

ROY S. NELSON PLANT

2020 Annual Groundwater Monitoring and Corrective Action Report

**PREPARED IN COMPLIANCE WITH THE
EPA FINAL RULE FOR THE DISPOSAL OF
COAL COMBUSTION RESIDUALS
TITLE 40 CODE OF FEDERAL REGULATIONS PART 257**



January 2021

**CCR UNIT
WESTLAKE, LA**

**2020 ANNUAL GROUNDWATER MONITORING
AND CORRECTIVE ACTION REPORT**

**Prepared for
Entergy Services, LLC
639 Loyola Ave
Mail unit L-ENT 3D
New Orleans, LA 70113**

Prepared By:

**Pivotal Engineering LLC,
Eagle Environmental, and
TRC Solutions**

January 2021

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1.0 EXECUTIVE SUMMARY

The Coal Ash Landfill (CCR Unit) was in operation throughout 2020. For the duration of the current annual reporting period (January 2020 through December 2020), the groundwater quality was monitored under a detection monitoring program. In line with historical trends at the site, statistically significant increases of calcium were detected. Entergy Louisiana LLC (Entergy) had previously performed the alternate source demonstration (ASD) to justify that the origin of the SSIs are from areas other than the CCR Unit. For the duration of 2020, no corrective measures were initiated.

2.0 INTRODUCTION

Entergy Louisiana LLC (Entergy), operates a Coal Ash Landfill (CCR Unit) for the disposal of coal combustion residuals (CCR) at the Roy S. Nelson Plant located in Westlake, Louisiana. The CCR Unit receives CCR generated from the combustion of coal at the Nelson Plant. Management of the CCRs at the CCR Unit is performed pursuant to national criteria established in Title 40 of the Code of Federal Regulations (40 CFR) Part 257 (CCR Rule), published by the United States Environmental Protection Agency (EPA) on April 17, 2015. Entergy has installed a groundwater monitoring system at the CCR Unit that is subject to the groundwater monitoring and corrective action requirements provided under §§257.90 through 257.98 of the CCR Rule. In accordance with §257.90(e) of the CCR Rule, Entergy must prepare an annual report that provides information regarding the groundwater monitoring and corrective action program at the CCR Unit. This document is intended to provide the required information.

This report is the fourth annual groundwater monitoring report required under the CCR Rule and is the summary and analysis of results from the 2020 groundwater monitoring sampling events. The first groundwater monitoring report was completed in January 2018.

3.0 GROUNDWATER MONITORING WELL NETWORK

Entergy's groundwater monitoring system consists of 14 monitoring wells as shown in Appendix A. Pursuant to §257.91(f) of the CCR Rule, a qualified professional engineer has certified that the groundwater monitoring system has been designed and constructed to meet the requirements of this section of §257.91.

4.0 INSTALLED OR DECOMMISSIONED MONITORING WELLS DURING 2020

No monitoring wells were installed or decommissioned during 2020 at the CCR Unit.

5.0 GROUNDWATER MONITORING DATA

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

6.0 STATUS SUMMARY OF THE 2020 GROUNDWATER MONITORING PROGRAM

Groundwater monitoring was performed in accordance with the detection monitoring requirements of §257.94. A summary of activities related to groundwater detection monitoring performed during 2020 is provided below:

- In accordance with §257.94(b), detection monitoring sampling was performed during March, June, September, and December for analysis of Appendix III parameters.
- Appendix IV parameters were collected in March, June, September and December 2020 to enhance the background data set for those constituents. Sample collection for Radium 226/228 was not performed as these constituents were not detected in any of the background data. As noted above, the March, June, September and December 2020 Appendix IV data were collected for background purposes and are not required by the rule since the unit is in detection monitoring.
- Statistical evaluation of the detection monitoring data was performed in accordance with the statistical method certified by a qualified Louisiana-registered professional Engineer. The certified statistical method has been posted to Entergy's CCR Rule Compliance Data and Information website.
- In 2018, Entergy completed a successful alternate source demonstration (ASD) per §257.94 (e)(2) in response to statistically significant increases (SSIs) identified during the second half of 2017 detection monitoring event. The ASD was certified by a Louisiana-registered professional engineer and was placed into the facility's operating record. Based on the successful evaluation conducted and results presented in the ASD, Entergy continued with detection monitoring in accordance with §257.94.
- In 2018, Entergy completed a successful alternate source demonstration (ASD) per §257.94 (e)(2) in response to statistically significant increases (SSIs) identified during the first half of 2018 detection monitoring event. The ASD were certified by a Louisiana-registered professional engineer and were placed into the facility's operating record. Based on the successful evaluation conducted and results presented in the ASD, Entergy continued with detection monitoring in accordance with §257.94.
- In 2019, Entergy completed a successful alternate source demonstration (ASD) per §257.94 (e)(2) in response to statistically significant increases (SSIs) identified during the second half of 2018 detection monitoring event. The ASD were certified by a Louisiana-registered professional engineer and were placed into the facility's operating record. Based on the successful evaluation conducted and results presented in the ASD, Entergy continued with detection monitoring in accordance with §257.94.

-
- The 2020 detection monitoring sampling was performed during March, June, September, and December 2020. Results confirmed SSIs for calcium in June and December 2020 in wells CCR-5 and CCR-7.
 - No problems were encountered during 2020 with regard to the groundwater monitoring system. Therefore, no actions were required to modify the system.
 - The facility remained in detection monitoring for the duration of 2020.

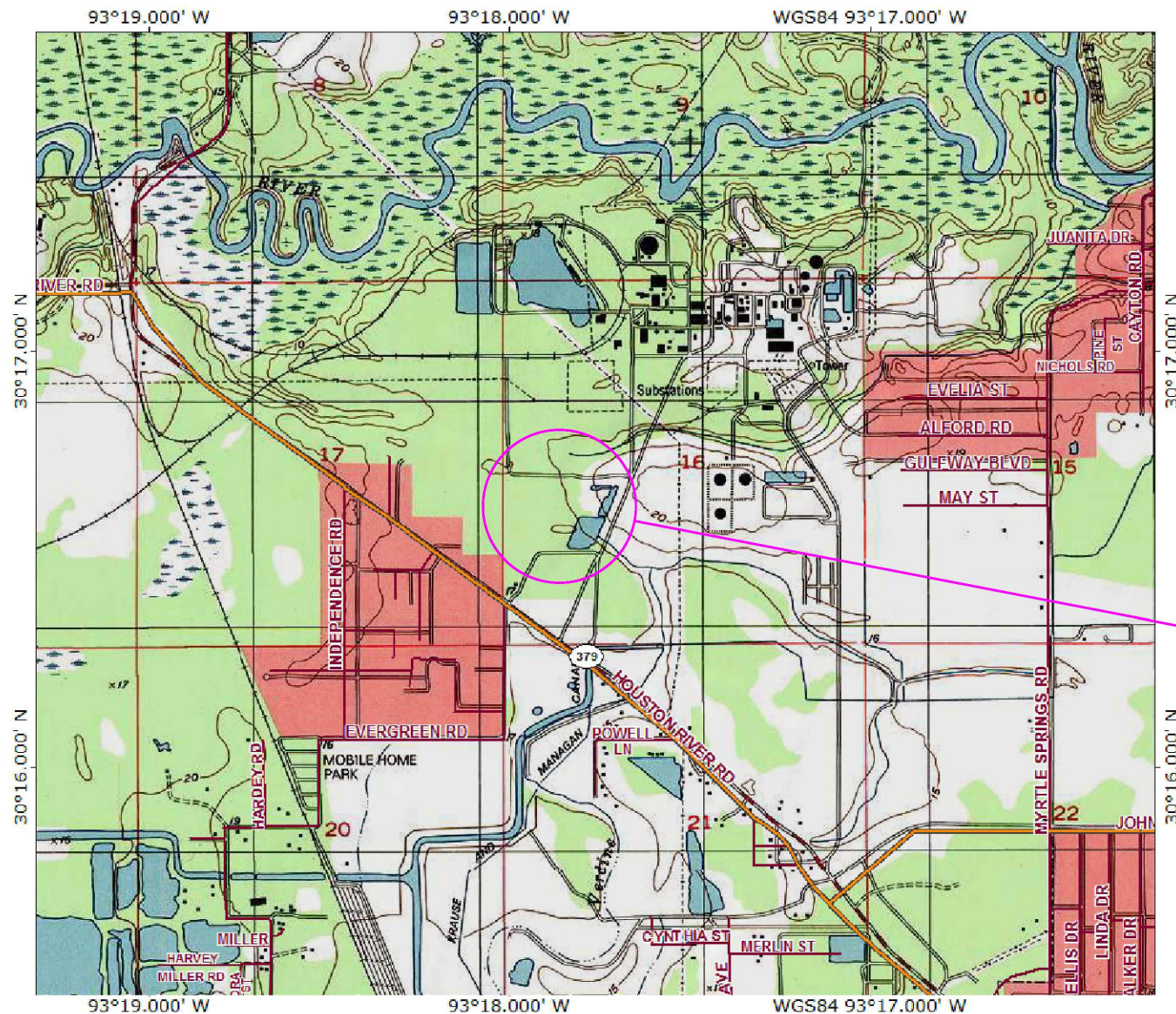
7.0 PROJECTED ACTIVITIES FOR 2021

Planned activities for the CCR Unit's groundwater monitoring program during 2021 are listed below:

- Semi-annual detection monitoring events are planned for June and December 2021

APPENDIX A

SITE MAP



SITE LOCATION

COAL ASH DISPOSAL LANDFILL SITE LOCATION MAP

NELSON POWER GENERATING STATION
3500 HOUSTON RIVER ROAD, WESTLAKE, LOUISIANA

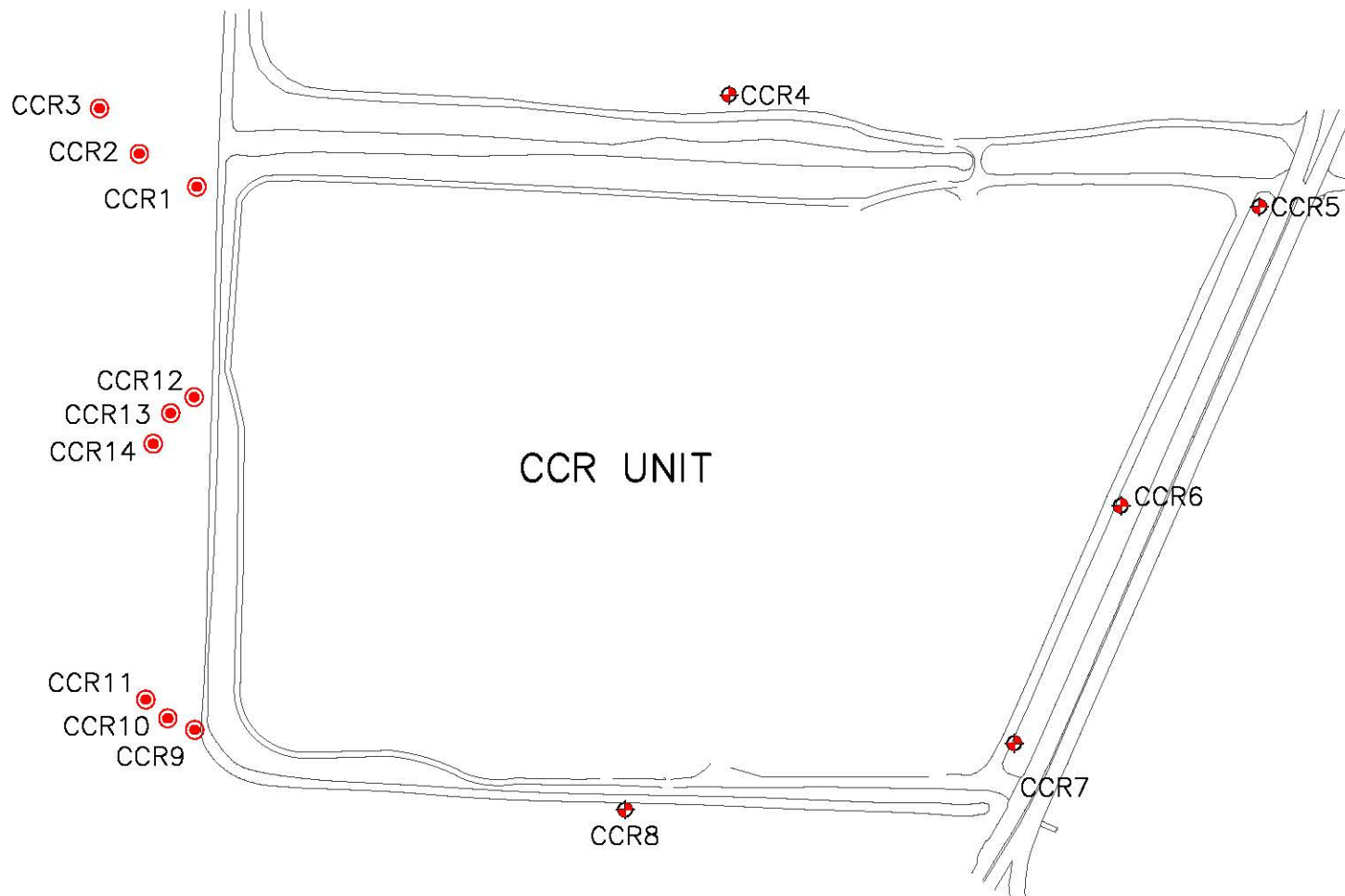


Pivotal Engineering LLC
CIVIL, ELECTRICAL, ENVIRONMENTAL & MECHANICAL ENGINEERING
1515 POWERS STREET, STE. 1076
NEW ORLEANS, LA. 70112
(504) 790-3853 (504) 790-3854(FAX)

SCALE: NOT TO SCALE	DRAWN BY: Y.S.
DATE: JANUARY 4, 2015	CHECKED BY: T.E.
JOB NO. 15-125	

1
FIG. NO.

DATE	DESCRIPTION	BY
	REVISIONS	



CCR UNIT SITE MAP

ENTERGY LOUISIANA, LLC
ROY S. NELSON PLANT
HOUSTON RIVER ROAD, WESTLAKE, LOUISIANA

DATE	DESCRIPTION REVISIONS	BY

SCALE: AS NOTED
DATE: JAN 06/16

DRAWN BY: B.S.
CHECKED BY: T.E.

APPENDIX B

SAMPLING SCHEDULE AND ANALYTICAL DATA



Detection Monitoring Sampling Dates

Entergy Louisiana LLC Nelson Coal Ash Landfill Westlake, LA

Well	CCR-1 (sg)	CCR-2 (sg)	CCR-3 (sg)	CCR-4	CCR-5	CCR-6	CCR-7	CCR-8	CCR-9 (sg)	CCR-10 (sg)	CCR-11 (sg)	CCR-12 (sg)	CCR-13 (sg)	CCR-14 (sg)
Date	3/3/20	3/3/20	3/3/20	3/4/20	3/5/20	3/5/20	3/5/20	3/4/20	3/2/20	3/2/20	3/2/20	3/3/20	3/3/20	3/3/20
40 CFR 257 Appendix III Parameters*	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
40 CFR 257 Appendix IV Parameters**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Date	6/5/20	6/5/20	6/5/20	6/5/20	6/5/20	6/5/20	6/5/20	6/5/20	6/4/20	6/4/20	6/4/20	6/4/20	6/4/20	6/4/20
40 CFR 257 Appendix III Parameters*	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
40 CFR 257 Appendix IV Parameters**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Date	9/28/20	9/28/20	9/28/20	9/28/20	9/29/20	9/29/20	9/29/20	9/29/20	9/29/20	9/29/20	9/29/20	9/28/20	9/28/20	9/28/20
40 CFR 257 Appendix III Parameters*	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
40 CFR 257 Appendix IV Parameters**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Date	12/14/20	12/14/20	12/14/20	12/14/20	12/14/20	12/14/20	12/14/20	12/14/20	12/15/20	12/15/20	12/15/20	12/15/20	12/15/20	12/15/20
40 CFR 257 Appendix III Parameters*	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
40 CFR 257 Appendix IV Parameters**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

*40 CFR 257 Appendix III Parameters collected on reference date and include Boron, Calcium, Chloride, Fluoride, Sulfate, and Total Dissolved Solids. Laboratory reports to follow

**40 CFR 257 Appendix IV Parameters collected on reference date and include Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Fluoride, Lead, Lithium, Mercury, Molybdenum, Selenium and Thallium

Note: Detection monitoring results for pH are located on the next table.

Radium 226 and 228 combined were not analyzed in 2020 due to 100% non-detect in previous background analytical results



Detection Monitoring pH Results

Entergy Louisiana LLC Nelson Coal Ash Landfill Westlake, LA

Well	CCR-1 (BG)	CCR-2 (BG)	CCR-3 (BG)	CCR-4	CCR-5	CCR-6	CCR-7	CCR-8	CCR-9 (BG)	CCR-10 (BG)	CCR-11 (BG)	CCR-12 (BG)	CCR-13 (BG)	CCR-14 (BG)
Date	3/3/20	3/3/20	3/3/20	3/4/20	3/5/20	3/5/20	3/5/20	3/4/20	3/2/20	3/2/20	3/2/20	3/3/20	3/3/20	3/3/20
pH (S.U.)	7.43	7.33	7.37	7.29	7.50	7.63	7.51	7.00	7.64	7.60	7.60	6.90	7.39	7.08
Date	6/5/20	6/5/20	6/5/20	6/5/20	6/5/20	6/5/20	6/5/20	6/5/20	6/4/20	6/4/20	6/4/20	6/4/20	6/4/20	6/4/20
pH (S.U.)	7.48	7.24	7.19	7.28	7.48	7.39	7.47	6.93	7.84	7.65	7.72	6.93	7.34	7.21
Date	9/28/20	9/28/20	9/28/20	9/28/20	9/29/20	9/29/20	9/29/20	9/29/20	9/29/20	9/29/20	9/29/20	9/28/20	9/28/20	9/28/20
pH (S.U.)	6.99	6.80	6.88	6.72	7.05	7.04	7.32	6.53	7.29	7.25	7.33	6.46	6.93	6.74
Date	12/14/20	12/14/20	12/14/20	12/14/20	12/14/20	12/14/20	12/14/20	12/14/20	12/15/20	12/15/20	12/15/20	12/15/20	12/15/20	12/15/20
pH (S.U.)	7.57	7.40	6.72	7.56	7.78	7.89	7.94	7.50	7.50	7.31	6.64	6.75	7.03	6.96
Date*					1/12/21	1/12/21	1/12/21							
pH (S.U.)					7.09	7.04	7.07							

S.U. - Standard Units

* Resampling event for pH in wells CCR-5, CCR-6, and CCR-7



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

March 18, 2020

Terry Elnaggar
Pivotal Engineering LLC
1515 Poydras St., STE. 1875
New Orleans, LA 70112
TEL: (504) 799-3653
FAX:

RE: CCR Detection Monitoring

Order No.: 20030278

Dear Terry Elnaggar:

Element Materials Technology Lafayette received 16 sample(s) on 3/6/2020 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.

Where applicable, 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.: 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.

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
Lafayette, LA 70508-3344



Element Materials Technology Lafayette
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Website: www.element.com

Case Narrative

WO#: 20030278
Date: 3/18/2020

CLIENT: Pivotal Engineering LLC
Project: CCR Detection Monitoring

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#: 20030278

Date Reported: 3/18/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 3/3/2020 4:50:00 PM
Project: CCR Detection Monitoring
Lab ID: 20030278-001 **Matrix:** AQUEOUS
Client Sample ID: CCR-1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	44.3	2.50		mg/L	10	3/10/2020 9:53:35 AM
Fluoride	0.308	0.0500		mg/L	1	3/10/2020 4:18:18 PM
Sulfate	2.93	0.250		mg/L	1	3/10/2020 4:18:18 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	3/12/2020 2:21:26 PM
Calcium	26.0	0.500		mg/L	1	3/12/2020 2:21:26 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	267	20.0		mg/L	1	3/6/2020 3:18:00 PM

Qualifiers:	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
	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#: 20030278

Date Reported: 3/18/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 3/3/2020 3:45:00 PM
Project: CCR Detection Monitoring
Lab ID: 20030278-002 **Matrix:** AQUEOUS
Client Sample ID: CCR-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	58.1	2.50		mg/L	10	3/10/2020 10:07:15 AM
Fluoride	0.360	0.0500		mg/L	1	3/10/2020 4:32:01 PM
Sulfate	1.42	0.250		mg/L	1	3/10/2020 4:32:01 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	3/12/2020 2:26:14 PM
Calcium	19.9	0.500		mg/L	1	3/12/2020 2:26:14 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	240	20.0		mg/L	1	3/6/2020 3:18:00 PM

Qualifiers:	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
	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#: 20030278

Date Reported: 3/18/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 3/3/2020 2:40:00 PM
Project: CCR Detection Monitoring
Lab ID: 20030278-003 **Matrix:** AQUEOUS
Client Sample ID: CCR-3

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	111	5.00		mg/L	20	3/10/2020 10:20:59 AM
Fluoride	0.406	0.0500		mg/L	1	3/10/2020 4:45:45 PM
Sulfate	3.69	0.250		mg/L	1	3/10/2020 4:45:45 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	3/12/2020 2:56:58 PM
Calcium	28.3	0.500		mg/L	1	3/12/2020 2:56:58 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	358	20.0		mg/L	1	3/6/2020 3:18:00 PM

Qualifiers:	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
	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#: 20030278

Date Reported: 3/18/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 3/4/2020 12:20:00 PM
Project: CCR Detection Monitoring
Lab ID: 20030278-004 **Matrix:** AQUEOUS
Client Sample ID: CCR-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	48.4	2.50		mg/L	10	3/10/2020 10:34:43 AM
Fluoride	0.132	0.0500		mg/L	1	3/10/2020 4:59:28 PM
Sulfate	10.3	0.250		mg/L	1	3/10/2020 4:59:28 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	0.104	0.100		mg/L	1	3/12/2020 3:01:25 PM
Calcium	18.3	0.500		mg/L	1	3/12/2020 3:01:25 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	240	20.0		mg/L	1	3/6/2020 3:18:00 PM

Qualifiers:	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
	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#: 20030278

Date Reported: 3/18/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 3/5/2020 12:00:00 PM
Project: CCR Detection Monitoring
Lab ID: 20030278-005 **Matrix:** AQUEOUS
Client Sample ID: CCR-5

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	62.2	5.00		mg/L	20	3/10/2020 10:48:27 AM
Fluoride	0.185	0.0500		mg/L	1	3/10/2020 5:13:13 PM
Sulfate	< 0.250	0.250		mg/L	1	3/10/2020 5:13:13 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	0.115	0.100		mg/L	1	3/12/2020 3:05:53 PM
Calcium	33.3	0.500		mg/L	1	3/12/2020 3:05:53 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	360	20.0		mg/L	1	3/6/2020 3:18:00 PM

Qualifiers:	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
	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#: 20030278

Date Reported: 3/18/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 3/5/2020 10:30:00 AM
Project: CCR Detection Monitoring
Lab ID: 20030278-006 **Matrix:** AQUEOUS
Client Sample ID: CCR-6

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	77.0	2.50		mg/L	10	3/10/2020 11:02:11 AM
Fluoride	0.227	0.0500		mg/L	1	3/10/2020 5:26:57 PM
Sulfate	< 0.250	0.250		mg/L	1	3/10/2020 5:26:57 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	0.104	0.100		mg/L	1	3/12/2020 3:10:21 PM
Calcium	30.6	0.500		mg/L	1	3/12/2020 3:10:21 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	301	20.0		mg/L	1	3/6/2020 3:18:00 PM

Qualifiers:	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
	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#: 20030278

Date Reported: 3/18/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 3/5/2020 9:15:00 AM
Project: CCR Detection Monitoring
Lab ID: 20030278-007 **Matrix:** AQUEOUS
Client Sample ID: CCR-7

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	77.2	2.50		mg/L	10	3/10/2020 11:43:25 AM
Fluoride	0.291	0.0500		mg/L	1	3/10/2020 5:40:40 PM
Sulfate	< 0.250	0.250		mg/L	1	3/10/2020 5:40:40 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	0.111	0.100		mg/L	1	3/12/2020 3:24:23 PM
Calcium	46.7	0.500		mg/L	1	3/12/2020 3:24:23 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	310	20.0		mg/L	1	3/6/2020 3:18:00 PM

Qualifiers:	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
	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#: 20030278

Date Reported: 3/18/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 3/4/2020 10:45:00 AM
Project: CCR Detection Monitoring
Lab ID: 20030278-008 **Matrix:** AQUEOUS
Client Sample ID: CCR-8

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	84.6	2.50		mg/L	10	3/10/2020 11:57:09 AM
Fluoride	0.160	0.0500		mg/L	1	3/10/2020 5:54:24 PM
Sulfate	1.02	0.250		mg/L	1	3/10/2020 5:54:24 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	3/12/2020 3:29:09 PM
Calcium	11.4	0.500		mg/L	1	3/12/2020 3:29:09 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	244	20.0		mg/L	1	3/6/2020 3:18:00 PM

Qualifiers:	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
	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#: 20030278

Date Reported: 3/18/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 3/2/2020 6:00:00 PM
Project: CCR Detection Monitoring
Lab ID: 20030278-009 **Matrix:** AQUEOUS
Client Sample ID CCR-9

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	69.6	2.50		mg/L	10	3/10/2020 12:10:52 PM
Fluoride	0.587	0.0500		mg/L	1	3/10/2020 6:08:07 PM
Sulfate	6.54	0.250		mg/L	1	3/10/2020 6:08:07 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	3/12/2020 3:33:33 PM
Calcium	30.4	0.500		mg/L	1	3/12/2020 3:33:33 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	327	20.0		mg/L	1	3/6/2020 3:18:00 PM

Qualifiers:	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
	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#: 20030278

Date Reported: 3/18/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 3/2/2020 5:00:00 PM
Project: CCR Detection Monitoring
Lab ID: 20030278-010 **Matrix:** AQUEOUS
Client Sample ID: CCR-10

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	42.3	2.50		mg/L	10	3/10/2020 12:24:51 PM
Fluoride	0.653	0.0500		mg/L	1	3/10/2020 6:21:51 PM
Sulfate	11.3	0.250		mg/L	1	3/10/2020 6:21:51 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	3/12/2020 3:37:59 PM
Calcium	26.9	0.500		mg/L	1	3/12/2020 3:37:59 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	305	20.0		mg/L	1	3/6/2020 3:18:00 PM

Qualifiers:	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
	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#: 20030278

Date Reported: 3/18/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 3/2/2020 2:40:00 PM
Project: CCR Detection Monitoring
Lab ID: 20030278-011 **Matrix:** AQUEOUS
Client Sample ID: CCR-11

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	25.4	2.50		mg/L	10	3/10/2020 1:06:03 PM
Fluoride	0.746	0.0500		mg/L	1	3/10/2020 7:03:05 PM
Sulfate	3.64	0.250		mg/L	1	3/10/2020 7:03:05 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	3/12/2020 3:55:49 PM
Calcium	27.9	0.500		mg/L	1	3/12/2020 3:55:49 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	211	20.0		mg/L	1	3/9/2020 7:54:00 AM

Qualifiers:	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
	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#: 20030278

Date Reported: 3/18/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 3/3/2020 12:45:00 PM
Project: CCR Detection Monitoring
Lab ID: 20030278-012 **Matrix:** AQUEOUS
Client Sample ID: CCR-12

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	16.9	1.25		mg/L	5	3/10/2020 1:19:46 PM
Fluoride	0.153	0.0500		mg/L	1	3/10/2020 7:17:02 PM
Sulfate	10.3	0.250		mg/L	1	3/10/2020 7:17:02 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	3/12/2020 4:00:37 PM
Calcium	18.1	0.500		mg/L	1	3/12/2020 4:00:37 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	154	20.0		mg/L	1	3/9/2020 7:54:00 AM

Qualifiers:	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
	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#: 20030278

Date Reported: 3/18/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 3/3/2020 11:30:00 AM
Project: CCR Detection Monitoring
Lab ID: 20030278-013 **Matrix:** AQUEOUS
Client Sample ID: CCR-13

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	11.8	1.25		mg/L	5	3/10/2020 1:33:43 PM
Fluoride	0.169	0.0500		mg/L	1	3/10/2020 7:30:47 PM
Sulfate	0.564	0.250		mg/L	1	3/10/2020 7:30:47 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	3/12/2020 4:05:22 PM
Calcium	21.0	0.500		mg/L	1	3/12/2020 4:05:22 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	143	20.0		mg/L	1	3/9/2020 7:54:00 AM

Qualifiers:	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
	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#: 20030278

Date Reported: 3/18/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 3/3/2020 10:20:00 AM
Project: CCR Detection Monitoring
Lab ID: 20030278-014 **Matrix:** AQUEOUS
Client Sample ID: CCR-14

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	12.7	1.25		mg/L	5	3/10/2020 1:47:27 PM
Fluoride	0.242	0.0500		mg/L	1	3/10/2020 7:44:31 PM
Sulfate	2.33	0.250		mg/L	1	3/10/2020 7:44:31 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	3/12/2020 4:10:10 PM
Calcium	16.2	0.500		mg/L	1	3/12/2020 4:10:10 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	180	20.0		mg/L	1	3/9/2020 7:54:00 AM

Qualifiers:	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
	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#: 20030278

Date Reported: 3/18/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 3/4/2020
Project: CCR Detection Monitoring
Lab ID: 20030278-015 **Matrix:** AQUEOUS
Client Sample ID Dup

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	43.8	2.50		mg/L	10	3/10/2020 2:01:11 PM
Fluoride	0.227	0.0500		mg/L	1	3/10/2020 7:58:15 PM
Sulfate	10.1	0.250		mg/L	1	3/10/2020 7:58:15 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	0.107	0.100		mg/L	1	3/12/2020 4:14:57 PM
Calcium	23.6	0.500		mg/L	1	3/12/2020 4:14:57 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	256	20.0		mg/L	1	3/9/2020 7:54:00 AM

Qualifiers:	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
	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#: 20030278

Date Reported: 3/18/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 3/5/2020 12:15:00 PM
Project: CCR Detection Monitoring
Lab ID: 20030278-016 **Matrix:** AQUEOUS
Client Sample ID: FB-1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0		Analyst: SGP
Chloride	< 0.250	0.250		mg/L	1	3/10/2020 2:14:55 PM
Fluoride	< 0.0500	0.0500		mg/L	1	3/10/2020 2:14:55 PM
Sulfate	< 0.250	0.250		mg/L	1	3/10/2020 2:14:55 PM
METALS IN WATER BY ICP, TOTALS				SW6010B		Analyst: STS
Boron	< 0.100	0.100		mg/L	1	3/12/2020 4:19:44 PM
Calcium	< 0.500	0.500		mg/L	1	3/12/2020 4:19:44 PM
TOTAL DISSOLVED SOLIDS				SM2540C		Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	< 20.0	20.0		mg/L	1	3/9/2020 7:54:00 AM

Qualifiers:	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
	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#: 20030278
18-Mar-20

Client: Pivotal Engineering LLC
Project: CCR Detection Monitoring

BatchID: 33394

Sample ID: MB-33394	SampType: MBLK	TestCode: 6010_W	Units: mg/L	Prep Date: 3/9/2020	RunNo: 86804
Client ID: PBW	Batch ID: 33394	TestNo: SW6010B		Analysis Date: 3/12/2020	SeqNo: 2173308
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Boron	< 0.100	0.100									
Calcium	< 0.500	0.500									

Sample ID: LCS-33394	SampType: LCS	TestCode: 6010_W	Units: mg/L	Prep Date: 3/9/2020	RunNo: 86804
Client ID: LCSW	Batch ID: 33394	TestNo: SW6010B		Analysis Date: 3/12/2020	SeqNo: 2173309
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Boron	0.494	0.100	0.5000	0	98.8	80	120				
Calcium	50.1	0.500	50.00	0	100	80	120				

Sample ID: LCSD-33394	SampType: LCSD	TestCode: 6010_W	Units: mg/L	Prep Date: 3/9/2020	RunNo: 86804
Client ID: LCSS02	Batch ID: 33394	TestNo: SW6010B		Analysis Date: 3/12/2020	SeqNo: 2173310
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Boron	0.495	0.100	0.5000	0	99.1	80	120	0.4938	0.303	20	
Calcium	50.0	0.500	50.00	0	99.9	80	120	50.13	0.320	20	

Sample ID: 20030280-006BMS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 3/9/2020	RunNo: 86804
Client ID: ZZZZZZ	Batch ID: 33394	TestNo: SW6010B		Analysis Date: 3/12/2020	SeqNo: 2173322
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Boron	0.601	0.100	0.5000	0.1040	99.3	75	125				
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Qualifiers:	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
	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#: 20030278

18-Mar-20

Client: Pivotal Engineering LLC
Project: CCR Detection Monitoring

BatchID: 33394

Sample ID: 20030280-006BMS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 3/9/2020	RunNo: 86804
Client ID: ZZZZZZ	Batch ID: 33394	TestNo: SW6010B	Analysis Date: 3/12/2020	SeqNo: 2173322	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Calcium	80.6	0.500	50.00	30.63	100 75 125

Sample ID: 20030280-006BMSD	SampType: MSD	TestCode: 6010_W	Units: mg/L	Prep Date: 3/9/2020	RunNo: 86804
Client ID: ZZZZZZ	Batch ID: 33394	TestNo: SW6010B	Analysis Date: 3/12/2020	SeqNo: 2173323	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Boron	0.616	0.100	0.5000	0.1040	102 75 125 0.6006 2.52 20
Calcium	81.0	0.500	50.00	30.63	101 75 125 80.64 0.507 20

Qualifiers:

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
SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as s1



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QC SUMMARY REPORT

WO#: 20030278
18-Mar-20

Client: Pivotal Engineering LLC
Project: CCR Detection Monitoring

BatchID: 33394

Sample ID: MB-33394	SampType: MBLK	TestCode: 6010_W	Units: mg/L	Prep Date: 3/9/2020	RunNo: 86803
Client ID: PBW	Batch ID: 33394	TestNo: SW6010B		Analysis Date: 3/12/2020	SeqNo: 2173264
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Boron	< 0.100	0.100			
Calcium	< 0.500	0.500			

Sample ID: LCS-33394	SampType: LCS	TestCode: 6010_W	Units: mg/L	Prep Date: 3/9/2020	RunNo: 86803
Client ID: LCSW	Batch ID: 33394	TestNo: SW6010B		Analysis Date: 3/12/2020	SeqNo: 2173265
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Boron	0.494	0.100	0.5000	0	98.8	80	120			
Calcium	50.1	0.500	50.00	0	100	80	120			

Sample ID: LCSD-33394	SampType: LCSD	TestCode: 6010_W	Units: mg/L	Prep Date: 3/9/2020	RunNo: 86803
Client ID: LCSS02	Batch ID: 33394	TestNo: SW6010B		Analysis Date: 3/12/2020	SeqNo: 2173266
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Boron	0.495	0.100	0.5000	0	99.1	80	120	0.4938	0.303	20
Calcium	50.0	0.500	50.00	0	99.9	80	120	50.13	0.320	20

Sample ID: 20030278-006BMS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 3/9/2020	RunNo: 86803
Client ID: CCR-6	Batch ID: 33394	TestNo: SW6010B		Analysis Date: 3/12/2020	SeqNo: 2173278
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Boron	0.601	0.100	0.5000	0.1040	99.3	75	125			
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Qualifiers:	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
	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#: 20030278

18-Mar-20

Client: Pivotal Engineering LLC
Project: CCR Detection Monitoring

BatchID: 33394

Sample ID: 20030278-006BMS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 3/9/2020	RunNo: 86803						
Client ID: CCR-6	Batch ID: 33394	TestNo: SW6010B		Analysis Date: 3/12/2020	SeqNo: 2173278						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	80.6	0.500	50.00	30.63	100	75	125				

Sample ID: 20030278-006BMSD	SampType: MSD	TestCode: 6010_W	Units: mg/L	Prep Date: 3/9/2020	RunNo: 86803						
Client ID: CCR-6	Batch ID: 33394	TestNo: SW6010B		Analysis Date: 3/12/2020	SeqNo: 2173279						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.616	0.100	0.5000	0.1040	102	75	125	0.6006	2.52	20	
Calcium	81.0	0.500	50.00	30.63	101	75	125	80.64	0.507	20	

Qualifiers:

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
SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as s



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QC SUMMARY REPORT

WO#: 20030278
18-Mar-20

Client: Pivotal Engineering LLC
Project: CCR Detection Monitoring

BatchID: R86620

Sample ID: 20030278-006ADUP	SampType: DUP	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 86620						
Client ID: CCR-6	Batch ID: R86620	TestNo: SM2540C	Analysis Date: 3/6/2020	SeqNo: 2170494							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable)	289	20.0						301.0	4.07	10	
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Sample ID: MB-R86620	SampType: MBLK	TestCode: TDS_2540C	Units: mg/L	Prep Date:					RunNo: 86620		
Client ID: PBW	Batch ID: R86620	TestNo: SM2540C	Analysis Date: 3/6/2020					SeqNo: 2170499			
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									
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Sample ID: LCS-R86620	SampType: LCS	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 86620						
Client ID: LCSW	Batch ID: R86620	TestNo: SM2540C		Analysis Date: 3/6/2020	SeqNo: 2170500						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable)	985	20.0	1,000	0	98.5	85	115				
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Sample ID: LCSD-R86620	SampType: LCSD	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 86620						
Client ID: LCSS02	Batch ID: R86620	TestNo: SM2540C		Analysis Date: 3/6/2020	SeqNo: 2170501						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable)	976	20.0	1,000	0	97.6	85	115	985.0	0.918	10	
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Qualifiers:	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
	SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as s1



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

QC SUMMARY REPORT

WO#: 20030278
18-Mar-20

Client: Pivotal Engineering LLC
Project: CCR Detection Monitoring

BatchID: R86620

Sample ID: LCSD-R86620	SampType: LCSD	TestCode: TDS_2540C	Units: mg/L	Prep Date:					RunNo: 86620		
Client ID: LCSS02	Batch ID: R86620	TestNo: SM2540C	Analysis Date: 3/6/2020					SeqNo: 2170501			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: 20030012-001BDUP	SampType: DUP	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 86620						
Client ID: ZZZZZZ	Batch ID: R86620	TestNo: SM2540C		Analysis Date: 3/6/2020	SeqNo: 2170504						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable)	18,100	2,000						10,500	53.1	10	R
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NOTES:

R - High RPD due to suspected sample non-homogeneity. The method is in control as indicated by the LCS/LCSD.

Sample ID: 20030171-001BDUP	SampType: DUP	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 86620						
Client ID: ZZZZZZ	Batch ID: R86620	TestNo: SM2540C		Analysis Date: 3/6/2020	SeqNo: 2170508						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable)	203	20.0						201.0	0.990	10	
--	-----	------	--	--	--	--	--	-------	-------	----	--

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
SDL Sample detection limit

H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
U Analyte not detected

M Matrix Interference
RL Reporting Limit
W Sample container temperature is out of limit as s1



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QC SUMMARY REPORT

WO#: 20030278
18-Mar-20

Client: Pivotal Engineering LLC
Project: CCR Detection Monitoring

BatchID: R86655

Sample ID: MB-R86655	SampType: MBLK	TestCode: TDS_2540C	Units: mg/L	Prep Date:					RunNo: 86655		
Client ID: PBW	Batch ID: R86655	TestNo: SM2540C	Analysis Date: 3/9/2020					SeqNo: 2171410			
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-R86655	SampType: LCS	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 86655						
Client ID: LCSW	Batch ID: R86655	TestNo: SM2540C		Analysis Date: 3/9/2020	SeqNo: 2171411						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 998 20.0 1,000 0 99.8 85 115

Sample ID: LCSD-R86655	SampType: LCSD	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 86655						
Client ID: LCSS02	Batch ID: R86655	TestNo: SM2540C		Analysis Date: 3/9/2020	SeqNo: 2171412						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 991 20.0 1,000 0 99.1 85 115 998.0 0.704 10

Sample ID: 20030278-011ADUP	SampType: DUP	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 86655						
Client ID: CCR-11	Batch ID: R86655	TestNo: SM2540C		Analysis Date: 3/9/2020	SeqNo: 2171419						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 209 20.0 211.0 0.952 10

Qualifiers: 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
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#: 20030278
18-Mar-20

Client: Pivotal Engineering LLC
Project: CCR Detection Monitoring

BatchID: R86655

Sample ID: 20030278-011ADUP	SampType: DUP	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 86655						
Client ID: CCR-11	Batch ID: R86655	TestNo: SM2540C		Analysis Date: 3/9/2020	SeqNo: 2171419						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: 20030238-001BDUP	SampType: DUP	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 86655						
Client ID: ZZZZZZ	Batch ID: R86655	TestNo: SM2540C		Analysis Date: 3/9/2020	SeqNo: 2171423						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filterable)	23,600	2,000						23,400	0.851	10	

Qualifiers:	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
	SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as s1



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QC SUMMARY REPORT

WO#: 20030278
18-Mar-20

Client: Pivotal Engineering LLC
Project: CCR Detection Monitoring

BatchID: R86686

Sample ID: MBLK	SampType: MBLK	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 86686						
Client ID: PBW	Batch ID: R86686	TestNo: E 300.0		Analysis Date: 3/10/2020	SeqNo: 2171686						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	< 0.250	0.250									
Fluoride	< 0.0500	0.0500									
Sulfate	< 0.250	0.250									

Sample ID: LCS	SampType: LCS	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 86686						
Client ID: LCSW	Batch ID: R86686	TestNo: E 300.0		Analysis Date: 3/10/2020	SeqNo: 2171687						
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	90	110				
Fluoride	2.05	0.0500	2.000	0	103	90	110				
Sulfate	10.2	0.250	10.00	0	102	90	110				

Sample ID: LCSD	SampType: LCSD	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 86686						
Client ID: LCSS02	Batch ID: R86686	TestNo: E 300.0		Analysis Date: 3/10/2020	SeqNo: 2171688						
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	90	110	10.06	0.561	15	
Fluoride	2.02	0.0500	2.000	0	101	90	110	2.051	1.30	15	
Sulfate	10.1	0.250	10.00	0	101	90	110	10.19	0.679	15	

Qualifiers:

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
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#: 20030278
18-Mar-20

Client: Pivotal Engineering LLC
Project: CCR Detection Monitoring

BatchID: R86686

Sample ID: 20030278-006AMS	SampType: MS	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 86686						
Client ID: CCR-6	Batch ID: R86686	TestNo: E 300.0	Analysis Date: 3/10/2020	SeqNo: 2171695							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	127	2.50	50.00	76.97	99.2	80	120				
Fluoride	10.3	0.500	10.00	0.1167	102	80	120				
Sulfate	48.7	2.50	50.00	0	97.3	80	120				

Sample ID: 20030278-006AMSD	SampType: MSD	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 86686						
Client ID: CCR-6	Batch ID: R86686	TestNo: E 300.0	Analysis Date: 3/10/2020	SeqNo: 2171696							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	128	2.50	50.00	76.97	101	80	120	126.6	0.826	15	
Fluoride	10.6	0.500	10.00	0.1167	105	80	120	10.33	2.63	15	
Sulfate	49.4	2.50	50.00	0	98.9	80	120	48.67	1.55	15	

Sample ID: 20030278-016AMS	SampType: MS	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 86686						
Client ID: FB-1	Batch ID: R86686	TestNo: E 300.0	Analysis Date: 3/10/2020	SeqNo: 2171709							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	5.19	0.250	5.000	0	104	80	120				
Fluoride	1.04	0.0500	1.000	0	104	80	120				
Sulfate	5.06	0.250	5.000	0	101	80	120				

Qualifiers:

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
SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as s1



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QC SUMMARY REPORT

WO#: 20030278

18-Mar-20

Client: Pivotal Engineering LLC
Project: CCR Detection Monitoring

BatchID: R86686

Sample ID: 20030278-016AMSD	SampType: MSD	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 86686						
Client ID: FB-1	Batch ID: R86686	TestNo: E 300.0	Analysis Date: 3/10/2020	SeqNo: 2171710							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	5.26	0.250	5.000	0	105	80	120	5.190	1.31	15	
Fluoride	1.05	0.0500	1.000	0	105	80	120	1.042	1.12	15	
Sulfate	5.07	0.250	5.000	0	101	80	120	5.057	0.254	15	

Qualifiers:

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
SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as sj



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Sample Log-In Check List

Client Name: **PIVOTAL_ENGINEERIN**

Work Order Number: **20030278**

RcptNo: **1**

Logged by: **Tammy Thibodeaux** **3/6/2020 12:48:00 PM**

Tammy Thibodeaux

Completed By: **Tammy Thibodeaux** **3/6/2020 1:59:49 PM**

Tammy Thibodeaux

Reviewed By: **Caitlin Duplantis** **3/10/2020 10:06:31 AM**

Caitlin Duplantis

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 $>0^{\circ}\text{C}$ 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: Courtland Parr Date: 3/11/2020
By Whom: Caitlin Duplantis Via: ☒ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: When was the duplicate collected?
Client Instructions: 3/4/2020.

18. Additional remarks:

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.7	Good	Not Present			



- ☐ 2203 S. Madison St., Muncie, IN 47302
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- ☐ 629 Washington St., Suite 300, Columbus, IN 47201
812-375-0531 Fax 812-375-0531
- ☐ 5738 Industrial Rd., Fort Wayne, IN 46825
219-471-7000 Fax 219-471-7777

- ☒ 2417 W. Pinhook Rd, Lafayette, LA 70508
337-235-0483/800-737-2378
Fax 337-233-6540
- ☐ 3445 S Sheridan, Tulsa, OK 74145
918-828-9977/800324-5757
Fax 918-828-7756

Page 1 of 2

Chain of Custody Record

Laboratory Number 20030218

Client Name: Pivotal Engineering LLC				Project: CCR Detection Monitoring				Preserv.		Number / Type of Container		Matrix Code		Test Requested										Comments / Remarks											
Contact Name: Terry Elnaggar				Quote #: 5346				HCl HNO ₃ H ₂ SO ₄						NaOH Na ₂ S ₂ O ₃		TDS		300: Cl, F, SO ₄		6010 metals*															
Phone/Fax: (504) 799-3653				Sampler's Signature: <i>Byron B. Link</i>																															
Collection		Grab	Comp	Sample Identification / Description										HCl		HNO ₃		H ₂ SO ₄		NaOH		Na ₂ S ₂ O ₃		TDS		300: Cl, F, SO ₄		6010 metals*							
Date	Time																																		
3/3/20	1650	X		C C R - 1										None/ HNO ₃		2 Plastic		Aq		X		X		X											
3/3/20	1545	X		C C R - 2										None/ HNO ₃		2 Plastic		Aq		X		X		X								*6010 Metals: B, Ca			
3/3/20	1440	X		C C R - 3										None/ HNO ₃		2 Plastic		Aq		X		X		X											
3/4/20	1220	X		C C R - 4										None/ HNO ₃		2 Plastic		Aq		X		X		X											
3/5/20	1200	X		C C R - 5										None/ HNO ₃		2 Plastic		Aq		X		X		X											
3/5/20	1030	X		C C R - 6										None/ HNO ₃		2 Plastic		Aq		X		X		X											
3/5/20	0915	X		C C R - 7										None/ HNO ₃		2 Plastic		Aq		X		X		X											
3/4/20	1045	X		C C R - 8										None/ HNO ₃		2 Plastic		Aq		X		X		X											
3/2/20	1800	X		C C R - 9										None/ HNO ₃		2 Plastic		Aq		X		X		X											
3/2/20	1700	X		C C R - 10										None/ HNO ₃		2 Plastic		Aq		X		X		X								UPS / FedEx Airborne / Element Hand / Mail			
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.																		P.O. Number																	
Relinquished by: (Signature) <i>Byron B. Link</i>				Received by: (Signature) <i>John Hebert</i>				Date <i>3/6/20</i>		Time <i>1005</i>		Relinquished by: (Signature)				Received by: (Signature)				Date		Time													
Relinquished by: (Signature)				Received by: (Signature)				Date		Time		Relinquished by: (Signature) <i>John Hebert</i>				Received by Laboratory: (Signature) <i>Philo Delaney</i>				Date <i>3/6/20</i>		Time <i>1248</i>													
Matrix Codes				Container Types				Shipping Conditions				Requested TAT				Thank-you for using Element Materials Technology																			
DW = Drinking Water AQ = Aqueous LIQ = Liquid GW = Ground Water O = Oil SLD = Solid WW = Waste Water SO = Soil SL = Sludge				G = Glass P = Plastic V = Vial				<input checked="" type="checkbox"/> Iced Temp. <i>3.7</i> <input type="checkbox"/> Ambient <i>9+</i>				<input type="checkbox"/> 24-Hr. <input type="checkbox"/> 72-Hr. <input type="checkbox"/> 48-Hr. <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Other																							



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Fax 918-828-7756

Page 2 of 2

Chain of Custody Record

Laboratory Number 20030219

Client Name: Pivotal Engineering LLC		Project: CCR Detection Monitoring		Preserv. HCl HNO ₃ H ₂ SO ₄ NaOH Na ₂ S ₂ O ₃	Number / Type of Container	Matrix Code	Test Requested										Comments / Remarks	
Contact Name: Terry Elnaggar		Quote #: 5346					TDS	300: Cl, F, SO ₄	6010 metals*									
Phone/Fax: (504) 799-3653		Sampler's Signature: <u>Bryan B. Smith</u>																
Collection	Grab	Comp	Sample Identification / Description															
Date	Time																	
3/2/20	1440	X		C	C	R	-	1	1	None/ HNO ₃	2 Plastic	Aq	X	X	X			
3/3/20	1245	X		C	C	R	-	1	2	None/ HNO ₃	2 Plastic	Aq	X	X	X		*6010 Metals: B, Ca	
3/3/20	1130	X		C	C	R	-	1	3	None/ HNO ₃	2 Plastic	Aq	X	X	X			
3/3/20	1020	X		C	C	R	-	1	4	None/ HNO ₃	2 Plastic	Aq	X	X	X			
3/5/20	1030	X		M	S			(CCR- <u>6</u>)		None/ HNO ₃	2 Plastic	Aq	X	X	X			
3/5/20	1030	X		M	S	D		(CCR- <u>6</u>)		None/ HNO ₃	2 Plastic	Aq	X	X	X			
-	-	X		D	U	P				None/ HNO ₃	2 Plastic	Aq	X	X	X			
3/5/20	1245	X		F	B		1			None/ HNO ₃	2 Plastic	Aq	X	X	X			
																	UPS / FedEx Airborne / Element Hand / Mail	
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.													P.O. Number					
Relinquished by: (Signature) <u>Bryan B. Smith</u>		Received by: (Signature) <u>John Hebert</u>		Date <u>3/6/20</u>		Time <u>1005</u>		Relinquished by: (Signature)		Received by: (Signature)		Date		Time				
Relinquished by: (Signature)		Received by: (Signature)		Date		Time		Relinquished by: (Signature) <u>John Hebert</u>		Received by: (Signature) <u>Shirley Camp</u>		Date <u>3/6/20</u>		Time <u>1248</u>				
Matrix Codes DW = Drinking Water AQ = Aqueous LIQ = Liquid GW = Ground Water O = Oil SLD = Solid WW = Waste Water SO = Soil SL = Sludge			Container Types G = Glass P = Plastic V = Vial			Shipping Conditions <input checked="" type="checkbox"/> Iced Temp. <u>3.7</u> <input type="checkbox"/> Ambient <u>84</u> <u>IR16</u>			Requested TAT <input type="checkbox"/> 24-Hr. <input type="checkbox"/> 72-Hr. <input type="checkbox"/> 48-Hr. <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Other			Thank-you for using Element Materials Technology						



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Website: www.element.com

March 26, 2020

Terry Elnaggar
Pivotal Engineering LLC
1515 Poydras St., STE. 1875
New Orleans, LA 70112
TEL: (504) 799-3653
FAX

RE: CCR Assessment Monitoring

Order No.: 20030273

Dear Terry Elnaggar:

Element Materials Technology Lafayette received 16 sample(s) on 3/6/2020 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.

Where applicable, 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.: 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.

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
Lafayette, LA 70508-3344



Element Materials Technology Lafayette
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Case Narrative

WO#: 20030273
Date: 3/26/2020

CLIENT: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

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 Method 6020 Lithium analysis was subcontracted to Pace Analytical. Their report is attached in its entirety.



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Analytical Report

(consolidated)

WO#: 20030273

Date Reported 3/26/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 3/3/2020 4:50:00 PM
Project: CCR Assessment Monitoring
Lab ID: 20030273-001 **Matrix:** AQUEOUS
Client Sample ID: CCR-1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL				SW7470A	Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	3/9/2020 12:03:29 PM
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Fluoride	0.308	0.0500		mg/L	1	3/10/2020 4:18:18 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Barium	0.188	0.0100		mg/L	1	3/12/2020 2:21:26 PM
Beryllium	< 0.00100	0.00100		mg/L	1	3/12/2020 2:21:26 PM
Cadmium	< 0.00500	0.00500		mg/L	1	3/12/2020 2:21:26 PM
Chromium	< 0.0100	0.0100		mg/L	1	3/12/2020 2:21:26 PM
Copper	< 0.0100	0.0100		mg/L	1	3/12/2020 2:21:26 PM
Lead	< 0.0100	0.0100		mg/L	1	3/12/2020 2:21:26 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	3/12/2020 2:21:26 PM
Selenium	< 0.0200	0.0200		mg/L	1	3/12/2020 2:21:26 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: MRM	
Antimony	< 0.250	0.250		µg/L	1	3/23/2020 3:57:42 PM
Arsenic	< 0.250	0.250		µg/L	1	3/23/2020 3:57:42 PM
Thallium	< 0.250	0.250		µg/L	1	3/23/2020 3:57:42 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
U Analyte not detected

E Value above quantitation range
M Matrix Interference
R RPD outside accepted recovery limits
SDL Sample detection limit
W Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 20030273

Date Reported 3/26/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 3/3/2020 3:45:00 PM
Project: CCR Assessment Monitoring
Lab ID: 20030273-002 **Matrix:** AQUEOUS
Client Sample ID CCR-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL				SW7470A	Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	3/9/2020 12:05:49 PM
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Fluoride	0.360	0.0500		mg/L	1	3/10/2020 4:32:01 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Barium	0.144	0.0100		mg/L	1	3/12/2020 2:26:14 PM
Beryllium	< 0.00100	0.00100		mg/L	1	3/12/2020 2:26:14 PM
Cadmium	< 0.00500	0.00500		mg/L	1	3/12/2020 2:26:14 PM
Chromium	< 0.0100	0.0100		mg/L	1	3/12/2020 2:26:14 PM
Copper	< 0.0100	0.0100		mg/L	1	3/12/2020 2:26:14 PM
Lead	< 0.0100	0.0100		mg/L	1	3/12/2020 2:26:14 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	3/12/2020 2:26:14 PM
Selenium	0.0235	0.0200		mg/L	1	3/12/2020 2:26:14 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: MRM	
Antimony	< 0.250	0.250		µg/L	1	3/23/2020 4:00:30 PM
Arsenic	< 0.250	0.250		µg/L	1	3/23/2020 4:00:30 PM
Thallium	< 0.250	0.250		µg/L	1	3/23/2020 4:00:30 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
U Analyte not detected

E Value above quantitation range
M Matrix Interference
R RPD outside accepted recovery limits
SDL Sample detection limit
W Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 20030273

Date Reported 3/26/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 3/3/2020 2:40:00 PM
Project: CCR Assessment Monitoring
Lab ID: 20030273-003 **Matrix:** AQUEOUS
Client Sample ID CCR-3

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL				SW7470A	Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	3/9/2020 12:08:08 PM
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Fluoride	0.406	0.0500		mg/L	1	3/10/2020 4:45:45 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Barium	0.251	0.0100		mg/L	1	3/12/2020 2:56:58 PM
Beryllium	< 0.00100	0.00100		mg/L	1	3/12/2020 2:56:58 PM
Cadmium	< 0.00500	0.00500		mg/L	1	3/12/2020 2:56:58 PM
Chromium	< 0.0100	0.0100		mg/L	1	3/12/2020 2:56:58 PM
Copper	< 0.0100	0.0100		mg/L	1	3/12/2020 2:56:58 PM
Lead	< 0.0100	0.0100		mg/L	1	3/12/2020 2:56:58 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	3/12/2020 2:56:58 PM
Selenium	< 0.0200	0.0200		mg/L	1	3/12/2020 2:56:58 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: MRM	
Antimony	< 0.250	0.250		µg/L	1	3/23/2020 4:03:17 PM
Arsenic	6.10	0.250		µg/L	1	3/23/2020 4:03:17 PM
Thallium	< 0.250	0.250		µg/L	1	3/23/2020 4:03:17 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
U Analyte not detected

E Value above quantitation range
M Matrix Interference
R RPD outside accepted recovery limits
SDL Sample detection limit
W Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: 20030273

Date Reported 3/26/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 3/4/2020 12:20:00 PM
Project: CCR Assessment Monitoring
Lab ID: 20030273-004 **Matrix:** AQUEOUS
Client Sample ID CCR-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL				SW7470A	Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	3/9/2020 12:10:26 PM
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Fluoride	0.132	0.0500		mg/L	1	3/10/2020 4:59:28 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Barium	0.100	0.0100		mg/L	1	3/12/2020 3:01:25 PM
Beryllium	< 0.00100	0.00100		mg/L	1	3/12/2020 3:01:25 PM
Cadmium	< 0.00500	0.00500		mg/L	1	3/12/2020 3:01:25 PM
Chromium	< 0.0100	0.0100		mg/L	1	3/12/2020 3:01:25 PM
Copper	< 0.0100	0.0100		mg/L	1	3/12/2020 3:01:25 PM
Lead	< 0.0100	0.0100		mg/L	1	3/12/2020 3:01:25 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	3/12/2020 3:01:25 PM
Selenium	< 0.0200	0.0200		mg/L	1	3/12/2020 3:01:25 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: MRM	
Antimony	< 0.250	0.250		µg/L	1	3/23/2020 4:14:31 PM
Arsenic	0.313	0.250		µg/L	1	3/23/2020 4:14:31 PM
Thallium	< 0.250	0.250		µg/L	1	3/23/2020 4:14:31 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
U Analyte not detected

E Value above quantitation range
M Matrix Interference
R RPD outside accepted recovery limits
SDL Sample detection limit
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Analytical Report

(consolidated)

WO#: 20030273

Date Reported 3/26/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 3/5/2020 12:00:00 PM
Project: CCR Assessment Monitoring
Lab ID: 20030273-005 **Matrix:** AQUEOUS
Client Sample ID CCR-5

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL				SW7470A	Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	3/9/2020 12:12:44 PM
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Fluoride	0.185	0.0500		mg/L	1	3/10/2020 5:13:13 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Barium	0.217	0.0100		mg/L	1	3/12/2020 3:05:53 PM
Beryllium	< 0.00100	0.00100		mg/L	1	3/12/2020 3:05:53 PM
Cadmium	< 0.00500	0.00500		mg/L	1	3/12/2020 3:05:53 PM
Chromium	< 0.0100	0.0100		mg/L	1	3/12/2020 3:05:53 PM
Copper	< 0.0100	0.0100		mg/L	1	3/12/2020 3:05:53 PM
Lead	< 0.0100	0.0100		mg/L	1	3/12/2020 3:05:53 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	3/12/2020 3:05:53 PM
Selenium	< 0.0200	0.0200		mg/L	1	3/12/2020 3:05:53 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: MRM	
Antimony	< 0.250	0.250		µg/L	1	3/23/2020 4:17:20 PM
Arsenic	< 0.250	0.250		µg/L	1	3/23/2020 4:17:20 PM
Thallium	< 0.250	0.250		µg/L	1	3/23/2020 4:17:20 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
U Analyte not detected

E Value above quantitation range
M Matrix Interference
R RPD outside accepted recovery limits
SDL Sample detection limit
W Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 20030273

Date Reported 3/26/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 3/5/2020 10:30:00 AM
Project: CCR Assessment Monitoring
Lab ID: 20030273-006 **Matrix:** AQUEOUS
Client Sample ID CCR-6

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL				SW7470A	Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	3/9/2020 12:15:03 PM
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Fluoride	0.227	0.0500		mg/L	1	3/10/2020 5:26:57 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Barium	0.199	0.0100		mg/L	1	3/12/2020 3:10:21 PM
Beryllium	< 0.00100	0.00100		mg/L	1	3/12/2020 3:10:21 PM
Cadmium	< 0.00500	0.00500		mg/L	1	3/12/2020 3:10:21 PM
Chromium	< 0.0100	0.0100		mg/L	1	3/12/2020 3:10:21 PM
Copper	< 0.0100	0.0100		mg/L	1	3/12/2020 3:10:21 PM
Lead	< 0.0100	0.0100		mg/L	1	3/12/2020 3:10:21 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	3/12/2020 3:10:21 PM
Selenium	< 0.0200	0.0200		mg/L	1	3/12/2020 3:10:21 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: MRM	
Antimony	< 0.250	0.250		µg/L	1	3/23/2020 4:20:08 PM
Arsenic	< 0.250	0.250		µg/L	1	3/23/2020 4:20:08 PM
Thallium	< 0.250	0.250		µg/L	1	3/23/2020 4:20:08 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
U Analyte not detected

E Value above quantitation range
M Matrix Interference
R RPD outside accepted recovery limits
SDL Sample detection limit
W Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 20030273

Date Reported 3/26/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 3/5/2020 9:15:00 AM
Project: CCR Assessment Monitoring
Lab ID: 20030273-007 **Matrix:** AQUEOUS
Client Sample ID: CCR-7

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL				SW7470A	Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	3/9/2020 12:30:36 PM
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Fluoride	0.291	0.0500		mg/L	1	3/10/2020 5:40:40 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Barium	0.224	0.0100		mg/L	1	3/12/2020 3:24:23 PM
Beryllium	< 0.00100	0.00100		mg/L	1	3/12/2020 3:24:23 PM
Cadmium	< 0.00500	0.00500		mg/L	1	3/12/2020 3:24:23 PM
Chromium	< 0.0100	0.0100		mg/L	1	3/12/2020 3:24:23 PM
Copper	< 0.0100	0.0100		mg/L	1	3/12/2020 3:24:23 PM
Lead	< 0.0100	0.0100		mg/L	1	3/12/2020 3:24:23 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	3/12/2020 3:24:23 PM
Selenium	0.0202	0.0200		mg/L	1	3/12/2020 3:24:23 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: MRM	
Antimony	< 0.250	0.250		µg/L	1	3/23/2020 4:31:19 PM
Arsenic	0.383	0.250		µg/L	1	3/23/2020 4:31:19 PM
Thallium	< 0.250	0.250		µg/L	1	3/23/2020 4:31:19 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
U Analyte not detected

E Value above quantitation range
M Matrix Interference
R RPD outside accepted recovery limits
SDL Sample detection limit
W Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 20030273

Date Reported 3/26/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 3/4/2020 10:45:00 AM
Project: CCR Assessment Monitoring
Lab ID: 20030273-008 **Matrix:** AQUEOUS
Client Sample ID CCR-8

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL				SW7470A	Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	3/9/2020 12:32:54 PM
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Fluoride	0.160	0.0500		mg/L	1	3/10/2020 5:54:24 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Barium	0.107	0.0100		mg/L	1	3/12/2020 3:29:09 PM
Beryllium	< 0.00100	0.00100		mg/L	1	3/12/2020 3:29:09 PM
Cadmium	< 0.00500	0.00500		mg/L	1	3/12/2020 3:29:09 PM
Chromium	< 0.0100	0.0100		mg/L	1	3/12/2020 3:29:09 PM
Copper	< 0.0100	0.0100		mg/L	1	3/12/2020 3:29:09 PM
Lead	< 0.0100	0.0100		mg/L	1	3/12/2020 3:29:09 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	3/12/2020 3:29:09 PM
Selenium	< 0.0200	0.0200		mg/L	1	3/12/2020 3:29:09 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: MRM	
Antimony	< 0.250	0.250		µg/L	1	3/23/2020 4:34:07 PM
Arsenic	< 0.250	0.250		µg/L	1	3/23/2020 4:34:07 PM
Thallium	< 0.250	0.250		µg/L	1	3/23/2020 4:34:07 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
U Analyte not detected

E Value above quantitation range
M Matrix Interference
R RPD outside accepted recovery limits
SDL Sample detection limit
W Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 20030273

Date Reported 3/26/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 3/2/2020 6:00:00 PM
Project: CCR Assessment Monitoring
Lab ID: 20030273-009 **Matrix:** AQUEOUS
Client Sample ID: CCR-9

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL				SW7470A	Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	3/9/2020 12:35:12 PM
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Fluoride	0.587	0.0500		mg/L	1	3/10/2020 6:08:07 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Barium	0.243	0.0100		mg/L	1	3/12/2020 3:33:33 PM
Beryllium	< 0.00100	0.00100		mg/L	1	3/12/2020 3:33:33 PM
Cadmium	< 0.00500	0.00500		mg/L	1	3/12/2020 3:33:33 PM
Chromium	< 0.0100	0.0100		mg/L	1	3/12/2020 3:33:33 PM
Copper	< 0.0100	0.0100		mg/L	1	3/12/2020 3:33:33 PM
Lead	< 0.0100	0.0100		mg/L	1	3/12/2020 3:33:33 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	3/12/2020 3:33:33 PM
Selenium	< 0.0200	0.0200		mg/L	1	3/12/2020 3:33:33 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: MRM	
Antimony	< 0.250	0.250		µg/L	1	3/23/2020 4:36:54 PM
Arsenic	< 0.250	0.250		µg/L	1	3/23/2020 4:36:54 PM
Thallium	< 0.250	0.250		µg/L	1	3/23/2020 4:36:54 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
U Analyte not detected

E Value above quantitation range
M Matrix Interference
R RPD outside accepted recovery limits
SDL Sample detection limit
W Sample container temperature is out of limit as specified at testcode



Element Materials Technology Lafayette
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Analytical Report

(consolidated)

WO#: 20030273

Date Reported 3/26/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 3/2/2020 5:00:00 PM
Project: CCR Assessment Monitoring
Lab ID: 20030273-010 **Matrix:** AQUEOUS
Client Sample ID: CCR-10

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL				SW7470A	Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	3/9/2020 12:37:30 PM
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Fluoride	0.653	0.0500		mg/L	1	3/10/2020 6:21:51 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Barium	0.250	0.0100		mg/L	1	3/12/2020 3:37:59 PM
Beryllium	< 0.00100	0.00100		mg/L	1	3/12/2020 3:37:59 PM
Cadmium	< 0.00500	0.00500		mg/L	1	3/12/2020 3:37:59 PM
Chromium	< 0.0100	0.0100		mg/L	1	3/12/2020 3:37:59 PM
Copper	< 0.0100	0.0100		mg/L	1	3/12/2020 3:37:59 PM
Lead	< 0.0100	0.0100		mg/L	1	3/12/2020 3:37:59 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	3/12/2020 3:37:59 PM
Selenium	< 0.0200	0.0200		mg/L	1	3/12/2020 3:37:59 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: MRM	
Antimony	< 0.250	0.250		µg/L	1	3/23/2020 4:39:42 PM
Arsenic	1.56	0.250		µg/L	1	3/23/2020 4:39:42 PM
Thallium	< 0.250	0.250		µg/L	1	3/23/2020 4:39:42 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
U Analyte not detected

E Value above quantitation range
M Matrix Interference
R RPD outside accepted recovery limits
SDL Sample detection limit
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Analytical Report

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WO#: 20030273

Date Reported 3/26/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 3/2/2020 2:40:00 PM
Project: CCR Assessment Monitoring
Lab ID: 20030273-011 **Matrix:** AQUEOUS
Client Sample ID: CCR-11

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL				SW7470A	Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	3/9/2020 12:39:48 PM
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Fluoride	0.746	0.0500		mg/L	1	3/10/2020 7:03:05 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Barium	0.144	0.0100		mg/L	1	3/12/2020 3:55:49 PM
Beryllium	< 0.00100	0.00100		mg/L	1	3/12/2020 3:55:49 PM
Cadmium	< 0.00500	0.00500		mg/L	1	3/12/2020 3:55:49 PM
Chromium	< 0.0100	0.0100		mg/L	1	3/12/2020 3:55:49 PM
Copper	< 0.0100	0.0100		mg/L	1	3/12/2020 3:55:49 PM
Lead	< 0.0100	0.0100		mg/L	1	3/12/2020 3:55:49 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	3/12/2020 3:55:49 PM
Selenium	< 0.0200	0.0200		mg/L	1	3/12/2020 3:55:49 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: MRM	
Antimony	< 0.250	0.250		µg/L	1	3/23/2020 4:50:56 PM
Arsenic	1.22	0.250		µg/L	1	3/23/2020 4:50:56 PM
Thallium	< 0.250	0.250		µg/L	1	3/23/2020 4:50:56 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
U Analyte not detected

E Value above quantitation range
M Matrix Interference
R RPD outside accepted recovery limits
SDL Sample detection limit
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Analytical Report

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WO#: 20030273

Date Reported 3/26/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 3/3/2020 12:45:00 PM
Project: CCR Assessment Monitoring
Lab ID: 20030273-012 **Matrix:** AQUEOUS
Client Sample ID: CCR-12

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL				SW7470A	Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	3/9/2020 12:42:07 PM
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Fluoride	0.153	0.0500		mg/L	1	3/10/2020 7:17:02 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Barium	0.163	0.0100		mg/L	1	3/12/2020 4:00:37 PM
Beryllium	< 0.00100	0.00100		mg/L	1	3/12/2020 4:00:37 PM
Cadmium	< 0.00500	0.00500		mg/L	1	3/12/2020 4:00:37 PM
Chromium	< 0.0100	0.0100		mg/L	1	3/12/2020 4:00:37 PM
Copper	< 0.0100	0.0100		mg/L	1	3/12/2020 4:00:37 PM
Lead	< 0.0100	0.0100		mg/L	1	3/12/2020 4:00:37 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	3/12/2020 4:00:37 PM
Selenium	< 0.0200	0.0200		mg/L	1	3/12/2020 4:00:37 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: MRM	
Antimony	< 0.250	0.250		µg/L	1	3/23/2020 4:53:45 PM
Arsenic	0.589	0.250		µg/L	1	3/23/2020 4:53:45 PM
Thallium	< 0.250	0.250		µg/L	1	3/23/2020 4:53:45 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
U Analyte not detected

E Value above quantitation range
M Matrix Interference
R RPD outside accepted recovery limits
SDL Sample detection limit
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WO#: 20030273

Date Reported 3/26/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 3/3/2020 11:30:00 AM
Project: CCR Assessment Monitoring
Lab ID: 20030273-013 **Matrix:** AQUEOUS
Client Sample ID: CCR-13

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL				SW7470A	Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	3/9/2020 12:44:24 PM
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Fluoride	0.169	0.0500		mg/L	1	3/10/2020 7:30:47 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Barium	0.0907	0.0100		mg/L	1	3/12/2020 4:05:22 PM
Beryllium	< 0.00100	0.00100		mg/L	1	3/12/2020 4:05:22 PM
Cadmium	< 0.00500	0.00500		mg/L	1	3/12/2020 4:05:22 PM
Chromium	< 0.0100	0.0100		mg/L	1	3/12/2020 4:05:22 PM
Copper	< 0.0100	0.0100		mg/L	1	3/12/2020 4:05:22 PM
Lead	< 0.0100	0.0100		mg/L	1	3/12/2020 4:05:22 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	3/12/2020 4:05:22 PM
Selenium	< 0.0200	0.0200		mg/L	1	3/12/2020 4:05:22 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: MRM	
Antimony	< 0.250	0.250		µg/L	1	3/23/2020 4:56:33 PM
Arsenic	< 0.250	0.250		µg/L	1	3/23/2020 4:56:33 PM
Thallium	< 0.250	0.250		µg/L	1	3/23/2020 4:56:33 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
U Analyte not detected

E Value above quantitation range
M Matrix Interference
R RPD outside accepted recovery limits
SDL Sample detection limit
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Analytical Report

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WO#: 20030273

Date Reported 3/26/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 3/3/2020 10:20:00 AM
Project: CCR Assessment Monitoring
Lab ID: 20030273-014 **Matrix:** AQUEOUS
Client Sample ID: CCR-14

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL				SW7470A	Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	3/9/2020 12:51:57 PM
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Fluoride	0.242	0.0500		mg/L	1	3/10/2020 7:44:31 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Barium	0.0724	0.0100		mg/L	1	3/12/2020 4:10:10 PM
Beryllium	< 0.00100	0.00100		mg/L	1	3/12/2020 4:10:10 PM
Cadmium	< 0.00500	0.00500		mg/L	1	3/12/2020 4:10:10 PM
Chromium	< 0.0100	0.0100		mg/L	1	3/12/2020 4:10:10 PM
Copper	< 0.0100	0.0100		mg/L	1	3/12/2020 4:10:10 PM
Lead	< 0.0100	0.0100		mg/L	1	3/12/2020 4:10:10 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	3/12/2020 4:10:10 PM
Selenium	< 0.0200	0.0200		mg/L	1	3/12/2020 4:10:10 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: MRM	
Antimony	< 0.250	0.250		µg/L	1	3/23/2020 4:59:20 PM
Arsenic	0.955	0.250		µg/L	1	3/23/2020 4:59:20 PM
Thallium	< 0.250	0.250		µg/L	1	3/23/2020 4:59:20 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
U Analyte not detected

E Value above quantitation range
M Matrix Interference
R RPD outside accepted recovery limits
SDL Sample detection limit
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Analytical Report

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WO#: 20030273

Date Reported 3/26/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 3/4/2020
Project: CCR Assessment Monitoring
Lab ID: 20030273-015 **Matrix:** AQUEOUS
Client Sample ID Dup

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL				SW7470A	Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	3/9/2020 12:54:19 PM
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Fluoride	0.227	0.0500		mg/L	1	3/10/2020 7:58:15 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Barium	0.104	0.0100		mg/L	1	3/12/2020 4:14:57 PM
Beryllium	< 0.00100	0.00100		mg/L	1	3/12/2020 4:14:57 PM
Cadmium	< 0.00500	0.00500		mg/L	1	3/12/2020 4:14:57 PM
Chromium	< 0.0100	0.0100		mg/L	1	3/12/2020 4:14:57 PM
Copper	< 0.0100	0.0100		mg/L	1	3/12/2020 4:14:57 PM
Lead	< 0.0100	0.0100		mg/L	1	3/12/2020 4:14:57 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	3/12/2020 4:14:57 PM
Selenium	< 0.0200	0.0200		mg/L	1	3/12/2020 4:14:57 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: MRM	
Antimony	< 0.250	0.250		µg/L	1	3/23/2020 5:02:08 PM
Arsenic	0.307	0.250		µg/L	1	3/23/2020 5:02:08 PM
Thallium	< 0.250	0.250		µg/L	1	3/23/2020 5:02:08 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
U Analyte not detected

E Value above quantitation range
M Matrix Interference
R RPD outside accepted recovery limits
SDL Sample detection limit
W Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 20030273

Date Reported 3/26/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 3/5/2020 12:15:00 PM
Project: CCR Assessment Monitoring
Lab ID: 20030273-016 **Matrix:** AQUEOUS
Client Sample ID FB 1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL				SW7470A	Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	3/9/2020 12:56:37 PM
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Fluoride	< 0.0500	0.0500		mg/L	1	3/10/2020 2:14:55 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Barium	< 0.0100	0.0100		mg/L	1	3/12/2020 4:19:44 PM
Beryllium	< 0.00100	0.00100		mg/L	1	3/12/2020 4:19:44 PM
Cadmium	< 0.00500	0.00500		mg/L	1	3/12/2020 4:19:44 PM
Chromium	< 0.0100	0.0100		mg/L	1	3/12/2020 4:19:44 PM
Copper	< 0.0100	0.0100		mg/L	1	3/12/2020 4:19:44 PM
Lead	< 0.0100	0.0100		mg/L	1	3/12/2020 4:19:44 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	3/12/2020 4:19:44 PM
Selenium	< 0.0200	0.0200		mg/L	1	3/12/2020 4:19:44 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: MRM	
Antimony	< 0.250	0.250		µg/L	1	3/23/2020 5:04:56 PM
Arsenic	< 0.250	0.250		µg/L	1	3/23/2020 5:04:56 PM
Thallium	< 0.250	0.250		µg/L	1	3/23/2020 5:04:56 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
U Analyte not detected

E Value above quantitation range
M Matrix Interference
R RPD outside accepted recovery limits
SDL Sample detection limit
W Sample container temperature is out of limit as specified at testcode



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QC SUMMARY REPORT

WO#: 20030273

26-Mar-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 33394

Sample ID: MB-33394	SampType: MBLK	TestCode: 6010_W	Units: mg/L	Prep Date: 3/9/2020	RunNo: 86804						
Client ID: PBW	Batch ID: 33394	TestNo: SW6010B		Analysis Date: 3/12/2020	SeqNo: 2173308						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	< 0.0100	0.0100									
Beryllium	< 0.00100	0.00100									
Cadmium	< 0.00500	0.00500									
Chromium	< 0.0100	0.0100									
Copper	< 0.0100	0.0100									
Lead	< 0.0100	0.0100									
Molybdenum	< 0.0100	0.0100									
Selenium	< 0.0200	0.0200									

Sample ID: LCS-33394	SampType: LCS	TestCode: 6010_W	Units: mg/L	Prep Date: 3/9/2020	RunNo: 86804						
Client ID: LCSW	Batch ID: 33394	TestNo: SW6010B		Analysis Date: 3/12/2020	SeqNo: 2173309						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.499	0.0100	0.5000	0	99.9	80	120				
Beryllium	0.494	0.00100	0.5000	0	98.8	80	120				
Cadmium	0.481	0.00500	0.5000	0	96.3	80	120				
Chromium	0.495	0.0100	0.5000	0	99.1	80	120				
Copper	0.501	0.0100	0.5000	0	100	80	120				
Lead	0.493	0.0100	0.5000	0	98.6	80	120				
Molybdenum	0.492	0.0100	0.5000	0	98.4	80	120				
Selenium	0.478	0.0200	0.5000	0	95.6	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank
M	Matrix Interference
RL	Reporting Limit
W	Sample container temperature is out of limit as specified at testcode

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
SDL	Sample detection limit

H	Holding times for preparation or analysis exceed
R	RPD outside accepted recovery limits
U	Analyte not detected



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QC SUMMARY REPORT

WO#: 20030273

26-Mar-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 33394

Sample ID: LCSD-33394	SampType: LCSD	TestCode: 6010_W	Units: mg/L	Prep Date: 3/9/2020	RunNo: 86804						
Client ID: LCSS02	Batch ID: 33394	TestNo: SW6010B		Analysis Date: 3/12/2020	SeqNo: 2173310						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.496	0.0100	0.5000	0	99.3	80	120	0.4993	0.562	20	
Beryllium	0.488	0.00100	0.5000	0	97.5	80	120	0.4942	1.32	20	
Cadmium	0.480	0.00500	0.5000	0	95.9	80	120	0.4813	0.375	20	
Chromium	0.492	0.0100	0.5000	0	98.4	80	120	0.4954	0.689	20	
Copper	0.500	0.0100	0.5000	0	100	80	120	0.5014	0.260	20	
Lead	0.491	0.0100	0.5000	0	98.2	80	120	0.4928	0.366	20	
Molybdenum	0.487	0.0100	0.5000	0	97.4	80	120	0.4922	1.08	20	
Selenium	0.487	0.0200	0.5000	0	97.4	80	120	0.4779	1.89	20	

Sample ID: 20030280-006BMS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 3/9/2020	RunNo: 86804						
Client ID: ZZZZZZ	Batch ID: 33394	TestNo: SW6010B		Analysis Date: 3/12/2020	SeqNo: 2173322						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.694	0.0100	0.5000	0.1994	99.0	75	125				
Beryllium	0.490	0.00100	0.5000	0	97.9	75	125				
Cadmium	0.478	0.00500	0.5000	0	95.7	75	125				
Chromium	0.490	0.0100	0.5000	0	97.9	75	125				
Copper	0.503	0.0100	0.5000	0	101	75	125				
Lead	0.488	0.0100	0.5000	0	97.6	75	125				
Molybdenum	0.490	0.0100	0.5000	0.003100	97.4	75	125				
Selenium	0.488	0.0200	0.5000	0.005800	96.4	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank
M	Matrix Interference
RL	Reporting Limit
W	Sample container temperature is out of limit as specified at testcode

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
SDL	Sample detection limit

H	Holding times for preparation or analysis exceed
R	RPD outside accepted recovery limits
U	Analyte not detected



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QC SUMMARY REPORT

WO#: 20030273

26-Mar-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 33394

Sample ID: 20030280-006BMSD	SampType: MSD	TestCode: 6010_W	Units: mg/L	Prep Date: 3/9/2020	RunNo: 86804						
Client ID: ZZZZZZ	Batch ID: 33394	TestNo: SW6010B		Analysis Date: 3/12/2020	SeqNo: 2173323						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.696	0.0100	0.5000	0.1994	99.4	75	125	0.6944	0.302	20	
Beryllium	0.494	0.00100	0.5000	0	98.8	75	125	0.4896	0.935	20	
Cadmium	0.484	0.00500	0.5000	0	96.9	75	125	0.4784	1.23	20	
Chromium	0.494	0.0100	0.5000	0	98.9	75	125	0.4897	0.975	20	
Copper	0.507	0.0100	0.5000	0	101	75	125	0.5028	0.871	20	
Lead	0.495	0.0100	0.5000	0	99.0	75	125	0.4878	1.49	20	
Molybdenum	0.500	0.0100	0.5000	0.003100	99.4	75	125	0.4899	2.02	20	
Selenium	0.491	0.0200	0.5000	0.005800	97.0	75	125	0.4878	0.572	20	

Qualifiers:

B	Analyte detected in the associated Method Blank
M	Matrix Interference
RL	Reporting Limit
W	Sample container temperature is out of limit as specified at testcode

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
SDL	Sample detection limit

H	Holding times for preparation or analysis exceed
R	RPD outside accepted recovery limits
U	Analyte not detected



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Website: www.element.com

QC SUMMARY REPORT

WO#: 20030273

26-Mar-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 33394

Sample ID: MB-33394	SampType: MBLK	TestCode: 6010_W	Units: mg/L	Prep Date: 3/9/2020	RunNo: 86803						
Client ID: PBW	Batch ID: 33394	TestNo: SW6010B		Analysis Date: 3/12/2020	SeqNo: 2173264						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	< 0.0100	0.0100									
Beryllium	< 0.00100	0.00100									
Cadmium	< 0.00500	0.00500									
Chromium	< 0.0100	0.0100									
Copper	< 0.0100	0.0100									
Lead	< 0.0100	0.0100									
Molybdenum	< 0.0100	0.0100									
Selenium	< 0.0200	0.0200									

Sample ID: LCS-33394	SampType: LCS	TestCode: 6010_W	Units: mg/L	Prep Date: 3/9/2020	RunNo: 86803						
Client ID: LCSW	Batch ID: 33394	TestNo: SW6010B		Analysis Date: 3/12/2020	SeqNo: 2173265						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.499	0.0100	0.5000	0	99.9	80	120				
Beryllium	0.494	0.00100	0.5000	0	98.8	80	120				
Cadmium	0.481	0.00500	0.5000	0	96.3	80	120				
Chromium	0.495	0.0100	0.5000	0	99.1	80	120				
Copper	0.501	0.0100	0.5000	0	100	80	120				
Lead	0.493	0.0100	0.5000	0	98.6	80	120				
Molybdenum	0.492	0.0100	0.5000	0	98.4	80	120				
Selenium	0.478	0.0200	0.5000	0	95.6	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank
M	Matrix Interference
RL	Reporting Limit
W	Sample container temperature is out of limit as specified at testcode

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
SDL	Sample detection limit

H	Holding times for preparation or analysis exceed
R	RPD outside accepted recovery limits
U	Analyte not detected



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QC SUMMARY REPORT

WO#: 20030273

26-Mar-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 33394

Sample ID: LCSD-33394	SampType: LCSD	TestCode: 6010_W	Units: mg/L	Prep Date: 3/9/2020	RunNo: 86803						
Client ID: LCSS02	Batch ID: 33394	TestNo: SW6010B		Analysis Date: 3/12/2020	SeqNo: 2173266						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.496	0.0100	0.5000	0	99.3	80	120	0.4993	0.562	20	
Beryllium	0.488	0.00100	0.5000	0	97.5	80	120	0.4942	1.32	20	
Cadmium	0.480	0.00500	0.5000	0	95.9	80	120	0.4813	0.375	20	
Chromium	0.492	0.0100	0.5000	0	98.4	80	120	0.4954	0.689	20	
Copper	0.500	0.0100	0.5000	0	100	80	120	0.5014	0.260	20	
Lead	0.491	0.0100	0.5000	0	98.2	80	120	0.4928	0.366	20	
Molybdenum	0.487	0.0100	0.5000	0	97.4	80	120	0.4922	1.08	20	
Selenium	0.487	0.0200	0.5000	0	97.4	80	120	0.4779	1.89	20	

Sample ID: 20030278-006BMS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 3/9/2020	RunNo: 86803						
Client ID: ZZZZZZ	Batch ID: 33394	TestNo: SW6010B		Analysis Date: 3/12/2020	SeqNo: 2173278						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.694	0.0100	0.5000	0.1994	99.0	75	125				
Beryllium	0.490	0.00100	0.5000	0	97.9	75	125				
Cadmium	0.478	0.00500	0.5000	0	95.7	75	125				
Chromium	0.490	0.0100	0.5000	0	97.9	75	125				
Copper	0.503	0.0100	0.5000	0	101	75	125				
Lead	0.488	0.0100	0.5000	0	97.6	75	125				
Molybdenum	0.490	0.0100	0.5000	0.003100	97.4	75	125				
Selenium	0.488	0.0200	0.5000	0.005800	96.4	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank
M	Matrix Interference
RL	Reporting Limit
W	Sample container temperature is out of limit as specified at testcode

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
SDL	Sample detection limit

H	Holding times for preparation or analysis exceed
R	RPD outside accepted recovery limits
U	Analyte not detected



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QC SUMMARY REPORT

WO#: 20030273

26-Mar-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 33394

Sample ID: 20030278-006BMSD	SampType: MSD	TestCode: 6010_W	Units: mg/L	Prep Date: 3/9/2020	RunNo: 86803						
Client ID: ZZZZZZ	Batch ID: 33394	TestNo: SW6010B		Analysis Date: 3/12/2020	SeqNo: 2173279						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.696	0.0100	0.5000	0.1994	99.4	75	125	0.6944	0.302	20	
Beryllium	0.494	0.00100	0.5000	0	98.8	75	125	0.4896	0.935	20	
Cadmium	0.484	0.00500	0.5000	0	96.9	75	125	0.4784	1.23	20	
Chromium	0.494	0.0100	0.5000	0	98.9	75	125	0.4897	0.975	20	
Copper	0.507	0.0100	0.5000	0	101	75	125	0.5028	0.871	20	
Lead	0.495	0.0100	0.5000	0	99.0	75	125	0.4878	1.49	20	
Molybdenum	0.500	0.0100	0.5000	0.003100	99.4	75	125	0.4899	2.02	20	
Selenium	0.491	0.0200	0.5000	0.005800	97.0	75	125	0.4878	0.572	20	

Qualifiers:

B	Analyte detected in the associated Method Blank
M	Matrix Interference
RL	Reporting Limit
W	Sample container temperature is out of limit as specified at testcode

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
SDL	Sample detection limit

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U	Analyte not detected



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QC SUMMARY REPORT

WO#: 20030273

26-Mar-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 33394

Sample ID: MB-33394	SampType: MBLK	TestCode: 6010_W	Units: mg/L	Prep Date: 3/9/2020	RunNo: 86802						
Client ID: PBW	Batch ID: 33394	TestNo: SW6010B		Analysis Date: 3/12/2020	SeqNo: 2173220						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	< 0.0100	0.0100									
Beryllium	< 0.00100	0.00100									
Cadmium	< 0.00500	0.00500									
Chromium	< 0.0100	0.0100									
Copper	< 0.0100	0.0100									
Lead	< 0.0100	0.0100									
Molybdenum	< 0.0100	0.0100									
Selenium	< 0.0200	0.0200									

Sample ID: LCS-33394	SampType: LCS	TestCode: 6010_W	Units: mg/L	Prep Date: 3/9/2020	RunNo: 86802						
Client ID: LCSW	Batch ID: 33394	TestNo: SW6010B		Analysis Date: 3/12/2020	SeqNo: 2173221						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.499	0.0100	0.5000	0	99.9	80	120				
Beryllium	0.494	0.00100	0.5000	0	98.8	80	120				
Cadmium	0.481	0.00500	0.5000	0	96.3	80	120				
Chromium	0.495	0.0100	0.5000	0	99.1	80	120				
Copper	0.501	0.0100	0.5000	0	100	80	120				
Lead	0.493	0.0100	0.5000	0	98.6	80	120				
Molybdenum	0.492	0.0100	0.5000	0	98.4	80	120				
Selenium	0.478	0.0200	0.5000	0	95.6	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank
M	Matrix Interference
RL	Reporting Limit
W	Sample container temperature is out of limit as specified at testcode

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
SDL	Sample detection limit

H	Holding times for preparation or analysis exceed
R	RPD outside accepted recovery limits
U	Analyte not detected



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QC SUMMARY REPORT

WO#: 20030273

26-Mar-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 33394

Sample ID: LCSD-33394	SampType: LCSD	TestCode: 6010_W	Units: mg/L	Prep Date: 3/9/2020	RunNo: 86802						
Client ID: LCSS02	Batch ID: 33394	TestNo: SW6010B		Analysis Date: 3/12/2020	SeqNo: 2173222						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.496	0.0100	0.5000	0	99.3	80	120	0.4993	0.562	20	
Beryllium	0.488	0.00100	0.5000	0	97.5	80	120	0.4942	1.32	20	
Cadmium	0.480	0.00500	0.5000	0	95.9	80	120	0.4813	0.375	20	
Chromium	0.492	0.0100	0.5000	0	98.4	80	120	0.4954	0.689	20	
Copper	0.500	0.0100	0.5000	0	100	80	120	0.5014	0.260	20	
Lead	0.491	0.0100	0.5000	0	98.2	80	120	0.4928	0.366	20	
Molybdenum	0.487	0.0100	0.5000	0	97.4	80	120	0.4922	1.08	20	
Selenium	0.487	0.0200	0.5000	0	97.4	80	120	0.4779	1.89	20	

Sample ID: 20030273-006BMS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 3/9/2020	RunNo: 86802						
Client ID: CCR-6	Batch ID: 33394	TestNo: SW6010B		Analysis Date: 3/12/2020	SeqNo: 2173234						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.694	0.0100	0.5000	0.1994	99.0	75	125				
Beryllium	0.490	0.00100	0.5000	0	97.9	75	125				
Cadmium	0.478	0.00500	0.5000	0	95.7	75	125				
Chromium	0.490	0.0100	0.5000	0	97.9	75	125				
Copper	0.503	0.0100	0.5000	0	101	75	125				
Lead	0.488	0.0100	0.5000	0	97.6	75	125				
Molybdenum	0.490	0.0100	0.5000	0.003100	97.4	75	125				
Selenium	0.488	0.0200	0.5000	0.005800	96.4	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank
M	Matrix Interference
RL	Reporting Limit
W	Sample container temperature is out of limit as specified at testcode

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
SDL	Sample detection limit

H	Holding times for preparation or analysis exceed
R	RPD outside accepted recovery limits
U	Analyte not detected



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QC SUMMARY REPORT

WO#: 20030273

26-Mar-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 33394

Sample ID: 20030273-006BMSD	SampType: MSD	TestCode: 6010_W	Units: mg/L	Prep Date: 3/9/2020	RunNo: 86802						
Client ID: CCR-6	Batch ID: 33394	TestNo: SW6010B		Analysis Date: 3/12/2020	SeqNo: 2173235						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.696	0.0100	0.5000	0.1994	99.4	75	125	0.6944	0.302	20	
Beryllium	0.494	0.00100	0.5000	0	98.8	75	125	0.4896	0.935	20	
Cadmium	0.484	0.00500	0.5000	0	96.9	75	125	0.4784	1.23	20	
Chromium	0.494	0.0100	0.5000	0	98.9	75	125	0.4897	0.975	20	
Copper	0.507	0.0100	0.5000	0	101	75	125	0.5028	0.871	20	
Lead	0.495	0.0100	0.5000	0	99.0	75	125	0.4878	1.49	20	
Molybdenum	0.500	0.0100	0.5000	0.003100	99.4	75	125	0.4899	2.02	20	
Selenium	0.491	0.0200	0.5000	0.005800	97.0	75	125	0.4878	0.572	20	

Qualifiers:

B	Analyte detected in the associated Method Blank
M	Matrix Interference
RL	Reporting Limit
W	Sample container temperature is out of limit as specified at testcode

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
SDL	Sample detection limit

H	Holding times for preparation or analysis exceed
R	RPD outside accepted recovery limits
U	Analyte not detected



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QC SUMMARY REPORT

WO#: 20030273

26-Mar-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 33395

Sample ID: MB-33395	SampType: MBLK	TestCode: 6020A_W	Units: µg/L	Prep Date: 3/9/2020	RunNo: 87126
Client ID: PBW	Batch ID: 33395	TestNo: SW6020A		Analysis Date: 3/23/2020	SeqNo: 2180584
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-33395	SampType: LCS	TestCode: 6020A_W	Units: µg/L	Prep Date: 3/9/2020	RunNo: 87126
Client ID: LCSW	Batch ID: 33395	TestNo: SW6020A		Analysis Date: 3/23/2020	SeqNo: 2180585
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Arsenic 501 5.00 500.0 0 100 80 120

Sample ID: LCSD-33395	SampType: LCSD	TestCode: 6020A_W	Units: µg/L	Prep Date: 3/9/2020	RunNo: 87126
Client ID: LCSS02	Batch ID: 33395	TestNo: SW6020A		Analysis Date: 3/23/2020	SeqNo: 2180586
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 80 120 500.8 0.280 20

Sample ID: 20030273-006BMS	SampType: MS	TestCode: 6020A_W	Units: µg/L	Prep Date: 3/9/2020	RunNo: 87126
Client ID: CCR-6	Batch ID: 33395	TestNo: SW6020A		Analysis Date: 3/23/2020	SeqNo: 2180597
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Arsenic 505 5.00 500.0 0.03889 101 75 125

Qualifiers:
B Analyte detected in the associated Method Blank
M Matrix Interference
RL Reporting Limit
W Sample container temperature is out of limit as specified at testcode

E Value above quantitation range
ND Not Detected at the Reporting Limit
SDL Sample detection limit

H Holding times for preparation or analysis exceed
R RPD outside accepted recovery limits
U Analyte not detected



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QC SUMMARY REPORT

WO#: 20030273

26-Mar-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 33395

Sample ID: 20030273-006BMSD	SampType: MSD	TestCode: 6020A_W	Units: µg/L	Prep Date: 3/9/2020	RunNo: 87126						
Client ID: CCR-6	Batch ID: 33395	TestNo: SW6020A		Analysis Date: 3/23/2020	SeqNo: 2180598						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	515	5.00	500.0	0.03889	103	75	125	505.0	1.92	20	

Qualifiers:

B	Analyte detected in the associated Method Blank
M	Matrix Interference
RL	Reporting Limit
W	Sample container temperature is out of limit as specified at testcode

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
SDL	Sample detection limit

H	Holding times for preparation or analysis exceed
R	RPD outside accepted recovery limits
U	Analyte not detected



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QC SUMMARY REPORT

WO#: 20030273

26-Mar-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 33395

Sample ID: MB-33395	SampType: MBLK	TestCode: 6020A_W	Units: µg/L	Prep Date: 3/9/2020	RunNo: 87058
Client ID: PBW	Batch ID: 33395	TestNo: SW6020A		Analysis Date: 3/23/2020	SeqNo: 2178761
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Antimony	< 0.250	0.250
Thallium	< 0.250	0.250

Sample ID: LCS-33395	SampType: LCS	TestCode: 6020A_W	Units: µg/L	Prep Date: 3/9/2020	RunNo: 87058
Client ID: LCSW	Batch ID: 33395	TestNo: SW6020A		Analysis Date: 3/23/2020	SeqNo: 2178762
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Antimony	497	5.00	500.0	0	99.4	80	120
Thallium	526	5.00	500.0	0	105	80	120

Sample ID: LCSD-33395	SampType: LCSD	TestCode: 6020A_W	Units: µg/L	Prep Date: 3/9/2020	RunNo: 87058
Client ID: LCSS02	Batch ID: 33395	TestNo: SW6020A		Analysis Date: 3/23/2020	SeqNo: 2178763
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Antimony	507	5.00	500.0	0	101	80	120	496.8	1.99	20
Thallium	526	5.00	500.0	0	105	80	120	525.9	0.00413	20

Sample ID: 20030273-006BMS	SampType: MS	TestCode: 6020A_W	Units: µg/L	Prep Date: 3/9/2020	RunNo: 87058
Client ID: CCR-6	Batch ID: 33395	TestNo: SW6020A		Analysis Date: 3/23/2020	SeqNo: 2178774
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Antimony	504	5.00	500.0	0	101	75	125
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Qualifiers:	B	Analyte detected in the associated Method Blank	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	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#: 20030273

26-Mar-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 33395

Sample ID: 20030273-006BMS	SampType: MS	TestCode: 6020A_W	Units: µg/L	Prep Date: 3/9/2020	RunNo: 87058						
Client ID: CCR-6	Batch ID: 33395	TestNo: SW6020A		Analysis Date: 3/23/2020	SeqNo: 2178774						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	501	5.00	500.0	0	100	75	125				

Sample ID: 20030273-006BMSD	SampType: MSD	TestCode: 6020A_W	Units: µg/L	Prep Date: 3/9/2020	RunNo: 87058						
Client ID: CCR-6	Batch ID: 33395	TestNo: SW6020A		Analysis Date: 3/23/2020	SeqNo: 2178775						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	500	5.00	500.0	0	100	75	125	504.3	0.864	20	
Thallium	509	5.00	500.0	0	102	75	125	500.7	1.57	20	

Qualifiers:

B	Analyte detected in the associated Method Blank
M	Matrix Interference
RL	Reporting Limit
W	Sample container temperature is out of limit as specified at testcode

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
SDL	Sample detection limit

H	Holding times for preparation or analysis exceed
R	RPD outside accepted recovery limits
U	Analyte not detected



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QC SUMMARY REPORT

WO#: 20030273

26-Mar-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 33397

Sample ID: MB-33397	SampType: MBLK	TestCode: HG_W_7470A	Units: mg/L	Prep Date: 3/9/2020	RunNo: 86687
Client ID: PBW	Batch ID: 33397	TestNo: SW7470A		Analysis Date: 3/9/2020	SeqNo: 2170716
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-33397	SampType: LCS	TestCode: HG_W_7470A	Units: mg/L	Prep Date: 3/9/2020	RunNo: 86687
Client ID: LCSW	Batch ID: 33397	TestNo: SW7470A		Analysis Date: 3/9/2020	SeqNo: 2170717
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 80 120

Sample ID: LCSD-33397	SampType: LCSD	TestCode: HG_W_7470A	Units: mg/L	Prep Date: 3/9/2020	RunNo: 86687
Client ID: LCSS02	Batch ID: 33397	TestNo: SW7470A		Analysis Date: 3/9/2020	SeqNo: 2170718
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury 0.0105 0.000200 0.01000 0 105 80 120 0.01035 1.04 20

Sample ID: 20030273-006BMS	SampType: MS	TestCode: HG_W_7470A	Units: mg/L	Prep Date: 3/9/2020	RunNo: 86687
Client ID: CCR-6	Batch ID: 33397	TestNo: SW7470A		Analysis Date: 3/9/2020	SeqNo: 2170728
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury 0.00972 0.000200 0.01000 0 97.2 75 125

Qualifiers:
B Analyte detected in the associated Method Blank
M Matrix Interference
RL Reporting Limit
W Sample container temperature is out of limit as specified at testcode

E Value above quantitation range
ND Not Detected at the Reporting Limit
SDL Sample detection limit

H Holding times for preparation or analysis exceed
R RPD outside accepted recovery limits
U Analyte not detected



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#: 20030273

26-Mar-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 33397

Sample ID: 20030273-006BMSD	SampType: MSD	TestCode: HG_W_7470A	Units: mg/L	Prep Date: 3/9/2020	RunNo: 86687						
Client ID: CCR-6	Batch ID: 33397	TestNo: SW7470A		Analysis Date: 3/9/2020	SeqNo: 2170729						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.00978	0.000200	0.01000	0	97.8	75	125	0.009721	0.649	20	

Qualifiers:

B	Analyte detected in the associated Method Blank
M	Matrix Interference
RL	Reporting Limit
W	Sample container temperature is out of limit as specified at testcode

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
SDL	Sample detection limit

H	Holding times for preparation or analysis exceed
R	RPD outside accepted recovery limits
U	Analyte not detected



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QC SUMMARY REPORT

WO#: 20030273

26-Mar-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: R86735

Sample ID: MBLK	SampType: MBLK	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 86735						
Client ID: PBW	Batch ID: R86735	TestNo: E 300.0		Analysis Date: 3/10/2020	SeqNo: 2171840						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride	< 0.0500	0.0500									
----------	----------	--------	--	--	--	--	--	--	--	--	--

Sample ID: LCS	SampType: LCS	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 86735						
Client ID: LCSW	Batch ID: R86735	TestNo: E 300.0		Analysis Date: 3/10/2020	SeqNo: 2171841						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride	2.05	0.0500	2.000	0	103	90	110				
----------	------	--------	-------	---	-----	----	-----	--	--	--	--

Sample ID: LCSD	SampType: LCSD	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 86735						
Client ID: LCSS02	Batch ID: R86735	TestNo: E 300.0		Analysis Date: 3/10/2020	SeqNo: 2171842						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride	2.02	0.0500	2.000	0	101	90	110	2.051	1.30	15	
----------	------	--------	-------	---	-----	----	-----	-------	------	----	--

Sample ID: 20030273-006AMS	SampType: MS	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 86735						
Client ID: CCR-6	Batch ID: R86735	TestNo: E 300.0	Analysis Date: 3/10/2020	SeqNo: 2171849							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride	10.3	0.500	10.00	0.1167	102	80	120				
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Qualifiers:

B	Analyte detected in the associated Method Blank
M	Matrix Interference
RL	Reporting Limit
W	Sample container temperature is out of limit as specified at testcode

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
SDL	Sample detection limit

H	Holding times for preparation or analysis exceed
R	RPD outside accepted recovery limits
U	Analyte not detected



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Lafayette, LA 70508-3344
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QC SUMMARY REPORT

WO#: 20030273

26-Mar-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: R86735

Sample ID: 20030273-006AMSD	SampType: MSD	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 86735						
Client ID: CCR-6	Batch ID: R86735	TestNo: E 300.0	Analysis Date: 3/10/2020	SeqNo: 2171850							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	10.6	0.500	10.00	0.1167	105	80	120	10.33	2.63	15	

Sample ID: 20030273-016AMS	SampType: MS	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 86735						
Client ID: FB 1	Batch ID: R86735	TestNo: E 300.0	Analysis Date: 3/10/2020	SeqNo: 2171863							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.04	0.0500	1.000	0	104	80	120				

Sample ID: 20030273-016AMSD	SampType: MSD	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 86735						
Client ID: FB 1	Batch ID: R86735	TestNo: E 300.0	Analysis Date: 3/10/2020	SeqNo: 2171864							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.05	0.0500	1.000	0	105	80	120	1.042	1.12	15	

Qualifiers:

B	Analyte detected in the associated Method Blank
M	Matrix Interference
RL	Reporting Limit
W	Sample container temperature is out of limit as specified at testcode

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
SDL	Sample detection limit

H	Holding times for preparation or analysis exceed
R	RPD outside accepted recovery limits
U	Analyte not detected



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Sample Log-In Check List

Client Name: **PIVOTAL_ENGINEERIN**

Work Order Number: **20030273**

RcptNo: **1**

Logged by: **Tammy Thibodeaux** **3/6/2020 12:48:00 PM**

Tammy Thibodeaux

Completed By: **Tammy Thibodeaux** **3/6/2020 1:46:47 PM**

Tammy Thibodeaux

Reviewed By: **Caitlin Duplantis** **3/10/2020 10:02:51 AM**

Caitlin Duplantis

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: Courtland Parr Date: 3/11/2020
By Whom: Caitlin Duplantis Via: ☒ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: When was the duplicate collected?
Client Instructions: 3/4/2020

18. Additional remarks:

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.7	Good	Not Present			



LELAP CERTIFICATE NUMBER: 01955
DOD-ELAP ACCREDITATION NUMBER: 74960

ANALYTICAL RESULTS

PERFORMED BY

Pace Analytical Gulf Coast
7979 Innovation Park Dr.
Baton Rouge, LA 70820
(225) 769-4900

Report Date 03/17/2020

Report # 220031036



Project 20030273

<i>Deliver To</i>	<i>Additional Recipients</i>
Annie Reedy	Caitlin Duplantis, Element Materials Technology
Element Materials Technology	Cristina Thibeaux, Element Materials Technology
2417 W Pinhook Rd	Rhonda David, Element Materials Technology
Lafayette, LA 70508	Buffy Bryant, Element Materials Technology
800-737-2378	



Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with Pace Gulf Coast's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	Organics - The result is estimated because it exceeded the instrument calibration range
E	Metals - % difference for the serial dilution is > 10%
L	Reporting Limits adjusted to meet risk-based limit.
P	RPD between primary and confirmation result is greater than 40
DL	Diluted analysis – when appended to Client Sample ID

Sample receipt at Pace Gulf Coast is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of Pace Gulf Coast. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.



Authorized Signature
Pace Gulf Coast Report 220031036

Certifications

Certification	Certification Number
DOD ELAP	74960
Alabama	01955
Arkansas	88-0655
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
Washington	C929
USDA Soil Permit	P330-16-00234



Report#: 220031036

Project ID: 20030273

Report Date: 03/17/2020

Case Narrative

Client: Element Materials Technology **Report:** 220031036

Pace Analytical Gulf Coast received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

No anomalies were found for the analyzed sample(s).



Report#: 220031036

Project ID: 20030273

Report Date: 03/17/2020

Sample Summary

LAB ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
22003103601	CCR-1	Water	03/03/2020 16:50	03/10/2020 12:15
22003103602	CCR-2	Water	03/03/2020 15:45	03/10/2020 12:15
22003103603	CCR-3	Water	03/03/2020 14:40	03/10/2020 12:15
22003103604	CCR-4	Water	03/04/2020 12:20	03/10/2020 12:15
22003103605	CCR-5	Water	03/05/2020 12:00	03/10/2020 12:15
22003103606	CCR-6	Water	03/05/2020 10:30	03/10/2020 12:15
22003103607	CCR-6 MS	Water	03/05/2020 10:30	03/10/2020 12:15
22003103608	CCR-6 MSD	Water	03/05/2020 10:30	03/10/2020 12:15
22003103609	CCR-7	Water	03/05/2020 09:15	03/10/2020 12:15
22003103610	CCR-8	Water	03/04/2020 10:45	03/10/2020 12:15
22003103611	CCR-9	Water	03/02/2020 18:00	03/10/2020 12:15
22003103612	CCR-10	Water	03/02/2020 17:00	03/10/2020 12:15
22003103613	CCR-11	Water	03/02/2020 14:40	03/10/2020 12:15
22003103614	CCR-12	Water	03/03/2020 12:45	03/10/2020 12:15
22003103615	CCR-13	Water	03/03/2020 11:30	03/10/2020 12:15
22003103616	CCR-14	Water	03/03/2020 10:20	03/10/2020 12:15
22003103617	Dup	Water	03/03/2020 00:01	03/10/2020 12:15
22003103618	FB 1	Water	03/05/2020 12:15	03/10/2020 12:15



Report#: 220031036

Project ID: 20030273

Report Date: 03/17/2020

Sample Results

CCR-1

Collect Date 03/03/2020 16:50

LAB ID 22003103601

Receive Date 03/10/2020 12:15

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/11/2020 07:45	679371	EPA 3010A	1	03/16/2020 15:37	LWZ	679794

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	23.0	5.00	ug/L

CCR-2

Collect Date 03/03/2020 15:45

LAB ID 22003103602

Receive Date 03/10/2020 12:15

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/11/2020 07:45	679371	EPA 3010A	1	03/16/2020 15:41	LWZ	679794

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	22.1	5.00	ug/L

CCR-3

Collect Date 03/03/2020 14:40

LAB ID 22003103603

Receive Date 03/10/2020 12:15

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/11/2020 07:45	679371	EPA 3010A	1	03/16/2020 15:46	LWZ	679794

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	28.5	5.00	ug/L

CCR-4

Collect Date 03/04/2020 12:20

LAB ID 22003103604

Receive Date 03/10/2020 12:15

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/11/2020 07:45	679371	EPA 3010A	1	03/16/2020 15:50	LWZ	679794

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	19.1	5.00	ug/L



Report#: 220031036

Project ID: 20030273

Report Date: 03/17/2020

Sample Results

CCR-5

Collect Date 03/05/2020 12:00

LAB ID 22003103605

Receive Date 03/10/2020 12:15

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/11/2020 07:45	679371	EPA 3010A	1	03/16/2020 15:55	LWZ	679794

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	21.4	5.00	ug/L

CCR-6

Collect Date 03/05/2020 10:30

LAB ID 22003103606

Receive Date 03/10/2020 12:15

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/11/2020 07:45	679371	EPA 3010A	1	03/16/2020 16:12	LWZ	679794

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	14.4	5.00	ug/L

CCR-6 MS

Collect Date 03/05/2020 10:30

LAB ID 22003103607

Receive Date 03/10/2020 12:15

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/11/2020 07:45	679371	EPA 3010A	1	03/16/2020 16:16	LWZ	679794

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	281	5.00	ug/L



Report#: 220031036

Project ID: 20030273

Report Date: 03/17/2020

Sample Results

CCR-6 MSD

Collect Date 03/05/2020 10:30

LAB ID 22003103608

Receive Date 03/10/2020 12:15

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/11/2020 07:45	679371	EPA 3010A	1	03/16/2020 16:21	LWZ	679794

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	254	5.00	ug/L

CCR-7

Collect Date 03/05/2020 09:15

LAB ID 22003103609

Receive Date 03/10/2020 12:15

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/11/2020 07:45	679371	EPA 3010A	1	03/16/2020 16:34	LWZ	679794

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	12.0	5.00	ug/L

CCR-8

Collect Date 03/04/2020 10:45

LAB ID 22003103610

Receive Date 03/10/2020 12:15

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/11/2020 07:45	679371	EPA 3010A	1	03/16/2020 16:39	LWZ	679794

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	37.8	5.00	ug/L



Report#: 220031036

Project ID: 20030273

Report Date: 03/17/2020

Sample Results

CCR-9

Collect Date 03/02/2020 18:00

LAB ID 22003103611

Receive Date 03/10/2020 12:15

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/11/2020 07:45	679371	EPA 3010A	1	03/16/2020 16:44	LWZ	679794

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	10.9	5.00	ug/L

CCR-10

Collect Date 03/02/2020 17:00

LAB ID 22003103612

Receive Date 03/10/2020 12:15

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/11/2020 07:45	679371	EPA 3010A	1	03/16/2020 16:48	LWZ	679794

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	7.35	5.00	ug/L

CCR-11

Collect Date 03/02/2020 14:40

LAB ID 22003103613

Receive Date 03/10/2020 12:15

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/11/2020 07:45	679371	EPA 3010A	1	03/16/2020 16:53	LWZ	679794

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	8.05	5.00	ug/L



Report#: 220031036

Project ID: 20030273

Report Date: 03/17/2020

Sample Results

CCR-12

Collect Date 03/03/2020 12:45

LAB ID 22003103614

Receive Date 03/10/2020 12:15

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/11/2020 07:45	679371	EPA 3010A	1	03/16/2020 17:06	LWZ	679794

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	28.4	5.00	ug/L

CCR-13

Collect Date 03/03/2020 11:30

LAB ID 22003103615

Receive Date 03/10/2020 12:15

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/11/2020 07:45	679371	EPA 3010A	1	03/16/2020 17:11	LWZ	679794

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	13.9	5.00	ug/L

CCR-14

Collect Date 03/03/2020 10:20

LAB ID 22003103616

Receive Date 03/10/2020 12:15

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/11/2020 07:45	679371	EPA 3010A	1	03/16/2020 17:15	LWZ	679794

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	15.9	5.00	ug/L



Report#: 220031036

Project ID: 20030273

Report Date: 03/17/2020

Sample Results

Dup	Collect Date	03/03/2020 00:01	LAB ID	22003103617
	Receive Date	03/10/2020 12:15	Matrix	Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/11/2020 07:45	679371	EPA 3010A	1	03/16/2020 17:20	LWZ	679794
CAS#	Parameter			Result	LOQ	Units
7439-93-2	Lithium			18.8	5.00	ug/L

FB 1	Collect Date	03/05/2020 12:15	LAB ID	22003103618
	Receive Date	03/10/2020 12:15	Matrix	Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
03/11/2020 07:45	679371	EPA 3010A	1	03/16/2020 17:24	LWZ	679794
CAS#	Parameter			Result	LOQ	Units
7439-93-2	Lithium			ND	5.00	ug/L



Report#: 220031036

Project ID: 20030273

Report Date: 03/17/2020

Inorganics QC Summary

Analytical Batch 679794	Client ID LAB ID	MB679371 2020040		LCS679371 2020041			
Prep Batch 679371	Sample Type Prep Date	MB 03/11/2020 07:45		LCS 03/11/2020 07:45			
Prep Method EPA 3010A	Analysis Date Matrix	03/16/2020 15:28 Water		03/16/2020 15:32 Water			
EPA 6020B		Units Result	ug/L LOQ	Spike Added	Result	%R	Control Limits%R
Lithium	7439-93-2	ND	5.00	250	246	99	80 - 120

Analytical Batch 679794	Client ID LAB ID	CCR-6 22003103606	CCR-6 MS 22003103607					CCR-6 MSD 22003103608				
Prep Batch 679371	Sample Type Prep Date	SAMPLE 03/11/2020 07:45	MS 03/11/2020 07:45					MSD 03/11/2020 07:45				
Prep Method EPA 3010A	Analysis Date Matrix	03/16/2020 16:12 Water	03/16/2020 16:16 Water					03/16/2020 16:21 Water				
EPA 6020B		Units Result	ug/L LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Lithium	7439-93-2	14.4	5.00	250	281	107	80 - 120	250	254	96	10	20



CHAIN OF CUSTODY RECORD

Omega COCID 9087

Client ID: 4462 - Element Materials Technology

SDG: 220031036

PM: JLM

TEL: (337) 233-6400
FAX: (337) 233-6540

Website: www.element.com

SUB CONTRACTOR: GCAL		COMPANY: Pace Analytical (FKA GCAL)		SPECIAL INSTRUCTIONS / COMMENTS: ELA 031261PO Lithium Only			
ADDRESS: 7979 GSRI Avenue							
CITY, STATE, ZIP: Baton Rouge, LA 70820							
PHONE: (225) 769-4900		FAX: (225) 767-5717		EMAIL:			
ACCOUNT #:							

ITEM #	SAMPLE ID	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	DATE COLLECTED	NUMBER OF CONTAINERS	COMMENTS: Methanol Preserved Weights HOT Sample Notation, Additional Sample Description.
1	20030273-001C 6020_W_SUB (SW6020A)	CCR-1	250HDPEHNO3	Aqueous	3/3/2020 4:50:00 PM	1	
2	20030273-002C 6020_W_SUB (SW6020A)	CCR-2	250HDPEHNO3	Aqueous	3/3/2020 3:45:00 PM	1	
3	20030273-003C 6020_W_SUB (SW6020A)	CCR-3	250HDPEHNO3	Aqueous	3/3/2020 2:40:00 PM	1	
4	20030273-004C 6020_W_SUB (SW6020A)	CCR-4	250HDPEHNO3	Aqueous	3/4/2020 12:20:00 PM	1	
5	20030273-005C 6020_W_SUB (SW6020A)	CCR-5	250HDPEHNO3	Aqueous	3/5/2020 12:00:00 PM	1	
6	20030273-006C 6020_W_SUB (SW6020A)	CCR-6	250HDPEHNO3	Aqueous	3/5/2020 10:30:00 AM	3	MS/MSD REQUIRED!
7	20030273-007C 6020_W_SUB (SW6020A)	CCR-7	250HDPEHNO3	Aqueous	3/5/2020 9:15:00 AM	1	
8	20030273-008C 6020_W_SUB (SW6020A)	CCR-8	250HDPEHNO3	Aqueous	3/4/2020 10:45:00 AM	1	
9	20030273-009C 6020_W_SUB (SW6020A)	CCR-9	250HDPEHNO3	Aqueous	3/2/2020 6:00:00 PM	1	

Relinquished By: <i>[Signature]</i>	Date: 3/6/2020	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
TAT: Standard <input type="checkbox"/> RUSH <input type="checkbox"/> Next BD <input type="checkbox"/> 2nd BD <input type="checkbox"/> 3rd BD <input type="checkbox"/>			REPORT TRANSMITTAL DESIRED: <input type="checkbox"/> HARDCOPY (extra cost) <input type="checkbox"/> FAX <input type="checkbox"/> EMAIL <input type="checkbox"/> ONLINE		
Note: RUSH requests will incur surcharges!			FOR LAB USE ONLY Temp of samples _____ °C Attempt to Cool? _____ Comments: <i>*Revised COCs emailed to PM from client. Original COCs attached with signatures. - TPB 3/11/20</i>		



CHAIN OF CUSTODY RECORD

Omega COCID 9087

PAGE

Client ID: 4462 - Element Materials Technology

SDG: 220031036

PM: JLM



FAX: (337) 233-6540

Website: www.element.com

SUB CONTRACTOR: GCAL		COMPANY: Pace Analytical (FKA GCAL)		SPECIAL INSTRUCTIONS / COMMENTS:			
ADDRESS: 7979 GSRI Avenue		ELA 030333 PO					
CITY, STATE, ZIP: Baton Rouge, LA 70820							
PHONE: (225) 769-4900 FAX: (225) 767-5717 EMAIL:							
ACCOUNT #:							
ITEM #	SAMPLE ID	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	DATE COLLECTED	NUMBER OF CONTAINERS	COMMENTS: Methanol Preserved Weights HOT Sample Notation, Additional Sample Description.
10	20030273-010C	CCR-10	250HDPEHNO3	Aqueous	3/2/2020 5:00:00 PM	1	
	6020_W_SUB (SW6020A)						
11	20030273-011C	CCR-11	250HDPEHNO3	Aqueous	3/2/2020 2:40:00 PM	1	
	6020_W_SUB (SW6020A)						
12	20030273-012C	CCR-12	250HDPEHNO3	Aqueous	3/3/2020 12:45:00 PM	1	
	6020_W_SUB (SW6020A)						
13	20030273-013C	CCR-13	250HDPEHNO3	Aqueous	3/3/2020 11:30:00 AM	1	
	6020_W_SUB (SW6020A)						
14	20030273-014C	CCR-14	250HDPEHNO3	Aqueous	3/3/2020 10:20:00 AM	1	
	6020_W_SUB (SW6020A)						
15	20030273-015C	Dup	250HDPEHNO3	Aqueous		1	
	6020_W_SUB (SW6020A)						
16	20030273-016C	FB 1	250HDPEHNO3	Aqueous	3/5/2020 12:15:00 PM	1	
	6020_W_SUB (SW6020A)						

Relinquished By: <i>[Signature]</i>	Date: 3/6/2020	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
TAT: Standard <input type="checkbox"/> RUSH <input type="checkbox"/> Next BD <input type="checkbox"/> 2nd BD <input type="checkbox"/> 3rd BD <input type="checkbox"/>			REPORT TRANSMITTAL DESIRED: <input type="checkbox"/> HARDCOPY (extra cost) <input type="checkbox"/> FAX <input type="checkbox"/> EMAIL <input type="checkbox"/> ONLINE		
Note: RUSH requests will incur surcharges!			FOR LAB USE ONLY Temp of samples _____ °C Attempt to Cool? _____ Comments: <i>* Original COCs attached with signatures + cooler temp. info. JPS</i>		



CHAIN OF CUSTODY RECORD

Omega COCID 9087

PAGE

Client ID: 4462 - Element Materials Technology

SDG: 220031036

PM: JLM



FAX: (337) 233-6540

Website: www.element.com

SUB CONTRACTOR: GCAL		COMPANY: Pace Analytical (FKA GCAL)		SPECIAL INSTRUCTIONS / COMMENTS:			
ADDRESS: 7979 GSRI Avenue				ELA 030333 PO			
CITY, STATE, ZIP: Baton Rouge, LA 70820							
PHONE: (225) 769-4900		FAX: (225) 767-5717		EMAIL:			
ACCOUNT #:							
ITEM #	SAMPLE ID	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	DATE COLLECTED	NUMBER OF CONTAINERS	COMMENTS: Methanol Preserved Weights HOT Sample Notation, Additional Sample Description.
1	20030273-001C 6020_W_SUB (SW6020A)	CCR-1	250HDPEHNO3	Aqueous	3/3/2020 4:50:00 PM	1	
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3	20030273-003C 6020_W_SUB (SW6020A)	CCR-3	250HDPEHNO3	Aqueous	3/3/2020 2:40:00 PM	1	
4	20030273-004C 6020_W_SUB (SW6020A)	CCR-4	250HDPEHNO3	Aqueous	3/4/2020 12:20:00 PM	1	
5	20030273-005C 6020_W_SUB (SW6020A)	CCR-5	250HDPEHNO3	Aqueous	3/5/2020 12:00:00 PM	1	
6	20030273-006C 6020_W_SUB (SW6020A)	CCR-6	250HDPEHNO3	Aqueous	3/5/2020 10:30:00 AM	3	
7	20030273-007C 6020_W_SUB (SW6020A)	CCR-7	250HDPEHNO3	Aqueous	3/5/2020 9:15:00 AM	1	
8	20030273-008C 6020_W_SUB (SW6020A)	CCR-8	250HDPEHNO3	Aqueous	3/4/2020 10:45:00 AM	1	
9	20030273-009C 6020_W_SUB (SW6020A)	CCR-9	250HDPEHNO3	Aqueous	3/2/2020 6:00:00 PM	1	

Relinquished By: <i>[Signature]</i>		Date: 3-9-20	Time: 1306	Received By: <i>[Signature]</i>		Date: 3-9-20	Time: 1300	REPORT TRANSMITTAL DESIRED:	
Relinquished By:		Date:	Time:	Received By:		Date:	Time:	<input type="checkbox"/> HARDCOPY (extra cost) <input type="checkbox"/> FAX <input type="checkbox"/> EMAIL <input type="checkbox"/> ONLINE	
Relinquished By: <i>[Signature]</i>		Date: 3-10-20	Time: 1215	Received By: <i>[Signature]</i>		Date: 3-10-20	Time: 1215	FOR LAB USE ONLY	
TAT: Standard <input type="checkbox"/> RUSH <input type="checkbox"/>				Next BD <input type="checkbox"/> 2nd BD <input type="checkbox"/> 3rd BD <input type="checkbox"/>				Temp of samples: 1.2 °C Attempt to Cool? ice	
								Comments: E34 39100	
Note: RUSH requests will incur surcharges!									



CHAIN OF CUSTODY RECORD

Omega COCID 9087

Client ID: 4462 - Element Materials Technology

SDG: 220031036

PM: JLM



FAX: (337) 233-6540

Website: www.element.com

SUB CONTRACTOR: GCAL		COMPANY: Pace Analytical (FKA GCAL)		SPECIAL INSTRUCTIONS / COMMENTS:			
ADDRESS: 7979 GSRI Avenue				ELA 030333 PO			
CITY, STATE, ZIP: Baton Rouge, LA 70820							
PHONE: (225) 769-4900		FAX: (225) 767-5717		EMAIL:			
ACCOUNT #:							
ITEM #	SAMPLE ID	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	DATE COLLECTED	NUMBER OF CONTAINERS	COMMENTS: Methanol Preserved Weights HOT Sample Notation, Additional Sample Description.
10	20030273-010C	CCR-10	250HDPEHNO3	Aqueous	3/2/2020 5:00:00 PM	1	
	6020_W_SUB (SW6020A)						
11	20030273-011C	CCR-11	250HDPEHNO3	Aqueous	3/2/2020 2:40:00 PM	1	
	6020_W_SUB (SW6020A)						
12	20030273-012C	CCR-12	250HDPEHNO3	Aqueous	3/3/2020 12:45:00 PM	1	
	6020_W_SUB (SW6020A)						
13	20030273-013C	CCR-13	250HDPEHNO3	Aqueous	3/3/2020 11:30:00 AM	1	
	6020_W_SUB (SW6020A)						
14	20030273-014C	CCR-14	250HDPEHNO3	Aqueous	3/3/2020 10:20:00 AM	1	
	6020_W_SUB (SW6020A)						
15	20030273-015C	Dup	250HDPEHNO3	Aqueous		1	
	6020_W_SUB (SW6020A)						
16	20030273-016C	FB 1	250HDPEHNO3	Aqueous	3/5/2020 12:15:00 PM	1	
	6020_W_SUB (SW6020A)						

Relinquished By: <i>[Signature]</i>	Date: <i>3-4-20</i>	Time: <i>1300</i>	Received By: <i>[Signature]</i>	Date: <i>3-4-20</i>	Time: <i>1300</i>	REPORT TRANSMITTAL DESIRED:	
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	<input type="checkbox"/> HARDCOPY (extra cost) <input type="checkbox"/> FAX <input type="checkbox"/> EMAIL <input type="checkbox"/> ONLINE	
Relinquished By: <i>[Signature]</i>	Date: <i>3-10-20</i>	Time: <i>1215</i>	Received By: <i>[Signature]</i>	Date: <i>3-10-20</i>	Time: <i>1215</i>	FOR LAB USE ONLY	
TAT: Standard <input type="checkbox"/> RUSH <input type="checkbox"/> Next BD <input type="checkbox"/> 2nd BD <input type="checkbox"/> 3rd BD <input type="checkbox"/>						Temp of samples <i>1.2 °C</i> Attempt to Cool? <i>il</i>	
Note: RUSH requests will incur surcharges!						Comments: <i>E34 396pm</i>	



SAMPLE RECEIVING CHECKLIST



SAMPLE DELIVERY GROUP 220031036			CHECKLIST		YES	NO
Client PM JLM 4462 - Element Materials Technology	Transport Method CUST		Samples received with proper thermal preservation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Radioactivity is <1600 cpm? If no, record cpm value in notes section.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Profile Number 271810	Received By Savage, Tiffany R		COC relinquished and complete (including sampleIDs, collect times, and sampler)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			All containers received in good condition and within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Line Item(s) 1 - Water	Receive Date(s) 03/10/20		All sample labels and containers received match the chain of custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Preservative added to any containers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
			If received, was headspace for VOC water containers < 6mm?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Samples collected in containers provided by Pace Gulf Coast?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
COOLERS			DISCREPANCIES	LAB PRESERVATIONS		
Airbill	Thermometer ID: E34	Temp °C	None	None		
		1.2				
NOTES						



- ☐ 2203 S. Madison St., Muncie, IN 47302
765-747-9000/800-874-3563 Fax 765-747-0228
- ☐ 629 Washington St., Suite 300, Columbus, IN 47201
812-375-0531 Fax 812-375-0531
- ☐ 5738 Industrial Rd., Fort Wayne, IN 46825
219-471-7000 Fax 219-471-7777

- ☒ 2417 W. Pinhook Rd, Lafayette, LA 70508
337-235-0483/800-737-2378
Fax 337-233-6540
- ☐ 3445 S Sheridan, Tulsa, OK 74145
918-828-9977/800324-5757
Fax 918-828-7756

Page 1 of 2

Chain of Custody Record

Laboratory Number 20030273

Client Name: Pivotal Engineering LLC		Project: CCR Assessment Monitoring		Preserv.		Test Requested		Comments / Remarks		
Contact Name: Terry Elnaggar		Quote #: 5346		HCl HNO ₃ H ₂ SO ₄		300: Fluoride				
Phone/Fax: (504) 799-3653		Sampler's Signature: <u>Bryan B. Lick</u>		NaOH Na ₂ S ₂ O ₃		+6010/**6020 metals				
Collection		Grab	Comp	Sample Identification / Description		Number / Type of Container	Matrix Code	6020 Sub	7470 Mercury	
Date	Time									
3/3/20	1650	X		C C R - 1		None/ HNO ₃ 3 Plastic	Aq	X	X	
3/3/20	1545	X		C C R - 2		None/ HNO ₃ 3 Plastic	Aq	X	X	
3/3/20	1440	X		C C R - 3		None/ HNO ₃ 3 Plastic	Aq	X	X	
3/4/20	1220	X		C C R - 4		None/ HNO ₃ 3 Plastic	Aq	X	X	
3/5/20	1200	X		C C R - 5		None/ HNO ₃ 3 Plastic	Aq	X	X	
3/5/20	1030	X		C C R - 6		None/ HNO ₃ 3 Plastic	Aq	X	X	
3/5/20	6915	X		C C R - 7		None/ HNO ₃ 3 Plastic	Aq	X	X	
3/4/20	1045	X		C C R - 8		None/ HNO ₃ 3 Plastic	Aq	X	X	
3/2/20	1800	X		C C R - 9		None/ HNO ₃ 3 Plastic	Aq	X	X	
3/2/20	1700	X		C C R - 10		None/ HNO ₃ 3 Plastic	Aq	X	X	
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.								P.O. Number		
Relinquished by: (Signature) <u>Bryan B. Lick</u>		Received by: (Signature) <u>John Helbert</u>		Date <u>3/6/20</u> Time <u>1005</u>		Relinquished by: (Signature)		Received by: (Signature)		
Relinquished by: (Signature)		Received by: (Signature)		Date		Relinquished by: (Signature)		Received by: (Signature)		
						<u>John Helbert</u>		<u>Phyllis</u>		
								<u>3/6/20 1248</u>		
Matrix Codes DW = Drinking Water AQ = Aqueous LIQ = Liquid GW = Ground Water O = Oil SLD = Solid WW = Waste Water SO = Soil SL = Sludge			Container Types G = Glass P = Plastic V = Vial		Shipping Conditions <input checked="" type="checkbox"/> Iced Temp. <u>37</u> <input type="checkbox"/> Ambient <u>94</u> <u>IL10</u>		Requested TAT <input type="checkbox"/> 24-Hr. <input type="checkbox"/> 72-Hr. <input type="checkbox"/> 48-Hr. <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Other		Thank-you for using Element Materials Technology	



- ☐ 2203 S. Madison St., Muncie, IN 47302
765-747-9000/800-874-3563 Fax 765-747-0228
- ☐ 629 Washington St., Suite 300, Columbus, IN 47201
812-375-0531 Fax 812-375-0531
- ☐ 5738 Industrial Rd., Fort Wayne, IN 46825
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- ☒ 2417 W. Pinhook Rd, Lafayette, LA 70508
337-235-0483/800-737-2378
Fax 337-233-6540
- ☐ 3445 S Sheridan, Tulsa, OK 74145
918-828-9977/800324-5757
Fax 918-828-7756

Page 2 of 2

Chain of Custody Record

Laboratory Number 20030273

Client Name: Pivotal Engineering LLC		Project: CCR Assessment Monitoring		Preserv.		Number / Type of Container	Matrix Code	Test Requested								Comments / Remarks						
Contact Name: Terry Elnaggar		Quote #: 5346		HCl HNO ₃ H ₂ SO ₄ NaOH Na ₂ S ₂ O ₃				300: Fluoride	*6010/**6020 metals	***6020 Sub	7470 Mercury											
Phone/Fax: (504) 799-3653		Sampler's Signature: <u>Bryan B. L.H.</u>																				
Collection		Grab	Comp	Sample Identification / Description																		
Date	Time																					
3/2/20	1440	X		C C R - 1 1				None/ HNO ₃	3 Plastic	Aq	X	X	X	X								*6010 Metals: Ba, Be, Cd, Cr, Co, Pb, Mo, Se
3/3/20	1245	X		C C R - 1 2				None/ HNO ₃	3 Plastic	Aq	X	X	X	X								
3/3/20	1130	X		C C R - 1 3				None/ HNO ₃	3 Plastic	Aq	X	X	X	X								**6020 Metals: As, Sb, Ti
3/3/20	1020	X		C C R - 1 4				None/ HNO ₃	3 Plastic	Aq	X	X	X	X								
3/5/20	1030	X		M S (CCR- <u>6</u>)				None/ HNO ₃	3 Plastic	Aq	X	X	X	X								***6020 Sub Metal: Li
3/5/20	1030	X		M S D (CCR- <u>6</u>)				None/ HNO ₃	3 Plastic	Aq	X	X	X	X								
—	—	X		D U P				None/ HNO ₃	3 Plastic	Aq	X	X	X	X								
3/5/20	1215	X		F B 1				None/ HNO ₃	3 Plastic	Aq	X	X	X	X								
																						UPS / FedEx Airborne / Element Hand / Mail
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.																	P.O. Number					
Relinquished by: (Signature)		Received by: (Signature)		Date		Time		Relinquished by: (Signature)				Received by: (Signature)				Date		Time				
<u>Bryan B. L.H.</u>		<u>John Hebert</u>		<u>3/6/20</u>		<u>1005</u>										<u>3/6/20</u>		<u>1248</u>				
Relinquished by: (Signature)		Received by: (Signature)		Date		Time		Relinquished by: (Signature)				Received by: (Signature)				Date		Time				
								<u>John Hebert</u>				<u>Thibodeaux</u>				<u>3/6/20</u>		<u>1248</u>				
Matrix Codes				Container Types				Shipping Conditions				Requested TAT				Thank-you for using Element Materials Technology						
DW = Drinking Water AQ = Aqueous LIQ = Liquid				G = Glass				<input checked="" type="checkbox"/> Iced				<input type="checkbox"/> 24-Hr. <input type="checkbox"/> 72-Hr.										
GW = Ground Water O = Oil SLD = Solid				P = Plastic				Temp. <u>3.7</u>				<input type="checkbox"/> 48-Hr. <input checked="" type="checkbox"/> Standard										
WW = Waste Water SO = Soil SL = Sludge				V = Vial				<input type="checkbox"/> Ambient <u>8H</u>				<input type="checkbox"/> Other										



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

June 19, 2020

Terry Elnaggar
Pivotal Engineering LLC
1515 Poydras St., STE. 1875
New Orleans, LA 70112
TEL: (504) 799-3653
FAX:

RE: Entergy: CCR & CADL Constituents

Order No.: 20060249

Dear Terry Elnaggar:

Element Materials Technology Lafayette received 16 sample(s) on 6/6/2020 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.

Where applicable, 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.: 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.

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
Lafayette, LA 70508-3344



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#: 20060249
Date: 6/19/2020

CLIENT: Pivotal Engineering LLC
Project: Entergy: CCR & CADL Constituents

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

Analytical Report

(consolidated)

WO#: 20060249

Date Reported: 6/19/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 6/5/2020 9:20:00 AM
Project: Entergy: CCR & CADL Constituents
Lab ID: 20060249-001 **Matrix:** AQUEOUS
Client Sample ID: CCR-1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	42.9	2.50		mg/L	10	6/10/2020 11:43:39 AM
Fluoride	0.272	0.0500		mg/L	1	6/10/2020 7:45:07 PM
Sulfate	2.59	0.250		mg/L	1	6/10/2020 7:45:07 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	6/15/2020 10:26:58 PM
Calcium	26.0	0.500		mg/L	1	6/15/2020 10:26:58 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	281	20.0		mg/L	1	6/8/2020 10:16:00 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		



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

Analytical Report

(consolidated)

WO#: 20060249

Date Reported: 6/19/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 6/5/2020 8:25:00 AM
Project: Entergy: CCR & CADL Constituents
Lab ID: 20060249-002 **Matrix:** AQUEOUS
Client Sample ID CCR-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	53.8	2.50		mg/L	10	6/10/2020 11:57:23 AM
Fluoride	0.314	0.0500		mg/L	1	6/10/2020 7:58:50 PM
Sulfate	1.28	0.250		mg/L	1	6/10/2020 7:58:50 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	6/15/2020 10:31:26 PM
Calcium	21.5	0.500		mg/L	1	6/15/2020 10:31:26 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	259	20.0		mg/L	1	6/8/2020 10:16:00 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

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WO#: 20060249

Date Reported: 6/19/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 6/5/2020 7:35:00 AM
Project: Entergy: CCR & CADL Constituents
Lab ID: 20060249-003 **Matrix:** AQUEOUS
Client Sample ID CCR-3

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	110	5.00		mg/L	20	6/10/2020 1:06:02 PM
Fluoride	0.355	0.0500		mg/L	1	6/10/2020 8:12:47 PM
Sulfate	3.12	0.250		mg/L	1	6/10/2020 8:12:47 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	6/15/2020 10:54:10 PM
Calcium	28.4	0.500		mg/L	1	6/15/2020 10:54:10 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	387	20.0		mg/L	1	6/8/2020 10:16:00 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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WO#: 20060249

Date Reported: 6/19/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 6/5/2020 10:10:00 AM
Project: Entergy: CCR & CADL Constituents
Lab ID: 20060249-004 **Matrix:** AQUEOUS
Client Sample ID CCR-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	43.6	2.50		mg/L	10	6/10/2020 1:19:47 PM
Fluoride	0.214	0.0500		mg/L	1	6/10/2020 8:26:30 PM
Sulfate	9.17	0.250		mg/L	1	6/10/2020 8:26:30 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	0.118	0.100		mg/L	1	6/15/2020 10:58:39 PM
Calcium	19.2	0.500		mg/L	1	6/15/2020 10:58:39 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	264	20.0		mg/L	1	6/8/2020 10:16:00 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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WO#: 20060249

Date Reported: 6/19/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 6/5/2020 11:00:00 AM
Project: Entergy: CCR & CADL Constituents
Lab ID: 20060249-005 **Matrix:** AQUEOUS
Client Sample ID CCR-5

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	58.4	5.00		mg/L	20	6/10/2020 1:33:32 PM
Fluoride	0.214	0.0500		mg/L	1	6/10/2020 8:40:14 PM
Sulfate	< 0.250	0.250		mg/L	1	6/10/2020 8:40:14 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	0.123	0.100		mg/L	1	6/15/2020 11:03:05 PM
Calcium	35.0	0.500		mg/L	1	6/15/2020 11:03:05 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	394	20.0		mg/L	1	6/8/2020 10:16:00 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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WO#: 20060249

Date Reported: 6/19/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 6/5/2020 11:45:00 AM
Project: Entergy: CCR & CADL Constituents
Lab ID: 20060249-006 **Matrix:** AQUEOUS
Client Sample ID CCR-6

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	82.2	2.50		mg/L	10	6/10/2020 1:47:16 PM
Fluoride	0.232	0.0500		mg/L	1	6/10/2020 8:53:58 PM
Sulfate	< 0.250	0.250		mg/L	1	6/10/2020 8:53:58 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	0.110	0.100		mg/L	1	6/15/2020 11:07:32 PM
Calcium	30.6	0.500		mg/L	1	6/15/2020 11:07:32 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	321	20.0		mg/L	1	6/8/2020 10:16:00 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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WO#: 20060249

Date Reported: 6/19/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 6/5/2020 12:30:00 PM
Project: Entergy: CCR & CADL Constituents
Lab ID: 20060249-007 **Matrix:** AQUEOUS
Client Sample ID CCR-7

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	78.4	2.50		mg/L	10	6/10/2020 2:00:58 PM
Fluoride	0.257	0.0500		mg/L	1	6/10/2020 9:07:41 PM
Sulfate	< 0.250	0.250		mg/L	1	6/10/2020 9:07:41 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	0.102	0.100		mg/L	1	6/15/2020 11:11:59 PM
Calcium	46.5	0.500		mg/L	1	6/15/2020 11:11:59 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	326	20.0		mg/L	1	6/8/2020 10:16:00 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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WO#: 20060249

Date Reported: 6/19/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 6/5/2020 1:15:00 PM
Project: Entergy: CCR & CADL Constituents
Lab ID: 20060249-008 **Matrix:** AQUEOUS
Client Sample ID CCR-8

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	81.6	2.50		mg/L	10	6/10/2020 2:14:42 PM
Fluoride	0.140	0.0500		mg/L	1	6/10/2020 9:21:25 PM
Sulfate	0.395	0.250		mg/L	1	6/10/2020 9:21:25 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	6/15/2020 11:16:27 PM
Calcium	11.8	0.500		mg/L	1	6/15/2020 11:16:27 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	284	20.0		mg/L	1	6/8/2020 10:16:00 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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WO#: 20060249

Date Reported: 6/19/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 6/4/2020 11:50:00 AM
Project: Entergy: CCR & CADL Constituents
Lab ID: 20060249-009 **Matrix:** AQUEOUS
Client Sample ID CCR-9

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	68.4	2.50		mg/L	10	6/10/2020 2:28:27 PM
Fluoride	0.536	0.0500		mg/L	1	6/10/2020 9:35:07 PM
Sulfate	6.19	0.250		mg/L	1	6/10/2020 9:35:07 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	6/15/2020 11:20:53 PM
Calcium	31.8	0.500		mg/L	1	6/15/2020 11:20:53 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	338	20.0		mg/L	1	6/8/2020 10:16:00 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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WO#: 20060249

Date Reported: 6/19/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 6/4/2020 10:50:00 AM
Project: Entergy: CCR & CADL Constituents
Lab ID: 20060249-010 **Matrix:** AQUEOUS
Client Sample ID CCR-10

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	42.3	2.50		mg/L	10	6/10/2020 2:42:11 PM
Fluoride	0.601	0.0500		mg/L	1	6/10/2020 9:48:52 PM
Sulfate	10.2	0.250		mg/L	1	6/10/2020 9:48:52 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	6/15/2020 11:25:21 PM
Calcium	27.7	0.500		mg/L	1	6/15/2020 11:25:21 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	317	20.0		mg/L	1	6/8/2020 10:16:00 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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WO#: 20060249

Date Reported: 6/19/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 6/4/2020 9:55:00 AM
Project: Entergy: CCR & CADL Constituents
Lab ID: 20060249-011 **Matrix:** AQUEOUS
Client Sample ID: CCR-11

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	25.7	2.50		mg/L	10	6/10/2020 2:55:54 PM
Fluoride	0.701	0.0500		mg/L	1	6/10/2020 10:30:17 PM
Sulfate	3.19	0.250		mg/L	1	6/10/2020 10:30:17 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	6/15/2020 11:29:50 PM
Calcium	28.3	0.500		mg/L	1	6/15/2020 11:29:50 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	226	20.0		mg/L	1	6/8/2020 10:16:00 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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WO#: 20060249

Date Reported: 6/19/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 6/4/2020 4:00:00 PM
Project: Entergy: CCR & CADL Constituents
Lab ID: 20060249-012 **Matrix:** AQUEOUS
Client Sample ID: CCR-12

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	16.0	1.25		mg/L	5	6/10/2020 3:09:39 PM
Fluoride	0.128	0.0500		mg/L	1	6/10/2020 10:44:00 PM
Sulfate	10.4	0.250		mg/L	1	6/10/2020 10:44:00 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	6/15/2020 11:34:17 PM
Calcium	19.0	0.500		mg/L	1	6/15/2020 11:34:17 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	162	20.0		mg/L	1	6/8/2020 10:16:00 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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WO#: 20060249

Date Reported: 6/19/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 6/4/2020 3:10:00 PM
Project: Entergy: CCR & CADL Constituents
Lab ID: 20060249-013 **Matrix:** AQUEOUS
Client Sample ID CCR-13

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	12.0	1.25		mg/L	5	6/10/2020 4:32:12 PM
Fluoride	0.219	0.0500		mg/L	1	6/10/2020 10:57:44 PM
Sulfate	1.12	0.250		mg/L	1	6/10/2020 10:57:44 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	6/15/2020 11:47:45 PM
Calcium	21.8	0.500		mg/L	1	6/15/2020 11:47:45 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	182	20.0		mg/L	1	6/8/2020 10:16:00 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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WO#: 20060249

Date Reported: 6/19/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 6/4/2020 1:10:00 PM
Project: Entergy: CCR & CADL Constituents
Lab ID: 20060249-014 **Matrix:** AQUEOUS
Client Sample ID CCR-14

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	11.3	1.25		mg/L	5	6/10/2020 4:45:56 PM
Fluoride	0.147	0.0500		mg/L	1	6/10/2020 11:11:29 PM
Sulfate	0.489	0.250		mg/L	1	6/10/2020 11:11:29 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	6/15/2020 11:52:13 PM
Calcium	16.9	0.500		mg/L	1	6/15/2020 11:52:13 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	140	20.0		mg/L	1	6/8/2020 10:16:00 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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WO#: 20060249

Date Reported: 6/19/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 6/5/2020
Project: Entergy: CCR & CADL Constituents
Lab ID: 20060249-015 **Matrix:** AQUEOUS
Client Sample ID Dup

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	109	5.00		mg/L	20	6/10/2020 4:59:40 PM
Fluoride	0.366	0.0500		mg/L	1	6/10/2020 11:25:13 PM
Sulfate	3.11	0.250		mg/L	1	6/10/2020 11:25:13 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	6/15/2020 11:56:40 PM
Calcium	29.5	0.500		mg/L	1	6/15/2020 11:56:40 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	381	20.0		mg/L	1	6/8/2020 10:16:00 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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WO#: 20060249

Date Reported: 6/19/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 6/5/2020 7:05:00 AM
Project: Entergy: CCR & CADL Constituents
Lab ID: 20060249-016 **Matrix:** AQUEOUS
Client Sample ID FB

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	< 0.250	0.250		mg/L	1	6/10/2020 5:13:24 PM
Fluoride	< 0.0500	0.0500		mg/L	1	6/10/2020 5:13:24 PM
Sulfate	< 0.250	0.250		mg/L	1	6/10/2020 5:13:24 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	6/16/2020 12:01:08 AM
Calcium	< 0.500	0.500		mg/L	1	6/16/2020 12:01:08 AM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	< 20.0	20.0		mg/L	1	6/8/2020 10:16:00 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#: 20060249
19-Jun-20

Client: Pivotal Engineering LLC
Project: Entergy: CCR & CADL Constituents

BatchID: 34223

Sample ID: 20060250-002BMS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 6/8/2020	RunNo: 90143						
Client ID: ZZZZZZ	Batch ID: 34223	TestNo: SW6010B		Analysis Date: 6/15/2020	SeqNo: 2229287						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.587	0.100	0.5000	0	117	75	125				
Calcium	71.4	0.500	50.00	21.50	99.8	75	125				

Sample ID: 20060250-002BMSD	SampType: MSD	TestCode: 6010_W	Units: mg/L	Prep Date: 6/8/2020	RunNo: 90143						
Client ID: ZZZZZZ	Batch ID: 34223	TestNo: SW6010B		Analysis Date: 6/15/2020	SeqNo: 2229288						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.598	0.100	0.5000	0	120	75	125	0.5872	1.91	20	
Calcium	70.1	0.500	50.00	21.50	97.2	75	125	71.42	1.88	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
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Lafayette, LA 70508-3344
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Website: www.element.com

QC SUMMARY REPORT

WO#: 20060249
19-Jun-20

Client: Pivotal Engineering LLC
Project: Entergy: CCR & CADL Constituents

BatchID: 34223

Sample ID: 20060249-002BMS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 6/8/2020	RunNo: 90140						
Client ID: CCR-2	Batch ID: 34223	TestNo: SW6010B		Analysis Date: 6/15/2020	SeqNo: 2229052						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.587	0.100	0.5000	0	117	75	125				
Calcium	71.4	0.500	50.00	21.50	99.8	75	125				

Sample ID: 20060249-002BMSD	SampType: MSD	TestCode: 6010_W	Units: mg/L	Prep Date: 6/8/2020	RunNo: 90140						
Client ID: CCR-2	Batch ID: 34223	TestNo: SW6010B		Analysis Date: 6/15/2020	SeqNo: 2229053						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.598	0.100	0.5000	0	120	75	125	0.5872	1.91	20	
Calcium	70.1	0.500	50.00	21.50	97.2	75	125	71.42	1.88	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#: 20060249
19-Jun-20

Client: Pivotal Engineering LLC
Project: Entergy: CCR & CADL Constituents

BatchID: 34223

Sample ID: MB-34223	SampType: MBLK	TestCode: 6010_W	Units: mg/L	Prep Date: 6/8/2020	RunNo: 90110						
Client ID: PBW	Batch ID: 34223	TestNo: SW6010B		Analysis Date: 6/15/2020	SeqNo: 2228547						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	< 0.100	0.100									
Calcium	< 0.500	0.500									

Sample ID: LCS-34223	SampType: LCS	TestCode: 6010_W	Units: mg/L	Prep Date: 6/8/2020	RunNo: 90110						
Client ID: LCSW	Batch ID: 34223	TestNo: SW6010B		Analysis Date: 6/15/2020	SeqNo: 2228548						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.504	0.100	0.5000	0	101	80	120				
Calcium	47.4	0.500	50.00	0	94.7	80	120				

Sample ID: LCSD-34223	SampType: LCSD	TestCode: 6010_W	Units: mg/L	Prep Date: 6/8/2020	RunNo: 90110						
Client ID: LCSS02	Batch ID: 34223	TestNo: SW6010B		Analysis Date: 6/15/2020	SeqNo: 2228549						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.508	0.100	0.5000	0	102	80	120	0.5042	0.731	20	
Calcium	48.2	0.500	50.00	0	96.3	80	120	47.37	1.65	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#: 20060249
19-Jun-20

Client: Pivotal Engineering LLC
Project: Entergy: CCR & CADL Constituents

BatchID: R89903

Sample ID: MB-R89903	SampType: MBLK	TestCode: TDS_2540C	Units: mg/L	Prep Date:					RunNo: 89903		
Client ID: PBW	Batch ID: R89903	TestNo: SM2540C	Analysis Date: 6/8/2020					SeqNo: 2221723			
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-R89903	SampType: LCS	TestCode: TDS_2540C	Units: mg/L	Prep Date:					RunNo: 89903		
Client ID: LCSW	Batch ID: R89903	TestNo: SM2540C	Analysis Date: 6/8/2020					SeqNo: 2221724			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 999 20.0 1,000 0 99.9 85 115

Sample ID: LCSD-R89903	SampType: LCSD	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 89903						
Client ID: LCSS02	Batch ID: R89903	TestNo: SM2540C		Analysis Date: 6/8/2020	SeqNo: 2221725						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 994 20.0 1,000 0 99.4 85 115 999.0 0.502 10

Sample ID: 20060249-002ADUP	SampType: DUP	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 89903						
Client ID: CCR-2	Batch ID: R89903	TestNo: SM2540C		Analysis Date: 6/8/2020	SeqNo: 2221745						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 251 20.0 259.0 3.14 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#: 20060249
19-Jun-20

Client: Pivotal Engineering LLC
Project: Entergy: CCR & CADL Constituents

BatchID: R89903

Sample ID: 20060249-002ADUP	SampType: DUP	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 89903						
Client ID: CCR-2	Batch ID: R89903	TestNo: SM2540C		Analysis Date: 6/8/2020	SeqNo: 2221745						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: 20060249-003ADUP	SampType: DUP	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 89903						
Client ID: CCR-3	Batch ID: R89903	TestNo: SM2540C		Analysis Date: 6/8/2020	SeqNo: 2221746						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filterable)	376	20.0						387.0	2.88	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#: 20060249

19-Jun-20

Client: Pivotal Engineering LLC
Project: Entergy: CCR & CADL Constituents

BatchID: R89994

Sample ID: MBLK	SampType: MBLK	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 89994						
Client ID: PBW	Batch ID: R89994	TestNo: E 300.0		Analysis Date: 6/10/2020	SeqNo: 2222849						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	< 0.250	0.250									
Fluoride	< 0.0500	0.0500									
Sulfate	< 0.250	0.250									

Sample ID: LCS	SampType: LCS	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 89994						
Client ID: LCSW	Batch ID: R89994	TestNo: E 300.0		Analysis Date: 6/10/2020	SeqNo: 2222852						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	9.91	0.250	10.00	0	99.1	90	110				
Fluoride	1.94	0.0500	2.000	0	97.1	90	110				
Sulfate	9.78	0.250	10.00	0	97.8	90	110				

Sample ID: LCSD	SampType: LCSD	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 89994						
Client ID: LCSS02	Batch ID: R89994	TestNo: E 300.0		Analysis Date: 6/10/2020	SeqNo: 2222855						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	9.94	0.250	10.00	0	99.4	90	110	9.906	0.325	15	
Fluoride	2.00	0.0500	2.000	0	100	90	110	1.941	2.93	15	
Sulfate	10.2	0.250	10.00	0	102	90	110	9.784	3.69	15	

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#: 20060249

19-Jun-20

Client: Pivotal Engineering LLC

Project: Entergy: CCR & CADL Constituents

BatchID: R89994

Sample ID: 20060249-002AMS	SampType: MS	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 89994						
Client ID: CCR-2	Batch ID: R89994	TestNo: E 300.0	Analysis Date: 6/10/2020	SeqNo: 2222894							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	102	2.50	50.00	53.81	95.5	80	120				
Fluoride	9.41	0.500	10.00	0.09080	93.2	80	120				
Sulfate	46.8	2.50	50.00	0.2416	93.1	80	120				

Sample ID: 20060249-002AMSD	SampType: MSD	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 89994						
Client ID: CCR-2	Batch ID: R89994	TestNo: E 300.0	Analysis Date: 6/10/2020	SeqNo: 2222898							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	102	2.50	50.00	53.81	95.5	80	120	101.6	0.00299	15	
Fluoride	9.52	0.500	10.00	0.09080	94.3	80	120	9.414	1.12	15	
Sulfate	46.8	2.50	50.00	0.2416	93.1	80	120	46.80	0.0354	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 sj



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QC SUMMARY REPORT

WO#: 20060249

19-Jun-20

Client: Pivotal Engineering LLC
Project: Entergy: CCR & CADL Constituents

BatchID: R89994-2

Sample ID: MBLK	SampType: MBLK	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 89994						
Client ID: PBW	Batch ID: R89994-2	TestNo: E 300.0		Analysis Date: 6/10/2020	SeqNo: 2222948						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	< 0.250	0.250									
Fluoride	< 0.0500	0.0500									
Sulfate	< 0.250	0.250									

Sample ID: LCS	SampType: LCS	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 89994						
Client ID: LCSW	Batch ID: R89994-2	TestNo: E 300.0		Analysis Date: 6/10/2020	SeqNo: 2222949						
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	90	110				
Fluoride	1.98	0.0500	2.000	0	99.0	90	110				
Sulfate	10.0	0.250	10.00	0	100	90	110				

Sample ID: LCSD	SampType: LCSD	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 89994						
Client ID: LCSS02	Batch ID: R89994-2	TestNo: E 300.0		Analysis Date: 6/10/2020	SeqNo: 2222950						
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	90	110	9.906	1.35	15	
Fluoride	2.04	0.0500	2.000	0	102	90	110	1.941	5.04	15	
Sulfate	10.5	0.250	10.00	0	105	90	110	9.784	7.12	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#: 20060249

19-Jun-20

Client: Pivotal Engineering LLC
Project: Entergy: CCR & CADL Constituents

BatchID: R89994-2

Sample ID: 20060249-016AMS	SampType: MS	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 89994						
Client ID: FB	Batch ID: R89994-2	TestNo: E 300.0	Analysis Date: 6/10/2020	SeqNo: 2222955							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	4.76	0.250	5.000	0	95.3	80	120				
Fluoride	1.06	0.0500	1.000	0	106	80	120				
Sulfate	5.04	0.250	5.000	0	101	80	120				

Sample ID: 20060249-016AMSD	SampType: MSD	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 89994						
Client ID: FB	Batch ID: R89994-2	TestNo: E 300.0	Analysis Date: 6/10/2020	SeqNo: 2222956							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	4.81	0.250	5.000	0	96.1	80	120	4.764	0.900	15	
Fluoride	1.08	0.0500	1.000	0	108	80	120	1.060	1.92	15	
Sulfate	5.14	0.250	5.000	0	103	80	120	5.039	1.92	15	

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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Sample Log-In Check List

Client Name: **PIVOTAL_ENGINEERIN**

Work Order Number: **20060249**

RcptNo: **1**

Logged by: **Tammy Thibodeaux** **6/6/2020 10:50:00 AM**

Tammy Thibodeaux

Completed By: **Tammy Thibodeaux** **6/8/2020 7:51:57 AM**

Tammy Thibodeaux

Reviewed By: **Caitlin Duplantis** **6/19/2020 2:03:27 PM**

Caitlin Duplantis

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 $>0^{\circ}\text{C}$ 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: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

18. Additional remarks:

Added year of collection to COC as per samples received.

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.0	Good	Not Present			



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Page 1 of 2

Chain of Custody Record

Laboratory Number 20060249

Client Name: Pivotal Engineering LLC				Project: CCR Detection Monitoring				Preserv.		Test Requested										Comments / Remarks					
Contact Name: Terry Elnaggar				Quote #: 5346				HCl HNO ₃ H ₂ SO ₄		Number / Type of Container	Matrix Code	TDS	300: Cl, FI, SO4	6010 metals*											
Phone/Fax: (504) 799-3653				Sampler's Signature:				NaOH Na ₂ S ₂ O ₃																	
Collection				Sample Identification / Description																					
Date	Time	Grab	Comp																						
6/5/20	920	X		C	C	R	-	1	None/ HNO ₃	2 Plastic	Aq	X	X	X											*6010 Metals: B, Ca
6/5	825	X		C	C	R	-	2	None/ HNO ₃	2 Plastic	Aq	X	X	X											
6/5	735	X		C	C	R	-	3	None/ HNO ₃	2 Plastic	Aq	X	X	X											
6/5	1010	X		C	C	R	-	4	None/ HNO ₃	2 Plastic	Aq	X	X	X											
6/5	1100	X		C	C	R	-	5	None/ HNO ₃	2 Plastic	Aq	X	X	X											
6/5	1145	X		C	C	R	-	6	None/ HNO ₃	2 Plastic	Aq	X	X	X											
6/5	1230	X		C	C	R	-	7	None/ HNO ₃	2 Plastic	Aq	X	X	X											
6/5	1315	X		C	C	R	-	8	None/ HNO ₃	2 Plastic	Aq	X	X	X											
6/4	1150	X		C	C	R	-	9	None/ HNO ₃	2 Plastic	Aq	X	X	X											
6/4	1050	X		C	C	R	-	10	None/ HNO ₃	2 Plastic	Aq	X	X	X											

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.

P.O. Number

Relinquished by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Received by: (Signature)	Date	Time
<i>Lucretia Perez</i>	<i>Francis Baker</i>	6/6	1050				
Relinquished by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Received by: (Signature)	Date	Time

Matrix Codes		Container Types		Shipping Conditions		Requested TAT		Thank-you for using Element Materials Technology
DW = Drinking Water	AQ = Aqueous	LIQ = Liquid	G = Glass	<input checked="" type="checkbox"/> Iced	<input type="checkbox"/> 24-Hr.	<input type="checkbox"/> 72-Hr.		
GW = Ground Water	O = Oil	SLD = Solid	P = Plastic	Temp. <u>20°C</u>	<input type="checkbox"/> 48-Hr.	<input checked="" type="checkbox"/> Standard		
WW = Waste Water	SO = Soil	SL = Sludge	V = Vial	<input type="checkbox"/> Ambient	<u>1210</u>	<input type="checkbox"/> Other		



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Page 2 of 2

Chain of Custody Record

Laboratory Number 20060249

Client Name: Pivotal Engineering LLC				Project: CCR Detection Monitoring				Preserv.		Number / Type of Container	Matrix Code	Test Requested										Comments / Remarks			
Contact Name: Terry Elnaggar				Quote #: 5346				HCl HNO ₃ H ₂ SO ₄				TDS	300: Cl, F, SO ₄	6010 metals*											
Phone/Fax: (504) 799-3653				Sampler's Signature: *				NaOH Na ₂ S ₂ O ₃																	
Collection		Grab	Comp	Sample Identification / Description																					
Date	Time																								
6/4	955	X		C C R - 1 1				None/ HNO ₃		2 Plastic	Aq	X	X	X											
6/4	1600	X		C C R - 1 2				None/ HNO ₃		2 Plastic	Aq	X	X	X										*6010 Metals: B, Ca	
6/4	1510	X		C C R - 1 3				None/ HNO ₃		2 Plastic	Aq	X	X	X											
6/4	1310	X		C C R - 1 4				None/ HNO ₃		2 Plastic	Aq	X	X	X											
6/5	830	X		M S (CCR- <u>2</u>)				None/ HNO ₃		2 Plastic	Aq	X	X	X											
6/5	830	X		M S D (CCR- <u>2</u>)				None/ HNO ₃		2 Plastic	Aq	X	X	X											
6/5		X		D U P				None/ HNO ₃		2 Plastic	Aq	X	X	X											
6/5	705	X		F B 1				None/ HNO ₃		2 Plastic	Aq	X	X	X											
																						UPS / FedEx Airborne / Element Hand / Mail			
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.												P.O. Number													
Relinquished by: (Signature)				Received by: (Signature)				Date		Time		Relinquished by: (Signature)				Received by: (Signature)				Date		Time			
<u>[Signature]</u>				<u>[Signature]</u>				6/6		1050															
Relinquished by: (Signature)				Received by: (Signature)				Date		Time		Relinquished by: (Signature)				Received by Laboratory: (Signature)				Date		Time			
Matrix Codes				Container Types				Shipping Conditions				Requested TAT				Thank-you for using Element Materials Technology									
DW = Drinking Water AQ = Aqueous LIQ = Liquid GW = Ground Water O = Oil SLD = Solid WW = Waste Water SO = Soil SL = Sludge				G = Glass P = Plastic V = Vial				<input checked="" type="checkbox"/> Iced Temp. <u>2.8°C</u> <input type="checkbox"/> Ambient <u>1610</u>				<input type="checkbox"/> 24-Hr. <input type="checkbox"/> 72-Hr. <input type="checkbox"/> 48-Hr. <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Other													



Element Materials Technology Lafayette
2417 W. Pinhook Road
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Website: www.element.com

July 07, 2020

Terry Elnaggar
Pivotal Engineering LLC
1515 Poydras St., STE. 1875
New Orleans, LA 70112
TEL: (504) 799-3653
FAX

RE: Entergy: CCR Assessment Monitoring

Order No.: 20060250

Dear Terry Elnaggar:

Element Materials Technology Lafayette received 16 sample(s) on 6/6/2020 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.

Where applicable, 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.: 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.

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
Lafayette, LA 70508-3344



Element Materials Technology Lafayette
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Case Narrative

WO#: 20060250
Date: 7/7/2020

CLIENT: Pivotal Engineering LLC
Project: Entergy: CCR Assessment Monitoring

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 6020 Lithium analysis was subcontracted to Pace Analytical. Their report is attached in its entirety.



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Analytical Report

(consolidated)

WO#: 20060250

Date Reported: 7/7/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 6/5/2020 9:20:00 AM
Project: Entergy: CCR Assessment Monitoring
Lab ID: 20060250-001 **Matrix:** AQUEOUS
Client Sample ID CCR-1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL			SW7470A		Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	6/15/2020 1:50:20 PM
INORGANIC ANIONS IN WATER BY IC			E 300.0		Analyst: SGP	
Fluoride	0.272	0.0500		mg/L	1	6/10/2020 7:45:07 PM
METALS IN WATER BY ICP, TOTALS			SW6010B		Analyst: STS	
Barium	0.196	0.0100		mg/L	1	6/15/2020 10:26:58 PM
Beryllium	< 0.00100	0.00100		mg/L	1	6/15/2020 10:26:58 PM
Cadmium	< 0.00500	0.00500		mg/L	1	6/15/2020 10:26:58 PM
Chromium	< 0.0100	0.0100		mg/L	1	6/15/2020 10:26:58 PM
Cobalt	< 0.0100	0.0100		mg/L	1	6/15/2020 10:26:58 PM
Lead	< 0.0100	0.0100		mg/L	1	6/15/2020 10:26:58 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	6/15/2020 10:26:58 PM
Selenium	< 0.0200	0.0200		mg/L	1	6/15/2020 10:26:58 PM
METALS IN WATER BY ICP-MS, TOTAL			SW6020A		Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	6/19/2020 10:47:45 AM
Arsenic	< 0.250	0.250		µg/L	1	6/19/2020 10:47:45 AM
Thallium	< 0.250	0.250		µg/L	1	6/19/2020 10:47:45 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#: 20060250

Date Reported: 7/7/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 6/5/2020 8:25:00 AM
Project: Entergy: CCR Assessment Monitoring
Lab ID: 20060250-002 **Matrix:** AQUEOUS
Client Sample ID CCR-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL			SW7470A		Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	6/15/2020 1:52:38 PM
INORGANIC ANIONS IN WATER BY IC			E 300.0		Analyst: SGP	
Fluoride	0.314	0.0500		mg/L	1	6/10/2020 7:58:50 PM
METALS IN WATER BY ICP, TOTALS			SW6010B		Analyst: STS	
Barium	0.162	0.0100		mg/L	1	6/15/2020 10:31:26 PM
Beryllium	< 0.00100	0.00100		mg/L	1	6/15/2020 10:31:26 PM
Cadmium	< 0.00500	0.00500		mg/L	1	6/15/2020 10:31:26 PM
Chromium	< 0.0100	0.0100		mg/L	1	6/15/2020 10:31:26 PM
Cobalt	< 0.0100	0.0100		mg/L	1	6/15/2020 10:31:26 PM
Lead	< 0.0100	0.0100		mg/L	1	6/15/2020 10:31:26 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	6/15/2020 10:31:26 PM
Selenium	< 0.0200	0.0200		mg/L	1	6/15/2020 10:31:26 PM
METALS IN WATER BY ICP-MS, TOTAL			SW6020A		Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	6/19/2020 10:50:33 AM
Arsenic	< 0.250	0.250		µg/L	1	6/19/2020 10:50:33 AM
Thallium	< 0.250	0.250		µg/L	1	6/19/2020 10:50:33 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#: 20060250

Date Reported: 7/7/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 6/5/2020 7:35:00 AM
Project: Entergy: CCR Assessment Monitoring
Lab ID: 20060250-003 **Matrix:** AQUEOUS
Client Sample ID CCR-3

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL			SW7470A		Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	6/15/2020 2:02:58 PM
INORGANIC ANIONS IN WATER BY IC			E 300.0		Analyst: SGP	
Fluoride	0.355	0.0500		mg/L	1	6/10/2020 8:12:47 PM
METALS IN WATER BY ICP, TOTALS			SW6010B		Analyst: STS	
Barium	0.306	0.0100		mg/L	1	6/15/2020 10:54:10 PM
Beryllium	< 0.00100	0.00100		mg/L	1	6/15/2020 10:54:10 PM
Cadmium	< 0.00500	0.00500		mg/L	1	6/15/2020 10:54:10 PM
Chromium	< 0.0100	0.0100		mg/L	1	6/15/2020 10:54:10 PM
Cobalt	< 0.0100	0.0100		mg/L	1	6/15/2020 10:54:10 PM
Lead	< 0.0100	0.0100		mg/L	1	6/15/2020 10:54:10 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	6/15/2020 10:54:10 PM
Selenium	< 0.0200	0.0200		mg/L	1	6/15/2020 10:54:10 PM
METALS IN WATER BY ICP-MS, TOTAL			SW6020A		Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	6/19/2020 11:10:11 AM
Arsenic	5.39	0.250		µg/L	1	6/19/2020 11:10:11 AM
Thallium	< 0.250	0.250		µg/L	1	6/19/2020 11:10:11 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#: 20060250

Date Reported: 7/7/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 6/5/2020 10:10:00 AM
Project: Entergy: CCR Assessment Monitoring
Lab ID: 20060250-004 **Matrix:** AQUEOUS
Client Sample ID CCR-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL			SW7470A		Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	6/15/2020 2:05:16 PM
INORGANIC ANIONS IN WATER BY IC			E 300.0		Analyst: SGP	
Fluoride	0.214	0.0500		mg/L	1	6/10/2020 8:26:30 PM
METALS IN WATER BY ICP, TOTALS			SW6010B		Analyst: STS	
Barium	0.117	0.0100		mg/L	1	6/15/2020 10:58:39 PM
Beryllium	< 0.00100	0.00100		mg/L	1	6/15/2020 10:58:39 PM
Cadmium	< 0.00500	0.00500		mg/L	1	6/15/2020 10:58:39 PM
Chromium	< 0.0100	0.0100		mg/L	1	6/15/2020 10:58:39 PM
Cobalt	< 0.0100	0.0100		mg/L	1	6/15/2020 10:58:39 PM
Lead	< 0.0100	0.0100		mg/L	1	6/15/2020 10:58:39 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	6/15/2020 10:58:39 PM
Selenium	0.0227	0.0200		mg/L	1	6/15/2020 10:58:39 PM
METALS IN WATER BY ICP-MS, TOTAL			SW6020A		Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	6/19/2020 11:12:59 AM
Arsenic	0.259	0.250		µg/L	1	6/19/2020 11:12:59 AM
Thallium	< 0.250	0.250		µg/L	1	6/19/2020 11:12:59 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#: 20060250

Date Reported: 7/7/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 6/5/2020 11:00:00 AM
Project: Entergy: CCR Assessment Monitoring
Lab ID: 20060250-005 **Matrix:** AQUEOUS
Client Sample ID CCR-5

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL				SW7470A	Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	6/15/2020 2:12:48 PM
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Fluoride	0.214	0.0500		mg/L	1	6/10/2020 8:40:14 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Barium	0.240	0.0100		mg/L	1	6/15/2020 11:03:05 PM
Beryllium	< 0.00100	0.00100		mg/L	1	6/15/2020 11:03:05 PM
Cadmium	< 0.00500	0.00500		mg/L	1	6/15/2020 11:03:05 PM
Chromium	< 0.0100	0.0100		mg/L	1	6/15/2020 11:03:05 PM
Cobalt	< 0.0100	0.0100		mg/L	1	6/15/2020 11:03:05 PM
Lead	< 0.0100	0.0100		mg/L	1	6/15/2020 11:03:05 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	6/15/2020 11:03:05 PM
Selenium	< 0.0200	0.0200		mg/L	1	6/15/2020 11:03:05 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	6/19/2020 11:15:47 AM
Arsenic	< 0.250	0.250		µg/L	1	6/19/2020 11:15:47 AM
Thallium	< 0.250	0.250		µg/L	1	6/19/2020 11:15:47 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

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WO#: 20060250

Date Reported: 7/7/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 6/5/2020 11:45:00 AM
Project: Entergy: CCR Assessment Monitoring
Lab ID: 20060250-006 **Matrix:** AQUEOUS
Client Sample ID CCR-6

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL		SW7470A			Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	6/15/2020 2:15:06 PM
INORGANIC ANIONS IN WATER BY IC		E 300.0			Analyst: SGP	
Fluoride	0.232	0.0500		mg/L	1	6/10/2020 8:53:58 PM
METALS IN WATER BY ICP, TOTALS		SW6010B			Analyst: STS	
Barium	0.210	0.0100		mg/L	1	6/15/2020 11:07:32 PM
Beryllium	< 0.00100	0.00100		mg/L	1	6/15/2020 11:07:32 PM
Cadmium	< 0.00500	0.00500		mg/L	1	6/15/2020 11:07:32 PM
Chromium	< 0.0100	0.0100		mg/L	1	6/15/2020 11:07:32 PM
Cobalt	< 0.0100	0.0100		mg/L	1	6/15/2020 11:07:32 PM
Lead	< 0.0100	0.0100		mg/L	1	6/15/2020 11:07:32 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	6/15/2020 11:07:32 PM
Selenium	< 0.0200	0.0200		mg/L	1	6/15/2020 11:07:32 PM
METALS IN WATER BY ICP-MS, TOTAL		SW6020A			Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	6/19/2020 11:18:35 AM
Arsenic	< 0.250	0.250		µg/L	1	6/19/2020 11:18:35 AM
Thallium	< 0.250	0.250		µg/L	1	6/19/2020 11:18:35 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#: 20060250

Date Reported: 7/7/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 6/5/2020 12:30:00 PM
Project: Entergy: CCR Assessment Monitoring
Lab ID: 20060250-007 **Matrix:** AQUEOUS
Client Sample ID CCR-7

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL				SW7470A	Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	6/15/2020 2:17:24 PM
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Fluoride	0.257	0.0500		mg/L	1	6/10/2020 9:07:41 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Barium	0.320	0.0100		mg/L	1	6/15/2020 11:11:59 PM
Beryllium	< 0.00100	0.00100		mg/L	1	6/15/2020 11:11:59 PM
Cadmium	< 0.00500	0.00500		mg/L	1	6/15/2020 11:11:59 PM
Chromium	< 0.0100	0.0100		mg/L	1	6/15/2020 11:11:59 PM
Cobalt	< 0.0100	0.0100		mg/L	1	6/15/2020 11:11:59 PM
Lead	< 0.0100	0.0100		mg/L	1	6/15/2020 11:11:59 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	6/15/2020 11:11:59 PM
Selenium	< 0.0200	0.0200		mg/L	1	6/15/2020 11:11:59 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	6/19/2020 11:21:23 AM
Arsenic	0.411	0.250		µg/L	1	6/19/2020 11:21:23 AM
Thallium	< 0.250	0.250		µg/L	1	6/19/2020 11:21:23 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#: 20060250

Date Reported: 7/7/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 6/5/2020 1:15:00 PM
Project: Entergy: CCR Assessment Monitoring
Lab ID: 20060250-008 **Matrix:** AQUEOUS
Client Sample ID CCR-8

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL			SW7470A		Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	6/15/2020 2:19:42 PM
INORGANIC ANIONS IN WATER BY IC			E 300.0		Analyst: SGP	
Fluoride	0.140	0.0500		mg/L	1	6/10/2020 9:21:25 PM
METALS IN WATER BY ICP, TOTALS			SW6010B		Analyst: STS	
Barium	0.120	0.0100		mg/L	1	6/15/2020 11:16:27 PM
Beryllium	< 0.00100	0.00100		mg/L	1	6/15/2020 11:16:27 PM
Cadmium	< 0.00500	0.00500		mg/L	1	6/15/2020 11:16:27 PM
Chromium	< 0.0100	0.0100		mg/L	1	6/15/2020 11:16:27 PM
Cobalt	< 0.0100	0.0100		mg/L	1	6/15/2020 11:16:27 PM
Lead	< 0.0100	0.0100		mg/L	1	6/15/2020 11:16:27 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	6/15/2020 11:16:27 PM
Selenium	< 0.0200	0.0200		mg/L	1	6/15/2020 11:16:27 PM
METALS IN WATER BY ICP-MS, TOTAL			SW6020A		Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	6/19/2020 11:24:10 AM
Arsenic	< 0.250	0.250		µg/L	1	6/19/2020 11:24:10 AM
Thallium	< 0.250	0.250		µg/L	1	6/19/2020 11:24:10 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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Website: www.element.com

Analytical Report

(consolidated)

WO#: 20060250

Date Reported: 7/7/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 6/4/2020 11:50:00 AM
Project: Entergy: CCR Assessment Monitoring
Lab ID: 20060250-009 **Matrix:** AQUEOUS
Client Sample ID CCR-9

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL			SW7470A		Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	6/15/2020 2:22:00 PM
INORGANIC ANIONS IN WATER BY IC			E 300.0		Analyst: SGP	
Fluoride	0.536	0.0500		mg/L	1	6/10/2020 9:35:07 PM
METALS IN WATER BY ICP, TOTALS			SW6010B		Analyst: STS	
Barium	0.250	0.0100		mg/L	1	6/15/2020 11:20:53 PM
Beryllium	< 0.00100	0.00100		mg/L	1	6/15/2020 11:20:53 PM
Cadmium	< 0.00500	0.00500		mg/L	1	6/15/2020 11:20:53 PM
Chromium	< 0.0100	0.0100		mg/L	1	6/15/2020 11:20:53 PM
Cobalt	< 0.0100	0.0100		mg/L	1	6/15/2020 11:20:53 PM
Lead	< 0.0100	0.0100		mg/L	1	6/15/2020 11:20:53 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	6/15/2020 11:20:53 PM
Selenium	< 0.0200	0.0200		mg/L	1	6/15/2020 11:20:53 PM
METALS IN WATER BY ICP-MS, TOTAL			SW6020A		Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	6/19/2020 11:26:58 AM
Arsenic	0.260	0.250		µg/L	1	6/19/2020 11:26:58 AM
Thallium	< 0.250	0.250		µg/L	1	6/19/2020 11:26:58 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

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WO#: 20060250

Date Reported: 7/7/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 6/4/2020 10:50:00 AM
Project: Entergy: CCR Assessment Monitoring
Lab ID: 20060250-010 **Matrix:** AQUEOUS
Client Sample ID CCR-10

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL			SW7470A		Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	6/15/2020 2:24:22 PM
INORGANIC ANIONS IN WATER BY IC			E 300.0		Analyst: SGP	
Fluoride	0.601	0.0500		mg/L	1	6/10/2020 9:48:52 PM
METALS IN WATER BY ICP, TOTALS			SW6010B		Analyst: STS	
Barium	0.272	0.0100		mg/L	1	6/15/2020 11:25:21 PM
Beryllium	< 0.00100	0.00100		mg/L	1	6/15/2020 11:25:21 PM
Cadmium	< 0.00500	0.00500		mg/L	1	6/15/2020 11:25:21 PM
Chromium	< 0.0100	0.0100		mg/L	1	6/15/2020 11:25:21 PM
Cobalt	< 0.0100	0.0100		mg/L	1	6/15/2020 11:25:21 PM
Lead	< 0.0100	0.0100		mg/L	1	6/15/2020 11:25:21 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	6/15/2020 11:25:21 PM
Selenium	< 0.0200	0.0200		mg/L	1	6/15/2020 11:25:21 PM
METALS IN WATER BY ICP-MS, TOTAL			SW6020A		Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	6/19/2020 11:29:46 AM
Arsenic	1.50	0.250		µg/L	1	6/19/2020 11:29:46 AM
Thallium	< 0.250	0.250		µg/L	1	6/19/2020 11:29:46 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#: 20060250

Date Reported: 7/7/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 6/4/2020 9:55:00 AM
Project: Entergy: CCR Assessment Monitoring
Lab ID: 20060250-011 **Matrix:** AQUEOUS
Client Sample ID CCR-11

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL			SW7470A		Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	6/15/2020 2:26:40 PM
INORGANIC ANIONS IN WATER BY IC			E 300.0		Analyst: SGP	
Fluoride	0.701	0.0500		mg/L	1	6/10/2020 10:30:17 PM
METALS IN WATER BY ICP, TOTALS			SW6010B		Analyst: STS	
Barium	0.156	0.0100		mg/L	1	6/15/2020 11:29:50 PM
Beryllium	< 0.00100	0.00100		mg/L	1	6/15/2020 11:29:50 PM
Cadmium	< 0.00500	0.00500		mg/L	1	6/15/2020 11:29:50 PM
Chromium	< 0.0100	0.0100		mg/L	1	6/15/2020 11:29:50 PM
Cobalt	< 0.0100	0.0100		mg/L	1	6/15/2020 11:29:50 PM
Lead	< 0.0100	0.0100		mg/L	1	6/15/2020 11:29:50 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	6/15/2020 11:29:50 PM
Selenium	< 0.0200	0.0200		mg/L	1	6/15/2020 11:29:50 PM
METALS IN WATER BY ICP-MS, TOTAL			SW6020A		Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	6/19/2020 11:43:48 AM
Arsenic	0.974	0.250		µg/L	1	6/19/2020 11:43:48 AM
Thallium	< 0.250	0.250		µg/L	1	6/19/2020 11:43:48 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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WO#: 20060250

Date Reported: 7/7/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 6/4/2020 4:00:00 PM
Project: Entergy: CCR Assessment Monitoring
Lab ID: 20060250-012 **Matrix:** AQUEOUS
Client Sample ID CCR-12

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL			SW7470A		Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	6/15/2020 2:28:59 PM
INORGANIC ANIONS IN WATER BY IC			E 300.0		Analyst: SGP	
Fluoride	0.128	0.0500		mg/L	1	6/10/2020 10:44:00 PM
METALS IN WATER BY ICP, TOTALS			SW6010B		Analyst: STS	
Barium	0.178	0.0100		mg/L	1	6/15/2020 11:34:17 PM
Beryllium	< 0.00100	0.00100		mg/L	1	6/15/2020 11:34:17 PM
Cadmium	< 0.00500	0.00500		mg/L	1	6/15/2020 11:34:17 PM
Chromium	< 0.0100	0.0100		mg/L	1	6/15/2020 11:34:17 PM
Cobalt	< 0.0100	0.0100		mg/L	1	6/15/2020 11:34:17 PM
Lead	< 0.0100	0.0100		mg/L	1	6/15/2020 11:34:17 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	6/15/2020 11:34:17 PM
Selenium	< 0.0200	0.0200		mg/L	1	6/15/2020 11:34:17 PM
METALS IN WATER BY ICP-MS, TOTAL			SW6020A		Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	6/19/2020 11:46:37 AM
Arsenic	0.423	0.250		µg/L	1	6/19/2020 11:46:37 AM
Thallium	< 0.250	0.250		µg/L	1	6/19/2020 11:46:37 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

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WO#: 20060250

Date Reported: 7/7/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 6/4/2020 3:10:00 PM
Project: Entergy: CCR Assessment Monitoring
Lab ID: 20060250-013 **Matrix:** AQUEOUS
Client Sample ID CCR-13

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER,TOTAL			SW7470A		Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	6/15/2020 2:31:17 PM
INORGANIC ANIONS IN WATER BY IC			E 300.0		Analyst: SGP	
Fluoride	0.219	0.0500		mg/L	1	6/10/2020 10:57:44 PM
METALS IN WATER BY ICP, TOTALS			SW6010B		Analyst: STS	
Barium	0.106	0.0100		mg/L	1	6/15/2020 11:47:45 PM
Beryllium	< 0.00100	0.00100		mg/L	1	6/15/2020 11:47:45 PM
Cadmium	< 0.00500	0.00500		mg/L	1	6/15/2020 11:47:45 PM
Chromium	< 0.0100	0.0100		mg/L	1	6/15/2020 11:47:45 PM
Cobalt	< 0.0100	0.0100		mg/L	1	6/15/2020 11:47:45 PM
Lead	< 0.0100	0.0100		mg/L	1	6/15/2020 11:47:45 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	6/15/2020 11:47:45 PM
Selenium	< 0.0200	0.0200		mg/L	1	6/15/2020 11:47:45 PM
METALS IN WATER BY ICP-MS, TOTAL			SW6020A		Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	6/19/2020 11:49:25 AM
Arsenic	< 0.250	0.250		µg/L	1	6/19/2020 11:49:25 AM
Thallium	< 0.250	0.250		µg/L	1	6/19/2020 11:49:25 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

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WO#: 20060250

Date Reported: 7/7/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 6/4/2020 1:10:00 PM
Project: Entergy: CCR Assessment Monitoring
Lab ID: 20060250-014 **Matrix:** AQUEOUS
Client Sample ID CCR-14

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL			SW7470A		Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	6/15/2020 2:33:35 PM
INORGANIC ANIONS IN WATER BY IC			E 300.0		Analyst: SGP	
Fluoride	0.147	0.0500		mg/L	1	6/10/2020 11:11:29 PM
METALS IN WATER BY ICP, TOTALS			SW6010B		Analyst: STS	
Barium	0.0854	0.0100		mg/L	1	6/15/2020 11:52:13 PM
Beryllium	< 0.00100	0.00100		mg/L	1	6/15/2020 11:52:13 PM
Cadmium	< 0.00500	0.00500		mg/L	1	6/15/2020 11:52:13 PM
Chromium	< 0.0100	0.0100		mg/L	1	6/15/2020 11:52:13 PM
Cobalt	< 0.0100	0.0100		mg/L	1	6/15/2020 11:52:13 PM
Lead	< 0.0100	0.0100		mg/L	1	6/15/2020 11:52:13 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	6/15/2020 11:52:13 PM
Selenium	< 0.0200	0.0200		mg/L	1	6/15/2020 11:52:13 PM
METALS IN WATER BY ICP-MS, TOTAL			SW6020A		Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	6/19/2020 11:52:12 AM
Arsenic	0.786	0.250		µg/L	1	6/19/2020 11:52:12 AM
Thallium	< 0.250	0.250		µg/L	1	6/19/2020 11:52:12 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

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WO#: 20060250

Date Reported: 7/7/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 6/5/2020
Project: Entergy: CCR Assessment Monitoring
Lab ID: 20060250-015 **Matrix:** AQUEOUS
Client Sample ID Dup

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL			SW7470A		Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	6/15/2020 2:41:07 PM
INORGANIC ANIONS IN WATER BY IC			E 300.0		Analyst: SGP	
Fluoride	0.366	0.0500		mg/L	1	6/10/2020 11:25:13 PM
METALS IN WATER BY ICP, TOTALS			SW6010B		Analyst: STS	
Barium	0.280	0.0100		mg/L	1	6/15/2020 11:56:40 PM
Beryllium	< 0.00100	0.00100		mg/L	1	6/15/2020 11:56:40 PM
Cadmium	< 0.00500	0.00500		mg/L	1	6/15/2020 11:56:40 PM
Chromium	< 0.0100	0.0100		mg/L	1	6/15/2020 11:56:40 PM
Cobalt	< 0.0100	0.0100		mg/L	1	6/15/2020 11:56:40 PM
Lead	< 0.0100	0.0100		mg/L	1	6/15/2020 11:56:40 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	6/15/2020 11:56:40 PM
Selenium	< 0.0200	0.0200		mg/L	1	6/15/2020 11:56:40 PM
METALS IN WATER BY ICP-MS, TOTAL			SW6020A		Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	6/19/2020 11:55:00 AM
Arsenic	5.65	0.250		µg/L	1	6/19/2020 11:55:00 AM
Thallium	< 0.250	0.250		µg/L	1	6/19/2020 11:55:00 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

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WO#: 20060250

Date Reported: 7/7/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 6/5/2020 7:05:00 AM
Project: Entergy: CCR Assessment Monitoring
Lab ID: 20060250-016 **Matrix:** AQUEOUS
Client Sample ID FB

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL			SW7470A		Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	6/15/2020 2:43:25 PM
INORGANIC ANIONS IN WATER BY IC			E 300.0		Analyst: SGP	
Fluoride	< 0.0500	0.0500		mg/L	1	6/10/2020 5:13:24 PM
METALS IN WATER BY ICP, TOTALS			SW6010B		Analyst: STS	
Barium	< 0.0100	0.0100		mg/L	1	6/16/2020 12:01:08 AM
Beryllium	< 0.00100	0.00100		mg/L	1	6/16/2020 12:01:08 AM
Cadmium	< 0.00500	0.00500		mg/L	1	6/16/2020 12:01:08 AM
Chromium	< 0.0100	0.0100		mg/L	1	6/16/2020 12:01:08 AM
Cobalt	< 0.0100	0.0100		mg/L	1	6/16/2020 12:01:08 AM
Lead	< 0.0100	0.0100		mg/L	1	6/16/2020 12:01:08 AM
Molybdenum	< 0.0100	0.0100		mg/L	1	6/16/2020 12:01:08 AM
Selenium	< 0.0200	0.0200		mg/L	1	6/16/2020 12:01:08 AM
METALS IN WATER BY ICP-MS, TOTAL			SW6020A		Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	6/19/2020 11:57:48 AM
Arsenic	< 0.250	0.250		µg/L	1	6/19/2020 11:57:48 AM
Thallium	< 0.250	0.250		µg/L	1	6/19/2020 11:57:48 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#: 20060250
07-Jul-20

Client: Pivotal Engineering LLC
Project: Entergy: CCR Assessment Monitoring

BatchID: 34223

Sample ID	20060250-002BMS	SampType:	MS	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/8/2020	RunNo:	90143
Client ID:	CCR-2	Batch ID:	34223	TestNo:	SW6010B			Analysis Date:	6/15/2020	SeqNo:	2229287
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.680	0.0100	0.5000	0.1622	104	75	125				
Beryllium	0.524	0.00100	0.5000	0	105	75	125				
Cadmium	0.504	0.00500	0.5000	0.0009000	101	75	125				
Chromium	0.522	0.0100	0.5000	0.0007000	104	75	125				
Cobalt	0.506	0.0100	0.5000	0	101	75	125				
Lead	0.510	0.0100	0.5000	0	102	75	125				
Molybdenum	0.518	0.0100	0.5000	0.003500	103	75	125				
Selenium	0.509	0.0200	0.5000	0.01420	99.0	75	125				

Sample ID	20060250-002BMSD	SampType:	MSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/8/2020	RunNo:	90143
Client ID:	CCR-2	Batch ID:	34223	TestNo:	SW6010B			Analysis Date:	6/15/2020	SeqNo:	2229288
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.673	0.0100	0.5000	0.1622	102	75	125	0.6798	1.01	20	
Beryllium	0.523	0.00100	0.5000	0	105	75	125	0.5245	0.286	20	
Cadmium	0.501	0.00500	0.5000	0.0009000	100	75	125	0.5039	0.557	20	
Chromium	0.517	0.0100	0.5000	0.0007000	103	75	125	0.5216	0.847	20	
Cobalt	0.503	0.0100	0.5000	0	101	75	125	0.5063	0.694	20	
Lead	0.505	0.0100	0.5000	0	101	75	125	0.5100	0.965	20	
Molybdenum	0.516	0.0100	0.5000	0.003500	103	75	125	0.5182	0.329	20	
Selenium	0.521	0.0200	0.5000	0.01420	101	75	125	0.5090	2.33	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 specified



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QC SUMMARY REPORT

WO#: 20060250
07-Jul-20

Client: Pivotal Engineering LLC
Project: Entergy: CCR Assessment Monitoring

BatchID: 34223

Sample ID	20060249-002BMS	SampType:	MS	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/8/2020	RunNo:	90140
Client ID:	ZZZZZZ	Batch ID:	34223	TestNo:	SW6010B			Analysis Date:	6/15/2020	SeqNo:	2229052
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.680	0.0100	0.5000	0.1622	104	75	125				
Beryllium	0.524	0.00100	0.5000	0	105	75	125				
Cadmium	0.504	0.00500	0.5000	0.0009000	101	75	125				
Chromium	0.522	0.0100	0.5000	0.0007000	104	75	125				
Cobalt	0.506	0.0100	0.5000	0	101	75	125				
Lead	0.510	0.0100	0.5000	0	102	75	125				
Molybdenum	0.518	0.0100	0.5000	0.003500	103	75	125				
Selenium	0.509	0.0200	0.5000	0.01420	99.0	75	125				

Sample ID	20060249-002BMSD	SampType:	MSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/8/2020	RunNo:	90140
Client ID:	ZZZZZZ	Batch ID:	34223	TestNo:	SW6010B			Analysis Date:	6/15/2020	SeqNo:	2229053
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.673	0.0100	0.5000	0.1622	102	75	125	0.6798	1.01	20	
Beryllium	0.523	0.00100	0.5000	0	105	75	125	0.5245	0.286	20	
Cadmium	0.501	0.00500	0.5000	0.0009000	100	75	125	0.5039	0.557	20	
Chromium	0.517	0.0100	0.5000	0.0007000	103	75	125	0.5216	0.847	20	
Cobalt	0.503	0.0100	0.5000	0	101	75	125	0.5063	0.694	20	
Lead	0.505	0.0100	0.5000	0	101	75	125	0.5100	0.965	20	
Molybdenum	0.516	0.0100	0.5000	0.003500	103	75	125	0.5182	0.329	20	
Selenium	0.521	0.0200	0.5000	0.01420	101	75	125	0.5090	2.33	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 specified



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Website: www.element.com

QC SUMMARY REPORT

WO#: 20060250
07-Jul-20

Client: Pivotal Engineering LLC
Project: Entergy: CCR Assessment Monitoring

BatchID: 34223

Sample ID	MB-34223	SampType:	MBLK	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/8/2020	RunNo:	90110	
Client ID:	PBW	Batch ID:	34223	TestNo:	SW6010B			Analysis Date:	6/15/2020	SeqNo:	2228547	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium		< 0.0100	0.0100									
Beryllium		< 0.00100	0.00100									
Cadmium		< 0.00500	0.00500									
Chromium		< 0.0100	0.0100									
Cobalt		< 0.0100	0.0100									
Lead		< 0.0100	0.0100									
Molybdenum		< 0.0100	0.0100									
Selenium		< 0.0200	0.0200									

Sample ID	LCS-34223	SampType:	LCS	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/8/2020	RunNo:	90110
Client ID:	LCSW	Batch ID:	34223	TestNo:	SW6010B			Analysis Date:	6/15/2020	SeqNo:	2228548
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.492	0.0100	0.5000	0	98.3	80	120				
Beryllium	0.488	0.00100	0.5000	0	97.6	80	120				
Cadmium	0.483	0.00500	0.5000	0	96.6	80	120				
Chromium	0.490	0.0100	0.5000	0	98.1	80	120				
Cobalt	0.484	0.0100	0.5000	0	96.9	80	120				
Lead	0.487	0.0100	0.5000	0	97.5	80	120				
Molybdenum	0.482	0.0100	0.5000	0	96.3	80	120				
Selenium	0.520	0.0200	0.5000	0	104	80	120				

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

M Matrix Interference
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S Spike Recovery outside accepted recovery limits
W Sample container temperature is out of limit as specified



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QC SUMMARY REPORT

WO#: 20060250
07-Jul-20

Client: Pivotal Engineering LLC
Project: Entergy: CCR Assessment Monitoring

BatchID: 34223

Sample ID	LCSD-34223	SampType: LCSD	TestCode: 6010_W	Units: mg/L	Prep Date: 6/8/2020	RunNo: 90110					
Client ID:	LCSS02	Batch ID: 34223	TestNo: SW6010B	Analysis Date: 6/15/2020	SeqNo: 2228549						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.492	0.0100	0.5000	0	98.4	80	120	0.4917	0.0813	20	
Beryllium	0.492	0.00100	0.5000	0	98.3	80	120	0.4880	0.755	20	
Cadmium	0.485	0.00500	0.5000	0	97.0	80	120	0.4831	0.372	20	
Chromium	0.493	0.0100	0.5000	0	98.6	80	120	0.4903	0.529	20	
Cobalt	0.484	0.0100	0.5000	0	96.7	80	120	0.4845	0.165	20	
Lead	0.487	0.0100	0.5000	0	97.5	80	120	0.4874	0.0205	20	
Molybdenum	0.487	0.0100	0.5000	0	97.4	80	120	0.4817	1.11	20	
Selenium	0.499	0.0200	0.5000	0	99.9	80	120	0.5203	4.12	20	

Qualifiers:

H Holding times for preparation or analysis exceeded
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QC SUMMARY REPORT

WO#: 20060250
07-Jul-20

Client: Pivotal Engineering LLC
Project: Entergy: CCR Assessment Monitoring

BatchID: 34224

Sample ID	MB-34224	SampType:	MBLK	TestCode:	6020A_W	Units:	µg/L	Prep Date:	6/8/2020	RunNo:	90679	
Client ID:	PBW	Batch ID:	34224	TestNo:	SW6020A			Analysis Date:	6/19/2020	SeqNo:	2243560	
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-34224	SampType:	LCS	TestCode:	6020A_W	Units:	µg/L	Prep Date:	6/8/2020	RunNo:	90679			
Client ID:	LCSW	Batch ID:	34224	TestNo:	SW6020A			Analysis Date:	6/19/2020	SeqNo:	2243561			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		474		5.00	500.0	0		94.8	80	120				

Sample ID	LCSD-34224	SampType:	LCSD	TestCode:	6020A_W	Units:	µg/L	Prep Date:	6/8/2020	RunNo:	90679			
Client ID:	LCSS02	Batch ID:	34224	TestNo:	SW6020A			Analysis Date:	6/19/2020	SeqNo:	2243562			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		470		5.00	500.0	0		94.1	80	120	474.1	0.806	20	

Sample ID	20060250-002BMS	SampType:	MS	TestCode:	6020A_W	Units:	µg/L	Prep Date:	6/8/2020	RunNo:	90679			
Client ID:	CCR-2	Batch ID:	34224	TestNo:	SW6020A			Analysis Date:	6/19/2020	SeqNo:	2243569			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		463		5.00	500.0	0.1299		92.5	75	125				

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
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ND Not Detected at the Reporting Limit
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W Sample container temperature is out of limit as specified



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QC SUMMARY REPORT

WO#: 20060250
07-Jul-20

Client: Pivotal Engineering LLC
Project: Entergy: CCR Assessment Monitoring

BatchID: 34224

Sample ID	20060250-002BMSD	SampType: MSD	TestCode: 6020A_W		Units: µg/L	Prep Date: 6/8/2020				RunNo: 90679		
Client ID:	CCR-2	Batch ID: 34224	TestNo: SW6020A			Analysis Date: 6/19/2020				SeqNo: 2243570		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		475	5.00	500.0	0.1299	94.9	75	125	462.6	2.58	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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W Sample container temperature is out of limit as s



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QC SUMMARY REPORT

WO#: 20060250
07-Jul-20

Client: Pivotal Engineering LLC
Project: Entergy: CCR Assessment Monitoring

BatchID: 34224

Sample ID	MB-34224	SampType:	MBLK	TestCode:	6020A_W	Units:	µg/L	Prep Date:	6/8/2020	RunNo:	90244			
Client ID:	PBW	Batch ID:	34224	TestNo:	SW6020A			Analysis Date:	6/19/2020	SeqNo:	2231780			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony		< 0.250		0.250										
Thallium		< 0.250		0.250										

Sample ID	LCS-34224	SampType:	LCS	TestCode:	6020A_W	Units:	µg/L	Prep Date:	6/8/2020	RunNo:	90244			
Client ID:	LCSW	Batch ID:	34224	TestNo:	SW6020A			Analysis Date:	6/19/2020	SeqNo:	2231781			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony		481		5.00	500.0	0		96.1	80	120				
Thallium		494		5.00	500.0	0		98.8	80	120				

Sample ID	LCSD-34224	SampType:	LCSD	TestCode:	6020A_W	Units:	µg/L	Prep Date:	6/8/2020	RunNo:	90244			
Client ID:	LCSS02	Batch ID:	34224	TestNo:	SW6020A			Analysis Date:	6/19/2020	SeqNo:	2231782			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony		473		5.00	500.0	0		94.6	80	120	480.5	1.54	20	
Thallium		493		5.00	500.0	0		98.6	80	120	493.8	0.202	20	

Sample ID	20060250-002BMS	SampType: MS	TestCode: 6020A_W	Units: µg/L	Prep Date: 6/8/2020	RunNo: 90244					
Client ID: CCR-2	Batch ID: 34224	TestNo: SW6020A	Analysis Date: 6/19/2020	SeqNo: 2231789							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	461	5.00	500.0	0.07742	92.3	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 s



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QC SUMMARY REPORT

WO#: 20060250
07-Jul-20

Client: Pivotal Engineering LLC
Project: Entergy: CCR Assessment Monitoring

BatchID: 34224

Sample ID	20060250-002BMS	SampType: MS	TestCode: 6020A_W	Units: µg/L	Prep Date: 6/8/2020	RunNo: 90244					
Client ID: CCR-2	Batch ID: 34224	TestNo: SW6020A	Analysis Date: 6/19/2020	SeqNo: 2231789							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Thallium	475	5.00	500.0	0	95.0	75	125				

Sample ID	20060250-002BMSD	SampType: MSD	TestCode: 6020A_W	Units: µg/L	Prep Date: 6/8/2020	RunNo: 90244					
Client ID: CCR-2	Batch ID: 34224	TestNo: SW6020A	Analysis Date: 6/19/2020	SeqNo: 2231790							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	470	5.00	500.0	0.07742	93.9	75	125	461.4	1.75	20	
Thallium	484	5.00	500.0	0	96.8	75	125	475.0	1.86	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 s



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QC SUMMARY REPORT

WO#: 20060250
07-Jul-20

Client: Pivotal Engineering LLC
Project: Entergy: CCR Assessment Monitoring

BatchID: 34311

Sample ID	MB-34311	SampType:	MBLK	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/15/2020	RunNo:	90106			
Client ID:	PBW	Batch ID:	34311	TestNo:	SW7470A			Analysis Date:	6/15/2020	SeqNo:	2228338			
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-34311	SampType:	LCS	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/15/2020	RunNo:	90106			
Client ID:	LCSW	Batch ID:	34311	TestNo:	SW7470A			Analysis Date:	6/15/2020	SeqNo:	2228342			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.00968		0.000200	0.01000	0		96.8	80	120				

Sample ID	LCSD-34311	SampType:	LCSD	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/15/2020	RunNo:	90106	
Client ID:	LCSS02	Batch ID:	34311	TestNo:	SW7470A			Analysis Date:	6/15/2020	SeqNo:	2228345	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.00974	0.000200	0.01000	0	97.4	80	120	0.009676	0.697	20	

Sample ID	20060250-002BMS	SampType:	MS	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/15/2020	RunNo:	90106	
Client ID:	CCR-2	Batch ID:	34311	TestNo:	SW7470A			Analysis Date:	6/15/2020	SeqNo:	2228361	
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				

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 sq



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QC SUMMARY REPORT

WO#: 20060250
07-Jul-20

Client: Pivotal Engineering LLC
Project: Entergy: CCR Assessment Monitoring

BatchID: 34311

Sample ID	20060250-002BMSD	SampType: MSD	TestCode: HG_W_7470	Units: mg/L	Prep Date: 6/15/2020	RunNo: 90106					
Client ID: CCR-2	Batch ID: 34311	TestNo: SW7470A	Analysis Date: 6/15/2020	SeqNo: 2228364							
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	0.01035	2.89	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
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QC SUMMARY REPORT

WO#: 20060250
07-Jul-20

Client: Pivotal Engineering LLC
Project: Entergy: CCR Assessment Monitoring

BatchID: R89995

Sample ID	MBLK	SampType:	MBLK	TestCode:	300.0	Units:	mg/L	Prep Date:		RunNo:	89995		
Client ID:	PBW	Batch ID:	R89995	TestNo:	E 300.0			Analysis Date:	6/10/2020	SeqNo:	2223099		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride	< 0.0500	0.0500												
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Sample ID	LCS	SampType:	LCS	TestCode:	300.0	Units:	mg/L	Prep Date:		RunNo:	89995		
Client ID:	LCSW	Batch ID:	R89995	TestNo:	E 300.0			Analysis Date:	6/10/2020	SeqNo:	2223100		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride	1.94	0.0500	2.000	0	97.1	90	110							
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Sample ID	LCSD	SampType:	LCSD	TestCode:	300.0	Units:	mg/L	Prep Date:		RunNo:	89995		
Client ID:	LCSS02	Batch ID:	R89995	TestNo:	E 300.0			Analysis Date:	6/10/2020	SeqNo:	2223101		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride	2.00	0.0500	2.000	0	100	90	110	1.941	2.93	15				
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Sample ID	20060250-002AMS	SampType:	MS	TestCode:	300.0	Units:	mg/L	Prep Date:		RunNo:	89995		
Client ID:	CCR-2	Batch ID:	R89995	TestNo:	E 300.0			Analysis Date:	6/10/2020	SeqNo:	2223112		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride	9.41	0.500	10.00	0.09080	93.2	80	120							
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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 specified



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QC SUMMARY REPORT

WO#: 20060250
07-Jul-20

Client: Pivotal Engineering LLC
Project: Entergy: CCR Assessment Monitoring

BatchID: R89995

Sample ID	20060250-002AMSD	SampType: MSD	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 89995					
Client ID: CCR-2	Batch ID: R89995	TestNo: E 300.0	Analysis Date: 6/10/2020	SeqNo: 2223113							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	9.52	0.500	10.00	0.09080	94.3	80	120	9.414	1.12	15	

Sample ID	MBLK	SampType:	MBLK	TestCode:	300.0	Units:	mg/L	Prep Date:		RunNo:	89995	
Client ID:	PBW	Batch ID:	R89995	TestNo:	E 300.0			Analysis Date:	6/10/2020	SeqNo:	2223128	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		< 0.0500	0.0500									

Sample ID	LCS	SampType:	LCS	TestCode:	300.0	Units:	mg/L	Prep Date:		RunNo:	89995	
Client ID:	LCSW	Batch ID:	R89995	TestNo:	E 300.0			Analysis Date:	6/10/2020	SeqNo:	2223129	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		1.98	0.0500	2.000	0	99.0	90	110				

Sample ID	LCSD	SampType:	LCSD	TestCode:	300.0	Units:	mg/L	Prep Date:		RunNo:	89995	
Client ID:	LCSS02	Batch ID:	R89995	TestNo:	E 300.0			Analysis Date:	6/10/2020	SeqNo:	2223130	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		2.04	0.0500	2.000	0	102	90	110	1.941	5.04	15	

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 specified



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QC SUMMARY REPORT

WO#: 20060250
07-Jul-20

Client: Pivotal Engineering LLC
Project: Entergy: CCR Assessment Monitoring

BatchID: R89995

Sample ID	20060250-016AMS	SampType: MS	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 89995					
Client ID: FB	Batch ID: R89995	TestNo: E 300.0	Analysis Date: 6/10/2020	SeqNo: 2223135							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.06	0.0500	1.000	0	106	80	120				

Sample ID	20060250-016AMSD	SampType:	MSD	TestCode:	300.0	Units:	mg/L	Prep Date:		RunNo:	89995	
Client ID:	FB	Batch ID:	R89995	TestNo:	E 300.0			Analysis Date:	6/10/2020	SeqNo:	2223136	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		1.08	0.0500	1.000	0	108	80	120	1.060	1.92	15	

Qualifiers:

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

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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 s



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Sample Log-In Check List

Client Name: **PIVOTAL_ENGINEERIN**

Work Order Number: **20060250**

RcptNo: **1**

Logged by: **Tammy Thibodeaux** **6/6/2020 10:50:00 AM**

Tammy Thibodeaux

Completed By: **Tammy Thibodeaux** **6/8/2020 8:10:10 AM**

Tammy Thibodeaux

Reviewed By: **Caitlin Duplantis** **6/24/2020 8:25:29 AM**

Caitlin Duplantis

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 $>0^{\circ}\text{C}$ 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?
(Note discrepancies on chain of custody) Yes ☒ No ☐
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?
(If no, notify customer for authorization.) Yes ☒ No ☐

Special Handling (if applicable)

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

Person Notified: Date
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

18. Additional remarks:
No sampler's signature by client
Added year of collection to COC as per samples received.

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.8	Good	Not Present			



LELAP CERTIFICATE NUMBER: 01955
DOD-ELAP ACCREDITATION NUMBER: 74960

ANALYTICAL RESULTS

PERFORMED BY

Pace Analytical Gulf Coast
7979 Innovation Park Dr.
Baton Rouge, LA 70820
(225) 769-4900

Report Date 06/30/2020

Report # 220060947



Project 20060250

<i>Deliver To</i>	<i>Additional Recipients</i>
Annie Reedy	Caitlin Duplantis, Element Materials Technology
Element Materials Technology	Cristina Thibeaux, Element Materials Technology
2417 W Pinhook Rd	Rhonda David, Element Materials Technology
Lafayette, LA 70508	Buffy Bryant, Element Materials Technology
800-737-2378	



Revision 1

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Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with Pace Gulf Coast's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	Organics - The result is estimated because it exceeded the instrument calibration range
E	Metals - % difference for the serial dilution is > 10%
L	Reporting Limits adjusted to meet risk-based limit.
P	RPD between primary and confirmation result is greater than 40
DL	Diluted analysis – when appended to Client Sample ID

Sample receipt at Pace Gulf Coast is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of Pace Gulf Coast. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature
Pace Gulf Coast Report 220060947

Certifications

Certification	Certification Number
DOD ELAP	74960
Alabama	01955
Arkansas	88-0655
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
Washington	C929
USDA Soil Permit	P330-16-00234



Case Narrative

Client: Element Materials Technology **Report:** 220060947

Pace Analytical Gulf Coast received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

This report is revised 6/30/20. The client updated the sample collection date and/or time for all samples except 22006094701 (CCR-1).

<u>ID</u>	<u>Date/Time Collected</u>
CCR-2	6/5/20 8:25 AM
CCR-3	6/5/20 7:35 AM
CCR-4	6/5/20 10:10 AM
CCR-5	6/5/20 11:00 AM
CCR-6	6/5/20 11:45 AM
CCR-7	6/5/20 12:30 PM
CCR-8	6/5/20 1:15 PM
CCR-9	6/4/20 11:50 AM
CCR-10	6/4/20 10:50 AM
CCR-11	6/4/20 9:55 AM
CCR-12	6/4/20 4:00 PM
CCR-13	6/4/20 3:10 PM
CCR-14	6/4/20 1:10 PM
DUP	6/5/20 12:00 AM
FB	6/5/20 7:05 AM

No anomalies were found for the analyzed sample(s).



Report#: 220060947

Project ID: 20060250

Report Date: 06/30/2020

Sample Summary

LAB ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
22006094701	CCR-1	Water	06/05/2020 09:20	06/09/2020 11:31
22006094702	CCR-2	Water	06/05/2020 08:25	06/09/2020 11:31
22006094703	CCR-2 MS	Water	06/05/2020 08:25	06/09/2020 11:31
22006094704	CCR-2 MSD	Water	06/05/2020 08:25	06/09/2020 11:31
22006094705	CCR-3	Water	06/05/2020 07:35	06/09/2020 11:31
22006094706	CCR-4	Water	06/05/2020 10:10	06/09/2020 11:31
22006094707	CCR-5	Water	06/05/2020 11:00	06/09/2020 11:31
22006094708	CCR-6	Water	06/05/2020 11:45	06/09/2020 11:31
22006094709	CCR-7	Water	06/05/2020 12:30	06/09/2020 11:31
22006094710	CCR-8	Water	06/05/2020 13:15	06/09/2020 11:31
22006094711	CCR-9	Water	06/04/2020 11:50	06/09/2020 11:31
22006094712	CCR-10	Water	06/04/2020 10:50	06/09/2020 11:31
22006094713	CCR-11	Water	06/04/2020 09:55	06/09/2020 11:31
22006094714	CCR-12	Water	06/04/2020 16:00	06/09/2020 11:31
22006094715	CCR-13	Water	06/04/2020 15:10	06/09/2020 11:31
22006094716	CCR-14	Water	06/04/2020 13:10	06/09/2020 11:31
22006094717	DUP	Water	06/05/2020 00:01	06/09/2020 11:31
22006094718	FB	Water	06/05/2020 07:05	06/09/2020 11:31



Report#: 220060947

Project ID: 20060250

Report Date: 06/30/2020

Sample Results

CCR-1

Collect Date 06/05/2020 09:20

LAB ID 22006094701

Receive Date 06/09/2020 11:31

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
06/10/2020 07:15	685522	EPA 3010A	1	06/12/2020 15:48	TJR	685787

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	21.3	5.00	ug/L

CCR-2

Collect Date 06/05/2020 08:25

LAB ID 22006094702

Receive Date 06/09/2020 11:31

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
06/10/2020 07:15	685522	EPA 3010A	1	06/12/2020 15:51	TJR	685787

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	21.6	5.00	ug/L

CCR-2 MS

Collect Date 06/05/2020 08:25

LAB ID 22006094703

Receive Date 06/09/2020 11:31

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
06/10/2020 07:15	685522	EPA 3010A	1	06/12/2020 15:55	TJR	685787

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	253	5.00	ug/L

CCR-2 MSD

Collect Date 06/05/2020 08:25

LAB ID 22006094704

Receive Date 06/09/2020 11:31

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
06/10/2020 07:15	685522	EPA 3010A	1	06/12/2020 15:58	TJR	685787

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	252	5.00	ug/L



Report#: 220060947

Project ID: 20060250

Report Date: 06/30/2020

Sample Results

CCR-3

Collect Date 06/05/2020 07:35

LAB ID 22006094705

Receive Date 06/09/2020 11:31

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
06/10/2020 07:15	685522	EPA 3010A	1	06/12/2020 16:09	TJR	685787

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	27.4	5.00	ug/L

CCR-4

Collect Date 06/05/2020 10:10

LAB ID 22006094706

Receive Date 06/09/2020 11:31

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
06/10/2020 07:15	685522	EPA 3010A	1	06/12/2020 16:12	TJR	685787

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	17.8	5.00	ug/L

CCR-5

Collect Date 06/05/2020 11:00

LAB ID 22006094707

Receive Date 06/09/2020 11:31

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
06/10/2020 07:15	685522	EPA 3010A	1	06/12/2020 16:16	TJR	685787

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	20.7	5.00	ug/L



Report#: 220060947

Project ID: 20060250

Report Date: 06/30/2020

Sample Results

CCR-6

Collect Date 06/05/2020 11:45

LAB ID 22006094708

Receive Date 06/09/2020 11:31

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
06/10/2020 07:15	685522	EPA 3010A	1	06/12/2020 16:19	TJR	685787

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	13.9	5.00	ug/L

CCR-7

Collect Date 06/05/2020 12:30

LAB ID 22006094709

Receive Date 06/09/2020 11:31

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
06/10/2020 07:15	685522	EPA 3010A	1	06/12/2020 16:23	TJR	685787

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	12.9	5.00	ug/L

CCR-8

Collect Date 06/05/2020 13:15

LAB ID 22006094710

Receive Date 06/09/2020 11:31

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
06/10/2020 07:15	685522	EPA 3010A	1	06/12/2020 16:26	TJR	685787

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	36.0	5.00	ug/L



Report#: 220060947

Project ID: 20060250

Report Date: 06/30/2020

Sample Results

CCR-9

Collect Date 06/04/2020 11:50

LAB ID 22006094711

Receive Date 06/09/2020 11:31

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
06/10/2020 07:15	685522	EPA 3010A	1	06/12/2020 16:37	TJR	685787

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	13.1	5.00	ug/L

CCR-10

Collect Date 06/04/2020 10:50

LAB ID 22006094712

Receive Date 06/09/2020 11:31

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
06/10/2020 07:15	685522	EPA 3010A	1	06/12/2020 16:40	TJR	685787

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	11.1	5.00	ug/L

CCR-11

Collect Date 06/04/2020 09:55

LAB ID 22006094713

Receive Date 06/09/2020 11:31

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
06/10/2020 07:15	685522	EPA 3010A	1	06/12/2020 16:44	TJR	685787

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	7.75	5.00	ug/L



Report#: 220060947

Project ID: 20060250

Report Date: 06/30/2020

Sample Results

CCR-12

Collect Date 06/04/2020 16:00

LAB ID 22006094714

Receive Date 06/09/2020 11:31

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
06/10/2020 07:15	685522	EPA 3010A	1	06/12/2020 16:47	TJR	685787

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	24.5	5.00	ug/L

CCR-13

Collect Date 06/04/2020 15:10

LAB ID 22006094715

Receive Date 06/09/2020 11:31

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
06/10/2020 07:15	685522	EPA 3010A	1	06/12/2020 16:51	TJR	685787

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	20.5	5.00	ug/L

CCR-14

Collect Date 06/04/2020 13:10

LAB ID 22006094716

Receive Date 06/09/2020 11:31

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
06/10/2020 07:15	685522	EPA 3010A	1	06/12/2020 16:54	TJR	685787

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	15.6	5.00	ug/L



Report#: 220060947

Project ID: 20060250

Report Date: 06/30/2020

Sample Results

DUP

Collect Date 06/05/2020 00:01

LAB ID 22006094717

Receive Date 06/09/2020 11:31

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
06/10/2020 07:15	685522	EPA 3010A	1	06/12/2020 16:58	TJR	685787

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	27.3	5.00	ug/L

FB

Collect Date 06/05/2020 07:05

LAB ID 22006094718

Receive Date 06/09/2020 11:31

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
06/10/2020 07:15	685522	EPA 3010A	1	06/12/2020 17:01	TJR	685787

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	ND	5.00	ug/L

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Report#: 220060947

Project ID: 20060250

Report Date: 06/30/2020

Inorganics QC Summary

Analytical Batch 685787	Client ID LAB ID	MB685522 2049074	LCS685522 2049075				
Prep Batch 685522	Sample Type Prep Date	MB 06/10/2020 07:15	LCS 06/10/2020 07:15				
Prep Method EPA 3010A	Analysis Date Matrix	06/12/2020 15:41 Water	06/12/2020 15:44 Water				
EPA 6020B		Units Result	ug/L LOQ	Spike Added	Result	%R	Control Limits%R
Lithium	7439-93-2	ND	5.00	250	251	100	80 - 120

Analytical Batch		Client ID	CCR-2		CCR-2 MS				CCR-2 MSD				
685787		LAB ID	22006094702		22006094703				22006094704				
Prep Batch		Sample Type	SAMPLE		MS				MSD				
685522		Prep Date	06/10/2020 07:15		06/10/2020 07:15				06/10/2020 07:15				
Prep Method		Analysis Date	06/12/2020 15:51		06/12/2020 15:55				06/12/2020 15:58				
EPA 3010A		Matrix	Water		Water				Water				
EPA 6020B			Units Result	ug/L LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Lithium	7439-93-2		21.6	5.00	250	253	93	80 - 120	250	252	92	0	20



CHAIN OF CUSTODY RECORD

Omega COCID 9309

PAGE

Client ID: 4462 - Element Materials Technology

SDG: 220060947

PM: JLM

FAX: (337) 233-6540
Website: www.element.com

SUB CONTRACTOR: GCAL		COMPANY: Pace Analytical (FKA GCAL)		SPECIAL INSTRUCTIONS / COMMENTS:			
ADDRESS: 7979 GSRI Avenue		ELA 032226PO>>>>testing for Li					
CITY, STATE, ZIP: Baton Rouge, LA 70820							
PHONE: (225) 769-4900 FAX: (225) 767-5717 EMAIL:							
ACCOUNT #:							
ITEM #	SAMPLE ID	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	DATE COLLECTED	NUMBER OF CONTAINERS	COMMENTS: Methanol Preserved Weights HOT Sample Notation, Additional Sample Description.
1	20060250-001C 6020_W_SUB (SW6020A)	CCR-1	250HDPEHNO3	Aqueous	6/5/2020 9:20:00 AM	1	1
2	20060250-002C 6020_W_SUB (SW6020A)	CCR-2	250HDPEHNO3	Aqueous	6/5/2020 9:20:00 AM	3	2,3,4
3	20060250-003C 6020_W_SUB (SW6020A)	CCR-3	250HDPEHNO3	Aqueous	6/5/2020 9:20:00 AM	1	5
4	20060250-004C 6020_W_SUB (SW6020A)	CCR-4	250HDPEHNO3	Aqueous	6/5/2020 9:20:00 AM	1	6
5	20060250-005C 6020_W_SUB (SW6020A)	CCR-5	250HDPEHNO3	Aqueous	6/5/2020 9:20:00 AM	1	7
6	20060250-006C 6020_W_SUB (SW6020A)	CCR-6	250HDPEHNO3	Aqueous	6/5/2020 9:20:00 AM	1	8
7	20060250-007C 6020_W_SUB (SW6020A)	CCR-7	250HDPEHNO3	Aqueous	6/5/2020 9:20:00 AM	1	9
8	20060250-008C 6020_W_SUB (SW6020A)	CCR-8	250HDPEHNO3	Aqueous	6/5/2020 9:20:00 AM	1	10
9	20060250-009C 6020_W_SUB (SW6020A)	CCR-9	250HDPEHNO3	Aqueous	6/5/2020 9:20:00 AM	1	11

Relinquished By: <i>[Signature]</i>	Date: 6/8/2020	Time: 1600	Received By: <i>[Signature]</i>	Date: 6-8-20	Time: 1600	REPORT TRANSMITTAL DESIRED:	
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	<input type="checkbox"/> HARDCOPY (extra cost) <input type="checkbox"/> FAX <input type="checkbox"/> EMAIL <input type="checkbox"/> ONLINE	
Relinquished By: <i>[Signature]</i>	Date: 6-8-20	Time: 1131	Received By: <i>[Signature]</i>	Date: 6-8-20	Time: 1131	FOR LAB USE ONLY	
TAT: Standard <input type="checkbox"/> RUSH <input type="checkbox"/> Next BD <input type="checkbox"/> 2nd BD <input type="checkbox"/> 3rd BD <input type="checkbox"/>						Temp of samples 0.1 °C Attempt to Cool? <input type="checkbox"/>	
Note: RUSH requests will incur surcharges!						Comments: E34	

Revision 1

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CHAIN OF CUSTODY RECORD

Omega COCID 9309

PAGE

Client ID: 4462 - Element Materials Technology

SDG: 220060947

PM: JLM



FAX: (337) 233-6540

Website: www.element.com

SUB CONTRACTOR: GCAL		COMPANY: Pace Analytical (FKA GCAL)		SPECIAL INSTRUCTIONS / COMMENTS:			
ADDRESS: 7979 GSRI Avenue		ELA 032226PO>>>>testing for Li					
CITY, STATE, ZIP: Baton Rouge, LA 70820							
PHONE: (225) 769-4900 FAX: (225) 767-5717 EMAIL:							
ACCOUNT #:							
ITEM #	SAMPLE ID	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	DATE COLLECTED	NUMBER OF CONTAINERS	COMMENTS: Methanol Preserved Weights HOT Sample Notation, Additional Sample Description.
10	20060250-010C 6020_W_SUB (SW6020A)	CCR-10	250HDPEHNO3	Aqueous	6/5/2020 9:20:00 AM	1	12
11	20060250-011C 6020_W_SUB (SW6020A)	CCR-11	250HDPEHNO3	Aqueous	6/5/2020 9:20:00 AM	1	13
12	20060250-012C 6020_W_SUB (SW6020A)	CCR-12	250HDPEHNO3	Aqueous	6/5/2020 9:20:00 AM	1	14
13	20060250-013C 6020_W_SUB (SW6020A)	CCR-13	250HDPEHNO3	Aqueous	6/5/2020 9:20:00 AM	1	15
14	20060250-014C 6020_W_SUB (SW6020A)	CCR-14	250HDPEHNO3	Aqueous	6/5/2020 9:20:00 AM	1	16
15	20060250-015C 6020_W_SUB (SW6020A)	Dup	250HDPEHNO3	Aqueous	6/5/2020 9:20:00 AM	1	17
16	20060250-016C 6020_W_SUB (SW6020A)	FB	250HDPEHNO3	Aqueous	6/5/2020 9:20:00 AM	1	18

Relinquished By: <i>[Signature]</i>	Date: 6/8/2020	Time: 1600	Received By: <i>[Signature]</i>	Date: 6-8-20	Time: 1600	REPORT TRANSMITTAL DESIRED:	
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	<input type="checkbox"/> HARDCOPY (extra cost) <input type="checkbox"/> FAX <input type="checkbox"/> EMAIL <input type="checkbox"/> ONLINE	
Relinquished By: <i>[Signature]</i>	Date: 6-8-20	Time: 1131	Received By: <i>[Signature]</i>	Date: 6-8-20	Time: 1131	FOR LAB USE ONLY	
TAT: Standard <input type="checkbox"/> RUSH <input type="checkbox"/> Next BD <input type="checkbox"/> 2nd BD <input type="checkbox"/> 3rd BD <input type="checkbox"/>						Temp of samples 0.1 °C Attempt to Cool ? _____	
Note: RUSH requests will incur surcharges!						Comments: E34	

Revision 1

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SAMPLE RECEIVING CHECKLIST



SAMPLE DELIVERY GROUP 220060947			CHECKLIST		YES	NO
Client PM JLM 4462 - Element Materials Technology	Transport Method CUST		Samples received with proper thermal preservation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Radioactivity is <1600 cpm? If no, record cpm value in notes section.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Profile Number 271810	Received By Savage, Tiffany R		COC relinquished and complete (including sampleIDs, collect times, and sampler)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			All containers received in good condition and within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Line Item(s) 8 - LITHIUM ONLY	Receive Date(s) 06/09/20		All sample labels and containers received match the chain of custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Preservative added to any containers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
			If received, was headspace for VOC water containers < 6mm?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Samples collected in containers provided by Pace Gulf Coast?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
COOLERS			DISCREPANCIES	LAB PRESERVATIONS		
Airbill	Thermometer ID: E34	Temp °C	None	None		
		0.1				
NOTES						



- ☐ 2203 S. Madison St., Muncie, IN 47302
765-747-9000/800-874-3563 Fax 765-747-0228
- ☐ 629 Washington St., Suite 300, Columbus, IN 47201
812-375-0531 Fax 812-375-0531
- ☐ 5738 Industrial Rd., Fort Wayne, IN 46825
219-471-7000 Fax 219-471-7777

- ☒ 2417 W. Pinhook Rd, Lafayette, LA 70508
337-235-0483/800-737-2378
Fax 337-233-6540
- ☐ 3445 S Sheridan, Tulsa, OK 74145
918-828-9977/800324-5757
Fax 918-828-7756

Page 1 of 2

Chain of Custody Record

Laboratory Number 2060250

Client Name: Pivotal Engineering LLC		Project: CCR Assessment Monitoring		Preserv.		Number / Type of Container		Matrix Code		Test Requested										Comments / Remarks	
Contact Name: Terry Elnaggar		Quote #: 5346		HCl HNO ₃ H ₂ SO ₄						300: Fluoride	*6010/**6020 metals	***6020 Sub	7470 Mercury								
Phone/Fax: (504) 799-3653		Sampler's Signature:		NaOH Na ₂ S ₂ O ₃																	
Collection	Grab	Comp	Sample Identification / Description																		
Date	Time																				
6/5/20	920	X		C	C	R	-	1	None/ HNO ₃	3 Plastic	Aq	X	X	X	X			*6010 Metals: Ba, Be, Cd, Cr, Co, Pb, Mo, Se			
	825	X		C	C	R	-	2	None/ HNO ₃	3 Plastic	Aq	X	X	X	X						
	735	X		C	C	R	-	3	None/ HNO ₃	3 Plastic	Aq	X	X	X	X			**6020 Metals: As, Sb, Ti			
	1010	X		C	C	R	-	4	None/ HNO ₃	3 Plastic	Aq	X	X	X	X						
	1100	X		C	C	R	-	5	None/ HNO ₃	3 Plastic	Aq	X	X	X	X			***6020 Sub Metal: Li			
	1145	X		C	C	R	-	6	None/ HNO ₃	3 Plastic	Aq	X	X	X	X						
	1230	X		C	C	R	-	7	None/ HNO ₃	3 Plastic	Aq	X	X	X	X						
	7315	X		C	C	R	-	8	None/ HNO ₃	3 Plastic	Aq	X	X	X	X						
6/4/20	1150	X		C	C	R	-	9	None/ HNO ₃	3 Plastic	Aq	X	X	X	X			UPS / FedEx Airborne			
6/4/20	1050	X		C	C	R	-	10	None/ HNO ₃	3 Plastic	Aq	X	X	X	X			/ Element Hand / Mail			

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.

P.O. Number

Relinquished by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Received by: (Signature)	Date	Time
<i>[Signature]</i>	<i>[Signature]</i>	6/6	1050				
Relinquished by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Received by Laboratory: (Signature)	Date	Time

Matrix Codes		Container Types		Shipping Conditions		Requested TAT		Thank-you for using Element Materials Technology
DW = Drinking Water	AQ = Aqueous	LIQ = Liquid	G = Glass	<input checked="" type="checkbox"/> Iced	<input type="checkbox"/> 24-Hr.	<input type="checkbox"/> 72-Hr.		
GW = Ground Water	O = Oil	SLD = Solid	P = Plastic	Temp. <u>28°C</u>	<input type="checkbox"/> 48-Hr.	<input checked="" type="checkbox"/> Standard		
WW = Waste Water	SO = Soil	SL = Sludge	V = Vial	<input type="checkbox"/> Ambient	<u>1K10</u>	<input type="checkbox"/> Other		



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Page 2 of 2

Chain of Custody Record

Laboratory Number 22060250

Client Name: Pivotal Engineering LLC				Project: CCR Assessment Monitoring				Preserv.		Number / Type of Container	Matrix Code	Test Requested								Comments / Remarks	
Contact Name: Terry Elnaggar				Quote #: 5346				HCl HNO ₃ H ₂ SO ₄				300: Fluoride	*6010/**6020 metals	***6020 Sub	7470 Mercury						
Phone/Fax: (504) 799-3653				Sampler's Signature:				NaOH Na ₂ S ₂ O ₃													
Collection		Grab	Comp	Sample Identification / Description				HCl	HNO ₃	H ₂ SO ₄											
Date	Time																				
6/4	955	X		C C R - 1 1				None/ HNO ₃	3 Plastic	Aq	X	X	X	X						*6010 Metals: Ba, Be, Cd, Cr, Co, Pb, Mo, Se	
6/4	1600	X		C C R - 1 2				None/ HNO ₃	3 Plastic	Aq	X	X	X	X							
6/4	1510	X		C C R - 1 3				None/ HNO ₃	3 Plastic	Aq	X	X	X	X							**6020 Metals: As, Sb, Ti
6/4	1310	X		C C R - 1 4				None/ HNO ₃	3 Plastic	Aq	X	X	X	X							
6/5	830	X		M S (CCR- <u>2</u>)				None/ HNO ₃	3 Plastic	Aq	X	X	X	X						***6020 Sub Metal: Li	
6/5	830	X		M S D (CCR- <u>2</u>)				None/ HNO ₃	3 Plastic	Aq	X	X	X	X							
6/5	—	X		D U P				None/ HNO ₃	3 Plastic	Aq	X	X	X	X							
6/5	705	X		F B 1				None/ HNO ₃	3 Plastic	Aq	X	X	X	X							
																			UPS / FedEx Airborne / Element Hand / Mail		

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.

P.O. Number

Relinquished by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Received by: (Signature)	Date	Time
<i>[Signature]</i>	<i>[Signature]</i>	6/6	1050				
Relinquished by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Received by Laboratory: (Signature)	Date	Time

Matrix Codes DW = Drinking Water AQ = Aqueous LIQ = Liquid GW = Ground Water O = Oil SLD = Solid WW = Waste Water SO = Soil SL = Sludge			Container Types G = Glass P = Plastic V = Vial		Shipping Conditions <input checked="" type="checkbox"/> Iced Temp. <u>28°C</u> <input type="checkbox"/> Ambient <u>100</u>		Requested TAT <input type="checkbox"/> 24-Hr. <input type="checkbox"/> 72-Hr. <input type="checkbox"/> 48-Hr. <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Other _____		Thank-you for using Element Materials Technology	
---	--	--	--	--	--	--	---	--	--	--



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 16, 2020

Terry Elnaggar
Pivotal Engineering LLC
1515 Poydras St., STE. 1875
New Orleans, LA 70112
TEL: (504) 799-3653
FAX

RE: CCR Assessment Monitoring

Order No.: 20091073

Dear Terry Elnaggar:

Element Materials Technology Lafayette received 16 sample(s) on 9/30/2020 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.

Where applicable, 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.: 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.

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
Lafayette, LA 70508-3344



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#: 20091073
Date: 10/16/2020

CLIENT: Pivotal Engineering LLC

Project: CCR Assessment Monitoring

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 Lithium analysis was subcontracted to Pace Analytical. Their report is attached in its entirety.



Element Materials Technology Lafayette
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Lafayette, LA 70508-3344
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Analytical Report

(consolidated)

WO#: 20091073

Date Reported: 10/16/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 9/28/2020 3:25:00 PM
Project: CCR Assessment Monitoring
Lab ID: 20091073-001 **Matrix:** AQUEOUS
Client Sample ID CCR-1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL			SW7470A		Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	10/2/2020 7:18:30 AM
INORGANIC ANIONS IN WATER BY IC			E 300.0		Analyst: SGP	
Fluoride	0.257	0.0500		mg/L	1	10/1/2020 8:08:53 PM
METALS IN WATER BY ICP, TOTALS			SW6010B		Analyst: STS	
Barium	0.177	0.0100		mg/L	1	10/13/2020 3:22:01 PM
Beryllium	< 0.00100	0.00100		mg/L	1	10/15/2020 6:38:56 PM
Cadmium	< 0.00500	0.00500		mg/L	1	10/13/2020 3:22:01 PM
Chromium	< 0.0100	0.0100		mg/L	1	10/13/2020 3:22:01 PM
Cobalt	< 0.0100	0.0100		mg/L	1	10/13/2020 3:22:01 PM
Lead	< 0.0100	0.0100		mg/L	1	10/13/2020 3:22:01 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	10/13/2020 3:22:01 PM
Selenium	< 0.0200	0.0200		mg/L	1	10/13/2020 3:22:01 PM
METALS IN WATER BY ICP-MS, TOTAL			SW6020A		Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	10/15/2020 12:28:02 PM
Arsenic	0.278	0.250		µg/L	1	10/15/2020 12:28:02 PM
Thallium	< 0.250	0.250		µg/L	1	10/15/2020 12:28:02 PM

Qualifiers:	E	Value above quantitation range	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#: 20091073

Date Reported: 10/16/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 9/28/2020 2:40:00 PM
Project: CCR Assessment Monitoring
Lab ID: 20091073-002 **Matrix:** AQUEOUS
Client Sample ID CCR-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL			SW7470A		Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	10/2/2020 7:20:50 AM
INORGANIC ANIONS IN WATER BY IC			E 300.0		Analyst: SGP	
Fluoride	0.261	0.0500		mg/L	1	10/1/2020 8:22:38 PM
METALS IN WATER BY ICP, TOTALS			SW6010B		Analyst: STS	
Barium	0.141	0.0100		mg/L	1	10/13/2020 3:25:49 PM
Beryllium	< 0.00100	0.00100		mg/L	1	10/15/2020 6:42:15 PM
Cadmium	< 0.00500	0.00500		mg/L	1	10/13/2020 3:25:49 PM
Chromium	< 0.0100	0.0100		mg/L	1	10/13/2020 3:25:49 PM
Cobalt	< 0.0100	0.0100		mg/L	1	10/13/2020 3:25:49 PM
Lead	< 0.0100	0.0100		mg/L	1	10/13/2020 3:25:49 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	10/13/2020 3:25:49 PM
Selenium	< 0.0200	0.0200		mg/L	1	10/13/2020 3:25:49 PM
METALS IN WATER BY ICP-MS, TOTAL			SW6020A		Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	10/15/2020 12:30:50 PM
Arsenic	< 0.250	0.250		µg/L	1	10/15/2020 12:30:50 PM
Thallium	< 0.250	0.250		µg/L	1	10/15/2020 12:30:50 PM

Qualifiers:	E	Value above quantitation range	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#: 20091073

Date Reported: 10/16/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 9/28/2020 12:40:00 PM
Project: CCR Assessment Monitoring
Lab ID: 20091073-003 **Matrix:** AQUEOUS
Client Sample ID CCR-3

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL			SW7470A		Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	10/2/2020 7:23:09 AM
INORGANIC ANIONS IN WATER BY IC			E 300.0		Analyst: SGP	
Fluoride	0.305	0.0500		mg/L	1	10/1/2020 8:36:22 PM
METALS IN WATER BY ICP, TOTALS			SW6010B		Analyst: STS	
Barium	0.261	0.0100		mg/L	1	10/13/2020 4:03:06 PM
Beryllium	< 0.00100	0.00100		mg/L	1	10/15/2020 6:52:39 PM
Cadmium	< 0.00500	0.00500		mg/L	1	10/13/2020 4:03:06 PM
Chromium	< 0.0100	0.0100		mg/L	1	10/13/2020 4:03:06 PM
Cobalt	< 0.0100	0.0100		mg/L	1	10/13/2020 4:03:06 PM
Lead	< 0.0100	0.0100		mg/L	1	10/13/2020 4:03:06 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	10/13/2020 4:03:06 PM
Selenium	< 0.0200	0.0200		mg/L	1	10/13/2020 4:03:06 PM
METALS IN WATER BY ICP-MS, TOTAL			SW6020A		Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	10/15/2020 12:33:38 PM
Arsenic	8.47	0.250		µg/L	1	10/15/2020 12:33:38 PM
Thallium	< 0.250	0.250		µg/L	1	10/15/2020 12:33:38 PM

Qualifiers:	E	Value above quantitation range	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#: 20091073

Date Reported: 10/16/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 9/28/2020 10:50:00 AM
Project: CCR Assessment Monitoring
Lab ID: 20091073-004 **Matrix:** AQUEOUS
Client Sample ID CCR-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL			SW7470A		Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	10/2/2020 7:25:27 AM
INORGANIC ANIONS IN WATER BY IC			E 300.0		Analyst: SGP	
Fluoride	0.118	0.0500		mg/L	1	10/1/2020 8:50:05 PM
METALS IN WATER BY ICP, TOTALS			SW6010B		Analyst: STS	
Barium	0.103	0.0100		mg/L	1	10/13/2020 4:06:58 PM
Beryllium	< 0.00100	0.00100		mg/L	1	10/15/2020 6:56:01 PM
Cadmium	< 0.00500	0.00500		mg/L	1	10/13/2020 4:06:58 PM
Chromium	< 0.0100	0.0100		mg/L	1	10/13/2020 4:06:58 PM
Cobalt	< 0.0100	0.0100		mg/L	1	10/13/2020 4:06:58 PM
Lead	< 0.0100	0.0100		mg/L	1	10/13/2020 4:06:58 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	10/13/2020 4:06:58 PM
Selenium	< 0.0200	0.0200		mg/L	1	10/13/2020 4:06:58 PM
METALS IN WATER BY ICP-MS, TOTAL			SW6020A		Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	10/15/2020 12:44:51 PM
Arsenic	0.272	0.250		µg/L	1	10/15/2020 12:44:51 PM
Thallium	< 0.250	0.250		µg/L	1	10/15/2020 12:44:51 PM

Qualifiers:	E	Value above quantitation range	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#: 20091073

Date Reported: 10/16/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 9/29/2020 3:20:00 PM
Project: CCR Assessment Monitoring
Lab ID: 20091073-005 **Matrix:** AQUEOUS
Client Sample ID CCR-5

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER,TOTAL			SW7470A		Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	10/2/2020 7:33:01 AM
INORGANIC ANIONS IN WATER BY IC			E 300.0		Analyst: SGP	
Fluoride	0.117	0.0500		mg/L	1	10/1/2020 9:04:02 PM
METALS IN WATER BY ICP, TOTALS			SW6010B		Analyst: STS	
Barium	0.200	0.0100		mg/L	1	10/13/2020 4:10:47 PM
Beryllium	< 0.00100	0.00100		mg/L	1	10/15/2020 6:59:22 PM
Cadmium	< 0.00500	0.00500		mg/L	1	10/13/2020 4:10:47 PM
Chromium	< 0.0100	0.0100		mg/L	1	10/13/2020 4:10:47 PM
Cobalt	< 0.0100	0.0100		mg/L	1	10/13/2020 4:10:47 PM
Lead	< 0.0100	0.0100		mg/L	1	10/13/2020 4:10:47 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	10/13/2020 4:10:47 PM
Selenium	< 0.0200	0.0200		mg/L	1	10/13/2020 4:10:47 PM
METALS IN WATER BY ICP-MS, TOTAL			SW6020A		Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	10/15/2020 12:47:41 PM
Arsenic	< 0.250	0.250		µg/L	1	10/15/2020 12:47:41 PM
Thallium	< 0.250	0.250		µg/L	1	10/15/2020 12:47:41 PM

Qualifiers:	E	Value above quantitation range	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#: 20091073

Date Reported: 10/16/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 9/29/2020 2:30:00 PM
Project: CCR Assessment Monitoring
Lab ID: 20091073-006 **Matrix:** AQUEOUS
Client Sample ID CCR-6

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL			SW7470A		Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	10/2/2020 7:35:20 AM
INORGANIC ANIONS IN WATER BY IC			E 300.0		Analyst: SGP	
Fluoride	0.177	0.0500		mg/L	1	10/1/2020 9:17:46 PM
METALS IN WATER BY ICP, TOTALS			SW6010B		Analyst: STS	
Barium	0.188	0.0100		mg/L	1	10/13/2020 4:14:34 PM
Beryllium	< 0.00100	0.00100		mg/L	1	10/15/2020 7:02:43 PM
Cadmium	< 0.00500	0.00500		mg/L	1	10/13/2020 4:14:34 PM
Chromium	< 0.0100	0.0100		mg/L	1	10/13/2020 4:14:34 PM
Cobalt	< 0.0100	0.0100		mg/L	1	10/13/2020 4:14:34 PM
Lead	< 0.0100	0.0100		mg/L	1	10/13/2020 4:14:34 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	10/13/2020 4:14:34 PM
Selenium	< 0.0200	0.0200		mg/L	1	10/13/2020 4:14:34 PM
METALS IN WATER BY ICP-MS, TOTAL			SW6020A		Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	10/15/2020 12:50:28 PM
Arsenic	< 0.250	0.250		µg/L	1	10/15/2020 12:50:28 PM
Thallium	< 0.250	0.250		µg/L	1	10/15/2020 12:50:28 PM

Qualifiers:	E	Value above quantitation range	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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Website: www.element.com

Analytical Report

(consolidated)

WO#: 20091073

Date Reported: 10/16/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 9/29/2020 1:30:00 PM
Project: CCR Assessment Monitoring
Lab ID: 20091073-007 **Matrix:** AQUEOUS
Client Sample ID CCR-7

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL			SW7470A		Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	10/2/2020 7:37:39 AM
INORGANIC ANIONS IN WATER BY IC			E 300.0		Analyst: SGP	
Fluoride	0.186	0.0500		mg/L	1	10/1/2020 9:31:34 PM
METALS IN WATER BY ICP, TOTALS			SW6010B		Analyst: STS	
Barium	0.207	0.0100		mg/L	1	10/13/2020 4:18:39 PM
Beryllium	< 0.00100	0.00100		mg/L	1	10/15/2020 7:06:05 PM
Cadmium	< 0.00500	0.00500		mg/L	1	10/13/2020 4:18:39 PM
Chromium	< 0.0100	0.0100		mg/L	1	10/13/2020 4:18:39 PM
Cobalt	< 0.0100	0.0100		mg/L	1	10/13/2020 4:18:39 PM
Lead	< 0.0100	0.0100		mg/L	1	10/13/2020 4:18:39 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	10/13/2020 4:18:39 PM
Selenium	< 0.0200	0.0200		mg/L	1	10/13/2020 4:18:39 PM
METALS IN WATER BY ICP-MS, TOTAL			SW6020A		Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	10/15/2020 12:53:16 PM
Arsenic	0.355	0.250		µg/L	1	10/15/2020 12:53:16 PM
Thallium	< 0.250	0.250		µg/L	1	10/15/2020 12:53:16 PM

Qualifiers:	E	Value above quantitation range	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

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WO#: 20091073

Date Reported: 10/16/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 9/29/2020 11:35:00 AM
Project: CCR Assessment Monitoring
Lab ID: 20091073-008 **Matrix:** AQUEOUS
Client Sample ID CCR-8

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL			SW7470A		Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	10/2/2020 7:39:58 AM
INORGANIC ANIONS IN WATER BY IC			E 300.0		Analyst: SGP	
Fluoride	0.0632	0.0500		mg/L	1	10/1/2020 9:45:17 PM
METALS IN WATER BY ICP, TOTALS			SW6010B		Analyst: STS	
Barium	0.106	0.0100		mg/L	1	10/13/2020 4:22:33 PM
Beryllium	< 0.00100	0.00100		mg/L	1	10/15/2020 7:09:28 PM
Cadmium	< 0.00500	0.00500		mg/L	1	10/13/2020 4:22:33 PM
Chromium	< 0.0100	0.0100		mg/L	1	10/13/2020 4:22:33 PM
Cobalt	< 0.0100	0.0100		mg/L	1	10/13/2020 4:22:33 PM
Lead	< 0.0100	0.0100		mg/L	1	10/13/2020 4:22:33 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	10/13/2020 4:22:33 PM
Selenium	< 0.0200	0.0200		mg/L	1	10/13/2020 4:22:33 PM
METALS IN WATER BY ICP-MS, TOTAL			SW6020A		Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	10/15/2020 12:56:04 PM
Arsenic	< 0.250	0.250		µg/L	1	10/15/2020 12:56:04 PM
Thallium	< 0.250	0.250		µg/L	1	10/15/2020 12:56:04 PM

Qualifiers:	E	Value above quantitation range	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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WO#: 20091073

Date Reported: 10/16/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 9/29/2020 10:30:00 AM
Project: CCR Assessment Monitoring
Lab ID: 20091073-009 **Matrix:** AQUEOUS
Client Sample ID CCR-9

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL			SW7470A		Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	10/2/2020 7:42:17 AM
INORGANIC ANIONS IN WATER BY IC			E 300.0		Analyst: SGP	
Fluoride	0.446	0.0500		mg/L	1	10/1/2020 9:59:00 PM
METALS IN WATER BY ICP, TOTALS			SW6010B		Analyst: STS	
Barium	0.226	0.0100		mg/L	1	10/13/2020 4:26:23 PM
Beryllium	< 0.00100	0.00100		mg/L	1	10/15/2020 7:12:51 PM
Cadmium	< 0.00500	0.00500		mg/L	1	10/13/2020 4:26:23 PM
Chromium	< 0.0100	0.0100		mg/L	1	10/13/2020 4:26:23 PM
Cobalt	< 0.0100	0.0100		mg/L	1	10/13/2020 4:26:23 PM
Lead	< 0.0100	0.0100		mg/L	1	10/13/2020 4:26:23 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	10/13/2020 4:26:23 PM
Selenium	< 0.0200	0.0200		mg/L	1	10/13/2020 4:26:23 PM
METALS IN WATER BY ICP-MS, TOTAL			SW6020A		Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	10/15/2020 12:58:52 PM
Arsenic	< 0.250	0.250		µg/L	1	10/15/2020 12:58:52 PM
Thallium	< 0.250	0.250		µg/L	1	10/15/2020 12:58:52 PM

Qualifiers:	E	Value above quantitation range	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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WO#: 20091073

Date Reported: 10/16/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 9/29/2020 9:40:00 AM
Project: CCR Assessment Monitoring
Lab ID: 20091073-010 **Matrix:** AQUEOUS
Client Sample ID: CCR-10

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL			SW7470A		Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	10/2/2020 7:52:42 AM
INORGANIC ANIONS IN WATER BY IC			E 300.0		Analyst: SGP	
Fluoride	0.532	0.0500		mg/L	1	10/1/2020 10:12:58 PM
METALS IN WATER BY ICP, TOTALS			SW6010B		Analyst: STS	
Barium	0.236	0.0100		mg/L	1	10/13/2020 4:38:39 PM
Beryllium	< 0.00100	0.00100		mg/L	1	10/15/2020 7:23:00 PM
Cadmium	< 0.00500	0.00500		mg/L	1	10/13/2020 4:38:39 PM
Chromium	< 0.0100	0.0100		mg/L	1	10/13/2020 4:38:39 PM
Cobalt	< 0.0100	0.0100		mg/L	1	10/13/2020 4:38:39 PM
Lead	< 0.0100	0.0100		mg/L	1	10/13/2020 4:38:39 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	10/13/2020 4:38:39 PM
Selenium	< 0.0200	0.0200		mg/L	1	10/13/2020 4:38:39 PM
METALS IN WATER BY ICP-MS, TOTAL			SW6020A		Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	10/15/2020 1:10:03 PM
Arsenic	1.82	0.250		µg/L	1	10/15/2020 1:10:03 PM
Thallium	< 0.250	0.250		µg/L	1	10/15/2020 1:10:03 PM

Qualifiers:	E	Value above quantitation range	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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WO#: 20091073

Date Reported: 10/16/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 9/29/2020 8:40:00 AM
Project: CCR Assessment Monitoring
Lab ID: 20091073-011 **Matrix:** AQUEOUS
Client Sample ID CCR-11

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER,TOTAL			SW7470A		Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	10/2/2020 7:55:01 AM
INORGANIC ANIONS IN WATER BY IC			E 300.0		Analyst: SGP	
Fluoride	0.669	0.0500		mg/L	1	10/1/2020 10:54:10 PM
METALS IN WATER BY ICP, TOTALS			SW6010B		Analyst: STS	
Barium	0.133	0.0100		mg/L	1	10/13/2020 4:54:33 PM
Beryllium	< 0.00100	0.00100		mg/L	1	10/15/2020 7:33:06 PM
Cadmium	< 0.00500	0.00500		mg/L	1	10/13/2020 4:54:33 PM
Chromium	< 0.0100	0.0100		mg/L	1	10/13/2020 4:54:33 PM
Cobalt	< 0.0100	0.0100		mg/L	1	10/13/2020 4:54:33 PM
Lead	< 0.0100	0.0100		mg/L	1	10/13/2020 4:54:33 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	10/13/2020 4:54:33 PM
Selenium	< 0.0200	0.0200		mg/L	1	10/13/2020 4:54:33 PM
METALS IN WATER BY ICP-MS, TOTAL			SW6020A		Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	10/15/2020 1:23:21 PM
Arsenic	1.32	0.250		µg/L	1	10/15/2020 1:23:21 PM
Thallium	< 0.250	0.250		µg/L	1	10/15/2020 1:23:21 PM

Qualifiers:	E	Value above quantitation range	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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WO#: 20091073

Date Reported: 10/16/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 9/28/2020 5:40:00 PM
Project: CCR Assessment Monitoring
Lab ID: 20091073-012 **Matrix:** AQUEOUS
Client Sample ID CCR-12

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL			SW7470A		Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	10/2/2020 8:02:34 AM
INORGANIC ANIONS IN WATER BY IC			E 300.0		Analyst: SGP	
Fluoride	0.0781	0.0500		mg/L	1	10/1/2020 11:07:54 PM
METALS IN WATER BY ICP, TOTALS			SW6010B		Analyst: STS	
Barium	0.176	0.0100		mg/L	1	10/13/2020 4:58:20 PM
Beryllium	< 0.00100	0.00100		mg/L	1	10/15/2020 7:36:26 PM
Cadmium	< 0.00500	0.00500		mg/L	1	10/13/2020 4:58:20 PM
Chromium	< 0.0100	0.0100		mg/L	1	10/13/2020 4:58:20 PM
Cobalt	< 0.0100	0.0100		mg/L	1	10/13/2020 4:58:20 PM
Lead	< 0.0100	0.0100		mg/L	1	10/13/2020 4:58:20 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	10/13/2020 4:58:20 PM
Selenium	< 0.0200	0.0200		mg/L	1	10/13/2020 4:58:20 PM
METALS IN WATER BY ICP-MS, TOTAL			SW6020A		Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	10/15/2020 1:26:10 PM
Arsenic	1.51	0.250		µg/L	1	10/15/2020 1:26:10 PM
Thallium	< 0.250	0.250		µg/L	1	10/15/2020 1:26:10 PM

Qualifiers:	E	Value above quantitation range	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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WO#: 20091073

Date Reported: 10/16/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 9/28/2020 4:55:00 PM
Project: CCR Assessment Monitoring
Lab ID: 20091073-013 **Matrix:** AQUEOUS
Client Sample ID: CCR-13

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL			SW7470A		Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	10/2/2020 8:04:55 AM
INORGANIC ANIONS IN WATER BY IC			E 300.0		Analyst: SGP	
Fluoride	0.171	0.0500		mg/L	1	10/1/2020 11:21:38 PM
METALS IN WATER BY ICP, TOTALS			SW6010B		Analyst: STS	
Barium	0.0999	0.0100		mg/L	1	10/13/2020 5:02:09 PM
Beryllium	< 0.00100	0.00100		mg/L	1	10/15/2020 7:39:45 PM
Cadmium	< 0.00500	0.00500		mg/L	1	10/13/2020 5:02:09 PM
Chromium	< 0.0100	0.0100		mg/L	1	10/13/2020 5:02:09 PM
Cobalt	< 0.0100	0.0100		mg/L	1	10/13/2020 5:02:09 PM
Lead	< 0.0100	0.0100		mg/L	1	10/13/2020 5:02:09 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	10/13/2020 5:02:09 PM
Selenium	< 0.0200	0.0200		mg/L	1	10/13/2020 5:02:09 PM
METALS IN WATER BY ICP-MS, TOTAL			SW6020A		Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	10/15/2020 1:28:58 PM
Arsenic	< 0.250	0.250		µg/L	1	10/15/2020 1:28:58 PM
Thallium	< 0.250	0.250		µg/L	1	10/15/2020 1:28:58 PM

Qualifiers:	E	Value above quantitation range	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

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WO#: 20091073

Date Reported: 10/16/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 9/28/2020 4:15:00 PM
Project: CCR Assessment Monitoring
Lab ID: 20091073-014 **Matrix:** AQUEOUS
Client Sample ID: CCR-14

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL			SW7470A		Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	10/2/2020 8:07:13 AM
INORGANIC ANIONS IN WATER BY IC			E 300.0		Analyst: SGP	
Fluoride	0.0857	0.0500		mg/L	1	10/1/2020 11:35:23 PM
METALS IN WATER BY ICP, TOTALS			SW6010B		Analyst: STS	
Barium	0.0734	0.0100		mg/L	1	10/13/2020 5:05:57 PM
Beryllium	< 0.00100	0.00100		mg/L	1	10/15/2020 7:43:06 PM
Cadmium	< 0.00500	0.00500		mg/L	1	10/13/2020 5:05:57 PM
Chromium	< 0.0100	0.0100		mg/L	1	10/13/2020 5:05:57 PM
Cobalt	< 0.0100	0.0100		mg/L	1	10/13/2020 5:05:57 PM
Lead	< 0.0100	0.0100		mg/L	1	10/13/2020 5:05:57 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	10/13/2020 5:05:57 PM
Selenium	< 0.0200	0.0200		mg/L	1	10/13/2020 5:05:57 PM
METALS IN WATER BY ICP-MS, TOTAL			SW6020A		Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	10/15/2020 1:31:46 PM
Arsenic	1.08	0.250		µg/L	1	10/15/2020 1:31:46 PM
Thallium	< 0.250	0.250		µg/L	1	10/15/2020 1:31:46 PM

Qualifiers:	E	Value above quantitation range	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

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WO#: 20091073

Date Reported: 10/16/2020

CLIENT: Pivotal Engineering LLC

Collection Date: 9/29/2020

Project: CCR Assessment Monitoring

Lab ID: 20091073-015

Matrix: AQUEOUS

Client Sample ID Dup

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL			SW7470A		Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	10/2/2020 8:09:31 AM
INORGANIC ANIONS IN WATER BY IC			E 300.0		Analyst: SGP	
Fluoride	0.641	0.0500		mg/L	1	10/1/2020 11:49:06 PM
METALS IN WATER BY ICP, TOTALS			SW6010B		Analyst: STS	
Barium	0.136	0.0100		mg/L	1	10/13/2020 5:09:43 PM
Beryllium	< 0.00100	0.00100		mg/L	1	10/15/2020 7:46:27 PM
Cadmium	< 0.00500	0.00500		mg/L	1	10/13/2020 5:09:43 PM
Chromium	< 0.0100	0.0100		mg/L	1	10/13/2020 5:09:43 PM
Cobalt	< 0.0100	0.0100		mg/L	1	10/13/2020 5:09:43 PM
Lead	< 0.0100	0.0100		mg/L	1	10/13/2020 5:09:43 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	10/13/2020 5:09:43 PM
Selenium	< 0.0200	0.0200		mg/L	1	10/13/2020 5:09:43 PM
METALS IN WATER BY ICP-MS, TOTAL			SW6020A		Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	10/15/2020 1:34:34 PM
Arsenic	1.40	0.250		µg/L	1	10/15/2020 1:34:34 PM
Thallium	< 0.250	0.250		µg/L	1	10/15/2020 1:34:34 PM

Qualifiers:	E	Value above quantitation range	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

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WO#: 20091073

Date Reported: 10/16/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 9/29/2020 3:30:00 PM
Project: CCR Assessment Monitoring
Lab ID: 20091073-016 **Matrix:** AQUEOUS
Client Sample ID FB

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL			SW7470A		Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	10/2/2020 8:11:50 AM
INORGANIC ANIONS IN WATER BY IC			E 300.0		Analyst: SGP	
Fluoride	< 0.0500	0.0500		mg/L	1	10/2/2020 10:29:02 AM
METALS IN WATER BY ICP, TOTALS			SW6010B		Analyst: STS	
Barium	< 0.0100	0.0100		mg/L	1	10/13/2020 5:14:01 PM
Beryllium	< 0.00100	0.00100		mg/L	1	10/15/2020 7:49:49 PM
Cadmium	< 0.00500	0.00500		mg/L	1	10/13/2020 5:14:01 PM
Chromium	< 0.0100	0.0100		mg/L	1	10/13/2020 5:14:01 PM
Cobalt	< 0.0100	0.0100		mg/L	1	10/13/2020 5:14:01 PM
Lead	< 0.0100	0.0100		mg/L	1	10/13/2020 5:14:01 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	10/13/2020 5:14:01 PM
Selenium	< 0.0200	0.0200		mg/L	1	10/13/2020 5:14:01 PM
METALS IN WATER BY ICP-MS, TOTAL			SW6020A		Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	10/15/2020 1:37:21 PM
Arsenic	< 0.250	0.250		µg/L	1	10/15/2020 1:37:21 PM
Thallium	< 0.250	0.250		µg/L	1	10/15/2020 1:37:21 PM

Qualifiers:	E	Value above quantitation range	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#: 20091073

16-Oct-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 35453

Sample ID	MB-35453	SampType:	MBLK	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	10/1/2020	RunNo:	92886		
Client ID:	PBW	Batch ID:	35453	TestNo:	SW7470A			Analysis Date:	10/2/2020	SeqNo:	2297580		
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-35453	SampType:	LCS	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	10/1/2020	RunNo:	92886			
Client ID:	LCSW	Batch ID:	35453	TestNo:	SW7470A			Analysis Date:	10/2/2020	SeqNo:	2297581			
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 80 120

Sample ID	LCSD-35453	SampType:	LCSD	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	10/1/2020	RunNo:	92886		
Client ID:	LCSS02	Batch ID:	35453	TestNo:	SW7470A			Analysis Date:	10/2/2020	SeqNo:	2297582		
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 80 120 0.01013 2.88 20

Sample ID	20091073-009BMS	SampType:	MS	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	10/1/2020	RunNo:	92886		
Client ID:	CCR-9	Batch ID:	35453	TestNo:	SW7470A			Analysis Date:	10/2/2020	SeqNo:	2297597		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.00987 0.000200 0.01000 0 98.7 75 125

Qualifiers:

E Value above quantitation range
ND Not Detected at the Reporting Limit
SDL Sample detection limit

H Holding times for preparation or analysis exceeded
RL Reporting Limit
U Analyte not detected

M Matrix Interference
S Spike Recovery outside accepted recovery limits
W Sample container temperature is out of limit as s



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QC SUMMARY REPORT

WO#: 20091073
16-Oct-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 35453

Sample ID	20091073-009BMSD	SampType: MSD	TestCode: HG_W_7470	Units: mg/L	Prep Date: 10/1/2020	RunNo: 92886					
Client ID: CCR-9	Batch ID: 35453	TestNo: SW7470A	Analysis Date: 10/2/2020	SeqNo: 2297598							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0100	0.000200	0.01000	0	100	75	125	0.009867	1.36	20	

Qualifiers:

E Value above quantitation range
ND Not Detected at the Reporting Limit
SDL Sample detection limit

H Holding times for preparation or analysis exceeded
RL Reporting Limit
U Analyte not detected

M Matrix Interference
S Spike Recovery outside accepted recovery limits
W Sample container temperature is out of limit as s



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QC SUMMARY REPORT

WO#: 20091073

16-Oct-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 35473A

Sample ID	MB-35473	SampType:	MBLK	TestCode:	6010_W	Units:	mg/L	Prep Date:	10/2/2020	RunNo:	94137	
Client ID:	PBW	Batch ID:	35473A	TestNo:	SW6010B			Analysis Date:	10/13/2020	SeqNo:	2304638	
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									
Chromium		< 0.0100	0.0100									
Cobalt		< 0.0100	0.0100									
Lead		< 0.0100	0.0100									
Molybdenum		< 0.0100	0.0100									
Selenium		< 0.0200	0.0200									

Sample ID	LCS-35473	SampType:	LCS	TestCode:	6010_W	Units:	mg/L	Prep Date:	10/2/2020	RunNo:	94137
Client ID:	LCSW	Batch ID:	35473A	TestNo:	SW6010B			Analysis Date:	10/13/2020	SeqNo:	2304639
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.469	0.0100	0.5000	0	93.8	80	120				
Cadmium	0.464	0.00500	0.5000	0	92.9	80	120				
Chromium	0.463	0.0100	0.5000	0	92.6	80	120				
Cobalt	0.471	0.0100	0.5000	0	94.1	80	120				
Lead	0.466	0.0100	0.5000	0	93.1	80	120				
Molybdenum	0.459	0.0100	0.5000	0	91.9	80	120				
Selenium	0.482	0.0200	0.5000	0	96.4	80	120				

Qualifiers:

E Value above quantitation range
ND Not Detected at the Reporting Limit
SDL Sample detection limit

H Holding times for preparation or analysis exceeded
RL Reporting Limit
U Analyte not detected

M Matrix Interference
S Spike Recovery outside accepted recovery limits
W Sample container temperature is out of limit as specified



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QC SUMMARY REPORT

WO#: 20091073

16-Oct-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 35473A

Sample ID	LCSD-35473	SampType:	LCSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	10/2/2020	RunNo:	94137
Client ID:	LCSS02	Batch ID:	35473A	TestNo:	SW6010B			Analysis Date:	10/13/2020	SeqNo:	2304640
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.452	0.0100	0.5000	0	90.5	80	120	0.4692	3.67	20	
Cadmium	0.449	0.00500	0.5000	0	89.8	80	120	0.4645	3.42	20	
Chromium	0.445	0.0100	0.5000	0	88.9	80	120	0.4628	4.01	20	
Cobalt	0.455	0.0100	0.5000	0	90.9	80	120	0.4706	3.46	20	
Lead	0.449	0.0100	0.5000	0	89.9	80	120	0.4657	3.58	20	
Molybdenum	0.446	0.0100	0.5000	0	89.1	80	120	0.4593	3.01	20	
Selenium	0.466	0.0200	0.5000	0	93.3	80	120	0.4821	3.31	20	

Sample ID	20091073-009BMS	SampType:	MS	TestCode:	6010_W	Units:	mg/L	Prep Date:	10/2/2020	RunNo:	94137
Client ID:	CCR-9	Batch ID:	35473A	TestNo:	SW6010B			Analysis Date:	10/13/2020	SeqNo:	2304653
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.676	0.0100	0.5000	0.2256	90.0	75	125				
Cadmium	0.452	0.00500	0.5000	0.002500	89.8	75	125				
Chromium	0.452	0.0100	0.5000	0.002600	89.8	75	125				
Cobalt	0.455	0.0100	0.5000	0.001200	90.7	75	125				
Lead	0.451	0.0100	0.5000	0.006700	88.9	75	125				
Molybdenum	0.450	0.0100	0.5000	0.006700	88.7	75	125				
Selenium	0.460	0.0200	0.5000	0.005900	90.8	75	125				

Qualifiers:

E Value above quantitation range
ND Not Detected at the Reporting Limit
SDL Sample detection limit

H Holding times for preparation or analysis exceeded
RL Reporting Limit
U Analyte not detected

M Matrix Interference
S Spike Recovery outside accepted recovery limits
W Sample container temperature is out of limit as s



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QC SUMMARY REPORT

WO#: 20091073
16-Oct-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 35473A

Sample ID	20091073-009BMSD	SampType:	MSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	10/2/2020	RunNo:	94137
Client ID:	CCR-9	Batch ID:	35473A	TestNo:	SW6010B			Analysis Date:	10/13/2020	SeqNo:	2304654
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.675	0.0100	0.5000	0.2256	90.0	75	125	0.6755	0.0148	20	
Cadmium	0.451	0.00500	0.5000	0.002500	89.8	75	125	0.4515	0.0222	20	
Chromium	0.450	0.0100	0.5000	0.002600	89.5	75	125	0.4516	0.377	20	
Cobalt	0.454	0.0100	0.5000	0.001200	90.6	75	125	0.4546	0.110	20	
Lead	0.449	0.0100	0.5000	0.006700	88.5	75	125	0.4510	0.400	20	
Molybdenum	0.454	0.0100	0.5000	0.006700	89.4	75	125	0.4501	0.841	20	
Selenium	0.468	0.0200	0.5000	0.005900	92.4	75	125	0.4600	1.66	20	

Qualifiers:

E Value above quantitation range
ND Not Detected at the Reporting Limit
SDL Sample detection limit

H Holding times for preparation or analysis exceeded
RL Reporting Limit
U Analyte not detected

M Matrix Interference
S Spike Recovery outside accepted recovery limits
W Sample container temperature is out of limit as s



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QC SUMMARY REPORT

WO#: 20091073

16-Oct-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 35473C

Sample ID	MB-35473	SampType:	MBLK	TestCode:	6010_W	Units:	mg/L	Prep Date:	10/2/2020	RunNo:	94250		
Client ID:	PBW	Batch ID:	35473C	TestNo:	SW6010B			Analysis Date:	10/15/2020	SeqNo:	2308084		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Beryllium	< 0.00100	0.00100												
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Sample ID	LCS-35473	SampType:	LCS	TestCode:	6010_W	Units:	mg/L	Prep Date:	10/2/2020	RunNo:	94250		
Client ID:	LCSW	Batch ID:	35473C	TestNo:	SW6010B			Analysis Date:	10/15/2020	SeqNo:	2308085		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Beryllium	0.494	0.00100	0.5000	0	98.8	80	120							
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Sample ID	LCSD-35473	SampType:	LCSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	10/2/2020	RunNo:	94250		
Client ID:	LCSS02	Batch ID:	35473C	TestNo:	SW6010B			Analysis Date:	10/15/2020	SeqNo:	2308086		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Beryllium	0.493	0.00100	0.5000	0	98.6	80	120	0.4941	0.243	20				
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Sample ID	20091073-009BMS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 10/2/2020	RunNo: 94250					
Client ID: CCR-9	Batch ID: 35473C	TestNo: SW6010B	Analysis Date: 10/15/2020	SeqNo: 2308098							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Beryllium	0.487	0.00100	0.5000	0	97.4	75	125							
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Qualifiers:

E Value above quantitation range
ND Not Detected at the Reporting Limit
SDL Sample detection limit

H Holding times for preparation or analysis exceeded
RL Reporting Limit
U Analyte not detected

M Matrix Interference
S Spike Recovery outside accepted recovery limits
W Sample container temperature is out of limit as s



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QC SUMMARY REPORT

WO#: 20091073
16-Oct-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 35473C

Sample ID	20091073-009BMSD	SampType: MSD	TestCode: 6010_W	Units: mg/L	Prep Date: 10/2/2020	RunNo: 94250					
Client ID: CCR-9	Batch ID: 35473C	TestNo: SW6010B	Analysis Date: 10/15/2020	SeqNo: 2308099							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beryllium	0.485	0.00100	0.5000	0	96.9	75	125	0.4871	0.515	20	

Qualifiers:

E Value above quantitation range
ND Not Detected at the Reporting Limit
SDL Sample detection limit

H Holding times for preparation or analysis exceeded
RL Reporting Limit
U Analyte not detected

M Matrix Interference
S Spike Recovery outside accepted recovery limits
W Sample container temperature is out of limit as s



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QC SUMMARY REPORT

WO#: 20091073

16-Oct-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 35474

Sample ID	MB-35474	SampType:	MBLK	TestCode:	6020A_W	Units:	µg/L	Prep Date:	10/2/2020	RunNo:	94236			
Client ID:	PBW	Batch ID:	35474	TestNo:	SW6020A			Analysis Date:	10/15/2020	SeqNo:	2307202			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony		< 0.250		0.250										
Arsenic		< 0.250		0.250										
Thallium		< 0.250		0.250										

Sample ID	LCS-35474	SampType: LCS	TestCode: 6020A_W	Units: µg/L	Prep Date: 10/2/2020	RunNo: 94236					
Client ID:	LCSW	Batch ID: 35474	TestNo: SW6020A		Analysis Date: 10/15/2020	SeqNo: 2307203					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	468	5.00	500.0	0	93.6	80	120				
Arsenic	505	5.00	500.0	0	101	80	120				
Thallium	523	5.00	500.0	0	105	80	120				

Sample ID	LCSD-35474	SampType: LCSD	TestCode: 6020A_W	Units: µg/L	Prep Date: 10/2/2020	RunNo: 94236					
Client ID:	LCSS02	Batch ID: 35474	TestNo: SW6020A		Analysis Date: 10/15/2020	SeqNo: 2307204					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	465	5.00	500.0	0	93.0	80	120	468.2	0.685	20	
Arsenic	487	5.00	500.0	0	97.5	80	120	505.4	3.62	20	
Thallium	508	5.00	500.0	0	102	80	120	522.5	2.76	20	

Qualifiers:

E Value above quantitation range
ND Not Detected at the Reporting Limit
SDL Sample detection limit

H Holding times for preparation or analysis exceeded
RL Reporting Limit
U Analyte not detected

M Matrix Interference
S Spike Recovery outside accepted recovery limits
W Sample container temperature is out of limit as s



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QC SUMMARY REPORT

WO#: 20091073
16-Oct-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 35474

Sample ID	20091073-009BMS	SampType: MS	TestCode: 6020A_W	Units: µg/L	Prep Date: 10/2/2020	RunNo: 94236					
Client ID:	CCR-9	Batch ID: 35474	TestNo: SW6020A	Analysis Date: 10/15/2020	SeqNo: 2307218						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	486	5.00	500.0	0	97.1	75	125				
Arsenic	522	5.00	500.0	0.2320	104	75	125				
Thallium	502	5.00	500.0	0	100	75	125				

Sample ID	20091073-009BMSD	SampType: MSD	TestCode: 6020A_W	Units: µg/L	Prep Date: 10/2/2020	RunNo: 94236					
Client ID: CCR-9	Batch ID: 35474	TestNo: SW6020A	Analysis Date: 10/15/2020	SeqNo: 2307219							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	477	5.00	500.0	0	95.4	75	125	485.7	1.81	20	
Arsenic	526	5.00	500.0	0.2320	105	75	125	521.9	0.860	20	
Thallium	502	5.00	500.0	0	100	75	125	502.2	0.111	20	

Qualifiers:

E Value above quantitation range
ND Not Detected at the Reporting Limit
SDL Sample detection limit

H Holding times for preparation or analysis exceeded
RL Reporting Limit
U Analyte not detected

M Matrix Interference
S Spike Recovery outside accepted recovery limits
W Sample container temperature is out of limit as s



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QC SUMMARY REPORT

WO#: 20091073
16-Oct-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: R92870

Sample ID	MBLK	SampType:	MBLK	TestCode:	300.0	Units:	mg/L	Prep Date:		RunNo:	92870	
Client ID:	PBW	Batch ID:	R92870	TestNo:	E 300.0			Analysis Date:	10/1/2020	SeqNo:	2297131	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		< 0.0500	0.0500									

Sample ID	LCS	SampType:	LCS	TestCode:	300.0	Units:	mg/L	Prep Date:		RunNo:	92870	
Client ID:	LCSW	Batch ID:	R92870	TestNo:	E 300.0			Analysis Date:	10/1/2020	SeqNo:	2297132	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		2.00	0.0500	2.000	0	100	90	110				

Sample ID	LCSD	SampType:	LCSD	TestCode:	300.0	Units:	mg/L	Prep Date:		RunNo:	92870	
Client ID:	LCSS02	Batch ID:	R92870	TestNo:	E 300.0			Analysis Date:	10/1/2020	SeqNo:	2297133	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		1.93	0.0500	2.000	0	96.4	90	110	2.000	3.66	15	

Sample ID	20091073-009AMS	SampType:	MS	TestCode:	300.0	Units:	mg/L	Prep Date:		RunNo:	92870	
Client ID:	CCR-9	Batch ID:	R92870	TestNo:	E 300.0			Analysis Date:	10/1/2020	SeqNo:	2297143	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		9.51	0.500	10.00	0	95.1	80	120				

Qualifiers:

E Value above quantitation range
ND Not Detected at the Reporting Limit
SDL Sample detection limit

H Holding times for preparation or analysis exceeded
RL Reporting Limit
U Analyte not detected

M Matrix Interference
S Spike Recovery outside accepted recovery limits
W Sample container temperature is out of limit as s



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QC SUMMARY REPORT

WO#: 20091073

16-Oct-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: R92870

Sample ID	20091073-009AMSD	SampType: MSD	TestCode: 300.0		Units: mg/L		Prep Date:			RunNo: 92870		
Client ID:	CCR-9	Batch ID: R92870	TestNo: E 300.0		Analysis Date: 10/1/2020				SeqNo: 2297144			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		9.08	0.500	10.00	0	90.8	80	120	9.506	4.54	15	

Sample ID	20091073-016AMS	SampType:	MS	TestCode:	300.0	Units:	mg/L	Prep Date:		RunNo:	92870	
Client ID:	FB	Batch ID:	R92870	TestNo:	E 300.0			Analysis Date:	10/1/2020	SeqNo:	2297154	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		1.04	0.0500	1.000	0	104	80	120				

Sample ID	20091073-016AMSD	SampType: MSD	TestCode: 300.0		Units: mg/L		Prep Date:			RunNo: 92870		
Client ID:	FB	Batch ID: R92870	TestNo: E 300.0		Analysis Date: 10/1/2020				SeqNo: 2297155			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		0.984	0.0500	1.000	0	98.4	80	120	1.044	5.94	15	

Qualifiers:

E Value above quantitation range
ND Not Detected at the Reporting Limit
SDL Sample detection limit

H Holding times for preparation or analysis exceeded
RL Reporting Limit
U Analyte not detected

M Matrix Interference
S Spike Recovery outside accepted recovery limits
W Sample container temperature is out of limit as specified



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QC SUMMARY REPORT

WO#: 20091073
16-Oct-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: R92913

Sample ID	MBLK	SampType:	MBLK	TestCode:	300.0	Units:	mg/L	Prep Date:		RunNo:	92913	
Client ID:	PBW	Batch ID:	R92913	TestNo:	E 300.0			Analysis Date:	10/2/2020	SeqNo:	2298292	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		< 0.0500	0.0500									

Sample ID	LCS	SampType:	LCS	TestCode:	300.0	Units:	mg/L	Prep Date:		RunNo:	92913	
Client ID:	LCSW	Batch ID:	R92913	TestNo:	E 300.0			Analysis Date:	10/2/2020	SeqNo:	2298293	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		2.02	0.0500	2.000	0	101	90	110				

Sample ID	LCSD	SampType:	LCSD	TestCode:	300.0	Units:	mg/L	Prep Date:		RunNo:	92913	
Client ID:	LCSS02	Batch ID:	R92913	TestNo:	E 300.0			Analysis Date:	10/2/2020	SeqNo:	2298294	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		1.96	0.0500	2.000	0	98.0	90	110	2.016	2.83	15	

Sample ID	20091073-016AMS	SampType:	MS	TestCode:	300.0	Units:	mg/L	Prep Date:		RunNo:	92913	
Client ID:	FB	Batch ID:	R92913	TestNo:	E 300.0			Analysis Date:	10/2/2020	SeqNo:	2298296	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		1.07	0.0500	1.000	0	107	80	120				

Qualifiers:

E Value above quantitation range
ND Not Detected at the Reporting Limit
SDL Sample detection limit

H Holding times for preparation or analysis exceeded
RL Reporting Limit
U Analyte not detected

M Matrix Interference
S Spike Recovery outside accepted recovery limits
W Sample container temperature is out of limit as s



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#: 20091073

16-Oct-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: R92913

Sample ID	20091073-016AMSD	SampType: MSD	TestCode: 300.0		Units: mg/L		Prep Date:			RunNo: 92913		
Client ID:	FB	Batch ID: R92913	TestNo: E 300.0		Analysis Date: 10/2/2020				SeqNo: 2298297			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		1.04	0.0500	1.000	0	104	80	120	1.044	0.528	15	

Qualifiers:

E Value above quantitation range
ND Not Detected at the Reporting Limit
SDL Sample detection limit

H Holding times for preparation or analysis exceeded
RL Reporting Limit
U Analyte not detected

M Matrix Interference
S Spike Recovery outside accepted recovery limits
W Sample container temperature is out of limit as s



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Website: www.element.com

Sample Log-In Check List

Client Name: **PIVOTAL_ENGINEERIN**

Work Order Number: **20091073**

RcptNo: **1**

Logged by: **Tammy Thibodeaux** **9/30/2020 7:05:00 AM**

Tammy Thibodeaux

Completed By: **Tammy Thibodeaux** **9/30/2020 8:51:40 AM**

Tammy Thibodeaux

Reviewed By: **Caitlin Duplantis** **10/6/2020 12:11:45 PM**

Caitlin Duplantis

Chain of Custody

1. Is Chain of Custody complete? Yes ☐ No ☒ Not Present ☐
2. How was the sample delivered? Drop Off Box

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 $>0^{\circ}\text{C}$ 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?
(Note discrepancies on chain of custody) Yes ☒ No ☐
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?
(If no, notify customer for authorization.) Yes ☒ No ☐

Special Handling (if applicable)

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

Person Notified: Terry Elnaqqar Date 9/30/2020
By Whom: Caitlin Duplantis Via: ☒ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: Confirm am/pm for collection times.
Client Instructions: See attached email.

18. Additional remarks:
No sampler's signature by client.
Added year of collection to COC as per samples received.

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.9	Good	Not Present			

Caitlin Duplantis

From: Courtland Parr <cparr@pivotaleng.com>
Sent: Wednesday, September 30, 2020 12:26 PM
To: Caitlin Duplantis
Cc: Terry Elnaggar
Subject: Re: Confirm Collection Times: 20091073, Entergy: CCR & CADL Constituents

CAUTION: This email originated from outside of Element Materials Technology. **DO NOT** click links or open attachments unless you recognize the sender and know the content is safe. Please contact IT Service Desk if you are in any doubt about this email.

Caitlin,

The times for the samples are as follows.

CCR-1 P.M.
CCR-2 P.M.
CCR-3 P.M.
CCR-4 A.M.
CCR-5 P.M.
CCR-6 P.M.
CCR-7 P.M.
CCR-8 A.M.
CCR-9 A.M.
CCR-10 A.M.
CCR-11 A.M.
CCR-12 P.M.
CCR-13 P.M.
CCR-14 P.M.
MS A.M.
MSD A.M.
FB P.M.

Thanks,

Courtland Parr | Environmental Project Manager
Pivotal Engineering, LLC
O: 504-799-3653
C: 337-967-3749

From: "<CustomerService.Lafayette@element.com>"
<CustomerService.Lafayette@Element.com>
Date: September 30, 2020 at 9:34:48 AM CDT
To: telnaggar@pivotaleng.com

Cc: Caitlin.Duplantis@element.com

**Subject: Confirm Collection Times: 20091073, Entergy: CCR & CADL
Constituents**

Terry,

Can you please clarify if the collection times are AM or PM on the attached
COC?

Please feel free to contact me by email at Caitlin.Duplantis@element.com with
any questions.

Sincerely,

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

<COC_20091073_v1.pdf>



LELAP CERTIFICATE NUMBER: 01955
DOD-ELAP ACCREDITATION NUMBER: 74960

ANALYTICAL RESULTS

PERFORMED BY

Pace Analytical Gulf Coast
7979 Innovation Park Dr.
Baton Rouge, LA 70820
(225) 769-4900

Report Date 10/11/2020

Report # 220100336



Project 20091073

<i>Deliver To</i>	<i>Additional Recipients</i>
Annie Reedy	Caitlin Duplantis, Element Materials Technology
Element Materials Technology	Cristina Thibeaux, Element Materials Technology
2417 W Pinhook Rd	Rhonda David, Element Materials Technology
Lafayette, LA 70508	Buffy Bryant, Element Materials Technology
800-737-2378	





Report#: 220100336

Project ID: 20091073

Report Date: 10/11/2020

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with Pace Gulf Coast's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	Organics - The result is estimated because it exceeded the instrument calibration range
E	Metals - % difference for the serial dilution is > 10%
L	Reporting Limits adjusted to meet risk-based limit.
P	RPD between primary and confirmation result is greater than 40
DL	Diluted analysis – when appended to Client Sample ID

Sample receipt at Pace Gulf Coast is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of Pace Gulf Coast. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature
Pace Gulf Coast Report 220100336

Certifications

Certification	Certification Number
DOD ELAP	74960
Alabama	01955
Arkansas	88-0655
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
Washington	C929
USDA Soil Permit	P330-16-00234



Report#: 220100336

Project ID: 20091073

Report Date: 10/11/2020

Case Narrative

Client: Element Materials Technology **Report:** 220100336

Pace Analytical Gulf Coast received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

No anomalies were found for the analyzed sample(s).



Report#: 220100336

Project ID: 20091073

Report Date: 10/11/2020

Sample Summary

LAB ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
22010033601	CCR-1	Water	09/28/2020 15:25	10/02/2020 10:27
22010033602	CCR-2	Water	09/28/2020 14:40	10/02/2020 10:27
22010033603	CCR-3	Water	09/28/2020 12:40	10/02/2020 10:27
22010033604	CCR-4	Water	09/28/2020 10:50	10/02/2020 10:27
22010033605	CCR-5	Water	09/29/2020 15:20	10/02/2020 10:27
22010033606	CCR-6	Water	09/29/2020 14:30	10/02/2020 10:27
22010033607	CCR-7	Water	09/29/2020 13:30	10/02/2020 10:27
22010033608	CCR-8	Water	09/29/2020 11:35	10/02/2020 10:27
22010033609	CCR-9	Water	09/29/2020 10:30	10/02/2020 10:27
22010033610	CCR-9 MS	Water	09/29/2020 10:30	10/02/2020 10:27
22010033611	CCR-9 MSD	Water	09/29/2020 10:30	10/02/2020 10:27
22010033612	CCR-10	Water	09/29/2020 09:40	10/02/2020 10:27
22010033613	CCR-11	Water	09/29/2020 08:40	10/02/2020 10:27
22010033614	CCR-12	Water	09/28/2020 17:40	10/02/2020 10:27
22010033615	CCR-13	Water	09/28/2020 16:55	10/02/2020 10:27
22010033616	CCR-14	Water	09/28/2020 16:15	10/02/2020 10:27
22010033617	DUP	Water	09/29/2020 00:01	10/02/2020 10:27
22010033618	FB	Water	09/29/2020 15:30	10/02/2020 10:27



Report#: 220100336

Project ID: 20091073

Report Date: 10/11/2020

Sample Results

CCR-1

Collect Date 09/28/2020 15:25

LAB ID 22010033601

Receive Date 10/02/2020 10:27

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
10/05/2020 07:00	693928	EPA 3010A	1	10/09/2020 14:23	LWZ	694324
CAS#	Parameter	Result	DL	LOQ	Units	
7439-93-2	Lithium	0.024	0.0013	0.0050	mg/L	

CCR-2

Collect Date 09/28/2020 14:40

LAB ID 22010033602

Receive Date 10/02/2020 10:27

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
10/05/2020 07:00	693928	EPA 3010A	1	10/09/2020 14:28	LWZ	694324
CAS#	Parameter	Result	DL	LOQ	Units	
7439-93-2	Lithium	0.023	0.0013	0.0050	mg/L	

CCR-3

Collect Date 09/28/2020 12:40

LAB ID 22010033603

Receive Date 10/02/2020 10:27

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
10/05/2020 07:00	693928	EPA 3010A	1	10/09/2020 14:33	LWZ	694324
CAS#	Parameter	Result	DL	LOQ	Units	
7439-93-2	Lithium	0.028	0.0013	0.0050	mg/L	

CCR-4

Collect Date 09/28/2020 10:50

LAB ID 22010033604

Receive Date 10/02/2020 10:27

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
10/05/2020 07:00	693928	EPA 3010A	1	10/09/2020 14:37	LWZ	694324
CAS#	Parameter	Result	DL	LOQ	Units	
7439-93-2	Lithium	0.019	0.0013	0.0050	mg/L	



Report#: 220100336

Project ID: 20091073

Report Date: 10/11/2020

Sample Results

CCR-5

Collect Date 09/29/2020 15:20

LAB ID 22010033605

Receive Date 10/02/2020 10:27

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
10/05/2020 07:00	693928	EPA 3010A	1	10/09/2020 14:51	LWZ	694324
CAS#	Parameter	Result	DL	LOQ	Units	
7439-93-2	Lithium	0.023	0.0013	0.0050	mg/L	

CCR-6

Collect Date 09/29/2020 14:30

LAB ID 22010033606

Receive Date 10/02/2020 10:27

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
10/05/2020 07:00	693928	EPA 3010A	1	10/09/2020 14:55	LWZ	694324
CAS#	Parameter	Result	DL	LOQ	Units	
7439-93-2	Lithium	0.015	0.0013	0.0050	mg/L	

CCR-7

Collect Date 09/29/2020 13:30

LAB ID 22010033607

Receive Date 10/02/2020 10:27

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
10/05/2020 07:00	693928	EPA 3010A	1	10/09/2020 15:00	LWZ	694324
CAS#	Parameter	Result	DL	LOQ	Units	
7439-93-2	Lithium	0.016	0.0013	0.0050	mg/L	



Report#: 220100336

Project ID: 20091073

Report Date: 10/11/2020

Sample Results

CCR-8

Collect Date 09/29/2020 11:35

LAB ID 22010033608

Receive Date 10/02/2020 10:27

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
10/05/2020 07:00	693928	EPA 3010A	1	10/09/2020 15:04	LWZ	694324
CAS#	Parameter	Result	DL	LOQ	Units	
7439-93-2	Lithium	0.038	0.0013	0.0050	mg/L	

CCR-9

Collect Date 09/29/2020 10:30

LAB ID 22010033609

Receive Date 10/02/2020 10:27

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
10/05/2020 07:00	693928	EPA 3010A	1	10/09/2020 15:09	LWZ	694324
CAS#	Parameter	Result	DL	LOQ	Units	
7439-93-2	Lithium	0.013	0.0013	0.0050	mg/L	

CCR-9 MS

Collect Date 09/29/2020 10:30

LAB ID 22010033610

Receive Date 10/02/2020 10:27

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
10/05/2020 07:00	693928	EPA 3010A	1	10/09/2020 15:14	LWZ	694324
CAS#	Parameter	Result	DL	LOQ	Units	
7439-93-2	Lithium	0.27	0.0013	0.0050	mg/L	



Report#: 220100336

Project ID: 20091073

Report Date: 10/11/2020

Sample Results

CCR-9 MSD

Collect Date 09/29/2020 10:30

LAB ID 22010033611

Receive Date 10/02/2020 10:27

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
10/05/2020 07:00	693928	EPA 3010A	1	10/09/2020 15:18	LWZ	694324
CAS#	Parameter	Result	DL	LOQ	Units	
7439-93-2	Lithium	0.25	0.0013	0.0050	mg/L	

CCR-10

Collect Date 09/29/2020 09:40

LAB ID 22010033612

Receive Date 10/02/2020 10:27

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
10/05/2020 07:00	693928	EPA 3010A	1	10/09/2020 15:32	LWZ	694324
CAS#	Parameter	Result	DL	LOQ	Units	
7439-93-2	Lithium	0.0097	0.0013	0.0050	mg/L	

CCR-11

Collect Date 09/29/2020 08:40

LAB ID 22010033613

Receive Date 10/02/2020 10:27

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
10/05/2020 07:00	693928	EPA 3010A	1	10/09/2020 15:36	LWZ	694324
CAS#	Parameter	Result	DL	LOQ	Units	
7439-93-2	Lithium	0.0077	0.0013	0.0050	mg/L	



Report#: 220100336

Project ID: 20091073

Report Date: 10/11/2020

Sample Results

CCR-12

Collect Date 09/28/2020 17:40

LAB ID 22010033614

Receive Date 10/02/2020 10:27

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
10/05/2020 07:00	693928	EPA 3010A	1	10/09/2020 15:41	LWZ	694324
CAS#	Parameter	Result	DL	LOQ	Units	
7439-93-2	Lithium	0.027	0.0013	0.0050	mg/L	

CCR-13

Collect Date 09/28/2020 16:55

LAB ID 22010033615

Receive Date 10/02/2020 10:27

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
10/05/2020 07:00	693928	EPA 3010A	1	10/09/2020 15:55	LWZ	694324
CAS#	Parameter	Result	DL	LOQ	Units	
7439-93-2	Lithium	0.019	0.0013	0.0050	mg/L	

CCR-14

Collect Date 09/28/2020 16:15

LAB ID 22010033616

Receive Date 10/02/2020 10:27

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
10/05/2020 07:00	693928	EPA 3010A	1	10/09/2020 16:00	LWZ	694324
CAS#	Parameter	Result	DL	LOQ	Units	
7439-93-2	Lithium	0.017	0.0013	0.0050	mg/L	



Report#: 220100336

Project ID: 20091073

Report Date: 10/11/2020

Sample Results

DUP

Collect Date 09/29/2020 00:01

LAB ID 22010033617

Receive Date 10/02/2020 10:27

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
10/05/2020 07:00	693928	EPA 3010A	1	10/09/2020 16:05	LWZ	694324

CAS#	Parameter	Result	DL	LOQ	Units
7439-93-2	Lithium	0.0082	0.0013	0.0050	mg/L

FB

Collect Date 09/29/2020 15:30

LAB ID 22010033618

Receive Date 10/02/2020 10:27

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
10/05/2020 07:00	693928	EPA 3010A	1	10/09/2020 16:09	LWZ	694324

CAS#	Parameter	Result	DL	LOQ	Units
7439-93-2	Lithium	0.0013U	0.0013	0.0050	mg/L



Report#: 220100336

Project ID: 20091073

Report Date: 10/11/2020

Inorganics QC Summary

Analytical Batch 694324	Client ID LAB ID	MB693928 2092632	LCS693928 2092633				
Prep Batch 693928	Sample Type Prep Date	MB 10/05/20 07:00	LCS 10/05/20 07:00				
Prep Method EPA 3010A	Analysis Date Matrix	10/09/20 14:14 Water	10/09/20 14:19 Water				
EPA 6020B		Units Result	mg/L DL	Spike Added	Result	%R	Control Limits%R
Lithium	7439-93-2	0.0013U	0.0013	0.25	0.25	98	80 - 120

Analytical Batch 694324	Client ID LAB ID	CCR-9 22010033609	CCR-9 MS 22010033610					CCR-9 MSD 22010033611				
Prep Batch 693928	Sample Type Prep Date	SAMPLE 10/05/2020 07:00	MS 10/05/20 07:00					MSD 10/05/20 07:00				
Prep Method EPA 3010A	Analysis Date Matrix	10/09/2020 15:09 Water	10/09/20 15:14 Water					10/09/20 15:18 Water				
EPA 6020B		Units Result	mg/L DL	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Lithium	7439-93-2	0.013	0.0013	0.25	0.27	103	80 - 120	0.25	0.25	96	8	20



CHAIN OF CUSTODY RECORD

Omega COCID 9605

Client ID: 4462 - Element Materials Technology

SDG: 220100336

PM: JLM



FAX: (337) 233-6540

Website: www.element.com

SUB CONTRACTOR: GCAL		COMPANY: Pace Analytical (FKA GCAL)		SPECIAL INSTRUCTIONS / COMMENTS:			
ADDRESS: 7979 GSRI Avenue				ELA 033893 PO			
CITY, STATE, ZIP: Baton Rouge, LA 70820				<i>Detection limit Required is 0.1ppm</i>			
PHONE: (225) 769-4900 FAX: (225) 767-5717 EMAIL:				<i>Report to MDL w/ J's</i>			
ACCOUNT #:							
ITEM #	SAMPLE ID	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	DATE COLLECTED	NUMBER OF CONTAINERS	COMMENTS: Methanol Preserved Weights HOT Sample Notation, Additional Sample Description.
1	20091073-001C 6020_W_SUB (SW6020A)	CCR-1	250HDPEHNO3	Aqueous	9/28/2020 3:25:00 PM	1	1
2	20091073-002C 6020_W_SUB (SW6020A)	CCR-2	250HDPEHNO3	Aqueous	9/28/2020 2:40:00 PM	1	2
3	20091073-003C 6020_W_SUB (SW6020A)	CCR-3	250HDPEHNO3	Aqueous	9/28/2020 12:40:00 PM	1	3
4	20091073-004C 6020_W_SUB (SW6020A)	CCR-4	250HDPEHNO3	Aqueous	9/28/2020 10:50:00 AM	1	4
5	20091073-005C 6020_W_SUB (SW6020A)	CCR-5	250HDPEHNO3	Aqueous	9/29/2020 3:20:00 PM	1	5
6	20091073-006C 6020_W_SUB (SW6020A)	CCR-6	250HDPEHNO3	Aqueous	9/29/2020 2:30:00 PM	1	6
7	20091073-007C 6020_W_SUB (SW6020A)	CCR-7	250HDPEHNO3	Aqueous	9/29/2020 1:30:00 PM	1	7
8	20091073-008C 6020_W_SUB (SW6020A)	CCR-8	250HDPEHNO3	Aqueous	9/29/2020 11:35:00 AM	1	8
9	20091073-009C 6020_W_SUB (SW6020A)	CCR-9	250HDPEHNO3	Aqueous	9/29/2020 10:30:00 AM	3	9,10,11

Relinquished By: <i>Stacy J. Shodeau</i>	Date: <i>9/30/2020</i>	Time: <i>1230</i>	Received By: <i>Ramona</i>	Date: <i>10/1/20</i>	Time: <i>1230</i>
Relinquished By: <i>Ramona</i>	Date: <i>10/1/20</i>	Time: <i>10:17</i>	Received By: <i>Rachel Alayyadin</i>	Date: <i>10/2/20</i>	Time: <i>10:27</i>
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
TAT: Standard <input type="checkbox"/> RUSH <input type="checkbox"/> Next BD <input type="checkbox"/> 2nd BD <input type="checkbox"/> 3rd BD <input type="checkbox"/>					
Note: RUSH requests will incur surcharges!					
REPORT TRANSMITTAL DESIRED: <input type="checkbox"/> HARDCOPY (extra cost) <input type="checkbox"/> FAX <input type="checkbox"/> EMAIL <input type="checkbox"/> ONLINE					
FOR LAB USE ONLY Temp of samples <i>0.7 E34</i> °C Attempt to Cool? _____ Comments: _____					



CHAIN OF CUSTODY RECORD

Omega COCID 9605

PAGE

Client ID: 4462 - Element Materials Technology

SDG: 220100336

PM: JLM



FAX: (337) 233-6540

Website: www.element.com

SUB CONTRACTOR: GCAL		COMPANY: Pace Analytical (FKA GCAL)		SPECIAL INSTRUCTIONS / COMMENTS:			
ADDRESS: 7979 GSRI Avenue				ELA 033893 PO			
CITY, STATE, ZIP: Baton Rouge, LA 70820				<i>10/1/2020</i> <i>Defect detection limit Required to 0.1 ppm Report to MDL w/ 5's</i>			
PHONE: (225) 769-4900		FAX: (225) 767-5717		EMAIL:			
ACCOUNT #:							
ITEM #	SAMPLE ID	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	DATE COLLECTED	NUMBER OF CONTAINERS	COMMENTS: Methanol Preserved Weights HOT Sample Notation, Additional Sample Description.
10	20091073-010C 6020_W_SUB (SW6020A)	CCR-10	250HDPEHNO3	Aqueous	9/29/2020 9:40:00 AM	1	12
11	20091073-011C 6020_W_SUB (SW6020A)	CCR-11	250HDPEHNO3	Aqueous	9/29/2020 8:40:00 AM	1	13
12	20091073-012C 6020_W_SUB (SW6020A)	CCR-12	250HDPEHNO3	Aqueous	9/28/2020 5:40:00 PM	1	14
13	20091073-013C 6020_W_SUB (SW6020A)	CCR-13	250HDPEHNO3	Aqueous	9/28/2020 4:55:00 PM	1	15
14	20091073-014C 6020_W_SUB (SW6020A)	CCR-14	250HDPEHNO3	Aqueous	9/28/2020 4:15:00 PM	1	16
15	20091073-015C 6020_W_SUB (SW6020A)	Dup	250HDPEHNO3	Aqueous	9/29/2020	1	17
16	20091073-016C 6020_W_SUB (SW6020A)	FB	250HDPEHNO3	Aqueous	9/29/2020 3:30:00 PM	1	18

Relinquished By: <i>10/1/2020</i> <i>[Signature]</i>	Date: <i>9/30/2020</i>	Time: <i>12:37</i>	Received By: <i>[Signature]</i>	Date: <i>10/1/20</i>	Time: <i>12:30</i>	REPORT TRANSMITTAL DESIRED:	
Relinquished By: <i>[Signature]</i>	Date: <i>10/1/20</i>	Time: <i>10:24</i>	Received By: <i>[Signature]</i>	Date: <i>10/2/20</i>	Time: <i>10:24</i>	<input type="checkbox"/> HARDCOPY (extra cost) <input type="checkbox"/> FAX <input type="checkbox"/> EMAIL <input type="checkbox"/> ONLINE	
Relinquished By: <i>[Signature]</i>	Date: <i>10/1/20</i>	Time: <i>10:24</i>	Received By: <i>[Signature]</i>	Date: <i>10/2/20</i>	Time: <i>10:24</i>	FOR LAB USE ONLY	
TAT: Standard <input type="checkbox"/> RUSH <input type="checkbox"/> Next BD <input type="checkbox"/> 2nd BD <input type="checkbox"/> 3rd BD <input type="checkbox"/>						Temp of samples <i>0.7 E34</i> °C Attempt to Cool? _____	
Note: RUSH requests will incur surcharges!						Comments: _____	



SAMPLE RECEIVING CHECKLIST



SAMPLE DELIVERY GROUP 220100336			CHECKLIST		YES	NO
Client PM JLM 4462 - Element Materials Technology	Transport Method CUST		Samples received with proper thermal preservation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Radioactivity is <1600 cpm? If no, record cpm value in notes section.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Profile Number 271810	Received By Savage, Tiffany R		COC relinquished and complete (including sampleIDs, collect times, and sampler)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			All containers received in good condition and within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Line Item(s) 8 - LITHIUM ONLY	Receive Date(s) 10/02/20		All sample labels and containers received match the chain of custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Preservative added to any containers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
			If received, was headspace for VOC water containers < 6mm?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Samples collected in containers provided by Pace Gulf Coast?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
COOLERS			DISCREPANCIES	LAB PRESERVATIONS		
Airbill	Thermometer ID: E34	Temp °C	None	None		
		0.7				
NOTES						



- ☐ 2203 S. Madison St., Muncie, IN 47302
765-747-9000/800-874-3563 Fax 765-747-0228
- ☐ 629 Washington St., Suite 300, Columbus, IN 47201
812-375-0531 Fax 812-375-0531
- ☐ 5738 Industrial Rd., Fort Wayne, IN 46825
219-471-7000 Fax 219-471-7777

- ☒ 2417 W. Pinhook Rd, Lafayette, LA 70508
337-235-0483/800-737-2378
Fax 337-233-6540
- ☐ 3445 S Sheridan, Tulsa, OK 74145
918-828-9977/800324-5757
Fax 918-828-7756

Page 1 of 2

Chain of Custody Record

Laboratory Number 20091023

Client Name: Pivotal Engineering LLC		Project: CCR Assessment Monitoring		Preserv.		Test Requested		Comments / Remarks	
Contact Name: Terry Elnaggar		Quote #: 5346		HCl HNO ₃ H ₂ SO ₄ NaOH Na ₂ S ₂ O ₃		300: Fluoride *6010/**6020 metals ***6020 Sub 7470 Mercury			
Phone/Fax: (504) 799-3653		Sampler's Signature:		Number / Type of Container		Matrix Code			
Collection		Grab	Comp	Sample Identification / Description					
Date	Time								
9/28	3:25	X		C C R - 1		None/ HNO ₃ 3 Plastic Aq		X X X X	*6010 Metals: Ba, Be, Cd, Cr, Co, Pb, Mo, Se
	2:40	X		C C R - 2		None/ HNO ₃ 3 Plastic Aq		X X X X	
	12:40	X		C C R - 3		None/ HNO ₃ 3 Plastic Aq		X X X X	
	10:50	X		C C R - 4		None/ HNO ₃ 3 Plastic Aq		X X X X	
9/29	3:20	X		C C R - 5		None/ HNO ₃ 3 Plastic Aq		X X X X	**6020 Metals: As, Sb, Ti
	2:30	X		C C R - 6		None/ HNO ₃ 3 Plastic Aq		X X X X	
	1:30	X		C C R - 7		None/ HNO ₃ 3 Plastic Aq		X X X X	
	4:35	X		C C R - 8		None/ HNO ₃ 3 Plastic Aq		X X X X	
	10:30	X		C C R - 9		None/ HNO ₃ 3 Plastic Aq		X X X X	***6020 Sub Metal: Li
	9:40	X		C C R - 10		None/ HNO ₃ 3 Plastic Aq		X X X X	
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.								P.O. Number	
Relinquished by: (Signature)		Received by: (Signature)		Date	Time	Relinquished by: (Signature)		Received by: (Signature)	
[Signature]		[Signature]		9/29	8:00	[Signature]		[Signature]	
Relinquished by: (Signature)		Received by: (Signature)		Date	Time	Relinquished by: (Signature)		Received by: (Signature)	
[Signature]		[Signature]				[Signature]		[Signature]	
Matrix Codes		Container Types		Shipping Conditions		Requested TAT		Thank-you for using Element Materials Technology	
DW = Drinking Water AQ = Aqueous LIQ = Liquid		G = Glass		<input checked="" type="checkbox"/> Iced		<input type="checkbox"/> 24-Hr. <input type="checkbox"/> 72-Hr.			
GW = Ground Water O = Oil SLD = Solid		P = Plastic		Temp. <u>19</u>		<input type="checkbox"/> 48-Hr. <input checked="" type="checkbox"/> Standard			
WW = Waste Water SO = Soil SL = Sludge		V = Vial		<input type="checkbox"/> Ambient		<input type="checkbox"/> Other			



Laboratory Number 25091072



Element Materials Technology Lafayette
2417 W. Pinhook Road
Lafayette, LA 70508-3344
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Website: www.element.com

October 15, 2020

Terry Elnaggar
Pivotal Engineering LLC
1515 Poydras St., STE. 1875
New Orleans, LA 70112
TEL: (504) 799-3653
FAX

RE: CCR Detection Monitoring

Order No.: 20091074

Dear Terry Elnaggar:

Element Materials Technology Lafayette received 16 sample(s) on 9/30/2020 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.

Where applicable, 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.: 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.

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
2417 W. Pinhook Road
Lafayette, LA 70508-3344



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#: 20091074
Date: 10/15/2020

CLIENT: Pivotal Engineering LLC
Project: CCR Detection Monitoring

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#: 20091074

Date Reported: 10/15/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 9/28/2020 3:25:00 PM
Project: CCR Detection Monitoring
Lab ID: 20091074-001 **Matrix:** AQUEOUS
Client Sample ID CCR-1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0		Analyst: SGP
Chloride	42.9	2.50		mg/L	10	10/1/2020 11:12:47 AM
Fluoride	0.257	0.0500		mg/L	1	10/1/2020 8:08:53 PM
Sulfate	2.79	0.250		mg/L	1	10/1/2020 8:08:53 PM
METALS IN WATER BY ICP, TOTALS				SW6010B		Analyst: STS
Boron	< 0.100	0.100		mg/L	1	10/13/2020 3:22:01 PM
Calcium	24.9	0.500		mg/L	1	10/13/2020 3:22:01 PM
TOTAL DISSOLVED SOLIDS				SM2540C		Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	273	20.0		mg/L	1	10/2/2020 7:22:00 AM

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#: 20091074

Date Reported: 10/15/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 9/28/2020 2:40:00 PM
Project: CCR Detection Monitoring
Lab ID: 20091074-002 **Matrix:** AQUEOUS
Client Sample ID CCR-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	58.0	2.50		mg/L	10	10/1/2020 11:26:31 AM
Fluoride	0.261	0.0500		mg/L	1	10/1/2020 8:22:38 PM
Sulfate	1.01	0.250		mg/L	1	10/1/2020 8:22:38 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	10/13/2020 3:25:49 PM
Calcium	19.5	0.500		mg/L	1	10/13/2020 3:25:49 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	257	20.0		mg/L	1	10/2/2020 7:22:00 AM

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#: 20091074

Date Reported: 10/15/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 9/28/2020 12:40:00 PM
Project: CCR Detection Monitoring
Lab ID: 20091074-003 **Matrix:** AQUEOUS
Client Sample ID CCR-3

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	113	2.50		mg/L	10	10/1/2020 11:40:14 AM
Fluoride	0.305	0.0500		mg/L	1	10/1/2020 8:36:22 PM
Sulfate	3.82	0.250		mg/L	1	10/1/2020 8:36:22 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	10/13/2020 4:03:06 PM
Calcium	28.9	0.500		mg/L	1	10/13/2020 4:03:06 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	388	20.0		mg/L	1	10/2/2020 7:22:00 AM

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#: 20091074

Date Reported: 10/15/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 9/28/2020 10:50:00 AM
Project: CCR Detection Monitoring
Lab ID: 20091074-004 **Matrix:** AQUEOUS
Client Sample ID CCR-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	45.9	2.50		mg/L	10	10/1/2020 11:53:58 AM
Fluoride	0.118	0.0500		mg/L	1	10/1/2020 8:50:05 PM
Sulfate	9.84	0.250		mg/L	1	10/1/2020 8:50:05 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	10/13/2020 4:06:58 PM
Calcium	17.9	0.500		mg/L	1	10/13/2020 4:06:58 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	257	20.0		mg/L	1	10/2/2020 7:22:00 AM

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#: 20091074

Date Reported: 10/15/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 9/29/2020 3:20:00 PM
Project: CCR Detection Monitoring
Lab ID: 20091074-005 **Matrix:** AQUEOUS
Client Sample ID CCR-5

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0		Analyst: SGP
Chloride	68.7	5.00		mg/L	20	10/1/2020 12:07:41 PM
Fluoride	0.117	0.0500		mg/L	1	10/1/2020 9:04:02 PM
Sulfate	< 0.250	0.250		mg/L	1	10/1/2020 9:04:02 PM
METALS IN WATER BY ICP, TOTALS				SW6010B		Analyst: STS
Boron	0.104	0.100		mg/L	1	10/13/2020 4:10:47 PM
Calcium	30.4	0.500		mg/L	1	10/13/2020 4:10:47 PM
TOTAL DISSOLVED SOLIDS				SM2540C		Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	393	20.0		mg/L	1	10/2/2020 7:22:00 AM

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

Analytical Report

(consolidated)

WO#: 20091074

Date Reported: 10/15/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 9/29/2020 2:30:00 PM
Project: CCR Detection Monitoring
Lab ID: 20091074-006 **Matrix:** AQUEOUS
Client Sample ID CCR-6

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	84.4	2.50		mg/L	10	10/1/2020 12:21:25 PM
Fluoride	0.177	0.0500		mg/L	1	10/1/2020 9:17:46 PM
Sulfate	< 0.250	0.250		mg/L	1	10/1/2020 9:17:46 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	10/13/2020 4:14:34 PM
Calcium	28.7	0.500		mg/L	1	10/13/2020 4:14:34 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	327	20.0		mg/L	1	10/2/2020 7:22:00 AM

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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Lafayette, LA 70508-3344
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Website: www.element.com

Analytical Report

(consolidated)

WO#: 20091074

Date Reported: 10/15/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 9/29/2020 1:30:00 PM
Project: CCR Detection Monitoring
Lab ID: 20091074-007 **Matrix:** AQUEOUS
Client Sample ID: CCR-7

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0		Analyst: SGP
Chloride	74.5	1.25		mg/L	5	10/1/2020 12:35:08 PM
Fluoride	0.186	0.0500		mg/L	1	10/1/2020 9:31:34 PM
Sulfate	< 0.250	0.250		mg/L	1	10/1/2020 9:31:34 PM
METALS IN WATER BY ICP, TOTALS				SW6010B		Analyst: STS
Boron	< 0.100	0.100		mg/L	1	10/13/2020 4:18:39 PM
Calcium	43.4	0.500		mg/L	1	10/13/2020 4:18:39 PM
TOTAL DISSOLVED SOLIDS				SM2540C		Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	337	20.0		mg/L	1	10/2/2020 7:22:00 AM

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

Analytical Report

(consolidated)

WO#: 20091074

Date Reported: 10/15/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 9/29/2020 11:35:00 AM
Project: CCR Detection Monitoring
Lab ID: 20091074-008 **Matrix:** AQUEOUS
Client Sample ID: CCR-8

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	90.3	2.50		mg/L	10	10/1/2020 12:48:52 PM
Fluoride	0.0632	0.0500		mg/L	1	10/1/2020 9:45:17 PM
Sulfate	0.501	0.250		mg/L	1	10/1/2020 9:45:17 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	10/13/2020 4:22:33 PM
Calcium	11.4	0.500		mg/L	1	10/13/2020 4:22:33 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	281	20.0		mg/L	1	10/2/2020 7:22:00 AM

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#: 20091074

Date Reported: 10/15/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 9/29/2020 10:30:00 AM
Project: CCR Detection Monitoring
Lab ID: 20091074-009 **Matrix:** AQUEOUS
Client Sample ID CCR-9

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0		Analyst: SGP
Chloride	66.2	2.50		mg/L	10	10/1/2020 1:02:36 PM
Fluoride	0.446	0.0500		mg/L	1	10/1/2020 9:59:00 PM
Sulfate	5.99	0.250		mg/L	1	10/1/2020 9:59:00 PM
METALS IN WATER BY ICP, TOTALS				SW6010B		Analyst: STS
Boron	< 0.100	0.100		mg/L	1	10/13/2020 4:26:23 PM
Calcium	28.8	0.500		mg/L	1	10/13/2020 4:26:23 PM
TOTAL DISSOLVED SOLIDS				SM2540C		Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	345	20.0		mg/L	1	10/2/2020 7:22:00 AM

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

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WO#: 20091074

Date Reported: 10/15/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 9/29/2020 9:40:00 AM
Project: CCR Detection Monitoring
Lab ID: 20091074-010 **Matrix:** AQUEOUS
Client Sample ID CCR-10

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	43.2	2.50		mg/L	10	10/1/2020 1:43:48 PM
Fluoride	0.532	0.0500		mg/L	1	10/1/2020 10:12:58 PM
Sulfate	8.98	0.250		mg/L	1	10/1/2020 10:12:58 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	10/13/2020 4:38:39 PM
Calcium	25.3	0.500		mg/L	1	10/13/2020 4:38:39 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	324	20.0		mg/L	1	10/2/2020 7:22:00 AM

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

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WO#: 20091074

Date Reported: 10/15/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 9/29/2020 8:40:00 AM
Project: CCR Detection Monitoring
Lab ID: 20091074-011 **Matrix:** AQUEOUS
Client Sample ID: CCR-11

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC			E 300.0		Analyst: SGP	
Chloride	28.3	2.50		mg/L	10	10/1/2020 2:25:02 PM
Fluoride	0.669	0.0500		mg/L	1	10/1/2020 10:54:10 PM
Sulfate	3.36	0.250		mg/L	1	10/1/2020 10:54:10 PM
METALS IN WATER BY ICP, TOTALS			SW6010B		Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	10/13/2020 4:54:33 PM
Calcium	25.8	0.500		mg/L	1	10/13/2020 4:54:33 PM
TOTAL DISSOLVED SOLIDS			SM2540C		Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	227	20.0		mg/L	1	10/2/2020 7:22:00 AM

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

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WO#: 20091074

Date Reported: 10/15/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 9/28/2020 5:40:00 PM
Project: CCR Detection Monitoring
Lab ID: 20091074-012 **Matrix:** AQUEOUS
Client Sample ID CCR-12

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC			E 300.0		Analyst: SGP	
Chloride	16.5	1.25		mg/L	5	10/1/2020 2:38:47 PM
Fluoride	0.0781	0.0500		mg/L	1	10/1/2020 11:07:54 PM
Sulfate	8.33	0.250		mg/L	1	10/1/2020 11:07:54 PM
METALS IN WATER BY ICP, TOTALS			SW6010B		Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	10/13/2020 4:58:20 PM
Calcium	17.4	0.500		mg/L	1	10/13/2020 4:58:20 PM
TOTAL DISSOLVED SOLIDS			SM2540C		Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	164	20.0		mg/L	1	10/2/2020 7:22:00 AM

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

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WO#: 20091074

Date Reported: 10/15/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 9/28/2020 4:55:00 PM
Project: CCR Detection Monitoring
Lab ID: 20091074-013 **Matrix:** AQUEOUS
Client Sample ID: CCR-13

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC			E 300.0		Analyst: SGP	
Chloride	11.7	1.25		mg/L	5	10/1/2020 2:52:26 PM
Fluoride	0.171	0.0500		mg/L	1	10/1/2020 11:21:38 PM
Sulfate	0.565	0.250		mg/L	1	10/1/2020 11:21:38 PM
METALS IN WATER BY ICP, TOTALS			SW6010B		Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	10/13/2020 5:02:09 PM
Calcium	21.6	0.500		mg/L	1	10/13/2020 5:02:09 PM
TOTAL DISSOLVED SOLIDS			SM2540C		Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	178	20.0		mg/L	1	10/2/2020 7:22:00 AM

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

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WO#: 20091074

Date Reported: 10/15/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 9/28/2020 4:15:00 PM
Project: CCR Detection Monitoring
Lab ID: 20091074-014 **Matrix:** AQUEOUS
Client Sample ID: CCR-14

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC		E 300.0			Analyst: SGP	
Chloride	11.0	1.25		mg/L	5	10/1/2020 3:06:10 PM
Fluoride	0.0857	0.0500		mg/L	1	10/1/2020 11:35:23 PM
Sulfate	< 0.250	0.250		mg/L	1	10/1/2020 11:35:23 PM
METALS IN WATER BY ICP, TOTALS		SW6010B			Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	10/13/2020 5:05:57 PM
Calcium	15.4	0.500		mg/L	1	10/13/2020 5:05:57 PM
TOTAL DISSOLVED SOLIDS		SM2540C			Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	149	20.0		mg/L	1	10/2/2020 7:22:00 AM

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

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WO#: 20091074

Date Reported: 10/15/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 9/29/2020
Project: CCR Detection Monitoring
Lab ID: 20091074-015 **Matrix:** AQUEOUS
Client Sample ID Dup

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC			E 300.0		Analyst: SGP	
Chloride	25.3	2.50		mg/L	10	10/1/2020 3:20:07 PM
Fluoride	0.641	0.0500		mg/L	1	10/1/2020 11:49:06 PM
Sulfate	3.26	0.250		mg/L	1	10/1/2020 11:49:06 PM
METALS IN WATER BY ICP, TOTALS			SW6010B		Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	10/13/2020 5:09:43 PM
Calcium	26.3	0.500		mg/L	1	10/13/2020 5:09:43 PM
TOTAL DISSOLVED SOLIDS			SM2540C		Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	216	20.0		mg/L	1	10/2/2020 7:22:00 AM

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

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WO#: 20091074

Date Reported: 10/15/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 9/29/2020 3:30:00 PM
Project: CCR Detection Monitoring
Lab ID: 20091074-016 **Matrix:** AQUEOUS
Client Sample ID FB

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0		Analyst: SGP
Chloride	< 0.250	0.250		mg/L	1	10/1/2020 3:33:51 PM
Fluoride	< 0.0500	0.0500		mg/L	1	10/2/2020 10:29:02 AM
Sulfate	< 0.250	0.250		mg/L	1	10/1/2020 3:33:51 PM
METALS IN WATER BY ICP, TOTALS				SW6010B		Analyst: STS
Boron	< 0.100	0.100		mg/L	1	10/13/2020 5:14:01 PM
Calcium	< 0.500	0.500		mg/L	1	10/13/2020 5:14:01 PM
TOTAL DISSOLVED SOLIDS				SM2540C		Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	< 20.0	20.0		mg/L	1	10/2/2020 7:22:00 AM

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#: 20091074

16-Oct-20

Client: Pivotal Engineering LLC
Project: CCR Detection Monitoring

BatchID: 35473

Sample ID	MB-35473	SampType:	MBLK	TestCode:	6010_W	Units:	mg/L	Prep Date:	10/2/2020	RunNo:	94138			
Client ID:	PBW	Batch ID:	35473	TestNo:	SW6010B			Analysis Date:	10/13/2020	SeqNo:	2304696			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron		< 0.100		0.100										
Calcium		< 0.500		0.500										

Sample ID	LCS-35473	SampType:	LCS	TestCode:	6010_W	Units:	mg/L	Prep Date:	10/2/2020	RunNo:	94138	
Client ID:	LCSW	Batch ID:	35473	TestNo:	SW6010B			Analysis Date:	10/13/2020	SeqNo:	2304697	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron		0.468	0.100	0.5000	0	93.6	80	120				
Calcium		47.2	0.500	50.00	0	94.4	80	120				

Sample ID	LCSD-35473	SampType:	LCSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	10/2/2020	RunNo:	94138			
Client ID:	LCSS02	Batch ID:	35473	TestNo:	SW6010B			Analysis Date:	10/13/2020	SeqNo:	2304698			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron		0.458		0.100	0.5000	0		91.5	80	120	0.4680	2.27	20	
Calcium		46.4		0.500	50.00	0		92.8	80	120	47.20	1.69	20	

Sample ID	20091074-009BMS	SampType:	MS	TestCode:	6010_W	Units:	mg/L	Prep Date:	10/2/2020	RunNo:	94138	
Client ID:	CCR-9	Batch ID:	35473	TestNo:	SW6010B			Analysis Date:	10/13/2020	SeqNo:	2304711	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron		0.530	0.100	0.5000	0	106	75	125				

Qualifiers:

H Holding times for preparation or analysis exceeded
RL Reporting Limit
U Analyte not detected

M Matrix Interference
S Spike Recovery outside accepted recovery limits
W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
SDL Sample detection limit



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QC SUMMARY REPORT

WO#: 20091074

16-Oct-20

Client: Pivotal Engineering LLC
Project: CCR Detection Monitoring

BatchID: 35473

Sample ID	20091074-009BMS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 10/2/2020	RunNo: 94138					
Client ID: CCR-9	Batch ID: 35473	TestNo: SW6010B	Analysis Date: 10/13/2020	SeqNo: 2304711							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	74.4	0.500	50.00	28.82	91.2	75	125				

Sample ID	20091074-009BMSD	SampType: MSD	TestCode: 6010_W	Units: mg/L	Prep Date: 10/2/2020	RunNo: 94138					
Client ID: CCR-9	Batch ID: 35473	TestNo: SW6010B	Analysis Date: 10/13/2020	SeqNo: 2304712							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.539	0.100	0.5000	0	108	75	125	0.5303	1.55	20	
Calcium	75.2	0.500	50.00	28.82	92.9	75	125	74.43	1.10	20	

Qualifiers:

H Holding times for preparation or analysis exceeded
RL Reporting Limit
U Analyte not detected

M Matrix Interference
S Spike Recovery outside accepted recovery limits
W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
SDL Sample detection limit



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QC SUMMARY REPORT

WO#: 20091074
16-Oct-20

Client: Pivotal Engineering LLC
Project: CCR Detection Monitoring

BatchID: R92869

Sample ID	MB-R92869	SampType:	MBLK	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	92869			
Client ID:	PBW	Batch ID:	R92869	TestNo:	SM2540C			Analysis Date:	10/2/2020	SeqNo:	2298677			
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-R92869	SampType:	LCS	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	92869			
Client ID:	LCSW	Batch ID:	R92869	TestNo:	SM2540C			Analysis Date:	10/2/2020	SeqNo:	2298678			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 1,030 20.0 1,000 0 103 85 115

Sample ID	LCSD-R92869	SampType:	LCSD	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	92869			
Client ID:	LCSS02	Batch ID:	R92869	TestNo:	SM2540C			Analysis Date:	10/2/2020	SeqNo:	2298679			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 1,040 20.0 1,000 0 104 85 115 1,027 1.55 10

Sample ID	20091074-009ADUP	SampType:	DUP	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	92869			
Client ID:	CCR-9	Batch ID:	R92869	TestNo:	SM2540C			Analysis Date:	10/2/2020	SeqNo:	2298689			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 336 20.0 345.0 2.64 10

Qualifiers:

H Holding times for preparation or analysis exceeded
RL Reporting Limit
U Analyte not detected

M Matrix Interference
S Spike Recovery outside accepted recovery limits
W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
SDL Sample detection limit



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QC SUMMARY REPORT

WO#: 20091074
16-Oct-20

Client: Pivotal Engineering LLC
Project: CCR Detection Monitoring

BatchID: R92869

Sample ID	20091074-009ADUP	SampType:	DUP	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	92869
Client ID:	CCR-9	Batch ID:	R92869	TestNo:	SM2540C			Analysis Date:	10/2/2020	SeqNo:	2298689
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Sample ID	20091074-015ADUP	SampType:	DUP	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	92869
Client ID:	Dup	Batch ID:	R92869	TestNo:	SM2540C			Analysis Date:	10/2/2020	SeqNo:	2298696
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Total Dissolved Solids (Residue, Filterable)		225		20.0						216.0	4.08 10

Qualifiers:

H Holding times for preparation or analysis exceeded
RL Reporting Limit
U Analyte not detected

M Matrix Interference
S Spike Recovery outside accepted recovery limits
W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
SDL Sample detection limit



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QC SUMMARY REPORT

WO#: 20091074

16-Oct-20

Client: Pivotal Engineering LLC
Project: CCR Detection Monitoring

BatchID: R92872

Sample ID	MBLK	SampType:	MBLK	TestCode:	300.0	Units:	mg/L	Prep Date:		RunNo:	92872	
Client ID:	PBW	Batch ID:	R92872	TestNo:	E 300.0			Analysis Date:	10/1/2020	SeqNo:	2297196	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		< 0.250	0.250									
Fluoride		< 0.0500	0.0500									
Sulfate		< 0.250	0.250									

Sample ID	LCS	SampType:	LCS	TestCode:	300.0	Units:	mg/L	Prep Date:		RunNo:	92872	
Client ID:	LCSW	Batch ID:	R92872	TestNo:	E 300.0			Analysis Date:	10/1/2020	SeqNo:	2297197	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		9.85	0.250	10.00	0	98.5	90	110				
Fluoride		2.00	0.0500	2.000	0	100	90	110				
Sulfate		10.4	0.250	10.00	0	104	90	110				

Sample ID	LCSD	SampType:	LCSD	TestCode:	300.0	Units:	mg/L	Prep Date:		RunNo:	92872	
Client ID:	LCSS02	Batch ID:	R92872	TestNo:	E 300.0			Analysis Date:	10/1/2020	SeqNo:	2297198	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		9.82	0.250	10.00	0	98.2	90	110	9.850	0.356	15	
Fluoride		1.93	0.0500	2.000	0	96.4	90	110	2.000	3.66	15	
Sulfate		10.2	0.250	10.00	0	102	90	110	10.36	1.54	15	

Qualifiers:

H Holding times for preparation or analysis exceeded
RL Reporting Limit
U Analyte not detected

M Matrix Interference
S Spike Recovery outside accepted recovery limits
W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
SDL Sample detection limit



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#: 20091074

16-Oct-20

Client: Pivotal Engineering LLC
Project: CCR Detection Monitoring

BatchID: R92872

Sample ID	20091074-009AMS	SampType: MS	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 92872					
Client ID:	CCR-9	Batch ID: R92872	TestNo: E 300.0	Analysis Date: 10/1/2020	SeqNo: 2297208						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	111	2.50	50.00	66.21	89.9	80	120				
Fluoride	9.51	0.500	10.00	0	95.1	80	120				
Sulfate	51.6	2.50	50.00	5.434	92.3	80	120				

Sample ID	20091074-009AMSD	SampType: MSD	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 92872					
Client ID:	CCR-9	Batch ID: R92872	TestNo: E 300.0	Analysis Date: 10/1/2020	SeqNo: 2297209						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	111	2.50	50.00	66.21	89.0	80	120	111.2	0.409	15	
Fluoride	9.08	0.500	10.00	0	90.8	80	120	9.506	4.54	15	
Sulfate	51.5	2.50	50.00	5.434	92.2	80	120	51.61	0.166	15	

Sample ID	20091074-016AMS	SampType: MS	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 92872					
Client ID: FB	Batch ID: R92872	TestNo: E 300.0	Analysis Date: 10/1/2020	SeqNo: 2297219							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	4.91	0.250	5.000	0	98.2	80	120				
Fluoride	1.04	0.0500	1.000	0	104	80	120				
Sulfate	5.51	0.250	5.000	0.1378	108	80	120				

Qualifiers:

H Holding times for preparation or analysis exceeded
RL Reporting Limit
U Analyte not detected

M Matrix Interference
S Spike Recovery outside accepted recovery limits
W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
SDL Sample detection limit



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QC SUMMARY REPORT

WO#: 20091074
16-Oct-20

Client: Pivotal Engineering LLC
Project: CCR Detection Monitoring

BatchID: R92872

Sample ID	20091074-016AMSD	SampType: MSD	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 92872					
Client ID: FB	Batch ID: R92872	TestNo: E 300.0	Analysis Date: 10/1/2020	SeqNo: 2297220							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	4.95	0.250	5.000	0	99.0	80	120	4.912	0.821	15	
Fluoride	0.984	0.0500	1.000	0	98.4	80	120	1.044	5.94	15	
Sulfate	5.23	0.250	5.000	0.1378	102	80	120	5.514	5.36	15	

Qualifiers:

H Holding times for preparation or analysis exceeded
RL Reporting Limit
U Analyte not detected

M Matrix Interference
S Spike Recovery outside accepted recovery limits
W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
SDL Sample detection limit



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QC SUMMARY REPORT

WO#: 20091074
16-Oct-20

Client: Pivotal Engineering LLC
Project: CCR Detection Monitoring

BatchID: R92914

Sample ID	MBLK	SampType:	MBLK	TestCode:	300.0	Units:	mg/L	Prep Date:		RunNo:	92914		
Client ID:	PBW	Batch ID:	R92914	TestNo:	E 300.0			Analysis Date:	10/2/2020	SeqNo:	2298335		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride	< 0.0500	0.0500												
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Sample ID	LCS	SampType:	LCS	TestCode:	300.0	Units:	mg/L	Prep Date:		RunNo:	92914		
Client ID:	LCSW	Batch ID:	R92914	TestNo:	E 300.0			Analysis Date:	10/2/2020	SeqNo:	2298336		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride	2.02	0.0500	2.000	0	101	90	110							
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Sample ID	LCSD	SampType:	LCSD	TestCode:	300.0	Units:	mg/L	Prep Date:		RunNo:	92914		
Client ID:	LCSS02	Batch ID:	R92914	TestNo:	E 300.0			Analysis Date:	10/2/2020	SeqNo:	2298337		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride	1.96	0.0500	2.000	0	98.0	90	110	2.016	2.83	15				
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Sample ID	20091074-016AMS	SampType:	MS	TestCode:	300.0	Units:	mg/L	Prep Date:		RunNo:	92914		
Client ID:	FB	Batch ID:	R92914	TestNo:	E 300.0			Analysis Date:	10/2/2020	SeqNo:	2298339		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride	1.07	0.0500	1.000	0	107	80	120							
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Qualifiers:

H Holding times for preparation or analysis exceeded
RL Reporting Limit
U Analyte not detected

M Matrix Interference
S Spike Recovery outside accepted recovery limits
W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
SDL Sample detection limit



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QC SUMMARY REPORT

WO#: 20091074
16-Oct-20

Client: Pivotal Engineering LLC
Project: CCR Detection Monitoring

BatchID: R92914

Sample ID	20091074-016AMSD	SampType: MSD	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 92914					
Client ID: FB	Batch ID: R92914	TestNo: E 300.0	Analysis Date: 10/2/2020	SeqNo: 2298340							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	1.04	0.0500	1.000	0	104	80	120	1.044	0.528	15	

Qualifiers:

H Holding times for preparation or analysis exceeded
RL Reporting Limit
U Analyte not detected

M Matrix Interference
S Spike Recovery outside accepted recovery limits
W Sample container temperature is out of limit as specified at testcode

ND Not Detected at the Reporting Limit
SDL Sample detection limit



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Sample Log-In Check List

Client Name: **PIVOTAL_ENGINEERIN**

Work Order Number: **20091074**

RcptNo: **1**

Logged by: **Tammy Thibodeaux** **9/30/2020 7:05:00 AM**

Tammy Thibodeaux

Completed By: **Tammy Thibodeaux** **9/30/2020 9:12:40 AM**

Tammy Thibodeaux

Reviewed By: **Caitlin Duplantis** **10/6/2020 12:15:38 PM**

Caitlin Duplantis

Chain of Custody

1. Is Chain of Custody complete? Yes ☐ No ☒ Not Present ☐
2. How was the sample delivered? Drop Off Box

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 $>0^{\circ}\text{C}$ 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?
(Note discrepancies on chain of custody) Yes ☒ No ☐
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?
(If no, notify customer for authorization.) Yes ☒ No ☐

Special Handling (if applicable)

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

Person Notified: Terry Elnaqqar Date 9/30/2020
By Whom: Caitlin Duplantis Via: ☒ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: Confirm am/pm for collection times.
Client Instructions: See attached email.

18. Additional remarks:
No sampler's signature by client.
Added year of collection to COC as per samples received.

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.9	Good	Not Present			



☐ 2203 S. Madison St., Muncie, IN 47302
765-747-9000/800-874-3563 Fax 765-747-0228

☐ 629 Washington St., Suite 300, Columbus, IN 47201
812-375-0531 Fax 812-375-0531

☐ 5738 Industrial Rd., Fort Wayne, IN 46825
219-471-7000 Fax 219-471-7777

☒ 2417 W. Pinhook Rd, Lafayette, LA 70508
337-235-0483/800-737-2378

Fax 337-233-6540

☐ 3445 S Sheridan, Tulsa, OK 74145

918-828-9977/800324-5757

Fax 918-828-7756

Page 2 of 2

Chain of Custody Record

Laboratory Number 20091074

Client Name: Pivotal Engineering LLC				Project: CCR Detection Monitoring				Preserv. HCl HNO ₃ H ₂ SO ₄ NaOH Na ₂ S ₂ O ₃	Number / Type of Container	Matrix Code	Test Requested										Comments / Remarks															
Contact Name: Terry Elnaggar				Quote #: 5346							TDS	300: Cl, F, SO ₄	6010 metals*																							
Phone/Fax: (504) 799-3653				Sampler's Signature:																																
Collection		Grab	Comp	Sample Identification / Description								HCl	HNO ₃	H ₂ SO ₄	NaOH	Na ₂ S ₂ O ₃	Number / Type of Container	Matrix Code	TDS	300: Cl, F, SO ₄	6010 metals*															
Date	Time																																			
9/29	8:40	X		C C R - 1 1								None/ HNO ₃			2 Plastic	Aq	X	X	X																	
9/28	5:40	X		C C R - 1 2								None/ HNO ₃			2 Plastic	Aq	X	X	X																	
	4:55	X		C C R - 1 3								None/ HNO ₃			2 Plastic	Aq	X	X	X																	
	4:15	X		C C R - 1 4								None/ HNO ₃			2 Plastic	Aq	X	X	X																	
9/29	1030	X		M S (CCR- <u>9</u>)								None/ HNO ₃			2 Plastic	Aq	X	X	X																	
	1030	X		M S D (CCR- <u>9</u>)								None/ HNO ₃			2 Plastic	Aq	X	X	X																	
		X		D U P								None/ HNO ₃			2 Plastic	Aq	X	X	X																	
	330	X		F B 1								None/ HNO ₃			2 Plastic	Aq	X	X	X																	
																		UPS / FedEx Airborne / Element Hand / Mail																		

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.

P.O. Number

Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature)	Date <u>9/29</u>	Time <u>8:00</u>	Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature) <u>[Signature]</u>	Received by Laboratory: (Signature) <u>[Signature]</u>	Date <u>9/29</u>	Time <u>0705</u>

Matrix Codes DW = Drinking Water AQ = Aqueous LIQ = Liquid GW = Ground Water O = Oil SLD = Solid WW = Waste Water SO = Soil SL = Sludge			Container Types G = Glass P = Plastic V = Vial		Shipping Conditions <input checked="" type="checkbox"/> Iced Temp. <u>1.9</u> <input type="checkbox"/> Ambient		Requested TAT <input type="checkbox"/> 24-Hr. <input type="checkbox"/> 72-Hr. <input type="checkbox"/> 48-Hr. <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Other		Thank-you for using Element Materials Technology	
---	--	--	--	--	--	--	---	--	--	--

Caitlin Duplantis

From: Courtland Parr <cparr@pivotaleng.com>
Sent: Wednesday, September 30, 2020 12:26 PM
To: Caitlin Duplantis
Cc: Terry Elnaggar
Subject: Re: Confirm Collection Times: 20091073, Entergy: CCR & CADL Constituents

CAUTION: This email originated from outside of Element Materials Technology. **DO NOT** click links or open attachments unless you recognize the sender and know the content is safe. Please contact IT Service Desk if you are in any doubt about this email.

Caitlin,

The times for the samples are as follows.

CCR-1 P.M.
CCR-2 P.M.
CCR-3 P.M.
CCR-4 A.M.
CCR-5 P.M.
CCR-6 P.M.
CCR-7 P.M.
CCR-8 A.M.
CCR-9 A.M.
CCR-10 A.M.
CCR-11 A.M.
CCR-12 P.M.
CCR-13 P.M.
CCR-14 P.M.
MS A.M.
MSD A.M.
FB P.M.

Thanks,

Courtland Parr | Environmental Project Manager
Pivotal Engineering, LLC
O: 504-799-3653
C: 337-967-3749

From: "<CustomerService.Lafayette@element.com>"
<CustomerService.Lafayette@Element.com>
Date: September 30, 2020 at 9:34:48 AM CDT
To: telnaggar@pivotaleng.com

Cc: Caitlin.Duplantis@element.com

**Subject: Confirm Collection Times: 20091073, Entergy: CCR & CADL
Constituents**

Terry,

Can you please clarify if the collection times are AM or PM on the attached
COC?

Please feel free to contact me by email at Caitlin.Duplantis@element.com with
any questions.

Sincerely,

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

<COC_20091073_v1.pdf>



Element Materials Technology Lafayette
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Lafayette, LA 70508-3344
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Website: www.element.com

December 29, 2020

Terry Elnaggar
Pivotal Engineering LLC
1515 Poydras St., STE. 1875
New Orleans, LA 70112
TEL: (504) 799-3653
FAX:

RE: CCR Assessment Monitoring

Order No.: 20120773

Dear Terry Elnaggar:

Element Materials Technology Lafayette received 16 sample(s) on 12/16/2020 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.

Where applicable, 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.: 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.

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
Lafayette, LA 70508-3344



Element Materials Technology Lafayette
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Lafayette, LA 70508-3344
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Website: www.element.com

Case Narrative

WO#: 20120773
Date: 12/29/2020

CLIENT: Pivotal Engineering LLC

Project: CCR Assessment Monitoring

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 Lithium by Method EPA 3010A analysis was subcontracted to Pace Gulf Coast (Baton Rouge, LA). Their report is attached in its entirety.



Element Materials Technology Lafayette
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Analytical Report

(consolidated)

WO#: 20120773

Date Reported 12/29/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 12/14/2020 11:35:00 AM
Project: CCR Assessment Monitoring
Lab ID: 20120773-001 **Matrix:** AQUEOUS
Client Sample ID CCR-1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL				SW7470A	Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	12/18/2020 9:22:34 AM
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Fluoride	0.236	0.0500		mg/L	1	12/17/2020 7:26:47 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Barium	0.185	0.0100		mg/L	1	12/18/2020 2:54:55 PM
Beryllium	< 0.00100	0.00100		mg/L	1	12/18/2020 2:54:55 PM
Cadmium	< 0.00500	0.00500		mg/L	1	12/18/2020 2:54:55 PM
Chromium	< 0.0100	0.0100		mg/L	1	12/18/2020 2:54:55 PM
Cobalt	< 0.0100	0.0100		mg/L	1	12/18/2020 2:54:55 PM
Lead	< 0.0100	0.0100		mg/L	1	12/18/2020 2:54:55 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	12/18/2020 2:54:55 PM
Selenium	< 0.0200	0.0200		mg/L	1	12/18/2020 2:54:55 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	12/22/2020 2:49:41 PM
Arsenic	0.293	0.250		µg/L	1	12/22/2020 2:49:41 PM
Thallium	< 0.250	0.250		µg/L	1	12/22/2020 2:49:41 PM

Qualifiers:

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#: 20120773

Date Reported 12/29/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 12/14/2020 10:40:00 AM
Project: CCR Assessment Monitoring
Lab ID: 20120773-002 **Matrix:** AQUEOUS
Client Sample ID CCR-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL				SW7470A	Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	12/18/2020 9:24:50 AM
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Fluoride	0.307	0.0500		mg/L	1	12/17/2020 7:41:34 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Barium	0.152	0.0100		mg/L	1	12/18/2020 2:57:03 PM
Beryllium	< 0.00100	0.00100		mg/L	1	12/18/2020 2:57:03 PM
Cadmium	< 0.00500	0.00500		mg/L	1	12/18/2020 2:57:03 PM
Chromium	< 0.0100	0.0100		mg/L	1	12/18/2020 2:57:03 PM
Cobalt	< 0.0100	0.0100		mg/L	1	12/18/2020 2:57:03 PM
Lead	< 0.0100	0.0100		mg/L	1	12/18/2020 2:57:03 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	12/18/2020 2:57:03 PM
Selenium	< 0.0200	0.0200		mg/L	1	12/18/2020 2:57:03 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	12/22/2020 2:52:30 PM
Arsenic	< 0.250	0.250		µg/L	1	12/22/2020 2:52:30 PM
Thallium	< 0.250	0.250		µg/L	1	12/22/2020 2:52:30 PM

Qualifiers:

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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Lafayette, LA 70508-3344
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Analytical Report

(consolidated)

WO#: 20120773

Date Reported 12/29/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 12/14/2020 9:55:00 AM
Project: CCR Assessment Monitoring
Lab ID: 20120773-003 **Matrix:** AQUEOUS
Client Sample ID: CCR-3

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL				SW7470A	Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	12/18/2020 9:27:06 AM
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Fluoride	< 0.0500	0.0500		mg/L	1	12/17/2020 7:56:21 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Barium	0.267	0.0100		mg/L	1	12/18/2020 3:03:26 PM
Beryllium	< 0.00100	0.00100		mg/L	1	12/18/2020 3:03:26 PM
Cadmium	< 0.00500	0.00500		mg/L	1	12/18/2020 3:03:26 PM
Chromium	< 0.0100	0.0100		mg/L	1	12/18/2020 3:03:26 PM
Cobalt	< 0.0100	0.0100		mg/L	1	12/18/2020 3:03:26 PM
Lead	< 0.0100	0.0100		mg/L	1	12/18/2020 3:03:26 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	12/18/2020 3:03:26 PM
Selenium	< 0.0200	0.0200		mg/L	1	12/18/2020 3:03:26 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	12/22/2020 2:55:18 PM
Arsenic	6.53	0.250		µg/L	1	12/22/2020 2:55:18 PM
Thallium	< 0.250	0.250		µg/L	1	12/22/2020 2:55:18 PM

Qualifiers:

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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Website: www.element.com

Analytical Report

(consolidated)

WO#: 20120773

Date Reported 12/29/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 12/14/2020 12:25:00 PM
Project: CCR Assessment Monitoring
Lab ID: 20120773-004 **Matrix:** AQUEOUS
Client Sample ID CCR-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL				SW7470A	Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	12/18/2020 9:29:22 AM
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Fluoride	< 0.0500	0.0500		mg/L	1	12/17/2020 8:11:08 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Barium	0.106	0.0100		mg/L	1	12/18/2020 3:05:34 PM
Beryllium	< 0.00100	0.00100		mg/L	1	12/18/2020 3:05:34 PM
Cadmium	< 0.00500	0.00500		mg/L	1	12/18/2020 3:05:34 PM
Chromium	< 0.0100	0.0100		mg/L	1	12/18/2020 3:05:34 PM
Cobalt	< 0.0100	0.0100		mg/L	1	12/18/2020 3:05:34 PM
Lead	< 0.0100	0.0100		mg/L	1	12/18/2020 3:05:34 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	12/18/2020 3:05:34 PM
Selenium	< 0.0200	0.0200		mg/L	1	12/18/2020 3:05:34 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	12/22/2020 2:58:06 PM
Arsenic	0.292	0.250		µg/L	1	12/22/2020 2:58:06 PM
Thallium	< 0.250	0.250		µg/L	1	12/22/2020 2:58:06 PM

Qualifiers:

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#: 20120773

Date Reported 12/29/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 12/14/2020 1:25:00 PM
Project: CCR Assessment Monitoring
Lab ID: 20120773-005 **Matrix:** AQUEOUS
Client Sample ID CCR-5

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL				SW7470A	Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	12/18/2020 7:27:21 AM
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Fluoride	< 0.0500	0.0500		mg/L	1	12/17/2020 8:25:55 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Barium	0.213	0.0100		mg/L	1	12/18/2020 3:07:42 PM
Beryllium	< 0.00100	0.00100		mg/L	1	12/18/2020 3:07:42 PM
Cadmium	< 0.00500	0.00500		mg/L	1	12/18/2020 3:07:42 PM
Chromium	< 0.0100	0.0100		mg/L	1	12/18/2020 3:07:42 PM
Cobalt	< 0.0100	0.0100		mg/L	1	12/18/2020 3:07:42 PM
Lead	< 0.0100	0.0100		mg/L	1	12/18/2020 3:07:42 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	12/18/2020 3:07:42 PM
Selenium	< 0.0200	0.0200		mg/L	1	12/18/2020 3:07:42 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	12/22/2020 3:00:54 PM
Arsenic	< 0.250	0.250		µg/L	1	12/22/2020 3:00:54 PM
Thallium	< 0.250	0.250		µg/L	1	12/22/2020 3:00:54 PM

Qualifiers:

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#: 20120773

Date Reported 12/29/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 12/14/2020 2:15:00 PM
Project: CCR Assessment Monitoring
Lab ID: 20120773-006 **Matrix:** AQUEOUS
Client Sample ID: CCR-6

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL				SW7470A	Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	12/18/2020 7:29:38 AM
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Fluoride	< 0.0500	0.0500		mg/L	1	12/17/2020 8:40:43 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Barium	0.190	0.0100		mg/L	1	12/18/2020 3:09:50 PM
Beryllium	< 0.00100	0.00100		mg/L	1	12/18/2020 3:09:50 PM
Cadmium	< 0.00500	0.00500		mg/L	1	12/18/2020 3:09:50 PM
Chromium	< 0.0100	0.0100		mg/L	1	12/18/2020 3:09:50 PM
Cobalt	< 0.0100	0.0100		mg/L	1	12/18/2020 3:09:50 PM
Lead	< 0.0100	0.0100		mg/L	1	12/18/2020 3:09:50 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	12/18/2020 3:09:50 PM
Selenium	< 0.0200	0.0200		mg/L	1	12/18/2020 3:09:50 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	12/22/2020 3:03:41 PM
Arsenic	< 0.250	0.250		µg/L	1	12/22/2020 3:03:41 PM
Thallium	< 0.250	0.250		µg/L	1	12/22/2020 3:03:41 PM

Qualifiers:

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#: 20120773

Date Reported 12/29/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 12/14/2020 3:05:00 PM
Project: CCR Assessment Monitoring
Lab ID: 20120773-007 **Matrix:** AQUEOUS
Client Sample ID: CCR-7

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL				SW7470A	Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	12/18/2020 7:31:55 AM
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Fluoride	< 0.0500	0.0500		mg/L	1	12/17/2020 8:55:30 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Barium	0.224	0.0100		mg/L	1	12/18/2020 3:11:59 PM
Beryllium	< 0.00100	0.00100		mg/L	1	12/18/2020 3:11:59 PM
Cadmium	< 0.00500	0.00500		mg/L	1	12/18/2020 3:11:59 PM
Chromium	< 0.0100	0.0100		mg/L	1	12/18/2020 3:11:59 PM
Cobalt	< 0.0100	0.0100		mg/L	1	12/18/2020 3:11:59 PM
Lead	< 0.0100	0.0100		mg/L	1	12/18/2020 3:11:59 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	12/18/2020 3:11:59 PM
Selenium	< 0.0200	0.0200		mg/L	1	12/18/2020 3:11:59 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	12/22/2020 3:06:29 PM
Arsenic	0.342	0.250		µg/L	1	12/22/2020 3:06:29 PM
Thallium	< 0.250	0.250		µg/L	1	12/22/2020 3:06:29 PM

Qualifiers:

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
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Analytical Report

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WO#: 20120773

Date Reported 12/29/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 12/14/2020 3:45:00 PM
Project: CCR Assessment Monitoring
Lab ID: 20120773-008 **Matrix:** AQUEOUS
Client Sample ID CCR-8

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL				SW7470A	Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	12/18/2020 7:34:11 AM
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Fluoride	< 0.0500	0.0500		mg/L	1	12/17/2020 9:10:17 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Barium	0.110	0.0100		mg/L	1	12/21/2020 5:15:06 PM
Beryllium	< 0.00100	0.00100		mg/L	1	12/21/2020 5:15:06 PM
Cadmium	< 0.00500	0.00500		mg/L	1	12/21/2020 5:15:06 PM
Chromium	< 0.0100	0.0100		mg/L	1	12/21/2020 5:15:06 PM
Cobalt	< 0.0100	0.0100		mg/L	1	12/21/2020 5:15:06 PM
Lead	< 0.0100	0.0100		mg/L	1	12/21/2020 5:15:06 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	12/21/2020 5:15:06 PM
Selenium	< 0.0200	0.0200		mg/L	1	12/21/2020 5:15:06 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	12/22/2020 3:42:23 PM
Arsenic	< 0.250	0.250		µg/L	1	12/22/2020 3:42:23 PM
Thallium	< 0.250	0.250		µg/L	1	12/22/2020 3:42:23 PM

Qualifiers:

E	Value above quantitation range	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#: 20120773

Date Reported 12/29/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 12/15/2020 10:55:00 AM
Project: CCR Assessment Monitoring
Lab ID: 20120773-009 **Matrix:** AQUEOUS
Client Sample ID: CCR-9

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL				SW7470A	Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	12/18/2020 7:36:27 AM
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Fluoride	0.518	0.0500		mg/L	1	12/17/2020 9:25:04 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Barium	0.238	0.0100		mg/L	1	12/21/2020 5:17:24 PM
Beryllium	< 0.00100	0.00100		mg/L	1	12/21/2020 5:17:24 PM
Cadmium	< 0.00500	0.00500		mg/L	1	12/21/2020 5:17:24 PM
Chromium	< 0.0100	0.0100		mg/L	1	12/21/2020 5:17:24 PM
Cobalt	< 0.0100	0.0100		mg/L	1	12/21/2020 5:17:24 PM
Lead	< 0.0100	0.0100		mg/L	1	12/21/2020 5:17:24 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	12/21/2020 5:17:24 PM
Selenium	< 0.0200	0.0200		mg/L	1	12/21/2020 5:17:24 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	12/22/2020 3:45:11 PM
Arsenic	< 0.250	0.250		µg/L	1	12/22/2020 3:45:11 PM
Thallium	< 0.250	0.250		µg/L	1	12/22/2020 3:45:11 PM

Qualifiers:

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#: 20120773

Date Reported 12/29/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 12/15/2020 10:10:00 AM
Project: CCR Assessment Monitoring
Lab ID: 20120773-010 **Matrix:** AQUEOUS
Client Sample ID: CCR-10

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL				SW7470A	Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	12/18/2020 7:46:49 AM
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Fluoride	0.552	0.0500		mg/L	1	12/17/2020 9:39:51 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Barium	0.256	0.0100		mg/L	1	12/21/2020 5:19:42 PM
Beryllium	< 0.00100	0.00100		mg/L	1	12/21/2020 5:19:42 PM
Cadmium	< 0.00500	0.00500		mg/L	1	12/21/2020 5:19:42 PM
Chromium	< 0.0100	0.0100		mg/L	1	12/21/2020 5:19:42 PM
Cobalt	< 0.0100	0.0100		mg/L	1	12/21/2020 5:19:42 PM
Lead	< 0.0100	0.0100		mg/L	1	12/21/2020 5:19:42 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	12/21/2020 5:19:42 PM
Selenium	< 0.0200	0.0200		mg/L	1	12/21/2020 5:19:42 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	12/22/2020 3:47:58 PM
Arsenic	1.88	0.250		µg/L	1	12/22/2020 3:47:58 PM
Thallium	< 0.250	0.250		µg/L	1	12/22/2020 3:47:58 PM

Qualifiers:

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#: 20120773

Date Reported 12/29/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 12/15/2020 9:20:00 AM
Project: CCR Assessment Monitoring
Lab ID: 20120773-011 **Matrix:** AQUEOUS
Client Sample ID: CCR-11

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL				SW7470A	Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	12/18/2020 7:53:19 AM
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Fluoride	0.605	0.0500		mg/L	1	12/17/2020 10:24:13 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Barium	0.143	0.0100		mg/L	1	12/21/2020 5:22:00 PM
Beryllium	< 0.00100	0.00100		mg/L	1	12/21/2020 5:22:00 PM
Cadmium	< 0.00500	0.00500		mg/L	1	12/21/2020 5:22:00 PM
Chromium	< 0.0100	0.0100		mg/L	1	12/21/2020 5:22:00 PM
Cobalt	< 0.0100	0.0100		mg/L	1	12/21/2020 5:22:00 PM
Lead	< 0.0100	0.0100		mg/L	1	12/21/2020 5:22:00 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	12/21/2020 5:22:00 PM
Selenium	< 0.0200	0.0200		mg/L	1	12/21/2020 5:22:00 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	12/22/2020 4:02:00 PM
Arsenic	1.28	0.250		µg/L	1	12/22/2020 4:02:00 PM
Thallium	< 0.250	0.250		µg/L	1	12/22/2020 4:02:00 PM

Qualifiers:

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#: 20120773

Date Reported 12/29/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 12/15/2020 2:10:00 PM
Project: CCR Assessment Monitoring
Lab ID: 20120773-012 **Matrix:** AQUEOUS
Client Sample ID: CCR-12

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL				SW7470A	Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	12/18/2020 7:55:35 AM
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Fluoride	< 0.0500	0.0500		mg/L	1	12/17/2020 10:39:00 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Barium	0.175	0.0100		mg/L	1	12/21/2020 5:24:18 PM
Beryllium	< 0.00100	0.00100		mg/L	1	12/21/2020 5:24:18 PM
Cadmium	< 0.00500	0.00500		mg/L	1	12/21/2020 5:24:18 PM
Chromium	< 0.0100	0.0100		mg/L	1	12/21/2020 5:24:18 PM
Cobalt	< 0.0100	0.0100		mg/L	1	12/21/2020 5:24:18 PM
Lead	< 0.0100	0.0100		mg/L	1	12/21/2020 5:24:18 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	12/21/2020 5:24:18 PM
Selenium	< 0.0200	0.0200		mg/L	1	12/21/2020 5:24:18 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	12/22/2020 4:04:49 PM
Arsenic	0.813	0.250		µg/L	1	12/22/2020 4:04:49 PM
Thallium	< 0.250	0.250		µg/L	1	12/22/2020 4:04:49 PM

Qualifiers:

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#: 20120773

Date Reported 12/29/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 12/15/2020 1:20:00 PM
Project: CCR Assessment Monitoring
Lab ID: 20120773-013 **Matrix:** AQUEOUS
Client Sample ID: CCR-13

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL				SW7470A	Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	12/18/2020 7:57:52 AM
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Fluoride	0.207	0.0500		mg/L	1	12/17/2020 10:53:47 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Barium	0.0888	0.0100		mg/L	1	12/21/2020 5:26:36 PM
Beryllium	< 0.00100	0.00100		mg/L	1	12/21/2020 5:26:36 PM
Cadmium	< 0.00500	0.00500		mg/L	1	12/21/2020 5:26:36 PM
Chromium	< 0.0100	0.0100		mg/L	1	12/21/2020 5:26:36 PM
Cobalt	< 0.0100	0.0100		mg/L	1	12/21/2020 5:26:36 PM
Lead	< 0.0100	0.0100		mg/L	1	12/21/2020 5:26:36 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	12/21/2020 5:26:36 PM
Selenium	< 0.0200	0.0200		mg/L	1	12/21/2020 5:26:36 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	12/22/2020 4:07:37 PM
Arsenic	< 0.250	0.250		µg/L	1	12/22/2020 4:07:37 PM
Thallium	< 0.250	0.250		µg/L	1	12/22/2020 4:07:37 PM

Qualifiers:

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

Analytical Report

(consolidated)

WO#: 20120773

Date Reported 12/29/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 12/15/2020 12:05:00 PM
Project: CCR Assessment Monitoring
Lab ID: 20120773-014 **Matrix:** AQUEOUS
Client Sample ID: CCR-14

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL				SW7470A	Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	12/18/2020 8:00:08 AM
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Fluoride	< 0.0500	0.0500		mg/L	1	12/17/2020 11:08:35 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Barium	0.0769	0.0100		mg/L	1	12/21/2020 5:28:54 PM
Beryllium	< 0.00100	0.00100		mg/L	1	12/21/2020 5:28:54 PM
Cadmium	< 0.00500	0.00500		mg/L	1	12/21/2020 5:28:54 PM
Chromium	< 0.0100	0.0100		mg/L	1	12/21/2020 5:28:54 PM
Cobalt	< 0.0100	0.0100		mg/L	1	12/21/2020 5:28:54 PM
Lead	< 0.0100	0.0100		mg/L	1	12/21/2020 5:28:54 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	12/21/2020 5:28:54 PM
Selenium	< 0.0200	0.0200		mg/L	1	12/21/2020 5:28:54 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	12/22/2020 4:10:25 PM
Arsenic	0.994	0.250		µg/L	1	12/22/2020 4:10:25 PM
Thallium	< 0.250	0.250		µg/L	1	12/22/2020 4:10:25 PM

Qualifiers:

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#: 20120773

Date Reported 12/29/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 12/14/2020
Project: CCR Assessment Monitoring
Lab ID: 20120773-015 **Matrix:** AQUEOUS
Client Sample ID Dup

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL				SW7470A	Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	12/18/2020 8:10:25 AM
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Fluoride	< 0.0500	0.0500		mg/L	1	12/17/2020 11:23:22 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Barium	0.105	0.0100		mg/L	1	12/21/2020 5:40:23 PM
Beryllium	< 0.00100	0.00100		mg/L	1	12/21/2020 5:40:23 PM
Cadmium	< 0.00500	0.00500		mg/L	1	12/21/2020 5:40:23 PM
Chromium	< 0.0100	0.0100		mg/L	1	12/21/2020 5:40:23 PM
Cobalt	< 0.0100	0.0100		mg/L	1	12/21/2020 5:40:23 PM
Lead	< 0.0100	0.0100		mg/L	1	12/21/2020 5:40:23 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	12/21/2020 5:40:23 PM
Selenium	< 0.0200	0.0200		mg/L	1	12/21/2020 5:40:23 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	12/22/2020 4:21:36 PM
Arsenic	0.295	0.250		µg/L	1	12/22/2020 4:21:36 PM
Thallium	< 0.250	0.250		µg/L	1	12/22/2020 4:21:36 PM

Qualifiers:

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#: 20120773

Date Reported 12/29/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 12/15/2020 2:20:00 PM
Project: CCR Assessment Monitoring
Lab ID: 20120773-016 **Matrix:** AQUEOUS
Client Sample ID FB 1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
MERCURY IN GROUND WATER, TOTAL				SW7470A	Analyst: BXB	
Mercury	< 0.000200	0.000200		mg/L	1	12/18/2020 8:12:41 AM
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Fluoride	0.0610	0.0500		mg/L	1	12/17/2020 5:58:00 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Barium	< 0.0100	0.0100		mg/L	1	12/21/2020 5:42:41 PM
Beryllium	< 0.00100	0.00100		mg/L	1	12/21/2020 5:42:41 PM
Cadmium	< 0.00500	0.00500		mg/L	1	12/21/2020 5:42:41 PM
Chromium	< 0.0100	0.0100		mg/L	1	12/21/2020 5:42:41 PM
Cobalt	< 0.0100	0.0100		mg/L	1	12/21/2020 5:42:41 PM
Lead	< 0.0100	0.0100		mg/L	1	12/21/2020 5:42:41 PM
Molybdenum	< 0.0100	0.0100		mg/L	1	12/21/2020 5:42:41 PM
Selenium	< 0.0200	0.0200		mg/L	1	12/21/2020 5:42:41 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: KML	
Antimony	< 0.250	0.250		µg/L	1	12/22/2020 4:24:24 PM
Arsenic	< 0.250	0.250		µg/L	1	12/22/2020 4:24:24 PM
Thallium	< 0.250	0.250		µg/L	1	12/22/2020 4:24:24 PM

Qualifiers:

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#: 20120773
29-Dec-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 37229

Sample ID: MB-37229	SampType: MBLK	TestCode: 6010_W	Units: mg/L	Prep Date: 12/16/2020	RunNo: 95904						
Client ID: PBW	Batch ID: 37229	TestNo: SW6010B		Analysis Date: 12/18/2020	SeqNo: 2344729						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	< 0.0100	0.0100									
Beryllium	< 0.00100	0.00100									
Cadmium	< 0.00500	0.00500									
Chromium	< 0.0100	0.0100									
Cobalt	< 0.0100	0.0100									
Lead	< 0.0100	0.0100									
Molybdenum	< 0.0100	0.0100									
Selenium	< 0.0200	0.0200									

Sample ID: LCS-37229	SampType: LCS	TestCode: 6010_W	Units: mg/L	Prep Date: 12/16/2020	RunNo: 95904						
Client ID: LCSW	Batch ID: 37229	TestNo: SW6010B		Analysis Date: 12/18/2020	SeqNo: 2344730						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.498	0.0100	0.5000	0	99.5	80	120				
Beryllium	0.503	0.00100	0.5000	0	101	80	120				
Cadmium	0.485	0.00500	0.5000	0	97.0	80	120				
Chromium	0.489	0.0100	0.5000	0	97.7	80	120				
Cobalt	0.492	0.0100	0.5000	0	98.4	80	120				
Lead	0.483	0.0100	0.5000	0	96.6	80	120				
Molybdenum	0.495	0.0100	0.5000	0	99.0	80	120				
Selenium	0.488	0.0200	0.5000	0	97.6	80	120				

Qualifiers:	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#: 20120773
29-Dec-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 37229

Sample ID: LCSD-37229	SampType: LCSD	TestCode: 6010_W	Units: mg/L	Prep Date: 12/16/2020	RunNo: 95904						
Client ID: LCSS02	Batch ID: 37229	TestNo: SW6010B		Analysis Date: 12/18/2020	SeqNo: 2344731						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.483	0.0100	0.5000	0	96.7	80	120	0.4976	2.91	20	
Beryllium	0.492	0.00100	0.5000	0	98.5	80	120	0.5028	2.10	20	
Cadmium	0.474	0.00500	0.5000	0	94.9	80	120	0.4851	2.26	20	
Chromium	0.478	0.0100	0.5000	0	95.5	80	120	0.4886	2.26	20	
Cobalt	0.478	0.0100	0.5000	0	95.7	80	120	0.4918	2.78	20	
Lead	0.477	0.0100	0.5000	0	95.3	80	120	0.4828	1.31	20	
Molybdenum	0.482	0.0100	0.5000	0	96.4	80	120	0.4951	2.68	20	
Selenium	0.474	0.0200	0.5000	0	94.8	80	120	0.4881	2.92	20	

Sample ID: 20120476-001EMS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 12/16/2020	RunNo: 95904						
Client ID: ZZZZZZ	Batch ID: 37229	TestNo: SW6010B		Analysis Date: 12/18/2020	SeqNo: 2344733						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.547	0.0100	0.5000	0.06477	96.5	75	125				
Beryllium	0.492	0.00100	0.5000	0	98.5	75	125				
Cadmium	0.472	0.00500	0.5000	0	94.5	75	125				
Chromium	0.481	0.0100	0.5000	0	96.2	75	125				
Cobalt	0.481	0.0100	0.5000	0	96.3	75	125				
Lead	0.472	0.0100	0.5000	0	94.4	75	125				
Molybdenum	0.486	0.0100	0.5000	0	97.2	75	125				
Selenium	0.476	0.0200	0.5000	0.008460	93.5	75	125				

Qualifiers:	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#: 20120773
29-Dec-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 37229

Sample ID: 20120476-001EMSD	SampType: MSD	TestCode: 6010_W	Units: mg/L	Prep Date: 12/16/2020	RunNo: 95904						
Client ID: ZZZZZZ	Batch ID: 37229	TestNo: SW6010B		Analysis Date: 12/18/2020	SeqNo: 2344734						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.544	0.0100	0.5000	0.06477	95.8	75	125	0.5473	0.627	20	
Beryllium	0.489	0.00100	0.5000	0	97.8	75	125	0.4925	0.674	20	
Cadmium	0.472	0.00500	0.5000	0	94.3	75	125	0.4724	0.150	20	
Chromium	0.479	0.0100	0.5000	0	95.7	75	125	0.4811	0.536	20	
Cobalt	0.480	0.0100	0.5000	0	96.0	75	125	0.4813	0.243	20	
Lead	0.472	0.0100	0.5000	0	94.3	75	125	0.4720	0.0975	20	
Molybdenum	0.480	0.0100	0.5000	0	96.1	75	125	0.4859	1.12	20	
Selenium	0.467	0.0200	0.5000	0.008460	91.6	75	125	0.4760	1.99	20	

Qualifiers:

E	Value above quantitation range
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#: 20120773
29-Dec-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 37230

Sample ID: MB-37230	SampType: MBLK	TestCode: 6020A_W	Units: µg/L	Prep Date: 12/16/2020	RunNo: 95985						
Client ID: PBW	Batch ID: 37230	TestNo: SW6020A		Analysis Date: 12/22/2020	SeqNo: 2346676						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	< 0.250	0.250									
Arsenic	< 0.250	0.250									
Thallium	< 0.250	0.250									

Sample ID: LCS-37230	SampType: LCS	TestCode: 6020A_W	Units: µg/L	Prep Date: 12/16/2020	RunNo: 95985						
Client ID: LCSW	Batch ID: 37230	TestNo: SW6020A		Analysis Date: 12/22/2020	SeqNo: 2346677						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	490	5.00	500.0	0	98.1	80	120				
Arsenic	466	5.00	500.0	0	93.2	80	120				
Thallium	499	5.00	500.0	0	99.7	80	120				

Sample ID: LCSD-37230	SampType: LCSD	TestCode: 6020A_W	Units: µg/L	Prep Date: 12/16/2020	RunNo: 95985						
Client ID: LCSS02	Batch ID: 37230	TestNo: SW6020A		Analysis Date: 12/22/2020	SeqNo: 2346678						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	475	5.00	500.0	0	95.0	80	120	490.5	3.19	20	
Arsenic	464	5.00	500.0	0	92.7	80	120	466.1	0.530	20	
Thallium	485	5.00	500.0	0	97.0	80	120	498.5	2.79	20	

Qualifiers:

E	Value above quantitation range
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#: 20120773
29-Dec-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 37230

Sample ID: 20120476-001EMS	SampType: MS	TestCode: 6020A_W	Units: µg/L	Prep Date: 12/16/2020	RunNo: 95985						
Client ID: ZZZZZZ	Batch ID: 37230	TestNo: SW6020A		Analysis Date: 12/22/2020	SeqNo: 2346681						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	469	5.00	500.0	0.2029	93.8	75	125				
Arsenic	458	5.00	500.0	0.08378	91.5	75	125				
Thallium	482	5.00	500.0	0.2362	96.4	75	125				

Sample ID: 20120476-001EMSD	SampType: MSD	TestCode: 6020A_W	Units: µg/L	Prep Date: 12/16/2020	RunNo: 95985						
Client ID: ZZZZZZ	Batch ID: 37230	TestNo: SW6020A		Analysis Date: 12/22/2020	SeqNo: 2346685						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	476	5.00	500.0	0.2029	95.2	75	125	469.2	1.53	20	
Arsenic	467	5.00	500.0	0.08378	93.5	75	125	457.7	2.12	20	
Thallium	488	5.00	500.0	0.2362	97.6	75	125	482.1	1.32	20	

Qualifiers:

E	Value above quantitation range
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#: 20120773
29-Dec-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 37245

Sample ID: MB-37245	SampType: MBLK	TestCode: HG_W_7470A	Units: mg/L	Prep Date: 12/17/2020	RunNo: 95874						
Client ID: PBW	Batch ID: 37245	TestNo: SW7470A		Analysis Date: 12/18/2020	SeqNo: 2343949						
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: LCSD-37245	SampType: LCSD	TestCode: HG_W_7470A	Units: mg/L	Prep Date: 12/17/2020	RunNo: 95874						
Client ID: LCSS02	Batch ID: 37245	TestNo: SW7470A		Analysis Date: 12/18/2020	SeqNo: 2343951						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	0.0109	0.000200	0.01000	0	109	80	120	0.01195	9.63	20	
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Sample ID: 20120773-014BMS	SampType: MS	TestCode: HG_W_7470A	Units: mg/L	Prep Date: 12/17/2020	RunNo: 95874						
Client ID: CCR-14	Batch ID: 37245	TestNo: SW7470A		Analysis Date: 12/18/2020	SeqNo: 2343973						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	0.00390	0.000200	0.01000	0	39.0	75	125				S
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Sample ID: 20120773-014BMSD	SampType: MSD	TestCode: HG_W_7470A	Units: mg/L	Prep Date: 12/17/2020	RunNo: 95874						
Client ID: CCR-14	Batch ID: 37245	TestNo: SW7470A		Analysis Date: 12/18/2020	SeqNo: 2343974						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	0.00617	0.000200	0.01000	0	61.7	75	125	0.003904	45.0	20	RS
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NOTES:

MS/MSD recoveries were outside of QC limits. PDS/PDSD recoveries were within the acceptance limits. The method is in control as indicated by the Lab Control Sample(s).

Qualifiers:

E	Value above quantitation range
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#: 20120773
29-Dec-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 37245

Sample ID: LCS-37245	SampType: LCS	TestCode: HG_W_7470A	Units: mg/L	Prep Date: 12/17/2020	RunNo: 95874						
Client ID: LCSW	Batch ID: 37245	TestNo: SW7470A		Analysis Date: 12/18/2020	SeqNo: 2343999						
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	80	120				

Qualifiers:

E	Value above quantitation range
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#: 20120773

29-Dec-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 37272

Sample ID: 20120775-014BMS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 12/18/2020	RunNo: 95967						
Client ID: ZZZZZZ	Batch ID: 37272	TestNo: SW6010B		Analysis Date: 12/21/2020	SeqNo: 2346417						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.543	0.0100	0.5000	0.07688	93.2	75	125				
Beryllium	0.476	0.00100	0.5000	0	95.1	75	125				
Cadmium	0.459	0.00500	0.5000	0	91.7	75	125				
Chromium	0.465	0.0100	0.5000	0.0008400	92.8	75	125				
Cobalt	0.464	0.0100	0.5000	0	92.8	75	125				
Lead	0.457	0.0100	0.5000	0	91.4	75	125				
Molybdenum	0.467	0.0100	0.5000	0	93.3	75	125				
Selenium	0.461	0.0200	0.5000	0	92.2	75	125				

Sample ID: 20120775-014BMSD	SampType: MSD	TestCode: 6010_W	Units: mg/L	Prep Date: 12/18/2020	RunNo: 95967						
Client ID: ZZZZZZ	Batch ID: 37272	TestNo: SW6010B		Analysis Date: 12/21/2020	SeqNo: 2346418						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.553	0.0100	0.5000	0.07688	95.2	75	125	0.5431	1.83	20	
Beryllium	0.481	0.00100	0.5000	0	96.3	75	125	0.4757	1.18	20	
Cadmium	0.468	0.00500	0.5000	0	93.5	75	125	0.4586	1.94	20	
Chromium	0.472	0.0100	0.5000	0.0008400	94.3	75	125	0.4647	1.66	20	
Cobalt	0.469	0.0100	0.5000	0	93.8	75	125	0.4640	1.11	20	
Lead	0.468	0.0100	0.5000	0	93.7	75	125	0.4570	2.44	20	
Molybdenum	0.479	0.0100	0.5000	0	95.7	75	125	0.4667	2.50	20	
Selenium	0.469	0.0200	0.5000	0	93.7	75	125	0.4609	1.67	20	

Qualifiers:

E	Value above quantitation range
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



Element Materials Technology Lafayette
2417 W. Pinhook Road
Lafayette, LA 70508-3344
TEL: (337) 235-0483 FAX: (337) 233-6546
Website: www.element.com

QC SUMMARY REPORT

WO#: 20120773
29-Dec-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 37272

Sample ID: MB-37272	SampType: MBLK	TestCode: 6010_W	Units: mg/L	Prep Date: 12/18/2020	RunNo: 95966						
Client ID: PBW	Batch ID: 37272	TestNo: SW6010B		Analysis Date: 12/21/2020	SeqNo: 2346318						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	< 0.0100	0.0100									
Beryllium	< 0.00100	0.00100									
Cadmium	< 0.00500	0.00500									
Chromium	< 0.0100	0.0100									
Cobalt	< 0.0100	0.0100									
Lead	< 0.0100	0.0100									
Molybdenum	< 0.0100	0.0100									
Selenium	< 0.0200	0.0200									

Sample ID: LCS-37272	SampType: LCS	TestCode: 6010_W	Units: mg/L	Prep Date: 12/18/2020	RunNo: 95966						
Client ID: LCSW	Batch ID: 37272	TestNo: SW6010B		Analysis Date: 12/21/2020	SeqNo: 2346319						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.483	0.0100	0.5000	0	96.5	80	120				
Beryllium	0.490	0.00100	0.5000	0	98.0	80	120				
Cadmium	0.473	0.00500	0.5000	0	94.6	80	120				
Chromium	0.475	0.0100	0.5000	0	95.0	80	120				
Cobalt	0.478	0.0100	0.5000	0	95.7	80	120				
Lead	0.473	0.0100	0.5000	0	94.6	80	120				
Molybdenum	0.483	0.0100	0.5000	0	96.7	80	120				
Selenium	0.473	0.0200	0.5000	0	94.6	80	120				

Qualifiers:

E	Value above quantitation range
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
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QC SUMMARY REPORT

WO#: 20120773

29-Dec-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 37272

Sample ID: LCSD-37272	SampType: LCSD	TestCode: 6010_W	Units: mg/L	Prep Date: 12/18/2020	RunNo: 95966						
Client ID: LCSS02	Batch ID: 37272	TestNo: SW6010B		Analysis Date: 12/21/2020	SeqNo: 2346320						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.476	0.0100	0.5000	0	95.2	80	120	0.4826	1.34	20	
Beryllium	0.484	0.00100	0.5000	0	96.8	80	120	0.4899	1.17	20	
Cadmium	0.464	0.00500	0.5000	0	92.8	80	120	0.4730	1.95	20	
Chromium	0.470	0.0100	0.5000	0	94.0	80	120	0.4752	1.13	20	
Cobalt	0.473	0.0100	0.5000	0	94.6	80	120	0.4783	1.08	20	
Lead	0.464	0.0100	0.5000	0	92.8	80	120	0.4731	1.96	20	
Molybdenum	0.479	0.0100	0.5000	0	95.9	80	120	0.4835	0.854	20	
Selenium	0.474	0.0200	0.5000	0	94.7	80	120	0.4729	0.150	20	

Sample ID: 20120773-014BMS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 12/18/2020	RunNo: 95966						
Client ID: CCR-14	Batch ID: 37272	TestNo: SW6010B		Analysis Date: 12/21/2020	SeqNo: 2346330						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.543	0.0100	0.5000	0.07688	93.2	75	125				
Beryllium	0.476	0.00100	0.5000	0	95.1	75	125				
Cadmium	0.459	0.00500	0.5000	0	91.7	75	125				
Chromium	0.465	0.0100	0.5000	0.0008400	92.8	75	125				
Cobalt	0.464	0.0100	0.5000	0	92.8	75	125				
Lead	0.457	0.0100	0.5000	0	91.4	75	125				
Molybdenum	0.467	0.0100	0.5000	0	93.3	75	125				
Selenium	0.461	0.0200	0.5000	0	92.2	75	125				

Qualifiers:

E	Value above quantitation range
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

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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#: 20120773
29-Dec-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 37272

Sample ID: 20120773-014BMSD	SampType: MSD	TestCode: 6010_W	Units: mg/L	Prep Date: 12/18/2020	RunNo: 95966						
Client ID: CCR-14	Batch ID: 37272	TestNo: SW6010B		Analysis Date: 12/21/2020	SeqNo: 2346331						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.553	0.0100	0.5000	0.07688	95.2	75	125	0.5431	1.83	20	
Beryllium	0.481	0.00100	0.5000	0	96.3	75	125	0.4757	1.18	20	
Cadmium	0.468	0.00500	0.5000	0	93.5	75	125	0.4586	1.94	20	
Chromium	0.472	0.0100	0.5000	0.0008400	94.3	75	125	0.4647	1.66	20	
Cobalt	0.469	0.0100	0.5000	0	93.8	75	125	0.4640	1.11	20	
Lead	0.468	0.0100	0.5000	0	93.7	75	125	0.4570	2.44	20	
Molybdenum	0.479	0.0100	0.5000	0	95.7	75	125	0.4667	2.50	20	
Selenium	0.469	0.0200	0.5000	0	93.7	75	125	0.4609	1.67	20	

Qualifiers:

E	Value above quantitation range
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
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QC SUMMARY REPORT

WO#: 20120773
29-Dec-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 37273

Sample ID: MB-37273	SampType: MBLK	TestCode: 6020A_W	Units: µg/L	Prep Date: 12/18/2020	RunNo: 95986						
Client ID: PBW	Batch ID: 37273	TestNo: SW6020A		Analysis Date: 12/22/2020	SeqNo: 2346770						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	< 0.250	0.250									
Arsenic	< 0.250	0.250									
Thallium	< 0.250	0.250									

Sample ID: LCS-37273	SampType: LCS	TestCode: 6020A_W	Units: µg/L	Prep Date: 12/18/2020	RunNo: 95986						
Client ID: LCSW	Batch ID: 37273	TestNo: SW6020A		Analysis Date: 12/22/2020	SeqNo: 2346771						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	463	5.00	500.0	0	92.6	80	120				
Arsenic	462	5.00	500.0	0	92.4	80	120				
Thallium	483	5.00	500.0	0	96.7	80	120				

Sample ID: LCSD-37273	SampType: LCSD	TestCode: 6020A_W	Units: µg/L	Prep Date: 12/18/2020	RunNo: 95986						
Client ID: LCSS02	Batch ID: 37273	TestNo: SW6020A		Analysis Date: 12/22/2020	SeqNo: 2346772						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	464	5.00	500.0	0	92.9	80	120	462.9	0.345	20	
Arsenic	471	5.00	500.0	0	94.2	80	120	462.0	1.98	20	
Thallium	479	5.00	500.0	0	95.7	80	120	483.3	0.986	20	

Qualifiers:

E	Value above quantitation range
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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Website: www.element.com

QC SUMMARY REPORT

WO#: 20120773
29-Dec-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: 37273

Sample ID: 20120773-014BMS	SampType: MS	TestCode: 6020A_W	Units: µg/L	Prep Date: 12/18/2020	RunNo: 95986						
Client ID: CCR-14	Batch ID: 37273	TestNo: SW6020A		Analysis Date: 12/22/2020	SeqNo: 2346785						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	465	5.00	500.0	0	93.1	75	125				
Arsenic	488	5.00	500.0	0.9943	97.4	75	125				
Thallium	468	5.00	500.0	0	93.6	75	125				

Sample ID: 20120773-014BMSD	SampType: MSD	TestCode: 6020A_W	Units: µg/L	Prep Date: 12/18/2020	RunNo: 95986						
Client ID: CCR-14	Batch ID: 37273	TestNo: SW6020A		Analysis Date: 12/22/2020	SeqNo: 2346786						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	468	5.00	500.0	0	93.6	75	125	465.4	0.526	20	
Arsenic	486	5.00	500.0	0.9943	96.9	75	125	487.8	0.437	20	
Thallium	471	5.00	500.0	0	94.1	75	125	468.1	0.527	20	

Qualifiers:

E	Value above quantitation range
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#: 20120773
29-Dec-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: R95859

Sample ID: MBLK	SampType: MBLK	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 95859						
Client ID: PBW	Batch ID: R95859	TestNo: E 300.0		Analysis Date: 12/17/2020	SeqNo: 2343493						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride < 0.0500 0.0500

Sample ID: LCS	SampType: LCS	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 95859						
Client ID: LCSW	Batch ID: R95859	TestNo: E 300.0		Analysis Date: 12/17/2020	SeqNo: 2343494						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride 1.85 0.0500 2.000 0 92.4 90 110

Sample ID: LCSD	SampType: LCSD	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 95859						
Client ID: LCSS02	Batch ID: R95859	TestNo: E 300.0		Analysis Date: 12/17/2020	SeqNo: 2343495						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride 1.85 0.0500 2.000 0 92.6 90 110 1.848 0.188 15

Sample ID: 20120691-001BMS	SampType: MS	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 95859						
Client ID: ZZZZZZ	Batch ID: R95859	TestNo: E 300.0		Analysis Date: 12/17/2020	SeqNo: 2343497						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Fluoride 8.70 0.500 10.00 0.2982 84.1 80 120

Qualifiers:

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#: 20120773
29-Dec-20

Client: Pivotal Engineering LLC
Project: CCR Assessment Monitoring

BatchID: R95859

Sample ID: 20120691-001BMSD	SampType: MSD	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 95859						
Client ID: ZZZZZZ	Batch ID: R95859	TestNo: E 300.0		Analysis Date: 12/17/2020	SeqNo: 2343498						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	8.78	0.500	10.00	0.2982	84.8	80	120	8.705	0.891	15	

Sample ID: 20120773-014AMS	SampType: MS	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 95859						
Client ID: CCR-14	Batch ID: R95859	TestNo: E 300.0	Analysis Date: 12/17/2020	SeqNo: 2343515							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	4.06	0.250	5.000	0.1814	77.7	80	120				S

NOTES:

S - Spike recovery outside of recovery limits. The method is in control for the analyte(s) as indicated by the LCS/LCSD and sample matrix spike duplicate

Sample ID: 20120773-014AMSD	SampType: MSD	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 95859						
Client ID: CCR-14	Batch ID: R95859	TestNo: E 300.0		Analysis Date: 12/17/2020	SeqNo: 2343516						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	4.61	0.250	5.000	0.1814	88.7	80	120	4.064	12.7	15	

Qualifiers:

E	Value above quantitation range
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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Sample Log-In Check List

Client Name: **PIVOTAL_ENGINEERIN**

Work Order Number: **20120773**

RcptNo: **1**

Logged by: **Tammy Thibodeaux** **12/16/2020 7:00:00 AM**

Tammy Thibodeaux

Completed By: **Tammy Thibodeaux** **12/16/2020 7:54:23 AM**

Tammy Thibodeaux

Reviewed By: **Caitlin Duplantis** **12/17/2020 8:21:07 AM**

Caitlin Duplantis

Chain of Custody

1. Is Chain of Custody complete? Yes ☐ No ☒ Not Present ☐
2. How was the sample delivered? Drop Off Box

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 $>0^{\circ}\text{C}$ 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?
(Note discrepancies on chain of custody) Yes ☒ No ☐
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?
(If no, notify customer for authorization.) Yes ☒ No ☐

Special Handling (if applicable)

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

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

18. Additional remarks:

Incomplete custody signature(s) prior to receipt by Element personnel
Added year of collection to COC as per samples received.

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.0	Good	Not Present			



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Sample Log-In Check List

Client Name: **PIVOTAL_ENGINEERIN**

Work Order Number: **20120773**

RcptNo: 1

2	2.8	Good	Not Present			
3	4.1	Good	Not Present			



LELAP CERTIFICATE NUMBER: 01955
DOD-ELAP ACCREDITATION NUMBER: 74960

ANALYTICAL RESULTS

PERFORMED BY

Pace Analytical Gulf Coast
7979 Innovation Park Dr.
Baton Rouge, LA 70820
(225) 769-4900

Report Date 12/28/2020

Report # 220121707



Project 20120773

<i>Deliver To</i>	<i>Additional Recipients</i>
Annie Reedy Element Materials Technology 2417 W Pinhook Rd Lafayette, LA 70508 800-737-2378	Kelli Foreman, Element Materials Technology Caitlin Duplantis, Element Materials Technology Cristina Thibeaux, Element Materials Technology Rhonda David, Element Materials Technology Buffy Bryant, Element Materials Technology



Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with Pace Gulf Coast's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
NO	Indicates the sample did not ignite when preliminary test performed for EPA Method 1030
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
DL	Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
CF	HPLC or GC Confirmation
00:01	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
J	DOD flag on analyte in the parent sample for MS/MSD outside acceptance criteria
U	Indicates the compound was analyzed for but not detected
B or V	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*	Indicates a non-compliant or not applicable QC recovery or RPD – see narrative
E	Organics - The result is estimated because it exceeded the instrument calibration range
E	Metals - % difference for the serial dilution is > 10%
L	Reporting Limits adjusted to meet risk-based limit.
P	RPD between primary and confirmation result is greater than 40
DL	Diluted analysis – when appended to Client Sample ID

Sample receipt at Pace Gulf Coast is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of Pace Gulf Coast. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with The NELAC Institute (TNI) Standard 2009 and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.



Authorized Signature
Pace Gulf Coast Report 220121707

Certifications

Certification	Certification Number
DOD ELAP	74960
Alabama	01955
Arkansas	88-0655
Colorado	01955
Delaware	01955
Florida	E87854
Georgia	01955
Hawaii	01955
Idaho	01955
Illinois	200048
Indiana	01955
Kansas	E-10354
Kentucky	95
Louisiana	01955
Maryland	01955
Massachusetts	01955
Michigan	01955
Mississippi	01955
Missouri	01955
Montana	N/A
Nebraska	01955
New Mexico	01955
North Carolina	618
North Dakota	R-195
Oklahoma	9403
South Carolina	73006001
South Dakota	01955
Tennessee	01955
Texas	T104704178
Vermont	01955
Virginia	460215
Washington	C929
USDA Soil Permit	P330-16-00234



Report#: 220121707

Project ID: 20120773

Report Date: 12/28/2020

Case Narrative

Client: Element Materials Technology **Report:** 220121707

Pace Analytical Gulf Coast received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

No anomalies were found for the analyzed sample(s).



Report#: 220121707

Project ID: 20120773

Report Date: 12/28/2020

Sample Summary

LAB ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
22012170701	CCR-1	Water	12/14/2020 11:35	12/17/2020 09:28
22012170702	CCR-2	Water	12/14/2020 10:40	12/17/2020 09:28
22012170703	CCR-3	Water	12/14/2020 09:55	12/17/2020 09:28
22012170704	CCR-4	Water	12/14/2020 12:25	12/17/2020 09:28
22012170705	CCR-5	Water	12/14/2020 13:25	12/17/2020 09:28
22012170706	CCR-6	Water	12/14/2020 14:15	12/17/2020 09:28
22012170707	CCR-7	Water	12/14/2020 15:05	12/17/2020 09:28
22012170708	CCR-8	Water	12/14/2020 15:45	12/17/2020 09:28
22012170709	CCR-9	Water	12/15/2020 10:55	12/17/2020 09:28
22012170710	CCR-10	Water	12/15/2020 10:10	12/17/2020 09:28
22012170711	CCR-11	Water	12/15/2020 09:20	12/17/2020 09:28
22012170712	CCR-12	Water	12/15/2020 14:10	12/17/2020 09:28
22012170713	CCR-13	Water	12/15/2020 13:20	12/17/2020 09:28
22012170714	CCR-14	Water	12/15/2020 12:05	12/17/2020 09:28
22012170715	DUP	Water	12/14/2020 00:01	12/17/2020 09:28
22012170716	FB-1	Water	12/15/2020 14:20	12/17/2020 09:28
22012170717	20120773-014C-MS	Water	12/15/2020 12:05	12/17/2020 09:28
22012170718	20120773-014C-MSD	Water	12/15/2020 12:05	12/17/2020 09:28



Report#: 220121707

Project ID: 20120773

Report Date: 12/28/2020

Sample Results

CCR-1

Collect Date 12/14/2020 11:35

LAB ID 22012170701

Receive Date 12/17/2020 09:28

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/18/2020 07:00	699942	EPA 3010A	1	12/21/2020 15:19	LWZ	700228

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	22.4	5.00	ug/L

CCR-2

Collect Date 12/14/2020 10:40

LAB ID 22012170702

Receive Date 12/17/2020 09:28

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/18/2020 07:00	699942	EPA 3010A	1	12/21/2020 15:24	LWZ	700228

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	21.8	5.00	ug/L

CCR-3

Collect Date 12/14/2020 09:55

LAB ID 22012170703

Receive Date 12/17/2020 09:28

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/18/2020 07:00	699942	EPA 3010A	1	12/21/2020 15:28	LWZ	700228

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	27.1	5.00	ug/L

CCR-4

Collect Date 12/14/2020 12:25

LAB ID 22012170704

Receive Date 12/17/2020 09:28

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/18/2020 07:00	699942	EPA 3010A	1	12/21/2020 15:33	LWZ	700228

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	17.4	5.00	ug/L



Report#: 220121707

Project ID: 20120773

Report Date: 12/28/2020

Sample Results

CCR-5

Collect Date 12/14/2020 13:25

LAB ID 22012170705

Receive Date 12/17/2020 09:28

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/18/2020 07:00	699942	EPA 3010A	1	12/21/2020 15:37	LWZ	700228

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	19.8	5.00	ug/L

CCR-6

Collect Date 12/14/2020 14:15

LAB ID 22012170706

Receive Date 12/17/2020 09:28

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/18/2020 07:00	699942	EPA 3010A	1	12/21/2020 15:42	LWZ	700228

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	13.6	5.00	ug/L

CCR-7

Collect Date 12/14/2020 15:05

LAB ID 22012170707

Receive Date 12/17/2020 09:28

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/18/2020 07:00	699942	EPA 3010A	1	12/21/2020 15:46	LWZ	700228

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	12.4	5.00	ug/L



Report#: 220121707

Project ID: 20120773

Report Date: 12/28/2020

Sample Results

CCR-8

Collect Date 12/14/2020 15:45

LAB ID 22012170708

Receive Date 12/17/2020 09:28

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/18/2020 07:00	699942	EPA 3010A	1	12/21/2020 15:51	LWZ	700228

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	33.1	5.00	ug/L

CCR-9

Collect Date 12/15/2020 10:55

LAB ID 22012170709

Receive Date 12/17/2020 09:28

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/18/2020 07:00	699942	EPA 3010A	1	12/21/2020 15:56	LWZ	700228

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	12.6	5.00	ug/L

CCR-10

Collect Date 12/15/2020 10:10

LAB ID 22012170710

Receive Date 12/17/2020 09:28

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/18/2020 07:00	699942	EPA 3010A	1	12/21/2020 16:00	LWZ	700228

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	8.57	5.00	ug/L



Report#: 220121707

Project ID: 20120773

Report Date: 12/28/2020

Sample Results

CCR-11

Collect Date 12/15/2020 09:20

LAB ID 22012170711

Receive Date 12/17/2020 09:28

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/18/2020 07:00	699942	EPA 3010A	1	12/21/2020 16:17	LWZ	700228

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	7.75	5.00	ug/L

CCR-12

Collect Date 12/15/2020 14:10

LAB ID 22012170712

Receive Date 12/17/2020 09:28

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/18/2020 07:00	699942	EPA 3010A	1	12/21/2020 16:22	LWZ	700228

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	25.7	5.00	ug/L

CCR-13

Collect Date 12/15/2020 13:20

LAB ID 22012170713

Receive Date 12/17/2020 09:28

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/18/2020 07:00	699942	EPA 3010A	1	12/21/2020 16:26	LWZ	700228

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	15.5	5.00	ug/L



Report#: 220121707

Project ID: 20120773

Report Date: 12/28/2020

Sample Results

CCR-14

Collect Date 12/15/2020 12:05

LAB ID 22012170714

Receive Date 12/17/2020 09:28

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/18/2020 07:00	699942	EPA 3010A	1	12/21/2020 16:31	LWZ	700228

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	15.0	5.00	ug/L

DUP

Collect Date 12/14/2020 00:01

LAB ID 22012170715

Receive Date 12/17/2020 09:28

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/18/2020 07:00	699942	EPA 3010A	1	12/21/2020 16:54	LWZ	700228

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	ND	5.00	ug/L

FB-1

Collect Date 12/15/2020 14:20

LAB ID 22012170716

Receive Date 12/17/2020 09:28

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/18/2020 07:00	699942	EPA 3010A	1	12/21/2020 16:58	LWZ	700228

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	17.5	5.00	ug/L



Report#: 220121707

Project ID: 20120773

Report Date: 12/28/2020

Sample Results

20120773-014C-MS

Collect Date 12/15/2020 12:05

LAB ID 22012170717

Receive Date 12/17/2020 09:28

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/18/2020 07:00	699942	EPA 3010A	1	12/21/2020 16:36	LWZ	700228

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	244	5.00	ug/L

20120773-014C-MSD

Collect Date 12/15/2020 12:05

LAB ID 22012170718

Receive Date 12/17/2020 09:28

Matrix Water

EPA 6020B

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
12/18/2020 07:00	699942	EPA 3010A	1	12/21/2020 16:40	LWZ	700228

CAS#	Parameter	Result	LOQ	Units
7439-93-2	Lithium	258	5.00	ug/L



Report#: 220121707

Project ID: 20120773

Report Date: 12/28/2020

Inorganics QC Summary

Analytical Batch 700228	Client ID LAB ID	MB699942 2125705	LCS699942 2125707				
Prep Batch 699942	Sample Type Prep Date	MB 12/18/20 07:00	LCS 12/18/20 07:00				
Prep Method EPA 3010A	Analysis Date Matrix	12/21/20 15:10 Water	12/21/20 15:15 Water				
EPA 6020B		Units Result	ug/L LOQ	Spike Added	Result	%R	Control Limits%R
Lithium	7439-93-2	ND	5.00	250	229	91	80 - 120

Analytical Batch 700228	Client ID LAB ID	CCR-14 22012170714	20120773-014C-MS 22012170717					20120773-014C-MSD 22012170718				
Prep Batch 699942	Sample Type Prep Date	SAMPLE 12/18/2020 07:00	MS 12/18/20 07:00					MSD 12/18/20 07:00				
Prep Method EPA 3010A	Analysis Date Matrix	12/21/2020 16:31 Water	12/21/20 16:36 Water					12/21/20 16:40 Water				
EPA 6020B		Units Result	ug/L LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Lithium	7439-93-2	15.0	5.00	250	244	92	80 - 120	250	258	97	6	20



CHAIN OF CUSTODY RECORD

Omega COCID 9923

Client ID: 4462 - Element Materials Technology

SDG: 220121707

PM: JLM



FAX: (337) 233-6540

Website: www.element.com

SUB CONTRACTOR: GCAL		COMPANY: Pace Analytical (FKA GCAL)		SPECIAL INSTRUCTIONS / COMMENTS:			
ADDRESS: 7979 GSRI Avenue				ELA 034978 PO			
CITY, STATE, ZIP: Baton Rouge, LA 70820							
PHONE: (225) 769-4900		FAX: (225) 767-5717		EMAIL:			
ACCOUNT #:							
ITEM #	SAMPLE ID	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	DATE COLLECTED	NUMBER OF CONTAINERS	COMMENTS: Methanol Preserved Weights HOT Sample Notation, Additional Sample Description.
1	20120773-001C 6020_W_SUB (SW6020A)	CCR-1	250HDEPHNO3	Aqueous	12/14/2020 11:35:00 AM	1	1
2	20120773-002C 6020_W_SUB (SW6020A)	CCR-2	250HDEPHNO3	Aqueous	12/14/2020 10:40:00 AM	1	2
3	20120773-003C 6020_W_SUB (SW6020A)	CCR-3	250HDEPHNO3	Aqueous	12/14/2020 9:55:00 AM	1	3
4	20120773-004C 6020_W_SUB (SW6020A)	CCR-4	250HDEPHNO3	Aqueous	12/14/2020 12:25:00 PM	1	4
5	20120773-005C 6020_W_SUB (SW6020A)	CCR-5	250HDEPHNO3	Aqueous	12/14/2020 1:25:00 PM	1	5
6	20120773-006C 6020_W_SUB (SW6020A)	CCR-6	250HDEPHNO3	Aqueous	12/14/2020 2:15:00 PM	1	6
7	20120773-007C 6020_W_SUB (SW6020A)	CCR-7	250HDEPHNO3	Aqueous	12/14/2020 3:05:00 PM	1	7
8	20120773-008C 6020_W_SUB (SW6020A)	CCR-8	250HDEPHNO3	Aqueous	12/14/2020 3:45:00 PM	1	8
9	20120773-009C 6020_W_SUB (SW6020A)	CCR-9	250HDEPHNO3	Aqueous	12/15/2020 10:55:00 AM	1	9

Relinquished By: <i>[Signature]</i>	Date: <i>12/17/20</i>	Time: <i>0705</i>	Received By: <i>[Signature]</i>	Date: <i>12/17/20</i>	Time: <i>0705</i>	REPORT TRANSMITTAL DESIRED: <input type="checkbox"/> HARDCOPY (extra cost) <input type="checkbox"/> FAX <input type="checkbox"/> EMAIL <input type="checkbox"/> ONLINE
Relinquished By: <i>[Signature]</i>	Date: <i>12/17/20</i>	Time: <i>0705</i>	Received By: <i>[Signature]</i>	Date: <i>12/17/20</i>	Time: <i>0705</i>	
Relinquished By: <i>[Signature]</i>	Date: <i>12/17/20</i>	Time: <i>0705</i>	Received By: <i>[Signature]</i>	Date: <i>12/17/20</i>	Time: <i>0705</i>	
TAT: <input type="checkbox"/> Standard <input checked="" type="checkbox"/> RUSH <input type="checkbox"/> Next BD <input type="checkbox"/> 2nd BD <input type="checkbox"/> 3rd BD <input type="checkbox"/>						FOR LAB USE ONLY
Note: RUSH requests will incur surcharges!						Temp of samples <i>0.7 E34</i> °C Attempt to Cool ? _____
						Comments: _____



CHAIN OF CUSTODY RECORD

Omega COCID 9923

Client ID: 4462 - Element Materials Technology

SDG: 220121707

PM: JLM



TEL: (337) 233-0463
FAX: (337) 233-6540
Website: www.element.com

SUB CONTRACTOR: GCAL		COMPANY: Pace Analytical (FKA GCAL)		SPECIAL INSTRUCTIONS / COMMENTS:			
ADDRESS: 7979 GSRI Avenue		ELA 034978 PO					
CITY, STATE, ZIP: Baton Rouge, LA 70820							
PHONE: (225) 769-4900 FAX: (225) 767-5717 EMAIL:							
ACCOUNT #:							
ITEM #	SAMPLE ID	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	DATE COLLECTED	NUMBER OF CONTAINERS	COMMENTS: Methanol Preserved Weights HOT Sample Notation, Additional Sample Description.
10	20120773-010C 6020_W_SUB (SW6020A)	CCR-10	250HDPEHNO3	Aqueous	12/15/2020 10:10:00 AM	1	10
11	20120773-011C 6020_W_SUB (SW6020A)	CCR-11	250HDPEHNO3	Aqueous	12/15/2020 9:20:00 AM	1	11
12	20120773-012C 6020_W_SUB (SW6020A)	CCR-12	250HDPEHNO3	Aqueous	12/15/2020 2:10:00 PM	1	12
13	20120773-013C 6020_W_SUB (SW6020A)	CCR-13	250HDPEHNO3	Aqueous	12/15/2020 1:20:00 PM	1	13
14	20120773-014C 6020_W_SUB (SW6020A)	CCR-14	250HDPEHNO3	Aqueous	12/15/2020 12:05:00 PM	3	17,18 14
15	20120773-015C 6020_W_SUB (SW6020A)	Dup	250HDPEHNO3	Aqueous	12/14/2020	1	15 15/16
16	20120773-016C 6020_W_SUB (SW6020A)	FB 1	250HDPEHNO3	Aqueous	12/15/2020 2:20:00 PM	1	16 16/17

Relinquished By: <i>[Signature]</i>	Date: <i>12/17/20</i>	Time: <i>0705</i>	Received By: <i>[Signature]</i>	Date: <i>12/17/20</i>	Time: <i>0705</i>	REPORT TRANSMITTAL DESIRED:	
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	<input type="checkbox"/> HARDCOPY (extra cost) <input type="checkbox"/> FAX <input type="checkbox"/> EMAIL <input type="checkbox"/> ONLINE	
Relinquished By: <i>[Signature]</i>	Date: <i>12/17/20</i>	Time:	Received By: <i>[Signature]</i>	Date: <i>12/17/20</i>	Time: <i>928</i>	FOR LAB USE ONLY	
TAT: <input type="checkbox"/> Standard <input checked="" type="checkbox"/> RUSH <input type="checkbox"/> Next BD <input type="checkbox"/> 2nd BD <input type="checkbox"/> 3rd BD <input type="checkbox"/>						Temp of samples <i>0.7E34°C</i> Attempt to Cool? _____	
Note: RUSH requests will incur surcharges!						Comments: _____	



SAMPLE RECEIVING CHECKLIST



SAMPLE DELIVERY GROUP 220121707			CHECKLIST		YES	NO
Client PM JLM 4462 - Element Materials Technology	Transport Method CUST		Samples received with proper thermal preservation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Radioactivity is <1600 cpm? If no, record cpm value in notes section.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Profile Number 271810	Received By McCune, Dodie N. Jenkins, Mark A.		COC relinquished and complete (including sampleIDs, collect times, and sampler)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			All containers received in good condition and within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Line Item(s) 1 - Water	Receive Date(s) 12/17/20		All sample labels and containers received match the chain of custody?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Preservative added to any containers?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
			If received, was headspace for VOC water containers < 6mm?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
			Samples collected in containers provided by Pace Gulf Coast?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
COOLERS			DISCREPANCIES	LAB PRESERVATIONS		
Airbill	Thermometer ID: E34	Temp °C	None	None		
		0.7				
NOTES						



- ☐ 2203 S. Madison St., Muncie, IN 47302
765-747-9000/800-874-3563 Fax 765-747-0228
- ☐ 629 Washington St., Suite 300, Columbus, IN 47201
812-375-0531 Fax 812-375-0531
- ☐ 5738 Industrial Rd., Fort Wayne, IN 46825
219-471-7000 Fax 219-471-7777

- ☒ 2417 W. Pinhook Rd, Lafayette, LA 70508
337-235-0483/800-737-2378
Fax 337-233-6540
- ☐ 3445 S Sheridan, Tulsa, OK 74145
918-828-9977/800324-5757
Fax 918-828-7756

Page 1 of 2

Chain of Custody Record

Laboratory Number 20120713

Client Name: Pivotal Engineering LLC		Project: CCR Assessment Monitoring		Preserv. HCl HNO ₃ H ₂ SO ₄ NaOH Na ₂ S ₂ O ₃	Number / Type of Container	Matrix Code	Test Requested										Comments / Remarks	
Contact Name: Terry Elnaggar		Quote #: 5346					300: Fluoride	*6010/**6020 metals	***6020 Sub	7470 Mercury								
Phone/Fax: (504) 799-3653		Sampler's Signature: <u>Cathy Pugh</u>																
Collection	Grab	Comp	Sample Identification / Description															
Date	Time																	
12/14/10	1135	X		C	C	R	-	1	None/ HNO ₃	3 Plastic	Aq	X	X	X	X			*6010 Metals: Ba, Be, Cd, Cr, Co, Pb, Mo, Se
	1040	X		C	C	R	-	2	None/ HNO ₃	3 Plastic	Aq	X	X	X	X			
	955	X		C	C	R	-	3	None/ HNO ₃	3 Plastic	Aq	X	X	X	X			**6020 Metals: As, Sb, Ti
	1225	X		C	C	R	-	4	None/ HNO ₃	3 Plastic	Aq	X	X	X	X			
	1325	X		C	C	R	-	5	None/ HNO ₃	3 Plastic	Aq	X	X	X	X			***6020 Sub Metal: Li
	1415	X		C	C	R	-	6	None/ HNO ₃	3 Plastic	Aq	X	X	X	X			
	1505	X		C	C	R	-	7	None/ HNO ₃	3 Plastic	Aq	X	X	X	X			
	1545	X		C	C	R	-	8	None/ HNO ₃	3 Plastic	Aq	X	X	X	X			
12/15/10	1055	X		C	C	R	-	9	None/ HNO ₃	3 Plastic	Aq	X	X	X	X			
	1010	X		C	C	R	-	10	None/ HNO ₃	3 Plastic	Aq	X	X	X	X			UPS / FedEx Airborne / Element Hand / Mail

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.

P.O.

Number

Relinquished by: (Signature) <u>Cathy Pugh</u>	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Received by: (Signature)	Date	Time
		12/15	7:15pm				
Relinquished by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature) <u>Dee Box</u>	Received by: (Signature) <u>Box P. M. 12/16/10</u>	Date	Time
Matrix Codes DW = Drinking Water AQ = Aqueous LIQ = Liquid GW = Ground Water O = Oil SLD = Solid WW = Waste Water SO = Soil SL = Sludge		Container Types G = Glass P = Plastic V = Vial		Shipping Conditions <input checked="" type="checkbox"/> Iced 3.0 Temp 2.8 <input type="checkbox"/> Ambient		Requested TAT <input type="checkbox"/> 24-Hr. <input type="checkbox"/> 72-Hr. <input type="checkbox"/> 48-Hr. <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Other	
Thank-you for using Element Materials Technology							



- ☐ 2203 S. Madison St., Muncie, IN 47302
765-747-9000/800-874-3563 Fax 765-747-0228
- ☐ 629 Washington St., Suite 300, Columbus, IN 47201
812-375-0531 Fax 812-375-0531
- ☐ 5738 Industrial Rd., Fort Wayne, IN 46825
219-471-7000 Fax 219-471-7777

- ☒ 2417 W. Pinhook Rd, Lafayette, LA 70508
337-235-0483/800-737-2378
Fax 337-233-6540
- ☐ 3445 S Sheridan, Tulsa, OK 74145
918-828-9977/800324-5757
Fax 918-828-7756

Page 2 of 2

Chain of Custody Record

Laboratory Number 2020713

Client Name: Pivotal Engineering LLC		Project: CCR Assessment Monitoring		Preserv.		Number / Type of Container	Matrix Code	Test Requested					Comments / Remarks	
Contact Name: Terry Elnaggar		Quote #: 5346		HCl HNO ₃ H ₂ SO ₄				300: Fluoride	*6010/**6020 metals	***6020 Sub	7470 Mercury			
Phone/Fax: (504) 799-3653		Sampler's Signature: <u>[Signature]</u>		NaOH Na ₂ S ₂ O ₃										
Collection	Grab	Comp	Sample Identification / Description											
Date	Time													
12/15	9:20	X	C	C	R - 1 1	None/ HNO ₃	3 Plastic	Aq	X	X	X	X		*6010 Metals: Ba, Be, Cd, Cr, Co, Pb, Mo, Se **6020 Metals: As, Sb, Ti ***6020 Sub Metal: Li
12/15	14:10	X	C	C	R - 1 2	None/ HNO ₃	3 Plastic	Aq	X	X	X	X		
12/15	13:20	X	C	C	R - 1 3	None/ HNO ₃	3 Plastic	Aq	X	X	X	X		
12/15	12:05	X	C	C	R - 1 4	None/ HNO ₃	3 Plastic	Aq	X	X	X	X		
12/15	12:10	X	M	S	(CCR- 14)	None/ HNO ₃	3 Plastic	Aq	X	X	X	X		
12/15	12:10	X	M	S	D (CCR- 14)	None/ HNO ₃	3 Plastic	Aq	X	X	X	X		
12/15	12:00	X	D	U	P	None/ HNO ₃	3 Plastic	Aq	X	X	X	X		
12/15	14:20	X	F	B	1	None/ HNO ₃	3 Plastic	Aq	X	X	X	X		
													UPS / FedEx Airborne / Element Hand / Mail	

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.

P.O.

Number

Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature)	Date	Time	Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received by: (Signature)	12/15	7:15 PM	Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature) <u>[Signature]</u>		
		Date	Time	Relinquished by: (Signature)	Received by: (Signature)	Date	Time

Matrix Codes

DW = Drinking Water AQ = Aqueous LIQ = Liquid
GW = Ground Water O = Oil SLD = Solid
WW = Waste Water SO = Soil SL = Sludge

Container Types

G = Glass
P = Plastic
V = Vial

Shipping Conditions

☒ Iced 3.0
Temp. 2.8
☐ Ambient 4.1

Requested TAT

☐ 24-Hr. ☐ 72-Hr.
☐ 48-Hr. ☒ Standard
☐ Other

Thank-you for using Element Materials Technology



Element Materials Technology Lafayette
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December 29, 2020

Terry Elnaggar
Pivotal Engineering LLC
1515 Poydras St., STE. 1875
New Orleans, LA 70112
TEL: (504) 799-3653
FAX

RE: Entergy: CCR Detection Monitoring

Order No.: 20120775

Dear Terry Elnaggar:

Element Materials Technology Lafayette received 16 sample(s) on 12/16/2020 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.

Where applicable, 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.: 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.

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
Lafayette, LA 70508-3344



Element Materials Technology Lafayette
2417 W. Pinhook Road
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Case Narrative

WO#: 20120775
Date: 12/29/2020

CLIENT: Pivotal Engineering LLC

Project: Entergy: CCR Detection Monitoring

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.

Exception: Total Dissolved Solids by Method M2540C

The method blank for TDS batch R95822 had a detection of 47 mg/L. Due to holding time constraints, re-analysis of the batch was not performed. All analytical result(s) associated with this method blank is reported with a "B" qualifier. The sample results appear to be consistent with history.

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#: 20120775

Date Reported: 12/29/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 12/14/2020 11:35:00 AM
Project: Entergy: CCR Detection Monitoring
Lab ID: 20120775-001 **Matrix:** AQUEOUS
Client Sample ID CCR-1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	37.1	2.50		mg/L	10	12/17/2020 1:17:04 PM
Fluoride	0.236	0.0500		mg/L	1	12/17/2020 7:26:47 PM
Sulfate	2.99	0.250		mg/L	1	12/17/2020 7:26:47 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	12/18/2020 2:54:55 PM
Calcium	26.2	0.500		mg/L	1	12/18/2020 2:54:55 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	251	20.0	B	mg/L	1	12/17/2020 5:28:00 AM

Qualifiers:	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
	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#: 20120775

Date Reported: 12/29/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 12/14/2020 10:40:00 AM
Project: Entergy: CCR Detection Monitoring
Lab ID: 20120775-002 **Matrix:** AQUEOUS
Client Sample ID CCR-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0		Analyst: SGP
Chloride	50.3	2.50		mg/L	10	12/17/2020 1:31:50 PM
Fluoride	0.307	0.0500		mg/L	1	12/17/2020 7:41:34 PM
Sulfate	1.30	0.250		mg/L	1	12/17/2020 7:41:34 PM
METALS IN WATER BY ICP, TOTALS				SW6010B		Analyst: STS
Boron	< 0.100	0.100		mg/L	1	12/18/2020 2:57:03 PM
Calcium	21.3	0.500		mg/L	1	12/18/2020 2:57:03 PM
TOTAL DISSOLVED SOLIDS				SM2540C		Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	212	20.0	B	mg/L	1	12/17/2020 5:28:00 AM

Qualifiers:	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
	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#: 20120775

Date Reported: 12/29/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 12/14/2020 9:55:00 AM
Project: Entergy: CCR Detection Monitoring
Lab ID: 20120775-003 **Matrix:** AQUEOUS
Client Sample ID CCR-3

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	103	5.00		mg/L	20	12/17/2020 1:46:39 PM
Fluoride	< 0.0500	0.0500		mg/L	1	12/17/2020 7:56:21 PM
Sulfate	3.61	0.250		mg/L	1	12/17/2020 7:56:21 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	12/18/2020 3:03:26 PM
Calcium	29.4	0.500		mg/L	1	12/18/2020 3:03:26 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	341	20.0	B	mg/L	1	12/17/2020 5:28:00 AM

Qualifiers:	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
	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#: 20120775

Date Reported: 12/29/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 12/14/2020 12:25:00 PM
Project: Entergy: CCR Detection Monitoring
Lab ID: 20120775-004 **Matrix:** AQUEOUS
Client Sample ID CCR-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0		Analyst: SGP
Chloride	37.6	2.50		mg/L	10	12/17/2020 2:01:27 PM
Fluoride	< 0.0500	0.0500		mg/L	1	12/17/2020 8:11:08 PM
Sulfate	9.92	0.250		mg/L	1	12/17/2020 8:11:08 PM
METALS IN WATER BY ICP, TOTALS				SW6010B		Analyst: STS
Boron	0.103	0.100		mg/L	1	12/18/2020 3:05:34 PM
Calcium	19.0	0.500		mg/L	1	12/18/2020 3:05:34 PM
TOTAL DISSOLVED SOLIDS				SM2540C		Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	212	20.0	B	mg/L	1	12/17/2020 5:28:00 AM

Qualifiers:	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
	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#: 20120775

Date Reported: 12/29/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 12/14/2020 1:25:00 PM
Project: Entergy: CCR Detection Monitoring
Lab ID: 20120775-005 **Matrix:** AQUEOUS
Client Sample ID CCR-5

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	54.8	5.00		mg/L	20	12/17/2020 2:16:14 PM
Fluoride	< 0.0500	0.0500		mg/L	1	12/17/2020 8:25:55 PM
Sulfate	< 0.250	0.250		mg/L	1	12/17/2020 8:25:55 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	0.107	0.100		mg/L	1	12/18/2020 3:07:42 PM
Calcium	32.4	0.500		mg/L	1	12/18/2020 3:07:42 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	388	20.0	B	mg/L	1	12/17/2020 5:28:00 AM

Qualifiers:	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
	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#: 20120775

Date Reported: 12/29/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 12/14/2020 2:15:00 PM
Project: Entergy: CCR Detection Monitoring
Lab ID: 20120775-006 **Matrix:** AQUEOUS
Client Sample ID CCR-6

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0		Analyst: SGP
Chloride	74.2	2.50		mg/L	10	12/17/2020 2:31:02 PM
Fluoride	< 0.0500	0.0500		mg/L	1	12/17/2020 8:40:43 PM
Sulfate	< 0.250	0.250		mg/L	1	12/17/2020 8:40:43 PM
METALS IN WATER BY ICP, TOTALS				SW6010B		Analyst: STS
Boron	< 0.100	0.100		mg/L	1	12/18/2020 3:09:50 PM
Calcium	28.8	0.500		mg/L	1	12/18/2020 3:09:50 PM
TOTAL DISSOLVED SOLIDS				SM2540C		Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	282	20.0	B	mg/L	1	12/17/2020 5:28:00 AM

Qualifiers:	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
	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#: 20120775

Date Reported: 12/29/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 12/14/2020 3:05:00 PM
Project: Entergy: CCR Detection Monitoring
Lab ID: 20120775-007 **Matrix:** AQUEOUS
Client Sample ID CCR-7

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0		Analyst: SGP
Chloride	70.8	2.50		mg/L	10	12/17/2020 2:45:49 PM
Fluoride	< 0.0500	0.0500		mg/L	1	12/17/2020 8:55:30 PM
Sulfate	< 0.250	0.250		mg/L	1	12/17/2020 8:55:30 PM
METALS IN WATER BY ICP, TOTALS				SW6010B		Analyst: STS
Boron	< 0.100	0.100		mg/L	1	12/18/2020 3:11:59 PM
Calcium	46.0	0.500		mg/L	1	12/18/2020 3:11:59 PM
TOTAL DISSOLVED SOLIDS				SM2540C		Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	320	20.0	B	mg/L	1	12/17/2020 5:28:00 AM

Qualifiers:	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
	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#: 20120775

Date Reported: 12/29/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 12/14/2020 3:45:00 PM
Project: Entergy: CCR Detection Monitoring
Lab ID: 20120775-008 **Matrix:** AQUEOUS
Client Sample ID CCR-8

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0		Analyst: SGP
Chloride	76.7	2.50		mg/L	10	12/17/2020 3:00:37 PM
Fluoride	< 0.0500	0.0500		mg/L	1	12/17/2020 9:10:17 PM
Sulfate	0.926	0.250		mg/L	1	12/17/2020 9:10:17 PM
METALS IN WATER BY ICP, TOTALS				SW6010B		Analyst: STS
Boron	< 0.100	0.100		mg/L	1	12/21/2020 5:15:06 PM
Calcium	11.4	0.500		mg/L	1	12/21/2020 5:15:06 PM
TOTAL DISSOLVED SOLIDS				SM2540C		Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	255	20.0	B	mg/L	1	12/17/2020 5:28:00 AM

Qualifiers:	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
	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#: 20120775

Date Reported: 12/29/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 12/15/2020 10:55:00 AM
Project: Entergy: CCR Detection Monitoring
Lab ID: 20120775-009 **Matrix:** AQUEOUS
Client Sample ID CCR-9

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0	Analyst: SGP	
Chloride	55.1	5.00		mg/L	20	12/17/2020 3:15:25 PM
Fluoride	0.518	0.0500		mg/L	1	12/17/2020 9:25:04 PM
Sulfate	5.68	0.250		mg/L	1	12/17/2020 9:25:04 PM
METALS IN WATER BY ICP, TOTALS				SW6010B	Analyst: STS	
Boron	< 0.100	0.100		mg/L	1	12/21/2020 5:17:24 PM
Calcium	30.3	0.500		mg/L	1	12/21/2020 5:17:24 PM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	306	20.0	B	mg/L	1	12/17/2020 5:28:00 AM

Qualifiers:	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
	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#: 20120775

Date Reported: 12/29/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 12/15/2020 10:10:00 AM
Project: Entergy: CCR Detection Monitoring
Lab ID: 20120775-010 **Matrix:** AQUEOUS
Client Sample ID CCR-10

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0		Analyst: SGP
Chloride	38.5	2.50		mg/L	10	12/17/2020 3:59:41 PM
Fluoride	0.552	0.0500		mg/L	1	12/17/2020 9:39:51 PM
Sulfate	7.94	0.250		mg/L	1	12/17/2020 9:39:51 PM
METALS IN WATER BY ICP, TOTALS				SW6010B		Analyst: STS
Boron	< 0.100	0.100		mg/L	1	12/21/2020 5:19:42 PM
Calcium	27.1	0.500		mg/L	1	12/21/2020 5:19:42 PM
TOTAL DISSOLVED SOLIDS				SM2540C		Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	298	20.0	B	mg/L	1	12/17/2020 5:28:00 AM

Qualifiers:	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
	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#: 20120775

Date Reported: 12/29/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 12/15/2020 9:20:00 AM
Project: Entergy: CCR Detection Monitoring
Lab ID: 20120775-011 **Matrix:** AQUEOUS
Client Sample ID CCR-11

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0		Analyst: SGP
Chloride	21.6	2.50		mg/L	10	12/17/2020 4:14:29 PM
Fluoride	0.605	0.0500		mg/L	1	12/17/2020 10:24:13 PM
Sulfate	2.99	0.250		mg/L	1	12/17/2020 10:24:13 PM
METALS IN WATER BY ICP, TOTALS				SW6010B		Analyst: STS
Boron	< 0.100	0.100		mg/L	1	12/21/2020 5:22:00 PM
Calcium	27.5	0.500		mg/L	1	12/21/2020 5:22:00 PM
TOTAL DISSOLVED SOLIDS				SM2540C		Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	207	20.0	B	mg/L	1	12/17/2020 5:28:00 AM

Qualifiers:	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
	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#: 20120775

Date Reported: 12/29/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 12/15/2020 2:10:00 PM
Project: Entergy: CCR Detection Monitoring
Lab ID: 20120775-012 **Matrix:** AQUEOUS
Client Sample ID CCR-12

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0		Analyst: SGP
Chloride	14.8	1.25		mg/L	5	12/17/2020 4:29:17 PM
Fluoride	< 0.0500	0.0500		mg/L	1	12/17/2020 10:39:00 PM
Sulfate	12.2	0.250		mg/L	1	12/17/2020 10:39:00 PM
METALS IN WATER BY ICP, TOTALS				SW6010B		Analyst: STS
Boron	< 0.100	0.100		mg/L	1	12/21/2020 5:24:18 PM
Calcium	18.6	0.500		mg/L	1	12/21/2020 5:24:18 PM
TOTAL DISSOLVED SOLIDS				SM2540C		Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	136	20.0	B	mg/L	1	12/17/2020 5:28:00 AM

Qualifiers:	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
	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#: 20120775

Date Reported: 12/29/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 12/15/2020 1:20:00 PM
Project: Entergy: CCR Detection Monitoring
Lab ID: 20120775-013 **Matrix:** AQUEOUS
Client Sample ID CCR-13

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0		Analyst: SGP
Chloride	10.4	1.25		mg/L	5	12/17/2020 4:44:04 PM
Fluoride	0.207	0.0500		mg/L	1	12/17/2020 10:53:47 PM
Sulfate	1.26	0.250		mg/L	1	12/17/2020 10:53:47 PM
METALS IN WATER BY ICP, TOTALS				SW6010B		Analyst: STS
Boron	< 0.100	0.100		mg/L	1	12/21/2020 5:26:36 PM
Calcium	18.2	0.500		mg/L	1	12/21/2020 5:26:36 PM
TOTAL DISSOLVED SOLIDS				SM2540C		Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	150	20.0	B	mg/L	1	12/17/2020 5:28:00 AM

Qualifiers:	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
	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#: 20120775

Date Reported: 12/29/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 12/15/2020 12:05:00 PM
Project: Entergy: CCR Detection Monitoring
Lab ID: 20120775-014 **Matrix:** AQUEOUS
Client Sample ID CCR-14

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0		Analyst: SGP
Chloride	10.1	1.25		mg/L	5	12/18/2020 8:32:10 AM
Fluoride	< 0.0500	0.0500		mg/L	1	12/17/2020 11:08:35 PM
Sulfate	0.313	0.250		mg/L	1	12/17/2020 11:08:35 PM
METALS IN WATER BY ICP, TOTALS				SW6010B		Analyst: STS
Boron	< 0.100	0.100		mg/L	1	12/21/2020 5:28:54 PM
Calcium	16.1	0.500		mg/L	1	12/21/2020 5:28:54 PM
TOTAL DISSOLVED SOLIDS				SM2540C		Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	141	20.0	B	mg/L	1	12/17/2020 5:28:00 AM

Qualifiers:	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
	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#: 20120775

Date Reported: 12/29/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 12/14/2020
Project: Entergy: CCR Detection Monitoring
Lab ID: 20120775-015 **Matrix:** AQUEOUS
Client Sample ID DUP

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0		Analyst: SGP
Chloride	37.2	2.50		mg/L	10	12/17/2020 5:43:12 PM
Fluoride	< 0.0500	0.0500		mg/L	1	12/17/2020 11:23:22 PM
Sulfate	9.62	0.250		mg/L	1	12/17/2020 11:23:22 PM
METALS IN WATER BY ICP, TOTALS				SW6010B		Analyst: STS
Boron	0.100	0.100		mg/L	1	12/21/2020 5:40:23 PM
Calcium	18.9	0.500		mg/L	1	12/21/2020 5:40:23 PM
TOTAL DISSOLVED SOLIDS				SM2540C		Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	259	20.0	B	mg/L	1	12/17/2020 5:28:00 AM

Qualifiers:	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
	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#: 20120775

Date Reported: 12/29/2020

CLIENT: Pivotal Engineering LLC **Collection Date:** 12/15/2020 2:20:00 PM
Project: Entergy: CCR Detection Monitoring
Lab ID: 20120775-016 **Matrix:** AQUEOUS
Client Sample ID FB-1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN WATER BY IC				E 300.0		Analyst: SGP
Chloride	1.85	0.250		mg/L	1	12/17/2020 5:58:00 PM
Fluoride	0.0610	0.0500		mg/L	1	12/17/2020 5:58:00 PM
Sulfate	< 0.250	0.250		mg/L	1	12/17/2020 5:58:00 PM
METALS IN WATER BY ICP, TOTALS				SW6010B		Analyst: STS
Boron	< 0.100	0.100		mg/L	1	12/21/2020 5:42:41 PM
Calcium	< 0.500	0.500		mg/L	1	12/21/2020 5:42:41 PM
TOTAL DISSOLVED SOLIDS				SM2540C		Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	< 20.0	20.0		mg/L	1	12/17/2020 5:28:00 AM

Qualifiers:	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
	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#: 20120775
29-Dec-20

Client: Pivotal Engineering LLC

Project: Entergy: CCR Detection Monitoring

BatchID: 37229

Sample ID	MB-37229	SampType:	MBLK	TestCode:	6010_W	Units:	mg/L	Prep Date:	12/16/2020	RunNo:	95904			
Client ID:	PBW	Batch ID:	37229	TestNo:	SW6010B			Analysis Date:	12/18/2020	SeqNo:	2344729			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron		< 0.100		0.100										
Calcium		< 0.500		0.500										

Sample ID	LCS-37229	SampType:	LCS	TestCode:	6010_W	Units:	mg/L	Prep Date:	12/16/2020	RunNo:	95904	
Client ID:	LCSW	Batch ID:	37229	TestNo:	SW6010B			Analysis Date:	12/18/2020	SeqNo:	2344730	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron		0.481	0.100	0.5000	0	96.2	80	120				
Calcium		49.1	0.500	50.00	0	98.2	80	120				

Sample ID	LCSD-37229	SampType:	LCSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	12/16/2020	RunNo:	95904	
Client ID:	LCSS02	Batch ID:	37229	TestNo:	SW6010B			Analysis Date:	12/18/2020	SeqNo:	2344731	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron		0.474	0.100	0.5000	0	94.9	80	120	0.4808	1.36	20	
Calcium		48.3	0.500	50.00	0	96.5	80	120	49.12	1.75	20	

Sample ID	20120476-001EMS	SampType:	MS	TestCode:	6010_W	Units:	mg/L	Prep Date:	12/16/2020	RunNo:	95904	
Client ID:	ZZZZZZ	Batch ID:	37229	TestNo:	SW6010B			Analysis Date:	12/18/2020	SeqNo:	2344733	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron		0.492	0.100	0.5000	0	98.4	75	125				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
SDL Sample detection limit

H Holding times for preparation or analysis exceeded
RL Reporting Limit
U Analyte not detected

M Matrix Interference
S Spike Recovery outside accepted recovery limits
W Sample container temperature is out of limit as s



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QC SUMMARY REPORT

WO#: 20120775
29-Dec-20

Client: Pivotal Engineering LLC

Project: Entergy: CCR Detection Monitoring

BatchID: 37229

Sample ID	20120476-001EMS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 12/16/2020	RunNo: 95904					
Client ID: ZZZZZZ	Batch ID: 37229	TestNo: SW6010B	Analysis Date: 12/18/2020	SeqNo: 2344733							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	50.6	0.500	50.00	2.166	96.8	75	125				

Sample ID	20120476-001EMSD	SampType: MSD	TestCode: 6010_W	Units: mg/L	Prep Date: 12/16/2020	RunNo: 95904					
Client ID: ZZZZZZ	Batch ID: 37229	TestNo: SW6010B	Analysis Date: 12/18/2020	SeqNo: 2344734							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.480	0.100	0.5000	0	96.1	75	125	0.4922	2.44	20	
Calcium	50.0	0.500	50.00	2.166	95.6	75	125	50.56	1.18	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
SDL Sample detection limit

H Holding times for preparation or analysis exceeded
RL Reporting Limit
U Analyte not detected

M Matrix Interference
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QC SUMMARY REPORT

WO#: 20120775
29-Dec-20

Client: Pivotal Engineering LLC

Project: Entergy: CCR Detection Monitoring

BatchID: 37272

Sample ID	20120775-014BMS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 12/18/2020	RunNo: 95967					
Client ID:	CCR-14	Batch ID: 37272	TestNo: SW6010B	Analysis Date: 12/21/2020	SeqNo: 2346417						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.514	0.100	0.5000	0	103	75	125				
Calcium	63.1	0.500	50.00	16.06	94.0	75	125				

Sample ID	20120775-014BMSD	SampType: MSD	TestCode: 6010_W	Units: mg/L	Prep Date: 12/18/2020	RunNo: 95967					
Client ID: CCR-14	Batch ID: 37272	TestNo: SW6010B	Analysis Date: 12/21/2020	SeqNo: 2346418							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	0.522	0.100	0.5000	0	104	75	125	0.5143	1.57	20	
Calcium	64.1	0.500	50.00	16.06	96.0	75	125	63.06	1.57	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
SDL Sample detection limit

H Holding times for preparation or analysis exceeded
RL Reporting Limit
U Analyte not detected

M Matrix Interference
S Spike Recovery outside accepted recovery limits
W Sample container temperature is out of limit as s



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QC SUMMARY REPORT

WO#: 20120775

29-Dec-20

Client: Pivotal Engineering LLC

Project: Entergy: CCR Detection Monitoring

BatchID: 37272

Sample ID	MB-37272	SampType:	MBLK	TestCode:	6010_W	Units:	mg/L	Prep Date:	12/18/2020	RunNo:	95966			
Client ID:	PBW	Batch ID:	37272	TestNo:	SW6010B			Analysis Date:	12/21/2020	SeqNo:	2346318			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron		< 0.100		0.100										
Calcium		< 0.500		0.500										

Sample ID	LCS-37272	SampType:	LCS	TestCode:	6010_W	Units:	mg/L	Prep Date:	12/18/2020	RunNo:	95966	
Client ID:	LCSW	Batch ID:	37272	TestNo:	SW6010B			Analysis Date:	12/21/2020	SeqNo:	2346319	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron		0.475	0.100	0.5000	0	95.0	80	120				
Calcium		48.4	0.500	50.00	0	96.9	80	120				

Sample ID	LCSD-37272	SampType:	LCSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	12/18/2020	RunNo:	95966			
Client ID:	LCSS02	Batch ID:	37272	TestNo:	SW6010B			Analysis Date:	12/21/2020	SeqNo:	2346320			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron		0.470		0.100	0.5000	0		94.0	80	120	0.4749	0.988	20	
Calcium		48.0		0.500	50.00	0		96.0	80	120	48.45	0.970	20	

Sample ID	20120773-014BMS	SampType:	MS	TestCode:	6010_W	Units:	mg/L	Prep Date:	12/18/2020	RunNo:	95966	
Client ID:	ZZZZZZ	Batch ID:	37272	TestNo:	SW6010B			Analysis Date:	12/21/2020	SeqNo:	2346330	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron		0.514	0.100	0.5000	0	103	75	125				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
SDL Sample detection limit

H Holding times for preparation or analysis exceeded
RL Reporting Limit
U Analyte not detected

M Matrix Interference
S Spike Recovery outside accepted recovery limits
W Sample container temperature is out of limit as s



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QC SUMMARY REPORT

WO#: 20120775
29-Dec-20

Client: Pivotal Engineering LLC

Project: Entergy: CCR Detection Monitoring

BatchID: 37272

Sample ID	20120773-014BMS	SampType:	MS	TestCode:	6010_W	Units:	mg/L	Prep Date:	12/18/2020	RunNo:	95966	
Client ID:	ZZZZZZ	Batch ID:	37272	TestNo:	SW6010B			Analysis Date:	12/21/2020	SeqNo:	2346330	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		63.1	0.500	50.00	16.06	94.0	75	125				

Sample ID	20120773-014BMSD	SampType:	MSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	12/18/2020	RunNo:	95966	
Client ID:	ZZZZZZ	Batch ID:	37272	TestNo:	SW6010B			Analysis Date:	12/21/2020	SeqNo:	2346331	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron		0.522	0.100	0.5000	0	104	75	125	0.5143	1.57	20	
Calcium		64.1	0.500	50.00	16.06	96.0	75	125	63.06	1.57	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
SDL Sample detection limit

H Holding times for preparation or analysis exceeded
RL Reporting Limit
U Analyte not detected

M Matrix Interference
S Spike Recovery outside accepted recovery limits
W Sample container temperature is out of limit as s



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QC SUMMARY REPORT

WO#: 20120775
29-Dec-20

Client: Pivotal Engineering LLC

Project: Entergy: CCR Detection Monitoring

BatchID: R95822

Sample ID	MB-R95822	SampType:	MBLK	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	95822			
Client ID:	PBW	Batch ID:	R95822	TestNo:	SM2540C			Analysis Date:	12/17/2020	SeqNo:	2344284			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 47.0 20.0

Sample ID	LCS-R95822	SampType:	LCS	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	95822			
Client ID:	LCSW	Batch ID:	R95822	TestNo:	SM2540C			Analysis Date:	12/17/2020	SeqNo:	2344285			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 939 20.0 1,000 0 93.9 85 115 B

Sample ID	LCSD-R95822	SampType:	LCSD	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	95822			
Client ID:	LCSS02	Batch ID:	R95822	TestNo:	SM2540C			Analysis Date:	12/17/2020	SeqNo:	2344286			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 930 20.0 1,000 0 93.0 85 115 939.0 0.963 10 B

Sample ID	20120775-001ADUP	SampType:	DUP	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	95822			
Client ID:	CCR-1	Batch ID:	R95822	TestNo:	SM2540C			Analysis Date:	12/17/2020	SeqNo:	2344288			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 246 20.0 251.0 2.01 10 B

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
SDL Sample detection limit

H Holding times for preparation or analysis exceeded
RL Reporting Limit
U Analyte not detected

M Matrix Interference
S Spike Recovery outside accepted recovery limits
W Sample container temperature is out of limit as s



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QC SUMMARY REPORT

WO#: 20120775
29-Dec-20

Client: Pivotal Engineering LLC

Project: Entergy: CCR Detection Monitoring

BatchID: R95822

Sample ID	20120775-001ADUP	SampType:	DUP	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	95822
Client ID:	CCR-1	Batch ID:	R95822	TestNo:	SM2540C			Analysis Date:	12/17/2020	SeqNo:	2344288
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Sample ID	20120775-014ADUP	SampType:	DUP	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	95822
Client ID:	CCR-14	Batch ID:	R95822	TestNo:	SM2540C			Analysis Date:	12/17/2020	SeqNo:	2344303
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Total Dissolved Solids (Residue, Filterable)		128		20.0						141.0	9.67 10 B

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
SDL Sample detection limit

H Holding times for preparation or analysis exceeded
RL Reporting Limit
U Analyte not detected

M Matrix Interference
S Spike Recovery outside accepted recovery limits
W Sample container temperature is out of limit as specified



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QC SUMMARY REPORT

WO#: 20120775
29-Dec-20

Client: Pivotal Engineering LLC

Project: Entergy: CCR Detection Monitoring

BatchID: R95872

Sample ID	MBLK	SampType:	MBLK	TestCode:	300.0	Units:	mg/L	Prep Date:		RunNo:	95872	
Client ID:	PBW	Batch ID:	R95872	TestNo:	E 300.0			Analysis Date:	12/17/2020	SeqNo:	2343860	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		< 0.250	0.250									
Fluoride		< 0.0500	0.0500									
Sulfate		< 0.250	0.250									

Sample ID	LCS	SampType:	LCS	TestCode:	300.0	Units:	mg/L	Prep Date:		RunNo:	95872	
Client ID:	LCSW	Batch ID:	R95872	TestNo:	E 300.0			Analysis Date:	12/17/2020	SeqNo:	2343861	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		9.76	0.250	10.00	0	97.6	90	110				
Fluoride		1.85	0.0500	2.000	0	92.4	90	110				
Sulfate		9.34	0.250	10.00	0	93.4	90	110				

Sample ID	LCSD	SampType:	LCSD	TestCode:	300.0	Units:	mg/L	Prep Date:		RunNo:	95872	
Client ID:	LCSS02	Batch ID:	R95872	TestNo:	E 300.0			Analysis Date:	12/17/2020	SeqNo:	2343862	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		9.76	0.250	10.00	0	97.6	90	110	9.764	0.0909	15	
Fluoride		1.85	0.0500	2.000	0	92.6	90	110	1.848	0.188	15	
Sulfate		9.33	0.250	10.00	0	93.3	90	110	9.343	0.153	15	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
SDL Sample detection limit

H Holding times for preparation or analysis exceeded
RL Reporting Limit
U Analyte not detected

M Matrix Interference
S Spike Recovery outside accepted recovery limits
W Sample container temperature is out of limit as s



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#: 20120775
29-Dec-20

Client: Pivotal Engineering LLC

Project: Entergy: CCR Detection Monitoring

BatchID: R95872

Sample ID	20120691-001BMS	SampType: MS	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 95872					
Client ID:	ZZZZZZ	Batch ID: R95872	TestNo: E 300.0	Analysis Date: 12/17/2020	SeqNo: 2343864						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	53.5	2.50	50.00	5.867	95.3	80	120				
Fluoride	8.70	0.500	10.00	0.2982	84.1	80	120				
Sulfate	45.1	2.50	50.00	1.242	87.7	80	120				

Sample ID	20120691-001BMSD	SampType: MSD	TestCode: 300.0		Units: mg/L		Prep Date:			RunNo: 95872		
Client ID:	ZZZZZZ	Batch ID: R95872	TestNo: E 300.0		Analysis Date: 12/17/2020				SeqNo: 2343865			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Chloride	53.4	2.50	50.00	5.867	95.0	80	120	53.54	0.313	15		
Fluoride	8.78	0.500	10.00	0.2982	84.8	80	120	8.705	0.891	15		
Sulfate	44.8	2.50	50.00	1.242	87.1	80	120	45.08	0.598	15		

Sample ID	20120775-014AMS	SampType: MS	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 95872					
Client ID:	CCR-14	Batch ID: R95872	TestNo: E 300.0	Analysis Date: 12/18/2020	SeqNo: 2343913						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	36.6	1.25	25.00	10.06	106	80	120				
Fluoride	4.99	0.250	5.000	0.1496	96.8	80	120				
Sulfate	23.9	1.25	25.00	0.4786	93.6	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
SDL Sample detection limit

H Holding times for preparation or analysis exceeded
RL Reporting Limit
U Analyte not detected

M Matrix Interference
S Spike Recovery outside accepted recovery limits
W Sample container temperature is out of limit as s



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QC SUMMARY REPORT

WO#: 20120775
29-Dec-20

Client: Pivotal Engineering LLC

Project: Entergy: CCR Detection Monitoring

BatchID: R95872

Sample ID	20120775-014AMSD	SampType: MSD	TestCode: 300.0	Units: mg/L	Prep Date:	RunNo: 95872					
Client ID:	CCR-14	Batch ID: R95872	TestNo: E 300.0	Analysis Date: 12/18/2020	SeqNo: 2343914						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	36.3	1.25	25.00	10.06	105	80	120	36.64	0.918	15	
Fluoride	4.93	0.250	5.000	0.1496	95.6	80	120	4.990	1.23	15	
Sulfate	23.8	1.25	25.00	0.4786	93.1	80	120	23.87	0.453	15	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
SDL Sample detection limit

H Holding times for preparation or analysis exceeded
RL Reporting Limit
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Sample Log-In Check List

Client Name: **PIVOTAL_ENGINEERIN**

Work Order Number: **20120775**

RcptNo: **1**

Logged by: **Tammy Thibodeaux** **12/16/2020 7:00:00 AM**

Tammy Thibodeaux

Completed By: **Tammy Thibodeaux** **12/16/2020 8:04:07 AM**

Tammy Thibodeaux

Reviewed By: **Caitlin Duplantis** **12/17/2020 8:22:04 AM**

Caitlin Duplantis

Chain of Custody

1. Is Chain of Custody complete? Yes ☐ No ☒ Not Present ☐
2. How was the sample delivered? Drop Off Box

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 $>0^{\circ}\text{C}$ 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?
(Note discrepancies on chain of custody) Yes ☒ No ☐
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?
(If no, notify customer for authorization.) Yes ☒ No ☐

Special Handling (if applicable)

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

Person Notified: Date
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

18. Additional remarks:
Incomplete custody signature(s) prior to receipt by Element personnel
Added year of collection to COC as per samples received.

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.0	Good	Not Present			



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Sample Log-In Check List

Client Name: **PIVOTAL_ENGINEERIN**

Work Order Number: **20120775**

RcptNo: 1

2	2.8	Good	Not Present			
3	4.1	Good	Not Present			



- ☐ 2203 S. Madison St., Muncie, IN 47302
765-747-9000/800-874-3563 Fax 765-747-0228
- ☐ 629 Washington St., Suite 300, Columbus, IN 47201
812-375-0531 Fax 812-375-0531
- ☐ 5738 Industrial Rd., Fort Wayne, IN 46825
219-471-7000 Fax 219-471-7777

- ☒ 2417 W. Pinhook Rd, Lafayette, LA 70508
337-235-0483/800-737-2378
Fax 337-233-6540
- ☐ 3445 S Sheridan, Tulsa, OK 74145
918-828-9977/800324-5757
Fax 918-828-7756

Page 1 of 2

Chain of Custody Record

Laboratory
Number

20120775

Client Name: Pivotal Engineering LLC

Project: CCR Detection Monitoring

Contact Name: Terry Elnaggar

Quote #: 5346

Phone/Fax: (504) 799-3653

Sampler's Signature:

Collection
Date Time

Grab
Comp

Sample Identification / Description

Preserv.

HCl HNO₃ H₂SO₄
NaOH Na₂S₂O₃

Number / Type of
Container

Matrix Code

Test Requested

TDS
300: Cl, F, SO₄
6010 metals*

Comments /
Remarks

12/14/10 1135

X

C C R - 1

None/ HNO₃

2 Plastic

Aq

X X X

12/14/10 1040

X

C C R - 2

None/ HNO₃

2 Plastic

Aq

X X X

12/14/10 955

X

C C R - 3

None/ HNO₃

2 Plastic

Aq

X X X

12/14/10 1225

X

C C R - 4

None/ HNO₃

2 Plastic

Aq

X X X

12/14/10 1325

X

C C R - 5

None/ HNO₃

2 Plastic

Aq

X X X

12/14/10 1415

X

C C R - 6

None/ HNO₃

2 Plastic

Aq

X X X

12/14/10 1505

X

C C R - 7

None/ HNO₃

2 Plastic

Aq

X X X

12/14/10 1545

X

C C R - 8

None/ HNO₃

2 Plastic

Aq

X X X

12/15/10 1055

X

C C R - 9

None/ HNO₃

2 Plastic

Aq

X X X

12/15/10 1010

X

C C R - 10

None/ HNO₃

2 Plastic

Aq

X X X

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.

P.O.
Number

Relinquished by: (Signature)

Received by: (Signature)

Date

Time

Relinquished by: (Signature)

Received by: (Signature)

Date

Time

Relinquished by: (Signature)

Received by: (Signature)

Date

Time

Relinquished by: (Signature)

Received by Laboratory: (Signature)

Date

Time

Matrix Codes

DW = Drinking Water AQ = Aqueous LIQ = Liquid
GW = Ground Water O = Oil SLD = Solid
WW = Waste Water SO = Soil SL = Sludge

Container Types

G = Glass
P = Plastic
V = Vial

Shipping Conditions

☒ Iced
Temp. 3.5
3.8
☐ Ambient 4.1

Requested TAT

☐ 24-Hr. ☐ 72-Hr.
☐ 48-Hr. ☒ Standard
☐ Other

Thank-you for using Element Materials
Technology



- ☐ 2203 S. Madison St., Muncie, IN 47302
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Fax 918-828-7756

Page 2 of 2

Chain of Custody Record

Laboratory Number 20120775

Client Name: Pivotal Engineering LLC		Project: CCR Detection Monitoring		Preserv. HCl HNO ₃ H ₂ SO ₄ NaOH Na ₂ S ₂ O ₃	Number / Type of Container	Matrix Code	Test Requested										Comments / Remarks	
Contact Name: Terry Elnaggar		Quote #: 5346					TDS	300: Cl, F, SO ₄	6010 metals*									
Phone/Fax: (504) 799-3653		Sampler's Signature: <u>[Signature]</u>																
Collection Date Time		Grab	Comp	Sample Identification / Description														
12/15/12 920		X		C C R - 1 1		None/ HNO ₃	2 Plastic	Aq	X	X	X							
1410		X		C C R - 1 2		None/ HNO ₃	2 Plastic	Aq	X	X	X							
1320		X		C C R - 1 3		None/ HNO ₃	2 Plastic	Aq	X	X	X							
1205		X		C C R - 1 4		None/ HNO ₃	2 Plastic	Aq	X	X	X							
1210		X		M S (CCR- 14)		None/ HNO ₃	2 Plastic	Aq	X	X	X							
1210		X		M S D (CCR- 14)		None/ HNO ₃	2 Plastic	Aq	X	X	X							
12/14/12		X		D U P		None/ HNO ₃	2 Plastic	Aq	X	X	X							
12/15/12 1420		X		F B 1		None/ HNO ₃	2 Plastic	Aq	X	X	X							
UPS / FedEx Airborne / Element Hand / Mail																		

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P.O. Number

Relinquished by: (Signature) <u>[Signature]</u>	Received by: (Signature)	Date <u>12/15</u>	Time <u>7:15pm</u>	Relinquished by: (Signature)	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature) <u>[Signature]</u>	Received by Laboratory: (Signature) <u>[Signature]</u>	Date <u>12/16/2012</u>	Time <u>0700</u>

Matrix Codes

DW = Drinking Water AQ = Aqueous LIQ = Liquid
GW = Ground Water O = Oil SLD = Solid
WW = Waste Water SO = Soil SL = Sludge

Container Types

G = Glass
P = Plastic
V = Vial

Shipping Conditions

☒ Iced 3.0
Temp. 2.8
☐ Ambient 4.1

Requested TAT

☐ 24-Hr. ☐ 72-Hr.
☐ 48-Hr. ☒ Standard
☐ Other

Thank-you for using Element Materials Technology