



December 15, 2015

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

Re: CHPRC SAF X16-001
Work Order: 387083
SDG: GEL387083

Dear Mr. Fitzgerald:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on December 09, 2015. 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,

Sarah Edwards for
Heather Shaffer
Project Manager

Purchase Order: 300071JDBA 7H
Chain of Custody: X16-001-055 and X16-001-213
Enclosures



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Case Narrative

December 22, 2015

General Narrative
for
CH2MHill Plateau Remediation Company
CHPRC SAF X16-001
SDG: GEL387083

December 15, 2015

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 December 09, 2015, 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 and DER.

Sample Identification

The laboratory received the following samples:

Laboratory Identification	Sample Description
387083001	B32T99
387083002	B32TB2
387083003	B32T92

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.

December 22, 2015

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, Metals and Radiochemistry.

This package, to the best of my knowledge, 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.



Sarah Edwards for
Heather Shaffer
Project Manager

December 22, 2015

Subject: Groundwater packages**From:** "Waters-husted, Karen S" <Karen_S_Waters-husted@rl.gov>**Date:** 11/10/2015 12:25 PM**To:** "Awalt, Jayna" <Jayna.Awalt@testamericainc.com>, "Franks, Mike" <Mike.Franks@testamericainc.com>, "Heather Shaffer (heather.shaffer@gel.com)" <heather.shaffer@gel.com>, Julie Ellingson <Julie.Ellingson@ALSGlobal.com>, Nancy Mattern <Nancy.Mattern@gel.com>, "Ritari, Whitney" <Whitney.Ritari@testamericainc.com>, "Sandra Seger (Sandra.Seger@testamericainc.com)" <Sandra.Seger@testamericainc.com>, "Wagar, Rhonda" <Rhonda.Wagar@testamericainc.com>, "Waters-husted, Karen S" <Karen_S_Waters-husted@rl.gov>**CC:** "Ayres, Doris E" <Doris_E_Ayres@rl.gov>, "Sumner, Laine C" <Laine_C_Sumner@rl.gov>, "Gibson, Gayelyn G" <Gayelyn_G_Gibson@rl.gov>, "Lynch, Sherry A" <Sherry_A_Lynch@rl.gov>, "Medley, Heather A" <Heather_A_Medley@rl.gov>, "Fitzgerald, Scot L" <Scot_L_Fitzgerald@rl.gov>, ^CPP Sample Management <CPP_Sample_Management@rl.gov>

The GW annual report is written for a calendar year. This means that we have requested all the samples collected through December 31 to be reported by January 31. However, this year our sampling work load is higher than normal for November and December. In order to meet the GW reporting needs and the large sampling events, CHPRC needs all GW (SAFs A, I, S, W, and some X) SDGs to be on 15 day TATs starting with samples received on 11-16-15 through 1-31-16. I will be adding the new TAT to the SAFs and re-sending them shortly.

Currently, all the November and December paperwork is out in the field, so we will not be recalling it all and making the changes on the chains due to the volume of paperwork impacted.

Please include this email in the data packages as the direction for the TAT change. A SIR will not be necessary.

Please let me know if you have any questions or any problems arise that will impact these packages.

Thank you,

Karen Waters-Husted

CH2M Plateau Remediation Company
Sample Management and Reporting
Groundwater Project Coordinator
200 East / MO-277 / 108
509-376-4650
Karen_S_Waters-husted@rl.gov

Chain of Custody and Supporting Documentation

December 22, 2015

BL# 775150191138

CH2M Hill Plateau Remediation Company
 C.O.C.# X16-001-055
 1209-15 Page 1 of 2
 T.L. Bacon

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 Telephone No. 509-376-4650
 Purchase Order/Charge Code 303271
 Ice Chest No. GWS 546
 Bill of Lading/Air Bill No. 775150191138
 Offsite Property No. 58196300
 Contact/Requester Karen Waters-Husted
 Sampling Origin Hanford Site
 Logbook No. HNF-N-506 80151
 Method of Shipment Commercial Carrier
 Priority: 30 Days **PRIORITY**
 SPECIAL INSTRUCTIONS Hold Time
 Submit deliverables & invoices to CPP Sample Management.

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

Sample No.	Filter	* Date	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B32T99	N	W	DEC 07 2015	1047	1x250-mL GIP	2320_ALKALINITY: COMMON	14 Days	Cool <=6C
B32T99	N	W			1x250-mL GIP	4500D_SULFIDE: COMMON	7 Days	ZnAc+NaOH to pH > 9/Cool <=6C
B32T99	N	W			1x500-mL GIP	6020_METALS_ICPMS: GW 01; 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B32T99	N	W			1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C
B32TB2	Y	W			1x500-mL GIP	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	Matrix *
K.C. Patterson/CHPRC			DEC 07 2015 1450	T.L. BACON/CHPRC		T.L. Bacon	DEC 07 2015 1450	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
Relinquished By			DEC 07 2015 1450	SSU-1			DEC 07 2015 1450	DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
Relinquished By			DEC 08 2015 1010				DEC 08 2015 1010	
Relinquished By			DEC 08 2015 1400				DEC 08 2015 1400	

BL# 775 / 50190933

December 22, 2015

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 387083		C.O.C.# X16-001-213 Page 1 of 2 12-07-15	
Collector K.C. Patterson/CHPRC	Contact/Requester Karen Waters-Husted	Telephone No. 509-376-4650	Purchase Order/Charge Code 303271	Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
SAF No. X16-001	Sampling Origin Hanford Site	Logbook No. HNF-N-506 80151	Ice Chest No. GWS-516	Bill of Lading/Air Bill No. 50128-2-275148877065	
Project Title 100-BC-5 RI, OCTOBER 2015	Method of Shipment Commercial Carrier	Priority: 15 Days	Offsite Property No. 6996200	Hold Time SPECIAL INSTRUCTIONS Submit deliverables & invoices to ^CPP Sample Management.	
Shipped To (Lab) GEL Laboratories, LLC	Hold Time PRIORITY	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			
Protocol CERCLA	Sample Analysis TRITIUM_DIST_LSC: COMMON	Holding Time 6 Months	Preservative None	Date/Time DEC 07 2015 1047	

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
K.C. Patterson/CHPRC			DEC 07 2015 1205	T.L. BACON/CHPRC	Troy L. Bacon		DEC 07 2015 1205	S = Soil, SE = Sediment, SO = Solid, SL = Sludge, W = Water, O = Oil, A = Air, DS = Drum Solids, DL = Drum Liquids, T = Tissue, WI = Wipe, L = Liquid, V = Vegetation, X = Other
Relinquished By			DEC 07 2015 1450	Received By			DEC 07 2015 1450	
10 of 6 #			DEC 08 2015 1010	Received By			DEC 08 2015 1010	
Relinquished By			DEC 08 2015 1400	Received By			DEC 08 2015 1400	
T.L. BACON/CHPRC			DEC 08 2015 1400	T.L. BACON/CHPRC	Troy L. Bacon		DEC 08 2015 1400	
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)			Disposed By		Date/Time		
PRINTED ON 11/10/2015				FSR ID = FSR6901				A-6004-842 (REV 2)

December 22, 2015



SAMPLE RECEIPT & REVIEW FORM

Client: <u>CPRC</u>		SDG/AR/COC/Work Order:
Received By: <u>cas</u>		Date Received: <u>12/09/15</u>
Suspected Hazard Information	Yes <input type="checkbox"/> No <input type="checkbox"/>	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?	<input checked="" type="checkbox"/>	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <u>0 cpm</u>
Classified Radioactive II or III by RSO?	<input type="checkbox"/>	If yes, Were swipes taken of sample containers < action levels?
COC/Samples marked containing PCBs?	<input type="checkbox"/>	
Package, COC, and/or Samples marked as beryllium or asbestos containing?	<input type="checkbox"/>	If yes, samples are to be segregated as Safety Controlled Samples, and opened by the GEL Safety Group.
Shipped as a DOT Hazardous?	<input type="checkbox"/>	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?	<input type="checkbox"/>	

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2 Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Preservation Method: <u>(Ice bags)</u> Blue ice Dry ice None Other (describe) *all temperatures are recorded in Celsius
2a Daily check performed and passed on IR temperature gun?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Temperature Device Serial #: <u>20404337</u> Secondary Temperature Device Serial # (if applicable):
3 Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4 Sample containers intact and sealed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5 Samples requiring chemical preservation at proper pH?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sample ID's, containers affected and observed pH: If Preservation added, Lot#: <u>see below</u>
6 Do Low Level Perchlorate samples have headspace as required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sample ID's and containers affected:
7 VOA vials contain acid preservation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(If unknown, select No)
8 VOA vials free of headspace (defined as < 6mm bubble)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sample ID's and containers affected:
9 Are Encore containers present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	If yes, immediately deliver to Volatiles laboratory)
10 Samples received within holding time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ID's and tests affected:
11 Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sample ID's and containers affected:
12 Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sample ID's affected:
13 Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sample ID's affected:
14 Are sample containers identifiable as GEL provided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15 COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
16 Carrier and tracking number.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: FedEx Ai <u>(1)</u> FedEx Ground UPS Field Services Courier Other 7751 5258 4758 - 2.5°C 7751 5019 1138 - 2.8°C 7751 5258 4703 - 2.7°C 7751 5019 0933 - 2.2°C

Comments (Use Continuation Form if needed):
* B33FA0: one alpha beta: one sr bottle have a pH of 5

PM (or PMA) review: Initials cas Date 12/9/15 Page 1 of 1 GL-CHL-SR-001 Rev 2

Data Review Qualifier Definitions

Project Specific Qualifier Definitions for GEL Client Code: **CPRC**

Code	Status	Qualifier Definition	CofA	Department	Fraction	Additional Comments
U	Programmed	Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.	Y			Includes MDA, TPU, count uncert.
J	Programmed	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	Y	Organics		Organics only
P	Programmed	Aroclor target analyte with greater than 25% difference between column analyses.	Y	Organics		PCB only
C	Manual	Analyte has been confirmed by GC/MS analysis	Y	Organics	Pesticide	IF GC/MS confirmation was attempted but unsuccessful do not qualify with C
B	Programmed	The analyte was detected in both the associated QC blank and in the sample.	Y	Organics		
E	Manual	Concentration exceeds the calibration range of the instrument	Y	Organics		Qualifier Uploaded
A	Manual	The TIC is a suspected aldol-condensation product	Y	Organics	Semi-Volatile	Uploaded with TIC
X	Programmed	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier	Y			Replaces H Hold Date In RAD replaces UI. Same usage as standard X as well.
N	Programmed	Spike Sample recovery is outside control limits.	Y			
*	Programmed	Duplicate analysis not within control limits	Y	Inorganics		
>	Programmed	Result greater than quantifiable range or greater than upper limit of the analysis range	Y	General Chemistry		
Z	Manual	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier	Y			
B	Programmed	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).	Y	Inorganics	Metals	Replaces J Estimated Value
D	Programmed	Results are reported from a diluted aliquot of sample.	Y			Dilution
E	Programmed	Reported value is estimated due to interferences. See comment in narrative.	Y	Inorganics	Metals	GEL E
M	Manual	Duplicate precision not met.	Y	Inorganics	Metals	Replaces *
o	Programmed	Analyte failed to recover within LCS limits (Organics only)	Y	Organics		
S	Manual	Reported value determined by the Method of Standard Additions (MSA)	Y	Inorganics		Not coded B/C Rarely performed
T	Programmed	Spike and/or spike duplicate sample recovery is outside control limits.	Y	Organics		GC/MS only
W	Manual	Post-digestion spike recovery for GFAA out of control limit. Sample absorbency < 50% of spike absorbency.	Y	Inorganics		No GFAA in house.
B	Programmed	The associated QC sample blank has a result $\geq 2X$ the MDA and, after corrections, result is \geq MDA for this sample	Y	Radiological		
Y	Manual	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier	Y			
+	Manual	Correlation coefficient for Method of Standard Additions (MSA) is < 0.995	Y	Inorganics		
B	Programmed	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).	Y	General Chemistry		Replaces J Estimated Value
C	Programmed	Target analyte was detected in the sample and the associated blank. The associated blank concentration is \geq EQL or is > 5% of the measured concentration and/or decision level for associated samples.	Y	Inorganics	Metals	Replaces B Blank Detection
C	Programmed	Target analyte was detected in the sample and the associated blank. The associated blank concentration is \geq EQL or is > 5% of the measured concentration and/or decision level for associated samples.	Y	General Chemistry		Replaces B Blank Detection
<	Programmed	Sample is below the EPA guidance level for Reactive Releasable Cyanide and/or Reactive Releasable Sulfide	Y	General Chemistry		for Reactive CN/S

Project Specific Qualifier Definitions for GEL Client Code: **CPRC**

Code	Status	Qualifier Definition	CofA	Department	Fraction	Additional Comments
UX	Manual	Gamma Spectroscopy--Uncertain identification	Y	Radiological		

Laboratory Certifications

List of current GEL Certifications as of 15 December 2015

State	Certification
Alaska	UST-110
Arkansas	88-0651
CLIA	42D0904046
California	2940 Interim
Colorado	SC00012
Connecticut	PH-0169
Delaware	SC000122013-10
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC000122013-10
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	LA150001
Maryland	270
Massachusetts	M-SC012
Michigan	9976
Mississippi	SC000122013-10
Nebraska	NE-OS-26-13
Nevada	SC000122016-1
New Hampshire NELAP	2054
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	T104704235-15-10
Utah NELAP	SC000122015-19
Vermont	VT87156
Virginia NELAP	460202
Washington	C780
West Virginia	997404

Metals Analysis

Case Narrative

December 22, 2015

Metals

Technical Case Narrative

CH2M Hill Plateau Remediation Company (CPRC)

SDG #: GEL387083

Work Order #: 387083

Sample ID	Client ID
387083001	B32T99
387083002	B32TB2
1203449276	Method Blank (MB)ICP
1203449277	Laboratory Control Sample (LCS)
1203449280	387083001(B32T99L) Serial Dilution (SD)
1203449278	387083001(B32T99S) Matrix Spike (MS)
1203449279	387083001(B32T99SD) Matrix Spike Duplicate (MSD)
1203449247	Method Blank (MB)ICP-MS
1203449248	Laboratory Control Sample (LCS)
1203449251	387083001(B32T99L) Serial Dilution (SD)
1203449249	387083001(B32T99S) Matrix Spike (MS)
1203449250	387083001(B32T99SD) Matrix Spike Duplicate (MSD)

Sample Analysis

Samples 387083 001 and 002 in this SDG were analyzed for metals on an "as received" basis.

Method/Analysis Information

Analytical Batch:	1529709 and 1529698
Prep Batch :	1529708 and 1529697
Standard Operating Procedures:	GL-MA-E-013 REV# 24, GL-MA-E-006 REV# 13 and GL-MA-E-014 REV# 26
Analytical Method:	6010_METALS_ICP and 6020_METALS_ICPMS
Prep Method :	SW846 3005A

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

System Configuration

The Metals analysis-ICP was performed on a P E 5300 Optima radial/axial-viewing inductively coupled plasma atomic emission spectrometer. The instrument is equipped with an ESI SC-FAST introduction, cyclonic spray chamber, and yttrium or scandium internal standard.

The Metals analysis - ICPMS was performed on a PerkinElmer NexION 300X ICPMS. The instrument is equipped with a ESI PFA-ST nebulizer, quadrupole mass spectrometer, dual mode electron multiplier detector, and Kinetic Energy Discrimination (KED) technology. Internal standards of scandium, germanium, indium,

tantalum, and/or lutetium were utilized to cover the mass spectrum.

Calibration Information

Instrument Calibration

All initial calibration requirements have been met for this sample delivery group (SDG).

CRDL/PQL Requirements

The PQL standard recoveries for SW846 6010C met the control limits with the exception of potassium. Client sample concentrations were less than the MDL or greater than two times the PQL; therefore the data were not adversely affected. 387083001 (B32T99) and 387083002 (B32TB2)-ICP.

ICSA/ICSAB Statement

All interference check samples (ICSA and ICSAB) associated with this SDG met the established acceptance criteria.

Continuing Calibration Blanks (CCB) Requirements

All continuing calibration blanks (CCB) bracketing this batch met the established acceptance criteria.

Continuing Calibration Verification (CCV) Requirements

All continuing calibration verifications (CCV) bracketing this SDG met the acceptance criteria.

Quality Control (QC) Information

Method Blank (MB) Statement

The method blanks (MB) analyzed with this SDG did not meet all of the acceptance criteria. Molybdenum was greater than the MDL. In instances where there were positive hits in the method blank, the results were evaluated and appropriately flagged on the data. 1203449247 (MB)-ICP-MS.

Laboratory Control Sample (LCS) Recovery

The LCS spike recoveries met the acceptance limits.

Quality Control (QC) Sample Statement

The following samples were selected as the quality control (QC) samples for this SDG: 387083001 (B32T99)-ICP and ICP-MS.

Matrix Spike (MS/MSD) Recovery Statement

The percent recoveries (%R) obtained from the MS/MSD analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The matrix spike met the recommended quality control acceptance criteria for percent recoveries for all applicable analytes.

MS/MSD Relative Percent Difference (RPD) Statement

The relative percent difference (RPD) obtained from the designated matrix spike duplicate (MSD) is evaluated based on acceptance criteria of 20%. The RPD values between qualifying analyte results in the MS and MSD were within the acceptance limits.

Serial Dilution % Difference Statement

The serial dilution is used to assess matrix suppression or enhancement. Raw element concentrations 25x the IDL/MDL for CVAA, 50X the IDL/MDL for ICP and 100X the IDL/MDL for ICP-MS analyses are applicable for serial dilution assessment. Not all the applicable analytes were within the established acceptance criteria. Matrix suppression may be suspected. The data has been qualified.

Sample	Analyte	Value
1203449280 (B32T99SDILT)	Potassium	12 *(0%-10%)

Technical Information

Holding Time Specifications

GEL assigns holding times based on the associated methodology. Holding time is measured by comparison of the date and time of sample collection to the date and time of sample preparation and analysis. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification

All procedures were performed as stated in the SOP.

Sample Dilutions

The samples in this SDG did not require dilutions.

Preparation Information

The samples in this SDG were not diluted and prepared according to the cited SOP.

Miscellaneous Information

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Data Exception (DER) Documentation

A Data exception report (DER) was generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) 1478356 was generated for sample 1203449280 (B32T99SDILT) in this SDG/batch.

Additional Comments

Additional comments were not required for this SDG.

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.

December 22, 2015

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: GEL387083 GEL Work Order: 387083

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 \geq 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.
- M Duplicate precision not met.
- 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: 

Name: Nik-Cole Elmore

Date: 22 DEC 2015

Title: Data Validator

Sample Data Summary

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL387083

METHOD TYPE: SW846

SAMPLE ID: 387083001

CLIENT ID: B32T99

CONTRACT: CPRC0X16001

MATRIX: WATER

DATE RECEIVED 09-DEC-15

LEVEL: Low

<u>CAS No</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>C</u>	<u>Qual</u>	<u>M*</u>	<u>MDL</u>	<u>DF</u>	<u>Inst ID</u>	<u>Analytical Run</u>
7429-90-5	Aluminum	15	ug/L	U		MS	15	1	ICPMS11	151213-2
7440-36-0	Antimony	1	ug/L	U		MS	1	1	ICPMS11	151213-4
7440-38-2	Arsenic	1.7	ug/L	U		MS	1.7	1	ICPMS11	151213-2
7440-39-3	Barium	35.7	ug/L			MS	0.6	1	ICPMS11	151213-2
7440-41-7	Beryllium	0.2	ug/L	U		MS	0.2	1	ICPMS11	151213-2
7440-42-8	Boron	15	ug/L	U		P	15	1	OPTIMA3	121615A-1
7440-43-9	Cadmium	0.11	ug/L	U		MS	0.11	1	ICPMS11	151213-2
7440-70-2	Calcium	52400	ug/L			P	50	1	OPTIMA3	121615A-1
7440-47-3	Chromium	25.1	ug/L			MS	2	1	ICPMS11	151213-2
7440-48-4	Cobalt	0.1	ug/L	U		MS	0.1	1	ICPMS11	151213-2
7440-50-8	Copper	0.586	ug/L	B		MS	0.35	1	ICPMS11	151213-2
7439-89-6	Iron	30	ug/L	U		P	30	1	OPTIMA3	121615A-1
7439-92-1	Lead	0.5	ug/L	U		MS	0.5	1	ICPMS11	151213-2
7439-95-4	Magnesium	7580	ug/L			P	110	1	OPTIMA3	121615A-1
7439-96-5	Manganese	1	ug/L	U		MS	1	1	ICPMS11	151213-2
7439-98-7	Molybdenum	2.7	ug/L	C		MS	0.165	1	ICPMS11	151213-2
7440-02-0	Nickel	0.5	ug/L	U		MS	0.5	1	ICPMS11	151213-2
7440-09-7	Potassium	2660	ug/L		M	P	50	1	OPTIMA3	121615A-1
7782-49-2	Selenium	1.5	ug/L	U		MS	1.5	1	ICPMS11	151214-5
7440-22-4	Silver	0.1	ug/L	U		MS	0.1	1	ICPMS11	151213-2
7440-23-5	Sodium	9970	ug/L			P	100	1	OPTIMA3	121615A-1
7440-24-6	Strontium	234	ug/L			MS	2	1	ICPMS11	151213-2
7440-28-0	Thallium	0.45	ug/L	U		MS	0.45	1	ICPMS11	151213-2
7440-29-1	Thorium	0.383	ug/L	U		MS	0.383	1	ICPMS11	151213-4
7440-31-5	Tin	1	ug/L	U		MS	1	1	ICPMS11	151213-2
7440-61-1	Uranium	3.01	ug/L			MS	0.067	1	ICPMS11	151213-4

METALS
 -1-
 INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL387083

METHOD TYPE: SW846

SAMPLE ID: 387083001

CLIENT ID: B32T99

CONTRACT: CPRC0X16001

MATRIX: WATER

DATE RECEIVED 09-DEC-15

LEVEL: Low

<u>CAS No</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>C</u>	<u>Qual</u>	<u>M*</u>	<u>MDL</u>	<u>DF</u>	<u>Inst ID</u>	<u>Analytical Run</u>
7440-62-2	Vanadium	3.63	ug/L	B		P	1	1	OPTIMA3	121615A-1
7440-66-6	Zinc	3.5	ug/L	U		MS	3.5	1	ICPMS11	151213-2

*Analytical Methods:

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

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL387083

METHOD TYPE: SW846

SAMPLE ID: 387083002

CLIENT ID: B32TB2

CONTRACT: CPRC0X16001

MATRIX: WATER

DATE RECEIVED 09-DEC-15

LEVEL: Low

<u>CAS No</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>C</u>	<u>Qual</u>	<u>M*</u>	<u>MDL</u>	<u>DF</u>	<u>Inst ID</u>	<u>Analytical Run</u>
7429-90-5	Aluminum	15	ug/L	U		MS	15	1	ICPMS11	151213-2
7440-36-0	Antimony	1	ug/L	U		MS	1	1	ICPMS11	151213-4
7440-38-2	Arsenic	1.7	ug/L	U		MS	1.7	1	ICPMS11	151213-2
7440-39-3	Barium	35.3	ug/L			MS	0.6	1	ICPMS11	151213-2
7440-41-7	Beryllium	0.2	ug/L	U		MS	0.2	1	ICPMS11	151213-2
7440-42-8	Boron	15	ug/L	U		P	15	1	OPTIMA3	121615A-1
7440-43-9	Cadmium	0.11	ug/L	U		MS	0.11	1	ICPMS11	151213-2
7440-70-2	Calcium	53900	ug/L			P	50	1	OPTIMA3	121615A-1
7440-47-3	Chromium	24.9	ug/L			MS	2	1	ICPMS11	151213-2
7440-48-4	Cobalt	0.1	ug/L	U		MS	0.1	1	ICPMS11	151213-2
7440-50-8	Copper	0.412	ug/L	B		MS	0.35	1	ICPMS11	151213-2
7439-89-6	Iron	30	ug/L	U		P	30	1	OPTIMA3	121615A-1
7439-92-1	Lead	0.5	ug/L	U		MS	0.5	1	ICPMS11	151213-2
7439-95-4	Magnesium	7760	ug/L			P	110	1	OPTIMA3	121615A-1
7439-96-5	Manganese	1	ug/L	U		MS	1	1	ICPMS11	151213-2
7439-98-7	Molybdenum	2.81	ug/L	C		MS	0.165	1	ICPMS11	151213-2
7440-02-0	Nickel	0.5	ug/L	U		MS	0.5	1	ICPMS11	151213-2
7440-09-7	Potassium	2740	ug/L		M	P	50	1	OPTIMA3	121615A-1
7782-49-2	Selenium	1.5	ug/L	U		MS	1.5	1	ICPMS11	151214-5
7440-22-4	Silver	0.1	ug/L	U		MS	0.1	1	ICPMS11	151213-2
7440-23-5	Sodium	10200	ug/L			P	100	1	OPTIMA3	121615A-1
7440-24-6	Strontium	241	ug/L			MS	2	1	ICPMS11	151213-2
7440-28-0	Thallium	0.45	ug/L	U		MS	0.45	1	ICPMS11	151213-2
7440-29-1	Thorium	0.383	ug/L	U		MS	0.383	1	ICPMS11	151213-4
7440-31-5	Tin	1	ug/L	U		MS	1	1	ICPMS11	151213-2
7440-61-1	Uranium	3.08	ug/L			MS	0.067	1	ICPMS11	151213-4

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL387083

METHOD TYPE: SW846

SAMPLE ID: 387083002

CLIENT ID: B32TB2

CONTRACT: CPRC0X16001

MATRIX: WATER

DATE RECEIVED 09-DEC-15

LEVEL: Low

<u>CAS No</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>C</u>	<u>Qual</u>	<u>M*</u>	<u>MDL</u>	<u>DF</u>	<u>Inst ID</u>	<u>Analytical Run</u>
7440-62-2	Vanadium	3.66	ug/L	B		P	1	1	OPTIMA3	121615A-1
7440-66-6	Zinc	3.5	ug/L	U		MS	3.5	1	ICPMS11	151213-2

*Analytical Methods:

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

Quality Control Summary

December 22, 2015
GEL LABORATORIES LLC

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QC Summary

Report Date: December 22, 2015

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

Contact: Mr. Scot Fitzgerald

Workorder: 387083

Parmname	NOM	Sample Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis - ICPMS										
Batch	1529698									
QC1203449248	LCS									
Aluminum	2000		2070	ug/L		103	(80%-120%)	PRB	12/13/15	21:25
Antimony	50.0		49.5	ug/L		99	(80%-120%)		12/14/15	02:44
Arsenic	50.0		48.6	ug/L		97.3	(80%-120%)		12/13/15	21:25
Barium	50.0		51.1	ug/L		102	(80%-120%)			
Beryllium	50.0		59.0	ug/L		118	(80%-120%)			
Cadmium	50.0		51.9	ug/L		104	(80%-120%)			
Chromium	50.0		52.5	ug/L		105	(80%-120%)			
Cobalt	50.0		51.4	ug/L		103	(80%-120%)			
Copper	50.0		55.4	ug/L		111	(80%-120%)			
Lead	50.0		48.4	ug/L		96.8	(80%-120%)			
Manganese	50.0		50.1	ug/L		100	(80%-120%)			
Molybdenum	50.0		49.6	ug/L		99.1	(80%-120%)			
Nickel	50.0		52.9	ug/L		106	(80%-120%)			
Selenium	50.0		50.4	ug/L		101	(80%-120%)		12/14/15	11:31
Silver	50.0		52.2	ug/L		104	(80%-120%)		12/13/15	21:25
Strontium	50.0		50.6	ug/L		101	(80%-120%)			
Thallium	50.0		45.2	ug/L		90.4	(80%-120%)			
Thorium	50.0		51.1	ug/L		102	(80%-120%)		12/14/15	02:44
Tin	50.0		52.0	ug/L		104	(80%-120%)		12/13/15	21:25
Uranium	50.0		51.4	ug/L		103	(80%-120%)		12/14/15	02:44

December 22, 2015

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QC Summary

Workorder: 387083

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis - ICPMS											
Batch	1529698										
Zinc	50.0			51.0	ug/L		102	(80%-120%)	PRB	12/13/15	21:25
QC1203449247	MB										
Aluminum			U	15.0	ug/L					12/13/15	21:22
Antimony			U	1.00	ug/L					12/14/15	02:41
Arsenic			U	1.70	ug/L					12/13/15	21:22
Barium			U	0.600	ug/L						
Beryllium			U	0.200	ug/L						
Cadmium			U	0.110	ug/L						
Chromium			U	2.00	ug/L						
Cobalt			U	0.100	ug/L						
Copper			U	0.350	ug/L						
Lead			U	0.500	ug/L						
Manganese			U	1.00	ug/L						
Molybdenum			B	0.190	ug/L						
Nickel			U	0.500	ug/L						
Selenium			U	1.50	ug/L					12/14/15	11:29
Silver			U	0.100	ug/L					12/13/15	21:22
Strontium			U	2.00	ug/L						
Thallium			U	0.450	ug/L						
Thorium			U	0.383	ug/L					12/14/15	02:41
Tin			U	1.00	ug/L					12/13/15	21:22
Uranium			U	0.067	ug/L					12/14/15	02:41

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QC Summary

Workorder: 387083

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis - ICPMS											
Batch	1529698										
Zinc			U	3.50	ug/L				PRB	12/13/15	21:22
QC1203449249	387083001	MS									
Aluminum	2000	U	15.0	1960	ug/L		97.7	(75%-125%)		12/13/15	21:57
Antimony	50.0	U	1.00	51.3	ug/L		103	(75%-125%)		12/14/15	03:15
Arsenic	50.0	U	1.70	49.1	ug/L		95.3	(75%-125%)		12/13/15	21:57
Barium	50.0		35.7	85.7	ug/L		99.9	(75%-125%)			
Beryllium	50.0	U	0.200	58.9	ug/L		118	(75%-125%)			
Cadmium	50.0	U	0.110	50.5	ug/L		101	(75%-125%)			
Chromium	50.0		25.1	76.8	ug/L		103	(75%-125%)			
Cobalt	50.0	U	0.100	50.9	ug/L		102	(75%-125%)			
Copper	50.0	B	0.586	52.5	ug/L		104	(75%-125%)			
Lead	50.0	U	0.500	47.3	ug/L		94.4	(75%-125%)			
Manganese	50.0	U	1.00	50.3	ug/L		100	(75%-125%)			
Molybdenum	50.0	C	2.70	54.1	ug/L		103	(75%-125%)			
Nickel	50.0	U	0.500	51.1	ug/L		102	(75%-125%)			
Selenium	50.0	U	1.50	56.7	ug/L		111	(75%-125%)		12/14/15	11:49
Silver	50.0	U	0.100	51.5	ug/L		103	(75%-125%)		12/13/15	21:57
Strontium	50.0		234	281	ug/L		N/A	(75%-125%)			
Thallium	50.0	U	0.450	45.4	ug/L		90.7	(75%-125%)			
Thorium	50.0	U	0.383	52.4	ug/L		105	(75%-125%)		12/14/15	03:15
Tin	50.0	U	1.00	51.3	ug/L		102	(75%-125%)		12/13/15	21:57
Uranium	50.0		3.01	55.2	ug/L		104	(75%-125%)		12/14/15	03:15

December 22, 2015
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QC Summary

Workorder: **387083**

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis - ICPMS											
Batch	1529698										
Zinc	50.0	U	3.50	45.7	ug/L		90.2	(75%-125%)	PRB	12/13/15	21:57
QC1203449250 387083001 MSD											
Aluminum	2000	U	15.0	2010	ug/L	2.67	100	(0%-20%)		12/13/15	22:00
Antimony	50.0	U	1.00	52.5	ug/L	2.2	105	(0%-20%)		12/14/15	03:18
Arsenic	50.0	U	1.70	49.1	ug/L	0.00408	95.3	(0%-20%)		12/13/15	22:00
Barium	50.0		35.7	84.2	ug/L	1.72	97	(0%-20%)			
Beryllium	50.0	U	0.200	58.1	ug/L	1.39	116	(0%-20%)			
Cadmium	50.0	U	0.110	50.7	ug/L	0.484	101	(0%-20%)			
Chromium	50.0		25.1	77.1	ug/L	0.42	104	(0%-20%)			
Cobalt	50.0	U	0.100	50.6	ug/L	0.676	101	(0%-20%)			
Copper	50.0	B	0.586	53.4	ug/L	1.69	106	(0%-20%)			
Lead	50.0	U	0.500	47.7	ug/L	0.699	95.1	(0%-20%)			
Manganese	50.0	U	1.00	49.7	ug/L	1.19	99	(0%-20%)			
Molybdenum	50.0	C	2.70	52.8	ug/L	2.35	100	(0%-20%)			
Nickel	50.0	U	0.500	51.5	ug/L	0.657	103	(0%-20%)			
Selenium	50.0	U	1.50	50.7	ug/L	11.2	99.1	(0%-20%)		12/14/15	11:51
Silver	50.0	U	0.100	50.5	ug/L	2.05	101	(0%-20%)		12/13/15	22:00
Strontium	50.0		234	281	ug/L	0.0195	N/A	(0%-20%)			
Thallium	50.0	U	0.450	45.9	ug/L	1.09	91.7	(0%-20%)			
Thorium	50.0	U	0.383	52.4	ug/L	0.0286	105	(0%-20%)		12/14/15	03:18
Tin	50.0	U	1.00	51.2	ug/L	0.351	102	(0%-20%)		12/13/15	22:00
Uranium	50.0		3.01	55.7	ug/L	0.853	105	(0%-20%)		12/14/15	03:18

December 22, 2015

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QC Summary

Workorder: 387083

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis - ICPMS											
Batch	1529698										
Zinc	50.0	U	3.50		45.4	ug/L	0.661	89.6	(0%-20%)	PRB	12/13/15 22:00
QC1203449251 387083001 SDILT											
Aluminum		U	8.02	DU	75.0	ug/L	N/A		(0%-10%)		12/13/15 22:06
Antimony		U	0.093	DU	5.00	ug/L	N/A		(0%-10%)		12/14/15 03:24
Arsenic		U	1.43	DU	8.50	ug/L	N/A		(0%-10%)		12/13/15 22:06
Barium			35.7	D	6.91	ug/L	3.33		(0%-10%)		
Beryllium		U	0.018	DU	1.00	ug/L	N/A		(0%-10%)		
Cadmium		U	0.015	DU	0.550	ug/L	N/A		(0%-10%)		
Chromium			25.1	D	5.24	ug/L	4.37		(0%-10%)		
Cobalt		U	0.054	DU	0.500	ug/L	N/A		(0%-10%)		
Copper		B	0.586	DU	1.75	ug/L	N/A		(0%-10%)		
Lead		U	0.117	DU	2.50	ug/L	N/A		(0%-10%)		
Manganese		U	0.167	DU	5.00	ug/L	N/A		(0%-10%)		
Molybdenum		C	2.70	D	0.590	ug/L	9.26		(0%-10%)		
Nickel		U	0.120	D	0.612	ug/L	N/A		(0%-10%)		
Selenium		U	1.18	DU	7.50	ug/L	N/A		(0%-10%)		12/14/15 11:53
Silver		U	0.015	DU	0.500	ug/L	N/A		(0%-10%)		12/13/15 22:06
Strontium			234	D	47.0	ug/L	.376		(0%-10%)		
Thallium		U	0.034	DU	2.25	ug/L	N/A		(0%-10%)		
Thorium		U	0.017	DU	1.92	ug/L	N/A		(0%-10%)		12/14/15 03:24
Tin		U	0.333	DU	5.00	ug/L	N/A		(0%-10%)		12/13/15 22:06
Uranium			3.01	D	0.618	ug/L	2.69		(0%-10%)		12/14/15 03:24

December 22, 2015
GEL LABORATORIES LLC

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QC Summary

Workorder: **387083**

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis - ICPMS											
Batch	1529698										
Zinc		U	0.596	DU	17.5	ug/L	N/A	(0%-10%)	PRB	12/13/15	22:06

Metals Analysis-ICP											
Batch	1529709										
QC1203449277	LCS										
Boron	500				525	ug/L		105	(80%-120%)	HSC	12/16/15 14:27
Calcium	5000				5240	ug/L		105	(80%-120%)		
Iron	5000				5190	ug/L		104	(80%-120%)		
Magnesium	5000				5320	ug/L		106	(80%-120%)		
Potassium	5000				5360	ug/L		107	(80%-120%)		
Sodium	5000				5150	ug/L		103	(80%-120%)		
Vanadium	500				521	ug/L		104	(80%-120%)		

QC1203449276	MB										
Boron				U	15.0	ug/L					12/16/15 14:23
Calcium				U	50.0	ug/L					
Iron				U	30.0	ug/L					
Magnesium				U	110	ug/L					
Potassium				U	50.0	ug/L					
Sodium				U	100	ug/L					
Vanadium				U	1.00	ug/L					

QC1203449278	387083001	MS									
Boron	500	U	15.0		556	ug/L		109	(75%-125%)		12/16/15 14:33
Calcium	5000		52400		58200	ug/L		N/A	(75%-125%)		
Iron	5000	U	30.0		5200	ug/L		104	(75%-125%)		
Magnesium	5000		7580		12900	ug/L		107	(75%-125%)		

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QC Summary

Workorder: **387083**

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis-ICP											
Batch	1529709										
Potassium	5000	M	2660	8120	ug/L		109	(75%-125%)			
Sodium	5000		9970	15500	ug/L		110	(75%-125%)	HSC	12/16/15	14:33
Vanadium	500	B	3.63	532	ug/L		106	(75%-125%)			
QC1203449279	387083001 MSD										
Boron	500	U	15.0	555	ug/L	0.0864	108	(0%-20%)		12/16/15	14:36
Calcium	5000		52400	57700	ug/L	0.711	N/A	(0%-20%)			
Iron	5000	U	30.0	5150	ug/L	0.963	103	(0%-20%)			
Magnesium	5000		7580	12800	ug/L	0.956	104	(0%-20%)			
Potassium	5000	M	2660	7990	ug/L	1.53	107	(0%-20%)			
Sodium	5000		9970	15100	ug/L	2.5	103	(0%-20%)			
Vanadium	500	B	3.63	532	ug/L	0.0207	106	(0%-20%)			
QC1203449280	387083001 SDILT										
Boron		U	13.0	DU	75.0	ug/L	N/A	(0%-10%)		12/16/15	14:39
Calcium			52400	D	10100	ug/L	3.99	(0%-10%)			
Iron		U	6.60	DU	150	ug/L	N/A	(0%-10%)			
Magnesium			7580	D	1470	ug/L	3.34	(0%-10%)			
Potassium		M	2660	DM	596	ug/L	12*	(0%-10%)			
Sodium			9970	D	1850	ug/L	7.35	(0%-10%)			
Vanadium		B	3.63	DU	5.00	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

Miscellaneous

DATA EXCEPTION REPORT

Mo.Day Yr. 21-DEC-15	Division: Industrial	Quality Criteria: Specifications	Type: Process
Instrument Type: ICP	Test / Method: SW846 3005A/6010C	Matrix Type: Liquid	Client Code: CPRC
Batch ID: 1529709	Sample Numbers: See Below		
Potentially affected work order(s)(SDG): 387046(GEL387046),387077(GEL387077),387080(GEL387080),387083(GEL387083)			
Application Issues: Failed difference for SDILT			
Specification and Requirements Exception Description:		DER Disposition:	
<p>1. Failed difference for SDILT: QC 1203449280SDILT</p>		<p>1. Not all the applicable analytes were within the established acceptance criteria. Matrix suppression may be suspected. The data has been qualified. 1203449280 (B32T99SDILT) Potassium [12 *(0%-10%)].</p>	

Originator's Name:
Helen Camello 21-DEC-15

Data Validator/Group Leader:
Travis Tola 21-DEC-15

General Chem Analysis

Case Narrative

Quality Control (QC) Information

Method Blank (MB) Statement

The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery

The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation

Sample 387083001 (B32T99) was selected for QC analysis.

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The MS/PS recovery for this sample set was within the required acceptance limits where applicable.

Duplicate Relative Percent Difference (RPD) Statement

The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times

All samples in this SDG met the specified holding time.

Sample Preservation/Integrity

All the samples from this sample group met the preservation and integrity requirements of the method.

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-analysis

The samples in this SDG did not require re-analysis.

Miscellaneous Information

Data Exception (DER) Documentation

Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments

Additional comments were not required for this SDG.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will

December 22, 2015

always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

Product: Sulfide and Total
Analytical Batch: 1530803 **Method:** 4500_Sulfide: COMMON

Sample Analysis

The following samples were analyzed using the analytical protocol as established in 4500D_SULFIDE:

Sample ID	Client ID
387083001	B32T99
1203451996	Method Blank (MB)
1203451997	Laboratory Control Sample (LCS)
1203451998	387083001(B32T99) Sample Duplicate (DUP)
1203451999	387083001(B32T99) Post Spike (PS)

Sample 387083 001 in this SDG was analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-052 REV# 7.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Spectrometric analysis was performed on a Spectronic 20D+ Digital Spectrophotometer.

Initial Calibration

All initial calibration requirements have been met for this SDG.

Continuing Calibration Blanks

All continuing calibration blanks (CCBs) associated with reported data from this batch were within acceptance limits.

Calibration Verification Information (CCV)

All continuing calibration verification standards (CCVs) associated with reported data from this batch were within acceptance limits.

Y Intercept Rule

The absolute value of the intercept is less than 3 times the MDL.

Quality Control (QC) Information

Method Blank (MB) Statement

The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery

The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation

Sample 387083001 (B32T99) was selected for QC analysis.

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The MS/PS recovery for this sample set was within the required acceptance limits where applicable.

Duplicate Relative Percent Difference (RPD) Statement

The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times

All samples in this SDG met the specified holding time.

Sample Preservation/Integrity

All the samples from this sample group met the preservation and integrity requirements of the method.

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-analysis

The samples in this SDG did not require re-analysis.

Miscellaneous Information

Data Exception (DER) Documentation

Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments

Additional comments were not required for this SDG.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:
Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

Product: Alkalinity
Analytical Batch: 1529844 **Method:** 2320_ALKALINITY: COMMON (Alkalinity only)

Sample Analysis

The following samples were analyzed using the analytical protocol as established in 2320_ALKALINITY:

Sample ID	Client ID
387083001	B32T99
1203449642	Method Blank (MB)
1203449639	Laboratory Control Sample (LCS)
1203449645	387087001(B33F43) Sample Duplicate (DUP)

Sample 387083 001 in this SDG was analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-033 REV# 12.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Titration and Ion analysis was performed on a manually operated buret.

Initial Standardization

The titrant was properly standardized

Quality Control (QC) Information

Method Blank (MB) Statement

The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery

The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation

Sample 387087001 (B33F43) was selected for QC analysis.

Duplicate Relative Percent Difference (RPD) Statement

The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times

All samples in this SDG met the specified holding time.

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-analysis

The samples in this SDG did not require re-analysis.

Miscellaneous Information

Data Exception (DER) Documentation

Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments

Additional comments were not required for this SDG.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

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.

December 22, 2015

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: GEL387083 GEL Work Order: 387083

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).

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: 

Name: Thomas Lewis

Date: 22 DEC 2015

Title: Data Validator

Sample Data Summary

Certificate of Analysis

Report Date: December 22, 2015

Company : CH2MHill Plateau Remediation Company
 Address : MSIN R3-50 CHPRC
 PO Box 1600
 Richland, Washington 99352
 Contact: Mr. Scot Fitzgerald
 Project: CHPRC SAF X16-001

Client Sample ID: B32T99	Project: CPRC0X16001
Sample ID: 387083001	Client ID: CPRC001
Matrix: WATER	
Collect Date: 07-DEC-15 10:47	
Receive Date: 09-DEC-15	
Collector: Client	

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
9060_TOC: COMMON "As Received"											
Total Organic Carbon #1	B	359	330	1000	ug/L	1	TSM	12/14/15	1735	1529883	1
Total Organic Carbon #2	B	375	330	1000	ug/L	1					
Total Organic Carbon #3	B	382	330	1000	ug/L	1					
Total Organic Carbon #4	B	398	330	1000	ug/L	1					
Total Organic Carbon Average	B	379	330	1000	ug/L	1					
Spectrometric Analysis											
4500_Sulfide: COMMON "As Received"											
Total Sulfide	U	33.0	33.0	500	ug/L	1	SXC5	12/14/15	1307	1530803	2
Titration and Ion Analysis											
2320_ALKALINITY: COMMON (Alkalinity only) "As Received"											
Alkalinity, Total as CaCO3		122000	725	1000	ug/L		AMB	12/10/15	1423	1529844	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9060A	
2	4500D_SULFIDE	
3	2320_ALKALINITY	

Notes:

Quality Control Summary

December 22, 2015
GEL LABORATORIES LLC

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

QC Summary

Report Date: December 22, 2015

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CH2M Hill Plateau Remediation Company

MSIN R3-50 CHPRC

PO Box 1600

Richland, Washington

Contact: Mr. Scot Fitzgerald

Workorder: 387083

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Carbon Analysis											
Batch	1529883										
QC1203449749	387083001	DUP									
Total Organic Carbon Average	B	379	B	385	ug/L	1.57	^	(+/-1000)	TSM	12/14/15	18:18
QC1203449748	LCS										
Total Organic Carbon Average	10000			10200	ug/L			(80%-120%)		12/14/15	17:09
QC1203449747	MB										
Total Organic Carbon Average			U	330	ug/L					12/14/15	16:55
QC1203449751	387083001	PS									
Total Organic Carbon Average	10.0	B	0.379	10.6	mg/L			(75%-125%)		12/14/15	19:00
Spectrometric Analysis											
Batch	1530803										
QC1203451998	387083001	DUP									
Total Sulfide	U	33.0	U	33.0	ug/L	N/A			SXC5	12/14/15	13:07
QC1203451997	LCS										
Total Sulfide	400		B	407	ug/L			(80%-120%)		12/14/15	13:06
QC1203451996	MB										
Total Sulfide			U	33.0	ug/L					12/14/15	13:06
QC1203451999	387083001	PS									
Total Sulfide	0.400	U	-0.00406	0.392	mg/L			(29%-142%)		12/14/15	13:07
Titration and Ion Analysis											
Batch	1529844										
QC1203449645	387087001	DUP									
Alkalinity, Total as CaCO3		99000		99000	ug/L	0		(0%-20%)	AMB	12/10/15	14:30
QC1203449639	LCS										
Alkalinity, Total as CaCO3	50000			53900	ug/L			(80%-120%)		12/10/15	14:10
QC1203449642	MB										
Alkalinity, Total as CaCO3			U	725	ug/L					12/10/15	14:08

Notes:

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

December 22, 2015

GEL LABORATORIES LLC

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QC Summary

Workorder: 387083

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

Radiological Analysis

December 22, 2015

Radiochemistry

Technical Case Narrative

CH2MHill Plateau Remediation Company (CPRC)

SDG #: GEL387083

Work Order #: 387083

Method/Analysis Information

Product: TRITIUM_DIST_LSC: COMMON

Analytical Method: TRITIUM_DIST_LSC

Analytical Batch Number: 1530916

Sample ID	Client ID
387083003	B32T92
1203452283	Method Blank (MB)
1203452286	Laboratory Control Sample (LCS)
1203452284	387087015(B33HL4) Sample Duplicate (DUP)
1203452285	387087015(B33HL4) Matrix Spike (MS)

Sample 387083 003 in this SDG was analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-002 REV# 21.

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry

All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information

The blank volume is representative of the sample volume in this batch.

QC Information

All of the QC samples meet the required acceptance limits with the following exceptions: Refer to Data Exception Report (DER).

Designated QC

December 22, 2015

The following sample was used for QC: 387087015 (B33HL4).

Technical Information:

Holding Time

All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis

None of the samples in this sample set required reprep or reanalysis.

Recounts

Samples were recounted due to low recovery. The recounts are reported.

Miscellaneous Information:

Data Exception (DER) Documentation

A data exception report (DER) 1478730 was generated for samples in this SDG/batch. DER 1478730 was generated due to RDL less than MDA. 1. Samples 387087015, 1203452283, and 1203452284 did not meet the required detection limit. The samples were counted the maximum count time of 120 minutes to achieve the best possible results. 1. Reporting results.

Sample-Specific MDA/MDC

The MDA/MDC reported on the certificate of analysis is a sample-specific MDA/MDC.

Additional Comments

Additional comments were not required for this sample set.

Qualifier Information

Manual qualifiers were not required.

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.

December 22, 2015

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: GEL387083 GEL Work Order: 387083

The Qualifiers in this report are defined as follows:

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: 

Name: Theresa Austin

Date: 22 DEC 2015

Title: Group Leader

DATA EXCEPTION REPORT			
Mo.Day Yr. 22-DEC-15	Division: Radiochemistry	Quality Criteria: Specifications	Type: Process
Instrument Type: LSC	Test / Method: EPA 906.0 Modified	Matrix Type: Liquid	Client Code: CPRC
Batch ID: 1530916	Sample Numbers: See Below		
Potentially affected work order(s)(SDG): 387083(GEL387083),387087(GEL387087),387424(GEL387424)			
Application Issues: RDL less than MDA			
Specification and Requirements Exception Description:		DER Disposition:	
1. Samples 387087015, 1203452283, and 1203452284 did not meet the required detection limit. The samples were counted the maximum count time of 120 minutes to achieve the best possible results.		1. Reporting results.	

Originator's Name:
Elizabeth Krouse 22-DEC-15

Data Validator/Group Leader:
Lyndsey Pace 22-DEC-15

Sample Data Summary

December 22, 2015

**Certificate of Analysis
Sample Summary**

SDG Number: GEL387083	Client: CPRC001	Project: CPRC0X16001
Lab Sample ID: 387083003	Date Collected: 12/07/2015 10:47	Matrix: WATER
	Date Received: 12/09/2015 08:55	
Client ID: B32T92	Method: TRITIUM_DIST_LSC	Prep Basis: "As Received"
Batch ID: 1530916	Analyst: TXJ1	SOP Ref: GL-RAD-A-002
Run Date: 12/21/2015 14:10	Aliquot: 50 mL	Instrument: LSCPINK
Data File: T1530916R2.xls	Prep Method: EPA 906.0 Modified	Count Time: 15.02967 min
Prep Batch: 1530916		
Prep Date: 12/16/2015 00:00		

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
10028-17-8	Tritium		4280	pCi/L	+/-590	1020	298	100

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
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Comments:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Quality Control Data

QC Summary

Report Date: December 22, 2015
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Client : CH2MHill Plateau Remediation Company
 MSIN R3-50 CHPRC
 PO Box 1600
 Richland, Washington 99352

Contact: Mr. Scot Fitzgerald

Workorder: 387083

Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date Time
Rad Liquid Scintillation									
Batch	1530916								
QC1203452283	MB								
Tritium			U	-33.7	pCi/L			TXJ1	12/21/1517:05
				Uncert: +/-65.7					
				TPU: +/-65.7					
QC1203452284	387087015	DUP							
Tritium		U	-29	U	-53.1				12/21/1519:08
				Uncert: +/-67.0		RPD: 0	N/A		
				TPU: +/-67.0		RER: 0.512	(0-2)		
QC1203452285	387087015	MS							
Tritium	2400	U	-29		2010	REC: 84	(75%-125%)		12/21/1521:10
				Uncert: +/-67.0					
				TPU: +/-67.0					
QC1203452286	LCS								
Tritium	2400				2140	REC: 89	(70%-130%)		12/21/1521:28
				Uncert: +/-430					
				TPU: +/-597					

Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

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
- < 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).
- B The associated QC sample blank has a result >= 2X the MDA and, after corrections, result is >= MDA for this sample
- 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.
- UX Gamma Spectroscopy--Uncertain identification
- 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

QC Summary

Workorder: 387083

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Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	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.

** Indicates analyte is a surrogate compound.

^ 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.

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.