GEL Laboratories LLC
a member of The GEL Group INC

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

www.gel.com

January 12, 2015

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

Re: CHPRC SAF X15-015
Work Order: 363842
SDG: GEL363842

Dear Mr. Fitzgerald:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on December 30, 2014. 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,

Hope Taylor for
Heather Shaffer
Project Manager

Purchase Order: per COC + price code
Chain of Custody: X15-015-089, X15-015-090 and X15-015-112
Enclosures

Table of Contents

Case Narrative.....1

Chain of Custody and Supporting Documentation.....4

Data Review Qualifier Definitions.....9

Laboratory Certifications.....11

FID Diesel Range Organics Analysis.....13

Case Narrative.....14

Sample Data Summary.....19

Quality Control Summary.....23

General Chem Analysis.....26

Case Narrative.....27

Sample Data Summary.....32

Quality Control Summary.....37

Radiological Analysis.....39

Sample Data Summary.....43

Quality Control Data.....48

Case Narrative

General Narrative
for
CH2MHill Plateau Remediation Company
CHPRC SAF X15-015
SDG: GEL363842

January 12, 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 30, 2014, 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
363842001	B2YJF0
363842002	B2YJF1
363842003	B2YJV0

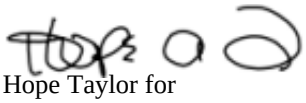
Case Narrative

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

Data Package

The enclosed data package contains the following sections: General Narrative, Chain of Custody and Supporting Documentation, and data from the following fractions: Diesel Range Organics, General Chemistry 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 Manger (or designee) and the laboratory's client services representative as verified by their signatures on this report.



Hope Taylor for
Heather Shaffer
Project Manager

Chain of Custody and Supporting Documentation

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

363842

C.O.C. # X15-015-089

Page 1 of 1

Collector	J.R. Aguilar/CHPRC	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	X15-015	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	303064JDBA
Project Title	AQUIFER TUBES, DECEMBER 2014	**Logbook No.**	HNF-N-506 72 / 42	**Ice Chest No.**	GW5 - 422
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7724081899773
Protocol	CERCLA	**Priority:**	~~30~~ 15 Days JCH 12/16/14 **PRIORITY**	**Offsite Property No.**	5303

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 ☐

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2YJF0	N	W	12-29-14	0819	1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C
B2YJF0	N	W	12-29-14	0819	3x1-L aG	WTPH_DIESEL: COMMON	14/40 Days	HCl to pH <2/Cool <=6C
B2YJF0	N	W	12-29-14	0819	1x2-L P	9310_ALPHABETA_GPC: COMMON	6 Months	HNO3 to pH <2

	Print	Sign	Date/Time		Print	Sign	Date/Time
Relinquished By	J.R. Aguilar/CHPRC		DEC 29 2014 1115	Received By	J.C. Fulton CHPRC		DEC 29 2014 1115
Relinquished By	J.C. Fulton CHPRC		DEC 29 2014 1400	Received By	FEDEX	JMM 12/30/14	12/30/14 0930
Relinquished By	FEDEX		Date/Time	Received By	Jacob McLane		12/30/14 0930
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

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

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

PRINTED O 11/11/2014

A-6004-842 (REV 2)

January 13, 2015

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

363842

C.O.C. # X15-015-090

Page 1 of 1

Collector	J.R. Aguilar/CHPRC	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	X15-015	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	303064JDBA
Project Title	AQUIFER TUBES, DECEMBER 2014	**Logbook No.**	HNF-N-506 72 / 42	**Ice Chest No.**	GWS-422
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7724 0818 9773
Protocol	CERCLA	**Priority:**	~~30~~ 15 Days JLH 12/16/14 **PRIORITY**	**Offsite Property No.**	5303

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 ☐

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2YJF1	N	W	12-29-14	0819	1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C
B2YJF1	N	W	12-29-14	0819	3x1-L aG	WTPH_DIESEL: COMMON	14/40 Days	HCl to pH <2/Cool <=6C
B2YJF1	N	W	12-29-14	0819	1x2-L P	9310_ALPHABETA_GPC: COMMON	6 Months	HNO3 to pH <2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
J.R. Aguilar/CHPRC		DEC 2 9 2014	1115	J.C. Fulton CHPRC		DEC 2 9 2014	1115
J.C. Fulton CHPRC		DEC 2 9 2014	1400	FEDEX		JMM 12/30/14	12/30/14 0930
FEDEX				Jacob McLane		12/30/14	0936

Matrix *

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

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

PRINTED O 11/11/2014

A-6004-842 (REV 2)

January 13, 2015

89 162

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 363842	C.O.C. # X15-015-112 Page 1 of 1

Collector	J.R. Aguilar/CHPRC	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	X15-015	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	303064JDBA
Project Title	AQUIFER TUBES, DECEMBER 2014	**Logbook No.**	HNF-N-506 72 / 42	**Ice Chest No.**	GWS-427
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	772408189773
Protocol	CERCLA	**Priority:** ~~30~~ 15 Days JLH 12/16/14	**PRIORITY**	**Offsite Property No.**	5303

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 ☐

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2YJV0	N	W	12-29-14	0957	1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C
B2YJV0	N	W	12-29-14	0957	3x1-L aG	WTPH_DIESEL: COMMON	14/40 Days	HCl to pH <2/Cool <=6C
B2YJV0	N	W	12-29-14	0957	1x2-L P	9310_ALPHABETA_GPC: COMMON	6 Months	HNO3 to pH <2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
J.R. Aguilar/CHPRC		DEC 29 2014	1115	J.C. Fulton CHPRC		DEC 29 2014	1115
J.C. Fulton CHPRC		DEC 29 2014	1400	FEDEX		12/30/14	0930
FEDEX				Jacob Mclane		12/30/14	0930

Matrix *

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

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

PRINTED O 11/11/2014 A-6004-842 (REV 2)

January 13, 2015

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: CPRC	**SDG/AR/COC/Work Order:** 363842
Received By: Jacob McClave	**Date Received:** 12/30/14

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

	Sample Receipt Criteria	**Yes**	**NA**	**No**	**Comments/Qualifiers (Required for Non-Conforming Items)**
1	Shipping containers received intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	✓			1 C Preservation Method: Ice bags Blue ice Dry ice None Other (describe) *all temperatures are recorded in Celsius
2a	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: Secondary Temperature Device Serial # (If Applicable): 130 462966
3	Chain of custody documents included with shipment?	✓			
4	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5	Samples requiring chemical preservation at proper pH?	✓			Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	VOA vials free of headspace (defined as < 6mm bubble)?		✓		Sample ID's and containers affected:
7	Are Encore containers present?			✓	(If yes, immediately deliver to Volatiles laboratory)
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Sample ID's affected:
11	Number of containers received match number indicated on COC?	✓			Sample ID's affected:
12	Are sample containers identifiable as GEL provided?			✓	
13	COC form is properly signed in relinquished/received sections?	✓			
14	Carrier and tracking number.				Circle Applicable: FedEx Air FedEx Ground UPS Field Services Courier Other 7724 0818 9773

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials HS Date 12/30/14 Page 1 of 1

Data Review Qualifier Definitions

GEL LABORATORIES LLC

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

Report Date: 12−JAN−15

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 (0rganics only)	Y	Organics		
S	Manual	Reported value determined by the Method of Standard Additions (MSA)	Y	Inorganics		Not coded B/C Rarely preformed
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 >= 2X the MDA and, after corrections, result is >= 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 >= 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 >= 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

Laboratory Certifications

List of current GEL Certifications as of 12 January 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	P330−12−00283, P330−12−00284
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	SC000122014−1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
Oklahoma	9904
Pennsylvania NELAP	68−00485
Plant Material Permit	PDEP−12−00260
South Carolina Chemistry	10120001
South Carolina GVL	23611001
South Carolina Radiochemi	10120002
Tennessee	TN 02934
Texas NELAP	T104704235−14−9
Utah NELAP	SC000122014−16
Vermont	VT87156
Virginia NELAP	460202
Washington	C780−12

FID Diesel Range Organics Analysis

Case Narrative

Method/Analysis Information

Procedure:	**Analysis of Diesel Range Organics by Flame Ionization Detector**
Analytical Method:	NWTPH-Dx
Prep Method:	SW846 3535A
Analytical Batch Number:	1446718
Prep Batch Number:	1446717

Sample Analysis

The following samples were analyzed using the analytical protocol as established in NWTPH-Dx:

Sample ID	Client ID
363842001	B2YJF0
363842002	B2YJF1
363842003	B2YJV0
1203236472	MB for batch 1446717
1203236473	Laboratory Control Sample (LCS)
1203236474	363842001(B2YJF0) Matrix Spike (MS)
1203236475	363842001(B2YJF0) Matrix Spike Duplicate (MSD)

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

Preparation/Analytical Method Verification

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-OA-E-003 REV# 24.

Raw data reports are processed and reviewed by the analyst using the Chemstation software package. False positives have been removed from the quantitation reports per standard operating procedures (SOP).

Calibration Information

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

Continuing Calibration Verification (CCV) Requirements
All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria. Analyte peaks eluted within the established retention time windows for this method.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
All surrogate recoveries were within the established acceptance criteria for this SDG.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

QC Sample Designation
Sample 363842001 (B2YJF0) was selected for the matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement
The MS recovery was within the established acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement
The MSD recovery was within the established acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement
The RPD between the MS and MSD met the acceptance limits.

Technical Information

Holding Time Specifications
GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. 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. Analyte peaks eluted within the established retention time windows for this method.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Electronic Package Comment

This package was generated using an electronic data processing program referred to as "virtual packaging". In an effort to increase quality and efficiency, the laboratory is developing systems to eventually 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 Exception (DER) Documentation
Data exception report (DER) is generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A DER was not required for this SDG in this batch.

Manual Integrations
Samples required manual integration for surrogates.

Additional Comments
The additional comments field is used to address special issues associated with each analysis, clarify method/contractual issues pertaining to the analysis, and to list any report documents generated as a result of sample analysis or review. The additional comments were not required.

System Configuration

The Diesel Range Organics analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
FID7.I	Agilent Gas Chromatograph	Agilent 6890N GC/FID	DB-5MS	30m x 0.25mm, 0.25um(J&W)

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: GEL363842 GEL Work Order: 363842

The Qualifiers in this report are defined as follows:

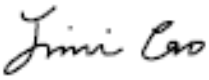
U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

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: Jimin Cao**

Date: 08 JAN 2015 **Title: Data Validator**

Sample Data Summary

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

Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-015**

Report Date: January 6, 2015

Client Sample ID: B2YJF0
Sample ID: 363842001
Matrix: WATER
Collect Date: 29-DEC-14 08:19
Receive Date: 30-DEC-14
Collector: Client

Project: CPRC0X15015
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Diesel Range Organics											
NWTPH-Dx DRO (WTPH_DIESEL:COMMON) "As Received"											
Diesel Range Organics DRO	U	0.00	47.6	190	ug/L	1	BYT1	01/05/15	1618	1446718	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3535A	3535A DRO IN LIQ PREP	AXW1	01/02/15	1000	1446717

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	NWTPH-Dx	

Surrogate/Tracer recovery	Test	Result		Nominal	Recovery%	Acceptable Limits
o-Terphenyl	NWTPH-Dx DRO (WTPH_DIESEL:COMMON) "As Received"	14.3	ug/L	19.0	75.3	(50%-150%)

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

Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-015**

Report Date: January 6, 2015

Client Sample ID: B2YJF1
Sample ID: 363842002
Matrix: WATER
Collect Date: 29-DEC-14 08:19
Receive Date: 30-DEC-14
Collector: Client

Project: CPRC0X15015
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Diesel Range Organics											
NWTPH-Dx DRO (WTPH_DIESEL:COMMON) "As Received"											
Diesel Range Organics DRO	U	0.00	47.6	190	ug/L	1	BYT1	01/05/15	1814	1446718	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3535A	3535A DRO IN LIQ PREP	AXW1	01/02/15	1000	1446717

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	NWTPH-Dx	

Surrogate/Tracer recovery	Test	Result		Nominal	Recovery%	Acceptable Limits
o-Terphenyl	NWTPH-Dx DRO (WTPH_DIESEL:COMMON) "As Received"	15.4	ug/L	19.0	81.0	(50%-150%)

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

Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-015**

Report Date: January 6, 2015

Client Sample ID: B2YJV0
Sample ID: 363842003
Matrix: WATER
Collect Date: 29-DEC-14 09:57
Receive Date: 30-DEC-14
Collector: Client

Project: CPRC0X15015
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Diesel Range Organics											
NWTPH-Dx DRO (WTPH_DIESEL:COMMON) "As Received"											
Diesel Range Organics DRO	U	0.00	47.6	190	ug/L	1	BYT1	01/05/15	1852	1446718	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3535A	3535A DRO IN LIQ PREP	AXW1	01/02/15	1000	1446717

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	NWTPH-Dx	

Surrogate/Tracer recovery	Test	Result		Nominal	Recovery%	Acceptable Limits
o-Terphenyl	NWTPH-Dx DRO (WTPH_DIESEL:COMMON) "As Received"	14.2	ug/L	19.0	74.8	(50%-150%)

Quality Control Summary

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

QC Summary

Report Date: January 6, 2015

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

Contact: **Mr. Scot Fitzgerald**

Workorder: **363842**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Diesel Range Organics										
Batch 1446718										
QC1203236473 LCS										
Diesel Range Organics	2000			1670	ug/L		83.6	(70%-130%)	BYT1	01/05/15 15:40
**o-Terphenyl	20.0			18.2	ug/L		91	(50%-150%)		
QC1203236472 MB										
Diesel Range Organics			U	50.0	ug/L					01/05/15 15:01
**o-Terphenyl	20.0			13.1	ug/L		65.5	(50%-150%)		
QC1203236474 363842001 MS										
Diesel Range Organics	1900	U	47.6	1510	ug/L		79.2	(70%-130%)		01/05/15 16:57
**o-Terphenyl	19.0		14.3	15.0	ug/L		78.8	(50%-150%)		
QC1203236475 363842001 MSD										
Diesel Range Organics	1900	U	47.6	1410	ug/L	6.71	74.1	(0%-20%)		01/05/15 17:36
**o-Terphenyl	19.0		14.3	17.2	ug/L		90.4	(50%-150%)		

Notes:

The Qualifiers in this report are defined as follows:

- A The TIC is a suspected aldol-condensation product
- B The analyte was detected in both the associated QC blank and in the sample.
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of sample.
- E Concentration exceeds the calibration range of the instrument
- 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
- N Spike Sample recovery is outside control limits.
- P Aroclor target analyte with greater than 25% difference between column analyses.
- T Spike and/or spike duplicate 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

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

QC Summary

Workorder: **363842**

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

o Analyte failed to recover within LCS limits (0rganics only)

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

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

General Chem Analysis

Case Narrative

General Chemistry Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG GEL363842

Method/Analysis Information

Product:	**Carbon and Total Organic**		
Analytical Batch:	1447032	**Method:**	9060_TOC: COMMON

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 9060A:

Sample ID	Client ID
363842001	B2YJF0
363842002	B2YJF1
363842003	B2YJV0
1203237129	Method Blank (MB)
1203237130	Laboratory Control Sample (LCS)
1203237132	363842003(B2YJV0) Sample Duplicate (DUP)
1203237134	363842003(B2YJV0) Post Spike (PS)

The samples in this SDG were 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-093 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 Carbon analysis was performed on a O-I Analytical Model 1010 Total Organic Carbon Analyzer.

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.

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
The following sample was selected for QC analysis: 363842003 (B2YJV0).

Matrix Spike (MS)/Post Spike (PS) Recovery Statement
The MS/PS recovery for this sample set was within the required acceptance limits.

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.

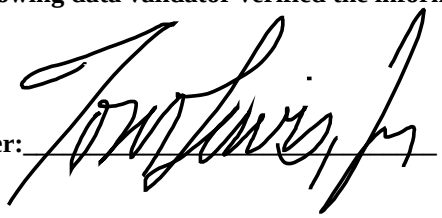
Certification Statement

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.

Review Validation:

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

The following data validator verified the information presented in this case narrative:

Reviewer:  **Date:** 09Jan15

Sample Data Summary

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

Certificate of Analysis Report
for

CPRC001 CH2MHill Plateau Remediation Company

Client SDG: GEL363842 GEL Work Order: 363842

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.

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 Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Heather Shaffer.

Reviewed by

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

Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-015**

Report Date: January 9, 2015

Client Sample ID: B2YJF0
Sample ID: 363842001
Matrix: WATER
Collect Date: 29-DEC-14 08:19
Receive Date: 30-DEC-14
Collector: Client

Project: CPRC0X15015
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
9060_TOC: COMMON "As Received"											
Total Organic Carbon #1		1130	330	1000	ug/L	1	TSM	01/06/15	1606	1447032	1
Total Organic Carbon #2		1080	330	1000	ug/L	1					
Total Organic Carbon #3		1100	330	1000	ug/L	1					
Total Organic Carbon #4		1090	330	1000	ug/L	1					
Total Organic Carbon Average		1100	330	1000	ug/L	1					

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060A	

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

Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-015**

Report Date: January 9, 2015

Client Sample ID: B2YJF1
Sample ID: 363842002
Matrix: WATER
Collect Date: 29-DEC-14 08:19
Receive Date: 30-DEC-14
Collector: Client

Project: CPRC0X15015
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
9060_TOC: COMMON "As Received"											
Total Organic Carbon #1		1110	330	1000	ug/L	1	TSM	01/06/15	1658	1447032	1
Total Organic Carbon #2		1080	330	1000	ug/L	1					
Total Organic Carbon #3		1080	330	1000	ug/L	1					
Total Organic Carbon #4		1050	330	1000	ug/L	1					
Total Organic Carbon Average		1080	330	1000	ug/L	1					

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060A	

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

Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF X15-015**

Report Date: January 9, 2015

Client Sample ID: B2YJV0
Sample ID: 363842003
Matrix: WATER
Collect Date: 29-DEC-14 09:57
Receive Date: 30-DEC-14
Collector: Client

Project: CPRC0X15015
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis											
9060_TOC: COMMON "As Received"											
Total Organic Carbon #1		1470	330	1000	ug/L	1	TSM	01/06/15	1731	1447032	1
Total Organic Carbon #2		1420	330	1000	ug/L	1					
Total Organic Carbon #3		1440	330	1000	ug/L	1					
Total Organic Carbon #4		1450	330	1000	ug/L	1					
Total Organic Carbon Average		1450	330	1000	ug/L	1					

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9060A	

Quality Control Summary

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

QC Summary

Report Date: January 9, 2015

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

Contact: **Mr. Scot Fitzgerald**

Workorder: **363842**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Carbon Analysis											
Batch 1447032											
QC1203237132 363842003 DUP											
Total Organic Carbon Average		1450		1400	ug/L	3.30 ^		(+/-1000)	TSM	01/06/15	18:05
QC1203237130 LCS											
Total Organic Carbon Average	10000			9820	ug/L		98.2	(85%-115%)		01/06/15	12:42
QC1203237129 MB											
Total Organic Carbon Average			U	330	ug/L					01/06/15	12:33
QC1203237134 363842003 PS											
Total Organic Carbon Average	10.0	1.45		11.5	mg/L		100	(65%-120%)		01/06/15	18:25

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 >= 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

Radiochemistry Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG GEL363842
Work Order 363842

Method/Analysis Information

Product:	**9310_ALPHABETA_GPC: COMMON**
Analytical Method:	EPA 900.0/SW846 9310
Analytical Batch Number:	1446845

Sample ID	Client ID
363842001	B2YJF0
363842002	B2YJF1
363842003	B2YJV0
1203236684	MB for batch 1446845
1203236688	Laboratory Control Sample (LCS)
1203236685	363842002(B2YJF1) Sample Duplicate (DUP)
1203236686	363842002(B2YJF1) Matrix Spike (MS)
1203236687	363842002(B2YJF1) Matrix Spike Duplicate (MSD)

The samples in this SDG were 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-001 REV# 18.

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.

Designated QC
The following sample was used for QC: 363842002 (B2YJF1).

QC Information
All of the QC samples meet the required acceptance limits with the following exceptions: The alpha relative error ratio for sample 1203236685 (B2YJF1DUP) is greater than 2, however there is no activity in either the duplicate or the sample.

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.

Chemical Recoveries
All chemical recoveries meet the required acceptance limits for this sample set.

Gross Alpha/Beta Preparation Information
High hygroscopic salt content in evaporated samples can cause the sample mass to fluctuate due to moisture absorption. To minimize this interference, the salts are converted to oxides by heating the sample under a flame until a dull red color is obtained. The conversion to oxides stabilizes the sample weight and ensures that proper alpha/beta efficiencies are assigned for each sample. Volatile radioisotopes of carbon, hydrogen, technetium, polonium and cesium may be lost during sample heating.

Recounts
Samples 1203236687 (B2YJF1MSD) and 1203236688 (LCS) were recounted due to high recovery. The recounts are reported.

Miscellaneous Information:

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

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

Additional Comments
The matrix spike and matrix spike duplicate, 1203236686 (B2YJF1MS) and 1203236687 (B2YJF1MSD), aliquots were reduced to conserve sample volume.

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.

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: GEL363842 GEL Work Order: 363842

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: Kate Gellatly**

Date: 13 JAN 2015 **Title: Analyst I**

Sample Data Summary

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

Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF X15-015

Report Date: January 13, 2015

Client Sample ID: B2YJF0
Sample ID: 363842001
Matrix: WATER
Collect Date: 29-DEC-14
Receive Date: 30-DEC-14
Collector: Client

Project: CPRC0X15015
Client ID: CPRC001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gas Flow Proportional Counting													
9310_ALPHABETA_GPC: COMMON "As Received"													
Alpha 12587-46-1	U	0.582	+/-0.811	1.24	+/-0.845	3.00	pCi/L		GXR1	01/08/15	1644	1446845	1
Beta 12587-47-2		14.9	+/-1.05	1.00	+/-2.64	4.00	pCi/L						

The following Analytical Methods were performed

Method	Description
1	EPA 900.0/SW846 9310

Notes:
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96 sigma).
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
A The TIC is a suspected aldol-condensation product
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 analyte was detected in both the associated QC blank and in the sample.
B The associated QC sample blank has a result >= 2X the MDA and, after corrections, result is >= MDA for this sample
C Analyte has been confirmed by GC/MS analysis
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 Concentration exceeds the calibration range of the instrument
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
N Spike Sample recovery is outside control limits.
P Aroclor target analyte with greater than 25% difference between column analyses.
T Spike and/or spike duplicate 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
o Analyte failed to recover within LCS limits (0rganics only)

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

Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF X15-015

Report Date: January 13, 2015

Client Sample ID: B2YJF0
Sample ID: 363842001

Project: CPRC0X15015
Client ID: CPRC001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	DF	Analyst Date	Time	Batch	Mtd.

The above sample is reported on an "as received" basis.

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

Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF X15-015

Report Date: January 13, 2015

Client Sample ID:	B2YJF1	Project:	CPRC0X15015
Sample ID:	363842002	Client ID:	CPRC001
Matrix:	WATER		
Collect Date:	29-DEC-14		
Receive Date:	30-DEC-14		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gas Flow Proportional Counting													
9310_ALPHABETA_GPC: COMMON "As Received"													
Alpha 12587-46-1	U	-0.97	+/-1.05	1.95	+/-1.05	3.00	pCi/L		GXR1	01/08/15	1644	1446845	1
Beta 12587-47-2		15.6	+/-1.12	1.15	+/-2.76	4.00	pCi/L						

The following Analytical Methods were performed

Method	Description
1	EPA 900.0/SW846 9310

Notes:
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96 sigma).
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
A The TIC is a suspected aldol-condensation product
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 analyte was detected in both the associated QC blank and in the sample.
B The associated QC sample blank has a result >= 2X the MDA and, after corrections, result is >= MDA for this sample
C Analyte has been confirmed by GC/MS analysis
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 Concentration exceeds the calibration range of the instrument
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
N Spike Sample recovery is outside control limits.
P Aroclor target analyte with greater than 25% difference between column analyses.
T Spike and/or spike duplicate 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
o Analyte failed to recover within LCS limits (0rganics only)
The above sample is reported on an "as received" basis.

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

Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF X15-015

Report Date: January 13, 2015

Client Sample ID:	B2YJV0	Project:	CPRC0X15015
Sample ID:	363842003	Client ID:	CPRC001
Matrix:	WATER		
Collect Date:	29-DEC-14		
Receive Date:	30-DEC-14		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gas Flow Proportional Counting													
9310_ALPHABETA_GPC: COMMON "As Received"													
Alpha 12587-46-1		3.36	+/-0.809	0.982	+/-0.995	3.00	pCi/L		GXR1	01/08/15	1644	1446845	1
Beta 12587-47-2		4.23	+/-1.03	1.58	+/-1.25	4.00	pCi/L						

The following Analytical Methods were performed

Method	Description
1	EPA 900.0/SW846 9310

Notes:
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96 sigma).
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
A The TIC is a suspected aldol-condensation product
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 analyte was detected in both the associated QC blank and in the sample.
B The associated QC sample blank has a result >= 2X the MDA and, after corrections, result is >= MDA for this sample
C Analyte has been confirmed by GC/MS analysis
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 Concentration exceeds the calibration range of the instrument
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
N Spike Sample recovery is outside control limits.
P Aroclor target analyte with greater than 25% difference between column analyses.
T Spike and/or spike duplicate 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
o Analyte failed to recover within LCS limits (0rganics only)
The above sample is reported on an "as received" basis.

Quality Control Data

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

QC Summary

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

Workorder: 363842

Report Date: January 13, 2015

Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date Time
Rad Gas Flow									
Batch 1446845									
QC1203236684 MB									
Alpha			U	-0.642	pCi/L			GXR1	01/08/1516:44
Uncert:				+/-0.410					
TPU:				+/-0.410					
Beta			U	-0.377	pCi/L				
Uncert:				+/-0.763					
TPU:				+/-0.763					
QC1203236685 363842002 DUP									
Alpha	U	-0.97	U	0.931	pCi/L				01/08/1516:44
Uncert:		+/-1.05		+/-0.920		RPD:	0	N/A	
TPU:		+/-1.05		+/-0.935		RER:	2.66	(0-2)	
Beta		15.6		14.9	pCi/L				
Uncert:		+/-1.12		+/-1.00		RPD:	4	(0% - 20%)	
TPU:		+/-2.76		+/-2.63		RER:	0.326	(0-2)	
QC1203236686 363842002 MS									
Alpha	243 U	-0.97		260	pCi/L	REC:	107	(75%-125%)	01/08/1515:07
Uncert:		+/-1.05		+/-27.2					
TPU:		+/-1.05		+/-50.9					
Beta	951	15.6		1150	pCi/L	REC:	119	(75%-125%)	
Uncert:		+/-1.12		+/-39.5					
TPU:		+/-2.76		+/-197					
QC1203236687 363842002 MSD									
Alpha	243 U	-0.97		288	pCi/L	REC:	119	(75%-125%)	01/09/1509:09
Uncert:		+/-1.05		+/-28.2		RPD:	11	(0%-20%)	
TPU:		+/-1.05		+/-57.0		RER:	0.740	(0-2)	
Beta	951	15.6		1180	pCi/L	REC:	122	(75%-125%)	
Uncert:		+/-1.12		+/-39.6		RPD:	3	(0%-20%)	
TPU:		+/-2.76		+/-196		RER:	0.222	(0-2)	
QC1203236688 LCS									
Alpha	81.1			80.7	pCi/L	REC:	100	(80%-120%)	01/11/1514:04
Uncert:				+/-8.13					
TPU:				+/-15.8					
Beta	317			357	pCi/L	REC:	113	(80%-120%)	
Uncert:				+/-12.5					
TPU:				+/-59.6					

Notes:

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

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
- A The TIC is a suspected aldol-condensation product
- 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).

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

QC Summary

Workorder: **363842**

Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date	Time

B	The analyte was detected in both the associated QC blank and in the sample.
B	The associated QC sample blank has a result >= 2X the MDA and, after corrections, result is >= MDA for this sample
C	Analyte has been confirmed by GC/MS analysis
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	Concentration exceeds the calibration range of the instrument
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
N	Spike Sample recovery is outside control limits.
P	Aroclor target analyte with greater than 25% difference between column analyses.
T	Spike and/or spike duplicate 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
o	Analyte failed to recover within LCS limits (0rganics only)

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 acceptence 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.