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: 363232
SDG: GEL363232

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: S15-012-180, S15-012-181, S15-012-192, S15-012-193, S15-012-198, S15-012-199, S15-012-200, S15-012-201, S15-012-204, S15-012-217, S15-012-218, S15-012-221, S15-012-222, S15-012-233, S15-012-234, S15-012-247, S15-012-250, S15-012-253, S15-012-254, S15-012-255, S15-012-256, S15-012-257, S15-012-258, S15-012-259, S15-012-260, S15-012-555 and S15-012-662
Enclosures

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Case Narrative

General Narrative
for
CH2MHill Plateau Remediation Company
CHPRC SAF S15-012
SDG: GEL363232

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
363232001	B2YK10
363232002	B2YK55
363232003	B2YKL1
363232004	B2YKN1
363232005	B2YK87
363232006	B2YK88
363232007	B2YK09
363232008	B2YK12
363232009	B2YK54
363232010	B2YK57
363232011	B2YK91
363232012	B2YK85
363232013	B2YK86
363232014	B2YK92
363232015	B2YKD5
363232016	B2YKD2
363232017	B2YKN0
363232018	B2YKN3
363232019	B2YL22
363232020	B2YL25
363232021	B2YKF5
363232022	B2YKF7

363232023	B2YKW1
363232024	B2YL28
363232025	B2YL48
363232026	B2YL58
363232027	B2YL63
363232028	B2YL73
363232029	B2YKW0
363232030	B2YKW3
363232031	B2YL47
363232032	B2YL50
363232033	B2YL60
363232034	B2YL57
363232035	B2YL62
363232036	B2YL65
363232037	B2YL75
363232038	B2YL72
363232039	B2YKL0
363232040	B2YKL3
363232041	B2YKL6
363232042	B303R5

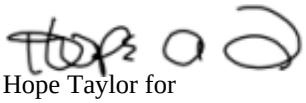
Case Narrative

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

363232

C.O.C. # **S15-012-181**

Page 1 of 1

Collector	D.J. Woehle/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 74/8	**Ice Chest No.**	GWS-303
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7722 4167 2547
Protocol	SURV	**Priority:**	30 Days **PRIORITY**	**Offsite Property No.**	5274

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
B2YK10	N	W	12-15-14	1006	1x250-mL G/P	9056_ANIONS_IC: COMMON	28 Days/48 Hours	Cool <=6C

January 12, 2015

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
D.J. Woehle/CHPRC			DEC 15 2014 1140	J.C. Fulton CHPRC			DEC 15 2014 1140
J.C. Fulton CHPRC			DEC 15 2014 1400	FEDEX			
Fed Ex				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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7-09-181

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

363232

C.O.C. # **S15-012-193**

Page 1 of 1

Collector	D.J. Woehle/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 74/8	**Ice Chest No.**	GWS-303
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	772241672547
Protocol	SURV	**Priority:**	30 Days **PRIORITY**	**Offsite Property No.**	5274

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
B2YK55	N	W	12-15-14	1109	1x250-mL G/P	9056_ANIONS_IC: COMMON	28 Days/48 Hours	Cool <=6C

January 12, 2015

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
D.J. Woehle/CHPRC	D.J. Woehle		DEC 15 2014 1140	J.C. Fulton CHPRC			DEC 15 2014 1140
J.C. Fulton CHPRC			DEC 15 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

363232

C.O.C. # **S15-012-218**

Page 1 of 1

Collector	D.J. Woehle/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 74/8	**Ice Chest No.**	GWS-303
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7922 4167 2547
Protocol	SURV	**Priority:**	30 Days **PRIORITY**	**Offsite Property No.**	5274

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
B2YKL1	N	W	12-15-14	1218	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
D.J. Woehle/CHPRC		DEC 15 2014 1254	J.C. Fulton CHPRC		DEC 15 2014 1254
J.C. Fulton CHPRC		DEC 15 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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January 12, 2015

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

363232

C.O.C. # **S15-012-222**

Page 1 of 1

Collector	D.J. Woehle/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 74/8	**Ice Chest No.**	GW-303
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7722 4167 2547
Protocol	SURV	**Priority:**	30 Days **PRIORITY**	**Offsite Property No.**	5274

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
B2YKN1	N	W	12-15-14	0947	1x250-mL G/P	9056_ANIONS_IC: COMMON	28 Days/48 Hours	Cool <=6C

January 12, 2015

Relinquished By	Print / Sign	Date/Time	Received By	Print / Sign	Date/Time
D.J. Woehle/CHPRC	D.J. Woehle	DEC 15 2014 1140	J.C. Fulton CHPRC	J.C. Fulton	DEC 15 2014 1140
J.C. Fulton CHPRC	J.C. Fulton	DEC 15 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 363232	C.O.C. # S15-012-199 Page 1 of 1

Collector	D.J. Woehle/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 18	**Ice Chest No.**	GW-303
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7722 4167 2547
Protocol	SURV	**Priority:**	30 Days **PRIORITY**	**Offsite Property No.**	5274

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
B2YK87	N	W	12-15-14	0810	1x250-mL G/P	9056_ANIONS_IC: COMMON; 9056_ANIONS_IC: GW 02	28 Days/48 Hours	Cool <=6C

Relinquished By	Print / Sign	Date/Time	Received By	Print / Sign	Date/Time
D.J. Woehle/CHPRC	D.J. Woehle	DEC 15 2014 1140	J.C. Fulton CHPRC	J.C. Fulton	DEC 15 2014 1140
J.C. Fulton CHPRC	J.C. Fulton	DEC 15 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 363232	C.O.C. # S15-012-201 Page 1 of 1

Collector	D.J. Woehle/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 74/8	**Ice Chest No.**	GWS-303
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7722 4167 2547
Protocol	SURV	**Priority:**	30 Days PRIORITY	**Offsite Property No.**	5274

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
B2YK88	N	W	12-15-14	1055	1x250-mL G/P	9056_ANIONS_IC: COMMON; 9056_ANIONS_IC: GW 02	28 Days/48 Hours	Cool <=6C

January 12, 2015

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
D.J. Woehle/CHPRC	D.J. Woehle		DEC 15 2014 1140	J.C. Fulton CHPRC	J.C. Fulton		DEC 15 2014 1140
J.C. Fulton CHPRC	J.C. Fulton		DEC 15 2014 1400	FEDEX			Date/Time
Fed Ex			Date/Time	Shanta Mack			12/17/14 9:25
			Date/Time				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 363232	C.O.C. # S15-012-180 Page 1 of 1

Collector	D.J. Woehle/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 74/8	**Ice Chest No.**	GWS-303
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7722 4167 2547
Protocol	SURV	**Priority:**	30 Days PRIORITY	**Offsite Property No.**	5274

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
B2YK09	N	W	12-15-14	1006	1x500-mL G/P	6010_METALS_ICP: GW 04; 6020_METALS_ICPMS: GW 01	6 Months	HNO3 to pH <2
B2YK09	N	W			1x2-L P	9310_ALPHABETA_GPC: COMMON	6 Months	HNO3 to pH <2
B2YK09	N	W			1x500-mL P	TRITIUM_DIST_LSC: COMMON	6 Months	None
B2YK12	Y	W			1x250-mL G/P	2320_ALKALINITY: GW 01	14 Days	Cool <=6C
B2YK12	Y	W	12-15-14	1006	1x500-mL G/P	6010_METALS_ICP: GW 04; 6020_METALS_ICPMS: GW 01	6 Months	HNO3 to pH <2

January 12, 2015

Relinquished By	Print / Sign	Date/Time	Received By	Print / Sign	Date/Time
D.J. Woehle/CHPRC	DJ Woehle	DEC 15 2014 1140	M.A. White/CHPRC	MA White	DEC 15 2014 1140
M.A. White/CHPRC	MA White	DEC 15 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

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CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 363232	C.O.C. # S15-012-192 Page 1 of 1

Collector	D.J. Woehle/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 74/8	**Ice Chest No.**	GWS - 303
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7722 4167 2547
Protocol	SURV	**Priority:**	30 Days PRIORITY	**Offsite Property No.**	5274

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
B2YK54	N	W	12-15-14	1109	1x500-mL G/P	6010_METALS_ICP: GW 04; 6020_METALS_ICPMS: GW 01	6 Months	HNO3 to pH <2
B2YK57	Y	W	12-15-14	1109	1x250-mL G/P	2320_ALKALINITY: GW 01	14 Days	Cool <=6C
B2YK57	Y	W	12-15-14	1109	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
D.J. Woehle/CHPRC	D.J. Woehle	DEC 15 2014 1140	M.A. White/CHPRC	M.A. White	DEC 15 2014 1140
M.A. White/CHPRC	M.A. White	DEC 15 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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A-6004-842 (REV 2)

January 12, 2015

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 363232	C.O.C. # S15-012-198 Page 1 of 1

Collector	D.J. Woehle/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 74/8	**Ice Chest No.**	GWS-303
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	772241672547
Protocol	SURV	**Priority:**	30 Days **PRIORITY**	**Offsite Property No.**	5274

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
B2YK91	Y	W	12-15-14	0810	1x250-mL G/P	2320_ALKALINITY: GW 01	14 Days	Cool <=6C
B2YK91	Y	W	12-15-14	0810	1x500-mL G/P	6010_METALS_ICP: GW 04; 6020_METALS_ICPMS: GW 01	6 Months	HNO3 to pH <2
B2YK85	N	W	12-15-14	0810	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
D.J. Woehle/CHPRC			DEC 15 2014 1140	M.A. White/CHPRC			DEC 15 2014 1140
M.A. White/CHPRC			DEC 15 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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January 12, 2015

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 363232	C.O.C. # S15-012-200 Page 1 of 1

Collector	D.J. Woehle/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 74/18	**Ice Chest No.**	GWS-303
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	772416725417
Protocol	SURV	**Priority:**	30 Days **PRIORITY**	**Offsite Property No.**	5274

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
B2YK86	N	W	12-15-14	1055	1x500-mL G/P	6010_METALS_ICP: GW 04; 6020_METALS_ICPMS: GW 01	6 Months	HNO3 to pH <2
B2YK92	Y	W	12-15-14	1055	1x250-mL G/P	2320_ALKALINITY: GW 01	14 Days	Cool <=6C
B2YK92	Y	W	12-15-14	1055	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
D.J. Woehle/CHPRC	D.J. Woehle	DEC 15 2014 1140	M.A. White/CHPRC	M.A. White	DEC 15 2014 1140
M.A. White/CHPRC	M.A. White	DEC 15 2014 1400	FEDEX		
Fed Ex			Shasta Mack	Shasta Mack	12/12/14 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

363232

C.O.C. # **S15-012-204**

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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 71127	**Ice Chest No.**	GWS-118
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7722 333339130
Protocol	SURV	**Priority:**	30 Days **PRIORITY**	**Offsite Property No.**	5873

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
B2YKD5	Y	W	DEC 1 2 2014	1246	1x250-mL G/P	2320_ALKALINITY: GW 01	14 Days	Cool <=6C
B2YKD5	Y	W			1x500-mL G/P	6010_METALS_ICP: GW 04; 6020_METALS_ICPMS: GW 01	6 Months	HNO3 to pH <2
B2YKD2	N	W			1x500-mL G/P	6010_METALS_ICP: GW 04; 6020_METALS_ICPMS: GW 01	6 Months	HNO3 to pH <2
B2YKD2	N	W			1x2-L P	9310_ALPHABETA_GPC: COMMON	6 Months	HNO3 to pH <2
B2YKD2	N	W			3x1-L G/P	SRISO_SEP_PRECIP_GPC: COMMON	6 Months	HNO3 to pH <2
B2YKD2	N	W	DEC 1 2 2014	1246	1x500-mL P	TRITIUM_DIST_LSC: COMMON	6 Months	None

January 12, 2015

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
S.W. King/CHPRC	Scott King	Scott King	DEC 1 2 2014 1440	SSU-1			DEC 1 2 2014 1440
SSU-1			DEC 15 2014 0920	L.D. Wall CHPRC		L.D. Wall	DEC 15 2014 0920
L.D. Wall CHPRC		L.D. Wall	DEC 15 2014 1400	FEDEX			
Fed Ex				Shante Mack		Shante 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 363232	C.O.C. # S15-012-221 Page 1 of 1

Collector	D.J. Woehle/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 74/8	**Ice Chest No.**	GWS-303
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7722 4167 2547
Protocol	SURV	**Priority:**	30 Days PRIORITY	**Offsite Property No.**	5274

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
B2YKN0	N	W	12-15-14	0947	1x500-mL G/P	KPA_UTOT: COMMON	6 Months	HNO3 to pH <2
B2YKN0	N	W			3x1-L G/P	SRISO_SEP_PRECIP_GPC: COMMON	6 Months	HNO3 to pH <2
B2YKN0	N	W			1x500-mL G/P	TC99_EIE_LSC: COMMON	6 Months	HNO3 to pH <2
B2YKN0	N	W			1x500-mL P	TRITIUM_DIST_LSC: COMMON	6 Months	None
B2YKN3	Y	W	12-15-14	0947	1x250-mL G/P	2320_ALKALINITY: GW 01	14 Days	Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
D.J. Woehle/CHPRC	D.J. Woehle		DEC 15 2014 1140	M.A. White/CHPRC	M.A. White		DEC 15 2014 1140
M.A. White/CHPRC	M.A. White		DEC 15 2014 1400		FEDEX		
	Fed Ex			Shanta Martin			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

383232

C.O.C. # S15-012-247

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 74/7	**Ice Chest No.**	6405-118
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7722 33339130
Protocol	SURV	**Priority:**	30 Days PRIORITY	**Offsite Property No.**	5273

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
B2YL22	N	W	12-12-14	1325	1x500-mL G/P	6010_METALS_ICP: GW 04; 6020_METALS_ICPMS: GW 01	6 Months	HNO3 to pH <2
B2YL22	N	W			3x1-L G/P	SRISO_SEP_PRECIP_GPC: COMMON	6 Months	HNO3 to pH <2
B2YL22	N	W			1x500-mL G/P	TC99_EIE_LSC: COMMON	6 Months	HNO3 to pH <2
B2YL22	N	W			1x500-mL P	TRITIUM_DIST_LSC: COMMON	6 Months	None
B2YL22	N	W			1x2-L P	9310_ALPHABETA_GPC: COMMON	6 Months	HNO3 to pH <2
B2YL25	Y	W			1x250-mL G/P	2320_ALKALINITY: GW 01	14 Days	Cool <=6C
B2YL25	Y	W	12-12-14	1325	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
R.J. Crow/CHPRC	R Crow		DEC 12 2014 1525	SSU-1			DEC 12 2014 1525
SSU-1			DEC 15 2014 0920	L.D. Wall CHPRC	L.D. Wall		DEC 15 2014 0920
L.D. Wall CHPRC	L.D. Wall		DEC 15 2014 1422	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 12, 2015

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 363232	C.O.C. # S15-012-555 Page 1 of 1

Collector	D.J. Woehle/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 7418	**Ice Chest No.**	GWS-303
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	772241672547
Protocol	SURV	**Priority:**	30 Days **PRIORITY**	**Offsite Property No.**	5274

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
B2YKF5	N	W	12-15-14	0931	1x500-mL G/P	6010_METALS_ICP: GW 04; 6020_METALS_ICPMS: GW 01	6 Months	HNO3 to pH <2
B2YKF7	Y	W	12-15-14	0931	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
D.J. Woehle/CHPRC	DEC 15 2014 1140	M.A. White/CHPRC	DEC 15 2014 1140
M.A. White/CHPRC	DEC 15 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

363232

C.O.C. # **S15-012-234**

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-060
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7722 6584 3050
Protocol	SURV	**Priority:**	**30 Days** PRIORITY	**Offsite Property No.**	5281

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
B2YKW1	N	W	DEC 16 2014	1115	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
1	R.A. Shepard/CHPRC			DEC 16 2014 1210	B.E. Briggs CHPRC			DEC 16 2014 1210
2	B.E. Briggs CHPRC			DEC 16 2014 1400	FEDEX			
3	Fed Ex				Shanta Mack			12/17/14 9:25
4								

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

363232

C.O.C. # **S15-012-250**

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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-060
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7722 6584 3050
Protocol	SURV	**Priority:**	**30 Days** PRIORITY	**Offsite Property No.**	5281

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
B2YL28	N	W	12-16-14	1215	1x250-mL G/P	9056_ANIONS_IC: COMMON	28 Days/48 Hours	Cool <=6C

January 12, 2015

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
R.J. Crow/CHPRC	R Crow		DEC 16 2014 1250	F.M. Hall/CHPRC			DEC 16 2014 1250
F.M. Hall/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 363232	C.O.C. # S15-012-254 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 74/110	**Ice Chest No.**	GWS-060
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7722 6584 3050
Protocol	SURV	**Priority:**	30 Days **PRIORITY**	**Offsite Property No.**	5281

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
B2YL48	N	W	12-16-14	1126	1x250-mL G/P	9056_ANIONS_IC: COMMON	28 Days/48 Hours	Cool <=6C

January 12, 2015

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
R.J. Crow/CHPRC	R Crow		DEC 16 2014 1250	B.E. Briggs CHPRC	B.E. Briggs		DEC 16 2014 1250
B.E. Briggs CHPRC	B.E. Briggs		DEC 16 2014 1400		FEDEX		
	Fed Ex			Shanta Mack	Shanta Mack		12/17/14 925

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 363232	C.O.C. # S15-012-256 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 68/68	**Ice Chest No.**	GWS-060
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7722 6584 3050
Protocol	SURV	**Priority:**	30 Days PRIORITY	**Offsite Property No.**	5281

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
B2YL58	N	W	DEC 16 2014	1058	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 1210	B.E. Briggs CHPRC		DEC 16 2014 1210
Relinquished By	B.E. Briggs	Date/Time 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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January 12, 2015

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CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 363232	C.O.C. # S15-012-258 Page 1 of 1

Collector	D.J. Woehle/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 74/9	**Ice Chest No.**	GWS-315
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	772253662399
Protocol	SURV	**Priority:**	30 Days PRIORITY	**Offsite Property No.**	5278

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
B2YL63	N	W	12-15-14	1345	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
D.J. Woehle/CHPRC			DEC 15 2014 1425	SSU-1			DEC 15 2014 1425
SSU-1			DEC 16 2014 0810	L.D. Wall CHPRC			DEC 16 2014 0810
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 363232	C.O.C. # S15-012-260 Page 1 of 1

Collector	D.J. Woehle/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 / 8	**Ice Chest No.**	GLOS-315
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7722 5366 2399
Protocol	SURV	**Priority:**	30 Days **PRIORITY**	**Offsite Property No.**	5278

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
B2YL73	N	W	12-15-14	1309	1x250-mL G/P	9056_ANIONS_IC: COMMON	28 Days/48 Hours	Cool <=6C

January 12, 2015

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
D.J. Woehle/CHPRC			DEC 15 2014 1425	SSU-1			DEC 15 2014 1425
SSU-1			DEC 16 2014 0810	L.D. Wall CHPRC			DEC 16 2014 0810
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 32232	C.O.C. # S15-012-233 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-060
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7722 6584 3050
Protocol	SURV	**Priority:**	30 Days PRIORITY	**Offsite Property No.**	5281

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
B2YKW0	N	W	DEC 16 2014	1115	1x500-mL G/P	KPA_UTOT: COMMON	6 Months	HNO3 to pH <2
B2YKW0	N	W	DEC 16 2014	1115	3x1-L G/P	SRISO_SEP_PRECIP_GPC: COMMON	6 Months	HNO3 to pH <2
B2YKW0	N	W	DEC 16 2014	1115	1x500-mL G/P	TC99_EIE_LSC: COMMON	6 Months	HNO3 to pH <2
B2YKW0	N	W	DEC 16 2014	1115	1x500-mL P	TRITIUM_DIST_LSC: COMMON	6 Months	None
B2YKW3	Y	W	DEC 16 2014	1115	1x250-mL G/P	2320_ALKALINITY: GW 01	14 Days	Cool <=6C

12/16/14

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
R.A. Shepard/CHPRC			DEC 16 2014 1210	B.E. Briggs CHPRC			DEC 16 2014 1210
Relinquished By B.E. Briggs CHPRC			DEC 16 2014 1400	Received By FEDEX			Date/Time
Relinquished By Fed Ex			Date/Time	Received By Shanta mack		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

36232

C.O.C. # **S15-012-253**

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 74/60	**Ice Chest No.**	GWS-060
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7722 6584 3050
Protocol	SURV	**Priority:**	**30 Days** PRIORITY	**Offsite Property No.**	5281

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
B2YL47	N	W	12-16-14	1126	1x500-mL G/P	KPA_UTOT: COMMON	6 Months	HNO3 to pH <2
B2YL47	N	W			3x1-L G/P	SRISO_SEP_PRECIP_GPC: COMMON	6 Months	HNO3 to pH <2
B2YL47	N	W			1x500-mL G/P	TC99_EIE_LSC: COMMON	6 Months	HNO3 to pH <2
B2YL47	N	W			1x500-mL P	TRITIUM_DIST_LSC: COMMON	6 Months	None
B2YL50	Y	W	12-16-14	1126	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 1250	B.E. Briggs CHPRC	B.E. Briggs	DEC 16 2014 1250
B.E. Briggs CHPRC	B.E. Briggs	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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January 12, 2015

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

363232

C.O.C. # **S15-012-255**

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 6568	**Ice Chest No.**	GWS-060
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7722 6584 3050
Protocol	SURV	**Priority:**	30 Days **PRIORITY**	**Offsite Property No.**	5281

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
B2YL60	Y	W	DEC 16 2014	1058	1x250-mL G/P	2320_ALKALINITY: GW 01	14 Days	Cool <=6C
B2YL57	N	W	↑	↑	1x500-mL G/P	KPA_UTOT: COMMON	6 Months	HNO3 to pH <2
B2YL57	N	W	↓	↓	3x1-L G/P	SRISO_SEP_PRECIP_GPC: COMMON	6 Months	HNO3 to pH <2
B2YL57	N	W	↓	↓	1x500-mL G/P	TC99_EIE_LSC: COMMON	6 Months	HNO3 to pH <2
B2YL57	N	W	DEC 16 2014	1058	1x500-mL P	TRITIUM_DIST_LSC: COMMON	6 Months	None

Relinquished By	Print / Sign	Date/Time	Received By	Print / Sign	Date/Time
R.A. Shepard/CHPRC		DEC 16 2014 1210	B.E. Briggs CHPRC	B.E. Briggs	DEC 16 2014 1210
B.E. Briggs CHPRC	B.E. Briggs	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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January 12, 2015

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

363232

C.O.C. # **S15-012-257**

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Collector	D.J. Woehle/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 7419	**Ice Chest No.**	GLOS-315
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	772253662399
Protocol	SURV	**Priority:**	30 Days **PRIORITY**	**Offsite Property No.**	5278

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
B2YL62	N	W	12-15-14	1345	1x500-mL G/P	KPA_UTOT: COMMON	6 Months	HNO3 to pH <2
B2YL62	N	W			3x1-L G/P	SRISO_SEP_PRECIP_GPC: COMMON	6 Months	HNO3 to pH <2
B2YL62	N	W			1x500-mL G/P	TC99_EIE_LSC: COMMON	6 Months	HNO3 to pH <2
B2YL62	N	W			1x500-mL P	TRITIUM_DIST_LSC: COMMON	6 Months	None
B2YL65	Y	W	12-15-14	1345	1x250-mL G/P	2320_ALKALINITY: GW 01	14 Days	Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
D.J. Woehle/CHPRC			DEC 15 2014 1425	SSU-1			DEC 15 2014 1425
SSU-1			DEC 16 2014 0810	L.D. Wall CHPRC			DEC 16 2014 0810
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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January 12, 2015

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CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

363232

C.O.C. # **S15-012-259**

Page 1 of 1

Collector	D.J. Woehle/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 74/8	**Ice Chest No.**	GWS-315
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7772 5366 2399
Protocol	SURV	**Priority:**	30 Days **PRIORITY**	**Offsite Property No.**	5278

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
B2YL75	Y	W	12-15-14	1309	1x250-mL G/P	2320_ALKALINITY: GW 01	14 Days	Cool <=6C
B2YL72	N	W			1x500-mL G/P	KPA_UTOT: COMMON	6 Months	HNO3 to pH <2
B2YL72	N	W			3x1-L G/P	SRISO_SEP_PRECIP_GPC: COMMON	6 Months	HNO3 to pH <2
B2YL72	N	W			1x500-mL G/P	TC99_EIE_LSC: COMMON	6 Months	HNO3 to pH <2
B2YL72	N	W	12-15-14	1309	1x500-mL P	TRITIUM_DIST_LSC: COMMON	6 Months	None

January 12, 2015

Relinquished By	Print / Sign	Date/Time	Received By	Print / Sign	Date/Time
D.J. Woehle/CHPRC	D.J. Woehle	DEC 15 2014 1425	SSU-1		DEC 15 2014 1425
SSU-1		DEC 16 2014 0810	L.D. Wall CHPRC	L.D. Wall	DEC 16 2014 0810
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

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 263232	C.O.C. # S15-012-217 Page 1 of 1

Collector	D.J. Woehle/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 18	**Ice Chest No.**	GLOS-315
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	772253662399
Protocol	SURV	**Priority:**	30 Days PRIORITY	**Offsite Property No.**	5278

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
B2YKL0	N	W	12-15-14	1218	1x500-mL G/P	6010_METALS_ICP: GW 04; 6020_METALS_ICPMS: GW 01	6 Months	HNO3 to pH <2
B2YKL0	N	W	"	"	1x2-L P	9310_ALPHABETA_GPC: COMMON	6 Months	HNO3 to pH <2
B2YKL0	N	W	"	"	3x1-L G/P	SRISO_SEP_PRECIP_GPC: COMMON	6 Months	HNO3 to pH <2
B2YKL0	N	W	"	"	1x500-mL P	TRITIUM_DIST_LSC: COMMON	6 Months	None
B2YKL3	Y	W	"	"	1x250-mL G/P	2320_ALKALINITY: GW 01	14 Days	Cool <=6C
B2YKL3	Y	W	12-15-14	1218	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
D.J. Woehle/CHPRC	D.J. Woehle	DEC 15 2014 1254	SSU-1		DEC 15 2014 1254
SSU-1		DEC 16 2014 0810	L.D. Wall CHPRC	L.D. Wall	DEC 16 2014 0810
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

PRINTED O 10/23/2014

A-6004-842 (REV 2)

January 12, 2015

86165

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 363232	C.O.C. # S15-012-662 Page 1 of 1

Collector	D.J. Woehle/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 18	**Ice Chest No.**	GWS-315
Shipped To (Lab)	GEL Laboratories, LLC	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7722 5366 2399
Protocol	SURV	**Priority:**	30 Days PRIORITY	**Offsite Property No.**	5278

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
B2YKL6	N	W	12-15-14	1157	1x500-mL G/P	6010_METALS_ICP: GW 04; 6020_METALS_ICPMS: GW 01	6 Months	HNO3 to pH <2
B303R5	Y	W	12-15-14	1157	1x500-mL G/P	6010_METALS_ICP: GW 04; 6020_METALS_ICPMS: GW 01	6 Months	HNO3 to pH <2

January 12, 2015

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
D.J. Woehle/CHPRC			DEC 15 2014 1254	SSU-1			DEC 15 2014 1254
SSU-1			DEC 16 2014 0810	L.D. Wall CHPRC			DEC 16 2014 0810
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

PRINTED O 12/8/2014

A-6004-842 (REV 2)

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: CRC	**SDG/AR/COC/Work Order:** 383232
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 segregated as Safety Controlled Samples, and opened by the GEL Safety Group.
Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		✓	

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	✓			Preservation Method: Ice bags Blue ice Dry ice None Other (describe) *all temperatures are recorded in Celsius 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 5366 2399-2 7722 3333 9130-3 772241167 2547-2 7722 6364 3459-2 72 6364 3913-3 7722 6364 3718-2 7722 6584 3050-3

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials HH 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 GEL363232

Sample ID	Client ID
363232007	B2YK09
363232008	B2YK12
363232009	B2YK54
363232010	B2YK57
363232011	B2YK91
363232012	B2YK85
363232013	B2YK86
363232014	B2YK92
363232015	B2YKD5
363232016	B2YKD2
363232019	B2YL22
363232020	B2YL25
363232021	B2YKF5
363232022	B2YKF7
363232039	B2YKL0
363232040	B2YKL3
363232041	B2YKL6
363232042	B303R5
1203230048	Method Blank (MB)**ICP**
1203230778	Method Blank (MB)**ICP**
1203230049	Laboratory Control Sample (LCS)
1203230779	Laboratory Control Sample (LCS)
1203230052	363235001(B2YPM3L) Serial Dilution (SD)
1203230782	363279002(B2Y9L9L) Serial Dilution (SD)
1203230050	363235001(B2YPM3S) Matrix Spike (MS)
1203230780	363279002(B2Y9L9S) Matrix Spike (MS)
1203230051	363235001(B2YPM3SD) Matrix Spike Duplicate (MSD)
1203230781	363279002(B2Y9L9SD) Matrix Spike Duplicate (MSD)
1203230067	Method Blank (MB)**ICP-MS**
1203230748	Method Blank (MB)**ICP-MS**
1203230068	Laboratory Control Sample (LCS)
1203230749	Laboratory Control Sample (LCS)
1203230071	363232007(B2YK09L) Serial Dilution (SD)
1203230752	363232039(B2YKL0L) Serial Dilution (SD)
1203230069	363232007(B2YK09S) Matrix Spike (MS)
1203230750	363232039(B2YKL0S) Matrix Spike (MS)
1203230070	363232007(B2YK09SD) Matrix Spike Duplicate (MSD)
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:	1444035, 1444308, 1444043 and 1444298
Prep Batch :	1444034, 1444307, 1444042 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 P E 5300 Optima radial/axial-viewing inductively coupled plasma atomic emission spectrometer. The instrument is equipped with an ESI SC-FAST introduction, cyclonic spray chamber, and yttrium or scandium internal standard.

The Metals analysis-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 method blanks (MB) analyzed with this SDG met the acceptance criteria. Zinc concentrations was greater than the MDL in blank . In instances where there were positive hits in the method blank, the results were evaluated and appropriately flagged on the data. 1203230067 (MB)-ICP-MS.

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

Quality Control (QC) Sample Statement
The following samples were selected as the quality control (QC) samples for this SDG: 363235001 (B2YPM3), 363279002 (B2Y9L9)-ICP, 363232007 (B2YK09) 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. 1203230071 (B2YK09SDILT)-ICP-MS. 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: Nick-Cole A. Elmore **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: GEL363232 GEL Work Order: 363232

The Qualifiers in this report are defined as follows:

* Duplicate analysis not within control limits

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

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

D Results are reported from a diluted aliquot of sample.

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 Nick-Cole A. Elmore 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: B2YK09
Sample ID: 363232007
Matrix: WATER
Collect Date: 15-DEC-14 10:06
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		31400	+/-6290	50.0	200	ug/L	1	HSC	01/08/15	0951	1444035	1
Iron 7439-89-6	U	4.61	+/-10.0	30.0	100	ug/L	1					
Magnesium 7439-95-4		7810	+/-1560	110	300	ug/L	1					
Sodium 7440-23-5		7710	+/-1540	100	300	ug/L	1					
Vanadium 7440-62-2		10.5	+/-2.13	1.00	5.00	ug/L	1					
Potassium 7440-09-7		34400	+/-6890	50.0	150	ug/L	1	HSC	01/09/15	0847	1444035	2
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: GW 01 "As Received"												
Aluminum 7429-90-5	U	5.31	+/-5.11	15.0	50.0	ug/L	1	SKJ	01/06/15	1817	1444043	3
Antimony 7440-36-0	U	0.348	+/-0.341	1.00	5.00	ug/L	1					
Arsenic 7440-38-2	B	1.83	+/-0.674	1.70	5.00	ug/L	1					
Barium 7440-39-3		55.9	+/-11.2	0.600	5.00	ug/L	1					
Beryllium 7440-41-7	U	0.006	+/-0.0667	0.200	2.00	ug/L	1					
Boron 7440-42-8	B	14.1	+/-3.12	4.00	15.0	ug/L	1					
Cadmium 7440-43-9	U	0.004	+/-0.0367	0.110	2.00	ug/L	1					
Chromium 7440-47-3		17.7	+/-3.61	2.00	10.0	ug/L	1					
Cobalt 7440-48-4	B	0.116	+/-0.0406	0.100	4.00	ug/L	1					
Copper 7440-50-8	B	0.578	+/-0.164	0.350	8.00	ug/L	1					
Lead	U	0.010	+/-0.167	0.500	2.00	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: B2YK09 Project: CPRC0S15012
Sample ID: 363232007 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"											
7439-92-1 Manganese	B	1.21	+/-0.412	1.00	5.00	ug/L	1				
7439-96-5 Molybdenum	B	1.70	+/-0.345	0.165	20.0	ug/L	1				
7439-98-7 Nickel	B	1.24	+/-0.299	0.500	2.00	ug/L	1				
7440-02-0 Selenium	U	0.921	+/-0.533	1.50	5.00	ug/L	1				
7782-49-2 Silver	U	0.002	+/-0.0667	0.200	2.00	ug/L	1				
7440-22-4 Strontium	M	229	+/-45.8	2.00	10.0	ug/L	1				
7440-24-6 Thallium	U	0.101	+/-0.151	0.450	2.00	ug/L	1				
7440-28-0 Tin	U	0.268	+/-0.338	1.00	5.00	ug/L	1				
7440-31-5 Zinc	U	1.56	+/-1.21	3.50	10.0	ug/L	1				
7440-66-6 Thorium	B	0.446	+/-0.156	0.383	2.00	ug/L	1	PRB 01/09/15	1248	1444043	4
7440-29-1 Uranium		1.79	+/-0.358	0.067	0.200	ug/L	1				
7440-61-1											

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	JP1	12/17/14	1740	1444042
SW846 3005A	SW846 3005A for 6010C	JP1	12/17/14	1740	1444034

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3005A/6010C	
2	SW846 3005A/6010C	
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: B2YK12
Sample ID: 363232008
Matrix: WATER
Collect Date: 15-DEC-14 10:06
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		32000	+/-6400	50.0	200	ug/L	1	HSC	01/08/15	1000	1444035	1
Iron 7439-89-6	U	2.29	+/-10.0	30.0	100	ug/L	1					
Magnesium 7439-95-4		7960	+/-1590	110	300	ug/L	1					
Sodium 7440-23-5		7790	+/-1560	100	300	ug/L	1					
Vanadium 7440-62-2		10.3	+/-2.09	1.00	5.00	ug/L	1					
Potassium 7440-09-7		35900	+/-7190	50.0	150	ug/L	1	HSC	01/09/15	0856	1444035	2
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: GW 01 "As Received"												
Aluminum 7429-90-5	U	6.42	+/-5.16	15.0	50.0	ug/L	1	SKJ	01/06/15	1910	1444043	3
Antimony 7440-36-0	U	0.296	+/-0.339	1.00	5.00	ug/L	1					
Arsenic 7440-38-2	U	1.40	+/-0.632	1.70	5.00	ug/L	1					
Barium 7440-39-3		56.6	+/-11.3	0.600	5.00	ug/L	1					
Beryllium 7440-41-7	U	-0.003	+/-0.0667	0.200	2.00	ug/L	1					
Boron 7440-42-8	B	14.5	+/-3.19	4.00	15.0	ug/L	1					
Cadmium 7440-43-9	U	0.024	+/-0.037	0.110	2.00	ug/L	1					
Chromium 7440-47-3		18.6	+/-3.78	2.00	10.0	ug/L	1					
Cobalt 7440-48-4	B	0.137	+/-0.0431	0.100	4.00	ug/L	1					
Copper 7440-50-8	B	1.02	+/-0.236	0.350	8.00	ug/L	1					
Lead	U	0.006	+/-0.167	0.500	2.00	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: B2YK12 Project: CPRC0S15012
Sample ID: 363232008 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"											
7439-92-1 Manganese	B	1.28	+/-0.421	1.00	5.00	ug/L	1				
7439-96-5 Molybdenum	B	1.65	+/-0.335	0.165	20.0	ug/L	1				
7439-98-7 Nickel	B	1.32	+/-0.312	0.500	2.00	ug/L	1				
7440-02-0 Selenium	U	0.841	+/-0.528	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	M	231	+/-46.2	2.00	10.0	ug/L	1				
7440-24-6 Thallium	U	0.077	+/-0.151	0.450	2.00	ug/L	1				
7440-28-0 Tin	U	0.207	+/-0.336	1.00	5.00	ug/L	1				
7440-31-5 Zinc	U	2.46	+/-1.27	3.50	10.0	ug/L	1				
7440-66-6 Thorium	U	0.157	+/-0.131	0.383	2.00	ug/L	1	PRB 01/09/15	1255	1444043	4
7440-29-1 Uranium		1.78	+/-0.356	0.067	0.200	ug/L	1				
7440-61-1											

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	JP1	12/17/14	1740	1444042
SW846 3005A	SW846 3005A for 6010C	JP1	12/17/14	1740	1444034

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3005A/6010C	
2	SW846 3005A/6010C	
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: B2YK54
Sample ID: 363232009
Matrix: WATER
Collect Date: 15-DEC-14 11:09
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		18200	+/-3640	50.0	200	ug/L	1	HSC	01/08/15	1002	1444035	1
Iron 7439-89-6	U	3.13	+/-10.0	30.0	100	ug/L	1					
Magnesium 7439-95-4		4300	+/-861	110	300	ug/L	1					
Sodium 7440-23-5		3390	+/-679	100	300	ug/L	1					
Vanadium 7440-62-2		5.50	+/-1.15	1.00	5.00	ug/L	1					
Potassium 7440-09-7		6840	+/-1370	50.0	150	ug/L	1	HSC	01/09/15	0859	1444035	2
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: GW 01 "As Received"												
Aluminum 7429-90-5	U	3.84	+/-5.06	15.0	50.0	ug/L	1	SKJ	01/06/15	1917	1444043	3
Antimony 7440-36-0	U	0.190	+/-0.335	1.00	5.00	ug/L	1					
Arsenic 7440-38-2	U	0.455	+/-0.574	1.70	5.00	ug/L	1					
Barium 7440-39-3		32.5	+/-6.50	0.600	5.00	ug/L	1					
Beryllium 7440-41-7	U	0.012	+/-0.0667	0.200	2.00	ug/L	1					
Boron 7440-42-8	B	8.37	+/-2.14	4.00	15.0	ug/L	1					
Cadmium 7440-43-9	U	-0.004	+/-0.0367	0.110	2.00	ug/L	1					
Chromium 7440-47-3		4.09	+/-1.06	2.00	10.0	ug/L	1					
Cobalt 7440-48-4	U	0.063	+/-0.0356	0.100	4.00	ug/L	1					
Copper 7440-50-8		16.7	+/-3.34	0.350	8.00	ug/L	1					
Lead	B	0.900	+/-0.245	0.500	2.00	ug/L	1					

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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: B2YK54 Project: CPRC0S15012
Sample ID: 363232009 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"											
7439-92-1 Manganese	U	0.164	+/-0.335	1.00	5.00	ug/L	1				
7439-96-5 Molybdenum	B	0.809	+/-0.171	0.165	20.0	ug/L	1				
7439-98-7 Nickel	B	1.13	+/-0.280	0.500	2.00	ug/L	1				
7440-02-0 Selenium	U	0.179	+/-0.501	1.50	5.00	ug/L	1				
7782-49-2 Silver	U	0.002	+/-0.0667	0.200	2.00	ug/L	1				
7440-22-4 Strontium	M	117	+/-23.4	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	0.161	+/-0.335	1.00	5.00	ug/L	1				
7440-31-5 Zinc	C	23.7	+/-4.87	3.50	10.0	ug/L	1				
7440-66-6 Thorium	U	0.064	+/-0.128	0.383	2.00	ug/L	1	PRB 01/09/15	1257	1444043	4
7440-29-1 Uranium		0.415	+/-0.086	0.067	0.200	ug/L	1				
7440-61-1											

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	JP1	12/17/14	1740	1444042
SW846 3005A	SW846 3005A for 6010C	JP1	12/17/14	1740	1444034

The following Analytical Methods were performed

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

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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: B2YK57
Sample ID: 363232010
Matrix: WATER
Collect Date: 15-DEC-14 11:09
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		18200	+/-3650	50.0	200	ug/L	1	HSC	01/08/15	1005	1444035	1
Iron 7439-89-6	U	2.17	+/-10.0	30.0	100	ug/L	1					
Magnesium 7439-95-4		4250	+/-850	110	300	ug/L	1					
Sodium 7440-23-5		3380	+/-676	100	300	ug/L	1					
Vanadium 7440-62-2		5.05	+/-1.06	1.00	5.00	ug/L	1					
Potassium 7440-09-7		6910	+/-1380	50.0	150	ug/L	1	HSC	01/09/15	0902	1444035	2
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: GW 01 "As Received"												
Aluminum 7429-90-5	U	3.56	+/-5.05	15.0	50.0	ug/L	1	SKJ	01/06/15	1924	1444043	3
Antimony 7440-36-0	U	0.182	+/-0.335	1.00	5.00	ug/L	1					
Arsenic 7440-38-2	U	0.122	+/-0.567	1.70	5.00	ug/L	1					
Barium 7440-39-3		32.0	+/-6.41	0.600	5.00	ug/L	1					
Beryllium 7440-41-7	U	0.008	+/-0.0667	0.200	2.00	ug/L	1					
Boron 7440-42-8	B	5.36	+/-1.71	4.00	15.0	ug/L	1					
Cadmium 7440-43-9	U	0.008	+/-0.0367	0.110	2.00	ug/L	1					
Chromium 7440-47-3		4.13	+/-1.06	2.00	10.0	ug/L	1					
Cobalt 7440-48-4	U	0.063	+/-0.0356	0.100	4.00	ug/L	1					
Copper 7440-50-8		12.3	+/-2.46	0.350	8.00	ug/L	1					
Lead	U	0.250	+/-0.174	0.500	2.00	ug/L	1					

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

Report Date: January 9, 2015

Client Sample ID: B2YK57 Project: CPRC0S15012
Sample ID: 363232010 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"											
7439-92-1 Manganese	U	0.150	+/-0.335	1.00	5.00	ug/L	1				
7439-96-5 Molybdenum	B	0.778	+/-0.165	0.165	20.0	ug/L	1				
7439-98-7 Nickel	B	0.639	+/-0.210	0.500	2.00	ug/L	1				
7440-02-0 Selenium	U	0.237	+/-0.502	1.50	5.00	ug/L	1				
7782-49-2 Silver	U	0.00	+/-0.0667	0.200	2.00	ug/L	1				
7440-22-4 Strontium	M	112	+/-22.5	2.00	10.0	ug/L	1				
7440-24-6 Thallium	U	0.042	+/-0.150	0.450	2.00	ug/L	1				
7440-28-0 Tin	U	0.172	+/-0.335	1.00	5.00	ug/L	1				
7440-31-5 Zinc	C	13.7	+/-2.99	3.50	10.0	ug/L	1				
7440-66-6 Thorium	U	0.024	+/-0.128	0.383	2.00	ug/L	1	PRB	01/09/15 1258	1444043	4
7440-29-1 Uranium		0.422	+/-0.0873	0.067	0.200	ug/L	1				
7440-61-1											

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	JP1	12/17/14	1740	1444042
SW846 3005A	SW846 3005A for 6010C	JP1	12/17/14	1740	1444034

The following Analytical Methods were performed

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

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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: B2YK91
Sample ID: 363232011
Matrix: WATER
Collect Date: 15-DEC-14 08:10
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	U	14.0	+/-16.9	50.0	200	ug/L	1	HSC	01/08/15	1008	1444035	1
Iron 7439-89-6	U	3.80	+/-10.0	30.0	100	ug/L	1					
Magnesium 7439-95-4	U	2.43	+/-36.7	110	300	ug/L	1					
Sodium 7440-23-5	U	-26.8	+/-33.8	100	300	ug/L	1					
Vanadium 7440-62-2	U	0.219	+/-0.336	1.00	5.00	ug/L	1					
Potassium 7440-09-7	U	-2.96	+/-16.7	50.0	150	ug/L	1	HSC	01/09/15	0905	1444035	2
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: GW 01 "As Received"												
Aluminum 7429-90-5	U	1.95	+/-5.02	15.0	50.0	ug/L	1	SKJ	01/06/15	1930	1444043	3
Antimony 7440-36-0	U	0.026	+/-0.333	1.00	5.00	ug/L	1					
Arsenic 7440-38-2	U	-0.506	+/-0.576	1.70	5.00	ug/L	1					
Barium 7440-39-3	U	0.528	+/-0.226	0.600	5.00	ug/L	1					
Beryllium 7440-41-7	U	0.011	+/-0.0667	0.200	2.00	ug/L	1					
Boron 7440-42-8	U	0.967	+/-1.35	4.00	15.0	ug/L	1					
Cadmium 7440-43-9	U	0.003	+/-0.0367	0.110	2.00	ug/L	1					
Chromium 7440-47-3	U	0.809	+/-0.686	2.00	10.0	ug/L	1					
Cobalt 7440-48-4	U	0.002	+/-0.0333	0.100	4.00	ug/L	1					
Copper 7440-50-8	U	0.023	+/-0.117	0.350	8.00	ug/L	1					
Lead	U	0.001	+/-0.167	0.500	2.00	ug/L	1					

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

Report Date: January 9, 2015

Client Sample ID: B2YK91
Sample ID: 363232011

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"											
7439-92-1 Manganese	U	0.102	+/-0.334	1.00	5.00	ug/L	1				
7439-96-5 Molybdenum	U	0.057	+/-0.0562	0.165	20.0	ug/L	1				
7439-98-7 Nickel	U	0.014	+/-0.167	0.500	2.00	ug/L	1				
7440-02-0 Selenium	U	0.114	+/-0.501	1.50	5.00	ug/L	1				
7782-49-2 Silver	U	0.007	+/-0.0667	0.200	2.00	ug/L	1				
7440-22-4 Strontium	MU	0.056	+/-0.667	2.00	10.0	ug/L	1				
7440-24-6 Thallium	U	0.030	+/-0.150	0.450	2.00	ug/L	1				
7440-28-0 Tin	U	0.121	+/-0.334	1.00	5.00	ug/L	1				
7440-31-5 Zinc	BC	4.23	+/-1.44	3.50	10.0	ug/L	1				
7440-66-6 Thorium	U	0.097	+/-0.129	0.383	2.00	ug/L	1	PRB 01/09/15	1305	1444043	4
7440-29-1 Uranium	U	0.001	+/-0.0223	0.067	0.200	ug/L	1				
7440-61-1											

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	JP1	12/17/14	1740	1444042
SW846 3005A	SW846 3005A for 6010C	JP1	12/17/14	1740	1444034

The following Analytical Methods were performed

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

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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: B2YK85
Sample ID: 363232012
Matrix: WATER
Collect Date: 15-DEC-14 08:10
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	U	9.04	+/-16.8	50.0	200	ug/L	1	HSC	01/08/15	1011	1444035	1
Iron 7439-89-6	U	0.860	+/-10.0	30.0	100	ug/L	1					
Magnesium 7439-95-4	U	10.6	+/-36.7	110	300	ug/L	1					
Sodium 7440-23-5	U	-35.6	+/-34.1	100	300	ug/L	1					
Vanadium 7440-62-2	U	0.322	+/-0.339	1.00	5.00	ug/L	1					
Potassium 7440-09-7	U	5.36	+/-16.7	50.0	150	ug/L	1	HSC	01/09/15	0909	1444035	2
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: GW 01 "As Received"												
Aluminum 7429-90-5	U	1.92	+/-5.01	15.0	50.0	ug/L	1	SKJ	01/06/15	1937	1444043	3
Antimony 7440-36-0	U	0.024	+/-0.333	1.00	5.00	ug/L	1					
Arsenic 7440-38-2	U	-0.53	+/-0.576	1.70	5.00	ug/L	1					
Barium 7440-39-3	U	0.293	+/-0.208	0.600	5.00	ug/L	1					
Beryllium 7440-41-7	U	0.009	+/-0.0667	0.200	2.00	ug/L	1					
Boron 7440-42-8	U	0.830	+/-1.34	4.00	15.0	ug/L	1					
Cadmium 7440-43-9	U	-0.004	+/-0.0367	0.110	2.00	ug/L	1					
Chromium 7440-47-3	U	0.581	+/-0.677	2.00	10.0	ug/L	1					
Cobalt 7440-48-4	U	0.002	+/-0.0333	0.100	4.00	ug/L	1					
Copper 7440-50-8	B	1.96	+/-0.408	0.350	8.00	ug/L	1					
Lead	U	0.002	+/-0.167	0.500	2.00	ug/L	1					

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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: B2YK85 Project: CPRC0S15012
Sample ID: 363232012 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"											
7439-92-1 Manganese	U	0.100	+/-0.334	1.00	5.00	ug/L	1				
7439-96-5 Molybdenum	U	0.019	+/-0.0551	0.165	20.0	ug/L	1				
7439-98-7 Nickel	U	0.026	+/-0.167	0.500	2.00	ug/L	1				
7440-02-0 Selenium	U	0.162	+/-0.501	1.50	5.00	ug/L	1				
7782-49-2 Silver	U	0.00	+/-0.0667	0.200	2.00	ug/L	1				
7440-22-4 Strontium	MU	0.025	+/-0.667	2.00	10.0	ug/L	1				
7440-24-6 Thallium	U	0.025	+/-0.150	0.450	2.00	ug/L	1				
7440-28-0 Tin	U	0.124	+/-0.334	1.00	5.00	ug/L	1				
7440-31-5 Zinc	U	0.576	+/-1.17	3.50	10.0	ug/L	1				
7440-66-6 Thorium	U	0.042	+/-0.128	0.383	2.00	ug/L	1	PRB 01/09/15	1306	1444043	4
7440-29-1 Uranium	U	-0.001	+/-0.0223	0.067	0.200	ug/L	1				
7440-61-1											

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	JP1	12/17/14	1740	1444042
SW846 3005A	SW846 3005A for 6010C	JP1	12/17/14	1740	1444034

The following Analytical Methods were performed

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

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

Report Date: January 9, 2015

Client Sample ID: B2YK86
Sample ID: 363232013
Matrix: WATER
Collect Date: 15-DEC-14 10:55
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		84000	+/-16800	50.0	200	ug/L	1	HSC	01/08/15	1014	1444035	1
Iron 7439-89-6	U	0.234	+/-10.0	30.0	100	ug/L	1					
Magnesium 7439-95-4		20700	+/-4150	110	300	ug/L	1					
Sodium 7440-23-5		11900	+/-2380	100	300	ug/L	1					
Vanadium 7440-62-2		5.03	+/-1.06	1.00	5.00	ug/L	1					
Potassium 7440-09-7		4320	+/-864	50.0	150	ug/L	1	HSC	01/09/15	0912	1444035	2
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: GW 01 "As Received"												
Aluminum 7429-90-5	U	3.23	+/-5.04	15.0	50.0	ug/L	1	SKJ	01/06/15	1943	1444043	3
Antimony 7440-36-0	U	0.169	+/-0.335	1.00	5.00	ug/L	1					
Arsenic 7440-38-2	U	-0.26	+/-0.569	1.70	5.00	ug/L	1					
Barium 7440-39-3		80.6	+/-16.1	0.600	5.00	ug/L	1					
Beryllium 7440-41-7	U	0.00	+/-0.0667	0.200	2.00	ug/L	1					
Boron 7440-42-8		102	+/-20.4	4.00	15.0	ug/L	1					
Cadmium 7440-43-9	U	-0.003	+/-0.0367	0.110	2.00	ug/L	1					
Chromium 7440-47-3		422	+/-84.4	2.00	10.0	ug/L	1					
Cobalt 7440-48-4	B	0.186	+/-0.0499	0.100	4.00	ug/L	1					
Copper 7440-50-8	B	4.75	+/-0.957	0.350	8.00	ug/L	1					
Lead	U	0.066	+/-0.167	0.500	2.00	ug/L	1					

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

Report Date: January 9, 2015

Client Sample ID: B2YK86 Project: CPRC0S15012
Sample ID: 363232013 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"											
7439-92-1 Manganese	U	0.084	+/-0.334	1.00	5.00	ug/L	1				
7439-96-5 Molybdenum	B	1.16	+/-0.238	0.165	20.0	ug/L	1				
7439-98-7 Nickel		2.99	+/-0.621	0.500	2.00	ug/L	1				
7440-02-0 Selenium	B	2.68	+/-0.733	1.50	5.00	ug/L	1				
7782-49-2 Silver	U	0.00	+/-0.0667	0.200	2.00	ug/L	1				
7440-22-4 Strontium	M	525	+/-105	2.00	10.0	ug/L	1				
7440-24-6 Thallium	U	0.019	+/-0.150	0.450	2.00	ug/L	1				
7440-28-0 Tin	U	0.144	+/-0.335	1.00	5.00	ug/L	1				
7440-31-5 Zinc	BC	7.75	+/-1.94	3.50	10.0	ug/L	1				
7440-66-6 Thorium	U	0.001	+/-0.128	0.383	2.00	ug/L	1	PRB 01/09/15	1308	1444043	4
7440-29-1 Uranium		2.43	+/-0.486	0.067	0.200	ug/L	1				
7440-61-1											

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	JP1	12/17/14	1740	1444042
SW846 3005A	SW846 3005A for 6010C	JP1	12/17/14	1740	1444034

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3005A/6010C	
2	SW846 3005A/6010C	
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: B2YK92
Sample ID: 363232014
Matrix: WATER
Collect Date: 15-DEC-14 10:55
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		85500	+/-17100	50.0	200	ug/L	1	HSC	01/08/15	1017	1444035	1
Iron 7439-89-6	U	0.607	+/-10.0	30.0	100	ug/L	1					
Magnesium 7439-95-4		21100	+/-4210	110	300	ug/L	1					
Sodium 7440-23-5		12100	+/-2410	100	300	ug/L	1					
Vanadium 7440-62-2	B	4.85	+/-1.03	1.00	5.00	ug/L	1					
Potassium 7440-09-7		4460	+/-891	50.0	150	ug/L	1	HSC	01/09/15	0915	1444035	2
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: GW 01 "As Received"												
Aluminum 7429-90-5	U	4.82	+/-5.09	15.0	50.0	ug/L	1	SKJ	01/06/15	2010	1444043	3
Antimony 7440-36-0	U	0.240	+/-0.337	1.00	5.00	ug/L	1					
Arsenic 7440-38-2	U	-0.009	+/-0.567	1.70	5.00	ug/L	1					
Barium 7440-39-3		82.7	+/-16.5	0.600	5.00	ug/L	1					
Beryllium 7440-41-7	U	0.001	+/-0.0667	0.200	2.00	ug/L	1					
Boron 7440-42-8		98.2	+/-19.7	4.00	15.0	ug/L	1					
Cadmium 7440-43-9	U	0.028	+/-0.0371	0.110	2.00	ug/L	1					
Chromium 7440-47-3		426	+/-85.2	2.00	10.0	ug/L	1					
Cobalt 7440-48-4	B	0.189	+/-0.0504	0.100	4.00	ug/L	1					
Copper 7440-50-8	B	4.07	+/-0.823	0.350	8.00	ug/L	1					
Lead	U	0.017	+/-0.167	0.500	2.00	ug/L	1					

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

Report Date: January 9, 2015

Client Sample ID: B2YK92 Project: CPRC0S15012
Sample ID: 363232014 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"											
7439-92-1 Manganese	U	0.074	+/-0.334	1.00	5.00	ug/L	1				
7439-96-5 Molybdenum	B	1.18	+/-0.243	0.165	20.0	ug/L	1				
7439-98-7 Nickel		2.88	+/-0.600	0.500	2.00	ug/L	1				
7440-02-0 Selenium	B	2.63	+/-0.725	1.50	5.00	ug/L	1				
7782-49-2 Silver	U	0.008	+/-0.0667	0.200	2.00	ug/L	1				
7440-22-4 Strontium	M	533	+/-107	2.00	10.0	ug/L	1				
7440-24-6 Thallium	U	0.031	+/-0.150	0.450	2.00	ug/L	1				
7440-28-0 Tin	U	0.123	+/-0.334	1.00	5.00	ug/L	1				
7440-31-5 Zinc	U	2.75	+/-1.29	3.50	10.0	ug/L	1				
7440-66-6 Thorium	U	-0.014	+/-0.128	0.383	2.00	ug/L	1	PRB 01/09/15	1309	1444043	4
7440-29-1 Uranium		2.34	+/-0.468	0.067	0.200	ug/L	1				
7440-61-1											

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	JP1	12/17/14	1740	1444042
SW846 3005A	SW846 3005A for 6010C	JP1	12/17/14	1740	1444034

The following Analytical Methods were performed

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

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

Report Date: January 9, 2015

Client Sample ID: B2YKD5
Sample ID: 363232015
Matrix: WATER
Collect Date: 12-DEC-14 12:46
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		74900	+/-15000	50.0	200	ug/L	1	HSC	01/08/15	1025	1444035	1
Iron 7439-89-6	U	7.48	+/-10.1	30.0	100	ug/L	1					
Magnesium 7439-95-4		21800	+/-4360	110	300	ug/L	1					
Sodium 7440-23-5		13200	+/-2630	100	300	ug/L	1					
Vanadium 7440-62-2		11.0	+/-2.22	1.00	5.00	ug/L	1					
Potassium 7440-09-7		5400	+/-1080	50.0	150	ug/L	1	HSC	01/09/15	0927	1444035	2
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: GW 01 "As Received"												
Aluminum 7429-90-5	U	3.08	+/-5.04	15.0	50.0	ug/L	1	SKJ	01/06/15	2017	1444043	3
Antimony 7440-36-0	U	0.210	+/-0.336	1.00	5.00	ug/L	1					
Arsenic 7440-38-2	U	1.37	+/-0.629	1.70	5.00	ug/L	1					
Barium 7440-39-3		54.8	+/-11.0	0.600	5.00	ug/L	1					
Beryllium 7440-41-7	U	-0.006	+/-0.0667	0.200	2.00	ug/L	1					
Boron 7440-42-8		33.4	+/-6.81	4.00	15.0	ug/L	1					
Cadmium 7440-43-9	U	0.027	+/-0.0371	0.110	2.00	ug/L	1					
Chromium 7440-47-3		52.5	+/-10.5	2.00	10.0	ug/L	1					
Cobalt 7440-48-4	B	0.223	+/-0.0557	0.100	4.00	ug/L	1					
Copper 7440-50-8	B	0.894	+/-0.213	0.350	8.00	ug/L	1					
Lead	U	0.008	+/-0.167	0.500	2.00	ug/L	1					

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

Report Date: January 9, 2015

Client Sample ID: B2YKD5 Project: CPRC0S15012
Sample ID: 363232015 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"											
7439-92-1 Manganese	U	0.382	+/-0.342	1.00	5.00	ug/L	1				
7439-96-5 Molybdenum	B	1.44	+/-0.293	0.165	20.0	ug/L	1				
7439-98-7 Nickel		3.83	+/-0.784	0.500	2.00	ug/L	1				
7440-02-0 Selenium	B	2.99	+/-0.779	1.50	5.00	ug/L	1				
7782-49-2 Silver	U	0.011	+/-0.0667	0.200	2.00	ug/L	1				
7440-22-4 Strontium	M	557	+/-111	2.00	10.0	ug/L	1				
7440-24-6 Thallium	U	0.022	+/-0.150	0.450	2.00	ug/L	1				
7440-28-0 Tin	U	0.133	+/-0.334	1.00	5.00	ug/L	1				
7440-31-5 Zinc	C	10.1	+/-2.34	3.50	10.0	ug/L	1				
7440-66-6 Thorium	U	-0.023	+/-0.128	0.383	2.00	ug/L	1	PRB	01/09/15 1311	1444043	4
7440-29-1 Uranium		3.54	+/-0.709	0.067	0.200	ug/L	1				
7440-61-1											

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	JP1	12/17/14	1740	1444042
SW846 3005A	SW846 3005A for 6010C	JP1	12/17/14	1740	1444034

The following Analytical Methods were performed

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

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

Report Date: January 9, 2015

Client Sample ID: B2YKD2
Sample ID: 363232016
Matrix: WATER
Collect Date: 12-DEC-14 12:46
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		76900	+/-15400	50.0	200	ug/L	1	HSC	01/08/15	1028	1444035	1
Iron 7439-89-6	U	28.9	+/-11.6	30.0	100	ug/L	1					
Magnesium 7439-95-4		22600	+/-4520	110	300	ug/L	1					
Sodium 7440-23-5		13500	+/-2690	100	300	ug/L	1					
Vanadium 7440-62-2		11.1	+/-2.24	1.00	5.00	ug/L	1					
Potassium 7440-09-7		5490	+/-1100	50.0	150	ug/L	1	HSC	01/09/15	0931	1444035	2
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: GW 01 "As Received"												
Aluminum 7429-90-5	U	10.5	+/-5.42	15.0	50.0	ug/L	1	SKJ	01/06/15	2023	1444043	3
Antimony 7440-36-0	U	0.177	+/-0.335	1.00	5.00	ug/L	1					
Arsenic 7440-38-2	U	0.526	+/-0.576	1.70	5.00	ug/L	1					
Barium 7440-39-3		56.9	+/-11.4	0.600	5.00	ug/L	1					
Beryllium 7440-41-7	U	0.00	+/-0.0667	0.200	2.00	ug/L	1					
Boron 7440-42-8		35.9	+/-7.30	4.00	15.0	ug/L	1					
Cadmium 7440-43-9	U	0.022	+/-0.0369	0.110	2.00	ug/L	1					
Chromium 7440-47-3		59.8	+/-12.0	2.00	10.0	ug/L	1					
Cobalt 7440-48-4	B	0.208	+/-0.0533	0.100	4.00	ug/L	1					
Copper 7440-50-8	B	1.03	+/-0.236	0.350	8.00	ug/L	1					
Lead	U	0.037	+/-0.167	0.500	2.00	ug/L	1					

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

Report Date: January 9, 2015

Client Sample ID: B2YKD2 Project: CPRC0S15012
Sample ID: 363232016 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"											
7439-92-1 Manganese	U	0.566	+/-0.352	1.00	5.00	ug/L	1				
7439-96-5 Molybdenum	B	1.56	+/-0.317	0.165	20.0	ug/L	1				
7439-98-7 Nickel		4.73	+/-0.961	0.500	2.00	ug/L	1				
7440-02-0 Selenium	B	2.81	+/-0.753	1.50	5.00	ug/L	1				
7782-49-2 Silver	U	0.036	+/-0.0671	0.200	2.00	ug/L	1				
7440-22-4 Strontium	M	586	+/-117	2.00	10.0	ug/L	1				
7440-24-6 Thallium	U	0.023	+/-0.150	0.450	2.00	ug/L	1				
7440-28-0 Tin	U	0.127	+/-0.334	1.00	5.00	ug/L	1				
7440-31-5 Zinc	C	10.8	+/-2.45	3.50	10.0	ug/L	1				
7440-66-6 Thorium	U	-0.015	+/-0.128	0.383	2.00	ug/L	1	PRB	01/09/15 1312	1444043	4
7440-29-1 Uranium		3.74	+/-0.749	0.067	0.200	ug/L	1				
7440-61-1											

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	JP1	12/17/14	1740	1444042
SW846 3005A	SW846 3005A for 6010C	JP1	12/17/14	1740	1444034

The following Analytical Methods were performed

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

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

Report Date: January 9, 2015

Client Sample ID: B2YL22
Sample ID: 363232019
Matrix: WATER
Collect Date: 12-DEC-14 13:25
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		67800	+/-13600	50.0	200	ug/L	1	HSC	01/08/15	1031	1444035	1
Iron 7439-89-6		153	+/-32.2	30.0	100	ug/L	1					
Magnesium 7439-95-4		12700	+/-2550	110	300	ug/L	1					
Sodium 7440-23-5		13200	+/-2650	100	300	ug/L	1					
Vanadium 7440-62-2		5.28	+/-1.11	1.00	5.00	ug/L	1					
Potassium 7440-09-7		5460	+/-1090	50.0	150	ug/L	1	HSC	01/09/15	0934	1444035	2
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: GW 01 "As Received"												
Aluminum 7429-90-5	U	8.32	+/-5.27	15.0	50.0	ug/L	1	SKJ	01/06/15	2030	1444043	3
Antimony 7440-36-0	U	0.197	+/-0.336	1.00	5.00	ug/L	1					
Arsenic 7440-38-2	U	1.38	+/-0.630	1.70	5.00	ug/L	1					
Barium 7440-39-3		60.9	+/-12.2	0.600	5.00	ug/L	1					
Beryllium 7440-41-7	U	0.005	+/-0.0667	0.200	2.00	ug/L	1					
Boron 7440-42-8		25.9	+/-5.34	4.00	15.0	ug/L	1					
Cadmium 7440-43-9	U	0.012	+/-0.0367	0.110	2.00	ug/L	1					
Chromium 7440-47-3		8.28	+/-1.78	2.00	10.0	ug/L	1					
Cobalt 7440-48-4	B	0.128	+/-0.042	0.100	4.00	ug/L	1					
Copper 7440-50-8	B	0.955	+/-0.224	0.350	8.00	ug/L	1					
Lead	U	0.163	+/-0.170	0.500	2.00	ug/L	1					

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

Report Date: January 9, 2015

Client Sample ID: B2YL22 Project: CPRC0S15012
Sample ID: 363232019 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"											
7439-92-1 Manganese	B	4.99	+/-1.05	1.00	5.00	ug/L	1				
7439-96-5 Molybdenum	B	1.61	+/-0.326	0.165	20.0	ug/L	1				
7439-98-7 Nickel		2.58	+/-0.542	0.500	2.00	ug/L	1				
7440-02-0 Selenium	U	0.920	+/-0.533	1.50	5.00	ug/L	1				
7782-49-2 Silver	U	0.013	+/-0.0667	0.200	2.00	ug/L	1				
7440-22-4 Strontium	M	310	+/-62.1	2.00	10.0	ug/L	1				
7440-24-6 Thallium	U	0.015	+/-0.150	0.450	2.00	ug/L	1				
7440-28-0 Tin	U	0.122	+/-0.334	1.00	5.00	ug/L	1				
7440-31-5 Zinc	BC	4.58	+/-1.48	3.50	10.0	ug/L	1				
7440-66-6 Thorium	U	-0.03	+/-0.128	0.383	2.00	ug/L	1	PRB 01/09/15	1314	1444043	4
7440-29-1 Uranium		1.61	+/-0.322	0.067	0.200	ug/L	1				
7440-61-1											

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	JP1	12/17/14	1740	1444042
SW846 3005A	SW846 3005A for 6010C	JP1	12/17/14	1740	1444034

The following Analytical Methods were performed

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

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

Report Date: January 9, 2015

Client Sample ID: B2YL25
Sample ID: 363232020
Matrix: WATER
Collect Date: 12-DEC-14 13:25
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		67400	+/-13500	50.0	200	ug/L	1	HSC	01/08/15	1034	1444035	1
Iron 7439-89-6	U	6.63	+/-10.1	30.0	100	ug/L	1					
Magnesium 7439-95-4		12900	+/-2580	110	300	ug/L	1					
Sodium 7440-23-5		13300	+/-2650	100	300	ug/L	1					
Vanadium 7440-62-2	B	4.93	+/-1.04	1.00	5.00	ug/L	1					
Potassium 7440-09-7		5550	+/-1110	50.0	150	ug/L	1	HSC	01/09/15	0937	1444035	2
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: GW 01 "As Received"												
Aluminum 7429-90-5	U	3.06	+/-5.04	15.0	50.0	ug/L	1	SKJ	01/06/15	2037	1444043	3
Antimony 7440-36-0	U	0.198	+/-0.336	1.00	5.00	ug/L	1					
Arsenic 7440-38-2	U	1.64	+/-0.655	1.70	5.00	ug/L	1					
Barium 7440-39-3		63.6	+/-12.7	0.600	5.00	ug/L	1					
Beryllium 7440-41-7	U	0.014	+/-0.0667	0.200	2.00	ug/L	1					
Boron 7440-42-8		26.1	+/-5.40	4.00	15.0	ug/L	1					
Cadmium 7440-43-9	U	-0.003	+/-0.0367	0.110	2.00	ug/L	1					
Chromium 7440-47-3		4.68	+/-1.15	2.00	10.0	ug/L	1					
Cobalt 7440-48-4	B	0.126	+/-0.0418	0.100	4.00	ug/L	1					
Copper 7440-50-8	B	0.746	+/-0.189	0.350	8.00	ug/L	1					
Lead	U	0.064	+/-0.167	0.500	2.00	ug/L	1					

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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: B2YL25
Sample ID: 363232020

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"											
7439-92-1 Manganese	U	0.404	+/-0.343	1.00	5.00	ug/L	1				
7439-96-5 Molybdenum	B	1.65	+/-0.334	0.165	20.0	ug/L	1				
7439-98-7 Nickel		2.20	+/-0.471	0.500	2.00	ug/L	1				
7440-02-0 Selenium	U	1.08	+/-0.545	1.50	5.00	ug/L	1				
7782-49-2 Silver	U	0.005	+/-0.0667	0.200	2.00	ug/L	1				
7440-22-4 Strontium	M	322	+/-64.4	2.00	10.0	ug/L	1				
7440-24-6 Thallium	U	0.011	+/-0.150	0.450	2.00	ug/L	1				
7440-28-0 Tin	U	0.142	+/-0.335	1.00	5.00	ug/L	1				
7440-31-5 Zinc	U	3.17	+/-1.33	3.50	10.0	ug/L	1				
7440-66-6 Thorium	U	-0.033	+/-0.128	0.383	2.00	ug/L	1	PRB 01/09/15	1315	1444043	4
7440-29-1 Uranium		1.64	+/-0.329	0.067	0.200	ug/L	1				
7440-61-1											

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	JP1	12/17/14	1740	1444042
SW846 3005A	SW846 3005A for 6010C	JP1	12/17/14	1740	1444034

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3005A/6010C	
2	SW846 3005A/6010C	
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: B2YKF5
Sample ID: 363232021
Matrix: WATER
Collect Date: 15-DEC-14 09:31
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		76200	+/-15200	50.0	200	ug/L	1	HSC	01/08/15	1037	1444035	1
Iron 7439-89-6	U	2.42	+/-10.0	30.0	100	ug/L	1					
Magnesium 7439-95-4		18500	+/-3700	110	300	ug/L	1					
Sodium 7440-23-5		8730	+/-1750	100	300	ug/L	1					
Vanadium 7440-62-2		6.75	+/-1.39	1.00	5.00	ug/L	1					
Potassium 7440-09-7		4500	+/-900	50.0	150	ug/L	1	HSC	01/09/15	0940	1444035	2
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: GW 01 "As Received"												
Aluminum 7429-90-5	U	4.80	+/-5.09	15.0	50.0	ug/L	1	SKJ	01/06/15	2043	1444043	3
Antimony 7440-36-0	U	0.136	+/-0.334	1.00	5.00	ug/L	1					
Arsenic 7440-38-2	U	0.157	+/-0.568	1.70	5.00	ug/L	1					
Barium 7440-39-3		73.8	+/-14.8	0.600	5.00	ug/L	1					
Beryllium 7440-41-7	U	0.009	+/-0.0667	0.200	2.00	ug/L	1					
Boron 7440-42-8		17.8	+/-3.81	4.00	15.0	ug/L	1					
Cadmium 7440-43-9	U	0.005	+/-0.0367	0.110	2.00	ug/L	1					
Chromium 7440-47-3		111	+/-22.2	2.00	10.0	ug/L	1					
Cobalt 7440-48-4	B	0.182	+/-0.0494	0.100	4.00	ug/L	1					
Copper 7440-50-8	B	1.13	+/-0.255	0.350	8.00	ug/L	1					
Lead	U	0.168	+/-0.170	0.500	2.00	ug/L	1					

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

Report Date: January 9, 2015

Client Sample ID: B2YKF5 Project: CPRC0S15012
Sample ID: 363232021 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"											
7439-92-1 Manganese	U	0.084	+/-0.334	1.00	5.00	ug/L	1				
7439-96-5 Molybdenum	B	1.10	+/-0.227	0.165	20.0	ug/L	1				
7439-98-7 Nickel		2.70	+/-0.566	0.500	2.00	ug/L	1				
7440-02-0 Selenium	B	2.44	+/-0.699	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	M	447	+/-89.5	2.00	10.0	ug/L	1				
7440-24-6 Thallium	U	0.011	+/-0.150	0.450	2.00	ug/L	1				
7440-28-0 Tin	U	0.115	+/-0.334	1.00	5.00	ug/L	1				
7440-31-5 Zinc	BC	7.28	+/-1.87	3.50	10.0	ug/L	1				
7440-66-6 Thorium	U	-0.036	+/-0.128	0.383	2.00	ug/L	1	PRB 01/09/15	1317	1444043	4
7440-29-1 Uranium		2.47	+/-0.494	0.067	0.200	ug/L	1				
7440-61-1											

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	JP1	12/17/14	1740	1444042
SW846 3005A	SW846 3005A for 6010C	JP1	12/17/14	1740	1444034

The following Analytical Methods were performed

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

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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: B2YKF7
Sample ID: 363232022
Matrix: WATER
Collect Date: 15-DEC-14 09:31
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		77100	+/-15400	50.0	200	ug/L	1	HSC	01/08/15	1040	1444035	1
Iron 7439-89-6	U	1.14	+/-10.0	30.0	100	ug/L	1					
Magnesium 7439-95-4		18600	+/-3710	110	300	ug/L	1					
Sodium 7440-23-5		8890	+/-1780	100	300	ug/L	1					
Vanadium 7440-62-2		7.11	+/-1.46	1.00	5.00	ug/L	1					
Potassium 7440-09-7		4520	+/-904	50.0	150	ug/L	1	HSC	01/09/15	0943	1444035	2
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: GW 01 "As Received"												
Aluminum 7429-90-5	U	3.36	+/-5.04	15.0	50.0	ug/L	1	SKJ	01/06/15	2050	1444043	3
Antimony 7440-36-0	U	0.145	+/-0.335	1.00	5.00	ug/L	1					
Arsenic 7440-38-2	U	0.039	+/-0.567	1.70	5.00	ug/L	1					
Barium 7440-39-3		74.4	+/-14.9	0.600	5.00	ug/L	1					
Beryllium 7440-41-7	U	0.005	+/-0.0667	0.200	2.00	ug/L	1					
Boron 7440-42-8		17.0	+/-3.66	4.00	15.0	ug/L	1					
Cadmium 7440-43-9	U	-0.003	+/-0.0367	0.110	2.00	ug/L	1					
Chromium 7440-47-3		109	+/-21.8	2.00	10.0	ug/L	1					
Cobalt 7440-48-4	B	0.181	+/-0.0492	0.100	4.00	ug/L	1					
Copper 7440-50-8	B	0.968	+/-0.226	0.350	8.00	ug/L	1					
Lead	U	0.187	+/-0.171	0.500	2.00	ug/L	1					

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

Report Date: January 9, 2015

Client Sample ID: B2YKF7 Project: CPRC0S15012
Sample ID: 363232022 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"											
7439-92-1 Manganese	U	0.121	+/-0.334	1.00	5.00	ug/L	1				
7439-96-5 Molybdenum	B	1.06	+/-0.219	0.165	20.0	ug/L	1				
7439-98-7 Nickel		2.55	+/-0.536	0.500	2.00	ug/L	1				
7440-02-0 Selenium	B	2.35	+/-0.686	1.50	5.00	ug/L	1				
7782-49-2 Silver	U	0.00	+/-0.0667	0.200	2.00	ug/L	1				
7440-22-4 Strontium	M	442	+/-88.5	2.00	10.0	ug/L	1				
7440-24-6 Thallium	U	0.009	+/-0.150	0.450	2.00	ug/L	1				
7440-28-0 Tin	U	0.119	+/-0.334	1.00	5.00	ug/L	1				
7440-31-5 Zinc	BC	5.76	+/-1.64	3.50	10.0	ug/L	1				
7440-66-6 Thorium	U	-0.039	+/-0.128	0.383	2.00	ug/L	1	PRB	01/09/15 1318	1444043	4
7440-29-1 Uranium		2.46	+/-0.493	0.067	0.200	ug/L	1				
7440-61-1											

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	JP1	12/17/14	1740	1444042
SW846 3005A	SW846 3005A for 6010C	JP1	12/17/14	1740	1444034

The following Analytical Methods were performed

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

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

Report Date: January 9, 2015

Client Sample ID: B2YKL0
Sample ID: 363232039
Matrix: WATER
Collect Date: 15-DEC-14 12:18
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		80600	+/-16100	50.0	200	ug/L	1	JWJ	12/20/14	1942	1444308	1
Iron 7439-89-6	U	-0.30	+/-10.0	30.0	100	ug/L	1					
Magnesium 7439-95-4		15600	+/-3110	110	300	ug/L	1					
Potassium 7440-09-7		4080	+/-816	50.0	150	ug/L	1					
Sodium 7440-23-5		18500	+/-3700	100	300	ug/L	1					
Vanadium 7440-62-2		5.24	+/-1.10	1.00	5.00	ug/L	1					
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: GW 01 "As Received"												
Aluminum 7429-90-5	U	4.35	+/-5.08	15.0	50.0	ug/L	1	SKJ	01/06/15	2321	1444298	2
Antimony 7440-36-0	U	0.244	+/-0.337	1.00	5.00	ug/L	1					
Arsenic 7440-38-2	U	0.00	+/-0.567	1.70	5.00	ug/L	1					
Barium 7440-39-3		72.6	+/-14.5	0.600	5.00	ug/L	1					
Cadmium 7440-43-9	U	-0.003	+/-0.0367	0.110	2.00	ug/L	1					
Chromium 7440-47-3		18.2	+/-3.69	2.00	10.0	ug/L	1					
Cobalt 7440-48-4	B	0.166	+/-0.047	0.100	4.00	ug/L	1					
Copper 7440-50-8		20.6	+/-4.12	0.350	8.00	ug/L	1					
Lead 7439-92-1	U	0.074	+/-0.167	0.500	2.00	ug/L	1					
Manganese 7439-96-5	U	0.060	+/-0.334	1.00	5.00	ug/L	1					
Molybdenum	B	0.792	+/-0.168	0.165	20.0	ug/L	1					

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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: B2YKL0 Project: CPRC0S15012
Sample ID: 363232039 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		2.51	+/-0.528	0.500	2.00	ug/L	1				
7440-02-0 Selenium	B	1.83	+/-0.619	1.50	5.00	ug/L	1				
7782-49-2 Silver	U	0.002	+/-0.0667	0.200	2.00	ug/L	1				
7440-22-4 Strontium	M	355	+/-71.0	2.00	10.0	ug/L	1				
7440-24-6 Thallium	U	0.110	+/-0.152	0.450	2.00	ug/L	1				
7440-28-0 Tin	U	0.461	+/-0.346	1.00	5.00	ug/L	1				
7440-31-5 Zinc	B	5.56	+/-1.61	3.50	10.0	ug/L	1				
7440-66-6 Thorium	U	0.365	+/-0.147	0.383	2.00	ug/L	1	PRB	01/09/15 1214	1444298	3
7440-29-1 Uranium		3.53	+/-0.707	0.067	0.200	ug/L	1				
7440-61-1 Beryllium	NU	-0.002	+/-0.0667	0.200	2.00	ug/L	1	PRB	01/09/15 1343	1444298	4
7440-41-7 Boron	N	19.3	+/-4.09	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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PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF S15-012**

Report Date: January 9, 2015

Client Sample ID: B2YKL3
Sample ID: 363232040
Matrix: WATER
Collect Date: 15-DEC-14 12:18
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		82200	+/-16400	50.0	200	ug/L	1	JWJ	12/20/14	1945	1444308	1
Iron 7439-89-6	U	-0.122	+/-10.0	30.0	100	ug/L	1					
Magnesium 7439-95-4		15800	+/-3160	110	300	ug/L	1					
Potassium 7440-09-7		4040	+/-809	50.0	150	ug/L	1					
Sodium 7440-23-5		18800	+/-3760	100	300	ug/L	1					
Vanadium 7440-62-2		5.27	+/-1.11	1.00	5.00	ug/L	1					
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: GW 01 "As Received"												
Aluminum 7429-90-5	U	5.96	+/-5.14	15.0	50.0	ug/L	1	SKJ	01/07/15	0014	1444298	2
Antimony 7440-36-0	U	0.249	+/-0.337	1.00	5.00	ug/L	1					
Arsenic 7440-38-2	U	-0.017	+/-0.567	1.70	5.00	ug/L	1					
Barium 7440-39-3		75.4	+/-15.1	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		18.2	+/-3.70	2.00	10.0	ug/L	1					
Cobalt 7440-48-4	B	0.168	+/-0.0473	0.100	4.00	ug/L	1					
Copper 7440-50-8		10.6	+/-2.13	0.350	8.00	ug/L	1					
Lead 7439-92-1	U	0.168	+/-0.170	0.500	2.00	ug/L	1					
Manganese 7439-96-5	U	0.136	+/-0.334	1.00	5.00	ug/L	1					
Molybdenum	B	0.786	+/-0.167	0.165	20.0	ug/L	1					

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

Report Date: January 9, 2015

Client Sample ID: B2YKL3 Project: CPRC0S15012
Sample ID: 363232040 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		2.60	+/-0.546	0.500	2.00	ug/L	1					
7440-02-0 Selenium	B	1.90	+/-0.628	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	M	352	+/-70.3	2.00	10.0	ug/L	1					
7440-24-6 Thallium	U	0.080	+/-0.151	0.450	2.00	ug/L	1					
7440-28-0 Tin	U	0.168	+/-0.335	1.00	5.00	ug/L	1					
7440-31-5 Zinc	B	7.53	+/-1.90	3.50	10.0	ug/L	1					
7440-66-6 Thorium	U	0.171	+/-0.132	0.383	2.00	ug/L	1	PRB	01/09/15	1221	1444298	3
7440-29-1 Uranium		3.55	+/-0.711	0.067	0.200	ug/L	1					
7440-61-1 Beryllium	NU	0.006	+/-0.0667	0.200	2.00	ug/L	1	PRB	01/09/15	1351	1444298	4
7440-41-7 Boron	N	20.2	+/-4.25	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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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: B2YKL6
Sample ID: 363232041
Matrix: WATER
Collect Date: 15-DEC-14 11:57
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		95100	+/-19000	50.0	200	ug/L	1	JWJ	12/20/14	1948	1444308	1
Iron 7439-89-6	U	0.252	+/-10.0	30.0	100	ug/L	1					
Magnesium 7439-95-4		14800	+/-2960	110	300	ug/L	1					
Potassium 7440-09-7		5510	+/-1100	50.0	150	ug/L	1					
Sodium 7440-23-5		18800	+/-3760	100	300	ug/L	1					
Vanadium 7440-62-2		5.04	+/-1.06	1.00	5.00	ug/L	1					
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: GW 01 "As Received"												
Aluminum 7429-90-5	U	2.73	+/-5.03	15.0	50.0	ug/L	1	SKJ	01/07/15	0021	1444298	2
Antimony 7440-36-0	U	0.139	+/-0.334	1.00	5.00	ug/L	1					
Arsenic 7440-38-2	U	0.143	+/-0.567	1.70	5.00	ug/L	1					
Barium 7440-39-3		106	+/-21.2	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		16.0	+/-3.26	2.00	10.0	ug/L	1					
Cobalt 7440-48-4	B	0.194	+/-0.0512	0.100	4.00	ug/L	1					
Copper 7440-50-8		45.9	+/-9.18	0.350	8.00	ug/L	1					
Lead 7439-92-1	U	0.111	+/-0.168	0.500	2.00	ug/L	1					
Manganese 7439-96-5	U	0.092	+/-0.334	1.00	5.00	ug/L	1					
Molybdenum	B	0.861	+/-0.181	0.165	20.0	ug/L	1					

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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: B2YKL6
Sample ID: 363232041

Project: CPRC0S15012
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		2.95	+/-0.613	0.500	2.00	ug/L	1					
7440-02-0 Selenium	B	1.85	+/-0.622	1.50	5.00	ug/L	1					
7782-49-2 Silver	U	0.002	+/-0.0667	0.200	2.00	ug/L	1					
7440-22-4 Strontium	M	401	+/-80.3	2.00	10.0	ug/L	1					
7440-24-6 Thallium	U	0.043	+/-0.150	0.450	2.00	ug/L	1					
7440-28-0 Tin	U	0.161	+/-0.335	1.00	5.00	ug/L	1					
7440-31-5 Zinc		11.7	+/-2.61	3.50	10.0	ug/L	1					
7440-66-6 Thorium	U	0.071	+/-0.128	0.383	2.00	ug/L	1	PRB	01/09/15	1228	1444298	3
7440-29-1 Uranium		4.15	+/-0.830	0.067	0.200	ug/L	1					
7440-61-1 Beryllium	NU	-0.003	+/-0.0667	0.200	2.00	ug/L	1	PRB	01/09/15	1357	1444298	4
7440-41-7 Boron	BN	14.1	+/-3.12	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: B303R5
Sample ID: 363232042
Matrix: WATER
Collect Date: 15-DEC-14 11:57
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		94700	+/-18900	50.0	200	ug/L	1	JWJ	12/20/14	1951	1444308	1
Iron 7439-89-6	U	-1.6	+/-10.0	30.0	100	ug/L	1					
Magnesium 7439-95-4		14700	+/-2940	110	300	ug/L	1					
Potassium 7440-09-7		5540	+/-1110	50.0	150	ug/L	1					
Sodium 7440-23-5		18700	+/-3740	100	300	ug/L	1					
Vanadium 7440-62-2		5.13	+/-1.08	1.00	5.00	ug/L	1					
Metals Analysis-ICP-MS												
6020_METALS_ICPMS: GW 01 "As Received"												
Aluminum 7429-90-5	U	2.75	+/-5.03	15.0	50.0	ug/L	1	SKJ	01/07/15	0027	1444298	2
Antimony 7440-36-0	U	0.130	+/-0.334	1.00	5.00	ug/L	1					
Arsenic 7440-38-2	U	0.769	+/-0.587	1.70	5.00	ug/L	1					
Barium 7440-39-3		106	+/-21.2	0.600	5.00	ug/L	1					
Cadmium 7440-43-9	U	0.011	+/-0.0367	0.110	2.00	ug/L	1					
Chromium 7440-47-3		15.9	+/-3.25	2.00	10.0	ug/L	1					
Cobalt 7440-48-4	B	0.190	+/-0.0505	0.100	4.00	ug/L	1					
Copper 7440-50-8		8.73	+/-1.75	0.350	8.00	ug/L	1					
Lead 7439-92-1	U	0.032	+/-0.167	0.500	2.00	ug/L	1					
Manganese 7439-96-5	U	0.079	+/-0.334	1.00	5.00	ug/L	1					
Molybdenum	B	0.846	+/-0.178	0.165	20.0	ug/L	1					

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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: B303R5 Project: CPRC0S15012
Sample ID: 363232042 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		2.91	+/-0.605	0.500	2.00	ug/L	1					
7440-02-0 Selenium	B	1.76	+/-0.611	1.50	5.00	ug/L	1					
7782-49-2 Silver	U	-0.001	+/-0.0667	0.200	2.00	ug/L	1					
7440-22-4 Strontium	M	397	+/-79.5	2.00	10.0	ug/L	1					
7440-24-6 Thallium	U	0.031	+/-0.150	0.450	2.00	ug/L	1					
7440-28-0 Tin	U	0.130	+/-0.334	1.00	5.00	ug/L	1					
7440-31-5 Zinc	B	7.45	+/-1.89	3.50	10.0	ug/L	1					
7440-66-6 Thorium	U	0.023	+/-0.128	0.383	2.00	ug/L	1	PRB	01/09/15	1229	1444298	3
7440-29-1 Uranium		4.15	+/-0.831	0.067	0.200	ug/L	1					
7440-61-1 Beryllium	NU	0.003	+/-0.0667	0.200	2.00	ug/L	1	PRB	01/09/15	1358	1444298	4
7440-41-7 Boron	BN	13.9	+/-3.09	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	

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: **363232**

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS										
Batch 1444043										
QC1203230068 LCS										
Aluminum	2000			2080	ug/L		104	(80%-120%)	SKJ	01/06/15 17:57
Antimony	50.0			54.3	ug/L		109	(80%-120%)		
Arsenic	50.0			52.8	ug/L		106	(80%-120%)		
Barium	50.0			51.5	ug/L		103	(80%-120%)		
Beryllium	50.0			52.8	ug/L		106	(80%-120%)		
Boron	100			101	ug/L		101	(80%-120%)		
Cadmium	50.0			53.9	ug/L		108	(80%-120%)		
Chromium	50.0			52.9	ug/L		106	(80%-120%)		
Cobalt	50.0			52.6	ug/L		105	(80%-120%)		
Copper	50.0			53.8	ug/L		108	(80%-120%)		
Lead	50.0			54.3	ug/L		109	(80%-120%)		
Manganese	50.0			53.0	ug/L		106	(80%-120%)		
Molybdenum	50.0			53.0	ug/L		106	(80%-120%)		
Nickel	50.0			54.0	ug/L		108	(80%-120%)		
Selenium	50.0			55.5	ug/L		111	(80%-120%)		
Silver	50.0			55.8	ug/L		112	(80%-120%)		
Strontium	50.0			56.3	ug/L		113	(80%-120%)		
Thallium	50.0			51.4	ug/L		103	(80%-120%)		
Thorium	50.0			54.8	ug/L		110	(80%-120%)	PRB	01/09/15 12:46
Tin	50.0			55.4	ug/L		111	(80%-120%)	SKJ	01/06/15 17:57

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QC Summary

Workorder: **363232**

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS										
Batch 1444043										
Uranium	50.0			54.8	ug/L		110	(80%-120%)	PRB	01/09/15 12:46
Zinc	50.0			56.6	ug/L		113	(80%-120%)	SKJ	01/06/15 17:57
QC1203230067 MB										
Aluminum			U	ND	ug/L					01/06/15 17:50
Antimony			U	ND	ug/L					
Arsenic			U	ND	ug/L					
Barium			U	ND	ug/L					
Beryllium			U	ND	ug/L					
Boron			U	ND	ug/L					
Cadmium			U	ND	ug/L					
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 12:45

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QC Summary

Workorder: **363232**

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS											
Batch 1444043											
Tin				U	ND	ug/L				SKJ	01/06/15 17:50
Uranium				U	ND	ug/L				PRB	01/09/15 12:45
Zinc				B	4.19	ug/L				SKJ	01/06/15 17:50
QC1203230069 363232007 MS											
Aluminum	2000	U	ND		2080	ug/L		104	(75%-125%)		01/06/15 18:24
Antimony	50.0	U	ND		55.3	ug/L		110	(75%-125%)		
Arsenic	50.0	B	1.83		54.9	ug/L		106	(75%-125%)		
Barium	50.0		55.9		105	ug/L		99.1	(75%-125%)		
Beryllium	50.0	U	ND		52.4	ug/L		105	(75%-125%)		
Boron	100	B	14.1		112	ug/L		98.2	(75%-125%)		
Cadmium	50.0	U	ND		53.8	ug/L		108	(75%-125%)		
Chromium	50.0		17.7		70.9	ug/L		106	(75%-125%)		
Cobalt	50.0	B	0.116		52.6	ug/L		105	(75%-125%)		
Copper	50.0	B	0.578		51.8	ug/L		103	(75%-125%)		
Lead	50.0	U	ND		53.4	ug/L		107	(75%-125%)		
Manganese	50.0	B	1.21		53.6	ug/L		105	(75%-125%)		
Molybdenum	50.0	B	1.70		55.7	ug/L		108	(75%-125%)		
Nickel	50.0	B	1.24		53.7	ug/L		105	(75%-125%)		
Selenium	50.0	U	ND		55.7	ug/L		110	(75%-125%)		
Silver	50.0	U	ND		53.9	ug/L		108	(75%-125%)		
Strontium	50.0	M	229		286	ug/L		N/A	(75%-125%)		
Thallium	50.0	U	ND		51.6	ug/L		103	(75%-125%)		

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QC Summary

Workorder: **363232**

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS											
Batch 1444043											
Thorium	50.0	B	0.446		56.2	ug/L		111	(75%-125%)	PRB	01/09/15 12:49
Tin	50.0	U	ND		56.4	ug/L		112	(75%-125%)	SKJ	01/06/15 18:24
Uranium	50.0		1.79		58.4	ug/L		113	(75%-125%)	PRB	01/09/15 12:49
Zinc	50.0	U	ND		52.9	ug/L		103	(75%-125%)	SKJ	01/06/15 18:24
QC1203230070 363232007 MSD											
Aluminum	2000	U	ND		2080	ug/L	0.407	104	(0%-20%)		01/06/15 18:30
Antimony	50.0	U	ND		55.6	ug/L	0.635	111	(0%-20%)		
Arsenic	50.0	B	1.83		57.7	ug/L	4.92	112	(0%-20%)		
Barium	50.0		55.9		106	ug/L	0.337	99.9	(0%-20%)		
Beryllium	50.0	U	ND		52.5	ug/L	0.177	105	(0%-20%)		
Boron	100	B	14.1		113	ug/L	1.03	99.3	(0%-20%)		
Cadmium	50.0	U	ND		54.5	ug/L	1.40	109	(0%-20%)		
Chromium	50.0		17.7		70.6	ug/L	0.300	106	(0%-20%)		
Cobalt	50.0	B	0.116		52.1	ug/L	0.890	104	(0%-20%)		
Copper	50.0	B	0.578		51.1	ug/L	1.43	101	(0%-20%)		
Lead	50.0	U	ND		53.9	ug/L	0.981	108	(0%-20%)		
Manganese	50.0	B	1.21		54.6	ug/L	1.89	107	(0%-20%)		
Molybdenum	50.0	B	1.70		57.0	ug/L	2.21	111	(0%-20%)		
Nickel	50.0	B	1.24		54.3	ug/L	1.17	106	(0%-20%)		
Selenium	50.0	U	ND		58.8	ug/L	5.41	116	(0%-20%)		
Silver	50.0	U	ND		56.4	ug/L	4.53	113	(0%-20%)		
Strontium	50.0	M	229		283	ug/L	1.02	N/A	(0%-20%)		

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QC Summary

Workorder: **363232**

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS											
Batch 1444043											
Thallium	50.0	U	ND		51.4	ug/L	0.247	103	(0%-20%)	SKJ	01/06/15 18:30
Thorium	50.0	B	0.446		56.8	ug/L	1.03	113	(0%-20%)	PRB	01/09/15 12:51
Tin	50.0	U	ND		56.7	ug/L	0.524	113	(0%-20%)	SKJ	01/06/15 18:30
Uranium	50.0		1.79		58.8	ug/L	0.693	114	(0%-20%)	PRB	01/09/15 12:51
Zinc	50.0	U	ND		58.0	ug/L	9.22	113	(0%-20%)	SKJ	01/06/15 18:30
QC1203230071 363232007 SDILT											
Aluminum		U	ND	DU	ND	ug/L	N/A		(0%-10%)		01/06/15 18:44
Antimony		U	ND	DU	ND	ug/L	N/A		(0%-10%)		
Arsenic		B	1.83	DU	ND	ug/L	N/A		(0%-10%)		
Barium			55.9	D	11.7	ug/L	4.81		(0%-10%)		
Beryllium		U	ND	DU	ND	ug/L	N/A		(0%-10%)		
Boron		B	14.1	D	6.00	ug/L	113		(0%-10%)		
Cadmium		U	ND	DU	ND	ug/L	N/A		(0%-10%)		
Chromium			17.7	D	3.93	ug/L	10.7		(0%-10%)		
Cobalt		B	0.116	DU	ND	ug/L	N/A		(0%-10%)		
Copper		B	0.578	DU	ND	ug/L	N/A		(0%-10%)		
Lead		U	ND	DU	ND	ug/L	N/A		(0%-10%)		
Manganese		B	1.21	DU	ND	ug/L	N/A		(0%-10%)		
Molybdenum		B	1.70	D	0.401	ug/L	17.7		(0%-10%)		
Nickel		B	1.24	DU	ND	ug/L	N/A		(0%-10%)		
Selenium		U	ND	DU	ND	ug/L	N/A		(0%-10%)		
Silver		U	ND	DU	ND	ug/L	N/A		(0%-10%)		

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QC Summary

Workorder: 363232

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS										
Batch 1444043										
Strontium	M	229	DM	53.5	ug/L	17*		(0%-10%)	SKJ	01/06/15 18:44
Thallium	U	ND	DU	ND	ug/L	N/A		(0%-10%)		
Thorium	B	0.446	DU	ND	ug/L	N/A		(0%-10%)	PRB	01/09/15 12:54
Tin	U	ND	DU	ND	ug/L	N/A		(0%-10%)	SKJ	01/06/15 18:44
Uranium		1.79	D	0.380	ug/L	6.32		(0%-10%)	PRB	01/09/15 12:54
Zinc	U	ND	DU	ND	ug/L	N/A		(0%-10%)	SKJ	01/06/15 18:44
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%)		

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QC Summary

Workorder: **363232**

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS										
Batch 1444298										
Selenium	50.0			51.3	ug/L		103	(80%-120%)		
Silver	50.0			54.3	ug/L		109	(80%-120%)	SKJ	01/06/15 23:01
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
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					

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QC Summary

Workorder: **363232**

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS											
Batch 1444298											
Selenium				U	ND	ug/L				SKJ	01/06/15 22:54
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
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%)		

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QC Summary

Workorder: 363232

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS											
Batch 1444298											
Nickel	50.0		2.51		50.9	ug/L		96.8	(75%-125%)	SKJ	01/06/15 23:28
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%)		
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%)		

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QC Summary

Workorder: 363232

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS											
Batch 1444298											
Molybdenum	50.0	B	0.792		51.3	ug/L	3.20	101	(0%-20%)	SKJ	01/06/15 23:34
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%)		
Thallium	50.0	U	ND		46.4	ug/L	0.254	92.7	(0%-20%)		
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%)		

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QC Summary

Workorder: 363232

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS										
Batch 1444298										
Copper		20.6	D	4.53	ug/L	9.85		(0%-10%)	SKJ	01/06/15 23:47
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%)		
Selenium	B	1.83	DU	ND	ug/L	N/A		(0%-10%)		
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 1444035										
QC1203230049 LCS										
Calcium	5000			4880	ug/L		97.5	(80%-120%)	HSC	01/08/15 09:38
Iron	5000			4860	ug/L		97.2	(80%-120%)		
Magnesium	5000			4970	ug/L		99.4	(80%-120%)		
Potassium	5000			5230	ug/L		105	(80%-120%)		01/09/15 09:18
Sodium	5000			4790	ug/L		95.8	(80%-120%)		01/08/15 09:38
Vanadium	500			497	ug/L		99.3	(80%-120%)		
QC1203230048 MB										

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QC Summary

Workorder: 363232

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis-ICP										
Batch 1444035										
Calcium			U	ND	ug/L					01/08/15 09:35
Iron			U	ND	ug/L				HSC	
Magnesium			U	ND	ug/L					
Potassium			U	ND	ug/L					01/09/15 08:28
Sodium			U	ND	ug/L					01/08/15 09:35
Vanadium			U	ND	ug/L					
QC1203230050 363235001 MS										
Calcium	5000	27400		33600	ug/L		N/A	(75%-125%)		01/08/15 09:44
Iron	5000	4470		10600	ug/L		123	(75%-125%)		
Magnesium	5000	6620		12000	ug/L		107	(75%-125%)		
Potassium	5000	12200		17900	ug/L		115	(75%-125%)		01/09/15 08:37
Sodium	5000	24900		30700	ug/L		N/A	(75%-125%)		01/08/15 09:44
Vanadium	500	9.84		503	ug/L		98.7	(75%-125%)		
QC1203230051 363235001 MSD										
Calcium	5000	27400		33500	ug/L	0.370	N/A	(0%-20%)		01/08/15 09:46
Iron	5000	4470		10600	ug/L	0.745	122	(0%-20%)		
Magnesium	5000	6620		11800	ug/L	1.13	105	(0%-20%)		
Potassium	5000	12200		17900	ug/L	0.162	115	(0%-20%)		01/09/15 08:41
Sodium	5000	24900		30600	ug/L	0.251	N/A	(0%-20%)		01/08/15 09:46
Vanadium	500	9.84		508	ug/L	0.880	99.6	(0%-20%)		
QC1203230052 363235001 SDILT										
Calcium		27400	D	5530	ug/L	.72		(0%-10%)		01/08/15 09:48
Iron		4470	D	901	ug/L	.723		(0%-10%)		
Magnesium		6620	D	1380	ug/L	4.21		(0%-10%)		

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QC Summary

Workorder: **363232**

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis-ICP											
Batch 1444035											
Potassium			12200	D	2440	ug/L	.424		(0%-10%)		01/09/15 08:44
Sodium			24900	D	5100	ug/L	2.33		(0%-10%)	HSC	01/08/15 09:48
Vanadium			9.84	D	1.99	ug/L	1.03		(0%-10%)		
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					
Vanadium				U	ND	ug/L					
QC1203230780 363279002 MS											
Calcium	5000		41000		46100	ug/L		N/A	(75%-125%)		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%)		

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QC Summary

Workorder: 363232

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis-ICP											
Batch 1444308											
QC1203230781 363279002 MSD											
Calcium	5000		41000		46500	ug/L	0.672	N/A	(0%-20%)	JWJ	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:

- * 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.

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QC Summary

Workorder: **363232**

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

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 GEL363232

Method/Analysis Information

Product:	**Ion Chromatography**		
Analytical Batch:	1444025	**Method:**	9056_ANIONS_IC: COMMON and 9056_ANIONS_IC: COMMON + GW 02

Sample Analysis

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

Sample ID	Client ID
363232001	B2YK10
363232002	B2YK55
363232003	B2YKL1
363232004	B2YKN1
363232005	B2YK87
363232006	B2YK88
363232023	B2YKW1
363232024	B2YL28
363232025	B2YL48
363232026	B2YL58
363232027	B2YL63
363232028	B2YL73
1203230033	Method Blank (MB)
1203230034	Laboratory Control Sample (LCS)
1203230035	363232001(B2YK10) Sample Duplicate (DUP)
1203230697	363232023(B2YKW1) Sample Duplicate (DUP)
1203230036	363232001(B2YK10) Post Spike (PS)
1203230698	363232023(B2YKW1) 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-3000 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 samples were selected for QC analysis: 363232001 (B2YK10) and 363232023 (B2YKW1).

Matrix Spike (MS)/Post Spike (PS) Recovery Statement
The spike recovery falls outside of the established acceptance limits due to matrix interference: 1203230036 (B2YK10PS).

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
The following samples were received with insufficient time to prep and/or analyze within the remaining method-specified holding time. The samples were analyzed as soon as possible by the analyst. 1203230035 (B2YK10DUP), 1203230036 (B2YK10PS), 363232002 (B2YK55), 363232005 (B2YK87) and 363232006 (B2YK88).

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
The following DER was generated for this SDG: 1369190. 1203230035 (B2YK10DUP), 1203230036 (B2YK10PS), 363232002 (B2YK55), 363232005 (B2YK87) and 363232006 (B2YK88).

Manual Integrations
The following sample from this sample group had to be manually integrated due to errors in the instrument software peak integration: 363232005 (B2YK87).

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:	1445080, 1445446 and 1446147	**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
363232008	B2YK12
363232010	B2YK57
363232011	B2YK91
363232014	B2YK92
363232015	B2YKD5
363232018	B2YKN3
363232020	B2YL25
363232030	B2YKW3
363232032	B2YL50
363232033	B2YL60
363232036	B2YL65
363232037	B2YL75
363232040	B2YKL3
1203232415	Method Blank (MB)
1203233262	Method Blank (MB)
1203234956	Method Blank (MB)
1203232417	Laboratory Control Sample (LCS)
1203233264	Laboratory Control Sample (LCS)
1203234958	Laboratory Control Sample (LCS)
1203232419	363131006(B2YL15) Sample Duplicate (DUP)
1203233268	363291002(B2YHD5) Sample Duplicate (DUP)
1203234962	363232033(B2YL60) Sample Duplicate (DUP)
1203232421	363131006(B2YL15) Matrix Spike (MS)
1203233271	363291002(B2YHD5) Matrix Spike (MS)
1203234964	363232033(B2YL60) 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: 363131006 (B2YL15)- Batch 1445080, 363291002 (B2YHD5)- Batch 1445446 and 363232033 (B2YL60)- Batch 1446147.

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 quantity. 1203232419 (B2YL15DUP) and 1203232421 (B2YL15MS)- Batch 1445080. 50mL of sample was used due to limited quantity. 1203233268 (B2YHD5DUP) and 1203233271

(B2YHD5MS)- Batch 1445446. 50mL of sample was used due to limited sample quantity. 1203234962 (B2YL60DUP), 1203234964 (B2YL60MS) and 363232033 (B2YL60)- Batch 1446147.

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.

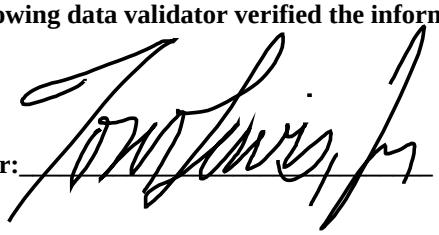
Certification Statement

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:** 08Jan15

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: GEL363232 GEL Work Order: 363232

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.

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

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: B2YK10
Sample ID: 363232001
Matrix: WATER
Collect Date: 15-DEC-14 10:06
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
9056_ANIONS_IC: COMMON "As Received"												
Chloride 16887-00-6		7640	+/-256	67.0	200	ug/L	1	MXL2	12/17/14	1220	1444025	1
Fluoride 16984-48-8	B	287	+/-14.6	33.0	500	ug/L	1					
Nitrate-N 14797-55-8		2390	+/-80.4	33.0	250	ug/L	1					
Nitrite-N 14797-65-0	U	0.00	+/-12.7	38.0	250	ug/L	1					
Sulfate 14808-79-8	D	56300	+/-1930	1330	4000	ug/L	10	MXL2	12/17/14	1855	1444025	2

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: B2YK55
Sample ID: 363232002
Matrix: WATER
Collect Date: 15-DEC-14 11:09
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
9056_ANIONS_IC: COMMON "As Received"												
Chloride 16887-00-6		1170	+/-45.0	67.0	200	ug/L	1	MXL2	12/17/14	1432	1444025	1
Fluoride 16984-48-8	B	163	+/-12.3	33.0	500	ug/L	1					
Nitrate-N 14797-55-8	X	389	+/-17.0	33.0	250	ug/L	1					
Nitrite-N 14797-65-0	UX	0.00	+/-12.7	38.0	250	ug/L	1					
Sulfate 14808-79-8		10100	+/-339	133	500	ug/L	1					

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	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: B2YKL1
Sample ID: 363232003
Matrix: WATER
Collect Date: 15-DEC-14 12:18
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
9056_ANIONS_IC: COMMON "As Received"												
Chloride 16887-00-6		18000	+/-602	67.0	200	ug/L	1	MXL2	12/17/14	1505	1444025	1
Fluoride 16984-48-8	B	154	+/-12.1	33.0	500	ug/L	1					
Nitrate-N 14797-55-8		5660	+/-189	33.0	250	ug/L	1					
Nitrite-N 14797-65-0	U	0.00	+/-12.7	38.0	250	ug/L	1					
Sulfate 14808-79-8	D	172000	+/-5740	1330	4000	ug/L	10	MXL2	12/17/14	2034	1444025	2

The following Analytical Methods were performed

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

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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: B2YKN1
Sample ID: 363232004
Matrix: WATER
Collect Date: 15-DEC-14 09:47
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
9056_ANIONS_IC: COMMON "As Received"												
Chloride 16887-00-6		8030	+/-269	67.0	200	ug/L	1	MXL2	12/17/14	1148	1444025	1
Fluoride 16984-48-8	B	112	+/-11.6	33.0	500	ug/L	1					
Nitrate-N 14797-55-8		2100	+/-70.8	33.0	250	ug/L	1					
Nitrite-N 14797-65-0	U	0.00	+/-12.7	38.0	250	ug/L	1					
Sulfate 14808-79-8	D	42400	+/-1480	1330	4000	ug/L	10	MXL2	12/17/14	1822	1444025	2

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: B2YK87
Sample ID: 363232005
Matrix: WATER
Collect Date: 15-DEC-14 08:10
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
9056_ANIONS_IC: COMMON + GW 02 "As Received"												
Bromide 24959-67-9	U	0.00	+/-22.3	67.0	250	ug/L	1	MXL2	12/19/14	1148	1444025	1
Chloride 16887-00-6	U	56.4	+/-22.4	67.0	200	ug/L	1					
Fluoride 16984-48-8	U	0.00	+/-11.0	33.0	500	ug/L	1					
Nitrate-N 14797-55-8	UX	0.00	+/-11.0	33.0	250	ug/L	1					
Nitrite-N 14797-65-0	UX	0.00	+/-12.7	38.0	250	ug/L	1					
Phosphorus in phosphate PO4-P	UX	0.00	+/-22.3	67.0	500	ug/L	1					
Sulfate 14808-79-8	U	86.0	+/-44.4	133	500	ug/L	1					

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	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: B2YK88
Sample ID: 363232006
Matrix: WATER
Collect Date: 15-DEC-14 10:55
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
9056_ANIONS_IC: COMMON + GW 02 "As Received"												
Bromide 24959-67-9	B	191	+/-23.2	67.0	250	ug/L	1	MXL2	12/17/14	1359	1444025	1
Chloride 16887-00-6		20000	+/-665	67.0	200	ug/L	1					
Fluoride 16984-48-8	B	135	+/-11.9	33.0	500	ug/L	1					
Nitrate-N 14797-55-8		7450	+/-249	33.0	250	ug/L	1					
Nitrite-N 14797-65-0	UX	0.00	+/-12.7	38.0	250	ug/L	1					
Phosphorus in phosphate PO4-P	UX	0.00	+/-22.3	67.0	500	ug/L	1					
Sulfate 14808-79-8	D	192000	+/-6400	1330	4000	ug/L	10	MXL2	12/17/14	1749	1444025	2

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: B2YK12
Sample ID: 363232008
Matrix: WATER
Collect Date: 15-DEC-14 10:06
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		99000	725	1000	ug/L		PXO1 12/20/14	1651	1445080	1
Bicarbonate alkalinity (CaCO3) 71-52-3		98000	725	1000	ug/L					
Carbonate alkalinity (CaCO3) CO3ALKALINITY		1060	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	

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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: B2YK57
Sample ID: 363232010
Matrix: WATER
Collect Date: 15-DEC-14 11:09
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		67800	725	1000	ug/L		PXO1 12/20/14	1654	1445080	1
Bicarbonate alkalinity (CaCO3) 71-52-3		67800	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	

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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: B2YK91
Sample ID: 363232011
Matrix: WATER
Collect Date: 15-DEC-14 08:10
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	U	0.00	725	1000	ug/L		PXO1 12/20/14	1656	1445080	1
Bicarbonate alkalinity (CaCO3) 71-52-3	U	0.00	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: B2YK92
Sample ID: 363232014
Matrix: WATER
Collect Date: 15-DEC-14 10:55
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		94800	725	1000	ug/L		PXO1 12/20/14	1700	1445080	1
Bicarbonate alkalinity (CaCO3) 71-52-3		94800	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: B2YKD5
Sample ID: 363232015
Matrix: WATER
Collect Date: 12-DEC-14 12:46
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Titration and Ion Analysis											
2320_ALKALINITY: GW 01 "As Received"											
Alkalinity, Total as CaCO3 ALKALINITY		105000	725	1000	ug/L		PXO1	12/20/14	1704	1445080	1
Bicarbonate alkalinity (CaCO3) 71-52-3		105000	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: B2YKN3
Sample ID: 363232018
Matrix: WATER
Collect Date: 15-DEC-14 09:47
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		36500	725	1000	ug/L		PXO1 12/20/14	1706	1445080	1
Bicarbonate alkalinity (CaCO3) 71-52-3		31200	725	1000	ug/L					
Carbonate alkalinity (CaCO3) CO3ALKALINITY		5300	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: B2YL25
Sample ID: 363232020
Matrix: WATER
Collect Date: 12-DEC-14 13:25
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		119000	725	1000	ug/L		PXO1 12/20/14	1715	1445080	1
Bicarbonate alkalinity (CaCO3) 71-52-3		119000	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: B2YKW1
Sample ID: 363232023
Matrix: WATER
Collect Date: 16-DEC-14 11:15
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
9056_ANIONS_IC: COMMON "As Received"												
Chloride 16887-00-6		12400	+/-413	67.0	200	ug/L	1	MXL2	12/18/14	0024	1444025	1
Fluoride 16984-48-8	B	286	+/-14.6	33.0	500	ug/L	1					
Nitrate-N 14797-55-8		4080	+/-136	33.0	250	ug/L	1					
Nitrite-N 14797-65-0	U	0.00	+/-12.7	38.0	250	ug/L	1					
Sulfate 14808-79-8	D	70600	+/-2400	1330	4000	ug/L	10	MXL2	12/18/14	0414	1444025	2

The following Analytical Methods were performed

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

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Certificate of Analysis

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Address : MSIN R3-50 CHPRC
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Contact: Mr. Scot Fitzgerald
Project: **CHPRC SAF S15-012**

Report Date: January 8, 2015

Client Sample ID: B2YL28
Sample ID: 363232024
Matrix: WATER
Collect Date: 16-DEC-14 12:15
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
9056_ANIONS_IC: COMMON "As Received"												
Chloride 16887-00-6		5540	+/-186	67.0	200	ug/L	1	MXL2	12/18/14	0236	1444025	1
Fluoride 16984-48-8	B	173	+/-12.4	33.0	500	ug/L	1					
Nitrate-N 14797-55-8		2510	+/-84.4	33.0	250	ug/L	1					
Nitrite-N 14797-65-0	U	0.00	+/-12.7	38.0	250	ug/L	1					
Sulfate 14808-79-8	D	75600	+/-2560	1330	4000	ug/L	10	MXL2	12/18/14	0732	1444025	2

The following Analytical Methods were performed

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

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Certificate of Analysis

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

Report Date: January 8, 2015

Client Sample ID: B2YL48
Sample ID: 363232025
Matrix: WATER
Collect Date: 16-DEC-14 11:26
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
9056_ANIONS_IC: COMMON "As Received"												
Chloride 16887-00-6		18900	+/-629	67.0	200	ug/L	1	MXL2	12/18/14	0203	1444025	1
Fluoride 16984-48-8	B	320	+/-15.3	33.0	500	ug/L	1					
Nitrate-N 14797-55-8		5380	+/-180	33.0	250	ug/L	1					
Nitrite-N 14797-65-0	U	0.00	+/-12.7	38.0	250	ug/L	1					
Sulfate 14808-79-8	D	69300	+/-2350	1330	4000	ug/L	10	MXL2	12/18/14	0659	1444025	2

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: B2YL58
Sample ID: 363232026
Matrix: WATER
Collect Date: 16-DEC-14 10:58
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
9056_ANIONS_IC: COMMON "As Received"												
Chloride 16887-00-6		16500	+/-549	67.0	200	ug/L	1	MXL2	12/17/14	2245	1444025	1
Fluoride 16984-48-8	B	349	+/-16.0	33.0	500	ug/L	1					
Nitrate-N 14797-55-8		4490	+/-150	33.0	250	ug/L	1					
Nitrite-N 14797-65-0	U	0.00	+/-12.7	38.0	250	ug/L	1					
Sulfate 14808-79-8	D	67300	+/-2290	1330	4000	ug/L	10	MXL2	12/18/14	0341	1444025	2

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: B2YL63
Sample ID: 363232027
Matrix: WATER
Collect Date: 15-DEC-14 13:45
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
9056_ANIONS_IC: COMMON "As Received"												
Chloride 16887-00-6		16700	+/-557	67.0	200	ug/L	1	MXL2	12/17/14	1610	1444025	1
Fluoride 16984-48-8	B	444	+/-18.4	33.0	500	ug/L	1					
Nitrate-N 14797-55-8		3670	+/-123	33.0	250	ug/L	1					
Nitrite-N 14797-65-0	U	0.00	+/-12.7	38.0	250	ug/L	1					
Sulfate 14808-79-8	D	71500	+/-2430	1330	4000	ug/L	10	MXL2	12/17/14	2139	1444025	2

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: B2YL73
Sample ID: 363232028
Matrix: WATER
Collect Date: 15-DEC-14 13:09
Receive Date: 17-DEC-14
Collector: Client

Project: CPRC0S15012
Client ID: CPRC001

Parameter	Qualifier	Result		DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
9056_ANIONS_IC: COMMON "As Received"												
Chloride 16887-00-6		22700	+/-758	67.0	200	ug/L	1	MXL2	12/17/14	1537	1444025	1
Fluoride 16984-48-8	B	294	+/-14.7	33.0	500	ug/L	1					
Nitrate-N 14797-55-8		5860	+/-196	33.0	250	ug/L	1					
Nitrite-N 14797-65-0	U	0.00	+/-12.7	38.0	250	ug/L	1					
Sulfate 14808-79-8	D	156000	+/-5220	1330	4000	ug/L	10	MXL2	12/17/14	2107	1444025	2

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: B2YKW3
Sample ID: 363232030
Matrix: WATER
Collect Date: 16-DEC-14 11:15
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	725	1000	ug/L		PXO1 12/27/14	1425	1446147	1
Bicarbonate alkalinity (CaCO3) 71-52-3		112000	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	

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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: B2YL50
Sample ID: 363232032
Matrix: WATER
Collect Date: 16-DEC-14 11:26
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		124000	725	1000	ug/L		PXO1 12/27/14	1429	1446147	1
Bicarbonate alkalinity (CaCO3) 71-52-3		124000	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	

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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: B2YL60
Sample ID: 363232033
Matrix: WATER
Collect Date: 16-DEC-14 10:58
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		120000	1450	2000	ug/L		PXO1 12/27/14	1433	1446147	1
Bicarbonate alkalinity (CaCO3) 71-52-3		120000	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: B2YL65
Sample ID: 363232036
Matrix: WATER
Collect Date: 15-DEC-14 13:45
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		105000	725	1000	ug/L		PXO1 12/20/14	1719	1445080	1
Bicarbonate alkalinity (CaCO3) 71-52-3		105000	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	

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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: B2YL75
Sample ID: 363232037
Matrix: WATER
Collect Date: 15-DEC-14 13:09
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		101000	725	1000	ug/L		PXO1 12/20/14	1721	1445080	1
Bicarbonate alkalinity (CaCO3) 71-52-3		101000	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	

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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: B2YKL3
Sample ID: 363232040
Matrix: WATER
Collect Date: 15-DEC-14 12:18
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		98000	725	1000	ug/L		PXO1 12/23/14	1517	1445446	1
Bicarbonate alkalinity (CaCO3) 71-52-3		98000	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: **363232**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Ion Chromatography										
Batch 1444025										
QC1203230035 363232001 DUP										
Bromide	U	67.0	U	67.0	ug/L	N/A			MXL2	12/18/14 08:05
Chloride		7640		7690	ug/L	0.557		(0%-20%)		
Fluoride	B	287	B	286	ug/L	0.454 ^		(+/-500)		
Nitrate-N		2390	X	2400	ug/L	0.276		(0%-20%)		
Nitrite-N	U	38.0	UX	38.0	ug/L	N/A				
Phosphorus in phosphate	U	67.0	UX	67.0	ug/L	N/A				
Sulfate	D	56300	D	56900	ug/L	1.00		(0%-20%)		12/18/14 09:10
QC1203230697 363232023 DUP										
Bromide	U	67.0	U	67.0	ug/L	N/A				12/18/14 00:57
Chloride		12400		12400	ug/L	0.0485		(0%-20%)		
Fluoride	B	286	B	287	ug/L	0.0349 ^		(+/-500)		
Nitrate-N		4080		4080	ug/L	0.147		(0%-20%)		
Nitrite-N	U	38.0	U	38.0	ug/L	N/A				
Phosphorus in phosphate	U	67.0	U	67.0	ug/L	N/A				
Sulfate	D	70600	D	70500	ug/L	0.163		(0%-20%)		12/18/14 04:47
QC1203230034 LCS										
Bromide	1250			1250	ug/L		99.9	(90%-110%)		12/18/14 10:49
Chloride	5000			4580	ug/L		91.5	(90%-110%)		
Fluoride	2500			2340	ug/L		93.8	(90%-110%)		
Nitrate-N	2500			2310	ug/L		92.4	(90%-110%)		
Nitrite-N	2500			2310	ug/L		92.5	(90%-110%)		

GEL LABORATORIES LLC
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QC Summary

Workorder: **363232**

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Ion Chromatography											
Batch 1444025											
Phosphorus in phosphate	1250				1310	ug/L		105	(90%-110%)	MXL2	12/18/14 10:49
Sulfate	10000				9380	ug/L		93.8	(90%-110%)		
QC1203230033 MB											
Bromide				U	67.0	ug/L					12/18/14 10:16
Chloride				U	67.0	ug/L					
Fluoride				U	33.0	ug/L					
Nitrate-N				U	33.0	ug/L					
Nitrite-N				U	38.0	ug/L					
Phosphorus in phosphate				U	67.0	ug/L					
Sulfate				U	133	ug/L					
QC1203230036 363232001 PS											
Bromide	1.25	U	0.00		1.37	mg/L		110	(90%-110%)		12/18/14 08:38
Chloride	5.00		7.64		13.5	mg/L		118*	(90%-110%)		
Fluoride	2.50	B	0.287		2.72	mg/L		97.3	(90%-110%)		
Nitrate-N	2.50		2.39	X	5.00	mg/L		105	(90%-110%)		
Nitrite-N	2.50	U	0.00	X	2.37	mg/L		94.9	(90%-110%)		
Phosphorus in phosphate	1.25	U	0.00	X	1.27	mg/L		102	(90%-110%)		
Sulfate	10.0	D	5.63	D	16.0	mg/L		103	(90%-110%)		12/18/14 09:43
QC1203230698 363232023 PS											
Bromide	1.25	U	0.00		1.37	mg/L		110	(90%-110%)		12/18/14 01:30
Chloride	5.00		12.4		18.3	mg/L		118*	(90%-110%)		
Fluoride	2.50	B	0.286		2.72	mg/L		97.3	(90%-110%)		
Nitrate-N	2.50		4.08		6.80	mg/L		109	(90%-110%)		

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QC Summary

Workorder: 363232

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Ion Chromatography											
Batch 1444025											
Nitrite-N	2.50	U	0.00		2.36	mg/L		94.5	(90%-110%)		
Phosphorus in phosphate	1.25	U	0.00		1.24	mg/L		99.4	(90%-110%)	MXL2	12/18/14 01:30
Sulfate	10.0	D	7.06	D	17.6	mg/L		105	(90%-110%)		12/18/14 05:20
Titration and Ion Analysis											
Batch 1445080											
QC1203232419 363131006 DUP											
Alkalinity, Total as CaCO3			112000		112000	ug/L	0.00		(0%-20%)	PXO1	12/20/14 16:39
Bicarbonate alkalinity (CaCO3)			112000		112000	ug/L	0.00		(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				
QC1203232417 LCS											
Alkalinity, Total as CaCO3	50000				52400	ug/L		105	(90%-110%)		12/20/14 15:57
QC1203232415 MB											
Alkalinity, Total as CaCO3				U	725	ug/L					12/20/14 15:57
Bicarbonate alkalinity (CaCO3)				U	725	ug/L					
Carbonate alkalinity (CaCO3)				U	725	ug/L					
Hydroxide alkalinity as CaCO3				U	725	ug/L					
QC1203232421 363131006 MS											
Alkalinity, Total as CaCO3	100000		112000		217000	ug/L		105	(80%-120%)		12/20/14 16:42
Batch 1445446											
QC1203233268 363291002 DUP											
Alkalinity, Total as CaCO3			84700		85800	ug/L	1.24		(0%-20%)	PXO1	12/23/14 15:40
Bicarbonate alkalinity (CaCO3)			84700		85800	ug/L	1.24		(0%-20%)		
Carbonate alkalinity (CaCO3)			0.00	U	1450	ug/L	0.00 ^		(+/-2000)		
Hydroxide alkalinity as CaCO3			0.00	U	1450	ug/L	0.00 ^		(+/-2000)		
QC1203233264 LCS											
Alkalinity, Total as CaCO3	50000				51900	ug/L		104	(90%-110%)		12/23/14 15:03
QC1203233262 MB											

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QC Summary

Workorder: 363232

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Titration and Ion Analysis											
Batch 1445446											
Alkalinity, Total as CaCO3				U	725	ug/L					12/23/14 15:03
Bicarbonate alkalinity (CaCO3)				U	725	ug/L				PXO1	
Carbonate alkalinity (CaCO3)				U	725	ug/L					
Hydroxide alkalinity as CaCO3				U	725	ug/L					
QC1203233271 363291002 MS											
Alkalinity, Total as CaCO3	100000		84700		190000	ug/L		105	(80%-120%)		12/23/14 15:42
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

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.

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QC Summary

Workorder: **363232**

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

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.

Miscellaneous

GEL Laboratories LLC
Form GEL-DER

DER Report No.: 1369190
Revision No.: 2

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
30-DEC-14	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
IC	SW846 9056A	Liquid	CPRC
Batch ID:	**Sample Numbers:**		
1444025	See Below		

Potentially affected work order(s)(SDG): 363232(GEL363232),363235(GEL363235),363279(GEL363279)

Application Issues:

Failed Recovery for MS/PS

Sample Analyzed out of Holding

Specification and Requirements Exception Description:	DER Disposition:
1. Failed Recovery for MS/PS: QC 1203230036PS	1. The MS/PS mixture contains seven anions of interest. Of those, all requested anions except chloride met normal acceptance criteria for recovery (90 - 110%). This failure is attributed to the matrix of the sample because the successful recovery of the other compounds indicate that the laboratory process was in control. This variance is judged to have no negative impact on the data. The deviation is noted in the Case Narrative and DER, and the data has been reported.
2. Sample Analyzed out of Holding: 363232 002,005,006 QC 1203230035DUP, 1203230036PS	2. The following samples were received with insufficient time to prep and/or analyze within the remaining method-specified holding time. The samples were analyzed as soon as possible by the analyst.

Originator's Name:

Marcy Lamb 30-DEC-14

Data Validator/Group Leader:

Thomas Lewis 08-JAN-15

Radiological Analysis

Radiochemistry Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG GEL363232
Work Order 363232

Method/Analysis Information

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

Sample ID	Client ID
363232007	B2YK09
363232016	B2YKD2
363232019	B2YL22
363232039	B2YKL0
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), 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: 1446010

Sample ID	Client ID
363232016	B2YKD2
363232017	B2YKN0
363232019	B2YL22
363232029	B2YKW0
363232031	B2YL47
363232034	B2YL57
363232035	B2YL62
363232038	B2YL72
363232039	B2YKL0
1203234607	MB for batch 1446010
1203234609	Laboratory Control Sample (LCS)
1203234608	363232016(B2YKD2) 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: 363232016 (B2YKD2).

QC Information
All of the QC samples meet the required acceptance limits with the following exceptions: The sample and the duplicate, 1203234608 (B2YKD2DUP) and 363232016 (B2YKD2), did not meet the Total Strontium relative error ratio requirement; however, both sample and duplicate results are less than their respective MDCs.

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
Samples 363232016 (B2YKD2), 363232017 (B2YKN0), 363232034 (B2YL57), 363232038 (B2YL72) and 363232039 (B2YKL0) were recounted to confirm sample results. The second counts 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:	**KPA_UTOT: COMMON**
Analytical Method:	ASTM D 5174
Analytical Batch Number:	1445583

Sample ID	Client ID
363232017	B2YKN0
363232029	B2YKW0
363232031	B2YL47
363232034	B2YL57
363232035	B2YL62
363232038	B2YL72
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 363232017 (B2YKN0), 363232029 (B2YKW0), 363232031 (B2YL47), 363232034 (B2YL57), 363232035 (B2YL62) and 363232038 (B2YL72) 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.

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

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:	1446106

Sample ID	Client ID
363232017	B2YKN0
363232019	B2YL22
363232029	B2YKW0
363232031	B2YL47
363232034	B2YL57
363232035	B2YL62
363232038	B2YL72
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:	**TRITIUM_DIST_LSC: COMMON**
Analytical Method:	EPA 906.0 Modified
Analytical Batch Number:	1446479

Sample ID	Client ID
363232007	B2YK09
363232016	B2YKD2
363232017	B2YKN0
363232019	B2YL22
363232029	B2YKW0
363232031	B2YL47
363232034	B2YL57
363232035	B2YL62
363232038	B2YL72

363232039	B2YKL0
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 363232007 (B2YK09), 363232016 (B2YKD2), 363232017 (B2YKN0), 363232019 (B2YL22), 363232029 (B2YKW0), 363232031 (B2YL47), 363232034 (B2YL57), 363232035 (B2YL62), 363232038 (B2YL72) and 363232039 (B2YKL0) 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: GEL363232 GEL Work Order: 363232

The Qualifiers in this report are defined as follows:

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

Review/Validation

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

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

Signature: **Name: Kate Gellatly**

Date: 12 JAN 2015 **Title: Analyst I**

Sample Data Summary

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 12, 2015

Client Sample ID:	B2YK09	Project:	CPRC0S15012
Sample ID:	363232007	Client ID:	CPRC001
Matrix:	WATER		
Collect Date:	15-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													
9310_ALPHABETA_GPC: COMMON "As Received"													
Alpha 12587-46-1	U	0.745	+/-1.62	2.93	+/-1.63	3.00	pCi/L		GXR1	12/30/14	0955	1445780	1
Beta 12587-47-2		31.0	+/-2.81	2.59	+/-5.81	4.00	pCi/L						
Rad Liquid Scintillation Analysis													
TRITIUM_DIST_LSC: COMMON "As Received"													
Tritium 10028-17-8		1650	+/-382	266	+/-498	100	pCi/L		BYS1	01/10/15	1125	1446479	2

The following Analytical Methods were performed

Method	Description
1	EPA 900.0/SW846 9310
2	EPA 906.0 Modified

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

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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 12, 2015

Client Sample ID: B2YK09
Sample ID: 363232007

Project: CPRC0S15012
Client ID: CPRC001

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

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

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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 12, 2015

Client Sample ID: B2YKD2
Sample ID: 363232016
Matrix: WATER
Collect Date: 12-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													
9310_ALPHABETA_GPC: COMMON "As Received"													
Alpha 12587-46-1		3.77	+/-2.07	2.96	+/-2.16	3.00	pCi/L		GXR1	12/30/14	0956	1445780	1
Beta 12587-47-2		4.41	+/-1.23	1.63	+/-1.44	4.00	pCi/L						
SRISO_SEP_PRECIP_GPC: COMMON "As Received"													
Total Strontium SR-RAD	U	0.383	+/-0.690	1.20	+/-0.695	2.00	pCi/L		KSD1	01/05/15	1233	1446010	2
Rad Liquid Scintillation Analysis													
TRITIUM_DIST_LSC: COMMON "As Received"													
Tritium 10028-17-8		5120	+/-659	271	+/-1190	100	pCi/L		BYS1	01/10/15	1142	1446479	3

The following Analytical Methods were performed

Method	Description
1	EPA 900.0/SW846 9310
2	EPA 905.0 Modified
3	EPA 906.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium Carrier	SRISO_SEP_PRECIP_GPC: COM	98.8	(25%-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.

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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 12, 2015

Client Sample ID: B2YKD2
Sample ID: 363232016

Project: CPRC0S15012
Client ID: CPRC001

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

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 12, 2015

Client Sample ID:	B2YKN0	Project:	CPRC0S15012
Sample ID:	363232017	Client ID:	CPRC001
Matrix:	WATER		
Collect Date:	15-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	0.118	+/-0.464	0.868	+/-0.465	2.00	pCi/L		KSD1	01/05/15	1233	1446010	1
Rad Liquid Scintillation Analysis													
TC99_EIE_LSC: COMMON "As Received"													
Technetium-99 14133-76-7	U	-4.21	+/-7.78	13.6	+/-7.78	15.0	pCi/L		MYM1	01/05/15	1059	1446106	2
TRITIUM_DIST_LSC: COMMON "As Received"													
Tritium 10028-17-8		183	+/-72.4	105	+/-80.5	100	pCi/L		BYS1	01/10/15	1200	1446479	3
Rad Total Uranium													
KPA_UTOT: COMMON "As Received"													
Total Uranium 7440-61-1		1.10	+/-0.0438	0.245	+/-0.101	1.00	ug/L	1	CXP3	01/06/15	1002	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	95.9	(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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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 12, 2015

Client Sample ID: B2YKN0 Project: CPRC0S15012
Sample ID: 363232017 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

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 12, 2015

Client Sample ID: B2YL22
Sample ID: 363232019
Matrix: WATER
Collect Date: 12-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													
9310_ALPHABETA_GPC: COMMON "As Received"													
Alpha 12587-46-1	U	-0.344	+/-1.49	2.99	+/-1.49	3.00	pCi/L		GXR1	12/30/14	0952	1445780	1
Beta 12587-47-2		4.19	+/-1.35	1.88	+/-1.51	4.00	pCi/L						
SRISO_SEP_PRECIP_GPC: COMMON "As Received"													
Total Strontium SR-RAD	U	1.07	+/-0.810	1.28	+/-0.847	2.00	pCi/L		KSD1	01/04/15	1432	1446010	2
Rad Liquid Scintillation Analysis													
TC99_EIE_LSC: COMMON "As Received"													
Technetium-99 14133-76-7	U	0.549	+/-5.08	8.73	+/-5.08	15.0	pCi/L		MYM1	01/05/15	1136	1446106	3
TRITIUM_DIST_LSC: COMMON "As Received"													
Tritium 10028-17-8		967	+/-302	265	+/-356	100	pCi/L		BYS1	01/10/15	1402	1446479	4

The following Analytical Methods were performed

Method	Description
1	EPA 900.0/SW846 9310
2	EPA 905.0 Modified
3	DOE EML HASL-300, Tc-02-RC Modified
4	EPA 906.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium Carrier	SRISO_SEP_PRECIP_GPC: COM	96.3	(25%-125%)
Technetium-99m Tracer	TC99_EIE_LSC: COMMON "As I	99.1	(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

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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 12, 2015

Client Sample ID: B2YL22
Sample ID: 363232019

Project: CPRC0S15012
Client ID: CPRC001

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

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 12, 2015

Client Sample ID: B2YKW0
Sample ID: 363232029
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	-0.482	+/-0.866	1.71	+/-0.866	2.00	pCi/L		KSD1	01/04/15	1431	1446010	1
Rad Liquid Scintillation Analysis													
TC99_EIE_LSC: COMMON "As Received"													
Technetium-99 14133-76-7	U	-0.924	+/-5.13	8.88	+/-5.13	15.0	pCi/L		MYM1	01/05/15	1214	1446106	2
TRITIUM_DIST_LSC: COMMON "As Received"													
Tritium 10028-17-8		2060	+/-416	259	+/-576	100	pCi/L		BYS1	01/10/15	1420	1446479	3
Rad Total Uranium													
KPA_UTOT: COMMON "As Received"													
Total Uranium 7440-61-1		2.18	+/-0.0836	0.245	+/-0.198	1.00	ug/L	1	CXP3	01/06/15	1005	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	86.4	(25%-125%)
Technetium-99m Tracer	TC99_EIE_LSC: COMMON "As I	97.6	(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

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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 12, 2015

Client Sample ID: B2YKW0 Project: CPRC0S15012
Sample ID: 363232029 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

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 12, 2015

Client Sample ID: B2YL47
Sample ID: 363232031
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	-0.128	+/-0.424	0.902	+/-0.424	2.00	pCi/L		KSD1	01/04/15	1432	1446010	1
Rad Liquid Scintillation Analysis													
TC99_EIE_LSC: COMMON "As Received"													
Technetium-99 14133-76-7	U	-3.19	+/-5.16	9.04	+/-5.16	15.0	pCi/L		MYM1	01/05/15	1251	1446106	2
TRITIUM_DIST_LSC: COMMON "As Received"													
Tritium 10028-17-8		3020	+/-493	255	+/-765	100	pCi/L		BYS1	01/10/15	1437	1446479	3
Rad Total Uranium													
KPA_UTOT: COMMON "As Received"													
Total Uranium 7440-61-1		4.39	+/-0.166	0.245	+/-0.399	1.00	ug/L	1	CXP3	01/06/15	1007	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	96.3	(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

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

Report Date: January 12, 2015

Client Sample ID: B2YL47
Sample ID: 363232031

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 12, 2015

Client Sample ID:	B2YL57	Project:	CPRC0S15012
Sample ID:	363232034	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		9.75	+/-1.34	0.900	+/-2.61	2.00	pCi/L		KSD1	01/05/15	1233	1446010	1
Rad Liquid Scintillation Analysis													
TC99_EIE_LSC: COMMON "As Received"													
Technetium-99 14133-76-7	U	-3.5	+/-5.04	8.85	+/-5.04	15.0	pCi/L		MYM1	01/05/15	1328	1446106	2
TRITIUM_DIST_LSC: COMMON "As Received"													
Tritium 10028-17-8		3670	+/-561	271	+/-904	100	pCi/L		BYS1	01/10/15	1455	1446479	3
Rad Total Uranium													
KPA_UTOT: COMMON "As Received"													
Total Uranium 7440-61-1		2.62	+/-0.102	0.245	+/-0.239	1.00	ug/L	1	CXP3	01/06/15	1010	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	96.3	(25%-125%)
Technetium-99m Tracer	TC99_EIE_LSC: COMMON "As I	97.4	(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 :

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 12, 2015

Client Sample ID: B2YL57
Sample ID: 363232034

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

Report Date: January 12, 2015

Client Sample ID: B2YL62
Sample ID: 363232035
Matrix: WATER
Collect Date: 15-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	0.0159	+/-0.693	1.31	+/-0.693	2.00	pCi/L		KSD1	01/04/15	1432	1446010	1
Rad Liquid Scintillation Analysis													
TC99_EIE_LSC: COMMON "As Received"													
Technetium-99 14133-76-7	U	-2.14	+/-5.25	9.16	+/-5.25	15.0	pCi/L		MYM1	01/05/15	1406	1446106	2
TRITIUM_DIST_LSC: COMMON "As Received"													
Tritium 10028-17-8		1140	+/-320	259	+/-389	100	pCi/L		BYS1	01/10/15	1512	1446479	3
Rad Total Uranium													
KPA_UTOT: COMMON "As Received"													
Total Uranium 7440-61-1		2.16	+/-0.0859	0.245	+/-0.198	1.00	ug/L	1	CXP3	01/06/15	1012	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	96.3	(25%-125%)
Technetium-99m Tracer	TC99_EIE_LSC: COMMON "As I	95.3	(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

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 12, 2015

Client Sample ID: B2YL62
Sample ID: 363232035

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
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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 12, 2015

Client Sample ID: B2YL72
Sample ID: 363232038
Matrix: WATER
Collect Date: 15-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	0.502	+/-0.612	1.04	+/-0.623	2.00	pCi/L		KSD1	01/05/15	1234	1446010	1
Rad Liquid Scintillation Analysis													
TC99_EIE_LSC: COMMON "As Received"													
Technetium-99 14133-76-7	U	-2.46	+/-5.37	9.38	+/-5.37	15.0	pCi/L		MYM1	01/05/15	1443	1446106	2
TRITIUM_DIST_LSC: COMMON "As Received"													
Tritium 10028-17-8		2010	+/-418	265	+/-571	100	pCi/L		BYS1	01/10/15	1530	1446479	3
Rad Total Uranium													
KPA_UTOT: COMMON "As Received"													
Total Uranium 7440-61-1		2.69	+/-0.102	0.245	+/-0.244	1.00	ug/L	1	CXP3	01/06/15	1015	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	93.1	(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 12, 2015

Client Sample ID: B2YL72
Sample ID: 363232038

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

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 12, 2015

Client Sample ID: B2YKL0
Sample ID: 363232039
Matrix: WATER
Collect Date: 15-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													
9310_ALPHABETA_GPC: COMMON "As Received"													
Alpha 12587-46-1	U	-0.594	+/-1.63	2.97	+/-1.63	3.00	pCi/L		GXR1	12/30/14	0949	1445780	1
Beta 12587-47-2		17.1	+/-1.94	1.83	+/-3.39	4.00	pCi/L						
SRISO_SEP_PRECIP_GPC: COMMON "As Received"													
Total Strontium SR-RAD		6.23	+/-1.14	1.03	+/-1.83	2.00	pCi/L		KSD1	01/05/15	1234	1446010	2
Rad Liquid Scintillation Analysis													
TRITIUM_DIST_LSC: COMMON "As Received"													
Tritium 10028-17-8		2260	+/-436	260	+/-618	100	pCi/L		BYS1	01/10/15	1547	1446479	3

The following Analytical Methods were performed

Method	Description
1	EPA 900.0/SW846 9310
2	EPA 905.0 Modified
3	EPA 906.0 Modified

Surrogate/Tracer recovery	Test	Recovery%	Acceptable Limits
Strontium Carrier	SRISO_SEP_PRECIP_GPC: COM	95.1	(25%-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.

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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 12, 2015

Client Sample ID: B2YKL0 Project: CPRC0S15012
Sample ID: 363232039 Client ID: CPRC001

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

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
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QC Summary

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

Workorder: **363232**

Report Date: January 12, 2015

Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date Time
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 1446010									
QC1203234607 MB									
Total Strontium			U	0.141	pCi/L			KSD1	01/04/1514:35
Uncert:				+/-0.661					
TPU:				+/-0.662					
QC1203234608 363232016 DUP									
Total Strontium	U	0.383	U	-0.651	pCi/L				01/04/1514:34
Uncert:		+/-0.690		+/-0.467		RPD:	0	N/A	
TPU:		+/-0.695		+/-0.467		RER:	2.42	(0-2)	
QC1203234609 LCS									

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QC Summary

Workorder: 363232

Parmname			NOM	Sample	Qual	QC	Units	QC Criteria		Range	Analyst	Date Time
Rad Gas Flow												
Batch 1446010												
Total Strontium			79.3			70.6	pCi/L	REC:	89	(80%-120%)		
			Uncert:			+/-3.57						
			TPU:			+/-16.7						
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 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						
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											
								REC:				

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QC Summary

Workorder: 363232

Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date Time
Rad Total U									
Batch 1445583									
Total Uranium	50.0			48.8	ug/L	98	(80%-120%)		
	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

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.