GEL Laboratories LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171
F 843.766.1178

gel.com

November 21, 2016

Mr. Scot Fitzgerald
CH2MHill Plateau Remediation Company
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352

Re: CHPRC SAF W17-011
Work Order: 410049
SDG: GEL410049

Dear Mr. Fitzgerald:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on November 08, 2016. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4505.

Sincerely,

B. Luthman

Brielle Luthman for
Heather Shaffer
Project Manager

Purchase Order: 30071 - 7C
Chain of Custody: W17-011-067, W17-011-068, W17-011-072, W17-011-073, W17-011-074 and W17-011-080

Enclosures

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Case Narrative

General Narrative
for
CH2MHill Plateau Remediation Company
CHPRC SAF W17-011
SDG: GEL410049

November 21, 2016

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary

Sample receipt

The sample(s) arrived at GEL Laboratories, LLC, Charleston, South Carolina on November 08, 2016, for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Items of Note All efforts were made by the lab to meet any short hold times. Samples that were analyzed outside of the initial hold time but still within 2X hold time will be noted in the lab case narrative.

Sample Identification
The laboratory received the following samples:

Laboratory Identification	Sample Description
410049001	B37387
410049002	B373B0
410049003	B37398
410049004	B373F6
410049005	B373F0
410049006	B373F7
410049007	B373F1
410049008	B373H3
410049009	B373H6
410049010	B373L8

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package

The enclosed data package contains the following sections: General Narrative, Chain of Custody and Supporting Documentation, and data from the following fractions: General Chemistry and Metals.

We certify that this package is in compliance with the SOW, both technically and for completeness, including a full description of, explanation of, and corrective actions for, any and all deviations, from either the analyses requested or the case narrative requested. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager (or designee) and the laboratory's client services representative as verified by their signatures on this report.

B Luthman

Brielle Luthman for
Heather Shaffer
Project Manager

Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL410049
Work Order #: 410049

Metals

Determination of Metals by ICP

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Calibration Information

CRDL/PQL Requirements
The PQL standard recoveries for SW846 6010C or 6010D met the control limits with the exception of chromium and sodium. Client sample concentrations were less than the MDL or greater than two times the PQL; therefore the data were not adversely affected. 410049002 (B373B0), 410049003 (B37398), 410049004 (B373F6), 410049006 (B373F7), 410049007 (B373F1), 410049008 (B373H3), 410049009 (B373H6) and 410049010 (B373L8).

Quality Control (QC) Information

Method Blank (MB) Statement
The method blanks (MB) analyzed with this SDG met the exception criteria with the exception of antimony. In instances where there were positive hits in the method blank, the results were evaluated and appropriately flagged on the data. 1203665662 (MB).

Determination of Metals by ICP-MS

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Method Blank (MB) Statement
The method blanks (MB) analyzed with this SDG met the exception criteria with the exception of selenium. In instances where there were positive hits in the method blank, the results were evaluated and appropriately flagged on the data. 1203665654 (MB).

Technical Information

Sample Dilutions
Samples 410049006 (B373F7) and 410049007 (B373F1) were diluted to ensure that the analyte concentrations were within the linear calibration range of the instrument.

Analyte	410049	
	006	007
Barium	5X	5X
Strontium	20X	20X
Uranium	5X	5X

Determination of Metals by ICP-MS

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

General Chemistry

Carbon, Total Organic

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

Cyanide, Total

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Sample Dilutions
The following sample 410049007 (B373F1) was diluted because target analyte concentrations exceeded the calibration range.

Analyte	410049
	007
Cyanide, Total	10X

Alkalinity

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

Chain of Custody and Supporting Documentation

08105

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

410049

C.O.C. # W17-011-080

Page 1 of 1

Collector	Kevin Patterson /CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	W17-011	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071
Project Title	RCRA, NOVEMBER 2016	Logbook No.	HNF-N-506 87152	Ice Chest No.	GW5-570
Shipped To (Lab)	GEL Laboratories, LLC	Method of Shipment	Commercial Carrier	Bill of Lading/Air Bill No.	7776 5056 0846
Protocol	RCRA	Priority:	15 Days PRIORITY	Offsite Property No.	7234

POSSIBLE SAMPLE HAZARDS/REMARKS

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

Special Handling:N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B373L8	yes ~~No~~	W	NOV 0 6 2016	1258	1x250-mL G/P	2320_ALKALINITY: COMMON	14 Days	Cool <=6C
B373L8	yes ~~No~~	W	NOV 0 6 2016	1258	1x500-mL G/P	6010_METALS_ICP: COMMON	6 Months	HNO3 to pH <2

Relinquished By	Print / Sign	Date/Time	Received By	Print / Sign	Date/Time
Kevin Patterson /CHPRC		NOV 0 6 2016 1425	SSU-1		NOV 0 6 2016 1425
SSU-1		NOV 0 7 2016 0815	Lesly Wall /CHPRC	Lesly Wall	NOV 0 7 2016 0815
Lesly Wall /CHPRC	Lesly Wall	NOV 0 7 2016 1400	FEDEX		
Fedex			Amy Stocdm		11.8.16 09:10

Matrix *

S	= Soil	DS	= Drum Solids
SE	= Sediment	DL	= Drum Liquids
SO	= Solid	T	= Tissue
SL	= Sludge	WI	= Wipe
W	= Water	L	= Liquid
O	= Oil	V	= Vegetation
A	= Air	X	= Other

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

PRINTED ON 9/21/2016 FSR ID = FSR37009 A-6004-842 (REV 2)

11/22/2016

REV.0

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

410049

C.O.C. # W17-011-067

Page 1 of 1

Collector	Juan Aguilar /CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	W17-011	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071 KW. 11/7/16
Project Title	RCRA, NOVEMBER 2016	Logbook No.	HNF-N-506 90 / 29	Ice Chest No.	GWS-~~SSO-468550~~
Shipped To (Lab)	GEL Laboratories, LLC	Method of Shipment	Commercial Carrier	Bill of Lading/Air Bill No.	7776 5539 9886
Protocol	RCRA	Priority:	15 Days PRIORITY	Offsite Property No.	72366

POSSIBLE SAMPLE HAZARDS/REMARKS

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

Special Handling:N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B37387	N	W	11-7-16	0914	1x250-mL G/P	2320_ALKALINITY: GW 01	14 Days	Cool <=6C
B37387	N	W	11-7-16	0914	1x250-mL G/P	9012_CYANIDE: COMMON	14 Days	NaOH to pH >=12/Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
	Juan Aguilar /CHPRC		NOV 07 2016 0958		Lesly Wall /CHPRC		NOV 07 2016 0958
Relinquished By	Lesly Wall /CHPRC		NOV 07 2016 1400	Received By	FEDEX		Date/Time
Relinquished By	Fedex		Date/Time	Received By			11.08.16 0910
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

S	= Soil	DS	= Drum Solids
SE	= Sediment	DL	= Drum Liquids
SO	= Solid	T	= Tissue
SL	= Sludge	WI	= Wipe
W	= Water	L	= Liquid
O	= Oil	V	= Vegetation
A	= Air	X	= Other

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

410049

C.O.C. # W17-011-073

Page 1 of 1

Collector	Scott King /CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	W17-011	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071
Project Title	RCRA, NOVEMBER 2016	Logbook No.	HNF-N-506 90/28	Ice Chest No.	GWS-570
Shipped To (Lab)	GEL Laboratories, LLC	Method of Shipment	Commercial Carrier	Bill of Lading/Air Bill No.	7776 5056 0846
Protocol	RCRA	Priority:	15 Days PRIORITY	Offsite Property No.	7234

POSSIBLE SAMPLE HAZARDS/REMARKS

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

Special Handling:N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B373F7	Y	W	11/6/16	0912	1x500-mL G/P	6020_METALS_ICPMS: GW 01; 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B373F1	N	W	↓	↓	1x250-mL G/P	2320_ALKALINITY: GW 01	14 Days	Cool <=6C
B373F1	N	W	↓	↓	1x500-mL G/P	6020_METALS_ICPMS: GW 01; 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B373F1	N	W	↓	↓	1x250-mL G/P	9012_CYANIDE: COMMON	14 Days	NaOH to pH >=12/Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Scott King /CHPRC			NOV 06 2016 0945	SSU #1			NOV 06 2016 0945
SSU #1			NOV 07 2016 0815	Lesly Wall /CHPRC		Lesly Wall	NOV 07 2016 0815
Lesly Wall /CHPRC		Lesly Wall	NOV 07 2016 1400	FEDEX			
Fedex				Ashley Goodner			11/08/16 0910

Matrix *

S	= Soil	DS	= Drum Solids
SE	= Sediment	DL	= Drum Liquids
SO	= Solid	T	= Tissue
SL	= Sludge	WI	= Wipe
W	= Water	L	= Liquid
O	= Oil	V	= Vegetation
A	= Air	X	= Other

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

PRINTED ON 9/21/2016 FSR ID = FSR37443 A-6004-842 (REV 2)

11/22/2016

REV.0

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

410049

C.O.C. # W17-011-072

Page 1 of 1

Collector	Scott King /CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	W17-011	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071
Project Title	RCRA, NOVEMBER 2016	Logbook No.	HNF-N-506 9028	Ice Chest No.	GWS-570
Shipped To (Lab)	GEL Laboratories, LLC	Method of Shipment	Commercial Carrier	Bill of Lading/Air Bill No.	7776 5056 0846
Protocol	RCRA	Priority:	15 Days PRIORITY	Offsite Property No.	17234

POSSIBLE SAMPLE HAZARDS/REMARKS

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

Special Handling:N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B373F6	Y	W	11/6/16	0710	1x500-mL G/P	6020_METALS_ICPMS: GW 01; 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B373F0	N	W	↓	↓	1x250-mL G/P	2320_ALKALINITY: GW 01	14 Days	Cool <=6C
B373F0	N	W			1x500-mL G/P	6020_METALS_ICPMS: GW 01; 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B373F0	N	W			1x250-mL G/P	9012_CYANIDE: COMMON	14 Days	NaOH to pH >=12/Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Scott King /CHPRC			NOV 06 2016 0945	SSU #1			NOV 06 2016 0945
SSU #1			NOV 07 2016 0815	Lesly Wall /CHPRC		Lesly Wall	NOV 07 2016 0815
Lesly Wall /CHPRC		Lesly Wall	NOV 07 2016 1400	FEDEX			
Fedex				Ayr Goodner			11/08/16 0910

Matrix *

S	= Soil	DS	= Drum Solids
SE	= Sediment	DL	= Drum Liquids
SO	= Solid	T	= Tissue
SL	= Sludge	WI	= Wipe
W	= Water	L	= Liquid
O	= Oil	V	= Vegetation
A	= Air	X	= Other

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

PRINTED ON 9/21/2016 FSR ID = FSR37444 A-6004-842 (REV 2)

11/22/2016

REV.0

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

410049

C.O.C. # W17-011-068

Page 1 of 1

Collector	Ed Kauer /CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	W17-011	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071 RW. 11/7/16
Project Title	RCRA, NOVEMBER 2016	Logbook No.	HNF-N-506 89151	Ice Chest No.	GWS- ~~550~~ ~~460~~ 550
Shipped To (Lab)	GEL Laboratories, LLC	Method of Shipment	Commercial Carrier	Bill of Lading/Air Bill No.	7776 5539 9886
Protocol	RCRA	Priority:	15 Days PRIORITY	Offsite Property No.	72316

POSSIBLE SAMPLE HAZARDS/REMARKS

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

Special Handling:N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B373B0	Y	W	11-6-16	1430	1x500-mL G/P	6020_METALS_ICPMS: GW 01; 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B37398	N	W	↓	↓	1x250-mL G/P	2320_ALKALINITY: GW 01	14 Days	Cool <=6C
B37398	N	W	↓	↓	1x500-mL G/P	6020_METALS_ICPMS: GW 01; 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B37398	N	W	↓	↓	1x250-mL G/P	9012_CYANIDE: COMMON	14 Days	NaOH to pH >=12/Cool <=6C
B37398	N	W	↓	↓	1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Ed Kauer /CHPRC			NOV 06 2016 1455	SSU-1			NOV 06 2016 1455
SSU-1			NOV 07 2016 1015	Lesly Wall /CHPRC			NOV 07 2016 1015
Lesly Wall /CHPRC			NOV 07 2016 1400	FEDEX			
Fedex							11.08.16 09:10

Matrix *

S	= Soil	DS	= Drum Solids
SE	= Sediment	DL	= Drum Liquids
SO	= Solid	T	= Tissue
SL	= Sludge	WI	= Wipe
W	= Water	L	= Liquid
O	= Oil	V	= Vegetation
A	= Air	X	= Other

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

PRINTED ON 9/21/2016 FSR ID = FSR37450 A-6004-842 (REV 2)

11/22/2016

REV.0

CH2MHill Plateau Remediation Company

62165

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

410049

C.O.C. # W17-011-074

Page 1 of 1

Collector	Juan Aguilar /CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	W17-011	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071
Project Title	RCRA, NOVEMBER 2016	Logbook No.	HNF-N-506 90129	Ice Chest No.	GWS-~~550~~-~~468~~ 550 RW. 11/7/16
Shipped To (Lab)	GEL Laboratories, LLC	Method of Shipment	Commercial Carrier	Bill of Lading/Air Bill No.	7776 5539 7886
Protocol	RCRA	Priority:	15 Days PRIORITY	Offsite Property No.	7236

POSSIBLE SAMPLE HAZARDS/REMARKS

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

Special Handling:N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B373H3	N	W	11-7-16	0943	1x250-mL G/P	2320_ALKALINITY: GW 01	14 Days	Cool <=6C
B373H3	N	W	↓	↓	1x500-mL G/P	6020_METALS_ICPMS: GW 01; 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B373H3	N	W	↓	↓	1x250-mL G/P	9012_CYANIDE: COMMON	14 Days	NaOH to pH >=12/Cool <=6C
B373H6	Y	W	11-7-16	0943	1x500-mL G/P	6020_METALS_ICPMS: GW 01; 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Juan Aguilar /CHPRC			NOV 07 2016 0958	Lesly Wall /CHPRC		Lesly Wall	NOV 07 2016 0958
Lesly Wall /CHPRC		Lesly Wall	NOV 07 2016 1400	FEDEX			
Fedex				Ashy Gresh			11.8.16 09:10

Matrix *

S	= Soil	DS	= Drum Solids
SE	= Sediment	DL	= Drum Liquids
SO	= Solid	T	= Tissue
SL	= Sludge	WI	= Wipe
W	= Water	L	= Liquid
O	= Oil	V	= Vegetation
A	= Air	X	= Other

FINAL SAMPLE DISPOSITION Disposal Method (e.g., Return to customer, per lab procedure, used in process) Disposed By Date/Time

PRINTED ON 9/21/2016

FSR ID = FSR37446

A-6004-842 (REV 2)

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: CPRC	SDG/AR/COC/Work Order: 410049
Received By: AG	Date Received: 11/08/16

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?		/	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0CPM
Classified Radioactive II or III by RSO?		/	If yes, Were swipes taken of sample containers < action levels?
COC/Samples marked containing PCBs?		/	
Package, COC, and/or Samples marked as beryllium or asbestos containing?		/	If yes, samples are to be segregated as Safety Controlled Samples, and opened by the GEL Safety Group.
Shipped as a DOT Hazardous?		/	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		/	

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	/			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	/			Preservation Method: Ice bags Blue ice Dry ice None Other (describe) *all temperatures are recorded in Celsius 10C
2a	Daily check performed and passed on IR temperature gun?	/			Temperature Device Serial #: Secondary Temperature Device Serial # (If Applicable): E5102009 185
3	Chain of custody documents included with shipment?	/			
4	Sample containers intact and sealed?	/			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5	Samples requiring chemical preservation at proper pH?	/			Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	Do Low Level Perchlorate samples have headspace as required?		/		Sample ID's and containers affected:
7	VOA vials contain acid preservation?	/			(If unknown, select No)
8	VOA vials free of headspace (defined as < 6mm bubble)?	/			Sample ID's and containers affected:
9	Are Encore containers present?			/	(If yes, immediately deliver to Volatiles laboratory)
10	Samples received within holding time?	/			ID's and tests affected:
11	Sample ID's on COC match ID's on bottles?	/			Sample ID's and containers affected:
12	Date & time on COC match date & time on bottles?	/			Sample ID's affected:
13	Number of containers received match number indicated on COC?	/			Sample ID's affected:
14	Are sample containers identifiable as GEL provided?			/	
15	COC form is properly signed in relinquished/received sections?	/			
16	Carrier and tracking number.				Circle Applicable: FedEx Air FedEx Ground UPS Field Services Courier Other 7776 5056 0846 7776 5539 9886

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials KS Date 11/9/16 Page 1 of 1

GL-CHL-SR-001 Rev 3

Data Review Qualifier Definitions

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 (843) 556−8171

Report Date: 21−NOV−16

Project Specific Qualifier Definitions for GEL Client Code: CPRC

Qualifier	Qualifier Definition	Department	Fraction
U	Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.		
J	The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated	Organics	
P	Aroclor target analyte with greater than 25% difference between column analyses.	Organics	
C	Analyte has been confirmed by GC/MS analysis	Organics	Pesticide
B	The analyte was detected in both the associated QC blank and in the sample.	Organics	
E	Concentration exceeds the calibration range of the instrument	Organics	
A	The TIC is a suspected aldol−condensation product	Organics	Semi−Volatile
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier		
N	Spike Sample recovery is outside control limits.		
*	Duplicate analysis not within control limits	Inorganics	
>	Result greater than quantifiable range or greater than upper limit of the analysis range	General Chemistry	
Z	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier		
B	The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).	Inorganics	Metals
D	Results are reported from a diluted aliquot of sample.		
E	Reported value is estimated due to interferences. See comment in narrative.	Inorganics	Metals
M	Duplicate precision not met.	Inorganics	Metals
o	Analyte failed to recover within LCS limits (0rganics only)	Organics	
S	Reported value determined by the Method of Standard Additions (MSA)	Inorganics	
T	Spike and/or spike duplicate sample recovery is outside control limits.	Organics	
W	Post−digestion spike recovery for GFAA out of control limit. Sample absorbency < 50% of spike absorbency.	Inorganics	
B	The associated QC sample blank has a result >= 2X the MDA and, after corrections, result is >= MDA for this sample	Radiological	
Y	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier		
+	Correlation coefficient for Method of Standard Additions (MSA) is < 0.995	Inorganics	
B	The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).	General Chemistry	
C	Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples.	Inorganics	Metals
C	Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples.	General Chemistry	
<	Sample is below the EPA guidance level for Reactive Releasable Cyanide and/or Reactive Releasable Sulfide	General Chemistry	
UX	Gamma Spectroscopy−−Uncertain identification	Radiological	

Laboratory Certifications

List of current GEL Certifications as of 21 November 2016

State	Certification
Alaska	UST−0110
Arkansas	88−0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH−0169
Delaware	SC00012
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330−15−00283, P330−15−00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho Chemistry	SC00012
Idaho Radiochemistry	SC00012
Illinois NELAP	200029
Indiana	C−SC−01
Kansas NELAP	E−10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA160006
Maryland	270
Massachusetts	M−SC012
Michigan	9976
Mississippi	SC00012
Nebraska	NE−OS−26−13
Nevada	SC000122016−1
New Hampshire NELAP	205415
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R−158
Oklahoma	9904
Pennsylvania NELAP	68−00485
S.Carolina Radchem	10120002
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235−16−11
Utah NELAP	SC000122016−21
Vermont	VT87156
Virginia NELAP	460202
Washington	C780
West Virginia	997404

Metals Analysis

Case Narrative

Metals
Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL410049
Work Order #: 410049

Product: **Determination of Metals by ICP-MS**
Analytical Method: 6020_METALS_ICPMS
Analytical Procedure: GL-MA-E-014 REV# 28
Analytical Batches: 1614414 and 1617583

Product: **Determination of Metals by ICP**
Analytical Method: 6010_METALS_ICP
Analytical Procedure: GL-MA-E-013 REV# 26
Analytical Batch: 1614418

Preparation Method: SW846 3005A
Preparation Procedure: GL-MA-E-006 REV# 13
Preparation Batches: 1614413, 1614416 and 1617582

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
410049002	B373B0
410049003	B37398
410049004	B373F6
410049005	B373F0
410049006	B373F7
410049007	B373F1
410049008	B373H3
410049009	B373H6
410049010	B373L8
1203665662	Method Blank (MB)**ICP**
1203665663	Laboratory Control Sample (LCS)
1203665666	410049002(B373B0L) Serial Dilution (SD)
1203665664	410049002(B373B0S) Matrix Spike (MS)
1203665665	410049002(B373B0SD) Matrix Spike Duplicate (MSD)
1203665654	Method Blank (MB)**ICP-MS**
1203673363	Method Blank (MB)**ICP-MS**
1203665655	Laboratory Control Sample (LCS)
1203673364	Laboratory Control Sample (LCS)
1203665658	410049002(B373B0L) Serial Dilution (SD)
1203673367	410049002(B373B0L) Serial Dilution (SD)
1203665656	410049002(B373B0S) Matrix Spike (MS)
1203673365	410049002(B373B0S) Matrix Spike (MS)
1203665657	410049002(B373B0SD) Matrix Spike Duplicate (MSD)
1203673366	410049002(B373B0SD) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Calibration Information

CRDL/PQL Requirements
The PQL standard recoveries for SW846 6010C or 6010D met the control limits with the exception of chromium and sodium. Client sample concentrations were less than the MDL or greater than two times the PQL; therefore the data were not adversely affected. 410049002 (B373B0), 410049003 (B37398), 410049004 (B373F6), 410049006 (B373F7), 410049007 (B373F1), 410049008 (B373H3), 410049009 (B373H6) and 410049010 (B373L8)-ICP.

Quality Control (QC) Information

Method Blank (MB) Statement
The method blanks (MB) analyzed with this SDG met the exception criteria with the exception of antimony. In instances where there were positive hits in the method blank, the results were evaluated and appropriately flagged on the data. 1203665662 (MB)-ICP. The method blanks (MB) analyzed with this SDG met the exception criteria with the exception of selenium. In instances where there were positive hits in the method blank, the results were evaluated and appropriately flagged on the data. 1203665654 (MB)-ICP-MS.

Technical Information

Sample Dilutions
Dilutions may be required for many reasons, including to minimize matrix interferences or to bring over range target analyte concentrations into the linear calibration range. Samples 410049006 (B373F7) and 410049007 (B373F1)-ICP-MS were diluted to ensure that the analyte concentrations were within the linear calibration range of the instrument.

Analyte	410049	
	006	007
Barium	5X	5X
Strontium	20X	20X
Uranium	5X	5X

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

CPRC001 CH2MHill Plateau Remediation Company

Client SDG: GEL410049 GEL Work Order: 410049

The Qualifiers in this report are defined as follows:

* Duplicate analysis not within control limits

B The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).

C Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples.

D Results are reported from a diluted aliquot of sample.

N Spike Sample recovery is outside control limits.

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Nik-Cole A. Elmore **Name: Nik-Cole Elmore**

Date: 21 NOV 2016 **Title: Data Validator**

Sample Data Summary

GEL Laboratories LLC

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL410049 **CONTRACT:** CPRC0W17011 **METHOD TYPE:** SW846

SAMPLE ID: 410049002 **BASIS:** As Received **DATE COLLECTED** 06−NOV−16

CLIENT ID: B373B0 **LEVEL:** Low **DATE RECEIVED** 08−NOV−16

MATRIX: WATER **%SOLIDS:** 0

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	15	ug/L	U	15	50	50	1	MS	SKJ	11/14/16 17:37	161114−4	1614414
7440−36−0	Antimony	1	ug/L	U	1	3	3	1	MS	SKJ	11/17/16 09:55	161116−13	1614414
7440−38−2	Arsenic	5.86	ug/L		1.7	5	5	1	MS	SKJ	11/14/16 17:37	161114−4	1614414
7440−39−3	Barium	72	ug/L		0.6	2	2	1	MS	SKJ	11/10/16 22:59	161110−3	1614414
7440−41−7	Beryllium	0.20	ug/L	U	0.2	0.5	0.5	1	MS	SKJ	11/14/16 17:37	161114−4	1614414
7440−42−8	Boron	55.7	ug/L		15	50	50	1	P	HSC	11/11/16 15:22	111116A−2	1614418
7440−43−9	Cadmium	0.30	ug/L	U	0.3	1	1	1	MS	SKJ	11/10/16 22:59	161110−3	1614414
7440−70−2	Calcium	72800	ug/L		50	200	200	1	P	HSC	11/11/16 15:22	111116A−2	1614418
7440−47−3	Chromium	4.99	ug/L	B	3	10	10	1	MS	SKJ	11/10/16 22:59	161110−3	1614414
7440−48−4	Cobalt	0.611	ug/L	B	0.1	1	1	1	MS	SKJ	11/10/16 22:59	161110−3	1614414
7440−50−8	Copper	0.887	ug/L	B	0.35	1	1	1	MS	SKJ	11/18/16 15:11	161118−15	1617583
7439−89−6	Iron	34.1	ug/L	B	30	100	100	1	P	HSC	11/11/16 15:22	111116A−2	1614418
7439−92−1	Lead	0.50	ug/L	U	0.5	2	2	1	MS	SKJ	11/10/16 22:59	161110−3	1614414
7439−95−4	Magnesium	20500	ug/L		110	300	300	1	P	HSC	11/11/16 15:22	111116A−2	1614418
7439−96−5	Manganese	1.56	ug/L	B	1	5	5	1	MS	SKJ	11/10/16 22:59	161110−3	1614414
7439−98−7	Molybdenum	5.94	ug/L		0.3	0.5	0.5	1	MS	SKJ	11/17/16 14:02	161117−14	1614414
7440−02−0	Nickel	3.85	ug/L		0.5	2	2	1	MS	SKJ	11/10/16 22:59	161110−3	1614414
7440−09−7	Potassium	9110	ug/L		50	150	150	1	P	HSC	11/11/16 15:22	111116A−2	1614418
7782−49−2	Selenium	9.82	ug/L	C	2	5	5	1	MS	SKJ	11/14/16 17:37	161114−4	1614414
7440−22−4	Silver	0.40	ug/L	U	0.4	1	1	1	MS	SKJ	11/10/16 22:59	161110−3	1614414
7440−23−5	Sodium	38700	ug/L		100	300	300	1	P	HSC	11/11/16 15:22	111116A−2	1614418
7440−24−6	Strontium	357	ug/L		2	10	10	1	MS	SKJ	11/10/16 22:59	161110−3	1614414
7440−28−0	Thallium	0.60	ug/L	U	0.6	2	2	1	MS	SKJ	11/10/16 22:59	161110−3	1614414
7440−29−1	Thorium	0.60	ug/L	U	0.6	2	2	1	MS	SKJ	11/14/16 17:37	161114−4	1614414
7440−31−5	Tin	1	ug/L	U	1	5	5	1	MS	SKJ	11/10/16 22:59	161110−3	1614414
7440−61−1	Uranium	36.3	ug/L		0.067	0.2	0.2	1	MS	SKJ	11/16/16 18:50	161116−5	1614414
7440−62−2	Vanadium	16.6	ug/L		1	5	5	1	P	HSC	11/11/16 15:22	111116A−2	1614418
7440−66−6	Zinc	3.5	ug/L	U	3.5	10	10	1	MS	SKJ	11/10/16 22:59	161110−3	1614414

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1614414	1614413	SW846 3005A	50	mL	50	mL	11/08/16	CXW4
1614418	1614416	SW846 3005A	50	mL	50	mL	11/08/16	CXW4
1617583	1617582	SW846 3005A	50	mL	50	mL	11/17/16	CXW4

METALS
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INORGANICS ANALYSIS DATA PACKAGE

***Analytical Methods:**

P	**SW846 3005A/6010C**
MS	**SW846 3005A/6020A**

GEL Laboratories LLC

METALS
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INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL410049 **CONTRACT:** CPRC0W17011 **METHOD TYPE:** SW846

SAMPLE ID: 410049003 **BASIS:** As Received **DATE COLLECTED** 06−NOV−16

CLIENT ID: B37398 **LEVEL:** Low **DATE RECEIVED** 08−NOV−16

MATRIX: WATER **%SOLIDS:** 0

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	15	ug/L	U	15	50	50	1	MS	SKJ	11/14/16 17:50	161114−4	1614414
7440−36−0	Antimony	1	ug/L	U	1	3	3	1	MS	SKJ	11/17/16 10:01	161116−13	1614414
7440−38−2	Arsenic	6.63	ug/L		1.7	5	5	1	MS	SKJ	11/14/16 17:50	161114−4	1614414
7440−39−3	Barium	72.3	ug/L		0.6	2	2	1	MS	SKJ	11/10/16 23:31	161110−3	1614414
7440−41−7	Beryllium	0.20	ug/L	U	0.2	0.5	0.5	1	MS	SKJ	11/14/16 17:50	161114−4	1614414
7440−42−8	Boron	56.2	ug/L		15	50	50	1	P	HSC	11/11/16 15:34	111116A−2	1614418
7440−43−9	Cadmium	0.30	ug/L	U	0.3	1	1	1	MS	SKJ	11/10/16 23:31	161110−3	1614414
7440−70−2	Calcium	73600	ug/L		50	200	200	1	P	HSC	11/11/16 15:34	111116A−2	1614418
7440−47−3	Chromium	15.1	ug/L		3	10	10	1	MS	SKJ	11/10/16 23:31	161110−3	1614414
7440−48−4	Cobalt	0.296	ug/L	B	0.1	1	1	1	MS	SKJ	11/10/16 23:31	161110−3	1614414
7440−50−8	Copper	1.6	ug/L		0.35	1	1	1	MS	SKJ	11/18/16 15:21	161118−15	1617583
7439−89−6	Iron	92	ug/L	B	30	100	100	1	P	HSC	11/11/16 15:34	111116A−2	1614418
7439−92−1	Lead	0.50	ug/L	U	0.5	2	2	1	MS	SKJ	11/10/16 23:31	161110−3	1614414
7439−95−4	Magnesium	20600	ug/L		110	300	300	1	P	HSC	11/11/16 15:34	111116A−2	1614418
7439−96−5	Manganese	2.25	ug/L	B	1	5	5	1	MS	SKJ	11/10/16 23:31	161110−3	1614414
7439−98−7	Molybdenum	5.89	ug/L		0.3	0.5	0.5	1	MS	SKJ	11/17/16 14:15	161117−14	1614414
7440−02−0	Nickel	8.23	ug/L		0.5	2	2	1	MS	SKJ	11/10/16 23:31	161110−3	1614414
7440−09−7	Potassium	9200	ug/L		50	150	150	1	P	HSC	11/11/16 15:34	111116A−2	1614418
7782−49−2	Selenium	10.6	ug/L	C	2	5	5	1	MS	SKJ	11/14/16 17:50	161114−4	1614414
7440−22−4	Silver	0.40	ug/L	U	0.4	1	1	1	MS	SKJ	11/10/16 23:31	161110−3	1614414
7440−23−5	Sodium	39700	ug/L		100	300	300	1	P	HSC	11/11/16 15:34	111116A−2	1614418
7440−24−6	Strontium	364	ug/L		2	10	10	1	MS	SKJ	11/10/16 23:31	161110−3	1614414
7440−28−0	Thallium	0.60	ug/L	U	0.6	2	2	1	MS	SKJ	11/10/16 23:31	161110−3	1614414
7440−29−1	Thorium	0.60	ug/L	U	0.6	2	2	1	MS	SKJ	11/14/16 17:50	161114−4	1614414
7440−31−5	Tin	1	ug/L	U	1	5	5	1	MS	SKJ	11/10/16 23:31	161110−3	1614414
7440−61−1	Uranium	36.6	ug/L		0.067	0.2	0.2	1	MS	SKJ	11/16/16 19:00	161116−5	1614414
7440−62−2	Vanadium	17.1	ug/L		1	5	5	1	P	HSC	11/11/16 15:34	111116A−2	1614418
7440−66−6	Zinc	3.5	ug/L	U	3.5	10	10	1	MS	SKJ	11/10/16 23:31	161110−3	1614414

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1614414	1614413	SW846 3005A	50	mL	50	mL	11/08/16	CXW4
1614418	1614416	SW846 3005A	50	mL	50	mL	11/08/16	CXW4
1617583	1617582	SW846 3005A	50	mL	50	mL	11/17/16	CXW4

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

***Analytical Methods:**

P	**SW846 3005A/6010C**
MS	**SW846 3005A/6020A**

GEL Laboratories LLC

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL410049 **CONTRACT:** CPRC0W17011 **METHOD TYPE:** SW846

SAMPLE ID: 410049004 **BASIS:** As Received **DATE COLLECTED** 06−NOV−16

CLIENT ID: B373F6 **LEVEL:** Low **DATE RECEIVED** 08−NOV−16

MATRIX: WATER **%SOLIDS:** 0

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	15	ug/L	U	15	50	50	1	MS	SKJ	11/14/16 17:58	161114−4	1614414
7440−36−0	Antimony	1	ug/L	U	1	3	3	1	MS	SKJ	11/17/16 10:03	161116−13	1614414
7440−38−2	Arsenic	1.7	ug/L	U	1.7	5	5	1	MS	SKJ	11/14/16 17:58	161114−4	1614414
7440−39−3	Barium	0.60	ug/L	U	0.6	2	2	1	MS	SKJ	11/10/16 23:35	161110−3	1614414
7440−41−7	Beryllium	0.20	ug/L	U	0.2	0.5	0.5	1	MS	SKJ	11/14/16 17:58	161114−4	1614414
7440−42−8	Boron	15	ug/L	U	15	50	50	1	P	HSC	11/11/16 15:37	111116A−2	1614418
7440−43−9	Cadmium	0.30	ug/L	U	0.3	1	1	1	MS	SKJ	11/10/16 23:35	161110−3	1614414
7440−70−2	Calcium	50	ug/L	U	50	200	200	1	P	HSC	11/11/16 15:37	111116A−2	1614418
7440−47−3	Chromium	3	ug/L	U	3	10	10	1	MS	SKJ	11/10/16 23:35	161110−3	1614414
7440−48−4	Cobalt	0.10	ug/L	U	0.1	1	1	1	MS	SKJ	11/10/16 23:35	161110−3	1614414
7440−50−8	Copper	0.350	ug/L	U	0.35	1	1	1	MS	SKJ	11/18/16 15:23	161118−15	1617583
7439−89−6	Iron	30	ug/L	U	30	100	100	1	P	HSC	11/11/16 15:37	111116A−2	1614418
7439−92−1	Lead	0.50	ug/L	U	0.5	2	2	1	MS	SKJ	11/10/16 23:35	161110−3	1614414
7439−95−4	Magnesium	110	ug/L	U	110	300	300	1	P	HSC	11/11/16 15:37	111116A−2	1614418
7439−96−5	Manganese	1	ug/L	U	1	5	5	1	MS	SKJ	11/10/16 23:35	161110−3	1614414
7439−98−7	Molybdenum	0.30	ug/L	U	0.3	0.5	0.5	1	MS	SKJ	11/17/16 14:18	161117−14	1614414
7440−02−0	Nickel	0.50	ug/L	U	0.5	2	2	1	MS	SKJ	11/10/16 23:35	161110−3	1614414
7440−09−7	Potassium	50	ug/L	U	50	150	150	1	P	HSC	11/11/16 15:37	111116A−2	1614418
7782−49−2	Selenium	3.55	ug/L	CB	2	5	5	1	MS	SKJ	11/14/16 17:58	161114−4	1614414
7440−22−4	Silver	0.40	ug/L	U	0.4	1	1	1	MS	SKJ	11/10/16 23:35	161110−3	1614414
7440−23−5	Sodium	100	ug/L	U	100	300	300	1	P	HSC	11/11/16 15:37	111116A−2	1614418
7440−24−6	Strontium	2	ug/L	U	2	10	10	1	MS	SKJ	11/10/16 23:35	161110−3	1614414
7440−28−0	Thallium	0.60	ug/L	U	0.6	2	2	1	MS	SKJ	11/10/16 23:35	161110−3	1614414
7440−29−1	Thorium	0.60	ug/L	U	0.6	2	2	1	MS	SKJ	11/14/16 17:58	161114−4	1614414
7440−31−5	Tin	1	ug/L	U	1	5	5	1	MS	SKJ	11/10/16 23:35	161110−3	1614414
7440−61−1	Uranium	0.067	ug/L	U	0.067	0.2	0.2	1	MS	SKJ	11/16/16 19:02	161116−5	1614414
7440−62−2	Vanadium	1	ug/L	U	1	5	5	1	P	HSC	11/11/16 15:37	111116A−2	1614418
7440−66−6	Zinc	3.5	ug/L	U	3.5	10	10	1	MS	SKJ	11/10/16 23:35	161110−3	1614414

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1614414	1614413	SW846 3005A	50	mL	50	mL	11/08/16	CXW4
1614418	1614416	SW846 3005A	50	mL	50	mL	11/08/16	CXW4
1617583	1617582	SW846 3005A	50	mL	50	mL	11/17/16	CXW4

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

***Analytical Methods:**

P	**SW846 3005A/6010C**
MS	**SW846 3005A/6020A**

GEL Laboratories LLC

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL410049 **CONTRACT:** CPRC0W17011 **METHOD TYPE:** SW846

SAMPLE ID: 410049005 **BASIS:** As Received **DATE COLLECTED** 06−NOV−16

CLIENT ID: B373F0 **LEVEL:** Low **DATE RECEIVED** 08−NOV−16

MATRIX: WATER **%SOLIDS:** 0

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	15	ug/L	U	15	50	50	1	MS	SKJ	11/14/16 18:00	161114−4	1614414
7440−36−0	Antimony	1	ug/L	U	1	3	3	1	MS	SKJ	11/17/16 10:09	161116−13	1614414
7440−38−2	Arsenic	1.7	ug/L	U	1.7	5	5	1	MS	SKJ	11/14/16 18:00	161114−4	1614414
7440−39−3	Barium	0.60	ug/L	U	0.6	2	2	1	MS	SKJ	11/10/16 23:38	161110−3	1614414
7440−41−7	Beryllium	0.20	ug/L	U	0.2	0.5	0.5	1	MS	SKJ	11/14/16 18:00	161114−4	1614414
7440−42−8	Boron	15	ug/L	U	15	50	50	1	P	HSC	11/11/16 15:40	111116A−2	1614418
7440−43−9	Cadmium	0.30	ug/L	U	0.3	1	1	1	MS	SKJ	11/10/16 23:38	161110−3	1614414
7440−70−2	Calcium	50	ug/L	U	50	200	200	1	P	HSC	11/11/16 15:40	111116A−2	1614418
7440−47−3	Chromium	3	ug/L	U	3	10	10	1	MS	SKJ	11/10/16 23:38	161110−3	1614414
7440−48−4	Cobalt	0.10	ug/L	U	0.1	1	1	1	MS	SKJ	11/10/16 23:38	161110−3	1614414
7440−50−8	Copper	0.350	ug/L	U	0.35	1	1	1	MS	SKJ	11/18/16 15:24	161118−15	1617583
7439−89−6	Iron	30	ug/L	U	30	100	100	1	P	HSC	11/11/16 15:40	111116A−2	1614418
7439−92−1	Lead	0.50	ug/L	U	0.5	2	2	1	MS	SKJ	11/10/16 23:38	161110−3	1614414
7439−95−4	Magnesium	110	ug/L	U	110	300	300	1	P	HSC	11/11/16 15:40	111116A−2	1614418
7439−96−5	Manganese	1	ug/L	U	1	5	5	1	MS	SKJ	11/10/16 23:38	161110−3	1614414
7439−98−7	Molybdenum	0.30	ug/L	U	0.3	0.5	0.5	1	MS	SKJ	11/17/16 14:20	161117−14	1614414
7440−02−0	Nickel	0.50	ug/L	U	0.5	2	2	1	MS	SKJ	11/10/16 23:38	161110−3	1614414
7440−09−7	Potassium	50	ug/L	U	50	150	150	1	P	HSC	11/11/16 15:40	111116A−2	1614418
7782−49−2	Selenium	3.6	ug/L	CB	2	5	5	1	MS	SKJ	11/14/16 18:00	161114−4	1614414
7440−22−4	Silver	0.40	ug/L	U	0.4	1	1	1	MS	SKJ	11/10/16 23:38	161110−3	1614414
7440−23−5	Sodium	100	ug/L	U	100	300	300	1	P	HSC	11/14/16 10:25	111416−1	1614418
7440−24−6	Strontium	2	ug/L	U	2	10	10	1	MS	SKJ	11/10/16 23:38	161110−3	1614414
7440−28−0	Thallium	0.60	ug/L	U	0.6	2	2	1	MS	SKJ	11/10/16 23:38	161110−3	1614414
7440−29−1	Thorium	0.60	ug/L	U	0.6	2	2	1	MS	SKJ	11/14/16 18:00	161114−4	1614414
7440−31−5	Tin	1	ug/L	U	1	5	5	1	MS	SKJ	11/10/16 23:38	161110−3	1614414
7440−61−1	Uranium	0.067	ug/L	U	0.067	0.2	0.2	1	MS	SKJ	11/16/16 19:04	161116−5	1614414
7440−62−2	Vanadium	1	ug/L	U	1	5	5	1	P	HSC	11/11/16 15:40	111116A−2	1614418
7440−66−6	Zinc	3.5	ug/L	U	3.5	10	10	1	MS	SKJ	11/10/16 23:38	161110−3	1614414

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1614414	1614413	SW846 3005A	50	mL	50	mL	11/08/16	CXW4
1614418	1614416	SW846 3005A	50	mL	50	mL	11/08/16	CXW4
1617583	1617582	SW846 3005A	50	mL	50	mL	11/17/16	CXW4

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

***Analytical Methods:**

P	**SW846 3005A/6010C**
MS	**SW846 3005A/6020A**

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METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL410049 **CONTRACT:** CPRC0W17011 **METHOD TYPE:** SW846

SAMPLE ID: 410049006 **BASIS:** As Received **DATE COLLECTED** 06−NOV−16

CLIENT ID: B373F7 **LEVEL:** Low **DATE RECEIVED** 08−NOV−16

MATRIX: WATER **%SOLIDS:** 0

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	15	ug/L	U	15	50	50	1	MS	SKJ	11/14/16 18:03	161114−4	1614414
7440−36−0	Antimony	1	ug/L	U	1	3	3	1	MS	SKJ	11/17/16 09:49	161116−13	1614414
7440−38−2	Arsenic	5.81	ug/L		1.7	5	5	1	MS	SKJ	11/14/16 18:03	161114−4	1614414
7440−39−3	Barium	144	ug/L	D	3	10	10	5	MS	SKJ	11/14/16 17:24	161114−4	1614414
7440−41−7	Beryllium	0.20	ug/L	U	0.2	0.5	0.5	1	MS	SKJ	11/14/16 18:03	161114−4	1614414
7440−42−8	Boron	23.9	ug/L	B	15	50	50	1	P	HSC	11/11/16 15:50	111116A−2	1614418
7440−43−9	Cadmium	0.30	ug/L	U	0.3	1	1	1	MS	SKJ	11/10/16 23:42	161110−3	1614414
7440−70−2	Calcium	181000	ug/L		50	200	200	1	P	HSC	11/11/16 15:50	111116A−2	1614418
7440−47−3	Chromium	30.6	ug/L		3	10	10	1	MS	SKJ	11/10/16 23:42	161110−3	1614414
7440−48−4	Cobalt	1.4	ug/L		0.1	1	1	1	MS	SKJ	11/10/16 23:42	161110−3	1614414
7440−50−8	Copper	1.34	ug/L		0.35	1	1	1	MS	SKJ	11/18/16 15:26	161118−15	1617583
7439−89−6	Iron	349	ug/L		30	100	100	1	P	HSC	11/11/16 15:50	111116A−2	1614418
7439−92−1	Lead	0.50	ug/L	U	0.5	2	2	1	MS	SKJ	11/10/16 23:42	161110−3	1614414
7439−95−4	Magnesium	51700	ug/L		110	300	300	1	P	HSC	11/11/16 15:50	111116A−2	1614418
7439−96−5	Manganese	1	ug/L	B	1	5	5	1	MS	SKJ	11/10/16 23:42	161110−3	1614414
7439−98−7	Molybdenum	6.62	ug/L		0.3	0.5	0.5	1	MS	SKJ	11/17/16 13:59	161117−14	1614414
7440−02−0	Nickel	3.22	ug/L		0.5	2	2	1	MS	SKJ	11/10/16 23:42	161110−3	1614414
7440−09−7	Potassium	17600	ug/L		50	150	150	1	P	HSC	11/11/16 15:50	111116A−2	1614418
7782−49−2	Selenium	23	ug/L	C	2	5	5	1	MS	SKJ	11/14/16 18:03	161114−4	1614414
7440−22−4	Silver	0.40	ug/L	U	0.4	1	1	1	MS	SKJ	11/10/16 23:42	161110−3	1614414
7440−23−5	Sodium	254000	ug/L		100	300	300	1	P	HSC	11/11/16 15:50	111116A−2	1614418
7440−24−6	Strontium	1150	ug/L	D	40	200	200	20	MS	SKJ	11/16/16 18:29	161116−5	1614414
7440−28−0	Thallium	0.60	ug/L	U	0.6	2	2	1	MS	SKJ	11/10/16 23:42	161110−3	1614414
7440−29−1	Thorium	0.60	ug/L	U	0.6	2	2	1	MS	SKJ	11/14/16 18:03	161114−4	1614414
7440−31−5	Tin	1	ug/L	U	1	5	5	1	MS	SKJ	11/10/16 23:42	161110−3	1614414
7440−61−1	Uranium	136	ug/L	D	0.335	1	1	5	MS	SKJ	11/16/16 18:34	161116−5	1614414
7440−62−2	Vanadium	13.3	ug/L		1	5	5	1	P	HSC	11/11/16 15:50	111116A−2	1614418
7440−66−6	Zinc	3.5	ug/L	U	3.5	10	10	1	MS	SKJ	11/10/16 23:42	161110−3	1614414

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1614414	1614413	SW846 3005A	50	mL	50	mL	11/08/16	CXW4
1614418	1614416	SW846 3005A	50	mL	50	mL	11/08/16	CXW4
1617583	1617582	SW846 3005A	50	mL	50	mL	11/17/16	CXW4

METALS
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INORGANICS ANALYSIS DATA PACKAGE

***Analytical Methods:**

P	**SW846 3005A/6010C**
MS	**SW846 3005A/6020A**

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METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL410049 **CONTRACT:** CPRC0W17011 **METHOD TYPE:** SW846

SAMPLE ID: 410049007 **BASIS:** As Received **DATE COLLECTED** 06−NOV−16

CLIENT ID: B373F1 **LEVEL:** Low **DATE RECEIVED** 08−NOV−16

MATRIX: WATER **%SOLIDS:** 0

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	15	ug/L	U	15	50	50	1	MS	SKJ	11/14/16 18:06	161114−4	1614414
7440−36−0	Antimony	1	ug/L	U	1	3	3	1	MS	SKJ	11/17/16 09:50	161116−13	1614414
7440−38−2	Arsenic	6.8	ug/L		1.7	5	5	1	MS	SKJ	11/14/16 18:06	161114−4	1614414
7440−39−3	Barium	143	ug/L	D	3	10	10	5	MS	SKJ	11/14/16 17:26	161114−4	1614414
7440−41−7	Beryllium	0.20	ug/L	U	0.2	0.5	0.5	1	MS	SKJ	11/14/16 18:06	161114−4	1614414
7440−42−8	Boron	23.4	ug/L	B	15	50	50	1	P	HSC	11/11/16 15:53	111116A−2	1614418
7440−43−9	Cadmium	0.30	ug/L	U	0.3	1	1	1	MS	SKJ	11/10/16 23:46	161110−3	1614414
7440−70−2	Calcium	184000	ug/L		50	200	200	1	P	HSC	11/11/16 15:53	111116A−2	1614418
7440−47−3	Chromium	30	ug/L		3	10	10	1	MS	SKJ	11/10/16 23:46	161110−3	1614414
7440−48−4	Cobalt	1.37	ug/L		0.1	1	1	1	MS	SKJ	11/10/16 23:46	161110−3	1614414
7440−50−8	Copper	1.17	ug/L		0.35	1	1	1	MS	SKJ	11/18/16 15:27	161118−15	1617583
7439−89−6	Iron	355	ug/L		30	100	100	1	P	HSC	11/11/16 15:53	111116A−2	1614418
7439−92−1	Lead	0.50	ug/L	U	0.5	2	2	1	MS	SKJ	11/10/16 23:46	161110−3	1614414
7439−95−4	Magnesium	52800	ug/L		110	300	300	1	P	HSC	11/11/16 15:53	111116A−2	1614418
7439−96−5	Manganese	1	ug/L	B	1	5	5	1	MS	SKJ	11/10/16 23:46	161110−3	1614414
7439−98−7	Molybdenum	6.38	ug/L		0.3	0.5	0.5	1	MS	SKJ	11/17/16 14:01	161117−14	1614414
7440−02−0	Nickel	3.22	ug/L		0.5	2	2	1	MS	SKJ	11/10/16 23:46	161110−3	1614414
7440−09−7	Potassium	18000	ug/L		50	150	150	1	P	HSC	11/11/16 15:53	111116A−2	1614418
7782−49−2	Selenium	22.2	ug/L	C	2	5	5	1	MS	SKJ	11/14/16 18:06	161114−4	1614414
7440−22−4	Silver	0.40	ug/L	U	0.4	1	1	1	MS	SKJ	11/10/16 23:46	161110−3	1614414
7440−23−5	Sodium	254000	ug/L		100	300	300	1	P	HSC	11/11/16 15:53	111116A−2	1614418
7440−24−6	Strontium	1110	ug/L	D	40	200	200	20	MS	SKJ	11/16/16 18:31	161116−5	1614414
7440−28−0	Thallium	0.60	ug/L	U	0.6	2	2	1	MS	SKJ	11/10/16 23:46	161110−3	1614414
7440−29−1	Thorium	0.60	ug/L	U	0.6	2	2	1	MS	SKJ	11/14/16 18:06	161114−4	1614414
7440−31−5	Tin	1	ug/L	U	1	5	5	1	MS	SKJ	11/10/16 23:46	161110−3	1614414
7440−61−1	Uranium	135	ug/L	D	0.335	1	1	5	MS	SKJ	11/16/16 18:36	161116−5	1614414
7440−62−2	Vanadium	13.3	ug/L		1	5	5	1	P	HSC	11/11/16 15:53	111116A−2	1614418
7440−66−6	Zinc	3.5	ug/L	U	3.5	10	10	1	MS	SKJ	11/10/16 23:46	161110−3	1614414

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1614414	1614413	SW846 3005A	50	mL	50	mL	11/08/16	CXW4
1614418	1614416	SW846 3005A	50	mL	50	mL	11/08/16	CXW4
1617583	1617582	SW846 3005A	50	mL	50	mL	11/17/16	CXW4

METALS
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INORGANICS ANALYSIS DATA PACKAGE

***Analytical Methods:**

P	**SW846 3005A/6010C**
MS	**SW846 3005A/6020A**

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METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL410049 **CONTRACT:** CPRC0W17011 **METHOD TYPE:** SW846

SAMPLE ID: 410049008 **BASIS:** As Received **DATE COLLECTED** 07−NOV−16

CLIENT ID: B373H3 **LEVEL:** Low **DATE RECEIVED** 08−NOV−16

MATRIX: WATER **%SOLIDS:** 0

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	15	ug/L	U	15	50	50	1	MS	SKJ	11/14/16 18:08	161114−4	1614414
7440−36−0	Antimony	1	ug/L	U	1	3	3	1	MS	SKJ	11/17/16 10:11	161116−13	1614414
7440−38−2	Arsenic	7.11	ug/L		1.7	5	5	1	MS	SKJ	11/14/16 18:08	161114−4	1614414
7440−39−3	Barium	50.9	ug/L		0.6	2	2	1	MS	SKJ	11/10/16 23:50	161110−3	1614414
7440−41−7	Beryllium	0.20	ug/L	U	0.2	0.5	0.5	1	MS	SKJ	11/14/16 18:08	161114−4	1614414
7440−42−8	Boron	42.7	ug/L	B	15	50	50	1	P	HSC	11/11/16 15:56	111116A−2	1614418
7440−43−9	Cadmium	0.30	ug/L	U	0.3	1	1	1	MS	SKJ	11/10/16 23:50	161110−3	1614414
7440−70−2	Calcium	46700	ug/L		50	200	200	1	P	HSC	11/11/16 15:56	111116A−2	1614418
7440−47−3	Chromium	3	ug/L	U	3	10	10	1	MS	SKJ	11/10/16 23:50	161110−3	1614414
7440−48−4	Cobalt	0.10	ug/L	U	0.1	1	1	1	MS	SKJ	11/10/16 23:50	161110−3	1614414
7440−50−8	Copper	2.72	ug/L		0.35	1	1	1	MS	SKJ	11/18/16 15:33	161118−15	1617583
7439−89−6	Iron	30	ug/L	U	30	100	100	1	P	HSC	11/11/16 15:56	111116A−2	1614418
7439−92−1	Lead	0.50	ug/L	U	0.5	2	2	1	MS	SKJ	11/10/16 23:50	161110−3	1614414
7439−95−4	Magnesium	13800	ug/L		110	300	300	1	P	HSC	11/11/16 15:56	111116A−2	1614418
7439−96−5	Manganese	1	ug/L	U	1	5	5	1	MS	SKJ	11/10/16 23:50	161110−3	1614414
7439−98−7	Molybdenum	6.89	ug/L		0.3	0.5	0.5	1	MS	SKJ	11/17/16 14:22	161117−14	1614414
7440−02−0	Nickel	1.1	ug/L	B	0.5	2	2	1	MS	SKJ	11/10/16 23:50	161110−3	1614414
7440−09−7	Potassium	6850	ug/L		50	150	150	1	P	HSC	11/11/16 15:56	111116A−2	1614418
7782−49−2	Selenium	8.36	ug/L	C	2	5	5	1	MS	SKJ	11/14/16 18:08	161114−4	1614414
7440−22−4	Silver	0.40	ug/L	U	0.4	1	1	1	MS	SKJ	11/10/16 23:50	161110−3	1614414
7440−23−5	Sodium	24900	ug/L		100	300	300	1	P	HSC	11/11/16 15:56	111116A−2	1614418
7440−24−6	Strontium	237	ug/L		2	10	10	1	MS	SKJ	11/10/16 23:50	161110−3	1614414
7440−28−0	Thallium	0.60	ug/L	U	0.6	2	2	1	MS	SKJ	11/10/16 23:50	161110−3	1614414
7440−29−1	Thorium	0.60	ug/L	U	0.6	2	2	1	MS	SKJ	11/14/16 18:08	161114−4	1614414
7440−31−5	Tin	1	ug/L	U	1	5	5	1	MS	SKJ	11/10/16 23:50	161110−3	1614414
7440−61−1	Uranium	12.3	ug/L		0.067	0.2	0.2	1	MS	SKJ	11/16/16 19:07	161116−5	1614414
7440−62−2	Vanadium	18.5	ug/L		1	5	5	1	P	HSC	11/11/16 15:56	111116A−2	1614418
7440−66−6	Zinc	3.5	ug/L	U	3.5	10	10	1	MS	SKJ	11/10/16 23:50	161110−3	1614414

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1614414	1614413	SW846 3005A	50	mL	50	mL	11/08/16	CXW4
1614418	1614416	SW846 3005A	50	mL	50	mL	11/08/16	CXW4
1617583	1617582	SW846 3005A	50	mL	50	mL	11/17/16	CXW4

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

***Analytical Methods:**

P	**SW846 3005A/6010C**
MS	**SW846 3005A/6020A**

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METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL410049 **CONTRACT:** CPRC0W17011 **METHOD TYPE:** SW846

SAMPLE ID: 410049009 **BASIS:** As Received **DATE COLLECTED** 07−NOV−16

CLIENT ID: B373H6 **LEVEL:** Low **DATE RECEIVED** 08−NOV−16

MATRIX: WATER **%SOLIDS:** 0

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	15	ug/L	U	15	50	50	1	MS	SKJ	11/14/16 18:11	161114−4	1614414
7440−36−0	Antimony	1	ug/L	U	1	3	3	1	MS	SKJ	11/17/16 10:12	161116−13	1614414
7440−38−2	Arsenic	6.59	ug/L		1.7	5	5	1	MS	SKJ	11/14/16 18:11	161114−4	1614414
7440−39−3	Barium	51.5	ug/L		0.6	2	2	1	MS	SKJ	11/10/16 23:54	161110−3	1614414
7440−41−7	Beryllium	0.20	ug/L	U	0.2	0.5	0.5	1	MS	SKJ	11/14/16 18:11	161114−4	1614414
7440−42−8	Boron	42.2	ug/L	B	15	50	50	1	P	HSC	11/11/16 15:59	111116A−2	1614418
7440−43−9	Cadmium	0.30	ug/L	U	0.3	1	1	1	MS	SKJ	11/10/16 23:54	161110−3	1614414
7440−70−2	Calcium	46700	ug/L		50	200	200	1	P	HSC	11/11/16 15:59	111116A−2	1614418
7440−47−3	Chromium	3	ug/L	U	3	10	10	1	MS	SKJ	11/10/16 23:54	161110−3	1614414
7440−48−4	Cobalt	0.102	ug/L	B	0.1	1	1	1	MS	SKJ	11/10/16 23:54	161110−3	1614414
7440−50−8	Copper	0.724	ug/L	B	0.35	1	1	1	MS	SKJ	11/18/16 15:35	161118−15	1617583
7439−89−6	Iron	30	ug/L	U	30	100	100	1	P	HSC	11/11/16 15:59	111116A−2	1614418
7439−92−1	Lead	0.50	ug/L	U	0.5	2	2	1	MS	SKJ	11/10/16 23:54	161110−3	1614414
7439−95−4	Magnesium	13800	ug/L		110	300	300	1	P	HSC	11/11/16 15:59	111116A−2	1614418
7439−96−5	Manganese	1	ug/L	U	1	5	5	1	MS	SKJ	11/10/16 23:54	161110−3	1614414
7439−98−7	Molybdenum	6.92	ug/L		0.3	0.5	0.5	1	MS	SKJ	11/17/16 14:23	161117−14	1614414
7440−02−0	Nickel	0.979	ug/L	B	0.5	2	2	1	MS	SKJ	11/10/16 23:54	161110−3	1614414
7440−09−7	Potassium	6860	ug/L		50	150	150	1	P	HSC	11/11/16 15:59	111116A−2	1614418
7782−49−2	Selenium	8.15	ug/L	C	2	5	5	1	MS	SKJ	11/14/16 18:11	161114−4	1614414
7440−22−4	Silver	0.40	ug/L	U	0.4	1	1	1	MS	SKJ	11/10/16 23:54	161110−3	1614414
7440−23−5	Sodium	23900	ug/L		100	300	300	1	P	HSC	11/11/16 15:59	111116A−2	1614418
7440−24−6	Strontium	241	ug/L		2	10	10	1	MS	SKJ	11/10/16 23:54	161110−3	1614414
7440−28−0	Thallium	0.60	ug/L	U	0.6	2	2	1	MS	SKJ	11/10/16 23:54	161110−3	1614414
7440−29−1	Thorium	0.60	ug/L	U	0.6	2	2	1	MS	SKJ	11/14/16 18:11	161114−4	1614414
7440−31−5	Tin	1	ug/L	U	1	5	5	1	MS	SKJ	11/10/16 23:54	161110−3	1614414
7440−61−1	Uranium	12.4	ug/L		0.067	0.2	0.2	1	MS	SKJ	11/16/16 19:16	161116−5	1614414
7440−62−2	Vanadium	17.9	ug/L		1	5	5	1	P	HSC	11/11/16 15:59	111116A−2	1614418
7440−66−6	Zinc	3.5	ug/L	U	3.5	10	10	1	MS	SKJ	11/10/16 23:54	161110−3	1614414

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1614414	1614413	SW846 3005A	50	mL	50	mL	11/08/16	CXW4
1614418	1614416	SW846 3005A	50	mL	50	mL	11/08/16	CXW4
1617583	1617582	SW846 3005A	50	mL	50	mL	11/17/16	CXW4

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

***Analytical Methods:**

P	**SW846 3005A/6010C**
MS	**SW846 3005A/6020A**

GEL Laboratories LLC

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL410049 **CONTRACT:** CPRC0W17011 **METHOD TYPE:** SW846

SAMPLE ID: 410049010 **BASIS:** As Received **DATE COLLECTED** 06−NOV−16

CLIENT ID: B373L8 **LEVEL:** Low **DATE RECEIVED** 08−NOV−16

MATRIX: WATER **%SOLIDS:** 0

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−36−0	Antimony	3.5	ug/L	U	3.5	10	10	1	P	HSC	11/11/16 16:02	111116A−2	1614418
7440−38−2	Arsenic	22.6	ug/L	B	5	30	30	1	P	HSC	11/11/16 16:02	111116A−2	1614418
7440−39−3	Barium	17.3	ug/L		1	5	5	1	P	HSC	11/11/16 16:02	111116A−2	1614418
7440−43−9	Cadmium	1	ug/L	U	1	5	5	1	P	HSC	11/11/16 16:02	111116A−2	1614418
7440−70−2	Calcium	6470	ug/L		50	200	200	1	P	HSC	11/11/16 16:02	111116A−2	1614418
7440−47−3	Chromium	24	ug/L		1	5	5	1	P	HSC	11/11/16 16:02	111116A−2	1614418
7440−48−4	Cobalt	1	ug/L	U	1	5	5	1	P	HSC	11/11/16 16:02	111116A−2	1614418
7440−50−8	Copper	3	ug/L	U	3	10	10	1	P	HSC	11/11/16 16:02	111116A−2	1614418
7439−89−6	Iron	92.8	ug/L	B	30	100	100	1	P	HSC	11/11/16 16:02	111116A−2	1614418
7439−95−4	Magnesium	2600	ug/L		110	300	300	1	P	HSC	11/11/16 16:02	111116A−2	1614418
7439−96−5	Manganese	2	ug/L	U	2	10	10	1	P	HSC	11/11/16 16:02	111116A−2	1614418
7440−02−0	Nickel	1.5	ug/L	U	1.5	5	5	1	P	HSC	11/11/16 16:02	111116A−2	1614418
7440−09−7	Potassium	2870	ug/L		50	150	150	1	P	HSC	11/11/16 16:02	111116A−2	1614418
7440−22−4	Silver	1	ug/L	U	1	5	5	1	P	HSC	11/11/16 16:02	111116A−2	1614418
7440−23−5	Sodium	111000	ug/L		100	300	300	1	P	HSC	11/11/16 16:02	111116A−2	1614418
7440−62−2	Vanadium	144	ug/L		1	5	5	1	P	HSC	11/11/16 16:02	111116A−2	1614418
7440−66−6	Zinc	10.1	ug/L		3.3	10	10	1	P	HSC	11/11/16 16:02	111116A−2	1614418

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1614418	1614416	SW846 3005A	50	mL	50	mL	11/08/16	CXW4

***Analytical Methods:**

P **SW846 3005A/6010C**

Quality Control Summary

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: November 21, 2016

CH2MHill Plateau Remediation Company
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington

Contact: **Mr. Scot Fitzgerald**

Workorder: **410049**

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS										
Batch 1614414										
QC1203665655 LCS										
Aluminum	2000			2070	ug/L		103	(80%-120%)	SKJ	11/14/16 17:21
Antimony	50.0			59.0	ug/L		118	(80%-120%)		11/17/16 09:47
Arsenic	50.0			53.1	ug/L		106	(80%-120%)		11/14/16 17:21
Barium	50.0			47.3	ug/L		94.7	(80%-120%)		11/10/16 22:55
Beryllium	50.0			55.9	ug/L		112	(80%-120%)		11/14/16 17:21
Cadmium	50.0			50.4	ug/L		101	(80%-120%)		11/10/16 22:55
Chromium	50.0			48.6	ug/L		97.2	(80%-120%)		
Cobalt	50.0			48.9	ug/L		97.8	(80%-120%)		
Lead	50.0			51.7	ug/L		103	(80%-120%)		
Manganese	50.0			49.2	ug/L		98.4	(80%-120%)		
Molybdenum	50.0			53.0	ug/L		106	(80%-120%)		11/17/16 13:57
Nickel	50.0			48.2	ug/L		96.3	(80%-120%)		11/10/16 22:55
Selenium	50.0			57.0	ug/L		114	(80%-120%)		11/14/16 17:21
Silver	50.0			50.6	ug/L		101	(80%-120%)		11/10/16 22:55
Strontium	50.0			49.8	ug/L		99.7	(80%-120%)		
Thallium	50.0			49.2	ug/L		98.4	(80%-120%)		
Thorium	50.0			51.3	ug/L		103	(80%-120%)		11/14/16 17:21
Tin	50.0			51.6	ug/L		103	(80%-120%)		11/10/16 22:55
Uranium	50.0			53.1	ug/L		106	(80%-120%)		11/16/16 18:22
Zinc	50.0			51.8	ug/L		104	(80%-120%)		11/10/16 22:55

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QC Summary

Workorder: **410049**

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS										
Batch 1614414										
QC1203665654 MB										
Aluminum			U	15.0	ug/L				SKJ	11/14/16 17:18
Antimony			U	1.00	ug/L					11/17/16 09:45
Arsenic			U	1.70	ug/L					11/14/16 17:18
Barium			U	0.600	ug/L					11/10/16 22:51
Beryllium			U	0.200	ug/L					11/14/16 17:18
Cadmium			U	0.300	ug/L					11/10/16 22:51
Chromium			U	3.00	ug/L					
Cobalt			U	0.100	ug/L					
Lead			U	0.500	ug/L					
Manganese			U	1.00	ug/L					
Molybdenum			U	0.300	ug/L					11/17/16 13:55
Nickel			U	0.500	ug/L					11/10/16 22:51
Selenium			B	3.09	ug/L					11/14/16 17:18
Silver			U	0.400	ug/L					11/10/16 22:51
Strontium			U	2.00	ug/L					
Thallium			U	0.600	ug/L					
Thorium			U	0.600	ug/L					11/14/16 17:18
Tin			U	1.00	ug/L					11/10/16 22:51
Uranium			U	0.067	ug/L					11/16/16 18:19
Zinc			U	3.50	ug/L					11/10/16 22:51
QC1203665656 410049002 MS										
Aluminum	2000	U	15.0	2070	ug/L		103	(75%-125%)		11/14/16 17:39

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QC Summary

Workorder: **410049**

Parmname	NOM	Qual	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS											
Batch 1614414											
Antimony	50.0	U	1.00		61.0	ug/L		120	(75%-125%)	SKJ	11/17/16 09:57
Arsenic	50.0		5.86		59.0	ug/L		106	(75%-125%)		11/14/16 17:39
Barium	50.0		72.0		118	ug/L		91	(75%-125%)		11/10/16 23:03
Beryllium	50.0	U	0.200		58.1	ug/L		116	(75%-125%)		11/14/16 17:39
Cadmium	50.0	U	0.300		50.7	ug/L		101	(75%-125%)		11/10/16 23:03
Chromium	50.0	B	4.99		53.3	ug/L		96.6	(75%-125%)		
Cobalt	50.0	B	0.611		47.2	ug/L		93.2	(75%-125%)		
Lead	50.0	U	0.500		50.9	ug/L		102	(75%-125%)		
Manganese	50.0	B	1.56		49.3	ug/L		95.4	(75%-125%)		
Molybdenum	50.0		5.94		62.5	ug/L		113	(75%-125%)		11/17/16 14:04
Nickel	50.0		3.85		49.4	ug/L		91.1	(75%-125%)		11/10/16 23:03
Selenium	50.0	C	9.82		63.5	ug/L		107	(75%-125%)		11/14/16 17:39
Silver	50.0	U	0.400		50.1	ug/L		99.9	(75%-125%)		11/10/16 23:03
Strontium	50.0		357		407	ug/L		N/A	(75%-125%)		
Thallium	50.0	U	0.600		49.0	ug/L		97.6	(75%-125%)		
Thorium	50.0	U	0.600		53.2	ug/L		106	(75%-125%)		11/14/16 17:39
Tin	50.0	U	1.00		52.9	ug/L		105	(75%-125%)		11/10/16 23:03
Uranium	50.0		36.3		89.9	ug/L		107	(75%-125%)		11/16/16 18:53
Zinc	50.0	U	3.50		51.4	ug/L		100	(75%-125%)		11/10/16 23:03
QC1203665657 410049002 MSD											
Aluminum	2000	U	15.0		2150	ug/L	4.2	108	(0%-20%)		11/14/16 17:42
Antimony	50.0	U	1.00		62.5	ug/L	2.43	123	(0%-20%)		11/17/16 09:58

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QC Summary

Workorder: **410049**

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS											
Batch 1614414											
Arsenic	50.0		5.86		61.0	ug/L	3.28	110	(0%-20%)	SKJ	11/14/16 17:42
Barium	50.0		72.0		121	ug/L	2.54	97.1	(0%-20%)		11/10/16 23:07
Beryllium	50.0	U	0.200		61.3	ug/L	5.36	123	(0%-20%)		11/14/16 17:42
Cadmium	50.0	U	0.300		50.7	ug/L	0.158	101	(0%-20%)		11/10/16 23:07
Chromium	50.0	B	4.99		54.0	ug/L	1.24	98	(0%-20%)		
Cobalt	50.0	B	0.611		47.6	ug/L	0.871	94	(0%-20%)		
Lead	50.0	U	0.500		51.6	ug/L	1.3	103	(0%-20%)		
Manganese	50.0	B	1.56		49.5	ug/L	0.428	95.8	(0%-20%)		
Molybdenum	50.0		5.94		63.3	ug/L	1.23	115	(0%-20%)		11/17/16 14:06
Nickel	50.0		3.85		49.6	ug/L	0.343	91.5	(0%-20%)		11/10/16 23:07
Selenium	50.0	C	9.82		66.9	ug/L	5.21	114	(0%-20%)		11/14/16 17:42
Silver	50.0	U	0.400		50.3	ug/L	0.397	100	(0%-20%)		11/10/16 23:07
Strontium	50.0		357		416	ug/L	2.29	N/A	(0%-20%)		
Thallium	50.0	U	0.600		49.4	ug/L	0.794	98.4	(0%-20%)		
Thorium	50.0	U	0.600		54.1	ug/L	1.68	108	(0%-20%)		11/14/16 17:42
Tin	50.0	U	1.00		52.4	ug/L	0.819	105	(0%-20%)		11/10/16 23:07
Uranium	50.0		36.3		92.9	ug/L	3.31	113	(0%-20%)		11/16/16 18:55
Zinc	50.0	U	3.50		51.2	ug/L	0.271	100	(0%-20%)		11/10/16 23:07
QC1203665658 410049002 SDILT											
Aluminum		U	0.394	DU	75.0	ug/L	N/A		(0%-10%)		11/14/16 17:47
Antimony		U	0.849	DU	5.00	ug/L	N/A		(0%-10%)		11/17/16 10:00
Arsenic			5.86	DU	8.50	ug/L	N/A		(0%-10%)		11/14/16 17:47

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QC Summary

Workorder: **410049**

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS										
Batch 1614414										
Barium		72.0	D	15.0	ug/L	4.17		(0%-10%)	SKJ	11/10/16 23:15
Beryllium	U	-0.022	DU	1.00	ug/L	N/A		(0%-10%)		11/14/16 17:47
Cadmium	U	0.101	DU	1.50	ug/L	N/A		(0%-10%)		11/10/16 23:15
Chromium	B	4.99	DU	15.0	ug/L	N/A		(0%-10%)		
Cobalt	B	0.611	DU	0.500	ug/L	N/A		(0%-10%)		
Lead	U	0.054	DU	2.50	ug/L	N/A		(0%-10%)		
Manganese	B	1.56	DU	5.00	ug/L	N/A		(0%-10%)		
Molybdenum		5.94	D	1.02	ug/L	14.5		(0%-10%)		11/17/16 14:16
Nickel		3.85	BD	0.779	ug/L	1.22		(0%-10%)		11/10/16 23:15
Selenium	C	9.82	BD	3.30	ug/L	68.1		(0%-10%)		11/14/16 17:47
Silver	U	0.128	DU	2.00	ug/L	N/A		(0%-10%)		11/10/16 23:15
Strontium		357	D	75.4	ug/L	5.57		(0%-10%)		
Thallium	U	0.244	DU	3.00	ug/L	N/A		(0%-10%)		
Thorium	U	0.116	DU	3.00	ug/L	N/A		(0%-10%)		11/14/16 17:47
Tin	U	0.150	DU	5.00	ug/L	N/A		(0%-10%)		11/10/16 23:15
Uranium		36.3	D	7.72	ug/L	6.32		(0%-10%)		11/16/16 18:57
Zinc	U	1.13	DU	17.5	ug/L	N/A		(0%-10%)		11/10/16 23:15
Batch 1617583										
QC1203673364 LCS										
Copper	50.0			52.6	ug/L		105	(80%-120%)	SKJ	11/18/16 15:09
QC1203673363 MB										
Copper			U	0.350	ug/L					11/18/16 15:08
QC1203673365 410049002 MS										
Copper	50.0 B	0.887		51.8	ug/L		102	(75%-125%)		11/18/16 15:12

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QC Summary

Workorder: **410049**

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS											
Batch 1617583											
QC1203673366 410049002 MSD											
Copper	50.0	B	0.887		51.9	ug/L	0.137	102	(0%-20%)	SKJ	11/18/16 15:14
QC1203673367 410049002 SDILT											
Copper		B	0.887	DU	1.75	ug/L	N/A		(0%-10%)		11/18/16 15:17
Metals Analysis-ICP											
Batch 1614418											
QC1203665663 LCS											
Antimony	500				512	ug/L		102	(80%-120%)	HSC	11/11/16 15:19
Arsenic	500				503	ug/L		101	(80%-120%)		
Barium	500				507	ug/L		101	(80%-120%)		
Boron	500				523	ug/L		105	(80%-120%)		
Cadmium	500				502	ug/L		100	(80%-120%)		
Calcium	5000				5030	ug/L		101	(80%-120%)		
Chromium	500				497	ug/L		99.4	(80%-120%)		
Cobalt	500				505	ug/L		101	(80%-120%)		
Copper	500				512	ug/L		102	(80%-120%)		
Iron	5000				5310	ug/L		106	(80%-120%)		
Magnesium	5000				5300	ug/L		106	(80%-120%)		
Manganese	500				506	ug/L		101	(80%-120%)		
Nickel	500				510	ug/L		102	(80%-120%)		
Potassium	5000				5090	ug/L		102	(80%-120%)		
Silver	500				500	ug/L		100	(80%-120%)		
Sodium	5000				5080	ug/L		102	(80%-120%)		
Vanadium	500				510	ug/L		102	(80%-120%)		

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QC Summary

Workorder: **410049**

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis-ICP												
Batch 1614418												
Zinc	500				491	ug/L		98.2	(80%-120%)			
QC1203665662 MB												
Antimony				B	4.05	ug/L				HSC	11/11/16	15:16
Arsenic				U	5.00	ug/L						
Barium				U	1.00	ug/L						
Boron				U	15.0	ug/L						
Cadmium				U	1.00	ug/L						
Calcium				U	50.0	ug/L						
Chromium				U	1.00	ug/L						
Cobalt				U	1.00	ug/L						
Copper				U	3.00	ug/L						
Iron				U	30.0	ug/L						
Magnesium				U	110	ug/L						
Manganese				U	2.00	ug/L						
Nickel				U	1.50	ug/L						
Potassium				U	50.0	ug/L						
Silver				U	1.00	ug/L						
Sodium				U	100	ug/L						
Vanadium				U	1.00	ug/L						
Zinc				U	3.30	ug/L						
QC1203665664 410049002 MS												
Antimony	500	U	3.50		514	ug/L		103	(75%-125%)		11/11/16	15:25
Arsenic	500	B	7.40		514	ug/L		101	(75%-125%)			
Barium	500		73.7		567	ug/L		98.7	(75%-125%)			

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QC Summary

Workorder: **410049**

Parmname	NOM	Qual	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis-ICP											
Batch 1614418											
Boron	500		55.7		591	ug/L		107	(75%-125%)	HSC	11/11/16 15:25
Cadmium	500	U	1.00		487	ug/L		97.3	(75%-125%)		
Calcium	5000		72800		77300	ug/L		N/A	(75%-125%)		
Chromium	500		5.72		488	ug/L		96.5	(75%-125%)		
Cobalt	500	U	1.00		478	ug/L		95.5	(75%-125%)		
Copper	500	U	3.00		501	ug/L		100	(75%-125%)		
Iron	5000	B	34.1		5240	ug/L		104	(75%-125%)		
Magnesium	5000		20500		25500	ug/L		N/A	(75%-125%)		
Manganese	500	U	2.00		480	ug/L		96.1	(75%-125%)		
Nickel	500	B	2.54		480	ug/L		95.5	(75%-125%)		
Potassium	5000		9110		14000	ug/L		97.1	(75%-125%)		
Silver	500	U	1.00		486	ug/L		97.3	(75%-125%)		
Sodium	5000		38700		44600	ug/L		N/A	(75%-125%)		
Vanadium	500		16.6		525	ug/L		102	(75%-125%)		
Zinc	500	U	3.30		475	ug/L		95	(75%-125%)		
QC1203665665 410049002 MSD											
Antimony	500	U	3.50		527	ug/L	2.55	105	(0%-20%)		11/11/16 15:28
Arsenic	500	B	7.40		524	ug/L	1.96	103	(0%-20%)		
Barium	500		73.7		580	ug/L	2.22	101	(0%-20%)		
Boron	500		55.7		609	ug/L	2.84	111	(0%-20%)		
Cadmium	500	U	1.00		498	ug/L	2.22	99.5	(0%-20%)		
Calcium	5000		72800		79300	ug/L	2.46	N/A	(0%-20%)		

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QC Summary

Workorder: **410049**

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis-ICP											
Batch 1614418											
Chromium	500		5.72		499	ug/L	2.32	98.7	(0%-20%)	HSC	11/11/16 15:28
Cobalt	500	U	1.00		487	ug/L	2.02	97.5	(0%-20%)		
Copper	500	U	3.00		513	ug/L	2.47	103	(0%-20%)		
Iron	5000	B	34.1		5290	ug/L	1.01	105	(0%-20%)		
Magnesium	5000		20500		26200	ug/L	2.41	N/A	(0%-20%)		
Manganese	500	U	2.00		491	ug/L	2.21	98.2	(0%-20%)		
Nickel	500	B	2.54		490	ug/L	2.07	97.5	(0%-20%)		
Potassium	5000		9110		14400	ug/L	2.96	105	(0%-20%)		
Silver	500	U	1.00		498	ug/L	2.29	99.5	(0%-20%)		
Sodium	5000		38700		43500	ug/L	2.43	N/A	(0%-20%)		
Vanadium	500		16.6		537	ug/L	2.33	104	(0%-20%)		
Zinc	500	U	3.30		485	ug/L	2.12	97	(0%-20%)		
QC1203665666 410049002 SDILT											
Antimony		U	-1.34	DU	17.5	ug/L	N/A		(0%-10%)		11/11/16 15:31
Arsenic		B	7.40	DU	25.0	ug/L	N/A		(0%-10%)		
Barium			73.7	D	15.0	ug/L	1.87		(0%-10%)		
Boron			55.7	DU	75.0	ug/L	N/A		(0%-10%)		
Cadmium		U	-0.0199	DU	5.00	ug/L	N/A		(0%-10%)		
Calcium			72800	D	14800	ug/L	1.94		(0%-10%)		
Chromium			5.72	BD	1.46	ug/L	27.4		(0%-10%)		
Cobalt		U	-0.378	DU	5.00	ug/L	N/A		(0%-10%)		
Copper		U	0.344	DU	15.0	ug/L	N/A		(0%-10%)		

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QC Summary

Workorder: **410049**

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis-ICP										
Batch 1614418										
Iron	B	34.1	DU	150	ug/L	N/A		(0%-10%)	HSC	11/11/16 15:31
Magnesium		20500	D	4270	ug/L	3.94		(0%-10%)		
Manganese	U	-0.0122	DU	10.0	ug/L	N/A		(0%-10%)		
Nickel	B	2.54	DU	7.50	ug/L	N/A		(0%-10%)		
Potassium		9110	D	1790	ug/L	1.56		(0%-10%)		
Silver	U	-0.291	DU	5.00	ug/L	N/A		(0%-10%)		
Sodium		38700	D	8130	ug/L	5.13		(0%-10%)		
Vanadium		16.6	BD	3.26	ug/L	2.03		(0%-10%)		
Zinc	U	-0.273	DU	16.5	ug/L	N/A		(0%-10%)		

Notes:

The Qualifiers in this report are defined as follows:

- * Duplicate analysis not within control limits
- + Correlation coefficient for Method of Standard Additions (MSA) is < 0.995
- B The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).
- C Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples.
- D Results are reported from a diluted aliquot of sample.
- E Reported value is estimated due to interferences. See comment in narrative.
- M Duplicate precision not met.
- N Spike Sample recovery is outside control limits.
- S Reported value determined by the Method of Standard Additions (MSA)
- U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
- W Post-digestion spike recovery for GFAA out of control limit. Sample absorbency < 50% of spike absorbency.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Z Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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QC Summary

Workorder: **410049**

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

General Chem Analysis

Case Narrative

General Chemistry
Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL410049
Work Order #: 410049

Product: **Carbon, Total Organic**
Analytical Method: SW846 9060A
Analytical Procedure: GL-GC-E-093 REV# 14
Analytical Batch: 1614377

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
410049003	B37398
1203665591	Method Blank (MB)
1203665592	Laboratory Control Sample (LCS)
1203665594	409988002(B37373) Sample Duplicate (DUP)
1203665596	409988002(B37373) Post Spike (PS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

Product: **Cyanide, Total**
Analytical Method: 9012_CYANIDE
Analytical Procedure: GL-GC-E-095 REV# 18
Analytical Batches: 1614530 and 1614529

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
410049001	B37387
410049003	B37398
410049005	B373F0
410049007	B373F1
410049008	B373H3
1203665939	Method Blank (MB)
1203665940	Laboratory Control Sample (LCS)
1203665941	410049003(B37398) Sample Duplicate (DUP)
1203665942	410049003(B37398) Matrix Spike (MS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Sample Dilutions
The following sample 410049007 (B373F1) was diluted because target analyte concentrations exceeded the calibration range. Dilutions may be required for many reasons, including to minimize matrix interferences or to bring over range target analyte concentrations into the linear calibration range.

Analyte	410049 007
Cyanide, Total	10X

Product: **Alkalinity**
Analytical Method: 2320_ALKALINITY
Analytical Procedure: GL-GC-E-033 REV# 13
Analytical Batch: 1618011

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
410049001	B37387
410049003	B37398
410049005	B373F0
410049007	B373F1
410049008	B373H3
410049010	B373L8
1203674465	Laboratory Control Sample (LCS)
1203674467	410076001(NonSDG) Sample Duplicate (DUP)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

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Qualifier Definition Report
for

CPRC001 CH2MHill Plateau Remediation Company

Client SDG: GEL410049 GEL Work Order: 410049

The Qualifiers in this report are defined as follows:

B The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).

D Results are reported from a diluted aliquot of sample.

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Kristen Mizzell **Name: Kristen Mizzell**

Date: 21 NOV 2016 **Title: Analyst I**

Sample Data Summary

GEL LABORATORIES LLC
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Certificate of Analysis

Report Date: November 21, 2016

Company :	CH2MHill Plateau Remediation Company
Address :	MSIN R3-50 CHPRC PO Box 1600 Richland, Washington 99352
Contact:	Mr. Scot Fitzgerald
Project:	CHPRC SAF W17-011

Client Sample ID:	B37387	Project:	CPRC0W17011
Sample ID:	410049001	Client ID:	CPRC001
Matrix:	WATER		
Collect Date:	07-NOV-16 09:14		
Receive Date:	08-NOV-16		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Flow Injection Analysis												
9012_CYANIDE: COMMON "As Received"												
Cyanide, Total	B	3.92	1.67	5.00	ug/L	1.00	1	AXH3	11/14/16	0723	1614530	1
Titration and Ion Analysis												
2320_ALKALINITY: GW 01 "As Received"												
Alkalinity, Total as CaCO3		120000	1450	4000	ug/L			RXB5	11/18/16	1953	1618011	2
Bicarbonate alkalinity (CaCO3)		120000	1450	4000	ug/L							
Carbonate alkalinity (CaCO3)	U	1450	1450	4000	ug/L							
Hydroxide alkalinity as CaCO3	U	1450	1450	4000	ug/L							

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9010C Distillation	SW846 9010C Prep	AXH3	11/14/16	0710	1614529

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	9012_CYANIDE	
2	2320_ALKALINITY	

Notes:

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
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Certificate of Analysis

Report Date: November 21, 2016

Company :	CH2MHill Plateau Remediation Company
Address :	MSIN R3-50 CHPRC PO Box 1600 Richland, Washington 99352
Contact:	Mr. Scot Fitzgerald
Project:	CHPRC SAF W17-011

Client Sample ID:	B37398	Project:	CPRC0W17011
Sample ID:	410049003	Client ID:	CPRC001
Matrix:	WATER		
Collect Date:	06-NOV-16 14:30		
Receive Date:	08-NOV-16		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis												
9060_TOC: COMMON "As Received"												
Total Organic Carbon #1	U	330	330	1000	ug/L		1	TSM	11/09/16	1531	1614377	1
Total Organic Carbon #2	B	338	330	1000	ug/L		1					
Total Organic Carbon #3	B	342	330	1000	ug/L		1					
Total Organic Carbon #4	B	350	330	1000	ug/L		1					
Total Organic Carbon Average	B	336	330	1000	ug/L		1					
Flow Injection Analysis												
9012_CYANIDE: COMMON "As Received"												
Cyanide, Total		46.4	1.67	5.00	ug/L	1.00	1	AXH3	11/14/16	0724	1614530	2
Titration and Ion Analysis												
2320_ALKALINITY: GW 01 "As Received"												
Alkalinity, Total as CaCO3		117000	1450	4000	ug/L			RXB5	11/18/16	1955	1618011	3
Bicarbonate alkalinity (CaCO3)		117000	1450	4000	ug/L							
Carbonate alkalinity (CaCO3)	U	1450	1450	4000	ug/L							
Hydroxide alkalinity as CaCO3	U	1450	1450	4000	ug/L							

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9010C Distillation	SW846 9010C Prep	AXH3	11/14/16	0710	1614529

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9060A	
2	9012_CYANIDE	
3	2320_ALKALINITY	

Notes:

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
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Certificate of Analysis

Report Date: November 21, 2016

Company :	CH2MHill Plateau Remediation Company
Address :	MSIN R3-50 CHPRC PO Box 1600 Richland, Washington 99352
Contact:	Mr. Scot Fitzgerald
Project:	CHPRC SAF W17-011

Client Sample ID:	B373F0	Project:	CPRC0W17011
Sample ID:	410049005	Client ID:	CPRC001
Matrix:	WATER		
Collect Date:	06-NOV-16 07:10		
Receive Date:	08-NOV-16		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Flow Injection Analysis												
9012_CYANIDE: COMMON "As Received"												
Cyanide, Total	U	1.67	1.67	5.00	ug/L	1.00	1	AXH3	11/14/16	0732	1614530	1
Titration and Ion Analysis												
2320_ALKALINITY: GW 01 "As Received"												
Alkalinity, Total as CaCO3	U	1450	1450	4000	ug/L			RXB5	11/18/16	1956	1618011	2
Bicarbonate alkalinity (CaCO3)	U	1450	1450	4000	ug/L							
Carbonate alkalinity (CaCO3)	U	1450	1450	4000	ug/L							
Hydroxide alkalinity as CaCO3	U	1450	1450	4000	ug/L							

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9010C Distillation	SW846 9010C Prep	AXH3	11/14/16	0710	1614529

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	9012_CYANIDE	
2	2320_ALKALINITY	

Notes:

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
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Certificate of Analysis

Report Date: November 21, 2016

Company :	CH2MHill Plateau Remediation Company
Address :	MSIN R3-50 CHPRC PO Box 1600 Richland, Washington 99352
Contact:	Mr. Scot Fitzgerald
Project:	CHPRC SAF W17-011

Client Sample ID:	B373F1	Project:	CPRC0W17011
Sample ID:	410049007	Client ID:	CPRC001
Matrix:	WATER		
Collect Date:	06-NOV-16 09:12		
Receive Date:	08-NOV-16		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Flow Injection Analysis												
9012_CYANIDE: COMMON "As Received"												
Cyanide, Total	D	954	16.7	50.0	ug/L	1.00	10	AXH3	11/14/16	0801	1614530	1
Titration and Ion Analysis												
2320_ALKALINITY: GW 01 "As Received"												
Alkalinity, Total as CaCO3		101000	1450	4000	ug/L			RXB5	11/18/16	1959	1618011	2
Bicarbonate alkalinity (CaCO3)		101000	1450	4000	ug/L							
Carbonate alkalinity (CaCO3)	U	1450	1450	4000	ug/L							
Hydroxide alkalinity as CaCO3	U	1450	1450	4000	ug/L							

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9010C Distillation	SW846 9010C Prep	AXH3	11/14/16	0710	1614529

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	9012_CYANIDE	
2	2320_ALKALINITY	

Notes:

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC
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Certificate of Analysis

Report Date: November 21, 2016

Company :	CH2MHill Plateau Remediation Company
Address :	MSIN R3-50 CHPRC PO Box 1600 Richland, Washington 99352
Contact:	Mr. Scot Fitzgerald
Project:	CHPRC SAF W17-011

Client Sample ID:	B373H3	Project:	CPRC0W17011
Sample ID:	410049008	Client ID:	CPRC001
Matrix:	WATER		
Collect Date:	07-NOV-16 09:43		
Receive Date:	08-NOV-16		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Flow Injection Analysis												
9012_CYANIDE: COMMON "As Received"												
Cyanide, Total		5.15	1.67	5.00	ug/L	1.00	1	AXH3	11/14/16	0734	1614530	1
Titration and Ion Analysis												
2320_ALKALINITY: GW 01 "As Received"												
Alkalinity, Total as CaCO3		120000	1450	4000	ug/L			RXB5	11/18/16	2002	1618011	2
Bicarbonate alkalinity (CaCO3)		120000	1450	4000	ug/L							
Carbonate alkalinity (CaCO3)	U	1450	1450	4000	ug/L							
Hydroxide alkalinity as CaCO3	U	1450	1450	4000	ug/L							

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9010C Distillation	SW846 9010C Prep	AXH3	11/14/16	0710	1614529

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	9012_CYANIDE	
2	2320_ALKALINITY	

Notes:

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: November 21, 2016

Company :	CH2MHill Plateau Remediation Company
Address :	MSIN R3-50 CHPRC PO Box 1600 Richland, Washington 99352
Contact:	Mr. Scot Fitzgerald
Project:	CHPRC SAF W17-011

Client Sample ID:	B373L8	Project:	CPRC0W17011
Sample ID:	410049010	Client ID:	CPRC001
Matrix:	WATER		
Collect Date:	06-NOV-16 12:58		
Receive Date:	08-NOV-16		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Titration and Ion Analysis												
2320_ALKALINITY: GW 01 "As Received"												
Alkalinity, Total as CaCO3		150000	1450	4000	ug/L			RXB5	11/18/16	2004	1618011	1
Bicarbonate alkalinity (CaCO3)		109000	1450	4000	ug/L							
Carbonate alkalinity (CaCO3)		41900	1450	4000	ug/L							
Hydroxide alkalinity as CaCO3	U	1450	1450	4000	ug/L							

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	2320_ALKALINITY	

Notes:

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

Quality Control Summary

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: November 21, 2016

CH2MHill Plateau Remediation Company
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington

Contact: **Mr. Scot Fitzgerald**

Workorder: **410049**

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Carbon Analysis											
Batch 1614377											
QC1203665594 409988002 DUP											
Total Organic Carbon Average		B	499	B	495	ug/L	0.805 ^		(+/-1000)	TSM	11/09/16 10:48
QC1203665592 LCS											
Total Organic Carbon Average	10000				9890	ug/L		98.9	(80%-120%)		11/09/16 04:16
QC1203665591 MB											
Total Organic Carbon Average				U	330	ug/L					11/09/16 04:06
QC1203665596 409988002 PS											
Total Organic Carbon Average	10.0	B	0.499		10.6	mg/L		101	(75%-125%)		11/09/16 11:28
Flow Injection Analysis											
Batch 1614530											
QC1203665941 410049003 DUP											
Cyanide, Total			46.4		43.6	ug/L	6.22		(0%-20%)	AXH3	11/14/16 07:25
QC1203665940 LCS											
Cyanide, Total	50.0				49.3	ug/L		98.6	(80%-120%)		11/14/16 07:22
QC1203665939 MB											
Cyanide, Total				U	1.67	ug/L					11/14/16 07:21
QC1203665942 410049003 MS											
Cyanide, Total	100		46.4		152	ug/L		106	(75%-125%)		11/14/16 07:26
Titration and Ion Analysis											
Batch 1618011											
QC1203674467 410076001 DUP											
Alkalinity, Total as CaCO3			126000		127000	ug/L	0.791		(0%-20%)	RXB5	11/18/16 20:10
Bicarbonate alkalinity (CaCO3)			126000		127000	ug/L	0.791		(0%-20%)		
Carbonate alkalinity (CaCO3)		U	1450	U	1450	ug/L	N/A				
Hydroxide alkalinity as CaCO3		U	1450	U	1450	ug/L	N/A				
QC1203674465 LCS											
Alkalinity, Total as CaCO3	100000				99700	ug/L		99.7	(80%-120%)		11/18/16 19:37

Notes:

GEL LABORATORIES LLC
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QC Summary

Workorder: **410049**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

The Qualifiers in this report are defined as follows:

- < Sample is below the EPA guidance level for Reactive Releasable Cyanide and/or Reactive Releasable Sulfide
- > Result greater than quantifiable range or greater than upper limit of the analysis range
- B The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).
- C Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples.
- D Results are reported from a diluted aliquot of sample.
- N Spike Sample recovery is outside control limits.
- U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Z Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.