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 08, 2015

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

Re: CHPRC SAF S15-012
Work Order: 363297
SDG: GEL363297

Dear Mr. Fitzgerald:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on December 17, 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: 300071JDBA - 7H
Chain of Custody: S15-012-225, S15-012-226, S15-012-227, S15-012-228, S15-012-229, S15-012-230, S15-012-235, S15-012-236, S15-012-237, S15-012-238, S15-012-251, S15-012-252, S15-012-263, S15-012-264, S15-012-274 and S15-012-276
Enclosures

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Case Narrative

General Narrative
for
CH2MHill Plateau Remediation Company
CHPRC SAF S15-012
SDG: GEL363297

January 08, 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 17, 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
363297001	B2YKR1
363297002	B2YKT1
363297003	B2YKT6
363297004	B2YKX1
363297005	B2YKY1
363297006	B2YL38
363297007	B2YLB7
363297008	B2YKR0
363297009	B2YKR3
363297010	B2YKT0
363297011	B2YKT3
363297012	B2YKT5
363297013	B2YKT8
363297014	B2YKX0
363297015	B2YKX3
363297016	B2YKY3
363297017	B2YKY0
363297018	B2YL40
363297019	B2YL37
363297020	B2YLB6
363297021	B2YLB8
363297022	B2YLJ9

363297023 B2YLJ8

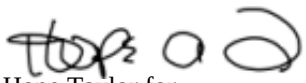
Case Narrative

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

Data Package

The enclosed data package contains the following sections: General Narrative, Chain of Custody and Supporting Documentation, and data from the following fractions: General Chemistry, 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 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 368297	C.O.C. # S15-012-226 Page 1 of 1

Collector	R.A. Shepard/CHPRC	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	S15-012	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071JDBA
Project Title	SURV, DECEMBER 2014	**Logbook No.**	HNF-N-506 69/68	**Ice Chest No.**	GWS-299
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	772263644574
Protocol	SURV	**Priority:**	30 Days PRIORITY	**Offsite Property No.**	5280

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
B2YKR1	N	W	DEC 16 2014	1033	1x250-mL G/P	9056_ANIONS_IC: COMMON	28 Days/48 Hours	Cool <=6C

January 13, 2015

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
R.A. Shepard/CHPRC			DEC 16 2014 1050	L.D. Wall CHPRC			DEC 16 2014 1050
L.D. Wall CHPRC			DEC 16 2014 1400	FEDEX			
Fed Ex				Shanta Mack			12/17/14 9:25

Matrix *

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

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

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 363297	C.O.C. # S15-012-228 Page 1 of 1

Collector	R.A. Shepard/CHPRC	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	S15-012	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071JDBA
Project Title	SURV, DECEMBER 2014	**Logbook No.**	HNF-N-506 69/68	**Ice Chest No.**	GWS-306
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	772263643718
Protocol	SURV	**Priority:**	30 Days PRIORITY	**Offsite Property No.**	5280

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
B2YKT1	N	W	DEC 16 2014	0903	1x250-mL G/P	9056_ANIONS_IC: COMMON	28 Days/48 Hours	Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
R.A. Shepard/CHPRC			DEC 16 2014 1050	L.D. Wall CHPRC		L.D. Wall	DEC 16 2014 1050
L.D. Wall CHPRC		L.D. Wall	DEC 16 2014 1400	FEDEX			
Fed Ex				Shasta Mack		Shasta Mack	12/17/14 9:25

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

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CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 363297	C.O.C. # S15-012-230 Page 1 of 1

Collector	R.A. Shepard/CHPRC	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	S15-012	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071JDBA
Project Title	SURV, DECEMBER 2014	**Logbook No.**	HNF-N-506 67/68	**Ice Chest No.**	GWS-299
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7722636445 74
Protocol	SURV	**Priority:**	30 Days **PRIORITY**	**Offsite Property No.**	5280

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
B2YKT6	N	W	DEC 16 2014	0922	1x250-mL G/P	9056_ANIONS_IC: COMMON	28 Days/48 Hours	Cool <=6C

Relinquished By	Print / Sign	Date/Time	Received By	Print / Sign	Date/Time
R.A. Shepard/CHPRC	R.A. Shepard	DEC 16 2014 1050	L.D. Wall CHPRC	L.D. Wall	DEC 16 2014 1050
L.D. Wall CHPRC	L.D. Wall	DEC 16 2014 1400	FEDEX		
Fed Ex			Shanta Mack	Shanta Mack	12/17/14 9:25

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

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CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 363297	C.O.C. # S15-012-236 Page 1 of 1

Collector	R.J. Crow/CHPRC	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	S15-012	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071JDBA
Project Title	SURV, DECEMBER 2014	**Logbook No.**	HNF-N-506 74/10	**Ice Chest No.**	GWS-423
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	772263643913
Protocol	SURV	**Priority:**	30 Days **PRIORITY**	**Offsite Property No.**	5280

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
B2YKX1	N	W	12-16-14	0758	1x250-mL G/P	9056_ANIONS_IC: COMMON	28 Days/48 Hours	Cool <=6C

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Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
R.J. Crow/CHPRC	R Crow		DEC 16 2014 1100	L.D. Wall CHPRC	L.D. Wall		DEC 16 2014 1100
L.D. Wall CHPRC	L.D. Wall		DEC 16 2014 1400	FEDEX			
Fed Ex				Shanta Mack	Shanta Mack		12/17/14 9:25

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

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CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 363297	C.O.C. # S15-012-238 Page 1 of 1

Collector	R.A. Shepard/CHPRC	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	S15-012	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071JDBA
Project Title	SURV, DECEMBER 2014	**Logbook No.**	HNF-N-506 69168	**Ice Chest No.**	GWS-299
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	772263644574
Protocol	SURV	**Priority:**	30 Days PRIORITY	**Offsite Property No.**	5280

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
B2YKY1	N	W	DEC 16 2014	0940	1x250-mL G/P	9056_ANIONS_IC: COMMON	28 Days/48 Hours	Cool <=6C

January 13, 2015

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
R.A. Shepard/CHPRC	R.A. Shepard/CHPRC		DEC 16 2014 1050	L.D. Wall	CHPRC	L.D. Wall	DEC 16 2014 1050
L.D. Wall	CHPRC	L.D. Wall	DEC 16 2014 1400	FEDEX			
Fed Ex				Sharta Mack		Mack	12/17/14 9:25

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

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CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 363297	C.O.C. # S15-012-252 Page 1 of 1

Collector		**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	S15-012	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071JDBA
Project Title	SURV, DECEMBER 2014	**Logbook No.**	HNF-N-506 74/10	**Ice Chest No.**	GWS-424
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	772263644287
Protocol	SURV	**Priority:**	30 Days PRIORITY	**Offsite Property No.**	5280

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
B2YL38	N	W	12-16-14	1020	1x250-mL G/P	9056_ANIONS_IC: COMMON	28 Days/48 Hours	Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
R.J. Crow/CHPRC	R Crow		DEC 16 2014 1100	L.D. Wall CHPRC	L.D. Wall		DEC 16 2014 1100
L.D. Wall CHPRC	L.D. Wall		DEC 16 2014 1400		FEDEX		
	Fed Ex				Shanta Mack		12/17/14 9:25

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

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CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 363297	C.O.C. # S15-012-264 Page 1 of 1

Collector	S.W. King/CHPRC	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	S15-012	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071JDBA
Project Title	SURV, DECEMBER 2014	**Logbook No.**	HNF-N-506 71 / 28	**Ice Chest No.**	GWS-116
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7722 6364 3659
Protocol	SURV	**Priority:**	30 Days PRIORITY	**Offsite Property No.**	5280

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
B2YLB7	N	W	DEC 16 2014	1200	1x250-mL G/P	9056_ANIONS_IC: COMMON	28 Days/48 Hours	Cool <=6C

January 13, 2015

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
S.W. King/CHPRC			DEC 16 2014 1230	L.D. Wall CHPRC			DEC 16 2014 1230
L.D. Wall CHPRC			DEC 16 2014 1400	FEDEX			
Fed Ex				Shanta Mack			12/17/14 9:25

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

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CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

363297

C.O.C. # S15-012-225

Page 1 of 1

Collector	R.A. Shepard/CHPRC	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	S15-012	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071JDBA
Project Title	SURV, DECEMBER 2014	**Logbook No.**	HNF-N-506 69168	**Ice Chest No.**	GWS-299
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7722 6364 4574
Protocol	SURV	**Priority:**	30 Days PRIORITY	**Offsite Property No.**	5280

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
B2YKR0	N	W	DEC 16 2014	1033	1x500-mL G/P	KPA_UTOT: COMMON	6 Months	HNO3 to pH <2
B2YKR0	N	W	↑	1033	3x1-L G/P	SRISO_SEP_PRECIP_GPC: COMMON	6 Months	HNO3 to pH <2
B2YKR0	N	W	↓	1033	1x500-mL G/P	TC99_EIE_LSC: COMMON	6 Months	HNO3 to pH <2
B2YKR0	N	W		1033	1x500-mL P	TRITIUM_DIST_LSC: COMMON	6 Months	None
B2YKR3	Y	W	DEC 16 2014	1033	1x250-mL G/P	2320_ALKALINITY: GW 01	14 Days	Cool <=6C

Relinquished By	Print / Sign	Date/Time	Received By	Print / Sign	Date/Time
R.A. Shepard/CHPRC	R.A. Shepard	DEC 16 2014 1050	L.D. Wall CHPRC	L.D. Wall	DEC 16 2014 1050
L.D. Wall CHPRC	L.D. Wall	DEC 16 2014 1400	FEDEX		
Fed Ex			Shanta Mack	Shanta Mack	12/17/14 9:25

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

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CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 363297	C.O.C. # S15-012-227 Page 1 of 1

Collector	R.A. Shepard/CHPRC	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	S15-012	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071JDBA
Project Title	SURV, DECEMBER 2014	**Logbook No.**	HNF-N-506 69/68	**Ice Chest No.**	GWS-306
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7722 6364 3718
Protocol	SURV	**Priority:**	30 Days PRIORITY	**Offsite Property No.**	5280

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
B2YKT0	N	W	DEC 16 2014	0903	1x500-mL G/P	KPA_UTOT: COMMON	6 Months	HNO3 to pH <2
B2YKT0	N	W	↑	↑	3x1-L G/P	SRISO_SEP_PRECIP_GPC: COMMON	6 Months	HNO3 to pH <2
B2YKT0	N	W	↕	↕	1x500-mL G/P	TC99_EIE_LSC: COMMON	6 Months	HNO3 to pH <2
B2YKT0	N	W	↓	↓	1x500-mL P	TRITIUM_DIST_LSC: COMMON	6 Months	None
B2YKT3	Y	W	DEC 16 2014	0903	1x250-mL G/P	2320_ALKALINITY: GW 01	14 Days	Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
R.A. Shepard/CHPRC			DEC 16 2014 1050	L.D. Wall CHPRC		L.D. Wall	DEC 16 2014 1050
~~Relinquished By~~ L.D. Wall CHPRC		L.D. Wall	DEC 16 2014 1400	Received By		FEDEX	Date/Time
Relinquished By		Fed Ex	Date/Time	Received By		Shanta Mack	Date/Time 12/17/14 9:25
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

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CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 3603297	C.O.C. # S15-012-229 Page 1 of 1

Collector	R.A. Shepard/CHPRC	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	S15-012	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071JDBA
Project Title	SURV, DECEMBER 2014	**Logbook No.**	HNF-N-506 69/68	**Ice Chest No.**	GWS-299
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7722 6304 4574
Protocol	SURV	**Priority:**	30 Days PRIORITY	**Offsite Property No.**	5280

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
B2YKT5	N	W	DEC 16 2014	0922	1x500-mL G/P	KPA_UTOT: COMMON	6 Months	HNO3 to pH <2
B2YKT5	N	W	↑	↑	3x1-L G/P	SRISO_SEP_PRECIP_GPC: COMMON	6 Months	HNO3 to pH <2
B2YKT5	N	W	↓	↓	1x500-mL G/P	TC99_EIE_LSC: COMMON	6 Months	HNO3 to pH <2
B2YKT5	N	W	DEC 16 2014	0922	1x500-mL P	TRITIUM_DIST_LSC: COMMON	6 Months	None
B2YKT8	Y	W	DEC 16 2014	0922	1x250-mL G/P	2320_ALKALINITY: GW 01	14 Days	Cool <=6C

	Print	Sign	Date/Time		Print	Sign	Date/Time
Relinquished By R.A. Shepard/CHPRC			DEC 16 2014 1050	Received By	L.D. Wall CHPRC	L.D. Wall	DEC 16 2014 1050
Relinquished By	L.D. Wall CHPRC	L.D. Wall	DEC 16 2014 1400	Received By	FEDEX		
Relinquished By	Fed Ex			Received By	Mark Shanta Mack		12/17/14 9:25
Relinquished By				Received By			

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

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CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 363297	C.O.C. # S15-012-235 Page 1 of 1

Collector	R.J. Crow/CHPRC	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	S15-012	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071JDBA
Project Title	SURV, DECEMBER 2014	**Logbook No.**	HNF-N-506 74/10	**Ice Chest No.**	GWS-299
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7722 6360 4574
Protocol	SURV	**Priority:**	30 Days PRIORITY	**Offsite Property No.**	5280

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
B2YKX0	N	W	12-16-14	0958	1x500-mL G/P	KPA_UTOT: COMMON	6 Months	HNO3 to pH <2
B2YKX0	N	W	"	"	3x1-L G/P	SRISO_SEP_PRECIP_GPC: COMMON	6 Months	HNO3 to pH <2
B2YKX0	N	W	"	"	1x500-mL G/P	TC99_EIE_LSC: COMMON	6 Months	HNO3 to pH <2
B2YKX0	N	W	"	"	1x500-mL P	TRITIUM_DIST_LSC: COMMON	6 Months	None
B2YKX3	Y	W	12-16-14	0959	1x250-mL G/P	2320_ALKALINITY: GW 01	14 Days	Cool <=6C

Relinquished By	Print / Sign	Date/Time	Received By	Print / Sign	Date/Time
R.J. Crow/CHPRC	R Crow	DEC 16 2014 1100	L.D. Wall CHPRC	L.D. Wall	DEC 16 2014 1100
L.D. Wall CHPRC	L.D. Wall	DEC 16 2014 1400		FEDEX	
	Fed Ex		Shanta Mack	Shanta Mack	12/17/14 9:25

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

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CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 363297	C.O.C. # S15-012-237 Page 1 of 1

Collector	R.A. Shepard/CHPRC	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	S15-012	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071JDBA
Project Title	SURV, DECEMBER 2014	**Logbook No.**	HNF-N-506 64/68	**Ice Chest No.**	GWS-299
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	552 7722 6364 4574
Protocol	SURV	**Priority:**	30 Days PRIORITY	**Offsite Property No.**	5280

Dec. 12/16/14

POSSIBLE SAMPLE HAZARDS/REMARKS

** ** Contains Radioaetive Material at conecentrations 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
B2YKY3	Y	W	DEC 16 2014	0940	1x250-mL G/P	2320_ALKALINITY: GW 01	14 Days	Cool <=6C
B2YKY0	N	W	↕	↕	1x500-mL G/P	KPA_UTOT: COMMON	6 Months	HNO3 to pH <2
B2YKY0	N	W	↕	↕	3x1-L G/P	SRISO_SEP_PRECIP_GPC: COMMON	6 Months	HNO3 to pH <2
B2YKY0	N	W	↕	↕	1x500-mL G/P	TC99_EIE_LSC: COMMON	6 Months	HNO3 to pH <2
B2YKY0	N	W	DEC 16 2014	0940	1x500-mL P	TRITIUM_DIST_LSC: COMMON	6 Months	None

January 13, 2015

Relinquished By	Print / Sign	Date/Time	Received By	Print / Sign	Date/Time
R.A. Shepard/CHPRC	R.A. Shepard	DEC 16 2014 1050	L.D. Wall CHPRC	L.D. Wall	DEC 16 2014 1050
Relinquished By	L.D. Wall CHPRC L.D. Wall	DEC 16 2014 1400	Received By	FEDEX	Date/Time
Relinquished By	Fed Ex	Date/Time	Received By	Shanta Mack	12/17/14 9:25
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

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CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 363297	C.O.C. # S15-012-251 Page 1 of 1

Collector	R.J. Crow/CHPRC	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	S15-012	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071JDBA
Project Title	SURV, DECEMBER 2014	**Logbook No.**	HNF-N-506 74/10	**Ice Chest No.**	Gcms-424
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	772263644287
Protocol	SURV	**Priority:**	30 Days PRIORITY	**Offsite Property No.**	5280

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
B2YL40	Y	W	12-16-14	1020	1x250-mL G/P	2320_ALKALINITY: GW 01	14 Days	Cool <=6C
B2YL37	N	W	"	"	1x500-mL G/P	KPA_UTOT: COMMON	6 Months	HNO3 to pH <2
B2YL37	N	W	"	"	3x1-L G/P	SRISO_SEP_PRECIP_GPC: COMMON	6 Months	HNO3 to pH <2
B2YL37	N	W	"	"	1x500-mL G/P	TC99_EIE_LSC: COMMON	6 Months	HNO3 to pH <2
B2YL37	N	W	12-16-14	1020	1x500-mL P	TRITIUM_DIST_LSC: COMMON	6 Months	None

Relinquished By	Print / Sign	Date/Time	Received By	Print / Sign	Date/Time
R.J. Crow/CHPRC	R Crow	DEC 16 2014 1100	L.D. Wall CHPRC	L.D. Wall	DEC 16 2014 1100
L.D. Wall CHPRC	L.D. Wall	DEC 16 2014 1400		FEDEX	
Fed Ex			Shanta Snell	Shanta Snell	12/17/14 9:25

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

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CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

363297

C.O.C. # **S15-012-263**

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Collector	S.W. King/CHPRC	**Coutact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	S15-012	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071JDBA
Project Title	SURV, DECEMBER 2014	**Logbook No.**	HNF-N-506 71/28	**Ice Chest No.**	GWS-116
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	772263643659
Protocol	SURV	**Priority:**	30 Days PRIORITY	**Offsite Property No.**	5280

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
B2YLB6	N	W	DEC 16 2014	1200	1x500-mL G/P	6010_METALS_ICP: GW 04; 6020_METALS_ICPMS: GW 01	6 Months	HNO3 to pH <2
B2YLB6	N	W			1x2-L P	9310_ALPHABETA_GPC: COMMON	6 Months	HNO3 to pH <2
B2YLB6	N	W			2x4-L G/P	I129LL_SEP_LEPS_GS_LL: COMMON	6 Months	None
B2YLB6	N	W			1x500-mL G/P	KPA_UTOT: COMMON	6 Months	HNO3 to pH <2
B2YLB6	N	W			3x1-L G/P	SRISO_SEP_PRECIP_GPC: COMMON	6 Months	HNO3 to pH <2
B2YLB6	N	W			1x500-mL G/P	TC99_EIE_LSC: COMMON	6 Months	HNO3 to pH <2
B2YLB6	N	W			1x500-mL P	TRITIUM_DIST_LSC: COMMON	6 Months	None
B2YLB8	Y	W	DEC 16 2014	1200	1x500-mL G/P	6010_METALS_ICP: GW 04; 6020_METALS_ICPMS: GW 01	6 Months	HNO3 to pH <2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
S.W. King/CHPRC			DEC 16 2014 1230	L.D. Wall CHPRC			DEC 16 2014 1230
Relinquished By			Date/Time	Received By			Date/Time
L.D. Wall CHPRC			DEC 16 2014 1400	FEDEX			
Relinquished By			Date/Time	Received By			Date/Time
Fed Ex				Shanta Mack			12/17/14 9:25
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

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January 13, 2015

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 363297	C.O.C. # S15-012-276 Page 1 of 1

Collector	S.W. King/CHPRC	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	S15-012	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071JDBA
Project Title	SURV, DECEMBER 2014	**Logbook No.**	HNF-N-506 71/28	**Ice Chest No.**	GWS-423
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7722 6364 3913
Protocol	SURV	**Priority:**	30 Days **PRIORITY**	**Offsite Property No.**	5280

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
B2YLJ9	N	W	DEC 16 2014	1030	1x4-L G/P	GAMMA_GS: COMMON; GAMMA_GS: GW 01	6 Months	HNO3 to pH <2
B2YLJ9	N	W			2x4-L G/P	I129LL_SEP_LEPS_GS_LL: COMMON	6 Months	None
B2YLJ9	N	W			1x500-mL G/P	KPA_UTOT: COMMON	6 Months	HNO3 to pH <2
B2YLJ9	N	W			1x500-mL G/P	TC99_EIE_LSC: COMMON	6 Months	HNO3 to pH <2
B2YLJ9	N	W			1x500-mL P	TRITIUM_DIST_LSC: COMMON	6 Months	None
B2YLJ9	N	W			1x500-mL G/P	6020_METALS_ICPMS: Arsenic (1)	6 Months	HNO3 to pH <2
B2YLJ9	N	W	DEC 16 2014	1030	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
S.W. King/CHPRC	S.W. King	DEC 16 2014 1130	L.D. Wall CHPRC	L.D. Wall	DEC 16 2014 1130
L.D. Wall CHPRC	L.D. Wall	DEC 16 2014 1400	FEDEX		
Fed Ex			Shasta Mack	Shasta Mack	12/17/14 9:25

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

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January 13, 2015

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

363297

C.O.C. # **S15-012-274**

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Collector	S.W. King/CHPRC	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	S15-012	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300071JDBA
Project Title	SURV, DECEMBER 2014	**Logbook No.**	HNF-N-506 71 / 25	**Ice Chest No.**	GWS-306
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	772263643718
Protocol	SURV	**Priority:**	30 Days **PRIORITY**	**Offsite Property No.**	52980

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
B2YLJ8	N	W	DEC 1 6 2014	1030	1x4-L G/P	GAMMA_GS: COMMON; GAMMA_GS: GW 01	6 Months	HNO3 to pH <2
B2YLJ8	N	W	↓	↓	2x4-L G/P	I129LL_SEP_LEPS_GS_LL: COMMON	6 Months	None
B2YLJ8	N	W			1x500-mL G/P	KPA_UTOT: COMMON	6 Months	HNO3 to pH <2
B2YLJ8	N	W			1x500-mL G/P	TC99_EIE_LSC: COMMON	6 Months	HNO3 to pH <2
B2YLJ8	N	W			1x500-mL P	TRITIUM_DIST_LSC: COMMON	6 Months	None
B2YLJ8	N	W			1x500-mL G/P	6020_METALS_ICPMS: Arsenic (1)	6 Months	HNO3 to pH <2
B2YLJ8	N	W	DEC 1 6 2014	1030	1x2-L P	9310_ALPHABETA_GPC: COMMON	6 Months	HNO3 to pH <2

January 13, 2015

Relinquished By	Print / Sign	Date/Time	Received By	Print / Sign	Date/Time
S.W. King/CHPRC	Sat King	DEC 1 6 2014 1130	L.D. Wall CHPRC	L.D. Wall	DEC 1 6 2014 1130
L.D. Wall CHPRC	L.D. Wall	DEC 1 6 2014 1400	FEDEX		
Fed Ex			Shanta Mack	Mack	12/17/14 9:25

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 11/4/2014

A-6004-842 (REV 2)

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: CPRC			**SDG/AR/COC/Work Order:** 383297
Received By: H. Taylor			**Date Received:** 121714
Suspected Hazard Information	**Yes**	**No**	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?		✓	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0cpm
Classified Radioactive II or III by RSO?		✓	If yes, Were swipes taken of sample 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)?*	✓			Preservation Method: Ice bags Blue ice Dry ice None Other (describe) *all temperatures are recorded in Celsius 2,3
2a	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: Secondary Temperature Device Serial # (If Applicable):
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 7722 6364 4287 2 7722 5364 2399-2 7722 3333 9130-3 7722 4167 2547-2 7722 6364 3459-2 772 6364 3913-3 7722 6364 3718-2 7722 6584 3050-3

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials TH Date 121714 Page 1 of 1

Data Review Qualifier Definitions

GEL LABORATORIES LLC

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

Report Date: 08−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 08 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
Wisconsin	999887790

Metals Analysis

Case Narrative

Metals Fractional Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG GEL363297

Sample ID	Client ID
363297020	B2YLB6
363297021	B2YLB8
363297022	B2YLJ9
363297023	B2YLJ8
1203230778	Method Blank (MB)**ICP**
1203230779	Laboratory Control Sample (LCS)
1203230782	363279002(B2Y9L9L) Serial Dilution (SD)
1203230780	363279002(B2Y9L9S) Matrix Spike (MS)
1203230781	363279002(B2Y9L9SD) Matrix Spike Duplicate (MSD)
1203230748	Method Blank (MB)**ICP-MS**
1203230749	Laboratory Control Sample (LCS)
1203230752	363232039(B2YKL0L) Serial Dilution (SD)
1203230750	363232039(B2YKL0S) Matrix Spike (MS)
1203230751	363232039(B2YKL0SD) Matrix Spike Duplicate (MSD)
1203238870	363232039(B2YKL0PS) Post Spike (PS)

Sample Analysis

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

Method/Analysis Information

Analytical Batch:	1444308 and 1444298
Prep Batch :	1444307 and 1444297
Standard Operating Procedures:	GL-MA-E-013 REV# 23, GL-MA-E-006 REV# 11 and GL-MA-E-014 REV# 25
Analytical Method:	SW846 3005A/6010C and SW846 3005A/6020A
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 PE 7300 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 Perkin Elmer ELAN 9000 inductively coupled plasma mass spectrometer (ICP-MS). The instrument is equipped with a cross-flow nebulizer, quadrupole mass spectrometer, and dual mode electron multiplier detector. Internal standards of scandium, germanium, indium, tantalum, and/or lutetium were utilized to cover the mass spectrum.

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. 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 MBs analyzed with this SDG met the acceptance criteria.

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: 363279002 (B2Y9L9)-ICP and 363232039 (B2YKL0)-ICP-MS.

Matrix Spike (MS) Recovery Statement
The percent recoveries (%R) obtained from the MS analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. All applicable analytes met the acceptance criteria.

Matrix Spike Duplicate (MSD) Recovery Statement
The percent recovery (%R) obtained from the MSD analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The MSD did not meet the recommended quality control acceptance criteria for percent recoveries for beryllium and boron. 1203230751 (B2YKL0MSD)-ICP-MS.

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. Strontium did not meet the established percent difference criteria. 1203230752 (B2YKL0SDILT)-ICP-MS.

Post Spike (PS) Recovery Statement
The percent recoveries (%R) obtained from the PS analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The PS did not meet the recommended quality control acceptance criteria for percent recoveries for beryllium and boron and verifies the presence of matrix interferences. 1203238870 (B2YKL0PS)-ICP-MS.

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
Dilutions are performed to minimize matrix interferences resulting from elevated mineral element concentrations present in solid samples and/or to bring over range target analyte concentrations into the linear calibration range of the instrument. The samples in this SDG did not require dilutions.

Preparation Information
The samples in this SDG were prepared exactly 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
Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. Data exception reports were included behind the Case Narrative or in the Miscellaneous Data section of this data package. The following DER was generated for this SDG: 1371773. 1203230751 (B2YKL0MSD) and 1203238870 (B2YKL0PS)-ICP-MS.

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.

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:** 1/9/15

Sample Data Summary

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: GEL363297 GEL Work Order: 363297

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).

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.

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 _____ 1/9/15

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 S15-012**

Report Date: January 9, 2015

Client Sample ID: B2YLB6
Sample ID: 363297020
Matrix: WATER
Collect Date: 16-DEC-14 12:00
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP												
6010_METALS_ICP:GW 04 (6 metals) "As Received"												
Calcium 7440-70-2		61700	+/-12300	50.0	200	ug/L	1	JWJ	12/20/14	2041	1444308	1
Iron 7439-89-6	U	4.88	+/-10.0	30.0	100	ug/L	1					
Magnesium 7439-95-4		18200	+/-3640	110	300	ug/L	1					
Potassium 7440-09-7		7690	+/-1540	50.0	150	ug/L	1					
Sodium 7440-23-5		25100	+/-5020	100	300	ug/L	1					
Vanadium 7440-62-2		22.3	+/-4.47	1.00	5.00	ug/L	1					
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: GW 01 "As Received"												
Aluminum 7429-90-5	U	4.76	+/-5.09	15.0	50.0	ug/L	1	SKJ	01/07/15	0047	1444298	2
Antimony 7440-36-0	U	0.173	+/-0.335	1.00	5.00	ug/L	1					
Arsenic 7440-38-2		4.82	+/-1.12	1.70	5.00	ug/L	1					
Barium 7440-39-3		71.1	+/-14.2	0.600	5.00	ug/L	1					
Cadmium 7440-43-9	U	0.008	+/-0.0367	0.110	2.00	ug/L	1					
Chromium 7440-47-3		2.89	+/-0.882	2.00	10.0	ug/L	1					
Cobalt 7440-48-4	B	0.129	+/-0.0422	0.100	4.00	ug/L	1					
Copper 7440-50-8	B	0.829	+/-0.203	0.350	8.00	ug/L	1					
Lead 7439-92-1	U	0.107	+/-0.168	0.500	2.00	ug/L	1					
Manganese 7439-96-5	U	0.316	+/-0.339	1.00	5.00	ug/L	1					
Molybdenum	B	3.72	+/-0.746	0.165	20.0	ug/L	1					

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Certificate of Analysis

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Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF S15-012**

Report Date: January 9, 2015

Client Sample ID: B2YLB6 Project: CPRC0S15012
Sample ID: 363297020 Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: GW 01 "As Received"												
7439-98-7 Nickel		2.20	+/-0.470	0.500	2.00	ug/L	1					
7440-02-0 Selenium	B	3.78	+/-0.906	1.50	5.00	ug/L	1					
7782-49-2 Silver	U	0.004	+/-0.0667	0.200	2.00	ug/L	1					
7440-22-4 Strontium		304	+/-60.8	2.00	10.0	ug/L	1					
7440-24-6 Thallium	U	0.012	+/-0.150	0.450	2.00	ug/L	1					
7440-28-0 Tin	U	0.371	+/-0.341	1.00	5.00	ug/L	1					
7440-31-5 Zinc		14.0	+/-3.04	3.50	10.0	ug/L	1					
7440-66-6 Thorium	U	-0.026	+/-0.128	0.383	2.00	ug/L	1	PRB	01/09/15	1234	1444298	3
7440-29-1 Uranium		39.5	+/-7.91	0.067	0.200	ug/L	1					
7440-61-1 Beryllium	U	0.011	+/-0.0667	0.200	2.00	ug/L	1	PRB	01/09/15	1402	1444298	4
7440-41-7 Boron		37.0	+/-7.51	4.00	15.0	ug/L	1					
7440-42-8												

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	JP1	12/17/14	1740	1444297
SW846 3005A	SW846 3005A for 6010C	JP1	12/17/14	1740	1444307

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3005A/6010C	
2	SW846 3005A/6020A	
3	SW846 3005A/6020A	
4	SW846 3005A/6020A	

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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 S15-012**

Report Date: January 9, 2015

Client Sample ID: B2YLB8
Sample ID: 363297021
Matrix: WATER
Collect Date: 16-DEC-14 12:00
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP												
6010_METALS_ICP:GW 04 (6 metals) "As Received"												
Calcium 7440-70-2		61100	+/-12200	50.0	200	ug/L	1	JWJ	12/20/14	2044	1444308	1
Iron 7439-89-6	U	5.57	+/-10.1	30.0	100	ug/L	1					
Magnesium 7439-95-4		17900	+/-3590	110	300	ug/L	1					
Potassium 7440-09-7		7590	+/-1520	50.0	150	ug/L	1					
Sodium 7440-23-5		24900	+/-4970	100	300	ug/L	1					
Vanadium 7440-62-2		21.6	+/-4.32	1.00	5.00	ug/L	1					
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: GW 01 "As Received"												
Aluminum 7429-90-5	U	4.23	+/-5.07	15.0	50.0	ug/L	1	SKJ	01/07/15	0107	1444298	2
Antimony 7440-36-0	U	0.382	+/-0.342	1.00	5.00	ug/L	1					
Arsenic 7440-38-2		4.82	+/-1.12	1.70	5.00	ug/L	1					
Barium 7440-39-3		72.2	+/-14.4	0.600	5.00	ug/L	1					
Cadmium 7440-43-9	U	0.004	+/-0.0367	0.110	2.00	ug/L	1					
Chromium 7440-47-3		2.76	+/-0.866	2.00	10.0	ug/L	1					
Cobalt 7440-48-4	B	0.407	+/-0.088	0.100	4.00	ug/L	1					
Copper 7440-50-8	B	0.803	+/-0.199	0.350	8.00	ug/L	1					
Lead 7439-92-1	U	0.096	+/-0.168	0.500	2.00	ug/L	1					
Manganese 7439-96-5	U	0.943	+/-0.383	1.00	5.00	ug/L	1					
Molybdenum	B	3.65	+/-0.732	0.165	20.0	ug/L	1					

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Certificate of Analysis

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Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF S15-012**

Report Date: January 9, 2015

Client Sample ID: B2YLB8
Sample ID: 363297021

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Metals Analysis-ICP-MS											
6020_METALS_ICPMS: GW 01 "As Received"											
7439-98-7 Nickel		2.07	+/-0.447	0.500	2.00	ug/L	1				
7440-02-0 Selenium		4.43	+/-1.02	1.50	5.00	ug/L	1				
7782-49-2 Silver	U	0.003	+/-0.0667	0.200	2.00	ug/L	1				
7440-22-4 Strontium		302	+/-60.4	2.00	10.0	ug/L	1				
7440-24-6 Thallium	U	0.052	+/-0.150	0.450	2.00	ug/L	1				
7440-28-0 Tin	U	0.140	+/-0.335	1.00	5.00	ug/L	1				
7440-31-5 Zinc		13.5	+/-2.94	3.50	10.0	ug/L	1				
7440-66-6 Thorium	U	-0.021	+/-0.128	0.383	2.00	ug/L	1	PRB	01/09/15 1235	1444298	3
7440-29-1 Uranium		39.5	+/-7.90	0.067	0.200	ug/L	1				
7440-61-1 Beryllium	U	-0.002	+/-0.0667	0.200	2.00	ug/L	1	PRB	01/09/15 1404	1444298	4
7440-41-7 Boron		37.8	+/-7.68	4.00	15.0	ug/L	1				
7440-42-8											

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	JP1	12/17/14	1740	1444297
SW846 3005A	SW846 3005A for 6010C	JP1	12/17/14	1740	1444307

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3005A/6010C	
2	SW846 3005A/6020A	
3	SW846 3005A/6020A	
4	SW846 3005A/6020A	

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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 S15-012**

Report Date: January 9, 2015

Client Sample ID: B2YLJ9
Sample ID: 363297022
Matrix: WATER
Collect Date: 16-DEC-14 10:30
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: Arsenic (1) "As Received"												
Arsenic 7440-38-2	B	3.17	+/-0.851	1.70	5.00	ug/L	1	SKJ	01/07/15	0114	1444298	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	JP1	12/17/14	1740	1444297

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3005A/6020A	

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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 S15-012**

Report Date: January 9, 2015

Client Sample ID: B2YLJ8
Sample ID: 363297023
Matrix: WATER
Collect Date: 16-DEC-14 10:30
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: Arsenic (1) "As Received"												
Arsenic 7440-38-2	B	3.85	+/-0.956	1.70	5.00	ug/L	1	SKJ	01/07/15	0120	1444298	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	JP1	12/17/14	1740	1444297

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3005A/6020A	

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: **363297**

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS										
Batch 1444298										
QC1203230749 LCS										
Aluminum	2000			2080	ug/L		104	(80%-120%)	SKJ	01/06/15 23:01
Antimony	50.0			51.9	ug/L		104	(80%-120%)		
Arsenic	50.0			48.8	ug/L		97.6	(80%-120%)		
Barium	50.0			49.0	ug/L		98	(80%-120%)		
Beryllium	50.0			59.5	ug/L		119	(80%-120%)	PRB	01/09/15 13:42
Boron	100			118	ug/L		118	(80%-120%)		
Cadmium	50.0			52.1	ug/L		104	(80%-120%)	SKJ	01/06/15 23:01
Chromium	50.0			53.1	ug/L		106	(80%-120%)		
Cobalt	50.0			52.3	ug/L		105	(80%-120%)		
Copper	50.0			52.2	ug/L		104	(80%-120%)		
Lead	50.0			50.5	ug/L		101	(80%-120%)		
Manganese	50.0			51.3	ug/L		103	(80%-120%)		
Molybdenum	50.0			50.7	ug/L		101	(80%-120%)		
Nickel	50.0			52.4	ug/L		105	(80%-120%)		
Selenium	50.0			51.3	ug/L		103	(80%-120%)		
Silver	50.0			54.3	ug/L		109	(80%-120%)		
Strontium	50.0			52.6	ug/L		105	(80%-120%)		
Thallium	50.0			47.3	ug/L		94.7	(80%-120%)		
Thorium	50.0			52.5	ug/L		105	(80%-120%)	PRB	01/09/15 12:12
Tin	50.0			52.7	ug/L		105	(80%-120%)	SKJ	01/06/15 23:01

GEL LABORATORIES LLC
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QC Summary

Workorder: **363297**

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS										
Batch 1444298										
Uranium	50.0			54.0	ug/L		108	(80%-120%)	PRB	01/09/15 12:12
Zinc	50.0			52.8	ug/L		106	(80%-120%)	SKJ	01/06/15 23:01
QC1203230748 MB										
Aluminum			U	ND	ug/L					01/06/15 22:54
Antimony			U	ND	ug/L					
Arsenic			U	ND	ug/L					
Barium			U	ND	ug/L					
Beryllium			U	ND	ug/L				PRB	01/09/15 13:40
Boron			U	ND	ug/L					
Cadmium			U	ND	ug/L				SKJ	01/06/15 22:54
Chromium			U	ND	ug/L					
Cobalt			U	ND	ug/L					
Copper			U	ND	ug/L					
Lead			U	ND	ug/L					
Manganese			U	ND	ug/L					
Molybdenum			U	ND	ug/L					
Nickel			U	ND	ug/L					
Selenium			U	ND	ug/L					
Silver			U	ND	ug/L					
Strontium			U	ND	ug/L					
Thallium			U	ND	ug/L					
Thorium			U	ND	ug/L				PRB	01/09/15 12:10

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QC Summary

Workorder: **363297**

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS											
Batch 1444298											
Tin				U	ND	ug/L				SKJ	01/06/15 22:54
Uranium				U	ND	ug/L				PRB	01/09/15 12:10
Zinc				U	ND	ug/L				SKJ	01/06/15 22:54
QC1203230750 363232039 MS											
Aluminum	2000	U	ND		1990	ug/L		99.4	(75%-125%)		01/06/15 23:28
Antimony	50.0	U	ND		52.9	ug/L		105	(75%-125%)		
Arsenic	50.0	U	ND		51.4	ug/L		103	(75%-125%)		
Barium	50.0		72.6		118	ug/L		90.3	(75%-125%)		
Beryllium	50.0	NU	ND		62.5	ug/L		125	(75%-125%)	PRB	01/09/15 13:45
Boron	100	N	19.3		143	ug/L		124	(75%-125%)		
Cadmium	50.0	U	ND		52.6	ug/L		105	(75%-125%)	SKJ	01/06/15 23:28
Chromium	50.0		18.2		67.1	ug/L		97.9	(75%-125%)		
Cobalt	50.0	B	0.166		48.9	ug/L		97.4	(75%-125%)		
Copper	50.0		20.6		67.6	ug/L		94	(75%-125%)		
Lead	50.0	U	ND		49.0	ug/L		97.9	(75%-125%)		
Manganese	50.0	U	ND		48.8	ug/L		97.4	(75%-125%)		
Molybdenum	50.0	B	0.792		52.9	ug/L		104	(75%-125%)		
Nickel	50.0		2.51		50.9	ug/L		96.8	(75%-125%)		
Selenium	50.0	B	1.83		55.4	ug/L		107	(75%-125%)		
Silver	50.0	U	ND		53.3	ug/L		107	(75%-125%)		
Strontium	50.0	M	355		419	ug/L		N/A	(75%-125%)		
Thallium	50.0	U	ND		46.6	ug/L		92.9	(75%-125%)		

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QC Summary

Workorder: **363297**

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS											
Batch 1444298											
Thorium	50.0	U	ND		53.8	ug/L		107	(75%-125%)	PRB	01/09/15 12:15
Tin	50.0	U	ND		53.9	ug/L		107	(75%-125%)	SKJ	01/06/15 23:28
Uranium	50.0		3.53		57.2	ug/L		107	(75%-125%)	PRB	01/09/15 12:15
Zinc	50.0	B	5.56		55.4	ug/L		99.7	(75%-125%)	SKJ	01/06/15 23:28
QC1203230751 363232039 MSD											
Aluminum	2000	U	ND		1990	ug/L	0.144	99.5	(0%-20%)		01/06/15 23:34
Antimony	50.0	U	ND		51.3	ug/L	2.96	102	(0%-20%)		
Arsenic	50.0	U	ND		50.9	ug/L	0.967	102	(0%-20%)		
Barium	50.0		72.6		119	ug/L	0.767	92.1	(0%-20%)		
Beryllium	50.0	NU	ND	N	63.7	ug/L	1.84	127*	(0%-20%)	PRB	01/09/15 13:46
Boron	100	N	19.3	N	150	ug/L	5.22	131*	(0%-20%)		
Cadmium	50.0	U	ND		51.4	ug/L	2.35	103	(0%-20%)	SKJ	01/06/15 23:34
Chromium	50.0		18.2		66.8	ug/L	0.575	97.2	(0%-20%)		
Cobalt	50.0	B	0.166		49.7	ug/L	1.60	99	(0%-20%)		
Copper	50.0		20.6		68.7	ug/L	1.67	96.2	(0%-20%)		
Lead	50.0	U	ND		49.0	ug/L	0.112	97.8	(0%-20%)		
Manganese	50.0	U	ND		48.8	ug/L	0.0922	97.5	(0%-20%)		
Molybdenum	50.0	B	0.792		51.3	ug/L	3.20	101	(0%-20%)		
Nickel	50.0		2.51		50.4	ug/L	1.05	95.8	(0%-20%)		
Selenium	50.0	B	1.83		55.0	ug/L	0.890	106	(0%-20%)		
Silver	50.0	U	ND		51.3	ug/L	3.76	103	(0%-20%)		
Strontium	50.0	M	355		422	ug/L	0.577	N/A	(0%-20%)		

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QC Summary

Workorder: **363297**

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS											
Batch 1444298											
Thallium	50.0	U	ND		46.4	ug/L	0.254	92.7	(0%-20%)	SKJ	01/06/15 23:34
Thorium	50.0	U	ND		55.4	ug/L	2.93	110	(0%-20%)	PRB	01/09/15 12:17
Tin	50.0	U	ND		53.3	ug/L	1.12	106	(0%-20%)	SKJ	01/06/15 23:34
Uranium	50.0		3.53		59.0	ug/L	2.98	111	(0%-20%)	PRB	01/09/15 12:17
Zinc	50.0	B	5.56		56.3	ug/L	1.67	102	(0%-20%)	SKJ	01/06/15 23:34
QC1203238870 363232039 PS											
Beryllium	50.0	NU	ND		66.1	ug/L		132*	(80%-120%)	PRB	01/09/15 13:48
Boron	100	N	19.3		154	ug/L		135*	(80%-120%)		
QC1203230752 363232039 SDILT											
Aluminum		U	ND	DU	ND	ug/L	N/A		(0%-10%)	SKJ	01/06/15 23:47
Antimony		U	ND	DU	ND	ug/L	N/A		(0%-10%)		
Arsenic		U	ND	DU	ND	ug/L	N/A		(0%-10%)		
Barium			72.6	D	15.6	ug/L	7.53		(0%-10%)		
Beryllium		NU	ND	DU	ND	ug/L	N/A		(0%-10%)	PRB	01/09/15 13:49
Boron		N	19.3	D	6.65	ug/L	72.1		(0%-10%)		
Cadmium		U	ND	DU	ND	ug/L	N/A		(0%-10%)	SKJ	01/06/15 23:47
Chromium			18.2	D	4.08	ug/L	12.2		(0%-10%)		
Cobalt		B	0.166	DU	ND	ug/L	N/A		(0%-10%)		
Copper			20.6	D	4.53	ug/L	9.85		(0%-10%)		
Lead		U	ND	DU	ND	ug/L	N/A		(0%-10%)		
Manganese		U	ND	DU	ND	ug/L	N/A		(0%-10%)		
Molybdenum		B	0.792	D	0.205	ug/L	29.4		(0%-10%)		
Nickel			2.51	D	0.600	ug/L	19.8		(0%-10%)		

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QC Summary

Workorder: **363297**

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS										
Batch 1444298										
Selenium	B	1.83	DU	ND	ug/L	N/A		(0%-10%)	SKJ	01/06/15 23:47
Silver	U	ND	DU	ND	ug/L	N/A		(0%-10%)		
Strontium	M	355	DM	81.3	ug/L	14.5*		(0%-10%)		
Thallium	U	ND	DU	ND	ug/L	N/A		(0%-10%)		
Thorium	U	ND	DU	ND	ug/L	N/A		(0%-10%)	PRB	01/09/15 12:20
Tin	U	ND	DU	ND	ug/L	N/A		(0%-10%)	SKJ	01/06/15 23:47
Uranium		3.53	D	0.771	ug/L	9.11		(0%-10%)	PRB	01/09/15 12:20
Zinc	B	5.56	DU	ND	ug/L	N/A		(0%-10%)	SKJ	01/06/15 23:47
Metals Analysis-ICP										
Batch 1444308										
QC1203230779 LCS										
Calcium	5000			5100	ug/L		102	(80%-120%)	JWJ	12/20/14 19:40
Iron	5000			5080	ug/L		102	(80%-120%)		
Magnesium	5000			5160	ug/L		103	(80%-120%)		
Potassium	5000			5070	ug/L		101	(80%-120%)		
Sodium	5000			5050	ug/L		101	(80%-120%)		
Vanadium	500			532	ug/L		106	(80%-120%)		
QC1203230778 MB										
Calcium			U	ND	ug/L					12/20/14 19:37
Iron			U	ND	ug/L					
Magnesium			U	ND	ug/L					
Potassium			U	ND	ug/L					
Sodium			U	ND	ug/L					

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QC Summary

Workorder: **363297**

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis-ICP											
Batch 1444308											
Vanadium				U	ND	ug/L					
QC1203230780 363279002 MS											
Calcium	5000		41000		46100	ug/L		N/A	(75%-125%)	JWJ	12/20/14 20:02
Iron	5000	U	ND		4970	ug/L		99.4	(75%-125%)		
Magnesium	5000		11100		16100	ug/L		99.8	(75%-125%)		
Potassium	5000		4870		10000	ug/L		103	(75%-125%)		
Sodium	5000		10900		15800	ug/L		97.8	(75%-125%)		
Vanadium	500		12.7		535	ug/L		104	(75%-125%)		
QC1203230781 363279002 MSD											
Calcium	5000		41000		46500	ug/L	0.672	N/A	(0%-20%)		12/20/14 20:04
Iron	5000	U	ND		4980	ug/L	0.191	99.6	(0%-20%)		
Magnesium	5000		11100		16300	ug/L	1.12	103	(0%-20%)		
Potassium	5000		4870		10100	ug/L	0.577	104	(0%-20%)		
Sodium	5000		10900		15800	ug/L	0.0949	98.1	(0%-20%)		
Vanadium	500		12.7		541	ug/L	1.15	106	(0%-20%)		
QC1203230782 363279002 SDILT											
Calcium			41000	D	8290	ug/L	1.14		(0%-10%)		12/20/14 20:06
Iron		U	ND	DU	ND	ug/L	N/A		(0%-10%)		
Magnesium			11100	D	2250	ug/L	1.29		(0%-10%)		
Potassium			4870	D	1010	ug/L	3.94		(0%-10%)		
Sodium			10900	D	2250	ug/L	3.37		(0%-10%)		
Vanadium			12.7	D	3.06	ug/L	20.6		(0%-10%)		

Notes:

The Qualifiers in this report are defined as follows:

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QC Summary

Workorder: **363297**

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

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

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.

Miscellaneous

GEL Laboratories LLC
Form GEL-DER

DER Report No.: 1371773
Revision No.:

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
09-JAN-15	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
ICP/MS	SW846 3005A/6020A	Liquid	CPRC
Batch ID:	**Sample Numbers:**		
1444298	See Below		

Potentially affected work order(s)(SDG): 363232(GEL363232),363291(GEL363291),363297(GEL363297)

Application Issues:

Failed Recovery for MS/PS

Failed Recovery for MSD/PSD

Specification and Requirements Exception Description:	DER Disposition:
1. Failed Recovery for MS/PS: QC 1203238870PS 2. Failed Recovery for MSD/PSD: QC 1203230751MSD	The matrix spike duplicate recovery failed outside of the control limits for beryllium and boron. The post spike failed outside the required control limits for beryllium and boron. This verifies the presence of a matrix interference.

Originator's Name:

Samantha Jacobs 09-JAN-15

Data Validator/Group Leader:

Bryan Davis 09-JAN-15

General Chem Analysis

Case Narrative

General Chemistry Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG GEL363297

Method/Analysis Information

Product:	**Ion Chromatography**		
Analytical Batch:	1444347	**Method:**	9056_ANIONS_IC: COMMON

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 9056A:

Sample ID	Client ID
363297001	B2YKR1
363297002	B2YKT1
363297003	B2YKT6
363297004	B2YKX1
363297005	B2YKY1
363297006	B2YL38
363297007	B2YLB7
1203230864	Method Blank (MB)
1203230865	Laboratory Control Sample (LCS)
1203230866	363297007(B2YLB7) Sample Duplicate (DUP)
1203230867	363297007(B2YLB7) 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-086 REV# 23.

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 Ion Chromatography analysis was performed on a Dionex ICS-5000 Ion Chromatograph.

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
The following sample was selected for QC analysis: 363297007 (B2YLB7).

Matrix Spike (MS)/Post Spike (PS) Recovery Statement
The MS/PS recoveries for this sample set were 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 Dilutions
The following samples in this sample group were diluted due to high concentration: 1203230866 (B2YLB7DUP), 1203230867 (B2YLB7PS), 363297001 (B2YKR1), 363297002 (B2YKT1), 363297003 (B2YKT6), 363297004 (B2YKX1), 363297005 (B2YKY1), 363297006 (B2YL38) and 363297007 (B2YLB7). The following samples in this sample group were diluted due to matrix interference: 1203230866 (B2YLB7DUP), 1203230867 (B2YLB7PS), 363297001 (B2YKR1), 363297002 (B2YKT1), 363297003 (B2YKT6), 363297004 (B2YKX1), 363297005 (B2YKY1), 363297006 (B2YL38) and 363297007 (B2YLB7). The following samples were diluted based on historical data: 1203230866 (B2YLB7DUP), 1203230867 (B2YLB7PS), 363297001 (B2YKR1), 363297002 (B2YKT1), 363297003 (B2YKT6), 363297004 (B2YKX1), 363297005 (B2YKY1), 363297006 (B2YL38) and 363297007 (B2YLB7).

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.

Manual Integrations
The following samples from this sample group had to be manually integrated due to errors in the instrument software peak integration: 1203230866 (B2YLB7DUP), 1203230867 (B2YLB7PS), 363297001 (B2YKR1), 363297002 (B2YKT1), 363297003 (B2YKT6), 363297004 (B2YKX1), 363297005 (B2YKY1), 363297006 (B2YL38) and 363297007 (B2YLB7).

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:	1446147 and 1446148	**Method:**	2320_ALKALINITY: GW 01

Sample Analysis

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

Sample ID	Client ID
363297009	B2YKR3
363297011	B2YKT3
363297013	B2YKT8
363297015	B2YKX3
363297016	B2YKY3
363297018	B2YL40
1203234956	Method Blank (MB)
1203234966	Method Blank (MB)
1203234958	Laboratory Control Sample (LCS)
1203234968	Laboratory Control Sample (LCS)
1203234962	363232033(B2YL60) Sample Duplicate (DUP)
1203234970	363297013(B2YKT8) Sample Duplicate (DUP)
1203234964	363232033(B2YL60) Matrix Spike (MS)
1203234972	363297013(B2YKT8) Matrix Spike (MS)

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-033 REV# 11.

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 MBs analyzed with this SDG met the acceptance criteria.

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

Quality Control (QC) Designation
The following samples were selected for QC analysis: 363232033 (B2YL60)- Batch 1446147 and 363297013 (B2YKT8)- Batch 1446148.

Matrix Spike (MS)/Post Spike (PS) Recovery Statement
The MS/PS recoveries for this sample set were 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 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
50mL of sample was used due to limited sample quantity. 1203234962 (B2YL60DUP) and 1203234964 (B2YL60MS)- Batch 1446147. 50mL of sample was used due to limited quantity. 1203234970 (B2YKT8DUP), 1203234972 (B2YKT8MS) and 363297013 (B2YKT8)- Batch 1446148.

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.

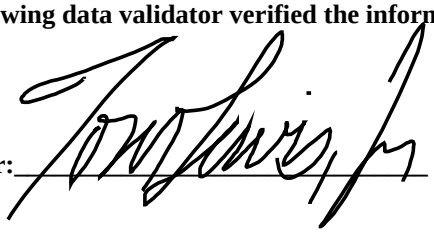
Certification Statement

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: GEL363297 GEL Work Order: 363297

The Qualifiers in this report are defined as follows:

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

D Results are reported from a diluted aliquot of sample.

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

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 S15-012**

Report Date: January 8, 2015

Client Sample ID: B2YKR1
Sample ID: 363297001
Matrix: WATER
Collect Date: 16-DEC-14 10:33
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography											
9056_ANIONS_IC: COMMON "As Received"											
Chloride 16887-00-6		9960	+/-333	67.0	200	ug/L	1	RXB5 12/17/14	1655	1444347	1
Fluoride 16984-48-8	B	159	+/-12.2	33.0	500	ug/L	1				
Nitrite-N 14797-65-0	U	0.00	+/-12.7	38.0	250	ug/L	1				
Nitrate-N 14797-55-8	D	2910	+/-147	330	1000	ug/L	10	RXB5 12/17/14	2004	1444347	2
Sulfate 14808-79-8	D	88700	+/-2990	1330	4000	ug/L	10				

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9056A	
2	SW846 9056A	

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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 S15-012**

Report Date: January 8, 2015

Client Sample ID: B2YKT1
Sample ID: 363297002
Matrix: WATER
Collect Date: 16-DEC-14 09:03
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography											
9056_ANIONS_IC: COMMON "As Received"											
Chloride 16887-00-6		5230	+/-176	67.0	200	ug/L	1	RXB5 12/17/14	1727	1444347	1
Fluoride 16984-48-8	B	157	+/-12.2	33.0	500	ug/L	1				
Nitrite-N 14797-65-0	U	0.00	+/-12.7	38.0	250	ug/L	1				
Nitrate-N 14797-55-8	D	1740	+/-124	330	1000	ug/L	10	RXB5 12/17/14	2035	1444347	2
Sulfate 14808-79-8	D	38500	+/-1360	1330	4000	ug/L	10				

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9056A	
2	SW846 9056A	

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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 S15-012**

Report Date: January 8, 2015

Client Sample ID: B2YKT6
Sample ID: 363297003
Matrix: WATER
Collect Date: 16-DEC-14 09:22
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography											
9056_ANIONS_IC: COMMON "As Received"											
Fluoride 16984-48-8	B	210	+/-13.0	33.0	500	ug/L	1	RXB5 12/17/14	1758	1444347	1
Nitrite-N 14797-65-0	U	0.00	+/-12.7	38.0	250	ug/L	1				
Chloride 16887-00-6	D	9980	+/-401	670	2000	ug/L	10	RXB5 12/17/14	2107	1444347	2
Nitrate-N 14797-55-8	D	3990	+/-173	330	1000	ug/L	10				
Sulfate 14808-79-8	D	53000	+/-1820	1330	4000	ug/L	10				

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9056A	
2	SW846 9056A	

GEL LABORATORIES LLC
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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 S15-012**

Report Date: January 8, 2015

Client Sample ID: B2YKX1
Sample ID: 363297004
Matrix: WATER
Collect Date: 16-DEC-14 09:58
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography											
9056_ANIONS_IC: COMMON "As Received"											
Chloride 16887-00-6		9120	+/-305	67.0	200	ug/L	1	RXB5 12/17/14	1419	1444347	1
Fluoride 16984-48-8	B	197	+/-12.8	33.0	500	ug/L	1				
Nitrite-N 14797-65-0	U	0.00	+/-12.7	38.0	250	ug/L	1				
Nitrate-N 14797-55-8	D	3200	+/-153	330	1000	ug/L	10	RXB5 12/17/14	2138	1444347	2
Sulfate 14808-79-8	D	112000	+/-3760	1330	4000	ug/L	10				

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9056A	
2	SW846 9056A	

GEL LABORATORIES LLC
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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 S15-012**

Report Date: January 8, 2015

Client Sample ID: B2YKY1
Sample ID: 363297005
Matrix: WATER
Collect Date: 16-DEC-14 09:40
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography											
9056_ANIONS_IC: COMMON "As Received"											
Fluoride 16984-48-8	B	236	+/-13.5	33.0	500	ug/L	1	RXB5 12/17/14	1830	1444347	1
Nitrite-N 14797-65-0	U	0.00	+/-12.7	38.0	250	ug/L	1				
Chloride 16887-00-6	D	14300	+/-527	670	2000	ug/L	10	RXB5 12/17/14	2209	1444347	2
Nitrate-N 14797-55-8	D	4370	+/-183	330	1000	ug/L	10				
Sulfate 14808-79-8	D	76700	+/-2600	1330	4000	ug/L	10				

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9056A	
2	SW846 9056A	

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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 S15-012**

Report Date: January 8, 2015

Client Sample ID: B2YL38
Sample ID: 363297006
Matrix: WATER
Collect Date: 16-DEC-14 10:20
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography											
9056_ANIONS_IC: COMMON "As Received"											
Fluoride 16984-48-8	B	153	+/-12.1	33.0	500	ug/L	1	RXB5 12/17/14	1451	1444347	1
Nitrite-N 14797-65-0	U	0.00	+/-12.7	38.0	250	ug/L	1				
Chloride 16887-00-6	D	10100	+/-404	670	2000	ug/L	10	RXB5 12/17/14	2241	1444347	2
Nitrate-N 14797-55-8	D	4080	+/-175	330	1000	ug/L	10				
Sulfate 14808-79-8	D	116000	+/-3890	1330	4000	ug/L	10				

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9056A	
2	SW846 9056A	

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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 S15-012**

Report Date: January 8, 2015

Client Sample ID: B2YLB7
Sample ID: 363297007
Matrix: WATER
Collect Date: 16-DEC-14 12:00
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Ion Chromatography											
9056_ANIONS_IC: COMMON "As Received"											
Fluoride 16984-48-8	B	247	+/-13.7	33.0	500	ug/L	1	RXB5 12/17/14	1522	1444347	1
Nitrite-N 14797-65-0	U	0.00	+/-12.7	38.0	250	ug/L	1				
Chloride 16887-00-6	D	18300	+/-648	670	2000	ug/L	10	RXB5 12/17/14	2312	1444347	2
Nitrate-N 14797-55-8	D	11000	+/-382	330	1000	ug/L	10				
Sulfate 14808-79-8	D	76900	+/-2600	1330	4000	ug/L	10				

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9056A	
2	SW846 9056A	

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Certificate of Analysis

Company : CH2MHill Plateau Remediation Company
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PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF S15-012**

Report Date: January 8, 2015

Client Sample ID: B2YKR3
Sample ID: 363297009
Matrix: WATER
Collect Date: 16-DEC-14 10:33
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Titration and Ion Analysis										
2320_ALKALINITY: GW 01 "As Received"										
Alkalinity, Total as CaCO3 ALKALINITY		96400	725	1000	ug/L		PXO1 12/27/14	1439	1446147	1
Bicarbonate alkalinity (CaCO3) 71-52-3		96400	725	1000	ug/L					
Carbonate alkalinity (CaCO3) CO3ALKALINITY	U	0.00	725	1000	ug/L					
Hydroxide alkalinity as CaCO3 84625-61-6	U	0.00	725	1000	ug/L					

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SM 2320B	

GEL LABORATORIES LLC
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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 S15-012**

Report Date: January 8, 2015

Client Sample ID: B2YKT3
Sample ID: 363297011
Matrix: WATER
Collect Date: 16-DEC-14 09:03
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Titration and Ion Analysis										
2320_ALKALINITY: GW 01 "As Received"										
Alkalinity, Total as CaCO3 ALKALINITY		84700	725	1000	ug/L		PXO1 12/27/14	1603	1446148	1
Bicarbonate alkalinity (CaCO3) 71-52-3		84700	725	1000	ug/L					
Carbonate alkalinity (CaCO3) CO3ALKALINITY	U	0.00	725	1000	ug/L					
Hydroxide alkalinity as CaCO3 84625-61-6	U	0.00	725	1000	ug/L					

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SM 2320B	

GEL LABORATORIES LLC
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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 S15-012**

Report Date: January 8, 2015

Client Sample ID: B2YKT8
Sample ID: 363297013
Matrix: WATER
Collect Date: 16-DEC-14 09:22
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Titration and Ion Analysis										
2320_ALKALINITY: GW 01 "As Received"										
Alkalinity, Total as CaCO3 ALKALINITY		112000	1450	2000	ug/L		PXO1 12/27/14	1607	1446148	1
Bicarbonate alkalinity (CaCO3) 71-52-3		112000	1450	2000	ug/L					
Carbonate alkalinity (CaCO3) CO3ALKALINITY	U	0.00	1450	2000	ug/L					
Hydroxide alkalinity as CaCO3 84625-61-6	U	0.00	1450	2000	ug/L					

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SM 2320B	

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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 S15-012**

Report Date: January 8, 2015

Client Sample ID: B2YKX3
Sample ID: 363297015
Matrix: WATER
Collect Date: 16-DEC-14 09:58
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Titration and Ion Analysis										
2320_ALKALINITY: GW 01 "As Received"										
Alkalinity, Total as CaCO3 ALKALINITY		113000	725	1000	ug/L		PXO1 12/27/14	1614	1446148	1
Bicarbonate alkalinity (CaCO3) 71-52-3		113000	725	1000	ug/L					
Carbonate alkalinity (CaCO3) CO3ALKALINITY	U	0.00	725	1000	ug/L					
Hydroxide alkalinity as CaCO3 84625-61-6	U	0.00	725	1000	ug/L					

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SM 2320B	

GEL LABORATORIES LLC
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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 S15-012**

Report Date: January 8, 2015

Client Sample ID: B2YKY3
Sample ID: 363297016
Matrix: WATER
Collect Date: 16-DEC-14 09:40
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Titration and Ion Analysis										
2320_ALKALINITY: GW 01 "As Received"										
Alkalinity, Total as CaCO3 ALKALINITY		104000	725	1000	ug/L		PXO1 12/27/14	1616	1446148	1
Bicarbonate alkalinity (CaCO3) 71-52-3		104000	725	1000	ug/L					
Carbonate alkalinity (CaCO3) CO3ALKALINITY	U	0.00	725	1000	ug/L					
Hydroxide alkalinity as CaCO3 84625-61-6	U	0.00	725	1000	ug/L					

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SM 2320B	

GEL LABORATORIES LLC
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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 S15-012**

Report Date: January 8, 2015

Client Sample ID: B2YL40
Sample ID: 363297018
Matrix: WATER
Collect Date: 16-DEC-14 10:20
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Titration and Ion Analysis										
2320_ALKALINITY: GW 01 "As Received"										
Alkalinity, Total as CaCO3 ALKALINITY		116000	725	1000	ug/L		PXO1 12/27/14	1620	1446148	1
Bicarbonate alkalinity (CaCO3) 71-52-3		116000	725	1000	ug/L					
Carbonate alkalinity (CaCO3) CO3ALKALINITY	U	0.00	725	1000	ug/L					
Hydroxide alkalinity as CaCO3 84625-61-6	U	0.00	725	1000	ug/L					

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SM 2320B	

Quality Control Summary

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

QC Summary

Report Date: January 8, 2015

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

Contact: **Mr. Scot Fitzgerald**

Workorder: **363297**

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Ion Chromatography											
Batch 1444347											
QC1203230866 363297007 DUP											
Chloride		D	18300	D	18200	ug/L	0.186		(0%-20%)	RXB5	12/17/14 23:44
Fluoride		B	247	B	243	ug/L	1.51 ^		(+/-500)		12/17/14 15:53
Nitrate-N		D	11000	D	11000	ug/L	0.100		(0%-20%)		12/17/14 23:44
Nitrite-N		U	38.0	U	38.0	ug/L	N/A				12/17/14 15:53
Sulfate		D	76900	D	77100	ug/L	0.327		(0%-20%)		12/17/14 23:44
QC1203230865 LCS											
Chloride	5000				4540	ug/L		90.9	(90%-110%)		12/18/14 02:21
Fluoride	2500				2330	ug/L		93.1	(90%-110%)		
Nitrate-N	2500				2300	ug/L		91.9	(90%-110%)		
Nitrite-N	2500				2290	ug/L		91.6	(90%-110%)		
Sulfate	10000				9370	ug/L		93.7	(90%-110%)		
QC1203230864 MB											
Chloride				U	67.0	ug/L					12/18/14 01:49
Fluoride				U	33.0	ug/L					
Nitrate-N				U	33.0	ug/L					
Nitrite-N				U	38.0	ug/L					
Sulfate				U	133	ug/L					
QC1203230867 363297007 PS											
Chloride	5.00	D	1.83	D	6.82	mg/L		99.9	(90%-110%)		12/18/14 00:15
Fluoride	2.50	B	0.247		2.57	mg/L		92.8	(90%-110%)		12/17/14 16:25
Nitrate-N	2.50	D	1.10	D	3.63	mg/L		101	(90%-110%)		12/18/14 00:15

GEL LABORATORIES LLC
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QC Summary

Workorder: 363297

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Ion Chromatography											
Batch 1444347											
Nitrite-N	2.50	U	0.00		2.35	mg/L		93.8	(90%-110%)		12/17/14 16:25
Sulfate	10.0	D	7.69	D	18.1	mg/L		104	(90%-110%)	RXB5	12/18/14 00:15
Titration and Ion Analysis											
Batch 1446147											
QC1203234962 363232033 DUP											
Alkalinity, Total as CaCO3			120000		119000	ug/L	0.889		(0%-20%)	PXO1	12/27/14 14:36
Bicarbonate alkalinity (CaCO3)			120000		119000	ug/L	0.889		(0%-20%)		
Carbonate alkalinity (CaCO3)		U	1450	U	1450	ug/L	N/A				
Hydroxide alkalinity as CaCO3		U	1450	U	1450	ug/L	N/A				
QC1203234958 LCS											
Alkalinity, Total as CaCO3	50000				51400	ug/L		103	(90%-110%)		12/27/14 14:15
QC1203234956 MB											
Alkalinity, Total as CaCO3				U	725	ug/L					12/27/14 14:15
Bicarbonate alkalinity (CaCO3)				U	725	ug/L					
Carbonate alkalinity (CaCO3)				U	725	ug/L					
Hydroxide alkalinity as CaCO3				U	725	ug/L					
QC1203234964 363232033 MS											
Alkalinity, Total as CaCO3	100000		120000		218000	ug/L		98.5	(80%-120%)		12/27/14 14:38
Batch 1446148											
QC1203234970 363297013 DUP											
Alkalinity, Total as CaCO3			112000		114000	ug/L	1.87		(0%-20%)	PXO1	12/27/14 16:09
Bicarbonate alkalinity (CaCO3)			112000		114000	ug/L	1.87		(0%-20%)		
Carbonate alkalinity (CaCO3)		U	1450	U	1450	ug/L	N/A				
Hydroxide alkalinity as CaCO3		U	1450	U	1450	ug/L	N/A				
QC1203234968 LCS											
Alkalinity, Total as CaCO3	50000				51400	ug/L		103	(90%-110%)		12/27/14 15:53
QC1203234966 MB											
Alkalinity, Total as CaCO3				U	725	ug/L					12/27/14 15:53

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

QC Summary

Workorder: **363297**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Titration and Ion Analysis										
Batch 1446148										
Bicarbonate alkalinity (CaCO3)			U	725	ug/L					
Carbonate alkalinity (CaCO3)			U	725	ug/L				PXO1	12/27/14 15:53
Hydroxide alkalinity as CaCO3			U	725	ug/L					
QC1203234972 363297013 MS										
Alkalinity, Total as CaCO3	100000	112000		217000	ug/L		105	(80%-120%)		12/27/14 16:11

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 GEL363297
Work Order 363297

Method/Analysis Information

Product:	**GAMMA_GS:COMMON + GW 01**
Analytical Method:	EPA 901.1
Analytical Batch Number:	1443873

Sample ID	Client ID
363297022	B2YLJ9
363297023	B2YLJ8
1203229584	MB for batch 1443873
1203229586	Laboratory Control Sample (LCS)
1203229585	363012002(B2YTX9) Sample Duplicate (DUP)

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-013 REV# 25.

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: 363012002 (B2YTX9).

QC Information
All of the QC samples met the required acceptance limits.

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
Sample 1203229586 (LCS) recounted due to high recovery for Am-241. The recount is 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
Additional comments were not required for this sample set.

Qualifier Information

Qualifier	Reason	Analyte	Sample	Client Sample
X	Data rejected due to no valid peak.	Potassium-40	363297023	B2YLJ8

Method/Analysis Information

Product:	**I129LL_SEP_LEPS_GS_LL: COMMON**
Analytical Method:	DOE EML HASL-300,I-01 Modified
Analytical Batch Number:	1445481

Sample ID	Client ID
363297020	B2YLB6
363297022	B2YLJ9
363297023	B2YLJ8
1203233366	MB for batch 1445481
1203233369	Laboratory Control Sample (LCS)
1203233367	363442003(B2YHM9) Sample Duplicate (DUP)
1203233368	363442003(B2YHM9) Matrix Spike (MS)

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-006 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.

Designated QC
The following sample was used for QC: 363442003 (B2YHM9).

QC Information
All of the QC samples met the required acceptance limits.

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
None of the samples in this sample set were recounted.

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
Additional comments were not required for this sample set.

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**9310_ALPHABETA_GPC: COMMON**
Analytical Method:	EPA 900.0/SW846 9310
Analytical Batch Number:	1445780

Sample ID	Client ID
363297020	B2YLB6
363297022	B2YLJ9
363297023	B2YLJ8
1203234093	MB for batch 1445780
1203234097	Laboratory Control Sample (LCS)
1203234094	363297020(B2YLB6) Sample Duplicate (DUP)
1203234095	363297020(B2YLB6) Matrix Spike (MS)
1203234096	363297020(B2YLB6) 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: 363297020 (B2YLB6).

QC Information

All of the QC samples meet the required acceptance limits with the following exceptions: The sample and the duplicate, 1203234094 (B2YLB6DUP) and 363297020 (B2YLB6), did not meet the alpha relative percent difference requirement; however, they do meet the relative error ratio requirement with a value of 1.49.

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
Sample 1203234097 (LCS) was recounted due to low recovery. The recount is reported. Sample 1203234095 (B2YLB6MS) was recounted due to high recovery. The recount is reported. Sample 1203234094 (B2YLB6DUP) was recounted to verify sample result. The second count is 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, 1203234095 (B2YLB6MS) and 1203234096 (B2YLB6MSD), aliquots were reduced to conserve sample volume.

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**SRISO_SEP_PRECIP_GPC: COMMON**
Analytical Method:	EPA 905.0 Modified
Analytical Batch Number:	1446313

Sample ID	Client ID
363297008	B2YKR0
363297010	B2YKT0
363297012	B2YKT5
363297014	B2YKX0
363297017	B2YKY0
363297019	B2YL37
363297020	B2YLB6
1203235387	MB for batch 1446313
1203235389	Laboratory Control Sample (LCS)
1203235388	363297008(B2YKR0) Sample Duplicate (DUP)

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-004 REV# 17.

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: 363297008 (B2YKR0).

QC Information
All of the QC samples met the required acceptance limits.

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.

Recounts
None of the samples in this sample set were recounted.

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
Additional comments were not required for this sample set.

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**KPA_UTOT: COMMON**
Analytical Method:	ASTM D 5174
Analytical Batch Number:	1445583

Sample ID	Client ID
363297008	B2YKR0
363297010	B2YKT0
363297012	B2YKT5
363297014	B2YKX0
363297017	B2YKY0
363297019	B2YL37
363297020	B2YLB6
363297022	B2YLJ9
363297023	B2YLJ8
1203233579	MB for batch 1445583
1203233582	Laboratory Control Sample (LCS)
1203233583	Laboratory Control Sample (LCS)
1203233580	363297008(B2YKR0) Sample Duplicate (DUP)
1203233581	363297008(B2YKR0) Matrix Spike (MS)

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-023 REV# 19.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met. The calibration for Total Uranium is performed prior to each analysis and is located with the raw data.

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: 363297008 (B2YKR0).

Technical Information:

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

Sample Re-prep/Re-analysis
Samples 363297008 (B2YKR0), 363297010 (B2YKT0), 363297012 (B2YKT5), 363297014 (B2YKX0), 363297017 (B2YKY0), 363297019 (B2YL37), 363297022 (B2YLJ9) and 363297023 (B2YLJ8) were treated with a post-spike due to contractual requirements and reanalyzed to test for quenching. The post-spike verified the initial results, so the initial results are reported. The entire batch is a re-prep of batch 1444533 due to the low level LCS not meeting recovery and duplicate not meeting requirements. Sample 363297020 (B2YLB6) was diluted 1:10, treated with a post-spike due to contractual requirements, and reanalyzed to test for quenching. The post-spike verified the diluted result, so the diluted result is reported.

Recounts
None of the samples in this sample set were recounted.

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
MB 1203233579 (MB) failed R2 and/or lifetime. This was due to insufficient uranium in the sample for measurement. The results are reported.

Qualifier Information

Qualifier	Reason	Analyte	Sample	Client Sample
D	Results are reported from a diluted aliquot of sample.	Total Uranium	363297020	B2YLB6

Method/Analysis Information

Product:	**TC99_EIE_LSC: COMMON**
Analytical Method:	DOE EML HASL-300, Tc-02-RC Modified
Analytical Batch Number:	1446106

Sample ID	Client ID
363297008	B2YKR0
363297010	B2YKT0
363297012	B2YKT5
363297014	B2YKX0
1203234835	MB for batch 1446106
1203234837	Laboratory Control Sample (LCS)
1203234836	363232017(B2YKN0) Sample Duplicate (DUP)

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-059 REV# 3.

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: 363232017 (B2YKN0).

QC Information
All of the QC samples met the required acceptance limits.

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
None of the samples in this sample set were recounted.

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
Additional comments were not required for this sample set.

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**TC99_EIE_LSC: COMMON**
Analytical Method:	DOE EML HASL-300, Tc-02-RC Modified
Analytical Batch Number:	1446194

Sample ID	Client ID
363297017	B2YKY0
363297019	B2YL37
363297020	B2YLB6
363297022	B2YLJ9
363297023	B2YLJ8
1203235122	MB for batch 1446194
1203235124	Laboratory Control Sample (LCS)
1203235123	363442003(B2YHM9) Sample Duplicate (DUP)

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-059 REV# 3.

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 samples were used for QC: 363442003 (B2YHM9) and 363565002 (B2Y8V1).

QC Information
All of the QC samples met the required acceptance limits.

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 363297020 (B2YLB6), 363297022 (B2YLJ9) and 363297023 (B2YLJ8) were recounted to verify sample results. The recount results are similar to the original results. Original results 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
Additional comments were not required for this sample set.

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**TRITIUM_DIST_LSC: COMMON**
Analytical Method:	EPA 906.0 Modified
Analytical Batch Number:	1446479

Sample ID	Client ID
363297008	B2YKR0
363297010	B2YKT0
363297012	B2YKT5
363297014	B2YKX0
363297017	B2YKY0
363297019	B2YL37
363297020	B2YLB6
363297022	B2YLJ9
363297023	B2YLJ8
1203235829	MB for batch 1446479
1203235832	Laboratory Control Sample (LCS)
1203235830	363297008(B2YKR0) Sample Duplicate (DUP)
1203235831	363297008(B2YKR0) Matrix Spike (MS)

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-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.

Designated QC
The following sample was used for QC: 363297008 (B2YKR0).

QC Information
All of the QC samples met the required acceptance limits.

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 363297010 (B2YKT0), 363297012 (B2YKT5), 363297014 (B2YKX0), 363297017 (B2YKY0), 363297019 (B2YL37), 363297020 (B2YLB6), 363297022 (B2YLJ9) and 363297023 (B2YLJ8) were recounted to verify sample results. 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
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.

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: GEL363297 GEL Work Order: 363297

The Qualifiers in this report are defined as follows:

D Results are reported from a diluted aliquot of sample.

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

X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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 S15-012

Report Date: January 13, 2015

Client Sample ID: B2YKR0
Sample ID: 363297008
Matrix: WATER
Collect Date: 16-DEC-14
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gas Flow Proportional Counting													
SRISO_SEP_PRECIP_GPC: COMMON "As Received"													
Total Strontium SR-RAD	U	0.068	+/-0.721	1.32	+/-0.721	2.00	pCi/L		KSD1	01/06/15	0735	1446313	1
Rad Liquid Scintillation Analysis													
TC99_EIE_LSC: COMMON "As Received"													
Technetium-99 14133-76-7	U	-1.5	+/-5.04	8.76	+/-5.04	15.0	pCi/L		MYM1	01/05/15	1558	1446106	2
TRITIUM_DIST_LSC: COMMON "As Received"													
Tritium 10028-17-8		832	+/-108	107	+/-194	100	pCi/L		BYS1	01/07/15	1221	1446479	3
Rad Total Uranium													
KPA_UTOT: COMMON "As Received"													
Total Uranium 7440-61-1		1.08	+/-0.0438	0.245	+/-0.0996	1.00	ug/L	1	CXP3	01/06/15	1017	1445583	4

The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified
2	DOE EML HASL-300, Tc-02-RC Modified
3	EPA 906.0 Modified
4	ASTM D 5174

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium Carrier	SRISO_SEP_PRECIP_GPC: COM	93.8	(25%-125%)
Technetium-99m Tracer	TC99_EIE_LSC: COMMON "As I	98.7	(15%-125%)

Notes:
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96 sigma).
The Qualifiers in this report are defined as follows :

B The associated QC sample blank has a result >= 2X the MDA and, after corrections, result is >= MDA for this sample
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

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 S15-012

Report Date: January 13, 2015

Client Sample ID: B2YKR0 Project: CPRC0S15012
Sample ID: 363297008 Client ID: CPRC001

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

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
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 S15-012

Report Date: January 13, 2015

Client Sample ID:	B2YKT0	Project:	CPRC0S15012
Sample ID:	363297010	Client ID:	CPRC001
Matrix:	WATER		
Collect Date:	16-DEC-14		
Receive Date:	17-DEC-14		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gas Flow Proportional Counting													
SRISO_SEP_PRECIP_GPC: COMMON "As Received"													
Total Strontium SR-RAD		1.42	+/-0.830	1.26	+/-0.892	2.00	pCi/L		KSD1	01/06/15	0735	1446313	1
Rad Liquid Scintillation Analysis													
TC99_EIE_LSC: COMMON "As Received"													
Technetium-99 14133-76-7	U	-1.8	+/-5.19	9.03	+/-5.19	15.0	pCi/L		MYM1	01/05/15	1635	1446106	2
TRITIUM_DIST_LSC: COMMON "As Received"													
Tritium 10028-17-8		303	+/-198	268	+/-207	100	pCi/L		BYS1	01/10/15	1622	1446479	3
Rad Total Uranium													
KPA_UTOT: COMMON "As Received"													
Total Uranium 7440-61-1		1.22	+/-0.0469	0.245	+/-0.111	1.00	ug/L	1	CXP3	01/06/15	1020	1445583	4

The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified
2	DOE EML HASL-300, Tc-02-RC Modified
3	EPA 906.0 Modified
4	ASTM D 5174

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium Carrier	SRISO_SEP_PRECIP_GPC: COM	91.4	(25%-125%)
Technetium-99m Tracer	TC99_EIE_LSC: COMMON "As I	95.6	(15%-125%)

Notes:
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96 sigma).
The Qualifiers in this report are defined as follows :

B The associated QC sample blank has a result >= 2X the MDA and, after corrections, result is >= MDA for this sample
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

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 S15-012

Report Date: January 13, 2015

Client Sample ID: B2YKT0 Project: CPRC0S15012
Sample ID: 363297010 Client ID: CPRC001

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

Z Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
The above sample is reported on an "as received" basis.

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Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF S15-012

Report Date: January 13, 2015

Client Sample ID: B2YKT5
Sample ID: 363297012
Matrix: WATER
Collect Date: 16-DEC-14
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gas Flow Proportional Counting													
SRISO_SEP_PRECIP_GPC: COMMON "As Received"													
Total Strontium SR-RAD	U	-0.317	+/-0.783	1.51	+/-0.783	2.00	pCi/L		KSD1	01/06/15	0736	1446313	1
Rad Liquid Scintillation Analysis													
TC99_EIE_LSC: COMMON "As Received"													
Technetium-99 14133-76-7	U	0.724	+/-5.03	8.64	+/-5.03	15.0	pCi/L		MYM1	01/05/15	1713	1446106	2
TRITIUM_DIST_LSC: COMMON "As Received"													
Tritium 10028-17-8		1630	+/-384	269	+/-497	100	pCi/L		BYS1	01/10/15	1640	1446479	3
Rad Total Uranium													
KPA_UTOT: COMMON "As Received"													
Total Uranium 7440-61-1		2.15	+/-0.0836	0.245	+/-0.196	1.00	ug/L	1	CXP3	01/06/15	1022	1445583	4

The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified
2	DOE EML HASL-300, Tc-02-RC Modified
3	EPA 906.0 Modified
4	ASTM D 5174

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium Carrier	SRISO_SEP_PRECIP_GPC: COM	91.4	(25%-125%)
Technetium-99m Tracer	TC99_EIE_LSC: COMMON "As I	99.7	(15%-125%)

Notes:
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96 sigma).
The Qualifiers in this report are defined as follows :

B The associated QC sample blank has a result >= 2X the MDA and, after corrections, result is >= MDA for this sample
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

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PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF S15-012

Report Date: January 13, 2015

Client Sample ID: B2YKT5
Sample ID: 363297012

Project: CPRC0S15012
Client ID: CPRC001

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

Z Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
The above sample is reported on an "as received" basis.

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Certificate of Analysis

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PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF S15-012

Report Date: January 13, 2015

Client Sample ID: B2YKX0
Sample ID: 363297014
Matrix: WATER
Collect Date: 16-DEC-14
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gas Flow Proportional Counting													
SRISO_SEP_PRECIP_GPC: COMMON "As Received"													
Total Strontium SR-RAD	U	0.211	+/-0.661	1.19	+/-0.663	2.00	pCi/L		KSD1	01/06/15	0736	1446313	1
Rad Liquid Scintillation Analysis													
TC99_EIE_LSC: COMMON "As Received"													
Technetium-99 14133-76-7	U	-3.02	+/-5.07	8.88	+/-5.07	15.0	pCi/L		MYM1	01/05/15	1750	1446106	2
TRITIUM_DIST_LSC: COMMON "As Received"													
Tritium 10028-17-8		825	+/-284	266	+/-326	100	pCi/L		BYS1	01/10/15	1657	1446479	3
Rad Total Uranium													
KPA_UTOT: COMMON "As Received"													
Total Uranium 7440-61-1		0.850	+/-0.0346	0.245	+/-0.0783	1.00	ug/L	1	CXP3	01/06/15	1025	1445583	4

The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified
2	DOE EML HASL-300, Tc-02-RC Modified
3	EPA 906.0 Modified
4	ASTM D 5174

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium Carrier	SRISO_SEP_PRECIP_GPC: COM	101	(25%-125%)
Technetium-99m Tracer	TC99_EIE_LSC: COMMON "As I	96.9	(15%-125%)

Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96 sigma).
The Qualifiers in this report are defined as follows :

B The associated QC sample blank has a result >= 2X the MDA and, after corrections, result is >= MDA for this sample
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

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Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF S15-012

Report Date: January 13, 2015

Client Sample ID: B2YKX0 Project: CPRC0S15012
Sample ID: 363297014 Client ID: CPRC001

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

Z Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
The above sample is reported on an "as received" basis.

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Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF S15-012

Report Date: January 13, 2015

Client Sample ID:	B2YKY0	Project:	CPRC0S15012
Sample ID:	363297017	Client ID:	CPRC001
Matrix:	WATER		
Collect Date:	16-DEC-14		
Receive Date:	17-DEC-14		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gas Flow Proportional Counting													
SRISO_SEP_PRECIP_GPC: COMMON "As Received"													
Total Strontium SR-RAD	U	0.0755	+/-0.532	1.01	+/-0.532	2.00	pCi/L		KSD1	01/06/15	0738	1446313	1
Rad Liquid Scintillation Analysis													
TC99_EIE_LSC: COMMON "As Received"													
Technetium-99 14133-76-7	U	-0.832	+/-4.37	7.61	+/-4.37	15.0	pCi/L		MYM1	01/05/15	0349	1446194	2
TRITIUM_DIST_LSC: COMMON "As Received"													
Tritium 10028-17-8		1150	+/-321	260	+/-390	100	pCi/L		BYS1	01/10/15	1715	1446479	3
Rad Total Uranium													
KPA_UTOT: COMMON "As Received"													
Total Uranium 7440-61-1		1.97	+/-0.0753	0.245	+/-0.179	1.00	ug/L	1	CXP3	01/06/15	1038	1445583	4

The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified
2	DOE EML HASL-300, Tc-02-RC Modified
3	EPA 906.0 Modified
4	ASTM D 5174

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium Carrier	SRISO_SEP_PRECIP_GPC: COM	98.8	(25%-125%)
Technetium-99m Tracer	TC99_EIE_LSC: COMMON "As I	98.8	(15%-125%)

Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96 sigma).
The Qualifiers in this report are defined as follows :

B The associated QC sample blank has a result >= 2X the MDA and, after corrections, result is >= MDA for this sample
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

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Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF S15-012

Report Date: January 13, 2015

Client Sample ID: B2YKY0 Project: CPRC0S15012
Sample ID: 363297017 Client ID: CPRC001

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

Z Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
The above sample is reported on an "as received" basis.

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Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF S15-012

Report Date: January 13, 2015

Client Sample ID:	B2YL37	Project:	CPRC0S15012
Sample ID:	363297019	Client ID:	CPRC001
Matrix:	WATER		
Collect Date:	16-DEC-14		
Receive Date:	17-DEC-14		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gas Flow Proportional Counting													
SRISO_SEP_PRECIP_GPC: COMMON "As Received"													
Total Strontium SR-RAD		5.15	+/-1.08	1.08	+/-1.60	2.00	pCi/L		KSD1	01/06/15	0738	1446313	1
Rad Liquid Scintillation Analysis													
TC99_EIE_LSC: COMMON "As Received"													
Technetium-99 14133-76-7	U	3.39	+/-4.52	7.63	+/-4.53	15.0	pCi/L		MYM1	01/05/15	0426	1446194	2
TRITIUM_DIST_LSC: COMMON "As Received"													
Tritium 10028-17-8		1040	+/-311	263	+/-370	100	pCi/L		BYS1	01/10/15	1732	1446479	3
Rad Total Uranium													
KPA_UTOT: COMMON "As Received"													
Total Uranium 7440-61-1		1.04	+/-0.0449	0.245	+/-0.0971	1.00	ug/L	1	CXP3	01/06/15	1040	1445583	4

The following Analytical Methods were performed

Method	Description
1	EPA 905.0 Modified
2	DOE EML HASL-300, Tc-02-RC Modified
3	EPA 906.0 Modified
4	ASTM D 5174

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium Carrier	SRISO_SEP_PRECIP_GPC: COM	101	(25%-125%)
Technetium-99m Tracer	TC99_EIE_LSC: COMMON "As I	97.5	(15%-125%)

Notes:
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96 sigma).
The Qualifiers in this report are defined as follows :

B The associated QC sample blank has a result >= 2X the MDA and, after corrections, result is >= MDA for this sample
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

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Certificate of Analysis

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Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF S15-012

Report Date: January 13, 2015

Client Sample ID: B2YL37
Sample ID: 363297019

Project: CPRC0S15012
Client ID: CPRC001

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

Z Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
The above sample is reported on an "as received" basis.

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PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF S15-012

Report Date: January 13, 2015

Client Sample ID: B2YLB6
Sample ID: 363297020
Matrix: WATER
Collect Date: 16-DEC-14
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis													
I129LL_SEP_LEPS_GS_LL: COMMON "As Received"													
Iodine-129 15046-84-1		4.09	+/-1.60	2.20	+/-1.65	1.00	pCi/L		BSW1	01/09/15	0541	1445481	1
Rad Gas Flow Proportional Counting													
9310_ALPHABETA_GPC: COMMON "As Received"													
Alpha 12587-46-1		17.9	+/-3.79	2.92	+/-5.42	3.00	pCi/L		GXR1	12/30/14	0949	1445780	2
Beta 12587-47-2		130	+/-4.89	3.02	+/-21.6	4.00	pCi/L						
SRISO_SEP_PRECIP_GPC: COMMON "As Received"													
Total Strontium SR-RAD	U	0.800	+/-0.701	1.12	+/-0.726	2.00	pCi/L		KSD1	01/06/15	0738	1446313	3
Rad Liquid Scintillation Analysis													
TC99_EIE_LSC: COMMON "As Received"													
Technetium-99 14133-76-7		153	+/-7.93	7.40	+/-18.8	15.0	pCi/L		MYM1	01/05/15	0503	1446194	4
TRITIUM_DIST_LSC: COMMON "As Received"													
Tritium 10028-17-8		1.47E+05	+/-3400	263	+/-28600	100	pCi/L		BYS1	01/10/15	1750	1446479	5
Rad Total Uranium													
KPA_UTOT: COMMON "As Received"													
Total Uranium 7440-61-1	D	37.1	+/-1.40	2.45	+/-4.01	1.00	ug/L	10	CXP3	01/06/15	1043	1445583	6

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300,I-01 Modified
2	EPA 900.0/SW846 9310
3	EPA 905.0 Modified
4	DOE EML HASL-300, Tc-02-RC Modified
5	EPA 906.0 Modified
6	ASTM D 5174

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium Carrier	SRISO_SEP_PRECIP_GPC: COM	81.5	(25%-125%)

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Project: CHPRC SAF S15-012

Report Date: January 13, 2015

Client Sample ID: B2YLB6
Sample ID: 363297020

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	DF	Analyst Date	Time	Batch	Mtd.
Technetium-99m Tracer		TC99_EIE_LSC: COMMON "As I			101		(15%-125%)					

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

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PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF S15-012

Report Date: January 13, 2015

Client Sample ID: B2YLJ9
Sample ID: 363297022
Matrix: WATER
Collect Date: 16-DEC-14
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis													
GAMMA_GS:COMMON + GW 01 "As Received"													
Antimony-125 14234-35-6	U	1.37	+/-6.64	12.2	+/-6.67		pCi/L		MJH1	12/31/14	1217	1443873	1
Cesium-134 13967-70-9	U	1.98	+/-2.44	5.14	+/-2.61		pCi/L						
Cesium-137 10045-97-3	U	0.0765	+/-4.89	5.27	+/-4.89	10.0	pCi/L						
Cobalt-60 10198-40-0	U	-0.36	+/-2.74	5.17	+/-2.74		pCi/L						
Europium-152 14683-23-9	U	-4.37	+/-7.05	11.9	+/-7.33		pCi/L						
Europium-154 15585-10-1	U	-1.46	+/-6.78	12.8	+/-6.81		pCi/L						
Europium-155 14391-16-3	U	0.304	+/-10.0	17.3	+/-10.0		pCi/L						
Potassium-40 13966-00-2	U	-11.7	+/-39.1	70.9	+/-39.5		pCi/L						
I129LL_SEP_LEPS_GS_LL: COMMON "As Received"													
Iodine-129 15046-84-1		4.28	+/-1.56	1.44	+/-1.62	1.00	pCi/L		BSW1	01/09/15	0541	1445481	2
Rad Gas Flow Proportional Counting													
9310_ALPHABETA_GPC: COMMON "As Received"													
Alpha 12587-46-1		3.96	+/-2.14	2.92	+/-2.24	3.00	pCi/L		GXR1	12/30/14	0949	1445780	3
Beta 12587-47-2		22.2	+/-2.13	1.71	+/-4.19	4.00	pCi/L						
Rad Liquid Scintillation Analysis													
TC99_EIE_LSC: COMMON "As Received"													
Technetium-99 14133-76-7		22.7	+/-5.41	8.14	+/-5.97	15.0	pCi/L		MYM1	01/05/15	0539	1446194	4
TRITIUM_DIST_LSC: COMMON "As Received"													
Tritium 10028-17-8		889	+/-293	266	+/-340	100	pCi/L		BYS1	01/10/15	1808	1446479	5
Rad Total Uranium													
KPA_UTOT: COMMON "As Received"													
Total Uranium 7440-61-1		3.28	+/-0.125	0.245	+/-0.298	1.00	ug/L	1	CXP3	01/06/15	1045	1445583	6

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Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF S15-012

Report Date: January 13, 2015

Client Sample ID: B2YLJ9
Sample ID: 363297022

Project: CPRC0S15012
Client ID: CPRC001

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

The following Analytical Methods were performed

Method	Description
1	EPA 901.1
2	DOE EML HASL-300,I-01 Modified
3	EPA 900.0/SW846 9310
4	DOE EML HASL-300, Tc-02-RC Modified
5	EPA 906.0 Modified
6	ASTM D 5174

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Technetium-99m Tracer	TC99_EIE_LSC: COMMON "As I	92.9	(15%-125%)

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

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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 S15-012

Report Date: January 13, 2015

Client Sample ID: B2YLJ8
Sample ID: 363297023
Matrix: WATER
Collect Date: 16-DEC-14
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis													
GAMMA_GS:COMMON + GW 01 "As Received"													
Antimony-125 14234-35-6	U	2.19	+/-6.78	12.8	+/-6.86		pCi/L		MJH1	12/31/14	1217	1443873	1
Cesium-134 13967-70-9	U	-0.35	+/-2.33	4.44	+/-2.33		pCi/L						
Cesium-137 10045-97-3	U	0.423	+/-3.00	5.27	+/-3.01	10.0	pCi/L						
Cobalt-60 10198-40-0	U	-2.22	+/-2.46	3.73	+/-2.66		pCi/L						
Europium-152 14683-23-9	U	-6.12	+/-7.41	12.6	+/-7.93		pCi/L						
Europium-154 15585-10-1	U	-0.643	+/-7.13	13.5	+/-7.13		pCi/L						
Europium-155 14391-16-3	U	2.51	+/-9.63	17.2	+/-9.70		pCi/L						
Potassium-40 13966-00-2	UX	30.0	+/-28.8	22.1	+/-28.9		pCi/L						
I129LL_SEP_LEPS_GS_LL: COMMON "As Received"													
Iodine-129 15046-84-1		4.88	+/-1.69	1.37	+/-1.76	1.00	pCi/L		BSW1	01/09/15	0542	1445481	2
Rad Gas Flow Proportional Counting													
9310_ALPHABETA_GPC: COMMON "As Received"													
Alpha 12587-46-1	U	-0.0376	+/-1.57	2.96	+/-1.57	3.00	pCi/L		GXR1	12/30/14	0952	1445780	3
Beta 12587-47-2		23.4	+/-2.03	1.68	+/-4.31	4.00	pCi/L						
Rad Liquid Scintillation Analysis													
TC99_EIE_LSC: COMMON "As Received"													
Technetium-99 14133-76-7		20.6	+/-5.00	7.52	+/-5.50	15.0	pCi/L		MYM1	01/05/15	0616	1446194	4
TRITIUM_DIST_LSC: COMMON "As Received"													
Tritium 10028-17-8		705	+/-276	281	+/-308	100	pCi/L		BYS1	01/10/15	1825	1446479	5
Rad Total Uranium													
KPA_UTOT: COMMON "As Received"													
Total Uranium 7440-61-1		3.07	+/-0.116	0.245	+/-0.278	1.00	ug/L	1	CXP3	01/06/15	1048	1445583	6

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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 S15-012

Report Date: January 13, 2015

Client Sample ID: B2YLJ8
Sample ID: 363297023

Project: CPRC0S15012
Client ID: CPRC001

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

The following Analytical Methods were performed

Method	Description
1	EPA 901.1
2	DOE EML HASL-300,I-01 Modified
3	EPA 900.0/SW846 9310
4	DOE EML HASL-300, Tc-02-RC Modified
5	EPA 906.0 Modified
6	ASTM D 5174

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Technetium-99m Tracer	TC99_EIE_LSC: COMMON "As I	99.4	(15%-125%)

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
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.
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
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: **363297**

Report Date: January 13, 2015

Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date Time
Rad Gamma Spec									
Batch 1443873									
QC1203229584 MB									
Antimony-125			U	1.96	pCi/L			MJH1	12/31/1412:44
	Uncert:			+/-8.24					
	TPU:			+/-8.29					
Cesium-134			U	-2.0	pCi/L				
	Uncert:			+/-3.89					
	TPU:			+/-3.99					
Cesium-137			U	-0.403	pCi/L				
	Uncert:			+/-3.51					
	TPU:			+/-3.52					
Cobalt-60			U	-0.276	pCi/L				
	Uncert:			+/-3.33					
	TPU:			+/-3.33					
Europium-152			U	12.5	pCi/L				
	Uncert:			+/-9.12					
	TPU:			+/-10.8					
Europium-154			U	-4.34	pCi/L				
	Uncert:			+/-7.85					
	TPU:			+/-8.09					
Europium-155			U	8.61	pCi/L				
	Uncert:			+/-21.1					
	TPU:			+/-21.1					
Potassium-40			U	-15.5	pCi/L				
	Uncert:			+/-37.1					
	TPU:			+/-37.8					
QC1203229585 363012002 DUP									
Antimony-125	U	-1.1	U	-1.71	pCi/L				01/02/1512:10
	Uncert:	+/-9.11		+/-8.83		RPD:	0	N/A	
	TPU:	+/-9.13		+/-8.87		RER:	0.0947	(0-2)	
Cesium-134	U	0.432	U	0.245	pCi/L				
	Uncert:	+/-3.97		+/-3.39		RPD:	0	N/A	
	TPU:	+/-3.98		+/-3.39		RER:	0.0701	(0-2)	
Cesium-137	U	5.01	U	0.535	pCi/L				
	Uncert:	+/-6.59		+/-3.43		RPD:	0	N/A	
	TPU:	+/-6.60		+/-3.44		RER:	1.18	(0-2)	
Cobalt-60	U	1.26	U	-2.47	pCi/L				
	Uncert:	+/-4.08		+/-3.83		RPD:	0	N/A	
	TPU:	+/-4.12		+/-4.00		RER:	1.28	(0-2)	
Europium-152	U	1.82	U	0.456	pCi/L				
	Uncert:	+/-10.2		+/-9.25		RPD:	0	N/A	
	TPU:	+/-10.3		+/-9.25		RER:	0.194	(0-2)	
Europium-154	U	-2.14	U	-0.927	pCi/L				
	Uncert:	+/-10.5		+/-8.99		RPD:	0	N/A	
	TPU:	+/-10.5		+/-9.00		RER:	0.172	(0-2)	
Europium-155	U	4.78	U	3.59	pCi/L				

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QC Summary

Workorder: 363297

Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date Time
Rad Gamma Spec									
Batch 1443873									
	Uncert:	+/-10.4		+/-12.1					
	TPU:	+/-10.6		+/-12.2		RPD:	0	N/A	
						RER:	0.144	(0-2)	
Potassium-40		U 39.4	U	38.0	pCi/L				
	Uncert:	+/-58.8		+/-44.8		RPD:	0	N/A	
	TPU:	+/-58.9		+/-48.1		RER:	0.0374	(0-2)	
QC1203229586 LCS									
Americium-241	34500			35300	pCi/L	REC:	102	(80%-120%)	01/02/1515:28
	Uncert:			+/-2080					
	TPU:			+/-3430					
Antimony-125			U	330	pCi/L				
	Uncert:			+/-265					
	TPU:			+/-305					
Cesium-134			U	36.8	pCi/L				
	Uncert:			+/-105					
	TPU:			+/-106					
Cesium-137	13900			14600	pCi/L	REC:	105	(80%-120%)	
	Uncert:			+/-361					
	TPU:			+/-1280					
Cobalt-60	16400			16600	pCi/L	REC:	101	(80%-120%)	
	Uncert:			+/-411					
	TPU:			+/-1390					
Europium-152			U	96.4	pCi/L				
	Uncert:			+/-270					
	TPU:			+/-274					
Europium-154			U	-102	pCi/L				
	Uncert:			+/-137					
	TPU:			+/-145					
Europium-155			U	-413	pCi/L				
	Uncert:			+/-375					
	TPU:			+/-420					
Potassium-40			U	1.62	pCi/L				
	Uncert:			+/-274					
	TPU:			+/-274					
Batch 1445481									
QC1203233366 MB									
Iodine-129			U	0.228	pCi/L			BSW1	01/09/1506:21
	Uncert:			+/-0.576					
	TPU:			+/-0.586					
QC1203233367 363442003 DUP									
Iodine-129		U 0.164	U	-0.0901	pCi/L				01/09/1506:22
	Uncert:	+/-0.511		+/-0.481		RPD:	0	N/A	
	TPU:	+/-0.517		+/-0.483		RER:	0.555	(0-2)	
QC1203233368 363442003 MS									
Iodine-129	26.0	U 0.164		24.2	pCi/L	REC:	93	(75%-125%)	01/09/1506:22
	Uncert:	+/-0.511		+/-3.79					
	TPU:	+/-0.517		+/-4.50					
QC1203233369 LCS									
Iodine-129	26.0			23.8	pCi/L	REC:	91	(80%-120%)	01/09/1506:22
	Uncert:			+/-3.95					

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QC Summary

Workorder: 363297

Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date Time
Rad Gamma Spec									
Batch 1445481									
	TPU:			+/-4.61					
Rad Gas Flow									
Batch 1445780									
QC1203234093 MB									
Alpha			U	0.510	pCi/L			GXR1	12/30/1410:43
	Uncert:			+/-1.29					
	TPU:			+/-1.29					
Beta			U	1.71	pCi/L				
	Uncert:			+/-2.09					
	TPU:			+/-2.11					
QC1203234094 363297020 DUP									
Alpha		17.9		24.3	pCi/L				12/31/1407:33
	Uncert:	+/-3.79		+/-4.84		RPD:	30*	(0% - 20%)	
	TPU:	+/-5.42		+/-6.37		RER:	1.49	(0-2)	
Beta		130		147	pCi/L				
	Uncert:	+/-4.89		+/-6.15		RPD:	12	(0% - 20%)	
	TPU:	+/-21.6		+/-25.0		RER:	1.02	(0-2)	
QC1203234095 363297020 MS									
Alpha	243	17.9		308	pCi/L	REC:	119	(75%-125%)	12/31/1407:33
	Uncert:	+/-3.79		+/-31.0					
	TPU:	+/-5.42		+/-59.8					
Beta	952	130		1280	pCi/L	REC:	121	(75%-125%)	
	Uncert:	+/-4.89		+/-40.9					
	TPU:	+/-21.6		+/-213					
QC1203234096 363297020 MSD									
Alpha	243	17.9		316	pCi/L	REC:	123	(75%-125%)	12/30/1410:41
	Uncert:	+/-3.79		+/-32.3		RPD:	3	(0%-20%)	
	TPU:	+/-5.42		+/-67.1		RER:	0.188	(0-2)	
Beta	952	130		1110	pCi/L	REC:	103	(75%-125%)	
	Uncert:	+/-4.89		+/-39.1		RPD:	14	(0%-20%)	
	TPU:	+/-21.6		+/-185		RER:	1.20	(0-2)	
QC1203234097 LCS									
Alpha	81.1			87.7	pCi/L	REC:	108	(80%-120%)	12/31/1407:33
	Uncert:			+/-8.27					
	TPU:			+/-16.7					
Beta	317			361	pCi/L	REC:	114	(80%-120%)	
	Uncert:			+/-12.4					
	TPU:			+/-60.1					
Batch 1446313									
QC1203235387 MB									
Total Strontium			U	0.152	pCi/L			KSD1	01/06/1507:38
	Uncert:			+/-0.584					
	TPU:			+/-0.585					
QC1203235388 363297008 DUP									
Total Strontium	U	0.068	U	0.662	pCi/L				01/06/1508:43
	Uncert:	+/-0.721		+/-0.660		RPD:	0	N/A	
	TPU:	+/-0.721		+/-0.677		RER:	1.18	(0-2)	
QC1203235389 LCS									
Total Strontium	79.3			82.5	pCi/L	REC:	104	(80%-120%)	01/06/1508:43
	Uncert:			+/-3.95					

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QC Summary

Workorder: 363297

Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date Time
Rad Gas Flow									
Batch 1446313									
	TPU:			+/-19.4					
Rad Liquid Scintillation									
Batch 1446106									
QC1203234835 MB									
Technetium-99			U	-0.296	pCi/L			MYM1	01/05/1518:30
	Uncert:			+/-5.26					
	TPU:			+/-5.26					
QC1203234836 363232017 DUP									
Technetium-99	U	-4.21	U	-3.6	pCi/L				01/05/1519:07
	Uncert:	+/-7.78		+/-7.72		RPD: 0	N/A		
	TPU:	+/-7.78		+/-7.72		RER: 0.109	(0-2)		
QC1203234837 LCS									
Technetium-99	290			306	pCi/L	REC: 106	(80%-120%)		01/05/1519:47
	Uncert:			+/-11.2					
	TPU:			+/-35.8					
Batch 1446194									
QC1203235122 MB									
Technetium-99			U	-1.46	pCi/L			MYM1	01/05/1510:37
	Uncert:			+/-4.31					
	TPU:			+/-4.31					
QC1203235123 363442003 DUP									
Technetium-99	U	0.545	U	1.59	pCi/L				01/05/1511:14
	Uncert:	+/-7.12		+/-6.89		RPD: 0	N/A		
	TPU:	+/-7.12		+/-6.89		RER: 0.208	(0-2)		
QC1203235124 LCS									
Technetium-99	290			233	pCi/L	REC: 81	(80%-120%)		01/05/1512:27
	Uncert:			+/-9.42					
	TPU:			+/-27.5					
QC1203235184 363565002 DUP									
Technetium-99	U	-0.382	U	1.23	pCi/L				01/05/1511:50
	Uncert:	+/-6.71		+/-6.52		RPD: 0	N/A		
	TPU:	+/-6.71		+/-6.52		RER: 0.337	(0-2)		
Batch 1446479									
QC1203235829 MB									
Tritium			U	-53.5	pCi/L			BYS1	01/08/1507:23
	Uncert:			+/-56.7					
	TPU:			+/-56.7					
QC1203235830 363297008 DUP									
Tritium		832		711	pCi/L				01/08/1511:31
	Uncert:	+/-108		+/-102		RPD: 16	(0% - 20%)		
	TPU:	+/-194		+/-171		RER: 0.912	(0-2)		
QC1203235831 363297008 MS									
Tritium	1880	832		2400	pCi/L	REC: 83	(75%-125%)		01/08/1513:33
	Uncert:	+/-108		+/-452					
	TPU:	+/-194		+/-647					
QC1203235832 LCS									
Tritium	1880			1520	pCi/L	REC: 81	(80%-120%)		01/08/1513:51
	Uncert:			+/-366					
	TPU:			+/-469					

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QC Summary

Workorder: 363297

Parmname	NOM	Sample	Qual	QC	Units	QC Criteria		Range	Analyst	Date Time
Rad Total U										
Batch 1445583										
QC1203233579 MB										
Total Uranium			U	0.00182	ug/L				CXP3	01/06/1510:50
Uncert:				+/-6.79E-05						
TPU:				+/-0.000165						
QC1203233580 363297008 DUP										
Total Uranium		1.08		1.02	ug/L					01/06/1510:53
Uncert:		+/-0.0438		+/-0.0446		RPD:	6	(0% - 100%)		
TPU:		+/-0.0996		+/-0.0952		RER:	0.925	(0-2)		
QC1203233581 363297008 MS										
Total Uranium	50.0	1.08		51.4	ug/L	REC:	101	(75%-125%)		01/06/1510:57
Uncert:		+/-0.0438		+/-3.14						
TPU:		+/-0.0996		+/-5.28						
QC1203233582 LCS										
Total Uranium	50.0			48.8	ug/L	REC:	98	(80%-120%)		01/06/1511:01
Uncert:				+/-2.99						
TPU:				+/-5.01						
QC1203233583 LCS										
Total Uranium	5.00			4.89	ug/L	REC:	98	(80%-120%)		01/06/1511:02
Uncert:				+/-0.186						
TPU:				+/-0.444						

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.
W	Post-digestion spike recovery for GFAA out of control limit. Sample absorbency < 50% of spike absorbency.
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Z	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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QC Summary

Workorder: **363297**

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 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.