

June 27, 2016



gel.com

June 27, 2016

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

Re: CHPRC SAF W16-006  
Work Order: 399471  
SDG: GEL399471

Dear Mr. Fitzgerald:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on June 16, 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,

A handwritten signature in black ink that reads "Heather Shaffer".

Heather Shaffer  
Project Manager

Purchase Order: 300071 - 7H  
Chain of Custody: W16-006-137 and W16-006-138  
Enclosures



Table of Contents

Case Narrative.....1

Chain of Custody and Supporting Documentation.....5

Data Review Qualifier Definitions.....9

Laboratory Certifications.....11

General Chem Analysis.....13

    Case Narrative.....14

    Sample Data Summary.....17

    Quality Control Summary.....26

# Case Narrative

General Narrative  
for  
CH2MHill Plateau Remediation Company  
CHPRC SAF W16-006  
SDG: GEL399471

June 27, 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 June 16, 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 and DER.

**Sample Identification**

The laboratory received the following samples:

<b><u>Laboratory Identification</u></b>	<b><u>Sample Description</u></b>
399471001	B35Y85
399471002	B35Y86
399471003	B35Y84
399471004	B35Y87
399471005	B35Y98
399471006	B35Y96
399471007	B35Y99
399471008	B35Y97

**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.

**June 27, 2016**

**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.

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.



Heather Shaffer  
Project Manager

**June 27, 2016**

**General Chemistry  
Technical Case Narrative  
CH2MHill Plateau Remediation Company (CPRC)  
SDG #: GEL399471  
Work Order #: 399471**

**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.

**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**

**CH2M Hill Plateau Remediation Company**

**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

C.O.C. # **W16-006-137**  
Page 1 of 1

Collector: **Juan Aguilera**      Contact/Requester: **Karen Waters-Husted**      Telephone No.: **509-376-4650**

SAF No.: **W16-006**      Sampling Origin: **Hanford Site**      Purchase Order/Charge Code: **300071**

Project Title: **RCRA, JUNE 2016**      Logbook No.: **HNF-N-506 86/27**      Ice Chest No.: **605-527**

Shipped To (Lab): **GEL Laboratories, LLC**      Method of Shipment: **Commercial Carrier**      Bill of Lading/Air Bill No.: **776526891390**

Protocol: **RCRA**      Priority: **15 Days**      **PRIORITY**      Offsite Property No.: **6730**

**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

N/A

Sample No.	Filter	* Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B35Y85	N	6-14-16	1218	1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C
B35Y86	N	↓	↓	1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C
B35Y84	N	↓	↓	1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C
B35Y87	N	6-14-16	1218	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	Matrix *
Juan Aguilera			JUN 14 2016 1340	SSU #1			JUN 14 2016 1340	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
			JUN 15 2016 0810	Judy Ward			JUN 15 2016 0810	
			JUN 15 2016 1940	FEDEX			JUN 15 2016 1940	
				M. Fustian			6-16-16 0915	

Disposal Method (e.g., Return to customer, per lab procedure, used in process)

**FINAL SAMPLE DISPOSITION**

PRINTED ON 6/7/2016      FSR ID = FSR21963      A-6004-842 (REV 2)

CH2M Hill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # W16-006-138  
Page 1 of 1

Collector: Juan Aguilar *CH2M*  
 SAF No.: W16-006  
 Project Title: RCRA, JUNE 2016  
 Shipped To (Lab): GEL Laboratories, LLC  
 Protocol: RCRA

Contact/Requester: Karen Waters-Husted  
 Sampling Origin: Hanford Site  
 Logbook No.: HNF-N-506 *86/27*  
 Method of Shipment: Commercial Carrier  
 Priority: 15 Days **PRIORITY**

Telephone No.: 509-376-4650  
 Purchase Order/Charge Code: 300071  
 Ice Chest No.: *6005-527*  
 Bill of Lading/Air Bill No.: *776526891390*  
 Offsite Property No.: *0730*

**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: N/A  
 Total Activity Exemption: Yes  No

Sample No.	Filter	* Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B35Y98	N	6-14-16	1308	1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C
B35Y96	N	↓	↓	1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C
B35Y99	N	↓	↓	1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C
B35Y97	N	6-14-16	1308	1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C

Relinquished By: Juan Aguilar <i>CH2M</i>	Print	Sign	Received By: SSU #1	Print	Sign	Date/Time: JUN 14 2016 1340	Date/Time: JUN 14 2016 1340	Matrix *
Relinquished By: SSU #1	Print	Sign	Received By: Leahy Wall <i>FEDEX</i>	Print	Sign	Date/Time: JUN 15 2016 0810	Date/Time: JUN 15 2016 0810	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: Leahy Wall <i>FEDEX</i>	Print	Sign	Received By: FEDEX	Print	Sign	Date/Time: JUN 15 2016 1400	Date/Time: JUN 15 2016 1400	
Relinquished By: <i>FE</i>	Print	Sign	Received By: M. Katsou...	Print	Sign	Date/Time: 6/16/16 0910	Date/Time: 6/16/16 0910	
<b>FINAL SAMPLE DISPOSITION</b>	Disposal Method (e.g., Return to customer, per lab procedure, used in process)						Date/Time	

**SAMPLE RECEIPT & REVIEW FORM**

Client: <u>OPRC</u>		SDG/AR/COC/Work Order: <u>399471</u>
Received By: <u>M/L</u>		Date Received: <u>6-16-16</u>
Suspected Hazard Information	Yes <input type="checkbox"/> No <input checked="" 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):
Classified Radioactive II or III by RSO?	<input checked="" type="checkbox"/>	If yes, Were swipes taken of sample containers < action levels?
COC/Samples marked containing PCBs?	<input checked="" type="checkbox"/>	
Package, COC, and/or Samples marked as beryllium or asbestos containing?	<input checked="" 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 checked="" type="checkbox"/>	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?	<input checked="" 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 <u>1c 2c</u>
2a Daily check performed and passed on IR temperature gun?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Temperature Device Serial #: <u>150462962</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:
6 Do Low Level Perchlorate samples have headspace as required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	If Preservation added, Lot#: 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 Air <u>7765</u> FedEx Ground <u>2909</u> UPS <u>9355</u> Field Services <u>2c</u> Courier <u>9263</u> Other <u>2c</u> <u>0193</u> <u>20c</u> <u>NO ICE</u> <u>9024</u> <u>2c</u> <u>9355</u> <u>21c</u> <u>NO ICE</u> <u>7765</u> <u>2689</u> <u>1840</u> <u>1c</u> <u>1390</u> <u>2c</u>

Comments (Use Continuation Form if needed):

# Data Review Qualifier Definitions

## 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 (Organics 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 $\geq 2X$ the MDA and, after corrections, result is $\geq$ 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 $\geq$ 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 $\geq$ 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 27 June 2016**

<b>State</b>	<b>Certification</b>
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	SC000122016-20
Vermont	VT87156
Virginia NELAP	460202
Washington	C780
West Virginia	997404

# General Chem Analysis

# Case Narrative

General Chemistry  
Technical Case Narrative  
CH2MHill Plateau Remediation Company (CPRC)  
SDG #: GEL399471  
Work Order #: 399471

**Product:** Carbon, Total Organic  
**Analytical Method:** SW846 9060A  
**Analytical Procedure:** GL-GC-E-093 REV# 14  
**Analytical Batch:** 1575007

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

<b><u>GEL Sample ID#</u></b>	<b><u>Client Sample Identification</u></b>
399471001	B35Y85
399471002	B35Y86
399471003	B35Y84
399471004	B35Y87
399471005	B35Y98
399471006	B35Y96
399471007	B35Y99
399471008	B35Y97
1203568737	Method Blank (MB)
1203568738	Laboratory Control Sample (LCS)
1203568740	399471008(B35Y97) Sample Duplicate (DUP)
1203568742	399471008(B35Y97) 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.

**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: GEL399471 GEL Work Order: 399471

**The Qualifiers in this report are defined as follows:**

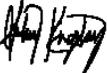
B The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).

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: Aubrey Kingsbury

Date: 27 JUN 2016

Title: Analyst I

# Sample Data Summary

June 27, 2016

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: June 27, 2016

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF W16-006

Client Sample ID: B35Y85
Sample ID: 399471001
Matrix: WATER
Collect Date: 14-JUN-16 12:18
Receive Date: 16-JUN-16
Collector: Client
Project: CPRCOW16006
Client ID: CPRC001

Table with 12 columns: Parameter, Qualifier, Result, DL, RL, Units, DF, Analyst, Date, Time, Batch, Method. Rows include Carbon Analysis and Total Organic Carbon #1-4.

The following Analytical Methods were performed:

Table with 3 columns: Method, Description, Analyst Comments. Row 1: 1, SW846 9060A.

Notes:

June 27, 2016

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: June 27, 2016

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF W16-006

Client Sample ID: B35Y86
Sample ID: 399471002
Matrix: WATER
Collect Date: 14-JUN-16 12:18
Receive Date: 16-JUN-16
Collector: Client
Project: CPRCOW16006
Client ID: CPRC001

Table with 12 columns: Parameter, Qualifier, Result, DL, RL, Units, DF, Analyst, Date, Time, Batch, Method. Rows include Carbon Analysis and Total Organic Carbon #1-4.

The following Analytical Methods were performed:

Table with 3 columns: Method, Description, Analyst Comments. Row 1: 1, SW846 9060A.

Notes:

June 27, 2016

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: June 27, 2016

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF W16-006

Client Sample ID: B35Y84
Sample ID: 399471003
Matrix: WATER
Collect Date: 14-JUN-16 12:18
Receive Date: 16-JUN-16
Collector: Client
Project: CPRCOW16006
Client ID: CPRC001

Table with 12 columns: Parameter, Qualifier, Result, DL, RL, Units, DF, Analyst, Date, Time, Batch, Method. Rows include Carbon Analysis and Total Organic Carbon #1-4.

The following Analytical Methods were performed:

Table with 3 columns: Method, Description, Analyst Comments. Row 1: 1, SW846 9060A.

Notes:

June 27, 2016

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: June 27, 2016

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF W16-006

Client Sample ID: B35Y87
Sample ID: 399471004
Matrix: WATER
Collect Date: 14-JUN-16 12:18
Receive Date: 16-JUN-16
Collector: Client
Project: CPRCOW16006
Client ID: CPRC001

Table with 12 columns: Parameter, Qualifier, Result, DL, RL, Units, DF, Analyst, Date, Time, Batch, Method. Rows include Carbon Analysis and Total Organic Carbon #1-4 and Average.

The following Analytical Methods were performed:

Table with 3 columns: Method, Description, Analyst Comments. Row 1: 1, SW846 9060A

Notes:

June 27, 2016

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: June 27, 2016

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF W16-006

Client Sample ID: B35Y98
Sample ID: 399471005
Matrix: WATER
Collect Date: 14-JUN-16 13:08
Receive Date: 16-JUN-16
Collector: Client
Project: CPRCOW16006
Client ID: CPRC001

Table with 12 columns: Parameter, Qualifier, Result, DL, RL, Units, DF, Analyst, Date, Time, Batch, Method. Rows include Carbon Analysis and Total Organic Carbon #1-4.

The following Analytical Methods were performed:

Table with 3 columns: Method, Description, Analyst Comments. Row 1: 1, SW846 9060A.

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June 27, 2016

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Certificate of Analysis

Report Date: June 27, 2016

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF W16-006

Client Sample ID: B35Y96
Sample ID: 399471006
Matrix: WATER
Collect Date: 14-JUN-16 13:08
Receive Date: 16-JUN-16
Collector: Client
Project: CPRCOW16006
Client ID: CPRC001

Table with 12 columns: Parameter, Qualifier, Result, DL, RL, Units, DF, Analyst, Date, Time, Batch, Method. Rows include Carbon Analysis and Total Organic Carbon #1-4 and Average.

The following Analytical Methods were performed:

Table with 3 columns: Method, Description, Analyst Comments. Row 1: 1, SW846 9060A

Notes:

June 27, 2016

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: June 27, 2016

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF W16-006

Client Sample ID: B35Y99
Sample ID: 399471007
Matrix: WATER
Collect Date: 14-JUN-16 13:08
Receive Date: 16-JUN-16
Collector: Client
Project: CPRCOW16006
Client ID: CPRC001

Table with 12 columns: Parameter, Qualifier, Result, DL, RL, Units, DF, Analyst, Date, Time, Batch, Method. Rows include Carbon Analysis and Total Organic Carbon #1-4 and Average.

The following Analytical Methods were performed:

Table with 3 columns: Method, Description, Analyst Comments. Row 1: 1, SW846 9060A.

Notes:

June 27, 2016

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: June 27, 2016

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF W16-006

Client Sample ID: B35Y97
Sample ID: 399471008
Matrix: WATER
Collect Date: 14-JUN-16 13:08
Receive Date: 16-JUN-16
Collector: Client
Project: CPRCOW16006
Client ID: CPRC001

Table with 12 columns: Parameter, Qualifier, Result, DL, RL, Units, DF, Analyst, Date, Time, Batch, Method. Rows include Carbon Analysis and Total Organic Carbon #1-4 and Average.

The following Analytical Methods were performed:

Table with 3 columns: Method, Description, Analyst Comments. Row 1: 1, SW846 9060A

Notes:

# Quality Control Summary

**GEL LABORATORIES LLC**

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

**QC Summary**

Report Date: June 27, 2016

CH2M Hill Plateau Remediation Company

MSIN R3-50 CHPRC

PO Box 1600

Richland, Washington

Contact: Mr. Scot Fitzgerald

Workorder: 399471

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Carbon Analysis</b>											
Batch	1575007										
QC1203568740	399471008	DUP									
Total Organic Carbon Average	B	542	B	520	ug/L	4.14	^	(+/-1000)	TSM	06/18/16	23:20
QC1203568738	LCS										
Total Organic Carbon Average	10000			10700	ug/L			(80%-120%)		06/18/16	10:24
QC1203568737	MB										
Total Organic Carbon Average			U	330	ug/L					06/18/16	10:14
QC1203568742	399471008	PS									
Total Organic Carbon Average	10.0	B	0.542	10.9	mg/L			(75%-125%)		06/19/16	00:00

**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
- > 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  $\geq$  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.
- 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.