/2022 12:00	06/28/2022	MAEPH LA	WP RMS

WP MTN - Memphis, TN: Waypoint Analytical - TN, Memphis, TN

WP RMS - Ridgeland, MS: Waypoint Analytical - Mississippi, Inc., Ridgeland, MS

Sample Summary Table

Report Number: 22-179-0021
Client Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Lab No	Client Sample ID	Matrix	Date Collected	Date Received	Method	Lab ID
70518	SB-10 (6-8)	Solids	06/22/2022 12:00	06/28/2022		
70518	SB-10 (6-8)	Solids	06/22/2022 12:00	06/28/2022	8270D SIM	WP MTN
70518	SB-10 (6-8)	Solids	06/22/2022 12:00	06/28/2022	7471A	WP MTN
70518	SB-10 (6-8)	Solids	06/22/2022 12:00	06/28/2022	6010D	WP MTN
70518	SB-10 (6-8)	Solids	06/22/2022 12:00	06/28/2022	29B	WP MTN
70518	SB-10 (6-8)	Solids	06/22/2022 12:00	06/28/2022	MAVPH LA	WP RMS
70518	SB-10 (6-8)	Solids	06/22/2022 12:00	06/28/2022	MAEPH LA	WP RMS
70519	SB-11 (0-2)	Solids	06/22/2022 13:45	06/28/2022		
70519	SB-11 (0-2)	Solids	06/22/2022 13:45	06/28/2022	8270D SIM	WP MTN
70519	SB-11 (0-2)	Solids	06/22/2022 13:45	06/28/2022	7471A	WP MTN
70519	SB-11 (0-2)	Solids	06/22/2022 13:45	06/28/2022	6010D	WP MTN
70519	SB-11 (0-2)	Solids	06/22/2022 13:45	06/28/2022	29B	WP MTN
70519	SB-11 (0-2)	Solids	06/22/2022 13:45	06/28/2022	MAVPH LA	WP RMS
70519	SB-11 (0-2)	Solids	06/22/2022 13:45	06/28/2022	MAEPH LA	WP RMS
70520	SB-11 (2-4)	Solids	06/22/2022 13:45	06/28/2022		
70520	SB-11 (2-4)	Solids	06/22/2022 13:45	06/28/2022	8270D SIM	WP MTN
70520	SB-11 (2-4)	Solids	06/22/2022 13:45	06/28/2022	7471A	WP MTN
70520	SB-11 (2-4)	Solids	06/22/2022 13:45	06/28/2022	6010D	WP MTN
70520	SB-11 (2-4)	Solids	06/22/2022 13:45	06/28/2022	29B	WP MTN
70520	SB-11 (2-4)	Solids	06/22/2022 13:45	06/28/2022	MAVPH LA	WP RMS
70520	SB-11 (2-4)	Solids	06/22/2022 13:45	06/28/2022	MAEPH LA	WP RMS
70521	SB-12 (0-2)	Solids	06/22/2022 14:30	06/28/2022		
70521	SB-12 (0-2)	Solids	06/22/2022 14:30	06/28/2022	8270D SIM	WP MTN
70521	SB-12 (0-2)	Solids	06/22/2022 14:30	06/28/2022	7471A	WP MTN
70521	SB-12 (0-2)	Solids	06/22/2022 14:30	06/28/2022	6010D	WP MTN
70521	SB-12 (0-2)	Solids	06/22/2022 14:30	06/28/2022	29B	WP MTN

WP MTN - Memphis, TN: Waypoint Analytical - TN, Memphis, TN

WP RMS - Ridgeland, MS: Waypoint Analytical - Mississippi, Inc., Ridgeland, MS

Sample Summary Table

Report Number: 22-179-0021
Client Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Lab No	Client Sample ID	Matrix	Date Collected	Date Received	Method	Lab ID
70521	SB-12 (0-2)	Solids	06/22/2022 14:30	06/28/2022	MAVPH LA	WP RMS
70521	SB-12 (0-2)	Solids	06/22/2022 14:30	06/28/2022	MAEPH LA	WP RMS
70522	SB-12 (2-4)	Solids	06/22/2022 14:30	06/28/2022		
70522	SB-12 (2-4)	Solids	06/22/2022 14:30	06/28/2022	8270D SIM	WP MTN
70522	SB-12 (2-4)	Solids	06/22/2022 14:30	06/28/2022	7471A	WP MTN
70522	SB-12 (2-4)	Solids	06/22/2022 14:30	06/28/2022	6010D	WP MTN
70522	SB-12 (2-4)	Solids	06/22/2022 14:30	06/28/2022	29B	WP MTN
70522	SB-12 (2-4)	Solids	06/22/2022 14:30	06/28/2022	MAVPH LA	WP RMS
70522	SB-12 (2-4)	Solids	06/22/2022 14:30	06/28/2022	MAEPH LA	WP RMS
70523	SB-13 (0-2)	Solids	06/22/2022 15:30	06/28/2022		
70523	SB-13 (0-2)	Solids	06/22/2022 15:30	06/28/2022	8270D SIM	WP MTN
70523	SB-13 (0-2)	Solids	06/22/2022 15:30	06/28/2022	7471A	WP MTN
70523	SB-13 (0-2)	Solids	06/22/2022 15:30	06/28/2022	6010D	WP MTN
70523	SB-13 (0-2)	Solids	06/22/2022 15:30	06/28/2022	29B	WP MTN
70523	SB-13 (0-2)	Solids	06/22/2022 15:30	06/28/2022	MAVPH LA	WP RMS
70523	SB-13 (0-2)	Solids	06/22/2022 15:30	06/28/2022	MAEPH LA	WP RMS
70524	SB-13 (2-4)	Solids	06/22/2022 15:30	06/28/2022		
70524	SB-13 (2-4)	Solids	06/22/2022 15:30	06/28/2022	8270D SIM	WP MTN
70524	SB-13 (2-4)	Solids	06/22/2022 15:30	06/28/2022	7471A	WP MTN
70524	SB-13 (2-4)	Solids	06/22/2022 15:30	06/28/2022	6010D	WP MTN
70524	SB-13 (2-4)	Solids	06/22/2022 15:30	06/28/2022	29B	WP MTN
70524	SB-13 (2-4)	Solids	06/22/2022 15:30	06/28/2022	MAVPH LA	WP RMS
70524	SB-13 (2-4)	Solids	06/22/2022 15:30	06/28/2022	MAEPH LA	WP RMS
70525	SB-13 (4-6)	Solids	06/22/2022 15:50	06/28/2022		
70525	SB-13 (4-6)	Solids	06/22/2022 15:50	06/28/2022	8270D SIM	WP MTN
70525	SB-13 (4-6)	Solids	06/22/2022 15:50	06/28/2022	7471A	WP MTN

WP MTN - Memphis, TN: Waypoint Analytical - TN, Memphis, TN

WP RMS - Ridgeland, MS: Waypoint Analytical - Mississippi, Inc., Ridgeland, MS

Sample Summary Table

Report Number: 22-179-0021
Client Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Lab No	Client Sample ID	Matrix	Date Collected	Date Received	Method	Lab ID
70525	SB-13 (4-6)	Solids	06/22/2022 15:50	06/28/2022	6010D	WP MTN
70525	SB-13 (4-6)	Solids	06/22/2022 15:50	06/28/2022	29B	WP MTN
70525	SB-13 (4-6)	Solids	06/22/2022 15:50	06/28/2022	MAVPH LA	WP RMS
70525	SB-13 (4-6)	Solids	06/22/2022 15:50	06/28/2022	MAEPH LA	WP RMS
70526	SB-13 (6-8)	Solids	06/22/2022 15:50	06/28/2022		
70526	SB-13 (6-8)	Solids	06/22/2022 15:50	06/28/2022	8270D SIM	WP MTN
70526	SB-13 (6-8)	Solids	06/22/2022 15:50	06/28/2022	7471A	WP MTN
70526	SB-13 (6-8)	Solids	06/22/2022 15:50	06/28/2022	6010D	WP MTN
70526	SB-13 (6-8)	Solids	06/22/2022 15:50	06/28/2022	29B	WP MTN
70526	SB-13 (6-8)	Solids	06/22/2022 15:50	06/28/2022	MAVPH LA	WP RMS
70526	SB-13 (6-8)	Solids	06/22/2022 15:50	06/28/2022	MAEPH LA	WP RMS
70527	SB-14 (0-2)	Solids	06/23/2022 10:15	06/28/2022		
70527	SB-14 (0-2)	Solids	06/23/2022 10:15	06/28/2022	8270D SIM	WP MTN
70527	SB-14 (0-2)	Solids	06/23/2022 10:15	06/28/2022	7471A	WP MTN
70527	SB-14 (0-2)	Solids	06/23/2022 10:15	06/28/2022	6010D	WP MTN
70527	SB-14 (0-2)	Solids	06/23/2022 10:15	06/28/2022	29B	WP MTN
70527	SB-14 (0-2)	Solids	06/23/2022 10:15	06/28/2022	MAVPH LA	WP RMS
70527	SB-14 (0-2)	Solids	06/23/2022 10:15	06/28/2022	MAEPH LA	WP RMS
70528	SB-14 (2-4)	Solids	06/23/2022 10:15	06/28/2022		
70528	SB-14 (2-4)	Solids	06/23/2022 10:15	06/28/2022	8270D SIM	WP MTN
70528	SB-14 (2-4)	Solids	06/23/2022 10:15	06/28/2022	7471A	WP MTN
70528	SB-14 (2-4)	Solids	06/23/2022 10:15	06/28/2022	6010D	WP MTN
70528	SB-14 (2-4)	Solids	06/23/2022 10:15	06/28/2022	29B	WP MTN
70528	SB-14 (2-4)	Solids	06/23/2022 10:15	06/28/2022	MAVPH LA	WP RMS
70528	SB-14 (2-4)	Solids	06/23/2022 10:15	06/28/2022	MAEPH LA	WP RMS
70529	SB-14 (4-6)	Solids	06/23/2022 10:30	06/28/2022		

WP MTN - Memphis, TN: Waypoint Analytical - TN, Memphis, TN

WP RMS - Ridgeland, MS: Waypoint Analytical - Mississippi, Inc., Ridgeland, MS

Sample Summary Table

Report Number: 22-179-0021
Client Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Lab No	Client Sample ID	Matrix	Date Collected	Date Received	Method	Lab ID
70529	SB-14 (4-6)	Solids	06/23/2022 10:30	06/28/2022	8270D SIM	WP MTN
70529	SB-14 (4-6)	Solids	06/23/2022 10:30	06/28/2022	7471A	WP MTN
70529	SB-14 (4-6)	Solids	06/23/2022 10:30	06/28/2022	6010D	WP MTN
70529	SB-14 (4-6)	Solids	06/23/2022 10:30	06/28/2022	29B	WP MTN
70529	SB-14 (4-6)	Solids	06/23/2022 10:30	06/28/2022	MAVPH LA	WP RMS
70529	SB-14 (4-6)	Solids	06/23/2022 10:30	06/28/2022	MAEPH LA	WP RMS
70530	SB-14 (6-8)	Solids	06/23/2022 10:30	06/28/2022		
70530	SB-14 (6-8)	Solids	06/23/2022 10:30	06/28/2022	8270D SIM	WP MTN
70530	SB-14 (6-8)	Solids	06/23/2022 10:30	06/28/2022	7471A	WP MTN
70530	SB-14 (6-8)	Solids	06/23/2022 10:30	06/28/2022	6010D	WP MTN
70530	SB-14 (6-8)	Solids	06/23/2022 10:30	06/28/2022	29B	WP MTN
70530	SB-14 (6-8)	Solids	06/23/2022 10:30	06/28/2022	MAVPH LA	WP RMS
70530	SB-14 (6-8)	Solids	06/23/2022 10:30	06/28/2022	MAEPH LA	WP RMS
70531	SB-15 (0-2)	Solids	06/23/2022 10:40	06/28/2022		
70531	SB-15 (0-2)	Solids	06/23/2022 10:40	06/28/2022	8270D SIM	WP MTN
70531	SB-15 (0-2)	Solids	06/23/2022 10:40	06/28/2022	7471A	WP MTN
70531	SB-15 (0-2)	Solids	06/23/2022 10:40	06/28/2022	6010D	WP MTN
70531	SB-15 (0-2)	Solids	06/23/2022 10:40	06/28/2022	29B	WP MTN
70531	SB-15 (0-2)	Solids	06/23/2022 10:40	06/28/2022	MAVPH LA	WP RMS
70531	SB-15 (0-2)	Solids	06/23/2022 10:40	06/28/2022	MAEPH LA	WP RMS
70532	SB-15 (2-4)	Solids	06/23/2022 10:40	06/28/2022		
70532	SB-15 (2-4)	Solids	06/23/2022 10:40	06/28/2022	8270D SIM	WP MTN
70532	SB-15 (2-4)	Solids	06/23/2022 10:40	06/28/2022	7471A	WP MTN
70532	SB-15 (2-4)	Solids	06/23/2022 10:40	06/28/2022	6010D	WP MTN
70532	SB-15 (2-4)	Solids	06/23/2022 10:40	06/28/2022	29B	WP MTN
70532	SB-15 (2-4)	Solids	06/23/2022 10:40	06/28/2022	MAVPH LA	WP RMS

WP MTN - Memphis, TN: Waypoint Analytical - TN, Memphis, TN

WP RMS - Ridgeland, MS: Waypoint Analytical - Mississippi, Inc., Ridgeland, MS

Sample Summary Table

Report Number: 22-179-0021
Client Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Lab No	Client Sample ID	Matrix	Date Collected	Date Received	Method	Lab ID
70532	SB-15 (2-4)	Solids	06/23/2022 10:40	06/28/2022	MAEPH LA	WP RMS
70533	SB-15 (4-6)	Solids	06/23/2022 11:00	06/28/2022		
70533	SB-15 (4-6)	Solids	06/23/2022 11:00	06/28/2022	8270D SIM	WP MTN
70533	SB-15 (4-6)	Solids	06/23/2022 11:00	06/28/2022	7471A	WP MTN
70533	SB-15 (4-6)	Solids	06/23/2022 11:00	06/28/2022	6010D	WP MTN
70533	SB-15 (4-6)	Solids	06/23/2022 11:00	06/28/2022	29B	WP MTN
70533	SB-15 (4-6)	Solids	06/23/2022 11:00	06/28/2022	MAVPH LA	WP RMS
70533	SB-15 (4-6)	Solids	06/23/2022 11:00	06/28/2022	MAEPH LA	WP RMS
70534	SB-15 (6-8)	Solids	06/23/2022 11:00	06/28/2022		
70534	SB-15 (6-8)	Solids	06/23/2022 11:00	06/28/2022	8270D SIM	WP MTN
70534	SB-15 (6-8)	Solids	06/23/2022 11:00	06/28/2022	7471A	WP MTN
70534	SB-15 (6-8)	Solids	06/23/2022 11:00	06/28/2022	6010D	WP MTN
70534	SB-15 (6-8)	Solids	06/23/2022 11:00	06/28/2022	29B	WP MTN
70534	SB-15 (6-8)	Solids	06/23/2022 11:00	06/28/2022	MAVPH LA	WP RMS
70534	SB-15 (6-8)	Solids	06/23/2022 11:00	06/28/2022	MAEPH LA	WP RMS
70535	SB-16 (0-2)	Solids	06/23/2022 11:20	06/28/2022		
70535	SB-16 (0-2)	Solids	06/23/2022 11:20	06/28/2022	8270D SIM	WP MTN
70535	SB-16 (0-2)	Solids	06/23/2022 11:20	06/28/2022	7471A	WP MTN
70535	SB-16 (0-2)	Solids	06/23/2022 11:20	06/28/2022	6010D	WP MTN
70535	SB-16 (0-2)	Solids	06/23/2022 11:20	06/28/2022	29B	WP MTN
70535	SB-16 (0-2)	Solids	06/23/2022 11:20	06/28/2022	MAVPH LA	WP RMS
70535	SB-16 (0-2)	Solids	06/23/2022 11:20	06/28/2022	MAEPH LA	WP RMS
70536	SB-16 (2-4)	Solids	06/23/2022 11:20	06/28/2022		
70536	SB-16 (2-4)	Solids	06/23/2022 11:20	06/28/2022	8270D SIM	WP MTN
70536	SB-16 (2-4)	Solids	06/23/2022 11:20	06/28/2022	7471A	WP MTN
70536	SB-16 (2-4)	Solids	06/23/2022 11:20	06/28/2022	6010D	WP MTN

WP MTN - Memphis, TN: Waypoint Analytical - TN, Memphis, TN

WP RMS - Ridgeland, MS: Waypoint Analytical - Mississippi, Inc., Ridgeland, MS

Sample Summary Table

Report Number: 22-179-0021
Client Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Lab No	Client Sample ID	Matrix	Date Collected	Date Received	Method	Lab ID
70536	SB-16 (2-4)	Solids	06/23/2022 11:20	06/28/2022	29B	WP MTN
70536	SB-16 (2-4)	Solids	06/23/2022 11:20	06/28/2022	MAVPH LA	WP RMS
70536	SB-16 (2-4)	Solids	06/23/2022 11:20	06/28/2022	MAEPH LA	WP RMS
70537	SB-16 (4-6)	Solids	06/23/2022 11:35	06/28/2022		
70537	SB-16 (4-6)	Solids	06/23/2022 11:35	06/28/2022	8270D SIM	WP MTN
70537	SB-16 (4-6)	Solids	06/23/2022 11:35	06/28/2022	7471A	WP MTN
70537	SB-16 (4-6)	Solids	06/23/2022 11:35	06/28/2022	6010D	WP MTN
70537	SB-16 (4-6)	Solids	06/23/2022 11:35	06/28/2022	29B	WP MTN
70537	SB-16 (4-6)	Solids	06/23/2022 11:35	06/28/2022	MAVPH LA	WP RMS
70537	SB-16 (4-6)	Solids	06/23/2022 11:35	06/28/2022	MAEPH LA	WP RMS
70538	SB-16 (6-8)	Solids	06/23/2022 11:35	06/28/2022		
70538	SB-16 (6-8)	Solids	06/23/2022 11:35	06/28/2022	8270D SIM	WP MTN
70538	SB-16 (6-8)	Solids	06/23/2022 11:35	06/28/2022	7471A	WP MTN
70538	SB-16 (6-8)	Solids	06/23/2022 11:35	06/28/2022	6010D	WP MTN
70538	SB-16 (6-8)	Solids	06/23/2022 11:35	06/28/2022	29B	WP MTN
70538	SB-16 (6-8)	Solids	06/23/2022 11:35	06/28/2022	MAVPH LA	WP RMS
70538	SB-16 (6-8)	Solids	06/23/2022 11:35	06/28/2022	MAEPH LA	WP RMS
70539	SB-17 (0-2)	Solids	06/23/2022 14:15	06/28/2022		
70539	SB-17 (0-2)	Solids	06/23/2022 14:15	06/28/2022	8270D SIM	WP MTN
70539	SB-17 (0-2)	Solids	06/23/2022 14:15	06/28/2022	MAVPH LA	WP RMS
70539	SB-17 (0-2)	Solids	06/23/2022 14:15	06/28/2022	MAEPH LA	WP RMS
70540	SB-18 (0-2)	Solids	06/23/2022 14:25	06/28/2022		
70540	SB-18 (0-2)	Solids	06/23/2022 14:25	06/28/2022	8270D SIM	WP MTN
70540	SB-18 (0-2)	Solids	06/23/2022 14:25	06/28/2022	MAVPH LA	WP RMS
70540	SB-18 (0-2)	Solids	06/23/2022 14:25	06/28/2022	MAEPH LA	WP RMS
70541	SB-19 (0-2)	Solids	06/23/2022 14:35	06/28/2022		

WP MTN - Memphis, TN: Waypoint Analytical - TN, Memphis, TN

WP RMS - Ridgeland, MS: Waypoint Analytical - Mississippi, Inc., Ridgeland, MS

Sample Summary Table

Report Number: 22-179-0021
Client Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Lab No	Client Sample ID	Matrix	Date Collected	Date Received	Method	Lab ID
70541	SB-19 (0-2)	Solids	06/23/2022 14:35	06/28/2022	8270D SIM	WP MTN
70541	SB-19 (0-2)	Solids	06/23/2022 14:35	06/28/2022	MAVPH LA	WP RMS
70541	SB-19 (0-2)	Solids	06/23/2022 14:35	06/28/2022	MAEPH LA	WP RMS
70542	SB-20 (0-2)	Solids	06/23/2022 14:45	06/28/2022		
70542	SB-20 (0-2)	Solids	06/23/2022 14:45	06/28/2022	8270D SIM	WP MTN
70542	SB-20 (0-2)	Solids	06/23/2022 14:45	06/28/2022	MAVPH LA	WP RMS
70542	SB-20 (0-2)	Solids	06/23/2022 14:45	06/28/2022	MAEPH LA	WP RMS
70543	SB-21 (0-2)	Solids	06/23/2022 15:10	06/28/2022		
70543	SB-21 (0-2)	Solids	06/23/2022 15:10	06/28/2022	8270D SIM	WP MTN
70543	SB-21 (0-2)	Solids	06/23/2022 15:10	06/28/2022	MAVPH LA	WP RMS
70543	SB-21 (0-2)	Solids	06/23/2022 15:10	06/28/2022	MAEPH LA	WP RMS
70544	SB-22 (0-2)	Solids	06/23/2022 15:20	06/28/2022		
70544	SB-22 (0-2)	Solids	06/23/2022 15:20	06/28/2022	8270D SIM	WP MTN
70544	SB-22 (0-2)	Solids	06/23/2022 15:20	06/28/2022	MAVPH LA	WP RMS
70544	SB-22 (0-2)	Solids	06/23/2022 15:20	06/28/2022	MAEPH LA	WP RMS
70545	SB-23 (0-2)	Solids	06/23/2022 15:25	06/28/2022		
70545	SB-23 (0-2)	Solids	06/23/2022 15:25	06/28/2022	8270D SIM	WP MTN
70545	SB-23 (0-2)	Solids	06/23/2022 15:25	06/28/2022	MAVPH LA	WP RMS
70545	SB-23 (0-2)	Solids	06/23/2022 15:25	06/28/2022	MAEPH LA	WP RMS
70546	SB-24 (0-2)	Solids	06/23/2022 15:30	06/28/2022		
70546	SB-24 (0-2)	Solids	06/23/2022 15:30	06/28/2022	8270D SIM	WP MTN
70546	SB-24 (0-2)	Solids	06/23/2022 15:30	06/28/2022	MAVPH LA	WP RMS
70546	SB-24 (0-2)	Solids	06/23/2022 15:30	06/28/2022	MAEPH LA	WP RMS
70547	HA-01R (2-4)	Solids	06/23/2022 14:55	06/28/2022		
70548	Trip Blank	Aqueous	06/21/2022 07:00	06/28/2022	MAVPH LA	WP RMS
70549	Field Blank	Aqueous	06/21/2022 08:00	06/28/2022	MAVPH LA	WP RMS

WP MTN - Memphis, TN: Waypoint Analytical - TN, Memphis, TN

WP RMS - Ridgeland, MS: Waypoint Analytical - Mississippi, Inc., Ridgeland, MS

Sample Summary Table

Report Number: 22-179-0021
Client Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Lab No	Client Sample ID	Matrix	Date Collected	Date Received	Method	Lab ID
70550	Field Blank	Aqueous	06/22/2022 08:00	06/28/2022	MAVPH LA	WP RMS
70551	Field Blank	Aqueous	06/23/2022 08:00	06/28/2022	MAVPH LA	WP RMS
71729	SB-03 (0-2)	TCLP	06/21/2022 11:40	06/28/2022	6010D	WP MTN
71729	SB-03 (0-2)	TCLP	06/21/2022 11:40	06/28/2022	1312	WP MTN
71730	SB-04 (0-2)	TCLP	06/21/2022 12:10	06/28/2022	6010D	WP MTN
71730	SB-04 (0-2)	TCLP	06/21/2022 12:10	06/28/2022	1312	WP MTN
71731	SB-04 (2-4)	TCLP	06/21/2022 12:10	06/28/2022	6010D	WP MTN
71731	SB-04 (2-4)	TCLP	06/21/2022 12:10	06/28/2022	1312	WP MTN
71732	SB-11 (2-4)	TCLP	06/22/2022 13:45	06/28/2022	6010D	WP MTN
71732	SB-11 (2-4)	TCLP	06/22/2022 13:45	06/28/2022	1312	WP MTN
71733	SB-12 (2-4)	TCLP	06/22/2022 14:30	06/28/2022	6010D	WP MTN
71733	SB-12 (2-4)	TCLP	06/22/2022 14:30	06/28/2022	1312	WP MTN

WP MTN - Memphis, TN: Waypoint Analytical - TN, Memphis, TN

WP RMS - Ridgeland, MS: Waypoint Analytical - Mississippi, Inc., Ridgeland, MS

Client: Hydro-Environmental Technology, Inc.
Project: August Levert
Lab Report Number: 22-179-0021
Date: 8/2/2022

CASE NARRATIVE

Methods

Methods reported as 29B are from the Laboratory Procedures for Analysis of Exploration & Production Waste – LDNR Office of Conservation Injection and Mining Division – Revised 11/2011.

Results

- 6010D/7471A metals are reported AR - As Received by adjusting the data using the percent moisture result.
- True Total Barium results are reported dry weight
- Oil & Grease results reported dry weight
- TX1006 results are reported as received
- VPH/EPH results reported as received
- PAH results reported as received

MA-DEP EPH (LA) Method MAEPH LA

Sample 70499 (SB-03 (2-4))

QC Batch No: L625934

Surrogate(s) was flagged for recovery outside QC limits in this project sample. This sample was re-analyzed for verification, and/or dilution of target analytes. Batch QC samples (method blank and laboratory control samples) all showed surrogates within QC limits.

Sample 70517 (SB-10 (4-6))

QC Batch No: L626600

Surrogate(s) was flagged for recovery outside QC limits in this project sample. This sample was re-analyzed for verification, and/or dilution of target analytes. Batch QC samples (method blank and laboratory control samples) all showed surrogates within QC limits.

Sample 70518 (SB-10 (6-8))

QC Batch No: L626600

Surrogate(s) was flagged for recovery outside QC limits in this project sample. This sample was re-analyzed for verification, and/or dilution of target analytes. Batch QC samples (method blank and laboratory control samples) all showed surrogates within QC limits.

Sample 70519 (SB-11 (0-2))

QC Batch No: L626600

Surrogate(s) was flagged for recovery outside QC limits in this project sample. This sample was re-analyzed for verification, and/or dilution of target analytes. Batch QC samples (method blank and laboratory control samples) all showed surrogates within QC limits.

Sample 70520 (SB-11 (2-4))

QC Batch No: L626600

Surrogate(s) was flagged for recovery outside QC limits in this project sample. This sample was re-analyzed for verification, and/or dilution of target analytes. Batch QC samples (method blank and laboratory control samples) all showed surrogates within QC limits.

Sample 70521 (SB-12 (0-2))

QC Batch No: L626600

Surrogate(s) was flagged for recovery outside QC limits in this project sample. This sample was re-analyzed for verification, and/or dilution of target analytes. Batch QC samples (method blank and laboratory control samples) all showed surrogates within QC limits.

Sample 70523 (SB-13 (0-2))

QC Batch No: L626600

Surrogate(s) was flagged for recovery outside QC limits in this project sample. This sample was re-analyzed for verification, and/or dilution of target analytes. Batch QC samples (method blank and laboratory control samples) all showed surrogates within QC limits.

Sample 70524 (SB-13 (2-4))

QC Batch No: L626600

Surrogate(s) was flagged for recovery outside QC limits in this project sample. This sample was re-analyzed for verification, and/or dilution of target analytes. Batch QC samples (method blank and laboratory control samples) all showed surrogates within QC limits.

Sample 70525 (SB-13 (4-6))

QC Batch No: L626600

Surrogate(s) was flagged for recovery outside QC limits in this project sample. This sample was re-analyzed for verification, and/or dilution of target analytes. Batch QC samples (method blank and laboratory control samples) all showed surrogates within QC limits.

Sample 70526 (SB-13 (6-8))

QC Batch No: L626600

Surrogate(s) was flagged for recovery outside QC limits in this project sample. This sample was re-analyzed for verification, and/or dilution of target analytes. Batch QC samples (method blank and laboratory control samples) all showed surrogates within QC limits.

Sample 70527 (SB-14 (0-2))

QC Batch No: L626600

Surrogate(s) was flagged for recovery outside QC limits in this project sample. This sample was re-analyzed for verification, and/or dilution of target analytes. Batch QC samples (method blank and laboratory control samples) all showed surrogates within QC limits.

Sample 70528 (SB-14 (2-4))

QC Batch No: L626600

Surrogate(s) was flagged for recovery outside QC limits in this project sample. This sample was re-analyzed for verification, and/or dilution of target analytes. Batch QC samples (method blank and laboratory control samples) all showed surrogates within QC limits.

Sample 70529 (SB-14 (4-6))

QC Batch No: L626600

Surrogate(s) was flagged for recovery outside QC limits in this project sample. This sample was re-analyzed for verification, and/or dilution of target analytes. Batch QC samples (method blank and laboratory control samples) all showed surrogates within QC limits.



Sample 70530 (SB-14 (6-8))

QC Batch No: L626600

Surrogate(s) was flagged for recovery outside QC limits in this project sample. This sample was re-analyzed for verification, and/or dilution of target analytes. Batch QC samples (method blank and laboratory control samples) all showed surrogates within QC limits.

Sample 70531 (SB-15 (0-2))

QC Batch No: L626600

Surrogate(s) was flagged for recovery outside QC limits in this project sample. This sample was re-analyzed for verification, and/or dilution of target analytes. Batch QC samples (method blank and laboratory control samples) all showed surrogates within QC limits.

Sample 70532 (SB-15 (2-4))

QC Batch No: L626600

Surrogate(s) was flagged for recovery outside QC limits in this project sample. This sample was re-analyzed for verification, and/or dilution of target analytes. Batch QC samples (method blank and laboratory control samples) all showed surrogates within QC limits.

Sample 70533 (SB-15 (4-6))

QC Batch No: L626600

Surrogate(s) was flagged for recovery outside QC limits in this project sample. This sample was re-analyzed for verification, and/or dilution of target analytes. Batch QC samples (method blank and laboratory control samples) all showed surrogates within QC limits.

Sample 70534 (SB-15 (6-8))

QC Batch No: L626600

Surrogate(s) was flagged for recovery outside QC limits in this project sample. This sample was re-analyzed for verification, and/or dilution of target analytes. Batch QC samples (method blank and laboratory control samples) all showed surrogates within QC limits.

Sample 70535 (SB-16 (0-2))

QC Batch No: L626600

Surrogate(s) was flagged for recovery outside QC limits in this project sample. This sample was re-analyzed for verification, and/or dilution of target analytes. Batch QC samples (method blank and laboratory control samples) all showed surrogates within QC limits.

Sample 70539 (SB-17 (0-2))

QC Batch No: L627112

Surrogate(s) was flagged for recovery outside QC limits in this project sample. This sample was re-analyzed for verification, and/or dilution of target analytes. Batch QC samples (method blank and laboratory control samples) all showed surrogates within QC limits.

Sample 70541 (SB-19 (0-2))

QC Batch No: L627112

Surrogate(s) was flagged for recovery outside QC limits in this project sample. This sample was re-analyzed for verification, and/or dilution of target analytes. Batch QC samples (method blank and laboratory control samples) all showed surrogates within QC limits.

Sample 70542 (SB-20 (0-2))

QC Batch No: L627112

Surrogate(s) was flagged for recovery outside QC limits in this project sample. This sample was re-analyzed for verification, and/or dilution of target analytes. Batch QC samples (method blank and laboratory control samples) all showed surrogates within QC limits.

Analyte: Aromatic >C12-C16

QC Batch No: L626600

Relative Percent Difference (RPD) for the duplicate analysis was outside of the allowable QC limits.

MADEP VPH Rev 1.1 Method MAVPH LA

Sample 70498 (SB-03 (0-2))

QC Batch No: L625054

Surrogate(s) was flagged for recovery outside QC limits in this project sample. This sample was re-analyzed for verification, and/or dilution of target analytes. Batch QC samples (method blank and laboratory control samples) all showed surrogates within QC limits.

Sample 70500 (SB-04 (0-2))

QC Batch No: L625054

Surrogate(s) was flagged for recovery outside QC limits in this project sample. This sample was re-analyzed for verification, and/or dilution of target analytes. Batch QC samples (method blank and laboratory control samples) all showed surrogates within QC limits.

Sample 70516 (SB-10 (2-4))

QC Batch No: L625823

Surrogate(s) was flagged for recovery outside QC limits in this project sample. This sample was re-analyzed for verification, and/or dilution of target analytes. Batch QC samples (method blank and laboratory control samples) all showed surrogates within QC limits.

Sample 70522 (SB-12 (2-4))

QC Batch No: L625823

Surrogate(s) was flagged for recovery outside QC limits in this project sample. This sample was re-analyzed for verification, and/or dilution of target analytes. Batch QC samples (method blank and laboratory control samples) all showed surrogates within QC limits.

Sample 70506 (SB-06 (4-6))

Analyte: 2,5-Dibromotoluene

QC Batch No: L625822/L625815

Surrogate(s) exhibited a high bias in this project sample where no target analytes were detected. The high recovery(s) had no impact on the data. Batch QC samples (method blank and laboratory control samples) all showed surrogates within QC limits.

Ultrasonic Extraction for 8270 Method 3550B

Sample 70500 (SB-04 (0-2))

QC Batch No: L624948/L624948

The weight/volume extracted was reduced during the extraction procedure due to the nature of the sample.

Reporting limits are factored for the sample size reduction.

Limited sample

Sample 70542 (SB-20 (0-2))

QC Batch No: L625588/L625588

The weight/volume extracted was reduced during the extraction procedure due to the nature of the sample.

Reporting limits are factored for the sample size reduction.

Limited sample

Metals Analysis Method 6010D

Sample 70513 (SB-09 (4-6))

Analyte: Barium

QC Batch No: L626848/L626040/A74932

The matrix spike and/or the matrix spike duplicate was outside quality control acceptance ranges. A dilution test was performed and passed quality control acceptance ranges. No matrix interference is suspected.

Sample 70513 (SB-09 (4-6))

Analyte: Lead

QC Batch No: L626848/L626040/A74932

The matrix spike and/or the matrix spike duplicate was outside quality control acceptance ranges. A dilution test was performed and passed quality control acceptance ranges. No matrix interference is suspected.

Sample 70501 (SB-04 (2-4))

Analyte: Selenium

QC Batch No: L626848/L626040/A74932

This analyte was analyzed at a dilution due to IEC interference/matrix interference.

Solids Total Mercury Analysis - CVAA Method 7471A

Sample 70538 (SB-16 (6-8))

Analyte: Mercury

QC Batch No: L627066/L626370/A74934

The matrix spike and/or the matrix spike duplicate was outside quality control acceptance ranges. A post digestion spike was performed and passed quality control acceptance ranges. No matrix interference is suspected.

Semivolatile Organic Compounds - GC/MS (SIM) Method 8270D SIM

Sample 70500 (SB-04 (0-2))

QC Batch No: L628176/L624948

The sample was diluted due to the nature of the sample matrix. Reporting limits have been adjusted accordingly.

Sample 70542 (SB-20 (0-2))

QC Batch No: L628178/L625588

The sample was diluted due to the nature of the sample matrix. Reporting limits have been adjusted accordingly.

09996

Hydro-Environmental Technology, Inc.
Mr. Stewart Stover, Jr.
91 Apollo Rd
Scott, LA 70583

Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 08/02/2022
Received : 06/28/2022



Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70494**
Sample ID : **SB-01 (0-2)**

Matrix: **Solids**
Sampled: **6/21/2022 10:40**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Bromide (Sat Paste)	<0.050	meq/L	0.050	5	07/12/22 18:54	MJM	29B
% Moisture	38.8	%		1	06/29/22 15:52	BXH	SW-DRYWT
% Saturation (Sat Paste)	122	%		1	07/11/22 10:40	JMB	29B
Alkalinity (Sat Paste)	1.5	meq/L		1	07/12/22 12:39	JMB	29B
Chloride (Sat Paste)	1.09	meq/L	0.050	5	07/12/22 18:54	MJM	29B
Chloride	16.7	mg/Kg	4.00	1	07/12/22 17:02	MJM	9056
Electrical Conductivity (Sat Paste)	0.467	mmhos/cm		1	07/11/22 10:40	JMB	29B
pH (Sat Paste)	6.82	s.u.		1	07/11/22 10:40	JMB	29B
Sulfate (Sat Paste)	1.13	meq/L	0.050	5	07/12/22 18:54	MJM	29B
Cation Exchange Capacity	68.7	meq/100g	0.100	20	07/12/22 09:19		29B
Exchangeable Sodium Percentage	0.580	%	0.100	1	07/11/22 10:40		CALCULATION
Sodium Adsorption Ratio (Sat Paste)	1.14	Calc	0.215	5	07/12/22 09:49		29B
Calcium (Sat Paste)	2.07	meq/L	0.250	5	07/12/22 11:04	BMB	29B
Magnesium (Sat Paste)	0.983	meq/L	0.410	5	07/12/22 10:28	BMB	29B
Sodium (Sat Paste)	1.41	meq/L	0.215	5	07/12/22 09:49	BMB	29B
Oil & Grease	<0.10	%	0.10	1	06/29/22 14:22	JMB	29B
Total Arsenic	3.64	mg/Kg AR	2.00	1	07/14/22 12:03	EAL	6010D
Total Barium	1380	mg/Kg AR	5.00	5	07/14/22 14:28	EAL	6010D
True Total Barium	25800	mg/Kg	500	1	07/12/22 16:52	TJS	29B
Total Cadmium	0.529	mg/Kg AR	0.200	1	07/14/22 12:03	EAL	6010D
Total Chromium	176	mg/Kg AR	0.500	1	07/14/22 12:03	EAL	6010D
Total Lead	56.0	mg/Kg AR	0.600	1	07/14/22 12:03	EAL	6010D
Mercury (Total)	0.0316	mg/Kg AR	0.0133	1	07/14/22 15:48	JTR	7471A

Qualifiers/ Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit



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Project August Levert
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 Bayou Sorrel, LA

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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70494**
 Sample ID : **SB-01 (0-2)**

Matrix: **Solids**
 Sampled: **6/21/2022 10:40**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/14/22 12:03	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/14/22 12:03	EAL	6010D
Total Zinc	79.7	mg/Kg AR	2.50	1	07/14/22 12:03	EAL	6010D
Bromide (Br)	<2.00	mg/Kg	2.00	1	07/12/22 17:02	MJM	9056

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 08/02/2022
 Received : 06/28/2022

Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70495**
 Sample ID : **SB-01 (2-4)**

Matrix: **Solids**
 Sampled: **6/21/2022 10:40**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Bromide (Sat Paste)	<0.050	meq/L	0.050	5	07/12/22 19:07	MJM	29B
% Moisture	52.2	%		1	06/29/22 16:21	BXH	SW-DRYWT
% Saturation (Sat Paste)	138	%		1	07/11/22 10:40	JMB	29B
Alkalinity (Sat Paste)	2.9	meq/L		1	07/12/22 12:39	JMB	29B
Chloride (Sat Paste)	2.46	meq/L	0.050	5	07/12/22 19:07	MJM	29B
Chloride	46.9	mg/Kg	4.00	1	07/12/22 17:39	MJM	9056
Electrical Conductivity (Sat Paste)	0.750	mmhos/cm		1	07/11/22 10:40	JMB	29B
pH (Sat Paste)	7.42	s.u.		1	07/11/22 10:40	JMB	29B
Sulfate (Sat Paste)	1.51	meq/L	0.050	5	07/12/22 19:07	MJM	29B
Cation Exchange Capacity	67.4	meq/100g	0.100	20	07/12/22 09:20		29B
Exchangeable Sodium Percentage	1.03	%	0.100	1	07/11/22 10:40		CALCULATION
Sodium Adsorption Ratio (Sat Paste)	2.20	Calc	0.430	10	07/12/22 09:50		29B
Calcium (Sat Paste)	3.37	meq/L	0.500	10	07/12/22 11:05	BMB	29B
Magnesium (Sat Paste)	1.28	meq/L	0.820	10	07/12/22 10:29	BMB	29B
Sodium (Sat Paste)	3.36	meq/L	0.430	10	07/12/22 09:50	BMB	29B
Oil & Grease	<0.10	%	0.10	1	06/29/22 14:22	JMB	29B
Total Arsenic	3.10	mg/Kg AR	2.00	1	07/14/22 12:08	EAL	6010D
Total Barium	743	mg/Kg AR	5.00	5	07/14/22 14:33	EAL	6010D
True Total Barium	9570	mg/Kg	500	1	07/12/22 16:57	TJS	29B
Total Cadmium	0.226	mg/Kg AR	0.200	1	07/14/22 12:08	EAL	6010D
Total Chromium	30.3	mg/Kg AR	0.500	1	07/14/22 12:08	EAL	6010D
Total Lead	14.8	mg/Kg AR	0.600	1	07/14/22 12:08	EAL	6010D
Mercury (Total)	<0.0133	mg/Kg AR	0.0133	1	07/14/22 15:50	JTR	7471A

Qualifiers/ Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit



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REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70495**
 Sample ID : **SB-01 (2-4)**

Matrix: **Solids**
 Sampled: **6/21/2022 10:40**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/14/22 12:08	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/14/22 12:08	EAL	6010D
Total Zinc	41.3	mg/Kg AR	2.50	1	07/14/22 12:08	EAL	6010D
Bromide (Br)	<2.00	mg/Kg	2.00	1	07/12/22 17:39	MJM	9056

Qualifiers/ Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit

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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70496**
Sample ID : **SB-02 (0-2)**

Matrix: **Solids**
Sampled: **6/21/2022 11:10**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Bromide (Sat Paste)	<0.050	meq/L	0.050	5	07/12/22 19:20	MJM	29B
% Moisture	47.0	%		1	06/29/22 16:21	BXH	SW-DRYWT
% Saturation (Sat Paste)	98.4	%		1	07/11/22 10:40	JMB	29B
Alkalinity (Sat Paste)	2.5	meq/L		1	07/12/22 12:39	JMB	29B
Chloride (Sat Paste)	2.00	meq/L	0.050	5	07/12/22 19:20	MJM	29B
Chloride	27.5	mg/Kg	4.00	1	07/12/22 17:52	MJM	9056
Electrical Conductivity (Sat Paste)	0.656	mmhos/cm		1	07/11/22 10:40	JMB	29B
pH (Sat Paste)	7.32	s.u.		1	07/11/22 10:40	JMB	29B
Sulfate (Sat Paste)	1.31	meq/L	0.050	5	07/12/22 19:20	MJM	29B
Cation Exchange Capacity	57.8	meq/100g	0.100	20	07/12/22 09:20		29B
Exchangeable Sodium Percentage	0.632	%	0.100	1	07/11/22 10:40		CALCULATION
Sodium Adsorption Ratio (Sat Paste)	1.42	Calc	0.430	10	07/12/22 09:50		29B
Calcium (Sat Paste)	2.93	meq/L	0.500	10	07/12/22 11:06	BMB	29B
Magnesium (Sat Paste)	1.37	meq/L	0.820	10	07/12/22 10:29	BMB	29B
Sodium (Sat Paste)	2.08	meq/L	0.430	10	07/12/22 09:50	BMB	29B
Oil & Grease	<0.10	%	0.10	1	06/29/22 14:22	JMB	29B
Total Arsenic	3.71	mg/Kg AR	2.00	1	07/14/22 12:13	EAL	6010D
Total Barium	789	mg/Kg AR	5.00	5	07/14/22 14:39	EAL	6010D
True Total Barium	64400	mg/Kg	2500	5	07/14/22 10:44	EAL	29B
Total Cadmium	0.267	mg/Kg AR	0.200	1	07/14/22 12:13	EAL	6010D
Total Chromium	48.2	mg/Kg AR	0.500	1	07/14/22 12:13	EAL	6010D
Total Lead	30.3	mg/Kg AR	0.600	1	07/14/22 12:13	EAL	6010D
Mercury (Total)	0.113	mg/Kg AR	0.0133	1	07/14/22 15:51	JTR	7471A

Qualifiers/ Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit



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REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70496**
 Sample ID : **SB-02 (0-2)**

Matrix: **Solids**
 Sampled: **6/21/2022 11:10**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/14/22 12:13	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/14/22 12:13	EAL	6010D
Total Zinc	55.5	mg/Kg AR	2.50	1	07/14/22 12:13	EAL	6010D
Bromide (Br)	<2.00	mg/Kg	2.00	1	07/12/22 17:52	MJM	9056

Qualifiers/ Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit



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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70497**
 Sample ID : **SB-02 (2-4)**

Matrix: **Solids**
 Sampled: **6/21/2022 11:10**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Bromide (Sat Paste)	<0.050	meq/L	0.050	5	07/12/22 19:32	MJM	29B
% Moisture	40.0	%		1	06/29/22 16:21	BXH	SW-DRYWT
% Saturation (Sat Paste)	120	%		1	07/11/22 10:40	JMB	29B
Alkalinity (Sat Paste)	2.5	meq/L		1	07/12/22 12:39	JMB	29B
Chloride (Sat Paste)	1.06	meq/L	0.050	5	07/12/22 19:32	MJM	29B
Chloride	18.8	mg/Kg	4.00	1	07/12/22 18:04	MJM	9056
Electrical Conductivity (Sat Paste)	0.462	mmhos/cm		1	07/11/22 10:40	JMB	29B
pH (Sat Paste)	7.41	s.u.		1	07/11/22 10:40	JMB	29B
Sulfate (Sat Paste)	0.691	meq/L	0.050	5	07/12/22 19:32	MJM	29B
Cation Exchange Capacity	64.3	meq/100g	0.100	20	07/12/22 09:21		29B
Exchangeable Sodium Percentage	0.670	%	0.100	1	07/11/22 10:40		CALCULATION
Sodium Adsorption Ratio (Sat Paste)	1.37	Calc	0.215	5	07/12/22 09:51		29B
Calcium (Sat Paste)	2.08	meq/L	0.250	5	07/12/22 11:07	BMB	29B
Magnesium (Sat Paste)	0.934	meq/L	0.410	5	07/12/22 10:30	BMB	29B
Sodium (Sat Paste)	1.68	meq/L	0.215	5	07/12/22 09:51	BMB	29B
Oil & Grease	<0.10	%	0.10	1	06/29/22 14:22	JMB	29B
Total Arsenic	3.29	mg/Kg AR	2.00	1	07/14/22 12:18	EAL	6010D
Total Barium	1780	mg/Kg AR	5.00	5	07/14/22 14:54	EAL	6010D
True Total Barium	17900	mg/Kg	500	1	07/12/22 17:07	TJS	29B
Total Cadmium	<0.200	mg/Kg AR	0.200	1	07/14/22 12:18	EAL	6010D
Total Chromium	23.8	mg/Kg AR	0.500	1	07/14/22 12:18	EAL	6010D
Total Lead	18.3	mg/Kg AR	0.600	1	07/14/22 12:18	EAL	6010D
Mercury (Total)	0.0945	mg/Kg AR	0.0133	1	07/14/22 15:52	JTR	7471A

Qualifiers/ Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit



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Hydro-Environmental Technology, Inc.
 Mr. Stewart Stover, Jr.
 91 Apollo Rd
 Scott , LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 08/02/2022
 Received : 06/28/2022

Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70497**
 Sample ID : **SB-02 (2-4)**

Matrix: **Solids**
 Sampled: **6/21/2022 11:10**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/14/22 12:18	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/14/22 12:18	EAL	6010D
Total Zinc	51.7	mg/Kg AR	2.50	1	07/14/22 12:18	EAL	6010D
Bromide (Br)	<2.00	mg/Kg	2.00	1	07/12/22 18:04	MJM	9056

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Hydro-Environmental Technology, Inc.
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Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 08/02/2022
Received : 06/28/2022



Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70498**
Sample ID : **SB-03 (0-2)**

Matrix: **Solids**
Sampled: **6/21/2022 11:40**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Bromide (Sat Paste)	<0.050	meq/L	0.050	5	07/12/22 19:45	MJM	29B
% Moisture	35.4	%		1	06/29/22 16:21	BXH	SW-DRYWT
% Saturation (Sat Paste)	98.4	%		1	07/11/22 10:40	JMB	29B
Alkalinity (Sat Paste)	4.8	meq/L		1	07/12/22 12:39	JMB	29B
Chloride (Sat Paste)	1.07	meq/L	0.050	5	07/12/22 19:45	MJM	29B
Chloride	20.0	mg/Kg	4.00	1	07/12/22 18:17	MJM	9056
Electrical Conductivity (Sat Paste)	0.740	mmhos/cm		1	07/11/22 10:40	JMB	29B
pH (Sat Paste)	7.62	s.u.		1	07/11/22 10:40	JMB	29B
Sulfate (Sat Paste)	0.365	meq/L	0.050	5	07/12/22 19:45	MJM	29B
Cation Exchange Capacity	40.2	meq/100g	0.100	20	07/12/22 09:22		29B
Exchangeable Sodium Percentage	0.577	%	0.100	1	07/11/22 10:40		CALCULATION
Sodium Adsorption Ratio (Sat Paste)	1.17	Calc	0.430	10	07/12/22 09:52		29B
Calcium (Sat Paste)	4.01	meq/L	0.500	10	07/12/22 11:08	BMB	29B
Magnesium (Sat Paste)	1.59	meq/L	0.820	10	07/12/22 10:31	BMB	29B
Sodium (Sat Paste)	1.96	meq/L	0.430	10	07/12/22 09:52	BMB	29B
Oil & Grease	0.25	%	0.10	1	06/29/22 14:22	JMB	29B
Total Arsenic	7.47	mg/Kg AR	2.00	1	07/14/22 12:24	EAL	6010D
Total Barium	442	mg/Kg AR	1.00	1	07/14/22 12:24	EAL	6010D
True Total Barium	207000	mg/Kg	5000	10	07/14/22 10:49	EAL	29B
Total Cadmium	0.513	mg/Kg AR	0.200	1	07/14/22 12:24	EAL	6010D
Total Chromium	517	mg/Kg AR	0.500	1	07/14/22 12:24	EAL	6010D
Total Lead	186	mg/Kg AR	0.600	1	07/14/22 12:24	EAL	6010D
Mercury (Total)	0.0728	mg/Kg AR	0.0133	1	07/14/22 15:54	JTR	7471A

Qualifiers/ Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit

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Hydro-Environmental Technology, Inc.
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Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 08/02/2022
Received : 06/28/2022



Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70498**
Sample ID : **SB-03 (0-2)**

Matrix: **Solids**
Sampled: **6/21/2022 11:40**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/14/22 12:24	EAL	6010D
Total Silver	0.696	mg/Kg AR	0.500	1	07/14/22 12:24	EAL	6010D
Total Zinc	149	mg/Kg AR	2.50	1	07/14/22 12:24	EAL	6010D
Bromide (Br)	3.01	mg/Kg	2.00	1	07/12/22 18:17	MJM	9056

Analytical Method: MAEPH LA **Prep Batch(es):** **L624846** 07/05/22 06:28
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/18/22 14:25	MMK	L625934
Aromatic >C10-C12	4.04	mg/Kg	1.00	1	07/18/22 14:25	MMK	L625934
Aliphatic >C12-C16	23.2	mg/Kg	2.00	1	07/18/22 14:25	MMK	L625934
Aromatic >C12-C16	20.6	mg/Kg	2.00	1	07/18/22 14:25	MMK	L625934
Aromatic >C16-C21	2.96	mg/Kg	2.00	1	07/18/22 14:25	MMK	L625934
Aliphatic >C16-C35	69.6	mg/Kg	4.00	1	07/18/22 14:25	MMK	L625934
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/18/22 14:25	MMK	L625934
Surrogate: Chlorooctadecane	87.3		Limits: 40-140%	1	07/18/22 14:25	MMK	MAEPH LA
Surrogate: OTP Surrogate	57.3		Limits: 40-140%	1	07/18/22 14:25	MMK	MAEPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70498**
 Sample ID : **SB-03 (0-2)**

Matrix: **Solids**
 Sampled: **6/21/2022 11:40**

Analytical Method: MAVPH LA **Prep Batch(es):** L625052 07/01/22 16:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	8.09	mg/Kg	2.12	100	07/02/22 06:38	HRS	L625054
Aliphatic >C8-C10	22.3	mg/Kg	4.24	100	07/02/22 06:38	HRS	L625054
Aromatic >C8-C10	6.20	mg/Kg	2.83	100	07/02/22 06:38	HRS	L625054
Surrogate: 2,5-Dibromotoluene		I *	Limits: 50-150%	100	07/02/22 06:38	HRS	MAVPH LA

Qualifiers/Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Project August Levert
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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70499**
Sample ID : **SB-03 (2-4)**

Matrix: **Solids**
Sampled: **6/21/2022 11:40**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Bromide (Sat Paste)	<0.050	meq/L	0.050	5	07/12/22 19:58	MJM	29B
% Moisture	41.2	%		1	06/29/22 16:21	BXH	SW-DRYWT
% Saturation (Sat Paste)	128	%		1	07/11/22 10:40	JMB	29B
Alkalinity (Sat Paste)	3.8	meq/L		1	07/12/22 12:39	JMB	29B
Chloride (Sat Paste)	2.19	meq/L	0.050	5	07/12/22 19:58	MJM	29B
Chloride	45.0	mg/Kg	4.00	1	07/12/22 18:29	MJM	9056
Electrical Conductivity (Sat Paste)	0.747	mmhos/cm		1	07/11/22 10:40	JMB	29B
pH (Sat Paste)	7.62	s.u.		1	07/11/22 10:40	JMB	29B
Sulfate (Sat Paste)	1.19	meq/L	0.050	5	07/12/22 19:58	MJM	29B
Cation Exchange Capacity	64.3	meq/100g	0.100	20	07/12/22 09:23		29B
Exchangeable Sodium Percentage	1.18	%	0.100	1	07/11/22 10:40		CALCULATION
Sodium Adsorption Ratio (Sat Paste)	2.61	Calc	0.430	10	07/12/22 09:53		29B
Calcium (Sat Paste)	2.71	meq/L	0.500	10	07/12/22 11:08	BMB	29B
Magnesium (Sat Paste)	1.12	meq/L	0.820	10	07/12/22 10:32	BMB	29B
Sodium (Sat Paste)	3.61	meq/L	0.430	10	07/12/22 09:53	BMB	29B
Oil & Grease	<0.10	%	0.10	1	06/29/22 14:22	JMB	29B
Total Arsenic	2.02	mg/Kg AR	2.00	1	07/14/22 12:29	EAL	6010D
Total Barium	1250	mg/Kg AR	5.00	5	07/14/22 14:59	EAL	6010D
True Total Barium	8300	mg/Kg	500	1	07/12/22 17:17	TJS	29B
Total Cadmium	<0.200	mg/Kg AR	0.200	1	07/14/22 12:29	EAL	6010D
Total Chromium	17.1	mg/Kg AR	0.500	1	07/14/22 12:29	EAL	6010D
Total Lead	12.1	mg/Kg AR	0.600	1	07/14/22 12:29	EAL	6010D
Mercury (Total)	0.584	mg/Kg AR	0.0133	1	07/14/22 15:55	JTR	7471A

Qualifiers/ Definitions	*	Outside QC Limit	B	Analyte detected in blank
	DF	Dilution Factor	I	Recovery out of range
	J	Estimated value	MQL	Method Quantitation Limit



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REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : 70499
 Sample ID : SB-03 (2-4)

Matrix: Solids
 Sampled: 6/21/2022 11:40

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/14/22 12:29	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/14/22 12:29	EAL	6010D
Total Zinc	44.8	mg/Kg AR	2.50	1	07/14/22 12:29	EAL	6010D
Bromide (Br)	3.23	mg/Kg	2.00	1	07/12/22 18:29	MJM	9056

Analytical Method: MAEPH LA **Prep Batch(es):** L624846 07/05/22 06:28
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/18/22 14:49	MMK	L625934
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/18/22 14:49	MMK	L625934
Aliphatic >C12-C16	<2.00	mg/Kg	2.00	1	07/18/22 14:49	MMK	L625934
Aromatic >C12-C16	<2.00	mg/Kg	2.00	1	07/18/22 14:49	MMK	L625934
Aromatic >C16-C21	<2.00	mg/Kg	2.00	1	07/18/22 14:49	MMK	L625934
Aliphatic >C16-C35	<4.00	mg/Kg	4.00	1	07/18/22 14:49	MMK	L625934
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/18/22 14:49	MMK	L625934
Surrogate: Chlorooctadecane	57.5		Limits: 40-140%	1	07/18/22 14:49	MMK	MAEPH LA
Surrogate: OTP Surrogate	36.2 *		Limits: 40-140%	1	07/18/22 14:49	MMK	MAEPH LA

Qualifiers/Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70499**
 Sample ID : **SB-03 (2-4)**

Matrix: **Solids**
 Sampled: **6/21/2022 11:40**

Analytical Method: MAVPH LA **Prep Batch(es):** L625052 07/01/22 16:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<2.98	mg/Kg	2.98	100	07/02/22 07:19	HRS	L625054
Aliphatic >C8-C10	6.11	mg/Kg	5.95	100	07/02/22 07:19	HRS	L625054
Aromatic >C8-C10	15.1	mg/Kg	3.97	100	07/02/22 07:19	HRS	L625054
Surrogate: 2,5-Dibromotoluene	77.8		Limits: 50-150%	100	07/02/22 07:19	HRS	MAVPH LA

Qualifiers/Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Received : 06/28/2022



Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70500**
Sample ID : **SB-04 (0-2)**

Matrix: **Solids**
Sampled: **6/21/2022 12:10**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Bromide (Sat Paste)	<0.050	meq/L	0.050	5	07/12/22 20:11	MJM	29B
% Moisture	28.7	%		1	06/29/22 16:21	BXH	SW-DRYWT
% Saturation (Sat Paste)	67.7	%		1	07/11/22 10:40	JMB	29B
Alkalinity (Sat Paste)	4.0	meq/L		1	07/12/22 12:39	JMB	29B
Chloride (Sat Paste)	1.24	meq/L	0.050	5	07/12/22 20:11	MJM	29B
Chloride	11.3	mg/Kg	4.00	1	07/12/22 18:41	MJM	9056
Electrical Conductivity (Sat Paste)	0.768	mmhos/cm		1	07/11/22 10:40	JMB	29B
pH (Sat Paste)	7.81	s.u.		1	07/11/22 10:40	JMB	29B
Sulfate (Sat Paste)	0.492	meq/L	0.050	5	07/12/22 20:11	MJM	29B
Cation Exchange Capacity	23.1	meq/100g	0.100	20	07/12/22 09:24		29B
Exchangeable Sodium Percentage	0.554	%	0.100	1	07/11/22 10:40		CALCULATION
Sodium Adsorption Ratio (Sat Paste)	1.16	Calc	0.430	10	07/12/22 09:53		29B
Calcium (Sat Paste)	4.26	meq/L	0.500	10	07/12/22 11:09	BMB	29B
Magnesium (Sat Paste)	1.43	meq/L	0.820	10	07/12/22 10:32	BMB	29B
Sodium (Sat Paste)	1.95	meq/L	0.430	10	07/12/22 09:53	BMB	29B
Oil & Grease	<0.10	%	0.10	1	06/29/22 14:22	JMB	29B
Total Arsenic	11.8	mg/Kg AR	2.00	1	07/14/22 12:34	EAL	6010D
Total Barium	276	mg/Kg AR	1.00	1	07/14/22 12:34	EAL	6010D
True Total Barium	301000	mg/Kg	5000	10	07/14/22 10:54	EAL	29B
Total Cadmium	0.457	mg/Kg AR	0.200	1	07/14/22 12:34	EAL	6010D
Total Chromium	413	mg/Kg AR	0.500	1	07/14/22 12:34	EAL	6010D
Total Lead	209	mg/Kg AR	0.600	1	07/14/22 12:34	EAL	6010D
Mercury (Total)	0.0512	mg/Kg AR	0.0133	1	07/14/22 16:00	JTR	7471A

Qualifiers/ Definitions	*	Outside QC Limit	B	Analyte detected in blank
	DF	Dilution Factor	I	Recovery out of range
	J	Estimated value	MQL	Method Quantitation Limit

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Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 08/02/2022
Received : 06/28/2022



Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70500**
Sample ID : **SB-04 (0-2)**

Matrix: **Solids**
Sampled: **6/21/2022 12:10**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/14/22 12:34	EAL	6010D
Total Silver	1.22	mg/Kg AR	0.500	1	07/14/22 12:34	EAL	6010D
Total Zinc	164	mg/Kg AR	2.50	1	07/14/22 12:34	EAL	6010D
Bromide (Br)	3.86	mg/Kg	2.00	1	07/12/22 18:41	MJM	9056

Analytical Method: 8270D SIM **Prep Batch(es):** **L624948** 07/05/22 10:58
Prep Method: 3550B

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
2-Methylnaphthalene	4.01	mg/Kg	0.0215	10	07/22/22 07:56	VBW	L628176
Acenaphthene	0.460	mg/Kg	0.0215	10	07/22/22 07:56	VBW	L628176
Acenaphthylene	<0.0215	mg/Kg	0.0215	10	07/22/22 07:56	VBW	L628176
Anthracene	0.186	mg/Kg	0.0215	10	07/22/22 07:56	VBW	L628176
Benzo(a)anthracene	<0.0215	mg/Kg	0.0215	10	07/22/22 07:56	VBW	L628176
Benzo(a)pyrene	<0.0215	mg/Kg	0.0215	10	07/22/22 07:56	VBW	L628176
Benzo(b)fluoranthene	<0.0215	mg/Kg	0.0215	10	07/22/22 07:56	VBW	L628176
Benzo(k)fluoranthene	<0.0215	mg/Kg	0.0215	10	07/22/22 07:56	VBW	L628176
Chrysene	<0.0215	mg/Kg	0.0215	10	07/22/22 07:56	VBW	L628176
Dibenz(a,h)anthracene	<0.0215	mg/Kg	0.0215	10	07/22/22 07:56	VBW	L628176
Fluoranthene	0.0402	mg/Kg	0.0215	10	07/22/22 07:56	VBW	L628176
Fluorene	0.379	mg/Kg	0.0215	10	07/22/22 07:56	VBW	L628176
Indeno(1,2,3-cd)pyrene	<0.0215	mg/Kg	0.0215	10	07/22/22 07:56	VBW	L628176
Naphthalene	0.608	mg/Kg	0.0215	10	07/22/22 07:56	VBW	L628176

Qualifiers/Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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 Bayou Sorrel, LA

Report Date : 08/02/2022
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Report Number : 22-179-0021

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : 70500
 Sample ID : SB-04 (0-2)

Matrix: Solids
 Sampled: 6/21/2022 12:10

Analytical Method: 8270D SIM **Prep Batch(es):** L624948 07/05/22 10:58
Prep Method: 3550B

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Phenanthrene	1.00	mg/Kg	0.0215	10	07/22/22 07:56	VBW	L628176
Pyrene	0.125	mg/Kg	0.0215	10	07/22/22 07:56	VBW	L628176
Surrogate: 2-Fluorobiphenyl	74.6		Limits: 33-115%	10	07/22/22 07:56	VBW	L628176
Surrogate: Nitrobenzene-d5	49.4		Limits: 29-110%	10	07/22/22 07:56	VBW	L628176
Surrogate: 4-Terphenyl-d14	99.1		Limits: 33-122%	10	07/22/22 07:56	VBW	L628176

Analytical Method: MAEPH LA **Prep Batch(es):** L624846 07/05/22 06:28
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	57.0	mg/Kg	20.0	10	07/19/22 00:03	MMK	L625934
Aromatic >C10-C12	76.0	mg/Kg	10.0	10	07/19/22 00:28	MMK	L625934
Aliphatic >C12-C16	361	mg/Kg	20.0	10	07/19/22 00:03	MMK	L625934
Aromatic >C12-C16	208	mg/Kg	20.0	10	07/19/22 00:28	MMK	L625934
Aromatic >C16-C21	28.2	mg/Kg	20.0	10	07/19/22 00:28	MMK	L625934
Aliphatic >C16-C35	442	mg/Kg	40.0	10	07/19/22 00:03	MMK	L625934
Aromatic >C21-C35	<20.0	mg/Kg	20.0	10	07/19/22 00:28	MMK	L625934
Surrogate: Chlorooctadecane	49.6		Limits: 40-140%	10	07/19/22 00:03	MMK	MAEPH LA
Surrogate: OTP Surrogate	53.2		Limits: 40-140%	10	07/19/22 00:28	MMK	MAEPH LA

Qualifiers/Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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Hydro-Environmental Technology, Inc.
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 91 Apollo Rd
 Scott, LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 08/02/2022
 Received : 06/28/2022

Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70500**
 Sample ID : **SB-04 (0-2)**

Matrix: **Solids**
 Sampled: **6/21/2022 12:10**

Analytical Method: MAVPH LA **Prep Batch(es):** L625052 07/01/22 16:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	6.80	mg/Kg	1.87	100	07/02/22 08:00	HRS	L625054
Aliphatic >C8-C10	17.1	mg/Kg	3.74	100	07/02/22 08:00	HRS	L625054
Aromatic >C8-C10	4.85	mg/Kg	2.49	100	07/02/22 08:00	HRS	L625054
Surrogate: 2,5-Dibromotoluene	22.2 *		Limits: 50-150%	100	07/02/22 08:00	HRS	MAVPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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Project August Levert
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Report Date : 08/02/2022
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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70501**
 Sample ID : **SB-04 (2-4)**

Matrix: **Solids**
 Sampled: **6/21/2022 12:10**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Bromide (Sat Paste)	<0.050	meq/L	0.050	5	07/12/22 20:37	MJM	29B
% Moisture	30.4	%		1	06/29/22 16:21	BXH	SW-DRYWT
% Saturation (Sat Paste)	121	%		1	07/11/22 10:40	JMB	29B
Alkalinity (Sat Paste)	2.9	meq/L		1	07/12/22 12:39	JMB	29B
Chloride (Sat Paste)	2.71	meq/L	0.050	5	07/12/22 20:37	MJM	29B
Chloride	44.0	mg/Kg	4.00	1	07/12/22 18:54	MJM	9056
Electrical Conductivity (Sat Paste)	0.720	mmhos/cm		1	07/11/22 10:40	JMB	29B
pH (Sat Paste)	7.99	s.u.		1	07/11/22 10:40	JMB	29B
Sulfate (Sat Paste)	0.764	meq/L	0.050	5	07/12/22 20:37	MJM	29B
Cation Exchange Capacity	59.6	meq/100g	0.100	20	07/12/22 09:27		29B
Exchangeable Sodium Percentage	1.52	%	0.100	1	07/11/22 10:40		CALCULATION
Sodium Adsorption Ratio (Sat Paste)	3.30	Calc	0.430	10	07/12/22 09:57		29B
Calcium (Sat Paste)	2.15	meq/L	0.500	10	07/12/22 11:11	BMB	29B
Magnesium (Sat Paste)	0.899	meq/L	0.820	10	07/12/22 10:34	BMB	29B
Sodium (Sat Paste)	4.07	meq/L	0.430	10	07/12/22 09:57	BMB	29B
Oil & Grease	0.10	%	0.10	1	06/29/22 14:22	JMB	29B
Total Arsenic	5.65	mg/Kg AR	2.00	1	07/14/22 12:49	EAL	6010D
Total Barium	2470	mg/Kg AR	5.00	5	07/14/22 15:05	EAL	6010D
True Total Barium	43900	mg/Kg	500	1	07/12/22 17:28	TJS	29B
Total Cadmium	0.353	mg/Kg AR	0.200	1	07/14/22 12:49	EAL	6010D
Total Chromium	21.4	mg/Kg AR	0.500	1	07/14/22 12:49	EAL	6010D
Total Lead	21.3	mg/Kg AR	0.600	1	07/14/22 12:49	EAL	6010D
Mercury (Total)	1.13	mg/Kg AR	0.0133	1	07/14/22 16:01	JTR	7471A

Qualifiers/ Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit

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Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

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Received : 06/28/2022



Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70501**
Sample ID : **SB-04 (2-4)**

Matrix: **Solids**
Sampled: **6/21/2022 12:10**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Selenium	<5.00	mg/Kg AR	5.00	5	07/14/22 15:05	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/14/22 12:49	EAL	6010D
Total Zinc	55.6	mg/Kg AR	2.50	1	07/14/22 12:49	EAL	6010D
Bromide (Br)	3.36	mg/Kg	2.00	1	07/12/22 18:54	MJM	9056

Analytical Method: MAEPH LA **Prep Batch(es):** **L624846** 07/05/22 06:28
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/19/22 00:52	MMK	L625934
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/19/22 01:16	MMK	L625934
Aliphatic >C12-C16	3.65	mg/Kg	2.00	1	07/19/22 00:52	MMK	L625934
Aromatic >C12-C16	<2.00	mg/Kg	2.00	1	07/19/22 01:16	MMK	L625934
Aromatic >C16-C21	<2.00	mg/Kg	2.00	1	07/19/22 01:16	MMK	L625934
Aliphatic >C16-C35	6.92	mg/Kg	4.00	1	07/19/22 00:52	MMK	L625934
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/19/22 01:16	MMK	L625934
Surrogate: Chlorooctadecane	48.6		Limits: 40-140%	1	07/19/22 00:52	MMK	MAEPH LA
Surrogate: OTP Surrogate	51.4		Limits: 40-140%	1	07/19/22 01:16	MMK	MAEPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70501**
 Sample ID : **SB-04 (2-4)**

Matrix: **Solids**
 Sampled: **6/21/2022 12:10**

Analytical Method: MAVPH LA **Prep Batch(es):** L625815 07/06/22 14:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<2.76	mg/Kg	2.76	100	07/06/22 17:40	HRS	L625822
Aliphatic >C8-C10	<5.52	mg/Kg	5.52	100	07/06/22 17:40	HRS	L625822
Aromatic >C8-C10	<3.68	mg/Kg	3.68	100	07/06/22 17:40	HRS	L625822
Surrogate: 2,5-Dibromotoluene	91.8		Limits: 50-150%	100	07/06/22 17:40	HRS	MAVPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70502**
 Sample ID : **SB-04 (4-6)**

Matrix: **Solids**
 Sampled: **6/21/2022 12:30**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Bromide (Sat Paste)	<0.050	meq/L	0.050	5	07/12/22 20:50	MJM	29B
% Moisture	46.4	%		1	06/29/22 16:21	BXH	SW-DRYWT
% Saturation (Sat Paste)	119	%		1	07/11/22 10:40	JMB	29B
Alkalinity (Sat Paste)	3.7	meq/L		1	07/12/22 12:39	JMB	29B
Chloride (Sat Paste)	5.82	meq/L	0.050	5	07/12/22 20:50	MJM	29B
Chloride	67.9	mg/Kg	4.00	1	07/12/22 19:43	MJM	9056
Electrical Conductivity (Sat Paste)	1.12	mmhos/cm		1	07/11/22 10:40	JMB	29B
pH (Sat Paste)	7.70	s.u.		1	07/11/22 10:40	JMB	29B
Sulfate (Sat Paste)	1.02	meq/L	0.050	5	07/12/22 20:50	MJM	29B
Cation Exchange Capacity	70.9	meq/100g	0.100	20	07/12/22 09:27		29B
Exchangeable Sodium Percentage	1.53	%	0.100	1	07/11/22 10:40		CALCULATION
Sodium Adsorption Ratio (Sat Paste)	3.50	Calc	0.430	10	07/12/22 09:58		29B
Calcium (Sat Paste)	3.67	meq/L	0.500	10	07/12/22 11:12	BMB	29B
Magnesium (Sat Paste)	1.60	meq/L	0.820	10	07/12/22 10:35	BMB	29B
Sodium (Sat Paste)	5.68	meq/L	0.430	10	07/12/22 09:58	BMB	29B
Oil & Grease	<0.10	%	0.10	1	06/29/22 14:22	JMB	29B
Total Arsenic	<2.00	mg/Kg AR	2.00	1	07/14/22 12:54	EAL	6010D
Total Barium	469	mg/Kg AR	1.00	1	07/14/22 12:54	EAL	6010D
True Total Barium	5370	mg/Kg	500	1	07/12/22 17:33	TJS	29B
Total Cadmium	0.204	mg/Kg AR	0.200	1	07/14/22 12:54	EAL	6010D
Total Chromium	10.4	mg/Kg AR	0.500	1	07/14/22 12:54	EAL	6010D
Total Lead	10.1	mg/Kg AR	0.600	1	07/14/22 12:54	EAL	6010D
Mercury (Total)	0.0668	mg/Kg AR	0.0133	1	07/14/22 16:02	JTR	7471A

Qualifiers/ Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit

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Hydro-Environmental Technology, Inc.
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Project August Levert
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Bayou Sorrel, LA

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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70502**
Sample ID : **SB-04 (4-6)**

Matrix: **Solids**
Sampled: **6/21/2022 12:30**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/14/22 12:54	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/14/22 12:54	EAL	6010D
Total Zinc	37.8	mg/Kg AR	2.50	1	07/14/22 12:54	EAL	6010D
Bromide (Br)	<2.00	mg/Kg	2.00	1	07/12/22 19:43	MJM	9056

Analytical Method: MAEPH LA **Prep Batch(es):** **L624846** 07/05/22 06:28
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/19/22 01:16	MMK	L625934
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/19/22 01:40	MMK	L625934
Aliphatic >C12-C16	<2.00	mg/Kg	2.00	1	07/19/22 01:16	MMK	L625934
Aromatic >C12-C16	<2.00	mg/Kg	2.00	1	07/19/22 01:40	MMK	L625934
Aromatic >C16-C21	<2.00	mg/Kg	2.00	1	07/19/22 01:40	MMK	L625934
Aliphatic >C16-C35	<4.00	mg/Kg	4.00	1	07/19/22 01:16	MMK	L625934
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/19/22 01:40	MMK	L625934
Surrogate: Chlorooctadecane	59.9		Limits: 40-140%	1	07/19/22 01:16	MMK	MAEPH LA
Surrogate: OTP Surrogate	59.9		Limits: 40-140%	1	07/19/22 01:40	MMK	MAEPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70502**
 Sample ID : **SB-04 (4-6)**

Matrix: **Solids**
 Sampled: **6/21/2022 12:30**

Analytical Method: MAVPH LA **Prep Batch(es):** L625815 07/06/22 14:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<3.59	mg/Kg	3.59	100	07/06/22 18:22	HRS	L625822
Aliphatic >C8-C10	<7.18	mg/Kg	7.18	100	07/06/22 18:22	HRS	L625822
Aromatic >C8-C10	<4.78	mg/Kg	4.78	100	07/06/22 18:22	HRS	L625822
Surrogate: 2,5-Dibromotoluene	104		Limits: 50-150%	100	07/06/22 18:22	HRS	MAVPH LA

Qualifiers/Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Bayou Sorrel, LA

Report Date : 08/02/2022
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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70503**
Sample ID : **SB-05 (2-4)**

Matrix: **Solids**
Sampled: **6/21/2022 14:10**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Bromide (Sat Paste)	<0.050	meq/L	0.050	5	07/12/22 21:41	MJM	29B
% Moisture	35.0	%		1	06/29/22 16:21	BXH	SW-DRYWT
% Saturation (Sat Paste)	98.8	%		1	07/11/22 10:40	JMB	29B
Alkalinity (Sat Paste)	2.6	meq/L		1	07/12/22 12:39	JMB	29B
Chloride (Sat Paste)	0.771	meq/L	0.050	5	07/12/22 21:41	MJM	29B
Chloride	13.6	mg/Kg	4.00	1	07/12/22 19:55	MJM	9056
Electrical Conductivity (Sat Paste)	0.431	mmhos/cm		1	07/11/22 10:40	JMB	29B
pH (Sat Paste)	7.28	s.u.		1	07/11/22 10:40	JMB	29B
Sulfate (Sat Paste)	0.436	meq/L	0.050	5	07/12/22 21:41	MJM	29B
Cation Exchange Capacity	53.9	meq/100g	0.100	20	07/12/22 09:28		29B
Exchangeable Sodium Percentage	0.645	%	0.100	1	07/11/22 10:40		CALCULATION
Sodium Adsorption Ratio (Sat Paste)	1.22	Calc	0.215	5	07/12/22 09:59		29B
Calcium (Sat Paste)	1.96	meq/L	0.250	5	07/12/22 11:14	BMB	29B
Magnesium (Sat Paste)	0.982	meq/L	0.410	5	07/12/22 10:37	BMB	29B
Sodium (Sat Paste)	1.48	meq/L	0.215	5	07/12/22 09:59	BMB	29B
Oil & Grease	<0.10	%	0.10	1	06/29/22 14:22	JMB	29B
Total Arsenic	3.27	mg/Kg AR	2.00	1	07/14/22 13:00	EAL	6010D
Total Barium	1830	mg/Kg AR	5.00	5	07/14/22 15:10	EAL	6010D
True Total Barium	90100	mg/Kg	2500	5	07/14/22 11:00	EAL	29B
Total Cadmium	<0.200	mg/Kg AR	0.200	1	07/14/22 13:00	EAL	6010D
Total Chromium	121	mg/Kg AR	0.500	1	07/14/22 13:00	EAL	6010D
Total Lead	60.3	mg/Kg AR	0.600	1	07/14/22 13:00	EAL	6010D
Mercury (Total)	0.0443	mg/Kg AR	0.0133	1	07/14/22 16:04	JTR	7471A

Qualifiers/ Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit

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Information : Project Number: 1009.A62
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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70503**
Sample ID : **SB-05 (2-4)**

Matrix: **Solids**
Sampled: **6/21/2022 14:10**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/14/22 13:00	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/14/22 13:00	EAL	6010D
Total Zinc	57.3	mg/Kg AR	2.50	1	07/14/22 13:00	EAL	6010D
Bromide (Br)	<2.00	mg/Kg	2.00	1	07/12/22 19:55	MJM	9056

Analytical Method: MAEPH LA **Prep Batch(es):** **L624846** 07/05/22 06:28
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/19/22 01:40	MMK	L625934
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/19/22 02:05	MMK	L625934
Aliphatic >C12-C16	9.44	mg/Kg	2.00	1	07/19/22 01:40	MMK	L625934
Aromatic >C12-C16	6.23	mg/Kg	2.00	1	07/19/22 02:05	MMK	L625934
Aromatic >C16-C21	<2.00	mg/Kg	2.00	1	07/19/22 02:05	MMK	L625934
Aliphatic >C16-C35	23.3	mg/Kg	4.00	1	07/19/22 01:40	MMK	L625934
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/19/22 02:05	MMK	L625934
Surrogate: Chlorooctadecane	56.3		Limits: 40-140%	1	07/19/22 01:40	MMK	MAEPH LA
Surrogate: OTP Surrogate	73.5		Limits: 40-140%	1	07/19/22 02:05	MMK	MAEPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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 Scott, LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 08/02/2022
 Received : 06/28/2022

Report Number : 22-179-0021

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : 70503
 Sample ID : SB-05 (2-4)

Matrix: Solids
 Sampled: 6/21/2022 14:10

Analytical Method: MAVPH LA **Prep Batch(es):** L625815 07/06/22 14:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<2.84	mg/Kg	2.84	100	07/06/22 19:03	HRS	L625822
Aliphatic >C8-C10	<5.68	mg/Kg	5.68	100	07/06/22 19:03	HRS	L625822
Aromatic >C8-C10	<3.79	mg/Kg	3.79	100	07/06/22 19:03	HRS	L625822
Surrogate: 2,5-Dibromotoluene	97.9		Limits: 50-150%	100	07/06/22 19:03	HRS	MAVPH LA

Qualifiers/Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

09996

Hydro-Environmental Technology, Inc.
Mr. Stewart Stover, Jr.
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Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 08/02/2022
Received : 06/28/2022



Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70504**
Sample ID : **SB-05 (4-6)**

Matrix: **Solids**
Sampled: **6/21/2022 14:20**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Bromide (Sat Paste)	<0.050	meq/L	0.050	5	07/12/22 21:54	MJM	29B
% Moisture	39.7	%		1	06/29/22 16:21	BXH	SW-DRYWT
% Saturation (Sat Paste)	121	%		1	07/11/22 10:40	JMB	29B
Alkalinity (Sat Paste)	3.0	meq/L		1	07/12/22 12:39	JMB	29B
Chloride (Sat Paste)	1.43	meq/L	0.050	5	07/12/22 21:54	MJM	29B
Chloride	21.3	mg/Kg	4.00	1	07/12/22 20:08	MJM	9056
Electrical Conductivity (Sat Paste)	0.630	mmhos/cm		1	07/11/22 10:40	JMB	29B
pH (Sat Paste)	7.56	s.u.		1	07/11/22 10:40	JMB	29B
Sulfate (Sat Paste)	1.31	meq/L	0.050	5	07/12/22 21:54	MJM	29B
Cation Exchange Capacity	63.5	meq/100g	0.100	20	07/12/22 09:30		29B
Exchangeable Sodium Percentage	0.661	%	0.100	1	07/11/22 10:40		CALCULATION
Sodium Adsorption Ratio (Sat Paste)	1.96	Calc	0.430	10	07/12/22 10:00		29B
Calcium (Sat Paste)	2.52	meq/L	0.500	10	07/12/22 11:15	BMB	29B
Magnesium (Sat Paste)	1.19	meq/L	0.820	10	07/12/22 10:38	BMB	29B
Sodium (Sat Paste)	2.67	meq/L	0.430	10	07/12/22 10:00	BMB	29B
Oil & Grease	<0.10	%	0.10	1	06/29/22 14:22	JMB	29B
Total Arsenic	2.13	mg/Kg AR	2.00	1	07/14/22 13:05	EAL	6010D
Total Barium	1330	mg/Kg AR	5.00	5	07/14/22 15:15	EAL	6010D
True Total Barium	6060	mg/Kg	500	1	07/12/22 17:53	TJS	29B
Total Cadmium	<0.200	mg/Kg AR	0.200	1	07/14/22 13:05	EAL	6010D
Total Chromium	20.2	mg/Kg AR	0.500	1	07/14/22 13:05	EAL	6010D
Total Lead	13.4	mg/Kg AR	0.600	1	07/14/22 13:05	EAL	6010D
Mercury (Total)	0.0335	mg/Kg AR	0.0133	1	07/14/22 16:05	JTR	7471A

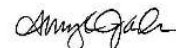
Qualifiers/ Definitions	*	Outside QC Limit	B	Analyte detected in blank
	DF	Dilution Factor	I	Recovery out of range
	J	Estimated value	MQL	Method Quantitation Limit

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Project August Levert
Information : Project Number: 1009.A62
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Report Date : 08/02/2022
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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70504**
Sample ID : **SB-05 (4-6)**

Matrix: **Solids**
Sampled: **6/21/2022 14:20**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/14/22 13:05	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/14/22 13:05	EAL	6010D
Total Zinc	47.2	mg/Kg AR	2.50	1	07/14/22 13:05	EAL	6010D
Bromide (Br)	<2.00	mg/Kg	2.00	1	07/12/22 20:08	MJM	9056

Analytical Method: MAEPH LA **Prep Batch(es):** **L624846** 07/05/22 06:28
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/19/22 02:05	MMK	L625934
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/19/22 02:29	MMK	L625934
Aliphatic >C12-C16	<2.00	mg/Kg	2.00	1	07/19/22 02:05	MMK	L625934
Aromatic >C12-C16	<2.00	mg/Kg	2.00	1	07/19/22 02:29	MMK	L625934
Aromatic >C16-C21	<2.00	mg/Kg	2.00	1	07/19/22 02:29	MMK	L625934
Aliphatic >C16-C35	<4.00	mg/Kg	4.00	1	07/19/22 02:05	MMK	L625934
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/19/22 02:29	MMK	L625934
Surrogate: Chlorooctadecane	74.9		Limits: 40-140%	1	07/19/22 02:05	MMK	MAEPH LA
Surrogate: OTP Surrogate	63.5		Limits: 40-140%	1	07/19/22 02:29	MMK	MAEPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Project August Levert

Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 08/02/2022
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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70504**
Sample ID : **SB-05 (4-6)**

Matrix: **Solids**
Sampled: **6/21/2022 14:20**

Analytical Method: MAVPH LA **Prep Batch(es):** **L625815** 07/06/22 14:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<2.75	mg/Kg	2.75	100	07/06/22 19:44	HRS	L625822
Aliphatic >C8-C10	<5.50	mg/Kg	5.50	100	07/06/22 19:44	HRS	L625822
Aromatic >C8-C10	<3.67	mg/Kg	3.67	100	07/06/22 19:44	HRS	L625822
Surrogate: 2,5-Dibromotoluene	108		Limits: 50-150%	100	07/06/22 19:44	HRS	MAVPH LA

Qualifiers/Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70505**
 Sample ID : **SB-06 (2-4)**

Matrix: **Solids**
 Sampled: **6/21/2022 14:50**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Bromide (Sat Paste)	<0.050	meq/L	0.050	5	07/12/22 22:07	MJM	29B
% Moisture	31.5	%		1	07/01/22 16:18	JMB	SW-DRYWT
% Saturation (Sat Paste)	119	%		1	07/11/22 10:40	JMB	29B
Alkalinity (Sat Paste)	0.8	meq/L		1	07/12/22 12:39	JMB	29B
Chloride (Sat Paste)	3.09	meq/L	0.050	5	07/12/22 22:07	MJM	29B
Chloride	79.0	mg/Kg	4.00	1	07/12/22 20:20	MJM	9056
Electrical Conductivity (Sat Paste)	1.41	mmhos/cm		1	07/11/22 10:40	JMB	29B
pH (Sat Paste)	6.69	s.u.		1	07/11/22 10:40	JMB	29B
Sulfate (Sat Paste)	11.3	meq/L	0.050	5	07/12/22 22:07	MJM	29B
Cation Exchange Capacity	66.5	meq/100g	0.100	20	07/12/22 09:30		29B
Exchangeable Sodium Percentage	1.4	%	0.1	1	07/12/22 10:00		CALCULATION
Sodium Adsorption Ratio (Sat Paste)	1.72	Calc	0.430	10	07/12/22 10:00		29B
Calcium (Sat Paste)	6.56	meq/L	0.500	10	07/12/22 11:16	BMB	29B
Magnesium (Sat Paste)	4.01	meq/L	0.820	10	07/12/22 10:38	BMB	29B
Sodium (Sat Paste)	3.95	meq/L	0.430	10	07/12/22 10:00	BMB	29B
Oil & Grease	<0.10	%	0.10	1	06/29/22 14:22	JMB	29B
Total Arsenic	3.54	mg/Kg AR	2.00	1	07/14/22 13:10	EAL	6010D
Total Barium	154	mg/Kg AR	1.00	1	07/14/22 13:10	EAL	6010D
True Total Barium	772	mg/Kg	500	1	07/12/22 17:58	TJS	29B
Total Cadmium	<0.200	mg/Kg AR	0.200	1	07/14/22 13:10	EAL	6010D
Total Chromium	13.6	mg/Kg AR	0.500	1	07/14/22 13:10	EAL	6010D
Total Lead	11.1	mg/Kg AR	0.600	1	07/14/22 13:10	EAL	6010D
Mercury (Total)	0.0361	mg/Kg AR	0.0133	1	07/14/22 16:07	JTR	7471A

Qualifiers/ Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit



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Project August Levert
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REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70505**
 Sample ID : **SB-06 (2-4)**

Matrix: **Solids**
 Sampled: **6/21/2022 14:50**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/14/22 13:10	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/14/22 13:10	EAL	6010D
Total Zinc	52.3	mg/Kg AR	2.50	1	07/14/22 13:10	EAL	6010D
Bromide (Br)	<2.00	mg/Kg	2.00	1	07/12/22 20:20	MJM	9056

Analytical Method: MAEPH LA **Prep Batch(es):** **L624846** 07/05/22 06:28
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/19/22 02:29	MMK	L625934
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/19/22 02:53	MMK	L625934
Aliphatic >C12-C16	<2.00	mg/Kg	2.00	1	07/19/22 02:29	MMK	L625934
Aromatic >C12-C16	<2.00	mg/Kg	2.00	1	07/19/22 02:53	MMK	L625934
Aromatic >C16-C21	<2.00	mg/Kg	2.00	1	07/19/22 02:53	MMK	L625934
Aliphatic >C16-C35	<4.00	mg/Kg	4.00	1	07/19/22 02:29	MMK	L625934
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/19/22 02:53	MMK	L625934
Surrogate: Chlorooctadecane	67.7		Limits: 40-140%	1	07/19/22 02:29	MMK	MAEPH LA
Surrogate: OTP Surrogate	64.1		Limits: 40-140%	1	07/19/22 02:53	MMK	MAEPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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Project August Levert
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 Bayou Sorrel, LA

Report Date : 08/02/2022
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REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : 70505
 Sample ID : SB-06 (2-4)

Matrix: Solids
 Sampled: 6/21/2022 14:50

Analytical Method: MAVPH LA **Prep Batch(es):** L625815 07/06/22 14:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<2.78	mg/Kg	2.78	100	07/06/22 20:25	HRS	L625822
Aliphatic >C8-C10	<5.57	mg/Kg	5.57	100	07/06/22 20:25	HRS	L625822
Aromatic >C8-C10	<3.71	mg/Kg	3.71	100	07/06/22 20:25	HRS	L625822
Surrogate: 2,5-Dibromotoluene	101		Limits: 50-150%	100	07/06/22 20:25	HRS	MAVPH LA

Qualifiers/Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Project August Levert
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Report Date : 08/02/2022
Received : 06/28/2022



Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70506**
Sample ID : **SB-06 (4-6)**

Matrix: **Solids**
Sampled: **6/21/2022 14:55**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Bromide (Sat Paste)	<0.050	meq/L	0.050	5	07/12/22 22:20	MJM	29B
% Moisture	39.7	%		1	07/01/22 16:18	JMB	SW-DRYWT
% Saturation (Sat Paste)	123	%		1	07/11/22 10:40	JMB	29B
Alkalinity (Sat Paste)	1.7	meq/L		1	07/12/22 12:39	JMB	29B
Chloride (Sat Paste)	4.53	meq/L	0.050	5	07/12/22 22:20	MJM	29B
Chloride	106	mg/Kg	4.00	1	07/12/22 20:32	MJM	9056
Electrical Conductivity (Sat Paste)	1.68	mmhos/cm		1	07/11/22 10:40	JMB	29B
pH (Sat Paste)	7.13	s.u.		1	07/11/22 10:40	JMB	29B
Sulfate (Sat Paste)	12.1	meq/L	0.050	5	07/12/22 22:20	MJM	29B
Cation Exchange Capacity	63.9	meq/100g	0.100	20	07/12/22 09:31		29B
Exchangeable Sodium Percentage	1.6	%	0.1	1	07/12/22 10:01		CALCULATION
Sodium Adsorption Ratio (Sat Paste)	2.30	Calc	0.430	10	07/12/22 10:01		29B
Calcium (Sat Paste)	7.72	meq/L	0.500	10	07/12/22 11:17	BMB	29B
Magnesium (Sat Paste)	4.29	meq/L	0.820	10	07/12/22 10:39	BMB	29B
Sodium (Sat Paste)	5.63	meq/L	0.430	10	07/12/22 10:01	BMB	29B
Oil & Grease	<0.10	%	0.10	1	06/29/22 14:22	JMB	29B
Total Arsenic	2.56	mg/Kg AR	2.00	1	07/14/22 13:15	EAL	6010D
Total Barium	173	mg/Kg AR	1.00	1	07/14/22 13:15	EAL	6010D
True Total Barium	566	mg/Kg	500	1	07/12/22 18:03	TJS	29B
Total Cadmium	<0.200	mg/Kg AR	0.200	1	07/14/22 13:15	EAL	6010D
Total Chromium	16.0	mg/Kg AR	0.500	1	07/14/22 13:15	EAL	6010D
Total Lead	10.9	mg/Kg AR	0.600	1	07/14/22 13:15	EAL	6010D
Mercury (Total)	1.05	mg/Kg AR	0.0133	1	07/14/22 16:08	JTR	7471A

Qualifiers/ Definitions	*	Outside QC Limit	B	Analyte detected in blank
	DF	Dilution Factor	I	Recovery out of range
	J	Estimated value	MQL	Method Quantitation Limit

09996

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Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 08/02/2022
Received : 06/28/2022



Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70506**
Sample ID : **SB-06 (4-6)**

Matrix: **Solids**
Sampled: **6/21/2022 14:55**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/14/22 13:15	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/14/22 13:15	EAL	6010D
Total Zinc	43.9	mg/Kg AR	2.50	1	07/14/22 13:15	EAL	6010D
Bromide (Br)	<2.00	mg/Kg	2.00	1	07/12/22 20:32	MJM	9056

Analytical Method: MAEPH LA **Prep Batch(es):** **L624846** 07/05/22 06:28
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/19/22 02:53	MMK	L625934
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/12/22 13:08	MMK	L625934
Aliphatic >C12-C16	<2.00	mg/Kg	2.00	1	07/19/22 02:53	MMK	L625934
Aromatic >C12-C16	<2.00	mg/Kg	2.00	1	07/12/22 13:08	MMK	L625934
Aromatic >C16-C21	<2.00	mg/Kg	2.00	1	07/12/22 13:08	MMK	L625934
Aliphatic >C16-C35	<4.00	mg/Kg	4.00	1	07/19/22 02:53	MMK	L625934
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/12/22 13:08	MMK	L625934
Surrogate: Chlorooctadecane	46.3		Limits: 40-140%	1	07/19/22 02:53	MMK	MAEPH LA
Surrogate: OTP Surrogate	48.8		Limits: 40-140%	1	07/12/22 13:08	MMK	MAEPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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 Bayou Sorrel, LA

Report Date : 08/02/2022
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Report Number : 22-179-0021

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : 70506
 Sample ID : SB-06 (4-6)

Matrix: Solids
 Sampled: 6/21/2022 14:55

Analytical Method: MAVPH LA **Prep Batch(es):** L625815 07/06/22 14:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<6.61	mg/Kg	6.61	100	07/06/22 21:07	HRS	L625822
Aliphatic >C8-C10	<13.2	mg/Kg	13.2	100	07/06/22 21:07	HRS	L625822
Aromatic >C8-C10	<8.81	mg/Kg	8.81	100	07/06/22 21:07	HRS	L625822
Surrogate: 2,5-Dibromotoluene	172 *		Limits: 50-150%	100	07/06/22 21:07	HRS	MAVPH LA

Qualifiers/Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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Project August Levert
 Information : Project Number: 1009.A62
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Report Date : 08/02/2022
 Received : 06/28/2022

Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70507**
 Sample ID : **SB-07 (2-4)**

Matrix: **Solids**
 Sampled: **6/21/2022 15:25**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Bromide (Sat Paste)	<0.050	meq/L	0.050	5	07/12/22 22:33	MJM	29B
% Moisture	39.4	%		1	07/01/22 16:18	JMB	SW-DRYWT
% Saturation (Sat Paste)	101	%		1	07/11/22 10:40	JMB	29B
Alkalinity (Sat Paste)	0.4	meq/L		1	07/12/22 12:39	JMB	29B
Chloride (Sat Paste)	2.65	meq/L	0.050	5	07/12/22 22:33	MJM	29B
Chloride	31.9	mg/Kg	4.00	1	07/12/22 20:45	MJM	9056
Electrical Conductivity (Sat Paste)	0.643	mmhos/cm		1	07/11/22 10:40	JMB	29B
pH (Sat Paste)	6.66	s.u.		1	07/11/22 10:40	JMB	29B
Sulfate (Sat Paste)	2.67	meq/L	0.050	5	07/12/22 22:33	MJM	29B
Cation Exchange Capacity	62.2	meq/100g	0.100	20	07/12/22 09:32		29B
Exchangeable Sodium Percentage	0.698	%	0.100	1	07/11/22 10:40		CALCULATION
Sodium Adsorption Ratio (Sat Paste)	2.02	Calc	0.430	10	07/12/22 10:02		29B
Calcium (Sat Paste)	1.89	meq/L	0.500	10	07/12/22 11:18	BMB	29B
Magnesium (Sat Paste)	1.17	meq/L	0.820	10	07/12/22 10:40	BMB	29B
Sodium (Sat Paste)	2.50	meq/L	0.430	10	07/12/22 10:02	BMB	29B
Oil & Grease	<0.10	%	0.10	1	06/29/22 14:22	JMB	29B
Total Arsenic	3.37	mg/Kg AR	2.00	1	07/14/22 13:21	EAL	6010D
Total Barium	124	mg/Kg AR	1.00	1	07/14/22 13:21	EAL	6010D
True Total Barium	631	mg/Kg	500	1	07/12/22 18:08	TJS	29B
Total Cadmium	<0.200	mg/Kg AR	0.200	1	07/14/22 13:21	EAL	6010D
Total Chromium	13.8	mg/Kg AR	0.500	1	07/14/22 13:21	EAL	6010D
Total Lead	11.7	mg/Kg AR	0.600	1	07/14/22 13:21	EAL	6010D
Mercury (Total)	0.0589	mg/Kg AR	0.0133	1	07/14/22 16:10	JTR	7471A

Qualifiers/ Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit



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Hydro-Environmental Technology, Inc.
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 91 Apollo Rd
 Scott, LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 08/02/2022
 Received : 06/28/2022

Report Number : 22-179-0021

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : 70507
 Sample ID : SB-07 (2-4)

Matrix: Solids
 Sampled: 6/21/2022 15:25

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/14/22 13:21	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/14/22 13:21	EAL	6010D
Total Zinc	50.5	mg/Kg AR	2.50	1	07/14/22 13:21	EAL	6010D
Bromide (Br)	3.61	mg/Kg	2.00	1	07/12/22 20:45	MJM	9056

Analytical Method: MAEPH LA **Prep Batch(es):** L624846 07/05/22 06:28
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/19/22 03:18	MMK	L625934
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/12/22 13:33	MMK	L625934
Aliphatic >C12-C16	<2.00	mg/Kg	2.00	1	07/19/22 03:18	MMK	L625934
Aromatic >C12-C16	<2.00	mg/Kg	2.00	1	07/12/22 13:33	MMK	L625934
Aromatic >C16-C21	<2.00	mg/Kg	2.00	1	07/12/22 13:33	MMK	L625934
Aliphatic >C16-C35	<4.00	mg/Kg	4.00	1	07/19/22 03:18	MMK	L625934
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/12/22 13:33	MMK	L625934
Surrogate: Chlorooctadecane	63.6		Limits: 40-140%	1	07/19/22 03:18	MMK	MAEPH LA
Surrogate: OTP Surrogate	77.0		Limits: 40-140%	1	07/12/22 13:33	MMK	MAEPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

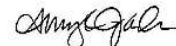
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Hydro-Environmental Technology, Inc.
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Project August Levert

Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 08/02/2022
Received : 06/28/2022



Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70507**
Sample ID : **SB-07 (2-4)**

Matrix: **Solids**
Sampled: **6/21/2022 15:25**

Analytical Method: MAVPH LA **Prep Batch(es):** **L625815** 07/06/22 14:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<3.07	mg/Kg	3.07	100	07/06/22 21:48	HRS	L625822
Aliphatic >C8-C10	<6.13	mg/Kg	6.13	100	07/06/22 21:48	HRS	L625822
Aromatic >C8-C10	<4.09	mg/Kg	4.09	100	07/06/22 21:48	HRS	L625822
Surrogate: 2,5-Dibromotoluene	95.6		Limits: 50-150%	100	07/06/22 21:48	HRS	MAVPH LA

Qualifiers/Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Hydro-Environmental Technology, Inc.
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Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 08/02/2022
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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70508**
Sample ID : **SB-07 (4-6)**

Matrix: **Solids**
Sampled: **6/21/2022 15:30**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Bromide (Sat Paste)	<0.050	meq/L	0.050	5	07/12/22 22:46	MJM	29B
% Moisture	47.5	%		1	07/01/22 16:18	JMB	SW-DRYWT
% Saturation (Sat Paste)	138	%		1	07/11/22 10:40	JMB	29B
Alkalinity (Sat Paste)	4.1	meq/L		1	07/12/22 12:39	JMB	29B
Chloride (Sat Paste)	2.27	meq/L	0.050	5	07/12/22 22:46	MJM	29B
Chloride	27.5	mg/Kg	4.00	1	07/12/22 20:57	MJM	9056
Electrical Conductivity (Sat Paste)	0.844	mmhos/cm		1	07/11/22 10:40	JMB	29B
pH (Sat Paste)	7.37	s.u.		1	07/11/22 10:40	JMB	29B
Sulfate (Sat Paste)	1.21	meq/L	0.050	5	07/12/22 22:46	MJM	29B
Cation Exchange Capacity	67.8	meq/100g	0.100	20	07/12/22 09:33		29B
Exchangeable Sodium Percentage	0.544	%	0.100	1	07/11/22 10:40		CALCULATION
Sodium Adsorption Ratio (Sat Paste)	2.18	Calc	0.430	10	07/12/22 10:03		29B
Calcium (Sat Paste)	3.50	meq/L	0.500	10	07/12/22 11:18	BMB	29B
Magnesium (Sat Paste)	1.85	meq/L	0.820	10	07/12/22 10:41	BMB	29B
Sodium (Sat Paste)	3.57	meq/L	0.430	10	07/12/22 10:03	BMB	29B
Oil & Grease	<0.10	%	0.10	1	06/29/22 14:22	JMB	29B
Total Arsenic	2.38	mg/Kg AR	2.00	1	07/14/22 13:26	EAL	6010D
Total Barium	152	mg/Kg AR	1.00	1	07/14/22 13:26	EAL	6010D
True Total Barium	527	mg/Kg	500	1	07/12/22 18:13	TJS	29B
Total Cadmium	0.348	mg/Kg AR	0.200	1	07/14/22 13:26	EAL	6010D
Total Chromium	14.0	mg/Kg AR	0.500	1	07/14/22 13:26	EAL	6010D
Total Lead	10.7	mg/Kg AR	0.600	1	07/14/22 13:26	EAL	6010D
Mercury (Total)	0.0381	mg/Kg AR	0.0133	1	07/14/22 16:11	JTR	7471A

Qualifiers/Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit



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Report Number : 22-179-0021

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70508**
 Sample ID : **SB-07 (4-6)**

Matrix: **Solids**
 Sampled: **6/21/2022 15:30**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/14/22 13:26	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/14/22 13:26	EAL	6010D
Total Zinc	44.6	mg/Kg AR	2.50	1	07/14/22 13:26	EAL	6010D
Bromide (Br)	<2.00	mg/Kg	2.00	1	07/12/22 20:57	MJM	9056

Analytical Method: MAEPH LA **Prep Batch(es):** **L624846** 07/05/22 06:28
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/19/22 03:42	MMK	L625934
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/12/22 13:58	MMK	L625934
Aliphatic >C12-C16	<2.00	mg/Kg	2.00	1	07/19/22 03:42	MMK	L625934
Aromatic >C12-C16	<2.00	mg/Kg	2.00	1	07/12/22 13:58	MMK	L625934
Aromatic >C16-C21	<2.00	mg/Kg	2.00	1	07/12/22 13:58	MMK	L625934
Aliphatic >C16-C35	<4.00	mg/Kg	4.00	1	07/19/22 03:42	MMK	L625934
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/12/22 13:58	MMK	L625934
Surrogate: Chlorooctadecane	78.9		Limits: 40-140%	1	07/19/22 03:42	MMK	MAEPH LA
Surrogate: OTP Surrogate	72.9		Limits: 40-140%	1	07/12/22 13:58	MMK	MAEPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : 70508
 Sample ID : SB-07 (4-6)

Matrix: Solids
 Sampled: 6/21/2022 15:30

Analytical Method: MAVPH LA **Prep Batch(es):** L625815 07/06/22 14:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<3.42	mg/Kg	3.42	100	07/06/22 22:29	HRS	L625822
Aliphatic >C8-C10	<6.83	mg/Kg	6.83	100	07/06/22 22:29	HRS	L625822
Aromatic >C8-C10	<4.56	mg/Kg	4.56	100	07/06/22 22:29	HRS	L625822
Surrogate: 2,5-Dibromotoluene	100		Limits: 50-150%	100	07/06/22 22:29	HRS	MAVPH LA

Qualifiers/Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Project August Levert
Information : Project Number: 1009.A62
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Report Date : 08/02/2022
Received : 06/28/2022



Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70509**
Sample ID : **SB-08 (0-2)**

Matrix: **Solids**
Sampled: **6/21/2022 15:50**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Bromide (Sat Paste)	<0.050	meq/L	0.050	5	07/12/22 22:59	MJM	29B
% Moisture	30.9	%		1	07/01/22 16:18	JMB	SW-DRYWT
% Saturation (Sat Paste)	110	%		1	07/11/22 10:40	JMB	29B
Alkalinity (Sat Paste)	2.8	meq/L		1	07/12/22 12:39	JMB	29B
Chloride (Sat Paste)	0.797	meq/L	0.050	5	07/12/22 22:59	MJM	29B
Chloride	11.2	mg/Kg	4.00	1	07/12/22 21:09	MJM	9056
Electrical Conductivity (Sat Paste)	0.479	mmhos/cm		1	07/11/22 10:40	JMB	29B
pH (Sat Paste)	7.33	s.u.		1	07/11/22 10:40	JMB	29B
Sulfate (Sat Paste)	1.11	meq/L	0.050	5	07/12/22 22:59	MJM	29B
Cation Exchange Capacity	61.7	meq/100g	0.100	20	07/12/22 09:33		29B
Exchangeable Sodium Percentage	0.463	%	0.100	1	07/11/22 10:40		CALCULATION
Sodium Adsorption Ratio (Sat Paste)	1.26	Calc	0.215	5	07/12/22 10:03		29B
Calcium (Sat Paste)	2.02	meq/L	0.250	5	07/12/22 11:19	BMB	29B
Magnesium (Sat Paste)	1.14	meq/L	0.410	5	07/12/22 10:41	BMB	29B
Sodium (Sat Paste)	1.59	meq/L	0.215	5	07/12/22 10:03	BMB	29B
Oil & Grease	<0.10	%	0.10	1	06/29/22 14:22	JMB	29B
Total Arsenic	4.11	mg/Kg AR	2.00	1	07/14/22 13:31	EAL	6010D
Total Barium	157	mg/Kg AR	1.00	1	07/14/22 13:31	EAL	6010D
True Total Barium	4750	mg/Kg	500	1	07/12/22 18:18	TJS	29B
Total Cadmium	0.541	mg/Kg AR	0.200	1	07/14/22 13:31	EAL	6010D
Total Chromium	15.3	mg/Kg AR	0.500	1	07/14/22 13:31	EAL	6010D
Total Lead	14.7	mg/Kg AR	0.600	1	07/14/22 13:31	EAL	6010D
Mercury (Total)	0.0401	mg/Kg AR	0.0133	1	07/14/22 16:13	JTR	7471A

Qualifiers/ Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit

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Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 08/02/2022
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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70509**
Sample ID : **SB-08 (0-2)**

Matrix: **Solids**
Sampled: **6/21/2022 15:50**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/14/22 13:31	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/14/22 13:31	EAL	6010D
Total Zinc	67.9	mg/Kg AR	2.50	1	07/14/22 13:31	EAL	6010D
Bromide (Br)	<2.00	mg/Kg	2.00	1	07/12/22 21:09	MJM	9056

Analytical Method: MAEPH LA **Prep Batch(es):** **L624846** 07/05/22 06:28
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/19/22 04:06	MMK	L625934
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/12/22 14:23	MMK	L625934
Aliphatic >C12-C16	<2.00	mg/Kg	2.00	1	07/19/22 04:06	MMK	L625934
Aromatic >C12-C16	<2.00	mg/Kg	2.00	1	07/12/22 14:23	MMK	L625934
Aromatic >C16-C21	<2.00	mg/Kg	2.00	1	07/12/22 14:23	MMK	L625934
Aliphatic >C16-C35	<4.00	mg/Kg	4.00	1	07/19/22 04:06	MMK	L625934
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/12/22 14:23	MMK	L625934
Surrogate: Chlorooctadecane	56.1		Limits: 40-140%	1	07/19/22 04:06	MMK	MAEPH LA
Surrogate: OTP Surrogate	56.7		Limits: 40-140%	1	07/12/22 14:23	MMK	MAEPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70509**
Sample ID : **SB-08 (0-2)**

Matrix: **Solids**
Sampled: **6/21/2022 15:50**

Analytical Method: MAVPH LA **Prep Batch(es):** **L625815** 07/06/22 14:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<2.78	mg/Kg	2.78	100	07/06/22 23:10	HRS	L625822
Aliphatic >C8-C10	<5.57	mg/Kg	5.57	100	07/06/22 23:10	HRS	L625822
Aromatic >C8-C10	<3.71	mg/Kg	3.71	100	07/06/22 23:10	HRS	L625822
Surrogate: 2,5-Dibromotoluene	94.1		Limits: 50-150%	100	07/06/22 23:10	HRS	MAVPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 08/02/2022
Received : 06/28/2022



Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70510**
Sample ID : **SB-08 (2-4)**

Matrix: **Solids**
Sampled: **6/21/2022 15:50**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Bromide (Sat Paste)	<0.050	meq/L	0.050	5	07/12/22 23:11	MJM	29B
% Moisture	34.0	%		1	07/01/22 16:18	JMB	SW-DRYWT
% Saturation (Sat Paste)	118	%		1	07/11/22 10:40	JMB	29B
Alkalinity (Sat Paste)	2.4	meq/L		1	07/12/22 12:39	JMB	29B
Chloride (Sat Paste)	1.13	meq/L	0.050	5	07/12/22 23:11	MJM	29B
Chloride	13.5	mg/Kg	4.00	1	07/12/22 21:22	MJM	9056
Electrical Conductivity (Sat Paste)	0.455	mmhos/cm		1	07/11/22 10:40	JMB	29B
pH (Sat Paste)	7.54	s.u.		1	07/11/22 10:40	JMB	29B
Sulfate (Sat Paste)	0.926	meq/L	0.050	5	07/12/22 23:11	MJM	29B
Cation Exchange Capacity	64.3	meq/100g	0.100	20	07/12/22 09:36		29B
Exchangeable Sodium Percentage	<0.1	%	0.1	1	07/12/22 10:06		CALCULATION
Sodium Adsorption Ratio (Sat Paste)	1.51	Calc	0.215	5	07/12/22 10:06		29B
Calcium (Sat Paste)	1.81	meq/L	0.250	5	07/12/22 11:20	BMB	29B
Magnesium (Sat Paste)	0.947	meq/L	0.410	5	07/12/22 10:42	BMB	29B
Sodium (Sat Paste)	1.77	meq/L	0.215	5	07/12/22 10:06	BMB	29B
Oil & Grease	<0.10	%	0.10	1	06/29/22 14:22	JMB	29B
Total Arsenic	4.09	mg/Kg AR	2.00	1	07/14/22 13:36	EAL	6010D
Total Barium	140	mg/Kg AR	1.00	1	07/14/22 13:36	EAL	6010D
True Total Barium	<500	mg/Kg	500	1	07/12/22 18:23	TJS	29B
Total Cadmium	0.307	mg/Kg AR	0.200	1	07/14/22 13:36	EAL	6010D
Total Chromium	14.6	mg/Kg AR	0.500	1	07/14/22 13:36	EAL	6010D
Total Lead	11.7	mg/Kg AR	0.600	1	07/14/22 13:36	EAL	6010D
Mercury (Total)	0.0206	mg/Kg AR	0.0133	1	07/14/22 16:17	JTR	7471A

Qualifiers/ Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit



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Hydro-Environmental Technology, Inc.
 Mr. Stewart Stover, Jr.
 91 Apollo Rd
 Scott, LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 08/02/2022
 Received : 06/28/2022

Report Number : 22-179-0021

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : 70510
 Sample ID : SB-08 (2-4)

Matrix: Solids
 Sampled: 6/21/2022 15:50

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/14/22 13:36	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/14/22 13:36	EAL	6010D
Total Zinc	54.3	mg/Kg AR	2.50	1	07/14/22 13:36	EAL	6010D
Bromide (Br)	<2.00	mg/Kg	2.00	1	07/12/22 21:22	MJM	9056

Analytical Method: MAEPH LA **Prep Batch(es):** L624846 07/05/22 06:28
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/19/22 04:30	MMK	L625934
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/12/22 14:49	MMK	L625934
Aliphatic >C12-C16	<2.00	mg/Kg	2.00	1	07/19/22 04:30	MMK	L625934
Aromatic >C12-C16	<2.00	mg/Kg	2.00	1	07/12/22 14:49	MMK	L625934
Aromatic >C16-C21	<2.00	mg/Kg	2.00	1	07/12/22 14:49	MMK	L625934
Aliphatic >C16-C35	<4.00	mg/Kg	4.00	1	07/19/22 04:30	MMK	L625934
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/12/22 14:49	MMK	L625934
Surrogate: Chlorooctadecane	56.9		Limits: 40-140%	1	07/19/22 04:30	MMK	MAEPH LA
Surrogate: OTP Surrogate	48.4		Limits: 40-140%	1	07/12/22 14:49	MMK	MAEPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70510**
 Sample ID : **SB-08 (2-4)**

Matrix: **Solids**
 Sampled: **6/21/2022 15:50**

Analytical Method: MAVPH LA **Prep Batch(es):** **L625815** 07/06/22 14:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<3.01	mg/Kg	3.01	100	07/06/22 23:51	HRS	L625822
Aliphatic >C8-C10	<6.02	mg/Kg	6.02	100	07/06/22 23:51	HRS	L625822
Aromatic >C8-C10	<4.02	mg/Kg	4.02	100	07/06/22 23:51	HRS	L625822
Surrogate: 2,5-Dibromotoluene	102		Limits: 50-150%	100	07/06/22 23:51	HRS	MAVPH LA

Qualifiers/Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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Project August Levert
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 Bayou Sorrel, LA

Report Date : 08/02/2022
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REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : 70511
 Sample ID : SB-09 (0-2)

Matrix: Solids
 Sampled: 6/22/2022 10:30

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	63.6	%		1	07/01/22 16:18	JMB	SW-DRYWT
Oil & Grease	<0.10	%	0.10	1	06/29/22 14:22	JMB	29B
Total Arsenic	<2.00	mg/Kg AR	2.00	1	07/14/22 13:52	EAL	6010D
Total Barium	204	mg/Kg AR	1.00	1	07/14/22 13:52	EAL	6010D
True Total Barium	2130	mg/Kg	500	1	07/14/22 11:28	TJS	29B
Total Cadmium	0.312	mg/Kg AR	0.200	1	07/14/22 13:52	EAL	6010D
Total Chromium	7.36	mg/Kg AR	0.500	1	07/14/22 13:52	EAL	6010D
Total Lead	7.76	mg/Kg AR	0.600	1	07/14/22 13:52	EAL	6010D
Mercury (Total)	0.0135	mg/Kg AR	0.0133	1	07/14/22 16:18	JTR	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/14/22 13:52	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/14/22 13:52	EAL	6010D
Total Zinc	39.5	mg/Kg AR	2.50	1	07/14/22 13:52	EAL	6010D

Analytical Method: MAEPH LA **Prep Batch(es):** L624846 07/05/22 06:28
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/19/22 04:55	MMK	L625934
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/12/22 15:14	MMK	L625934
Aliphatic >C12-C16	<2.00	mg/Kg	2.00	1	07/19/22 04:55	MMK	L625934
Aromatic >C12-C16	<2.00	mg/Kg	2.00	1	07/12/22 15:14	MMK	L625934
Aromatic >C16-C21	2.43	mg/Kg	2.00	1	07/12/22 15:14	MMK	L625934
Aliphatic >C16-C35	5.41	mg/Kg	4.00	1	07/19/22 04:55	MMK	L625934

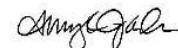
Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Project August Levert
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Report Date : 08/02/2022
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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70511**
Sample ID : **SB-09 (0-2)**

Matrix: **Solids**
Sampled: **6/22/2022 10:30**

Analytical Method: MAEPH LA **Prep Batch(es):** L624846 07/05/22 06:28
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/12/22 15:14	MMK	L625934
Surrogate: Chlorooctadecane	57.3		Limits: 40-140%	1	07/19/22 04:55	MMK	MAEPH LA
Surrogate: OTP Surrogate	65.1		Limits: 40-140%	1	07/12/22 15:14	MMK	MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L625815 07/06/22 14:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<3.55	mg/Kg	3.55	100	07/07/22 00:32	HRS	L625822
Aliphatic >C8-C10	<7.11	mg/Kg	7.11	100	07/07/22 00:32	HRS	L625822
Aromatic >C8-C10	<4.74	mg/Kg	4.74	100	07/07/22 00:32	HRS	L625822
Surrogate: 2,5-Dibromotoluene	92.8		Limits: 50-150%	100	07/07/22 00:32	HRS	MAVPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : 70512
 Sample ID : SB-09 (2-4)

Matrix: Solids
 Sampled: 6/22/2022 10:30

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	44.1	%		1	07/01/22 16:18	JMB	SW-DRYWT
Oil & Grease	0.43	%	0.10	1	06/29/22 14:22	JMB	29B
Total Arsenic	5.47	mg/Kg AR	2.00	1	07/14/22 13:57	EAL	6010D
Total Barium	325	mg/Kg AR	1.00	1	07/14/22 13:57	EAL	6010D
True Total Barium	84300	mg/Kg	2500	5	07/14/22 13:39	TJS	29B
Total Cadmium	1.43	mg/Kg AR	0.200	1	07/14/22 13:57	EAL	6010D
Total Chromium	107	mg/Kg AR	0.500	1	07/14/22 13:57	EAL	6010D
Total Lead	123	mg/Kg AR	0.600	1	07/14/22 13:57	EAL	6010D
Mercury (Total)	0.0415	mg/Kg AR	0.0133	1	07/14/22 16:20	JTR	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/14/22 13:57	EAL	6010D
Total Silver	0.829	mg/Kg AR	0.500	1	07/14/22 13:57	EAL	6010D
Total Zinc	246	mg/Kg AR	2.50	1	07/14/22 13:57	EAL	6010D

Analytical Method: MAEPH LA **Prep Batch(es):** L624846 07/05/22 06:28
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	28.1	mg/Kg	20.0	10	07/19/22 05:19	MMK	L625934
Aromatic >C10-C12	23.4	mg/Kg	1.00	1	07/12/22 18:49	MMK	L625934
Aliphatic >C12-C16	169	mg/Kg	20.0	10	07/19/22 05:19	MMK	L625934
Aromatic >C12-C16	127	mg/Kg	2.00	1	07/12/22 18:49	MMK	L625934
Aromatic >C16-C21	85.8	mg/Kg	2.00	1	07/12/22 18:49	MMK	L625934
Aliphatic >C16-C35	580	mg/Kg	40.0	10	07/19/22 05:19	MMK	L625934

Qualifiers/Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 08/02/2022
 Received : 06/28/2022

Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70512**
 Sample ID : **SB-09 (2-4)**

Matrix: **Solids**
 Sampled: **6/22/2022 10:30**

Analytical Method: MAEPH LA **Prep Batch(es):** L624846 07/05/22 06:28
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C21-C35	25.7	mg/Kg	2.00	1	07/12/22 18:49	MMK	L625934
Surrogate: Chlorooctadecane	57.0		Limits: 40-140%	10	07/19/22 05:19	MMK	MAEPH LA
Surrogate: OTP Surrogate	74.1		Limits: 40-140%	10	07/19/22 03:18	MMK	MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L625815 07/06/22 14:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<3.34	mg/Kg	3.34	100	07/07/22 01:14	HRS	L625822
Aliphatic >C8-C10	<6.68	mg/Kg	6.68	100	07/07/22 01:14	HRS	L625822
Aromatic >C8-C10	4.77	mg/Kg	4.45	100	07/07/22 01:14	HRS	L625822
Surrogate: 2,5-Dibromotoluene	95.1		Limits: 50-150%	100	07/07/22 01:14	HRS	MAVPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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 Bayou Sorrel, LA

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Report Number : 22-179-0021

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : 70513
 Sample ID : SB-09 (4-6)

Matrix: Solids
 Sampled: 6/22/2022 15:15

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	63.4	%		1	07/01/22 16:18	JMB	SW-DRYWT
Oil & Grease	0.45	%	0.10	1	06/29/22 14:22	JMB	29B
Total Arsenic	<2.00	mg/Kg AR	2.00	1	07/14/22 14:02	EAL	6010D
Total Barium	66.7	mg/Kg AR	1.00	1	07/14/22 14:02	EAL	6010D
True Total Barium	1490	mg/Kg	500	1	07/14/22 11:58	TJS	29B
Total Cadmium	<0.200	mg/Kg AR	0.200	1	07/14/22 14:02	EAL	6010D
Total Chromium	6.91	mg/Kg AR	0.500	1	07/14/22 14:02	EAL	6010D
Total Lead	5.27	mg/Kg AR	0.600	1	07/14/22 14:02	EAL	6010D
Mercury (Total)	0.0599	mg/Kg AR	0.0133	1	07/14/22 16:21	JTR	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/14/22 14:02	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/14/22 14:02	EAL	6010D
Total Zinc	19.3	mg/Kg AR	2.50	1	07/14/22 14:02	EAL	6010D

Analytical Method: MAEPH LA Prep Batch(es): L624846 07/05/22 06:28
 Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/19/22 06:08	MMK	L625934
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/12/22 19:13	MMK	L625934
Aliphatic >C12-C16	<2.00	mg/Kg	2.00	1	07/19/22 06:08	MMK	L625934
Aromatic >C12-C16	5.17	mg/Kg	2.00	1	07/12/22 19:13	MMK	L625934
Aromatic >C16-C21	3.58	mg/Kg	2.00	1	07/12/22 19:13	MMK	L625934
Aliphatic >C16-C35	<4.00	mg/Kg	4.00	1	07/19/22 06:08	MMK	L625934

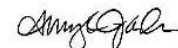
Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70513**
Sample ID : **SB-09 (4-6)**

Matrix: **Solids**
Sampled: **6/22/2022 15:15**

Analytical Method: MAEPH LA **Prep Batch(es):** **L624846** 07/05/22 06:28
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/12/22 19:13	MMK	L625934
Surrogate: Chlorooctadecane	78.9		Limits: 40-140%	1	07/19/22 06:08	MMK	MAEPH LA
Surrogate: OTP Surrogate	72.9		Limits: 40-140%	1	07/12/22 19:13	MMK	MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** **L625815** 07/06/22 14:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<3.28	mg/Kg	3.28	100	07/07/22 01:55	HRS	L625822
Aliphatic >C8-C10	<6.55	mg/Kg	6.55	100	07/07/22 01:55	HRS	L625822
Aromatic >C8-C10	<4.37	mg/Kg	4.37	100	07/07/22 01:55	HRS	L625822
Surrogate: 2,5-Dibromotoluene	91.3		Limits: 50-150%	100	07/07/22 01:55	HRS	MAVPH LA

Qualifiers/Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 08/02/2022
Received : 06/28/2022



Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70514**
Sample ID : **SB-09 (6-8)**

Matrix: **Solids**
Sampled: **6/22/2022 15:15**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	51.7	%		1	07/01/22 16:18	JMB	SW-DRYWT
Oil & Grease	<0.10	%	0.10	1	07/01/22 13:48	JMB	29B
Total Arsenic	<2.00	mg/Kg AR	2.00	1	07/13/22 00:13	EAL	6010D
Total Barium	113	mg/Kg AR	1.00	1	07/13/22 00:13	EAL	6010D
True Total Barium	1600	mg/Kg	500	1	07/14/22 12:03	TJS	29B
Total Cadmium	<0.200	mg/Kg AR	0.200	1	07/13/22 00:13	EAL	6010D
Total Chromium	6.68	mg/Kg AR	0.500	1	07/13/22 00:13	EAL	6010D
Total Lead	7.24	mg/Kg AR	0.600	1	07/13/22 00:13	EAL	6010D
Mercury (Total)	0.0305	mg/Kg AR	0.0133	1	07/14/22 15:02	JTR	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/13/22 00:13	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/13/22 00:13	EAL	6010D
Total Zinc	27.3	mg/Kg AR	2.50	1	07/13/22 00:13	EAL	6010D

Analytical Method: MAEPH LA **Prep Batch(es):** **L624846** 07/05/22 06:28
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/19/22 06:32	MMK	L625934
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/12/22 19:38	MMK	L625934
Aliphatic >C12-C16	2.39	mg/Kg	2.00	1	07/19/22 06:32	MMK	L625934
Aromatic >C12-C16	2.63	mg/Kg	2.00	1	07/12/22 19:38	MMK	L625934
Aromatic >C16-C21	<2.00	mg/Kg	2.00	1	07/12/22 19:38	MMK	L625934
Aliphatic >C16-C35	14.2	mg/Kg	4.00	1	07/19/22 06:32	MMK	L625934

Qualifiers/ Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit

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Project August Levert
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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70514**
Sample ID : **SB-09 (6-8)**

Matrix: **Solids**
Sampled: **6/22/2022 15:15**

Analytical Method: MAEPH LA **Prep Batch(es):** L624846 07/05/22 06:28
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/12/22 19:38	MMK	L625934
Surrogate: Chlorooctadecane	97.0		Limits: 40-140%	1	07/19/22 06:32	MMK	MAEPH LA
Surrogate: OTP Surrogate	113		Limits: 40-140%	1	07/12/22 19:38	MMK	MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L625815 07/06/22 14:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<2.85	mg/Kg	2.85	100	07/07/22 02:36	HRS	L625822
Aliphatic >C8-C10	<5.70	mg/Kg	5.70	100	07/07/22 02:36	HRS	L625822
Aromatic >C8-C10	<3.80	mg/Kg	3.80	100	07/07/22 02:36	HRS	L625822
Surrogate: 2,5-Dibromotoluene	95.3		Limits: 50-150%	100	07/07/22 02:36	HRS	MAVPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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Hydro-Environmental Technology, Inc.
 Mr. Stewart Stover, Jr.
 91 Apollo Rd
 Scott, LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 08/02/2022
 Received : 06/28/2022

Report Number : 22-179-0021

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : 70515
 Sample ID : SB-10 (0-2)

Matrix: Solids
 Sampled: 6/22/2022 11:35

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	65.7	%		1	07/07/22 16:30	BXH	SW-DRYWT
Oil & Grease	<0.10	%	0.10	1	07/01/22 13:48	JMB	29B
Total Arsenic	<2.00	mg/Kg AR	2.00	1	07/13/22 00:18	EAL	6010D
Total Barium	53.4	mg/Kg AR	1.00	1	07/14/22 12:08	TJS	6010D
True Total Barium	5750	mg/Kg	500	1	07/14/22 12:08	TJS	29B
Total Cadmium	0.260	mg/Kg AR	0.200	1	07/13/22 00:18	EAL	6010D
Total Chromium	10.8	mg/Kg AR	0.500	1	07/13/22 00:18	EAL	6010D
Total Lead	10.1	mg/Kg AR	0.600	1	07/13/22 00:18	EAL	6010D
Mercury (Total)	0.0207	mg/Kg AR	0.0133	1	07/14/22 15:03	JTR	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/13/22 00:18	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/13/22 00:18	EAL	6010D
Total Zinc	39.1	mg/Kg AR	2.50	1	07/13/22 00:18	EAL	6010D

Analytical Method: MAEPH LA Prep Batch(es): L624846 07/05/22 06:28
 Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/19/22 06:56	MMK	L625934
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/12/22 20:03	MMK	L625934
Aliphatic >C12-C16	4.11	mg/Kg	2.00	1	07/19/22 06:56	MMK	L625934
Aromatic >C12-C16	5.25	mg/Kg	2.00	1	07/12/22 20:03	MMK	L625934
Aromatic >C16-C21	12.2	mg/Kg	2.00	1	07/12/22 20:03	MMK	L625934
Aliphatic >C16-C35	65.1	mg/Kg	4.00	1	07/19/22 06:56	MMK	L625934

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Hydro-Environmental Technology, Inc.
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Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 08/02/2022
Received : 06/28/2022



Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70515**
Sample ID : **SB-10 (0-2)**

Matrix: **Solids**
Sampled: **6/22/2022 11:35**

Analytical Method: MAEPH LA **Prep Batch(es):** L624846 07/05/22 06:28
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C21-C35	3.13	mg/Kg	2.00	1	07/12/22 20:03	MMK	L625934
Surrogate: Chlorooctadecane	48.4		Limits: 40-140%	1	07/19/22 06:56	MMK	MAEPH LA
Surrogate: OTP Surrogate	59.2		Limits: 40-140%	1	07/12/22 20:03	MMK	MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L625816 07/06/22 14:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<3.73	mg/Kg	3.73	100	07/07/22 15:13	HRS	L625823
Aliphatic >C8-C10	<7.46	mg/Kg	7.46	100	07/07/22 15:13	HRS	L625823
Aromatic >C8-C10	<4.98	mg/Kg	4.98	100	07/07/22 15:13	HRS	L625823
Surrogate: 2,5-Dibromotoluene	81.9		Limits: 50-150%	100	07/07/22 15:13	HRS	MAVPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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Report Number : 22-179-0021

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : 70516
 Sample ID : SB-10 (2-4)

Matrix: Solids
 Sampled: 6/22/2022 11:35

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	50.5	%		1	07/07/22 16:30	BXH	SW-DRYWT
Oil & Grease	3.64	%	0.10	1	07/01/22 13:48	JMB	29B
Total Arsenic	8.40	mg/Kg AR	2.00	1	07/13/22 00:24	EAL	6010D
Total Barium	411	mg/Kg AR	1.00	1	07/13/22 00:24	EAL	6010D
True Total Barium	200000	mg/Kg	5000	10	07/14/22 13:44	TJS	29B
Total Cadmium	2.09	mg/Kg AR	0.200	1	07/13/22 00:24	EAL	6010D
Total Chromium	155	mg/Kg AR	0.500	1	07/13/22 00:24	EAL	6010D
Total Lead	192	mg/Kg AR	0.600	1	07/13/22 00:24	EAL	6010D
Mercury (Total)	0.679	mg/Kg AR	0.0133	1	07/14/22 15:08	JTR	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/13/22 00:24	EAL	6010D
Total Silver	1.27	mg/Kg AR	0.500	1	07/13/22 00:24	EAL	6010D
Total Zinc	370	mg/Kg AR	2.50	1	07/13/22 00:24	EAL	6010D

Analytical Method: MAEPH LA **Prep Batch(es):** L625151 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<20.0	mg/Kg	20.0	10	07/15/22 21:39	MMK	L626600
Aromatic >C10-C12	<10.0	mg/Kg	10.0	10	07/15/22 21:39	MMK	L626600
Aliphatic >C12-C16	41.4	mg/Kg	20.0	10	07/15/22 21:39	MMK	L626600
Aromatic >C12-C16	54.7	mg/Kg	20.0	10	07/15/22 21:39	MMK	L626600
Aromatic >C16-C21	38.8	mg/Kg	20.0	10	07/15/22 21:39	MMK	L626600
Aliphatic >C16-C35	375	mg/Kg	40.0	10	07/15/22 21:39	MMK	L626600

Qualifiers/Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Report Date : 08/02/2022
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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70516**
Sample ID : **SB-10 (2-4)**

Matrix: **Solids**
Sampled: **6/22/2022 11:35**

Analytical Method: MAEPH LA **Prep Batch(es):** L625151 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C21-C35	<20.0	mg/Kg	20.0	10	07/15/22 21:39	MMK	L626600
Surrogate: Chlorooctadecane	54.4		Limits: 40-140%	10	07/13/22 22:16	MMK	MAEPH LA
Surrogate: OTP Surrogate	34.4 *		Limits: 40-140%	10	07/15/22 21:39	MMK	MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L625816 07/06/22 14:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	3.86	mg/Kg	2.60	100	07/07/22 15:54	HRS	L625823
Aliphatic >C8-C10	25.2	mg/Kg	5.19	100	07/07/22 15:54	HRS	L625823
Aromatic >C8-C10	7.56	mg/Kg	3.46	100	07/07/22 15:54	HRS	L625823
Surrogate: 2,5-Dibromotoluene	32.7 *		Limits: 50-150%	100	07/07/22 15:54	HRS	MAVPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Project August Levert
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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70517**
Sample ID : **SB-10 (4-6)**

Matrix: **Solids**
Sampled: **6/22/2022 12:00**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	65.5	%		1	07/07/22 16:30	BXH	SW-DRYWT
Oil & Grease	0.31	%	0.10	1	07/01/22 13:48	JMB	29B
Total Arsenic	2.41	mg/Kg AR	2.00	1	07/13/22 00:29	EAL	6010D
Total Barium	160	mg/Kg AR	1.00	1	07/13/22 00:29	EAL	6010D
True Total Barium	2900	mg/Kg	500	1	07/14/22 12:18	TJS	29B
Total Cadmium	0.201	mg/Kg AR	0.200	1	07/13/22 00:29	EAL	6010D
Total Chromium	5.67	mg/Kg AR	0.500	1	07/13/22 00:29	EAL	6010D
Total Lead	6.74	mg/Kg AR	0.600	1	07/13/22 00:29	EAL	6010D
Mercury (Total)	0.0299	mg/Kg AR	0.0133	1	07/14/22 15:09	JTR	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/13/22 00:29	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/13/22 00:29	EAL	6010D
Total Zinc	21.9	mg/Kg AR	2.50	1	07/13/22 00:29	EAL	6010D

Analytical Method: MAEPH LA **Prep Batch(es):** **L625151** 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/15/22 22:03	MMK	L626600
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/15/22 22:03	MMK	L626600
Aliphatic >C12-C16	2.24	mg/Kg	2.00	1	07/15/22 22:03	MMK	L626600
Aromatic >C12-C16	4.18	mg/Kg	2.00	1	07/15/22 22:03	MMK	L626600
Aromatic >C16-C21	<2.00	mg/Kg	2.00	1	07/15/22 22:03	MMK	L626600
Aliphatic >C16-C35	7.24	mg/Kg	4.00	1	07/15/22 22:03	MMK	L626600

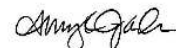
Qualifiers/ Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit

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Hydro-Environmental Technology, Inc.
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Project August Levert
Information : Project Number: 1009.A62
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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70517**
Sample ID : **SB-10 (4-6)**

Matrix: **Solids**
Sampled: **6/22/2022 12:00**

Analytical Method: MAEPH LA **Prep Batch(es):** L625151 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/15/22 22:03	MMK	L626600
Surrogate: Chlorooctadecane	41.1		Limits: 40-140%	1	07/15/22 22:03	MMK	MAEPH LA
Surrogate: OTP Surrogate	36.4 *		Limits: 40-140%	1	07/15/22 22:03	MMK	MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L625816 07/06/22 14:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<3.69	mg/Kg	3.69	100	07/07/22 16:35	HRS	L625823
Aliphatic >C8-C10	<7.37	mg/Kg	7.37	100	07/07/22 16:35	HRS	L625823
Aromatic >C8-C10	<4.91	mg/Kg	4.91	100	07/07/22 16:35	HRS	L625823
Surrogate: 2,5-Dibromotoluene	74.8		Limits: 50-150%	100	07/07/22 16:35	HRS	MAVPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : 70518
 Sample ID : SB-10 (6-8)

Matrix: Solids
 Sampled: 6/22/2022 12:00

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	67.1	%		1	07/07/22 16:30	BXH	SW-DRYWT
Oil & Grease	0.57	%	0.10	1	07/01/22 13:48	JMB	29B
Total Arsenic	<2.00	mg/Kg AR	2.00	1	07/13/22 00:34	EAL	6010D
Total Barium	58.7	mg/Kg AR	1.00	1	07/13/22 00:34	EAL	6010D
True Total Barium	1030	mg/Kg	500	1	07/14/22 12:23	TJS	29B
Total Cadmium	0.216	mg/Kg AR	0.200	1	07/13/22 00:34	EAL	6010D
Total Chromium	5.15	mg/Kg AR	0.500	1	07/13/22 00:34	EAL	6010D
Total Lead	4.31	mg/Kg AR	0.600	1	07/13/22 00:34	EAL	6010D
Mercury (Total)	0.0384	mg/Kg AR	0.0133	1	07/14/22 15:11	JTR	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/13/22 00:34	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/13/22 00:34	EAL	6010D
Total Zinc	22.1	mg/Kg AR	2.50	1	07/13/22 00:34	EAL	6010D

Analytical Method: MAEPH LA **Prep Batch(es):** L625151 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/15/22 22:27	MMK	L626600
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/15/22 22:27	MMK	L626600
Aliphatic >C12-C16	<2.00	mg/Kg	2.00	1	07/15/22 22:27	MMK	L626600
Aromatic >C12-C16	4.97	mg/Kg	2.00	1	07/15/22 22:27	MMK	L626600
Aromatic >C16-C21	4.08	mg/Kg	2.00	1	07/15/22 22:27	MMK	L626600
Aliphatic >C16-C35	6.33	mg/Kg	4.00	1	07/15/22 22:27	MMK	L626600

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70518**
Sample ID : **SB-10 (6-8)**

Matrix: **Solids**
Sampled: **6/22/2022 12:00**

Analytical Method: MAEPH LA **Prep Batch(es):** L625151 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C21-C35	2.57	mg/Kg	2.00	1	07/15/22 22:27	MMK	L626600
Surrogate: Chlorooctadecane	20.7 *		Limits: 40-140%	1	07/15/22 22:27	MMK	MAEPH LA
Surrogate: OTP Surrogate	19.0 *		Limits: 40-140%	1	07/15/22 22:27	MMK	MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L625816 07/06/22 14:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<3.94	mg/Kg	3.94	100	07/07/22 17:16	HRS	L625823
Aliphatic >C8-C10	<7.87	mg/Kg	7.87	100	07/07/22 17:16	HRS	L625823
Aromatic >C8-C10	<5.25	mg/Kg	5.25	100	07/07/22 17:16	HRS	L625823
Surrogate: 2,5-Dibromotoluene	85.5		Limits: 50-150%	100	07/07/22 17:16	HRS	MAVPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Project August Levert
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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70519**
Sample ID : **SB-11 (0-2)**

Matrix: **Solids**
Sampled: **6/22/2022 13:45**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	57.7	%		1	07/07/22 16:30	BXH	SW-DRYWT
Oil & Grease	0.20	%	0.10	1	07/01/22 13:48	JMB	29B
Total Arsenic	2.48	mg/Kg AR	2.00	1	07/13/22 00:39	EAL	6010D
Total Barium	120	mg/Kg AR	1.00	1	07/14/22 12:28	TJS	6010D
True Total Barium	14000	mg/Kg	500	1	07/14/22 12:28	TJS	29B
Total Cadmium	0.440	mg/Kg AR	0.200	1	07/13/22 00:39	EAL	6010D
Total Chromium	46.5	mg/Kg AR	0.500	1	07/13/22 00:39	EAL	6010D
Total Lead	25.0	mg/Kg AR	0.600	1	07/13/22 00:39	EAL	6010D
Mercury (Total)	0.105	mg/Kg AR	0.0133	1	07/14/22 15:12	JTR	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/13/22 00:39	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/13/22 00:39	EAL	6010D
Total Zinc	62.3	mg/Kg AR	2.50	1	07/13/22 00:39	EAL	6010D

Analytical Method: MAEPH LA **Prep Batch(es):** **L625151** 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/15/22 22:51	MMK	L626600
Aromatic >C10-C12	2.16	mg/Kg	1.00	1	07/15/22 22:51	MMK	L626600
Aliphatic >C12-C16	11.6	mg/Kg	2.00	1	07/15/22 22:51	MMK	L626600
Aromatic >C12-C16	8.08	mg/Kg	2.00	1	07/15/22 22:51	MMK	L626600
Aromatic >C16-C21	3.41	mg/Kg	2.00	1	07/15/22 22:51	MMK	L626600
Aliphatic >C16-C35	39.3	mg/Kg	4.00	1	07/15/22 22:51	MMK	L626600

Qualifiers/ Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit

09996

Hydro-Environmental Technology, Inc.
Mr. Stewart Stover, Jr.
91 Apollo Rd
Scott, LA 70583

Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 08/02/2022
Received : 06/28/2022



Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70519**
Sample ID : **SB-11 (0-2)**

Matrix: **Solids**
Sampled: **6/22/2022 13:45**

Analytical Method: MAEPH LA **Prep Batch(es):** L625151 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/15/22 22:51	MMK	L626600
Surrogate: Chlorooctadecane	17.1 *		Limits: 40-140%	1	07/15/22 22:51	MMK	MAEPH LA
Surrogate: OTP Surrogate	16.1 *		Limits: 40-140%	1	07/15/22 22:51	MMK	MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L625816 07/06/22 14:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<3.30	mg/Kg	3.30	100	07/07/22 17:58	HRS	L625823
Aliphatic >C8-C10	<6.61	mg/Kg	6.61	100	07/07/22 17:58	HRS	L625823
Aromatic >C8-C10	<4.41	mg/Kg	4.41	100	07/07/22 17:58	HRS	L625823
Surrogate: 2,5-Dibromotoluene	85.9		Limits: 50-150%	100	07/07/22 17:58	HRS	MAVPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 08/02/2022
 Received : 06/28/2022

Report Number : 22-179-0021

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : 70520
 Sample ID : SB-11 (2-4)

Matrix: Solids
 Sampled: 6/22/2022 13:45

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	50.6	%		1	07/07/22 16:30	BXH	SW-DRYWT
Oil & Grease	1.86	%	0.10	1	07/01/22 13:48	JMB	29B
Total Arsenic	16.7	mg/Kg AR	2.00	1	07/13/22 00:45	EAL	6010D
Total Barium	174	mg/Kg AR	1.00	1	07/13/22 00:45	EAL	6010D
True Total Barium	239000	mg/Kg	5000	10	07/14/22 13:59	TJS	29B
Total Cadmium	4.28	mg/Kg AR	0.200	1	07/13/22 00:45	EAL	6010D
Total Chromium	286	mg/Kg AR	0.500	1	07/13/22 00:45	EAL	6010D
Total Lead	387	mg/Kg AR	0.600	1	07/13/22 00:45	EAL	6010D
Mercury (Total)	1.33	mg/Kg AR	0.0133	1	07/14/22 15:14	JTR	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/13/22 00:45	EAL	6010D
Total Silver	3.54	mg/Kg AR	0.500	1	07/13/22 00:45	EAL	6010D
Total Zinc	733	mg/Kg AR	2.50	1	07/13/22 00:45	EAL	6010D

Analytical Method: MAEPH LA **Prep Batch(es):** L625151 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	10.2	mg/Kg	2.00	1	07/15/22 23:15	MMK	L626600
Aromatic >C10-C12	15.9	mg/Kg	1.00	1	07/15/22 23:15	MMK	L626600
Aliphatic >C12-C16	120	mg/Kg	20.0	10	07/16/22 16:05	MMK	L626600
Aromatic >C12-C16	81.0	mg/Kg	20.0	10	07/16/22 16:05	MMK	L626600
Aromatic >C16-C21	20.3	mg/Kg	20.0	10	07/16/22 16:05	MMK	L626600
Aliphatic >C16-C35	403	mg/Kg	40.0	10	07/16/22 16:05	MMK	L626600

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Hydro-Environmental Technology, Inc.
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Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 08/02/2022
Received : 06/28/2022



Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70520**
Sample ID : **SB-11 (2-4)**

Matrix: **Solids**
Sampled: **6/22/2022 13:45**

Analytical Method: MAEPH LA **Prep Batch(es):** L625151 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C21-C35	10.4	mg/Kg	2.00	1	07/15/22 23:15	MMK	L626600
Surrogate: Chlorooctadecane	13.2 *		Limits: 40-140%	1	07/15/22 23:15	MMK	MAEPH LA
Surrogate: OTP Surrogate	35.7 *		Limits: 40-140%	10	07/16/22 16:05	MMK	MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L625816 07/06/22 14:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	23.8	mg/Kg	2.44	100	07/07/22 18:39	HRS	L625823
Aliphatic >C8-C10	54.1	mg/Kg	4.87	100	07/07/22 18:39	HRS	L625823
Aromatic >C8-C10	14.7	mg/Kg	3.25	100	07/07/22 18:39	HRS	L625823
Surrogate: 2,5-Dibromotoluene	149		Limits: 50-150%	100	07/07/22 18:39	HRS	MAVPH LA

Qualifiers/	*	Outside QC Limit	B	Analyte detected in blank
Definitions	DF	Dilution Factor	I	Recovery out of range
	J	Estimated value	MQL	Method Quantitation Limit



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Project August Levert
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 Bayou Sorrel, LA

Report Date : 08/02/2022
 Received : 06/28/2022

Report Number : 22-179-0021

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : 70521
 Sample ID : SB-12 (0-2)

Matrix: Solids
 Sampled: 6/22/2022 14:30

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	57.8	%		1	07/07/22 16:30	BXH	SW-DRYWT
Oil & Grease	<0.10	%	0.10	1	07/01/22 13:48	JMB	29B
Total Arsenic	2.06	mg/Kg AR	2.00	1	07/13/22 00:50	EAL	6010D
Total Barium	564	mg/Kg AR	5.00	5	07/14/22 17:31	TJS	6010D
True Total Barium	7510	mg/Kg	500	1	07/14/22 12:38	TJS	29B
Total Cadmium	0.319	mg/Kg AR	0.200	1	07/13/22 00:50	EAL	6010D
Total Chromium	10.8	mg/Kg AR	0.500	1	07/13/22 00:50	EAL	6010D
Total Lead	13.0	mg/Kg AR	0.600	1	07/13/22 00:50	EAL	6010D
Mercury (Total)	1.14	mg/Kg AR	0.0133	1	07/14/22 15:15	JTR	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/13/22 00:50	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/13/22 00:50	EAL	6010D
Total Zinc	50.9	mg/Kg AR	2.50	1	07/13/22 00:50	EAL	6010D

Analytical Method: MAEPH LA **Prep Batch(es):** L625151 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/15/22 23:39	MMK	L626600
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/15/22 23:39	MMK	L626600
Aliphatic >C12-C16	2.53	mg/Kg	2.00	1	07/15/22 23:39	MMK	L626600
Aromatic >C12-C16	2.54	mg/Kg	2.00	1	07/15/22 23:39	MMK	L626600
Aromatic >C16-C21	<2.00	mg/Kg	2.00	1	07/15/22 23:39	MMK	L626600
Aliphatic >C16-C35	26.5	mg/Kg	4.00	1	07/15/22 23:39	MMK	L626600

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Hydro-Environmental Technology, Inc.
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Project August Levert
Information : Project Number: 1009.A62
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Report Date : 08/02/2022
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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70521**
Sample ID : **SB-12 (0-2)**

Matrix: **Solids**
Sampled: **6/22/2022 14:30**

Analytical Method: MAEPH LA **Prep Batch(es):** L625151 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/15/22 23:39	MMK	L626600
Surrogate: Chlorooctadecane	47.5		Limits: 40-140%	1	07/15/22 23:39	MMK	MAEPH LA
Surrogate: OTP Surrogate	26.5 *		Limits: 40-140%	1	07/15/22 23:39	MMK	MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L625816 07/06/22 14:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	15.2	mg/Kg	3.36	100	07/07/22 19:20	HRS	L625823
Aliphatic >C8-C10	56.6	mg/Kg	6.71	100	07/07/22 19:20	HRS	L625823
Aromatic >C8-C10	21.9	mg/Kg	4.47	100	07/07/22 19:20	HRS	L625823
Surrogate: 2,5-Dibromotoluene	129		Limits: 50-150%	100	07/07/22 19:20	HRS	MAVPH LA

Qualifiers/Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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Project August Levert
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 Bayou Sorrel, LA

Report Date : 08/02/2022
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REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : 70522
 Sample ID : SB-12 (2-4)

Matrix: Solids
 Sampled: 6/22/2022 14:30

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	40.7	%		1	07/07/22 16:30	BXH	SW-DRYWT
Oil & Grease	0.24	%	0.10	1	07/01/22 13:48	JMB	29B
Total Arsenic	23.3	mg/Kg AR	2.00	1	07/13/22 00:55	EAL	6010D
Total Barium	336	mg/Kg AR	1.00	1	07/13/22 00:55	EAL	6010D
True Total Barium	307000	mg/Kg	5000	10	07/14/22 14:05	TJS	29B
Total Cadmium	5.22	mg/Kg AR	0.200	1	07/13/22 00:55	EAL	6010D
Total Chromium	401	mg/Kg AR	0.500	1	07/13/22 00:55	EAL	6010D
Total Lead	468	mg/Kg AR	0.600	1	07/13/22 00:55	EAL	6010D
Mercury (Total)	0.0722	mg/Kg AR	0.0133	1	07/14/22 15:16	JTR	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/13/22 00:55	EAL	6010D
Total Silver	4.15	mg/Kg AR	0.500	1	07/13/22 00:55	EAL	6010D
Total Zinc	936	mg/Kg AR	2.50	1	07/13/22 00:55	EAL	6010D

Analytical Method: MAEPH LA **Prep Batch(es):** L625151 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	35.8	mg/Kg	20.0	10	07/16/22 16:29	MMK	L626600
Aromatic >C10-C12	35.5	mg/Kg	10.0	10	07/16/22 16:55	MMK	L626600
Aliphatic >C12-C16	235	mg/Kg	20.0	10	07/16/22 16:29	MMK	L626600
Aromatic >C12-C16	93.6	mg/Kg	20.0	10	07/16/22 16:55	MMK	L626600
Aromatic >C16-C21	19.8	mg/Kg	2.00	1	07/16/22 00:04	MMK	L626600
Aliphatic >C16-C35	432	mg/Kg	40.0	10	07/16/22 16:29	MMK	L626600

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Hydro-Environmental Technology, Inc.
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Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 08/02/2022
Received : 06/28/2022



Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70522**
Sample ID : **SB-12 (2-4)**

Matrix: **Solids**
Sampled: **6/22/2022 14:30**

Analytical Method: MAEPH LA **Prep Batch(es):** L625151 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/16/22 00:04	MMK	L626600
Surrogate: Chlorooctadecane	45.4		Limits: 40-140%	10	07/16/22 16:29	MMK	MAEPH LA
Surrogate: OTP Surrogate	67.1		Limits: 40-140%	10	07/16/22 16:55	MMK	MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L625816 07/06/22 14:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	7.37	mg/Kg	2.52	100	07/07/22 20:01	HRS	L625823
Aliphatic >C8-C10	35.7	mg/Kg	5.03	100	07/07/22 20:01	HRS	L625823
Aromatic >C8-C10	13.2	mg/Kg	3.36	100	07/07/22 20:01	HRS	L625823
Surrogate: 2,5-Dibromotoluene	151 *		Limits: 50-150%	100	07/07/22 20:01	HRS	MAVPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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 Bayou Sorrel, LA

Report Date : 08/02/2022
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Report Number : 22-179-0021

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : 70523
 Sample ID : SB-13 (0-2)

Matrix: Solids
 Sampled: 6/22/2022 15:30

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	39.5	%		1	07/07/22 16:30	BXH	SW-DRYWT
Oil & Grease	<0.10	%	0.10	1	07/01/22 13:48	JMB	29B
Total Arsenic	4.09	mg/Kg AR	2.00	1	07/13/22 01:00	EAL	6010D
Total Barium	666	mg/Kg AR	5.00	5	07/14/22 17:36	TJS	6010D
True Total Barium	9640	mg/Kg	500	1	07/14/22 12:59	TJS	29B
Total Cadmium	0.468	mg/Kg AR	0.200	1	07/13/22 01:00	EAL	6010D
Total Chromium	18.7	mg/Kg AR	0.500	1	07/13/22 01:00	EAL	6010D
Total Lead	25.9	mg/Kg AR	0.600	1	07/13/22 01:00	EAL	6010D
Mercury (Total)	0.0446	mg/Kg AR	0.0133	1	07/14/22 15:18	JTR	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/13/22 01:00	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/13/22 01:00	EAL	6010D
Total Zinc	72.3	mg/Kg AR	2.50	1	07/13/22 01:00	EAL	6010D

Analytical Method: MAEPH LA **Prep Batch(es):** L625151 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/16/22 00:28	MMK	L626600
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/16/22 00:28	MMK	L626600
Aliphatic >C12-C16	<2.00	mg/Kg	2.00	1	07/16/22 00:28	MMK	L626600
Aromatic >C12-C16	<2.00	mg/Kg	2.00	1	07/16/22 00:28	MMK	L626600
Aromatic >C16-C21	<2.00	mg/Kg	2.00	1	07/16/22 00:28	MMK	L626600
Aliphatic >C16-C35	<4.00	mg/Kg	4.00	1	07/16/22 00:28	MMK	L626600

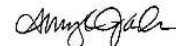
Qualifiers/ Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit

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Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 08/02/2022
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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70523**
Sample ID : **SB-13 (0-2)**

Matrix: **Solids**
Sampled: **6/22/2022 15:30**

Analytical Method: MAEPH LA **Prep Batch(es):** L625151 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/16/22 00:28	MMK	L626600
Surrogate: Chlorooctadecane	35.6 *		Limits: 40-140%	1	07/16/22 00:28	MMK	MAEPH LA
Surrogate: OTP Surrogate	24.6 *		Limits: 40-140%	1	07/16/22 00:28	MMK	MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L625816 07/06/22 14:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<3.02	mg/Kg	3.02	100	07/07/22 20:42	HRS	L625823
Aliphatic >C8-C10	<6.05	mg/Kg	6.05	100	07/07/22 20:42	HRS	L625823
Aromatic >C8-C10	<4.03	mg/Kg	4.03	100	07/07/22 20:42	HRS	L625823
Surrogate: 2,5-Dibromotoluene	90.6		Limits: 50-150%	100	07/07/22 20:42	HRS	MAVPH LA

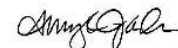
Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Hydro-Environmental Technology, Inc.
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Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 08/02/2022
Received : 06/28/2022



Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70524**
Sample ID : **SB-13 (2-4)**

Matrix: **Solids**
Sampled: **6/22/2022 15:30**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	39.7	%		1	07/07/22 16:30	BXH	SW-DRYWT
Oil & Grease	<0.10	%	0.10	1	07/01/22 13:48	JMB	29B
Total Arsenic	4.29	mg/Kg AR	2.00	1	07/13/22 01:16	EAL	6010D
Total Barium	315	mg/Kg AR	1.00	1	07/13/22 01:16	EAL	6010D
True Total Barium	2840	mg/Kg	500	1	07/14/22 13:04	TJS	29B
Total Cadmium	0.221	mg/Kg AR	0.200	1	07/13/22 01:16	EAL	6010D
Total Chromium	11.6	mg/Kg AR	0.500	1	07/13/22 01:16	EAL	6010D
Total Lead	10.7	mg/Kg AR	0.600	1	07/13/22 01:16	EAL	6010D
Mercury (Total)	0.0362	mg/Kg AR	0.0133	1	07/14/22 15:19	JTR	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/13/22 01:16	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/13/22 01:16	EAL	6010D
Total Zinc	48.0	mg/Kg AR	2.50	1	07/13/22 01:16	EAL	6010D

Analytical Method: MAEPH LA **Prep Batch(es):** **L625151** 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/16/22 00:52	MMK	L626600
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/16/22 00:52	MMK	L626600
Aliphatic >C12-C16	<2.00	mg/Kg	2.00	1	07/16/22 00:52	MMK	L626600
Aromatic >C12-C16	<2.00	mg/Kg	2.00	1	07/16/22 00:52	MMK	L626600
Aromatic >C16-C21	<2.00	mg/Kg	2.00	1	07/16/22 00:52	MMK	L626600
Aliphatic >C16-C35	<4.00	mg/Kg	4.00	1	07/16/22 00:52	MMK	L626600

Qualifiers/ Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit

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Hydro-Environmental Technology, Inc.
Mr. Stewart Stover, Jr.
91 Apollo Rd
Scott, LA 70583

Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 08/02/2022
Received : 06/28/2022



Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70524**
Sample ID : **SB-13 (2-4)**

Matrix: **Solids**
Sampled: **6/22/2022 15:30**

Analytical Method: MAEPH LA **Prep Batch(es):** L625151 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/16/22 00:52	MMK	L626600
Surrogate: Chlorooctadecane	35.3 *		Limits: 40-140%	1	07/16/22 00:52	MMK	MAEPH LA
Surrogate: OTP Surrogate	28.0 *		Limits: 40-140%	1	07/16/22 00:52	MMK	MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L625816 07/06/22 14:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<2.80	mg/Kg	2.80	100	07/07/22 21:24	HRS	L625823
Aliphatic >C8-C10	<5.60	mg/Kg	5.60	100	07/07/22 21:24	HRS	L625823
Aromatic >C8-C10	<3.73	mg/Kg	3.73	100	07/07/22 21:24	HRS	L625823
Surrogate: 2,5-Dibromotoluene	96.8		Limits: 50-150%	100	07/07/22 21:24	HRS	MAVPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 08/02/2022
 Received : 06/28/2022

Report Number : 22-179-0021

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : 70525
 Sample ID : SB-13 (4-6)

Matrix: Solids
 Sampled: 6/22/2022 15:50

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	41.3	%		1	07/08/22 08:10	BXH	SW-DRYWT
Oil & Grease	<0.10	%	0.10	1	07/01/22 13:48	JMB	29B
Total Arsenic	5.55	mg/Kg AR	2.00	1	07/13/22 01:21	EAL	6010D
Total Barium	157	mg/Kg AR	1.00	1	07/13/22 01:21	EAL	6010D
True Total Barium	810	mg/Kg	500	1	07/14/22 13:09	TJS	29B
Total Cadmium	0.346	mg/Kg AR	0.200	1	07/13/22 01:21	EAL	6010D
Total Chromium	11.5	mg/Kg AR	0.500	1	07/13/22 01:21	EAL	6010D
Total Lead	10.1	mg/Kg AR	0.600	1	07/13/22 01:21	EAL	6010D
Mercury (Total)	0.0367	mg/Kg AR	0.0133	1	07/14/22 15:21	JTR	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/13/22 01:21	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/13/22 01:21	EAL	6010D
Total Zinc	47.7	mg/Kg AR	2.50	1	07/13/22 01:21	EAL	6010D

Analytical Method: MAEPH LA **Prep Batch(es):** L625151 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/16/22 01:16	MMK	L626600
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/16/22 01:16	MMK	L626600
Aliphatic >C12-C16	<2.00	mg/Kg	2.00	1	07/16/22 01:16	MMK	L626600
Aromatic >C12-C16	<2.00	mg/Kg	2.00	1	07/16/22 01:16	MMK	L626600
Aromatic >C16-C21	<2.00	mg/Kg	2.00	1	07/16/22 01:16	MMK	L626600
Aliphatic >C16-C35	<4.00	mg/Kg	4.00	1	07/16/22 01:16	MMK	L626600

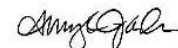
Qualifiers/Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Hydro-Environmental Technology, Inc.
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Project August Levert
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Bayou Sorrel, LA

Report Date : 08/02/2022
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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70525**
Sample ID : **SB-13 (4-6)**

Matrix: **Solids**
Sampled: **6/22/2022 15:50**

Analytical Method: MAEPH LA **Prep Batch(es):** L625151 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/16/22 01:16	MMK	L626600
Surrogate: Chlorooctadecane	26.6 *		Limits: 40-140%	1	07/16/22 01:16	MMK	MAEPH LA
Surrogate: OTP Surrogate	30.3 *		Limits: 40-140%	1	07/16/22 01:16	MMK	MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L625816 07/06/22 14:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<3.23	mg/Kg	3.23	100	07/07/22 22:05	HRS	L625823
Aliphatic >C8-C10	<6.45	mg/Kg	6.45	100	07/07/22 22:05	HRS	L625823
Aromatic >C8-C10	<4.30	mg/Kg	4.30	100	07/07/22 22:05	HRS	L625823
Surrogate: 2,5-Dibromotoluene	87.4		Limits: 50-150%	100	07/07/22 22:05	HRS	MAVPH LA

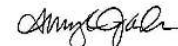
Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70526**
Sample ID : **SB-13 (6-8)**

Matrix: **Solids**
Sampled: **6/22/2022 15:50**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	44.0	%		1	07/08/22 08:10	BXH	SW-DRYWT
Oil & Grease	<0.10	%	0.10	1	07/01/22 13:48	JMB	29B
Total Arsenic	4.57	mg/Kg AR	2.00	1	07/13/22 01:26	EAL	6010D
Total Barium	233	mg/Kg AR	1.00	1	07/13/22 01:26	EAL	6010D
True Total Barium	796	mg/Kg	500	1	07/14/22 13:14	TJS	29B
Total Cadmium	0.453	mg/Kg AR	0.200	1	07/13/22 01:26	EAL	6010D
Total Chromium	10.4	mg/Kg AR	0.500	1	07/13/22 01:26	EAL	6010D
Total Lead	10.4	mg/Kg AR	0.600	1	07/13/22 01:26	EAL	6010D
Mercury (Total)	0.0341	mg/Kg AR	0.0133	1	07/14/22 15:25	JTR	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/13/22 01:26	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/13/22 01:26	EAL	6010D
Total Zinc	44.2	mg/Kg AR	2.50	1	07/13/22 01:26	EAL	6010D

Analytical Method: MAEPH LA **Prep Batch(es):** **L625151** 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/16/22 01:41	MMK	L626600
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/16/22 01:41	MMK	L626600
Aliphatic >C12-C16	<2.00	mg/Kg	2.00	1	07/16/22 01:41	MMK	L626600
Aromatic >C12-C16	2.22	mg/Kg	2.00	1	07/16/22 01:41	MMK	L626600
Aromatic >C16-C21	<2.00	mg/Kg	2.00	1	07/16/22 01:41	MMK	L626600
Aliphatic >C16-C35	<4.00	mg/Kg	4.00	1	07/16/22 01:41	MMK	L626600

Qualifiers/ Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit

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Hydro-Environmental Technology, Inc.
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Bayou Sorrel, LA

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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70526**
Sample ID : **SB-13 (6-8)**

Matrix: **Solids**
Sampled: **6/22/2022 15:50**

Analytical Method: MAEPH LA **Prep Batch(es):** L625151 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/16/22 01:41	MMK	L626600
Surrogate: Chlorooctadecane	27.4 *		Limits: 40-140%	1	07/16/22 01:41	MMK	MAEPH LA
Surrogate: OTP Surrogate	32.7 *		Limits: 40-140%	1	07/16/22 01:41	MMK	MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L625816 07/06/22 14:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<4.04	mg/Kg	4.04	100	07/07/22 22:46	HRS	L625823
Aliphatic >C8-C10	<8.09	mg/Kg	8.09	100	07/07/22 22:46	HRS	L625823
Aromatic >C8-C10	<5.39	mg/Kg	5.39	100	07/07/22 22:46	HRS	L625823
Surrogate: 2,5-Dibromotoluene	89.6		Limits: 50-150%	100	07/07/22 22:46	HRS	MAVPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 08/02/2022
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REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : 70527
 Sample ID : SB-14 (0-2)

Matrix: Solids
 Sampled: 6/23/2022 10:15

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	40.1	%		1	07/08/22 08:10	BXH	SW-DRYWT
Oil & Grease	<0.10	%	0.10	1	07/01/22 13:48	JMB	29B
Total Arsenic	3.67	mg/Kg AR	2.00	1	07/13/22 01:32	EAL	6010D
Total Barium	175	mg/Kg AR	1.00	1	07/13/22 01:32	EAL	6010D
True Total Barium	<500	mg/Kg	500	1	07/14/22 13:19	TJS	29B
Total Cadmium	0.370	mg/Kg AR	0.200	1	07/13/22 01:32	EAL	6010D
Total Chromium	13.6	mg/Kg AR	0.500	1	07/13/22 01:32	EAL	6010D
Total Lead	13.5	mg/Kg AR	0.600	1	07/13/22 01:32	EAL	6010D
Mercury (Total)	0.130	mg/Kg AR	0.0133	1	07/14/22 15:27	JTR	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/13/22 01:32	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/13/22 01:32	EAL	6010D
Total Zinc	55.8	mg/Kg AR	2.50	1	07/13/22 01:32	EAL	6010D

Analytical Method: MAEPH LA **Prep Batch(es):** L625151 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/16/22 02:05	MMK	L626600
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/16/22 02:05	MMK	L626600
Aliphatic >C12-C16	<2.00	mg/Kg	2.00	1	07/16/22 02:05	MMK	L626600
Aromatic >C12-C16	<2.00	mg/Kg	2.00	1	07/16/22 02:05	MMK	L626600
Aromatic >C16-C21	<2.00	mg/Kg	2.00	1	07/16/22 02:05	MMK	L626600
Aliphatic >C16-C35	<4.00	mg/Kg	4.00	1	07/16/22 02:05	MMK	L626600

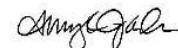
Qualifiers/Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Project August Levert
Information : Project Number: 1009.A62
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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70527**
Sample ID : **SB-14 (0-2)**

Matrix: **Solids**
Sampled: **6/23/2022 10:15**

Analytical Method: MAEPH LA **Prep Batch(es):** L625151 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/16/22 02:05	MMK	L626600
Surrogate: Chlorooctadecane	19.1 *		Limits: 40-140%	1	07/16/22 02:05	MMK	MAEPH LA
Surrogate: OTP Surrogate	25.2 *		Limits: 40-140%	1	07/16/22 02:05	MMK	MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L625816 07/06/22 14:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<2.72	mg/Kg	2.72	100	07/07/22 23:27	HRS	L625823
Aliphatic >C8-C10	<5.44	mg/Kg	5.44	100	07/07/22 23:27	HRS	L625823
Aromatic >C8-C10	<3.63	mg/Kg	3.63	100	07/07/22 23:27	HRS	L625823
Surrogate: 2,5-Dibromotoluene	85.6		Limits: 50-150%	100	07/07/22 23:27	HRS	MAVPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Project August Levert
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Report Date : 08/02/2022
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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70528**
Sample ID : **SB-14 (2-4)**

Matrix: **Solids**
Sampled: **6/23/2022 10:15**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	38.8	%		1	07/08/22 08:10	BXH	SW-DRYWT
Oil & Grease	<0.10	%	0.10	1	07/01/22 13:48	JMB	29B
Total Arsenic	3.63	mg/Kg AR	2.00	1	07/13/22 01:37	EAL	6010D
Total Barium	170	mg/Kg AR	1.00	1	07/13/22 01:37	EAL	6010D
True Total Barium	616	mg/Kg	500	1	07/14/22 13:24	TJS	29B
Total Cadmium	0.293	mg/Kg AR	0.200	1	07/13/22 01:37	EAL	6010D
Total Chromium	12.8	mg/Kg AR	0.500	1	07/13/22 01:37	EAL	6010D
Total Lead	10.8	mg/Kg AR	0.600	1	07/13/22 01:37	EAL	6010D
Mercury (Total)	0.902	mg/Kg AR	0.0133	1	07/14/22 15:28	JTR	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/13/22 01:37	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/13/22 01:37	EAL	6010D
Total Zinc	50.4	mg/Kg AR	2.50	1	07/13/22 01:37	EAL	6010D

Analytical Method: MAEPH LA **Prep Batch(es):** **L625151** 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/16/22 02:30	MMK	L626600
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/16/22 02:30	MMK	L626600
Aliphatic >C12-C16	<2.00	mg/Kg	2.00	1	07/16/22 02:30	MMK	L626600
Aromatic >C12-C16	<2.00	mg/Kg	2.00	1	07/16/22 02:30	MMK	L626600
Aromatic >C16-C21	<2.00	mg/Kg	2.00	1	07/16/22 02:30	MMK	L626600
Aliphatic >C16-C35	<4.00	mg/Kg	4.00	1	07/16/22 02:30	MMK	L626600

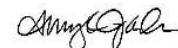
Qualifiers/ Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit

09996

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REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70528**
Sample ID : **SB-14 (2-4)**

Matrix: **Solids**
Sampled: **6/23/2022 10:15**

Analytical Method: MAEPH LA **Prep Batch(es):** L625151 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/16/22 02:30	MMK	L626600
Surrogate: Chlorooctadecane	33.8 *		Limits: 40-140%	1	07/16/22 02:30	MMK	MAEPH LA
Surrogate: OTP Surrogate	32.7 *		Limits: 40-140%	1	07/16/22 02:30	MMK	MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L625816 07/06/22 14:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<2.91	mg/Kg	2.91	100	07/08/22 00:08	HRS	L625823
Aliphatic >C8-C10	<5.81	mg/Kg	5.81	100	07/08/22 00:08	HRS	L625823
Aromatic >C8-C10	<3.88	mg/Kg	3.88	100	07/08/22 00:08	HRS	L625823
Surrogate: 2,5-Dibromotoluene	92.3		Limits: 50-150%	100	07/08/22 00:08	HRS	MAVPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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Hydro-Environmental Technology, Inc.
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 91 Apollo Rd
 Scott, LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 08/02/2022
 Received : 06/28/2022

Report Number : 22-179-0021

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : 70529
 Sample ID : SB-14 (4-6)

Matrix: Solids
 Sampled: 6/23/2022 10:30

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	42.4	%		1	07/08/22 08:10	BXH	SW-DRYWT
Oil & Grease	<0.10	%	0.10	1	07/01/22 13:48	JMB	29B
Total Arsenic	2.92	mg/Kg AR	2.00	1	07/13/22 01:42	EAL	6010D
Total Barium	144	mg/Kg AR	1.00	1	07/13/22 01:42	EAL	6010D
True Total Barium	518	mg/Kg	500	1	07/14/22 13:29	TJS	29B
Total Cadmium	0.265	mg/Kg AR	0.200	1	07/13/22 01:42	EAL	6010D
Total Chromium	11.0	mg/Kg AR	0.500	1	07/13/22 01:42	EAL	6010D
Total Lead	10.5	mg/Kg AR	0.600	1	07/13/22 01:42	EAL	6010D
Mercury (Total)	0.0360	mg/Kg AR	0.0133	1	07/14/22 15:29	JTR	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/13/22 01:42	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/13/22 01:42	EAL	6010D
Total Zinc	41.6	mg/Kg AR	2.50	1	07/13/22 01:42	EAL	6010D

Analytical Method: MAEPH LA **Prep Batch(es):** L625151 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/16/22 02:54	MMK	L626600
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/16/22 02:54	MMK	L626600
Aliphatic >C12-C16	<2.00	mg/Kg	2.00	1	07/16/22 02:54	MMK	L626600
Aromatic >C12-C16	<2.00	mg/Kg	2.00	1	07/16/22 02:54	MMK	L626600
Aromatic >C16-C21	<2.00	mg/Kg	2.00	1	07/16/22 02:54	MMK	L626600
Aliphatic >C16-C35	<4.00	mg/Kg	4.00	1	07/16/22 02:54	MMK	L626600

Qualifiers/ Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit

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Hydro-Environmental Technology, Inc.
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Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 08/02/2022
Received : 06/28/2022



Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70529**
Sample ID : **SB-14 (4-6)**

Matrix: **Solids**
Sampled: **6/23/2022 10:30**

Analytical Method: MAEPH LA **Prep Batch(es):** L625151 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/16/22 02:54	MMK	L626600
Surrogate: Chlorooctadecane	22.3 *		Limits: 40-140%	1	07/16/22 02:54	MMK	MAEPH LA
Surrogate: OTP Surrogate	29.6 *		Limits: 40-140%	1	07/16/22 02:54	MMK	MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L625816 07/06/22 14:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<2.95	mg/Kg	2.95	100	07/08/22 00:49	HRS	L625823
Aliphatic >C8-C10	<5.89	mg/Kg	5.89	100	07/08/22 00:49	HRS	L625823
Aromatic >C8-C10	<3.93	mg/Kg	3.93	100	07/08/22 00:49	HRS	L625823
Surrogate: 2,5-Dibromotoluene	85.7		Limits: 50-150%	100	07/08/22 00:49	HRS	MAVPH LA

Qualifiers/Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 08/02/2022
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Report Number : 22-179-0021

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : 70530
 Sample ID : SB-14 (6-8)

Matrix: Solids
 Sampled: 6/23/2022 10:30

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	44.2	%		1	07/08/22 08:10	BXH	SW-DRYWT
Oil & Grease	<0.10	%	0.10	1	07/01/22 13:48	JMB	29B
Total Arsenic	2.04	mg/Kg AR	2.00	1	07/13/22 01:48	EAL	6010D
Total Barium	139	mg/Kg AR	1.00	1	07/13/22 01:48	EAL	6010D
True Total Barium	<500	mg/Kg	500	1	07/14/22 13:34	TJS	29B
Total Cadmium	<0.200	mg/Kg AR	0.200	1	07/13/22 01:48	EAL	6010D
Total Chromium	10.0	mg/Kg AR	0.500	1	07/13/22 01:48	EAL	6010D
Total Lead	9.85	mg/Kg AR	0.600	1	07/13/22 01:48	EAL	6010D
Mercury (Total)	0.0318	mg/Kg AR	0.0133	1	07/14/22 15:31	JTR	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/13/22 01:48	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/13/22 01:48	EAL	6010D
Total Zinc	36.4	mg/Kg AR	2.50	1	07/13/22 01:48	EAL	6010D

Analytical Method: MAEPH LA **Prep Batch(es):** L625151 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/16/22 03:19	MMK	L626600
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/16/22 03:19	MMK	L626600
Aliphatic >C12-C16	<2.00	mg/Kg	2.00	1	07/16/22 03:19	MMK	L626600
Aromatic >C12-C16	2.44	mg/Kg	2.00	1	07/16/22 03:19	MMK	L626600
Aromatic >C16-C21	<2.00	mg/Kg	2.00	1	07/16/22 03:19	MMK	L626600
Aliphatic >C16-C35	<4.00	mg/Kg	4.00	1	07/16/22 03:19	MMK	L626600

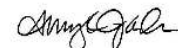
Qualifiers/Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Hydro-Environmental Technology, Inc.
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Project August Levert
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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70530**
Sample ID : **SB-14 (6-8)**

Matrix: **Solids**
Sampled: **6/23/2022 10:30**

Analytical Method: MAEPH LA **Prep Batch(es):** L625151 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C21-C35	2.42	mg/Kg	2.00	1	07/16/22 03:19	MMK	L626600
Surrogate: Chlorooctadecane	24.2 *		Limits: 40-140%	1	07/16/22 03:19	MMK	MAEPH LA
Surrogate: OTP Surrogate	20.7 *		Limits: 40-140%	1	07/16/22 03:19	MMK	MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L625816 07/06/22 14:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<4.03	mg/Kg	4.03	100	07/08/22 01:31	HRS	L625823
Aliphatic >C8-C10	<8.06	mg/Kg	8.06	100	07/08/22 01:31	HRS	L625823
Aromatic >C8-C10	<5.38	mg/Kg	5.38	100	07/08/22 01:31	HRS	L625823
Surrogate: 2,5-Dibromotoluene	74.0		Limits: 50-150%	100	07/08/22 01:31	HRS	MAVPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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Project August Levert
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 Bayou Sorrel, LA

Report Date : 08/02/2022
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Report Number : 22-179-0021

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : 70531
 Sample ID : SB-15 (0-2)

Matrix: Solids
 Sampled: 6/23/2022 10:40

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	41.4	%		1	07/08/22 08:10	BXH	SW-DRYWT
Oil & Grease	<0.10	%	0.10	1	07/01/22 13:48	JMB	29B
Total Arsenic	3.01	mg/Kg AR	2.00	1	07/13/22 01:53	EAL	6010D
Total Barium	168	mg/Kg AR	1.00	1	07/13/22 01:53	EAL	6010D
True Total Barium	539	mg/Kg	500	1	07/15/22 12:39	TJS	29B
Total Cadmium	0.435	mg/Kg AR	0.200	1	07/13/22 01:53	EAL	6010D
Total Chromium	12.4	mg/Kg AR	0.500	1	07/13/22 01:53	EAL	6010D
Total Lead	12.5	mg/Kg AR	0.600	1	07/13/22 01:53	EAL	6010D
Mercury (Total)	0.0357	mg/Kg AR	0.0133	1	07/14/22 15:32	JTR	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/13/22 01:53	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/13/22 01:53	EAL	6010D
Total Zinc	59.8	mg/Kg AR	2.50	1	07/13/22 01:53	EAL	6010D

Analytical Method: MAEPH LA **Prep Batch(es):** L625151 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/16/22 03:43	MMK	L626600
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/16/22 03:43	MMK	L626600
Aliphatic >C12-C16	<2.00	mg/Kg	2.00	1	07/16/22 03:43	MMK	L626600
Aromatic >C12-C16	<2.00	mg/Kg	2.00	1	07/16/22 03:43	MMK	L626600
Aromatic >C16-C21	<2.00	mg/Kg	2.00	1	07/16/22 03:43	MMK	L626600
Aliphatic >C16-C35	<4.00	mg/Kg	4.00	1	07/16/22 03:43	MMK	L626600

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Hydro-Environmental Technology, Inc.
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Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 08/02/2022
Received : 06/28/2022



Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70531**
Sample ID : **SB-15 (0-2)**

Matrix: **Solids**
Sampled: **6/23/2022 10:40**

Analytical Method: MAEPH LA **Prep Batch(es):** L625151 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/16/22 03:43	MMK	L626600
Surrogate: Chlorooctadecane	29.5 *		Limits: 40-140%	1	07/16/22 03:43	MMK	MAEPH LA
Surrogate: OTP Surrogate	21.0 *		Limits: 40-140%	1	07/16/22 03:43	MMK	MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L625816 07/06/22 14:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<2.75	mg/Kg	2.75	100	07/08/22 02:12	HRS	L625823
Aliphatic >C8-C10	<5.50	mg/Kg	5.50	100	07/08/22 02:12	HRS	L625823
Aromatic >C8-C10	<3.67	mg/Kg	3.67	100	07/08/22 02:12	HRS	L625823
Surrogate: 2,5-Dibromotoluene	83.1		Limits: 50-150%	100	07/08/22 02:12	HRS	MAVPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 08/02/2022
Received : 06/28/2022



Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70532**
Sample ID : **SB-15 (2-4)**

Matrix: **Solids**
Sampled: **6/23/2022 10:40**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	39.2	%		1	07/08/22 08:10	BXH	SW-DRYWT
Oil & Grease	<0.10	%	0.10	1	07/01/22 13:48	JMB	29B
Total Arsenic	3.50	mg/Kg AR	2.00	1	07/13/22 01:58	EAL	6010D
Total Barium	143	mg/Kg AR	1.00	1	07/13/22 01:58	EAL	6010D
True Total Barium	<500	mg/Kg	500	1	07/15/22 13:04	TJS	29B
Total Cadmium	0.261	mg/Kg AR	0.200	1	07/13/22 01:58	EAL	6010D
Total Chromium	13.0	mg/Kg AR	0.500	1	07/13/22 01:58	EAL	6010D
Total Lead	10.8	mg/Kg AR	0.600	1	07/13/22 01:58	EAL	6010D
Mercury (Total)	0.0400	mg/Kg AR	0.0133	1	07/14/22 15:34	JTR	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/13/22 01:58	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/13/22 01:58	EAL	6010D
Total Zinc	49.5	mg/Kg AR	2.50	1	07/13/22 01:58	EAL	6010D

Analytical Method: MAEPH LA **Prep Batch(es):** **L625151** 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/16/22 04:08	MMK	L626600
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/16/22 04:08	MMK	L626600
Aliphatic >C12-C16	<2.00	mg/Kg	2.00	1	07/16/22 04:08	MMK	L626600
Aromatic >C12-C16	<2.00	mg/Kg	2.00	1	07/16/22 04:08	MMK	L626600
Aromatic >C16-C21	<2.00	mg/Kg	2.00	1	07/16/22 04:08	MMK	L626600
Aliphatic >C16-C35	<4.00	mg/Kg	4.00	1	07/16/22 04:08	MMK	L626600

Qualifiers/ Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit

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Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 08/02/2022
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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70532**
Sample ID : **SB-15 (2-4)**

Matrix: **Solids**
Sampled: **6/23/2022 10:40**

Analytical Method: MAEPH LA **Prep Batch(es):** L625151 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/16/22 04:08	MMK	L626600
Surrogate: Chlorooctadecane	51.0		Limits: 40-140%	1	07/13/22 20:40	MMK	MAEPH LA
Surrogate: OTP Surrogate	23.2 *		Limits: 40-140%	1	07/16/22 04:08	MMK	MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L625816 07/06/22 14:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<2.88	mg/Kg	2.88	100	07/08/22 02:53	HRS	L625823
Aliphatic >C8-C10	<5.77	mg/Kg	5.77	100	07/08/22 02:53	HRS	L625823
Aromatic >C8-C10	<3.85	mg/Kg	3.85	100	07/08/22 02:53	HRS	L625823
Surrogate: 2,5-Dibromotoluene	93.2		Limits: 50-150%	100	07/08/22 02:53	HRS	MAVPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 08/02/2022
Received : 06/28/2022



Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70533**
Sample ID : **SB-15 (4-6)**

Matrix: **Solids**
Sampled: **6/23/2022 11:00**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	41.2	%		1	07/08/22 08:10	BXH	SW-DRYWT
Oil & Grease	<0.10	%	0.10	1	07/01/22 13:48	JMB	29B
Total Arsenic	3.47	mg/Kg AR	2.00	1	07/13/22 02:03	EAL	6010D
Total Barium	173	mg/Kg AR	1.00	1	07/13/22 02:03	EAL	6010D
True Total Barium	537	mg/Kg	500	1	07/15/22 13:10	TJS	29B
Total Cadmium	0.254	mg/Kg AR	0.200	1	07/13/22 02:03	EAL	6010D
Total Chromium	11.9	mg/Kg AR	0.500	1	07/13/22 02:03	EAL	6010D
Total Lead	9.43	mg/Kg AR	0.600	1	07/13/22 02:03	EAL	6010D
Mercury (Total)	0.0372	mg/Kg AR	0.0133	1	07/14/22 15:35	JTR	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/13/22 02:03	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/13/22 02:03	EAL	6010D
Total Zinc	45.3	mg/Kg AR	2.50	1	07/13/22 02:03	EAL	6010D

Analytical Method: MAEPH LA **Prep Batch(es):** **L625151** 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/16/22 16:55	MMK	L626600
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/16/22 04:57	MMK	L626600
Aliphatic >C12-C16	<2.00	mg/Kg	2.00	1	07/16/22 16:55	MMK	L626600
Aromatic >C12-C16	<2.00	mg/Kg	2.00	1	07/16/22 04:57	MMK	L626600
Aromatic >C16-C21	<2.00	mg/Kg	2.00	1	07/16/22 04:57	MMK	L626600
Aliphatic >C16-C35	<4.00	mg/Kg	4.00	1	07/16/22 16:55	MMK	L626600

Qualifiers/ Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit

09996

Hydro-Environmental Technology, Inc.
Mr. Stewart Stover, Jr.
91 Apollo Rd
Scott, LA 70583

Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 08/02/2022
Received : 06/28/2022



Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70533**
Sample ID : **SB-15 (4-6)**

Matrix: **Solids**
Sampled: **6/23/2022 11:00**

Analytical Method: MAEPH LA **Prep Batch(es):** L625151 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/16/22 04:57	MMK	L626600
Surrogate: Chlorooctadecane	52.3		Limits: 40-140%	1	07/13/22 21:04	MMK	MAEPH LA
Surrogate: OTP Surrogate	24.3 *		Limits: 40-140%	1	07/16/22 04:57	MMK	MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L625816 07/06/22 14:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<2.96	mg/Kg	2.96	100	07/08/22 03:34	HRS	L625823
Aliphatic >C8-C10	<5.93	mg/Kg	5.93	100	07/08/22 03:34	HRS	L625823
Aromatic >C8-C10	<3.95	mg/Kg	3.95	100	07/08/22 03:34	HRS	L625823
Surrogate: 2,5-Dibromotoluene	88.9		Limits: 50-150%	100	07/08/22 03:34	HRS	MAVPH LA

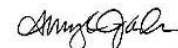
Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

09996

Hydro-Environmental Technology, Inc.
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Project August Levert
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Bayou Sorrel, LA

Report Date : 08/02/2022
Received : 06/28/2022



Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70534**
Sample ID : **SB-15 (6-8)**

Matrix: **Solids**
Sampled: **6/23/2022 11:00**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	43.4	%		1	07/08/22 08:10	BXH	SW-DRYWT
Oil & Grease	<0.10	%	0.10	1	07/07/22 12:00	APB	29B
Total Arsenic	4.24	mg/Kg AR	2.00	1	07/13/22 02:50	EAL	6010D
Total Barium	131	mg/Kg AR	1.00	1	07/13/22 02:50	EAL	6010D
True Total Barium	3920	mg/Kg	500	1	07/15/22 13:15	TJS	29B
Total Cadmium	0.254	mg/Kg AR	0.200	1	07/13/22 02:50	EAL	6010D
Total Chromium	9.84	mg/Kg AR	0.500	1	07/13/22 02:50	EAL	6010D
Total Lead	10.6	mg/Kg AR	0.600	1	07/13/22 02:50	EAL	6010D
Mercury (Total)	0.0429	mg/Kg AR	0.0133	1	07/15/22 14:34	JTR	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/13/22 02:50	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/13/22 02:50	EAL	6010D
Total Zinc	36.9	mg/Kg AR	2.50	1	07/13/22 02:50	EAL	6010D

Analytical Method: MAEPH LA **Prep Batch(es):** **L625151** 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/16/22 17:19	MMK	L626600
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/16/22 05:21	MMK	L626600
Aliphatic >C12-C16	<2.00	mg/Kg	2.00	1	07/16/22 17:19	MMK	L626600
Aromatic >C12-C16	4.49	mg/Kg	2.00	1	07/16/22 05:21	MMK	L626600
Aromatic >C16-C21	<2.00	mg/Kg	2.00	1	07/16/22 05:21	MMK	L626600
Aliphatic >C16-C35	<4.00	mg/Kg	4.00	1	07/16/22 17:19	MMK	L626600

Qualifiers/ Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit

09996

Hydro-Environmental Technology, Inc.
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Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 08/02/2022
Received : 06/28/2022



Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70534**
Sample ID : **SB-15 (6-8)**

Matrix: **Solids**
Sampled: **6/23/2022 11:00**

Analytical Method: MAEPH LA **Prep Batch(es):** L625151 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/16/22 05:21	MMK	L626600
Surrogate: Chlorooctadecane	47.1		Limits: 40-140%	1	07/16/22 17:19	MMK	MAEPH LA
Surrogate: OTP Surrogate	37.6 *		Limits: 40-140%	1	07/16/22 05:21	MMK	MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L625816 07/06/22 14:14
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<3.70	mg/Kg	3.70	100	07/08/22 04:15	HRS	L625823
Aliphatic >C8-C10	<7.41	mg/Kg	7.41	100	07/08/22 04:15	HRS	L625823
Aromatic >C8-C10	<4.94	mg/Kg	4.94	100	07/08/22 04:15	HRS	L625823
Surrogate: 2,5-Dibromotoluene	85.4		Limits: 50-150%	100	07/08/22 04:15	HRS	MAVPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 08/02/2022
 Received : 06/28/2022

Report Number : 22-179-0021

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : 70535
 Sample ID : SB-16 (0-2)

Matrix: Solids
 Sampled: 6/23/2022 11:20

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	43.6	%		1	07/08/22 08:40	BXH	SW-DRYWT
Oil & Grease	<0.10	%	0.10	1	07/07/22 12:00	APB	29B
Total Arsenic	4.34	mg/Kg AR	2.00	1	07/13/22 02:56	EAL	6010D
Total Barium	132	mg/Kg AR	1.00	1	07/13/22 02:56	EAL	6010D
True Total Barium	589	mg/Kg	500	1	07/15/22 13:20	TJS	29B
Total Cadmium	0.374	mg/Kg AR	0.200	1	07/13/22 02:56	EAL	6010D
Total Chromium	11.1	mg/Kg AR	0.500	1	07/13/22 02:56	EAL	6010D
Total Lead	11.7	mg/Kg AR	0.600	1	07/13/22 02:56	EAL	6010D
Mercury (Total)	0.0444	mg/Kg AR	0.0133	1	07/15/22 14:35	JTR	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/13/22 02:56	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/13/22 02:56	EAL	6010D
Total Zinc	48.4	mg/Kg AR	2.50	1	07/13/22 02:56	EAL	6010D

Analytical Method: MAEPH LA **Prep Batch(es):** L625151 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/16/22 17:43	MMK	L626600
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/16/22 05:46	MMK	L626600
Aliphatic >C12-C16	<2.00	mg/Kg	2.00	1	07/16/22 17:43	MMK	L626600
Aromatic >C12-C16	<2.00	mg/Kg	2.00	1	07/16/22 05:46	MMK	L626600
Aromatic >C16-C21	<2.00	mg/Kg	2.00	1	07/16/22 05:46	MMK	L626600
Aliphatic >C16-C35	<4.00	mg/Kg	4.00	1	07/16/22 17:43	MMK	L626600

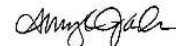
Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

09996

Hydro-Environmental Technology, Inc.
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Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 08/02/2022
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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70535**
Sample ID : **SB-16 (0-2)**

Matrix: **Solids**
Sampled: **6/23/2022 11:20**

Analytical Method: MAEPH LA **Prep Batch(es):** L625151 07/06/22 07:15
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/16/22 05:46	MMK	L626600
Surrogate: Chlorooctadecane	81.2		Limits: 40-140%	1	07/13/22 21:52	MMK	MAEPH LA
Surrogate: OTP Surrogate	43.4		Limits: 40-140%	1	07/16/22 05:46	MMK	MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L626335 07/11/22 14:03
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<3.55	mg/Kg	3.55	100	07/11/22 16:49	HRS	L626336
Aliphatic >C8-C10	<7.11	mg/Kg	7.11	100	07/11/22 16:49	HRS	L626336
Aromatic >C8-C10	<4.74	mg/Kg	4.74	100	07/11/22 16:49	HRS	L626336
Surrogate: 2,5-Dibromotoluene	67.9		Limits: 50-150%	100	07/11/22 16:49	HRS	MAVPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Hydro-Environmental Technology, Inc.
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Project August Levert
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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70536**
Sample ID : **SB-16 (2-4)**

Matrix: **Solids**
Sampled: **6/23/2022 11:20**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	41.9	%		1	07/08/22 08:40	BXH	SW-DRYWT
Oil & Grease	<0.10	%	0.10	1	07/07/22 12:00	APB	29B
Total Arsenic	3.41	mg/Kg AR	2.00	1	07/13/22 03:01	EAL	6010D
Total Barium	151	mg/Kg AR	1.00	1	07/13/22 03:01	EAL	6010D
True Total Barium	570	mg/Kg	500	1	07/15/22 13:25	TJS	29B
Total Cadmium	0.260	mg/Kg AR	0.200	1	07/13/22 03:01	EAL	6010D
Total Chromium	12.0	mg/Kg AR	0.500	1	07/13/22 03:01	EAL	6010D
Total Lead	10.0	mg/Kg AR	0.600	1	07/13/22 03:01	EAL	6010D
Mercury (Total)	0.0343	mg/Kg AR	0.0133	1	07/15/22 14:36	JTR	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/13/22 03:01	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/13/22 03:01	EAL	6010D
Total Zinc	46.8	mg/Kg AR	2.50	1	07/13/22 03:01	EAL	6010D

Analytical Method: MAEPH LA **Prep Batch(es):** **L625418** 07/07/22 07:00
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/16/22 22:35	MMK	L627112
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/16/22 20:57	MMK	L627112
Aliphatic >C12-C16	<2.00	mg/Kg	2.00	1	07/16/22 22:35	MMK	L627112
Aromatic >C12-C16	<2.00	mg/Kg	2.00	1	07/16/22 20:57	MMK	L627112
Aromatic >C16-C21	<2.00	mg/Kg	2.00	1	07/16/22 20:57	MMK	L627112
Aliphatic >C16-C35	<4.00	mg/Kg	4.00	1	07/16/22 22:35	MMK	L627112

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Hydro-Environmental Technology, Inc.
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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70536**
Sample ID : **SB-16 (2-4)**

Matrix: **Solids**
Sampled: **6/23/2022 11:20**

Analytical Method: MAEPH LA **Prep Batch(es):** L625418 07/07/22 07:00
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/16/22 20:57	MMK	L627112
Surrogate: Chlorooctadecane	52.3		Limits: 40-140%	1	07/16/22 22:35	MMK	MAEPH LA
Surrogate: OTP Surrogate	62.9		Limits: 40-140%	1	07/16/22 07:48	MMK	MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L626335 07/11/22 14:03
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<3.49	mg/Kg	3.49	100	07/11/22 17:30	HRS	L626336
Aliphatic >C8-C10	<6.98	mg/Kg	6.98	100	07/11/22 17:30	HRS	L626336
Aromatic >C8-C10	<4.65	mg/Kg	4.65	100	07/11/22 17:30	HRS	L626336
Surrogate: 2,5-Dibromotoluene	107		Limits: 50-150%	100	07/11/22 17:30	HRS	MAVPH LA

Qualifiers/Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70537**
Sample ID : **SB-16 (4-6)**

Matrix: **Solids**
Sampled: **6/23/2022 11:35**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	42.4	%		1	07/08/22 08:40	BXH	SW-DRYWT
Oil & Grease	<0.10	%	0.10	1	07/07/22 12:00	APB	29B
Total Arsenic	2.27	mg/Kg AR	2.00	1	07/13/22 03:06	EAL	6010D
Total Barium	135	mg/Kg AR	1.00	1	07/13/22 03:06	EAL	6010D
True Total Barium	<500	mg/Kg	500	1	07/15/22 13:30	TJS	29B
Total Cadmium	<0.200	mg/Kg AR	0.200	1	07/13/22 03:06	EAL	6010D
Total Chromium	11.0	mg/Kg AR	0.500	1	07/13/22 03:06	EAL	6010D
Total Lead	9.77	mg/Kg AR	0.600	1	07/13/22 03:06	EAL	6010D
Mercury (Total)	0.0349	mg/Kg AR	0.0133	1	07/15/22 14:38	JTR	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/13/22 03:06	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/13/22 03:06	EAL	6010D
Total Zinc	42.0	mg/Kg AR	2.50	1	07/13/22 03:06	EAL	6010D

Analytical Method: MAEPH LA **Prep Batch(es):** **L625418** 07/07/22 07:00
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/19/22 07:21	MMK	L627112
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/19/22 00:03	MMK	L627112
Aliphatic >C12-C16	<2.00	mg/Kg	2.00	1	07/19/22 07:21	MMK	L627112
Aromatic >C12-C16	<2.00	mg/Kg	2.00	1	07/19/22 00:03	MMK	L627112
Aromatic >C16-C21	<2.00	mg/Kg	2.00	1	07/19/22 00:03	MMK	L627112
Aliphatic >C16-C35	<4.00	mg/Kg	4.00	1	07/19/22 07:21	MMK	L627112

Qualifiers/Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit

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Hydro-Environmental Technology, Inc.
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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70537**
Sample ID : **SB-16 (4-6)**

Matrix: **Solids**
Sampled: **6/23/2022 11:35**

Analytical Method: MAEPH LA **Prep Batch(es):** L625418 07/07/22 07:00
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/19/22 00:03	MMK	L627112
Surrogate: Chlorooctadecane	81.1		Limits: 40-140%	1	07/19/22 07:21	MMK	MAEPH LA
Surrogate: OTP Surrogate	106		Limits: 40-140%	1	07/16/22 08:13	MMK	MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L626335 07/11/22 14:03
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<3.56	mg/Kg	3.56	100	07/11/22 18:11	HRS	L626336
Aliphatic >C8-C10	<7.13	mg/Kg	7.13	100	07/11/22 18:11	HRS	L626336
Aromatic >C8-C10	<4.75	mg/Kg	4.75	100	07/11/22 18:11	HRS	L626336
Surrogate: 2,5-Dibromotoluene	105		Limits: 50-150%	100	07/11/22 18:11	HRS	MAVPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Hydro-Environmental Technology, Inc.
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Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 08/02/2022
Received : 06/28/2022



Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70538**
Sample ID : **SB-16 (6-8)**

Matrix: **Solids**
Sampled: **6/23/2022 11:35**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	44.1	%		1	07/08/22 08:40	BXH	SW-DRYWT
Oil & Grease	0.10	%	0.10	1	07/07/22 12:00	APB	29B
Total Arsenic	2.18	mg/Kg AR	2.00	1	07/13/22 03:22	EAL	6010D
Total Barium	147	mg/Kg AR	1.00	1	07/13/22 03:22	EAL	6010D
True Total Barium	<500	mg/Kg	500	1	07/15/22 13:35	TJS	29B
Total Cadmium	0.272	mg/Kg AR	0.200	1	07/13/22 03:22	EAL	6010D
Total Chromium	9.76	mg/Kg AR	0.500	1	07/13/22 03:22	EAL	6010D
Total Lead	8.40	mg/Kg AR	0.600	1	07/13/22 03:22	EAL	6010D
Mercury (Total)	0.0326	mg/Kg AR	0.0133	1	07/15/22 14:39	JTR	7471A
Total Selenium	<1.00	mg/Kg AR	1.00	1	07/13/22 03:22	EAL	6010D
Total Silver	<0.500	mg/Kg AR	0.500	1	07/13/22 03:22	EAL	6010D
Total Zinc	29.2	mg/Kg AR	2.50	1	07/13/22 03:22	EAL	6010D

Analytical Method: MAEPH LA **Prep Batch(es):** **L625418** 07/07/22 07:00
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/19/22 11:08	MMK	L627112
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/16/22 08:37	MMK	L627112
Aliphatic >C12-C16	<2.00	mg/Kg	2.00	1	07/19/22 11:08	MMK	L627112
Aromatic >C12-C16	4.70	mg/Kg	2.00	1	07/16/22 08:37	MMK	L627112
Aromatic >C16-C21	2.91	mg/Kg	2.00	1	07/16/22 08:37	MMK	L627112
Aliphatic >C16-C35	<4.00	mg/Kg	4.00	1	07/19/22 11:08	MMK	L627112

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Hydro-Environmental Technology, Inc.
Mr. Stewart Stover, Jr.
91 Apollo Rd
Scott, LA 70583

Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 08/02/2022
Received : 06/28/2022



Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70538**
Sample ID : **SB-16 (6-8)**

Matrix: **Solids**
Sampled: **6/23/2022 11:35**

Analytical Method: MAEPH LA **Prep Batch(es):** L625418 07/07/22 07:00
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/16/22 08:37	MMK	L627112
Surrogate: Chlorooctadecane	55.1		Limits: 40-140%	1	07/19/22 11:08	MMK	MAEPH LA
Surrogate: OTP Surrogate	46.0		Limits: 40-140%	1	07/16/22 08:37	MMK	MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L626335 07/11/22 14:03
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<3.55	mg/Kg	3.55	100	07/11/22 18:53	HRS	L626336
Aliphatic >C8-C10	<7.11	mg/Kg	7.11	100	07/11/22 18:53	HRS	L626336
Aromatic >C8-C10	<4.74	mg/Kg	4.74	100	07/11/22 18:53	HRS	L626336
Surrogate: 2,5-Dibromotoluene	97.9		Limits: 50-150%	100	07/11/22 18:53	HRS	MAVPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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Project August Levert
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 Bayou Sorrel, LA

Report Date : 08/02/2022
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Report Number : 22-179-0021

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : 70539
 Sample ID : SB-17 (0-2)

Matrix: Solids
 Sampled: 6/23/2022 14:15

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	60.2	%		1	07/08/22 08:40	BXH	SW-DRYWT
Oil & Grease	11.2	%	0.10	1	07/07/22 12:00	APB	29B

Analytical Method: MAEPH LA **Prep Batch(es):** L625418 07/07/22 07:00
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<20.0	mg/Kg	20.0	10	07/16/22 20:33	MMK	L627112
Aromatic >C10-C12	11.1	mg/Kg	1.00	1	07/16/22 09:02	MMK	L627112
Aliphatic >C12-C16	49.1	mg/Kg	20.0	10	07/16/22 20:33	MMK	L627112
Aromatic >C12-C16	132	mg/Kg	20.0	10	07/16/22 19:44	MMK	L627112
Aromatic >C16-C21	81.5	mg/Kg	20.0	10	07/16/22 19:44	MMK	L627112
Aliphatic >C16-C35	682	mg/Kg	400	100	07/16/22 20:57	MMK	L627112
Aromatic >C21-C35	20.2	mg/Kg	2.00	1	07/16/22 09:02	MMK	L627112

Surrogate: OTP Surrogate **24.0 *** Limits: 40-140% 1 07/16/22 09:02 MMK MAEPH LA
 Surrogate: Chlorooctadecane 77.0 Limits: 40-140% 10 07/16/22 20:33 MMK MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L626335 07/11/22 14:03
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	9.98	mg/Kg	3.33	100	07/11/22 19:34	HRS	L626336
Aliphatic >C8-C10	29.8	mg/Kg	6.67	100	07/11/22 19:34	HRS	L626336

Qualifiers/Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit

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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70539**
Sample ID : **SB-17 (0-2)**

Matrix: **Solids**
Sampled: **6/23/2022 14:15**

Analytical Method: MAVPH LA **Prep Batch(es):** L626335 07/11/22 14:03
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C8-C10	10.3	mg/Kg	4.44	100	07/11/22 19:34	HRS	L626336
Surrogate: 2,5-Dibromotoluene	114		Limits: 50-150%	100	07/11/22 19:34	HRS	MAVPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : 70540
 Sample ID : SB-18 (0-2)

Matrix: Solids
 Sampled: 6/23/2022 14:25

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	63.3	%		1	07/08/22 08:40	BXH	SW-DRYWT
Oil & Grease	2.05	%	0.10	1	07/07/22 12:00	APB	29B

Analytical Method: MAEPH LA **Prep Batch(es):** L625418 07/07/22 07:00
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<20.0	mg/Kg	20.0	10	07/16/22 21:22	MMK	L627112
Aromatic >C10-C12	7.30	mg/Kg	1.00	1	07/16/22 09:27	MMK	L627112
Aliphatic >C12-C16	74.2	mg/Kg	20.0	10	07/16/22 21:22	MMK	L627112
Aromatic >C12-C16	70.2	mg/Kg	20.0	10	07/16/22 20:09	MMK	L627112
Aromatic >C16-C21	23.7	mg/Kg	20.0	10	07/16/22 20:09	MMK	L627112
Aliphatic >C16-C35	621	mg/Kg	40.0	10	07/16/22 21:22	MMK	L627112
Aromatic >C21-C35	10.7	mg/Kg	2.00	1	07/16/22 09:27	MMK	L627112
Surrogate: OTP Surrogate	41.8		Limits: 40-140%	1	07/16/22 09:27	MMK	MAEPH LA
Surrogate: Chlorooctadecane	40.9		Limits: 40-140%	10	07/16/22 21:22	MMK	MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L626335 07/11/22 14:03
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	10.6	mg/Kg	3.38	100	07/11/22 20:15	HRS	L626336
Aliphatic >C8-C10	44.1	mg/Kg	6.76	100	07/11/22 20:15	HRS	L626336

Qualifiers/Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit



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Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70540**
 Sample ID : **SB-18 (0-2)**

Matrix: **Solids**
 Sampled: **6/23/2022 14:25**

Analytical Method: MAVPH LA **Prep Batch(es):** L626335 07/11/22 14:03
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C8-C10	15.3	mg/Kg	4.50	100	07/11/22 20:15	HRS	L626336
Surrogate: 2,5-Dibromotoluene	115		Limits: 50-150%	100	07/11/22 20:15	HRS	MAVPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : 70541
 Sample ID : SB-19 (0-2)

Matrix: Solids
 Sampled: 6/23/2022 14:35

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	57.6	%		1	07/08/22 08:40	BXH	SW-DRYWT
Oil & Grease	1.97	%	0.10	1	07/07/22 12:00	APB	29B

Analytical Method: MAEPH LA **Prep Batch(es):** L625418 07/07/22 07:00
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<20.0	mg/Kg	20.0	10	07/16/22 21:46	MMK	L627112
Aromatic >C10-C12	3.89	mg/Kg	1.00	1	07/16/22 09:51	MMK	L627112
Aliphatic >C12-C16	141	mg/Kg	20.0	10	07/16/22 21:46	MMK	L627112
Aromatic >C12-C16	21.8	mg/Kg	2.00	1	07/16/22 09:51	MMK	L627112
Aromatic >C16-C21	23.2	mg/Kg	2.00	1	07/16/22 09:51	MMK	L627112
Aliphatic >C16-C35	1280	mg/Kg	40.0	10	07/16/22 21:46	MMK	L627112
Aromatic >C21-C35	2.64	mg/Kg	2.00	1	07/16/22 09:51	MMK	L627112
Surrogate: OTP Surrogate	67.5		Limits: 40-140%	1	07/16/22 09:51	MMK	MAEPH LA
Surrogate: Chlorooctadecane	29.2 *		Limits: 40-140%	10	07/16/22 21:46	MMK	MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L626335 07/11/22 14:03
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	3.84	mg/Kg	3.60	100	07/11/22 20:56	HRS	L626336
Aliphatic >C8-C10	14.0	mg/Kg	7.19	100	07/11/22 20:56	HRS	L626336

Qualifiers/	*	Outside QC Limit	B	Analyte detected in blank
Definitions	DF	Dilution Factor	I	Recovery out of range
	J	Estimated value	MQL	Method Quantitation Limit

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Hydro-Environmental Technology, Inc.
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REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70541**
Sample ID : **SB-19 (0-2)**

Matrix: **Solids**
Sampled: **6/23/2022 14:35**

Analytical Method: MAVPH LA **Prep Batch(es):** L626335 07/11/22 14:03
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C8-C10	12.6	mg/Kg	4.80	100	07/11/22 20:56	HRS	L626336
Surrogate: 2,5-Dibromotoluene	96.3		Limits: 50-150%	100	07/11/22 20:56	HRS	MAVPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70542**
 Sample ID : **SB-20 (0-2)**

Matrix: **Solids**
 Sampled: **6/23/2022 14:45**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	59.9	%		1	07/08/22 08:40	BXH	SW-DRYWT
Oil & Grease	2.92	%	0.10	1	07/07/22 12:00	APB	29B

Analytical Method: 8270D SIM **Prep Batch(es):** **L625588** 07/07/22 14:00
Prep Method: 3550B

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
2-Methylnaphthalene	<0.0113	mg/Kg	0.0113	5	07/23/22 02:15	VBW	L628178
Acenaphthene	<0.0113	mg/Kg	0.0113	5	07/23/22 02:15	VBW	L628178
Acenaphthylene	0.0178	mg/Kg	0.0113	5	07/23/22 02:15	VBW	L628178
Anthracene	0.0160	mg/Kg	0.0113	5	07/23/22 02:15	VBW	L628178
Benzo(a)anthracene	<0.0113	mg/Kg	0.0113	5	07/23/22 02:15	VBW	L628178
Benzo(a)pyrene	0.0210	mg/Kg	0.0113	5	07/23/22 02:15	VBW	L628178
Benzo(b)fluoranthene	<0.0113	mg/Kg	0.0113	5	07/23/22 02:15	VBW	L628178
Benzo(k)fluoranthene	<0.0113	mg/Kg	0.0113	5	07/23/22 02:15	VBW	L628178
Chrysene	0.0177	mg/Kg	0.0113	5	07/23/22 02:15	VBW	L628178
Dibenz(a,h)anthracene	<0.0113	mg/Kg	0.0113	5	07/23/22 02:15	VBW	L628178
Fluoranthene	0.0205	mg/Kg	0.0113	5	07/23/22 02:15	VBW	L628178
Fluorene	0.0530	mg/Kg	0.0113	5	07/23/22 02:15	VBW	L628178
Indeno(1,2,3-cd)pyrene	<0.0113	mg/Kg	0.0113	5	07/23/22 02:15	VBW	L628178
Naphthalene	<0.0113	mg/Kg	0.0113	5	07/23/22 02:15	VBW	L628178
Phenanthrene	0.0149	mg/Kg	0.0113	5	07/23/22 02:15	VBW	L628178

Qualifiers/Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70542**
Sample ID : **SB-20 (0-2)**

Matrix: **Solids**
Sampled: **6/23/2022 14:45**

Analytical Method: 8270D SIM **Prep Batch(es):** L625588 07/07/22 14:00
Prep Method: 3550B

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Pyrene	0.0294	mg/Kg	0.0113	5	07/23/22 02:15	VBW	L628178
Surrogate: 2-Fluorobiphenyl	50.2		Limits: 33-115%	5	07/23/22 02:15	VBW	L628178
Surrogate: Nitrobenzene-d5	46.3		Limits: 29-110%	5	07/23/22 02:15	VBW	L628178
Surrogate: 4-Terphenyl-d14	80.5		Limits: 33-122%	5	07/23/22 02:15	VBW	L628178

Analytical Method: MAEPH LA **Prep Batch(es):** L625418 07/07/22 07:00
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<20.0	mg/Kg	20.0	10	07/16/22 21:46	MMK	L627112
Aromatic >C10-C12	18.0	mg/Kg	1.00	1	07/16/22 10:16	MMK	L627112
Aliphatic >C12-C16	141	mg/Kg	20.0	10	07/16/22 21:46	MMK	L627112
Aromatic >C12-C16	207	mg/Kg	20.0	10	07/16/22 20:33	MMK	L627112
Aromatic >C16-C21	168	mg/Kg	20.0	10	07/16/22 20:33	MMK	L627112
Aliphatic >C16-C35	1820	mg/Kg	400	100	07/16/22 22:10	MMK	L627112
Aromatic >C21-C35	21.6	mg/Kg	2.00	1	07/16/22 10:16	MMK	L627112
Surrogate: Chlorooctadecane	29.1 *		Limits: 40-140%	10	07/16/22 21:46	MMK	MAEPH LA
Surrogate: OTP Surrogate	63.9		Limits: 40-140%	10	07/16/22 20:33	MMK	MAEPH LA

Qualifiers/Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit



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REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : 70542
 Sample ID : SB-20 (0-2)

Matrix: Solids
 Sampled: 6/23/2022 14:45

Analytical Method: MAVPH LA **Prep Batch(es):** L626335 07/11/22 14:03
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	5.30	mg/Kg	3.46	100	07/11/22 21:37	HRS	L626336
Aliphatic >C8-C10	14.6	mg/Kg	6.91	100	07/11/22 21:37	HRS	L626336
Aromatic >C8-C10	5.92	mg/Kg	4.61	100	07/11/22 21:37	HRS	L626336
Surrogate: 2,5-Dibromotoluene	104		Limits: 50-150%	100	07/11/22 21:37	HRS	MAVPH LA

Qualifiers/Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : 70543
 Sample ID : SB-21 (0-2)

Matrix: Solids
 Sampled: 6/23/2022 15:10

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	41.1	%		1	07/08/22 08:40	BXH	SW-DRYWT
Oil & Grease	<0.10	%	0.10	1	07/07/22 12:00	APB	29B

Analytical Method: MAEPH LA **Prep Batch(es):** L625418 07/07/22 07:00
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/18/22 12:23	MMK	L627112
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/18/22 12:23	MMK	L627112
Aliphatic >C12-C16	3.68	mg/Kg	2.00	1	07/18/22 12:23	MMK	L627112
Aromatic >C12-C16	4.63	mg/Kg	2.00	1	07/18/22 12:23	MMK	L627112
Aromatic >C16-C21	6.56	mg/Kg	2.00	1	07/18/22 12:23	MMK	L627112
Aliphatic >C16-C35	60.7	mg/Kg	4.00	1	07/18/22 12:23	MMK	L627112
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/18/22 12:23	MMK	L627112

Surrogate: Chlorooctadecane 95.2 Limits: 40-140% 1 07/18/22 12:23 MMK MAEPH LA
 Surrogate: OTP Surrogate 40.5 Limits: 40-140% 1 07/18/22 12:23 MMK MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L626335 07/11/22 14:03
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<3.51	mg/Kg	3.51	100	07/11/22 22:18	HRS	L626336
Aliphatic >C8-C10	<7.03	mg/Kg	7.03	100	07/11/22 22:18	HRS	L626336

Qualifiers/Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit

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Hydro-Environmental Technology, Inc.
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91 Apollo Rd
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Project August Levert
Information : Project Number: 1009.A62
Bayou Sorrel, LA

Report Date : 08/02/2022
Received : 06/28/2022



Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70543**
Sample ID : **SB-21 (0-2)**

Matrix: **Solids**
Sampled: **6/23/2022 15:10**

Analytical Method: MAVPH LA **Prep Batch(es):** L626335 07/11/22 14:03
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C8-C10	<4.68	mg/Kg	4.68	100	07/11/22 22:18	HRS	L626336
Surrogate: 2,5-Dibromotoluene	91.5		Limits: 50-150%	100	07/11/22 22:18	HRS	MAVPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 08/02/2022
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Amy Jackson
 Project Manager

Report Number : **22-179-0021**

REPORT OF ANALYSIS

Lab No : **70544**
 Sample ID : **SB-22 (0-2)**

Matrix: **Solids**
 Sampled: **6/23/2022 15:20**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	39.7	%		1	07/08/22 08:40	BXH	SW-DRYWT
Oil & Grease	<0.10	%	0.10	1	07/07/22 12:00	APB	29B

Analytical Method: MAEPH LA **Prep Batch(es):** **L625418** 07/07/22 07:00
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/18/22 12:48	MMK	L627112
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/18/22 12:48	MMK	L627112
Aliphatic >C12-C16	<2.00	mg/Kg	2.00	1	07/18/22 12:48	MMK	L627112
Aromatic >C12-C16	<2.00	mg/Kg	2.00	1	07/18/22 12:48	MMK	L627112
Aromatic >C16-C21	<2.00	mg/Kg	2.00	1	07/18/22 12:48	MMK	L627112
Aliphatic >C16-C35	5.36	mg/Kg	4.00	1	07/18/22 12:48	MMK	L627112
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/18/22 12:48	MMK	L627112

Surrogate: Chlorooctadecane 60.5 Limits: 40-140% 1 07/18/22 12:48 MMK MAEPH LA
 Surrogate: OTP Surrogate 58.3 Limits: 40-140% 1 07/18/22 12:48 MMK MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** **L626335** 07/11/22 14:03
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<3.58	mg/Kg	3.58	100	07/11/22 23:00	HRS	L626336
Aliphatic >C8-C10	<7.16	mg/Kg	7.16	100	07/11/22 23:00	HRS	L626336

Qualifiers/Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit

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Project August Levert
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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70544**
Sample ID : **SB-22 (0-2)**

Matrix: **Solids**
Sampled: **6/23/2022 15:20**

Analytical Method: MAVPH LA **Prep Batch(es):** L626335 07/11/22 14:03
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C8-C10	<4.77	mg/Kg	4.77	100	07/11/22 23:00	HRS	L626336
Surrogate: 2,5-Dibromotoluene	83.7		Limits: 50-150%	100	07/11/22 23:00	HRS	MAVPH LA

Qualifiers/Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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Report Date : 08/02/2022
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Amy Jackson
 Project Manager

Report Number : 22-179-0021

REPORT OF ANALYSIS

Lab No : 70545
 Sample ID : SB-23 (0-2)

Matrix: Solids
 Sampled: 6/23/2022 15:25

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	36.2	%		1	07/08/22 09:05	BXH	SW-DRYWT
Oil & Grease	<0.10	%	0.10	1	07/07/22 12:00	APB	29B

Analytical Method: MAEPH LA **Prep Batch(es):** L625418 07/07/22 07:00
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/19/22 11:32	MMK	L627112
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/19/22 04:06	MMK	L627112
Aliphatic >C12-C16	<2.00	mg/Kg	2.00	1	07/19/22 11:32	MMK	L627112
Aromatic >C12-C16	<2.00	mg/Kg	2.00	1	07/19/22 04:06	MMK	L627112
Aromatic >C16-C21	<2.00	mg/Kg	2.00	1	07/19/22 04:06	MMK	L627112
Aliphatic >C16-C35	13.5	mg/Kg	4.00	1	07/19/22 11:32	MMK	L627112
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/19/22 04:06	MMK	L627112

Surrogate: Chlorooctadecane 105 Limits: 40-140% 1 07/19/22 11:32 MMK MAEPH LA
 Surrogate: OTP Surrogate 77.7 Limits: 40-140% 1 07/19/22 04:06 MMK MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** L626335 07/11/22 14:03
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<2.99	mg/Kg	2.99	100	07/11/22 23:41	HRS	L626336
Aliphatic >C8-C10	<5.98	mg/Kg	5.98	100	07/11/22 23:41	HRS	L626336

Qualifiers/Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit

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Project August Levert
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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70545**
Sample ID : **SB-23 (0-2)**

Matrix: **Solids**
Sampled: **6/23/2022 15:25**

Analytical Method: MAVPH LA **Prep Batch(es):** L626335 07/11/22 14:03
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C8-C10	<3.98	mg/Kg	3.98	100	07/11/22 23:41	HRS	L626336
Surrogate: 2,5-Dibromotoluene	95.5		Limits: 50-150%	100	07/11/22 23:41	HRS	MAVPH LA

Qualifiers/Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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Amy Jackson
 Project Manager

Report Number : **22-179-0021**

REPORT OF ANALYSIS

Lab No : **70546**
 Sample ID : **SB-24 (0-2)**

Matrix: **Solids**
 Sampled: **6/23/2022 15:30**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	38.9	%		1	07/08/22 09:05	BXH	SW-DRYWT
Oil & Grease	<0.10	%	0.10	1	07/07/22 12:00	APB	29B

Analytical Method: MAEPH LA **Prep Batch(es):** **L625418** 07/07/22 07:00
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	07/19/22 11:55	MMK	L627112
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	07/19/22 03:42	MMK	L627112
Aliphatic >C12-C16	<2.00	mg/Kg	2.00	1	07/19/22 11:55	MMK	L627112
Aromatic >C12-C16	<2.00	mg/Kg	2.00	1	07/19/22 03:42	MMK	L627112
Aromatic >C16-C21	<2.00	mg/Kg	2.00	1	07/19/22 03:42	MMK	L627112
Aliphatic >C16-C35	5.88	mg/Kg	4.00	1	07/19/22 11:55	MMK	L627112
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	07/19/22 03:42	MMK	L627112

Surrogate: Chlorooctadecane 62.0 Limits: 40-140% 1 07/19/22 11:55 MMK MAEPH LA
 Surrogate: OTP Surrogate 66.3 Limits: 40-140% 1 07/19/22 03:42 MMK MAEPH LA

Analytical Method: MAVPH LA **Prep Batch(es):** **L626335** 07/11/22 14:03
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<3.11	mg/Kg	3.11	100	07/12/22 00:22	HRS	L626336
Aliphatic >C8-C10	<6.21	mg/Kg	6.21	100	07/12/22 00:22	HRS	L626336

Qualifiers/Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit



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 Bayou Sorrel, LA

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Report Number : 22-179-0021

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : 70546
 Sample ID : SB-24 (0-2)

Matrix: Solids
 Sampled: 6/23/2022 15:30

Analytical Method: MAVPH LA **Prep Batch(es):** L626335 07/11/22 14:03
Prep Method: MAVPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C8-C10	<4.14	mg/Kg	4.14	100	07/12/22 00:22	HRS	L626336
Surrogate: 2,5-Dibromotoluene	87.4		Limits: 50-150%	100	07/12/22 00:22	HRS	MAVPH LA

Qualifiers/ Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **70547**
 Sample ID : **HA-01R (2-4)**

Matrix: **Solids**
 Sampled: **6/23/2022 14:55**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	57.4	%		1	07/08/22 09:05	BXH	SW-DRYWT
% Saturation (Sat Paste)	129	%		1	07/11/22 10:40	JMB	29B
Sodium Adsorption Ratio (Sat Paste)	9.32	Calc	0.164	10	07/12/22 10:07		29B
Calcium (Sat Paste)	1.62	meq/L	0.500	10	07/12/22 11:21	BMB	29B
Magnesium (Sat Paste)	0.672	meq/L	0.164	2	07/12/22 11:37	BMB	29B
Sodium (Sat Paste)	9.98	meq/L	0.430	10	07/12/22 10:07	BMB	29B

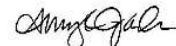
Qualifiers/ Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit

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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70548**
Sample ID : **Trip Blank**

Matrix: **Aqueous**
Sampled: **6/21/2022 7:00**

Analytical Method: MAVPH LA **Prep Batch(es):** L625592 07/05/22 16:19
Prep Method: MAVPH LA (Aqueous)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<0.015	mg/L	0.015	1	07/05/22 19:04	HRS	L625593
Aliphatic >C8-C10	<0.030	mg/L	0.030	1	07/05/22 19:04	HRS	L625593
Aromatic >C8-C10	<0.020	mg/L	0.020	1	07/05/22 19:04	HRS	L625593
Surrogate: 2,5-Dibromotoluene	102		Limits: 50-150%	1	07/05/22 19:04	HRS	MAVPH LA

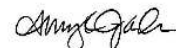
Qualifiers/Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70549**
Sample ID : **Field Blank**

Matrix: **Aqueous**
Sampled: **6/21/2022 8:00**

Analytical Method: MAVPH LA **Prep Batch(es):** L625592 07/05/22 16:19
Prep Method: MAVPH LA (Aqueous)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<0.015	mg/L	0.015	1	07/05/22 19:45	HRS	L625593
Aliphatic >C8-C10	<0.030	mg/L	0.030	1	07/05/22 19:45	HRS	L625593
Aromatic >C8-C10	<0.020	mg/L	0.020	1	07/05/22 19:45	HRS	L625593
Surrogate: 2,5-Dibromotoluene	92.1		Limits: 50-150%	1	07/05/22 19:45	HRS	MAVPH LA

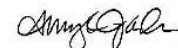
Qualifiers/Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Bayou Sorrel, LA

Report Date : 08/02/2022
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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70550**
Sample ID : **Field Blank**

Matrix: **Aqueous**
Sampled: **6/22/2022 8:00**

Analytical Method: MAVPH LA **Prep Batch(es):** L625592 07/05/22 16:19
Prep Method: MAVPH LA (Aqueous)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<0.015	mg/L	0.015	1	07/05/22 23:11	HRS	L625593
Aliphatic >C8-C10	<0.030	mg/L	0.030	1	07/05/22 23:11	HRS	L625593
Aromatic >C8-C10	<0.020	mg/L	0.020	1	07/05/22 23:11	HRS	L625593
Surrogate: 2,5-Dibromotoluene	98.2		Limits: 50-150%	1	07/05/22 23:11	HRS	MAVPH LA

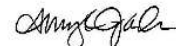
Qualifiers/Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	

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Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
Project Manager

Lab No : **70551**
Sample ID : **Field Blank**

Matrix: **Aqueous**
Sampled: **6/23/2022 8:00**

Analytical Method: MAVPH LA **Prep Batch(es):** L625592 07/05/22 16:19
Prep Method: MAVPH LA (Aqueous)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C6-C8	<0.015	mg/L	0.015	1	07/05/22 23:52	HRS	L625593
Aliphatic >C8-C10	<0.030	mg/L	0.030	1	07/05/22 23:52	HRS	L625593
Aromatic >C8-C10	<0.020	mg/L	0.020	1	07/05/22 23:52	HRS	L625593
Surrogate: 2,5-Dibromotoluene	78.3		Limits: 50-150%	1	07/05/22 23:52	HRS	MAVPH LA

Qualifiers/Definitions				
*	Outside QC Limit	B	Analyte detected in blank	
DF	Dilution Factor	I	Recovery out of range	
J	Estimated value	MQL	Method Quantitation Limit	



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REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **71729**
 Sample ID : **SB-03 (0-2)**

Matrix: **TCLP**
 Sampled: **6/21/2022 11:40**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
SPLP Extraction	Leachate			1	07/25/22 16:00	PHE	1312
SPLP Barium	5.06	mg/L	0.0277	1	07/26/22 19:52	TJS	6010D
SPLP Chromium	0.0522	mg/L	0.0111	1	07/26/22 19:52	EAL	6010D
SPLP Lead	0.0202	mg/L	0.0111	1	07/26/22 19:52	EAL	6010D

Qualifiers/ Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit



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Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 08/02/2022
 Received : 06/28/2022

Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **71730**
 Sample ID : **SB-04 (0-2)**

Matrix: **TCLP**
 Sampled: **6/21/2022 12:10**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
SPLP Extraction	Leachate			1	07/25/22 16:00	PHE	1312
SPLP Arsenic	<0.0277	mg/L	0.0277	1	07/29/22 13:28		6010D
SPLP Barium	3.63	mg/L	0.0277	1	07/29/22 13:28	KAL	6010D
SPLP Chromium	0.118	mg/L	0.0111	1	07/29/22 13:28	KAL	6010D
SPLP Lead	0.0860	mg/L	0.0111	1	07/29/22 13:28	KAL	6010D

Qualifiers/ Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit



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09996

Hydro-Environmental Technology, Inc.
 Mr. Stewart Stover, Jr.
 91 Apollo Rd
 Scott , LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 08/02/2022
 Received : 06/28/2022

Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **71731**
 Sample ID : **SB-04 (2-4)**

Matrix: **TCLP**
 Sampled: **6/21/2022 12:10**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
SPLP Extraction	Leachate			1	07/25/22 16:00	PHE	1312
SPLP Barium	7.10	mg/L	0.0277	1	07/26/22 19:57	TJS	6010D

Qualifiers/ Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit



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Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 08/02/2022
 Received : 06/28/2022

Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **71732**
 Sample ID : **SB-11 (2-4)**

Matrix: **TCLP**
 Sampled: **6/22/2022 13:45**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
SPLP Extraction	Leachate			1	07/25/22 16:00	PHE	1312
SPLP Arsenic	<0.0277	mg/L	0.0277	1	07/26/22 20:02	EAL	6010D
SPLP Barium	22.0	mg/L	0.139	5	07/27/22 17:04	TJS	6010D
SPLP Chromium	0.485	mg/L	0.0111	1	07/26/22 20:02	EAL	6010D
SPLP Lead	0.493	mg/L	0.0111	1	07/26/22 20:02	EAL	6010D

Qualifiers/ Definitions				
*	Outside QC Limit		B	Analyte detected in blank
DF	Dilution Factor		I	Recovery out of range
J	Estimated value		MQL	Method Quantitation Limit



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Project August Levert
 Information : Project Number: 1009.A62
 Bayou Sorrel, LA

Report Date : 08/02/2022
 Received : 06/28/2022

Report Number : **22-179-0021**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **71733**
 Sample ID : **SB-12 (2-4)**

Matrix: **TCLP**
 Sampled: **6/22/2022 14:30**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
SPLP Extraction	Leachate			1	07/25/22 16:00	PHE	1312
SPLP Barium	5.12	mg/L	0.0277	1	07/29/22 13:33	KAL	6010D
SPLP Chromium	0.148	mg/L	0.0111	1	07/29/22 13:33	KAL	6010D
SPLP Lead	0.160	mg/L	0.0111	1	07/29/22 13:33	KAL	6010D

Qualifiers/ Definitions	*	Outside QC Limit	B	Analyte detected in blank
	DF	Dilution Factor	I	Recovery out of range

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0021

QC Prep: L625943 **QC Analytical Batch(es):** L626351
QC Prep Batch Method: LA 29B BA (PREP) **Analysis Method:** 29B
Analysis Description: True Total Barium

Lab Reagent Blank LRB-L625943 Matrix: SOL
Associated Lab Samples: 70494, 70495, 70496, 70497, 70498, 70499, 70500, 70501, 70502, 70503, 70504, 70505, 70506, 70507, 70508, 70509, 70510

Parameter	Units	Blank Result	MQL	Analyzed
True Total Barium	mg/Kg	< 500	500	07/12/22 13:11

Laboratory Control Sample LCS-L625943

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
True Total Barium	mg/Kg	8930	9250	104	80-120

Matrix Spike & Matrix Spike Duplicate A 70004-A74715-MS-L625943 A 70004-A74715-MSD-L625943

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
True Total Barium	mg/Kg	532	8400	9090	9010	9760	101	102	75-125	7.9	20.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0021

QC Prep: L626209 **QC Analytical Batch(es):** L626814
QC Prep Batch Method: LA 29B BA (PREP) **Analysis Method:** 29B
Analysis Description: True Total Barium

Lab Reagent Blank LRB-L626209 Matrix: SOL
Associated Lab Samples: 70511, 70512, 70513, 70514, 70515, 70516, 70517, 70518, 70519, 70520, 70521, 70522, 70523, 70524, 70525, 70526, 70527, 70528, 70529, 70530

Parameter	Units	Blank Result	MQL	Analyzed
True Total Barium	mg/Kg	< 500	500	07/14/22 14:10

Laboratory Control Sample LCS-L626209

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
True Total Barium	mg/Kg	7750	7500	97.0	80-120

Matrix Spike & Matrix Spike Duplicate A 70511-A74932-MS-L626209 A 70511-A74932-MSD-L626209

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
True Total Barium	mg/Kg	2130	8930	9170	10500	10300	94.0	89.0	75-125	1.9	20.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0021

QC Prep: L626210 **QC Analytical Batch(es):** L627037
QC Prep Batch Method: LA 29B BA (PREP) **Analysis Method:** 29B
Analysis Description: True Total Barium

Lab Reagent Blank LRB-L626210 Matrix: SOL
Associated Lab Samples: 70531, 70532, 70533, 70534, 70535, 70536, 70537, 70538

Parameter	Units	Blank Result	MQL	Analyzed
True Total Barium	mg/Kg	< 500	500	07/15/22 12:29

Laboratory Control Sample LCS-L626210

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
True Total Barium	mg/Kg	8200	8250	101	80-120

Matrix Spike & Matrix Spike Duplicate A 70531-A74933-MS-L626210 A 70531-A74933-MSD-L626210

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
True Total Barium	mg/Kg	539	9430	8260	9900	8550	99.0	97.0	75-125	14.6	20.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-179-0021

QC Prep: A74935

QC Analytical Batch(es): A75037

QC Prep Batch Method: LA 29B CEC (PREP)

Analysis Method: 29B

Analysis Description: Cation Exchange Capacity

Lab Reagent Blank

LRB-A74935

Matrix: SOL

Associated Lab Samples: 70494, 70495, 70496, 70497, 70498, 70499, 70500, 70501, 70502, 70503, 70504, 70505, 70506, 70507, 70508, 70509, 70510

Parameter	Units	Blank Result	ML	Analyzed
Total Sodium CEC	mg/Kg	< 100	100	07/12/22 09:17

Duplicate

A 70503-A74932-DUP-A74935

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Total Sodium CEC	mg/Kg	12400	12500	0.8	30.0	07/12/22 09:29

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-179-0021

QC Prep: A74940

QC Analytical Batch(es): A75038

QC Prep Batch Method: 29B

Analysis Method: 29B

Analysis Description: Exchangeable Sodium Percentage

Duplicate A 70503-A74932-DUP-A74940

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Total Sodium ESP	meq/100g	0.494	0.489	1.0	30.0	07/12/22 09:40

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0021

QC Analytical Batch: A74854
Analysis Method: 29B
Analysis Description: Soxhlet Oil and Grease

Lab Reagent Blank LRB Matrix: SOL
Associated Lab Samples: 70494, 70495, 70496, 70497, 70498, 70499, 70500, 70501, 70502, 70503, 70504, 70505, 70506, 70507, 70508, 70509, 70510, 70511, 70512, 70513

Parameter	Units	Blank Result	MQL	Analyzed
Oil & Grease	%	< 0.10	0.10	06/29/22 14:22

Laboratory Control Sample LCS

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Oil & Grease	%	1.18	1.18	100	70-130

Duplicate A 70494-DUP

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Oil & Grease	%	< 0.10	< 0.10	0.0	35.0	06/29/22 14:22

Duplicate A 70504-DUP

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Oil & Grease	%	< 0.10	< 0.10	0.0	35.0	06/29/22 14:22

Matrix Spike A 70494-MS

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	%Rec Limits	Max RPD
Oil & Grease	%	< 0.10	2.03		2.01		99.0	50-150	

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-179-0021

QC Analytical Batch: A74854
Analysis Method: 29B
Analysis Description: Soxhlet Oil and Grease

Matrix Spike A 70504-MS

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	%Rec Limits	Max RPD
Oil & Grease	%	< 0.10	1.72		1.75		102	50-150	

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0021

QC Analytical Batch: A74868
Analysis Method: 29B
Analysis Description: Soxhlet Oil and Grease

Lab Reagent Blank LRB Matrix: SOL
Associated Lab Samples: 70514, 70515, 70516, 70517, 70518, 70519, 70520, 70521, 70522, 70523, 70524, 70525, 70526, 70527, 70528, 70529, 70530, 70531, 70532, 70533

Parameter	Units	Blank Result	MQL	Analyzed
Oil & Grease	%	< 0.10	0.10	07/01/22 13:48

Laboratory Control Sample LCS

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Oil & Grease	%	1.16	1.12	97.0	70-130

Duplicate A 70514-DUP

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Oil & Grease	%	< 0.10	< 0.10	0.0	35.0	07/01/22 13:48

Duplicate A 70524-DUP

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Oil & Grease	%	< 0.10	< 0.10	0.0	35.0	07/01/22 13:48

Matrix Spike A 70514-MS

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	%Rec Limits	Max RPD
Oil & Grease	%	< 0.10	2.03		1.91		94.0	50-150	

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-179-0021

QC Analytical Batch: A74868

Analysis Method: 29B

Analysis Description: Soxhlet Oil and Grease

Matrix Spike A 70524-MS

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	%Rec Limits	Max RPD
Oil & Grease	%	< 0.10	1.80		1.80		100	50-150	

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0021

QC Analytical Batch: A74965
Analysis Method: 29B
Analysis Description: Soxhlet Oil and Grease

Lab Reagent Blank LRB Matrix: SOL
Associated Lab Samples: 70534, 70535, 70536, 70537, 70538, 70539, 70540, 70541, 70542, 70543, 70544, 70545, 70546

Parameter	Units	Blank Result	MQL	Analyzed
Oil & Grease	%	< 0.10	0.10	07/07/22 12:00

Laboratory Control Sample

LCS

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Oil & Grease	%	1.15	1.15	100	70-130

Duplicate A 70534-DUP

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Oil & Grease	%	< 0.10	< 0.10	0.0	35.0	07/07/22 12:00

Duplicate A 70544-DUP

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Oil & Grease	%	< 0.10	< 0.10	0.0	35.0	07/07/22 12:00

Matrix Spike A 70534-MS

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	%Rec Limits	Max RPD
Oil & Grease	%	< 0.10	1.79		1.83		102	50-150	

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-179-0021

QC Analytical Batch: A74965
Analysis Method: 29B
Analysis Description: Soxhlet Oil and Grease

Matrix Spike A 70544-MS

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	%Rec Limits	Max RPD
Oil & Grease	%	< 0.10	1.61		1.64		102	50-150	

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-179-0021

QC Prep: A74937

QC Analytical Batch(es): A75001,A75054,A75003,A75005

QC Prep Batch Method: 29B

Analysis Method: 29B

Analysis Description: Alkalinity

Duplicate A 70500-A74932-DUP-A74937

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Alkalinity (Sat Paste)	meq/L	4.0	4.1	2.4	30.0	07/12/22 12:39

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-179-0021

QC Prep: A74937

QC Analytical Batch(es): A75001,A75054,A75003,A75005

QC Prep Batch Method: 29B

Analysis Method: 29B

Analysis Description: Anions by Ion Chromatography

Duplicate A 70500-A74932-DUP-A74937

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Bromide (Sat Paste)	meq/L	< 0.050	< 0.050	0.0	30.0	07/12/22 20:24
Chloride (Sat Paste)	meq/L	1.24	1.26	1.6	30.0	07/12/22 20:24
Sulfate (Sat Paste)	meq/L	0.492	0.484	1.6	30.0	07/12/22 20:24

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-179-0021

QC Prep: A74937

QC Analytical Batch(es): A75001,A75054,A75003,A75005

QC Prep Batch Method: 29B

Analysis Method: 29B

Analysis Description: Saturated Paste Extraction

Duplicate A 70500-A74932-DUP-A74937

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
% Saturation (Sat Paste)	%	67.7	65.6	3.1	30.0	07/11/22 10:40
Electrical Conductivity (Sat Paste)	nmhos/cm	0.768	0.816	6.0	30.0	07/11/22 10:40
pH (Sat Paste)	s.u.	7.81	7.72	1.1	30.0	07/11/22 10:40

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-179-0021

QC Prep: A74937	QC Analytical Batch(es): A75001,A75054,A75003,A75005
QC Prep Batch Method: 29B	Analysis Method: 29B
	Analysis Description: Saturated Paste Extraction

Duplicate A 70500-A74932-DUP-A74937

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Calcium (Sat Paste)	meq/L	4.26	4.48	5.0	30.0	07/12/22 11:10
Magnesium (Sat Paste)	meq/L	1.43	1.54	7.4	30.0	07/12/22 10:33
Sodium (Sat Paste)	meq/L	1.95	2.07	5.9	30.0	07/12/22 09:56

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-179-0021

QC Prep: L626040

QC Analytical Batch(es): L626848

QC Prep Batch Method: 3050B

Analysis Method: 6010D

Analysis Description: Metals Analysis

Lab Reagent Blank

LRB-L626040

Matrix: SOL

Associated Lab Samples: 70494, 70495, 70496, 70497, 70498, 70499, 70500, 70501, 70502, 70503, 70504, 70505, 70506, 70507, 70508, 70509, 70510, 70511, 70512, 70513

Parameter	Units	Blank Result	MQL	Analyzed
Total Arsenic	mg/Kg AR	< 2.00	2.00	07/14/22 11:57
Total Barium	mg/Kg AR	< 0.999	0.999	07/14/22 11:57
Total Cadmium	mg/Kg AR	< 0.199	0.199	07/14/22 11:57
Total Chromium	mg/Kg AR	< 0.499	0.499	07/14/22 11:57
Total Lead	mg/Kg AR	< 0.599	0.599	07/14/22 11:57
Total Selenium	mg/Kg AR	< 0.999	0.999	07/14/22 11:57
Total Silver	mg/Kg AR	< 0.499	0.499	07/14/22 11:57
Total Zinc	mg/Kg AR	< 2.50	2.50	07/14/22 11:57

Laboratory Control Sample

LCS-L626040

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Total Arsenic	mg/Kg AR	10.0	10.5	105	80-120
Total Barium	mg/Kg AR	100	102	102	80-120
Total Cadmium	mg/Kg AR	10.0	10.2	102	80-120
Total Chromium	mg/Kg AR	100	107	107	80-120
Total Lead	mg/Kg AR	10.0	10.4	104	80-120
Total Selenium	mg/Kg AR	10.0	9.80	98.0	80-120
Total Silver	mg/Kg AR	10.0	10.2	102	80-120
Total Zinc	mg/Kg AR	100	104	104	80-120

Matrix Spike & Matrix Spike Duplicate

A 70513-A74932-MS-L626040

A 70513-A74932-MSD-L626040

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Total Arsenic	mg/Kg AR	< 2.00	3.58	3.64	4.85	4.85	83.0	82.0	75-125	0.0	20.0
Total Barium	mg/Kg AR	66.7	35.8	36.4	77.8	72.4	31.0*	16.0*	75-125	7.1	20.0

* QC Fail

Date: 08/02/2022 02:14 PM

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Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-179-0021

QC Prep: L626040

QC Analytical Batch(es): L626848

QC Prep Batch Method: 3050B

Analysis Method: 6010D

Analysis Description: Metals Analysis

Matrix Spike & Matrix Spike Duplicate A 70513-A74932-MS-L626040 A 70513-A74932-MSD-L626040

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Total Cadmium	mg/Kg AR	< 0.200	3.58	3.64	2.93	3.00	78.0	78.0	75-125	2.3	20.0
Total Chromium	mg/Kg AR	6.91	35.8	36.4	36.5	37.1	83.0	83.0	75-125	1.6	20.0
Total Lead	mg/Kg AR	5.27	3.58	3.64	7.88	8.25	73.0*	82.0	75-125	4.5	20.0
Total Selenium	mg/Kg AR	< 1.00	3.58	3.64	3.17	3.23	89.0	89.0	75-125	1.8	20.0
Total Silver	mg/Kg AR	< 0.500	3.58	3.64	3.00	3.11	84.0	85.0	75-125	3.6	20.0
Total Zinc	mg/Kg AR	19.3	35.8	36.4	46.7	47.6	77.0	78.0	75-125	1.9	20.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0021

QC Prep: L626041 **QC Analytical Batch(es):** L626480
QC Prep Batch Method: 3050B **Analysis Method:** 6010D
Analysis Description: Metals Analysis

Lab Reagent Blank LRB-L626041 Matrix: SOL
Associated Lab Samples: 70514, 70515, 70516, 70517, 70518, 70519, 70520, 70521, 70522, 70523, 70524, 70525, 70526, 70527, 70528, 70529, 70530, 70531, 70532, 70533

Parameter	Units	Blank Result	MQL	Analyzed
Total Arsenic	mg/Kg AR	< 2.00	2.00	07/12/22 23:57
Total Barium	mg/Kg AR	< 0.999	0.999	07/12/22 23:57
Total Cadmium	mg/Kg AR	< 0.199	0.199	07/12/22 23:57
Total Chromium	mg/Kg AR	< 0.499	0.499	07/12/22 23:57
Total Lead	mg/Kg AR	< 0.599	0.599	07/12/22 23:57
Total Selenium	mg/Kg AR	< 0.999	0.999	07/12/22 23:57
Total Silver	mg/Kg AR	< 0.499	0.499	07/12/22 23:57
Total Zinc	mg/Kg AR	< 2.50	2.50	07/12/22 23:57

Laboratory Control Sample LCS-L626041

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Total Arsenic	mg/Kg AR	10.0	11.1	111	80-120
Total Barium	mg/Kg AR	100	106	106	80-120
Total Cadmium	mg/Kg AR	10.0	10.5	105	80-120
Total Chromium	mg/Kg AR	100	109	109	80-120
Total Lead	mg/Kg AR	10.0	10.9	109	80-120
Total Selenium	mg/Kg AR	10.0	10.3	103	80-120
Total Silver	mg/Kg AR	10.0	10.5	105	80-120
Total Zinc	mg/Kg AR	100	108	108	80-120

Matrix Spike & Matrix Spike Duplicate A 70533-A74933-MS-L626041 A 70533-A74933-MSD-L626041

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Total Arsenic	mg/Kg AR	3.47	5.52	5.62	8.40	8.48	89.0	89.0	75-125	0.9	20.0
Total Barium	mg/Kg AR	173	55.2	56.2	234	228	111	98.0	75-125	2.5	20.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-179-0021

QC Prep: L626041

QC Analytical Batch(es): L626480

QC Prep Batch Method: 3050B

Analysis Method: 6010D

Analysis Description: Metals Analysis

Matrix Spike & Matrix Spike Duplicate A 70533-A74933-MS-L626041 A 70533-A74933-MSD-L626041

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Total Cadmium	mg/Kg AR	0.254	5.52	5.62	4.98	5.12	86.0	87.0	75-125	2.7	20.0
Total Chromium	mg/Kg AR	11.9	55.2	56.2	62.7	64.9	92.0	94.0	75-125	3.4	20.0
Total Lead	mg/Kg AR	9.43	5.52	5.62	14.5	14.9	92.0	97.0	75-125	2.7	20.0
Total Selenium	mg/Kg AR	< 1.00	5.52	5.62	4.26	4.35	77.0	77.0	75-125	2.0	20.0
Total Silver	mg/Kg AR	< 0.500	5.52	5.62	4.88	5.05	88.0	90.0	75-125	3.4	20.0
Total Zinc	mg/Kg AR	45.3	55.2	56.2	93.3	98.4	87.0	95.0	75-125	5.3	20.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-179-0021

QC Prep: L626042

QC Analytical Batch(es): L626480

QC Prep Batch Method: 3050B

Analysis Method: 6010D

Analysis Description: Metals Analysis

Lab Reagent Blank

LRB-L626042

Matrix: SOL

Associated Lab Samples: 70534, 70535, 70536, 70537, 70538

Parameter	Units	Blank Result	MQL	Analyzed
Total Arsenic	mg/Kg AR	< 2.00	2.00	07/13/22 02:40
Total Barium	mg/Kg AR	< 0.999	0.999	07/13/22 02:40
Total Cadmium	mg/Kg AR	< 0.199	0.199	07/13/22 02:40
Total Chromium	mg/Kg AR	< 0.499	0.499	07/13/22 02:40
Total Lead	mg/Kg AR	< 0.599	0.599	07/13/22 02:40
Total Selenium	mg/Kg AR	< 0.999	0.999	07/13/22 02:40
Total Silver	mg/Kg AR	< 0.499	0.499	07/13/22 02:40
Total Zinc	mg/Kg AR	< 2.50	2.50	07/13/22 02:40

Laboratory Control Sample

LCS-L626042

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Total Arsenic	mg/Kg AR	10.0	11.2	112	80-120
Total Barium	mg/Kg AR	100	105	105	80-120
Total Cadmium	mg/Kg AR	10.0	10.3	103	80-120
Total Chromium	mg/Kg AR	100	110	110	80-120
Total Lead	mg/Kg AR	10.0	10.6	106	80-120
Total Selenium	mg/Kg AR	10.0	10.1	101	80-120
Total Silver	mg/Kg AR	10.0	10.5	105	80-120
Total Zinc	mg/Kg AR	100	106	106	80-120

Matrix Spike & Matrix Spike Duplicate

A 70538-A74934-MS-L626042

A 70538-A74934-MSD-L626042

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Total Arsenic	mg/Kg AR	2.18	5.52	5.43	6.76	6.41	83.0	78.0	75-125	5.3	20.0
Total Barium	mg/Kg AR	147	55.2	54.3	204	197	103	92.0	75-125	3.4	20.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-179-0021

QC Prep: L626042

QC Analytical Batch(es): L626480

QC Prep Batch Method: 3050B

Analysis Method: 6010D

Analysis Description: Metals Analysis

Matrix Spike & Matrix Spike Duplicate A 70538-A74934-MS-L626042 A 70538-A74934-MSD-L626042

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Total Cadmium	mg/Kg AR	0.272	5.52	5.43	5.03	4.84	86.0	84.0	75-125	3.8	20.0
Total Chromium	mg/Kg AR	9.76	55.2	54.3	61.8	60.2	94.0	93.0	75-125	2.6	20.0
Total Lead	mg/Kg AR	8.40	5.52	5.43	13.6	13.5	94.0	94.0	75-125	0.7	20.0
Total Selenium	mg/Kg AR	< 1.00	5.52	5.43	5.28	5.25	96.0	97.0	75-125	0.5	20.0
Total Silver	mg/Kg AR	< 0.500	5.52	5.43	4.94	4.80	89.0	88.0	75-125	2.8	20.0
Total Zinc	mg/Kg AR	29.2	55.2	54.3	80.1	77.3	92.0	89.0	75-125	3.5	20.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0021

QC Prep: L628704 **QC Analytical Batch(es):** L628811,L629054
QC Prep Batch Method: 3015A **Analysis Method:** 6010D
Analysis Description: Metals Analysis (SPLP)

Lab Reagent Blank LRB-L628704 Matrix: TCL
Associated Lab Samples: 71729, 71731, 71732

Parameter	Units	Blank Result	MQL	Analyzed
SPLP Arsenic	mg/L	< 0.0056	0.0250	07/26/22 19:06
SPLP Barium	mg/L	< 0.0040	0.0250	07/26/22 19:06
SPLP Chromium	mg/L	0.0046	0.0100	07/26/22 19:06
SPLP Lead	mg/L	< 0.0024	0.0100	07/26/22 19:06

Laboratory Control Sample LCS-L628704

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
SPLP Arsenic	mg/L	0.100	0.109	109	80-120
SPLP Barium	mg/L	1.00	1.07	107	80-120
SPLP Chromium	mg/L	1.00	1.12	112	80-120
SPLP Lead	mg/L	0.100	0.106	106	80-120

Matrix Spike & Matrix Spike Duplicate A 71732-MS-L628704 A 71732-MSD-L628704

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
SPLP Arsenic	mg/L	< 0.0284	0.568	0.568	0.617	0.605	105	103	75-125	1.9	20.0
SPLP Barium	mg/L	22.0	5.68	5.68	27.8	27.3	102	93.0	75-125	1.8	20.0
SPLP Chromium	mg/L	0.485	5.68	5.68	6.17	6.19	100	100	75-125	0.3	20.0
SPLP Lead	mg/L	0.493	0.568	0.568	1.06	1.05	100	98.0	75-125	0.9	20.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0021

QC Prep: L629363 **QC Analytical Batch(es):** L629438
QC Prep Batch Method: 3015A **Analysis Method:** 6010D
Analysis Description: Metals Analysis (SPLP)

Lab Reagent Blank LRB-L629363 Matrix: TCL
Associated Lab Samples: 71730, 71733

Parameter	Units	Blank Result	MQL	Analyzed
SPLP Arsenic	mg/L	< 0.0056	0.0250	07/29/22 13:17
SPLP Barium	mg/L	< 0.0040	0.0250	07/29/22 13:17
SPLP Chromium	mg/L	< 0.0038	0.0100	07/29/22 13:17
SPLP Lead	mg/L	< 0.0024	0.0100	07/29/22 13:17

Laboratory Control Sample LCS-L629363

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
SPLP Arsenic	mg/L	0.100	0.101	101	80-120
SPLP Barium	mg/L	1.00	1.03	103	80-120
SPLP Chromium	mg/L	1.00	1.08	108	80-120
SPLP Lead	mg/L	0.100	0.103	103	80-120

Matrix Spike & Matrix Spike Duplicate L 92336-MS-L629363 L 92336-MSD-L629363

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
SPLP Arsenic	mg/L	< 0.250	5.00	5.00	5.11	5.09	102	102	75-125	0.3	20.0
SPLP Barium	mg/L	1.11	50.0	50.0	50.8	51.1	99.0	100	75-125	0.5	20.0
SPLP Chromium	mg/L	< 0.100	50.0	50.0	51.1	52.1	102	104	75-125	1.9	20.0
SPLP Lead	mg/L	< 0.100	5.00	5.00	4.93	4.92	99.0	98.0	75-125	0.2	20.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0021

QC Prep: L626173 **QC Analytical Batch(es):** L626967
QC Prep Batch Method: 7471A **Analysis Method:** 7471A
Analysis Description: Solids Total Mercury Analysis - CVAA

Lab Reagent Blank LRB-L626173 Matrix: SOL
Associated Lab Samples: 70494, 70495, 70496, 70497, 70498, 70499, 70500, 70501, 70502, 70503, 70504, 70505, 70506, 70507, 70508, 70509, 70510, 70511, 70512, 70513

Parameter	Units	Blank Result	MQL	Analyzed
Mercury (Total)	mg/Kg AR	< 0.160	0.160	07/14/22 15:45

Laboratory Control Sample LCS-L626173

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Mercury (Total)	mg/Kg AR	0.400	0.377	94.0	80-120

Matrix Spike & Matrix Spike Duplicate A 70513-A74932-MS-L626173 A 70513-A74932-MSD-L626173

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Mercury (Total)	mg/Kg AR	0.0599	0.133	0.128	0.209	0.205	112	113	80-120	1.9	20.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0021

QC Prep: L626370 **QC Analytical Batch(es):** L627066
QC Prep Batch Method: 7471A **Analysis Method:** 7471A
Analysis Description: Solids Total Mercury Analysis - CVAA

Lab Reagent Blank LRB-L626370 Matrix: SOL
Associated Lab Samples: 70534, 70535, 70536, 70537, 70538

Parameter	Units	Blank Result	MQL	Analyzed
Mercury (Total)	mg/Kg AR	< 0.160	0.160	07/15/22 14:31

Laboratory Control Sample LCS-L626370

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Mercury (Total)	mg/Kg AR	0.400	0.402	101	80-120

Matrix Spike & Matrix Spike Duplicate A 70538-A74934-MS-L626370 A 70538-A74934-MSD-L626370

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Mercury (Total)	mg/Kg AR	0.0326	0.215	0.215	0.174	0.180	66.0*	69.0*	80-120	3.3	20.0

* QC Fail

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0021

QC Prep: L626774 **QC Analytical Batch(es):** L626967
QC Prep Batch Method: 7471A **Analysis Method:** 7471A
Analysis Description: Solids Total Mercury Analysis - CVAA

Lab Reagent Blank LRB-L626774 Matrix: SOL
Associated Lab Samples: 70514, 70515, 70516, 70517, 70518, 70519, 70520, 70521, 70522, 70523, 70524, 70525, 70526, 70527, 70528, 70529, 70530, 70531, 70532, 70533

Parameter	Units	Blank Result	MQL	Analyzed
Mercury (Total)	mg/Kg AR	< 0.160	0.160	07/14/22 14:59

Laboratory Control Sample LCS-L626774

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Mercury (Total)	mg/Kg AR	0.400	0.405	101	80-120

Matrix Spike & Matrix Spike Duplicate A 70533-A74933-MS-L626774 A 70533-A74933-MSD-L626774

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Mercury (Total)	mg/Kg AR	0.0372	0.197	0.202	0.231	0.240	99.0	100	80-120	3.8	20.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0021

QC Prep: L624948 **QC Analytical Batch(es):** L628176
QC Prep Batch Method: 3550B **Analysis Method:** 8270D SIM
Analysis Description: Semivolatile Organic Compounds - GC/MS (SIM)

Lab Reagent Blank LRB-L624948 Matrix: SOL
 Associated Lab Samples: 70498, 70499, 70500, 70501, 70502, 70503, 70504, 70505, 70506, 70507, 70508, 70509, 70510, 70511, 70512, 70515, 70516, 70517, 70518, 70519

Parameter	Units	Blank Result	MQL	Analyzed	% Recovery	% Rec Limits
2-Methylnaphthalene	mg/Kg	<0.000645	0.000670	07/22/22 02:03		
Acenaphthene	mg/Kg	<0.000304	0.000670	07/22/22 02:03		
Acenaphthylene	mg/Kg	<0.000270	0.000670	07/22/22 02:03		
Anthracene	mg/Kg	<0.000334	0.000670	07/22/22 02:03		
Benzo(a)anthracene	mg/Kg	<0.000493	0.000670	07/22/22 02:03		
Benzo(a)pyrene	mg/Kg	<0.000468	0.000670	07/22/22 02:03		
Benzo(b)fluoranthene	mg/Kg	<0.000585	0.000670	07/22/22 02:03		
Benzo(k)fluoranthene	mg/Kg	<0.000437	0.000670	07/22/22 02:03		
Chrysene	mg/Kg	<0.000624	0.000670	07/22/22 02:03		
Dibenz(a,h)anthracene	mg/Kg	<0.000614	0.000670	07/22/22 02:03		
Fluoranthene	mg/Kg	<0.000394	0.000670	07/22/22 02:03		
Fluorene	mg/Kg	<0.000286	0.000670	07/22/22 02:03		
Indeno(1,2,3-cd)pyrene	mg/Kg	<0.000627	0.000670	07/22/22 02:03		
Naphthalene	mg/Kg	<0.000484	0.000670	07/22/22 02:03		
Phenanthrene	mg/Kg	<0.000421	0.000670	07/22/22 02:03		
Pyrene	mg/Kg	<0.000643	0.000670	07/22/22 02:03		
2-Fluorobiphenyl (S)				07/22/22 02:03	79.8	33-115
Nitrobenzene-d5 (S)				07/22/22 02:03	63.0	29-110
4-Terphenyl-d14 (S)				07/22/22 02:03	66.6	33-122

Laboratory Control Sample LCS-L624948

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
2-Methylnaphthalene	mg/Kg	0.167	0.109	65.2	30-130
Benzo(b)fluoranthene	mg/Kg	0.167	0.116	69.4	30-130
Benzo(k)fluoranthene	mg/Kg	0.167	0.106	63.4	30-130
Dibenz(a,h)anthracene	mg/Kg	0.167	0.0807	48.3	30-130

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0021

QC Prep: L624948 **QC Analytical Batch(es):** L628176
QC Prep Batch Method: 3550B **Analysis Method:** 8270D SIM
Analysis Description: Semivolatile Organic Compounds - GC/MS (SIM)

Laboratory Control Sample LCS-L624948

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Fluoranthene	mg/Kg	0.167	0.125	74.8	30-130
Indeno(1,2,3-cd)pyrene	mg/Kg	0.167	0.0819	49.0	30-130
Naphthalene	mg/Kg	0.167	0.102	61.0	30-130
Pyrene	mg/Kg	0.167	0.118	70.6	30-130

Laboratory Control Sample & LCSD LCS-L624948 LCSD-L624948

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS %Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD
Acenaphthene	mg/Kg	0.167	0.117	0.0963	70.0	57.6	30-130	19.4	20
Acenaphthylene	mg/Kg	0.167	0.114	0.110	68.2	65.8	30-130	3.5	20
Anthracene	mg/Kg	0.167	0.107	0.0892	64.0	53.4	30-130	18.1	20
Benzo(a)anthracene	mg/Kg	0.167	0.133	0.118	79.6	70.6	30-130	11.9	20
Benzo(a)pyrene	mg/Kg	0.167	0.123	0.109	73.6	65.2	30-130	12.0	20
Chrysene	mg/Kg	0.167	0.126	0.104	75.4	62.2	30-130	19.1	20
Fluorene	mg/Kg	0.167	0.126	0.129	75.4	77.2	30-130	2.3	20
Phenanthrene	mg/Kg	0.167	0.126	0.104	75.4	62.2	30-130	19.1	20
2-Fluorobiphenyl (S)					59.1	60.0	33-115		
Nitrobenzene-d5 (S)					64.5	49.2	29-110		
4-Terphenyl-d14 (S)					71.1	51.3	33-122		

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0021

QC Prep: L625588 **QC Analytical Batch(es):** L628178
QC Prep Batch Method: 3550B **Analysis Method:** 8270D SIM
Analysis Description: Semivolatile Organic Compounds - GC/MS (SIM)

Lab Reagent Blank LRB-L625588 Matrix: SOL
Associated Lab Samples: 70535, 70536, 70537, 70538, 70539, 70540, 70541, 70542, 70543, 70544, 70545, 70546

Parameter	Units	Blank Result	MQL	Analyzed	% Recovery	% Rec Limits
2-Methylnaphthalene	mg/Kg	<0.000645	0.000670	07/22/22 02:19		
Acenaphthene	mg/Kg	<0.000304	0.000670	07/22/22 02:19		
Acenaphthylene	mg/Kg	<0.000270	0.000670	07/22/22 02:19		
Anthracene	mg/Kg	<0.000334	0.000670	07/22/22 02:19		
Benzo(a)anthracene	mg/Kg	<0.000493	0.000670	07/22/22 02:19		
Benzo(a)pyrene	mg/Kg	<0.000468	0.000670	07/22/22 02:19		
Benzo(b)fluoranthene	mg/Kg	<0.000585	0.000670	07/22/22 02:19		
Benzo(k)fluoranthene	mg/Kg	<0.000437	0.000670	07/22/22 02:19		
Chrysene	mg/Kg	<0.000624	0.000670	07/22/22 02:19		
Dibenz(a,h)anthracene	mg/Kg	<0.000614	0.000670	07/22/22 02:19		
Fluoranthene	mg/Kg	<0.000394	0.000670	07/22/22 02:19		
Fluorene	mg/Kg	<0.000286	0.000670	07/22/22 02:19		
Indeno(1,2,3-cd)pyrene	mg/Kg	<0.000627	0.000670	07/22/22 02:19		
Naphthalene	mg/Kg	<0.000484	0.000670	07/22/22 02:19		
Phenanthrene	mg/Kg	<0.000421	0.000670	07/22/22 02:19		
Pyrene	mg/Kg	<0.000643	0.000670	07/22/22 02:19		
2-Fluorobiphenyl (S)				07/22/22 02:19	48.3	33-115
Nitrobenzene-d5 (S)				07/22/22 02:19	50.1	29-110
4-Terphenyl-d14 (S)				07/22/22 02:19	58.5	33-122

Laboratory Control Sample & LCSD LCS-L625588 LCSD-L625588

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS %Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD
2-Methylnaphthalene	mg/Kg	0.167	0.0796	0.0904	47.6	54.1	30-130	12.7	20
Acenaphthene	mg/Kg	0.167	0.0921	0.104	55.1	62.2	30-130	12.1	20
Acenaphthylene	mg/Kg	0.167	0.0857	0.119	51.3	71.2	30-130	32.5*	20

* QC Fail

Date: 08/02/2022 02:14 PM

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Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0021

QC Prep: L625588 **QC Analytical Batch(es):** L628178
QC Prep Batch Method: 3550B **Analysis Method:** 8270D SIM
Analysis Description: Semivolatile Organic Compounds - GC/MS (SIM)

Laboratory Control Sample & LCSD LCS-L625588 LCSD-L625588

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS %Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD
Anthracene	mg/Kg	0.167	0.0923	0.0985	55.2	58.9	30-130	6.4	20
Benzo(a)anthracene	mg/Kg	0.167	0.118	0.117	70.6	70.0	30-130	0.8	20
Benzo(a)pyrene	mg/Kg	0.167	0.0960	0.114	57.4	68.2	30-130	17.1	20
Benzo(b)fluoranthene	mg/Kg	0.167	0.103	0.116	61.6	69.4	30-130	11.8	20
Benzo(k)fluoranthene	mg/Kg	0.167	0.0951	0.101	56.9	60.4	30-130	6.0	20
Chrysene	mg/Kg	0.167	0.108	0.125	64.6	74.8	30-130	14.5	20
Dibenz(a,h)anthracene	mg/Kg	0.167	0.0753	0.103	45.0	61.6	30-130	31.0*	20
Fluoranthene	mg/Kg	0.167	0.108	0.0943	64.6	56.4	30-130	13.5	20
Fluorene	mg/Kg	0.167	0.112	0.107	67.0	64.0	30-130	4.5	20
Indeno(1,2,3-cd)pyrene	mg/Kg	0.167	0.0758	0.0815	45.3	48.8	30-130	7.2	20
Naphthalene	mg/Kg	0.167	0.0775	0.0947	46.4	56.7	30-130	19.9	20
Phenanthrene	mg/Kg	0.167	0.106	0.118	63.4	70.6	30-130	10.7	20
Pyrene	mg/Kg	0.167	0.0995	0.0849	59.5	50.8	30-130	15.8	20
2-Fluorobiphenyl (S)					45.6	48.6	33-115		
Nitrobenzene-d5 (S)					49.2	50.1	29-110		
4-Terphenyl-d14 (S)					66.3	56.7	33-122		

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0021

QC Prep: A74921 **QC Analytical Batch(es):** A74984
QC Prep Batch Method: SW-9056 (PREP) **Analysis Method:** 9056
Analysis Description: Anions by Ion Chromatography

Lab Reagent Blank LRB-A74921 Matrix: SOL
Associated Lab Samples: 70494, 70495, 70496, 70497, 70498, 70499, 70500, 70501, 70502, 70503, 70504, 70505, 70506, 70507, 70508, 70509, 70510

Parameter	Units	Blank Result	MQL	Analyzed
Bromide (Br)	mg/Kg	< 2.00	2.00	07/12/22 16:38
Chloride	mg/Kg	< 4.00	4.00	07/12/22 16:38

Laboratory Control Sample LCS-A74921

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Bromide (Br)	mg/Kg	125	121	96.8	80-120
Chloride	mg/Kg	500	500	100	80-120

Matrix Spike & Matrix Spike Duplicate A 70494-MS-A74921 A 70494-MSD-A74921

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Bromide (Br)	mg/Kg	< 2.00	107	106	107	107	100	101	80-120	0.0	15.0
Chloride	mg/Kg	16.7	427	424	455	453	103	103	80-120	0.4	15.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0021

QC Prep: L624846 **QC Analytical Batch(es):** L625934
QC Prep Batch Method: MAEPH LA (Soil) **Analysis Method:** MAEPH LA
Analysis Description: MADEP EPH Rev 1.1

Lab Reagent Blank LRB-L624846 Matrix: SOL
 Associated Lab Samples: 70498, 70499, 70500, 70501, 70502, 70503, 70504, 70505, 70506, 70507, 70508, 70509, 70510, 70511, 70512, 70513, 70514, 70515

Parameter	Units	Blank Result	MQL	Analyzed	% Recovery	% Rec Limits
Aliphatic >C10-C12	mg/Kg	<1.00	2.00	07/11/22 17:44		
Aliphatic >C12-C16	mg/Kg	<1.00	2.00	07/11/22 17:44		
Aliphatic >C16-C35	mg/Kg	<2.00	4.00	07/11/22 17:44		
Aromatic >C10-C12	mg/Kg	<0.500	1.00	07/11/22 18:08		
Aromatic >C12-C16	mg/Kg	<1.00	2.00	07/11/22 18:08		
Aromatic >C16-C21	mg/Kg	<1.00	2.00	07/11/22 18:08		
Aromatic >C21-C35	mg/Kg	<1.00	2.00	07/11/22 18:08		
Chlorooctadecane (S)				07/11/22 17:44	57.9	40-140
OTP Surrogate (S)				07/11/22 18:08	68.2	40-140

Laboratory Control Sample & LCSD LCS-L624846 LCSD-L624846

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS %Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD
Aliphatic >C12-C16	mg/Kg	3.33	2.38	2.00	71.4	60.0	40-140	17.3	25
Aliphatic >C16-C35	mg/Kg	10.0	6.58	8.24	65.8	82.4	40-140	22.4	25
Aromatic >C10-C12	mg/Kg	3.33	2.50	1.96	75.0	58.8	40-140	24.2	25
Aromatic >C12-C16	mg/Kg	6.67	5.88	4.32	88.1	64.7	40-140	41.0*	25
Aromatic >C16-C21	mg/Kg	3.33	4.64	1.00	139	46.2	40-140	100*	25
Chlorooctadecane (S)					54.0	53.2	40-140		
OTP Surrogate (S)					82.6	79.6	40-140		

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0021

QC Prep: L625151 **QC Analytical Batch(es):** L626600
QC Prep Batch Method: MAEPH LA (Soil) **Analysis Method:** MAEPH LA
Analysis Description: MADEP EPH Rev 1.1

Lab Reagent Blank LRB-L625151 Matrix: SOL
Associated Lab Samples: 70516, 70517, 70518, 70519, 70520, 70521, 70522, 70523, 70524, 70525, 70526, 70527, 70528, 70529, 70530, 70531, 70532, 70533, 70534, 70535

Parameter	Units	Blank Result	MQL	Analyzed	% Recovery	% Rec Limits
Aliphatic >C10-C12	mg/Kg	<1.00	2.00	07/16/22 14:52		
Aliphatic >C12-C16	mg/Kg	<1.00	2.00	07/16/22 14:52		
Aromatic >C10-C12	mg/Kg	<0.500	1.00	07/16/22 14:52		
Aromatic >C12-C16	mg/Kg	<1.00	2.00	07/16/22 14:52		
Aromatic >C16-C21	mg/Kg	<1.00	2.00	07/16/22 14:52		
Aromatic >C21-C35	mg/Kg	<1.00	2.00	07/16/22 14:52		
Chlorooctadecane (S)				07/15/22 20:27	41.7	40-140
OTP Surrogate (S)				07/16/22 14:52	52.2	40-140

Laboratory Control Sample LCS-L625151

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Aromatic >C10-C12	mg/Kg	3.33	2.49	74.7	40-140
Aromatic >C16-C21	mg/Kg	3.33	1.86	55.8	40-140

Laboratory Control Sample & LCSD LCS-L625151 LCSD-L625151

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS %Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD
Aliphatic >C12-C16	mg/Kg	3.33	3.41	3.50	102	105	40-140	2.6	25
Aliphatic >C16-C35	mg/Kg	10.0	7.18	7.70	71.8	77.0	40-140	6.9	25
Aromatic >C12-C16	mg/Kg	6.67	6.25	3.62	93.7	54.2	40-140	53.2*	25
Chlorooctadecane (S)					59.0	59.5	40-140		
OTP Surrogate (S)					58.7	52.4	40-140		

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0021

QC Prep: L625418 **QC Analytical Batch(es):** L627112
QC Prep Batch Method: MAEPH LA (Soil) **Analysis Method:** MAEPH LA
Analysis Description: MADEP EPH Rev 1.1

Lab Reagent Blank LRB-L625418 Matrix: SOL
Associated Lab Samples: 70536, 70537, 70538, 70539, 70540, 70541, 70542, 70543, 70544, 70545, 70546

Parameter	Units	Blank Result	MQL	Analyzed	% Recovery	% Rec Limits
Aliphatic >C10-C12	mg/Kg	<1.00	2.00	07/16/22 18:07		
Aliphatic >C12-C16	mg/Kg	<1.00	2.00	07/16/22 18:07		
Aliphatic >C16-C35	mg/Kg	<2.00	4.00	07/16/22 18:07		
Aromatic >C10-C12	mg/Kg	<0.500	1.00	07/16/22 17:19		
Aromatic >C12-C16	mg/Kg	<1.00	2.00	07/16/22 17:19		
Aromatic >C16-C21	mg/Kg	<1.00	2.00	07/16/22 17:19		
Aromatic >C21-C35	mg/Kg	<1.00	2.00	07/16/22 17:19		
Chlorooctadecane (S)				07/16/22 18:07	80.2	40-140
OTP Surrogate (S)				07/16/22 17:19	38.1	40-140

Laboratory Control Sample LCS-L625418

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Aliphatic >C12-C16	mg/Kg	3.33	2.31	69.3	40-140
Aliphatic >C16-C35	mg/Kg	10.0	5.07	50.7	40-140
Aromatic >C10-C12	mg/Kg	3.33	2.16	64.8	40-140
Aromatic >C12-C16	mg/Kg	6.67	3.77	56.5	40-140
Aromatic >C16-C21	mg/Kg	3.33	1.90	57.0	40-140
Chlorooctadecane (S)				70.0	40-140
OTP Surrogate (S)				42.2	40-140

Matrix Spike & Matrix Spike Duplicate A 69482-MS-L625418 A 69482-MSD-L625418

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Aliphatic >C12-C16	mg/Kg	24.2	3.33	3.26	32.9	19.1	261*	-140*	40-140	53.0*	25
Aliphatic >C16-C35	mg/Kg	191	10.0	9.77	208	182	170*	-92*	40-140	13.3	25

* QC Fail

Date: 08/02/2022 02:14 PM

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Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-179-0021

QC Prep: L625418

QC Prep Batch Method: MAEPH LA (Soil)

QC Analytical Batch(es): L627112

Analysis Method: MAEPH LA

Analysis Description: MADEP EPH Rev 1.1

Matrix Spike & Matrix Spike Duplicate A 69482-MS-L625418 A 69482-MSD-L625418

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Aromatic >C10-C12	mg/Kg	33.6	3.33	3.26	49.8	45.3	486*	359*	40-140	9.4	25
Aromatic >C12-C16	mg/Kg	694	6.67	6.51	506	265	-2800*	-6400*	40-140	62.5*	25
Aromatic >C16-C21	mg/Kg	825	3.33	3.26	332	100	-13000*	-25000*	40-140	107*	25
Chlorooctadecane (S)							62.2	70.5	40-140		
OTP Surrogate (S)							54.1	66.2	40-140		

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0021

QC Prep: L625052 **QC Analytical Batch(es):** L625054
QC Prep Batch Method: MAVPH LA (Soil) **Analysis Method:** MAVPH LA
Analysis Description: MADEP VPH Rev 1.1

Lab Reagent Blank LRB-L625052 Matrix: SOL
Associated Lab Samples: 70498, 70499, 70500

Parameter	Units	Blank Result	MQL	Analyzed	% Recovery	% Rec Limits
Aliphatic >C6-C8	mg/Kg	<3.00	3.00	07/01/22 18:18		
Aromatic >C8-C10	mg/Kg	<4.00	4.00	07/01/22 18:18		
Aliphatic >C8-C10	mg/Kg	<6.00	6.00	07/01/22 18:18		
2,5-Dibromotoluene (S)				07/01/22 18:18	85.5	50-150

Laboratory Control Sample & LCSD LCS-L625052 LCSD-L625052

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS %Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD
Aliphatic >C6-C8	mg/Kg	60.0	73.3	68.5	122	114	50-150	6.7	30
Aromatic >C8-C10	mg/Kg	80.0	86.5	83.4	108	104	50-150	3.6	30
Aliphatic >C8-C10	mg/Kg	120	145	134	121	112	50-150	7.8	30
2,5-Dibromotoluene (S)					112	95.5	50-150		

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0021

QC Prep: L625592 **QC Analytical Batch(es):** L625593
QC Prep Batch Method: MAVPH LA (Aqueous) **Analysis Method:** MAVPH LA
Analysis Description: MADEP VPH Rev 1.1

Lab Reagent Blank LRB-L625592 Matrix: AQU
Associated Lab Samples: 70548, 70549, 70550, 70551

Parameter	Units	Blank Result	MQL	Analyzed	% Recovery	% Rec Limits
Aliphatic >C6-C8	mg/L	<0.015	0.015	07/05/22 18:23		
Aromatic >C8-C10	mg/L	<0.020	0.020	07/05/22 18:23		
Aliphatic >C8-C10	mg/L	<0.030	0.030	07/05/22 18:23		
2,5-Dibromotoluene (S)				07/05/22 18:23	81.4	50-150

Laboratory Control Sample & LCSD LCS-L625592 LCSD-L625592

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS %Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD
Aliphatic >C6-C8	mg/L	0.300	0.351	0.366	117	122	70-130	4.1	30
Aromatic >C8-C10	mg/L	0.400	0.404	0.429	101	107	70-130	6.0	30
Aliphatic >C8-C10	mg/L	0.600	0.706	0.737	118	123	70-130	4.2	30
2,5-Dibromotoluene (S)					115	115	50-150		

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-179-0021

QC Prep: L625815	QC Analytical Batch(es): L625822
QC Prep Batch Method: MAVPH LA (Soil)	Analysis Method: MAVPH LA
	Analysis Description: MADEP VPH Rev 1.1

Lab Reagent Blank LRB-L625815 Matrix: SOL
Associated Lab Samples: 70501, 70502, 70503, 70504, 70505, 70506, 70507, 70508, 70509, 70510, 70511, 70512, 70513, 70514

Parameter	Units	Blank Result	MQL	Analyzed	% Recovery	% Rec Limits
Aliphatic >C6-C8	mg/Kg	<3.00	3.00	07/06/22 16:18		
Aromatic >C8-C10	mg/Kg	<4.00	4.00	07/06/22 16:18		
Aliphatic >C8-C10	mg/Kg	<6.00	6.00	07/06/22 16:18		
2,5-Dibromotoluene (S)				07/06/22 16:18	93.5	50-150

Laboratory Control Sample & LCSD LCS-L625815 LCSD-L625815

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS %Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD
Aliphatic >C6-C8	mg/Kg	60.0	73.2	71.9	122	120	50-150	1.7	30
Aromatic >C8-C10	mg/Kg	80.0	85.7	86.6	107	108	50-150	1.0	30
Aliphatic >C8-C10	mg/Kg	120	147	148	123	123	50-150	0.6	30
2,5-Dibromotoluene (S)					116	124	50-150		

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0021

QC Prep: L625816 **QC Analytical Batch(es):** L625823
QC Prep Batch Method: MAVPH LA (Soil) **Analysis Method:** MAVPH LA
Analysis Description: MADEP VPH Rev 1.1

Lab Reagent Blank LRB-L625816 Matrix: SOL
Associated Lab Samples: 70515, 70516, 70517, 70518, 70519, 70520, 70521, 70522, 70523, 70524, 70525, 70526, 70527, 70528, 70529, 70530, 70531, 70532, 70533, 70534

Parameter	Units	Blank Result	MLQ	Analyzed	% Recovery	% Rec Limits
Aliphatic >C6-C8	mg/Kg	<3.00	3.00	07/06/22 16:18		
Aromatic >C8-C10	mg/Kg	<4.00	4.00	07/06/22 16:18		
Aliphatic >C8-C10	mg/Kg	<6.00	6.00	07/06/22 16:18		
2,5-Dibromotoluene (S)				07/06/22 16:18	93.5	50-150

Laboratory Control Sample & LCSD LCS-L625816 LCSD-L625816

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS %Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD
Aliphatic >C6-C8	mg/Kg	60.0	71.9	69.6	120	116	50-150	3.2	30
Aromatic >C8-C10	mg/Kg	80.0	86.6	81.3	108	102	50-150	6.3	30
Aliphatic >C8-C10	mg/Kg	120	148	136	123	113	50-150	8.4	30
2,5-Dibromotoluene (S)					124	103	50-150		

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0021

QC Prep: L626335 **QC Analytical Batch(es):** L626336
QC Prep Batch Method: MAVPH LA (Soil) **Analysis Method:** MAVPH LA
Analysis Description: MADEP VPH Rev 1.1

Lab Reagent Blank LRB-L626335 Matrix: SOL
Associated Lab Samples: 70535, 70536, 70537, 70538, 70539, 70540, 70541, 70542, 70543, 70544, 70545, 70546

Parameter	Units	Blank Result	MQL	Analyzed	% Recovery	% Rec Limits
Aliphatic >C6-C8	mg/Kg	<3.00	3.00	07/11/22 16:07		
Aromatic >C8-C10	mg/Kg	<4.00	4.00	07/11/22 16:07		
Aliphatic >C8-C10	mg/Kg	<6.00	6.00	07/11/22 16:07		
2,5-Dibromotoluene (S)				07/11/22 16:07	94.5	50-150

Laboratory Control Sample & LCSD LCS-L626335 LCSD-L626335

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS %Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD
Aliphatic >C6-C8	mg/Kg	60.0	72.1	70.4	120	117	50-150	2.3	30
Aromatic >C8-C10	mg/Kg	80.0	85.0	82.5	106	103	50-150	2.9	30
Aliphatic >C8-C10	mg/Kg	120	148	140	123	117	50-150	5.5	30
2,5-Dibromotoluene (S)					119	104	50-150		

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0021

QC Analytical Batch: A74861
Analysis Method: SW-DRYWT
Analysis Description: Dry Weight Determination

Duplicate A 70476-DUP

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
% Moisture	%	20.7	22.0	6.0	20.0	06/29/22 15:52

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0021

QC Analytical Batch: A74862
Analysis Method: SW-DRYWT
Analysis Description: Dry Weight Determination

Duplicate A 70495-DUP

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
% Moisture	%	52.2	45.7	13.2	20.0	06/29/22 16:21

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0021

QC Analytical Batch: A74899
Analysis Method: SW-DRYWT
Analysis Description: Dry Weight Determination

Duplicate A 70505-DUP

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
% Moisture	%	31.5	31.6	0.3	20.0	07/01/22 16:18

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-179-0021

QC Analytical Batch: A74900
Analysis Method: SW-DRYWT
Analysis Description: Dry Weight Determination

Duplicate A 70515-DUP

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
% Moisture	%	65.7	61.5	6.6	20.0	07/07/22 16:30

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0021

QC Analytical Batch: A74922
Analysis Method: SW-DRYWT
Analysis Description: Dry Weight Determination

Duplicate A 70525-DUP

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
% Moisture	%	41.3	41.3	0.0	20.0	07/08/22 08:10

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0021

QC Analytical Batch: A74923
Analysis Method: SW-DRYWT
Analysis Description: Dry Weight Determination

Duplicate A 70535-DUP

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
% Moisture	%	43.6	43.8	0.4	20.0	07/08/22 08:40

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-179-0021

QC Analytical Batch: A74924
Analysis Method: SW-DRYWT
Analysis Description: Dry Weight Determination

Duplicate A 70545-DUP

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
% Moisture	%	36.2	34.9	3.6	20.0	07/08/22 09:05

Shipment Receipt Form

Customer Number: **09996**

Customer Name: **Hydro-Environmental Technology, Inc.**

Report Number: **22-179-0021**

Shipping Method

Fed Ex US Postal Lab Other :
 UPS Client Courier Thermometer ID:

Shipping container/cooler uncompromised?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Number of coolers/boxes received	<input type="text" value="1"/>		
Custody seals intact on shipping container/cooler?	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> Not Present
Custody seals intact on sample bottles?	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> Not Present
Chain of Custody (COC) present?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
COC agrees with sample label(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
COC properly completed	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Samples in proper containers?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Sample containers intact?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Sufficient sample volume for indicated test(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
All samples received within holding time?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Cooler temperature in compliance?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Cooler/Samples arrived at the laboratory on ice. Samples were considered acceptable as cooling process had begun.	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Water - Sample containers properly preserved	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> N/A
Water - VOA vials free of headspace	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
Trip Blanks received with VOAs	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
Soil VOA method 5035 – compliance criteria met	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
<input type="checkbox"/> High concentration container (48 hr)	<input type="checkbox"/> Low concentration EnCore samplers (48 hr)		
<input type="checkbox"/> High concentration pre-weighed (methanol -14 d)	<input type="checkbox"/> Low conc pre-weighed vials (Sod Bis -14 d)		
Special precautions or instructions included?	<input type="radio"/> Yes	<input checked="" type="radio"/> No	

Comments:

Signature:

Date & Time:



HYDRO-ENVIRONMENTAL TECH
 Environmental Consul
 P.O. Box 60295
 Lafayette, LA 70596-
 Phone (337) 261-1963 FAX (3:



22-179-0021
 09996
 06-29-2022
 07:12:13

Hydro-Environmental Technology, Inc.
 August Levert

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert Laboratory: Waypoint
 Project Number: 1009.A62 Collected By: DW/DCC
 Project Location: Bayou Sorrel, LA Company: Hydro-Environmental Technology, Inc.
 Date: 2022 06-21

Sample I.D.	Type	Date/Time Sampled		Containers	Analysis Requested/Method	Comments
SB-01 (0-2) 70494	SO	6/21/2022	1040	1 x 16oz	EC, ESP, SAR, CEC Chlorides, pH, % Moisture, Cations*, Anions*, Bromide, Metals*, 29B Oil and Grease	4°C
SB-01 (2-4) 70495	SO	6/21/2022	1040	1 x 16oz	EC, ESP, SAR, CEC Chlorides, pH, % Moisture, Cations*, Anions*, Bromide, Metals*, 29B Oil and Grease	4°C
SB-02 (0-2) 70496	SO	6/21/2022	1110	1 x 16oz	EC, ESP, SAR, CEC Chlorides, pH, % Moisture, Cations*, Anions*, Bromide, Metals*, 29B Oil and Grease	4°C
SB-02 (2-4) 70497	SO	6/21/2022	1110	1 x 16oz	EC, ESP, SAR, CEC Chlorides, pH, % Moisture, Cations*, Anions*, Bromide, Metals*, 29B Oil and Grease	4°C
SB-03 (0-2) 70498	SO	6/21/2022	1140	1 x 16oz 2 x Terracore	EC, ESP, SAR, CEC Chlorides, pH, % Moisture, Cations*, Anions*, Bromide, Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-03 (2-4) 70499	SO	6/21/2022	1140	1 x 16oz 2 x Terracore	EC, ESP, SAR, CEC Chlorides, pH, % Moisture, Cations*, Anions*, Bromide, Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-04 (0-2) 70500 70498H	SO	6/21/2022	1210	1 x 16oz 2 x Terracore	EC, ESP, SAR, CEC Chlorides, pH, % Moisture, Cations*, Anions*, Bromide, Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-04 (2-4) 70501	SO	6/21/2022	1210	1 x 16oz 2 x Terracore	EC, ESP, SAR, CEC Chlorides, pH, % Moisture, Cations*, Anions*, Bromide, Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-04 (4-6) 70502	SO	6/21/2022	1230	1 x 16oz 2 x Terracore	EC, ESP, SAR, CEC Chlorides, pH, % Moisture, Cations*, Anions*, Bromide, Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-05 (2-4) 70503	SO	6/21/2022	1410	1 x 16oz 2 x Terracore	EC, ESP, SAR, CEC Chlorides, pH, % Moisture, Cations*, Anions*, Bromide, Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH

HOLD for possible analysis of SPLP Chloride and Sodium and additional parameters
 Cations*: Soluble Calcium, Magnesium, and Sodium
 Anions*: Cl, SO4, HCO3

VPH Analysis added per DCC
 6/24/22 @ 3:02pm

Relinquished By: [Signature] Date/Time: 6/23/22 1340
 Received By: P. Howard Date/Time: 6/24/22 1340
 Relinquished By: P. Howard Date/Time: 6/27/22 10:15
 Received By: [Signature] Date/Time: 6/27/22 1015
 Analysis Due: Verbal: Written:

Rel: [Signature] 6/28/22 830 Rec'd by: [Signature] 6-28-22 0830



HYDRO-ENVIRONMENTAL TECHNOLOGY, INC.
 Environmental Consultants
 P.O. Box 60295
 Lafayette, LA 70596-0295
 Phone (337) 261-1963 FAX (337) 261-1953

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert **Laboratory:** Waypoint
Project Number: 1009.A62 **Collected By:** DW/DCC
Project Location: Bayou Sorrel, LA **Company:** Hydro-Environmental Technology, Inc.
Date: 2022 06-21

Sample I.D.	Type	Date/Time Sampled		Containers	Analysis Requested/Method	Comments
SB-05 (4-6) 70504	SO	6/21/2022	1420	1 x 16oz 2 x Terracore VPH	EC, ESP, SAR, CEC Chlorides, pH, % Moisture, Cations*, Anions*, Bromide, Metals*, EPH (Ma), . 29B Oil and Grease	4°C HOLD: PAH
SB-06 (2-4) 70505	SO	6/21/2022	1450	1 x 16oz 2 x Terracore VPH	EC, ESP, SAR, CEC Chlorides, pH, % Moisture, Cations*, Anions*, Bromide, Metals*, EPH (Ma), . 29B Oil and Grease	4°C HOLD: PAH
SB-06 (4-6) 70506	SO	6/21/2022	1455	1 x 16oz 2 x Terracore VPH	EC, ESP, SAR, CEC Chlorides, pH, % Moisture, Cations*, Anions*, Bromide, Metals*, EPH (Ma), . 29B Oil and Grease	4°C HOLD: PAH
SB-07 (2-4) 70507	SO	6/21/2022	1525	1 x 16oz 2 x Terracore VPH	EC, ESP, SAR, CEC Chlorides, pH, % Moisture, Cations*, Anions*, Bromide, Metals*, EPH (Ma), . 29B Oil and Grease	4°C HOLD: PAH
SB-07 (4-6) 70508	SO	6/21/2022	1530	1 x 16oz 2 x Terracore VPH	EC, ESP, SAR, CEC Chlorides, pH, % Moisture, Cations*, Anions*, Bromide, Metals*, EPH (Ma), . 29B Oil and Grease	4°C HOLD: PAH
SB-08 (0-2) 70509	SO	6/21/2022	1550	1 x 16oz 2 x Terracore VPH	EC, ESP, SAR, CEC Chlorides, pH, % Moisture, Cations*, Anions*, Bromide, Metals*, EPH (Ma), . 29B Oil and Grease	4°C HOLD: PAH
SB-08 (2-4) 70510	SO	6/21/2022	1550	1 x 16oz 2 x Terracore VPH	EC, ESP, SAR, CEC Chlorides, pH, % Moisture, Cations*, Anions*, Bromide, Metals*, EPH (Ma), . 29B Oil and Grease	4°C HOLD: PAH
SB-09 (0-2) 70511	SO	6/22/2022	1030	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-09 (2-4) 70512	SO	6/22/2022	1030	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-09 (4-6) 70513	SO	6/22/2022	1515	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH

HOLD for possible analysis of SPLP Chloride and Sodium and additional parameters
 Cations*: Soluble Calcium, Magnesium, and Sodium
 Anions*: Cl, SO4, HCO3

VPH ANALYSIS
 added per DCC
 6/24/22 @ 3:02pm

Relinquished By: *[Signature]*
 Date/Time: 6/23/22 1340

Received By: P. Howard
 Date/Time: 6/24/22 1340

Relinquished By: P. Howard
 Date/Time: 6/27/22 10:15

Received By: *[Signature]*
 Date/Time: 6/27/22 1015

Analysis Due: Verbal: _____ Written: _____

Rel: *[Signature]* 6/28/22 830 Rec'd by 6-28-22 0830



HYDRO-ENVIRONMENTAL TECHNOLOGY, INC.
Environmental Consultants
 P.O. Box 60295
 Lafayette, LA 70596-0295
 Phone (337) 261-1963 FAX (337) 261-1953

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert	Laboratory: Waypoint
Project Number: 1009.A62	Collected By: DW/DCC
Project Location: Bayou Sorrel, LA	Company: Hydro-Environmental Technology, Inc.
	Date: 2022 06-21

Sample I.D.	Type	Date/Time Sampled		Containers	Analysis Requested/Method	Comments
SB-09 (6-8) 70514	SO	6/22/2022	1515	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-10 (0-2) 70515	SO	6/22/2022	1135	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-10 (2-4) 70516	SO	6/22/2022	1135	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-10 (4-6) 70517	SO	6/22/2022	1200	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-10 (6-8) 70518	SO	6/22/2022	1200	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-11 (0-2) 70519	SO	6/22/2022	1345	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-11 (2-4) 70520	SO	6/22/2022	1345	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-12 (0-2) 70521	SO	6/22/2022	1430	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-12 (2-4) 70522	SO	6/22/2022	1430	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-13 (0-2) 70523	SO	6/22/2022	1530	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-13 (2-4) 70524	SO	6/22/2022	1530	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-13 (4-6) 70525	SO	6/22/2022	1550	1 x 16oz 2 x Terracore VPH	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH

HOLD for possible analysis of SPLP Chloride and Sodium and additional parameters
 Cations*: Soluble Calcium, Magnesium, and Sodium
 Anions*: Cl, SO4, HCO3

VPH analysis added per DOC
 6/24/22 13:02pm

Relinquished By: <i>[Signature]</i> Date/Time: 6/24/22 1340	Received By: P. Howard Date/Time: 6/24/22 1340
Relinquished By: P. Howard Date/Time: 6/27/22 10:15	Received By: <i>[Signature]</i> Date/Time: 6/27/22 1015
Analysis Due: Verbal:	Written:

Rel: *[Signature]* 6/28/22 830 Rec'd By: *[Signature]* 6-28-22 0830



HYDRO-ENVIRONMENTAL TECHNOLOGY, INC.
 Environmental Consultants
 P.O. Box 60295
 Lafayette, LA 70596-0295
 Phone (337) 261-1963 FAX (337) 261-1953

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name:	August Levert	Laboratory:	Waypoint
Project Number:	1009.A62	Collected By:	DW/DCC
Project Location:	Bayou Sorrel, LA	Company:	Hydro-Environmental Technology, Inc.
		Date:	2022 06-21

Sample I.D.	Type	Date/Time Sampled	Containers	Analysis Requested/Method	Comments
SB-13 (6-8) <i>70526</i>	SO	6/22/2022 1550	1 x 16oz 2 x Terracore <i>VPH</i>	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-14 (0-2) <i>70527</i>	SO	6/23/2022 1015	1 x 16oz 2 x Terracore <i>VPH</i>	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-14 (2-4) <i>70528</i>	SO	6/23/2022 1015	1 x 16oz 2 x Terracore <i>VPH</i>	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-14 (4-6) <i>70529</i>	SO	6/23/2022 1030	1 x 16oz 2 x Terracore <i>VPH</i>	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-14 (6-8) <i>70530</i>	SO	6/23/2022 1030	1 x 16oz 2 x Terracore <i>VPH</i>	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-15 (0-2) <i>70531</i>	SO	6/23/2022 1040	1 x 16oz 2 x Terracore <i>VPH</i>	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-15 (2-4) <i>70532</i>	SO	6/23/2022 1040	1 x 16oz 2 x Terracore <i>VPH</i>	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-15 (4-6) <i>70533</i>	SO	6/23/2022 1100	1 x 16oz 2 x Terracore <i>VPH</i>	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-15 (6-8) <i>70534</i>	SO	6/23/2022 1100	1 x 16oz 2 x Encore <i>VPH</i>	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-16 (0-2) <i>70535</i>	SO	6/23/2022 1120	1 x 16oz 2 x Encore <i>VPH</i>	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH

HOLD for possible analysis of SPLP Chloride and Sodium and additional parameters
 Cations*: Soluble Calcium, Magnesium, and Sodium
 Anions*: Cl, SO4, HCO3

VPH added per DCC 6/24/22 @ 3:02pm

Relinquished By: <i>[Signature]</i> Date/Time: <i>6/24/22 1340</i>	Received By: <i>P. Howard</i> Date/Time: <i>6/24/22 1340</i>
Relinquished By: <i>P. Howard</i> Date/Time: <i>6/27/22 10:15</i>	Received By: <i>[Signature]</i> Date/Time: <i>6/27/22 10:15</i>
Analysis Due: Verbal:	Written:

Rel: [Signature] 6/26/22 830

Rec'd By: [Signature] 6-28-22 0830



HYDRO-ENVIRONMENTAL TECHNOLOGY, INC.
 Environmental Consultants
 P.O. Box 60295
 Lafayette, LA 70596-0295
 Phone (337) 261-1963 FAX (337) 261-1953

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert Laboratory: Waypoint
 Project Number: 1009.A62 Collected By: DW/DCC
 Project Location: Bayou Sorrel, LA Company: Hydro-Environmental Technology, Inc.
 Date: 2022 06-21

Sample I.D.	Type	Date/Time Sampled	Containers	Analysis Requested/Method	Comments
SB-16 (2-4) 70536	SO	6/23/2022 1120	1 x 16oz VPH 2 x Encore	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-16 (4-6) 70537	SO	6/23/2022 1135	1 x 16oz VPH 2 x Encore	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-16 (6-8) 70538	SO	6/23/2022 1135	1 x 16oz VPH 2 x Encore	Metals*, EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-17 (0-2) 70539	SO	6/23/2022 1415	1 x 16oz VPH 2 x Encore	EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-18 (0-2) 70540	SO	6/23/2022 1425	1 x 16oz VPH 2 x Encore	EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-19 (0-2) 70541	SO	6/23/2022 1435	1 x 16oz VPH 2 x Encore	EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-20 (0-2) 70542	SO	6/23/2022 1445	1 x 16oz VPH 2 x Encore	EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-21 (0-2) 70543	SO	6/23/2022 1510	1 x 16oz VPH 2 x Encore	EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-22 (0-2) 70544	SO	6/23/2022 1520	1 x 16oz VPH 2 x Encore	EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
SB-23 (0-2) 70545	SO	6/23/2022 1525	1 x 16oz VPH 2 x Encore	EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH

HOLD for possible analysis of SPLP Chloride and Sodium and additional parameters
 Cations*: Soluble Calcium, Magnesium, and Sodium
 Anions*: Cl, SO4, HCO3

VPH ANALYSIS
 Added per DCC
 6/24/22 @ 3:02 pm

Relinquished By: [Signature] Received By: P. Atkinson
 Date/Time: 6/24/22 1340 Date/Time: 6/24/22 1340
 Relinquished By: P. Atkinson Received By: [Signature]
 Date/Time: 6/27/22 10:15 Date/Time: 6/27/22 1015
 Analysis Due: Verbal: Written:

Rel: [Signature] 6/28/22 830 Page 5 of 6
 Rec'd By: [Signature] 6-28-22 0830 Page 205 of 206



HYDRO-ENVIRONMENTAL TECHNOLOGY, INC.
 Environmental Consultants
 P.O. Box 60295
 Lafayette, LA 70596-0295
 Phone (337) 261-1963 FAX (337) 261-1953

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert
 Project Number: 1009.A62
 Project Location: Bayou Sorrel, LA

Laboratory: Waypoint
 Collected By: DW/DCC
 Company: Hydro-Environmental Technology, Inc.
 Date: 2022 06-21

Sample I.D.	Type	Date/Time Sampled	Containers	Analysis Requested/Method	Comments
SB-24 (0-2) 70546	SO	6/23/2022 1530	1 x 16oz 2 x Encore VPH	EPH (Ma), 29B Oil and Grease	4°C HOLD: PAH
HA-01R (2-4) 70547	SO	6/23/2022 1455	1 x 16oz	SAR	4°C
Trip Blank 70548	Water	6/21/2022 0700	3 x 40ml	VPH (Ma)	4°C
Field Blank 70549	Water	6/21/2022 0800	3 x 40ml	VPH (Ma)	4°C
Field Blank 70550	Water	6/22/2022 0800	3 x 40ml	VPH (Ma)	4°C
Field Blank 70551	Water	6/23/2022 0800	3 x 40ml	VPH (Ma)	4°C

HOLD for possible analysis of SPLP Chloride and Sodium and additional parameters
 Cations*: Soluble Calcium, Magnesium, and Sodium
 Anions*: Cl, SO4, HCO3

VPH ANALYSIS
 ADDED per DCC
 6/24/22 @ 3:02pm

Relinquished By: [Signature] Date/Time: 6/27/22 1340
 Received By: P. Howard Date/Time: 6/24/22 1340

Relinquished By: P. Howard Date/Time: 6/27/22 10:15
 Received By: [Signature] Date/Time: 6/27/22 10:15

Analysis Due: Verbal: Written:

Rel: [Signature] 6/28/22 830
 Rec'd By: [Signature] 6-28-22 0830

The results set forth herein are provided by SGS North America Inc.

Technical Report for

Hydro-Environmental Technology, Inc.
1009.A62 August Levert-Bayou Sorrel, LA

SGS Job Number: LA57952

Sampling Dates: 08/29/19 - 08/30/19



Report to:

Hydro-Environmental Technology
P.O. BOX 60295
Lafayette, LA 70596
labdata@hetinc.us

ATTN: Stewart L Stover, Jr.

Total number of pages in report: 97



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Ron Benjamin
Ron Benjamin
Lab Director

Client Service contact: Ralph Frye 337-237-4775

Certifications: LDEQ(2048), LDHH(LA150012), AR(14-045-04), AZ(AZ0805), FL(E87657), IL(200082), KY(#31), NC(487), SC(73004001), NJ(LA007), TX(T104704186-18-16), WV(257)

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Test results relate only to samples analyzed.



Hydro-Environmental Technologies, Inc.
ATTN: Stewart L. Stover
P. O. Box 60295
Lafayette, LA 70596

RE: Accutest Job #LA57952
1009.A62 August Levert-Bayou Sorrel, LA

The final report for SGS job number above has been edited to reflect changes to your data package. These edits have been incorporated into the revised report which is attached.

The analytical results for sample ID HA4 (0-2) have been modified at the request of the client. The results for the SPP Metals has been amended to include SPLP Strontium and Zinc.

Please contact me at 337-237-4775 if I may be of further assistance in this matter, or if you have any further questions regarding this data report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ralph Frye'.

Ralph Frye
Environment, Health and Safety
Project Manager
SGS North America Inc.-Scott

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Sample Summary

Hydro-Environmental Technology, Inc.

Job No: LA57952

1009.A62 August Levert-Bayou Sorrel, LA

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
LA57952-1	08/29/19	11:00 DJW	09/25/19	SO	Soil	HA-1 (0-2)
LA57952-1A	08/29/19	11:00 DJW	09/25/19	SO	Soil	HA-1 (0-2)
LA57952-1B	08/29/19	11:00 DJW	09/25/19	SO	Soil	HA-1 (0-2)
LA57952-2	08/29/19	11:05 DJW	09/25/19	SO	Soil	HA-1 (2-4)
LA57952-2A	08/29/19	11:05 DJW	09/25/19	SO	Soil	HA-1 (2-4)
LA57952-2B	08/29/19	11:05 DJW	09/25/19	SO	Soil	HA-1 (2-4)
LA57952-3	08/29/19	13:15 DJW	09/25/19	SO	Soil	HA-2 (0-2)
LA57952-3A	08/29/19	13:15 DJW	09/25/19	SO	Soil	HA-2 (0-2)
LA57952-3B	08/29/19	13:15 DJW	09/25/19	SO	Soil	HA-2 (0-2)
LA57952-3C	08/29/19	13:15 DJW	09/25/19	SO	Soil	HA-2 (0-2)
LA57952-4	08/29/19	13:20 DJW	09/25/19	SO	Soil	HA-2 (2-4)
LA57952-4A	08/29/19	13:20 DJW	09/25/19	SO	Soil	HA-2 (2-4)
LA57952-4B	08/29/19	13:20 DJW	09/25/19	SO	Soil	HA-2 (2-4)

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



Sample Summary
(continued)

Hydro-Environmental Technology, Inc.

Job No: LA57952

1009.A62 August Levert-Bayou Sorrel, LA

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
LA57952-5	08/29/19	14:40 DJW	09/25/19	SO	Soil	HA-3 (0-2)
LA57952-5A	08/29/19	14:40 DJW	09/25/19	SO	Soil	HA-3 (0-2)
LA57952-5B	08/29/19	14:40 DJW	09/25/19	SO	Soil	HA-3 (0-2)
LA57952-5C	08/29/19	14:40 DJW	09/25/19	SO	Soil	HA-3 (0-2)
LA57952-6	08/29/19	14:45 DJW	09/25/19	SO	Soil	HA-3 (2-4)
LA57952-6A	08/29/19	14:45 DJW	09/25/19	SO	Soil	HA-3 (2-4)
LA57952-6B	08/29/19	14:45 DJW	09/25/19	SO	Soil	HA-3 (2-4)
LA57952-7	08/29/19	14:50 DJW	09/25/19	SO	Soil	HA-3 (4-6)
LA57952-7A	08/29/19	14:50 DJW	09/25/19	SO	Soil	HA-3 (4-6)
LA57952-7B	08/29/19	14:50 DJW	09/25/19	SO	Soil	HA-3 (4-6)
LA57952-8	08/29/19	14:55 DJW	09/25/19	SO	Soil	HA-3 (6-8)
LA57952-8A	08/29/19	14:55 DJW	09/25/19	SO	Soil	HA-3 (6-8)
LA57952-8B	08/29/19	14:55 DJW	09/25/19	SO	Soil	HA-3 (6-8)

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



Sample Summary
(continued)

Hydro-Environmental Technology, Inc.

Job No: LA57952

1009.A62 August Levert-Bayou Sorrel, LA

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
LA57952-9	08/30/19	10:25 DJW	09/25/19	SO	Soil	HA-4 (0-2)
LA57952-9A	08/30/19	10:25 DJW	09/25/19	SO	Soil	HA-4 (0-2)
LA57952-9B	08/30/19	10:25 DJW	09/25/19	SO	Soil	HA-4 (0-2)
LA57952-9C	08/30/19	10:25 DJW	09/25/19	SO	Soil	HA-4 (0-2)
LA57952-10	08/30/19	10:30 DJW	09/25/19	SO	Soil	HA-4 (2-4)
LA57952-10A	08/30/19	10:30 DJW	09/25/19	SO	Soil	HA-4 (2-4)
LA57952-10B	08/30/19	10:30 DJW	09/25/19	SO	Soil	HA-4 (2-4)
LA57952-11	08/30/19	10:35 DJW	09/25/19	SO	Soil	HA-4 (4-6)
LA57952-11A	08/30/19	10:35 DJW	09/25/19	SO	Soil	HA-4 (4-6)
LA57952-11B	08/30/19	10:35 DJW	09/25/19	SO	Soil	HA-4 (4-6)
LA57952-12	08/30/19	10:40 DJW	09/25/19	SO	Soil	HA-4 (6-8)
LA57952-12A	08/30/19	10:40 DJW	09/25/19	SO	Soil	HA-4 (6-8)
LA57952-12B	08/30/19	10:40 DJW	09/25/19	SO	Soil	HA-4 (6-8)

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



Sample Summary
(continued)

Hydro-Environmental Technology, Inc.

Job No: LA57952

1009.A62 August Levert-Bayou Sorrel, LA

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
LA57952-13	08/30/19	11:35 DJW	09/25/19	SO	Soil	HA-5 (0-2)
LA57952-13A	08/30/19	11:35 DJW	09/25/19	SO	Soil	HA-5 (0-2)
LA57952-13B	08/30/19	11:35 DJW	09/25/19	SO	Soil	HA-5 (0-2)
LA57952-14	08/30/19	11:40 DJW	09/25/19	SO	Soil	HA-5 (2-4)
LA57952-14A	08/30/19	11:40 DJW	09/25/19	SO	Soil	HA-5 (2-4)
LA57952-14B	08/30/19	11:40 DJW	09/25/19	SO	Soil	HA-5 (2-4)
LA57952-15	08/30/19	11:45 DJW	09/25/19	SO	Soil	HA-5 (4-6)
LA57952-15A	08/30/19	11:45 DJW	09/25/19	SO	Soil	HA-5 (4-6)
LA57952-15B	08/30/19	11:45 DJW	09/25/19	SO	Soil	HA-5 (4-6)
LA57952-16	08/30/19	11:50 DJW	09/25/19	SO	Soil	HA-5 (6-7)
LA57952-16A	08/30/19	11:50 DJW	09/25/19	SO	Soil	HA-5 (6-7)
LA57952-16B	08/30/19	11:50 DJW	09/25/19	SO	Soil	HA-5 (6-7)

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: HA-1 (0-2)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-1	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	5.6	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	104	10	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.5	2.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	18.4	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	13.7	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.080	0.080	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	63.1	25	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-1 (0-2)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-1A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 48.2
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	785	210	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17150

(2) Prep QC Batch: MP16523

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-1 (0-2)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-1B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 48.2
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent	51.8		%	1	09/30/19	DP	ASTM 2216
Oil And Grease	8.4	0.010	%	1	09/26/19 10:00	HD	LADNR 29B

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-1 (2-4)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-2	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 4.6	4.6	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	185	9.3	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.3	2.3	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	13.2	4.6	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	11.0	4.6	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.071	0.071	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 4.6	4.6	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 4.6	4.6	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	46.7	23	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-1 (2-4)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-2A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 51.8 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	1170	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17150

(2) Prep QC Batch: MP16523

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-1 (2-4)	
Lab Sample ID: LA57952-2B	Date Sampled: 08/29/19
Matrix: SO - Soil	Date Received: 09/25/19
	Percent Solids: 51.8 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	48.2		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-2 (0-2)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-3	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	5120	10	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.5	2.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	38.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	49.1	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.069	0.069	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	99.2	25	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-2 (0-2)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-3A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 42.6
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	25700	230	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17150

(2) Prep QC Batch: MP16523

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-2 (0-2)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-3B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 42.6
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent	57.4		%	1	09/30/19	DP	ASTM 2216
Oil And Grease	1.2	0.010	%	1	09/26/19 10:00	HD	LADNR 29B

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-2 (0-2)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-3C	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 42.6
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis, SPLP Leachate SW846 1312

Analyte	Result	MCL	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 0.10	0.10		mg/l	1	09/27/19	09/30/19 RD	SW846 6010C ¹	SW846 3010A ²
Barium	2.7	1.0		mg/l	1	09/27/19	09/30/19 RD	SW846 6010C ¹	SW846 3010A ²
Chromium	< 0.10	0.10		mg/l	1	09/27/19	09/30/19 RD	SW846 6010C ¹	SW846 3010A ²
Lead	< 0.10	0.10		mg/l	1	09/27/19	09/30/19 RD	SW846 6010C ¹	SW846 3010A ²

(1) Instrument QC Batch: MA17062

(2) Prep QC Batch: MP16445

RL = Reporting Limit
MCL = Maximum Contamination Level (not available)

Report of Analysis

Client Sample ID: HA-2 (2-4)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-4	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	560	10	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.5	2.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	15.3	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	13.9	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.074	0.074	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	51.9	25	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-2 (2-4)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-4A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 49.1
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	1920	200	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17150

(2) Prep QC Batch: MP16523

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-2 (2-4)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-4B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 49.1
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent	50.9		%	1	09/30/19	DP	ASTM 2216
Oil And Grease	0.20	0.010	%	1	09/26/19 10:00	HD	LADNR 29B

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (0-2)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-5	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	7.8	5.0	mg/kg	5	10/08/19	10/10/19 RD	SW846 6010C ¹	SW846 3050B ²
Barium	277	10	mg/kg	5	10/08/19	10/10/19 RD	SW846 6010C ¹	SW846 3050B ²
Cadmium	< 2.5	2.5	mg/kg	5	10/08/19	10/10/19 RD	SW846 6010C ¹	SW846 3050B ²
Chromium	21.0	5.0	mg/kg	5	10/08/19	10/10/19 RD	SW846 6010C ¹	SW846 3050B ²
Lead	15.6	5.0	mg/kg	5	10/08/19	10/10/19 RD	SW846 6010C ¹	SW846 3050B ²
Selenium	< 5.0	5.0	mg/kg	5	10/08/19	10/10/19 RD	SW846 6010C ¹	SW846 3050B ²
Silver	< 5.0	5.0	mg/kg	5	10/08/19	10/10/19 RD	SW846 6010C ¹	SW846 3050B ²
Zinc	58.8	25	mg/kg	5	10/08/19	10/10/19 RD	SW846 6010C ¹	SW846 3050B ²

(1) Instrument QC Batch: MA17214

(2) Prep QC Batch: MP16550

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (0-2)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-5A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 59.8 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	7510	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17150

(2) Prep QC Batch: MP16523

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (0-2)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-5B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 59.8 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	40.2		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (0-2)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-5C	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 59.8 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis, SPLP Leachate SW846 1312

Analyte	Result	MCL	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 0.10	0.10		mg/l	1	09/27/19	09/30/19 RD	SW846 6010C ¹	SW846 3010A ²
Barium	< 1.0	1.0		mg/l	1	09/27/19	09/30/19 RD	SW846 6010C ¹	SW846 3010A ²

(1) Instrument QC Batch: MA17062

(2) Prep QC Batch: MP16445

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

MCL = Maximum Contamination Level (not available)

Report of Analysis

Client Sample ID: HA-3 (2-4)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-6	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	5.7	4.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	288	9.1	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.3	2.3	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	17.5	4.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	13.6	4.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.077	0.077	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 4.5	4.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 4.5	4.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	55.3	23	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (2-4)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-6A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 55.5 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	771	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17150

(2) Prep QC Batch: MP16523

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (2-4)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-6B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 55.5 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	44.5		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (4-6)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-7	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	175	10	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.5	2.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	13.8	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	10.4	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.074	0.074	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	48.5	25	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (4-6)	
Lab Sample ID: LA57952-7A	Date Sampled: 08/29/19
Matrix: SO - Soil	Date Received: 09/25/19
	Percent Solids: 54.9 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	566	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17150

(2) Prep QC Batch: MP16523

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (4-6)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-7B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 54.9 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	45.1		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (6-8)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-8	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	8.3	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	201	9.8	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.5	2.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	13.8	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	10.5	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.071	0.071	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 4.9	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 4.9	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	45.6	25	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (6-8)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-8A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 59.1 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	341	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17150

(2) Prep QC Batch: MP16523

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (6-8)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-8B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 59.1 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	40.9		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (0-2)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-9	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	12.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	217	10	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.5	2.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	10.6	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	12.1	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.077	0.077	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	144	25	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (0-2)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-9A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 72.5 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	244	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17150

(2) Prep QC Batch: MP16523

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (0-2)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-9B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 72.5 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	27.5		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (0-2)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-9C	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 72.5 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis, SPLP Leachate SW846 1312

Analyte	Result	MCL	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 0.10	0.10		mg/l	1	09/27/19	09/30/19 RD	SW846 6010C ¹	SW846 3010A ²
Strontium	< 0.10	0.10		mg/l	1	09/27/19	09/30/19 RD	SW846 6010C ¹	SW846 3010A ²
Zinc	< 0.10	0.10		mg/l	1	09/27/19	09/30/19 RD	SW846 6010C ¹	SW846 3010A ²

(1) Instrument QC Batch: MA17062

(2) Prep QC Batch: MP16445

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit
MCL = Maximum Contamination Level (not available)

Report of Analysis

Client Sample ID: HA-4 (2-4)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-10	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	5.6	4.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	99.8	9.1	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.3	2.3	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	11.8	4.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	10.4	4.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.080	0.080	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 4.5	4.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 4.5	4.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	52.1	23	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (2-4)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-10A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 66.8 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	430	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17149

(2) Prep QC Batch: MP16524

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (2-4)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-10B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 66.8 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	33.2		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (4-6)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-11	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	141	10	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.5	2.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	12.6	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	9.1	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.077	0.077	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	55.5	25	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (4-6)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-11A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 68.7 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	280	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17149

(2) Prep QC Batch: MP16524

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (4-6)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-11B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 68.7 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	31.3		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (6-8)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-12	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	5.8	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	123	9.8	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.5	2.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	15.2	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	12.7	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.074	0.074	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 4.9	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 4.9	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	56.2	25	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (6-8)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-12A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 59.7 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	195	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17149

(2) Prep QC Batch: MP16524

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (6-8)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-12B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 59.7 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	40.3		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (0-2)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-13	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	7.3	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	150	10	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.5	2.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	20.9	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	15.8	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.074	0.074	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	74.3	25	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (0-2)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-13A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 61.4 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	354	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17149

(2) Prep QC Batch: MP16524

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (0-2)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-13B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 61.4 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	38.6		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (2-4)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-14	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 4.6	4.6	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	71.3	9.3	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.3	2.3	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	16.5	4.6	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	12.7	4.6	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.074	0.074	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 4.6	4.6	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 4.6	4.6	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	65.8	23	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (2-4)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-14A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 61.5 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	189	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17149

(2) Prep QC Batch: MP16524

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (2-4)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-14B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 61.5 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	38.5		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (4-6)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-15	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	115	10	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.5	2.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	16.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	11.1	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.074	0.074	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	52.0	25	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (4-6)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-15A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 52.3 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	611	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17149

(2) Prep QC Batch: MP16524

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (4-6)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-15B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 52.3 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	47.7		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (6-7)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-16	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 4.9	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	126	9.8	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.5	2.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	11.6	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	7.9	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.080	0.080	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 4.9	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 4.9	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	37.3	25	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (6-7)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-16A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 47.8 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	370	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17149

(2) Prep QC Batch: MP16524

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (6-7)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-16B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 47.8 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	52.2		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody



HYDRO-ENVIRONMENTAL TECHNOLOGY, INC.
 Environmental Consultants
 P.O. Box 60295
 Lafayette, LA 70596-0295
 Phone (337) 261-1963 FAX (337) 261-1953

LA 57952

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert Laboratory: SGS
 Project Number: 1009 A62 Collected By: DJW
 Project Location: Bayou Sorrel, LA Company: Hydro-Environmental Technology, Inc.
 Date: 8/29/2019

Sample I.D.	Type	Date/Time Sampled	Containers	Analysis Requested/Method	Comments
1 HA-1 (0-2)	SO	8/29/2019 1100	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*, Oil and Grease	4°C
2 HA-1 (2-4)	SO	8/29/2019 1105	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*, Oil and Grease	4°C
3 HA-2 (0-2)	SO	8/29/2019 1315	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*, Oil and Grease	4°C
4 HA-2 (2-4)	SO	8/29/2019 1320	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*, Oil and Grease	4°C
5 HA-3 (0-2)	SO	8/29/2019 1440	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*, Oil and Grease	4°C
6 HA-3 (2-4)	SO	8/29/2019 1445	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*, Oil and Grease	4°C
7 HA-3 (4-6)	SO	8/29/2019 1450	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*, Oil and Grease	4°C

HOLD for possible analysis
 Metals*, Arsenic, Barium, True Total Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver, Zinc

Relinquished By: *André White* Received By: *APJ*
 Date/Time: 8/25/19 800 Date/Time: 9/25/19 800
 Relinquished By: *APJ* Received By: *Mark Paul*
 Date/Time: 9/25/19 805 Date/Time: 9-25-19 09:15
 Analysis Due: Verbal: *Moellec Temp: 52 DW19 2-12 Floor*
Client d/10

LA57952: Chain of Custody
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 Environmental Consultants
 P.O. Box 60295
 Lafayette, LA 70596-0295
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LA 57952

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert Laboratory: SGS
 Project Number: 1009.A62 Collected By: DJW
 Project Location: Bayou Sorrel, LA Company: Hydro-Environmental Technology, Inc.
 Date: 8/29/2019

Sample I.D.	Type	Date/Time Sampled	Containers	Analysis Requested/Method	Comments
HA-3 (6-8)	SO	8/29/2019 1455	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*; Oil and Grease	4°C
HA-4 (0-2)	SO	8/30/2019 1025	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*; Oil and Grease	4°C
HA-4 (2-4)	SO	8/30/2019 1030	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*; Oil and Grease	4°C
HA-4 (4-6)	SO	8/30/2019 1035	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*; Oil and Grease	4°C
HA-4 (6-8)	SO	8/30/2019 1040	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*; Oil and Grease	4°C
HA-5 (0-2)	SO	8/30/2019 1135	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*; Oil and Grease	4°C
HA-5 (2-4)	SO	8/30/2019 1140	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*; Oil and Grease	4°C
HOLD for possible analysis Metals*: Arsenic, Barium, True Total Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver, Zinc					
Relinquished By:	Date/Time:		Received By:	Date/Time:	
<i>[Signature]</i>	8/25/19 800		<i>[Signature]</i>	8/25/19 800	
Relinquished By:	Date/Time:		Received By:	Date/Time:	
<i>[Signature]</i>	8/25/19 915		<i>[Signature]</i>	8/25/19 09:15	
Analysis Due: Verbal:	Written:				

LA57952: Chain of Custody
 Page 2 of 4



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LA 57952

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert Laboratory: SGS
 Project Number: 1009.A62 Collected By: DJW
 Project Location: Bayou Siret, LA Company: Hydro-Environmental Technology, Inc.
 Date: 8/29/2019

Sample I.D.	Type	Date/Time Sampled	Containers	Analysis Requested/Method	Comments
HA-5 (4-6)	SO	8/30/2019 1145	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals; Oil and Grease	4°C
HA-5 (6-7)	SO	8/30/2019 1150	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals; Oil and Grease	4°C
HOLD for possible analysis Metals*: Arsenic, Barium, True Total Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver, Zinc					
Relinquished By: <i>Paul White</i>		Received By: <i>Mark Reed</i>			
Date/Time: 9/25/19 800		Date/Time: 9/25/19 800			
Relinquished By: <i>Paul White</i>		Received By: <i>Mark Reed</i>			
Date/Time: 9/25/19 9:15		Date/Time: 9-25-19 09:15			
Analysis Due: Verbal: Written:					

15
16

LA57952: Chain of Custody
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SGS Sample Receipt Summary

Job Number: LA57952

Client: HYDRO - ENV.

Project: AUGUST LEVERT

Date / Time Received: 9/25/2019 9:15:00 AM

Delivery Method: Client

Airbill #s: _____

Cooler Temps (Initial/Adjusted): #1: (5.2/5.2); DV439

<u>Cooler Security</u>		<u>Y or N</u>		<u>Y or N</u>	
1. Custody Seals Present:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Custody Seals Intact:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	4. Smp Dates/Time OK	<input checked="" type="checkbox"/>	<input type="checkbox"/>

<u>Cooler Temperature</u>		<u>Y or N</u>	
1. Temp criteria achieved:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Thermometer ID:	<u>DV439;</u>		
3. Cooler media:	<u>Ice (direct contact)</u>		
4. No. Coolers:	<u>1</u>		

<u>Quality Control Preservation</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Trip Blank present / cooler:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2. Trip Blank listed on COC:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3. Samples preserved properly:	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
4. VOCs headspace free:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

<u>Sample Integrity - Documentation</u>		<u>Y or N</u>	
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Container labeling complete:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

<u>Sample Integrity - Condition</u>		<u>Y or N</u>	
1. Sample recvd within HT:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. All containers accounted for:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3. Condition of sample:	<u>Intact</u>		

<u>Sample Integrity - Instructions</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
2. Bottles received for unspecified tests	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
4. Compositing instructions clear:	<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>

Comments

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA57952
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16427
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 09/26/19

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.080	.0067	.0066	-0.00081	<0.080

Associated samples MP16427: LA57952-1, LA57952-2, LA57952-3, LA57952-4, LA57952-6, LA57952-7, LA57952-8, LA57952-9, LA57952-10, LA57952-11, LA57952-12, LA57952-13, LA57952-14, LA57952-15, LA57952-16

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

4.1.1
4

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16427
 Matrix Type: SOLID

Methods: SW846 7471B
 Units: mg/kg

Prep Date: 09/26/19

Metal	LA57952-1 Original MS	Spikelot HGSPIKE1 % Rec	QC Limits
Mercury	0.014 0.60	0.6 97.7	75-125

Associated samples MP16427: LA57952-1, LA57952-2, LA57952-3, LA57952-4, LA57952-6, LA57952-7, LA57952-8, LA57952-9, LA57952-10, LA57952-11, LA57952-12, LA57952-13, LA57952-14, LA57952-15, LA57952-16

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

4.1.2
4

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16427
 Matrix Type: SOLID

Methods: SW846 7471B
 Units: mg/kg

Prep Date: 09/26/19

Metal	LA57952-1 Original MSD	Spikelot HGSPIKE1 % Rec	MSD RPD	QC Limit
Mercury	0.014 0.52	0.536 94.5	14.3	20

Associated samples MP16427: LA57952-1, LA57952-2, LA57952-3, LA57952-4, LA57952-6, LA57952-7, LA57952-8, LA57952-9, LA57952-10, LA57952-11, LA57952-12, LA57952-13, LA57952-14, LA57952-15, LA57952-16

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

4.1.2
4

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA57952
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16427
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 09/26/19

Metal	LCS Result	Spikelot HGLCS10	% Rec	QC Limits
Mercury	23.3	20.3	114.8	64-136

Associated samples MP16427: LA57952-1, LA57952-2, LA57952-3, LA57952-4, LA57952-6, LA57952-7, LA57952-8, LA57952-9, LA57952-10, LA57952-11, LA57952-12, LA57952-13, LA57952-14, LA57952-15, LA57952-16

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

4.13
4

SERIAL DILUTION RESULTS SUMMARY

Login Number: LA57952
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16427
Matrix Type: SOLID

Methods: SW846 7471B
Units: ug/l

Prep Date: 09/26/19

Metal	LA57952-1 Original	SDL 1:5	%DIF	QC Limits
Mercury	0.118	0.00	100.0(a)	0-

Associated samples MP16427: LA57952-1, LA57952-2, LA57952-3, LA57952-4, LA57952-6, LA57952-7, LA57952-8, LA57952-9, LA57952-10, LA57952-11, LA57952-12, LA57952-13, LA57952-14, LA57952-15, LA57952-16

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(anr) Analyte not requested

(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

4.1.4
4

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA57952
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16432
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 09/26/19

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.72	2.4		
Antimony	0.60	.096	.33		
Arsenic	1.0	.19	.39	-0.11	<1.0
Barium	2.0	.016	1.1	-0.027	<2.0
Beryllium	0.40	.01	.04		
Boron	50	.053	2		
Cadmium	0.50	.013	.15	0.014	<0.50
Calcium	10	.81	3.9		
Chromium	1.0	.025	.11	0.011	<1.0
Cobalt	1.0	.02	.13		
Copper	1.0	.048	.31		
Iron	10	.2	3.8		
Lead	1.0	.12	.31	-0.017	<1.0
Lithium	1.0	.14	.56		
Magnesium	10	1.6	8.2		
Manganese	5.0	.005	.21		
Molybdenum	1.0	.014	.06		
Nickel	1.0	.027	.17		
Potassium	50	4.4	13		
Selenium	1.0	.13	.35	0.10	<1.0
Silver	1.0	.062	.3	0.0050	<1.0
Sodium	50	5.1	11		
Strontium	1.0	.008	.19		
Thallium	0.50	.14	.37		
Tin	5.0	.041	.29		
Titanium	1.0	.02	.18		
Vanadium	1.0	.034	.13		
Zinc	5.0	.018	1.8	-0.040	<5.0

Associated samples MP16432: LA57952-1, LA57952-2, LA57952-3, LA57952-4, LA57952-6, LA57952-7, LA57952-8, LA57952-9, LA57952-10, LA57952-11, LA57952-12, LA57952-13, LA57952-14, LA57952-15, LA57952-16

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16432
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 09/26/19

Metal	LA57948-1 Original MS	Spikelot ICPSPIKE1% Rec	QC Limits		
Aluminum					
Antimony					
Arsenic	6.8	102	100	95.2	75-125
Barium	35.8	126	100	90.2	75-125
Beryllium					
Boron					
Cadmium	0.090	102	100	101.9	75-125
Calcium					
Chromium	17.2	108	100	90.8	75-125
Cobalt					
Copper					
Iron					
Lead	8.9	106	100	97.1	75-125
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel					
Potassium					
Selenium	0.74	102	100	101.3	75-125
Silver	0.36	96.3	100	95.9	75-125
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Vanadium					
Zinc	16.3	110	100	93.7	75-125

Associated samples MP16432: LA57952-1, LA57952-2, LA57952-3, LA57952-4, LA57952-6, LA57952-7, LA57952-8, LA57952-9, LA57952-10, LA57952-11, LA57952-12, LA57952-13, LA57952-14, LA57952-15, LA57952-16

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16432
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 09/26/19

Metal	LA57948-1 Original MSD		Spikelot ICPSPIKE1% Rec		MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	6.8	104	100	97.2	1.9	20
Barium	35.8	131	100	95.2	3.9	20
Beryllium						
Boron						
Cadmium	0.090	103	100	102.9	1.0	20
Calcium						
Chromium	17.2	112	100	94.8	3.6	20
Cobalt						
Copper						
Iron						
Lead	8.9	107	100	98.1	0.9	20
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Potassium						
Selenium	0.74	103	100	102.3	1.0	20
Silver	0.36	99.1	100	98.7	2.9	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc	16.3	113	100	96.7	2.7	20

Associated samples MP16432: LA57952-1, LA57952-2, LA57952-3, LA57952-4, LA57952-6, LA57952-7, LA57952-8, LA57952-9, LA57952-10, LA57952-11, LA57952-12, LA57952-13, LA57952-14, LA57952-15, LA57952-16

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16432
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 09/26/19

Metal	LCS Result	Spikelot LCSMETAL11% Rec	QC Limits
Aluminum			
Antimony			
Arsenic	122	125	97.6 82-117
Barium	583	529	110.2 82-119
Beryllium			
Boron			
Cadmium	35.3	37.7	93.6 82-118
Calcium			
Chromium	48.3	58.3	82.8 82-118
Cobalt			
Copper			
Iron			
Lead	95.3	111	85.9 82-117
Lithium			
Magnesium			
Manganese			
Molybdenum			
Nickel			
Potassium			
Selenium	261	251	104.0 79-122
Silver	25.9	27.2	95.2 79-121
Sodium			
Strontium			
Thallium			
Tin			
Titanium			
Vanadium			
Zinc	289	351	82.3 80-119

Associated samples MP16432: LA57952-1, LA57952-2, LA57952-3, LA57952-4, LA57952-6, LA57952-7, LA57952-8, LA57952-9, LA57952-10, LA57952-11, LA57952-12, LA57952-13, LA57952-14, LA57952-15, LA57952-16

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16432
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: ug/l

Prep Date: 09/26/19

Metal	LA57948-1 Original	SDL 5:25	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	68.3	110	61.6 (a)	0-10
Barium	358	365	2.1	0-10
Beryllium				
Boron				
Cadmium	0.900	4.90	444.4(a)	0-10
Calcium				
Chromium	172	181	5.3	0-10
Cobalt				
Copper				
Iron				
Lead	89.2	79.4	11.0 (a)	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium	7.36	0.00	100.0(a)	0-10
Silver	3.58	0.00	100.0(a)	0-10
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	163	158	2.8	0-10

Associated samples MP16432: LA57952-1, LA57952-2, LA57952-3, LA57952-4, LA57952-6, LA57952-7, LA57952-8, LA57952-9, LA57952-10, LA57952-11, LA57952-12, LA57952-13, LA57952-14, LA57952-15, LA57952-16

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested
 (a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA57952
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16445
Matrix Type: LEACHATE

Methods: SW846 6010C
Units: mg/l

Prep Date: 09/27/19

Metal	RL	IDL	MDL	MB raw	final
Aluminum	0.10	.006	.056		
Antimony	0.10	.0014	.003		
Arsenic	0.10	.0028	.0036	0.000030	<0.10
Barium	1.0	.0001	.004	-0.00018	<1.0
Beryllium	0.10	.00006	.0003		
Boron	0.10	.00051	.03		
Cadmium	0.10	.00015	.0004		
Calcium	0.10	.019	.092		
Chromium	0.10	.00034	.002	-0.00014	<0.10
Cobalt	0.10	.00031	.0017		
Copper	0.10	.00044	.0038		
Iron	0.10	.0021	.017		
Lead	0.10	.0011	.0031	-0.00032	<0.10
Lithium	0.10	.0011	.008		
Magnesium	0.10	.016	.09		
Manganese	0.10	.00016	.0012		
Molybdenum	0.10	.00015	.001		
Nickel	0.10	.00065	.005		
Potassium	0.50	.014	.22		
Selenium	0.10	.0023	.0045		
Silver	0.10	.00041	.0028		
Sodium	0.50	.0052	.17		
Strontium	0.10	.00005	.0032	0.00022	<0.10
Thallium	0.10	.0013	.0051		
Tin	0.10	.00071	.0024		
Titanium	0.10	.00028	.0024		
Vanadium	0.10	.0002	.0024		
Zinc	0.10	.0013	.0037	0.0025	<0.10

Associated samples MP16445: LA57952-3C, LA57952-5C, LA57952-9C

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

4.3.1
4

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16445
 Matrix Type: LEACHATE

Methods: SW846 6010C
 Units: mg/l

Prep Date: 09/27/19 09/27/19

Metal	LA57948-5 Original MS		SpikeLot ICPSPIKE1% Rec		QC Limits	LA57948-5 Original DUP		RPD	QC Limits
Aluminum									
Antimony									
Arsenic	0.0	2.1	2.0	105.0	75-125	0.0	0.0	NC	0-20
Barium	0.0099	2.1	2.0	104.5	75-125	0.0099	0.0097	2.0	0-20
Beryllium									
Boron									
Cadmium									
Calcium									
Chromium	0.0017	2.0	2.0	99.9	75-125	0.0017	0.0016	6.1	0-20
Cobalt									
Copper									
Iron									
Lead	0.0038	2.2	2.0	109.8	75-125	0.0038	0.0040	5.1	0-20
Lithium									
Magnesium									
Manganese									
Molybdenum									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Strontium	0.010	1.0	1.0	99.0	75-125	0.010	0.0098	2.0	0-20
Thallium									
Tin									
Titanium									
Vanadium									
Zinc	0.0067	2.0	2.0	99.7	75-125	0.0067	0.0067	0.0	0-20

Associated samples MP16445: LA57952-3C, LA57952-5C, LA57952-9C

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

4.3.2
4

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16445
 Matrix Type: LEACHATE

Methods: SW846 6010C
 Units: mg/l

Prep Date: 09/27/19

Metal	BSP Result	Spikelot ICP	Spike1% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	1.9	2.0	95.0	80-120
Barium	2.0	2.0	100.0	80-120
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium	1.9	2.0	95.0	80-120
Cobalt				
Copper				
Iron				
Lead	2.1	2.0	105.0	80-120
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium	0.97	1.0	97.0	80-120
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	1.9	2.0	95.0	80-120

Associated samples MP16445: LA57952-3C, LA57952-5C, LA57952-9C

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

4.3.3
4

SERIAL DILUTION RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16445
 Matrix Type: LEACHATE

Methods: SW846 6010C
 Units: ug/l

Prep Date: 09/27/19

Metal	LA57948-5 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	0.00	0.00	NC	0-10
Barium	9.93	7.73	22.2*(a)	0-10
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium	1.65	3.11	88.5 (b)	0-10
Cobalt				
Copper				
Iron				
Lead	3.79	0.00	100.0(b)	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium	9.96	8.76	12.0*(a)	0-10
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	6.70	0.00	100.0(b)	0-10

Associated samples MP16445: LA57952-3C, LA57952-5C, LA57952-9C

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(anr) Analyte not requested

(a) Serial dilution indicates possible matrix interference.

(b) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

4.3.4
4

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA57952
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16523
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 10/05/19

Metal	RL	IDL	MDL	MB raw	final
Aluminum	500	36	120		
Antimony	30	4.8	17		
Arsenic	50	9.3	20		
Barium	100	.8	56	-0.30	<100
Beryllium	20	.5	2		
Boron	2500	2.7	98		
Cadmium	25	.65	7.5		
Calcium	500	40	200		
Chromium	50	1.3	5.5		
Cobalt	50	1	6.5		
Copper	50	2.4	16		
Iron	500	9.8	190		
Lead	50	5.8	16		
Lithium	50	7.2	28		
Magnesium	500	81	410		
Manganese	250	.25	11		
Molybdenum	50	.7	3		
Nickel	50	1.4	8.5		
Potassium	2500	220	630		
Selenium	50	6.6	18		
Silver	50	3.1	15		
Sodium	2500	250	560		
Strontium	50	.4	9.5		
Thallium	25	6.9	19		
Tin	250	2.1	15		
Titanium	50	1	9		
Vanadium	50	1.7	6.5		
Zinc	250	.9	92		

Associated samples MP16523: LA57952-1A, LA57952-2A, LA57952-3A, LA57952-4A, LA57952-5A, LA57952-6A, LA57952-7A, LA57952-8A, LA57952-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

4.4.1
4

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16523
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 10/05/19

Metal	LA57789-1B Original DUP	RPD	QC Limits
Aluminum			
Antimony			
Arsenic			
Barium	1230 1220	0.8	0-20
Beryllium			
Boron			
Cadmium			
Calcium			
Chromium			
Cobalt			
Copper			
Iron			
Lead			
Lithium			
Magnesium			
Manganese			
Molybdenum			
Nickel			
Potassium			
Selenium			
Silver			
Sodium			
Strontium			
Thallium			
Tin			
Titanium			
Vanadium			
Zinc			

Associated samples MP16523: LA57952-1A, LA57952-2A, LA57952-3A, LA57952-4A, LA57952-5A, LA57952-6A, LA57952-7A, LA57952-8A, LA57952-9A

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

4.4.2
4

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16523
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 10/05/19

Metal	BSP Result	Spikelot TTBALA29	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	45000	50000	90.0	80-120
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP16523: LA57952-1A, LA57952-2A, LA57952-3A, LA57952-4A, LA57952-5A, LA57952-6A, LA57952-7A, LA57952-8A, LA57952-9A

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

4.4.3
4

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA57952
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16524
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 10/05/19

Metal	RL	IDL	MDL	MB raw	final
Aluminum	500	30	120		
Antimony	30	7.1	17		
Arsenic	50	14	20		
Barium	100	.5	56	-1.6	<100
Beryllium	20	.3	2		
Boron	2500	2.6	98		
Cadmium	25	.75	7.5		
Calcium	500	93	200		
Chromium	50	1.7	5.5		
Cobalt	50	1.6	6.5		
Copper	50	2.2	16		
Iron	500	10	190		
Lead	50	5.4	16		
Lithium	50	5.5	28		
Magnesium	500	78	410		
Manganese	250	.8	11		
Molybdenum	50	.75	3		
Nickel	50	3.3	8.5		
Potassium	2500	68	630		
Selenium	50	12	18		
Silver	50	2.1	15		
Sodium	2500	26	560		
Strontium	50	.25	9.5		
Thallium	25	6.7	19		
Tin	250	3.6	15		
Titanium	50	1.4	9		
Vanadium	50	1	6.5		
Zinc	250	6.5	92		

Associated samples MP16524: LA57952-10A, LA57952-11A, LA57952-12A, LA57952-13A, LA57952-14A, LA57952-15A, LA57952-16A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

4.5.1
4

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16524
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 10/05/19

Metal	LA57952-10A Original DUP	RPD	QC Limits
-------	-----------------------------	-----	--------------

Aluminum			
Antimony			
Arsenic			
Barium	430	428	0.5
Beryllium			0-20
Boron			
Cadmium			
Calcium			
Chromium			
Cobalt			
Copper			
Iron			
Lead			
Lithium			
Magnesium			
Manganese			
Molybdenum			
Nickel			
Potassium			
Selenium			
Silver			
Sodium			
Strontium			
Thallium			
Tin			
Titanium			
Vanadium			
Zinc			

Associated samples MP16524: LA57952-10A, LA57952-11A, LA57952-12A, LA57952-13A, LA57952-14A, LA57952-15A, LA57952-16A

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

4.5.2
4

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16524
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 10/05/19

Metal	BSP Result	Spikelot TTBALA29	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	51800	50000	103.6	80-120
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP16524: LA57952-10A, LA57952-11A, LA57952-12A, LA57952-13A, LA57952-14A, LA57952-15A, LA57952-16A

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

4.5.3
 4

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA57952
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16550
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 10/08/19

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.6	2.4		
Antimony	0.60	.14	.33		
Arsenic	1.0	.28	.39	-0.058	<1.0
Barium	2.0	.01	1.1	-0.011	<2.0
Beryllium	0.40	.006	.04		
Boron	50	.051	2		
Cadmium	0.50	.015	.15	-0.0030	<0.50
Calcium	10	1.9	3.9		
Chromium	1.0	.034	.11	-0.012	<1.0
Cobalt	1.0	.031	.13		
Copper	1.0	.044	.31		
Iron	10	.21	3.8		
Lead	1.0	.11	.31	-0.035	<1.0
Lithium	1.0	.11	.56		
Magnesium	10	1.6	8.2		
Manganese	5.0	.016	.21		
Molybdenum	1.0	.015	.06		
Nickel	1.0	.065	.17		
Potassium	50	1.4	13		
Selenium	1.0	.23	.35	-0.13	<1.0
Silver	1.0	.041	.3	0.069	<1.0
Sodium	50	.52	11		
Strontium	1.0	.005	.19		
Thallium	0.50	.13	.37		
Tin	5.0	.071	.29		
Titanium	1.0	.028	.18		
Vanadium	1.0	.02	.13		
Zinc	5.0	.13	1.8	-0.0040	<5.0

Associated samples MP16550: LA57952-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

4.6.1
4

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16550
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 10/08/19

Metal	TD45671-1 Original MS	Spikelot ICPSPIKE1% Rec	QC Limits
Aluminum	anr		
Antimony	anr		
Arsenic	10.6	235	238 94.5 75-125
Barium	219	507	238 121.2 75-125
Beryllium	anr		
Boron			
Cadmium	1.4	226	238 94.6 75-125
Calcium	anr		
Chromium	41.0	286	238 103.1 75-125
Cobalt			
Copper	anr		
Iron			
Lead	26.1	253	238 95.5 75-125
Lithium			
Magnesium	anr		
Manganese			
Molybdenum			
Nickel	anr		
Potassium			
Selenium	0.0	221	238 93.0 75-125
Silver	0.0	232	238 97.7 75-125
Sodium			
Strontium			
Thallium			
Tin			
Titanium			
Vanadium			
Zinc	538	794	238 107.8 75-125

Associated samples MP16550: LA57952-5

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

4.6.2
 4

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16550
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 10/08/19

Metal	TD45671-1 Original MSD	Spikelot ICPSPIKE1% Rec	MSD RPD	QC Limit		
Aluminum	anr					
Antimony	anr					
Arsenic	10.6	229	238	91.9	2.6	20
Barium	219	480	238	109.9	5.5	20
Beryllium	anr					
Boron						
Cadmium	1.4	218	238	91.2	3.6	20
Calcium	anr					
Chromium	41.0	266	238	94.7	7.2	20
Cobalt						
Copper	anr					
Iron						
Lead	26.1	240	238	90.1	5.3	20
Lithium						
Magnesium	anr					
Manganese						
Molybdenum						
Nickel	anr					
Potassium						
Selenium	0.0	215	238	90.5	2.8	20
Silver	0.0	228	238	96.0	1.7	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc	538	720	238	76.6	9.8	20

Associated samples MP16550: LA57952-5

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

4.6.2
4

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16550
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 10/08/19

Metal	LCS Result	Spikelot LCSMETAL11% Rec	QC Limits
Aluminum	anr		
Antimony	anr		
Arsenic	117	125	93.6 82-117
Barium	622	529	117.6 82-119
Beryllium	anr		
Boron			
Cadmium	46.1	37.7	122.3*(a) 82-118
Calcium	anr		
Chromium	54.6	58.3	93.7 82-118
Cobalt			
Copper	anr		
Iron			
Lead	93.9	111	84.6 82-117
Lithium			
Magnesium	anr		
Manganese			
Molybdenum			
Nickel	anr		
Potassium			
Selenium	245	251	97.6 79-122
Silver	26.5	27.2	97.4 79-121
Sodium			
Strontium			
Thallium			
Tin			
Titanium			
Vanadium			
Zinc	306	351	87.2 80-119

Associated samples MP16550: LA57952-5

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested
 (a) All reported results < RL

4.6.3
4

SERIAL DILUTION RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16550
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: ug/l

Prep Date: 10/08/19

Metal	TD45671-1	Original	SDL 5:25	%DIF	QC Limits
Aluminum	anr				
Antimony	anr				
Arsenic	44.7	0.00		100.0(a)	0-10
Barium	923	601		34.9*(b)	0-10
Beryllium	anr				
Boron					
Cadmium	5.86	9.13		55.8 (a)	0-10
Calcium	anr				
Chromium	173	163		5.8	0-10
Cobalt					
Copper	anr				
Iron					
Lead	110	142		28.7 (a)	0-10
Lithium					
Magnesium	anr				
Manganese					
Molybdenum					
Nickel	anr				
Potassium					
Selenium	0.00	0.00		NC	0-10
Silver	0.00	16.9		NC	0-10
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Vanadium					
Zinc	2270	2450		8.1	0-10

Associated samples MP16550: LA57952-5

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested
 (a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
 (b) Serial dilution indicates possible matrix interference.

POST DIGESTATE SPIKE SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16550
 Matrix Type: SOLID

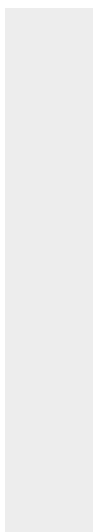
Methods: SW846 6010C
 Units: ug/l

Prep Date:

10/08/19

Metal	Sample ml	Final ml	TD45671-1 Raw	PS Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
-------	--------------	-------------	------------------	---------------	------------	-------------	----------------	---------------	-------	--------------

Antimony
 Boron
 Cobalt
 Iron
 Lithium
 Manganese
 Molybdenum
 Potassium
 Sodium
 Strontium
 Thallium
 Tin
 Titanium
 Vanadium



Associated samples MP16550: LA57952-5

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (**) Corr. sample result = Raw * (sample volume / final volume)
 (anr) Analyte not requested

4.6.5
 4

General Chemistry

5

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
 GENERAL CHEMISTRY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Oil And Grease	GP7279/GN15706	0.010	0.0	%	.01	0.093	93.0	80-120%

Associated Samples:
 Batch GP7279: LA57952-1B, LA57952-3B, LA57952-4B
 (*) Outside of QC limits

5.1
 5

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: LA57952
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Moisture, Percent	GN15702	LA57952-16B	%	52.2	52.1	0.2	0-5%

Associated Samples:

Batch GN15702: LA57952-1B, LA57952-2B, LA57952-3B, LA57952-4B, LA57952-5B, LA57952-6B, LA57952-7B, LA57952-8B, LA57952-9B, LA57952-10B, LA57952-11B, LA57952-12B, LA57952-13B, LA57952-14B, LA57952-15B, LA57952-16B
(*) Outside of QC limits

5.2
5

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: LA57952
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Oil And Grease	GP7279/GN15706	LA57952-1B	%	8.4	.01	9.6	116.0	80-120%

Associated Samples:
Batch GP7279: LA57952-1B, LA57952-3B, LA57952-4B
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

5.3
5

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: LA57952
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Oil And Grease	GP7279/GN15706	LA57952-1B	%	8.4	.01	9.5	0.4	

Associated Samples:
Batch GP7279: LA57952-1B, LA57952-3B, LA57952-4B
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

5.4
5

8/15/2022

Hydro-Environmental Technology, Inc.
Mr. Stewart Stover, Jr.
91 Apollo Rd
Scott, LA, 70583

Ref: Report Number: 22-179-0020
Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Dear Mr. Stewart Stover, Jr.:

Waypoint Analytical Louisiana, Inc. received sample(s) on 6/28/2022 for the analyses presented in the following report. The above referenced project has been analyzed per your instructions. Unless otherwise noted, the analyses were performed in our laboratory in accordance with Standard Methods, The Solid Waste Manual SW-846, EPA Methods for Chemical Analysis of Water and Wastes and /or 40 CFR part 136.

Certain parameters (chlorine, pH, dissolved oxygen, sulfite...) are required to be analyzed within 15 minutes of sampling. Usually, but not always, any field parameter analyzed at the laboratory is outside of this holding time. Refer to sample analysis time for confirmation of holding time compliance. Analyses reported which indicate "Field" for these parameters were analyzed by the client in the field. Results for solid samples are reported on an as received or "wet weight" basis unless otherwise specified.

The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, method validations, instrumentation maintenance and calibration for all parameters (NELAP and non-NELAP) were performed in accordance with guidelines established by the USEPA (including 40 CFR 136 Method Update Rule May 2021) and NELAC unless otherwise indicated. Any parameter for which the laboratory is not officially NELAP accredited is indicated by a '~' symbol. These are not included in the scope because NELAP accreditation is either not available or has not been applied for. Additional certifications may be held/are available for parameters, where NELAP accreditation is not required or applicable. A full list of certifications is available upon request.

All quality control measures undertaken in accordance with Waypoint Analytical Louisiana, Inc. CompQAP990807A and revisions under the terms of the Louisiana Environmental Laboratory Accreditation Program (Certificate #02041) are within acceptance ranges established in that document with the exception of the items indicated and/or discussed in a Case Narrative.

The results are shown on the attached analysis sheet(s). Be aware that the time analyzed for certain samples (e.g. - BOD, CBOD, etc.) refer to the time the sample batch was begun and not necessarily to the time an individual sample was begun. Thank you for allowing Waypoint Analytical Louisiana, Inc. to serve you. Should I be of further assistance, if you have any questions or need additional information please contact me or client services.

Sincerely,



Amy Jackson
Project Manager

Laboratory's liability in any claim relating to analyses performed shall be limited to, at laboratory's option, repeating the analysis in question at laboratory's expense, or the refund of the charges paid for performance of said analysis. This report may be reproduced in full only with the written permission of the laboratory and/or the entity to which it is addressed. Results contained herein relate only to the sample(s) submitted to the laboratory.





5041 Taravella Road, Marrero, LA 70072
Main 504-371-8557 ° Fax 504-371-8560
www.waypointanalytical.com

Certification Summary

Laboratory ID: WP MLA: Waypoint Analytical Louisiana, Inc., Marrero, LA

<u>State</u>	<u>Program</u>	<u>Lab ID</u>	<u>Expiration Date</u>
Georgia	State Program	02041	06/30/2023
Louisiana	State Program - NELAP	02041	06/30/2023

Sample Summary Table

Report Number: 22-179-0020
Client Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Lab No	Client Sample ID	Matrix	Date Collected	Date Received	Method	Lab ID
70492	LT-4 (13-18)	Aqueous	06/22/2022 15:00	06/28/2022	901.1 Mod	
70492	LT-4 (13-18)	Aqueous	06/22/2022 15:00	06/28/2022	2540C-2011	
70493	LT-5 (13-23)	Aqueous	06/22/2022 11:20	06/28/2022	901.1 Mod	
70493	LT-5 (13-23)	Aqueous	06/22/2022 11:20	06/28/2022	2540C-2011	

WAYPOINT ANALYTICAL LOUISIANA

Project: 22-179-0020

**STANDARD LEVEL IV
REPORT OF ANALYSIS**

WORK ORDER #22-06118-OR

August 11, 2022

**EBERLINE ANALYTICAL/OAK RIDGE LABORATORY
OAK RIDGE, TN**

0001

STANDARD OPERATING PROCEDURE

Sample Receiving

**Eberline Services – Oak Ridge Laboratory
LABORATORY DATA SUPPORT CHECKLIST**

MP-001-3

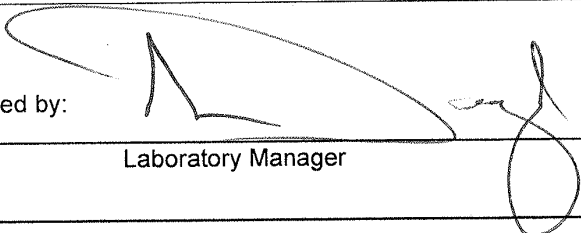
Eberline Services Work Order # 22-06118

The checklist items listed below are to be initialed by appropriate staff upon completion/verification.

Date for Partial	Initials	Date	Initials	Checklist Items
		6/30/22	PS	Sample Log-In
		7/12/22	JS	Data Compilation
		7-25-22	MT	First Technical Data Review
		7/26/22	MM	Second Technical Data Review
		8/1/22		Data Entry/Electronic Deliverable
		8/11/22		Case Narrative
		8/12/22		Electronic Deliverable Proof
		8/12/22		Samples Analyzed within Holding Time Yes? <input checked="" type="checkbox"/> No? <input type="checkbox"/>
		8/12/22		QA/QC Review
				Client in Possession of Data Electronic or Hard Copy
				Invoiced by Laboratory

Technical/Clerical Corrections, Signatures Needed, Problems, Etc	Date/Initials

Date package approved by:


Laboratory Manager


Date

Copy No. _____

Radiochemistry Services
0002

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IV	Analytical Results Summary	0016
V	Analytical Standard	0018
VI	Quality Control Sample Results Summary	026
VII	Laboratory Technician's Notes	031
VIII	Analytical Data (Radium-226)	045
IX	Analytical Data (Radium-228)	084
X	Barium-133 Analytical Tracer Data	0100
XI	Analytical Data (Total Dissolved Solids)	0132
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SECTION I
CHAIN OF CUSTODY
& pH CHECK

0004



5041 Taravella Road, Marrero, LA 70072
 Main 504-371-8557 • Fax 504-371-8560
 www.waypointanalytical.com

06/30/2022 15:08:43

REC'D JUN 30 2022

Export Batch Report

Created: 6/28/2022 17:08:35

Export Batch Id: 8005EXP

Computer: WPALMS-091

User: Christina R. Varuso

22-06118

Project Manager: Amy Jackson

To: Eberline Analytical Coporation
 601 Scarborough Road
 Oak Ridge, TN 37830
 865-481-0683

From: Waypoint Analytical Louisiana, Inc.
 5041 Taravella Rd.
 Marrero, LA 70072
 504-371-8557

Report No	Due Date	Sample Date	Customer Sample No	Rush	Lab No	Method No	Fee Code	Description
22-179-0020	08/08/2022	06/22/2022 15:00	LT-4 (13-18)	70492	EPA-901.1		Radium 226/228 29B	
22-179-0020	08/08/2022	06/22/2022 15:00	LT-4 (13-18)	70492	SM-2540C		Total Dissolved Solids (TDS)	
22-179-0020	08/08/2022	06/22/2022 11:20	LT-5 (13-23)	70493	EPA-901.1		Radium 226/228 29B	
22-179-0020	08/08/2022	06/22/2022 11:20	LT-5 (13-23)	70493	SM-2540C		Total Dissolved Solids (TDS)	

Sampled By	Method of Shipment	Blank / Cooler Temp.
Relinquished By (sign)	Date / Time	Received By (sign)
<i>[Signature]</i>	6-28-22 1710	<i>[Signature]</i>
Relinquished By (sign)	Date / Time	Received By (sign)
		6/30/22 1537



Internal Chain of Custody

Work Order #	22-06118
Lab Deadline	7/25/2022
Analysis	Ra226 - Level 4
Sample Matrix	Water

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
	04	40	KK1.2
	05	30	KK1.2

	Location (circle one)						Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room			
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room			
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room			
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room			
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room			
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room			
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room			
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room			
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room			
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room			
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room			
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room			




Internal Chain of Custody

Work Order #	22-06118
Lab Deadline	7/25/2022
Analysis	Ra228 - Level 4
Sample Matrix	Water

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
	04	40	KK1.2
	05	30	KK1.2

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	JH...	7/18/22 0909
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	MB	7/11/22 0841
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	LP	7/19/22 0909
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	MB	7/19/22 1447
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	LP	7/21/22 1057
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		


 EBERLINE SERVICES Oak Ridge Laboratory	<h1>Internal Chain of Custody</h1>	Work Order #	22-06118
		Lab Deadline	7/1/2022
		Analysis	TDS - Level 4
		Sample Matrix	Water

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
	04	40	KK1.2
	05	30	KK1.2

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	<i>10/15 [Signature]</i>	<i>7-22</i>
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	<i>MK</i>	<i>2 JUL 22 0245</i>
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		

0008

Printed: 7/1/2022 10:07 AM

	Sample Receiving Report (Volumes, pH, & CPM)	Internal Work Order
		22-06118
		Received By RSPENCER

FR	ClientID	# Btls	Comments	Matrix	Storage	Rec Vol Ttl	CPM Max
01	LCS	0		WA	KK1.2		
02	BLANK	0		WA	KK1.2		
03	DUP	0		WA	KK1.2		
04	22-179-0020 LT-4	1		WA	KK1.2	0.00	40
			Container Number	pH Orig	pH Final	Volume (L)	CPM
			1	7	7		40
05	22-179-0020 LT-5	1		WA	KK1.2	3.76	30
			Container Number	pH Orig	pH Final	Volume (L)	CPM
			1	7	7	3.7600	30

Received by: *Randolph Spencer* Date: *7-1-22*

MP-001, Rev 5
Effective: 11/22/02
0009

SECTION II
SAMPLE ACKNOWLEDGEMENT

0010

STANDARD OPERATING PROCEDURE

Sample Receiving

Eberline Services – Oak Ridge Laboratory

SAMPLE RECEIPT CHECKLIST
MP-001-2

WORK ORDER # **22-06118**

SAMPLE MATRIX/MATRICES:

(CIRCLE ONE OR BOTH)

AQUEOUS NON-AQUEOUS

(CIRCLE EITHER YES, NO, OR N/A)

WERE SAMPLES:

Received in good condition?	<input checked="" type="radio"/> Y	<input type="radio"/> N	
If aqueous, properly preserved	<input checked="" type="radio"/> Y	<input type="radio"/> N	N/A

WERE CHAIN OF CUSTODY SEALS:

Present on outside of package?	<input checked="" type="radio"/> Y	<input type="radio"/> N	
Unbroken on outside of package?	<input checked="" type="radio"/> Y	<input type="radio"/> N	
Present on samples?	<input checked="" type="radio"/> Y	<input type="radio"/> N	
Unbroken on samples?	<input checked="" type="radio"/> Y	<input type="radio"/> N	
Was chain of custody present upon sample receipt?	<input checked="" type="radio"/> Y	<input type="radio"/> N	

IF THE RESPONSE TO ANY OF THE ABOVE IS **NO**, A DISCREPANT SAMPLE RECEIPT REPORT (DSR) HAS BEEN ISSUED.

REMARKS: _____

SIGNATURE: Randolph Spencer DATE: 6-30-22

SECTION III
CASE NARRATIVE

0013



EBS-OR-50011

August 15, 2022

Amy Jackson
Waypoint Analytical Louisiana
5041 Taravell Road
Marrero, LA 70072

CASE NARRATIVE
Work Order # 22-06118-OR

SAMPLE RECEIPT

This work order contains two water samples received 06/30/2022. Samples were analyzed for Radium-226/228 and Total Dissolved Solids.

<u>CLIENT ID</u>	<u>LAB ID</u>
LT-4 13-18 - 70492	22-06118-04
LT-5 13-23 - 70493	22-06118-05

ANALYTICAL METHODS

Radium-226 was analyzed using EPA Method 903.0 Modified. Radium-228 was analyzed using EPA Method 904.0. Total Dissolved Solids were performed using Standard Methods 2540C.

ANALYTICAL RESULTS

Combined Standard Uncertainty is reported at 1-sigma value.

Minimum Detectable Activity (MDA) values for data represented in this report are sample-specific. MDA measurements are determined based on factors and conditions including instrument settings, aliquot size, and matrix type.

RADIUM-226

Samples were prepared by removing representative aliquots followed by mixed acid digestions as appropriate. This was followed by precipitations of Radium/Barium Sulfate. Precipitates were dissolved in alkaline EDTA. Radium was selectively precipitated and mounted on micro-porous filter media. Samples were counted by alpha spectroscopy using an energy specific region of interest for Radium-226. The final result was corrected for inherent self-absorption from elemental Barium. Chemical recovery was calculated using a Barium-133 tracer, which was determined by HPGe gamma spectroscopy.

ANALYTICAL RESULTS CONTINUED

RADIUM-226 CONTINUED

Samples demonstrated acceptable results for all Radium-226 analyses. Chemical recovery was acceptable for all analyses. The Radium-226 method blank demonstrated an acceptable result. Results for the Radium-226 duplicate demonstrated a slightly high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. Results for the Radium-226 laboratory control sample demonstrated an acceptable percent recovery.

RADIUM-228

Following alpha spectroscopy analysis of Radium-226, Barium/Radium Sulfate precipitates were redissolved and allowed for sufficient ingrowth of the Actinium-228 daughter. After ingrowth, Actinium-228 was selectively precipitated. Precipitates were filtered and beta emissions for Actinium-228 were counted on a gas proportional counter. Chemical recovery was determined using a Barium-133 tracer, the activity of which was determined by HPGe gamma spectroscopy and an elemental Yttrium carrier by gravimetric measurements. The product of these two recoveries was used to calculate chemical yield.

Samples demonstrated acceptable results for all Radium-228 analyses. Chemical recovery was acceptable for all analyses. The Radium-228 method blank demonstrated an acceptable result. Results for the Radium-228 duplicate demonstrated a slightly high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. Results for the Radium-228 laboratory control sample demonstrated an acceptable percent recovery.

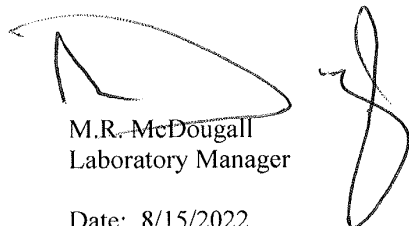
TOTAL DISSOLVED SOLIDS (TDS)

A volumetric aliquot of each sample was filtered through 0.45µm filter media into a tared 250 ml beaker. Samples were dried on a hot plate and allowed to cool. The TDS content was determined by reweighing tared beakers.

Samples demonstrated Total Dissolved Solids content of 647.0 and 885.0 mg/L.

CERTIFICATION OF ACCURACY

I certify that this data report complies with the terms and conditions of the Purchase Order, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the cognizant project manager or his/her designee to be accurate as verified by the following signature.


M.R. McDougall
Laboratory Manager

Date: 8/15/2022

Eberline Analytical wants and encourages your feedback regarding our performance providing radioanalytical services. Please visit <http://eberlineanalytical.com/> to provide us with feedback on our services.

SECTION IV
ANALYTICAL RESULTS SUMMARY

0016

Eberline Analytical Final Report of Analysis		Report To:				Work Order Details:							
Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
Amy Jackson Waypoint Analytical Louisiana 5041 Taravell Road Marrero, LA 70072													
SDG: 22-06118 Purchase Order: 22-179-0020 Analysis Category: ENVIRONMENTAL Sample Matrix: WA													
22-06118-01	LCS	KNOWN	07/01/22 00:00	7/1/2022	7/19/2022	22-06118	Radium-226	EPA 903.0 Modified	1.01E+01	4.66E-01			pCi/l
22-06118-01	LCS	SPIKE	07/01/22 00:00	7/1/2022	7/19/2022	22-06118	Radium-226	EPA 903.0 Modified	1.16E+01	1.45E+00	2.85E+00	2.74E-01	pCi/l
22-06118-02	MBL	BLANK	07/01/22 00:00	7/1/2022	7/19/2022	22-06118	Radium-226	EPA 903.0 Modified	9.15E-02	1.48E-01	1.49E-01	2.55E-01	pCi/l
22-06118-03	DUP	LT-4 13-18 - 70492	06/22/22 15:00	7/1/2022	7/19/2022	22-06118	Radium-226	EPA 903.0 Modified	8.10E-01	3.80E-01	4.17E-01	2.49E-01	pCi/l
22-06118-04	DO	LT-4 13-18 - 70492	06/22/22 15:00	7/1/2022	7/19/2022	22-06118	Radium-226	EPA 903.0 Modified	5.28E-01	3.23E-01	3.42E-01	2.37E-01	pCi/l
22-06118-05	TRG	LT-5 13-23 - 70493	06/22/22 11:20	7/1/2022	7/19/2022	22-06118	Radium-226	EPA 903.0 Modified	8.52E-01	4.23E-01	4.60E-01	2.25E-01	pCi/l
22-06118-01	LCS	KNOWN	07/01/22 00:00	7/1/2022	7/21/2022	22-06118	Radium-228	EPA 904.0	9.19E+00	4.69E-01			pCi/l
22-06118-01	LCS	SPIKE	07/01/22 00:00	7/1/2022	7/21/2022	22-06118	Radium-228	EPA 904.0	1.06E+01	1.69E+00	2.93E+00	1.42E+00	pCi/l
22-06118-02	MBL	BLANK	07/01/22 00:00	7/1/2022	7/21/2022	22-06118	Radium-228	EPA 904.0	2.05E-01	4.46E-01	4.48E-01	9.30E-01	pCi/l
22-06118-03	DUP	LT-4 13-18 - 70492	06/22/22 15:00	7/1/2022	7/21/2022	22-06118	Radium-228	EPA 904.0	8.87E-01	5.33E-01	5.69E-01	1.03E+00	pCi/l
22-06118-04	DO	LT-4 13-18 - 70492	06/22/22 15:00	7/1/2022	7/21/2022	22-06118	Radium-228	EPA 904.0	1.46E+00	5.33E-01	6.27E-01	9.74E-01	pCi/l
22-06118-05	TRG	LT-5 13-23 - 70493	06/22/22 11:20	7/1/2022	7/21/2022	22-06118	Radium-228	EPA 904.0	1.16E+00	4.71E-01	5.39E-01	8.82E-01	pCi/l
22-06118-04	TRG	LT-4 13-18 - 70492	06/22/22 15:00	7/1/2022	7/2/2022	22-06118	TDS	SM2540C	6.47E+02				mg/l
22-06118-05	TRG	LT-5 13-23 - 70493	06/22/22 11:20	7/1/2022	7/2/2022	22-06118	TDS	SM2540C	8.85E+02				mg/l

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (1-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original



EBERLINE
ANALYTICAL

EBERLINE ANALYTICAL CORPORATION

601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 FAX 865/483-4621

SECTION V
ANALYTICAL STANDARD

0018

SRS Number: 110755

Source Description: 5 mL Liquid in Flame Sealed Ampoule

Product Code: 8133

Customer: Eberline Analytical Corporation

P.O. Number: MCDUGAL14AUG18/VS, Item 1

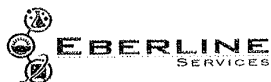
This standard radionuclide source was prepared gravimetrically from a master solution calibrated with an ionization chamber. The ionization chamber was calibrated by the National Physical Laboratory (NPL), Teddington, U.K., and is traceable to national standards. Radionuclide calibration and purity were checked by germanium gamma-ray spectrometry, liquid scintillation counting, and/or alpha spectrometry, as applicable. The nuclear decay rate and reference date for this source are given below. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology (NIST) through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 2, July 2007, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST."

Reference Date: 06-September-2018 12:00 PM EST

Isotope	Half-Life, d	Activity, Bq	Uncertainty			Calibration Method**
			$u_A, \%$	$u_B, \%$	$U, \%^*$	
Ba-133	3.854E+03	1.834E+05	0.1	0.9	1.8	IC

Uncertainty:** U - Relative expanded uncertainty, $k = 2$. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results." *Calibration Methods:** 4π LS - 4π Liquid Scintillation Counting, HPGe - High Purity Germanium Gamma-Ray Spectrometer, IC - Ionization Chamber.

(Certificate continued on reverse side)



QUALITY CONTROL PROGRAM
QCP-009

Rev.8; 11/10/03
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE SOLUTIONS
PRIMARY DILUTION RECERTIFICATION
QCP 009-1

SOLUTION REFERENCE # EZA 100755 CURRENT DATE 10/19/2021 0:00
SOLUTION # Ba-7

Principal Radionuclide ¹³³Barium Half Life, Years 1.048E+01 Half Life, Days 3.828E+03

Radionuclide ¹³³Barium Reference Date 9/6/2018 12:00
Certified Activity 1.834E+05 Total Bq

Ampoule /Solution Gross Weight, Grams
Empty Ampoule Weight, Grams
Solution Net Weight, Grams
Total Activity in Ampoule 4.9568 μ Ci

Chemical Composition of Standard Solution
¹³³BaCl₂ in 1M HCl

Dilution Instructions: Dilution Solvent Used 1M HCl
Dilute to a volume of 1000.00 milliliters

Certified Total Activity of 4.9568 μ Ci Which Equals 1.100E+07 dpm at the date listed above

And after dilution the activity of this solution is 1.100E+04 dpm/ml. This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: October 19, 2022

Verified & Approved By [Signature]
QC Approval [Signature]

Date: 10/19/21
Date: 10-19-21

CERTIFICATE OF CALIBRATION ALPHA STANDARD SOLUTION

Ra-5

QA/QC REVIEWED
Date 2/8/94 Initials <i>WT</i>

Radionuclide:	Ra-226	Customer:	TMA EBERLINE
Half Life:	1600 ± 7 years	P.O.No.:	VH1888
Catalog No.:	7226	Reference Date:	February 1 1994 12:00 PST.
Source No.:	453-26	Contained Radioactivity: (Ra-226)	1.001 μCi.
		Contained Radioactivity: (Ra-226)	37.0 kBq.

Description of Solution

a. Mass of solution:	5.1864 g (in a 5 ml Flame Sealed Ampoule)
b. Chemical form:	Ra(NO3)2 in 1 N HNO3
c. Carrier content:	None added
d. Density:	1.0318 g/ml @ 20°C.

Radioimpurities: None detected (other than daughters)

Radioactive Daughters: Rn-222, Po-218, At-218, Pb-214, Bi-214, Po-214, Tl-210, Pb-210, Bi-210, Po-210 and Tl-206.

Radionuclide Concentration: (Ra-226) 0.1929 μCi/g.

Method of Calibration

Weighed aliquots of the solution were assayed using gamma spectrometry:

Energy peak(s) integrated under: 186 keV.

Branching ratio(s) used: 0.0351 gamma rays per decay.

Uncertainty of Measurement

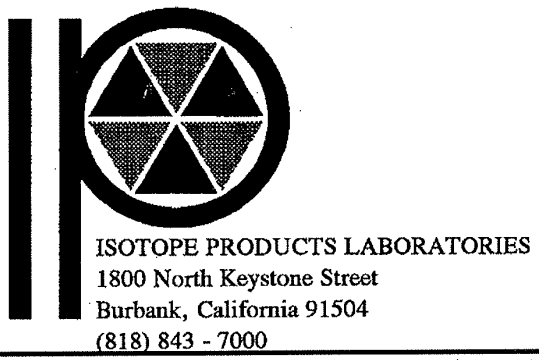
a. Systematic uncertainty in instrument calibration:	±3.4%
b. Random uncertainty in assay:	±3.1%
c. Random uncertainty in weighing(s):	±0.2%
d. Total uncertainty at the 99% confidence level:	±4.6%

NIST Traceability: This calibration is implicitly traceable to the National Institute of Standards and Technology.

Leak Test(s): See reverse side for Leak Test(s) applied to this source.

Notes

1. Nuclear data were taken from "Table of Radioactive Isotopes", edited by Virginia S. Shirley, 1986.
2. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (As in NRC Regulatory Guide 4.15).



Ana H. Kwan
QUALITY CONTROL
Feb. 3, 1994
Date Signed

0021



QUALITY CONTROL PROGRAM
MP 009

Rev.8; 11/01/03
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE SOLUTIONS
PRIMARY DILUTION RECERTIFICATION
MP 009

SOLUTION REFERENCE # CURRENT DATE
SOLUTION #

Principal Radionuclide Half Life, Years Half Life, Days

Radionuclide Reference Date
Certified Activity μCi
Certified Concentration $\mu\text{Ci per gram}$

Ampoule /Solution Gross Weight, Grams
Empty Ampoule Weight, Grams
Solution Net Weight, Grams
Total Activity in Ampoule μCi

Chemical Composition of Standard Solution

Dilution Instructions: Dilution Solvent Used

Dilute to a volume of milliliters

Certified Total Activity of μCi Which Equals dpm at the date listed above

And after dilution the activity of this solution is dpm/ml
This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date:

Verified & Approved By 

Date:

QC Approval 

Date:

0022



QUALITY CONTROL PROGRAM
MP 009

Rev.8; 11/01/03
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE STANDARD SOLUTIONS
SECONDARY DILUTION RECERTIFICATION

Solution Reference # MP 009 IPL-453-26 Date 8/3/2022 0:00
Solution # Ra-5b

Principal Radionuclide ²²⁶Radium Half Life, Years 1.600E+03 Half Life, Days 5.844E+05

Radionuclide of Interest ²²⁶Radium Reference Date 2/1/1994 0:00
Parent Solution Conc. 2.22E+03 dpm/ml

Chemical Composition of Standard Solution
²²⁶Ra(NO₃)₂ in 1M HNO₃

Dilution Instructions: Dilution Solvent Used 1M HNO₃

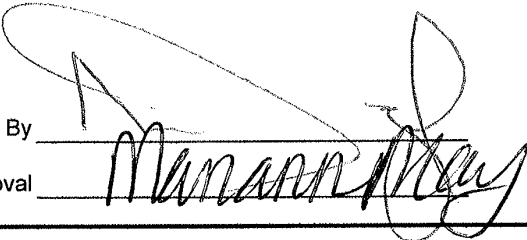
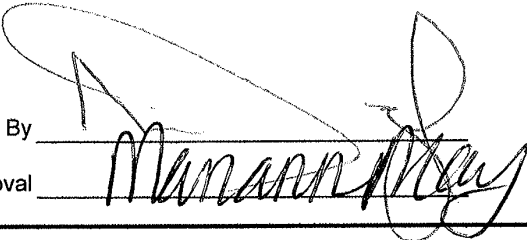
SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution: 20.0000 ml
Total Activity: 4.4440E+04 dpm Final Activity Concentration: 4.4440E+01 dpm/ml
Final Volume: 1000.00 ml

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

NOTES:

Expiration Date: 2-Aug-23

Verified & Approved By 
QC Approval 

Date: 8/3/2022 0:00
Date: 8-3-22



ANALYTICS #411 Rec'd 2/15/06 Presented

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 • U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

72325-207

Ra²²⁸

Ra-228 5 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared gravimetrically from a calibrated master solution. The master solution was calibrated using a germanium gamma spectrometer system.

Radionuclide purity and calibration were checked using a germanium gamma spectrometer system. The nuclear decay rate and assay date for this source are given below.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

ISOTOPE:	Ra-228
ACTIVITY (dps):	4.022 E3
HALF-LIFE:	5.75 years
CALIBRATION DATE:	February 10, 2006 12:00 EST
RELATIVE EXPANDED UNCERTAINTY (k=2):	4.0%

Impurities: γ -impurities <0.1%

5.10721 grams 0.1M HCl solution with 50 μ g/g Ba carrier.

P O NUMBER 00003181, Item 1

SOURCE PREPARED BY: *M. Taskaeva*
M. Taskaeva, Radiochemist

Q A APPROVED: *W.M. [Signature] 2-13-06*

0024



QUALITY CONTROL PROGRAM
MP-009

Rev.8; 1/10/03
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE SOLUTIONS
RECERTIFICATION
MP 009

SOLUTION REFERENCE # Analytics 7235-207 CURRENT DATE 1/7/2022 0:00
SOLUTION # Ra-12

Principal Radionuclide ²²⁸Ra Half Life, Years 5.750E+00 Half Life, Days 2.100E+03

Radionuclide ²²⁸Ra Reference Date 2/10/2006 0:00
Certified Activity 1.087E-01 μCi
Certified Concentration $\mu\text{Ci per gram}$

Ampoule /Solution Gross 9.0741 Weight, Grams
Empty Ampoule 3.9858 Weight, Grams
Solution Net 5.0883 Weight, Grams
Total Activity in Ampoule 0.1087 μCi

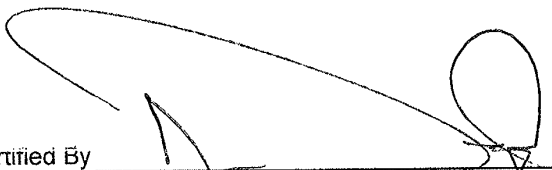
Chemical Composition of Standard Solution
²²⁸Ra(NO₃)₂ in 0.5 M HCl

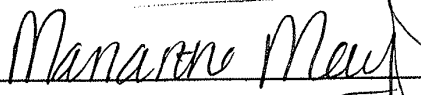
Dilution Instructions: Dilution Solvent Used 0.5 M HCl
Dilute to a volume of 991.00 Kg

Certified Total Activity of 0.1087 μCi Which Equals 2.413E+05 dpm at the date listed above

And after dilution the activity of this solution is 2.435E+02 dpm/ml
This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: January 4, 2023

Recertified By  Date: 1/7/22

QC Approval  Date: 1-7-22

SECTION VI
QUALITY CONTROL SAMPLE RESULTS SUMMARY

0026

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
22-06118	Ra226	1	pCi	I	Waypoint Analytical Louisiana

Laboratory Control Sample

Analyte	LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
RA-226	114.37%	24.58%	100.00%	4.60%	1.01E+01	4.66E-01	1.16E+01	2.85E+00	Ra-5b	4.39E+01	4.60E+00	5.12E-01

Matrix Spike

Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

Replicate Sample

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	MS % R	MS ND	Rep RPD	Rep ND
RA-226	1.02	42.14	5.28E-01	3.42E-01	8.10E-01	4.17E-01	1.14	OK			NA	OK

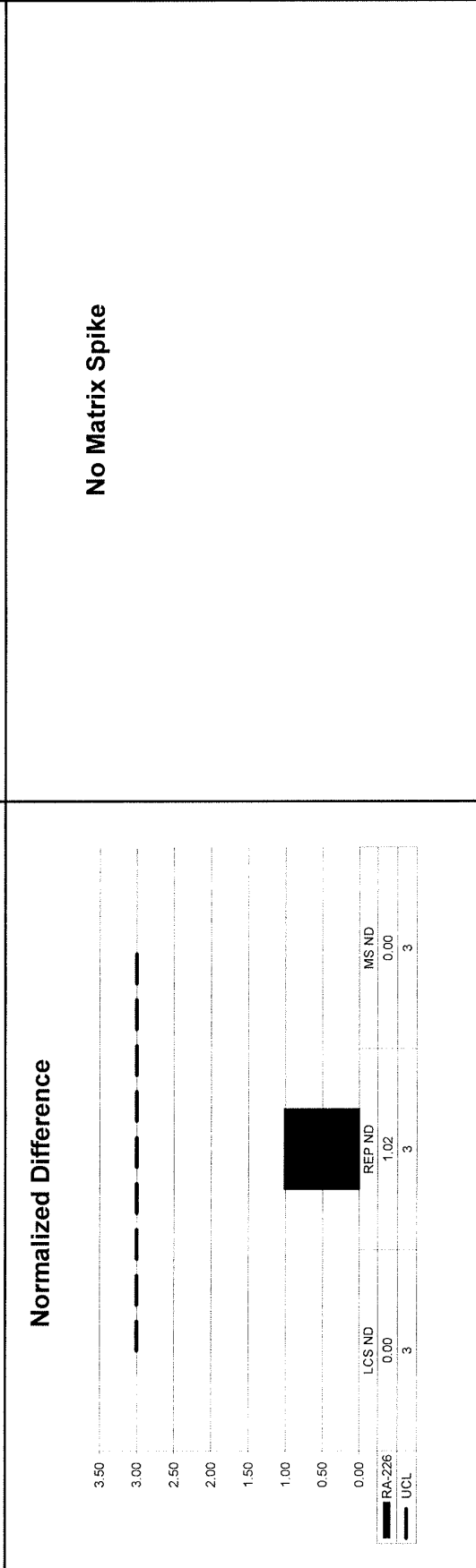
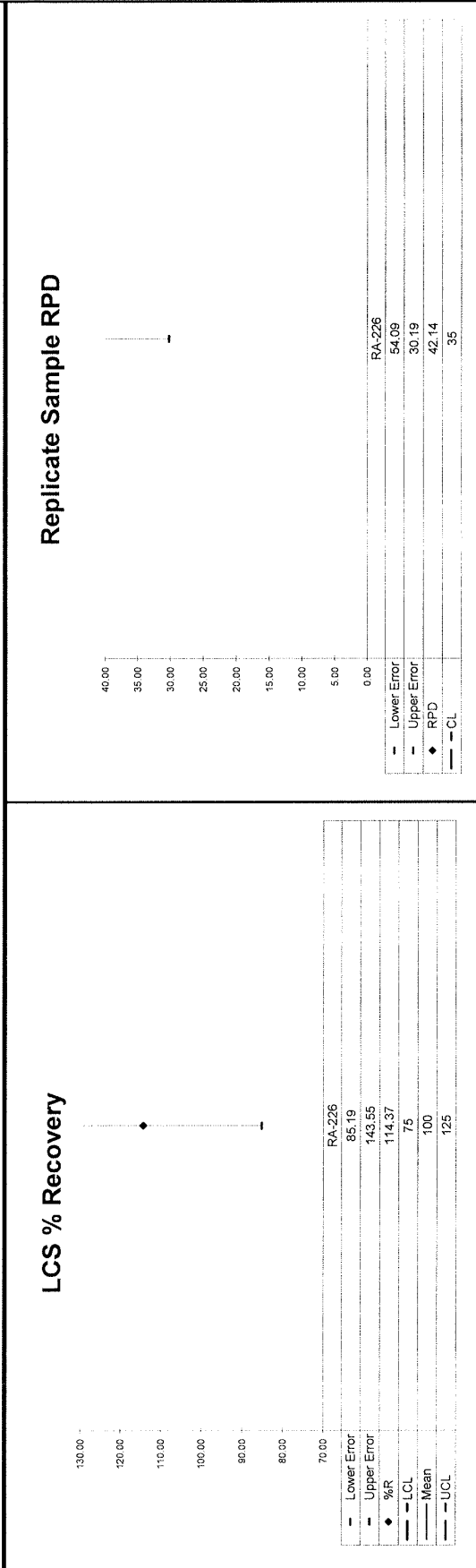
QC Summary

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	MS % R	MS ND	Rep RPD	Rep ND
RA-226	1.02	42.14	5.28E-01	3.42E-01	8.10E-01	4.17E-01	1.14	OK			NA	OK

0027

Version

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
22-06118	Ra226	1	pCi	I	Waypoint Analytical Louisiana



0028

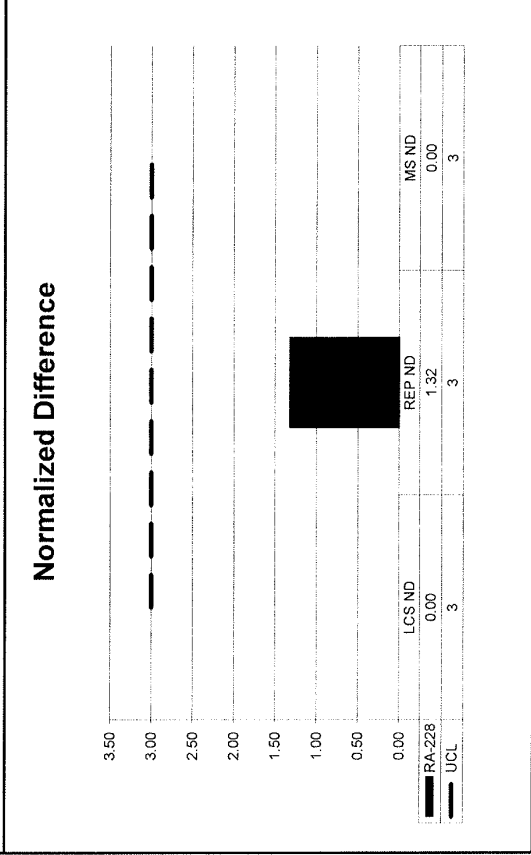
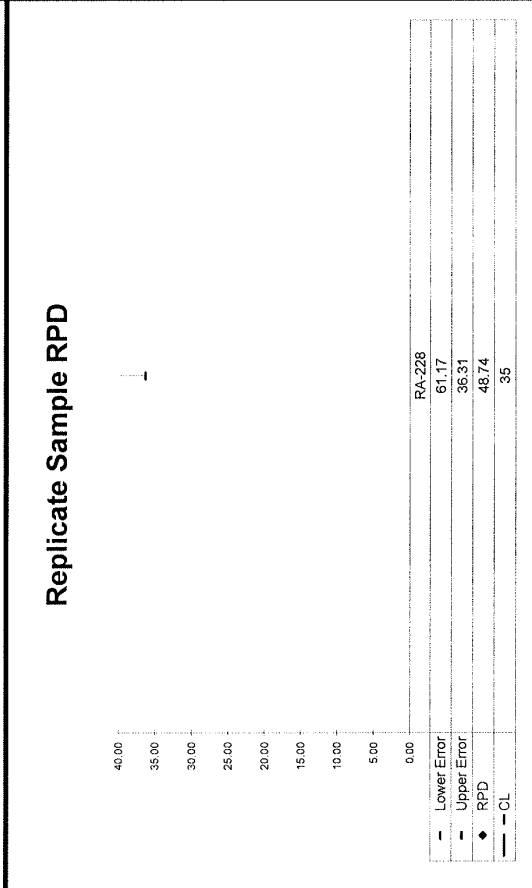
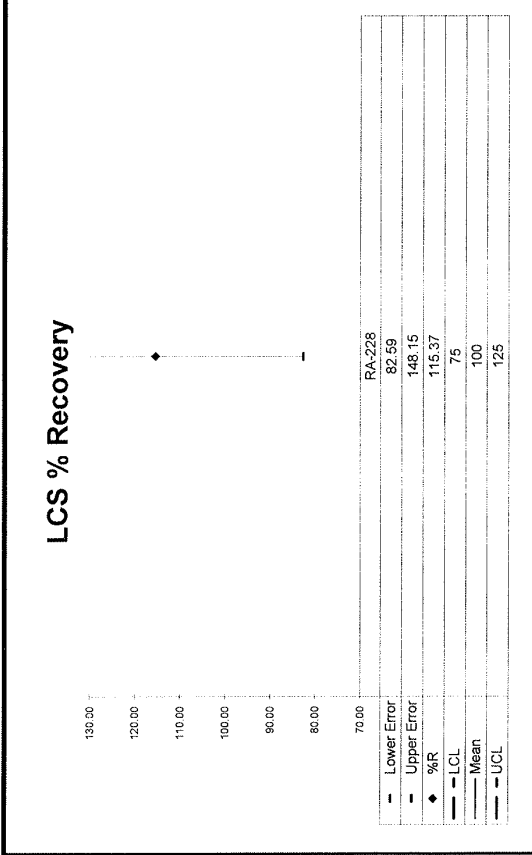
W/O	Analysis	Run	Activity Units	Aliquot Units	Client Name
22-06118	Ra228	1	pCi	I	Waypoint Analytical Louisiana

Laboratory Control Sample												
Analyte	LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
RA-228	115.37%	27.68%	100.00%	5.10%	9.19E+00	4.69E-01	1.06E+01	2.93E+00	Ra-12	3.36E+01	5.10E+00	6.08E-01

Matrix Spike												
Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

Replicate Sample						QC Summary					
Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS % R	MS % R	MS ND	Rep RPD	Rep ND
RA-228	1.32	48.74	1.46E+00	6.27E-01	8.87E-01	5.69E-01	OK			NA	OK

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
22-06118	Ra228	1	pCi	1	Waypoint Analytical Louisiana



No Matrix Spike

SECTION VII
LABORATORY TECHNICIAN'S NOTES

0031

RA-226 NOTES

0032

 EBERLINE <small>SERVICES</small> Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	22-06118
		Analysis Code	Ra226
		Run Number	1

#	Date	Dept	User	Notes
1	07/08/22 11:37	PREP	JHARVEY	ALIQUOTED AND ADDED SPIKE AND TRACER- PH'D SAMPLES- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMPLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS

J Harvey
 7/8/22

 EBERLINE SERVICES Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	22-06118
		Analysis Code	Ra226
		Run Number	1

#	Date	Dept	User	Notes
1	07/08/22 11:37	PREP	JHARVEY	ALIQOTED AND ADDED SPIKE AND TRACER- PH'D SAMPLES- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMPLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS
2	07/19/22 08:43	CHEM	MDAVIS	ADDED EDTA TO SAMPLES AND LET SIT. ADDED AMMONIUM SULFATE AND ACETIC ACID TO SAMPLES. RECORDED TO. FILTERED ONTO TARED FILTER PAPERS, LET DRY UNDER HEAT LAMP, REWEIGHED, AND SUBMITTED TO COUNT.

MB
7/19/22


0034

 EBERLINE <small>SERVICES</small> Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	22-06116
		Analysis Code	Ra226
		Run Number	1

#	Date	Dept	User	Notes
1	07/11/22 11:36	PREP	JHARVEY	ALIUQUOTED AND ADDED SPIKE AND TRACER- PH'D SAMPLES- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMPLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS
2	07/11/22 08:22	PREP	JHARVEY	DUE TO HIGH AMOUNT OF SOLIDS PRESENT, ADDED .25M EDTA TO PRECIP, VORTEXED AND PUT SAMPLES IN A HOT WATER BATH- VORTEXED AND CHECKED PH- CENTRIFUGED AND TRANSFERRED SUPERNATE INTO CLEAN C-TUBES AND SUBMITTED SAMPLES TO SEPARATIONS

J Harvey
 7/11/22

0035

 EBERLINE SERVICES Reagents Used in an Analysis		Internal Work Order		
		22-06118		
		Analysis Code		Run
		Ra226		1
Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
024396P	Ammonium Hydroxide	Reagent Grade	JHARVEY	7/8/2022
023625D07	Ammonium Sulfate	200 mg/ml	JHARVEY	7/8/2022
023237D06	Barium Carrier	1 mg/ml	JHARVEY	7/8/2022
023967D01	Lead Carrier	166 mg/ml	JHARVEY	7/8/2022
024457P	Nitric Acid	Reagent Grade	JHARVEY	7/8/2022
024243P	Acedic Acid, Glacial	Reagent Grade	MDAVIS	7/19/2022
023625D02	Ammonium Sulfate	200 mg/ml	MDAVIS	7/19/2022
024431S	EDTA	0.25M	MDAVIS	7/19/2022

Alpha Bank #3

Date	Sample #	Client	Lead Time	Count Time	Analysis	Tech
7/15/22	Cal Check (49-60)	Lab	1122	2hr 30min	NA	KP
7/15/22	System Bkgd	Lab	1358	10hrs 40min	NA	KP
7/18/22	Daily Pulser	Lab	0553	10min	NA	KP
7/18/22	2207031A (1-7)	Env. Man.	0759	2hr 50min	UU	KP
7/18/22	2207031A (1-7)	Env. Man.	0800	2hr 50min	Th	KP
7/18/22	2207028A (1-4)	Parsons	0800	5hr 35min	Pu	KP
7/18/22	2207028A (1-4)	Parsons	0801	5hr 35min	Am ²⁴¹	KP
7/18/22	2207051A (1-4)	USA	1055	2hr 50min	Ra ²²⁶	KP
7/18/22	2206103A (1-4)	UCOR	1359	2hr 50min	Ra ²²⁶	CB
7/19/22	Daily Pulser	Lab	0534	10min	NA	KP
7/19/22	2207048A (3,4,6)	UCOR	0758	2hr 50min	UU	KP
7/19/22	2207051A (1-4)	USA	0759	2hr 50min	UU	KP
7/19/22	2206103A (1-4,7)	UCOR	0759	2hr 50min	Pu	KP
7/19/22	2206103A (1-4)	UCOR	0800	2hr 50min	Pu ²⁴²	KP
7/19/22	2207020A (1-4)	Bergen City	0800	2hr 50min	UU	KP
7/19/22	2207038A (1,2)	UCOR	0800	2hr 50min	UU	KP
7/19/22	2207038A (3-5)	UCOR	1056	2hr 50min	UU	KP
7/19/22	2207019A (1-5)	Waypoint	1057	2hr 50min	Ra ²²⁶	KP
7/19/22	2206118A (1-5)	Waypoint	1058	2hr 50min	Ra ²²⁶	KP


RA-228 NOTES

0038

 EBERLINE <small>SERVICES</small> Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	22-06118
		Analysis Code	Ra228
		Run Number	1

#	Date	Dept	User	Notes
1	07/08/22 11:37	PREP	JHARVEY	ALIQOTED AND ADDED SPIKE AND TRACER- PH'D SAMPLES- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMPLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS


J Harvey
 7/8/22

 EBERLINE SERVICES Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	22-06118
		Analysis Code	Ra228
		Run Number	1

#	Date	Dept	User	Notes
1	07/08/22 11:37	PREP	JHARVEY	ALIQUOTED AND ADDED SPIKE AND TRACER- PH'D SAMPLES- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMPLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS
2	07/21/22 10:16	CHEM	MDAVIS	ADDED FILTER PAPERS FROM COUNT ROOM TO LABELED C-TUBES, FILLED WITH EDTA SOLUTION AND LET SIT OVERNIGHT. REMOVED FILTER FROM EDTA-ADDED 2MLS YTTRIUM 9MG/ML CARRIER ADDED 18N NAOH TO SAMPLES AND RECORDED T1. HOT BATHED FOR 15 MIN, CENTRIFUGED AND DISCARDED SUPERNANT. ADDED 6N HNO3, DI WATER AND 10N NAOH. HOT BATHED FOR 15 MIN, CENTRIFUGED AND DISCARDED SUPERNTANT. ADDED IN HNO3, DI WATER, AND AMMONIUM OXALATE. FILTERED ONTO TARED FILTER PAPERS. LET DRY UNDER HEAT LAMP, REWEIGHED AND SUBMITTED TO COUNT.

mb
7/21/22

0040

 Reagents Used in an Analysis		Internal Work Order		
		22-06118		
		Analysis Code		Run
		Ra228		1
Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
024396P	Ammonium Hydroxide	Reagent Grade	JHARVEY	7/8/2022
023625D07	Ammonium Sulfate	200 mg/ml	JHARVEY	7/8/2022
023237D06	Barium Carrier	1 mg/ml	JHARVEY	7/8/2022
023967D01	Lead Carrier	166 mg/ml	JHARVEY	7/8/2022
024457P	Nitric Acid	Reagent Grade	JHARVEY	7/8/2022
023894D03	Ammonium Oxalate	5%	MDAVIS	7/21/2022
024225S	EDTA	0.25M	MDAVIS	7/21/2022
024041D26	Nitric Acid	1N	MDAVIS	7/21/2022
023733D08	Nitric Acid	6N	MDAVIS	7/21/2022
024355S	Sodium Hydroxide	10M	MDAVIS	7/21/2022
024354S	Sodium Hydroxide	18M	MDAVIS	7/21/2022
024295S	Yttrium Carrier	9 mg/ml	MDAVIS	7/21/2022

Aqua LB4110

93

Date	Sample #	Client	Lead Time	Count Time	Analysis	Tech
7/19/22	Cross Talk	Lab	0722	5 min	XB	KP
7/19/22	Cross Talk	Lab	0729	5 min	XB	KP
7/19/22	2206103SY (1-46)	UCOR	0740	2 hrs	Sr ⁹⁰	KP
7/19/22	2206105SY (1-46)	UCOR	0741	2 hrs	Sr ⁹⁰	KP
7/19/22	2207057AB (19)	APTIM	0942	2 hrs	XB	KP
7/19/22	2207051Ra (1)	USA	1057	1 hr	Ra ⁸	KP
7/19/22	2207051Ra (2-4)	USA	1057	2 hrs	Ra ⁸	KP
7/19/22	2206116Ra (2-4)	Data Resources	1058	2 hrs	Ra ⁸	KP
7/19/22	2206116Ba (1)	Data Resources	1144	1 hr	Ra ⁸	KP
7/19/22	2207060AB (5-8)	UCOR	1240	2 hrs	XB	KP
7/19/22	2207051SY (1-57)	ERA	1259	1 hr	Sr ⁹⁰	KP
7/19/22	2207026AB (2-4)	Bergen City Util.	1404	2 hrs	XB	KB
7/19/22	2207039AB (2-4)	UCOR	1405	2 hrs	XB	KB
7/19/22	2207039AB (6)	UCOR	1450	30 mins	XB	KB
7/20/22	Daily Bkgd/QC	Lab	0552/0655	1 hr/30 min	XB	KP
7/20/22	Cross Talk	Lab	0736	5 min	XB	KP
7/20/22	Cross Talk	Lab	0745	5 min	XB	KP
7/20/22	2207074AB (1-8)	UCOR	0755	2 hrs	XB	KP
7/20/22	2207021RAC	Gilbert Summit	1101	2 hrs	Ra ⁸	KB
7/21/22	Daily Bkgd/QC	Lab	0630/0748	1 hr/30 min	XB	KP
7/21/22	Cross Talk	Lab	0734	5 min	XB	KP
7/21/22	Cross Talk	Lab	0754	5 min	XB	KP
7/21/22	2206118Ra (1)	Waypoint	1100	30 min	Ra ⁸	KP
7/21/22	2206118Ra (2-5)	Waypoint	1100	2 hrs	Ra ⁸	KP
7/21/22	2207019Ra (1-5)	Waypoint	1101	2 hrs	Ra ⁸	KP

0042

TDS NOTES

0043

 EBERLINE <small>SERVICES</small> Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	22-06118
		Analysis Code	TDS
		Run Number	1

#	Date	Dept	User	Notes
1	07/02/22 02:24	PREP	MHIGHTOWER	Filtered sample into tared beaker, dried, re-weighed

MIL 2 JUL 22

SECTION VIII
ANALYTICAL DATA (RADIUM-226)

0045

Work Order	22-06118
Analysis Code	Ra226
Run	1
Date Received	7/11/2022
Lab Deadline	7/25/2022
Client	Waypoint Analytical Louisiana
Project	22-179-0020
Report Level	4
Activity Units	pCi
Aliquot Units	I
Matrix	WA
Method	EPA 903.0 Modified
Instrument Type	Alpha Spectroscopy
Radiometric Tracer	Ba-133
Radiometric Sol#	Ba-7
Tracer Act (dpm/g)	8538.42
Carrier	
Carrier Conc (mg/ml)	

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		07/01/22 00:00	1.0000E+00
02	MBL	BLANK		07/01/22 00:00	1.0000E+00
03	DUP	LT-4 13-18 - 70492	40	06/22/22 15:00	1.0000E+00
04	DO	LT-4 13-18 - 70492	40	06/22/22 15:00	1.0000E+00
05	TRG	LT-5 13-23 - 70493	30	06/22/22 11:20	1.0000E+00

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

0046

Internal Fraction	Sample Desc	Tracer Aliquot (g)	Tracer Total ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	Grav Carrier Added (ml)	Grav Filter Tare (g)	Grav Filter Final (g)	Grav Filter Net (g)	Grav % Rec	Mean % Rec	SAF 1*	SAF 2*
01	LCS	0.1272	1086.1	448.0	91.57		0.0207	0.0276	0.0069		91.57	2.47	1.00
02	MBL	0.1272	1086.1	517.0	105.68		0.0206	0.0276	0.0070		105.68	2.50	1.00
03	DUP	0.1255	1071.6	440.0	91.16		0.0207	0.0306	0.0099		91.16	3.00^	1.00
04	DO	0.1159	989.6	469.0	105.21		0.0206	0.0301	0.0095		105.21	3.00^	1.00
05	TRG	0.1258	1074.1	499.0	103.13		0.0206	0.0301	0.0095		103.13	3.00^	1.00

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep t0 Date/Time	Sep t0 By	Sep t1 Date/Time	Sep t1 By
01	LCS			07/08/22 07:57	JHARVEY	07/19/22 08:29	M DAVIS		
02	MBL			07/08/22 07:57	JHARVEY	07/19/22 08:29	M DAVIS		
03	DUP			07/08/22 07:57	JHARVEY	07/19/22 08:29	M DAVIS		
04	DO			07/08/22 07:57	JHARVEY	07/19/22 08:29	M DAVIS		
05	TRG			07/08/22 07:57	JHARVEY	07/19/22 08:29	M DAVIS		

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
 ** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

	Run	1	Ra226 Analysis Code	22-06118 Eberline Services Work Order	Waypoint Analytical Louisiana Client	0049
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Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	RA-226	LCS	LCS	pCi/l	1.16E+01	1.45E+00	2.74E-01	1.01E+01	114.37	OK		OK	
02	RA-226	MBL	BLANK	pCi/l	9.15E-02	1.48E-01	2.55E-01					OK	OK
03	RA-226	DUP	LT-4 13-18 - 70492	pCi/l	8.10E-01	3.80E-01	2.49E-01				NA	OK	
04	RA-226	DO	LT-4 13-18 - 70492	pCi/l	5.28E-01	3.23E-01	2.37E-01					OK	
05	RA-226	TRG	LT-5 13-23 - 70493	pCi/l	8.52E-01	4.23E-01	2.25E-01					OK	

	Run	1	Analysis Code	Ra226	22-06118	Eberline Services Work Order	Client	0500
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Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep.10 Date/Time	Sep.11 Date/Time
01	RA-226	LCS	07/01/22 00:00	1.00E+00	91.57	0.00	91.57		7/19/2022 8:29	
02	RA-226	MBL	07/01/22 00:00	1.00E+00	100.00	0.00	105.68		7/19/2022 8:29	
03	RA-226	DUP	06/22/22 15:00	1.00E+00	91.16	0.00	91.16		7/19/2022 8:29	
04	RA-226	DO	06/22/22 15:00	1.00E+00	100.00	0.00	105.21		7/19/2022 8:29	
05	RA-226	TRG	06/22/22 11:20	1.00E+00	100.00	0.00	103.13		7/19/2022 8:29	

	0051	Client	Waypoint Analytical Louisiana
Run	1		
Analysis Code			Ra226
			22-06118
		Eberline Services Work Order	

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	RA-226	LCS	07/19/22 10:57		A_Spec	Alpha_045	170	2.66 E+02	6.00 E-03	16.4
02	RA-226	MBL	07/19/22 10:57		A_Spec	Alpha_046	170	2.15 E+00	5.00 E-03	15.6
03	RA-226	DUP	07/19/22 10:58		A_Spec	Alpha_048	170	1.83 E+01	4.00 E-03	19.7
04	RA-226	DO	07/19/22 10:57		A_Spec	Alpha_049	170	1.07 E+01	2.00 E-03	16.1
05	RA-226	TRG	07/19/22 10:57		A_Spec	Alpha_050	170	1.58 E+01	1.00 E-03	14.8

Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
01	LCS	LCS	07/01/22 00:00	1.0000	0.1272	1086.0870	448.0000	91.57	2.47	1.00
02	MBL	BLANK	07/01/22 00:00	1.0000	0.1272	1086.0870	517.0000	105.68	2.50	1.00
03	DUP	LT-4 13-18 - 70492	06/22/22 15:00	1.0000	0.1255	1071.5717	440.0000	91.16	3.00^	1.00
04	DO	LT-4 13-18 - 70492	06/22/22 15:00	1.0000	0.1159	989.6029	469.0000	105.21	3.00^	1.00
05	TRG	LT-5 13-23 - 70493	06/22/22 11:20	1.0000	0.1258	1074.1332	499.0000	103.13	3.00^	1.00

Spike and Tracer Worksheet

Internal Work Order		Run		Analysis Code		Date		Technician		Technician Initials		Witness Initials		
22-06118		1		Ra226		7/8/2022 07:48		JHARVEY		_____				
LCS & Matrix Spikes														
Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	LCS Volume Used (g)	MS Volume Used (g)	LCS Volume Used (g)	MSD Volume Used (g)	LCS Known pCi	Error Estimate	MS Added pCi	Error Estimate	MSD Added pCi	Error Estimate
Ra-226	Ra-5b	43.900	7/8/2022	0.500	0.5120		10.12		10.12	0.466	0.00	0.000	0.00	0.000

Tracers														
fraction	Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	LCS Volume Used (g)	MSD Volume Used (g)	MS Volume Used (g)	LCS Known pCi	Error Estimate	MS Added pCi	Error Estimate	MSD Added pCi	Error Estimate
01	Ba-133	Ba-7	8538.420	7/8/2022	0.1200	0.1272								
02	Ba-133	Ba-7	8538.420	7/8/2022	0.1200	0.1272								
03	Ba-133	Ba-7	8538.420	7/8/2022	0.1200	0.1255								
04	Ba-133	Ba-7	8538.420	7/8/2022	0.1200	0.1159								
05	Ba-133	Ba-7	8538.420	7/8/2022	0.1200	0.1258								
Balance Printer Tapes														
Tracer														
LCS														
Matrix Spike														

0053

Aliquot Worksheet

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician
22-06118	1	Ra226	liters	7/25/2022	JHARVEY

Lab Fraction	Waypoint Analytical Louisiana Client ID	Sample Type	Muffle Data		Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
			Ratio Post/Pre	No of Dilis	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq	
01	LCS	LCS					1.0000E+00	1.0000E+00					
02	BLANK	MBL					1.0000E+00	1.0000E+00					
03	LT-4 13-18 - 70492	DUP					1.0000E+00	1.0000E+00					
04	LT-4 13-18 - 70492	DO					1.0000E+00	1.0000E+00					
05	LT-5 13-23 - 70493	TRG					1.0000E+00	1.0000E+00					

Comments

Technician: *JHarvey* Date: 7/8/22

Gravimetric Worksheet

Work Order	22-06118	Run	1	Analysis Code	Ra226	Gravimetric Carrier	Carrier Conc (mg/ml)	Technician	MDAVIS
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TRetec Fraction	Waypoint Analytical Louisiana Client ID	Sample Type	Carrier Data		Filter Data			Gravimetric	
			Carrier Added (ml)	Filter Tare (g)	Filter Final (g)	Filter Net (g)	% Recovery		
01	LCS	LCS		0.0207	0.0276	0.0069			
02	BLANK	MBL		0.0206	0.0276	0.0070			
03	DUP	DUP		0.0207	0.0306	0.0099			
04	LT-4 13-18 - 70492	DO		0.0206	0.0301	0.0095			
05	LT-5 13-23 - 70493	TRG		0.0206	0.0301	0.0095			

0055

Technician: *Melissa Daw* Date: 7/19/22



Apex-Alpha™

KB
7/19/22

Sample Description: SPIKE
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00003173
 Batch Identification: 2206118A-RA
 Sample Identification: 01
 Sample Geometry: Shelf 2
 Procedure Description: Ra

Detector Name: Alpha_045
 Chamber Serial Number: 04026482A
 Detector Serial Number: 91131
 Env. Background: System Bkgd 324297
 Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 liter
 Generic Mult. Factor: 2.470E+000 Generic Div. Factor: 1.000E+000
 Sample Date/Time: 7/19/2022 9:10:58 AM
 Acquisition Date/Time: 7/19/2022 10:57:54 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Chem. Recovery Factor: 0.9157 +/- 0.0000
 Counting Efficiency: 0.1642 +/- 0.0029 on 5/21/2021 9:18:20 AM
 Effective Efficiency: 0.1503 +/- 0.0027

Control Certificate Name: Ra226_Ra-5b
 Chem. Recov. of Control: RA-226 0.463056 +/- 0.032719
 Peak Match Tolerance: 0.350 MeV

 PEAK AREA REPORT

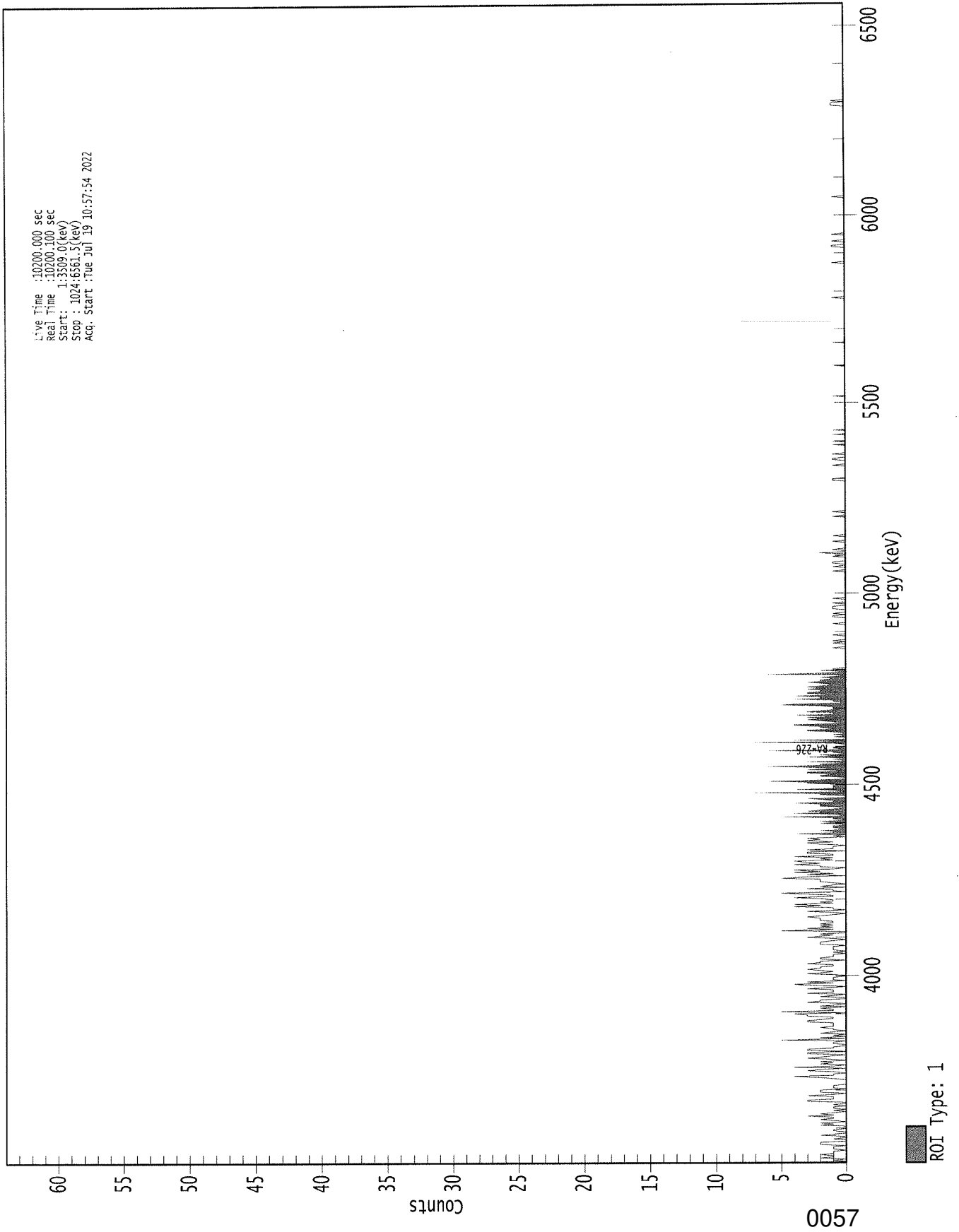
Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
RA-224	5.487	5.64	93.45	1.36	0.00E+000	3.0
RA-226	4.596	265.98	12.04	1.02	0.00E+000	3.6

 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/liter)	MDA (pCi/liter)
RA-224	0.950	5685.50*	2.58E-001 +/- 2.41E-001	3.14E-001 +/- 1.09E-002
RA-226	0.954	4785.00*	1.16E+001 +/- 1.45E+000	2.74E-001 +/- 9.56E-003

AG
7/19/22

0000317383.CNF



 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 01

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	2	0	1	0	2	1	1	2	
9:	1	1	1	0	1	1	1	0	
17:	2	2	2	0	0	1	0	0	
25:	2	1	0	0	1	1	0	0	
33:	0	2	1	2	0	1	2	1	
41:	1	3	1	2	1	0	1	0	
49:	1	1	0	1	0	0	3	3	
57:	1	1	1	3	1	0	2	2	
65:	2	0	1	1	1	0	0	0	
73:	0	0	1	2	4	1	1	0	
81:	1	3	2	0	4	1	0	2	
89:	1	2	0	1	3	2	1	0	
97:	3	3	0	3	3	1	1	0	
105:	0	1	1	0	5	0	2	0	
113:	1	0	2	1	0	1	1	2	
121:	1	1	1	1	3	3	2	1	
129:	1	3	3	4	0	5	1	1	
137:	2	0	2	0	0	3	2	2	
145:	0	0	2	1	0	3	1	1	
153:	1	3	1	0	3	4	1	3	
161:	0	1	1	1	0	0	3	2	
169:	1	2	3	2	2	1	1	3	
177:	2	2	0	2	2	1	1	1	
185:	0	1	0	1	1	1	1	0	
193:	2	2	2	1	0	1	3	2	
201:	1	2	0	0	5	1	3	1	
209:	2	1	2	1	1	2	2	2	
217:	3	2	1	0	1	3	0	1	
225:	1	4	2	4	1	2	1	1	
233:	2	4	1	1	3	5	0	1	
241:	1	3	0	2	1	0	1	2	
249:	2	2	5	3	0	3	1	4	
257:	2	4	1	0	2	2	4	2	
265:	3	4	1	2	1	4	1	1	
273:	3	3	0	3	1	1	1	0	
281:	2	3	1	3	2	3	0	1	
289:	0	4	1	1	2	0	1	1	
297:	1	0	2	1	2	0	1	1	
305:	5	0	1	4	1	3	2	1	
313:	0	2	2	2	4	1	1	2	
321:	3	0	0	2	2	7	0	1	
329:	4	1	1	1	1	3	3	6	
337:	3	0	0	2	2	1	3	3	
345:	0	3	1	3	6	2	2	0	
353:	3	0	1	0	3	1	2	0	
361:	1	1	6	0	1	1	0	0	

369: 1 7 0 4 0 0 1 0

Sample Title: 01

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	1	0	1	3	3	1	2	2
385:	4	4	0	1	2	3	2	3
393:	1	4	1	1	3	2	1	1
401:	1	2	5	4	0	1	1	4
409:	2	2	4	1	3	3	2	2
417:	3	2	3	2	1	2	3	2
425:	2	1	2	1	0	6	2	0
433:	2	1	1	0	0	0	0	0
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	1	0	0	0
457:	1	0	1	0	0	0	0	1
465:	0	0	0	0	0	0	0	0
473:	0	1	0	0	0	0	0	1
481:	1	0	1	0	0	0	1	1
489:	1	0	0	1	0	0	0	1
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	1
521:	0	0	0	1	0	0	1	1
529:	0	0	0	0	1	0	0	2
537:	0	0	1	0	0	0	0	0
545:	0	1	0	0	0	0	1	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	1
569:	0	0	0	1	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	1
601:	1	0	0	0	0	0	0	0
609:	0	0	0	0	1	0	0	0
617:	0	1	1	0	0	0	1	0
625:	0	0	0	0	0	0	1	0
633:	0	1	0	0	0	0	0	1
641:	0	0	0	1	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	1	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	1	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	1	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	1	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	1	0	0	0	0	0	0

0059

801: 0 0 0 0 0 0 0 0 1

Sample Title: 01

Channel	1	2	3	4	5	6	7	8	9
809:	1	0	0	0	1	0	0	0	0
817:	0	0	1	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0	0
849:	0	0	0	1	0	0	0	0	0
857:	0	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0	0
929:	0	0	0	0	1	1	1	0	0
937:	1	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0	0



LB
7/19/22

Sample Description: BLANK
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00003173
 Batch Identification: 2206118A-RA
 Sample Identification: 02
 Sample Geometry: Shelf 2
 Procedure Description: Ra

Detector Name: Alpha_046
 Chamber Serial Number: 04026482B
 Detector Serial Number: 58762
 Env. Background: System Bkgd 324298
 Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 liter
 Generic Mult. Factor: 2.500E+000 Generic Div. Factor: 1.000E+000
 Sample Date/Time: 7/19/2022 9:10:58 AM
 Acquisition Date/Time: 7/19/2022 10:57:56 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Chem. Recovery Factor: 1.0000 +/- 0.0000
 Counting Efficiency: 0.1557 +/- 0.0028 on 5/21/2021 9:18:19 AM
 Effective Efficiency: 0.1557 +/- 0.0028

Peak Match Tolerance: 0.350 MeV

 PEAK AREA REPORT

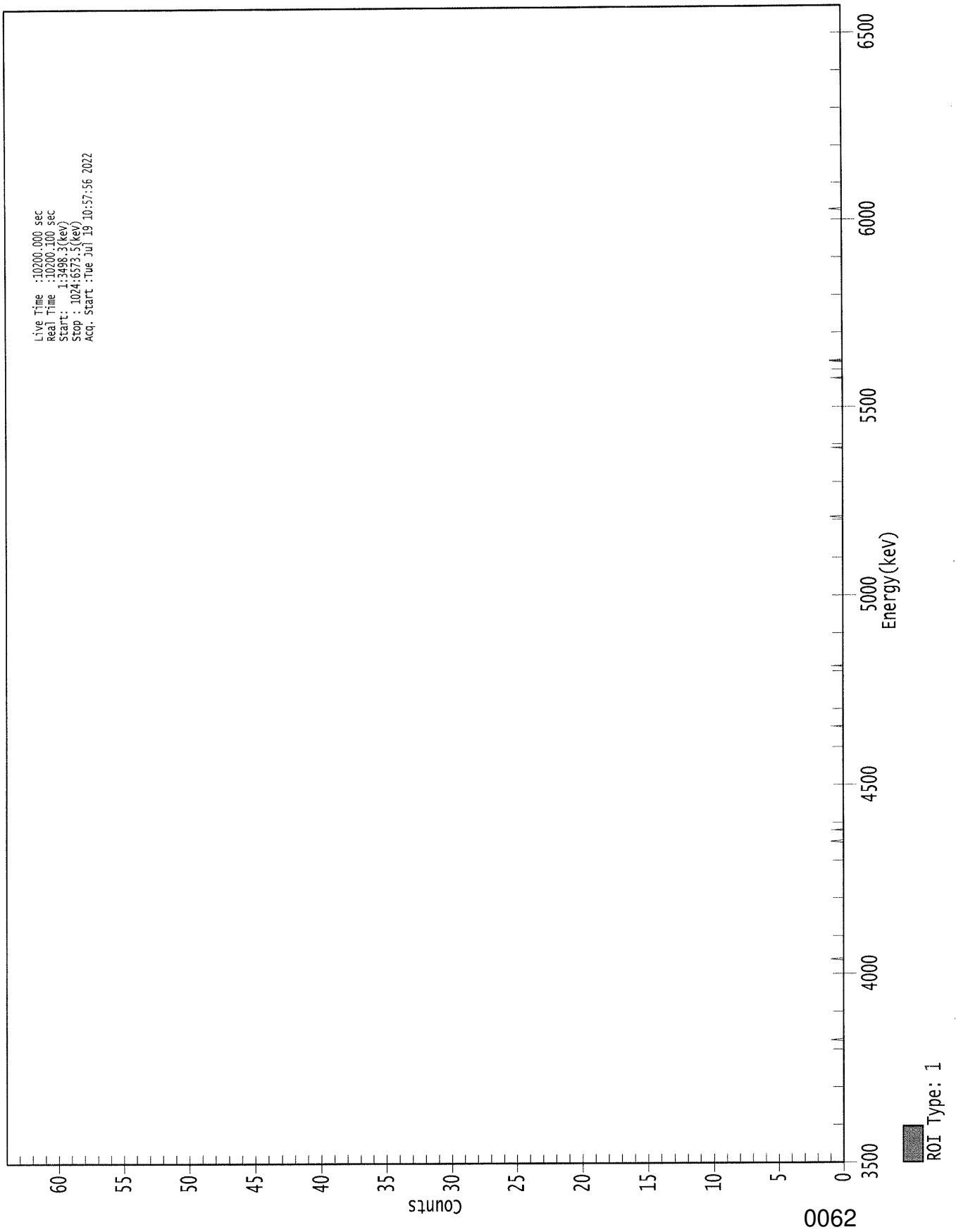
Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
RA-224	5.552	2.47	163.78	1.53	0.00E+000	3.0
RA-226	4.615	2.15	161.66	0.85	0.00E+000	3.0

 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/liter)	MDA (pCi/liter)
RA-224	0.977	5685.50*	1.10E-001 +/- 1.81E-001	3.18E-001 +/- 1.12E-002
RA-226	0.963	4785.00*	9.15E-002 +/- 1.48E-001	2.55E-001 +/- 8.94E-003

ALG
7/19/22

0000317382.CNF



 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 02

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	1	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	1	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	1	0	0	0	0
289:	0	0	0	0	0	1	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0

0063

369: 0 0 0 0 0 0 0 0 0

Sample Title: 02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	0	0	0	0	0	0	0
385:	1	0	0	0	0	0	0	0
393:	0	0	0	0	0	0	0	0
401:	0	0	0	0	0	0	0	0
409:	0	0	0	0	0	0	0	0
417:	0	0	0	0	0	0	0	0
425:	0	0	0	0	0	0	0	0
433:	0	0	0	0	0	1	0	0
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	1	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	1	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	1	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	1	1	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

0064

801: 0 0 0 0 0 0 0 0 0

Sample Title: 02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	1	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



yes
7/19/22

Sample Description: LT-4 13-18 - 70492 DUP
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00003173
 Batch Identification: 2206118A-RA
 Sample Identification: 03
 Sample Geometry: Shelf 2
 Procedure Description: Ra

Detector Name: Alpha_048
 Chamber Serial Number: 10006125B
 Detector Serial Number: 83111
 Env. Background: System Bkgd 324299
 Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 liter
 Generic Mult. Factor: 3.000E+000 Generic Div. Factor: 1.000E+000
 Sample Date/Time: 6/22/2022 9:10:58 AM
 Acquisition Date/Time: 7/19/2022 10:58:01 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Chem. Recovery Factor: 0.9116 +/- 0.0000
 Counting Efficiency: 0.1973 +/- 0.0034 on 12/3/2021 12:28:22 PM
 Effective Efficiency: 0.1799 +/- 0.0031

Peak Match Tolerance: 0.350 MeV

 ----- PEAK AREA REPORT -----

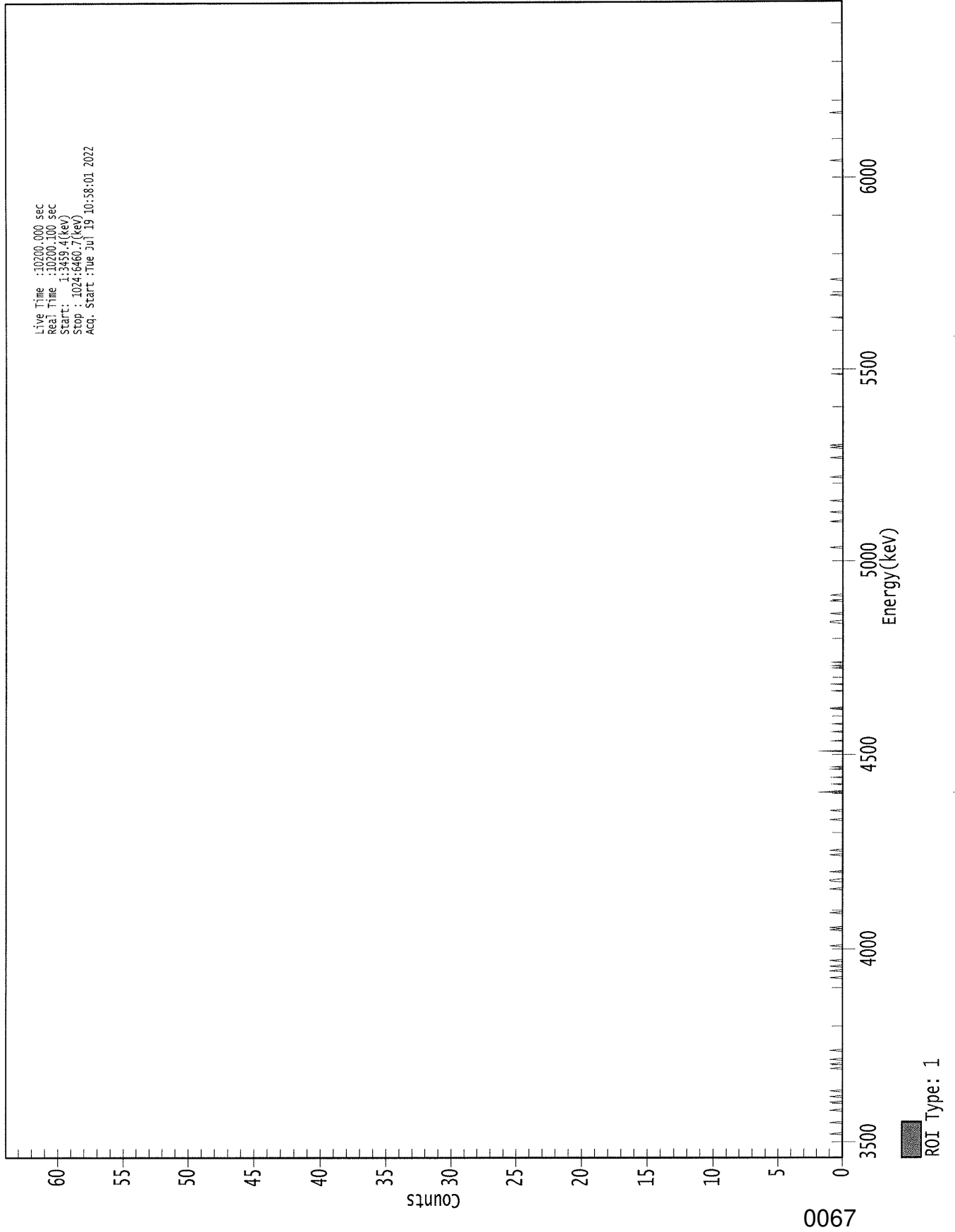
Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
RA-224	5.560	1.49	190.02	0.51	0.00E+000	2.9
RA-226	4.552	18.32	46.78	0.68	0.00E+000	4.4

 ----- NUCLIDE ANALYSIS RESULTS -----

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/liter)	MDA (pCi/liter)
RA-224	0.980	5685.50*	6.99E-002 +/- 1.33E-001	2.46E-001 +/- 8.39E-003
RA-226	0.932	4785.00*	8.10E-001 +/- 3.80E-001	2.49E-001 +/- 8.46E-003

AG
7/19/22

0000317384.CNF



***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 03

Elapsed Live time: 10200
Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	1	0	0
25:	0	0	0	0	0	0	0	1
33:	0	0	0	0	0	0	0	0
41:	0	0	1	0	0	0	0	0
49:	0	1	0	0	0	0	1	0
57:	0	0	0	1	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	1
81:	0	0	0	1	0	0	0	1
89:	0	0	0	0	0	0	0	1
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	1
161:	0	0	0	0	0	1	0	0
169:	0	1	0	0	0	0	1	0
177:	0	0	0	0	0	0	0	0
185:	0	0	0	1	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	1	0	1	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	1	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	1	0	0
241:	0	0	0	0	1	1	0	0
249:	0	0	0	0	1	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	1	0	0	0	1
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	1	0	0	0	0	0
305:	0	0	1	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	2	1	0	0	0	0
329:	0	1	0	0	0	0	0	1
337:	0	0	0	0	0	0	1	0
345:	1	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	2	0
361:	0	0	0	0	0	0	0	1

0068

369: 0 0 0 0 0 0 0 0 1

Sample Title: 03

Channel									
377:	0	0	0	0	0	0	0	1	0
385:	0	0	0	0	0	0	0	0	0
393:	0	0	0	1	1	0	0	0	0
401:	0	0	0	0	0	0	0	0	0
409:	0	0	0	1	0	0	0	0	0
417:	0	1	0	0	0	0	0	0	0
425:	0	0	0	0	0	0	0	0	1
433:	0	1	0	0	1	0	0	0	0
441:	0	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0	1
473:	1	0	0	0	0	0	0	0	1
481:	0	0	0	0	0	0	0	0	0
489:	0	0	1	0	0	0	0	0	1
497:	0	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0	0
537:	0	1	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0	0
561:	1	0	0	0	0	0	0	0	0
569:	1	0	0	0	0	0	0	0	0
577:	0	0	1	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0	1
601:	0	0	0	0	0	0	0	0	0
609:	0	0	0	0	0	0	0	0	0
617:	1	0	0	0	0	0	0	0	0
625:	0	1	0	1	0	0	0	0	0
633:	0	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0	0
689:	0	0	0	1	0	0	0	0	0
697:	0	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	1	0	0	0
745:	0	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0	0
761:	0	1	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0	1
777:	0	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0	0

0069

801: 0 0 0 0 0 0 0 0 0

Sample Title: 03

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	1	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	1	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



KB
7/19/22

Sample Description: LT-4 13-18 - 70492
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00003173
 Batch Identification: 2206118A-RA
 Sample Identification: 04
 Sample Geometry: Shelf 2
 Procedure Description: Ra

Detector Name: Alpha_049
 Chamber Serial Number: 10006121A
 Detector Serial Number: 49
 Env. Background: System Bkgd 324300
 Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 liter
 Generic Mult. Factor: 3.000E+000 Generic Div. Factor: 1.000E+000
 Sample Date/Time: 6/22/2022 9:10:58 AM
 Acquisition Date/Time: 7/19/2022 10:57:58 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Chem. Recovery Factor: 1.0000 +/- 0.0000
 Counting Efficiency: 0.1605 +/- 0.0029 on 5/21/2021 3:25:40 PM
 Effective Efficiency: 0.1605 +/- 0.0029

Peak Match Tolerance: 0.350 MeV

 PEAK AREA REPORT

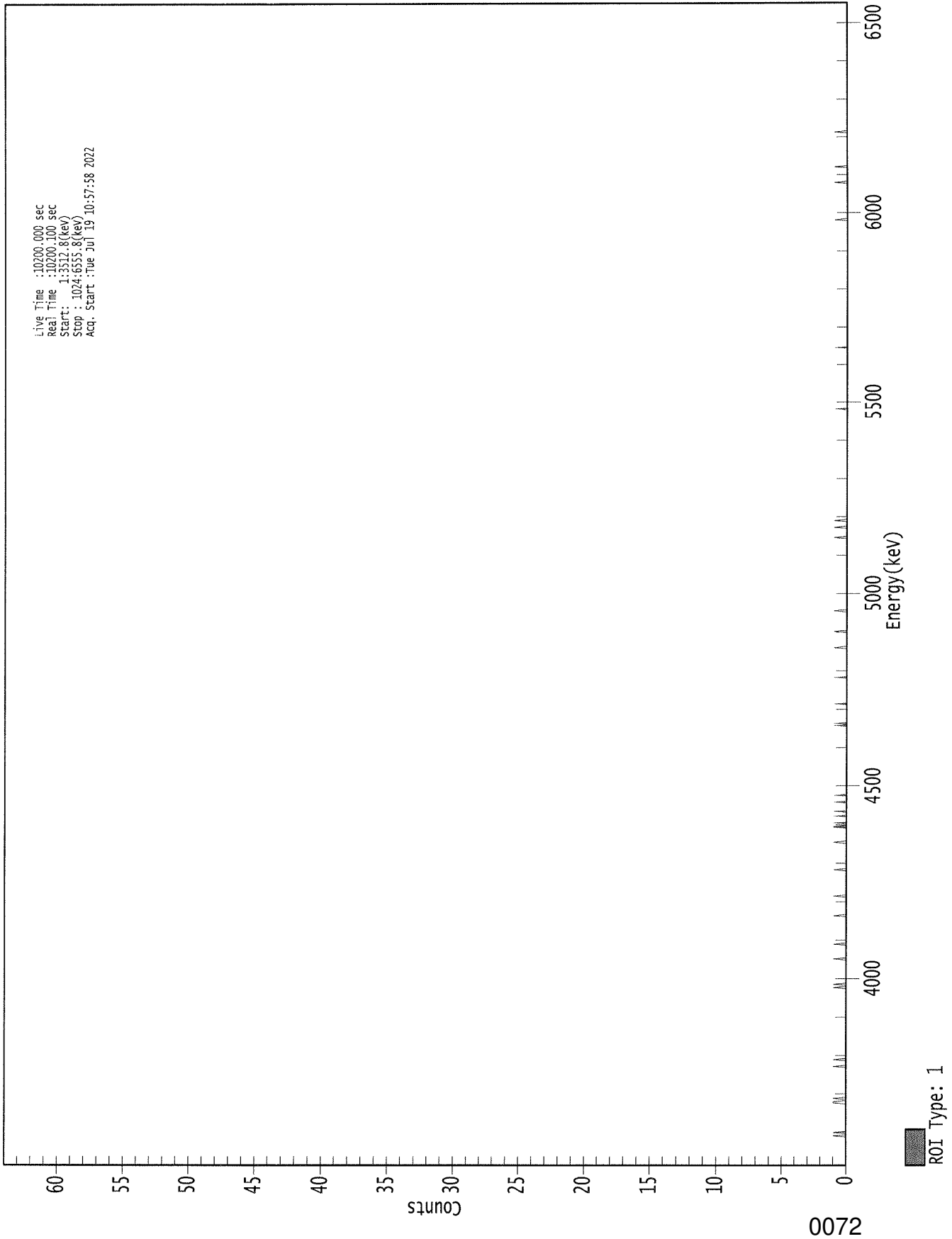
Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
RA-224	5.564	1.32	215.97	0.68	0.00E+000	3.0
RA-226	4.528	10.66	61.14	0.34	0.00E+000	5.9

 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/liter)	MDA (pCi/liter)
RA-224	0.981	5685.50*	6.93E-002 +/- 1.50E-001	2.96E-001 +/- 1.04E-002
RA-226	0.917	4785.00*	5.28E-001 +/- 3.23E-001	2.37E-001 +/- 8.30E-003

AG
7/19/22

0000317378.CNF



 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 04

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	1	0	0	1	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	1
57:	1	0	0	1	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	1
89:	0	0	0	0	0	1	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	1	0	0	1
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	1	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	1	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	1	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	1	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	1	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	1	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	1	1	0	0	1	0	0	0
305:	0	0	1	0	0	0	1	0
313:	0	0	0	0	0	0	1	0
321:	0	0	0	0	1	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0

0073

369: 0 0 0 0 0 0 0 0 0

Sample Title: 04

Channel									
377:	0	0	0	0	0	0	0	0	0
385:	0	1	0	1	0	0	0	0	0
393:	0	0	0	0	0	0	0	0	0
401:	0	0	0	0	1	0	0	0	0
409:	0	0	0	0	0	0	0	0	0
417:	0	0	0	0	0	0	0	0	0
425:	0	0	0	1	0	0	0	0	0
433:	0	0	0	0	0	0	0	0	0
441:	0	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	1	0	0	0
457:	0	0	0	0	0	0	0	0	0
465:	0	0	0	1	0	0	0	0	0
473:	0	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	1	0	0	0
489:	0	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	1	0	0	0
553:	0	0	0	0	0	0	1	0	0
561:	0	0	0	0	1	0	0	0	0
569:	0	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0	0
609:	0	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	1	0	0
665:	0	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	1	0	0	0
721:	0	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0	0

0074

801: 0 0 0 0 0 0 0 0 0

Sample Title: 04

Channel									
809:	0	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	1	0
833:	0	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0	1
865:	0	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	1	0	0	0
881:	0	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0	0
905:	0	0	0	0	1	0	0	0	0
913:	0	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0	0



KB
7/19/22

Sample Description: LT-5 13-23 - 70493
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00003173
 Batch Identification: 2206118A-RA
 Sample Identification: 05
 Sample Geometry: Shelf 2
 Procedure Description: Ra

Detector Name: Alpha_050
 Chamber Serial Number: 10006121B
 Detector Serial Number: 50
 Env. Background: System Bkgd 324301
 Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 liter
 Generic Mult. Factor: 3.000E+000 Generic Div. Factor: 1.000E+000
 Sample Date/Time: 6/22/2022 9:10:58 AM
 Acquisition Date/Time: 7/19/2022 10:57:59 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Chem. Recovery Factor: 1.0000 +/- 0.0000
 Counting Efficiency: 0.1477 +/- 0.0027 on 5/26/2021 3:37:09 PM
 Effective Efficiency: 0.1477 +/- 0.0027

Peak Match Tolerance: 0.350 MeV

 PEAK AREA REPORT

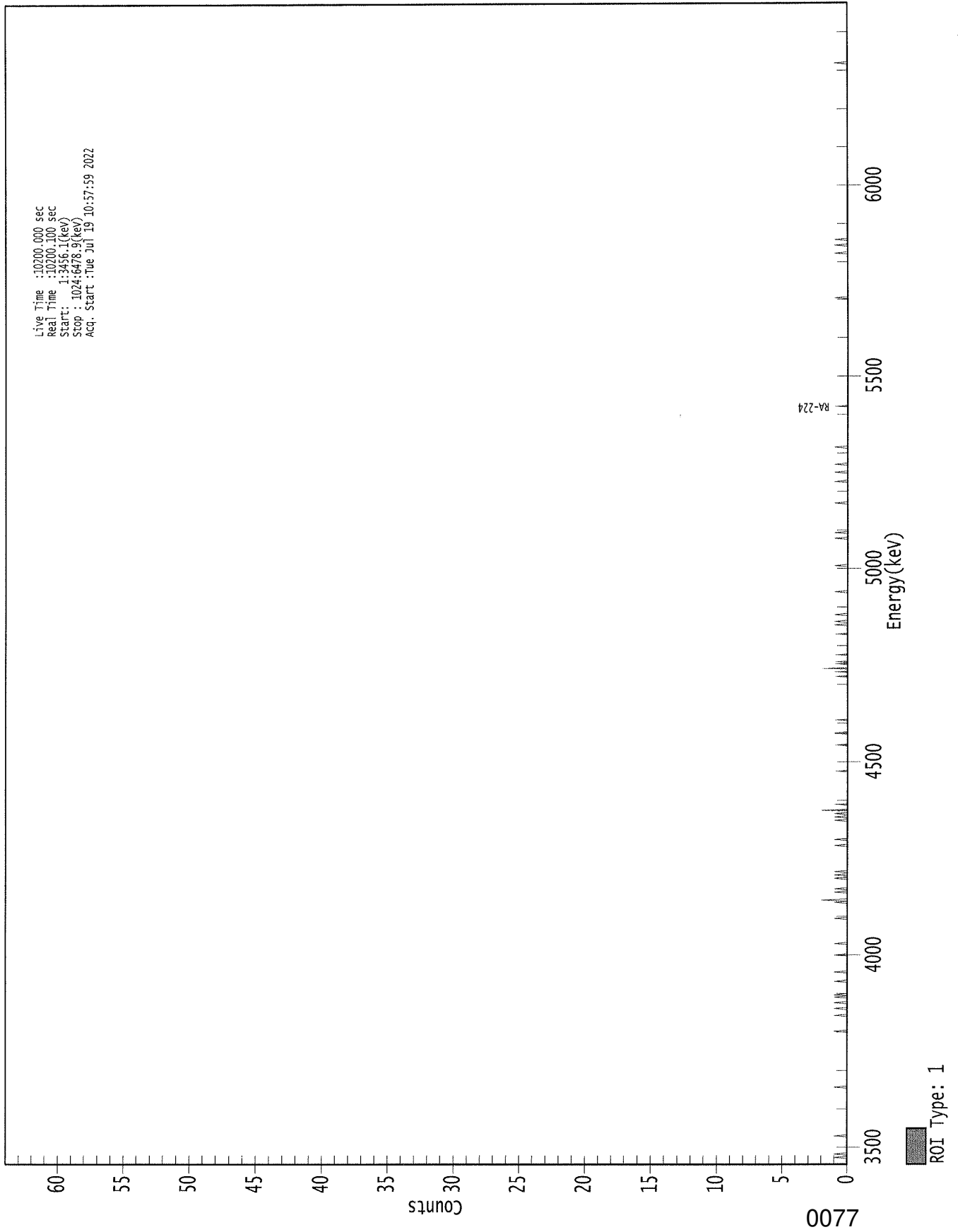
Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
RA-224	5.421	0.66	305.43	0.34	0.00E+000	3.0
RA-226	4.623	15.83	49.57	0.17	0.00E+000	3.0

 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/liter)	MDA (pCi/liter)
RA-224	0.913	5685.50*	3.77E-002 +/- 1.15E-001	2.73E-001 +/- 9.66E-003
RA-226	0.966	4785.00*	8.52E-001 +/- 4.23E-001	2.25E-001 +/- 7.92E-003

AG
7/19/22

0000317379.CNF



 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 05

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	0	0	0	1	0
9:	0	1	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	0	0	0
25:	0	1	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0
65:	0	0	0	0	1	0	0	0	0
73:	0	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	1	0	0	0
121:	0	0	0	0	0	0	0	0	0
129:	0	0	0	1	0	0	0	0	0
137:	0	1	0	0	0	0	1	0	0
145:	0	0	0	1	0	1	0	0	0
153:	0	0	0	0	0	0	0	0	0
161:	0	1	0	0	0	0	0	0	0
169:	0	1	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0	0
185:	1	0	0	0	0	0	0	0	0
193:	0	0	1	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0	0
217:	1	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	1	0	0
233:	2	0	0	0	0	0	0	1	0
241:	0	0	1	0	0	0	0	0	0
249:	0	0	0	1	0	0	1	0	0
257:	0	1	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	1	0	0	0	0	1	0	0	0
289:	0	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	1	0	0
305:	0	1	0	0	1	0	0	2	0
313:	0	0	0	0	1	0	0	0	0
321:	0	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0	0
345:	0	1	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0	0

0078

369: 1 0 0 0 0 0 0 0 0

Sample Title: 05

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	0	1	1	0	0	0	0
385:	0	0	0	0	0	0	1	0
393:	0	0	0	0	0	0	0	0
401:	0	0	0	0	0	0	0	0
409:	0	0	0	0	0	0	0	0
417:	0	0	0	0	0	0	0	0
425:	0	0	0	0	1	0	0	0
433:	1	0	0	2	0	0	0	1
441:	0	1	0	0	0	0	0	1
449:	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	1	0	0	0	0	0	0
473:	0	1	0	0	1	0	0	0
481:	0	0	1	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	1	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	1	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	1	0	0
553:	0	0	1	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	1	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	1
601:	0	0	0	0	0	0	0	1
609:	0	0	0	0	0	0	1	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	1	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	1	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	1	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

0079

801: 0 1 0 0 0 0 0 0 0

Sample Title: 05

Channel	1	0	0	0	0	1	0	0
809:	1	0	0	0	0	1	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	1	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



QA SUMMARY REPORT Review Of QA Results - Pulser Check

Date : 7/19/2022
Time : 5:48:56 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha 001	21f	ALL	Not Done	
Alpha 002	21f	ALL	Not Done	
Alpha 003	21f	ALL	Not Done	
Alpha 004	21f	ALL	Not Done	
Alpha 005	21f	ALL	Not Done	
Alpha 006	21f	ALL	Not Done	
Alpha 007	21f	ALL	Not Done	
Alpha 008	21f	ALL	Not Done	
Alpha 009	21f	ALL	Not Done	
Alpha 010	21f	ALL	Not Done	
Alpha 011	21f	ALL	Passed	7/19/2022 5:33:42 AM
Alpha 012	21f	ALL	Passed	7/19/2022 5:33:43 AM
Alpha 013	21f	ALL	Not Done	
Alpha 014	21f	ALL	Not Done	
Alpha 015	21f	ALL	Not Done	
Alpha 016	21f	ALL	Not Done	
Alpha 033	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:33:44 AM
Alpha 034	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:33:45 AM
Alpha 035	Alpha Analyst100DC	ALL	Not Done	
Alpha 036	Alpha Analyst100DC	ALL	Not Done	
Alpha 037	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:33:47 AM
Alpha 038	Alpha Analyst100DC	Peak Energy	Action	7/19/2022 5:33:48 AM
Alpha 039	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:33:50 AM
Alpha 040	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:33:51 AM
Alpha 041	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:33:53 AM
Alpha 042	Alpha Analyst100DC	ALL	Not Done	
Alpha 043	Alpha Analyst100DC	ALL	Not Done	
Alpha 044	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:33:54 AM
Alpha 045	Alpha Analyst100DC	Peak Energy	Action	7/19/2022 5:33:56 AM
Alpha 046	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:33:58 AM
Alpha 047	Alpha Analyst100DC	ALL	Not Done	
Alpha 048	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:34:00 AM
Alpha 049	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:34:01 AM
Alpha 050	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:34:03 AM
Alpha 051	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:34:06 AM
Alpha 052	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:34:08 AM
Alpha 053	Alpha Analyst100DC	ALL	Not Done	
Alpha 054	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:34:11 AM
Alpha 055	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:34:13 AM
Alpha 056	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:34:16 AM
Alpha 057	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:34:19 AM
Alpha 058	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:34:22 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha 059	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:34:25 AM
Alpha 060	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:34:28 AM

APPROVED BY: KP

APPROVAL DATE: 7/19/22

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*****
*****      L I B R A R Y  L I S T I N G  R E P O R T      *****
*****

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Nuclide Library Title: Radium

Nuclide Library Description: Ra-226, Po-218, Rn-222

Nuclide Name	Half-Life (Seconds)	Energy (keV)	Energy Uncert. (keV)	Yield (%)	Yield Uncert. (Abs.+/-)
PO-218	5.049E+010	6003.000*	0.000	99.9800	0.0000
RN-222	5.049E+010	5490.000*	0.000	99.9200	0.0000
RA-226	5.049E+010	4785.000*	0.000	100.0000	0.0000

* = key line

TOTALS: 3 Nuclides 3 Energy Lines

SECTION IX
ANALYTICAL DATA (RADIUM-228)

0084

Work Order	22-06118
Analysis Code	Ra228
Run	1
Date Received	7/1/2022
Lab Deadline	7/25/2022
Client	Waypoint Analytical Louisiana
Project	22-179-0020
Report Level	4
Activity Units	pCi
Aliquot Units	I
Matrix	WA
Method	EPA 904.0
Instrument Type	Alpha/Beta GPC
Radiometric Tracer	Ba-133
Radiometric Sol#	Ba-7
Tracer Act (dpm/g)	8518.34
Carrier	Yttrium
Carrier Conc (mg/ml)	28.5333

0085

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		07/01/22 00:00	1.0000E+00
02	MBL	BLANK		07/01/22 00:00	1.0000E+00
03	DUP	LT-4 13-18 - 70492	40	06/22/22 15:00	1.0000E+00
04	DO	LT-4 13-18 - 70492	40	06/22/22 15:00	1.0000E+00
05	TRG	LT-5 13-23 - 70493	30	06/22/22 11:20	1.0000E+00

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
 ** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

22-06118
Ra228
Run 1

Internal Fraction	Sample Desc	Tracer Aliquot (g)	Tracer Total ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	Grav Carrier Added (ml)	Grav Filter Tare (g)	Grav Filter Final (g)	Grav Filter Net (g)	Grav % Rec	Mean % Rec	SAF 1*	SAF 2*
01	LCS	0.1272	1083.5	448.0	91.79	2.000	0.0845	0.1371	0.0526	92.17	84.60	1.00	1.00
02	MBL	0.1272	1083.5	517.0	105.93	2.000	0.0842	0.1391	0.0549	96.20	101.90	1.00	1.00
03	DUP	0.1255	1069.1	440.0	91.37	2.000	0.0841	0.1301	0.0460	80.61	73.65	1.00	1.00
04	DO	0.1159	987.3	469.0	105.46	2.000	0.0850	0.1312	0.0462	80.96	85.38	1.00	1.00
05	TRG	0.1258	1071.6	499.0	103.38	2.000	0.0848	0.1398	0.0550	96.38	99.63	1.00	1.00

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep 10 Date/Time	Sep 10 By	Sep 11 Date/Time	Sep 11 By
01	LCS			07/21/22 08:48	MDAVIS	07/19/22 08:29	MDAVIS	07/21/22 08:52	MDAVIS
02	MBL			07/21/22 08:48	MDAVIS	07/19/22 08:29	MDAVIS	07/21/22 08:52	MDAVIS
03	DUP			07/21/22 08:48	MDAVIS	07/19/22 08:29	MDAVIS	07/21/22 08:52	MDAVIS
04	DO			07/21/22 08:48	MDAVIS	07/19/22 08:29	MDAVIS	07/21/22 08:52	MDAVIS
05	TRG			07/21/22 08:48	MDAVIS	07/19/22 08:29	MDAVIS	07/21/22 08:52	MDAVIS

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Preliminary Data Report & Analytical Calculations
Work Order: 22-06118-Ra228-1

8800	Client	Waypoint Analytical Louisiana
	Eberline Services Work Order	22-06118
	Analysis Code	Ra228
1	Run	

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	RA-228	LCS	LCS	pCi/l	1.06E+01	1.69E+00	1.42E+00	9.19E+00	115.37	OK		OK	
02	RA-228	MBL	BLANK	pCi/l	2.05E-01	4.46E-01	9.30E-01					OK	OK
03	RA-228	DUP	LT-4 13-18 - 70492	pCi/l	8.87E-01	5.33E-01	1.03E+00				NA	OK	
04	RA-228	DO	LT-4 13-18 - 70492	pCi/l	1.46E+00	5.33E-01	9.74E-01					OK	
05	RA-228	TRG	LT-5 13-23 - 70493	pCi/l	1.16E+00	4.71E-01	8.82E-01					OK	

Preliminary Data Report & Analytical Calculations
Work Order: 22-06118-Ra228-1

	Run	1	6800	Client	Waypoint Analytical Louisiana	Eberline Services Work Order	22-06118	Ra228
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Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep 10 Date/Time	Sep 11 Date/Time
01	RA-228	LCS	07/01/22 00:00	1.00E+00	91.79	92.17	84.60	1.00	7/19/2022 8:29	7/21/2022 8:52
02	RA-228	MBL	07/01/22 00:00	1.00E+00	105.93	96.20	101.90	1.00	7/19/2022 8:29	7/21/2022 8:52
03	RA-228	DUP	06/22/22 15:00	1.00E+00	91.37	80.61	73.65	1.00	7/19/2022 8:29	7/21/2022 8:52
04	RA-228	DO	06/22/22 15:00	1.00E+00	105.46	80.96	85.38	1.00	7/19/2022 8:29	7/21/2022 8:52
05	RA-228	TRG	06/22/22 11:20	1.00E+00	103.38	96.38	99.63	1.00	7/19/2022 8:29	7/21/2022 8:52

0600	Client	Eberline Services Work Order	22-06118	Ra228	1	
		Waypoint Analytical Louisiana				

Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	RA-228	LCS	07/21/22 11:00		LB4110A	A4	30	244	1.25	0.4548
02	RA-228	MBL	07/21/22 11:00		LB4110A	B1	120	208	1.583333333	0.4626
03	RA-228	DUP	07/21/22 11:00		LB4110A	B2	120	181	1.033333333	0.4691
04	RA-228	DO	07/21/22 11:00		LB4110A	B3	120	240	1.133333333	0.449
05	RA-228	TRG	07/21/22 11:00		LB4110A	B4	120	261	1.35	0.4619

Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
01	LCS	LCS	07/01/22 00:00	1.0000	0.1272	1083.5328	448.0000	91.79	1.00	1.00
02	MBL	BLANK	07/01/22 00:00	1.0000	0.1272	1083.5328	517.0000	105.93	1.00	1.00
03	DUP	LT-4 13-18 - 70492	06/22/22 15:00	1.0000	0.1255	1069.0517	440.0000	91.37	1.00	1.00
04	DO	LT-4 13-18 - 70492	06/22/22 15:00	1.0000	0.1159	987.2756	469.0000	105.46	1.00	1.00
05	TRG	LT-5 13-23 - 70493	06/22/22 11:20	1.0000	0.1258	1071.6072	499.0000	103.38	1.00	1.00

Aliquot Worksheet

Work Order	22-06118	Run	1	Analysis Code	Ra228	Rpt Units	liters	Lab Deadline	7/25/2022	Technician	JHARVEY
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Lab Fraction	Waypoint Analytical Louisiana Client ID	Sample Type	Muffle Data		Dilution Data		Aliquot Data		MS Aliquot Data		H-3 Solids Only	
			Ratio PostPre	No of Dils	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist
01	LCS	LCS					1.0000E+00	1.0000E+00				
02	BLANK	MBL					1.0000E+00	1.0000E+00				
03	LT-4 13-18 - 70492	DUP					1.0000E+00	1.0000E+00				
04	LT-4 13-18 - 70492	DO					1.0000E+00	1.0000E+00				
05	LT-5 13-23 - 70493	TRG					1.0000E+00	1.0000E+00				

Comments	
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0093

Technician:  Date: 7/8/2022

Gravimetric Worksheet

Work Order	Run	Analysis Code	Gravimetric Carrier	Carrier Conc (mg/ml)	Technician
22-06118	1	Ra228	Yttrium	28.5333	MDAVIS

TRetec Fraction	Waypoint Analytical Louisiana Client ID	Sample Type	Carrier Data Carrier Added (ml)	Filter Data			Gravimetric % Recovery
				Filter Tare (g)	Filter Final (g)	Filter Net (g)	
01	LCS	LCS	2.0000	0.0845	0.1371	0.0526	92.17
02	BLANK	MBL	2.0000	0.0842	0.1391	0.0549	96.20
03	DUP	DUP	2.0000	0.0841	0.1301	0.0460	80.61
04	LT-4 13-18 - 70492	DO	2.0000	0.0850	0.1312	0.0462	80.96
05	LT-5 13-23 - 70493	TRG	2.0000	0.0848	0.1398	0.0550	96.38

0094

Technician: Morgan Law Date: 7/21/22

KG
7/21/22

Detector ID	Sample ID	Alpha	Beta	Count Time	Voltage	TOD
A4	2206118-01	16	244	30	1410	7/21/2022 11:00:30 AM
B1	2206118-02	22	208	120	1410	7/21/2022 11:00:30 AM
B2	2206118-03	10	181	120	1410	7/21/2022 11:00:30 AM
B3	2206118-04	27	240	120	1410	7/21/2022 11:00:30 AM
B4	2206118-05	19	261	120	1410	7/21/2022 11:00:30 AM

0095

GPC Detector Report
(ALL Backgrounds)

MP
7/21/22

Detector	Alpha/Beta	Calibration Date	Count Date	Bkg CPM	PFW	LCL	Mean	UCL
LB4110A - A1	Alpha	11/2/2019	7/21/2022	1.33E-01	P	8.27E-03	1.66E-01	3.23E-01
LB4110A - A2	Alpha	11/2/2019	7/21/2022	2.17E-01	P	9.44E-03	1.52E-01	2.95E-01
LB4110A - A3	Alpha	11/2/2019	7/21/2022	2.00E-01	P	1.85E-02	1.64E-01	3.10E-01
LB4110A - A4	Alpha	11/2/2019	7/21/2022	1.67E-01	P	1.51E-02	1.66E-01	3.18E-01
LB4110A - B1	Alpha	11/2/2019	7/21/2022	1.00E-01	P	-2.28E-02	1.41E-01	3.05E-01
LB4110A - B2	Alpha	11/2/2019	7/21/2022	1.00E-01	P	-2.49E-02	1.88E-01	4.01E-01
LB4110A - B3	Alpha	11/2/2019	7/21/2022	1.67E-01	P	1.07E-02	1.65E-01	3.20E-01
LB4110A - B4	Alpha	11/2/2019	7/21/2022	1.67E-01	P	-9.15E-03	1.14E-01	2.38E-01
LB4110A - C1	Alpha	11/2/2019	7/21/2022	2.17E-01	P	-2.61E-02	1.21E-01	2.67E-01
LB4110A - C2	Alpha	11/2/2019	7/21/2022	1.17E-01	P	-1.78E-02	1.11E-01	2.40E-01
LB4110A - C3	Alpha	11/2/2019	7/21/2022	6.67E-02	P	-2.06E-02	8.79E-02	1.96E-01
LB4110A - C4	Alpha	11/2/2019	7/21/2022	2.33E-01	P	3.11E-02	2.20E-01	4.08E-01
LB4110A - D1	Alpha	11/2/2019	7/21/2022	8.33E-02	P	-6.81E-02	7.23E-02	2.13E-01
LB4110A - D2	Alpha	11/2/2019	7/21/2022	8.33E-02	P	-5.15E-02	1.08E-01	2.68E-01
LB4110A - D3	Alpha	11/2/2019	7/21/2022	1.17E-01	P	-7.78E-02	1.27E-01	3.33E-01
LB4110A - D4	Alpha	11/2/2019	7/21/2022	1.00E-01	P	8.91E-03	1.65E-01	3.21E-01
LB4110A - E1	Alpha	11/2/2017	5/19/2020	1.00E+05	F	-2.35E+04	8.93E+02	2.53E+04
LB4110A - E2	Alpha	11/2/2017	5/19/2020	1.00E+05	F	-2.35E+04	8.93E+02	2.53E+04
LB4110A - E3	Alpha	11/2/2017	5/19/2020	1.00E+05	F	-2.35E+04	8.93E+02	2.53E+04
LB4110A - E4	Alpha	11/2/2017	5/19/2020	1.00E+05	F	-2.35E+04	8.93E+02	2.53E+04
LB4110A - F1	Alpha	11/2/2019	1/10/2022	0.00E+00	P	-3.26E-02	1.31E-01	2.95E-01
LB4110A - F2	Alpha	11/2/2019	1/10/2022	0.00E+00	P	-3.95E-02	1.19E-01	2.77E-01
LB4110A - F3	Alpha	11/2/2019	1/10/2022	0.00E+00	P	-2.28E-02	1.05E-01	2.34E-01
LB4110A - F4	Alpha	11/2/2019	1/10/2022	0.00E+00	P	-4.44E-02	7.07E-02	1.86E-01
LB4110A - G1	Alpha	11/2/2019	7/21/2022	8.33E-02	P	-1.75E-02	9.10E-02	1.99E-01
LB4110A - G2	Alpha	11/2/2019	7/21/2022	1.17E-01	P	-2.64E-02	9.35E-02	2.13E-01
LB4110A - G3	Alpha	11/2/2019	7/21/2022	1.67E-01	P	-3.58E-02	1.61E-01	3.58E-01
LB4110A - G4	Alpha	11/2/2019	7/21/2022	6.67E-02	P	-2.74E-02	1.07E-01	2.41E-01

GPC Detector Report
(ALL Backgrounds)

KP
7/21/22

Detector	Alpha/Beta	Calibration Date	Count Date	Bkg CPM	PFW	LCL	Mean	UCL
LB4110A - A1	Beta	11/2/2019	7/21/2022	1.25E+00	P	-1.31E+00	1.35E+00	4.02E+00
LB4110A - A2	Beta	11/2/2019	7/21/2022	1.20E+00	P	-1.11E+00	1.62E+00	4.35E+00
LB4110A - A3	Beta	11/2/2019	7/21/2022	1.43E+00	P	-1.08E+00	1.44E+00	3.96E+00
LB4110A - A4	Beta	11/2/2019	7/21/2022	1.25E+00	P	-1.20E+00	1.47E+00	4.15E+00
LB4110A - B1	Beta	11/2/2019	7/21/2022	1.58E+00	P	1.01E+00	1.39E+00	1.77E+00
LB4110A - B2	Beta	11/2/2019	7/21/2022	1.03E+00	P	6.88E-01	1.36E+00	2.02E+00
LB4110A - B3	Beta	11/2/2019	7/21/2022	1.13E+00	P	8.93E-01	1.30E+00	1.71E+00
LB4110A - B4	Beta	11/2/2019	7/21/2022	1.35E+00	P	5.86E-01	1.51E+00	2.43E+00
LB4110A - C1	Beta	11/2/2019	7/21/2022	1.03E+00	P	7.81E-01	1.16E+00	1.53E+00
LB4110A - C2	Beta	11/2/2019	7/21/2022	1.13E+00	P	6.43E-01	1.00E+00	1.37E+00
LB4110A - C3	Beta	11/2/2019	7/21/2022	9.17E-01	P	7.03E-01	1.29E+00	1.87E+00
LB4110A - C4	Beta	11/2/2019	7/21/2022	1.08E+00	P	8.47E-01	1.27E+00	1.70E+00
LB4110A - D1	Beta	11/2/2019	7/21/2022	1.07E+00	P	6.45E-01	1.06E+00	1.48E+00
LB4110A - D2	Beta	11/2/2019	7/21/2022	1.82E+00	P	-1.16E+00	2.28E+00	5.71E+00
LB4110A - D3	Beta	11/2/2019	7/21/2022	9.17E-01	P	6.80E-01	1.11E+00	1.54E+00
LB4110A - D4	Beta	11/2/2019	7/21/2022	1.62E+00	P	1.01E+00	1.46E+00	1.91E+00
LB4110A - E1	Beta	11/2/2017	5/19/2020	1.00E+05	F	-2.35E+04	8.94E+02	2.53E+04
LB4110A - E2	Beta	11/2/2017	5/19/2020	1.00E+05	F	-2.35E+04	8.94E+02	2.53E+04
LB4110A - E3	Beta	11/2/2017	5/19/2020	1.00E+05	F	-2.35E+04	8.94E+02	2.53E+04
LB4110A - E4	Beta	11/2/2017	5/19/2020	1.00E+05	F	-2.35E+04	8.94E+02	2.53E+04
LB4110A - F1	Beta	11/2/2019	1/10/2022	1.67E-02	P	2.10E-01	1.28E+00	2.35E+00
LB4110A - F2	Beta	11/2/2019	1/10/2022	0.00E+00	P	-5.04E-01	1.19E+00	2.88E+00
LB4110A - F3	Beta	11/2/2019	1/10/2022	0.00E+00	P	-2.58E-01	1.18E+00	2.62E+00
LB4110A - F4	Beta	11/2/2019	1/10/2022	0.00E+00	P	-1.30E+00	1.60E+00	4.50E+00
LB4110A - G1	Beta	11/2/2019	7/21/2022	1.43E+00	P	7.56E-01	1.19E+00	1.63E+00
LB4110A - G2	Beta	11/2/2019	7/21/2022	1.90E+00	P	1.12E+00	1.58E+00	2.04E+00
LB4110A - G3	Beta	11/2/2019	7/21/2022	1.07E+00	P	7.69E-01	1.19E+00	1.61E+00
LB4110A - G4	Beta	11/2/2019	7/21/2022	1.08E+00	P	-1.32E-01	1.28E+00	2.70E+00

GPC Detector Report
(ALL Efficiencies)

Detector	Alpha/Beta	Calibration Date	Count Date	Eff	PFW	LCL	Mean	UCL
LB4110A - A1	Alpha	11/2/2019	7/21/2022	0.2091	W	0.2056	0.2317	0.2578
LB4110A - A2	Alpha	11/2/2019	7/21/2022	0.1938	P	0.1792	0.2013	0.2234
LB4110A - A3	Alpha	11/2/2019	7/21/2022	0.1857	P	0.1748	0.1963	0.2178
LB4110A - A4	Alpha	11/2/2019	7/21/2022	0.2159	P	0.2008	0.2258	0.2507
LB4110A - B1	Alpha	11/2/2019	7/21/2022	0.2129	P	0.1873	0.2116	0.2358
LB4110A - B2	Alpha	11/2/2019	7/21/2022	0.1874	P	0.1705	0.1960	0.2214
LB4110A - B3	Alpha	11/2/2019	7/21/2022	0.2231	P	0.1994	0.2309	0.2623
LB4110A - B4	Alpha	11/2/2019	7/21/2022	0.2187	P	0.1966	0.2256	0.2546
LB4110A - C1	Alpha	11/2/2019	7/21/2022	0.1878	P	0.1728	0.1966	0.2203
LB4110A - C2	Alpha	11/2/2019	7/21/2022	0.1931	P	0.1741	0.1984	0.2228
LB4110A - C3	Alpha	11/2/2019	7/21/2022	0.2160	P	0.1919	0.2226	0.2533
LB4110A - C4	Alpha	11/2/2019	7/21/2022	0.2113	P	0.1786	0.2084	0.2381
LB4110A - D1	Alpha	11/2/2019	7/21/2022	0.1900	P	0.1737	0.1964	0.2192
LB4110A - D2	Alpha	11/2/2019	7/21/2022	0.2213	P	0.2061	0.2334	0.2606
LB4110A - D3	Alpha	11/2/2019	7/21/2022	0.2372	P	0.2134	0.2399	0.2663
LB4110A - D4	Alpha	11/2/2019	7/21/2022	0.1764	P	0.1620	0.1832	0.2045
LB4110A - E1	Alpha	11/2/2017	5/19/2020	0.2075	P	0.1686	0.2257	0.2828
LB4110A - E2	Alpha	11/2/2017	5/19/2020	0.1778	P	0.1514	0.2049	0.2583
LB4110A - E3	Alpha	11/2/2017	5/19/2020	0.2234	P	0.1549	0.2076	0.2604
LB4110A - E4	Alpha	11/2/2017	5/19/2020	0.2155	P	0.1746	0.2353	0.2961
LB4110A - F1	Alpha	11/2/2019	1/10/2022	0.0000	F	0.1419	0.2082	0.2746
LB4110A - F2	Alpha	11/2/2019	1/10/2022	0.0000	F	0.1190	0.1738	0.2286
LB4110A - F3	Alpha	11/2/2019	1/10/2022	0.0000	F	0.1494	0.2173	0.2853
LB4110A - F4	Alpha	11/2/2019	1/10/2022	0.0000	F	0.1457	0.2123	0.2788
LB4110A - G1	Alpha	11/2/2019	7/21/2022	0.1901	P	0.1767	0.1872	0.1977
LB4110A - G2	Alpha	11/2/2019	7/21/2022	0.1847	P	0.1731	0.1835	0.1939
LB4110A - G3	Alpha	11/2/2019	7/21/2022	0.2066	P	0.2017	0.2142	0.2267
LB4110A - G4	Alpha	11/2/2019	7/21/2022	0.1804	P	0.1654	0.1834	0.2014

KP
7/21/22

KP 7/21/22
out of service

GPC Detector Report
(ALL Efficiencies)

Detector	Alpha/Beta	Calibration Date	Count Date	Eff	PFW	LCL	Mean	UCL
LB4110A - A1	Beta	11/2/2019	7/21/2022	0.5188	P	0.4974	0.5626	0.6279
LB4110A - A2	Beta	11/2/2019	7/21/2022	0.4499	P	0.3976	0.4439	0.4903
LB4110A - A3	Beta	11/2/2019	7/21/2022	0.4532	P	0.4261	0.4790	0.5319
LB4110A - A4	Beta	11/2/2019	7/21/2022	0.5199	P	0.4909	0.5541	0.6172
LB4110A - B1	Beta	11/2/2019	7/21/2022	0.4938	P	0.4375	0.4947	0.5520
LB4110A - B2	Beta	11/2/2019	7/21/2022	0.4339	P	0.3892	0.4799	0.5705
LB4110A - B3	Beta	11/2/2019	7/21/2022	0.5412	P	0.4889	0.5746	0.6603
LB4110A - B4	Beta	11/2/2019	7/21/2022	0.5287	P	0.4673	0.5527	0.6380
LB4110A - C1	Beta	11/2/2019	7/21/2022	0.4507	P	0.4156	0.4729	0.5302
LB4110A - C2	Beta	11/2/2019	7/21/2022	0.4526	P	0.4168	0.4751	0.5334
LB4110A - C3	Beta	11/2/2019	7/21/2022	0.5507	P	0.4894	0.5645	0.6395
LB4110A - C4	Beta	11/2/2019	7/21/2022	0.5087	P	0.4409	0.5098	0.5787
LB4110A - D1	Beta	11/2/2019	7/21/2022	0.5388	P	0.5075	0.5743	0.6411
LB4110A - D2	Beta	11/2/2019	7/21/2022	0.5669	P	0.5211	0.5897	0.6584
LB4110A - D3	Beta	11/2/2019	7/21/2022	0.5814	P	0.5348	0.6003	0.6658
LB4110A - D4	Beta	11/2/2019	7/21/2022	0.4654	P	0.4291	0.4812	0.5332
LB4110A - E1	Beta	11/2/2017	5/19/2020	0.5360	P	0.4167	0.5408	0.6649
LB4110A - E2	Beta	11/2/2017	5/19/2020	0.4520	P	0.3728	0.4910	0.6092
LB4110A - E3	Beta	11/2/2017	5/19/2020	0.5775	P	0.3848	0.5001	0.6154
LB4110A - E4	Beta	11/2/2017	5/19/2020	0.5466	P	0.4532	0.5887	0.7241
LB4110A - F1	Beta	11/2/2019	1/10/2022	0.0044	F	0.3744	0.5247	0.6751
LB4110A - F2	Beta	11/2/2019	1/10/2022	0.0009	F	0.3099	0.4365	0.5632
LB4110A - F3	Beta	11/2/2019	1/10/2022	0.0002	F	0.4027	0.5661	0.7294
LB4110A - F4	Beta	11/2/2019	1/10/2022	0.0003	F	0.3883	0.5461	0.7040
LB4110A - G1	Beta	11/2/2019	7/21/2022	0.4386	P	0.4199	0.4439	0.4679
LB4110A - G2	Beta	11/2/2019	7/21/2022	0.4366	P	0.4080	0.4340	0.4601
LB4110A - G3	Beta	11/2/2019	7/21/2022	0.5029	P	0.4882	0.5164	0.5446
LB4110A - G4	Beta	11/2/2019	7/21/2022	0.4437	P	0.3988	0.4396	0.4803

LP
7/21/22

out of service
LP
7/21/22

SECTION X
BARIUM-133 ANALYTICAL TRACER DATA

0100



KB
7/19/22

Analysis Report for 2206118-01
SPIKE

GAMMA SPECTRUM ANALYSIS

Sample Identification : 2206118-01
 Sample Description : SPIKE
 Sample Type : RA RECOVERY

Sample Size : 1.000E+00 units
 Facility : Countroom

Sample Taken On : 7/19/2022 9:10:02AM
 Acquisition Started : 7/19/2022 2:01:53PM

Procedure : BAFIL
 Operator : Administrator
 Detector Name : GE5
 Geometry : BAFIL
 Live Time : 900.0 seconds
 Real Time : 1081.8 seconds

Dead Time : 16.81 %

Peak Locate Threshold : 2.50
 Peak Locate Range (in channels) : 1 - 4096
 Peak Area Range (in channels) : 2 - 4096
 Identification Energy Tolerance : 2.500 keV

Energy Calibration Used Done On : 11/20/2021
 Efficiency Calibration Used Done On : 12/13/2021
 Efficiency Calibration Description :

Sample Number : 126695

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 7/19/2022 2:19:57PM
 Peak Analysis From Channel : 1
 Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
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Analysis Report for 2206118-01

SPIKE

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)	
1	20.94	191 -	219	202.72	1.51E+02	46.26	1.14E+02	0.65	
2	24.83	235 -	249	241.89	3.55E+01	19.57	3.31E+01	0.54	
3	30.64	286 -	314	300.48	3.08E+03	126.26	3.09E+02	0.77	
4	34.94	330 -	358	343.77	8.20E+02	64.65	7.51E+01	0.70	
5	52.52	505 -	530	520.98	9.56E+01	40.88	1.19E+02	0.40	
6	61.36	597 -	624	610.11	4.04E+02	45.17	3.73E+01	0.98	
7	65.68	638 -	672	653.66	1.97E+02	41.82	7.17E+01	0.83	
M	8	79.09	778 -	816	788.82	5.53E+01	27.79	7.17E+01	0.89
m	9	80.63	778 -	816	804.35	1.26E+03	73.93	4.95E+01	0.76
10	111.43	1101 -	1128	1114.76	2.59E+02	49.71	1.53E+02	0.69	
11	115.41	1141 -	1167	1154.89	8.17E+01	32.17	8.06E+01	0.23	
M	12	158.46	1588 -	1613	1588.84	1.59E+01	5.12	3.00E+00	0.75
m	13	159.86	1588 -	1613	1602.96	4.71E+01	19.10	2.20E+01	1.12
14	275.27	2750 -	2778	2766.38	6.02E+01	18.20	1.16E+01	1.17	
M	15	301.52	3016 -	3045	3031.00	1.94E+02	29.12	2.94E+01	1.07
m	16	302.13	3016 -	3045	3037.17	1.73E+01	25.55	1.97E+01	1.17
17	306.15	3063 -	3087	3077.68	3.03E+01	13.93	1.14E+01	0.98	
18	332.53	3327 -	3355	3343.59	7.77E+01	21.09	1.65E+01	0.60	
19	354.69	3550 -	3579	3567.08	5.40E+02	51.73	5.99E+01	0.92	
M	20	381.75	3830 -	3858	3839.89	3.55E+01	19.90	4.55E+00	1.12
m	21	382.55	3830 -	3858	3847.95	8.68E+01	23.09	1.47E+01	0.95
22	385.45	3861 -	3890	3877.17	2.20E+02	34.81	4.05E+01	0.85	

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 7/19/2022 2:19:57PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000126625.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	20.94	1.51E+02	46.26	1.99E+01	9.25E-01	1.31E+02	4.63E+01
2	24.83	3.55E+01	19.57	3.59E+00	4.93E-01	3.19E+01	1.96E+01
3	30.64	3.08E+03	126.26	5.33E+00	8.70E-01	3.08E+03	1.26E+02
4	34.94	8.20E+02	64.65	9.23E-01	5.15E-01	8.20E+02	6.47E+01
5	52.52	9.56E+01	40.88	1.49E-01	3.82E-01	9.55E+01	4.09E+01
6	61.36	4.04E+02	45.17	7.83E+00	8.09E-01	3.97E+02	4.52E+01
7	65.68	1.97E+02	41.82	1.71E-01	7.09E-01	1.97E+02	4.18E+01

0102

Analysis Report for 2206118-01

SPIKE

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	8	79.09	5.53E+01	27.79	0.00E+00	0.00E+00	5.53E+01	2.78E+01
m	9	80.63	1.26E+03	73.93	0.00E+00	0.00E+00	1.26E+03	7.39E+01
	10	111.43	2.59E+02	49.71	8.81E-01	5.68E-01	2.58E+02	4.97E+01
	11	115.41	8.17E+01	32.17			8.17E+01	3.22E+01
M	12	158.46	1.59E+01	5.12			1.59E+01	5.12E+00
m	13	159.86	4.71E+01	19.10			4.71E+01	1.91E+01
	14	275.27	6.02E+01	18.20	2.30E-01	3.48E-01	6.00E+01	1.82E+01
M	15	301.52	1.94E+02	29.12	1.45E-01	3.10E-01	1.94E+02	2.91E+01
m	16	302.13	1.73E+01	25.55	1.45E-01	3.10E-01	1.72E+01	2.56E+01
	17	306.15	3.03E+01	13.93			3.03E+01	1.39E+01
	18	332.53	7.77E+01	21.09			7.77E+01	2.11E+01
	19	354.69	5.40E+02	51.73			5.40E+02	5.17E+01
M	20	381.75	3.55E+01	19.90			3.55E+01	1.99E+01
m	21	382.55	8.68E+01	23.09			8.68E+01	2.31E+01
	22	385.45	2.20E+02	34.81			2.20E+02	3.48E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/units)	Activity Uncertainty
I-129	0.87	29.78 *	57.00	4.22E+01	1.73E+00
		33.60 *	13.20	7.90E+01	6.24E+00
		39.58	7.52		
BA-133	0.97	81.00 *	34.06	5.29E+02	3.70E+01
		302.84 *	18.33	5.20E+01	7.76E+01
		356.01 *	62.05	4.65E+02	4.86E+01
TH-231	0.88	25.64 *	14.70	7.26E-01	4.46E-01
		84.21	6.40		
TH-234	0.90	63.29 *	3.80	7.73E+02	8.94E+01
AM-241	0.91	59.54 *	35.90	8.19E+01	9.47E+00

0103

Analysis Report for 2206118-01

SPIKE

* = Energy line found in the spectrum.
 - = Manually added nuclide.
 ? = Manually edited nuclide.
 @ = Energy line not used for Weighted Mean Activity
 Energy Tolerance : 2.500 keV
 Nuclide confidence index threshold = 0.30
 Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/units)	Wt mean Activity Uncertainty	Comments
I-129	0.879	4.48E+01	1.67E+00	
BA-133	0.973	4.48E+02	2.75E+01	
TH-231	0.886	7.26E-01	4.46E-01	
? TH-234	0.909	7.73E+02	8.94E+01	
X NP-237	0.734			
? AM-241	0.919	8.19E+01	9.47E+00	

? = nuclide is part of an undetermined solution
 X = nuclide rejected by the interference analysis
 @ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

0104

Analysis Report for 2206118-01
SPIKE

UNIDENTIFIED PEAKS

Peak Locate Performed on : 7/19/2022 2:19:57PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Peak Size (CPS)</i>	<i>Peak CPS (%) Uncertainty</i>	<i>Peak Type</i>	<i>Tolerance Nuclide</i>
1	20.94	1.45796E-01	17.63	Tol.	MO-93 PA-234M
5	52.52	1.06073E-01	21.41		
7	65.68	2.18867E-01	10.62	Sum	
M 8	79.09	6.14841E-02	25.11	Tol.	BA-133
10	111.43	2.87163E-01	9.62	Sum	
11	115.41	9.07514E-02	19.69	Sum	
M 12	158.46	1.77133E-02	16.07		
m 13	159.86	5.23072E-02	20.29	Sum	
14	275.27	6.66332E-02	15.18		
M 15	301.52	2.15013E-01	7.52	Tol.	BA-133
17	306.15	3.36914E-02	22.97		
18	332.53	8.63798E-02	13.57	Sum	
M 20	381.75	3.94591E-02	28.02	Sum	
m 21	382.55	9.64067E-02	13.30	Sum	
22	385.45	2.44183E-01	7.92	Sum	

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

0105

Analysis Report for 2206118-01

SPIKE

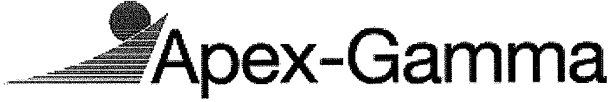
Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/units)	Nuclide MDA (pCi/units)	Activity (pCi/units)	Dec. Level (pCi/units)
CA-41	3.00	77.00	5.72E-07	5.72E-07	-4.93E-07	2.69E-07
	3.31	12.30	7.37E-06		6.16E-07	3.45E-06
FE-55	5.89	24.50	1.95E-04	1.95E-04	4.31E-05	8.99E-05
CO-57	122.06	85.51	1.04E+01	1.04E+01	-1.17E+00	4.74E+00
	136.48	10.60	1.09E+02		-1.48E+00	5.01E+01
NI-59	6.92	29.80	4.25E-04	4.25E-04	1.11E-04	1.95E-04
MO-93	16.59	52.90	3.10E-02	3.10E-02	-6.90E-03	1.41E-02
	18.60	10.00	3.56E-01		3.24E-02	1.65E-01
NB-93M	16.57	9.43	1.73E-01	1.73E-01	-3.85E-02	7.87E-02
CD-109	88.03	3.72	1.32E+02	1.32E+02	-1.13E+01	5.98E+01
SN-113	255.12	1.93	5.95E+02	1.98E+01	-1.29E+02	2.58E+02
	391.69	61.90	1.98E+01		6.30E+00	8.79E+00
SN-119M	23.87	16.10	6.72E-01	6.04E-01	-1.96E-01	3.12E-01
	25.10	22.70	6.04E-01		-9.20E-02	2.81E-01
+ I-129	29.78	*	57.00	1.39E+00	4.22E+01	6.79E-01
	33.60	*	13.20	5.03E+00	7.90E+01	2.38E+00
	39.58		7.52	7.82E+00	2.63E+00	3.56E+00
+ BA-133	81.00	*	34.06	2.25E+01	5.29E+02	1.07E+01
	302.84	*	18.33	8.22E+01	5.20E+01	3.70E+01
	356.01	*	62.05	3.45E+01	4.65E+02	1.61E+01
CE-139	165.85	80.35	1.68E+01	1.68E+01	-1.40E+01	7.69E+00
CE-144	133.54	10.80	1.09E+02	1.09E+02	3.27E+00	5.01E+01
HG-203	279.19	77.30	1.66E+01	1.66E+01	8.32E+00	7.34E+00
PB-210	46.50	4.25	1.72E+01	1.72E+01	-9.90E+00	7.52E+00
+ TH-231	25.64	*	14.70	6.61E-01	7.26E-01	3.00E-01
	84.21		6.40	8.22E+01	3.43E+01	3.78E+01
PA-234M	9.89	89.00	1.32E-03	1.32E-03	-4.15E-05	6.10E-04
	21.72	64.90	1.60E-01		-4.55E-03	7.63E-02
	37.93	23.75	2.08E+00		-8.07E-02	9.44E-01
+ TH-234	63.29	*	3.80	7.37E+01	7.73E+02	3.42E+01
NP-237	29.37	*	14.00	5.68E+00	1.72E+02	2.76E+00
	86.50	12.60	3.71E+01		6.93E+00	1.68E+01
U-237	97.08	16.30	4.18E+01	3.17E+01	1.34E+01	1.91E+01
	101.07	26.30	3.17E+01		1.62E+01	1.47E+01
	114.00	12.30	9.76E+01		-2.49E+01	4.57E+01
	208.01	22.00	6.93E+01		5.66E+00	3.14E+01
+ AM-241	59.54	*	35.90	7.80E+00	8.19E+01	3.62E+00
AM-243	74.67	66.00	5.86E+00	5.86E+00	4.35E-01	2.68E+00

+ = Nuclide identified during the nuclide identification

* = Energy line found in the spectrum

> = MDA value not calculated

@ = Half-life too short to be able to perform the decay correction



KB
7/19/22

Analysis Report for 2206118-02
BLANK

GAMMA SPECTRUM ANALYSIS

Sample Identification : 2206118-02
 Sample Description : BLANK
 Sample Type : RA RECOVERY

 Sample Size : 1.000E+00 units
 Facility : Countroom

 Sample Taken On : 7/19/2022 9:10:08AM
 Acquisition Started : 7/19/2022 2:01:59PM

 Procedure : BAFIL
 Operator : Administrator
 Detector Name : GE1
 Geometry : BAFIL
 Live Time : 900.0 seconds
 Real Time : 900.3 seconds

 Dead Time : 0.03 %

 Peak Locate Threshold : 2.50
 Peak Locate Range (in channels) : 1 - 4096
 Peak Area Range (in channels) : 32 - 4096
 Identification Energy Tolerance : 2.500 keV

 Energy Calibration Used Done On : 7/1/2022
 Efficiency Calibration Used Done On : 12/14/2021
 Efficiency Calibration Description :

 Sample Number : 126696

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 7/19/2022 2:17:03PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
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Analysis Report for 2206118-02

BLANK

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	1	54.34	48 -	74	52.89	1.01E+02	56.15	3.08E+02	3.56
m	2	63.10	48 -	74	61.66	3.54E+02	64.33	3.31E+02	3.24
m	3	67.20	48 -	74	65.76	1.34E+02	50.72	2.55E+02	2.40
	4	82.08	75 -	87	80.65	1.01E+03	90.40	4.83E+02	2.99
	5	113.60	106 -	118	112.18	2.92E+02	72.52	4.82E+02	2.49
	6	277.75	272 -	282	276.42	5.71E+01	31.73	1.02E+02	2.35
	7	304.67	295 -	310	303.35	2.19E+02	47.29	1.36E+02	2.73
	8	335.07	328 -	338	333.77	7.72E+01	34.28	1.16E+02	3.46
	9	356.98	348 -	360	355.68	6.33E+02	58.62	1.13E+02	2.74
	10	387.75	380 -	396	386.46	4.51E+02	48.18	4.27E+01	5.05
	11	437.81	430 -	444	436.54	9.05E+01	29.42	5.50E+01	2.65
	12	470.41	461 -	474	469.15	3.63E+01	20.00	2.95E+01	6.85
	13	512.06	507 -	516	510.81	2.61E+01	11.70	3.75E+00	5.23

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 7/19/2022 2:17:03PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000126621.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	1	54.34	1.01E+02	56.15			1.01E+02	5.61E+01
m	2	63.10	3.54E+02	64.33	2.33E+01	2.79E+00	3.30E+02	6.44E+01
m	3	67.20	1.34E+02	50.72			1.34E+02	5.07E+01
	4	82.08	1.01E+03	90.40			1.01E+03	9.04E+01
	5	113.60	2.92E+02	72.52	2.17E+00	2.38E+00	2.90E+02	7.26E+01
	6	277.75	5.71E+01	31.73			5.71E+01	3.17E+01
	7	304.67	2.19E+02	47.29			2.19E+02	4.73E+01
	8	335.07	7.72E+01	34.28			7.72E+01	3.43E+01
	9	356.98	6.33E+02	58.62			6.33E+02	5.86E+01
	10	387.75	4.51E+02	48.18			4.51E+02	4.82E+01
	11	437.81	9.05E+01	29.42			9.05E+01	2.94E+01
	12	470.41	3.63E+01	20.00			3.63E+01	2.00E+01
	13	512.06	2.61E+01	11.70	1.45E+01	1.43E+00	1.16E+01	1.18E+01

0108

Analysis Report for 2206118-02
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M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/units)	Activity Uncertainty
BA-133	0.96	81.00	*	34.06	5.26E+02	5.18E+01
		302.84	*	18.33	6.08E+02	1.35E+02
		356.01	*	62.05	4.97E+02	5.02E+01
HG-203	0.94	279.19	*	77.30	3.80E+01	2.13E+01
TH-234	0.99	63.29	*	3.80	9.20E+02	1.81E+02

* = Energy line found in the spectrum.
- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 2.500 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/units)	Wt mean Activity Uncertainty	Comments
BA-133	0.965	5.17E+02	3.49E+01	0109
HG-203	0.948	3.80E+01	2.13E+01	

Analysis Report for 2206118-02

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	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/units)	Wt mean Activity Uncertainty	Comments
X	TH-231	0.966			
	TH-234	0.999	9.20E+02	1.81E+02	

? = nuclide is part of an undetermined solution

X = nuclide rejected by the interference analysis

@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

0110

Analysis Report for 2206118-02

BLANK

UNIDENTIFIED PEAKS

Peak Locate Performed on : 7/19/2022 2:17:03PM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M 1	54.34	1.12065E-01	27.83		
m 3	67.20	1.48837E-01	18.93		
5	113.60	3.21954E-01	12.52	Tol.	U-237
8	335.07	8.58066E-02	22.20		
10	387.75	5.00730E-01	5.35	Sum	
11	437.81	1.00546E-01	16.26	Sum	
12	470.41	4.02832E-02	27.58		
13	512.06	1.29428E-02	50.62		

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/units)	Nuclide MDA (pCi/units)	Activity (pCi/units)	Dec. Level (pCi/units)
CA-41	3.00	77.00	5.44E-07	5.44E-07	0.00E+00	0.00E+00
	3.31	12.30	6.51E-06		0.00E+00	0.00E+00
FE-55	5.89	24.50	1.09E-04	1.09E-04	0.00E+00	0.00E+00
CO-57	122.06	85.51	2.29E+01	2.29E+01	-1.26E+01	1.09E+01
	136.48	10.60	1.98E+02		5.33E+01	9.44E+01
NI-59	6.92	29.80	2.19E-04	2.19E-04	0.00E+00	0.00E+00
MO-93	16.59	52.90	8.08E-03	8.08E-03	0.00E+00	0.00E+00
	18.60	10.00	6.79E-02		0.00E+00	0.00E+00
NB-93M	16.57	9.43	4.51E-02	4.51E-02	0.00E+00	0.00E+00

0111

Analysis Report for 2206118-02

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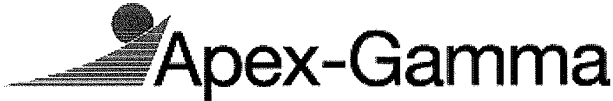
Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/units)	Nuclide MDA (pCi/units)	Activity (pCi/units)	Dec. Level (pCi/units)
CD-109	88.03	3.72	3.85E+02	3.85E+02	-1.48E+02	1.85E+02
SN-113	255.12	1.93	1.11E+03	6.11E+01	4.35E+01	5.21E+02
	391.69	61.90	6.11E+01		1.29E+02	2.95E+01
SN-119M	23.87	16.10	1.08E-01	9.19E-02	0.00E+00	0.00E+00
	25.10	22.70	9.19E-02		0.00E+00	0.00E+00
I-129	29.78	57.00	1.78E-01	1.78E-01	-4.75E+00	5.62E-02
	33.60	13.20	2.03E+01		9.24E+01	9.97E+00
	39.58	7.52	6.05E+01		2.63E+02	2.97E+01
+ BA-133	81.00 *	34.06	5.65E+01	5.43E+01	5.26E+02	2.76E+01
	302.84 *	18.33	1.76E+02		6.08E+02	8.42E+01
	356.01 *	62.05	5.43E+01		4.97E+02	2.61E+01
CE-139	165.85	80.35	2.98E+01	2.98E+01	-7.30E+00	1.42E+01
CE-144	133.54	10.80	1.84E+02	1.84E+02	1.81E+01	8.77E+01
+ HG-203	279.19 *	77.30	3.24E+01	3.24E+01	3.80E+01	1.53E+01
PB-210	46.50	4.25	6.72E+01	6.72E+01	-1.22E+02	3.20E+01
TH-231	25.64	14.70	1.53E-01	1.53E-01	0.00E+00	0.00E+00
	84.21 *	6.40	3.01E+02		2.80E+03	1.47E+02
PA-234M	9.89	89.00	4.64E-04	4.64E-04	0.00E+00	0.00E+00
	21.72	64.90	1.90E-02		0.00E+00	0.00E+00
	37.93	23.75	1.85E+01		1.15E+02	9.10E+00
+ TH-234	63.29 *	3.80	5.25E+02	5.25E+02	9.20E+02	2.59E+02
NP-237	29.37	14.00	6.92E-01	6.92E-01	-1.85E+01	2.19E-01
	86.50	12.60	1.95E+02		-3.67E+00	9.54E+01
U-237	97.08	16.30	9.42E+01	5.78E+01	4.47E+01	4.51E+01
	101.07	26.30	5.78E+01		-2.44E+01	2.76E+01
	114.00	12.30	2.50E+02		7.48E+02	1.21E+02
	208.01	22.00	1.11E+02		-5.38E+00	5.26E+01
AM-241	59.54	35.90	2.63E+01	2.63E+01	1.05E+01	1.28E+01
AM-243	74.67	66.00	1.51E+01	1.51E+01	-1.97E+02	7.24E+00

+ = Nuclide identified during the nuclide identification

* = Energy line found in the spectrum

> = MDA value not calculated

@ = Half-life too short to be able to perform the decay correction



ICB
7/19/22

Analysis Report for 2206118-03
LT-4 13-18 - 70492

GAMMA SPECTRUM ANALYSIS

Sample Identification : 2206118-03
 Sample Description : LT-4 13-18 - 70492
 Sample Type : RA RECOVERY

Sample Size : 1.000E+00 units
 Facility : Countroom

Sample Taken On : 7/19/2022 9:10:24AM
 Acquisition Started : 7/19/2022 2:02:09PM

Procedure : BAFIL
 Operator : Administrator
 Detector Name : GE2
 Geometry : BAFIL
 Live Time : 900.0 seconds
 Real Time : 905.7 seconds

Dead Time : 0.63 %

Peak Locate Threshold : 2.50
 Peak Locate Range (in channels) : 1 - 4096
 Peak Area Range (in channels) : 19 - 4096
 Identification Energy Tolerance : 2.500 keV

Energy Calibration Used Done On : 7/8/2022
 Efficiency Calibration Used Done On : 12/13/2021
 Efficiency Calibration Description :

Sample Number : 126697

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 7/19/2022 2:17:18PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
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Analysis Report for 2206118-03

LT-4 13-18 - 70492

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	1	31.17	26 -	53	31.77	8.11E+03	268.77	1.95E+03	3.52
m	2	35.02	26 -	53	35.61	4.01E+03	288.41	3.90E+03	3.56
	3	61.46	59 -	65	62.06	1.80E+02	148.73	3.85E+03	3.18
	4	81.65	77 -	87	82.26	8.51E+02	163.97	3.10E+03	2.88
	5	112.56	109 -	117	113.17	1.66E+02	107.50	1.68E+03	2.35
	6	148.16	146 -	151	148.78	5.82E+01	57.75	6.20E+02	3.47
	7	212.21	209 -	217	212.83	9.05E+01	66.02	6.11E+02	4.01
M	8	273.77	273 -	281	274.39	2.02E+01	23.14	1.34E+02	1.65
m	9	276.81	273 -	281	277.43	4.93E+01	40.47	2.82E+02	2.02
	10	303.54	300 -	308	304.16	1.58E+02	56.62	3.97E+02	1.72
	11	334.53	330 -	342	335.15	6.07E+01	62.45	4.35E+02	3.15
	12	356.44	351 -	363	357.06	5.95E+02	72.51	3.40E+02	2.43
M	13	384.58	381 -	399	385.19	1.55E+02	43.49	1.81E+02	2.37
m	14	387.60	381 -	399	388.22	1.58E+02	45.30	1.60E+02	2.32
m	15	391.47	381 -	399	392.09	6.41E+01	36.55	1.39E+02	2.38
	16	415.89	413 -	421	416.50	3.85E+01	39.34	2.11E+02	2.86
M	17	431.61	431 -	443	432.22	1.58E+01	15.56	6.70E+01	2.41
m	18	437.61	431 -	443	438.22	9.79E+01	33.50	1.36E+02	2.42
	19	557.63	551 -	565	558.22	5.66E+01	39.71	1.41E+02	10.38
	20	808.56	805 -	812	809.05	1.76E+01	22.98	7.67E+01	5.39
	21	933.78	930 -	941	934.21	4.19E+01	34.41	1.30E+02	3.20
	22	1135.55	1132 -	1139	1135.84	1.69E+01	16.73	3.42E+01	3.58
	23	1205.50	1203 -	1209	1205.74	1.55E+01	19.60	5.70E+01	3.54
	24	1533.54	1527 -	1538	1533.46	1.63E+01	19.90	3.93E+01	4.90
	25	1695.70	1690 -	1701	1695.43	2.45E+01	26.68	7.29E+01	7.51
	26	1706.54	1701 -	1711	1706.26	1.85E+01	21.08	4.91E+01	4.53
	27	1717.07	1712 -	1721	1716.78	2.50E+01	19.49	4.00E+01	3.27
M	28	1956.93	1953 -	1984	1956.30	2.02E+01	18.30	5.67E+01	3.35
m	29	1974.80	1953 -	1984	1974.15	3.07E+01	26.29	6.39E+01	3.36
m	30	1980.66	1953 -	1984	1980.00	2.37E+01	23.40	4.97E+01	3.05
M	31	1990.54	1985 -	2003	1989.87	2.28E+01	18.60	4.07E+01	4.92
m	32	2000.13	1985 -	2003	1999.44	2.25E+01	17.94	3.03E+01	4.93

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 7/19/2022 2:17:18PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000126622.CNF

0114

Analysis Report for 2206118-03

LT-4 13-18 - 70492

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	1	31.17	8.11E+03	268.77	8.38E+02	8.56E+00	7.27E+03	2.69E+02
m	2	35.02	4.01E+03	288.41	3.09E+03	2.08E+01	9.19E+02	2.89E+02
	3	61.46	1.80E+02	148.73	4.93E-01	7.51E-01	1.80E+02	1.49E+02
	4	81.65	8.51E+02	163.97			8.51E+02	1.64E+02
	5	112.56	1.66E+02	107.50			1.66E+02	1.08E+02
	6	148.16	5.82E+01	57.75			5.82E+01	5.77E+01
	7	212.21	9.05E+01	66.02			9.05E+01	6.60E+01
M	8	273.77	2.02E+01	23.14			2.02E+01	2.31E+01
m	9	276.81	4.93E+01	40.47			4.93E+01	4.05E+01
	10	303.54	1.58E+02	56.62			1.58E+02	5.66E+01
	11	334.53	6.07E+01	62.45			6.07E+01	6.25E+01
	12	356.44	5.95E+02	72.51			5.95E+02	7.25E+01
M	13	384.58	1.55E+02	43.49			1.55E+02	4.35E+01
m	14	387.60	1.58E+02	45.30			1.58E+02	4.53E+01
m	15	391.47	6.41E+01	36.55			6.41E+01	3.65E+01
	16	415.89	3.85E+01	39.34			3.85E+01	3.93E+01
M	17	431.61	1.58E+01	15.56			1.58E+01	1.56E+01
m	18	437.61	9.79E+01	33.50			9.79E+01	3.35E+01
	19	557.63	5.66E+01	39.71			5.66E+01	3.97E+01
	20	808.56	1.76E+01	22.98			1.76E+01	2.30E+01
	21	933.78	4.19E+01	34.41			4.19E+01	3.44E+01
	22	1135.55	1.69E+01	16.73			1.69E+01	1.67E+01
	23	1205.50	1.55E+01	19.60			1.55E+01	1.96E+01
	24	1533.54	1.63E+01	19.90			1.63E+01	1.99E+01
	25	1695.70	2.45E+01	26.68			2.45E+01	2.67E+01
	26	1706.54	1.85E+01	21.08			1.85E+01	2.11E+01
	27	1717.07	2.50E+01	19.49			2.50E+01	1.95E+01
M	28	1956.93	2.02E+01	18.30			2.02E+01	1.83E+01
m	29	1974.80	3.07E+01	26.29			3.07E+01	2.63E+01
m	30	1980.66	2.37E+01	23.40			2.37E+01	2.34E+01
M	31	1990.54	2.28E+01	18.60			2.28E+01	1.86E+01
m	32	2000.13	2.25E+01	17.94			2.25E+01	1.79E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

IDENTIFIED NUCLIDES

0115

Analysis Report for 2206118-03

LT-4 13-18 - 70492

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/units)	Activity Uncertainty
SN-113	0.95	255.12	1.93		
		391.69 *	61.90	4.68E+01	2.67E+01
I-129	0.84	29.78 *	57.00	2.95E+02	1.10E+01
		33.60 *	13.20	2.18E+02	6.87E+01
		39.58	7.52		
BA-133	0.99	81.00 *	34.06	4.43E+02	8.73E+01
		302.84 *	18.33	4.07E+02	1.48E+02
		356.01 *	62.05	4.44E+02	5.71E+01
HG-203	0.86	279.19 *	77.30	3.02E+01	2.49E+01
TH-234	0.91	63.29 *	3.80	5.17E+02	4.27E+02
NP-237	0.60	29.37 *	14.00	1.20E+03	4.49E+01
		86.50	12.60		
AM-241	0.91	59.54 *	35.90	5.47E+01	4.52E+01

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 2.500 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/units)	Wt mean Activity Uncertainty	Comments
SN-113	0.951	4.68E+01	2.67E+01	
I-129	0.842	2.18E+02	6.87E+01	
BA-133	0.992	4.40E+02	4.55E+01	
HG-203	0.865	3.02E+01	2.49E+01	
? TH-234	0.918	5.17E+02	4.27E+02	
NP-237	0.600	3.12E+02	2.83E+02	
? AM-241	0.910	5.47E+01	4.52E+01	

? = nuclide is part of an undetermined solution

X = nuclide rejected by the interference analysis

@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

0116

Analysis Report for 2206118-03
 LT-4 13-18 - 70492

UNIDENTIFIED PEAKS

Peak Locate Performed on : 7/19/2022 2:17:18PM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Peak Size (CPS)</i>	<i>Peak CPS (%) Uncertainty</i>	<i>Peak Type</i>	<i>Tolerance Nuclide</i>
	5	112.56	1.84809E-01	32.32	Sum
	6	148.16	6.46815E-02	49.60	
	7	212.21	1.00543E-01	36.48	
M	8	273.77	2.24453E-02	57.28	
	11	334.53	6.74381E-02	51.45	Sum
M	13	384.58	1.72577E-01	14.00	Sum
m	14	387.60	1.75256E-01	14.36	Sum
	16	415.89	4.28241E-02	51.04	Sum
M	17	431.61	1.76027E-02	49.10	
m	18	437.61	1.08818E-01	17.10	Sum
	19	557.63	6.28565E-02	35.10	
	20	808.56	1.96032E-02	65.12	
	21	933.78	4.65784E-02	41.04	
	22	1135.55	1.87582E-02	49.56	
	23	1205.50	1.71970E-02	63.33	
	24	1533.54	1.81482E-02	60.92	
	25	1695.70	2.72678E-02	54.36	
	26	1706.54	2.05168E-02	57.07	
	27	1717.07	2.77778E-02	38.99	
M	28	1956.93	2.24596E-02	45.27	
m	29	1974.80	3.41420E-02	42.77	
m	30	1980.66	2.63622E-02	49.32	
M	31	1990.54	2.53609E-02	40.75	
m	32	2000.13	2.50066E-02	39.87	

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

0117

Analysis Report for 2206118-03
LT-4 13-18 - 70492

NUCLIDE MDA REPORT

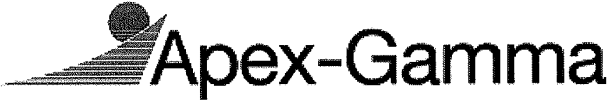
Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/units)	Nuclide MDA (pCi/units)	Activity (pCi/units)	Dec. Level (pCi/units)
CA-41	3.00	77.00	5.55E-06	5.55E-06	0.00E+00	0.00E+00
	3.31	12.30	5.93E-05		0.00E+00	0.00E+00
FE-55	5.89	24.50	5.43E-04	5.43E-04	0.00E+00	0.00E+00
CO-57	122.06	85.51	3.89E+01	3.89E+01	-1.95E+01	1.90E+01
	136.48	10.60	3.19E+02		-1.37E+02	1.55E+02
NI-59	6.92	29.80	9.37E-04	9.37E-04	0.00E+00	0.00E+00
MO-93	16.59	52.90	4.64E-02	4.64E-02	6.30E-03	1.47E-02
	18.60	10.00	3.61E-01		-1.72E-01	1.14E-01
NB-93M	16.57	9.43	2.59E-01	2.59E-01	3.52E-02	8.19E-02
CD-109	88.03	3.72	7.62E+02	7.62E+02	5.69E+01	3.74E+02
+ SN-113	255.12	1.93	1.73E+03	8.27E+01	4.70E+01	8.31E+02
	391.69	* 61.90	8.27E+01		4.68E+01	4.03E+01
SN-119M	23.87	16.10	1.51E+00	1.51E+00	-1.93E+00	6.62E-01
	25.10	22.70	3.34E+00		-1.04E+00	1.60E+00
+ I-129	29.78	* 57.00	2.68E+01	2.68E+01	2.95E+02	1.34E+01
	33.60	* 13.20	1.63E+02		2.18E+02	8.14E+01
	39.58	7.52	1.88E+02		-5.73E+02	9.31E+01
+ BA-133	81.00	* 34.06	1.33E+02	6.79E+01	4.43E+02	6.56E+01
	302.84	* 18.33	2.23E+02		4.07E+02	1.08E+02
	356.01	* 62.05	6.79E+01		4.44E+02	3.29E+01
CE-139	165.85	80.35	4.66E+01	4.66E+01	-1.31E+01	2.27E+01
CE-144	133.54	10.80	3.07E+02	3.07E+02	-4.08E+01	1.49E+02
+ HG-203	279.19	* 77.30	5.18E+01	5.18E+01	3.02E+01	2.51E+01
PB-210	46.50	4.25	3.98E+02	3.98E+02	3.95E+00	1.97E+02
TH-231	25.64	14.70	5.49E+00	5.49E+00	-1.71E+00	2.62E+00
	84.21	6.40	5.40E+02		9.92E+02	2.66E+02
PA-234M	9.89	89.00	1.45E-03	1.45E-03	0.00E+00	0.00E+00
	21.72	64.90	1.50E-01		-1.43E-01	5.79E-02
	37.93	23.75	5.80E+01		-1.18E+01	2.88E+01
+ TH-234	63.29	* 3.80	6.99E+02	6.99E+02	5.17E+02	3.45E+02
+ NP-237	29.37	* 14.00	1.09E+02	1.09E+02	1.20E+03	5.44E+01
	86.50	12.60	2.35E+02		6.24E+01	1.15E+02
U-237	97.08	16.30	1.85E+02	1.17E+02	-1.45E+01	9.05E+01
	101.07	26.30	1.17E+02		3.03E+01	5.75E+01
	114.00	12.30	3.17E+02		5.76E+02	1.56E+02
	208.01	22.00	1.73E+02		1.98E+01	8.36E+01
+ AM-241	59.54	* 35.90	7.39E+01	7.39E+01	5.47E+01	3.66E+01
AM-243	74.67	66.00	3.83E+01	3.83E+01	-6.30E+00	1.88E+01

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

0118

Analysis Report for 2206118-03
LT-4 13-18 - 70492



KB
7/19/22

Analysis Report for 2206118-04
LT-4 13-18 - 70492

GAMMA SPECTRUM ANALYSIS

Sample Identification : 2206118-04
 Sample Description : LT-4 13-18 - 70492
 Sample Type : RA RECOVERY

Sample Size : 1.000E+00 units
 Facility : Countroom

Sample Taken On : 7/19/2022 9:10:30AM
 Acquisition Started : 7/19/2022 2:02:19PM

Procedure : BAFIL
 Operator : Administrator
 Detector Name : GE4
 Geometry : BAFIL
 Live Time : 900.0 seconds
 Real Time : 900.6 seconds

Dead Time : 0.06 %

Peak Locate Threshold : 2.50
 Peak Locate Range (in channels) : 1 - 4096
 Peak Area Range (in channels) : 9 - 4096
 Identification Energy Tolerance : 2.500 keV

Energy Calibration Used Done On : 11/22/2021
 Efficiency Calibration Used Done On : 12/13/2021
 Efficiency Calibration Description :

Sample Number : 126698

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 7/19/2022 2:17:34PM

Peak Analysis From Channel : 1
Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
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Analysis Report for 2206118-04

LT-4 13-18 - 70492

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	20.50	16 -	24	20.48	6.74E+01	57.32	4.65E+02	2.05
M	2	30.83	27 -	40	30.80	2.37E+03	103.92	2.28E+02	2.35
m	3	35.11	27 -	40	35.07	5.37E+02	73.26	1.83E+02	2.35
	4	51.76	46 -	56	51.71	8.51E+01	46.83	2.46E+02	2.77
M	5	61.59	57 -	72	61.54	2.33E+02	46.25	2.12E+02	2.41
m	6	65.71	57 -	72	65.65	1.30E+02	55.49	2.76E+02	3.13
	7	80.95	75 -	86	80.88	9.46E+02	76.79	2.64E+02	2.14
	8	112.44	108 -	119	112.35	2.76E+02	56.43	2.66E+02	2.68
M	9	195.36	193 -	202	195.22	1.94E+01	21.07	8.98E+01	2.31
	10	276.43	270 -	281	276.24	3.40E+01	30.85	1.02E+02	1.99
	11	303.27	298 -	310	303.06	1.55E+02	35.17	7.67E+01	2.73
M	12	333.76	326 -	348	333.54	6.73E+01	24.13	4.48E+01	3.01
m	13	338.68	326 -	348	338.45	2.36E+01	23.43	3.10E+01	3.19
	14	355.98	349 -	362	355.74	4.56E+02	46.27	3.52E+01	2.78
	15	386.22	372 -	395	385.96	3.08E+02	39.70	2.74E+01	5.33
	16	418.01	410 -	428	417.73	6.96E+01	26.40	2.87E+01	5.73
	17	436.25	430 -	440	435.96	6.30E+01	18.23	9.94E+00	2.14
	18	467.61	463 -	471	467.30	1.72E+01	12.52	1.37E+01	2.66

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 7/19/2022 2:17:34PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000126624.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	20.50	6.74E+01	57.32			6.74E+01	5.73E+01
M	2	30.83	2.37E+03	103.92			2.37E+03	1.04E+02
m	3	35.11	5.37E+02	73.26			5.37E+02	7.33E+01
	4	51.76	8.51E+01	46.83			8.51E+01	4.68E+01
M	5	61.59	2.33E+02	46.25	1.27E+01	2.58E+00	2.20E+02	4.63E+01
m	6	65.71	1.30E+02	55.49	1.27E+01	2.58E+00	1.17E+02	5.56E+01
	7	80.95	9.46E+02	76.79			9.46E+02	7.68E+01
	8	112.44	2.76E+02	56.43			2.76E+02	5.64E+01
M	9	195.36	1.94E+01	21.07			1.94E+01	2.11E+01
	10	276.43	3.40E+01	30.85			3.40E+01	3.09E+01
	11	303.27	1.55E+02	35.17			1.55E+02	3.52E+01

0121

Analysis Report for 2206118-04

LT-4 13-18 - 70492

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	12	333.76	6.73E+01	24.13			6.73E+01	2.41E+01
m	13	338.68	2.36E+01	23.43			2.36E+01	2.34E+01
	14	355.98	4.56E+02	46.27			4.56E+02	4.63E+01
	15	386.22	3.08E+02	39.70			3.08E+02	3.97E+01
	16	418.01	6.96E+01	26.40			6.96E+01	2.64E+01
	17	436.25	6.30E+01	18.23			6.30E+01	1.82E+01
	18	467.61	1.72E+01	12.52			1.72E+01	1.25E+01

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/units)	Activity Uncertainty
I-129	0.86	29.78 *	57.00	4.85E+01	2.13E+00
		33.60 *	13.20	7.33E+01	1.00E+01
		39.58 *	7.52		
BA-133	0.99	81.00 *	34.06	4.55E+02	4.09E+01
		302.84 *	18.33	5.54E+02	1.29E+02
		356.01 *	62.05	4.79E+02	5.25E+01
TH-234	0.92	63.29 *	3.80	5.16E+02	1.09E+02
AM-241	0.89	59.54 *	35.90	5.46E+01	1.16E+01

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 2.500 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

0122

Analysis Report for 2206118-04

LT-4 13-18 - 70492

INTERFERENCE CORRECTED REPORT

<i>Nuclide Name</i>	<i>Nuclide Id Confidence</i>	<i>Wt mean Activity (pCi/units)</i>	<i>Wt mean Activity Uncertainty</i>	<i>Comments</i>
I-129	0.866	4.96E+01	2.08E+00	
BA-133	0.999	<u>4.69E+02</u>	<u>3.13E+01</u>	
? TH-234	0.929	<u>5.16E+02</u>	<u>1.09E+02</u>	
X NP-237	0.698			
? AM-241	0.898	5.46E+01	1.16E+01	

- ? = nuclide is part of an undetermined solution
 X = nuclide rejected by the interference analysis
 @ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

0123

Analysis Report for 2206118-04

LT-4 13-18 - 70492

UNIDENTIFIED PEAKS

Peak Locate Performed on : 7/19/2022 2:17:34PM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	20.50	7.49259E-02	42.50	Tol.	PA-234M
4	51.76	9.45727E-02	27.51		
m 6	65.71	1.29911E-01	23.76	Sum	
8	112.44	3.06405E-01	10.23	Sum	
M 9	195.36	2.15889E-02	54.22		
10	276.43	3.77647E-02	45.39		
M 12	333.76	7.47884E-02	17.92	Sum	
m 13	338.68	2.62672E-02	49.56	Sum	
15	386.22	3.42553E-01	6.44	Sum	
16	418.01	7.73809E-02	18.95	Sum	
17	436.25	7.00327E-02	14.47	Sum	
18	467.61	1.90741E-02	36.47		

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

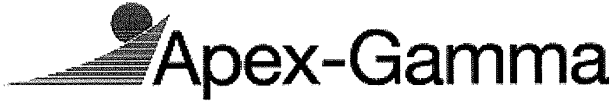
Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/units)	Nuclide MDA (pCi/units)	Activity (pCi/units)	Dec. Level (pCi/units)
CA-41	3.00	77.00	2.38E-07	2.38E-07	0.00E+00	0.00E+00
	3.31	12.30	2.92E-06		0.00E+00	0.00E+00
FE-55	5.89	24.50	6.88E-04	6.88E-04	3.69E-04	3.16E-04

0124

Analysis Report for 2206118-04
LT-4 13-18 - 70492

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/units)	Nuclide MDA (pCi/units)	Activity (pCi/units)	Dec. Level (pCi/units)
CO-57	122.06	85.51	1.96E+01	1.96E+01	4.47E+00	9.27E+00
	136.48	10.60	1.74E+02		7.13E+00	8.22E+01
NI-59	6.92	29.80	1.70E-03	1.70E-03	1.02E-03	7.92E-04
MO-93	16.59	52.90	1.58E-01	1.58E-01	-3.68E-03	7.63E-02
	18.60	10.00	1.41E+00		1.55E+00	6.80E-01
NB-93M	16.57	9.43	8.81E-01	8.81E-01	-2.06E-02	4.26E-01
CD-109	88.03	3.72	2.81E+02	2.81E+02	1.25E+01	1.33E+02
SN-113	255.12	1.93	1.17E+03	6.25E+01	-1.72E+02	5.41E+02
	391.69	61.90	6.25E+01		1.06E+02	2.98E+01
SN-119M	23.87	16.10	2.43E+00	2.43E+00	-2.34E-01	1.18E+00
	25.10	22.70	2.54E+00		-2.01E-01	1.24E+00
+ I-129	29.78	* 57.00	2.04E+00	2.04E+00	4.85E+01	9.93E-01
	33.60	* 13.20	1.35E+01		7.33E+01	6.55E+00
	39.58	7.52	2.86E+01		4.71E+00	1.38E+01
+ BA-133	81.00	* 34.06	3.77E+01	3.35E+01	4.55E+02	1.82E+01
	302.84	* 18.33	1.56E+02		5.54E+02	7.32E+01
	356.01	* 62.05	3.35E+01		4.79E+02	1.53E+01
CE-139	165.85	80.35	3.13E+01	3.13E+01	4.00E+00	1.48E+01
CE-144	133.54	10.80	1.59E+02	1.59E+02	-4.85E+00	7.50E+01
HG-203	279.19	77.30	3.73E+01	3.73E+01	6.75E+00	1.75E+01
PB-210	46.50	4.25	4.97E+01	4.97E+01	-5.31E+00	2.35E+01
TH-231	25.64	14.70	6.33E+00	6.33E+00	-3.36E-01	3.11E+00
	84.21	6.40	4.05E+02		6.20E+00	1.99E+02
PA-234M	9.89	89.00	5.34E-03	5.34E-03	3.36E-03	2.53E-03
	21.72	64.90	4.11E-01		-4.01E-02	1.99E-01
	37.93	23.75	1.16E+01		9.72E-02	5.69E+00
+ TH-234	63.29	* 3.80	2.62E+02	2.62E+02	5.16E+02	1.28E+02
NP-237	29.37	* 14.00	8.31E+00	8.31E+00	1.98E+02	4.04E+00
	86.50	12.60	1.29E+02		-4.33E+01	6.27E+01
U-237	97.08	16.30	7.68E+01	4.67E+01	-6.35E+00	3.64E+01
	101.07	26.30	4.67E+01		-1.72E+01	2.20E+01
	114.00	12.30	2.31E+02		6.47E+02	1.12E+02
	208.01	22.00	1.29E+02		4.19E+01	6.08E+01
+ AM-241	59.54	* 35.90	2.77E+01	2.77E+01	5.46E+01	1.35E+01
AM-243	74.67	66.00	1.46E+01	1.46E+01	-6.99E-02	7.02E+00

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction



VCB
7/19/22

Analysis Report for 2206118-05
LT-5 13-23 - 70493

GAMMA SPECTRUM ANALYSIS

Sample Identification : 2206118-05
 Sample Description : LT-5 13-23 - 70493
 Sample Type : RA RECOVERY

Sample Size : 1.000E+00 units
 Facility : Countroom

Sample Taken On : 7/19/2022 9:10:54AM
 Acquisition Started : 7/19/2022 2:18:03PM

Procedure : BAFIL
 Operator : Administrator
 Detector Name : GE4
 Geometry : BAFIL
 Live Time : 900.0 seconds
 Real Time : 900.6 seconds

Dead Time : 0.06 %

Peak Locate Threshold : 2.50
 Peak Locate Range (in channels) : 1 - 4096
 Peak Area Range (in channels) : 9 - 4096
 Identification Energy Tolerance : 2.500 keV

Energy Calibration Used Done On : 11/22/2021
 Efficiency Calibration Used Done On : 12/13/2021
 Efficiency Calibration Description :

Sample Number : 126699

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 7/19/2022 2:33:06PM
 Peak Analysis From Channel : 1
 Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
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Analysis Report for 2206118-05

LT-5 13-23 - 70493

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	1	20.27	14 -	39	20.24	1.19E+02	45.34	2.96E+02	2.67
m	2	30.81	14 -	39	30.78	2.44E+03	108.89	2.30E+02	2.58
m	3	35.10	14 -	39	35.06	6.09E+02	76.62	1.45E+02	2.21
	4	53.14	47 -	56	53.09	3.74E+01	45.14	2.69E+02	1.85
M	5	61.77	57 -	90	61.71	2.62E+02	46.95	1.81E+02	2.79
m	6	65.73	57 -	90	65.67	9.09E+01	36.37	1.34E+02	1.95
m	7	80.96	57 -	90	80.89	1.08E+03	73.27	1.68E+02	2.56
	8	112.14	107 -	118	112.05	2.46E+02	55.79	2.72E+02	2.26
	9	192.09	189 -	194	191.95	3.64E+01	24.98	9.52E+01	1.80
	10	276.36	271 -	281	276.17	4.95E+01	30.67	9.90E+01	2.26
	11	303.82	297 -	310	303.61	1.51E+02	39.33	1.04E+02	2.45
	12	334.93	329 -	342	334.70	6.62E+01	32.82	8.75E+01	2.62
	13	356.15	349 -	362	355.91	4.26E+02	51.49	1.05E+02	2.55
	14	386.64	380 -	399	386.39	2.61E+02	46.00	8.67E+01	5.02
	15	437.37	431 -	442	437.08	7.60E+01	22.27	2.39E+01	2.93
	16	469.37	462 -	474	469.06	3.26E+01	15.51	1.29E+01	3.25

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 7/19/2022 2:33:06PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000126624.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	1	20.27	1.19E+02	45.34			1.19E+02	4.53E+01
m	2	30.81	2.44E+03	108.89			2.44E+03	1.09E+02
m	3	35.10	6.09E+02	76.62			6.09E+02	7.66E+01
	4	53.14	3.74E+01	45.14			3.74E+01	4.51E+01
M	5	61.77	2.62E+02	46.95	1.27E+01	2.58E+00	2.50E+02	4.70E+01
m	6	65.73	9.09E+01	36.37			9.09E+01	3.64E+01
m	7	80.96	1.08E+03	73.27			1.08E+03	7.33E+01
	8	112.14	2.46E+02	55.79			2.46E+02	5.58E+01
	9	192.09	3.64E+01	24.98			3.64E+01	2.50E+01
	10	276.36	4.95E+01	30.67			4.95E+01	3.07E+01
	11	303.82	1.51E+02	39.33			1.51E+02	3.93E+01
	12	334.93	6.62E+01	32.82			6.62E+01	3.28E+01
	13	356.15	4.26E+02	51.49			4.26E+02	5.15E+01

0127

Analysis Report for 2206118-05

LT-5 13-23 - 70493

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
14	386.64	2.61E+02	46.00			2.61E+02	4.60E+01
15	437.37	7.60E+01	22.27			7.60E+01	2.23E+01
16	469.37	3.26E+01	15.51			3.26E+01	1.55E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/units)	Activity Uncertainty
I-129	0.86	29.78 *	57.00	4.98E+01	2.22E+00
		33.60 *	13.20	8.30E+01	1.05E+01
		39.58	7.52		
BA-133	0.99	81.00 *	34.06	5.22E+02	4.06E+01
		302.84 *	18.33	5.41E+02	1.44E+02
		356.01 *	62.05	4.48E+02	5.72E+01
TH-234	0.94	63.29 *	3.80	5.90E+02	1.12E+02
AM-241	0.88	59.54 *	35.90	6.24E+01	1.18E+01

* = Energy line found in the spectrum.
- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 2.500 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

0128

Analysis Report for 2206118-05

LT-5 13-23 - 70493

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/units)	Wt mean Activity Uncertainty	Comments
I-129	0.867	5.12E+01	2.18E+00	
BA-133	0.996	4.99E+02	3.23E+01	
? TH-234	0.942	5.90E+02	1.12E+02	
X NP-237	0.698			
? AM-241	0.881	6.24E+01	1.18E+01	

? = nuclide is part of an undetermined solution

X = nuclide rejected by the interference analysis

@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

Analysis Report for 2206118-05
LT-5 13-23 - 70493

UNIDENTIFIED PEAKS

Peak Locate Performed on : 7/19/2022 2:33:06PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
M	1	20.27	1.32766E-01	18.97	Tol.	PA-234M
	4	53.14	4.15762E-02	60.32		
m	6	65.73	1.01006E-01	20.01	Sum	
	8	112.14	2.73473E-01	11.33	Sum	
	9	192.09	4.04365E-02	34.32		
	10	276.36	5.50000E-02	30.98		
	12	334.93	7.36061E-02	24.77	Sum	
	14	386.64	2.89620E-01	8.82	Sum	
	15	437.37	8.44949E-02	14.64	Sum	
	16	469.37	3.61823E-02	23.81		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/units)	Nuclide MDA (pCi/units)	Activity (pCi/units)	Dec. Level (pCi/units)
CA-41	3.00	77.00	2.38E-07	2.38E-07	0.00E+00	0.00E+00
	3.31	12.30	2.92E-06		0.00E+00	0.00E+00
FE-55	5.89	24.50	6.35E-04	6.35E-04	1.11E-04	2.89E-04
CO-57	122.06	85.51	1.97E+01	1.97E+01	-7.20E+00	9.32E+00
	136.48	10.60	1.78E+02		-7.55E+01	8.39E+01

0130

Analysis Report for 2206118-05

LT-5 13-23 - 70493

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/units)	Nuclide MDA (pCi/units)	Activity (pCi/units)	Dec. Level (pCi/units)
NI-59	6.92	29.80	1.62E-03	1.62E-03	6.78E-04	7.53E-04
MO-93	16.59	52.90	1.57E-01	1.57E-01	7.26E-02	7.58E-02
	18.60	10.00	1.42E+00		2.01E+00	6.86E-01
NB-93M	16.57	9.43	8.76E-01	8.76E-01	4.05E-01	4.23E-01
CD-109	88.03	3.72	2.91E+02	2.91E+02	3.20E+00	1.38E+02
SN-113	255.12	1.93	1.15E+03	5.91E+01	2.32E+02	5.30E+02
	391.69	61.90	5.91E+01		5.66E+01	2.82E+01
SN-119M	23.87	16.10	2.45E+00	2.45E+00	-6.95E+01	1.19E+00
	25.10	22.70	2.66E+00		-6.10E+01	1.30E+00
+ I-129	29.78 *	57.00	3.43E+00	3.43E+00	4.98E+01	1.69E+00
	33.60 *	13.20	2.27E+01		8.30E+01	1.12E+01
	39.58	7.52	3.00E+01		-3.22E+00	1.45E+01
+ BA-133	81.00 *	34.06	9.07E+01	5.59E+01	5.22E+02	4.47E+01
	302.84 *	18.33	1.90E+02		5.41E+02	9.04E+01
	356.01 *	62.05	5.59E+01		4.48E+02	2.65E+01
CE-139	165.85	80.35	3.04E+01	3.04E+01	-5.40E+00	1.44E+01
CE-144	133.54	10.80	1.69E+02	1.69E+02	-2.10E+01	7.97E+01
HG-203	279.19	77.30	3.92E+01	3.92E+01	-6.31E-01	1.85E+01
PB-210	46.50	4.25	5.32E+01	5.32E+01	2.50E+00	2.53E+01
TH-231	25.64	14.70	6.58E+00	6.58E+00	-2.85E+01	3.24E+00
	84.21	6.40	4.34E+02		2.56E+03	2.13E+02
PA-234M	9.89	89.00	5.32E-03	5.32E-03	4.12E-03	2.52E-03
	21.72	64.90	4.01E-01		-7.53E-02	1.94E-01
	37.93	23.75	1.24E+01		0.00E+00	6.08E+00
+ TH-234	63.29 *	3.80	4.47E+02	4.47E+02	5.90E+02	2.20E+02
NP-237	29.37 *	14.00	1.39E+01	1.39E+01	2.03E+02	6.86E+00
	86.50	12.60	1.44E+02		-2.25E+02	6.98E+01
U-237	97.08	16.30	7.81E+01	5.09E+01	9.91E+00	3.71E+01
	101.07	26.30	5.09E+01		1.63E+01	2.41E+01
	114.00	12.30	2.23E+02		6.10E+02	1.08E+02
	208.01	22.00	1.26E+02		-6.75E+00	5.92E+01
+ AM-241	59.54 *	35.90	4.73E+01	4.73E+01	6.24E+01	2.33E+01
AM-243	74.67	66.00	1.53E+01	1.53E+01	-2.36E+02	7.35E+00

- + = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

0131

SECTION XI
ANALYTICAL DATA (TOTAL DISSOLVED SOLIDS)

0132

TDS / TSS Worksheet

Work Order		Run	Analysis Code	Technician			
22-06118		1	TDS	MHIGHTOWER			
TRetec Fraction	Waypoint Analytical Louisiana Client ID	Aliquot ml	Filter Tare (g)	Filter Data Filter Final (g)	Filter Net (g)	TDS/TSS (mg/L)	Maximum Aliq (mL)
04	LT-4 13-18 - 70492	100.0000	111.9891	112.0538	0.0647	647.0000	154.56
05	LT-5 13-23 - 70493	100.0000	125.1963	125.2848	0.0885	885.0000	112.99

ML Date: 7, 2, 22

Technician:

Aliquot Worksheet

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician	
22-06118	1	TDS	liters	7/25/2022	JPACHELLA	

Lab Fraction	Waypoint Analytical Louisiana Client ID	Sample Type	Muffle Data		Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
			Ratio Post/Pre	No of Dils	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq	
01	LCS	LCS						1.0000E+00	1.0000E+00				
02	BLANK	MBL						1.0000E+00	1.0000E+00				
03	DUP	DUP						1.0000E-01	1.0000E-01				
04	LT-4 13-18 - 70492	TRG						1.0000E-01	1.0000E-01				
05	LT-5 13-23 - 70493	TRG						1.0000E-01	1.0000E-01				

	Comments
--	----------

Technician: *JPACHELLA* Date: 7/1/22

Shipment Receipt Form

Customer Number: **09996**

Customer Name: **Hydro-Environmental Technology, Inc.**

Report Number: **22-179-0020**

Shipping Method

Fed Ex US Postal Lab Other :
 UPS Client Courier Thermometer ID:

Shipping container/cooler uncompromised?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Number of coolers/boxes received	<input type="text" value="1"/>		
Custody seals intact on shipping container/cooler?	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> Not Present
Custody seals intact on sample bottles?	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> Not Present
Chain of Custody (COC) present?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
COC agrees with sample label(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
COC properly completed	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Samples in proper containers?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Sample containers intact?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Sufficient sample volume for indicated test(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
All samples received within holding time?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Cooler temperature in compliance?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Cooler/Samples arrived at the laboratory on ice. Samples were considered acceptable as cooling process had begun.	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Water - Sample containers properly preserved	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> N/A
Water - VOA vials free of headspace	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
Trip Blanks received with VOAs	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
Soil VOA method 5035 – compliance criteria met	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
<input type="checkbox"/> High concentration container (48 hr)	<input type="checkbox"/> Low concentration EnCore samplers (48 hr)		
<input type="checkbox"/> High concentration pre-weighed (methanol -14 d)	<input type="checkbox"/> Low conc pre-weighed vials (Sod Bis -14 d)		
Special precautions or instructions included?	<input type="radio"/> Yes	<input checked="" type="radio"/> No	

Comments:

Signature:

Date & Time:



HYDRO-ENVIRONMENTAL TECH
 Environmental Consult
 P.O. Box 60295
 Lafayette, LA 70596-02
 Phone (337) 261-1963 FAX (337



22-179-0020
 09996
 06-28-2022
 16:26:26

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert Laboratory: Eberline
 Project Number: 1009.A62 Collected By: TW
 Project Location: Bayou Sorrel, LA Company: Hydro-Environmental Technology, Inc.
 Date: 6/22/2022

Sample I.D.	Type	Date/Time Sampled		Containers	Analysis Requested/Method	Comments
LT-4 (13-18) 70492	AQ	6/22/2022	15:00	(1) Gallon Cube	Radium 226/228, TDS	4°C
LT-5 (13-23) 70493	AQ	6/23/2022	11:20	(1) Gallon Cube	Radium 226/228, TDS	4°C

Relinquished By: <u>TW</u>	Received By: <u>P. Howard</u>
Date/Time: <u>6/24/22 1340</u>	Date/Time: <u>6/24/22 1340</u>
Relinquished By: <u>P. Howard</u>	Received By: <u>[Signature]</u>
Date/Time: <u>6/27/22 10:15</u>	Date/Time: <u>6/27/22 1015</u>
Analysis Due: Verbal:	Written:

edi: [Signature] 6/28/22 930

Received By: [Signature]
 6/28/22 0830

8/15/2022

Hydro-Environmental Technology, Inc.
Mr. Stewart Stover, Jr.
91 Apollo Rd
Scott, LA, 70583

Ref: Report Number: 22-181-0068
Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Dear Mr. Stewart Stover, Jr.:

Waypoint Analytical Louisiana, Inc. received sample(s) on 6/30/2022 for the analyses presented in the following report. The above referenced project has been analyzed per your instructions. Unless otherwise noted, the analyses were performed in our laboratory in accordance with Standard Methods, The Solid Waste Manual SW-846, EPA Methods for Chemical Analysis of Water and Wastes and /or 40 CFR part 136.

Certain parameters (chlorine, pH, dissolved oxygen, sulfite...) are required to be analyzed within 15 minutes of sampling. Usually, but not always, any field parameter analyzed at the laboratory is outside of this holding time. Refer to sample analysis time for confirmation of holding time compliance. Analyses reported which indicate "Field" for these parameters were analyzed by the client in the field. Results for solid samples are reported on an as received or "wet weight" basis unless otherwise specified.

The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, method validations, instrumentation maintenance and calibration for all parameters (NELAP and non-NELAP) were performed in accordance with guidelines established by the USEPA (including 40 CFR 136 Method Update Rule May 2021) and NELAC unless otherwise indicated. Any parameter for which the laboratory is not officially NELAP accredited is indicated by a '~' symbol. These are not included in the scope because NELAP accreditation is either not available or has not been applied for. Additional certifications may be held/are available for parameters, where NELAP accreditation is not required or applicable. A full list of certifications is available upon request.

All quality control measures undertaken in accordance with Waypoint Analytical Louisiana, Inc. CompQAP990807A and revisions under the terms of the Louisiana Environmental Laboratory Accreditation Program (Certificate #02041) are within acceptance ranges established in that document with the exception of the items indicated and/or discussed in a Case Narrative.

The results are shown on the attached analysis sheet(s). Be aware that the time analyzed for certain samples (e.g. - BOD, CBOD, etc.) refer to the time the sample batch was begun and not necessarily to the time an individual sample was begun. Thank you for allowing Waypoint Analytical Louisiana, Inc. to serve you. Should I be of further assistance, if you have any questions or need additional information please contact me or client services.

Sincerely,



Amy Jackson
Project Manager

Laboratory's liability in any claim relating to analyses performed shall be limited to, at laboratory's option, repeating the analysis in question at laboratory's expense, or the refund of the charges paid for performance of said analysis. This report may be reproduced in full only with the written permission of the laboratory and/or the entity to which it is addressed. Results contained herein relate only to the sample(s) submitted to the laboratory.





5041 Taravella Road, Marrero, LA 70072
Main 504-371-8557 ° Fax 504-371-8560
www.waypointanalytical.com

Certification Summary

Laboratory ID: WP MLA: Waypoint Analytical Louisiana, Inc., Marrero, LA

State	Program	Lab ID	Expiration Date
Georgia	State Program	02041	06/30/2023
Louisiana	State Program - NELAP	02041	06/30/2023

Sample Summary Table

Report Number: 22-181-0068
Client Project Description: August Levert
Project Number: 1009.A62
Bayou Sorrel, LA

Lab No	Client Sample ID	Matrix	Date Collected	Date Received	Method	Lab ID
70754	LT-8 (14-24)	Aqueous	06/28/2022 11:45	06/30/2022 16:00	901.1 Mod	
70754	LT-8 (14-24)	Aqueous	06/28/2022 11:45	06/30/2022 16:00	2540C-2011	
70755	LT-9 (8-18)	Aqueous	06/28/2022 15:10	06/30/2022 16:00	901.1 Mod	
70755	LT-9 (8-18)	Aqueous	06/28/2022 15:10	06/30/2022 16:00	2540C-2011	

WAYPOINT ANALYTICAL LOUISIANA

Project: 22-181-0068

**STANDARD LEVEL IV
REPORT OF ANALYSIS**

WORK ORDER #22-07019-OR

August 11, 2022

**EBERLINE ANALYTICAL/OAK RIDGE LABORATORY
OAK RIDGE, TN**

0001

STANDARD OPERATING PROCEDURE

Sample Receiving

**Eberline Services – Oak Ridge Laboratory
LABORATORY DATA SUPPORT CHECKLIST**

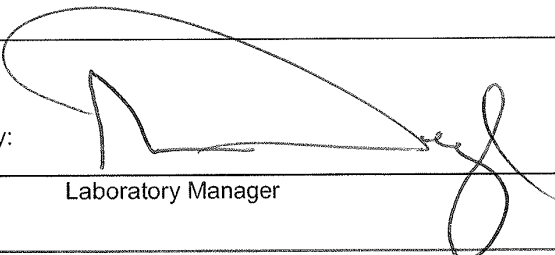
MP-001-3

Eberline Services Work Order # 22-07019

The checklist items listed below are to be initialed by appropriate staff upon completion/verification.

Date for Partial	Initials	Date	Initials	Checklist Items
		7/7/22	JB	Sample Log-In
		7/22/22	JB	Data Compilation
		7/25/22	MM	First Technical Data Review
		7/26/22	MM	Second Technical Data Review
		8/1/22	JB	Data Entry/Electronic Deliverable
		8/1/22	JB	Case Narrative
		8/12/22	JB	Electronic Deliverable Proof
		8/12/22	JB	Samples Analyzed within Holding Time Yes? <input checked="" type="checkbox"/> No? <input type="checkbox"/>
		8/12/22	JB	QA/QC Review
				Client in Possession of Data Electronic or Hard Copy
				Invoiced by Laboratory

Technical/Clerical Corrections, Signatures Needed, Problems, Etc	Date/Initials

Date package approved by:  8/12/22
 Laboratory Manager Date

Copy No. _____

Radiochemistry Services

0002

TABLE OF CONTENTS

SECTION	DESCRIPTION	PAGE
I	Chain of Custody & pH Check	0004
II	Sample Acknowledgement	0010
III	Case Narrative	0013
IV	Analytical Results Summary	0016
V	Analytical Standard	0018
VI	Quality Control Sample Results Summary	026
VII	Laboratory Technician's Notes	031
VIII	Analytical Data (Radium-226)	046
IX	Analytical Data (Radium-228)	085
X	Barium-133 Analytical Tracer Data	0101
XI	Analytical Data (Total Dissolved Solids)	0132
	Last Page Number	0134

0003

SECTION I
CHAIN OF CUSTODY
& pH CHECK

0004



5041 Taravella Road, Marrero, LA 70072
 Main 504-371-8557 • Fax 504-371-8560
 www.waypointanalytical.com

07/05/2022 16:19:31

Export Batch Report

Export Batch Id : 8029EXP

Page 1 of 1

Created: 7/5/2022 16:18:09
 Computer: WPALMS-055
 User: Christina R. Varuso
 Project Manager: Amy Jackson

To: Eberline Analytical Coporation
 601 Scarboror Road
 Oak Ridge, TN 37830
 865-481-0683

From: Waypoint Analytical Louisiana, Inc.
 5041 Taravella Rd.
 Marrero, LA 70072
 504-371-8557
 22-07019
 REC'D JUL 07 2022

Report No	Due Date	Sample Date	Customer Sample No	Rush	Lab No	Method No	Fee Code	Description
22-181-0068	08/11/2022	06/28/2022 11:45	LT-8 (14-24)	70754	EPA-901.1		Radium	226/228 29B
22-181-0068	08/11/2022	06/28/2022 11:45	LT-8 (14-24)	70754	SM-2540C		Total Dissolved Solids (TDS)	
22-181-0068	08/11/2022	06/28/2022 15:10	LT-9 (8-18)	70755	EPA-901.1		Radium	226/228 29B
22-181-0068	08/11/2022	06/28/2022 15:10	LT-9 (8-18)	70755	SM-2540C		Total Dissolved Solids (TDS)	

4 }
 5 }
 Page 5 of 139

Sampled By	Method of Shipment	Blank / Cooler Temp.
Remarks		
000	Date / Time	Date / Time
Relinquished By (sign)	7-5-22 1620	7/7/22 1245
Relinquished By (sign)		
Relinquished By (sign)		



EBERLINE
SERVICES
Oak Ridge Laboratory

Internal Chain of Custody

Work Order #	22-07019
Lab Deadline	7/28/2022
Analysis	Ra226 - Level 4
Sample Matrix	Water

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
	04	60	CC1.1
	05	20	CC1.1

	Location (circle one)						Initials	Date
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room			
Relinquished by	Sample Storage	Rough Prep	<u>Prep</u>	Separations	Count Room	J. Levert	7/18/22 0910	
Received by	Sample Storage	Rough Prep	Prep	<u>Separations</u>	Count Room			
Relinquished by	Sample Storage	Rough Prep	Prep	<u>Separations</u>	Count Room	Mb	7/11/22 0824	
Received by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>			
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	<u>Count Room</u>	MB	7/19/22 0944	
Received by	<u>Sample Storage</u>	Rough Prep	Prep	Separations	Count Room			
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room			
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room			
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room			
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room			
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room			
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room			
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room			

0006

Printed: 7/7/2022 2:45 PM



Internal Chain of Custody


Work Order #	22-07019
Lab Deadline	7/28/2022
Analysis	Ra228 - Level 4
Sample Matrix	Water

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
	04	60	CC1.1
	05	20	CC1.1

	Location (circle one)						Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		7/8/22 0944	
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		7/11/22 0810	
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		7/14/22 084	
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		7/19/22 0949	
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		7/19/22 0944	
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		7/19/22 1501	
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		7/19/22 1502	
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		7/20/22 1055	
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		7/21/22 1057	
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		7/21/22 1301	
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room			
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room			
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room			
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room			


0007

Printed: 7/7/2022 2:45 PM

 EBERLINE SERVICES Oak Ridge Laboratory	<h1>Internal Chain of Custody</h1>	Work Order #	22-07019
		Lab Deadline	7/7/2022
		Analysis	TDS - Level 4
		Sample Matrix	Water

Comments	Sample Fraction	HP 210 / 270 Detector Activity	Storage Location
	04	60	CC1.1
	05	20	CC1.1

	Location (circle one)					Initials	Date
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room	MIL	7 JUL 22
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room	MIL	7 JUL 22 2235
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Received by	Sample Storage	Rough Prep	Prep	Separations	Count Room		
Relinquished by	Sample Storage	Rough Prep	Prep	Separations	Count Room		

	Sample Receiving Report (Volumes, pH, & CPM)	Internal Work Order
		22-07019
		Received By RSPENCER

FR	ClientID	# Btls	Comments	Matrix	Storage	Rec Vol Ttl	CPM Max
01	LCS	0		WA	CC1.1		
02	BLANK	0		WA	CC1.1		
03	DUP	0		WA	CC1.1		
04	LT-8 14-24	1		WA	CC1.1	3.76	60
			Container Number	pH Orig	pH Final	Volume (L)	CPM
			1	7	7	3.7600	60
05	LT-9- 8-18	1		WA	CC1.1	3.76	20
			Container Number	pH Orig	pH Final	Volume (L)	CPM
			1	7	7	3.7600	20

Received by: *Randolph Spencer* Date: *7-7-22*

MP-001, Rev 5
Effective: 11/22/02
0009

SECTION II
SAMPLE ACKNOWLEDGEMENT

0010

Client Name		Contract/PO	Project Type	Date Received	Required Turnaround Days		Eberline Services Work Order	
Waypoint Analytical Louisiana		22-181-0068	Environmental	07/07/2022	28		22-07019	
Project Name		Client/NO	Sample Disp	Lab Deadline	Internal Deadline		Client Deadline	
22-181-0068		WATER	W	07/28/2022	08/03/2022		08/04/2022	
Internal ID	Client ID	Sample Date	Matrix	Storage	RA226	RA228	TDS	RL
01	LCS	07/07/22	WA	CC1.1	X	X	X	3
02	BLANK	07/07/22	WA	CC1.1	X	X	X	3
03	DUP	07/07/22	WA	CC1.1	X	X	X	3
04	LT-8 14-24 70754	06/28/22 11:45	WA	CC1.1	X	X	X	3
05	LT-9 8-18 70755	06/28/22 15:10	WA	CC1.1	X	X	X	3
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
								0
Totals Per Analysis (non QA samples)					2	2	2	0

EBERLINE <small>SERVICES</small> Sample Log In Report 0011	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: (865) 481-0683 Fax: (865) 483-4621	Invoice Accounts Payable Waypoint Analytical Louisiana 5041 Taravella Rd. Marrero, LA 70072 Voice 504-371-8557 Fax 504-371-8560 Contact Amy Jackson Voice 504-371-8557 Fax 504-371-8560	Report Data Amy Jackson Waypoint Analytical Louisiana 5041 Taravella Road Marrero, LA 70072 Voice 504-371-8557 Fax 504-371-8560
--	--	---	--

STANDARD OPERATING PROCEDURE

Sample Receiving

Eberline Services – Oak Ridge Laboratory

SAMPLE RECEIPT CHECKLIST
MP-001-2

WORK ORDER # 22-07019

SAMPLE MATRIX/MATRICES:

(CIRCLE ONE OR BOTH)

AQUEOUS NON-AQUEOUS

(CIRCLE EITHER YES, NO, OR N/A)

WERE SAMPLES:

Received in good condition?	<input checked="" type="radio"/> Y	N	
If aqueous, properly preserved	<input checked="" type="radio"/> Y	N	N/A

WERE CHAIN OF CUSTODY SEALS:

Present on outside of package?	<input checked="" type="radio"/> Y	N
Unbroken on outside of package?	<input checked="" type="radio"/> Y	N
Present on samples?	<input checked="" type="radio"/> Y	N
Unbroken on samples?	<input checked="" type="radio"/> Y	N
Was chain of custody present upon sample receipt?	<input checked="" type="radio"/> Y	N

IF THE RESPONSE TO ANY OF THE ABOVE IS **NO**, A DISCREPANT SAMPLE RECEIPT REPORT (DSR) HAS BEEN ISSUED.

REMARKS: _____

SIGNATURE: Ronald Spencer DATE: 7-7-22

SECTION III
CASE NARRATIVE

0013



EBERLINE ANALYTICAL CORPORATION
601 SCARBORO ROAD
OAK RIDGE, TENNESSEE 37830
PHONE (865) 481-0683
FAX (865) 483-4621

EBS-OR-50012

August 15, 2022

Amy Jackson
Waypoint Analytical Louisiana
5041 Taravell Road
Marrero, LA 70072

CASE NARRATIVE
Work Order # 22-07019-OR

SAMPLE RECEIPT

This work order contains two water samples received 07/07/2022. Samples were analyzed for Radium-226/228 and Total Dissolved Solids.

<u>CLIENT ID</u>	<u>LAB ID</u>
LT-8 14-24 - 70754	22-07019-04
LT-9 8-18 - 70755	22-07019-05

ANALYTICAL METHODS

Radium-226 was analyzed using EPA Method 903.0 Modified. Radium-228 was analyzed using EPA Method 904.0. Total Dissolved Solids were performed using Standard Methods 2540C.

ANALYTICAL RESULTS

Combined Standard Uncertainty is reported at 1-sigma value.

Minimum Detectable Activity (MDA) values for data represented in this report are sample-specific. MDA measurements are determined based on factors and conditions including instrument settings, aliquot size, and matrix type.

RADIUM-226

Samples were prepared by removing representative aliquots followed by mixed acid digestions as appropriate. This was followed by precipitations of Radium/Barium Sulfate. Precipitates were dissolved in alkaline EDTA. Radium was selectively precipitated and mounted on micro-porous filter media. Samples were counted by alpha spectroscopy using an energy specific region of interest for Radium-226. The final result was corrected for inherent self-absorption from elemental Barium. Chemical recovery was calculated using a Barium-133 tracer, which was determined by HPGe gamma spectroscopy.

ANALYTICAL RESULTS CONTINUED

RADIUM-226 CONTINUED

Samples demonstrated acceptable results for all Radium-226 analyses. Chemical recovery was acceptable for all analyses. The Radium-226 method blank demonstrated an acceptable result. Results for the Radium-226 duplicate demonstrated a high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. Results for the Radium-226 laboratory control sample demonstrated an acceptable percent recovery.

RADIUM-228

Following alpha spectroscopy analysis of Radium-226, Barium/Radium Sulfate precipitates were redissolved and allowed for sufficient ingrowth of the Actinium-228 daughter. After ingrowth, Actinium-228 was selectively precipitated. Precipitates were filtered and beta emissions for Actinium-228 were counted on a gas proportional counter. Chemical recovery was determined using a Barium-133 tracer, the activity of which was determined by HPGe gamma spectroscopy and an elemental Yttrium carrier by gravimetric measurements. The product of these two recoveries was used to calculate chemical yield.

Samples demonstrated acceptable results for all Radium-228 analyses. Chemical recovery was acceptable for all analyses. The Radium-228 method blank demonstrated an acceptable result. Results for the Radium-228 duplicate demonstrated a slightly high relative percent difference; however, normalized difference is within acceptable limits for the analytical technique. Results for the Radium-228 laboratory control sample demonstrated an acceptable percent recovery.

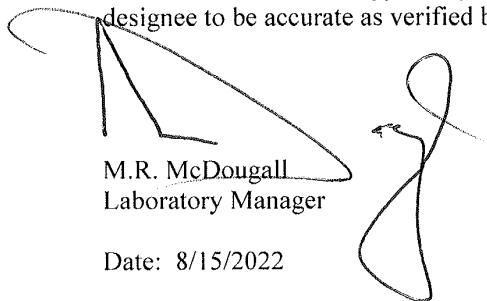
TOTAL DISSOLVED SOLIDS (TDS)

A volumetric aliquot of each sample was filtered through 0.45µm filter media into a tared 250 ml beaker. Samples were dried on a hot plate and allowed to cool. The TDS content was determined by reweighing tared beakers.

Samples demonstrated Total Dissolved Solids content of 1,304.0 and 1,063.0 mg/L.

CERTIFICATION OF ACCURACY

I certify that this data report complies with the terms and conditions of the Purchase Order, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the cognizant project manager or his/her designee to be accurate as verified by the following signature.



M.R. McDougall
Laboratory Manager

Date: 8/15/2022

Eberline Analytical wants and encourages your feedback regarding our performance providing radioanalytical services. Please visit <http://eberlineanalytical.com/> to provide us with feedback on our services.

SECTION IV
ANALYTICAL RESULTS SUMMARY

0016

Eberline Analytical Final Report of Analysis			Report To:				Work Order Details:						
Amy Jackson Waypoint Analytical Louisiana 5041 Taravella Road Marrero, LA 70072			SDG: 22-07019 Purchase Order: 22-181-0068 Analysis Category: ENVIRONMENTAL Sample Matrix: WA										
Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
22-07019-01	LCS	KNOWN	07/07/22 00:00	7/7/2022	7/19/2022	22-07019	Radium-226	EPA 903.0 Modified	1.01E+01	4.64E-01			pCi/l
22-07019-01	LCS	SPIKE	07/07/22 00:00	7/7/2022	7/19/2022	22-07019	Radium-226	EPA 903.0 Modified	1.05E+01	1.41E+00	2.63E+00	1.90E-01	pCi/l
22-07019-02	MBL	BLANK	07/07/22 00:00	7/7/2022	7/19/2022	22-07019	Radium-226	EPA 903.0 Modified	-6.71E-02	8.79E-02	8.90E-02	2.90E-01	pCi/l
22-07019-03	DUP	LT-8 14-24 70754	06/28/22 11:45	7/7/2022	7/19/2022	22-07019	Radium-226	EPA 903.0 Modified	1.29E+00	5.27E-01	5.94E-01	3.20E-01	pCi/l
22-07019-04	DO	LT-8 14-24 70754	06/28/22 11:45	7/7/2022	7/19/2022	22-07019	Radium-226	EPA 903.0 Modified	5.22E-01	3.36E-01	3.54E-01	3.59E-01	pCi/l
22-07019-05	TRG	LT-9 8-18 70755	06/28/22 15:10	7/7/2022	7/19/2022	22-07019	Radium-226	EPA 903.0 Modified	8.33E-01	4.61E-01	4.94E-01	3.53E-01	pCi/l
22-07019-01	LCS	KNOWN	07/07/22 00:00	7/7/2022	7/21/2022	22-07019	Radium-228	EPA 904.0	9.19E+00	4.69E-01			pCi/l
22-07019-01	LCS	SPIKE	07/07/22 00:00	7/7/2022	7/21/2022	22-07019	Radium-228	EPA 904.0	7.47E+00	7.64E-01	1.86E+00	9.44E-01	pCi/l
22-07019-02	MBL	BLANK	07/07/22 00:00	7/7/2022	7/21/2022	22-07019	Radium-228	EPA 904.0	7.24E-01	3.95E-01	4.28E-01	7.57E-01	pCi/l
22-07019-03	DUP	LT-8 14-24 70754	06/28/22 11:45	7/7/2022	7/21/2022	22-07019	Radium-228	EPA 904.0	9.13E-01	4.80E-01	5.23E-01	9.19E-01	pCi/l
22-07019-04	DO	LT-8 14-24 70754	06/28/22 11:45	7/7/2022	7/21/2022	22-07019	Radium-228	EPA 904.0	1.20E+00	5.08E-01	5.75E-01	9.39E-01	pCi/l
22-07019-05	TRG	LT-9 8-18 70755	06/28/22 15:10	7/7/2022	7/21/2022	22-07019	Radium-228	EPA 904.0	8.92E-01	1.00E+00	1.02E+00	2.04E+00	pCi/l
22-07019-04	TRG	LT-8 14-24 70754	06/28/22 11:45	7/7/2022	7/7/2022	22-07019	TDS	SM2540C	1.30E+03				mg/l
22-07019-05	TRG	LT-9 8-18 70755	06/28/22 15:10	7/7/2022	7/7/2022	22-07019	TDS	SM2540C	1.06E+03				mg/l

CU=Counting Uncertainty; CSU=Combined Standard Uncertainty (1-sigma); MDA=Minimal Detected Activity; LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original.



EBERLINE
ANALYTICAL

EBERLINE ANALYTICAL CORPORATION
601 SCARBORO ROAD OAK RIDGE, TN 37830 865/481-0683 FAX 865/483-4621

SECTION V
ANALYTICAL STANDARD

0018

SRS Number: 110755

Source Description: 5 mL Liquid in Flame Sealed Ampoule

Product Code: 8133

Customer: Eberline Analytical Corporation

P.O. Number: MCDUGAL14AUG18/VS, Item 1

This standard radionuclide source was prepared gravimetrically from a master solution calibrated with an ionization chamber. The ionization chamber was calibrated by the National Physical Laboratory (NPL), Teddington, U.K., and is traceable to national standards. Radionuclide calibration and purity were checked by germanium gamma-ray spectrometry, liquid scintillation counting, and/or alpha spectrometry, as applicable. The nuclear decay rate and reference date for this source are given below. Eckert & Ziegler Analytics (EZA) maintains traceability to the National Institute of Standards and Technology (NIST) through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Revision 2, July 2007, and compliance with ANSI N42.22-1995, "Traceability of Radioactive Sources to NIST."

Reference Date: 06-September-2018 12:00 PM EST

Isotope	Half-Life, d	Activity, Bq	Uncertainty			Calibration Method**
			u_A , %	u_B , %	U , %*	
Ba-133	3.854E+03	1.834E+05	0.1	0.9	1.8	IC

Uncertainty:** U - Relative expanded uncertainty, $k = 2$. See NIST Technical Note 1297, "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results." *Calibration Methods:** 4π LS - 4π Liquid Scintillation Counting, HPGe - High Purity Germanium Gamma-Ray Spectrometer, IC - Ionization Chamber.

(Certificate continued on reverse side)



QUALITY CONTROL PROGRAM
QCP-009

Rev.8; 11/10/03
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE SOLUTIONS
PRIMARY DILUTION RECERTIFICATION
QCP 009-1

SOLUTION REFERENCE # EZA 100755 ^{mm} CURRENT DATE 10/19/2021 0:00
SOLUTION # Ba-7

Principal Radionuclide ¹³³Barium Half Life, Years 1.048E+01 Half Life, Days 3.828E+03

Radionuclide ¹³³Barium Reference Date 9/6/2018 12:00
Certified Activity 1.834E+05 Total Bq

Ampoule /Solution Gross Weight, Grams
Empty Ampoule Weight, Grams
Solution Net Weight, Grams
Total Activity in Ampoule 4.9568 μ Ci

Chemical Composition of Standard Solution
¹³³BaCl₂ in 1M HCl

Dilution Instructions: Dilution Solvent Used 1M HCl

Dilute to a volume of 1000.00 milliliters

Certified Total Activity of 4.9568 μ Ci Which Equals 1.100E+07 dpm at the date listed above

And after dilution the activity of this solution is 1.100E+04 dpm/ml. This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date: October 19, 2022

Verified & Approved By 

QC Approval 

Date: 10-19-21

Date: 10-19-21

0020

CERTIFICATE OF CALIBRATION ALPHA STANDARD SOLUTION

^{Ra-5}
QA/QC REVIEWED
Date 2/8/94 Initials W

Radionuclide: Ra-226 Customer: TMA EBERLINE
Half Life: 1600 ± 7 years P.O.No.: VH1888
Catalog No.: 7226 Reference Date: February 1 1994 12:00 PST.
Source No.: 453-26 Contained Radioactivity: (Ra-226) 1.001 µCi.
Contained Radioactivity: (Ra-226) 37.0 kBq.

Description of Solution
a. Mass of solution: 5.1864 g (in a 5 ml Flame Sealed Ampoule)
b. Chemical form: Ra(NO₃)₂ in 1 N HNO₃
c. Carrier content: None added
d. Density: 1.0318 g/ml @ 20°C.

Radioimpurities: None detected (other than daughters)

Radioactive Daughters
Rn-222, Po-218, At-218, Pb-214, Bi-214, Po-214, Tl-210, Pb-210, Bi-210, Po-210 and Tl-206.

Radionuclide Concentration
(Ra-226) 0.1929 µCi/g.

Method of Calibration

Weighed aliquots of the solution were assayed using gamma spectrometry:
Energy peak(s) integrated under: 186 keV.
Branching ratio(s) used: 0.0351 gamma rays per decay.

Uncertainty of Measurement

- a. Systematic uncertainty in instrument calibration: ±3.4%
- b. Random uncertainty in assay: ±3.1%
- c. Random uncertainty in weighing(s): ±0.2%
- d. Total uncertainty at the 99% confidence level: ±4.6%

NIST Traceability

This calibration is implicitly traceable to the National Institute of Standards and Technology.

Leak Test(s)

See reverse side for Leak Test(s) applied to this source.

Notes

1. Nuclear data were taken from "Table of Radioactive Isotopes", edited by Virginia S. Shirley, 1986.
2. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (As in NRC Regulatory Guide 4.15).



Ana H. Kuen
QUALITY CONTROL

Feb. 3, 1994
Date Signed

0021



QUALITY CONTROL PROGRAM
MP 009

Rev.8; 11/01/03
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE SOLUTIONS
PRIMARY DILUTION RECERTIFICATION
MP 009

SOLUTION REFERENCE # CURRENT DATE
SOLUTION #

Principal Radionuclide Half Life, Years Half Life, Days

Radionuclide Reference Date
Certified Activity μCi
Certified Concentration $\mu\text{Ci per gram}$

Ampoule /Solution Gross Weight, Grams
Empty Ampoule Weight, Grams
Solution Net Weight, Grams
Total Activity in Ampoule μCi

Chemical Composition of Standard Solution

Dilution Instructions: Dilution Solvent Used

Dilute to a volume of milliliters

Certified Total Activity of μCi Which Equals dpm at the date listed above

And after dilution the activity of this solution is dpm/ml
This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date:

Verified & Approved By 

Date:

QC Approval 

Date:

0022



QUALITY CONTROL PROGRAM
MP 009

Rev.8; 11/01/03
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE STANDARD SOLUTIONS
SECONDARY DILUTION RECERTIFICATION

Solution Reference # MP 009 IPL-453-26 Date 8/3/2022 0:00
Solution # Ra-5b

Principal Radionuclide ²²⁶Radium Half Life, Years 1.600E+03 Half Life, Days 5.844E+05

Radionuclide of Interest ²²⁶Radium Reference Date 2/1/1994 0:00
Parent Solution Conc. 2.22E+03 dpm/ml

Chemical Composition of Standard Solution
²²⁶Ra(NO₃)₂ in 1M HNO₃

Dilution Instructions: Dilution Solvent Used 1M HNO₃

SECONDARY VOLUMETRIC DILUTION

Vol. Parent Solution: 20.0000 ml
Total Activity: 4.4440E+04 dpm
Final Volume: 1000.00 ml
Final Activity Concentration: 4.4440E+01 dpm/ml

This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

NOTES:

Expiration Date: 2-Aug-23

Verified & Approved By
QC Approval

Date: 8/3/2022 0:00
Date: 8-3-22



ANALYTICS #411 Rec'd 2/15/06 R. Brenton

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 - U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

72325-207

Ra²²⁸

Ra-228 5 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared gravimetrically from a calibrated master solution. The master solution was calibrated using a germanium gamma spectrometer system.

Radionuclide purity and calibration were checked using a germanium gamma spectrometer system. The nuclear decay rate and assay date for this source are given below.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

ISOTOPE:	Ra-228
ACTIVITY (dps):	4.022 E3
HALF-LIFE:	5.75 years
CALIBRATION DATE:	February 10, 2006 12:00 EST
RELATIVE EXPANDED UNCERTAINTY (k=2):	4.0%

Impurities: γ -impurities <0.1%

5.10721 grams 0.1M HCl solution with 50 μ g/g Ba carrier.

P O NUMBER 00003181, Item 1

SOURCE PREPARED BY: *M. Taskaeva*
M. Taskaeva, Radiochemist

Q A APPROVED: *W.M. M... 2-13-06*

0024



QUALITY CONTROL PROGRAM
MP-009

Rev.8; 1/10/03
Title: Radioactive Reference Standards Solutions & Records

EBERLINE SERVICES - OAK RIDGE LABORATORY
RADIOACTIVE REFERENCE SOLUTIONS
RECERTIFICATION
MP 009

SOLUTION REFERENCE # **CURRENT DATE**
SOLUTION #

Principal Radionuclide **Half Life, Years** **Half Life, Days**

Radionuclide **Reference Date**
Certified Activity μCi
Certified Concentration $\mu\text{Ci per gram}$

Ampoule /Solution Gross **Weight, Grams**
Empty Ampoule **Weight, Grams**
Solution Net **Weight, Grams**
Total Activity in Ampoule μCi

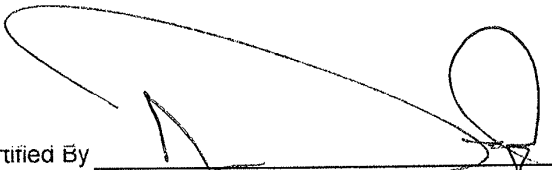
Chemical Composition of Standard Solution

Dilution Instructions: **Dilution Solvent Used**
Dilute to a volume of **Kg**

Certified Total Activity of μCi **Which Equals** **dpm at the date listed above**

And after dilution the activity of this solution is **dpm/ml**
This activity concentration is based on the original reference date listed above. All activities are corrected to the date and time of analysis by the laboratory data processing software.

Expiration Date:

Recertified By  **Date:**

QC Approval  **Date:**

0025

SECTION VI
QUALITY CONTROL SAMPLE RESULTS SUMMARY

0026

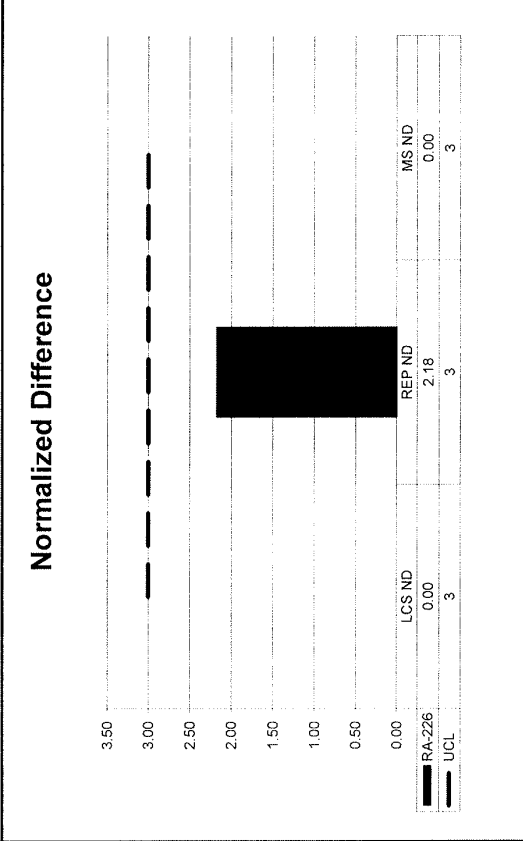
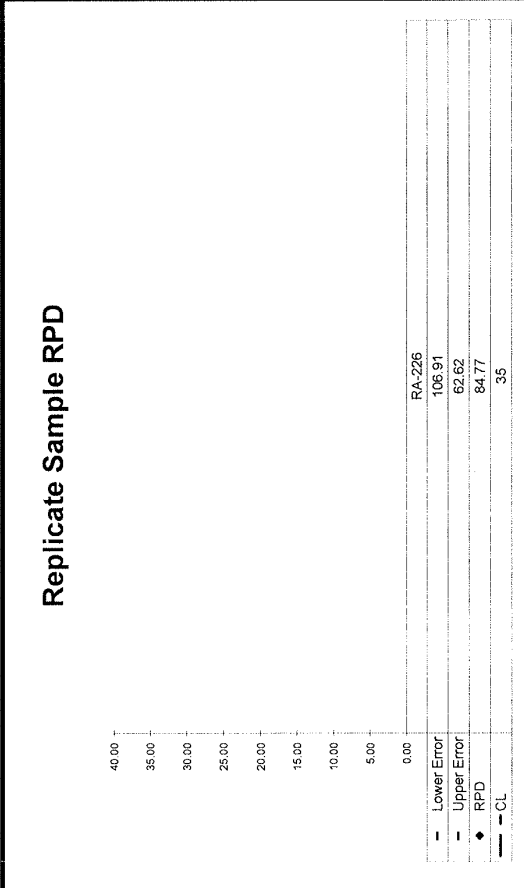
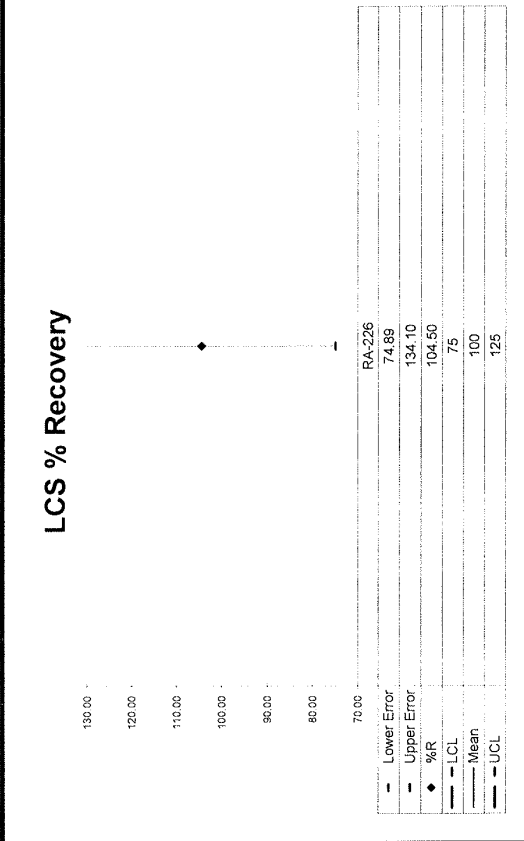
WCO	Analysis	Run	Activity Units	Aliquot Units	Client Name
22-07019	Ra226	1	pCi	I	Waypoint Analytical Louisiana

Laboratory Control Sample												
Analyte	LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
RA-226	104.50%	25.00%	100.00%	4.60%	1.01E+01	4.64E-01	1.05E+01	2.63E+00	Ra-5b	4.39E+01	4.60E+00	5.10E-01

Matrix Spike													
Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

Replicate Sample								QC Summary				
Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	MS % R	MS ND	Rep RPD	Rep ND
RA-226	2.18	84.77	5.22E-01	3.54E-01	1.29E+00	5.94E-01	1.04	OK	NA		NA	OK

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
22-07019	Ra226	1	pCi	I	Waypoint Analytical Louisiana



No Matrix Spike

Version

0028

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
22-07019	Ra228	1	pCi	I	Waypoint Analytical Louisiana

Laboratory Control Sample

Analyte	LCS Measured	CSU Measured	LCS Expected	Uncert. Expected	Known	Known Error	Result	CSU	Standard ID	Standard ACT (dpm)	Standard Error	Standard Added (g)
RA-228	81.33%	24.84%	100.00%	5.10%	9.19E+00	4.69E-01	7.47E+00	1.86E+00	Ra-12	3.36E+01	5.10E+00	6.08E-01

Matrix Spike

Analyte	Normalized Difference	MS Actual % Rec	Expected MS Result	Expected MS Uncert	Actual MS Result	Actual MS CSU	Sample Result	Sample CSU	Sample Aliquot	Standard ID	Standard ACT (dpm)	Standard Error %	Standard Added (g)

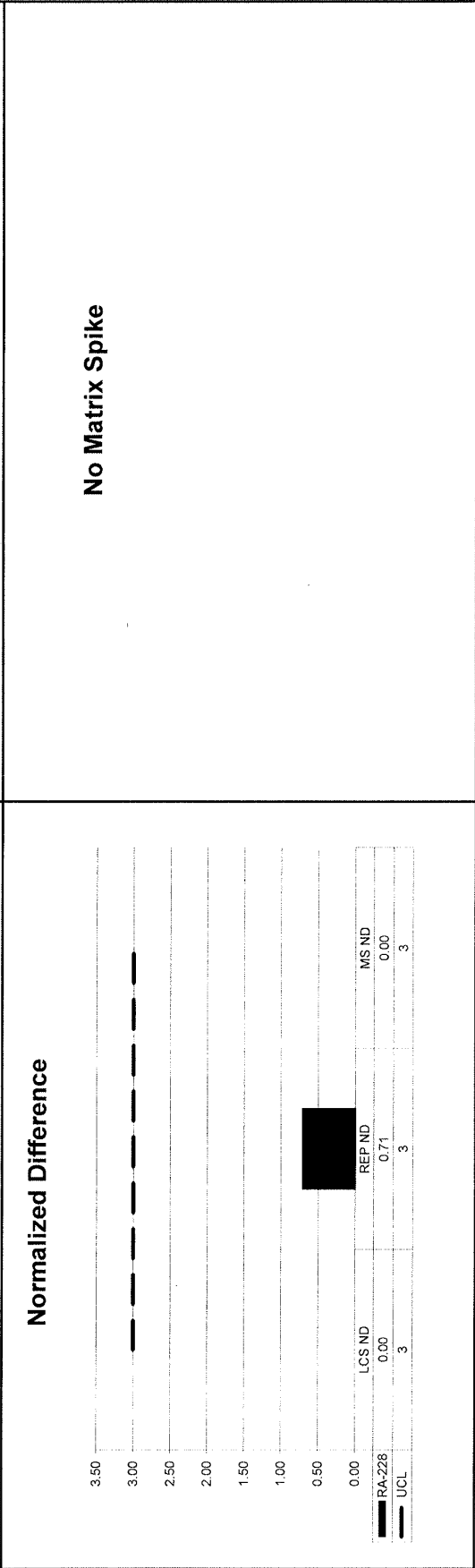
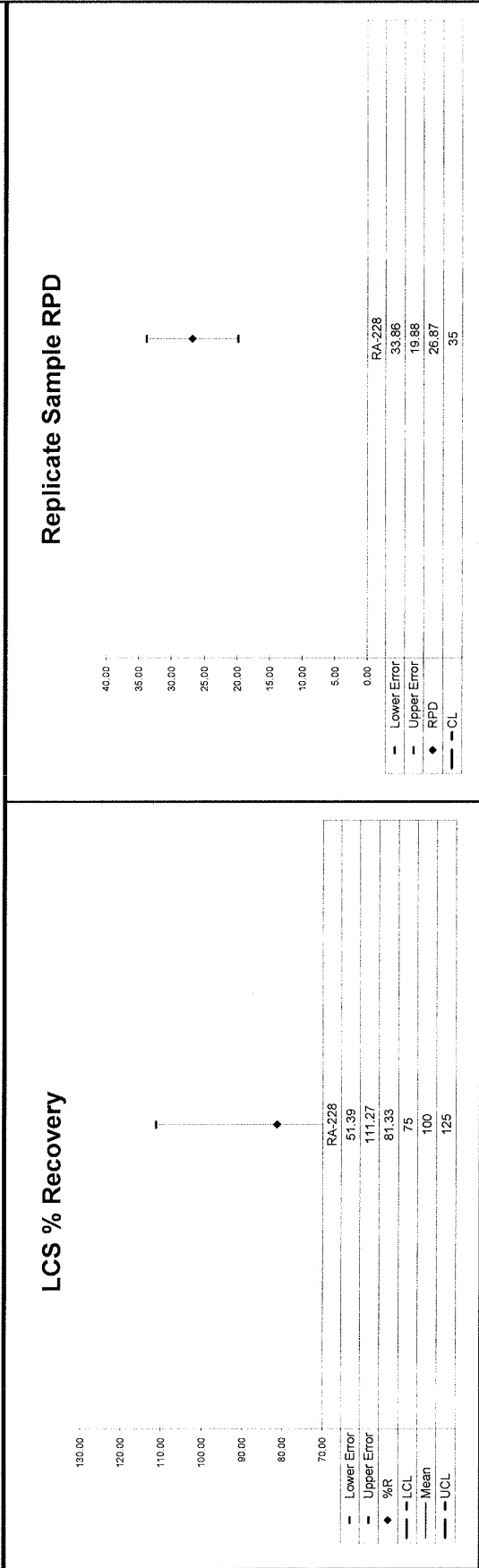
Replicate Sample

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	MS % R	MS MD	Rep RPD	Rep MD
RA-228	0.71	26.87	1.20E+00	5.75E-01	9.13E-01	5.23E-01	0.81	OK			NA	OK

QC Summary

Analyte	Normalized Difference	RPD	Original Result	Original CSU	Replicate Result	Replicate CSU	LCS Relative Bias	LCS % R	MS % R	MS MD	Rep RPD	Rep MD

WO	Analysis	Run	Activity Units	Aliquot Units	Client Name
22-07019	Ra228	1	pCi	1	Waypoint Analytical Louisiana



Version

0030

SECTION VII
LABORATORY TECHNICIAN'S NOTES

0031

RA-226 NOTES

0032

 EBERLINE <small>SERVICES</small> Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	22-07019
		Analysis Code	Ra226
		Run Number	1

#	Date	Dept	User	Notes
1	07/08/22 11:37	PREP	JHARVEY	ALIQUOTED AND ADDED SPIKE AND TRACER- PH'D SAMPLES- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMPLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS

J Harvey
 7/8/22

0033

 EBERLINE SERVICES Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	22-07019
		Analysis Code	Ra226
		Run Number	1

#	Date	Dept	User	Notes
1	07/11/22 11:37	PREP	JHARVEY	ALIQUOTED AND ADDED SPIKE AND TRACER- PH'D SAMPLES- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMPLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS
2	07/11/22 08:33	PREP	JHARVEY	DUE TO HIGH AMOUNT OF SOLIDS PRESENT, ADDED .25M EDTA TO PRECIP, VORTEXED AND PUT SAMPLES IN A HOT WATER BATH- VORTEXED AND CHECKED PH- CENTRIFUGED AND TRANSFERRED SUPERNATE INTO CLEAN C-TUBES AND SUBMITTED SAMPLES TO SEPARATIONS

J Harvey
 7/11/22


0034

 EBERLINE <small>SERVICES</small> Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com		Internal Work Order	22-07019
			Analysis Code	Ra226
			Run Number	1

#	Date	Dept	User	Notes
1	07/08/22 11:37	PREP	JHARVEY	ALIQOTED AND ADDED SPIKE AND TRACER- PH'D SAMPLES- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMPLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS
2	07/11/22 08:33	PREP	JHARVEY	DUE TO HIGH AMOUNT OF SOLIDS PRESENT, ADDED .25M EDTA TO PRECIP, VORTEXED AND PUT SAMPLES IN A HOT WATER BATH- VORTEXED AND CHECKED PH- CENTRIFUGED AND TRANSFERRED SUPERNATE INTO CLEAN C-TUBES AND SUBMITTED SAMPLES TO SEPARATIONS
3	07/19/22 08:43	CHEM	MDAVIS	ADDED EDTA TO SAMPLES AND LET SIT. ADDED AMMONIUM SULFATE AND ACETIC ACID TO SAMPLES. RECORDED TO. FILTERED ONTO TARED FILTER PAPERS, LET DRY UNDER HEAT LAMP, REWEIGHED, AND SUBMITTED TO COUNT.

MD
7/19/22

0035

 Reagents Used in an Analysis		Internal Work Order		
		22-07019		
		Analysis Code		Run
		Ra226		1
Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
024396P	Ammonium Hydroxide	Reagent Grade	JHARVEY	7/8/2022
023625D07	Ammonium Sulfate	200 mg/ml	JHARVEY	7/8/2022
023237D06	Barium Carrier	1 mg/ml	JHARVEY	7/8/2022
023967D01	Lead Carrier	166 mg/ml	JHARVEY	7/8/2022
024457P	Nitric Acid	Reagent Grade	JHARVEY	7/8/2022
024497S	EDTA	0.25M	JHARVEY	7/11/2022
024243P	Acedic Acid, Glacial	Reagent Grade	MDAVIS	7/19/2022
023625D02	Ammonium Sulfate	200 mg/ml	MDAVIS	7/19/2022
024431S	EDTA	0.25M	MDAVIS	7/19/2022


0036

Alpha Bank #3

Date	Sample #	Client	Load Time	Count Time	Analysis	Tech
7/15/22	Cal Check (49-60)	Lab	1122	2hr 30min	NA	KLP
7/15/22	System Bkgd	Lab	1358	16hrs 40min	NA	KLP
7/18/22	Daily Pulser	Lab	0553	10min	NA	KLP
7/18/22	2207031A (1-7)	Env. Man.	0759	2hr 50min	UU	KLP
7/18/22	2207031A (1-7)	Env. Man.	0800	2hr 50min	TH	KLP
7/18/22	2207028A (1-4)	Parsons	0800	5hr 35min	Pu	KP
7/18/22	2207028A (1-4)	Parsons	0801	5hr 35min	Am ²⁴¹	KLP
7/18/22	2207051A (1-4)	USA	1055	2hr 50min	Ca ⁴⁰	KLP
7/18/22	2206103A (1-4)	UCOR	1359	2hr 50min	Re	CB
7/19/22	Daily Pulser	Lab	0534	10min	NA	KLP
7/19/22	2207048A (3,4,6)	UCOR	0758	2hr 50min	UU	KLP
7/19/22	2207051A (1-4)	USA	0759	2hr 50min	UU	KLP
7/19/22	2206103A (1-4,7)	UCOR	0759	2hr 50min	Pu	KLP
7/19/22	2206103A (1-4)	UCOR	0800	2hr 50min	Pu ²⁴²	KLP
7/19/22	2207020A (1-4)	Bergen City	0800	2hr 50min	UU	KLP
7/19/22	2207038A (1,2)	UCOR	0800	2hr 50min	UU	KLP
7/19/22	2207038A (3-5)	UCOR	1056	2hr 50min	UU	KLP
7/19/22	2207019A (1-5)	Waypoint	1057	2hr 50min	Ca ⁴⁰	KLP
7/19/22	2206118A (1-5)	Waypoint	1058	2hr 50min	Re ⁴⁰	KLP

RA-228 NOTES

0038

 EBERLINE <small>SERVICES</small> Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	22-07019
		Analysis Code	Ra228
		Run Number	1

#	Date	Dept	User	Notes
1	07/08/22 11:37	PREP	JHARVEY	ALIQOTED AND ADDED SPIKE AND TRACER- PH'D SAMPLES- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMPLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS

J Harvey
 7/8/22

 EBERLINE <small>SERVICES</small> Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	22-07019
		Analysis Code	Ra228
		Run Number	1

#	Date	Dept	User	Notes
1	07/11/22 11:37	PREP	JHARVEY	ALIQUOTED AND ADDED SPIKE AND TRACER- PH'D SAMPLES- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMPLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS
2	07/11/22 08:33	PREP	JHARVEY	DUE TO HIGH AMOUNT OF SOLIDS PRESENT, ADDED .25M EDTA TO PRECIP, VORTEXED AND PUT SAMPLES IN A HOT WATER BATH- VORTEXED AND CHECKED PH- CENTRIFUGED AND TRANSFERRED SUPERNATE INTO CLEAN C-TUBES AND SUBMITTED SAMPLES TO SEPARATIONS

J Harvey
 7/11/22

0040


 EBERLINE SERVICES Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	22-07019
		Analysis Code	Ra228
		Run Number	1

#	Date	Dept	User	Notes
1	07/08/22 11:37	PREP	JHARVEY	ALIUQUOTED AND ADDED SPIKE AND TRACER- PH'D SAMPLES- PRECIPITATED WITH BA AND PB CARRIERS AND AMMONIUM SULFATE- DECANTED SAMPLES AND CENTRIFUGED- SUBMITTED RADIUM PRECIP TO SEPARATIONS
2	07/11/22 08:33	PREP	JHARVEY	DUE TO HIGH AMOUNT OF SOLIDS PRESENT, ADDED .25M EDTA TO PRECIP, VORTEXED AND PUT SAMPLES IN A HOT WATER BATH- VORTEXED AND CHECKED PH- CENTRIFUGED AND TRANSFERRED SUPERNATE INTO CLEAN C-TUBES AND SUBMITTED SAMPLES TO SEPARATIONS
3	07/21/22 10:16	CHEM	MDAVIS	ADDED FILTER PAPERS FROM COUNT ROOM TO LABELED C-TUBES, FILLED WITH EDTA SOLUTION AND LET SIT OVERNIGHT. REMOVED FILTER FROM EDTA-ADDED 2MLS YTTRIUM 9MG/ML CARRIER ADDED 18N NAOH TO SAMPLES AND RECORDED T1. HOT BATHED FOR 15 MIN, CENTRIFUGED AND DISCARDED SUPERNANT. ADDED 6N HNO3, DI WATER AND 10N NAOH. HOT BATHED FOR 15 MIN, CENTRIFUED AND DISCARDED SUPERNANT. ADDED IN HNO3, DI WATER, AND AMMONIUM OXALATE. FILTERED ONTO TARED FILTER PAPERS. LET DRY UNDER HEAT LAMP, REWEIGHED AND SUBMITTED TO COUNT.



 MB
 7/21/22

0041

 Reagents Used in an Analysis		Internal Work Order		
		22-07019		
		Analysis Code		Run
		Ra228		1
Reagent ID	Reagent Name	Reagent Concentration	Analyst ID	Date Recorded
024396P	Ammonium Hydroxide	Reagent Grade	JHARVEY	7/8/2022
023625D07	Ammonium Sulfate	200 mg/ml	JHARVEY	7/8/2022
023237D06	Barium Carrier	1 mg/ml	JHARVEY	7/8/2022
023967D01	Lead Carrier	166 mg/ml	JHARVEY	7/8/2022
024457P	Nitric Acid	Reagent Grade	JHARVEY	7/8/2022
024497S	EDTA	0.25M	JHARVEY	7/11/2022
023894D03	Ammonium Oxalate	5%	MDAVIS	7/21/2022
024225S	EDTA	0.25M	MDAVIS	7/21/2022
024041D26	Nitric Acid	1N	MDAVIS	7/21/2022
023733D08	Nitric Acid	6N	MDAVIS	7/21/2022
024355S	Sodium Hydroxide	10M	MDAVIS	7/21/2022
024354S	Sodium Hydroxide	18M	MDAVIS	7/21/2022
024295S	Yttrium Carrier	9 mg/ml	MDAVIS	7/21/2022

Aqua LB4110

93

Date	Sample #	Client	Load Time	Count Time	Analysis	Tech
7/19/22	Cross Talk	Lab	0722	5 min	XB	KP
7/19/22	Cross Talk	Lab	0729	5 min	XB	KP
7/19/22	2206103SY (1-46)	UCOR	0740	2 hrs	Sr ⁹⁰	KP
7/19/22	2206103SY (1-46)	UCOR	0741	2 hrs	Sr ⁹⁰	KP
7/19/22	2207057AB (1-9)	APTIM	0942	2 hrs	XB	KP
7/19/22	2207051Ra (1)	USA	1057	1 hr	Ra ⁸	KP
7/19/22	2207051Ra (2-4)	USA	1057	2 hrs	Ra ⁸	KP
7/19/22	2206116Ra (2-4)	Data Resources	1058	2 hrs	Ra ⁸	KP
7/19/22	2206116Ba (1)	Data Resources	1144	1 hr	Ra ⁸	KP
7/19/22	2207060AB (5-8)	UCOR	1246	2 hrs	XB	KP
7/19/22	2207051SY (1-57)	ERA	1259	1 hr	Sr ⁹⁰	KP
7/19/22	2207026AB (2-4)	Bergen City Util.	1404	2 hrs	XB	KB
7/19/22	2207039 AB (2-4)	UCOR	1405	2 hrs	XB	KB
7/19/22	2207039 AB (1)	UCOR	1450	30 mins	XB	KB
7/20/22	Daily Bkgd/QC	Lab	0555/0655	1hr/30min	XB	KP
7/20/22	Cross Talk	Lab	0736	5 min	XB	KP
7/20/22	Cross Talk	Lab	0745	5 min	XB	KP
7/20/22	2207077AB (1-8)	UCOR	0755	2 hrs	XB	KP
7/20/22	2207021RAC	Gilbert Summit	1101	2 hrs	Ra ⁸	KB
7/21/22	Daily Bkgd/QC	Lab	0630/0730	1hr/30min	XB	KP
7/21/22	Cross Talk	Lab	0734	5 min	XB	KP
7/21/22	Cross Talk	Lab	0754	5 min	XB	KP
7/21/22	2206118Ra (1)	Waypoint	1100	30 min	Ra ⁸	KP
7/21/22	2206118Ra (2-5)	Waypoint	1100	2 hrs	Ra ⁸	KP
7/21/22	2207019Ra (1-5)	Waypoint	1101	2 hrs	Ra ⁸	KP

0043

TDS NOTES

0044

 EBERLINE SERVICES Work Order Analysis Notes	Oak Ridge Laboratory 601 Scarboro Rd. Oak Ridge, TN 37830 Voice: 865.481.0683 www.eberlineservices.com	Internal Work Order	22-07019
		Analysis Code	TDS
		Run Number	1

#	Date	Dept	User	Notes
1	07/07/22 22:25	PREP	MHIGHTOWER	Filtered sample into tared beaker, dried, re-weighed

MIA 7JUL22

SECTION VIII
ANALYTICAL DATA (RADIUM-226)

0046

Work Order	22-07019
Analysis Code	Ra226
Run	1
Date Received	7/7/2022
Lab Deadline	7/28/2022
Client	Waypoint Analytical Louisiana
Project	22-181-0068
Report Level	4
Activity Units	pCi
Aliquot Units	I
Matrix	WA
Method	EPA 903.0 Modified
Instrument Type	Alpha Spectroscopy
Radiometric Tracer	Ba-133
Radiometric Sol#	Ba-7
Tracer Act (dpm/g)	8538.42
Carrier	
Carrier Conc (mg/ml)	

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		07/07/22 00:00	1.0000E+00
02	MBL	BLANK		07/07/22 00:00	1.0000E+00
03	DUP	LT-8 14-24 70754	60	06/28/22 11:45	1.0000E+00
04	DO	LT-8 14-24 70754	60	06/28/22 11:45	1.0000E+00
05	TRG	LT-9 8-18 70755	20	06/28/22 15:10	1.0000E+00

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
 ** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Internal Fraction	Sample Desc	Tracer Aliquot (g)	Tracer Total ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	Grav Carrier Added (ml)	Grav Filter Tare (g)	Grav Filter Final (g)	Grav Filter Net (g)	Grav % Rec	Mean % Rec	SAF 1*	SAF 2*
01	LCS	0.1257	1073.3	531.0	109.83		0.0206	0.0276	0.0070		109.83	2.50	1.00
02	MBL	0.1269	1083.5	476.0	97.53		0.0209	0.0272	0.0063		97.53	2.27	1.00
03	DUP	0.1254	1070.7	474.0	98.28		0.0206	0.0299	0.0093		98.28	3.00^	1.00
04	DO	0.1218	1040.0	418.0	89.23		0.0208	0.0288	0.0080		89.23	2.77	1.00
05	TRG	0.1236	1055.3	274.0	57.64		0.0207	0.0267	0.0060		57.64	2.16	1.00

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep 10 Date/Time	Sep 10 By	Sep 11 Date/Time	Sep 11 By
01	LCS			07/08/22 09:07	JHARVEY	07/19/22 08:36	MDAVIS		
02	MBL			07/08/22 09:07	JHARVEY	07/19/22 08:36	MDAVIS		
03	DUP			07/08/22 09:07	JHARVEY	07/19/22 08:36	MDAVIS		
04	DO			07/08/22 09:07	JHARVEY	07/19/22 08:36	MDAVIS		
05	TRG			07/08/22 09:07	JHARVEY	07/19/22 08:36	MDAVIS		

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

	1	Ra226	22-07019	Waypoint Analytical Louisiana
Run		Analysis Code	Eberline Services Work Order	Client

0500

Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	RA-226	LCS	LCS	pCi/l	1.05E+01	1.41E+00	1.90E-01	1.01E+01	104.50	OK		OK	
02	RA-226	MBL	BLANK	pCi/l	-6.71E-02	8.79E-02	2.90E-01					OK	OK
03	RA-226	DUP	LT-8 14-24 70754	pCi/l	1.29E+00	5.27E-01	3.20E-01				NA	OK	OK
04	RA-226	DO	LT-8 14-24 70754	pCi/l	5.22E-01	3.36E-01	3.55E-01					OK	OK
05	RA-226	TRG	LT-9 8-18 70755	pCi/l	8.33E-01	4.61E-01	3.53E-01					OK	OK

 1 Run	Ra226 Analysis Code	22-07019 Eberline Services Work Order	Waypoint Analytical Louisiana Client	1500
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Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep 10 Date/Time	Sep 11 Date/Time
01	RA-226	LCS	07/07/22 00:00	1.00E+00	100.00	0.00	109.83		7/19/2022 8:36	
02	RA-226	MBL	07/07/22 00:00	1.00E+00	97.53	0.00	97.53		7/19/2022 8:36	
03	RA-226	DUP	06/28/22 11:45	1.00E+00	98.28	0.00	98.28		7/19/2022 8:36	
04	RA-226	DO	06/28/22 11:45	1.00E+00	89.23	0.00	89.23		7/19/2022 8:36	
05	RA-226	TRG	06/28/22 15:10	1.00E+00	57.64	0.00	57.64		7/19/2022 8:36	

2500

Client
Waypoint Analytical Louisiana

Eberline Services Work Order
22-07019

Analysis Code
Ra226

Run
1



Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	RA-226	LCS	07/19/22 10:56		A_Spec	Alpha_038	170	2.32 E+02	1.00 E-03	14.6
02	RA-226	MBL	07/19/22 10:56		A_Spec	Alpha_039	170	-1.70 E+00	1.00 E-02	15.6
03	RA-226	DUP	07/19/22 10:57		A_Spec	Alpha_040	170	2.41 E+01	5.00 E-03	15.1
04	RA-226	DO	07/19/22 10:57		A_Spec	Alpha_041	170	1.11 E+01	1.10 E-02	17.5
05	RA-226	TRG	07/19/22 10:57		A_Spec	Alpha_044	170	1.33 E+01	4.00 E-03	15.9

Spike and Tracer Worksheet

Internal Work Order		Run	Analysis Code		Date		Technician		Technician Initials		Witness Initials					
22-07019		1	Ra226		7/8/2022 09:02		JHARVEY									
LCS & Matrix Spikes																
Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	LCS Volume Used (g)	MS Volume Used (g)	LCS Volume Used (g)	MSD Volume Used (g)	LCS Known pCi	LCS Error Estimate	MS Added pCi	MS Error Estimate	LCS Known pCi	LCS Error Estimate	MSD Added pCi	MSD Error Estimate
Ra-226	Ra-5b	43,900	7/8/2022	0.500	0.5099				10.08	0.464	0.00	0.000	0.00	0.000	0.00	0.000

Tracers																		
fraction	Isotope	Sol #	Activity dpm/g	Solution Date	Volume Used (g)	Approx Addition	Tracer											
01	Ba-133	Ba-7	8538.420	7/8/2022	0.1257	0.1200	LCS											
02	Ba-133	Ba-7	8538.420	7/8/2022	0.1269	0.1200	LCS											
03	Ba-133	Ba-7	8538.420	7/8/2022	0.1254	0.1200	LCS											
04	Ba-133	Ba-7	8538.420	7/8/2022	0.1218	0.1200	LCS											
05	Ba-133	Ba-7	8538.420	7/8/2022	0.1236	0.1200	LCS											
							Balance Printer Tapes						Matrix Spike					

0054

Aliquot Worksheet

Work Order 22-07019	Run 1	Analysis Code Ra226	Rpt Units liters	Lab Deadline 7/28/2022	Technician JHARVEY
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Lab Fraction	Waypoint Analytical Louisiana Client ID	Sample Type	Muffle Data		Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
			Ratio Post/Pre	No of Dilis	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq	
01	LCS	LCS						1.0000E+00	1.0000E+00				
02	BLANK	MBL						1.0000E+00	1.0000E+00				
03	LT-8 14-24 70754	DUP						1.0000E+00	1.0000E+00				
04	LT-8 14-24 70754	DO						1.0000E+00	1.0000E+00				
05	LT-9 8-18 70755	TRG						1.0000E+00	1.0000E+00				

Comments

0055

Technician:  Date: 7/8/22

Gravimetric Worksheet

Work Order	Run	Analysis Code	Gravimetric Carrier	Carrier Conc (mg/ml)	Technician
22-07019	1	Ra226			MDAVIS

TRetek Fraction	Waypoint Analytical Louisiana Client ID	Sample Type	Carrier Data		Filter Data			Gravimetric % Recovery
			Carrier Added (ml)	Filter Tare (g)	Filter Final (g)	Filter Net (g)		
01	LCS	LCS		0.0206	0.0276	0.0070		
02	BLANK	MBL		0.0209	0.0272	0.0063		
03	DUP	DUP		0.0206	0.0299	0.0093		
04	LT-8 14-24 70754	DO		0.0208	0.0288	0.0080		
05	LT-9 8-18 70755	TRG		0.0207	0.0267	0.0060		

Technician: Wayne Dow Date: 7/19/22



ICB
7/19/22

Sample Description: SPIKE
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00003173
 Batch Identification: 2207019A-RA
 Sample Identification: 01
 Sample Geometry: Shelf 2
 Procedure Description: Ra

Detector Name: Alpha_038
 Chamber Serial Number: 04026478B
 Detector Serial Number: 91134
 Env. Background: System Bkgd 324292
 Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 liter
 Generic Mult. Factor: 2.500E+000 Generic Div. Factor: 1.000E+000
 Sample Date/Time: 7/19/2022 9:47:22 AM
 Acquisition Date/Time: 7/19/2022 10:56:57 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Chem. Recovery Factor: 1.0000 +/- 0.0000
 Counting Efficiency: 0.1457 +/- 0.0026 on 5/21/2021 9:18:06 AM
 Effective Efficiency: 0.1457 +/- 0.0026

Control Certificate Name: Ra226_Ra-5b
 Chem. Recov. of Control: RA-226 0.418016 +/- 0.031118
 Peak Match Tolerance: 0.350 MeV

 PEAK AREA REPORT

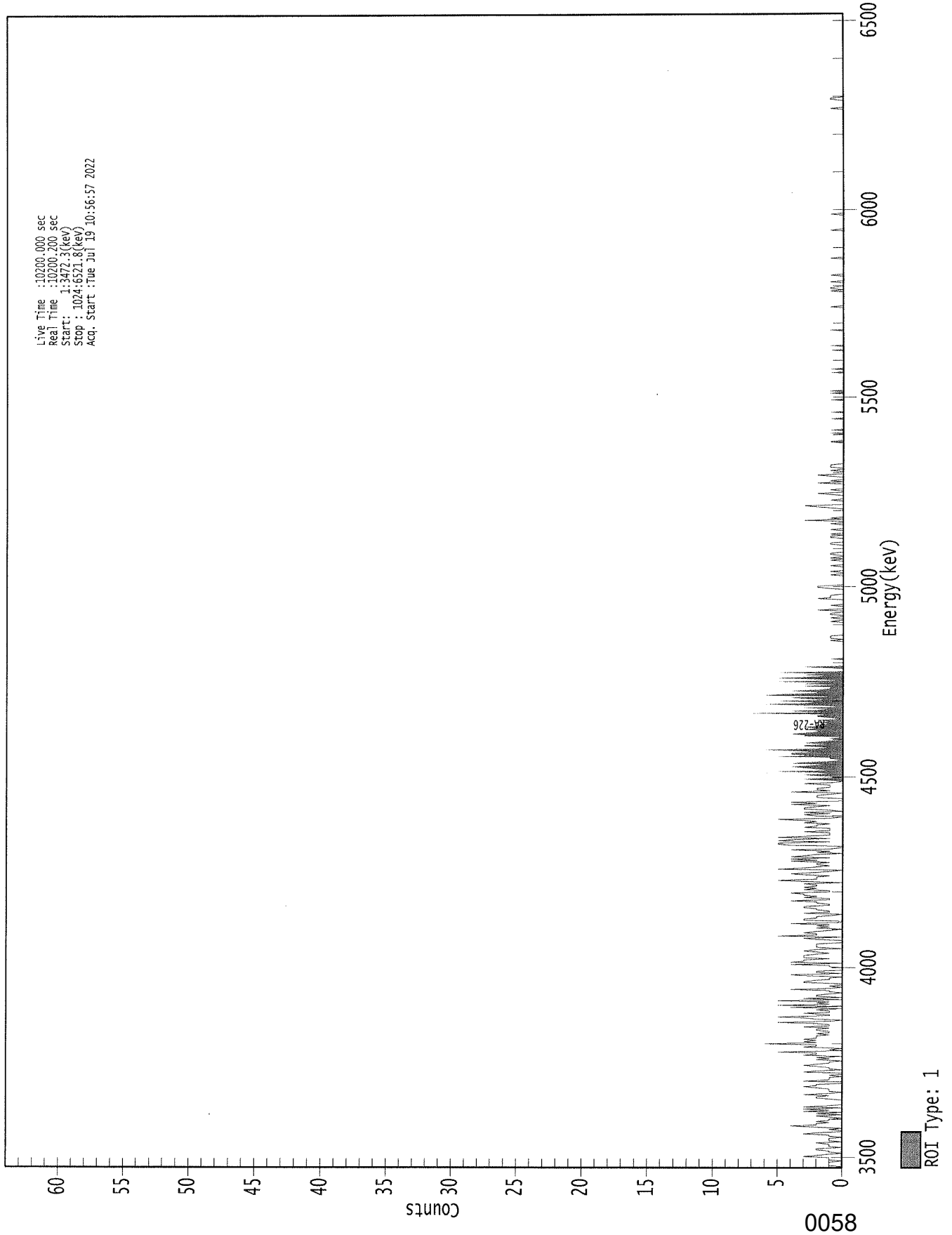
Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
RA-224	5.507	13.15	56.06	0.85	0.00E+000	6.0
RA-226	4.640	231.83	12.88	0.17	0.00E+000	3.5

 NUCLIDE ANALYSIS RESULTS

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/liter)	MDA (pCi/liter)
RA-224	0.959	5685.50*	6.28E-001 +/- 3.53E-001	2.86E-001 +/- 1.01E-002
RA-226	0.973	4785.00*	1.05E+001 +/- 1.41E+000	1.90E-001 +/- 6.70E-003

AG
7/20/22

0000317386.CNF



 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 01

Elapsed Live time: 10200
 Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	1	1	1	1	0	1
9:	1	1	3	2	1	0	1	1
17:	2	2	0	1	1	1	2	0
25:	1	1	1	0	1	1	3	2
33:	0	0	1	0	2	4	2	2
41:	1	2	1	1	0	1	2	0
49:	2	0	3	1	3	0	3	1
57:	0	0	0	0	0	1	2	2
65:	1	3	1	0	1	1	1	2
73:	3	2	2	0	0	3	1	1
81:	1	0	1	0	0	3	2	0
89:	1	1	2	3	2	1	1	0
97:	2	1	2	0	3	2	2	5
105:	0	1	0	3	2	2	6	2
113:	3	2	3	2	2	2	1	2
121:	1	1	2	2	1	3	1	1
129:	2	5	1	0	2	3	5	1
137:	1	3	1	1	2	0	4	0
145:	5	1	2	1	5	0	3	0
153:	2	2	1	0	1	1	4	1
161:	0	1	0	0	3	3	2	1
169:	1	0	3	4	0	2	2	0
177:	0	0	1	1	4	0	4	3
185:	3	1	3	3	3	2	1	2
193:	3	2	0	2	2	2	2	0
201:	0	0	2	3	0	5	2	2
209:	3	2	1	0	2	1	2	1
217:	4	0	0	3	3	2	2	1
225:	0	3	1	1	2	2	3	3
233:	1	1	2	2	4	1	1	3
241:	2	3	3	4	1	1	3	2
249:	3	2	2	3	0	3	5	2
257:	2	2	1	3	4	2	1	0
265:	5	3	2	1	2	2	1	4
273:	2	4	1	4	3	2	0	2
281:	1	4	1	0	0	4	5	5
289:	1	5	4	1	5	3	1	1
297:	1	3	1	1	1	3	2	2
305:	1	3	2	3	5	1	0	2
313:	3	1	3	0	1	3	3	2
321:	1	4	2	4	0	0	0	2
329:	2	2	1	0	4	1	2	2
337:	1	1	1	3	1	0	1	3
345:	2	0	2	3	1	2	5	1
353:	2	3	4	3	1	4	3	1
361:	0	1	1	5	2	4	4	2

0059

369: 4 6 2 1 3 3 1 3

Sample Title: 01

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	2	1	0	1	0	3	3	4
385:	3	2	2	3	2	3	2	2
393:	1	2	1	2	0	1	2	2
401:	1	7	1	4	2	1	3	0
409:	2	6	3	2	5	1	3	4
417:	0	6	5	2	2	4	2	1
425:	1	3	0	3	1	5	0	2
433:	5	3	1	3	1	5	0	0
441:	0	1	3	0	0	0	0	0
449:	0	1	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	1	0	1	1	1	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	1	0	0	1	0	0
489:	1	1	0	0	2	0	0	0
497:	1	0	0	0	0	0	2	1
505:	1	1	0	0	0	0	0	1
513:	2	2	0	0	0	0	0	0
521:	0	0	0	1	0	0	1	0
529:	0	0	0	1	0	0	0	0
537:	1	0	1	0	0	1	1	0
545:	0	0	0	0	0	0	1	1
553:	0	0	0	0	1	1	0	1
561:	0	0	0	1	0	0	0	0
569:	1	0	0	3	0	1	0	0
577:	0	0	0	0	0	0	1	2
585:	3	0	0	0	0	1	0	0
593:	0	0	1	2	0	0	1	0
601:	0	0	0	0	2	0	1	0
609:	0	0	1	2	0	0	0	1
617:	0	0	1	1	1	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	1	1	0	0	0	0	0	0
649:	1	0	0	1	0	0	0	0
657:	0	0	0	0	0	1	0	0
665:	0	0	0	1	0	0	0	0
673:	0	0	0	0	0	0	1	0
681:	0	0	0	0	1	0	1	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	1
705:	0	0	1	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	1	0	0	0	1
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	1	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	1	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	1	0	1	1	0	0	0	0
785:	1	0	0	0	0	0	1	0
793:	0	0	0	0	0	0	0	0

0060

801: 0 0 0 0 0 1 0 0

Sample Title: 01

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	1	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	1	0	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0
937:	0	0	1	0	0	0	0	0
945:	0	0	1	1	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



ICB
7/19/22

Sample Description: BLANK
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00003173
 Batch Identification: 2207019A-RA
 Sample Identification: 02
 Sample Geometry: Shelf 2
 Procedure Description: Ra

Detector Name: Alpha_039
 Chamber Serial Number: 06027396A
 Detector Serial Number: 83109
 Env. Background: System Bkgd 324293
 Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 liter
 Generic Mult. Factor: 2.270E+000 Generic Div. Factor: 1.000E+000
 Sample Date/Time: 7/19/2022 9:47:22 AM
 Acquisition Date/Time: 7/19/2022 10:56:59 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Chem. Recovery Factor: 0.9753 +/- 0.0000
 Counting Efficiency: 0.1562 +/- 0.0028 on 5/21/2021 9:18:04 AM
 Effective Efficiency: 0.1524 +/- 0.0027

Peak Match Tolerance: 0.350 MeV

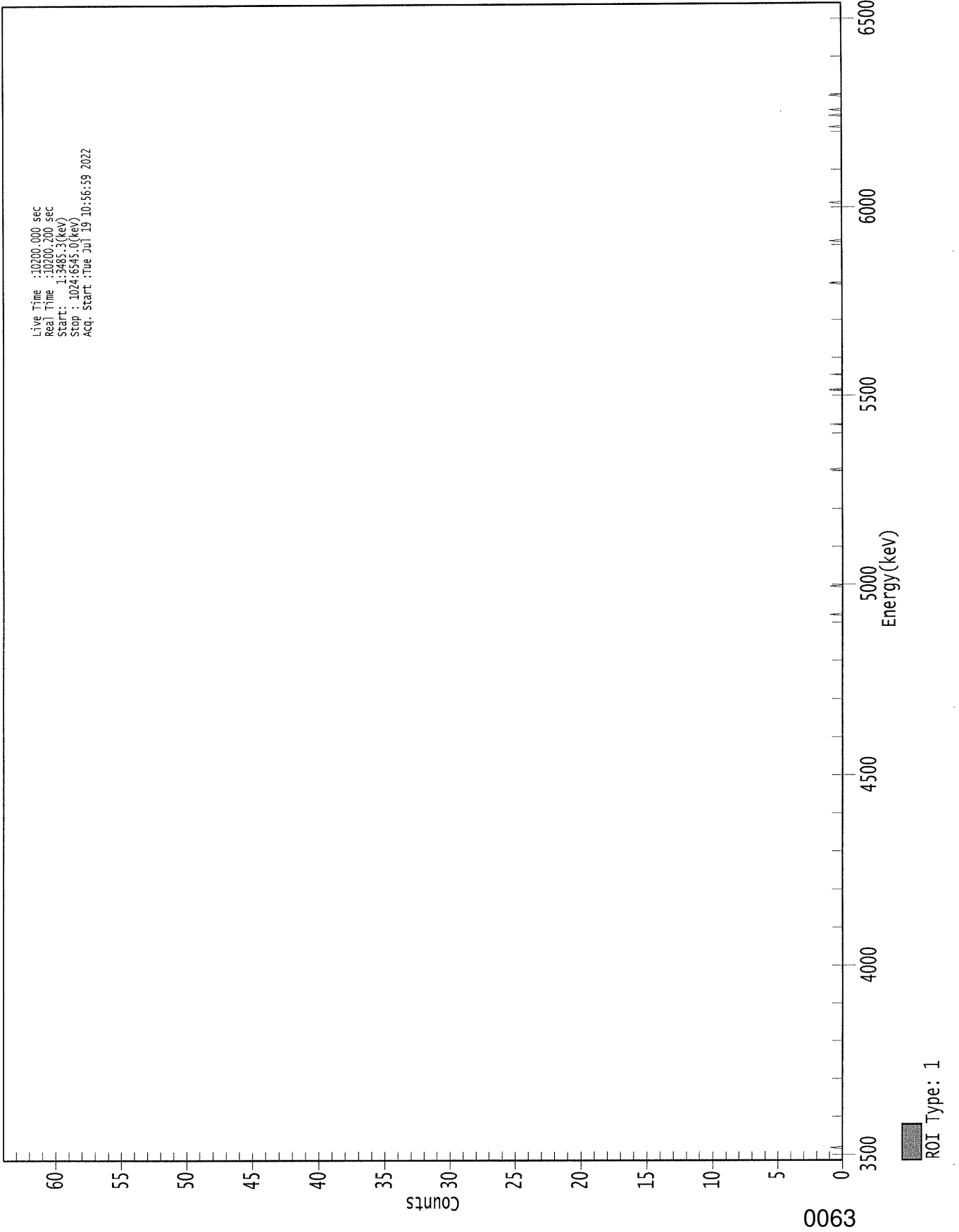
----- PEAK AREA REPORT -----						
Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
RA-224	5.502	2.64	152.72	1.36	0.00E+000	3.0
RA-226	4.604	-1.70	130.90	1.70	0.00E+000	0.0

----- NUCLIDE ANALYSIS RESULTS -----						
Nuclide	Id Conf.	Energy (keV)	Activity (pCi/liter)		MDA (pCi/liter)	
RA-224	0.957	5685.50*	1.10E-001 +/-	1.67E-001	2.85E-001 +/-	9.96E-003
RA-226	0.958	4785.00*	-6.71E-002 +/-	8.79E-002	2.90E-001 +/-	1.01E-002

AG
7/20/22

0062

0000317387.CNF



 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 02

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	1	0	0	0	0
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	0	0	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0
105:	0	0	0	0	0	0	0	0
113:	0	0	0	0	0	0	0	0
121:	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	0	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	0
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0

0064

369: 0 0 0 0 0 0 0 0 0

Sample Title: 02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	0	0	0	0	0	0	0
385:	0	0	0	0	0	0	0	0
393:	0	0	0	0	0	0	0	0
401:	0	0	0	0	0	0	0	0
409:	0	0	0	0	0	0	0	0
417:	0	0	0	0	0	0	0	0
425:	0	0	0	0	0	0	0	0
433:	0	0	0	0	0	0	0	0
441:	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	1	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	1	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	1	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0
649:	1	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	1	1
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	1	0	0	0
697:	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	1	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

0065

801: 0 0 0 0 0 0 0 0 0

Sample Title: 02

Channel	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	1	0	0	0	0
817:	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	1	0	0
849:	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0
913:	1	0	0	0	0	0	0	0
921:	0	0	1	0	0	0	0	1
929:	0	0	0	0	0	0	0	0
937:	0	0	0	0	1	0	0	0
945:	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0



KCS
7/19/22

Sample Description: LT-8 14-24 70754 DUP
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00003173
 Batch Identification: 2207019A-RA
 Sample Identification: 03
 Sample Geometry: Shelf 2
 Procedure Description: Ra

Detector Name: Alpha_040
 Chamber Serial Number: 06027396B
 Detector Serial Number: 91135
 Env. Background: System Bkgd 324294
 Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 liter
 Generic Mult. Factor: 3.000E+000 Generic Div. Factor: 1.000E+000
 Sample Date/Time: 6/28/2022 9:47:22 AM
 Acquisition Date/Time: 7/19/2022 10:57:02 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Chem. Recovery Factor: 0.9828 +/- 0.0000
 Counting Efficiency: 0.1514 +/- 0.0027 on 11/30/2021 2:02:37 PM
 Effective Efficiency: 0.1488 +/- 0.0027

Peak Match Tolerance: 0.350 MeV

 ----- PEAK AREA REPORT -----

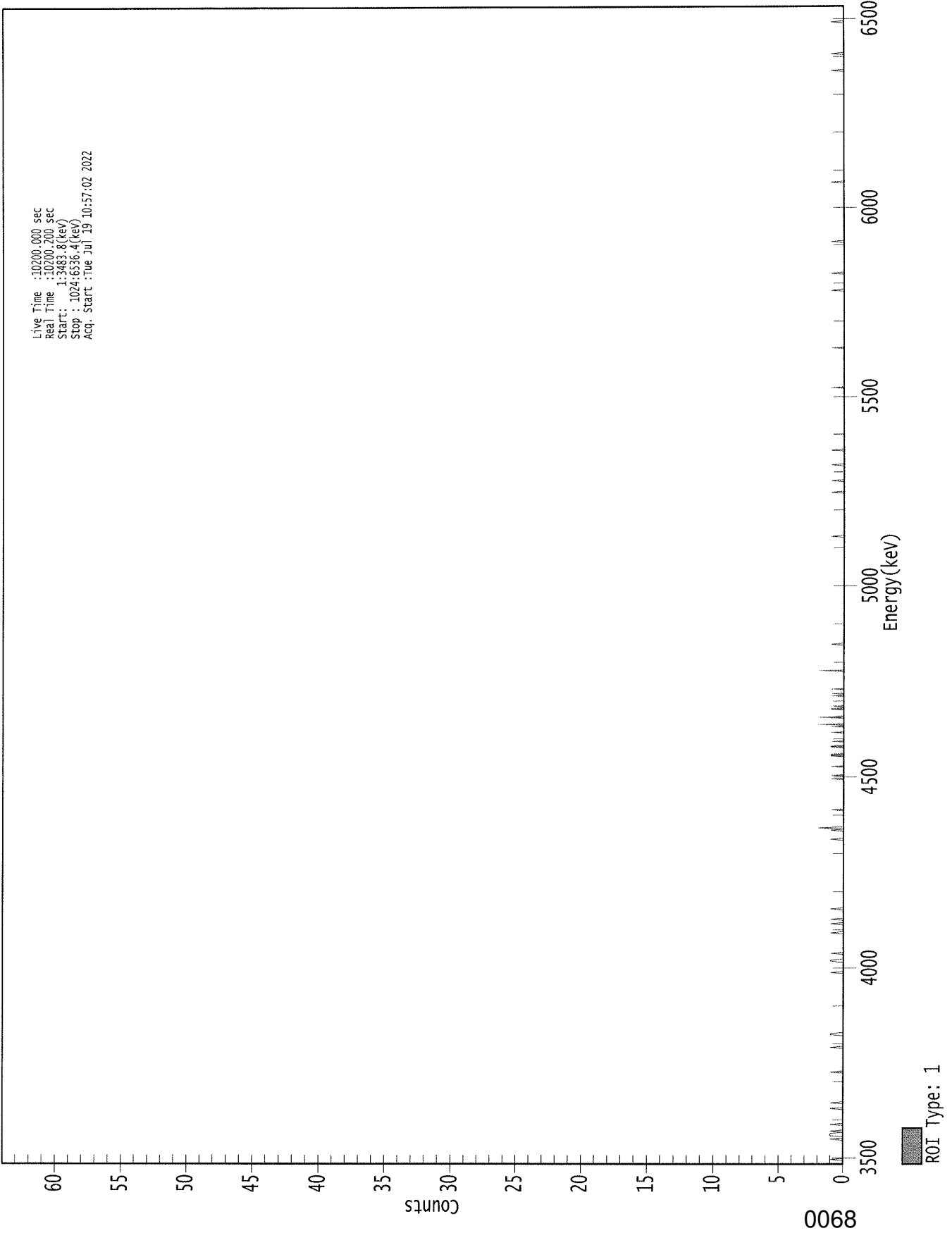
Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
RA-224	5.577	1.49	190.02	0.51	0.00E+000	3.0
RA-226	4.625	24.15	40.70	0.85	0.00E+000	3.0

 ----- NUCLIDE ANALYSIS RESULTS -----

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/liter)	MDA (pCi/liter)
RA-224	0.985	5685.50*	8.43E-002 +/- 1.60E-001	2.97E-001 +/- 1.04E-002
RA-226	0.967	4785.00*	1.29E+000 +/- 5.27E-001	3.20E-001 +/- 1.12E-002

AG
7/20/22

0000317388.CNF



 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 03

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	0	1	0	0	0	0
9:	0	0	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	1	0	0
25:	0	1	1	1	0	1	0	0	0
33:	0	0	0	1	0	0	0	0	0
41:	0	0	0	0	0	0	0	0	0
49:	0	1	0	0	0	0	1	0	0
57:	0	0	0	0	0	0	0	0	0
65:	0	0	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	0
81:	0	1	0	0	0	0	0	0	0
89:	0	0	0	0	0	0	0	0	0
97:	0	0	0	0	0	0	0	0	1
105:	0	0	0	0	0	0	0	0	0
113:	0	0	1	1	0	0	0	0	0
121:	0	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0	0
169:	0	1	0	0	0	0	0	0	0
177:	0	0	0	1	1	0	0	0	0
185:	0	0	1	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0	0
201:	0	0	0	0	1	0	0	0	0
209:	0	0	0	0	1	0	0	0	0
217:	1	0	0	0	0	0	0	0	0
225:	0	1	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	0	0	0
241:	0	0	0	0	0	0	0	0	0
249:	0	0	0	0	0	0	0	0	0
257:	0	0	0	0	0	0	0	0	0
265:	0	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	1	0	0
289:	0	0	0	0	0	0	1	0	0
297:	2	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	0	0
313:	1	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	0	0	0
329:	0	0	0	0	0	0	0	0	0
337:	0	0	0	1	0	0	1	0	0
345:	0	0	0	0	0	0	1	0	0
353:	0	0	0	0	0	0	0	0	1
361:	1	1	0	0	0	0	0	0	1

0069

369: 1 0 0 0 1 0 0 0

Sample Title: 03

Channel									
377:	0	0	0	0	1	0	0	0	0
385:	0	1	0	2	0	0	0	0	0
393:	0	2	1	0	0	0	0	0	0
401:	1	1	0	1	0	0	0	0	0
409:	0	0	0	0	1	0	1	0	0
417:	0	0	1	0	0	0	0	0	0
425:	0	0	0	0	0	0	0	0	0
433:	0	0	2	0	0	0	0	0	0
441:	0	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0	0
457:	0	1	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	0	0	0	0
489:	0	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0	0
545:	0	0	0	0	0	0	0	0	0
553:	1	0	0	0	0	0	0	0	0
561:	0	0	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0	1
593:	0	0	0	0	0	0	0	0	0
601:	0	1	0	0	0	0	0	0	0
609:	0	0	0	0	0	0	0	0	1
617:	0	0	0	0	0	0	0	0	0
625:	0	0	0	0	1	0	0	0	0
633:	0	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	0	0
649:	0	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0	0
665:	0	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0	0
681:	0	0	0	0	1	0	0	0	0
689:	0	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0	1
721:	0	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0	0
769:	0	0	1	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0	0
785:	0	1	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0	0

0070

801: 0 0 0 0 0 0 0 0 0

Sample Title: 03

Channel	1	2	3	4	5	6	7	8	9
809:	0	0	0	0	0	1	0	0	0
817:	0	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0	0
865:	0	0	1	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0	0
881:	0	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0	0
961:	0	0	0	0	0	1	0	0	0
969:	0	0	0	0	0	0	0	0	0
977:	0	0	0	0	1	0	0	0	0
985:	0	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0	0
1009:	1	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0	0



Apex-Alpha™

*KB
7/19/22*

Sample Description: LT-8 14-24 70754
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00003173
 Batch Identification: 2207019A-RA
 Sample Identification: 04
 Sample Geometry: Shelf 2
 Procedure Description: Ra

Detector Name: Alpha_041
 Chamber Serial Number: 05026930A
 Detector Serial Number: 91087
 Env. Background: System Bkgd 324295
 Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 liter
 Generic Mult. Factor: 2.770E+000 Generic Div. Factor: 1.000E+000
 Sample Date/Time: 6/28/2022 9:47:22 AM
 Acquisition Date/Time: 7/19/2022 10:57:04 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Chem. Recovery Factor: 0.8923 +/- 0.0000
 Counting Efficiency: 0.1753 +/- 0.0031 on 5/21/2021 9:18:01 AM
 Effective Efficiency: 0.1564 +/- 0.0027

Peak Match Tolerance: 0.350 MeV

 ----- PEAK AREA REPORT -----

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
RA-224	5.458	1.66	169.38	0.34	0.00E+000	3.0
RA-226	4.563	11.13	64.27	1.87	0.00E+000	3.0

 ----- NUCLIDE ANALYSIS RESULTS -----

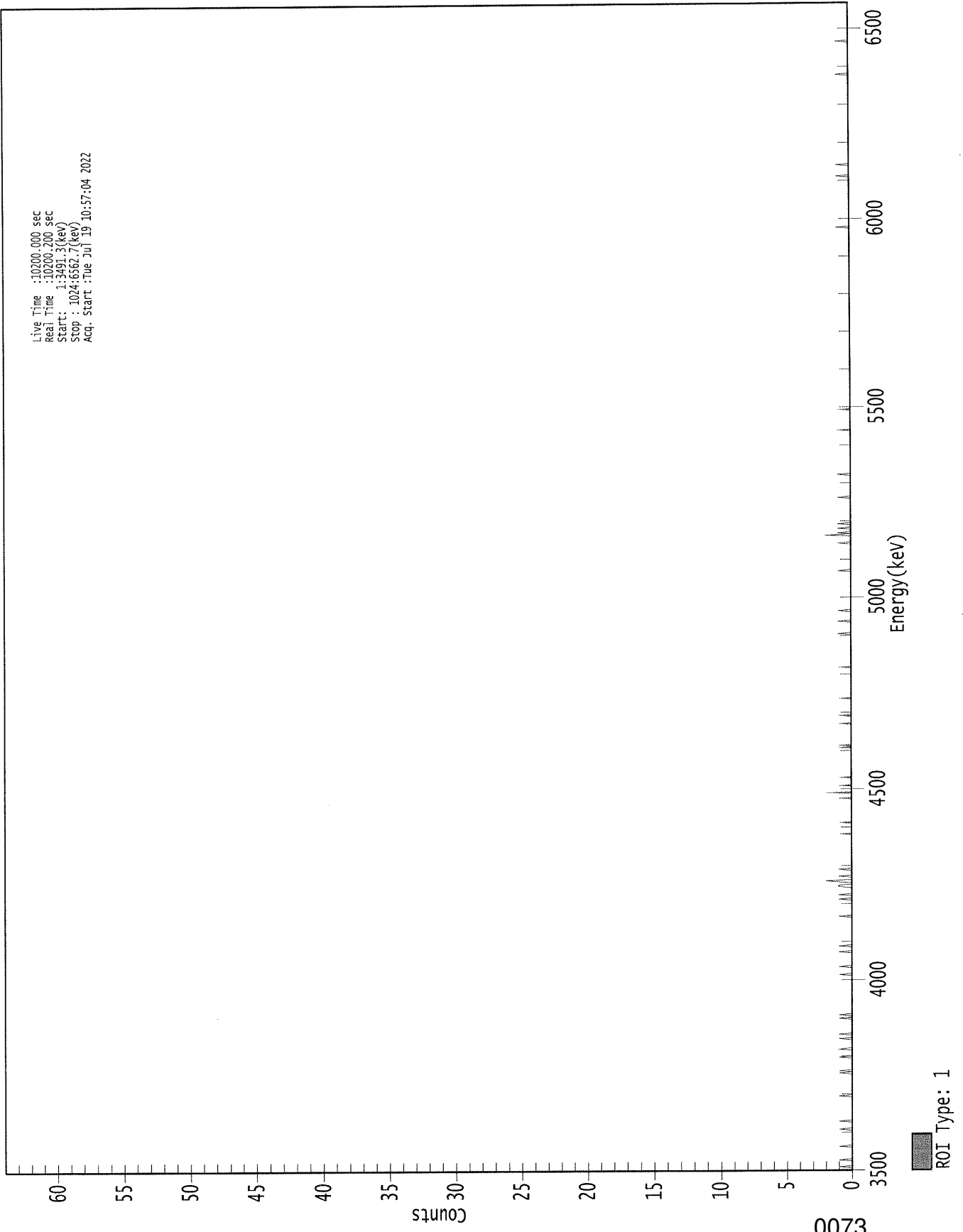
Nuclide	Id Conf.	Energy (keV)	Activity (pCi/liter)	MDA (pCi/liter)
RA-224	0.935	5685.50*	8.25E-002 +/- 1.40E-001	2.38E-001 +/- 8.18E-003
RA-226	0.938	4785.00*	5.22E-001 +/- 3.36E-001	3.55E-001 +/- 1.22E-002

*AC
7/20/22*

0072

0000317389.CNF

Live Time : 10200.000 sec
Real Time : 10200.200 sec
Start : 1:3491.3(keV)
Stop : 1024:6562.7(keV)
Acq. Start : Tue Jul 19 10:57:04 2022



0073

```

*****
***** S P E C T R A L   D A T A   R E P O R T   *****
*****

```

Sample Title: 04

```

Elapsed Live time: 10200
Elapsed Real Time: 10200

```

Channel	1	2	3	4	5	6	7	8	9
1:	0	0	0	1	0	0	0	0	0
9:	0	1	0	0	0	0	0	0	0
17:	0	0	0	0	0	0	1	0	0
25:	0	0	0	0	0	0	0	0	0
33:	0	0	0	0	1	0	0	0	0
41:	0	0	0	1	0	0	0	0	0
49:	0	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	0	0	0	0
65:	0	1	0	0	0	0	0	0	0
73:	0	0	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	1	0	1
89:	0	0	0	0	0	0	0	0	0
97:	0	0	0	1	0	0	0	0	0
105:	0	0	1	0	0	0	0	0	0
113:	0	0	0	1	0	0	0	0	1
121:	0	0	0	0	0	0	0	0	0
129:	0	0	0	0	0	0	1	0	0
137:	1	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0	0
169:	0	0	0	1	0	0	0	0	0
177:	0	0	1	0	0	0	0	0	0
185:	0	0	0	0	0	0	0	0	1
193:	0	0	0	0	1	0	0	0	0
201:	0	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0	0
217:	0	0	0	0	0	0	0	1	0
225:	0	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	1	0	0
241:	0	1	0	0	0	0	0	0	0
249:	1	1	0	0	1	2	0	0	0
257:	0	1	0	0	0	0	0	0	1
265:	0	0	0	0	0	0	0	0	0
273:	0	0	0	0	0	0	0	0	0
281:	0	0	0	0	0	0	0	0	0
289:	0	0	0	0	0	0	0	1	0
297:	0	0	0	0	0	0	0	0	0
305:	1	0	0	0	0	0	0	0	0
313:	0	0	0	0	0	0	0	0	0
321:	0	0	0	0	0	0	1	0	0
329:	0	0	2	0	0	0	0	0	0
337:	1	0	0	0	0	0	0	0	1
345:	0	0	0	0	0	0	0	0	0
353:	0	0	0	0	0	0	0	0	0
361:	0	0	0	0	0	0	0	0	0

0074

369: 0 1 0 1 0 0 0 0

Sample Title: 04

Channel	1	2	3	4	5	6	7	8	9
377:	0	0	0	0	0	0	0	0	0
385:	0	0	0	0	0	0	0	1	0
393:	0	0	0	0	0	0	1	0	0
401:	0	0	0	0	0	0	0	0	0
409:	0	0	0	0	1	0	0	0	0
417:	0	0	0	0	0	0	0	0	0
425:	0	0	0	0	0	0	0	0	0
433:	0	0	0	0	0	0	0	0	1
441:	0	0	0	0	0	0	0	0	0
449:	0	0	0	0	0	0	0	0	0
457:	0	0	0	0	0	0	0	0	0
465:	0	0	0	0	1	0	0	0	0
473:	0	0	0	0	0	0	0	0	1
481:	0	0	0	0	0	0	0	0	0
489:	1	0	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0	0
521:	0	0	0	1	0	0	0	0	0
529:	0	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0	0
545:	0	0	0	1	0	0	0	0	0
553:	0	0	2	0	1	0	0	0	0
561:	1	0	0	0	1	0	0	0	0
569:	0	0	0	0	0	0	0	0	0
577:	0	0	0	0	0	0	0	0	0
585:	0	0	0	1	0	0	0	0	0
593:	0	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0	1
609:	0	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0	0
641:	0	0	0	0	0	0	0	1	0
649:	0	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	0	0	0
665:	1	0	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	0	0	0	0
705:	0	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0	0
721:	0	0	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0	0
753:	0	0	0	0	0	0	0	0	0
761:	0	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0	0

0075

801: 0 0 0 0 0 0 0 0 0

Sample Title: 04

Channel	-----	-----	-----	-----	-----	-----	-----	-----	-----
809:	0	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0	0
825:	0	1	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	1	0	0
873:	0	0	0	0	0	0	0	0	0
881:	1	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0	0
953:	0	0	0	0	0	0	0	0	1
961:	0	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0	0
985:	0	0	0	0	1	0	0	0	0
993:	0	0	0	0	0	0	0	0	0
1001:	0	0	0	0	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0	0



LB
7/19/22

Sample Description: LT-9 8-18 70755
 Spectrum File: \\OR-ALPHA1\Canberra\ApexAlpha\Root\Data\00003173
 Batch Identification: 2207019A-RA
 Sample Identification: 05
 Sample Geometry: Shelf 2
 Procedure Description: Ra

Detector Name: Alpha_044
 Chamber Serial Number: 04026481B
 Detector Serial Number: 84168
 Env. Background: System Bkgd 324296
 Reagent Blank: <not performed>

Sample Size: 1.000E+000 +/- 0.000E+000 liter
 Generic Mult. Factor: 2.160E+000 Generic Div. Factor: 1.000E+000
 Sample Date/Time: 6/28/2022 9:47:22 AM
 Acquisition Date/Time: 7/19/2022 10:57:07 AM
 Acquisition Live Time: 170.0 minutes
 Acquisition Real Time: 170.0 minutes

Chem. Recovery Factor: 0.5764 +/- 0.0000
 Counting Efficiency: 0.1589 +/- 0.0028 on 11/30/2021 2:02:39 PM
 Effective Efficiency: 0.0916 +/- 0.0016

Peak Match Tolerance: 0.350 MeV

 ----- PEAK AREA REPORT -----

Nuclide	Energy (MeV)	Net Pk Area	Pk Area Error %	Ambient Backgnd	Reagent Backgnd	FWHM (keV)
RA-224	5.481	4.32	102.62	0.68	0.00E+000	3.0
RA-226	4.564	13.32	55.28	0.68	0.00E+000	3.0

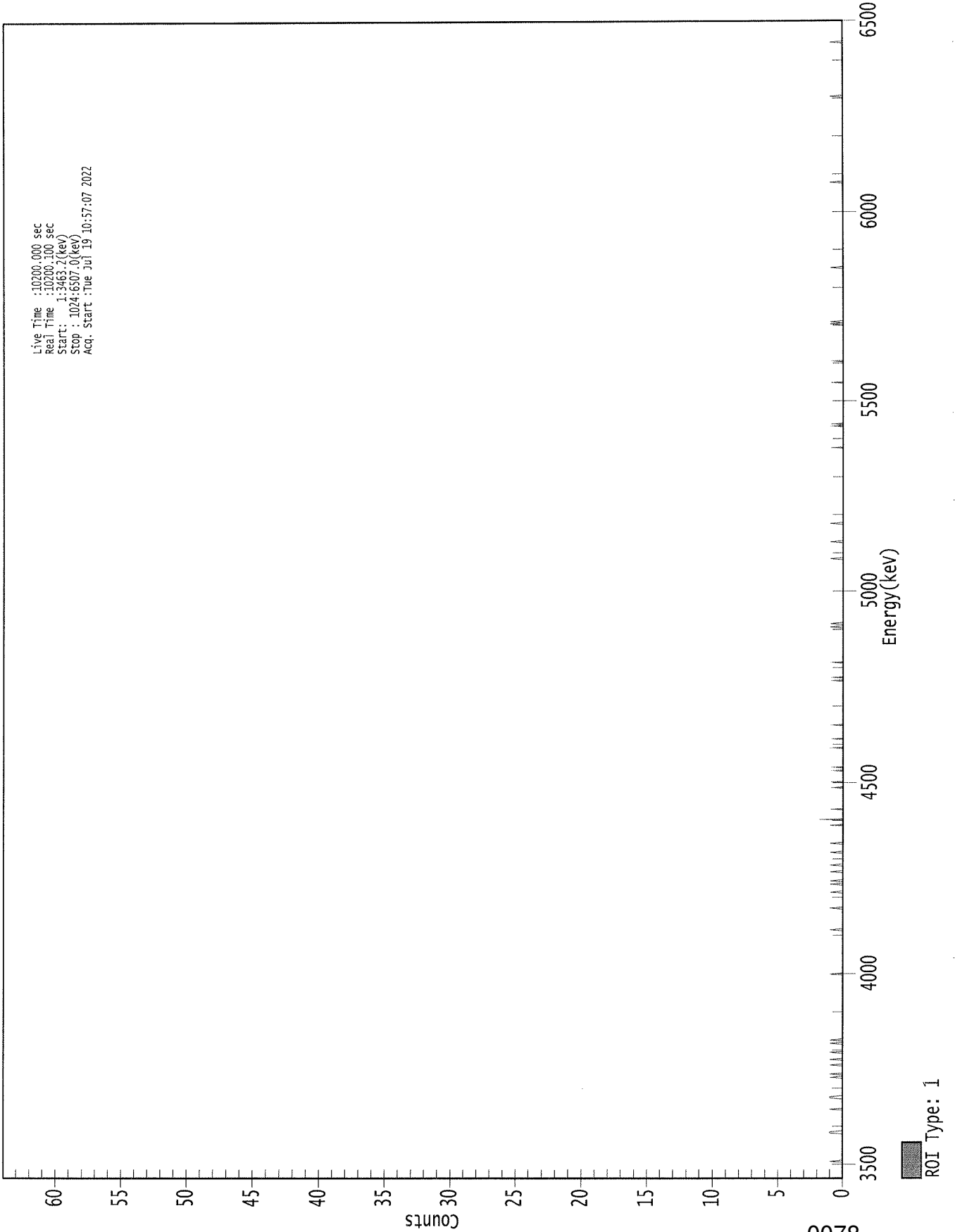
 ----- NUCLIDE ANALYSIS RESULTS -----

Nuclide	Id Conf.	Energy (keV)	Activity (pCi/liter)	MDA (pCi/liter)
RA-224	0.947	5685.50*	2.86E-001 +/- 2.94E-001	3.73E-001 +/- 1.31E-002
RA-226	0.938	4785.00*	8.33E-001 +/- 4.61E-001	3.53E-001 +/- 1.23E-002

AG
7/20/22

0000317390.CNF

Live Time : 10200.000 sec
Real Time : 10200.100 sec
Start : 1:3463.2(keV)
Stop : 1024:6507.0(keV)
Acq. Start : Tue Jul 19 10:57:07 2022



0078

 ***** S P E C T R A L D A T A R E P O R T *****

Sample Title: 05

Elapsed Live time: 10200

Elapsed Real Time: 10200

Channel	-----	-----	-----	-----	-----	-----	-----	-----
1:	0	0	0	0	0	0	0	0
9:	0	0	0	0	0	0	0	1
17:	0	0	0	0	0	0	0	0
25:	0	0	0	0	0	0	0	0
33:	0	0	0	0	0	0	0	0
41:	1	1	0	0	0	0	0	0
49:	0	0	0	0	0	0	0	0
57:	0	0	0	0	0	1	0	0
65:	0	0	0	0	0	0	0	1
73:	1	0	0	0	0	0	0	0
81:	0	0	0	0	0	0	0	0
89:	0	1	0	0	1	0	0	0
97:	0	0	0	0	1	0	0	0
105:	0	1	0	0	0	0	0	1
113:	0	0	0	0	0	0	0	1
121:	0	0	1	0	0	0	0	0
129:	0	0	0	0	0	0	0	0
137:	0	0	0	0	0	0	0	0
145:	0	0	0	0	0	0	0	0
153:	0	0	0	0	0	0	0	0
161:	0	0	0	0	0	0	0	0
169:	0	0	0	0	0	0	0	0
177:	0	0	0	0	1	0	0	0
185:	0	0	0	0	0	0	0	0
193:	0	0	0	0	0	0	0	0
201:	0	0	0	0	0	0	0	0
209:	0	0	0	0	0	0	0	0
217:	0	0	0	1	0	0	0	0
225:	0	0	0	0	0	0	0	0
233:	0	0	0	0	0	0	1	0
241:	0	0	0	0	0	0	0	0
249:	0	0	0	0	1	0	0	0
257:	0	0	0	1	0	0	1	0
265:	0	0	0	0	0	0	1	0
273:	0	0	0	0	1	0	0	0
281:	0	0	0	0	0	0	0	1
289:	0	0	0	0	0	0	0	1
297:	0	0	0	0	0	0	0	0
305:	0	0	0	0	0	0	0	1
313:	0	0	0	0	2	0	0	0
321:	0	0	0	0	0	1	0	0
329:	0	0	0	0	0	0	0	0
337:	0	0	0	0	0	0	0	0
345:	1	0	0	0	0	1	0	0
353:	0	0	0	0	0	0	0	1
361:	0	0	1	0	0	0	0	0

0079

369: 0 0 0 0 0 0 0 0 0

Sample Title: 05

Channel	-----	-----	-----	-----	-----	-----	-----	-----
377:	0	0	0	1	0	0	0	0
385:	0	0	0	1	0	0	0	0
393:	0	0	0	0	0	0	0	1
401:	0	0	0	0	0	0	0	0
409:	0	0	0	0	0	0	0	0
417:	0	0	0	0	0	0	0	0
425:	0	0	0	0	0	0	0	0
433:	0	0	0	0	0	0	1	0
441:	0	1	0	0	0	0	0	0
449:	0	0	0	0	0	0	1	0
457:	0	0	0	0	0	0	0	0
465:	0	0	0	0	0	0	0	0
473:	0	0	0	0	0	0	0	0
481:	0	0	0	0	0	1	0	0
489:	1	0	0	0	0	0	0	0
497:	0	0	0	0	0	0	0	0
505:	0	0	0	0	0	0	0	0
513:	0	0	0	0	0	0	0	0
521:	0	0	0	0	0	0	0	0
529:	0	0	0	0	0	0	0	0
537:	0	0	0	0	0	0	0	0
545:	0	1	0	0	0	0	0	0
553:	0	0	0	0	0	0	0	0
561:	1	0	0	0	0	0	0	0
569:	0	0	0	0	0	0	0	0
577:	1	0	0	0	0	0	0	0
585:	0	0	0	0	0	0	0	0
593:	0	0	0	0	0	0	0	0
601:	0	0	0	0	0	0	0	0
609:	0	0	0	0	0	0	0	0
617:	0	0	0	0	0	0	0	0
625:	0	0	0	0	0	0	0	0
633:	0	0	0	0	0	0	0	0
641:	0	0	0	1	0	0	0	0
649:	0	0	0	0	0	0	0	0
657:	0	0	0	0	0	0	1	0
665:	1	0	0	0	0	0	0	0
673:	0	0	0	0	0	0	0	0
681:	0	0	0	0	0	0	0	0
689:	0	0	0	0	0	0	0	0
697:	0	0	0	0	0	1	0	0
705:	0	0	0	0	0	0	0	0
713:	0	0	0	0	0	0	0	0
721:	1	0	0	0	0	0	0	0
729:	0	0	0	0	0	0	0	0
737:	0	0	0	0	0	0	0	0
745:	0	0	0	0	0	0	0	0
753:	0	1	0	1	0	0	0	0
761:	0	0	0	0	0	0	0	0
769:	0	0	0	0	0	0	0	0
777:	0	0	0	0	0	0	0	0
785:	0	0	0	0	0	0	0	0
793:	0	0	0	0	0	0	0	0

0080

801: 0 0 0 1 0 0 0 0

Sample Title: 05

Channel									
809:	0	0	0	0	0	0	0	0	0
817:	0	0	0	0	0	0	0	0	0
825:	0	0	0	0	0	0	0	0	0
833:	0	0	0	0	0	0	0	0	0
841:	0	0	0	0	0	0	0	0	0
849:	0	0	0	0	0	0	0	0	0
857:	0	0	0	0	0	0	0	0	0
865:	0	0	0	0	0	0	0	0	0
873:	0	0	0	0	0	0	0	0	1
881:	0	0	0	0	0	0	0	0	0
889:	0	0	0	0	0	0	0	0	0
897:	0	0	0	0	0	0	0	0	0
905:	0	0	0	0	0	0	0	0	0
913:	0	0	0	0	0	0	0	0	0
921:	0	0	0	0	0	0	0	0	0
929:	0	0	0	0	0	0	0	0	0
937:	0	0	0	0	0	0	0	0	0
945:	0	0	0	0	0	0	0	0	0
953:	0	0	0	1	0	0	0	0	0
961:	0	0	0	0	0	0	0	0	0
969:	0	0	0	0	0	0	0	0	0
977:	0	0	0	0	0	0	0	0	0
985:	0	0	0	0	0	0	0	0	0
993:	0	0	0	0	0	0	0	0	0
1001:	0	0	0	1	0	0	0	0	0
1009:	0	0	0	0	0	0	0	0	0
1017:	0	0	0	0	0	0	0	0	0



QA SUMMARY REPORT Review Of QA Results - Pulser Check

Date : 7/19/2022
Time : 5:48:56 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha 001	21f	ALL	Not Done	
Alpha 002	21f	ALL	Not Done	
Alpha 003	21f	ALL	Not Done	
Alpha 004	21f	ALL	Not Done	
Alpha 005	21f	ALL	Not Done	
Alpha 006	21f	ALL	Not Done	
Alpha 007	21f	ALL	Not Done	
Alpha 008	21f	ALL	Not Done	
Alpha 009	21f	ALL	Not Done	
Alpha 010	21f	ALL	Not Done	
Alpha 011	21f	ALL	Passed	7/19/2022 5:33:42 AM
Alpha 012	21f	ALL	Passed	7/19/2022 5:33:43 AM
Alpha 013	21f	ALL	Not Done	
Alpha 014	21f	ALL	Not Done	
Alpha 015	21f	ALL	Not Done	
Alpha 016	21f	ALL	Not Done	
Alpha 033	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:33:44 AM
Alpha 034	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:33:45 AM
Alpha 035	Alpha Analyst100DC	ALL	Not Done	
Alpha 036	Alpha Analyst100DC	ALL	Not Done	
Alpha 037	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:33:47 AM
Alpha 038	Alpha Analyst100DC	Peak Energy	Action	7/19/2022 5:33:48 AM
Alpha 039	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:33:50 AM
Alpha 040	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:33:51 AM
Alpha 041	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:33:53 AM
Alpha 042	Alpha Analyst100DC	ALL	Not Done	
Alpha 043	Alpha Analyst100DC	ALL	Not Done	
Alpha 044	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:33:54 AM
Alpha 045	Alpha Analyst100DC	Peak Energy	Action	7/19/2022 5:33:56 AM
Alpha 046	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:33:58 AM
Alpha 047	Alpha Analyst100DC	ALL	Not Done	
Alpha 048	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:34:00 AM
Alpha 049	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:34:01 AM
Alpha 050	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:34:03 AM
Alpha 051	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:34:06 AM
Alpha 052	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:34:08 AM
Alpha 053	Alpha Analyst100DC	ALL	Not Done	
Alpha 054	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:34:11 AM
Alpha 055	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:34:13 AM
Alpha 056	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:34:16 AM
Alpha 057	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:34:19 AM
Alpha 058	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:34:22 AM

CHAMBER	DEVICE	PARAMETER	FLAG	DATE
Alpha 059	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:34:25 AM
Alpha 060	Alpha Analyst100DC	ALL	Passed	7/19/2022 5:34:28 AM

APPROVED BY: KP

APPROVAL DATE: 7/19/22

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*****          L I B R A R Y  L I S T I N G  R E P O R T          *****
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Nuclide Library Title: Radium

Nuclide Library Description: Ra-226, Po-218, Rn-222

Nuclide Name	Half-Life (Seconds)	Energy (keV)	Energy Uncert. (keV)	Yield (%)	Yield Uncert. (Abs.+/-)
PO-218	5.049E+010	6003.000*	0.000	99.9800	0.0000
RN-222	5.049E+010	5490.000*	0.000	99.9200	0.0000
RA-226	5.049E+010	4785.000*	0.000	100.0000	0.0000

* = key line

TOTALS: 3 Nuclides 3 Energy Lines

SECTION IX
ANALYTICAL DATA (RADIUM-228)

0085

Work Order	22-07019
Analysis Code	Ra228
Run	1
Date Received	7/7/2022
Lab Deadline	7/28/2022
Client	Waypoint Analytical Louisiana
Project	22-181-0068
Report Level	4
Activity Units	pCi
Aliquot Units	I
Matrix	WA
Method	EPA 904.0
Instrument Type	Alpha/Beta GPC
Radiometric Tracer	Ba-133
Radiometric Sol#	Ba-7
Tracer Act (dpm/g)	8518.34
Carrier	Yttrium
Carrier Conc (mg/ml)	28.5333

Internal Fraction	Sample Desc	Client ID	Login CPM	Sample Date	Sample Aliquot
01	LCS	LCS		07/07/22 00:00	1.0000E+00
02	MBL	BLANK		07/07/22 00:00	1.0000E+00
03	DUP	LT-8 14-24 70754	60	06/28/22 11:45	1.0000E+00
04	DO	LT-8 14-24 70754	60	06/28/22 11:45	1.0000E+00
05	TRG	LT-9 8-18 70755	20	06/28/22 15:10	1.0000E+00

0086

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
 ** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Internal Fraction	Sample Desc	Rough Prep Date	Rough Prep By	Prep Date	Prep By	Sep 10 Date/Time	Sep 10 By	Sep 11 Date/Time	Sep 11 By
01	LCS			07/21/22 08:47	MDAVIS	07/19/22 08:36	MDAVIS	07/21/22 08:51	MDAVIS
02	MBL			07/21/22 08:47	MDAVIS	07/19/22 08:36	MDAVIS	07/21/22 08:51	MDAVIS
03	DUP			07/21/22 08:47	MDAVIS	07/19/22 08:36	MDAVIS	07/21/22 08:51	MDAVIS
04	DO			07/21/22 08:47	MDAVIS	07/19/22 08:36	MDAVIS	07/21/22 08:51	MDAVIS
05	TRG			07/21/22 08:47	MDAVIS	07/19/22 08:36	MDAVIS	07/21/22 08:51	MDAVIS

* SAF1 is used for Gross Alpha and all other radionuclides. SAF2 is used for Gross Beta only. ^ Indicates estimated SAF value.
** Actual mass exceeded the calibration curve range. Results should be qualified as appropriate.

Run	1	Analysis Code	Ra228	Eberline Services Work Order	22-07019	Client	Waypoint Analytical Louisiana
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Lab Fraction	Nuclide	Sample Desc	Client Identification	Activity Units	Results	Error Estimate	MDA	LCS Known	LCS %R	LCS Flag	RPD Flag	MDA Flag	Blank Flag
01	RA-228	LCS	LCS	pCi/l	7.47E+00	7.64E-01	9.44E-01	9.19E+00	81.33	OK		OK	
02	RA-228	MBL	BLANK	pCi/l	7.24E-01	3.95E-01	7.57E-01					OK	OK
03	RA-228	DUP	LT-8 14-24 70754	pCi/l	9.13E-01	4.80E-01	9.19E-01				NA	OK	
04	RA-228	DO	LT-8 14-24 70754	pCi/l	1.20E+00	5.08E-01	9.39E-01					OK	
05	RA-228	TRG	LT-9 8-18 70755	pCi/l	8.92E-01	1.00E+00	2.04E+00					INV	

Preliminary Data Report & Analytical Calculations
Work Order: 22-07019-Ra228-1

	Run	1
Analysis Code	Ra228	
Eberline Services Work Order	22-07019	
Client	Waypoint Analytical Louisiana	

0600

Lab Fraction	Nuclide	Sample Desc	Sample Date	Sample Aliquot	Radiometric % Rec	Grav % Rec	Mean % Rec	SAF	Sep 10 Date/Time	Sep 11 Date/Time
01	RA-228	LCS	07/07/22 00:00	1.00E+00	110.09	78.86	86.74	1.00	7/19/2022 8:36	7/21/2022 8:51
02	RA-228	MBL	07/07/22 00:00	1.00E+00	97.76	97.43	95.24	1.00	7/19/2022 8:36	7/21/2022 8:51
03	RA-228	DUP	06/28/22 11:45	1.00E+00	98.51	81.66	80.44	1.00	7/19/2022 8:36	7/21/2022 8:51
04	RA-228	DO	06/28/22 11:45	1.00E+00	89.44	85.51	76.48	1.00	7/19/2022 8:36	7/21/2022 8:51
05	RA-228	TRG	06/28/22 15:10	1.00E+00	57.77	79.56	45.96	1.00	7/19/2022 8:36	7/21/2022 8:51

	Run 1	Analysis Code Ra228	Eberline Services Work Order 22-07019	Client Waypoint Analytical Louisiana
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Lab Fraction	Nuclide	Sample Desc	Counting Date/Time	Half-life (days)	Detect	Carrier	Count Time	Counts	Bkg CPM	Eff
01	RA-228	LCS	07/21/22 11:01		LB4110A	C2	120	686	1.133333333	0.4578
02	RA-228	MBL	07/21/22 11:01		LB4110A	C3	120	170	0.916666667	0.4699
03	RA-228	DUP	07/21/22 11:01		LB4110A	D1	120	195	1.066666667	0.4924
04	RA-228	DO	07/21/22 11:01		LB4110A	D3	120	190	0.916666667	0.4719
05	RA-228	TRG	07/21/22 11:01		LB4110A	D4	120	230	1.616666667	0.4741

Internal Fraction	Sample Desc	Client ID	Sample Date	Sample Aliquot	Tracer Aliquot (g)	Tracer ACT (dpm)	Radiometric Tracer (pCi)	Radiometric % Rec	SAF 1*	SAF 2*
01	LCS	LCS	07/07/22 00:00	1.0000	0.1257	1070.7553	531.0000	110.09	1.00	1.00
02	MBL	BLANK	07/07/22 00:00	1.0000	0.1269	1080.9773	476.0000	97.76	1.00	1.00
03	DUP	LT-8 14-24 70754	06/28/22 11:45	1.0000	0.1254	1068.1998	474.0000	98.51	1.00	1.00
04	DO	LT-8 14-24 70754	06/28/22 11:45	1.0000	0.1218	1037.5338	418.0000	89.44	1.00	1.00
05	TRG	LT-9 8-18 70755	06/28/22 15:10	1.0000	0.1236	1052.8668	274.0000	57.77	1.00	1.00

Spike and Tracer Worksheet

Internal Work Order		Run	Analysis Code		Date		Technician		Technician Initials		Witness Initials		
22-07019		1	Ra228		7/21/2022 8:46		MDAVIS		<i>MD</i>				
LCS & Matrix Spikes													
Isotope	Sol #	Activity dpm/g	Solution Date	Approx Addition	LCS Volume Used (g)	MS Volume Used (g)	LCS Volume Used (g)	MSD Volume Used (g)	LCS Known pCi	MS Error Estimate	LCS Error Estimate	MSD Added pCi	MSD Error Estimate
Ra-228	Ra-12	33.560	7/21/2022	0.600	0.6080				9.19	0.469	0.000	0.00	0.000
TC-99/MS TC-2a 22043.06 7/21/2022 0.1													

Tracers													
fraction	Isotope	Sol #	Activity dpm/g	Solution Date	Volume Used (g)	Approx Addition	Balance Printer Tapes						Tracer
01	Ba-133	Ba-7	8518.340	7/21/2022	0.1257	0.1200							LCS
02	Ba-133	Ba-7	8518.340	7/21/2022	0.1269	0.1200							
03	Ba-133	Ba-7	8518.340	7/21/2022	0.1254	0.1200							
04	Ba-133	Ba-7	8518.340	7/21/2022	0.1218	0.1200							
05	Ba-133	Ba-7	8518.340	7/21/2022	0.1236	0.1200							
Matrix Spike													

0093

Aliquot Worksheet

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician
22-07019	1	Ra228	liters	7/28/2022	JHARVEY

Lab Fraction	Waypoint Analytical Louisiana		Sample		Muffle Data		Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
	Client ID	Type	No of Dilis	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq				
01	LCS	LCS				1.0000E+00	1.0000E+00								
02	BLANK	MBL				1.0000E+00	1.0000E+00								
03	LT-8 14-24 70754	DUP				1.0000E+00	1.0000E+00								
04	LT-8 14-24 70754	DO				1.0000E+00	1.0000E+00								
05	LT-9 8-18 70755	TRG				1.0000E+00	1.0000E+00								

Comments

0094

Technician:  Date: 7/8/22

LP
7/21/22

Detector ID	Sample ID	Alpha	Beta	Count Time	Voltage	TOD
C2	2207019-01	41	686	120	1410	7/21/2022 11:01:18 AM
C3	2207019-02	14	170	120	1410	7/21/2022 11:01:18 AM
D1	2207019-03	10	195	120	1410	7/21/2022 11:01:19 AM
D3	2207019-04	22	190	120	1410	7/21/2022 11:01:19 AM
D4	2207019-05	25	230	120	1410	7/21/2022 11:01:22 AM

0096

GPC Detector Report
(ALL Backgrounds)

MP
7/21/22

Detector	Alpha/Beta	Calibration Date	Count Date	Bkg CPM	PFW	LCL	Mean	UCL
LB4110A - A1	Alpha	11/2/2019	7/21/2022	1.33E-01	P	8.27E-03	1.66E-01	3.23E-01
LB4110A - A2	Alpha	11/2/2019	7/21/2022	2.17E-01	P	9.44E-03	1.52E-01	2.95E-01
LB4110A - A3	Alpha	11/2/2019	7/21/2022	2.00E-01	P	1.85E-02	1.64E-01	3.10E-01
LB4110A - A4	Alpha	11/2/2019	7/21/2022	1.67E-01	P	1.51E-02	1.66E-01	3.18E-01
LB4110A - B1	Alpha	11/2/2019	7/21/2022	1.00E-01	P	-2.28E-02	1.41E-01	3.05E-01
LB4110A - B2	Alpha	11/2/2019	7/21/2022	1.00E-01	P	-2.49E-02	1.88E-01	4.01E-01
LB4110A - B3	Alpha	11/2/2019	7/21/2022	1.67E-01	P	1.07E-02	1.65E-01	3.20E-01
LB4110A - B4	Alpha	11/2/2019	7/21/2022	1.67E-01	P	-9.15E-03	1.14E-01	2.38E-01
LB4110A - C1	Alpha	11/2/2019	7/21/2022	2.17E-01	P	-2.61E-02	1.21E-01	2.67E-01
LB4110A - C2	Alpha	11/2/2019	7/21/2022	1.17E-01	P	-1.78E-02	1.11E-01	2.40E-01
LB4110A - C3	Alpha	11/2/2019	7/21/2022	6.67E-02	P	-2.06E-02	8.79E-02	1.96E-01
LB4110A - C4	Alpha	11/2/2019	7/21/2022	2.33E-01	P	3.11E-02	2.20E-01	4.08E-01
LB4110A - D1	Alpha	11/2/2019	7/21/2022	8.33E-02	P	-6.81E-02	7.23E-02	2.13E-01
LB4110A - D2	Alpha	11/2/2019	7/21/2022	8.33E-02	P	-5.15E-02	1.08E-01	2.68E-01
LB4110A - D3	Alpha	11/2/2019	7/21/2022	1.17E-01	P	-7.78E-02	1.27E-01	3.33E-01
LB4110A - D4	Alpha	11/2/2019	7/21/2022	1.00E-01	P	8.91E-03	1.65E-01	3.21E-01
LB4110A - E1	Alpha	11/2/2017	5/19/2020	1.00E+05	F	-2.35E+04	8.93E+02	2.53E+04
LB4110A - E2	Alpha	11/2/2017	5/19/2020	1.00E+05	F	-2.35E+04	8.93E+02	2.53E+04
LB4110A - E3	Alpha	11/2/2017	5/19/2020	1.00E+05	F	-2.35E+04	8.93E+02	2.53E+04
LB4110A - E4	Alpha	11/2/2017	5/19/2020	1.00E+05	F	-2.35E+04	8.93E+02	2.53E+04
LB4110A - F1	Alpha	11/2/2019	1/10/2022	0.00E+00	P	-3.26E-02	1.31E-01	2.95E-01
LB4110A - F2	Alpha	11/2/2019	1/10/2022	0.00E+00	P	-3.95E-02	1.19E-01	2.77E-01
LB4110A - F3	Alpha	11/2/2019	1/10/2022	0.00E+00	P	-2.28E-02	1.05E-01	2.34E-01
LB4110A - F4	Alpha	11/2/2019	1/10/2022	0.00E+00	P	-4.44E-02	7.07E-02	1.86E-01
LB4110A - G1	Alpha	11/2/2019	7/21/2022	8.33E-02	P	-1.75E-02	9.10E-02	1.99E-01
LB4110A - G2	Alpha	11/2/2019	7/21/2022	1.17E-01	P	-2.64E-02	9.35E-02	2.13E-01
LB4110A - G3	Alpha	11/2/2019	7/21/2022	1.67E-01	P	-3.58E-02	1.61E-01	3.58E-01
LB4110A - G4	Alpha	11/2/2019	7/21/2022	6.67E-02	P	-2.74E-02	1.07E-01	2.41E-01

GPC Detector Report
(ALL Backgrounds)

KP
7/21/22

Detector	Alpha/Beta	Calibration Date	Count Date	Bkg CPM	PFW	LCL	Mean	UCL
LB4110A - A1	Beta	11/2/2019	7/21/2022	1.25E+00	P	-1.31E+00	1.35E+00	4.02E+00
LB4110A - A2	Beta	11/2/2019	7/21/2022	1.20E+00	P	-1.11E+00	1.62E+00	4.35E+00
LB4110A - A3	Beta	11/2/2019	7/21/2022	1.43E+00	P	-1.08E+00	1.44E+00	3.96E+00
LB4110A - A4	Beta	11/2/2019	7/21/2022	1.25E+00	P	-1.20E+00	1.47E+00	4.15E+00
LB4110A - B1	Beta	11/2/2019	7/21/2022	1.58E+00	P	1.01E+00	1.39E+00	1.77E+00
LB4110A - B2	Beta	11/2/2019	7/21/2022	1.03E+00	P	6.88E-01	1.36E+00	2.02E+00
LB4110A - B3	Beta	11/2/2019	7/21/2022	1.13E+00	P	8.93E-01	1.30E+00	1.71E+00
LB4110A - B4	Beta	11/2/2019	7/21/2022	1.35E+00	P	5.86E-01	1.51E+00	2.43E+00
LB4110A - C1	Beta	11/2/2019	7/21/2022	1.03E+00	P	7.81E-01	1.16E+00	1.53E+00
LB4110A - C2	Beta	11/2/2019	7/21/2022	1.13E+00	P	6.43E-01	1.00E+00	1.37E+00
LB4110A - C3	Beta	11/2/2019	7/21/2022	9.17E-01	P	7.03E-01	1.29E+00	1.87E+00
LB4110A - C4	Beta	11/2/2019	7/21/2022	1.08E+00	P	8.47E-01	1.27E+00	1.70E+00
LB4110A - D1	Beta	11/2/2019	7/21/2022	1.07E+00	P	6.45E-01	1.06E+00	1.48E+00
LB4110A - D2	Beta	11/2/2019	7/21/2022	1.82E+00	P	-1.16E+00	2.28E+00	5.71E+00
LB4110A - D3	Beta	11/2/2019	7/21/2022	9.17E-01	P	6.80E-01	1.11E+00	1.54E+00
LB4110A - D4	Beta	11/2/2019	7/21/2022	1.62E+00	P	1.01E+00	1.46E+00	1.91E+00
LB4110A - E1	Beta	11/2/2017	5/19/2020	1.00E+05	F	-2.35E+04	8.94E+02	2.53E+04
LB4110A - E2	Beta	11/2/2017	5/19/2020	1.00E+05	F	-2.35E+04	8.94E+02	2.53E+04
LB4110A - E3	Beta	11/2/2017	5/19/2020	1.00E+05	F	-2.35E+04	8.94E+02	2.53E+04
LB4110A - E4	Beta	11/2/2017	5/19/2020	1.00E+05	F	-2.35E+04	8.94E+02	2.53E+04
LB4110A - F1	Beta	11/2/2019	1/10/2022	1.67E-02	P	2.10E-01	1.28E+00	2.35E+00
LB4110A - F2	Beta	11/2/2019	1/10/2022	0.00E+00	P	-5.04E-01	1.19E+00	2.88E+00
LB4110A - F3	Beta	11/2/2019	1/10/2022	0.00E+00	P	-2.58E-01	1.18E+00	2.62E+00
LB4110A - F4	Beta	11/2/2019	1/10/2022	0.00E+00	P	-1.30E+00	1.60E+00	4.50E+00
LB4110A - G1	Beta	11/2/2019	7/21/2022	1.43E+00	P	7.56E-01	1.19E+00	1.63E+00
LB4110A - G2	Beta	11/2/2019	7/21/2022	1.90E+00	P	1.12E+00	1.58E+00	2.04E+00
LB4110A - G3	Beta	11/2/2019	7/21/2022	1.07E+00	P	7.69E-01	1.19E+00	1.61E+00
LB4110A - G4	Beta	11/2/2019	7/21/2022	1.08E+00	P	-1.32E-01	1.28E+00	2.70E+00

GPC Detector Report
(ALL Efficiencies)

KP
7/21/22

Detector	Alpha/Beta	Calibration Date	Count Date	Eff	PFW	LCL	Mean	UCL
LB4110A - A1	Alpha	11/2/2019	7/21/2022	0.2091	W	0.2056	0.2317	0.2578
LB4110A - A2	Alpha	11/2/2019	7/21/2022	0.1938	P	0.1792	0.2013	0.2234
LB4110A - A3	Alpha	11/2/2019	7/21/2022	0.1857	P	0.1748	0.1963	0.2178
LB4110A - A4	Alpha	11/2/2019	7/21/2022	0.2159	P	0.2008	0.2258	0.2507
LB4110A - B1	Alpha	11/2/2019	7/21/2022	0.2129	P	0.1873	0.2116	0.2358
LB4110A - B2	Alpha	11/2/2019	7/21/2022	0.1874	P	0.1705	0.1960	0.2214
LB4110A - B3	Alpha	11/2/2019	7/21/2022	0.2231	P	0.1994	0.2309	0.2623
LB4110A - B4	Alpha	11/2/2019	7/21/2022	0.2187	P	0.1966	0.2256	0.2546
LB4110A - C1	Alpha	11/2/2019	7/21/2022	0.1878	P	0.1728	0.1966	0.2203
LB4110A - C2	Alpha	11/2/2019	7/21/2022	0.1931	P	0.1741	0.1984	0.2228
LB4110A - C3	Alpha	11/2/2019	7/21/2022	0.2160	P	0.1919	0.2226	0.2533
LB4110A - C4	Alpha	11/2/2019	7/21/2022	0.2113	P	0.1786	0.2084	0.2381
LB4110A - D1	Alpha	11/2/2019	7/21/2022	0.1900	P	0.1737	0.1964	0.2192
LB4110A - D2	Alpha	11/2/2019	7/21/2022	0.2213	P	0.2061	0.2334	0.2606
LB4110A - D3	Alpha	11/2/2019	7/21/2022	0.2372	P	0.2134	0.2399	0.2663
LB4110A - D4	Alpha	11/2/2019	7/21/2022	0.1764	P	0.1620	0.1832	0.2045
LB4110A - E1	Alpha	11/2/2017	5/19/2020	0.2075	P	0.1686	0.2257	0.2828
LB4110A - E2	Alpha	11/2/2017	5/19/2020	0.1778	P	0.1514	0.2049	0.2583
LB4110A - E3	Alpha	11/2/2017	5/19/2020	0.2234	P	0.1549	0.2076	0.2604
LB4110A - E4	Alpha	11/2/2017	5/19/2020	0.2155	P	0.1746	0.2353	0.2961
LB4110A - F1	Alpha	11/2/2019	1/10/2022	0.0000	F	0.1419	0.2082	0.2746
LB4110A - F2	Alpha	11/2/2019	1/10/2022	0.0000	F	0.1190	0.1738	0.2286
LB4110A - F3	Alpha	11/2/2019	1/10/2022	0.0000	F	0.1494	0.2173	0.2853
LB4110A - F4	Alpha	11/2/2019	1/10/2022	0.0000	F	0.1457	0.2123	0.2788
LB4110A - G1	Alpha	11/2/2019	7/21/2022	0.1901	P	0.1767	0.1872	0.1977
LB4110A - G2	Alpha	11/2/2019	7/21/2022	0.1847	P	0.1731	0.1835	0.1939
LB4110A - G3	Alpha	11/2/2019	7/21/2022	0.2066	P	0.2017	0.2142	0.2267
LB4110A - G4	Alpha	11/2/2019	7/21/2022	0.1804	P	0.1654	0.1834	0.2014

KP 7/21/22
at of service

GPC Detector Report
(ALL Efficiencies)

Detector	Alpha/Beta	Calibration Date	Count Date	Eff	PFW	LCL	Mean	UCL
LB4110A - A1	Beta	11/2/2019	7/21/2022	0.5188	P	0.4974	0.5626	0.6279
LB4110A - A2	Beta	11/2/2019	7/21/2022	0.4499	P	0.3976	0.4439	0.4903
LB4110A - A3	Beta	11/2/2019	7/21/2022	0.4532	P	0.4261	0.4790	0.5319
LB4110A - A4	Beta	11/2/2019	7/21/2022	0.5199	P	0.4909	0.5541	0.6172
LB4110A - B1	Beta	11/2/2019	7/21/2022	0.4938	P	0.4375	0.4947	0.5520
LB4110A - B2	Beta	11/2/2019	7/21/2022	0.4339	P	0.3892	0.4799	0.5705
LB4110A - B3	Beta	11/2/2019	7/21/2022	0.5412	P	0.4889	0.5746	0.6603
LB4110A - B4	Beta	11/2/2019	7/21/2022	0.5287	P	0.4673	0.5527	0.6380
LB4110A - C1	Beta	11/2/2019	7/21/2022	0.4507	P	0.4156	0.4729	0.5302
LB4110A - C2	Beta	11/2/2019	7/21/2022	0.4526	P	0.4168	0.4751	0.5334
LB4110A - C3	Beta	11/2/2019	7/21/2022	0.5507	P	0.4894	0.5645	0.6395
LB4110A - C4	Beta	11/2/2019	7/21/2022	0.5087	P	0.4409	0.5098	0.5787
LB4110A - D1	Beta	11/2/2019	7/21/2022	0.5388	P	0.5075	0.5743	0.6411
LB4110A - D2	Beta	11/2/2019	7/21/2022	0.5669	P	0.5211	0.5897	0.6584
LB4110A - D3	Beta	11/2/2019	7/21/2022	0.5814	P	0.5348	0.6003	0.6658
LB4110A - D4	Beta	11/2/2019	7/21/2022	0.4654	P	0.4291	0.4812	0.5332
LB4110A - E1	Beta	11/2/2017	5/19/2020	0.5360	P	0.4167	0.5408	0.6649
LB4110A - E2	Beta	11/2/2017	5/19/2020	0.4520	P	0.3728	0.4910	0.6092
LB4110A - E3	Beta	11/2/2017	5/19/2020	0.5775	P	0.3848	0.5001	0.6154
LB4110A - E4	Beta	11/2/2017	5/19/2020	0.5466	P	0.4532	0.5887	0.7241
LB4110A - F1	Beta	11/2/2019	1/10/2022	0.0044	F	0.3744	0.5247	0.6751
LB4110A - F2	Beta	11/2/2019	1/10/2022	0.0009	F	0.3099	0.4365	0.5632
LB4110A - F3	Beta	11/2/2019	1/10/2022	0.0002	F	0.4027	0.5661	0.7294
LB4110A - F4	Beta	11/2/2019	1/10/2022	0.0003	F	0.3883	0.5461	0.7040
LB4110A - G1	Beta	11/2/2019	7/21/2022	0.4386	P	0.4199	0.4439	0.4679
LB4110A - G2	Beta	11/2/2019	7/21/2022	0.4366	P	0.4080	0.4340	0.4601
LB4110A - G3	Beta	11/2/2019	7/21/2022	0.5029	P	0.4882	0.5164	0.5446
LB4110A - G4	Beta	11/2/2019	7/21/2022	0.4437	P	0.3988	0.4396	0.4803

LP
7/21/22

out of service
LP
7/21/22

SECTION X
BARIUM-133 ANALYTICAL TRACER DATA

0101

CB
7/19/22

 Analysis Report for 2207019-01
 SPIKE

GAMMA SPECTRUM ANALYSIS

Sample Identification	: 2207019-01
Sample Description	: SPIKE
Sample Type	: RA RECOVERY
Sample Size	: 1.000E+00 units
Facility	: Countroom
Sample Taken On	: 7/19/2022 9:45:51AM
Acquisition Started	: 7/19/2022 2:20:23PM
Procedure	: BAFIL
Operator	: Administrator
Detector Name	: GE5
Geometry	: BAFIL
Live Time	: 900.0 seconds
Real Time	: 1080.2 seconds
Dead Time	: 16.69 %
Peak Locate Threshold	: 2.50
Peak Locate Range (in channels)	: 1 - 4096
Peak Area Range (in channels)	: 2 - 4096
Identification Energy Tolerance	: 2.500 keV
Energy Calibration Used Done On	: 11/20/2021
Efficiency Calibration Used Done On	: 12/13/2021
Efficiency Calibration Description	:
Sample Number	: 126702

PEAK ANALYSIS REPORT

Peak Analysis Performed on	: 7/19/2022 2:38:26PM
Peak Analysis From Channel	: 1
Peak Analysis To Channel	: 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
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Analysis Report for 2207019-01

SPIKE

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	20.71	189 -	210	200.44	1.49E+02	44.31	1.47E+02	0.41
	2	30.65	284 -	316	300.58	3.19E+03	121.43	1.54E+02	0.77
	3	34.89	328 -	358	343.35	8.17E+02	70.14	1.32E+02	0.76
	4	37.23	360 -	373	366.86	1.37E+01	13.38	1.87E+01	0.21
M	5	50.81	490 -	532	503.75	3.37E+01	25.12	3.65E+01	0.83
m	6	52.62	490 -	532	522.00	6.55E+01	27.60	4.06E+01	0.76
	7	61.42	596 -	625	610.71	3.71E+02	57.27	1.48E+02	0.87
	8	65.76	641 -	669	654.38	1.56E+02	55.46	1.99E+02	0.69
M	9	79.29	777 -	818	790.79	7.85E+01	58.97	7.00E+01	0.98
m	10	80.62	777 -	818	804.23	1.24E+03	73.26	5.75E+01	0.75
	11	111.31	1095 -	1126	1113.50	3.26E+02	51.65	1.39E+02	0.81
	12	115.35	1146 -	1164	1154.30	3.45E+01	30.16	1.15E+02	0.69
	13	119.47	1182 -	1208	1195.80	1.41E+01	17.04	2.58E+01	0.10
	14	130.77	1302 -	1318	1309.65	1.33E+01	14.57	2.55E+01	1.07
	15	133.40	1324 -	1347	1336.16	2.36E+01	20.59	3.88E+01	0.98
	16	160.05	1589 -	1621	1604.83	4.08E+01	33.06	9.04E+01	0.85
M	17	274.79	2752 -	2778	2761.48	4.89E+01	16.06	2.87E+00	0.99
m	18	275.53	2752 -	2778	2769.00	5.73E+01	18.87	9.35E+00	1.04
M	19	301.32	3016 -	3043	3029.00	8.93E+01	26.63	1.11E+01	1.07
m	20	301.72	3016 -	3043	3032.95	9.99E+01	26.12	1.34E+01	1.06
	21	305.90	3064 -	3083	3075.18	3.00E+01	12.96	8.00E+00	0.78
M	22	332.17	3327 -	3353	3340.00	6.48E+01	21.17	2.19E+01	1.09
m	23	332.77	3327 -	3353	3346.00	2.67E+01	18.71	1.10E+01	1.09
	24	336.77	3370 -	3395	3386.36	2.80E+01	10.58	0.00E+00	0.75
M	25	354.09	3550 -	3585	3561.00	1.19E+01	44.76	2.05E+00	1.11
m	26	354.78	3550 -	3585	3568.00	7.48E+02	49.54	7.07E+00	1.11
	27	382.46	3832 -	3859	3847.09	1.11E+02	27.98	4.38E+01	0.96
	28	385.33	3862 -	3889	3876.00	1.84E+02	35.27	6.63E+01	1.15
	29	389.49	3902 -	3927	3917.91	1.94E+01	21.85	5.12E+01	1.24

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 7/19/2022 2:38:26PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000126625.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
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0103

Analysis Report for 2207019-01

SPIKE

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	20.71	1.49E+02	44.31	1.99E+01	9.25E-01	1.29E+02	4.43E+01
	2	30.65	3.19E+03	121.43	5.33E+00	8.70E-01	3.18E+03	1.21E+02
	3	34.89	8.17E+02	70.14	9.23E-01	5.15E-01	8.16E+02	7.01E+01
	4	37.23	1.37E+01	13.38	1.04E+00	5.32E-01	1.26E+01	1.34E+01
M	5	50.81	3.37E+01	25.12	1.49E-01	3.82E-01	3.36E+01	2.51E+01
m	6	52.62	6.55E+01	27.60	1.49E-01	3.82E-01	6.54E+01	2.76E+01
	7	61.42	3.71E+02	57.27	7.83E+00	8.09E-01	3.63E+02	5.73E+01
	8	65.76	1.56E+02	55.46	1.71E-01	7.09E-01	1.56E+02	5.55E+01
M	9	79.29	7.85E+01	58.97	0.00E+00	0.00E+00	7.85E+01	5.90E+01
m	10	80.62	1.24E+03	73.26	0.00E+00	0.00E+00	1.24E+03	7.33E+01
	11	111.31	3.26E+02	51.65	8.81E-01	5.68E-01	3.25E+02	5.17E+01
	12	115.35	3.45E+01	30.16			3.45E+01	3.02E+01
	13	119.47	1.41E+01	17.04	3.03E-01	4.57E-01	1.38E+01	1.70E+01
	14	130.77	1.33E+01	14.57			1.33E+01	1.46E+01
	15	133.40	2.36E+01	20.59			2.36E+01	2.06E+01
	16	160.05	4.08E+01	33.06			4.08E+01	3.31E+01
M	17	274.79	4.89E+01	16.06	2.30E-01	3.48E-01	4.87E+01	1.61E+01
m	18	275.53	5.73E+01	18.87	2.30E-01	3.48E-01	5.70E+01	1.89E+01
M	19	301.32	8.93E+01	26.63	1.45E-01	3.10E-01	8.92E+01	2.66E+01
m	20	301.72	9.99E+01	26.12	1.45E-01	3.10E-01	9.98E+01	2.61E+01
	21	305.90	3.00E+01	12.96			3.00E+01	1.30E+01
M	22	332.17	6.48E+01	21.17			6.48E+01	2.12E+01
m	23	332.77	2.67E+01	18.71			2.67E+01	1.87E+01
	24	336.77	2.80E+01	10.58			2.80E+01	1.06E+01
M	25	354.09	1.19E+01	44.76			1.19E+01	4.48E+01
m	26	354.78	7.48E+02	49.54			7.48E+02	4.95E+01
	27	382.46	1.11E+02	27.98			1.11E+02	2.80E+01
	28	385.33	1.84E+02	35.27			1.84E+02	3.53E+01
	29	389.49	1.94E+01	21.85			1.94E+01	2.19E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/units)	Activity Uncertainty
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0104

Analysis Report for 2207019-01
SPIKE

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/units)	Activity Uncertainty
SN-113	0.84	255.12	1.93		
		391.69 *	61.90	1.60E+01	1.81E+01
I-129	0.96	29.78 *	57.00	4.36E+01	1.67E+00
		33.60 *	13.20	7.84E+01	6.74E+00
		39.58 *	7.52	2.68E+00	2.84E+00
BA-133	0.97	81.00 *	34.06	5.19E+02	3.65E+01
		302.84 *	18.33	3.03E+02	8.08E+01
		356.01 *	62.05	6.44E+02	5.05E+01
CE-144	0.99	133.54 *	10.80	7.48E+01	6.55E+01
TH-234	0.91	63.29 *	3.80	7.10E+02	1.13E+02
NP-237	0.73	29.37 *	14.00	1.78E+02	6.79E+00
		86.50	12.60		
AM-241	0.91	59.54 *	35.90	7.52E+01	1.19E+01

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 2.500 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/units)	Wt mean Activity Uncertainty	Comments
SN-113	0.840	1.60E+01	1.81E+01	
I-129	0.965	1.41E+01	2.62E+00	
BA-133	0.973	5.31E+02	2.78E+01	
CE-144	0.999	7.48E+01	6.55E+01	
? TH-234	0.915	7.10E+02	1.13E+02	
NP-237	0.734	1.20E+02	1.26E+01	
? AM-241	0.913	7.52E+01	1.19E+01	

? = nuclide is part of an undetermined solution

X = nuclide rejected by the interference analysis

@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

0105

Analysis Report for 2207019-01
SPIKE

UNIDENTIFIED PEAKS

Peak Locate Performed on : 7/19/2022 2:38:26PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	20.71	1.43013E-01	17.22	Tol.	MO-93 PA-234M
M 5	50.81	3.72953E-02	37.43		
m 6	52.62	7.26441E-02	21.11		
8	65.76	1.72847E-01	17.83	Sum	
M 9	79.29	8.72767E-02	37.54	Tol.	BA-133
11	111.31	3.60814E-01	7.95	Sum	
12	115.35	3.83092E-02	43.73	Sum	
13	119.47	1.53117E-02	61.84	Sum	
14	130.77	1.47222E-02	54.99		
16	160.05	4.53165E-02	40.52	Sum	
M 17	274.79	5.41030E-02	16.49		
m 18	275.53	6.33837E-02	16.54		
M 19	301.32	9.90846E-02	14.93	Tol.	BA-133
21	305.90	3.33333E-02	21.60		
M 22	332.17	7.19964E-02	16.33	Sum	
m 23	332.77	2.96940E-02	35.01	Sum	
24	336.77	3.11111E-02	18.90	Sum	
M 25	354.09	1.31877E-02	188.55	Tol.	BA-133
27	382.46	1.23437E-01	12.59	Sum	
28	385.33	2.04251E-01	9.59	Sum	

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

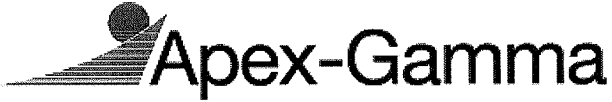
0106

Analysis Report for 2207019-01
SPIKE

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/units)	Nuclide MDA (pCi/units)	Activity (pCi/units)	Dec. Level (pCi/units)
CA-41	3.00	77.00	6.31E-07	6.31E-07	-7.95E-07	2.98E-07
	3.31	12.30	7.99E-06		-2.97E-06	3.76E-06
FE-55	5.89	24.50	1.82E-04	1.82E-04	-6.19E-05	8.35E-05
CO-57	122.06	85.51	1.10E+01	1.10E+01	8.45E-01	5.01E+00
	136.48	10.60	1.06E+02		5.42E+01	4.83E+01
NI-59	6.92	29.80	4.47E-04	4.47E-04	4.55E-05	2.06E-04
MO-93	16.59	52.90	3.21E-02	3.21E-02	-1.21E-02	1.47E-02
	18.60	10.00	3.33E-01		-2.15E-01	1.54E-01
NB-93M	16.57	9.43	1.79E-01	1.79E-01	-6.77E-02	8.19E-02
CD-109	88.03	3.72	1.55E+02	1.55E+02	-2.01E+01	7.13E+01
+ SN-113	255.12	1.93	6.28E+02	2.94E+01	-8.91E+01	2.75E+02
	391.69	* 61.90	2.94E+01		1.60E+01	1.36E+01
SN-119M	23.87	16.10	6.78E-01	6.04E-01	5.98E-02	3.15E-01
	25.10	22.70	6.04E-01		3.49E-01	2.81E-01
+ I-129	29.78	* 57.00	1.05E+00	1.05E+00	4.36E+01	5.08E-01
	33.60	* 13.20	6.69E+00		7.84E+01	3.21E+00
	39.58	* 7.52	4.54E+00		2.68E+00	1.98E+00
+ BA-133	81.00	* 34.06	2.52E+01	1.38E+01	5.19E+02	1.20E+01
	302.84	* 18.33	6.32E+01		3.03E+02	2.75E+01
	356.01	* 62.05	1.38E+01		6.44E+02	5.75E+00
CE-139	165.85	80.35	1.70E+01	1.70E+01	6.64E+00	7.79E+00
+ CE-144	133.54	* 10.80	1.03E+02	1.03E+02	7.48E+01	4.73E+01
HG-203	279.19	77.30	1.26E+01	1.26E+01	-8.23E+00	5.33E+00
PB-210	46.50	4.25	2.07E+01	2.07E+01	-4.54E+00	9.31E+00
TH-231	25.64	14.70	1.02E+00	1.02E+00	-3.50E-01	4.74E-01
	84.21	6.40	8.05E+01		-1.94E+01	3.69E+01
PA-234M	9.89	89.00	1.35E-03	1.35E-03	-6.69E-04	6.22E-04
	21.72	64.90	1.74E-01		-3.35E-02	8.28E-02
	37.93	23.75	2.11E+00		-4.86E-01	9.59E-01
+ TH-234	63.29	* 3.80	1.43E+02	1.43E+02	7.10E+02	6.88E+01
+ NP-237	29.37	* 14.00	4.28E+00	4.28E+00	1.78E+02	2.07E+00
	86.50	12.60	4.85E+01		3.16E+01	2.25E+01
U-237	97.08	16.30	4.03E+01	3.51E+01	1.54E+01	1.84E+01
	101.07	26.30	3.51E+01		3.13E+01	1.64E+01
	114.00	12.30	9.43E+01		-9.92E+01	4.41E+01
	208.01	22.00	7.39E+01		-7.04E+00	3.37E+01
+ AM-241	59.54	* 35.90	1.51E+01	1.51E+01	7.52E+01	7.28E+00
AM-243	74.67	66.00	5.72E+00	5.72E+00	-2.19E-01	2.62E+00

+ = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

0107



VB
7/19/22

Analysis Report for 2207019-02
BLANK

GAMMA SPECTRUM ANALYSIS

Sample Identification : 2207019-02
 Sample Description : BLANK
 Sample Type : RA RECOVERY

Sample Size : 1.000E+00 units
 Facility : Countroom

Sample Taken On : 7/19/2022 9:45:57AM
 Acquisition Started : 7/19/2022 2:18:32PM

Procedure : BAFIL
 Operator : Administrator
 Detector Name : GE1
 Geometry : BAFIL
 Live Time : 900.0 seconds
 Real Time : 900.3 seconds

Dead Time : 0.03 %

Peak Locate Threshold : 2.50
 Peak Locate Range (in channels) : 1 - 4096
 Peak Area Range (in channels) : 32 - 4096
 Identification Energy Tolerance : 2.500 keV

Energy Calibration Used Done On : 7/1/2022
 Efficiency Calibration Used Done On : 12/14/2021
 Efficiency Calibration Description :

Sample Number : 126700

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 7/19/2022 2:33:36PM
 Peak Analysis From Channel : 1
 Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
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Analysis Report for 2207019-02

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	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
	1	54.05	49 -	56	52.59	9.45E+01	41.28	2.23E+02	3.41
	2	63.89	57 -	70	62.44	4.52E+02	83.31	5.83E+02	3.25
	3	82.23	76 -	86	80.80	1.10E+03	85.31	3.75E+02	3.06
	4	102.87	99 -	105	101.45	2.65E+01	31.23	1.59E+02	2.29
	5	113.58	106 -	119	112.17	3.24E+02	66.22	3.44E+02	2.68
	6	162.73	157 -	165	161.35	4.16E+01	38.72	2.01E+02	3.02
M	7	268.96	264 -	280	267.62	1.89E+01	19.38	6.42E+01	4.21
m	8	277.53	264 -	280	276.20	7.48E+01	28.69	6.67E+01	3.23
	9	286.95	282 -	290	285.62	1.85E+01	19.97	5.11E+01	4.57
	10	304.08	298 -	310	302.76	1.59E+02	41.82	1.35E+02	2.82
M	11	334.60	327 -	341	333.29	8.11E+01	33.14	1.12E+02	3.21
m	12	340.01	327 -	341	338.71	2.23E+01	20.15	6.13E+01	3.22
M	13	357.07	350 -	366	355.77	6.14E+02	53.13	5.81E+01	2.98
m	14	365.00	350 -	366	363.71	2.01E+01	15.65	4.19E+01	3.23
	15	387.57	379 -	395	386.28	4.19E+02	48.76	6.28E+01	4.93
M	16	415.57	410 -	424	414.30	5.30E+01	19.80	3.20E+01	3.26
m	17	420.98	410 -	424	419.70	3.12E+01	22.36	4.00E+01	3.27
	18	437.57	430 -	441	436.30	1.09E+02	26.83	3.45E+01	2.87
	19	1033.10	1027 -	1035	1031.89	9.00E+00	6.00	0.00E+00	1.33

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 7/19/2022 2:33:36PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000126621.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	1	54.05	9.45E+01	41.28			9.45E+01	4.13E+01
	2	63.89	4.52E+02	83.31	2.33E+01	2.79E+00	4.28E+02	8.34E+01
	3	82.23	1.10E+03	85.31			1.10E+03	8.53E+01
	4	102.87	2.65E+01	31.23			2.65E+01	3.12E+01
	5	113.58	3.24E+02	66.22	2.17E+00	2.38E+00	3.22E+02	6.63E+01
	6	162.73	4.16E+01	38.72			4.16E+01	3.87E+01
M	7	268.96	1.89E+01	19.38			1.89E+01	1.94E+01
m	8	277.53	7.48E+01	28.69			7.48E+01	2.87E+01
	9	286.95	1.85E+01	19.97			1.85E+01	2.00E+01
	10	304.08	1.59E+02	41.82			1.59E+02	4.18E+01

0109

Analysis Report for 2207019-02

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	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	11	334.60	8.11E+01	33.14			8.11E+01	3.31E+01
m	12	340.01	2.23E+01	20.15			2.23E+01	2.01E+01
M	13	357.07	6.14E+02	53.13			6.14E+02	5.31E+01
m	14	365.00	2.01E+01	15.65			2.01E+01	1.57E+01
	15	387.57	4.19E+02	48.76			4.19E+02	4.88E+01
M	16	415.57	5.30E+01	19.80			5.30E+01	1.98E+01
m	17	420.98	3.12E+01	22.36			3.12E+01	2.24E+01
	18	437.57	1.09E+02	26.83			1.09E+02	2.68E+01
	19	1033.10	9.00E+00	6.00			9.00E+00	6.00E+00

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/units)	Activity Uncertainty
BA-133	0.96	81.00 *	34.06	5.76E+02	5.05E+01
		302.84 *	18.33	4.40E+02	1.18E+02
		356.01 *	62.05	4.82E+02	4.61E+01
HG-203	0.93	279.19 *	77.30	4.98E+01	1.93E+01
		TH-231	0.97	25.64	14.70
TH-231	0.97	84.21 *	6.40	3.07E+03	2.69E+02
		TH-234	0.99	63.29 *	3.80

* = Energy line found in the spectrum.

- = Manually added nuclide.

? = Manually edited nuclide.

@ = Energy line not used for Weighted Mean Activity

Energy Tolerance : 2.500 keV

Nuclide confidence index threshold = 0.30

Errors quoted at 2.000sigma

0110

Analysis Report for 2207019-02
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INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/units)	Wt mean Activity Uncertainty	Comments
BA-133	0.967	4.76E+02	4.29E+01	
HG-203	0.932	4.98E+01	1.93E+01	
TH-231	0.970	5.32E+02	3.53E+02	
TH-234	0.991	1.22E+03	2.40E+02	

- ? = nuclide is part of an undetermined solution
 X = nuclide rejected by the interference analysis
 @ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

0111

Analysis Report for 2207019-02

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UNIDENTIFIED PEAKS

Peak Locate Performed on : 7/19/2022 2:33:36PM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
1	54.05	1.05040E-01	21.83		
4	102.87	2.94602E-02	58.89	Tol.	U-237
5	113.58	3.57758E-01	10.29	Tol.	U-237
6	162.73	4.62207E-02	46.54	Sum	
M 7	268.96	2.10180E-02	51.24		
9	286.95	2.05177E-02	54.07		
M 11	334.60	9.00668E-02	20.44		
m 12	340.01	2.48270E-02	45.09	Sum	
m 14	365.00	2.23095E-02	38.98		
15	387.57	4.65131E-01	5.82	Sum	
M 16	415.57	5.88451E-02	18.69		
m 17	420.98	3.46527E-02	35.85	Sum	
18	437.57	1.20847E-01	12.34	Sum	
19	1033.10	1.00000E-02	33.33		

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/units)	Nuclide MDA (pCi/units)	Activity (pCi/units)	Dec. Level (pCi/units)
CA-41	3.00	77.00	5.44E-07	5.44E-07	0.00E+00	0.00E+00
	3.31	12.30	6.51E-06		0.00E+00	0.00E+00

0112

Analysis Report for 2207019-02

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Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/units)	Nuclide MDA (pCi/units)	Activity (pCi/units)	Dec. Level (pCi/units)
FE-55	5.89	24.50	1.09E-04	1.09E-04	0.00E+00	0.00E+00
CO-57	122.06	85.51	2.03E+01	2.03E+01	-3.87E+00	9.67E+00
	136.48	10.60	1.89E+02		3.54E+01	9.00E+01
NI-59	6.92	29.80	2.19E-04	2.19E-04	0.00E+00	0.00E+00
MO-93	16.59	52.90	8.08E-03	8.08E-03	0.00E+00	0.00E+00
	18.60	10.00	6.79E-02		0.00E+00	0.00E+00
NB-93M	16.57	9.43	4.51E-02	4.51E-02	0.00E+00	0.00E+00
CD-109	88.03	3.72	4.05E+02	4.05E+02	-2.06E+02	1.95E+02
SN-113	255.12	1.93	9.80E+02	5.90E+01	-4.07E+02	4.54E+02
	391.69	61.90	5.90E+01		1.17E+02	2.85E+01
SN-119M	23.87	16.10	1.08E-01	9.19E-02	0.00E+00	0.00E+00
	25.10	22.70	9.19E-02		0.00E+00	0.00E+00
I-129	29.78	57.00	2.24E-01	2.24E-01	-4.93E+00	7.95E-02
	33.60	13.20	2.04E+01		9.25E+01	9.99E+00
	39.58	7.52	6.16E+01		2.72E+02	3.02E+01
+ BA-133	81.00	* 34.06	4.74E+01	4.40E+01	5.76E+02	2.30E+01
	302.84	* 18.33	1.60E+02		4.40E+02	7.63E+01
	356.01	* 62.05	4.40E+01		4.82E+02	2.09E+01
CE-139	165.85	80.35	3.02E+01	3.02E+01	-4.52E+00	1.44E+01
CE-144	133.54	10.80	1.75E+02	1.75E+02	-4.00E+01	8.29E+01
+ HG-203	279.19	* 77.30	4.00E+01	4.00E+01	4.98E+01	1.91E+01
PB-210	46.50	4.25	7.22E+01	7.22E+01	-1.36E+02	3.45E+01
+ TH-231	25.64	14.70	1.53E-01	1.53E-01	0.00E+00	0.00E+00
	84.21	* 6.40	2.52E+02		3.07E+03	1.22E+02
PA-234M	9.89	89.00	4.64E-04	4.64E-04	0.00E+00	0.00E+00
	21.72	64.90	1.90E-02		0.00E+00	0.00E+00
	37.93	23.75	1.86E+01		1.13E+02	9.13E+00
+ TH-234	63.29	* 3.80	3.48E+02	3.48E+02	1.22E+03	1.70E+02
NP-237	29.37	14.00	8.73E-01	8.73E-01	-1.92E+01	3.09E-01
	86.50	12.60	2.06E+02		-3.91E+01	1.01E+02
U-237	97.08	16.30	9.15E+01	5.37E+01	3.58E+01	4.37E+01
	101.07	26.30	5.37E+01		-1.70E+01	2.56E+01
	114.00	12.30	2.40E+02		7.34E+02	1.17E+02
	208.01	22.00	1.21E+02		6.26E+01	5.75E+01
AM-241	59.54	35.90	2.64E+01	2.64E+01	1.43E+01	1.29E+01
AM-243	74.67	66.00	1.56E+01	1.56E+01	-9.72E+00	7.48E+00

- + = Nuclide identified during the nuclide identification
* = Energy line found in the spectrum
> = MDA value not calculated
@ = Half-life too short to be able to perform the decay correction

0113

*LAB
7/19/22*

Analysis Report for 2207019-03
LT-8 14-24 70754

GAMMA SPECTRUM ANALYSIS

Sample Identification : 2207019-03
 Sample Description : LT-8 14-24 70754
 Sample Type : RA RECOVERY

Sample Size : 1.000E+00 units
 Facility : Countroom

Sample Taken On : 7/19/2022 9:46:23AM
 Acquisition Started : 7/19/2022 2:18:44PM

Procedure : BAFIL
 Operator : Administrator
 Detector Name : GE2
 Geometry : BAFIL
 Live Time : 900.0 seconds
 Real Time : 906.3 seconds

Dead Time : 0.70 %

Peak Locate Threshold : 2.50
 Peak Locate Range (in channels) : 1 - 4096
 Peak Area Range (in channels) : 17 - 4096
 Identification Energy Tolerance : 2.500 keV

Energy Calibration Used Done On : 7/8/2022
 Efficiency Calibration Used Done On : 12/13/2021
 Efficiency Calibration Description :

Sample Number : 126701

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 7/19/2022 2:33:53PM
 Peak Analysis From Channel : 1
 Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
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Analysis Report for 2207019-03

LT-8 14-24 70754

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	1	31.48	27 -	40	32.07	4.23E+03	183.20	1.42E+03	3.32
	2	62.70	60 -	67	63.30	1.11E+02	104.29	1.74E+03	1.80
	3	82.17	77 -	89	82.78	9.22E+02	121.70	1.29E+03	2.40
	4	113.22	109 -	119	113.83	2.96E+02	90.40	9.37E+02	2.83
	5	152.86	150 -	156	153.48	5.04E+01	59.19	5.97E+02	3.72
	6	214.85	211 -	220	215.47	7.86E+01	70.35	6.55E+02	2.98
	7	241.84	239 -	247	242.46	5.74E+01	60.94	5.37E+02	3.85
	8	277.41	272 -	283	278.03	8.93E+01	70.74	5.77E+02	2.07
M	9	304.19	300 -	317	304.81	2.01E+02	54.08	3.00E+02	3.04
m	10	313.41	300 -	317	314.03	3.21E+01	46.82	2.76E+02	3.05
	11	333.72	329 -	339	334.34	6.16E+01	66.48	5.59E+02	1.46
	12	356.50	351 -	363	357.12	6.10E+02	81.17	4.89E+02	2.40
M	13	384.58	382 -	396	385.20	1.25E+02	42.86	2.55E+02	2.63
m	14	387.84	382 -	396	388.45	1.66E+02	55.57	3.19E+02	2.61
	15	415.99	412 -	421	416.60	6.31E+01	55.28	4.02E+02	4.30
M	16	437.60	434 -	448	438.21	1.07E+02	44.36	2.51E+02	2.66
m	17	443.86	434 -	448	444.46	4.77E+01	41.38	2.44E+02	2.67
	18	468.88	463 -	474	469.48	8.43E+01	56.99	3.57E+02	3.27
	19	937.14	927 -	948	937.56	5.20E+01	47.01	1.54E+02	13.07
M	20	1355.59	1351 -	1380	1355.69	2.26E+01	19.04	3.16E+01	4.92
m	21	1365.96	1351 -	1380	1366.05	2.08E+01	29.77	7.51E+01	4.92
	22	1492.71	1490 -	1495	1492.67	1.35E+01	15.65	3.69E+01	2.83
	23	1964.38	1959 -	1967	1963.74	2.91E+01	25.31	7.98E+01	2.02
	24	2147.66	2142 -	2150	2146.74	9.93E+00	9.82	8.14E+00	4.40

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 7/19/2022 2:33:53PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000126622.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	1	31.48	4.23E+03	183.20	8.38E+02	8.56E+00	3.39E+03	1.83E+02
	2	62.70	1.11E+02	104.29	4.93E-01	7.51E-01	1.10E+02	1.04E+02
	3	82.17	9.22E+02	121.70			9.22E+02	1.22E+02
	4	113.22	2.96E+02	90.40			2.96E+02	9.04E+01
	5	152.86	5.04E+01	59.19			5.04E+01	5.92E+01

0115

Analysis Report for 2207019-03

LT-8 14-24 70754

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	6	214.85	7.86E+01	70.35		7.86E+01	7.03E+01
	7	241.84	5.74E+01	60.94	5.50E+00	5.19E+01	6.10E+01
	8	277.41	8.93E+01	70.74	1.93E+00	8.93E+01	7.07E+01
M	9	304.19	2.01E+02	54.08		2.01E+02	5.41E+01
m	10	313.41	3.21E+01	46.82		3.21E+01	4.68E+01
	11	333.72	6.16E+01	66.48		6.16E+01	6.65E+01
	12	356.50	6.10E+02	81.17		6.10E+02	8.12E+01
M	13	384.58	1.25E+02	42.86		1.25E+02	4.29E+01
m	14	387.84	1.66E+02	55.57		1.66E+02	5.56E+01
	15	415.99	6.31E+01	55.28		6.31E+01	5.53E+01
M	16	437.60	1.07E+02	44.36		1.07E+02	4.44E+01
m	17	443.86	4.77E+01	41.38		4.77E+01	4.14E+01
	18	468.88	8.43E+01	56.99		8.43E+01	5.70E+01
	19	937.14	5.20E+01	47.01		5.20E+01	4.70E+01
M	20	1355.59	2.26E+01	19.04		2.26E+01	1.90E+01
m	21	1365.96	2.08E+01	29.77		2.08E+01	2.98E+01
	22	1492.71	1.35E+01	15.65		1.35E+01	1.57E+01
	23	1964.38	2.91E+01	25.31		2.91E+01	2.53E+01
	24	2147.66	9.93E+00	9.82		9.93E+00	9.82E+00

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/units)	Activity Uncertainty
I-129	0.58	29.78 *	57.00	1.41E+02	7.68E+00
		33.60	13.20		
		39.58	7.52		
BA-133	0.97	81.00 *	34.06	4.84E+02	6.71E+01
		302.84 *	18.33	5.18E+02	1.42E+02
		356.01 *	62.05	4.56E+02	6.34E+01
HG-203	0.92	279.19 *	77.30	5.48E+01	4.35E+01
TH-234	0.99	63.29 *	3.80	3.29E+02	3.11E+02
NP-237	0.58	29.37 *	14.00	5.75E+02	3.12E+01
		86.50	12.60		

0116

Analysis Report for 2207019-03
LT-8 14-24 70754

* = Energy line found in the spectrum.
- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 2.500 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/units)	Wt mean Activity Uncertainty	Comments
?	I-129	0.589	1.41E+02	7.68E+00	
	BA-133	0.979	4.74E+02	4.38E+01	
	HG-203	0.922	5.48E+01	4.35E+01	
	TH-234	0.991	3.29E+02	3.11E+02	
?	NP-237	0.585	5.75E+02	3.12E+01	

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

0117

Analysis Report for 2207019-03
 LT-8 14-24 70754

UNIDENTIFIED PEAKS

Peak Locate Performed on : 7/19/2022 2:33:53PM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

<i>Peak No.</i>	<i>Energy (keV)</i>	<i>Peak Size (CPS)</i>	<i>Peak CPS (%) Uncertainty</i>	<i>Peak Type</i>	<i>Tolerance Nuclide</i>
4	113.22	3.29434E-01	15.25	Sum	
5	152.86	5.59519E-02	58.77		
6	214.85	8.73317E-02	44.75		
7	241.84	5.76798E-02	58.73		
m 10	313.41	3.56915E-02	72.88		
11	333.72	6.84816E-02	53.93	Sum	
M 13	384.58	1.38707E-01	17.17	Sum	
m 14	387.84	1.84383E-01	16.74	Sum	
15	415.99	7.00673E-02	43.83		
M 16	437.60	1.18376E-01	20.82	Sum	
m 17	443.86	5.29704E-02	43.40		
18	468.88	9.37009E-02	33.79		
19	937.14	5.77778E-02	45.20		
M 20	1355.59	2.50909E-02	42.16		
m 21	1365.96	2.30649E-02	71.72		
22	1492.71	1.50347E-02	57.84		
23	1964.38	3.23269E-02	43.49		
24	2147.66	1.10317E-02	49.47		

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

0118

Analysis Report for 2207019-03
LT-8 14-24 70754

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/units)	Nuclide MDA (pCi/units)	Activity (pCi/units)	Dec. Level (pCi/units)
CA-41	3.00	77.00	5.55E-06	5.55E-06	0.00E+00	0.00E+00
	3.31	12.30	5.93E-05		0.00E+00	0.00E+00
FE-55	5.89	24.50	5.43E-04	5.43E-04	0.00E+00	0.00E+00
CO-57	122.06	85.51	3.02E+01	3.02E+01	1.08E+01	1.46E+01
	136.48	10.60	2.63E+02		-1.75E+02	1.27E+02
NI-59	6.92	29.80	9.37E-04	9.37E-04	0.00E+00	0.00E+00
MO-93	16.59	52.90	4.64E-02	4.64E-02	-5.04E-02	1.47E-02
	18.60	10.00	7.37E-01		-9.81E-02	3.02E-01
NB-93M	16.57	9.43	2.59E-01	2.59E-01	-2.82E-01	8.19E-02
CD-109	88.03	3.72	4.96E+02	4.96E+02	-2.02E+02	2.41E+02
SN-113	255.12	1.93	1.67E+03	5.59E+01	1.32E+02	8.03E+02
	391.69	61.90	5.59E+01		-3.56E+00	2.70E+01
SN-119M	23.87	16.10	1.39E+00	1.39E+00	-3.35E+00	6.05E-01
	25.10	22.70	1.82E+00		-1.78E+00	8.33E-01
+ I-129	29.78	*	57.00	1.09E+01	1.41E+02	5.41E+00
	33.60		13.20		4.66E+02	3.33E+01
	39.58		7.52		2.00E+01	5.33E+01
+ BA-133	81.00	*	34.06	8.11E+01	4.84E+02	4.56E+01
	302.84	*	18.33		5.18E+02	1.63E+02
	356.01	*	62.05		4.56E+02	3.96E+01
CE-139	165.85		80.35	4.28E+01	4.61E+00	2.08E+01
CE-144	133.54		10.80	2.59E+02	-1.84E+01	1.25E+02
+ HG-203	279.19	*	77.30	7.05E+01	5.48E+01	3.44E+01
PB-210	46.50		4.25	2.18E+02	3.00E+01	1.07E+02
TH-231	25.64		14.70	2.98E+00	-2.93E+00	1.37E+00
	84.21		6.40	4.56E+02	1.93E+03	2.24E+02
PA-234M	9.89		89.00	1.45E-03	0.00E+00	0.00E+00
	21.72		64.90		1.04E-01	1.16E-01
	37.93		23.75		2.30E+00	1.67E+01
+ TH-234	63.29	*	3.80	5.09E+02	3.29E+02	2.50E+02
+ NP-237	29.37	*	14.00	4.45E+01	5.75E+02	2.20E+01
	86.50		12.60		-5.77E+02	8.31E+01
U-237	97.08		16.30	1.30E+02	-1.91E+01	6.32E+01
	101.07		26.30	8.21E+01	-3.15E+01	3.98E+01
	114.00		12.30		5.71E+02	1.29E+02
	208.01		22.00		2.76E+01	8.24E+01
AM-241	59.54		35.90	3.92E+01	1.31E+00	1.92E+01
AM-243	74.67		66.00	2.36E+01	8.02E-01	1.15E+01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction

*ICB
7/19/22*

Analysis Report for 2207019-04
LT-8 14-24 70754

GAMMA SPECTRUM ANALYSIS

Sample Identification : 2207019-04
 Sample Description : LT-8 14-24 70754
 Sample Type : RA RECOVERY

Sample Size : 1.000E+00 units
 Facility : Countroom

Sample Taken On : 7/19/2022 9:46:31AM
 Acquisition Started : 7/19/2022 2:34:18PM

Procedure : BAFIL
 Operator : Administrator
 Detector Name : GE1
 Geometry : BAFIL
 Live Time : 900.0 seconds
 Real Time : 900.2 seconds

Dead Time : 0.03 %

Peak Locate Threshold : 2.50
 Peak Locate Range (in channels) : 1 - 4096
 Peak Area Range (in channels) : 32 - 4096
 Identification Energy Tolerance : 2.500 keV

Energy Calibration Used Done On : 7/1/2022
 Efficiency Calibration Used Done On : 12/14/2021
 Efficiency Calibration Description :

Sample Number : 126703

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 7/19/2022 2:49:21PM

Peak Analysis From Channel : 1
 Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
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0120

Analysis Report for 2207019-04

LT-8 14-24 70754

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)	
1	63.91	57 -	68	62.47	3.03E+02	69.11	4.49E+02	2.58	
2	82.23	74 -	87	80.79	8.48E+02	81.23	3.55E+02	2.90	
3	114.40	103 -	122	112.99	2.45E+02	84.83	5.09E+02	3.81	
4	209.06	205 -	211	207.70	3.04E+01	26.76	1.01E+02	3.47	
5	277.04	270 -	280	275.71	5.75E+01	28.42	7.70E+01	2.21	
M	6	296.98	287 -	311	295.66	2.72E+01	27.13	4.59E+01	3.85
m	7	304.42	287 -	311	303.10	1.39E+02	35.94	6.89E+01	3.86
M	8	334.31	327 -	341	333.00	9.61E+01	27.55	5.30E+01	2.92
m	9	339.31	327 -	341	338.00	1.73E+01	20.07	4.73E+01	2.92
10	357.16	349 -	364	355.86	5.09E+02	56.96	1.25E+02	3.20	
11	387.54	379 -	396	386.25	3.55E+02	48.09	8.26E+01	4.89	
12	417.53	411 -	424	416.25	4.85E+01	30.98	8.90E+01	5.97	
13	438.06	431 -	442	436.79	9.64E+01	24.00	2.32E+01	2.35	
14	467.86	462 -	470	466.60	2.18E+01	10.78	4.38E+00	2.29	

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 7/19/2022 2:49:21PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000126621.CNF

Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
1	63.91	3.03E+02	69.11	2.33E+01	2.79E+00	2.80E+02	6.92E+01
2	82.23	8.48E+02	81.23			8.48E+02	8.12E+01
3	114.40	2.45E+02	84.83	2.17E+00	2.38E+00	2.43E+02	8.49E+01
4	209.06	3.04E+01	26.76			3.04E+01	2.68E+01
5	277.04	5.75E+01	28.42			5.75E+01	2.84E+01
M	6	2.72E+01	27.13			2.72E+01	2.71E+01
m	7	1.39E+02	35.94			1.39E+02	3.59E+01
M	8	9.61E+01	27.55			9.61E+01	2.75E+01
m	9	1.73E+01	20.07			1.73E+01	2.01E+01
10	357.16	5.09E+02	56.96			5.09E+02	5.70E+01
11	387.54	3.55E+02	48.09			3.55E+02	4.81E+01
12	417.53	4.85E+01	30.98			4.85E+01	3.10E+01
13	438.06	9.64E+01	24.00			9.64E+01	2.40E+01
14	467.86	2.18E+01	10.78			2.18E+01	1.08E+01

0121

Analysis Report for 2207019-04

LT-8 14-24 70754

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)		Yield(%)	Activity (pCi/units)	Activity Uncertainty
BA-133	0.96	81.00	*	34.06	4.43E+02	4.62E+01
		302.84	*	18.33	3.87E+02	1.02E+02
		356.01	*	62.05	3.99E+02	4.75E+01
HG-203	0.88	279.19	*	77.30	3.83E+01	1.91E+01
TH-234	0.99	63.29	*	3.80	8.01E+02	1.99E+02

* = Energy line found in the spectrum.
 - = Manually added nuclide.
 ? = Manually edited nuclide.
 @ = Energy line not used for Weighted Mean Activity
 Energy Tolerance : 2.500 keV
 Nuclide confidence index threshold = 0.30
 Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/units)	Wt mean Activity Uncertainty	Comments
BA-133	0.961	4.18E+02	3.15E+01	
HG-203	0.889	3.83E+01	1.91E+01	

0122

Analysis Report for 2207019-04

LT-8 14-24 70754

	Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/units)	Wt mean Activity Uncertainty	Comments
X	TH-231	0.970			
	TH-234	0.990	8.01E+02	1.99E+02	

? = nuclide is part of an undetermined solution

X = nuclide rejected by the interference analysis

@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

0123

Analysis Report for 2207019-04
 LT-8 14-24 70754

UNIDENTIFIED PEAKS

Peak Locate Performed on : 7/19/2022 2:49:21PM
 Peak Locate From Channel : 1
 Peak Locate To Channel : 4096

Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide	
	3	114.40	2.69462E-01	17.50	Tol.	U-237
	4	209.06	3.38272E-02	43.95	Tol.	U-237
M	6	296.98	3.02059E-02	49.90		
M	8	334.31	1.06813E-01	14.33		
m	9	339.31	1.92071E-02	58.07	Sum	
	11	387.54	3.94099E-01	6.78	Sum	
	12	417.53	5.39068E-02	31.93		
	13	438.06	1.07109E-01	12.45	Sum	
	14	467.86	2.42361E-02	24.72		

M = First peak in a multiplet region
 m = Other peak in a multiplet region
 F = Fitted singlet
 Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/units)	Nuclide MDA (pCi/units)	Activity (pCi/units)	Dec. Level (pCi/units)
CA-41	3.00	77.00	5.44E-07	5.44E-07	0.00E+00	0.00E+00
	3.31	12.30	6.51E-06		0.00E+00	0.00E+00
FE-55	5.89	24.50	1.09E-04	1.09E-04	0.00E+00	0.00E+00
CO-57	122.06	85.51	1.93E+01	1.93E+01	3.63E-01	9.15E+00
	136.48	10.60	1.71E+02		7.55E+00	8.08E+01
NI-59	6.92	29.80	2.19E-04	2.19E-04	0.00E+00	0.00E+00
MO-93	16.59	52.90	8.08E-03	8.08E-03	0.00E+00	0.00E+00
	18.60	10.00	6.79E-02		0.00E+00	0.00E+00

0124

Analysis Report for 2207019-04
LT-8 14-24 70754

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/units)	Nuclide MDA (pCi/units)	Activity (pCi/units)	Dec. Level (pCi/units)
NB-93M	16.57	9.43	4.51E-02	4.51E-02	0.00E+00	0.00E+00
CD-109	88.03	3.72	3.56E+02	3.56E+02	-1.03E+02	1.71E+02
SN-113	255.12	1.93	9.88E+02	5.64E+01	2.12E+02	4.58E+02
	391.69	61.90	5.64E+01		1.08E+02	2.72E+01
SN-119M	23.87	16.10	1.08E-01	9.19E-02	0.00E+00	0.00E+00
	25.10	22.70	9.19E-02		0.00E+00	0.00E+00
I-129	29.78	57.00	1.78E-01	1.78E-01	-4.02E+00	5.62E-02
	33.60	13.20	1.85E+01		7.55E+01	9.03E+00
	39.58	7.52	5.60E+01		2.27E+02	2.74E+01
+ BA-133	81.00 *	34.06	5.01E+01	4.70E+01	4.43E+02	2.43E+01
	302.84 *	18.33	2.04E+02		3.87E+02	9.84E+01
	356.01 *	62.05	4.70E+01		3.99E+02	2.24E+01
CE-139	165.85	80.35	2.66E+01	2.66E+01	6.25E+00	1.26E+01
CE-144	133.54	10.80	1.62E+02	1.62E+02	-2.49E+01	7.68E+01
+ HG-203	279.19 *	77.30	2.81E+01	2.81E+01	3.83E+01	1.32E+01
PB-210	46.50	4.25	7.19E+01	7.19E+01	-1.53E+02	3.43E+01
TH-231	25.64	14.70	1.53E-01	1.53E-01	0.00E+00	0.00E+00
	84.21 *	6.40	2.67E+02		2.36E+03	1.30E+02
PA-234M	9.89	89.00	4.64E-04	4.64E-04	0.00E+00	0.00E+00
	21.72	64.90	1.90E-02		0.00E+00	0.00E+00
	37.93	23.75	1.68E+01		9.17E+01	8.25E+00
+ TH-234	63.29 *	3.80	2.93E+02	2.93E+02	8.01E+02	1.42E+02
NP-237	29.37	14.00	6.92E-01	6.92E-01	-1.56E+01	2.19E-01
	86.50	12.60	1.79E+02		-3.00E+01	8.76E+01
U-237	97.08	16.30	8.72E+01	5.28E+01	-1.02E+00	4.16E+01
	101.07	26.30	5.28E+01		-9.45E+00	2.51E+01
	114.00	12.30	2.21E+02		5.79E+02	1.07E+02
	208.01	22.00	1.14E+02		1.88E+00	5.39E+01
AM-241	59.54	35.90	2.29E+01	2.29E+01	-1.42E+00	1.11E+01
AM-243	74.67	66.00	1.44E+01	1.44E+01	-3.19E-01	6.91E+00

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction

KB
7/19/22

Analysis Report for 2207019-05
LT-9 8-18 70755

GAMMA SPECTRUM ANALYSIS

Sample Identification : 2207019-05
 Sample Description : LT-9 8-18 70755
 Sample Type : RA RECOVERY

 Sample Size : 1.000E+00 units
 Facility : Countroom

 Sample Taken On : 7/19/2022 9:46:55AM
 Acquisition Started : 7/19/2022 2:34:25PM

 Procedure : BAFIL
 Operator : Administrator
 Detector Name : GE2
 Geometry : BAFIL
 Live Time : 900.0 seconds
 Real Time : 906.8 seconds

 Dead Time : 0.75 %

 Peak Locate Threshold : 2.50
 Peak Locate Range (in channels) : 1 - 4096
 Peak Area Range (in channels) : 21 - 4096
 Identification Energy Tolerance : 2.500 keV

 Energy Calibration Used Done On : 7/8/2022
 Efficiency Calibration Used Done On : 12/13/2021
 Efficiency Calibration Description :

 Sample Number : 126704

PEAK ANALYSIS REPORT

Peak Analysis Performed on : 7/19/2022 2:49:35PM

Peak Analysis From Channel : 1
 Peak Analysis To Channel : 4096

Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
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Analysis Report for 2207019-05

LT-9 8-18 70755

	Peak No.	Energy (keV)	ROI start	ROI end	Peak Centroid	Net Peak Area	Net Area Uncertainty	Continuum Counts	FWHM (keV)
M	1	31.18	26 -	50	31.78	2.78E+03	140.46	5.04E+02	2.89
m	2	42.40	26 -	50	43.00	1.24E+02	67.36	8.80E+02	1.68
	3	62.20	60 -	66	62.80	1.02E+02	86.60	1.29E+03	3.88
	4	81.63	77 -	87	82.23	4.62E+02	113.01	1.45E+03	2.34
	5	112.54	109 -	117	113.15	1.11E+02	80.32	9.29E+02	1.56
	6	277.23	274 -	282	277.85	9.56E+01	67.73	6.55E+02	3.59
	7	303.21	299 -	308	303.83	7.69E+01	85.94	1.01E+03	1.86
	8	316.97	315 -	321	317.59	4.59E+01	55.55	5.32E+02	3.02
	9	356.19	350 -	363	356.81	4.66E+02	108.15	1.09E+03	2.26
M	10	383.84	381 -	397	384.45	6.03E+01	66.45	6.34E+02	2.60
m	11	387.09	381 -	397	387.70	1.33E+02	67.76	6.29E+02	2.61
m	12	391.65	381 -	397	392.26	6.47E+01	66.63	6.23E+02	2.61
m	13	394.53	381 -	397	395.14	4.05E+01	51.86	4.64E+02	1.87
	14	551.59	549 -	555	552.17	4.62E+01	53.92	4.92E+02	2.33
	15	573.74	572 -	577	574.32	5.47E+01	47.15	3.95E+02	3.17
	16	826.88	824 -	830	827.36	3.55E+01	37.85	2.35E+02	3.87
	17	871.65	868 -	876	872.11	4.08E+01	41.93	2.40E+02	2.48
	18	1014.82	1012 -	1018	1015.20	3.42E+01	22.20	6.16E+01	4.73
	19	1111.95	1108 -	1116	1112.26	4.85E+01	26.31	7.71E+01	5.67
	20	1335.29	1333 -	1339	1335.41	2.05E+01	25.20	9.90E+01	1.45
	21	1413.21	1410 -	1418	1413.26	4.32E+01	30.04	1.12E+02	5.26
	22	1423.20	1419 -	1426	1423.24	2.16E+01	23.75	7.88E+01	2.59
	23	2109.60	2104 -	2113	2108.74	2.14E+01	25.94	8.12E+01	3.44
	24	2172.05	2167 -	2176	2171.09	1.33E+01	15.13	2.55E+01	2.98

M = First peak in a multiplet region

m = Other peak in a multiplet region

F = Fitted singlet

Errors quoted at 2.000sigma

BACKGROUND SUBTRACT REPORT

Peak Analysis Performed on : 7/19/2022 2:49:35PM

Env. Background File : \\OR-GAMMA1\ApexRoot\Countroom\Data\0000126622.CNF

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
M	1	31.18	2.78E+03	140.46	8.38E+02	8.56E+00	1.94E+03	1.41E+02
m	2	42.40	1.24E+02	67.36			1.24E+02	6.74E+01
	3	62.20	1.02E+02	86.60	4.93E-01	7.51E-01	1.02E+02	8.66E+01
	4	81.63	4.62E+02	113.01			4.62E+02	1.13E+02
	5	112.54	1.11E+02	80.32			1.11E+02	8.03E+01

0127

Analysis Report for 2207019-05

LT-9 8-18 70755

	Peak No.	Energy (keV)	Original Area	Orig. Area Uncertainty	Ambient Background	Backgr. Uncert.	Subtracted Area	Subtracted Uncert.
	6	277.23	9.56E+01	67.73			9.56E+01	6.77E+01
	7	303.21	7.69E+01	85.94			7.69E+01	8.59E+01
	8	316.97	4.59E+01	55.55			4.59E+01	5.55E+01
	9	356.19	4.66E+02	108.15			4.66E+02	1.08E+02
M	10	383.84	6.03E+01	66.45			6.03E+01	6.65E+01
m	11	387.09	1.33E+02	67.76			1.33E+02	6.78E+01
m	12	391.65	6.47E+01	66.63			6.47E+01	6.66E+01
m	13	394.53	4.05E+01	51.86			4.05E+01	5.19E+01
	14	551.59	4.62E+01	53.92			4.62E+01	5.39E+01
	15	573.74	5.47E+01	47.15			5.47E+01	4.71E+01
	16	826.88	3.55E+01	37.85			3.55E+01	3.79E+01
	17	871.65	4.08E+01	41.93			4.08E+01	4.19E+01
	18	1014.82	3.42E+01	22.20			3.42E+01	2.22E+01
	19	1111.95	4.85E+01	26.31			4.85E+01	2.63E+01
	20	1335.29	2.05E+01	25.20	6.87E-01	6.24E-01	1.98E+01	2.52E+01
	21	1413.21	4.32E+01	30.04			4.32E+01	3.00E+01
	22	1423.20	2.16E+01	23.75			2.16E+01	2.37E+01
	23	2109.60	2.14E+01	25.94			2.14E+01	2.59E+01
	24	2172.05	1.33E+01	15.13			1.33E+01	1.51E+01

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE IDENTIFICATION REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

IDENTIFIED NUCLIDES

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/units)	Activity Uncertainty
SN-113	0.95	255.12	1.93		
		391.69 *	61.90	4.72E+01	4.86E+01
I-129	0.60	29.78 *	57.00	7.88E+01	5.73E+00
		33.60	13.20		
		39.58	7.52		
BA-133	0.99	81.00 *	34.06	2.40E+02	5.96E+01
		302.84 *	18.33	1.99E+02	2.22E+02
		356.01 *	62.05	3.48E+02	8.20E+01
HG-203	0.90	279.19 *	77.30	5.87E+01	4.17E+01
TH-234	0.97	63.29 *	3.80	2.99E+02	2.54E+02

0128

Analysis Report for 2207019-05
LT-9 8-18 70755

Nuclide Name	Id Confidence	Energy (keV)	Yield(%)	Activity (pCi/units)	Activity Uncertainty
NP-237	0.60	29.37 * 86.50	14.00 12.60	3.21E+02	2.33E+01

* = Energy line found in the spectrum.
- = Manually added nuclide.
? = Manually edited nuclide.
@ = Energy line not used for Weighted Mean Activity
Energy Tolerance : 2.500 keV
Nuclide confidence index threshold = 0.30
Errors quoted at 2.000sigma

INTERFERENCE CORRECTED REPORT

Nuclide Name	Nuclide Id Confidence	Wt mean Activity (pCi/units)	Wt mean Activity Uncertainty	Comments
?	SN-113 0.952	4.72E+01	4.86E+01	
	I-129 0.605	7.88E+01	5.73E+00	
	BA-133 0.996	2.74E+02	4.71E+01	
	HG-203 0.907	5.87E+01	4.17E+01	
	TH-234 0.970	2.99E+02	2.54E+02	
?	NP-237 0.600	3.21E+02	2.33E+01	

? = nuclide is part of an undetermined solution
X = nuclide rejected by the interference analysis
@ = nuclide contains energy lines not used in Weighted Mean Activity

Errors quoted at 2.000sigma

0129

Analysis Report for 2207019-05
LT-9 8-18 70755

UNIDENTIFIED PEAKS

Peak Locate Performed on : 7/19/2022 2:49:35PM
Peak Locate From Channel : 1
Peak Locate To Channel : 4096

	Peak No.	Energy (keV)	Peak Size (CPS)	Peak CPS (%) Uncertainty	Peak Type	Tolerance Nuclide
m	2	42.40	1.37598E-01	27.20		
	5	112.54	1.23031E-01	36.27	Sum	
	8	316.97	5.10114E-02	60.50		
M	10	383.84	6.70204E-02	55.09	Sum	
m	11	387.09	1.47531E-01	25.52	Sum	
m	13	394.53	4.50240E-02	63.99		
	14	551.59	5.13584E-02	58.33		
	15	573.74	6.08091E-02	43.08		
	16	826.88	3.94916E-02	53.25		
	17	871.65	4.53796E-02	51.33		
	18	1014.82	3.80000E-02	32.45		
	19	1111.95	5.38506E-02	27.14		
	20	1335.29	2.20060E-02	63.65		
	21	1413.21	4.80303E-02	34.74		
	22	1423.20	2.40255E-02	54.92		
	23	2109.60	2.37724E-02	60.63		
	24	2172.05	1.47222E-02	57.10		

M = First peak in a multiplet region
m = Other peak in a multiplet region
F = Fitted singlet
Errors quoted at 2.000sigma

NUCLIDE MDA REPORT

Nuclide Library Used : \\OR-GAMMA1\ApexRoot\Countroom\Library\WSRC.NLB

0130

Analysis Report for 2207019-05
LT-9 8-18 70755

Nuclide Name	Energy (keV)	Yield(%)	Line MDA (pCi/units)	Nuclide MDA (pCi/units)	Activity (pCi/units)	Dec. Level (pCi/units)
CA-41	3.00	77.00	5.55E-06	5.55E-06	0.00E+00	0.00E+00
	3.31	12.30	5.93E-05		0.00E+00	0.00E+00
FE-55	5.89	24.50	5.43E-04	5.43E-04	0.00E+00	0.00E+00
CO-57	122.06	85.51	3.21E+01	3.21E+01	2.62E+00	1.56E+01
	136.48	10.60	2.77E+02		-9.10E+01	1.34E+02
NI-59	6.92	29.80	9.37E-04	9.37E-04	0.00E+00	0.00E+00
MO-93	16.59	52.90	1.70E-02	1.70E-02	0.00E+00	0.00E+00
	18.60	10.00	3.61E-01		0.00E+00	1.14E-01
NB-93M	16.57	9.43	9.52E-02	9.52E-02	0.00E+00	0.00E+00
CD-109	88.03	3.72	5.13E+02	5.13E+02	-2.82E+02	2.49E+02
+ SN-113	255.12	1.93	2.05E+03	1.37E+02	7.37E+02	9.93E+02
	391.69	* 61.90	1.37E+02		4.72E+01	6.73E+01
SN-119M	23.87	16.10	1.35E+00	1.35E+00	-2.26E-01	5.84E-01
	25.10	22.70	1.56E+00		-1.52E-01	7.04E-01
+ I-129	29.78	* 57.00	1.32E+01	1.32E+01	7.88E+01	6.53E+00
	33.60	13.20	5.57E+01		2.70E+02	2.76E+01
	39.58	7.52	9.98E+01		-1.91E+02	4.91E+01
+ BA-133	81.00	* 34.06	9.08E+01	9.08E+01	2.40E+02	4.47E+01
	302.84	* 18.33	3.65E+02		1.99E+02	1.79E+02
	356.01	* 62.05	1.24E+02		3.48E+02	6.09E+01
CE-139	165.85	80.35	4.44E+01	4.44E+01	-4.41E+00	2.16E+01
CE-144	133.54	10.80	2.68E+02	2.68E+02	-6.18E+01	1.30E+02
+ HG-203	279.19	* 77.30	6.71E+01	6.71E+01	5.87E+01	3.27E+01
PB-210	46.50	4.25	2.02E+02	2.02E+02	-2.54E+01	9.89E+01
TH-231	25.64	14.70	2.56E+00	2.56E+00	-2.50E-01	1.16E+00
	84.21	6.40	3.92E+02		8.78E+02	1.92E+02
PA-234M	9.89	89.00	1.45E-03	1.45E-03	0.00E+00	0.00E+00
	21.72	64.90	1.76E-01		-2.80E-02	7.10E-02
	37.93	23.75	3.09E+01		-3.51E+01	1.52E+01
+ TH-234	63.29	* 3.80	4.15E+02	4.15E+02	2.99E+02	2.03E+02
+ NP-237	29.37	* 14.00	5.36E+01	5.36E+01	3.21E+02	2.66E+01
	86.50	12.60	1.61E+02		3.70E+01	7.82E+01
U-237	97.08	16.30	1.36E+02	8.51E+01	3.40E+01	6.61E+01
	101.07	26.30	8.51E+01		-5.65E+00	4.13E+01
	114.00	12.30	2.36E+02		1.49E+02	1.15E+02
	208.01	22.00	1.91E+02		7.37E+01	9.27E+01
AM-241	59.54	35.90	3.75E+01	3.75E+01	2.22E+00	1.84E+01
AM-243	74.67	66.00	2.40E+01	2.40E+01	-2.39E+00	1.17E+01

- + = Nuclide identified during the nuclide identification
 * = Energy line found in the spectrum
 > = MDA value not calculated
 @ = Half-life too short to be able to perform the decay correction

SECTION XI
ANALYTICAL DATA (TOTAL DISSOLVED SOLIDS)

0132

TDS / TSS Worksheet

Work Order		Run	Analysis Code		Technician		
22-07019		1	TDS		MHIGHTOWER		
TRetec Fraction	Waypoint Analytical Louisiana Client ID	Aliquot ml	Filter Tare (g)	Filter Data Filter Final (g)	Filter Net (g)	TDS/TSS (mg/L)	Maximum Aliq (mL)
04	LT-8 14-24 70754	100.0000	100.1143	100.2447	0.1304	1304.0000	76.69
05	LT-9 8-18 70755	100.0000	102.4606	102.5669	0.1063	1063.0000	94.07

Technician: ML Date: 7/7/22

Aliquot Worksheet

Work Order	Run	Analysis Code	Rpt Units	Lab Deadline	Technician
22-07019	1	TDS	liters	7/28/2022	MHIGHTOWER

Lab Fraction	Waypoint Analytical Louisiana Client ID	Sample Type	Muffle Data		Dilution Data			Aliquot Data		MS Aliquot Data		H-3 Solids Only	
			Ratio Post/Pre	No of Dilis	Dil Factor	Ratio	Aliquot	Net Equiv	Aliquot	Net Equiv	Water Added (ml)	H3 Dist Aliq	
01	LCS	LCS						1.0000E+00	1.0000E+00				
02	BLANK	MBL						1.0000E+00	1.0000E+00				
03	DUP	DUP						1.0000E-01	1.0000E-01				
04	LT-8 14-24 70754	TRG						1.0000E-01	1.0000E-01				
05	LT-9 8-18 70755	TRG						1.0000E-01	1.0000E-01				

Comments

0134

Technician: ML Date: 7/7/22

Shipment Receipt Form

Customer Number: **09996**

Customer Name: **Hydro-Environmental Technology, Inc.**

Report Number: **22-181-0068**

Shipping Method

Fed Ex US Postal Lab Other :
 UPS Client Courier Thermometer ID:

Shipping container/cooler uncompromised? Yes No

Number of coolers/boxes received

Custody seals intact on shipping container/cooler? Yes No Not Present

Custody seals intact on sample bottles? Yes No Not Present

Chain of Custody (COC) present? Yes No

COC agrees with sample label(s)? Yes No

COC properly completed Yes No

Samples in proper containers? Yes No

Sample containers intact? Yes No

Sufficient sample volume for indicated test(s)? Yes No

All samples received within holding time? Yes No

Cooler temperature in compliance? Yes No

Cooler/Samples arrived at the laboratory on ice. Samples were considered acceptable as cooling process had begun. Yes No

Water - Sample containers properly preserved Yes No N/A

Water - VOA vials free of headspace Yes No N/A

Trip Blanks received with VOAs Yes No N/A

Soil VOA method 5035 – compliance criteria met Yes No N/A

High concentration container (48 hr) Low concentration EnCore samplers (48 hr)
 High concentration pre-weighed (methanol -14 d) Low conc pre-weighed vials (Sod Bis -14 d)

Special precautions or instructions included? Yes No

Comments:

Signature:

Date & Time:



HYDRO-ENVIRONMENTAL TECHI
 Environmental Consult
 P.O. Box 60295
 Lafayette, LA 70596-0;
 Phone (337) 261-1963 FAX (33



22-181-0068
 09996
 07-01-2022
 13:24:16

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert **Laboratory:** Eberline
Project Number: 1009.A62 **Collected By:** TW & DCC
Project Location: Bayou Sorrel, LA **Company:** Hydro-Environmental Technology, Inc.
Date: 6/28/2022

Sample I.D.	Type	Date/Time Sampled		Containers	Analysis Requested/Method	Comments
LT-8 (14-24) 70754	AQ	6/28/2022	11:45	(1) Gallon Cube	Radium 226/228, TDS	4°C
LT-9 (8-18) 70755	AQ	6/28/2022	15:10	(1) Gallon Cube	Radium 226/228, TDS	4°C

Relinquished By: <u>Todd Webb</u>	Received By: <u>[Signature]</u>
Date/Time: <u>6/30/22 1105</u>	Date/Time: <u>6/30/22 1105</u>
Relinquished By: <u>[Signature]</u>	Received By: <u>[Signature]</u>
Date/Time: <u>6/30/22 1600</u>	Date/Time: <u>6-30-22 1400</u>
Analysis Due: Verbal:	Written:

8/16/2022

Hydro-Environmental Technology, Inc.
Mr. Stewart Stover, Jr.
91 Apollo Rd
Scott, LA, 70583

Ref: Report Number: 22-210-0031
Project Description: August Levert
Project Number: 1009.A62
Plaquemines, LA

Dear Mr. Stewart Stover, Jr.:

Waypoint Analytical Louisiana, Inc. received sample(s) on 7/29/2022 for the analyses presented in the following report. The above referenced project has been analyzed per your instructions. Unless otherwise noted, the analyses were performed in our laboratory in accordance with Standard Methods, The Solid Waste Manual SW-846, EPA Methods for Chemical Analysis of Water and Wastes and /or 40 CFR part 136.

Certain parameters (chlorine, pH, dissolved oxygen, sulfite...) are required to be analyzed within 15 minutes of sampling. Usually, but not always, any field parameter analyzed at the laboratory is outside of this holding time. Refer to sample analysis time for confirmation of holding time compliance. Analyses reported which indicate "Field" for these parameters were analyzed by the client in the field. Results for solid samples are reported on an as received or "wet weight" basis unless otherwise specified.

The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, method validations, instrumentation maintenance and calibration for all parameters (NELAP and non-NELAP) were performed in accordance with guidelines established by the USEPA (including 40 CFR 136 Method Update Rule May 2021) and NELAC unless otherwise indicated. Any parameter for which the laboratory is not officially NELAP accredited is indicated by a '~' symbol. These are not included in the scope because NELAP accreditation is either not available or has not been applied for. Additional certifications may be held/are available for parameters, where NELAP accreditation is not required or applicable. A full list of certifications is available upon request.

All quality control measures undertaken in accordance with Waypoint Analytical Louisiana, Inc. CompQAP990807A and revisions under the terms of the Louisiana Environmental Laboratory Accreditation Program (Certificate #02041) are within acceptance ranges established in that document with the exception of the items indicated and/or discussed in a Case Narrative.

The results are shown on the attached analysis sheet(s). Be aware that the time analyzed for certain samples (e.g. - BOD, CBOD, etc.) refer to the time the sample batch was begun and not necessarily to the time an individual sample was begun. Thank you for allowing Waypoint Analytical Louisiana, Inc. to serve you. Should I be of further assistance, if you have any questions or need additional information please contact me or client services.

Sincerely,



Amy Jackson
Project Manager

Laboratory's liability in any claim relating to analyses performed shall be limited to, at laboratory's option, repeating the analysis in question at laboratory's expense, or the refund of the charges paid for performance of said analysis. This report may be reproduced in full only with the written permission of the laboratory and/or the entity to which it is addressed. Results contained herein relate only to the sample(s) submitted to the laboratory.





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www.waypointanalytical.com

Certification Summary

Laboratory ID: WP MLA: Waypoint Analytical Louisiana, Inc., Marrero, LA

State	Program	Lab ID	Expiration Date
Georgia	State Program	02041	06/30/2023
Louisiana	State Program - NELAP	02041	06/30/2023

Laboratory ID: WP MTN: Waypoint Analytical, LLC., Memphis, TN

State	Program	Lab ID	Expiration Date
Alabama	State Program	40750	02/28/2023
Arkansas	State Program	88-0650	02/07/2023
California	State Program	2904	06/30/2023
Florida	State Program - NELAP	E871157	06/30/2023
Georgia	State Program	C044	02/18/2023
Georgia	State Program	04015	06/30/2023
Illinois	State Program - NELAP	200078	10/10/2022
Kentucky	State Program	80215	06/30/2023
Kentucky	State Program	KY90047	12/31/2022
Louisiana	State Program - NELAP	LA037	12/31/2022
Louisiana	State Program - NELAP	04015	06/30/2023
Mississippi	State Program	MS	02/11/2023
North Carolina	State Program	415	12/31/2022
Pennsylvania	State Program - NELAP	68-03195	05/31/2023
South Carolina	State Program	84002	06/30/2022
Tennessee	State Program	02027	02/11/2023
Texas	State Program - NELAP	T104704180	09/30/2022
Virginia	State Program	00106	06/30/2023
Virginia	State Program - NELAP	460181	09/14/2022



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Sample Summary Table

Report Number: 22-210-0031
Client Project Description: August Levert
Project Number: 1009.A62
Plaquemines, LA

Lab No	Client Sample ID	Matrix	Date Collected	Date Received	Method	Lab ID
72204	SB-11 (4-6)	Solids	07/28/2022 13:35	07/29/2022		
72204	SB-11 (4-6)	Solids	07/28/2022 13:35	07/29/2022	8270D SIM	WP MTN
72204	SB-11 (4-6)	Solids	07/28/2022 13:35	07/29/2022	MAEPH LA	WP MTN
72205	SB-11 (6-8)	Solids	07/28/2022 13:40	07/29/2022		
72205	SB-11 (6-8)	Solids	07/28/2022 13:40	07/29/2022	8270D SIM	WP MTN
72205	SB-11 (6-8)	Solids	07/28/2022 13:40	07/29/2022	MAEPH LA	WP MTN



Client: Hydro-Environmental Technology, Inc.
Project: August Levert
Lab Report Number: 22-210-0031
Date: 8/16/2022

CASE NARRATIVE

Methods

Methods reported as 29B are from the Laboratory Procedures for Analysis of Exploration & Production Waste – LDNR Office of Conservation Injection and Mining Division – Revised 11/2011.

Results

- 6010D/7471A metals are reported AR - As Received by adjusting the data using the percent moisture result.
- True Total Barium results are reported dry weight
- Oil & Grease results reported dry weight
- TX1006 results are reported as received
- VPH/EPH results reported as received
- PAH results reported as received

Metals Analysis Method 6010D

QC Batch No: A75547/A75503/A75502

Target analyte(s) was identified in the method blank associated with this project, below the Method Quantitation Limit. Per laboratory protocol any associated affected sample result is flagged "B" to indicate that it was detected in the method blank.



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09996

Hydro-Environmental Technology, Inc.
 Mr. Stewart Stover, Jr.
 91 Apollo Rd
 Scott, LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Plaquemines, LA

Report Date : 08/16/2022
 Received : 07/29/2022

Report Number : 22-210-0031

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : 72204
 Sample ID : SB-11 (4-6)

Matrix: Solids
 Sampled: 7/28/2022 13:35

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	44.8	%		1	08/02/22 12:00	BXH	SW-DRYWT
Oil & Grease	<0.10	%	0.10	1	08/02/22 15:13	JMB	29B
Total Arsenic	2.72	mg/Kg AR	1.00	1	08/04/22 12:46	APB	6010D
Total Barium	125	mg/Kg AR	0.500	1	08/04/22 12:46	APB	6010D
True Total Barium	463	mg/Kg	50.0	1	08/09/22 09:57	APB	29B
Total Cadmium	0.299	mg/Kg AR	0.100	1	08/04/22 12:46	APB	6010D
Total Chromium	15.9	mg/Kg AR	0.250	1	08/04/22 12:46	APB	6010D
Total Lead	8.90	mg/Kg AR	0.300	1	08/04/22 12:46	APB	6010D
Mercury (Total)	0.0287	mg/Kg AR	0.0133	1	08/09/22 14:29	BMB	7471A
Total Selenium	<0.500	mg/Kg AR	0.500	1	08/04/22 12:46	APB	6010D
Total Silver	<0.250	mg/Kg AR	0.250	1	08/04/22 12:46	APB	6010D
Total Zinc	44.5	mg/Kg AR	1.25	1	08/04/22 12:46	APB	6010D

Analytical Method: MAEPH LA **Prep Batch(es):** L630752 08/08/22 08:44
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	08/09/22 23:33	MMK	L631344
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	08/10/22 17:28	MMK	L631344
Aliphatic >C12-C16	<2.00	mg/Kg	2.00	1	08/09/22 23:33	MMK	L631344
Aromatic >C12-C16	<2.00	mg/Kg	2.00	1	08/10/22 17:28	MMK	L631344
Aromatic >C16-C21	<2.00	mg/Kg	2.00	1	08/10/22 17:28	MMK	L631344
Aliphatic >C16-C35	<4.00	mg/Kg	4.00	1	08/09/22 23:33	MMK	L631344

Qualifiers/ B Analyte detected in blank DF Dilution Factor
Definitions J Estimated value MQL Method Quantitation Limit



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09996

Hydro-Environmental Technology, Inc.
 Mr. Stewart Stover, Jr.
 91 Apollo Rd
 Scott, LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Plaquemines, LA

Report Date : 08/16/2022
 Received : 07/29/2022

Report Number : **22-210-0031**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **72204**
 Sample ID : **SB-11 (4-6)**

Matrix: **Solids**
 Sampled: **7/28/2022 13:35**

Analytical Method: MAEPH LA **Prep Batch(es):** L630752 08/08/22 08:44
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	08/10/22 17:28	MMK	L631344
Surrogate: Chlorooctadecane	82.4		Limits: 40-140%	1	08/09/22 23:33	MMK	MAEPH LA
Surrogate: OTP Surrogate	61.8		Limits: 40-140%	1	08/10/22 17:28	MMK	MAEPH LA

Qualifiers/Definitions				
B	Analyte detected in blank	DF	Dilution Factor	
J	Estimated value	MQL	Method Quantitation Limit	



5041 Taravella Road, Marrero, LA 70072
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09996

Hydro-Environmental Technology, Inc.
 Mr. Stewart Stover, Jr.
 91 Apollo Rd
 Scott, LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Plaquemines, LA

Report Date : 08/16/2022
 Received : 07/29/2022

Report Number : 22-210-0031

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : 72205
 Sample ID : SB-11 (6-8)

Matrix: Solids
 Sampled: 7/28/2022 13:40

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	46.1	%		1	08/02/22 12:00	BXH	SW-DRYWT
Oil & Grease	<0.10	%	0.10	1	08/02/22 15:13	JMB	29B
Total Arsenic	2.89	mg/Kg AR	1.00	1	08/04/22 12:49	APB	6010D
Total Barium	120	mg/Kg AR	0.500	1	08/04/22 12:49	APB	6010D
True Total Barium	491	mg/Kg	50.0	1	08/09/22 10:07	APB	29B
Total Cadmium	0.249	mg/Kg AR	0.100	1	08/04/22 12:49	APB	6010D
Total Chromium	14.8	mg/Kg AR	0.250	1	08/04/22 12:49	APB	6010D
Total Lead	8.73	mg/Kg AR	0.300	1	08/04/22 12:49	APB	6010D
Mercury (Total)	0.0340	mg/Kg AR	0.0133	1	08/09/22 14:32	BMB	7471A
Total Selenium	<0.500	mg/Kg AR	0.500	1	08/04/22 12:49	APB	6010D
Total Silver	<0.250	mg/Kg AR	0.250	1	08/04/22 12:49	APB	6010D
Total Zinc	42.5	mg/Kg AR	1.25	1	08/04/22 12:49	APB	6010D

Analytical Method: MAEPH LA **Prep Batch(es):** L630752 08/08/22 08:44
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aliphatic >C10-C12	<2.00	mg/Kg	2.00	1	08/10/22 17:28	MMK	L631344
Aromatic >C10-C12	<1.00	mg/Kg	1.00	1	08/10/22 18:16	MMK	L631344
Aliphatic >C12-C16	<2.00	mg/Kg	2.00	1	08/10/22 17:28	MMK	L631344
Aromatic >C12-C16	<2.00	mg/Kg	2.00	1	08/10/22 18:16	MMK	L631344
Aromatic >C16-C21	<2.00	mg/Kg	2.00	1	08/10/22 18:16	MMK	L631344
Aliphatic >C16-C35	<4.00	mg/Kg	4.00	1	08/10/22 17:28	MMK	L631344

Qualifiers/ B Analyte detected in blank DF Dilution Factor
Definitions J Estimated value MQL Method Quantitation Limit



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09996

Hydro-Environmental Technology, Inc.
 Mr. Stewart Stover, Jr.
 91 Apollo Rd
 Scott, LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Plaquemines, LA

Report Date : 08/16/2022
 Received : 07/29/2022

Report Number : **22-210-0031**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **72205**
 Sample ID : **SB-11 (6-8)**

Matrix: **Solids**
 Sampled: **7/28/2022 13:40**

Analytical Method: MAEPH LA **Prep Batch(es):** L630752 08/08/22 08:44
Prep Method: MAEPH LA (Soil)

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Aromatic >C21-C35	<2.00	mg/Kg	2.00	1	08/10/22 18:16	MMK	L631344
Surrogate: Chlorooctadecane	101		Limits: 40-140%	1	08/10/22 17:28	MMK	MAEPH LA
Surrogate: OTP Surrogate	82.9		Limits: 40-140%	1	08/10/22 18:16	MMK	MAEPH LA

Qualifiers/Definitions				
B	Analyte detected in blank	DF	Dilution Factor	
J	Estimated value	MQL	Method Quantitation Limit	

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-210-0031

QC Prep: A75531 **QC Analytical Batch(es):** A75615
QC Prep Batch Method: LA 29B BA (PREP) **Analysis Method:** 29B
Analysis Description: True Total Barium

Lab Reagent Blank LRB-A75531 Matrix: SOL
Associated Lab Samples: 72204, 72205

Parameter	Units	Blank Result	MQL	Analyzed
True Total Barium	mg/Kg	< 500	500	08/09/22 09:50

Laboratory Control Sample LCS-A75531

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
True Total Barium	mg/Kg	10000	10100	101	80-120

Matrix Spike & Matrix Spike Duplicate A 72204-A75502-MS-A75531 A 72204-A75502-MSD-A75531

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
True Total Barium	mg/Kg	463	9010	9710	9550	10300	101	101	75-125	7.5	20.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-210-0031

QC Analytical Batch: A75513
Analysis Method: 29B
Analysis Description: Soxhlet Oil and Grease

Lab Reagent Blank LRB Matrix: SOL
Associated Lab Samples: 72204, 72205

Parameter	Units	Blank Result	MQL	Analyzed
Oil & Grease	%	< 0.10	0.10	08/02/22 15:13

Laboratory Control Sample LCS

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Oil & Grease	%	1.05	1.14	109	70-130

Duplicate A 72204-DUP

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Oil & Grease	%	< 0.10	< 0.10	0.0	35.0	08/02/22 15:13

Matrix Spike A 72204-MS

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	%Rec Limits	Max RPD
Oil & Grease	%	< 0.10	1.94		1.91		98.0	50-150	

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-210-0031

QC Prep: A75503 **QC Analytical Batch(es):** A75547
QC Prep Batch Method: 3050B **Analysis Method:** 6010D
Analysis Description: Metals Analysis

Lab Reagent Blank LRB-A75503 Matrix: SOL
Associated Lab Samples: 72204, 72205

Parameter	Units	Blank Result	MQL	Analyzed
Total Arsenic	mg/Kg AR	< 0.202	1.00	08/04/22 10:15
Total Cadmium	mg/Kg AR	0.037	0.100	08/04/22 10:15
Total Chromium	mg/Kg AR	< 0.142	0.250	08/04/22 10:15
Total Lead	mg/Kg AR	< 0.162	0.300	08/04/22 10:15
Total Selenium	mg/Kg AR	< 0.364	0.500	08/04/22 10:15
Total Silver	mg/Kg AR	< 0.083	0.250	08/04/22 10:15
Total Zinc	mg/Kg AR	< 0.810	1.25	08/04/22 10:15

Laboratory Control Sample & LCSD LCS-A75503 LCSD-A75503

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS %Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD
Total Arsenic	mg/Kg AR	5.00	5.20	5.35	104	107	80-120	2.8	20.0
Total Barium	mg/Kg AR	50.0	53.6	54.1	107	108	80-120	0.9	20.0
Total Cadmium	mg/Kg AR	5.00	5.32	5.32	106	106	80-120	0.0	20.0
Total Chromium	mg/Kg AR	50.0	53.9	54.1	108	108	80-120	0.3	20.0
Total Lead	mg/Kg AR	5.00	5.30	5.32	106	106	80-120	0.3	20.0
Total Selenium	mg/Kg AR	5.00	4.92	5.27	98.0	105	80-120	6.8	20.0
Total Silver	mg/Kg AR	5.00	5.55	5.40	111	108	80-120	2.7	20.0
Total Zinc	mg/Kg AR	50.0	52.9	53.0	106	106	80-120	0.1	20.0

Matrix Spike & Matrix Spike Duplicate A 72156-MS-A75503 A 72156-MSD-A75503

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Total Arsenic	mg/Kg AR	2.05	4.64	4.81	6.38	6.39	93.0	90.0	75-125	0.1	20.0
Total Barium	mg/Kg AR	89.6	46.4	48.1	140	144	109	113	75-125	2.8	20.0
Total Cadmium	mg/Kg AR	0.206	4.64	4.81	4.32	4.43	89.0	88.0	75-125	2.5	20.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-210-0031

QC Prep: A75503

QC Analytical Batch(es): A75547

QC Prep Batch Method: 3050B

Analysis Method: 6010D

Analysis Description: Metals Analysis

Matrix Spike & Matrix Spike Duplicate A 72156-MS-A75503 A 72156-MSD-A75503

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Total Chromium	mg/Kg AR	10.4	46.4	48.1	55.2	57.4	97.0	98.0	75-125	3.9	20.0
Total Lead	mg/Kg AR	5.90	4.64	4.81	10.3	10.2	95.0	89.0	75-125	0.9	20.0
Total Selenium	mg/Kg AR	0.519	4.64	4.81	4.44	4.75	85.0	88.0	75-125	6.7	20.0
Total Silver	mg/Kg AR	< 0.250	4.64	4.81	4.25	4.36	92.0	91.0	75-125	2.5	20.0
Total Zinc	mg/Kg AR	33.3	46.4	48.1	74.3	75.9	88.0	89.0	75-125	2.1	20.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-210-0031

QC Prep: A75579 **QC Analytical Batch(es):** A75653
QC Prep Batch Method: 7471A **Analysis Method:** 7471A
Analysis Description: Solids Total Mercury Analysis - CVAA

Lab Reagent Blank LRB-A75579 Matrix: SOL
Associated Lab Samples: 72204, 72205

Parameter	Units	Blank Result	MQL	Analyzed
Mercury (Total)	mg/Kg AR	< 0.153	0.153	08/09/22 13:49

Laboratory Control Sample & LCSD LCS-A75579 LCSD-A75579

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS %Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD
Mercury (Total)	mg/Kg AR	0.350	0.332	0.293	95.0	85.0	80-120	12.4	20.0

Matrix Spike & Matrix Spike Duplicate A 72156-MS-A75579 A 72156-MSD-A75579

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Mercury (Total)	mg/Kg AR	< 0.140	0.351	0.357	0.380	0.397	108	111	80-120	4.3	20.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-210-0031

QC Prep: L630752 **QC Analytical Batch(es):** L631344
QC Prep Batch Method: MAEPH LA (Soil) **Analysis Method:** MAEPH LA
Analysis Description: MADEP EPH Rev 1.1

Lab Reagent Blank LRB-L630752 Matrix: SOL
Associated Lab Samples: 72204, 72205

Parameter	Units	Blank Result	MQL	Analyzed	% Recovery	% Rec Limits
Aliphatic >C10-C12	mg/Kg	<1.00	2.00	08/10/22 12:04		
Aliphatic >C12-C16	mg/Kg	<1.00	2.00	08/10/22 12:04		
Aliphatic >C16-C35	mg/Kg	3.34	4.00	08/10/22 12:04		
Aromatic >C10-C12	mg/Kg	<0.500	1.00	08/10/22 11:32		
Aromatic >C12-C16	mg/Kg	<1.00	2.00	08/10/22 11:32		
Aromatic >C16-C21	mg/Kg	<1.00	2.00	08/10/22 11:32		
Aromatic >C21-C35	mg/Kg	<1.00	2.00	08/10/22 11:32		
Chlorooctadecane (S)				08/10/22 12:04	105	40-140
OTP Surrogate (S)				08/10/22 11:32	68.2	40-140

Laboratory Control Sample LCS-L630752

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Aliphatic >C12-C16	mg/Kg	3.33	2.57	77.1	40-140
Aliphatic >C16-C35	mg/Kg	10.0	10.0	100	40-140
Aromatic >C10-C12	mg/Kg	3.33	2.95	88.5	40-140
Aromatic >C12-C16	mg/Kg	6.67	5.15	77.2	40-140
Aromatic >C16-C21	mg/Kg	3.33	4.29	129	40-140
Chlorooctadecane (S)				122	40-140
OTP Surrogate (S)				82.6	40-140

Matrix Spike & Matrix Spike Duplicate G 88096-MS-L630752 G 88096-MSD-L630752

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Aliphatic >C12-C16	mg/Kg	<2.00	3.32	3.27	3.07	2.97	92.4	90.8	40-140	3.3	25
Aliphatic >C16-C35	mg/Kg	<4.00	9.97	9.80	10.1	11.8	67.8	86.3	40-140	15.5	25

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-210-0031

QC Prep: L630752 **QC Analytical Batch(es):** L631344
QC Prep Batch Method: MAEPH LA (Soil) **Analysis Method:** MAEPH LA
Analysis Description: MADEP EPH Rev 1.1

Matrix Spike & Matrix Spike Duplicate G 88096-MS-L630752 G 88096-MSD-L630752

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Aromatic >C10-C12	mg/Kg	<1.00	3.32	3.27	3.16	3.21	95.1	98.1	40-140	1.5	25
Aromatic >C12-C16	mg/Kg	<2.00	6.64	6.54	6.10	6.76	91.8	103	40-140	10.2	25
Aromatic >C16-C21	mg/Kg	<2.00	3.32	3.27	5.67	5.04	171*	154*	40-140	11.7	25
Chlorooctadecane (S)							108	113	40-140		
OTP Surrogate (S)							74.6	88.3	40-140		

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-210-0031

QC Analytical Batch: A75506
Analysis Method: SW-DRYWT
Analysis Description: Dry Weight Determination

Duplicate A 72204-DUP

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
% Moisture	%	44.8	44.5	0.6	20.0	08/02/22 12:00

Shipment Receipt Form

Customer Number: **09996**

Customer Name: **Hydro-Environmental Technology, Inc.**

Report Number: **22-210-0031**

Shipping Method

Fed Ex US Postal Lab Other :
 UPS Client Courier Thermometer ID:

Shipping container/cooler uncompromised?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Number of coolers/boxes received	<input type="text" value="1"/>		
Custody seals intact on shipping container/cooler?	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> Not Present
Custody seals intact on sample bottles?	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> Not Present
Chain of Custody (COC) present?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
COC agrees with sample label(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
COC properly completed	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Samples in proper containers?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Sample containers intact?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Sufficient sample volume for indicated test(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
All samples received within holding time?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Cooler temperature in compliance?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Cooler/Samples arrived at the laboratory on ice. Samples were considered acceptable as cooling process had begun.	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Water - Sample containers properly preserved	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> N/A
Water - VOA vials free of headspace	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
Trip Blanks received with VOAs	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
Soil VOA method 5035 – compliance criteria met	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
<input type="checkbox"/> High concentration container (48 hr)	<input type="checkbox"/> Low concentration EnCore samplers (48 hr)		
<input type="checkbox"/> High concentration pre-weighed (methanol -14 d)	<input type="checkbox"/> Low conc pre-weighed vials (Sod Bis -14 d)		
Special precautions or instructions included?	<input type="radio"/> Yes	<input checked="" type="radio"/> No	

Comments:

Signature:

Date & Time:



HYDRO-ENVIRONMENTAL TECHN
 Environmental Consultz
 P.O. Box 60295
 Lafayette, LA 70596-02
 Phone (337) 261-1963 FAX (337)



22-210-0031
 09996
 08-01-2022
 09:04:43

Hydro-Environmental Technology, Inc.
 August Levert

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert **Laboratory:** Waypoint
Project Number: 1009.A62 **Collected By:** DW/TRW
Project Location: Plaquemine, LA **Company:** Hydro-Environmental Technology, Inc.
Date: 07 28, 2022

Sample I.D.	Type	Date/Time Sampled	Containers	Analysis Requested/Method	Comments
SB-11 (4-6) 72204	SO	7/28/2022 1335	1 x 16oz	% Moisture, Metals*, 29B Oil and Grease, EPH	4°C HOLD: PAH
SB-11 (6-8) 72205	SO	7/28/2022 1340	1 x 16oz	% Moisture, Metals*, 29B Oil and Grease, EPH	4°C HOLD: PAH

HOLD for possible analyses
 Metals: Arsenic, Barium, True Total Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver, Zinc

Relinquished By: *[Signature]* Received By: *[Signature]*
 Date/Time: 7-29-22 1255 Date/Time: *[Signature]* 7-29-22 1255
 Relinquished By: *[Signature]* Received By: *[Signature]*
 Date/Time: 7-29-22 1720 Date/Time: 7-29-22
 Analysis Due: Verbal: Written:

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Hydro-Environmental Technology, Inc.
1009.A62 August Levert-Bayou Sorrel, LA

SGS Job Number: LA57952

Sampling Dates: 08/29/19 - 08/30/19



Report to:

Hydro-Environmental Technology
P.O. BOX 60295
Lafayette, LA 70596
labdata@hetinc.us

ATTN: Stewart L Stover, Jr.

Total number of pages in report: 98



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Ron Benjamin
Ron Benjamin
Lab Director

Client Service contact: Ralph Frye 337-237-4775

Certifications: LDEQ(2048), LDHH(LA150012), AR(14-045-04), AZ(AZ0805), FL(E87657), IL(200082), KY(#31), NC(487), SC(73004001), NJ(LA007), TX(T104704186-18-16), WV(257)

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Test results relate only to samples analyzed.

SGS North America Inc. • 500 Ambassador Caffery • Scott, LA 70583 • tel: 337-237-4775



Hydro-Environmental Technologies, Inc.
ATTN: Stewart L. Stover
P. O. Box 60295
Lafayette, LA 70596

RE: Accutest Job #LA57952
1009.A62 August Levert-Bayou Sorrel, LA

The final report for SGS job number above has been edited to reflect changes to your data package. These edits have been incorporated into the revised report which is attached.

The analytical results for sample ID HA4 (0-2) have been modified at the request of the client. The results for the SPP Metals has been amended to include SPLP Strontium and Zinc.

Please contact me at 337-237-4775 if I may be of further assistance in this matter, or if you have any further questions regarding this data report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ralph Frye'.

Ralph Frye
Environment, Health and Safety
Project Manager
SGS North America Inc.-Scott



Hydro-Environmental Technologies, Inc.
ATTN: Stewart L. Stover
P. O. Box 60295
Lafayette, LA 70596

RE: Accutest Job #LA57952
1009.A62 August Levert-Bayou Sorrel, LA

The final report for SGS job number above has been edited to reflect changes to your data package. These edits have been incorporated into the revised report which is attached.

The analytical results for sample requesting SPLP metals have been modified at the request of the client. The results for all reportable 29B metals have been added.

Please contact me at 337-237-4775 if I may be of further assistance in this matter, or if you have any further questions regarding this data report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ralph Frye'.

Ralph Frye
Environment, Health and Safety
Project Manager
SGS North America Inc.-Scott

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Sample Summary

Hydro-Environmental Technology, Inc.

Job No: LA57952

1009.A62 August Levert-Bayou Sorrel, LA

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
LA57952-1	08/29/19	11:00 DJW	09/25/19	SO	Soil	HA-1 (0-2)
LA57952-1A	08/29/19	11:00 DJW	09/25/19	SO	Soil	HA-1 (0-2)
LA57952-1B	08/29/19	11:00 DJW	09/25/19	SO	Soil	HA-1 (0-2)
LA57952-2	08/29/19	11:05 DJW	09/25/19	SO	Soil	HA-1 (2-4)
LA57952-2A	08/29/19	11:05 DJW	09/25/19	SO	Soil	HA-1 (2-4)
LA57952-2B	08/29/19	11:05 DJW	09/25/19	SO	Soil	HA-1 (2-4)
LA57952-3	08/29/19	13:15 DJW	09/25/19	SO	Soil	HA-2 (0-2)
LA57952-3A	08/29/19	13:15 DJW	09/25/19	SO	Soil	HA-2 (0-2)
LA57952-3B	08/29/19	13:15 DJW	09/25/19	SO	Soil	HA-2 (0-2)
LA57952-3C	08/29/19	13:15 DJW	09/25/19	SO	Soil	HA-2 (0-2)
LA57952-4	08/29/19	13:20 DJW	09/25/19	SO	Soil	HA-2 (2-4)
LA57952-4A	08/29/19	13:20 DJW	09/25/19	SO	Soil	HA-2 (2-4)
LA57952-4B	08/29/19	13:20 DJW	09/25/19	SO	Soil	HA-2 (2-4)

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



SGS North America Inc.

Sample Summary (continued)

Hydro-Environmental Technology, Inc.

Job No: LA57952

1009.A62 August Levert-Bayou Sorrel, LA

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
LA57952-5	08/29/19	14:40 DJW	09/25/19	SO	Soil	HA-3 (0-2)
LA57952-5A	08/29/19	14:40 DJW	09/25/19	SO	Soil	HA-3 (0-2)
LA57952-5B	08/29/19	14:40 DJW	09/25/19	SO	Soil	HA-3 (0-2)
LA57952-5C	08/29/19	14:40 DJW	09/25/19	SO	Soil	HA-3 (0-2)
LA57952-6	08/29/19	14:45 DJW	09/25/19	SO	Soil	HA-3 (2-4)
LA57952-6A	08/29/19	14:45 DJW	09/25/19	SO	Soil	HA-3 (2-4)
LA57952-6B	08/29/19	14:45 DJW	09/25/19	SO	Soil	HA-3 (2-4)
LA57952-7	08/29/19	14:50 DJW	09/25/19	SO	Soil	HA-3 (4-6)
LA57952-7A	08/29/19	14:50 DJW	09/25/19	SO	Soil	HA-3 (4-6)
LA57952-7B	08/29/19	14:50 DJW	09/25/19	SO	Soil	HA-3 (4-6)
LA57952-8	08/29/19	14:55 DJW	09/25/19	SO	Soil	HA-3 (6-8)
LA57952-8A	08/29/19	14:55 DJW	09/25/19	SO	Soil	HA-3 (6-8)
LA57952-8B	08/29/19	14:55 DJW	09/25/19	SO	Soil	HA-3 (6-8)

Soil samples reported on a dry weight basis unless otherwise indicated on result page.





Sample Summary
(continued)

Hydro-Environmental Technology, Inc.

Job No: LA57952

1009.A62 August Levert-Bayou Sorrel, LA

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
LA57952-9	08/30/19	10:25 DJW	09/25/19	SO	Soil	HA-4 (0-2)
LA57952-9A	08/30/19	10:25 DJW	09/25/19	SO	Soil	HA-4 (0-2)
LA57952-9B	08/30/19	10:25 DJW	09/25/19	SO	Soil	HA-4 (0-2)
LA57952-9C	08/30/19	10:25 DJW	09/25/19	SO	Soil	HA-4 (0-2)
LA57952-10	08/30/19	10:30 DJW	09/25/19	SO	Soil	HA-4 (2-4)
LA57952-10A	08/30/19	10:30 DJW	09/25/19	SO	Soil	HA-4 (2-4)
LA57952-10B	08/30/19	10:30 DJW	09/25/19	SO	Soil	HA-4 (2-4)
LA57952-11	08/30/19	10:35 DJW	09/25/19	SO	Soil	HA-4 (4-6)
LA57952-11A	08/30/19	10:35 DJW	09/25/19	SO	Soil	HA-4 (4-6)
LA57952-11B	08/30/19	10:35 DJW	09/25/19	SO	Soil	HA-4 (4-6)
LA57952-12	08/30/19	10:40 DJW	09/25/19	SO	Soil	HA-4 (6-8)
LA57952-12A	08/30/19	10:40 DJW	09/25/19	SO	Soil	HA-4 (6-8)
LA57952-12B	08/30/19	10:40 DJW	09/25/19	SO	Soil	HA-4 (6-8)

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



Sample Summary
(continued)

Hydro-Environmental Technology, Inc.

Job No: LA57952

1009.A62 August Levert-Bayou Sorrel, LA

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
LA57952-13	08/30/19	11:35 DJW	09/25/19	SO	Soil	HA-5 (0-2)
LA57952-13A	08/30/19	11:35 DJW	09/25/19	SO	Soil	HA-5 (0-2)
LA57952-13B	08/30/19	11:35 DJW	09/25/19	SO	Soil	HA-5 (0-2)
LA57952-14	08/30/19	11:40 DJW	09/25/19	SO	Soil	HA-5 (2-4)
LA57952-14A	08/30/19	11:40 DJW	09/25/19	SO	Soil	HA-5 (2-4)
LA57952-14B	08/30/19	11:40 DJW	09/25/19	SO	Soil	HA-5 (2-4)
LA57952-15	08/30/19	11:45 DJW	09/25/19	SO	Soil	HA-5 (4-6)
LA57952-15A	08/30/19	11:45 DJW	09/25/19	SO	Soil	HA-5 (4-6)
LA57952-15B	08/30/19	11:45 DJW	09/25/19	SO	Soil	HA-5 (4-6)
LA57952-16	08/30/19	11:50 DJW	09/25/19	SO	Soil	HA-5 (6-7)
LA57952-16A	08/30/19	11:50 DJW	09/25/19	SO	Soil	HA-5 (6-7)
LA57952-16B	08/30/19	11:50 DJW	09/25/19	SO	Soil	HA-5 (6-7)

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: HA-1 (0-2)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-1	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	5.6	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	104	10	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.5	2.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	18.4	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	13.7	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.080	0.080	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Strontium	240	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	63.1	25	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-1 (0-2)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-1A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 48.2
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	785	210	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17150

(2) Prep QC Batch: MP16523

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-1 (0-2)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-1B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 48.2
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent	51.8		%	1	09/30/19	DP	ASTM 2216
Oil And Grease	8.4	0.010	%	1	09/26/19 10:00	HD	LADNR 29B

RL = Reporting Limit



Report of Analysis

Client Sample ID: HA-1 (2-4)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-2	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 4.6	4.6	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	185	9.3	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.3	2.3	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	13.2	4.6	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	11.0	4.6	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.071	0.071	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 4.6	4.6	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 4.6	4.6	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Strontium	119	4.6	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	46.7	23	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

(1) Instrument QC Batch: MA17039

(2) Instrument QC Batch: MA17047

(3) Prep QC Batch: MP16427

(4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-1 (2-4)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-2A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 51.8 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	1170	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17150

(2) Prep QC Batch: MP16523

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-1 (2-4)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-2B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 51.8 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	48.2		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-2 (0-2)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-3	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	5120	10	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.5	2.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	38.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	49.1	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.069	0.069	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Strontium	171	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	99.2	25	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

(1) Instrument QC Batch: MA17039

(2) Instrument QC Batch: MA17047

(3) Prep QC Batch: MP16427

(4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-2 (0-2)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-3A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 42.6
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	25700	230	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17150

(2) Prep QC Batch: MP16523

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-2 (0-2)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-3B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 42.6
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent	57.4		%	1	09/30/19	DP	ASTM 2216
Oil And Grease	1.2	0.010	%	1	09/26/19 10:00	HD	LADNR 29B

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-2 (0-2)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-3C	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 42.6
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis, SPLP Leachate SW846 1312

Analyte	Result	MCL	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 0.10	0.10		mg/l	1	09/27/19	09/30/19 RD	SW846 6010C ¹	SW846 3010A ²
Barium	2.7	1.0		mg/l	1	09/27/19	09/30/19 RD	SW846 6010C ¹	SW846 3010A ²
Chromium	< 0.10	0.10		mg/l	1	09/27/19	09/30/19 RD	SW846 6010C ¹	SW846 3010A ²
Lead	< 0.10	0.10		mg/l	1	09/27/19	09/30/19 RD	SW846 6010C ¹	SW846 3010A ²
Strontium	< 0.10	0.10		mg/l	1	09/27/19	09/30/19 RD	SW846 6010C ¹	SW846 3010A ²
Zinc	< 0.10	0.10		mg/l	1	09/27/19	09/30/19 RD	SW846 6010C ¹	SW846 3010A ²

(1) Instrument QC Batch: MA17062

(2) Prep QC Batch: MP16445

RL = Reporting Limit

MCL = Maximum Contamination Level (not available)

Report of Analysis

Client Sample ID: HA-2 (2-4)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-4	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	560	10	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.5	2.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	15.3	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	13.9	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.074	0.074	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Strontium	171	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	51.9	25	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

(1) Instrument QC Batch: MA17039

(2) Instrument QC Batch: MA17047

(3) Prep QC Batch: MP16427

(4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-2 (2-4)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-4A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 49.1
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	1920	200	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17150

(2) Prep QC Batch: MP16523

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-2 (2-4)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-4B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 49.1
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent	50.9		%	1	09/30/19	DP	ASTM 2216
Oil And Grease	0.20	0.010	%	1	09/26/19 10:00	HD	LADNR 29B

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (0-2)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-5	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	7.8	5.0	mg/kg	5	10/08/19	10/10/19 RD	SW846 6010C ¹	SW846 3050B ²
Barium	277	10	mg/kg	5	10/08/19	10/10/19 RD	SW846 6010C ¹	SW846 3050B ²
Cadmium	< 2.5	2.5	mg/kg	5	10/08/19	10/10/19 RD	SW846 6010C ¹	SW846 3050B ²
Chromium	21.0	5.0	mg/kg	5	10/08/19	10/10/19 RD	SW846 6010C ¹	SW846 3050B ²
Lead	15.6	5.0	mg/kg	5	10/08/19	10/10/19 RD	SW846 6010C ¹	SW846 3050B ²
Selenium	< 5.0	5.0	mg/kg	5	10/08/19	10/10/19 RD	SW846 6010C ¹	SW846 3050B ²
Silver	< 5.0	5.0	mg/kg	5	10/08/19	10/10/19 RD	SW846 6010C ¹	SW846 3050B ²
Zinc	58.8	25	mg/kg	5	10/08/19	10/10/19 RD	SW846 6010C ¹	SW846 3050B ²

(1) Instrument QC Batch: MA17214

(2) Prep QC Batch: MP16550

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (0-2)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-5A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 59.8 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	7510	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17150

(2) Prep QC Batch: MP16523

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (0-2)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-5B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 59.8 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	40.2		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (0-2)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-5C	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 59.8 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis, SPLP Leachate SW846 1312

Analyte	Result	MCL	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 0.10	0.10		mg/l	1	09/27/19	09/30/19 RD	SW846 6010C ¹	SW846 3010A ²
Barium	< 1.0	1.0		mg/l	1	09/27/19	09/30/19 RD	SW846 6010C ¹	SW846 3010A ²
Chromium	< 0.10	0.10		mg/l	1	09/27/19	09/30/19 RD	SW846 6010C ¹	SW846 3010A ²
Lead	< 0.10	0.10		mg/l	1	09/27/19	09/30/19 RD	SW846 6010C ¹	SW846 3010A ²
Strontium	< 0.10	0.10		mg/l	1	09/27/19	09/30/19 RD	SW846 6010C ¹	SW846 3010A ²
Zinc	< 0.10	0.10		mg/l	1	09/27/19	09/30/19 RD	SW846 6010C ¹	SW846 3010A ²

(1) Instrument QC Batch: MA17062

(2) Prep QC Batch: MP16445

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

MCL = Maximum Contamination Level (not available)

Report of Analysis

Client Sample ID: HA-3 (2-4)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-6	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	5.7	4.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	288	9.1	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.3	2.3	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	17.5	4.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	13.6	4.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.077	0.077	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 4.5	4.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 4.5	4.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Strontium	60.0	4.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	55.3	23	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (2-4)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-6A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 55.5 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	771	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17150

(2) Prep QC Batch: MP16523

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (2-4)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-6B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 55.5 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	44.5		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (4-6)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-7	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	175	10	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.5	2.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	13.8	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	10.4	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.074	0.074	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Strontium	34.1	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	48.5	25	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (4-6)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-7A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 54.9 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	566	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17150

(2) Prep QC Batch: MP16523

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (4-6)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-7B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 54.9 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	45.1		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (6-8)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-8	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	8.3	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	201	9.8	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.5	2.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	13.8	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	10.5	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.071	0.071	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 4.9	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 4.9	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Strontium	36.9	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	45.6	25	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

(1) Instrument QC Batch: MA17039

(2) Instrument QC Batch: MA17047

(3) Prep QC Batch: MP16427

(4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (6-8)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-8A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 59.1 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	341	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17150

(2) Prep QC Batch: MP16523

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-3 (6-8)	Date Sampled: 08/29/19
Lab Sample ID: LA57952-8B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 59.1 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	40.9		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (0-2)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-9	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	12.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	217	10	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.5	2.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	10.6	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	12.1	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.077	0.077	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Strontium	325	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	144	25	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

(1) Instrument QC Batch: MA17039

(2) Instrument QC Batch: MA17047

(3) Prep QC Batch: MP16427

(4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (0-2)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-9A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 72.5 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	244	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17150

(2) Prep QC Batch: MP16523

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (0-2)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-9B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 72.5 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	27.5		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (0-2)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-9C	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 72.5 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis, SPLP Leachate SW846 1312

Analyte	Result	MCL	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 0.10	0.10		mg/l	1	09/27/19	09/30/19 RD	SW846 6010C ¹	SW846 3010A ²
Chromium	< 0.10	0.10		mg/l	1	09/27/19	09/30/19 RD	SW846 6010C ¹	SW846 3010A ²
Lead	< 0.10	0.10		mg/l	1	09/27/19	09/30/19 RD	SW846 6010C ¹	SW846 3010A ²
Strontium	< 0.10	0.10		mg/l	1	09/27/19	09/30/19 RD	SW846 6010C ¹	SW846 3010A ²
Zinc	< 0.10	0.10		mg/l	1	09/27/19	09/30/19 RD	SW846 6010C ¹	SW846 3010A ²

(1) Instrument QC Batch: MA17062

(2) Prep QC Batch: MP16445

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

MCL = Maximum Contamination Level (not available)

Report of Analysis

Client Sample ID: HA-4 (2-4)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-10	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	5.6	4.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	99.8	9.1	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.3	2.3	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	11.8	4.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	10.4	4.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.080	0.080	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 4.5	4.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 4.5	4.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Strontium	78.2	4.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	52.1	23	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

(1) Instrument QC Batch: MA17039

(2) Instrument QC Batch: MA17047

(3) Prep QC Batch: MP16427

(4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (2-4)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-10A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 66.8 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	430	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17149

(2) Prep QC Batch: MP16524

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (2-4)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-10B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 66.8 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	33.2		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (4-6)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-11	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	141	10	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.5	2.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	12.6	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	9.1	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.077	0.077	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Strontium	44.4	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	55.5	25	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

(1) Instrument QC Batch: MA17039

(2) Instrument QC Batch: MA17047

(3) Prep QC Batch: MP16427

(4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (4-6)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-11A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 68.7 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	280	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17149

(2) Prep QC Batch: MP16524

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (4-6)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-11B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 68.7 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	31.3		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (6-8)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-12	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	5.8	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	123	9.8	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.5	2.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	15.2	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	12.7	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.074	0.074	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 4.9	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 4.9	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Strontium	35.6	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	56.2	25	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

(1) Instrument QC Batch: MA17039

(2) Instrument QC Batch: MA17047

(3) Prep QC Batch: MP16427

(4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (6-8)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-12A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 59.7 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	195	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17149

(2) Prep QC Batch: MP16524

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-4 (6-8)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-12B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 59.7 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	40.3		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (0-2)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-13	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	7.3	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	150	10	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.5	2.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	20.9	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	15.8	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.074	0.074	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Strontium	48.1	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	74.3	25	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

(1) Instrument QC Batch: MA17039

(2) Instrument QC Batch: MA17047

(3) Prep QC Batch: MP16427

(4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (0-2)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-13A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 61.4 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	354	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17149

(2) Prep QC Batch: MP16524

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (0-2)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-13B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 61.4 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	38.6		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (2-4)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-14	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 4.6	4.6	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	71.3	9.3	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.3	2.3	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	16.5	4.6	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	12.7	4.6	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.074	0.074	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 4.6	4.6	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 4.6	4.6	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Strontium	36.0	4.6	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	65.8	23	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (2-4)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-14A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 61.5 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	189	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17149

(2) Prep QC Batch: MP16524

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (2-4)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-14B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 61.5 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	38.5		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (4-6)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-15	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	115	10	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.5	2.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	16.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	11.1	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.074	0.074	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 5.0	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Strontium	39.4	5.0	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	52.0	25	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (4-6)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-15A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 52.3 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	611	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17149

(2) Prep QC Batch: MP16524

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (4-6)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-15B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 52.3 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	47.7		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (6-7)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-16	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 4.9	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Barium	126	9.8	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Cadmium	< 2.5	2.5	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Chromium	11.6	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Lead	7.9	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Mercury	< 0.080	0.080	mg/kg	1	09/26/19	09/26/19 SA	SW846 7471B ¹	SW846 7471B ³
Selenium	< 4.9	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Silver	< 4.9	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Strontium	34.1	4.9	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴
Zinc	37.3	25	mg/kg	5	09/26/19	09/27/19 RD	SW846 6010C ²	SW846 3050B ⁴

- (1) Instrument QC Batch: MA17039
- (2) Instrument QC Batch: MA17047
- (3) Prep QC Batch: MP16427
- (4) Prep QC Batch: MP16432

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (6-7)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-16A	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 47.8 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	370	100	mg/kg	1	10/05/19	10/07/19 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA17149

(2) Prep QC Batch: MP16524

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: HA-5 (6-7)	Date Sampled: 08/30/19
Lab Sample ID: LA57952-16B	Date Received: 09/25/19
Matrix: SO - Soil	Percent Solids: 47.8 ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Moisture, Percent ^a	52.2		%	1	09/30/19	DP	ASTM 2216

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody



HYDRO-ENVIRONMENTAL TECHNOLOGY, INC.
 Environmental Consultants
 P.O. Box 60295
 Lafayette, LA 70596-0295
 Phone (337) 261-1963 FAX (337) 261-1953

LA 57952

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert Laboratory: SGS
 Project Number: 1009 A62 Collected By: DJW
 Project Location: Bayou Sorrel, LA Company: Hydro-Environmental Technology, Inc.
 Date: 8/29/2019

Sample I.D.	Type	Date/Time Sampled	Containers	Analysis Requested/Method	Comments
1 HA-1 (0-2)	SO	8/29/2019 1100	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*, Oil and Grease	4°C
2 HA-1 (2-4)	SO	8/29/2019 1105	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*, Oil and Grease	4°C
3 HA-2 (0-2)	SO	8/29/2019 1315	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*, Oil and Grease	4°C
4 HA-2 (2-4)	SO	8/29/2019 1320	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*, Oil and Grease	4°C
5 HA-3 (0-2)	SO	8/29/2019 1440	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*, Oil and Grease	4°C
6 HA-3 (2-4)	SO	8/29/2019 1445	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*, Oil and Grease	4°C
7 HA-3 (4-6)	SO	8/29/2019 1450	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*, Oil and Grease	4°C

HOLD for possible analysis
 Metals*, Arsenic, Barium, True Total Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver, Zinc

Relinquished By: *André White* 8/25/19 800 Received By: *APL* 8/25/19 800
 Date/Time: 8/25/19 800 Date/Time: 8/25/19 800
 Relinquished By: *APL* 8/25/19 805 Received By: *Make Red*
 Date/Time: 8/25/19 805 Date/Time: 9-25-19 09:15
 Analysis Due: Verball: *Moellec Temp: 52 MW19 Z-12 Floor*
Client d/10

LA57952: Chain of Custody
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LA 57952

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert Laboratory: SGS
 Project Number: 1009.A62 Collected By: DJW
 Project Location: Bayou Sorrel, LA Company: Hydro-Environmental Technology, Inc.
 Date: 8/29/2019

Sample I.D.	Type	Date/Time Sampled	Containers	Analysis Requested/Method	Comments
HA-3 (6-8)	SO	8/29/2019 1455	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*; Oil and Grease	4°C
HA-4 (0-2)	SO	8/30/2019 1025	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*; Oil and Grease	4°C
HA-4 (2-4)	SO	8/30/2019 1030	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*; Oil and Grease	4°C
HA-4 (4-6)	SO	8/30/2019 1035	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*; Oil and Grease	4°C
HA-4 (6-8)	SO	8/30/2019 1040	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*; Oil and Grease	4°C
HA-5 (0-2)	SO	8/30/2019 1135	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*; Oil and Grease	4°C
HA-5 (2-4)	SO	8/30/2019 1140	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals*; Oil and Grease	4°C
HOLD for possible analysis Metals*: Arsenic, Barium, True Total Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver, Zinc					
Relinquished By:	Date/Time:		Received By:	Date/Time:	
<i>[Signature]</i>	8/25/19 800		<i>[Signature]</i>	8/25/19 800	
Relinquished By:	Date/Time:		Received By:	Date/Time:	
<i>[Signature]</i>	8/25/19 915		<i>[Signature]</i>	8/25/19 09:15	
Analysis Due:	Verbal:		Written:		

LA57952: Chain of Custody
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LA 57952

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert Laboratory: SGS
 Project Number: 1009_A62 Collected By: DJW
 Project Location: Bayou Sorrel, LA Company: Hydro-Environmental Technology, Inc.
 Date: 8/29/2019

Sample I.D.	Type	Date/Time Sampled	Containers	Analysis Requested/Method	Comments
HA-5 (4-6)	SO	8/30/2019 1145	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals; Oil and Grease	4°C
HA-5 (6-7)	SO	8/30/2019 1150	(1) 9 oz Glass Jar (1) 4 oz Glass Jar	29-B Metals; Oil and Grease	4°C
HOLD for possible analysis Metals*: Arsenic, Barium, True Total Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver, Zinc					
Relinquished By: <i>Paul White</i>	Received By: <i>Mark Reed</i>				
Date/Time: 8/25/19 800	Date/Time: 9/25/19 800				
Relinquished By: <i>Paul White</i>	Received By: <i>Mark Reed</i>				
Date/Time: 8/25/19 9:15	Date/Time: 9-25-19 09:15				
Analysis Due: Verbal:	Written:				

15 16 2 2

LA57952: Chain of Custody
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SGS Sample Receipt Summary

Job Number: LA57952

Client: HYDRO - ENV.

Project: AUGUST LEVERT

Date / Time Received: 9/25/2019 9:15:00 AM

Delivery Method: Client

Airbill #s: _____

Cooler Temps (Initial/Adjusted): #1: (5.2/5.2); DV439

<u>Cooler Security</u>		<u>Y or N</u>		<u>Y or N</u>	
1. Custody Seals Present:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Custody Seals Intact:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	4. Smp Dates/Time OK	<input checked="" type="checkbox"/>	<input type="checkbox"/>

<u>Cooler Temperature</u>		<u>Y or N</u>	
1. Temp criteria achieved:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Thermometer ID:	<u>DV439;</u>		
3. Cooler media:	<u>Ice (direct contact)</u>		
4. No. Coolers:	<u>1</u>		

<u>Quality Control Preservation</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Trip Blank present / cooler:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
2. Trip Blank listed on COC:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
3. Samples preserved properly:	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
4. VOCs headspace free:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

<u>Sample Integrity - Documentation</u>		<u>Y or N</u>	
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. Container labeling complete:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

<u>Sample Integrity - Condition</u>		<u>Y or N</u>	
1. Sample recvd within HT:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
2. All containers accounted for:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
3. Condition of sample:	<u>Intact</u>		

<u>Sample Integrity - Instructions</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
2. Bottles received for unspecified tests	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
4. Compositing instructions clear:	<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>

Comments

3.1
3

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA57952
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16427
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 09/26/19

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.080	.0067	.0066	-0.00081	<0.080

Associated samples MP16427: LA57952-1, LA57952-2, LA57952-3, LA57952-4, LA57952-6, LA57952-7, LA57952-8, LA57952-9, LA57952-10, LA57952-11, LA57952-12, LA57952-13, LA57952-14, LA57952-15, LA57952-16

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

4.1.1
4

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16427
 Matrix Type: SOLID

Methods: SW846 7471B
 Units: mg/kg

Prep Date: 09/26/19

Metal	LA57952-1 Original MS	Spikelot HGSPIKE1 % Rec	QC Limits
Mercury	0.014 0.60	0.6 97.7	75-125

Associated samples MP16427: LA57952-1, LA57952-2, LA57952-3, LA57952-4, LA57952-6, LA57952-7, LA57952-8, LA57952-9, LA57952-10, LA57952-11, LA57952-12, LA57952-13, LA57952-14, LA57952-15, LA57952-16

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

4.1.2
4

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16427
 Matrix Type: SOLID

Methods: SW846 7471B
 Units: mg/kg

Prep Date: 09/26/19

Metal	LA57952-1 Original MSD	Spikelot HGSPIKE1 % Rec	MSD RPD	QC Limit
Mercury	0.014 0.52	0.536 94.5	14.3	20

Associated samples MP16427: LA57952-1, LA57952-2, LA57952-3, LA57952-4, LA57952-6, LA57952-7, LA57952-8, LA57952-9, LA57952-10, LA57952-11, LA57952-12, LA57952-13, LA57952-14, LA57952-15, LA57952-16

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

4.1.2
4

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA57952
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16427
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 09/26/19

Metal	LCS Result	Spikelot HGLCS10	% Rec	QC Limits
Mercury	23.3	20.3	114.8	64-136

Associated samples MP16427: LA57952-1, LA57952-2, LA57952-3, LA57952-4, LA57952-6, LA57952-7, LA57952-8, LA57952-9, LA57952-10, LA57952-11, LA57952-12, LA57952-13, LA57952-14, LA57952-15, LA57952-16

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

4.13
4

SERIAL DILUTION RESULTS SUMMARY

Login Number: LA57952
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16427
Matrix Type: SOLID

Methods: SW846 7471B
Units: ug/l

Prep Date: 09/26/19

Metal	LA57952-1 Original	SDL 1:5	%DIF	QC Limits
Mercury	0.118	0.00	100.0(a)	0-

Associated samples MP16427: LA57952-1, LA57952-2, LA57952-3, LA57952-4, LA57952-6, LA57952-7, LA57952-8, LA57952-9, LA57952-10, LA57952-11, LA57952-12, LA57952-13, LA57952-14, LA57952-15, LA57952-16

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(anr) Analyte not requested

(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

4.1.4
4

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA57952
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16432
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 09/26/19

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.72	2.4		
Antimony	0.60	.096	.33		
Arsenic	1.0	.19	.39	-0.11	<1.0
Barium	2.0	.016	1.1	-0.027	<2.0
Beryllium	0.40	.01	.04		
Boron	50	.053	2		
Cadmium	0.50	.013	.15	0.014	<0.50
Calcium	10	.81	3.9		
Chromium	1.0	.025	.11	0.011	<1.0
Cobalt	1.0	.02	.13		
Copper	1.0	.048	.31		
Iron	10	.2	3.8		
Lead	1.0	.12	.31	-0.017	<1.0
Lithium	1.0	.14	.56		
Magnesium	10	1.6	8.2		
Manganese	5.0	.005	.21		
Molybdenum	1.0	.014	.06		
Nickel	1.0	.027	.17		
Potassium	50	4.4	13		
Selenium	1.0	.13	.35	0.10	<1.0
Silver	1.0	.062	.3	0.0050	<1.0
Sodium	50	5.1	11		
Strontium	1.0	.008	.19	-0.0030	<1.0
Thallium	0.50	.14	.37		
Tin	5.0	.041	.29		
Titanium	1.0	.02	.18		
Vanadium	1.0	.034	.13		
Zinc	5.0	.018	1.8	-0.040	<5.0

Associated samples MP16432: LA57952-1, LA57952-2, LA57952-3, LA57952-4, LA57952-6, LA57952-7, LA57952-8, LA57952-9, LA57952-10, LA57952-11, LA57952-12, LA57952-13, LA57952-14, LA57952-15, LA57952-16

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16432
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 09/26/19

Metal	LA57948-1 Original MS	Spikelot ICPSPIKE1% Rec	QC Limits		
Aluminum					
Antimony					
Arsenic	6.8	102	100	95.2	75-125
Barium	35.8	126	100	90.2	75-125
Beryllium					
Boron					
Cadmium	0.090	102	100	101.9	75-125
Calcium					
Chromium	17.2	108	100	90.8	75-125
Cobalt					
Copper					
Iron					
Lead	8.9	106	100	97.1	75-125
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel					
Potassium					
Selenium	0.74	102	100	101.3	75-125
Silver	0.36	96.3	100	95.9	75-125
Sodium					
Strontium	11.0	59.6	50	97.2	75-125
Thallium					
Tin					
Titanium					
Vanadium					
Zinc	16.3	110	100	93.7	75-125

Associated samples MP16432: LA57952-1, LA57952-2, LA57952-3, LA57952-4, LA57952-6, LA57952-7, LA57952-8, LA57952-9, LA57952-10, LA57952-11, LA57952-12, LA57952-13, LA57952-14, LA57952-15, LA57952-16

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16432
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 09/26/19

Metal	LA57948-1 Original MSD		Spikelot ICPSPIKE1% Rec		MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	6.8	104	100	97.2	1.9	20
Barium	35.8	131	100	95.2	3.9	20
Beryllium						
Boron						
Cadmium	0.090	103	100	102.9	1.0	20
Calcium						
Chromium	17.2	112	100	94.8	3.6	20
Cobalt						
Copper						
Iron						
Lead	8.9	107	100	98.1	0.9	20
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Potassium						
Selenium	0.74	103	100	102.3	1.0	20
Silver	0.36	99.1	100	98.7	2.9	20
Sodium						
Strontium	11.0	61.1	50	100.2	2.5	20
Thallium						
Tin						
Titanium						
Vanadium						
Zinc	16.3	113	100	96.7	2.7	20

Associated samples MP16432: LA57952-1, LA57952-2, LA57952-3, LA57952-4, LA57952-6, LA57952-7, LA57952-8, LA57952-9, LA57952-10, LA57952-11, LA57952-12, LA57952-13, LA57952-14, LA57952-15, LA57952-16

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16432
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 09/26/19

Metal	LCS Result	Spikelot LCSMETAL11% Rec	QC Limits
Aluminum			
Antimony			
Arsenic	122	125	97.6 82-117
Barium	583	529	110.2 82-119
Beryllium			
Boron			
Cadmium	35.3	37.7	93.6 82-118
Calcium			
Chromium	48.3	58.3	82.8 82-118
Cobalt			
Copper			
Iron			
Lead	95.3	111	85.9 82-117
Lithium			
Magnesium			
Manganese			
Molybdenum			
Nickel			
Potassium			
Selenium	261	251	104.0 79-122
Silver	25.9	27.2	95.2 79-121
Sodium			
Strontium	137	147	93.2 80-120
Thallium			
Tin			
Titanium			
Vanadium			
Zinc	289	351	82.3 80-119

Associated samples MP16432: LA57952-1, LA57952-2, LA57952-3, LA57952-4, LA57952-6, LA57952-7, LA57952-8, LA57952-9, LA57952-10, LA57952-11, LA57952-12, LA57952-13, LA57952-14, LA57952-15, LA57952-16

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

4.2.3
4

SERIAL DILUTION RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16432
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: ug/l

Prep Date: 09/26/19

Metal	LA57948-1 Original	SDL 5:25	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	68.3	110	61.6 (a)	0-10
Barium	358	365	2.1	0-10
Beryllium				
Boron				
Cadmium	0.900	4.90	444.4(a)	0-10
Calcium				
Chromium	172	181	5.3	0-10
Cobalt				
Copper				
Iron				
Lead	89.2	79.4	11.0 (a)	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium	7.36	0.00	100.0(a)	0-10
Silver	3.58	0.00	100.0(a)	0-10
Sodium				
Strontium	110	112	2.4	0-10
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	163	158	2.8	0-10

Associated samples MP16432: LA57952-1, LA57952-2, LA57952-3, LA57952-4, LA57952-6, LA57952-7, LA57952-8, LA57952-9, LA57952-10, LA57952-11, LA57952-12, LA57952-13, LA57952-14, LA57952-15, LA57952-16

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested
 (a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA57952
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16445
Matrix Type: LEACHATE

Methods: SW846 6010C
Units: mg/l

Prep Date: 09/27/19

Metal	RL	IDL	MDL	MB raw	final
Aluminum	0.10	.006	.056		
Antimony	0.10	.0014	.003		
Arsenic	0.10	.0028	.0036	0.000030	<0.10
Barium	1.0	.0001	.004	-0.00018	<1.0
Beryllium	0.10	.00006	.0003		
Boron	0.10	.00051	.03		
Cadmium	0.10	.00015	.0004		
Calcium	0.10	.019	.092		
Chromium	0.10	.00034	.002	-0.00014	<0.10
Cobalt	0.10	.00031	.0017		
Copper	0.10	.00044	.0038		
Iron	0.10	.0021	.017		
Lead	0.10	.0011	.0031	-0.00032	<0.10
Lithium	0.10	.0011	.008		
Magnesium	0.10	.016	.09		
Manganese	0.10	.00016	.0012		
Molybdenum	0.10	.00015	.001		
Nickel	0.10	.00065	.005		
Potassium	0.50	.014	.22		
Selenium	0.10	.0023	.0045		
Silver	0.10	.00041	.0028		
Sodium	0.50	.0052	.17		
Strontium	0.10	.00005	.0032	0.00022	<0.10
Thallium	0.10	.0013	.0051		
Tin	0.10	.00071	.0024		
Titanium	0.10	.00028	.0024		
Vanadium	0.10	.0002	.0024		
Zinc	0.10	.0013	.0037	0.0025	<0.10

Associated samples MP16445: LA57952-3C, LA57952-5C, LA57952-9C

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

4.3.1
4

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16445
 Matrix Type: LEACHATE

Methods: SW846 6010C
 Units: mg/l

Prep Date: 09/27/19 09/27/19

Metal	LA57948-5 Original MS		SpikeLot ICPSPIKE1% Rec		QC Limits	LA57948-5 Original DUP		RPD	QC Limits
Aluminum									
Antimony									
Arsenic	0.0	2.1	2.0	105.0	75-125	0.0	0.0	NC	0-20
Barium	0.0099	2.1	2.0	104.5	75-125	0.0099	0.0097	2.0	0-20
Beryllium									
Boron									
Cadmium									
Calcium									
Chromium	0.0017	2.0	2.0	99.9	75-125	0.0017	0.0016	6.1	0-20
Cobalt									
Copper									
Iron									
Lead	0.0038	2.2	2.0	109.8	75-125	0.0038	0.0040	5.1	0-20
Lithium									
Magnesium									
Manganese									
Molybdenum									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Strontium	0.010	1.0	1.0	99.0	75-125	0.010	0.0098	2.0	0-20
Thallium									
Tin									
Titanium									
Vanadium									
Zinc	0.0067	2.0	2.0	99.7	75-125	0.0067	0.0067	0.0	0-20

Associated samples MP16445: LA57952-3C, LA57952-5C, LA57952-9C

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

4.3.2
4

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16445
 Matrix Type: LEACHATE

Methods: SW846 6010C
 Units: mg/l

Prep Date: 09/27/19

Metal	BSP Result	Spikelot ICP	Spike1% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	1.9	2.0	95.0	80-120
Barium	2.0	2.0	100.0	80-120
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium	1.9	2.0	95.0	80-120
Cobalt				
Copper				
Iron				
Lead	2.1	2.0	105.0	80-120
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium	0.97	1.0	97.0	80-120
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	1.9	2.0	95.0	80-120

Associated samples MP16445: LA57952-3C, LA57952-5C, LA57952-9C

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

4.3.3
4

SERIAL DILUTION RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16445
 Matrix Type: LEACHATE

Methods: SW846 6010C
 Units: ug/l

Prep Date: 09/27/19

Metal	LA57948-5 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	0.00	0.00	NC	0-10
Barium	9.93	7.73	22.2*(a)	0-10
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium	1.65	3.11	88.5 (b)	0-10
Cobalt				
Copper				
Iron				
Lead	3.79	0.00	100.0(b)	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium	9.96	8.76	12.0*(a)	0-10
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	6.70	0.00	100.0(b)	0-10

Associated samples MP16445: LA57952-3C, LA57952-5C, LA57952-9C

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested
 (a) Serial dilution indicates possible matrix interference.
 (b) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

4.3.4
 4

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA57952
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16523
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 10/05/19

Metal	RL	IDL	MDL	MB raw	final
Aluminum	500	36	120		
Antimony	30	4.8	17		
Arsenic	50	9.3	20		
Barium	100	.8	56	-0.30	<100
Beryllium	20	.5	2		
Boron	2500	2.7	98		
Cadmium	25	.65	7.5		
Calcium	500	40	200		
Chromium	50	1.3	5.5		
Cobalt	50	1	6.5		
Copper	50	2.4	16		
Iron	500	9.8	190		
Lead	50	5.8	16		
Lithium	50	7.2	28		
Magnesium	500	81	410		
Manganese	250	.25	11		
Molybdenum	50	.7	3		
Nickel	50	1.4	8.5		
Potassium	2500	220	630		
Selenium	50	6.6	18		
Silver	50	3.1	15		
Sodium	2500	250	560		
Strontium	50	.4	9.5		
Thallium	25	6.9	19		
Tin	250	2.1	15		
Titanium	50	1	9		
Vanadium	50	1.7	6.5		
Zinc	250	.9	92		

Associated samples MP16523: LA57952-1A, LA57952-2A, LA57952-3A, LA57952-4A, LA57952-5A, LA57952-6A, LA57952-7A, LA57952-8A, LA57952-9A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

4.4.1
4

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16523
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 10/05/19

Metal	LA57789-1B Original DUP	RPD	QC Limits
Aluminum			
Antimony			
Arsenic	anr		
Barium	1230 1220	0.8	0-20
Beryllium			
Boron			
Cadmium	anr		
Calcium			
Chromium	anr		
Cobalt			
Copper			
Iron			
Lead			
Lithium			
Magnesium			
Manganese			
Molybdenum			
Nickel			
Potassium			
Selenium	anr		
Silver	anr		
Sodium			
Strontium			
Thallium			
Tin			
Titanium			
Vanadium			
Zinc	anr		

Associated samples MP16523: LA57952-1A, LA57952-2A, LA57952-3A, LA57952-4A, LA57952-5A, LA57952-6A, LA57952-7A, LA57952-8A, LA57952-9A

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

4.4.2
4

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16523
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 10/05/19

Metal	BSP Result	Spikelot TTBALA29	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	45000	50000	90.0	80-120
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP16523: LA57952-1A, LA57952-2A, LA57952-3A, LA57952-4A, LA57952-5A, LA57952-6A, LA57952-7A, LA57952-8A, LA57952-9A

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

4.4.3
4

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA57952
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16524
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 10/05/19

Metal	RL	IDL	MDL	MB raw	final
Aluminum	500	30	120		
Antimony	30	7.1	17		
Arsenic	50	14	20		
Barium	100	.5	56	-1.6	<100
Beryllium	20	.3	2		
Boron	2500	2.6	98		
Cadmium	25	.75	7.5		
Calcium	500	93	200		
Chromium	50	1.7	5.5		
Cobalt	50	1.6	6.5		
Copper	50	2.2	16		
Iron	500	10	190		
Lead	50	5.4	16		
Lithium	50	5.5	28		
Magnesium	500	78	410		
Manganese	250	.8	11		
Molybdenum	50	.75	3		
Nickel	50	3.3	8.5		
Potassium	2500	68	630		
Selenium	50	12	18		
Silver	50	2.1	15		
Sodium	2500	26	560		
Strontium	50	.25	9.5		
Thallium	25	6.7	19		
Tin	250	3.6	15		
Titanium	50	1.4	9		
Vanadium	50	1	6.5		
Zinc	250	6.5	92		

Associated samples MP16524: LA57952-10A, LA57952-11A, LA57952-12A, LA57952-13A, LA57952-14A, LA57952-15A, LA57952-16A

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

4.5.1
4

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16524
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 10/05/19

Metal	LA57952-10A Original DUP	RPD	QC Limits
Aluminum			
Antimony			
Arsenic			
Barium	430 428	0.5	0-20
Beryllium			
Boron			
Cadmium			
Calcium			
Chromium			
Cobalt			
Copper			
Iron			
Lead			
Lithium			
Magnesium			
Manganese			
Molybdenum			
Nickel			
Potassium			
Selenium			
Silver			
Sodium			
Strontium			
Thallium			
Tin			
Titanium			
Vanadium			
Zinc			

Associated samples MP16524: LA57952-10A, LA57952-11A, LA57952-12A, LA57952-13A, LA57952-14A, LA57952-15A, LA57952-16A

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

4.5.2
4

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16524
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 10/05/19

Metal	BSP Result	Spikelot TTBALA29	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	51800	50000	103.6	80-120
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP16524: LA57952-10A, LA57952-11A, LA57952-12A, LA57952-13A, LA57952-14A, LA57952-15A, LA57952-16A

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

4.5.3
4

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA57952
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16550
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 10/08/19

Metal	RL	IDL	MDL	MB raw	final
Aluminum	10	.6	2.4		
Antimony	0.60	.14	.33		
Arsenic	1.0	.28	.39	-0.058	<1.0
Barium	2.0	.01	1.1	-0.011	<2.0
Beryllium	0.40	.006	.04		
Boron	50	.051	2		
Cadmium	0.50	.015	.15	-0.0030	<0.50
Calcium	10	1.9	3.9		
Chromium	1.0	.034	.11	-0.012	<1.0
Cobalt	1.0	.031	.13		
Copper	1.0	.044	.31		
Iron	10	.21	3.8		
Lead	1.0	.11	.31	-0.035	<1.0
Lithium	1.0	.11	.56		
Magnesium	10	1.6	8.2		
Manganese	5.0	.016	.21		
Molybdenum	1.0	.015	.06		
Nickel	1.0	.065	.17		
Potassium	50	1.4	13		
Selenium	1.0	.23	.35	-0.13	<1.0
Silver	1.0	.041	.3	0.069	<1.0
Sodium	50	.52	11		
Strontium	1.0	.005	.19		
Thallium	0.50	.13	.37		
Tin	5.0	.071	.29		
Titanium	1.0	.028	.18		
Vanadium	1.0	.02	.13		
Zinc	5.0	.13	1.8	-0.0040	<5.0

Associated samples MP16550: LA57952-5

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

4.6.1
4

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16550
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 10/08/19

Metal	TD45671-1 Original MS		Spikelot ICPSPIKE1% Rec	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	10.6	235	238	94.5 75-125
Barium	219	507	238	121.2 75-125
Beryllium	anr			
Boron				
Cadmium	1.4	226	238	94.6 75-125
Calcium	anr			
Chromium	41.0	286	238	103.1 75-125
Cobalt				
Copper	anr			
Iron				
Lead	26.1	253	238	95.5 75-125
Lithium				
Magnesium	anr			
Manganese				
Molybdenum				
Nickel	anr			
Potassium				
Selenium	0.0	221	238	93.0 75-125
Silver	0.0	232	238	97.7 75-125
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	538	794	238	107.8 75-125

Associated samples MP16550: LA57952-5

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

4.6.2
4

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16550
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 10/08/19

Metal	TD45671-1 Original MSD	Spikelot ICPSPIKE1% Rec	MSD RPD	QC Limit		
Aluminum	anr					
Antimony	anr					
Arsenic	10.6	229	238	91.9	2.6	20
Barium	219	480	238	109.9	5.5	20
Beryllium	anr					
Boron						
Cadmium	1.4	218	238	91.2	3.6	20
Calcium	anr					
Chromium	41.0	266	238	94.7	7.2	20
Cobalt						
Copper	anr					
Iron						
Lead	26.1	240	238	90.1	5.3	20
Lithium						
Magnesium	anr					
Manganese						
Molybdenum						
Nickel	anr					
Potassium						
Selenium	0.0	215	238	90.5	2.8	20
Silver	0.0	228	238	96.0	1.7	20
Sodium						
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc	538	720	238	76.6	9.8	20

Associated samples MP16550: LA57952-5

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

4.6.2
 4

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16550
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 10/08/19

Metal	LCS Result	Spikelot LCSMETAL11% Rec	QC Limits
Aluminum	anr		
Antimony	anr		
Arsenic	117	125	93.6 82-117
Barium	622	529	117.6 82-119
Beryllium	anr		
Boron			
Cadmium	46.1	37.7	122.3*(a) 82-118
Calcium	anr		
Chromium	54.6	58.3	93.7 82-118
Cobalt			
Copper	anr		
Iron			
Lead	93.9	111	84.6 82-117
Lithium			
Magnesium	anr		
Manganese			
Molybdenum			
Nickel	anr		
Potassium			
Selenium	245	251	97.6 79-122
Silver	26.5	27.2	97.4 79-121
Sodium			
Strontium			
Thallium			
Tin			
Titanium			
Vanadium			
Zinc	306	351	87.2 80-119

Associated samples MP16550: LA57952-5

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested
 (a) All reported results < RL

4.6.3
 4

SERIAL DILUTION RESULTS SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16550
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: ug/l

Prep Date: 10/08/19

Metal	TD45671-1	Original	SDL 5:25	%DIF	QC Limits
Aluminum	anr				
Antimony	anr				
Arsenic	44.7	0.00		100.0(a)	0-10
Barium	923	601		34.9*(b)	0-10
Beryllium	anr				
Boron					
Cadmium	5.86	9.13		55.8 (a)	0-10
Calcium	anr				
Chromium	173	163		5.8	0-10
Cobalt					
Copper	anr				
Iron					
Lead	110	142		28.7 (a)	0-10
Lithium					
Magnesium	anr				
Manganese					
Molybdenum					
Nickel	anr				
Potassium					
Selenium	0.00	0.00		NC	0-10
Silver	0.00	16.9		NC	0-10
Sodium					
Strontium					
Thallium					
Tin					
Titanium					
Vanadium					
Zinc	2270	2450		8.1	0-10

Associated samples MP16550: LA57952-5

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested
 (a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
 (b) Serial dilution indicates possible matrix interference.

POST DIGESTATE SPIKE SUMMARY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP16550
 Matrix Type: SOLID

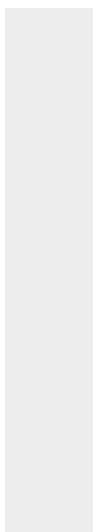
Methods: SW846 6010C
 Units: ug/l

Prep Date:

10/08/19

Metal	Sample ml	Final ml	TD45671-1 Raw	PS Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
-------	--------------	-------------	------------------	---------------	------------	-------------	----------------	---------------	-------	--------------

Antimony
 Boron
 Cobalt
 Iron
 Lithium
 Manganese
 Molybdenum
 Potassium
 Sodium
 Strontium
 Thallium
 Tin
 Titanium
 Vanadium



Associated samples MP16550: LA57952-5

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (**) Corr. sample result = Raw * (sample volume / final volume)
 (anr) Analyte not requested

4.6.5
 4

General Chemistry

5

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
 GENERAL CHEMISTRY

Login Number: LA57952
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Oil And Grease	GP7279/GN15706	0.010	0.0	%	.01	0.093	93.0	80-120%

Associated Samples:
 Batch GP7279: LA57952-1B, LA57952-3B, LA57952-4B
 (*) Outside of QC limits

5.1
5

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: LA57952
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Moisture, Percent	GN15702	LA57952-16B	%	52.2	52.1	0.2	0-5%

Associated Samples:

Batch GN15702: LA57952-1B, LA57952-2B, LA57952-3B, LA57952-4B, LA57952-5B, LA57952-6B, LA57952-7B, LA57952-8B, LA57952-9B, LA57952-10B, LA57952-11B, LA57952-12B, LA57952-13B, LA57952-14B, LA57952-15B, LA57952-16B
(*) Outside of QC limits

5.2
5

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: LA57952
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Oil And Grease	GP7279/GN15706	LA57952-1B	%	8.4	.01	9.6	116.0	80-120%

Associated Samples:
Batch GP7279: LA57952-1B, LA57952-3B, LA57952-4B
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

5.3
5

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: LA57952
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Oil And Grease	GP7279/GN15706	LA57952-1B	%	8.4	.01	9.5	0.4	

Associated Samples:
Batch GP7279: LA57952-1B, LA57952-3B, LA57952-4B
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

5.4
5

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Hydro-Environmental Technology, Inc.
1009.A62 August Levert-Bayou Sorrel, LA

SGS Job Number: LA83454

Sampling Date: 06/21/22



Report to:

Hydro-Environmental Technology
P.O. BOX 60295
Lafayette, LA 70596
labdata@hetinc.us

ATTN: Stewart L Stover, Jr.

Total number of pages in report: 13



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Ron Benjamin
Ron Benjamin
Lab Director

Client Service contact: Ralph Frye 337-237-4775

Certifications: LDEQ(2048), LDHH(LA150012), AR(14-045-04), AZ(AZ0805), FL(E87657), IL(200082), KY(#31), NC(487), SC(73004001), NJ(LA007), TX(T104704186-18-16), WV(257)

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Test results relate only to samples analyzed.

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Sample Summary

Hydro-Environmental Technology, Inc.

Job No: LA83454

1009.A62 August Levert-Bayou Sorrel, LA

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
LA83454-1	06/21/22	15:50	09/21/22	SO	Soil	SB-08 (0-2)
LA83454-2	06/21/22	10:50	09/21/22	SO	Soil	SB-08 (0-2) (WET)

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: SB-08 (0-2)	Date Sampled: 06/21/22
Lab Sample ID: LA83454-1	Date Received: 09/21/22
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	415	100	mg/kg	1	09/23/22	09/23/22 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA24726

(2) Prep QC Batch: MP25094

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Report of Analysis

Client Sample ID: SB-08 (0-2) (WET)	Date Sampled: 06/21/22
Lab Sample ID: LA83454-2	Date Received: 09/21/22
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: 1009.A62 August Levert-Bayou Sorrel, LA	

Total True Barium Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Barium	253	100	mg/kg	1	09/23/22	09/23/22 RD	SW846 6010C ¹	LADNR 29B ²

(1) Instrument QC Batch: MA24726

(2) Prep QC Batch: MP25094

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody



HYDRO-ENVIRONMENTAL TECHNOLOGY, INC.
 Environmental Consultants
 P.O. Box 60295
 Lafayette, LA 70596-0295
 Phone (337) 261-1963 FAX (337) 261-1953

LA 83454

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert
 Project Number: 1009.A62
 Project Location: Plaquemine, LA

Laboratory: SGS
 Collected By: DW/TRW
 Company: Hydro-Environmental Technology, Inc.
 Date: 07/28/2022

Sample I.D.	Type	Date/Time Sampled	Containers	Analysis Requested/Method	Comments
SB-08 (0-2)	SO	8/21/2022 1550	1 x 16oz	29-B True Total Barium	4°C RUSH
<p><i>Notes: Temp 22.8 12001 BS-105 2w Client c/c</i></p>					
Relinquished By: <i>[Signature]</i>		Received By: <i>[Signature]</i>			
Date/Time: <i>9-20-22</i>		Date/Time: <i>9-20-22 0800</i>			
Relinquished By: <i>[Signature]</i>		Received By: <i>[Signature]</i>			
Date/Time: <i>9-20-22</i>		Date/Time: <i>9-20-22 0800</i>			
Analysis Due: Verbal.					

Rel. by: Brandi Hidalgo 9/20/22 1127 Rec'd by: Kathy Gendron 09/20/22 1137
Relinquished by: Kathy Gendron 09/20/22 0941 Rec'd by: P. Howard 9/19/22 0941
Rel. by: P. Howard 9/19/22 1055 Rec'd by: Mark Reed 9/19/22 1055

LA83454: Chain of Custody
 Page 1 of 2

SGS SAMPLE RECEIPT SUMMARY

3.1
3

JOB NUMBER: LA 83454	CLIENT: <i>Hydro-CW,</i>
DATE/TIME RECEIVED: <i>9/21/22 10:55</i>	DELIVERY METHOD: <i>Client</i>
PROJECT: <i>August Levert</i>	NO. COOLERS: <i>1</i>
COOLER TEMPS (Initial/Adjusted): <i>22.8 22.001</i>	
AIRBILL #s:	

COOLER SECURITY	Y	OR	N
1. Custody Seals Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. COC present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
4. Sample Dates/Time OK?	<input checked="" type="checkbox"/>		<input type="checkbox"/>

SAMPLE INTEGRITY - DOCUMENTATION	Y	OR	N
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Sample container label/COC agree:	<input checked="" type="checkbox"/>		<input type="checkbox"/>

COOLER TEMPERATURE	Y	OR	N
1. Temp criteria achieved:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Cooler temp verification:			<input type="checkbox"/>
3. Cooler media:			<input checked="" type="checkbox"/>

SAMPLE INTEGRITY - CONDITION	Y	OR	N
1. Sample within HT:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. All containers accounted for:			<input type="checkbox"/>
3. Condition of sample:			<input type="checkbox"/>

QUALITY CONTROL PRESERVATION	Y	OR	N	N/A
1. Trip Blank present / cooler:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
2. Trip Blank listed on COC:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
3. Samples preserved properly:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
4. VOCs headspace free:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>

SAMPLE INTEGRITY - INSTRUCTIONS	Y	OR	N	N/A
1. Analysis requested is clear:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
2. Bottles received for unspecified test:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
3. Sufficient Volume rec'd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
4. Compositing instructions clear:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
5. Filtering instructions clear:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>

LA83454: Chain of Custody

Page 2 of 2

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA83454
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP25094
Matrix Type: SOLID

Methods: SW846 6010C
Units: mg/kg

Prep Date: 09/23/22

Metal	RL	IDL	MDL	MB raw	final
Aluminum	500	24	90		
Antimony	30	6.2	14		
Arsenic	50	13	21		
Barium	100	.65	8	5.2	<100
Beryllium	20	.2	5.5		
Boron	2500	2.3	76		
Cadmium	25	1	3		
Calcium	500	20	190		
Chromium	50	1.5	5.5		
Cobalt	50	1.5	5		
Copper	50	2.7	14		
Iron	500	170	110		
Lead	50	6.6	18		
Lithium	50	4.7	18		
Magnesium	500	62	170		
Manganese	250	1.1	16		
Molybdenum	50	1.4	6.5		
Nickel	50	2.1	11		
Potassium	2500	100	710		
Selenium	50	9.6	23		
Silver	50	1.3	13		
Sodium	2500	50	710		
Strontium	50	.3	12		
Thallium	25	6.9	22		
Tin	250	4.1	12		
Titanium	50	1.2	6		
Vanadium	50	1.6	6.5		
Zinc	250	.85	9.5		

Associated samples MP25094: LA83454-1, LA83454-2

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

4.1.1
4

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA83454
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP25094
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 09/23/22

Metal	LA83454-1 Original DUP	RPD	QC Limits
Aluminum			
Antimony			
Arsenic			
Barium	415	400	3.7 0-20
Beryllium			
Boron			
Cadmium			
Calcium			
Chromium			
Cobalt			
Copper			
Iron			
Lead			
Lithium			
Magnesium			
Manganese			
Molybdenum			
Nickel			
Potassium			
Selenium			
Silver			
Sodium			
Strontium			
Thallium			
Tin			
Titanium			
Vanadium			
Zinc			

Associated samples MP25094: LA83454-1, LA83454-2

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested

4.1.2
4

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA83454
 Account: HETILAL - Hydro-Environmental Technology, Inc.
 Project: 1009.A62 August Levert-Bayou Sorrel, LA

QC Batch ID: MP25094
 Matrix Type: SOLID

Methods: SW846 6010C
 Units: mg/kg

Prep Date: 09/23/22

Metal	BSP Result	Spikelot TTBALA29	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium	59500	50000	119.0	80-120
Beryllium				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP25094: LA83454-1, LA83454-2

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

4.13
4

10/7/2022

Hydro-Environmental Technology, Inc.
Mr. Stewart Stover, Jr.
91 Apollo Rd
Scott, LA, 70583

Ref: Report Number: 22-271-0033
Project Description: August Levert
Project Number: 1009.A62
Plaquemine, LA

Dear Mr. Stewart Stover, Jr.:

Waypoint Analytical Louisiana, Inc. received sample(s) on 9/29/2022 for the analyses presented in the following report. The above referenced project has been analyzed per your instructions. Unless otherwise noted, the analyses were performed in our laboratory in accordance with Standard Methods, The Solid Waste Manual SW-846, EPA Methods for Chemical Analysis of Water and Wastes and /or 40 CFR part 136.

Certain parameters (chlorine, pH, dissolved oxygen, sulfite...) are required to be analyzed within 15 minutes of sampling. Usually, but not always, any field parameter analyzed at the laboratory is outside of this holding time. Refer to sample analysis time for confirmation of holding time compliance. Analyses reported which indicate "Field" for these parameters were analyzed by the client in the field. Results for solid samples are reported on an as received or "wet weight" basis unless otherwise specified.

The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, method validations, instrumentation maintenance and calibration for all parameters (NELAP and non-NELAP) were performed in accordance with guidelines established by the USEPA (including 40 CFR 136 Method Update Rule May 2021) and NELAC unless otherwise indicated. Any parameter for which the laboratory is not officially NELAP accredited is indicated by a '~' symbol. These are not included in the scope because NELAP accreditation is either not available or has not been applied for. Additional certifications may be held/are available for parameters, where NELAP accreditation is not required or applicable. A full list of certifications is available upon request.

All quality control measures undertaken in accordance with Waypoint Analytical Louisiana, Inc. CompQAP990807A and revisions under the terms of the Louisiana Environmental Laboratory Accreditation Program (Certificate #02041) are within acceptance ranges established in that document with the exception of the items indicated and/or discussed in a Case Narrative.

The results are shown on the attached analysis sheet(s). Be aware that the time analyzed for certain samples (e.g. - BOD, CBOD, etc.) refer to the time the sample batch was begun and not necessarily to the time an individual sample was begun. Thank you for allowing Waypoint Analytical Louisiana, Inc. to serve you. Should I be of further assistance, if you have any questions or need additional information please contact me or client services.

Sincerely,



Amy Jackson
Project Manager

Laboratory's liability in any claim relating to analyses performed shall be limited to, at laboratory's option, repeating the analysis in question at laboratory's expense, or the refund of the charges paid for performance of said analysis. This report may be reproduced in full only with the written permission of the laboratory and/or the entity to which it is addressed. Results contained herein relate only to the sample(s) submitted to the laboratory.





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Certification Summary

Laboratory ID: WP MLA: Waypoint Analytical Louisiana, Inc., Marrero, LA

<u>State</u>	<u>Program</u>	<u>Lab ID</u>	<u>Expiration Date</u>
Georgia	State Program	02041	06/30/2023
Louisiana	State Program - NELAP	02041	06/30/2023

Sample Summary Table

Report Number: 22-271-0033
Client Project Description: August Levert
Project Number: 1009.A62
Plaquemine, LA

Lab No	Client Sample ID	Matrix	Date Collected	Date Received
76033	SB-6R (0-2)	Solids	09/27/2022 09:40	09/29/2022
76034	SB-7R (0-2)	Solids	09/27/2022 09:50	09/29/2022
76035	SB-27 (0-2)	Solids	09/27/2022 10:20	09/29/2022
76036	SB-5R (0-2)	Solids	09/27/2022 10:35	09/29/2022
76037	SB-5R (6-8)	Solids	09/27/2022 11:10	09/29/2022
76038	SB-25 (0-2)	Solids	09/27/2022 10:50	09/29/2022
76039	SB-25 (2-4)	Solids	09/27/2022 11:00	09/29/2022
76040	SB-26 (0-2)	Solids	09/27/2022 11:20	09/29/2022
76041	SB-26 (2-4)	Solids	09/27/2022 11:30	09/29/2022

Client: Hydro-Environmental Technology, Inc.
Project: August Levert
Lab Report Number: 22-271-0033
Date: 10/6/2022

CASE NARRATIVE

Methods

Methods reported as 29B are from the Laboratory Procedures for Analysis of Exploration & Production Waste – LDNR Office of Conservation Injection and Mining Division – Revised 11/2011.

Results

- 6010D/7471A metals are reported AR - As Received by adjusting the data using the percent moisture result.
- True Total Barium results are reported dry weight
- Oil & Grease results reported dry weight
- TX1006 results are reported as received
- VPH/EPH results reported as received
- PAH results reported as received

Metals Analysis Method 6010D

Sample 76033 (SB-6R (0-2))

Analyte: Silver

QC Batch No: A76978/A76902/A76881

The matrix spike and/or the matrix spike duplicate was outside quality control acceptance ranges. A post digestion spike was performed and passed quality control acceptance ranges. No matrix interference is suspected.

Sample 76033 (SB-6R (0-2))

Analyte: Arsenic

QC Batch No: A76978/A76902/A76881

The matrix spike and/or the matrix spike duplicate was outside quality control acceptance ranges. A post digestion spike was performed and passed quality control acceptance ranges. No matrix interference is suspected.

Sample 76033 (SB-6R (0-2))

Analyte: Barium

QC Batch No: A76978/A76902/A76881

The matrix spike and/or the matrix spike duplicate was outside quality control acceptance ranges. A post digestion spike was performed and passed quality control acceptance ranges. No matrix interference is suspected.

Sample 76033 (SB-6R (0-2))

Analyte: Cadmium

QC Batch No: A76978/A76902/A76881

The matrix spike and/or the matrix spike duplicate was outside quality control acceptance ranges. A post digestion spike was performed and passed quality control acceptance ranges. No matrix interference is suspected.



Sample 76033 (SB-6R (0-2))

Analyte: Chromium

QC Batch No: A76978/A76902/A76881

The matrix spike and/or the matrix spike duplicate was outside quality control acceptance ranges. A post digestion spike was performed and passed quality control acceptance ranges. No matrix interference is suspected.

Sample 76033 (SB-6R (0-2))

Analyte: Lead

QC Batch No: A76978/A76902/A76881

The matrix spike and/or the matrix spike duplicate was outside quality control acceptance ranges. A post digestion spike was performed and passed quality control acceptance ranges. No matrix interference is suspected.

Sample 76033 (SB-6R (0-2))

Analyte: Selenium

QC Batch No: A76978/A76902/A76881

The matrix spike, matrix spike duplicate and the post digestion spike were all outside of the quality control acceptance ranges. Matrix interference is suspected

Sample 76033 (SB-6R (0-2))

Analyte: Zinc

QC Batch No: A76978/A76902/A76881

The matrix spike and/or the matrix spike duplicate was outside quality control acceptance ranges. A post digestion spike was performed and passed quality control acceptance ranges. No matrix interference is suspected.



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09996

Hydro-Environmental Technology, Inc.
 Mr. Stewart Stover, Jr.
 91 Apollo Rd
 Scott , LA 70583

Project August Levert
 Information : Project Number: 1009.A62
 Plaquemine, LA

Report Date : 10/07/2022
 Received : 09/29/2022

Report Number : **22-271-0033**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **76033**
 Sample ID : **SB-6R (0-2)**

Matrix: **Solids**
 Sampled: **9/27/2022 9:40**

Test	Results	Units	MLL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	29.8	%		1	10/05/22 12:09	JMB	SW-DRYWT
Total Arsenic	1.66	mg/Kg AR	1.00	1	10/05/22 13:40	APB	6010D
Total Barium	117	mg/Kg AR	0.500	1	10/05/22 13:40	APB	6010D
True Total Barium	394	mg/Kg	50.0	1	10/05/22 12:49	APB	29B
Total Cadmium	1.20	mg/Kg AR	0.100	1	10/05/22 13:40	APB	6010D
Total Chromium	19.0	mg/Kg AR	0.250	1	10/05/22 13:40	APB	6010D
Total Lead	12.2	mg/Kg AR	0.300	1	10/05/22 13:40	APB	6010D
Mercury (Total)	0.0493	mg/Kg AR	0.0133	1	10/05/22 17:43	BMB	7471A
Total Selenium	<0.500	mg/Kg AR	0.500	1	10/05/22 13:40	APB	6010D
Total Silver	<0.250	mg/Kg AR	0.250	1	10/05/22 13:40	APB	6010D
Total Zinc	56.1	mg/Kg AR	1.25	1	10/05/22 13:40	APB	6010D

Qualifiers/ Definitions DF Dilution Factor MQL Method Quantitation Limit



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Project August Levert
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 Plaquemine, LA

Report Date : 10/07/2022
 Received : 09/29/2022

Report Number : **22-271-0033**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **76034**
 Sample ID : **SB-7R (0-2)**

Matrix: **Solids**
 Sampled: **9/27/2022 9:50**

Test	Results	Units	MLL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	33.7	%		1	10/05/22 12:09	JMB	SW-DRYWT
Total Arsenic	2.39	mg/Kg AR	1.00	1	10/05/22 14:04	APB	6010D
Total Barium	125	mg/Kg AR	0.500	1	10/05/22 14:04	APB	6010D
True Total Barium	432	mg/Kg	50.0	1	10/05/22 12:59	APB	29B
Total Cadmium	1.08	mg/Kg AR	0.100	1	10/05/22 14:04	APB	6010D
Total Chromium	18.2	mg/Kg AR	0.250	1	10/05/22 14:04	APB	6010D
Total Lead	9.98	mg/Kg AR	0.300	1	10/05/22 14:04	APB	6010D
Mercury (Total)	0.0409	mg/Kg AR	0.0133	1	10/05/22 17:46	BMB	7471A
Total Selenium	<0.500	mg/Kg AR	0.500	1	10/05/22 14:04	APB	6010D
Total Silver	<0.250	mg/Kg AR	0.250	1	10/05/22 14:04	APB	6010D
Total Zinc	48.4	mg/Kg AR	1.25	1	10/05/22 14:04	APB	6010D

Qualifiers/ Definitions DF Dilution Factor MQL Method Quantitation Limit



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Project August Levert
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 Plaquemine, LA

Report Date : 10/07/2022
 Received : 09/29/2022

Report Number : **22-271-0033**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **76035**
 Sample ID : **SB-27 (0-2)**

Matrix: **Solids**
 Sampled: **9/27/2022 10:20**

Test	Results	Units	ML	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	35.8	%		1	10/05/22 12:09	JMB	SW-DRYWT
Total Barium	110	mg/Kg AR	0.500	1	10/05/22 14:07	APB	6010D
True Total Barium	448	mg/Kg	50.0	1	10/05/22 13:03	APB	29B

**Qualifiers/
 Definitions**

DF Dilution Factor
 ML Method Quantitation Limit



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Project August Levert
 Information : Project Number: 1009.A62
 Plaquemine, LA

Report Date : 10/07/2022
 Received : 09/29/2022

Report Number : **22-271-0033**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **76036**
 Sample ID : **SB-5R (0-2)**

Matrix: **Solids**
 Sampled: **9/27/2022 10:35**

Test	Results	Units	ML	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	28.5	%		1	10/05/22 12:09	JMB	SW-DRYWT
Total Arsenic	1.52	mg/Kg AR	1.00	1	10/05/22 14:11	APB	6010D
Total Barium	278	mg/Kg AR	0.500	1	10/05/22 14:11	APB	6010D
True Total Barium	219	mg/Kg	50.0	1	10/05/22 13:06	APB	29B
Total Cadmium	1.27	mg/Kg AR	0.100	1	10/05/22 14:11	APB	6010D
Total Chromium	20.7	mg/Kg AR	0.250	1	10/05/22 14:11	APB	6010D
Total Lead	13.2	mg/Kg AR	0.300	1	10/05/22 14:11	APB	6010D
Mercury (Total)	0.0529	mg/Kg AR	0.0133	1	10/05/22 17:49	BMB	7471A
Total Selenium	<0.500	mg/Kg AR	0.500	1	10/05/22 14:11	APB	6010D
Total Silver	<0.250	mg/Kg AR	0.250	1	10/05/22 14:11	APB	6010D
Total Zinc	57.7	mg/Kg AR	1.25	1	10/05/22 14:11	APB	6010D

Qualifiers/ Definitions DF Dilution Factor MQL Method Quantitation Limit



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Project August Levert
 Information : Project Number: 1009.A62
 Plaquemine, LA

Report Date : 10/07/2022
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Report Number : **22-271-0033**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **76037**
 Sample ID : **SB-5R (6-8)**

Matrix: **Solids**
 Sampled: **9/27/2022 11:10**

Test	Results	Units	ML	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	45.1	%		1	10/05/22 12:09	JMB	SW-DRYWT
Total Barium	544	mg/Kg AR	5.00	10	10/06/22 12:50	APB	6010D

**Qualifiers/
 Definitions**

DF Dilution Factor
 ML Method Quantitation Limit



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Project August Levert
 Information : Project Number: 1009.A62
 Plaquemine, LA

Report Date : 10/07/2022
 Received : 09/29/2022

Report Number : **22-271-0033**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **76038**
 Sample ID : **SB-25 (0-2)**

Matrix: **Solids**
 Sampled: **9/27/2022 10:50**

Test	Results	Units	ML	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	27.5	%		1	10/05/22 12:09	JMB	SW-DRYWT
Total Barium	101	mg/Kg AR	0.500	1	10/05/22 14:18	APB	6010D
True Total Barium	404	mg/Kg	50.0	1	10/05/22 13:10	APB	29B

**Qualifiers/
 Definitions**

DF Dilution Factor

ML Method Quantitation Limit



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Project August Levert
 Information : Project Number: 1009.A62
 Plaquemine, LA

Report Date : 10/07/2022
 Received : 09/29/2022

Report Number : **22-271-0033**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **76039**
 Sample ID : **SB-25 (2-4)**

Matrix: **Solids**
 Sampled: **9/27/2022 11:00**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	33.0	%		1	10/05/22 12:09	JMB	SW-DRYWT
Total Barium	108	mg/Kg AR	0.500	1	10/05/22 14:21	APB	6010D
True Total Barium	408	mg/Kg	50.0	1	10/05/22 13:13	APB	29B

**Qualifiers/
 Definitions**

DF Dilution Factor

MQL Method Quantitation Limit



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Project August Levert
 Information : Project Number: 1009.A62
 Plaquemine, LA

Report Date : 10/07/2022
 Received : 09/29/2022

Report Number : **22-271-0033**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **76040**
 Sample ID : **SB-26 (0-2)**

Matrix: **Solids**
 Sampled: **9/27/2022 11:20**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	30.1	%		1	10/05/22 12:09	JMB	SW-DRYWT
Total Barium	131	mg/Kg AR	0.500	1	10/05/22 14:24	APB	6010D
True Total Barium	410	mg/Kg	50.0	1	10/05/22 13:23	APB	29B

**Qualifiers/
 Definitions**

DF Dilution Factor MQL Method Quantitation Limit



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Project August Levert
 Information : Project Number: 1009.A62
 Plaquemine, LA

Report Date : 10/07/2022
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Report Number : **22-271-0033**

REPORT OF ANALYSIS

Amy Jackson
 Project Manager

Lab No : **76041**
 Sample ID : **SB-26 (2-4)**

Matrix: **Solids**
 Sampled: **9/27/2022 11:30**

Test	Results	Units	MQL	DF	Date / Time Analyzed	By	Analytical Method
% Moisture	37.1	%		1	10/05/22 12:09	JMB	SW-DRYWT
Total Barium	107	mg/Kg AR	0.500	1	10/05/22 14:28	APB	6010D
True Total Barium	426	mg/Kg	50.0	1	10/05/22 13:27	APB	29B

**Qualifiers/
 Definitions**

DF Dilution Factor MQL Method Quantitation Limit

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-271-0033

QC Prep: A76901 **QC Analytical Batch(es):** A76977
QC Prep Batch Method: LA 29B BA (PREP) **Analysis Method:** 29B
Analysis Description: True Total Barium

Lab Reagent Blank LRB-A76901 Matrix: SOL
Associated Lab Samples: 76033, 76034, 76035, 76036, 76038, 76039, 76040, 76041

Parameter	Units	Blank Result	MQL	Analyzed
True Total Barium	mg/Kg	< 500	500	10/05/22 12:42

Laboratory Control Sample LCS-A76901

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
True Total Barium	mg/Kg	10000	10100	101	80-120

Matrix Spike & Matrix Spike Duplicate A 76033-A76881-MS-A76901 A 76033-A76881-MSD-A76901

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
True Total Barium	mg/Kg	394	10000	10000	10400	10500	100	101	75-125	0.9	20.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-271-0033

QC Prep: A76902 **QC Analytical Batch(es):** A76978
QC Prep Batch Method: 3050B **Analysis Method:** 6010D
Analysis Description: Metals Analysis

Lab Reagent Blank LRB-A76902 Matrix: SOL
Associated Lab Samples: 76033, 76034, 76035, 76036, 76037, 76038, 76039, 76040, 76041

Parameter	Units	Blank Result	MQL	Analyzed
Total Arsenic	mg/Kg AR	< 1.00	1.00	10/05/22 13:30
Total Barium	mg/Kg AR	< 0.500	0.500	10/05/22 13:30
Total Cadmium	mg/Kg AR	< 0.100	0.100	10/05/22 13:30
Total Chromium	mg/Kg AR	< 0.250	0.250	10/05/22 13:30
Total Lead	mg/Kg AR	< 0.300	0.300	10/05/22 13:30
Total Selenium	mg/Kg AR	< 0.500	0.500	10/05/22 13:30
Total Silver	mg/Kg AR	< 0.250	0.250	10/05/22 13:30
Total Zinc	mg/Kg AR	< 1.25	1.25	10/05/22 13:30

Laboratory Control Sample & LCSD LCS-A76902 LCSD-A76902

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS %Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD
Total Arsenic	mg/Kg AR	5.00	5.51	5.51	110	110	80-120	0.0	20.0
Total Barium	mg/Kg AR	50.0	50.9	51.3	102	103	80-120	0.7	20.0
Total Cadmium	mg/Kg AR	5.00	5.50	5.55	110	111	80-120	0.9	20.0
Total Chromium	mg/Kg AR	50.0	55.5	56.0	111	112	80-120	0.8	20.0
Total Lead	mg/Kg AR	5.00	5.49	5.52	110	110	80-120	0.5	20.0
Total Selenium	mg/Kg AR	5.00	5.35	5.47	107	109	80-120	2.2	20.0
Total Silver	mg/Kg AR	5.00	5.37	5.40	107	108	80-120	0.5	20.0
Total Zinc	mg/Kg AR	50.0	51.6	51.9	103	104	80-120	0.5	20.0

Matrix Spike & Matrix Spike Duplicate A 76033-A76881-MS-A76902 A 76033-A76881-MSD-A76902

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Total Arsenic	mg/Kg AR	1.66	4.96	4.91	4.08	4.12	49.0*	50.0*	75-125	0.9	20.0
Total Barium	mg/Kg AR	117	49.6	49.1	133	141	32.0*	49.0*	75-125	5.8	20.0

* QC Fail

Date: 10/07/2022 09:34 AM

Page 2 of 5

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.

Project Description: August Levert

Report No: 22-271-0033

QC Prep: A76902

QC Analytical Batch(es): A76978

QC Prep Batch Method: 3050B

Analysis Method: 6010D

Analysis Description: Metals Analysis

Matrix Spike & Matrix Spike Duplicate A 76033-A76881-MS-A76902 A 76033-A76881-MSD-A76902

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Total Cadmium	mg/Kg AR	1.20	4.96	4.91	3.60	3.64	48.0*	50.0*	75-125	1.1	20.0
Total Chromium	mg/Kg AR	19.0	49.6	49.1	44.1	45.1	51.0*	53.0*	75-125	2.2	20.0
Total Lead	mg/Kg AR	12.2	4.96	4.91	14.4	14.5	44.0*	47.0*	75-125	0.6	20.0
Total Selenium	mg/Kg AR	< 0.500	4.96	4.91	0.547	0.566	11.0*	12.0*	75-125	3.4	20.0
Total Silver	mg/Kg AR	< 0.250	4.96	4.91	2.54	2.51	51.0*	51.0*	75-125	1.1	20.0
Total Zinc	mg/Kg AR	56.1	49.6	49.1	80.2	82.2	49.0*	53.0*	75-125	2.4	20.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-271-0033

QC Prep: A76906 **QC Analytical Batch(es):** A76981
QC Prep Batch Method: 7471A **Analysis Method:** 7471A
Analysis Description: Solids Total Mercury Analysis - CVAA

Lab Reagent Blank LRB-A76906 Matrix: SOL
Associated Lab Samples: 76033, 76034, 76036

Parameter	Units	Blank Result	MQL	Analyzed
Mercury (Total)	mg/Kg AR	< 0.153	0.153	10/05/22 16:30

Laboratory Control Sample & LCSD LCS-A76906 LCSD-A76906

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS %Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD
Mercury (Total)	mg/Kg AR	0.362	0.310	0.341	86.0	93.0	80-120	9.5	20.0

Matrix Spike & Matrix Spike Duplicate A 76060-MS-A76906 A 76060-MSD-A76906

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Mercury (Total)	mg/Kg AR	< 0.138	0.347	0.370	0.339	0.351	98.0	95.0	80-120	3.4	20.0

Quality Control Data

Client ID: Hydro-Environmental Technology, Inc.
Project Description: August Levert
Report No: 22-271-0033

QC Analytical Batch: A76935
Analysis Method: SW-DRYWT
Analysis Description: Dry Weight Determination

Duplicate A 76033-DUP

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
% Moisture	%	29.8	29.9	0.3	20.0	10/05/22 12:09

Shipment Receipt Form

Customer Number: **09996**

Customer Name: **Hydro-Environmental Technology, Inc.**

Report Number: **22-271-0033**

Shipping Method

Fed Ex US Postal Lab Other :
 UPS Client Courier Thermometer ID:

Shipping container/cooler uncompromised?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Number of coolers/boxes received	<input type="text" value="1"/>		
Custody seals intact on shipping container/cooler?	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> Not Present
Custody seals intact on sample bottles?	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> Not Present
Chain of Custody (COC) present?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
COC agrees with sample label(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
COC properly completed	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Samples in proper containers?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Sample containers intact?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Sufficient sample volume for indicated test(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
All samples received within holding time?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Cooler temperature in compliance?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Cooler/Samples arrived at the laboratory on ice. Samples were considered acceptable as cooling process had begun.	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Water - Sample containers properly preserved	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
Water - VOA vials free of headspace	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
Trip Blanks received with VOAs	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
Soil VOA method 5035 – compliance criteria met	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> N/A
<input type="checkbox"/> High concentration container (48 hr)		<input type="checkbox"/> Low concentration EnCore samplers (48 hr)	
<input type="checkbox"/> High concentration pre-weighed (methanol -14 d)		<input type="checkbox"/> Low conc pre-weighed vials (Sod Bis -14 d)	
Special precautions or instructions included?	<input type="radio"/> Yes	<input checked="" type="radio"/> No	

Comments:

Signature:

Date & Time:



HYDRO-ENVIRONMENTAL TEC
 Environmental Cons
 P.O. Box 60295
 Lafayette, LA 70596
 Phone (337) 261-1963 FAX :

22-271-0033
 09996
 09-29-2022
 10:28:03
 Hydro-Environmental Technology, Inc.
 August Levert

SAMPLE CHAIN-OF-CUSTODY RECORD

Project Name: August Levert **Laboratory:** Waypoint
Project Number: 1009.A62 **Collected By:** DW/TW
Project Location: Plaquemine, LA **Company:** Hydro-Environmental Technology, Inc.
Date: 9/27/2022

Sample I.D.	Type	Date/Time Sampled	Containers	Analysis Requested/Method	Comments
SB-6R (0-2) 76033	SO	9/27/2022 0940	1 x 16oz	29B Metals*	4°C
SB-7R (0-2) 76034	SO	9/27/2022 0950	1 x 16oz	29B Metals*	4°C
SB-27 (0-2) 76035	SO	9/27/2022 1020	1 x 16oz	Barium, True Total Barium	4°C
SB-5R (0-2) 76036	SO	9/27/2022 1035	1 x 16oz	29B Metals*	4°C
SB-5R (6-8) 76037	SO	9/27/2022 1110	1 x 16oz	Barium	4°C
SB-25 (0-2) 76038	SO	9/27/2022 1050	1 x 16oz	Barium, True Total Barium	4°C
SB-25 (2-4) 76039	SO	9/27/2022 1100	1 x 16oz	Barium, True Total Barium	4°C
SB-26 (0-2) 76040	SO	9/27/2022 1120	1 x 16oz	Barium, True Total Barium	4°C
SB-26 (2-4) 76041	SO	9/27/2022 1130	1 x 16oz	Barium, True Total Barium	4°C

29B Metals*: Arsenic, Barium, True Total Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver, Zinc

Relinquished By: *[Signature]* Received By: *P. Howard*
 Date/Time: 9-28-22 0800 Date/Time: 9/28/22 0800
 Relinquished By: *P. Howard* Received By: *Kathy Hendrix*
 Date/Time: 9/28/22 1200 Date/Time: 09/28/22 1200
 Analysis Due: Verbal: Written:

Relinquished by Kathy Hendrix 09/28/22 1435 Received by: *[Signature]*
 76041 9-28-22 1650 Page 21 of 21 9-28-22 1435

0591-22-82-6-01 July 09, 2022 REC'd by [Signature]



Element Materials Technology Lafayette
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Lafayette, LA 70508-3344
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October 21, 2022

Greg Miller
ICON Environmental Services
2049 Commercial Drive
Port Allen, LA 70767
TEL: (225) 344-8490
FAX (225) 344-6654

RE: Levert-Grand River

Order No.: 22091256

Dear Greg Miller:

Element Materials Technology Lafayette received 9 sample(s) on 9/28/2022 for the analyses presented in the following report.

In accordance with your instructions, Element Lafayette either conducted or subcontracted these analyses. Subcontracted analyses will be identified in the accompanying case narrative. All relevant sampling information can be found on the attached Chain-of-Custody form. Unless otherwise noted, all analyses were conducted using EPA approved methodologies and all test results meet the applicable requirements of TNI. Reported results relate only to the items tested.

Where applicable, all soil data, except for 29-B, are reported on a wet-weight basis unless otherwise indicated in the units field as –dry.

LELAP Certification No.: 01997. TCEQ Certification No.: T104704261. LDHH Certification No.: LA023. ISDH Certification No.: C-LA-01. NDELCP Certification No.: R-226. A scope of accredited parameters is available upon request. A "#" by the test method or analyte indicates this parameter is outside the scope of accreditation. PA registration No.: 68-05967.

Estimated uncertainty is available upon request. This report shall not be reproduced, except in full, without the written approval of the laboratory.

If you have any questions regarding these test results, please feel free to call.

A handwritten signature in blue ink, appearing to read 'Cristina Thibeaux'.

Cristina Thibeaux
Customer Service Supervisor



Element Materials Technology Lafayette
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Lafayette, LA 70508-3344
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Website: www.element.com

Case Narrative

WO#: 22091256

Date: 10/21/2022

CLIENT: ICON Environmental Services

Project: Levert-Grand River

Unless specified by the client, a duplicate or MS/MSD, wherever applicable, is randomly selected and analyzed from each analytical batch provided sample volume is sufficient. The sample chosen for duplicate or MS/MSD may or may not be a sample submitted in this workorder. A method blank and/or a lab control sample (LCS)/lab control sample duplicate (LCSD), wherever applicable, are processed as a quality control check for each analytical batch. When the matrix QC data is not available due to insufficient sample volume or when the results indicate possible matrix effect, the validity of the batch is determined by the method blank and LCS/LCSD.

The results of the laboratory internal quality control data are provided in the QC Summary Report section of the report for your review. Laboratory-related QC exceptions that may impact the validity of data are discussed in the case narrative. Sample-related QC exceptions are flagged either in the results page(s) or in the QC report page(s). End users should consider QC exceptions when evaluating sample data against data quality objectives.

Any other exceptions associated with this report will be footnoted in the results page(s) or the QC summary page(s).

The Mercury (7471B) analysis was subcontracted to SGS North American Inc - Scott. Their report is attached in its entirety.



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Analytical Report

(consolidated)

WO#: 22091256

Date Reported: 10/21/2022

CLIENT: ICON Environmental Services

Collection Date: 9/27/2022 9:40:00 AM

Project: Levert-Grand River

Lab ID: 22091256-001

Matrix: SOIL

Client Sample ID SB-6R 0-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Arsenic	< 3.92	3.92		mg/Kg-dry	2	10/11/2022 6:27:15 PM
Barium	211	1.96		mg/Kg-dry	2	10/11/2022 6:27:15 PM
NOTES:						
Note: Sample was analyzed at a dilution due to matrix interference/internal standard. The reporting limits were raised accordingly.						
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	336	49.3		mg/Kg-dry	1	10/7/2022 3:50:26 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	24.6	1.00		wt%	1	9/29/2022 1:30:00 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: **22091256**

Date Reported: **10/21/2022**

CLIENT: ICON Environmental Services

Collection Date: 9/27/2022 9:50:00 AM

Project: Levert-Grand River

Lab ID: 22091256-002

Matrix: SOIL

Client Sample ID SB-7R 0-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Arsenic	4.35	3.83		mg/Kg-dry	2	10/11/2022 6:38:42 PM
Barium	231	1.91		mg/Kg-dry	2	10/11/2022 6:38:42 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	321	49.2		mg/Kg-dry	1	10/7/2022 3:52:43 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	29.9	1.00		wt%	1	9/29/2022 1:30:00 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: **22091256**

Date Reported: **10/21/2022**

CLIENT: ICON Environmental Services

Collection Date: 9/27/2022 10:20:00 AM

Project: Levert-Grand River

Lab ID: 22091256-003

Matrix: SOIL

Client Sample ID SB-27 0-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Barium	392	1.99		mg/Kg-dry	2	10/11/2022 6:40:59 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	737	49.7		mg/Kg-dry	1	10/7/2022 3:55:00 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	34.9	1.00		wt%	1	9/29/2022 1:30:00 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 22091256

Date Reported: 10/21/2022

CLIENT: ICON Environmental Services

Collection Date: 9/27/2022 10:35:00 AM

Project: Levert-Grand River

Lab ID: 22091256-004

Matrix: SOIL

Client Sample ID SB-5R 0-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Arsenic	6.88	3.99		mg/Kg-dry	2	10/11/2022 6:43:16 PM
Barium	328	1.99		mg/Kg-dry	2	10/11/2022 6:43:16 PM
Cadmium	< 0.997	0.997		mg/Kg-dry	2	10/11/2022 6:43:16 PM
Chromium	26.1	1.99		mg/Kg-dry	2	10/11/2022 6:43:16 PM
Lead	20.6	1.99		mg/Kg-dry	2	10/11/2022 6:43:16 PM
Selenium	< 7.98	7.98		mg/Kg-dry	2	10/11/2022 6:43:16 PM
Strontium	42.9	1.99		mg/Kg-dry	2	10/11/2022 6:43:16 PM
Zinc	91.8	1.99		mg/Kg-dry	2	10/11/2022 6:43:16 PM
NOTES:						
Note: Sample was analyzed at a dilution due to matrix interference/internal standard. The reporting limits were raised accordingly.						
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	467	49.0		mg/Kg-dry	1	10/7/2022 3:57:16 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	27.4	1.00		wt%	1	9/29/2022 1:30:00 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 22091256

Date Reported: 10/21/2022

CLIENT: ICON Environmental Services

Collection Date: 9/27/2022 11:10:00 AM

Project: Levert-Grand River

Lab ID: 22091256-005

Matrix: SOIL

Client Sample ID SB-5R 6-8

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
METALS IN SOIL OR SLUDGE BY ICP				SW6010B	SW3050B	Analyst: MRM
Barium	1,230	1.89		mg/Kg-dry	2	10/11/2022 6:45:33 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: HXW
Percent Moisture	45.7	1.00		wt%	1	9/29/2022 1:30:00 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: **22091256**

Date Reported: **10/21/2022**

CLIENT: ICON Environmental Services **Collection Date:** 9/27/2022 10:50:00 AM
Project: Levert-Grand River
Lab ID: 22091256-006 **Matrix:** SOIL
Client Sample ID SB-25 0-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Barium	239	1.88		mg/Kg-dry	2	10/11/2022 6:47:50 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	370	49.4		mg/Kg-dry	1	10/7/2022 3:59:33 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	24.6	1.00		wt%	1	9/29/2022 1:30:00 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: **22091256**

Date Reported: **10/21/2022**

CLIENT: ICON Environmental Services

Collection Date: 9/27/2022 11:00:00 AM

Project: Levert-Grand River

Lab ID: 22091256-007

Matrix: SOIL

Client Sample ID SB-25 2-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Barium	271	2.00		mg/Kg-dry	2	10/11/2022 6:50:08 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	398	49.9		mg/Kg-dry	1	10/7/2022 4:01:50 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	32.8	1.00		wt%	1	9/29/2022 1:30:00 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: **22091256**

Date Reported: **10/21/2022**

CLIENT: ICON Environmental Services

Collection Date: 9/27/2022 11:20:00 AM

Project: Levert-Grand River

Lab ID: 22091256-008

Matrix: SOIL

Client Sample ID SB-26 0-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Barium	232	1.95		mg/Kg-dry	2	10/11/2022 6:52:25 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	481	49.4		mg/Kg-dry	1	10/7/2022 4:04:07 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	28.9	1.00		wt%	1	9/29/2022 1:30:00 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 22091256

Date Reported: 10/21/2022

CLIENT: ICON Environmental Services

Collection Date: 9/27/2022 11:30:00 AM

Project: Levert-Grand River

Lab ID: 22091256-009

Matrix: SOIL

Client Sample ID SB-26 2-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Barium	236	1.99		mg/Kg-dry	2	10/11/2022 6:54:41 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	395	48.1		mg/Kg-dry	1	10/7/2022 4:06:23 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	36.1	1.00		wt%	1	9/29/2022 1:30:00 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

QC SUMMARY REPORT

WO#: 22091256
 21-Oct-22

Client: ICON Environmental Services

Project: Levert-Grand River

BatchID: 45342

Sample ID	MB-45342	SampType:	MBLK	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	10/5/2022	RunNo:	113838
Client ID:	PBS	Batch ID:	45342	TestNo:	LDNR 29-B			Analysis Date:	10/7/2022	SeqNo:	2816599
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

True Total Barium < 50.0 50.0

Sample ID	LCS-45342	SampType:	LCS	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	10/5/2022	RunNo:	113838
Client ID:	LCSS	Batch ID:	45342	TestNo:	LDNR 29-B			Analysis Date:	10/7/2022	SeqNo:	2816600
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

True Total Barium 5,330 50.0 5,000 0 107 75 125

Sample ID	LCSD-45342	SampType:	LCSD	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	10/5/2022	RunNo:	113838
Client ID:	LCSS02	Batch ID:	45342	TestNo:	LDNR 29-B			Analysis Date:	10/7/2022	SeqNo:	2816601
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

True Total Barium 5,200 50.0 5,000 0 104 75 125 5,325 2.37 20

Sample ID	22091179-027AMS	SampType:	MS	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	10/5/2022	RunNo:	113838
Client ID:	ZZZZZ	Batch ID:	45342	TestNo:	LDNR 29-B			Analysis Date:	10/7/2022	SeqNo:	2816603
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

True Total Barium 4,890 47.9 4,794 216.2 97.5 75 125

Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
 RL Reporting Limit S Spike Recovery outside accepted recovery limits SDL Sample detection limit
 U Analyte not detected W Sample container temperature is out of limit as specified at testcode



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QC SUMMARY REPORT

WO#: 22091256
 21-Oct-22

Client: ICON Environmental Services

Project: Levert-Grand River

BatchID: 45342

Sample ID	22091179-027AMSD	SampType:	MSD	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	10/5/2022	RunNo:	113838		
Client ID:	ZZZZZZ	Batch ID:	45342	TestNo:	LDNR 29-B			Analysis Date:	10/7/2022	SeqNo:	2816604		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium		4,840		48.8	4,878	216.2	94.9	75	125	4,890	0.938	20	

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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 Website: www.element.com

QC SUMMARY REPORT

WO#: 22091256
 21-Oct-22

Client: ICON Environmental Services
Project: Levert-Grand River

BatchID: 45363

Sample ID	MB-45363	SampType:	MBLK	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	10/6/2022	RunNo:	113906		
Client ID:	PBS	Batch ID:	45363	TestNo:	SW6010B	SW3050B		Analysis Date:	10/10/2022	SeqNo:	2817705		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	< 2.00	2.00											
Barium	< 1.00	1.00											
Cadmium	< 0.500	0.500											
Chromium	< 1.00	1.00											
Lead	< 1.00	1.00											
Selenium	< 4.00	4.00											
Strontium	< 1.00	1.00											
Zinc	< 1.00	1.00											

Sample ID	LCS-45363	SampType:	LCS	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	10/6/2022	RunNo:	113906		
Client ID:	LCSS	Batch ID:	45363	TestNo:	SW6010B	SW3050B		Analysis Date:	10/10/2022	SeqNo:	2817706		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	50.6	2.00	50.00	0	101	80	120						
Barium	51.5	1.00	50.00	0	103	80	120						
Cadmium	47.5	0.500	50.00	0	95.1	80	120						
Chromium	50.9	1.00	50.00	0	102	80	120						
Lead	48.9	1.00	50.00	0	97.8	80	120						
Selenium	45.9	4.00	50.00	0	91.7	80	120						
Strontium	50.9	1.00	50.00	0	102	80	120						
Zinc	47.0	1.00	50.00	0	94.0	80	120						

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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 Website: www.element.com

QC SUMMARY REPORT

WO#: 22091256
 21-Oct-22

Client: ICON Environmental Services
Project: Levert-Grand River

BatchID: 45363

Sample ID	LCSD-45363	SampType:	LCSD	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	10/6/2022	RunNo:	113906
Client ID:	LCSS02	Batch ID:	45363	TestNo:	SW6010B	SW3050B		Analysis Date:	10/10/2022	SeqNo:	2817707
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	49.3	2.00	50.00	0	98.6	80	120	50.57	2.55	20	
Barium	52.6	1.00	50.00	0	105	80	120	51.51	2.15	20	
Cadmium	48.0	0.500	50.00	0	96.0	80	120	47.54	0.936	20	
Chromium	51.7	1.00	50.00	0	103	80	120	50.90	1.56	20	
Lead	49.9	1.00	50.00	0	99.8	80	120	48.91	2.04	20	
Selenium	45.8	4.00	50.00	0	91.6	80	120	45.87	0.203	20	
Strontium	51.5	1.00	50.00	0	103	80	120	50.92	1.11	20	
Zinc	47.6	1.00	50.00	0	95.2	80	120	47.01	1.28	20	

Sample ID	22091179-033AMS	SampType:	MS	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	10/6/2022	RunNo:	113906
Client ID:	ZZZZZZ	Batch ID:	45363	TestNo:	SW6010B	SW3050B		Analysis Date:	10/10/2022	SeqNo:	2817713
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	49.8	2.00	49.94	11.23	77.3	75	125				
Barium	207	0.999	49.94	164.3	85.9	75	125				
Cadmium	38.2	0.499	49.94	0.1069	76.3	75	125				
Chromium	55.8	0.999	49.94	12.41	86.8	75	125				
Lead	47.9	0.999	49.94	9.965	75.9	75	125				
Selenium	33.6	4.00	49.94	0.1000	67.1	75	125				S
Strontium	157	0.999	49.94	117.9	78.5	75	125				
Zinc	88.3	0.999	49.94	48.60	79.5	75	125				

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



Element Materials Technology Lafayette
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 Lafayette, LA 70508-3344
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 Website: www.element.com

QC SUMMARY REPORT

WO#: 22091256
 21-Oct-22

Client: ICON Environmental Services
Project: Levert-Grand River

BatchID: 45363

Sample ID	22091179-033AMSD	SampType:	MSD	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	10/6/2022	RunNo:	113906
Client ID:	ZZZZZZ	Batch ID:	45363	TestNo:	SW6010B		SW3050B	Analysis Date:	10/10/2022	SeqNo:	2817714
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	50.7	1.99	49.82	11.23	79.2	75	125	49.84	1.70	20	
Barium	205	0.996	49.82	164.3	81.6	75	125	207.3	1.09	20	
Cadmium	37.6	0.498	49.82	0.1069	75.3	75	125	38.22	1.63	20	
Chromium	55.0	0.996	49.82	12.41	85.5	75	125	55.76	1.36	20	
Lead	47.1	0.996	49.82	9.965	74.5	75	125	47.88	1.68	20	S
Selenium	33.0	3.99	49.82	0.1000	66.1	75	125	33.60	1.74	20	S
Strontium	156	0.996	49.82	117.9	76.2	75	125	157.1	0.810	20	
Zinc	87.6	0.996	49.82	48.60	78.4	75	125	88.29	0.737	20	

NOTES:

S - Spike recovery indicates matrix interference. The method is in control as indicated by the Lab Control Sample.

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

QC SUMMARY REPORT

WO#: 22091256
 21-Oct-22

Client: ICON Environmental Services

Project: Levert-Grand River

BatchID: R113811

Sample ID	22091236-001ADUP	SampType:	DUP	TestCode:	PMOIST_29B	Units:	wt%	Prep Date:		RunNo:	113811		
Client ID:	ZZZZZZ	Batch ID:	R113811	TestNo:	LDNR 29-B			Analysis Date:	9/29/2022	SeqNo:	2814686		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture		20.9		1.00						17.60	17.1	20	

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



Sample Log-In Check List

Client Name: **ICON_ENV**

Work Order Number: **22091256**

RcptNo: **1**

Logged by:	Tammy Thibodeaux	9/28/2022 3:20:00 PM	<i>Tammy Thibodeaux</i>
Completed By:	Tammy Thibodeaux	9/28/2022 5:27:11 PM	<i>Tammy Thibodeaux</i>
Reviewed By:	Cristina Thibeaux		

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
2. How was the sample delivered? Element

Log In

3. Coolers are present? Yes No NA
4. Shipping container/cooler in good condition? Yes No
 Custody seals intact on shipping container/cooler? Yes No Not Present
 No. Seal Date: Signed By:
5. Was an attempt made to cool the samples? Yes No NA
6. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
Not required
7. Sample(s) in proper container(s)? Yes No
8. Sufficient sample volume for indicated test(s)? Yes No
9. Are samples (except VOA and ONG) properly preserved? Yes No
10. Was preservative added to bottles? Yes No NA
11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes No No VOA Vials
12. Were any sample containers received broken? Yes No
13. Does paperwork match bottle labels? Yes No
 (Note discrepancies on chain of custody)
14. Are matrices correctly identified on Chain of Custody? Yes No
15. Is it clear what analyses were requested? Yes No
16. Were all holding times able to be met? Yes No
 (If no, notify customer for authorization.)

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

18. Additional remarks:

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
-----------	---------	-----------	-------------	---------	-----------	-----------

The results set forth herein are provided by SGS North America Inc.

Technical Report for

Element Materials Technology

Element Materials Technology, 2417 West Pinhook Road, Lafayette, LA

SGS Job Number: LA84075

Sampling Date: 09/27/22

Report to:

Sherry Laboratories
2417 West Pinhook Rd
Lafayette, LA 70508
annie.reedy@element.com; rhonda.david@element.com;
cristina.thibeaux@element.com; buffy.hudson@element.com;
ATTN: Annie Reedy

Total number of pages in report: 17



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Ron Benjamin
Ron Benjamin
Lab Director

Client Service contact: Ralph Frye 337-237-4775

Certifications: LDEQ(2048), LDHH(LA150012), AR(14-045-04), AZ(AZ0805), FL(E87657), IL(200082), KY(#31), NC(487), SC(73004001), NJ(LA007), TX(T104704186-18-16), WV(257)

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Test results relate only to samples analyzed.

SGS North America Inc. • 500 Ambassador Caffery • Scott, LA 70583 • tel: 337-237-4775

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Sample Summary

Element Materials Technology

Job No: LA84075

Element Materials Technology, 2417 West Pinhook Road, Lafayette, LA

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
LA84075-1	09/27/22	10:35	10/10/22	SO	Soil	SB-5R 0-2

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

Summary of Hits

Job Number: LA84075
Account: Element Materials Technology
Project: Element Materials Technology, 2417 West Pinhook Road, Lafayette, LA
Collected: 09/27/22

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
---------------	------------------	-----------------	----	-----	-------	--------

LA84075-1 SB-5R 0-2

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: SB-5R 0-2	Date Sampled: 09/27/22
Lab Sample ID: LA84075-1	Date Received: 10/10/22
Matrix: SO - Soil	Percent Solids: n/a ^a
Project: Element Materials Technology, 2417 West Pinhook Road, Lafayette, LA	

Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Mercury ^b	< 0.080	0.080	mg/kg	1	10/11/22	10/11/22 SA	SW846 7471B ¹	SW846 7471B ²

(1) Instrument QC Batch: MA24820

(2) Prep QC Batch: MP25191

(a) All results with the exception of 29B parameters are reported on a wet weight basis.

(b) Reported result based on a dry weight basis

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody



CHAIN OF CUSTODY RECORD

Omega COCID 12461 PAGE: 1 OF: 1

ADDRESS
Element Materials Technology
Lafayette
2417 W. Pinhook Road
Lafayette, LA 70508-3344
TEL: (337) 235-0483
FAX: (337) 233-6540
Website: www.element.com

LA84075

Form with fields: SUB CONTRACTOR: ACCUTEST_LAF, COMPANY: SGS- Accutest Lafayette Labor, ADDRESS: 500 Ambassador Caffery Parkway, CITY, STATE, ZIP: Scott, LA 70583, PHONE: (337) 237-4775, SPECIAL INSTRUCTIONS / COMMENTS: sample has been dried. Report Mercury results in mg/kg- dry

4.1
4

Table with columns: ITEM #, SAMPLE ID, CLIENT SAMPLE ID, BOTTLE TYPE, MATRIX, DATE COLLECTED, NUMBER OF CONTAINERS, COMMENTS: Methanol Preserved Weights HOT Sample Notation, Additional Sample Description.

client DIO
NOC5 T15.6 (INOC2)

Form with fields: Relinquished By, Date, Time, Received By, Date, Time, REPORT TRANSMITTAL DESIRED: HARDCOPY, FAX, EMAIL, ONLINE, FOR LAB USE ONLY, Temp of samples, Comments.

LA84075: Chain of Custody
Page 1 of 4

SGS SAMPLE RECEIPT SUMMARY

JOB NUMBER: LA84075	CLIENT: Element
DATE/TIME RECEIVED: 10/10/22 1530	DELIVERY METHOD: \$10/10 Client
PROJECT: 22 09 1256-004	NO. COOLERS: 1
COOLER TEMPS (Initial/Adjusted): 15.6	
AIRBILL #s:	

COOLER SECURITY	Y	OR	N
1. Custody Seals Present:	<input type="checkbox"/>		<input checked="" type="checkbox"/>
2. Custody Seals Intact:	<input type="checkbox"/>		<input checked="" type="checkbox"/>
3. COC present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
4. Sample Dates/Time OK?	<input type="checkbox"/>		<input type="checkbox"/>

SAMPLE INTEGRITY - DOCUMENTATION	Y	OR	N
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Sample container label/COC agree:	<input checked="" type="checkbox"/>		<input type="checkbox"/>

COOLER TEMPERATURE	Y	OR	N
1. Temp criteria achieved:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Cooler temp verification:	<input type="checkbox"/> Insol		
3. Cooler media:	<input type="checkbox"/> No Ice		

SAMPLE INTEGRITY - CONDITION	Y	OR	N
1. Sample within HT:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Condition of sample:	<input type="checkbox"/> IN test		

QUALITY CONTROL PRESERVATION	Y	OR	N	N/A
1. Trip Blank present / cooler:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Trip Blank listed on COC:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Samples preserved properly:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
4. VOCs headspace free:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

SAMPLE INTEGRITY - INSTRUCTIONS	Y	OR	N	N/A
1. Analysis requested is clear:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
2. Bottles received for unspecified test:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Sufficient Volume rec'd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
4. Compositing instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

4.1
4

LA84075: Chain of Custody
Page 2 of 4

SGS Sample Receipt Summary

Job Number: LA84075

Client: ELEMENT

Project: 22091256

Date / Time Received: 10/10/2022 3:50:00 PM

Delivery Method: CLIENT

Airbill #s: _____

Cooler Temps (Initial/Adjusted): #1: (15.6/15.6):

Cooler Security

Y or N

Y or N

- | | | | | | |
|---------------------------|-------------------------------------|--------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Smpl Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Cooler Temperature

Y or N

- | | | |
|----------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Thermometer ID: | <u>IR001;</u> | |
| 3. Cooler media: | <u>No Ice</u> | |
| 4. No. Coolers: | <u>1</u> | |

Quality Control Preservation

Y or N

N/A

- | | | | |
|---------------------------------|-------------------------------------|--------------------------|-------------------------------------|
| 1. Trip Blank present / cooler: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Trip Blank listed on COC: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Samples preserved properly: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. VOCs headspace free: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Sample Integrity - Documentation

Y or N

- | | | |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Container labeling complete: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Sample Integrity - Condition

Y or N

- | | | |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Condition of sample: | <u>Intact</u> | |

Sample Integrity - Instructions

Y or N

N/A

- | | | | |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 2. Bottles received for unspecified tests | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 3. Sufficient volume recvd for analysis: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. Compositing instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Comments

4.1
4

LA84075: Chain of Custody

Page 3 of 4

Problem Resolution

Page 2 of 2

Job Number: LA84075

CSR: _____

Response Date: _____

Response:

4:1
4

LA84075: Chain of Custody
Page 4 of 4



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LA84075

August Levert_BP Plan_001982

Metals Analysis

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA84075
Account: SLLAL - Element Materials Technology
Project: Element Materials Technology, 2417 West Pinhook Road, Lafayette, LA

QC Batch ID: MP25191
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 10/11/22

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.080	.0013	.023	-0.0011	<0.080

Associated samples MP25191: LA84075-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

5.1.1
5

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA84075
Account: SLLAL - Element Materials Technology
Project: Element Materials Technology, 2417 West Pinhook Road, Lafayette, LA

QC Batch ID: MP25191
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 10/11/22

Metal	LA84055-21 Original MS	Spikelot HGSPIKE1 % Rec	QC Limits
Mercury	0.042 0.54	0.577 86.3	75-125

Associated samples MP25191: LA84075-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

5.1.2
5

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA84075
Account: SLLAL - Element Materials Technology
Project: Element Materials Technology, 2417 West Pinhook Road, Lafayette, LA

QC Batch ID: MP25191
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 10/11/22

Metal	LA84055-21 Original MSD	Spikelot HGSPIKE1 % Rec	MSD RPD	QC Limit		
Mercury	0.042	0.55	0.556	91.4	1.8	20

Associated samples MP25191: LA84075-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

5.1.2
5

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA84075
Account: SLLAL - Element Materials Technology
Project: Element Materials Technology, 2417 West Pinhook Road, Lafayette, LA

QC Batch ID: MP25191
Matrix Type: SOLID

Methods: SW846 7471B
Units: mg/kg

Prep Date: 10/11/22

Metal	LCS Result	SpikeLot LCSHG18A % Rec	QC Limits
Mercury	22.0	25.6 85.9	80-120

Associated samples MP25191: LA84075-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

5.1.3
5

SERIAL DILUTION RESULTS SUMMARY

Login Number: LA84075
Account: SLLAL - Element Materials Technology
Project: Element Materials Technology, 2417 West Pinhook Road, Lafayette, LA

QC Batch ID: MP25191
Matrix Type: SOLID

Methods: SW846 7471B
Units: ug/l

Prep Date: 10/11/22

Metal	LA84055-21	Original	SDL 1:5	%DIF	QC Limits
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Mercury 0.353 0.312 11.6 (a) 0-

Associated samples MP25191: LA84075-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

5.1.4
5



Chain of Custody

Laboratory Number: 22091756

Client Information:
 Company Name: Icon Env
 Contact Name: Jason Sills
 Address: 209 Commercial Dr
 City, State Zip: Port Allen La 70767
 Phone Number: 225 344 8488
 Fax Number:
 E-mail Address:

Billing Information:
 PO Number:
 Quote Number:
 Required QC Level
 Bill Monthly
 Yes
 No

Project Name/Number: Levert - Ground Water
Sampler's Signature:
Shipping Method:
 UPS / FedEx / NOW
 DHL / Hand / Mail

Matrix Code
 DW = Drinking Water
 WW = Waste Water
 GW = Ground Water
 AQ = Aqueous
 SL = Sludge
 O = Oil
 F = Food
 NG = Natural Gas
 NGL = Natural Gas Liquid
 PW = Produced Water
 CF = Completion Fluid

Page 1 of 1

Sample ID/Description	Which Regulations Apply:			Turn Time <input type="checkbox"/> Standard <input type="checkbox"/> RUSH <input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> Other	(Rush turn times will incur a surcharge and must be pre-approved by lab.)	Container Type P=Plastic, V=Vial G=Glass	Pres. HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₃	Requested Tests	Comments
	Collection Information		Quantity						
	Date	Time							
SB-6R(0-2)	9-27-22	940	G	sol					
SB-7R(0-2)		950							
SB-27(0-2)		1020							
SB-5R(0-2)		1035							
SB-5R(6-8)		1110							
SB-25(0-2)		1050							
SB-25(2-4)		1100							
SB-26(0-2)		1120							
SB-26(2-4)		1130							

Relinquished by:
Date/Time: 9-28-22 1020

Received by:
Date/Time: 9-28-22 1020

Relinquished by:
Date/Time: 9-28-22 1520

Received by:
Date/Time: 9-28-22 1520

Field Notes:
 Received at lab on ice? Yes No
 Temp:

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

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