TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica St. Louis
13715 Rider Trail North
Earth City, MO 63045
Tel: (314)298-8566

TestAmerica Job ID: 160-15217-1
TestAmerica Sample Delivery Group: SL2043
Client Project/Site: X15-068

For:
CH2M Hill Plateau Remediation Company
PO BOX 1600, MS H8-41
Richland, Washington 99352

Attn: Mr. Scot Fitzgerald

Authorized for release by:
1/15/2016 2:31:43 PM

Jayna Awalt, Project Manager II
(314)298-8566
jayna.awalt@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Chain of Custody 7
Definitions/Glossary 22
Method Summary 23
Sample Summary 24
Client Sample Results 25
QC Sample Results 31
QC Association Summary 34

Job ID: 160-15217-1

Laboratory: TestAmerica St. Louis

Narrative

CASE NARRATIVE

CH2MHill Plateau Remediation Company
P.O. Box 1600
Richland, Washington 99352
January 15, 2016
Attention: Scot Fitzgerald

SDG	: SL2043
Number of Samples	: 20 samples
Sample Matrix	: Water
Data Deliverable	: Summary
Date SDG Closed	: December 4, 2015

II. Introduction

On December 4, 20 samples were received by TestAmerica - St. Louis for chemical analysis. The samples were received within temperature criteria. See the COC and receipt checklists for documentation of any variations on receipt conditions and temperature. Upon receipt, samples were given laboratory Ids to correspond with specific client Ids. Please refer to the Sample Summary sheets attached to this case narrative. This report is incomplete without the narrative.

The following SAFs are associated with this SDG: X15-068

Due to a large backlog for ICP Metals, the requested 6010 analytes have been reported by ICPMS 6020 per SIR16-165.

III. Analytical Results/ Methodology

The analytical results for this report are presented by analytical test. Each set of data includes sample identification information, analytical results and the appropriate detection limits. All results are based upon samples as they were received, i.e. wet weight, unless otherwise noted on the data sheets. See the attached Methods Summary Form for the methods used in this SDG.

MS/MSD/Dup analysis was done per the client requirements. Analytical batches that did not contain matrix QC were analyzed with an LCS/LCS duplicate.

Note: For Metals analyses, per standard practice, all 6020 water and soil samples are initially prepared at 2x dilution. This standard dilution does not affect reporting limits as MDL studies are also prepared in the same manner. These dilutions do not necessitate flagging unless otherwise noted in the case narrative.

For Anion analysis, samples have been started at a 2x dilution per CHPRC direction. The samples are flagged accordingly with a “D” flag if sample concentration is above the MDL/RL. Non-conformance will be included in the below section only if dilution is greater than 2x.

For WTPH methods, the lab utilizes method 8015B. Per CHPRC direction, the method name in the electronic data has been modified to read WTPH in the place of 8015B.

Per CHPRC direction (June 2014), Boron will be reported for Metals using method 6010. Boron will no longer be reported by method 6020.

Per CHPRC direction, due to the short hold times for Nitrate, Nitrite and Phosphate by IC (48 hours) as well as pH analysis (24 hours), a SIR request is not needed when samples are run outside 1x hold but within 2x hold. A narrative comment will be included below if a sample is run outside the lab-specified hold time for waters.

Per CHPRC direction, data for pH analysis will be reported outside 1x 24 hour hold time due to this being a field parameter.

Job ID: 160-15217-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

IV. Definitions

QCBLK-	Quality Control Blank, Method Blank
QCLCS-	Quality Control Laboratory Control Sample, Blank Spike
DUP-	Laboratory Duplicate
MS-	Matrix Spike
MSD-	Matrix Spike Duplicate

The term “Detection Limit” used in the analytical data report refers to either the lab’s standard reporting limits or contractually required reporting limits, whichever is applicable.

The following data qualifiers may be applicable to the results in this report, as appropriate.

- **B** - For inorganic analyses, the sample result is greater than the MDL but less than the RL.
- **B** - For organic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **J** - For organic analyses, the sample is estimated and less than the RL.
- **C** - For inorganic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **D** - For all analyses, the sample result was obtained from the analysis of a dilution. For Metals analyses, per standard practice, all solid samples are initially prepared at a 2x dilution. This standard dilution does not affect reporting limits as MDL studies are also prepared in the same manner. These dilutions do not necessitate qualification unless otherwise noted in the case narrative.
- **N** - For inorganics and GC analyses, the spike/spike duplicate recoveries are outside QC limits.
- **T** - For GCMS analyses, the spike/spike duplicate recoveries are outside QC limits.
- **O**- For all analyses, the LCS (LCSD) recoveries are outside QC limits.
- **M**- For inorganic analyses, the precision was outside control limits.
- **P -** For organic analyses (PCB/Pests only), the aroclor target analyte has greater than 25% difference for detected concentrations between the two GC columns.

ICPMS Metals

Batch: 232300

The method blank for preparation batch 160-227134 and analytical batch 160-232300 contained sodium above the reporting limit (RL). Associated samples were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank. (MB 160-227134/1-A)

The CCVL was outside upper QC limits for sodium. The concentration of this analyte in the samples was at such a high level as to make the CCVL unnecessary. (CCVL 160-232300/17), (CCVL 160-232300/29), (CCVL 160-232300/42) and (CCVL 160-232300/51)

The following samples were diluted to bring the concentration of target analytes within the calibration range: B33917 (160-15217-1), B33918 (160-15217-2), B33926 (160-15217-3), B33925 (160-15217-4), B33929 (160-15217-5), B33930 (160-15217-6), B33922 (160-15217-7), B33921 (160-15217-8), B338V5 (160-15217-11), B338V6 (160-15217-12), B338V1 (160-15217-13), B338V2 (160-15217-14), B338Y0 (160-15217-19), B338X9 (160-15217-20), (160-15217-A-1-E MS), (160-15217-A-1-F MSD) and (160-15217-A-1-D SD). Elevated reporting limits (RLs) are provided. These analytes have been qualified accordingly with a "D" flag in the associated samples.

There were no observations or non-conformances associated with the following methods:

Alkalinity

We certify that this data package is in compliance with the SOW, both technically and for completeness, including a full description of, explanation of, and corrective actions for, any and all deviations, from either the analyses requested or the case narrative requested.

Job ID: 160-15217-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager or designee and the laboratory's client services representative as verified by their signature on this report.

Reviewed and approved:

Jayna Awalt
St. Louis Project Manager

SAMPLE ISSUE RESOLUTION

SIR NUM	SIR16-165
REV NUM	0
DATE INITIATED	1/8/2016

SAMPLE EVENT INFORMATION

SAF NUM(S)	X15-068
OPERABLE UNIT(S)	300-FF-5
PROJECT(S)	CERC15
SAMPLE EVENT TITLE(S)	CERC15
LABORATORY	TestAmerica St. Louis

SAMPLING INFORMATION

NUMBER OF SAMPLES	20
SAMPLE NUMBERS	B338R1, B338R2, B338T3, B338T4, B338V1, B338V2, B338V5, B338V6, B338X9, B338Y0, B33901, B33902, B33917, B33918, B33921, B33922, B33925, B33926, B33929, B33930
SAMPLE MATRIX	WATER
COLLECTION DATE	12/2/2015 - 12/3/2015
SDG NUM	SL2043

ISSUE BACKGROUND

CLASS	Sample Management Issues
TYPE	Method Correction
DESCRIPTION	The laboratory has a backlog for ICP and has requested permission to subtitute ICP-MS.

DISPOSITION

DESCRIPTION	Report requested analytes (sodium, calcium, potassium and magnesium) by 6020.
JUSTIFICATION	Final Disposition: Accept proposed resolution. SUBMITTED BY: Jayna Awalt DATE: 01/07/2016 ACCEPTED BY: Karen Waters-Husted DATE: 01/08/2016

Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 160-15217-1
SDG Number: SL2043

Login Number: 15217
List Number: 1
Creator: Clarke, Jill C

List Source: TestAmerica St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.2°, 0.9°, 1.0°
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

CH2MHill Plateau Remediation Company SL2043

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **X15-068-057**

Collector	K.C. Patterson/CHPRC	**Contact/Requester**	WHITLEY, KM	**Telephone No.**	373-4929
SAF No.	X15-068	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300205
Project Title	300 Area Uranium Sequestration Post Inj	**Logbook No.**	HNF-N-506 80 / 47	**Ice Chest No.**	GW5-511
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7751155536306
Protocol	CERCLA	**Priority:**	**30 Days** **PRIORITY**	**Offsite Property No.**	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

*Contains Radioactive Material at concentrations that are not be 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
B33917	Y	W	DEC 03 2015	0910	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B33918	N	W			1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B33918	N	W			1x500-mL G/P	310.1_ALKALINITY: GW 01	14 Days	Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
K.C. Patterson/CHPRC			DEC 03 2015 1040	F.M. Hall/CHPRC			DEC 03 2015 1040
F.M. Hall/CHPRC			DEC 03 2015 1400	FEDEX			
FED EX				Jill Clarke	Jill Clarke		12.4.15 0915

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 ON 9/30/2015 FSR ID = FSR7323 A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company SL2043

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **X15-068-063**

Collector	K.C. Patterson/CHPRC	**Contact/Requester**	WHITLEY, KM	**Telephone No.**	373-4929
SAF No.	X15-068	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300205
Project Title	300 Area Uranium Sequestration Post Inj	**Logbook No.**	HNF-N-506 80147	**Ice Chest No.**	GWS-511
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7751155536306
Protocol	CERCLA	**Priority:**	**30 Days** **PRIORITY**	**Offsite Property No.**	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

*Contains Radioactive Material at concentrations that are not be 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
B33926	N	W	DEC 03 2015	0837	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B33926	N	W			1x500-mL G/P	310.1_ALKALINITY: GW 01	14 Days	Cool <=6C
B33925	Y	W			1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2

Relinquished By (Print / Sign)	Date/Time	Received By (Print / Sign)	Date/Time
K.C. Patterson/CHPRC	DEC 03 2015 1040	F.M. Hall/CHPRC	DEC 03 2015 1040
F.M. Hall/CHPRC	DEC 03 2015 1400	FEDEX	
FED EX		Jill Clark Jill Clarke	12-4-15 0915

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 ON 9/30/2015 FSR ID = FSR7322 A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company SL2043

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **X15-068-064**

Collector	K.C. Patterson/CHPRC	**Contact/Requester**	WHITLEY, KM	**Telephone No.**	373-4929
SAF No.	X15-068	**Sampling Origin**	Hanford Site WW 12-3-15	**Purchase Order/Charge Code**	300205
Project Title	300 Area Uranium Sequestration Post Inj	**Logbook No.**	HNF-N-506 80/~~46~~47	**Ice Chest No.**	GW5-511
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	775115536306
Protocol	CERCLA	**Priority:**	**30 Days** **PRIORITY**	**Offsite Property No.**	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

*Contains Radioactive Material at concentrations that are not be 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
B33929	Y	W	DEC 03 2015	1008	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B33930	N	W	↓	↓	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B33930	N	W	↓	↓	1x500-mL G/P	310.1_ALKALINITY: GW 01	14 Days	Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
	K.C. Patterson/CHPRC		DEC 03 2015 1040		F.M. Hall/CHPRC		DEC 03 2015 1040
Relinquished By	F.M. Hall/CHPRC		Date/Time DEC 03 2015 1400	Received By	FEDEX		Date/Time
Relinquished By	FED EX		Date/Time	Received By	Jill Clarke	Jill Clarke	Date/Time 12-4-15 0915
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

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

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

PRINTED ON 9/30/2015 **FSR ID = FSR7324** A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company SL2043

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **X15-068-056**

Collector	K.C. Patterson/CHPRC	**Contact/Requester**	WHITLEY, KM	**Telephone No.**	373-4929
SAF No.	X15-068	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300205
Project Title	300 Area Uranium Sequestration Post Inj	**Logbook No.**	HNF-N-506 80/47	**Ice Chest No.**	GWS-511
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7751155536306
Protocol	CERCLA	**Priority:**	**30 Days** **PRIORITY**	**Offsite Property No.**	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

*Contains Radioactive Material at concentrations that are not be 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
B33922	N	W	DEC 03 2015	0941	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B33922	N	W	↓	↓	1x500-mL G/P	310.1_ALKALINITY: GW 01	14 Days	Cool <=6C
B33921	Y	W	↓	↓	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2

Relinquished By (Print / Sign)	Date/Time	Received By (Print / Sign)	Date/Time
K.C. Patterson/CHPRC	DEC 03 2015 1040	F.M. Hall/CHPRC	DEC 03 2015 1040
~~K.C. Patterson/CHPRC~~ 12/3/15 F.M. Hall/CHPRC	DEC 03 2015 1400	FEDEX	
FED EX		Jill Clarke Jill Clarke	12.4.15 0915

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 ON 9/30/2015 **FSR ID = FSR7325** A-6004-842 (REV 2)

78 165

CH2MHill Plateau Remediation Company SL2043

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **X15-068-075**

Page 1 of 1

Collector	J.R. Aguilar/CHPRC	**Contact/Requester**	WHITLEY, KM	**Telephone No.**	373-4929
SAF No.	X15-068	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300205
Project Title	300 Area Uranium Sequestration Post Inj	**Logbook No.**	HNF-N-506 81 / 53	**Ice Chest No.**	GW05-511 on 12-3-15
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	~~775115537~~ 775115536306
Protocol	CERCLA	**Priority:**	**30 Days** **PRIORITY**	**Offsite Property No.**	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

*Contains Radioactive Material at concentrations that are not be 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
B338R2	N	W	12-3-15	1011	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B338R2	N	W	12-3-15	1011	1x500-mL G/P	310.1_ALKALINITY: GW 01	14 Days	Cool <=6C
B338R1	Y	W	12-3-15	1011	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
J.R. Aguilar/CHPRC		DEC 0 3 2015	1050	F.M. Hall/CHPRC		DEC 0 3 2015	1050
F.M. Hall/CHPRC		DEC 0 3 2015	1400	FEDEX		~~DEC 0 3 2015~~ 12-3-15	
FED EX				Jill Clarke	Jill Clarke	12.4.15	0915

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 ON 9/30/2015 FSR ID = FSR7330 A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company SL2043

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **X15-068-061**

Collector	K.C. Patterson/CHPRC	**Contact/Requester**	WHITLEY, KM	**Telephone No.**	373-4929
SAF No.	X15-068	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300205
Project Title	300 Area Uranium Sequestration Post Inj	**Logbook No.**	HNF-N-506 80/48	**Ice Chest No.**	GW5-508
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7751179147 06
Protocol	CERCLA	**Priority:**	**30 Days** **PRIORITY**	**Offsite Property No.**	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

*Contains Radioactive Material at concentrations that are not be 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
B338V5	Y	W	DEC 03 2015	1225	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B338V6	N	W			1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B338V6	N	W			1x500-mL G/P	310.1_ALKALINITY: GW 01	14 Days	Cool <=6C

Relinquished By	Print / Sign	Date/Time	Received By	Print / Sign	Date/Time
K.C. Patterson/CHPRC		DEC 03 2015 1320	CHRIS FULTON CHPRC		DEC 03 2015 1320
CHRIS FULTON CHPRC		DEC 03 2015 1430	FEDEX		
		FED EX	Jill Clarke	Jill Clarke	12.4.15 0915

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 ON 9/30/2015 FSR ID = FSR7336 A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company SL2043

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **X15-068-076**

Collector	K.C. Patterson/CHPRC	**Contact/Requester**	WHITLEY, KM	**Telephone No.**	373-4929
SAF No.	X15-068	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300205
Project Title	300 Area Uranium Sequestration Post Inj	**Logbook No.**	HNF-N-506 80/48	**Ice Chest No.**	Gwo-508
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7751/7914706
Protocol	CERCLA	**Priority:**	**30 Days** **PRIORITY**	**Offsite Property No.**	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

*Contains Radioactive Material at concentrations that are not be 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
B338V1	Y	W	DEC 03 2015	1152	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B338V2	N	W			1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B338V2	N	W			1x500-mL G/P	310.1_ALKALINITY: GW 01	14 Days	Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
K.C. Patterson/CHPRC			DEC 03 2015 1320	CHRIS FULTON CHPRC			DEC 03 2015 1320
CHRIS FULTON CHPRC			DEC 03 2015 1430	FEDEX			
		FED EX		Jill Clarke	Jill Clarke		12-4-15 0915

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 ON 9/30/2015 **FSR ID = FSR7335** A-6004-842 (REV 2)

'1416s

CH2MHill Plateau Remediation Company SL2043

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **X15-068-082**

Page 1 of 1

Collector	K.C. Patterson/CHPRC	**Contact/Requester**	WHITLEY, KM	**Telephone No.**	373-4929
SAF No.	X15-068	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300205
Project Title	300 Area Uranium Sequestration Post Inj	**Logbook No.**	HNF-N-506 80/48	**Ice Chest No.**	G-W5-508
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7751 1791 4706
Protocol	CERCLA	**Priority:**	**30 Days** **PRIORITY**	**Offsite Property No.**	NP

POSSIBLE SAMPLE HAZARDS/REMARKS

*Contains Radioactive Material at concentrations that are not be 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
B338T3	Y	W	DEC 03 2015	1118	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B338T4	N	W	↙	↙	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B338T4	N	W	↙	↙	1x500-mL G/P	310.1_ALKALINITY: GW 01	14 Days	Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
K.C. Patterson/CHPRC		DEC 03 2015	1320	CHRIS FULTON CHPRC		DEC 03 2015	1320
CHRIS FULTON CHPRC		DEC 03 2015	1430	FEDEX			
FED EX				Jill Clarke	Jill Clarke	12.4.15	0915

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 ON 9/30/2015 **FSR ID = FSR7333** A-6004-842 (REV 2)

82 lbs

CH2MHill Plateau Remediation Company SL2043

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **X15-068-065**

Collector	J.R. Aguilar/CHPRC	**Contact/Requester**	WHITLEY, KM	**Telephone No.**	373-4929
SAF No.	X15-068	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300205
Project Title	300 Area Uranium Sequestration Post Inj	**Logbook No.**	HNF-N-506 80 145	**Ice Chest No.**	GWS-498
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7751 1329 6583
Protocol	CERCLA	**Priority:**	**30 Days** **PRIORITY**	**Offsite Property No.**	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

*Contains Radioactive Material at concentrations that are not be 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
B33902	N	W	12-2-15	1151	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B33902	N	W	12-2-15	↓	1x500-mL G/P	310.1_ALKALINITY: GW 01	14 Days	Cool <=6C
B33901	Y	W	12-2-15	↓	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
J.R. Aguilar/CHPRC			DEC 0 2 2015 1200	F.M. Hall/CHPRC			DEC 0 2 2015 1200
F.M. Hall/CHPRC			DEC 0 2 2015 1255	SSU-1			DEC 0 2 2015 1255
SSU-1			DEC 0 3 2015 1020	M.A. White CHPRC			DEC 0 3 2015 1020
M.A. White CHPRC			DEC 0 3 2015 1400	FEDEX			

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 ON 9/30/2015 FSR ID = FSR7345 A-6004-842 (REV 2)

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST (continued)

C.O.C. No. X15-068-065

Page 2 of 2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
		FED EX		Jill Clarke	Jill Clarke	12-4-15	0915
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time

A-6003-962 (03/05)

CH2MHill Plateau Remediation Company SL2043

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **X15-068-074**

Collector	S.W. King/CHPRC	**Contact/Requester**	WHITLEY, KM	**Telephone No.**	373-4929
SAF No.	X15-068	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	300205
Project Title	300 Area Uranium Sequestration Post Inj	**Logbook No.**	HNF-N-506 81 / 51	**Ice Chest No.**	CWS-498
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7751132965 83
Protocol	CERCLA	**Priority:**	**30 Days** **PRIORITY**	**Offsite Property No.**	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

*Contains Radioactive Material at concentrations that are not be 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
B338Y0	N	W	DEC 02 2015	1253	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B338Y0	N	W	↓	↓	1x500-mL G/P	310.1_ALKALINITY: GW 01	14 Days	Cool <=6C
B338X9	Y	W	DEC 02 2015	1253	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
S.W. King/CHPRC			DEC 02 2015 1450	SSU-1			DEC 02 2015 1450
SSU-1			DEC 03 2015 1020	M.A. White CHPRC			DEC 03 2015 1020
M.A. White CHPRC			DEC 03 2015 1400	FEDEX			
		FED EX		Jim Clarke		Jim Clarke	12-4-15 0915

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 ON 9/30/2015 **FSR ID = FSR7342** A-6004-842 (REV 2)

FedEx® Tracking

775115536306

Ship date
Thu 12/03/2015

RICHLAND, WA US

Delivered
Signed for by R CASTELLO

Actual delivery
Fri 12/04/2015 9:09 am

EARTH CITY, MO US

Travel History

Date/Time	Activity	Location
- 12/04/2015 - Friday		
9:09 am	Delivered	EARTH CITY, MO
7:01 am	On FedEx vehicle for delivery	EARTH CITY, MO
6:55 am	At local FedEx facility	EARTH CITY, MO
5:38 am	At destination sort facility	BERKELEY, MO
4:55 am	Departed FedEx location	MEMPHIS, TN
12:47 am	Arrived at FedEx location	MEMPHIS, TN
- 12/03/2015 - Thursday		
8:17 pm	Shipment information sent to FedEx	
5:09 pm	Left FedEx origin facility	PASCO, WA
3:25 pm	Picked up	PASCO, WA

Shipment Facts

Tracking number	775115536306	Service	FedEx Priority Overnight
Weight	78 lbs / 35.38 kgs	Delivered To	Shipping/Receiving
Total pieces	1	Total shipment weight	78 lbs / 35.38 kgs
Shipper reference	gws-511	Packaging	Your Packaging
Special handling section	Deliver Weekday, Additional Handling Surcharge		

© FedEx 1995-2015

FedEx ® Tracking

775117914706

Ship date
Thu 12/03/2015

RICHLAND, WA US

Delivered
Signed for by: R CASTELLO

Actual delivery
Fri 12/04/2015 9:09 am

EARTH CITY, MO US

Travel History

Date/Time	Activity	Location
- 12/04/2015 - Friday		
9:09 am	Delivered	EARTH CITY, MO
7:17 am	On FedEx vehicle for delivery	EARTH CITY, MO
7:10 am	At local FedEx facility	EARTH CITY, MO
5:38 am	At destination sort facility	BERKELEY, MO
4:55 am	Departed FedEx location	MEMPHIS, TN
12:47 am	Arrived at FedEx location	MEMPHIS, TN
- 12/03/2015 - Thursday		
5:09 pm	Left FedEx origin facility	PASCO, WA
4:49 pm	Shipment information sent to FedEx	
3:25 pm	Picked up	PASCO, WA

Shipment Facts

Tracking number	775117914706	Service	FedEx Priority Overnight
Weight	74 lbs / 33.57 kgs	Delivered To	Shipping/Receiving
Total pieces	1	Total shipment weight	74 lbs / 33.57 kgs
Shipper reference	GWS-508	Packaging	Your Packaging
Special handling section	Deliver Weekday		

© FedEx 1995-2015

FedEx ® Tracking

775113296583

Ship date
Thu 12/03/2015

RICHLAND, WA US

Delivered
Signed for by R.CASTELLO

Actual delivery
Fri 12/04/2015 9:09 am

EARTH CITY, MO US

Travel History

Date/Time	Activity	Location
- 12/04/2015 - Friday		
9:09 am	Delivered	EARTH CITY, MO
7:17 am	On FedEx vehicle for delivery	EARTH CITY, MO
7:10 am	At local FedEx facility	EARTH CITY, MO
5:38 am	At destination sort facility	BERKELEY, MO
4:55 am	Departed FedEx location	MEMPHIS, TN
12:47 am	Arrived at FedEx location	MEMPHIS, TN
- 12/03/2015 - Thursday		
5:09 pm	Left FedEx origin facility	PASCO, WA
3:25 pm	Picked up	PASCO, WA
1:06 pm	Shipment information sent to FedEx	

Shipment Facts

Tracking number	775113296583	**Service**	FedEx Priority Overnight
Weight	82 lbs / 37.19 kgs	**Delivered To**	Shipping/Receiving
Total pieces	1	**Total shipment weight**	82 lbs / 37.19 kgs
Shipper reference	gws-498	**Packaging**	Your Packaging
Special handling section	Deliver Weekday, Additional Handling Surcharge		

© FedEx 1995-2015

Qualifiers

Metals

Qualifier	Qualifier Description
D	The reported value is from a dilution.
U	Analyzed for but not detected.
B	Estimated result. Result is less than the RL, but greater than MDL

General Chemistry

Qualifier	Qualifier Description
U	Analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: X15-068

TestAmerica Job ID: 160-15217-1
SDG: SL2043

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL SL
310.1	Alkalinity	MCAWW	TAL SL

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: X15-068

TestAmerica Job ID: 160-15217-1
SDG: SL2043

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-15217-1	B33917	Water	12/03/15 09:10	12/04/15 09:15
160-15217-2	B33918	Water	12/03/15 09:10	12/04/15 09:15
160-15217-3	B33926	Water	12/03/15 08:37	12/04/15 09:15
160-15217-4	B33925	Water	12/03/15 08:37	12/04/15 09:15
160-15217-5	B33929	Water	12/03/15 10:08	12/04/15 09:15
160-15217-6	B33930	Water	12/03/15 10:08	12/04/15 09:15
160-15217-7	B33922	Water	12/03/15 09:41	12/04/15 09:15
160-15217-8	B33921	Water	12/03/15 09:41	12/04/15 09:15
160-15217-9	B338R2	Water	12/03/15 10:11	12/04/15 09:15
160-15217-10	B338R1	Water	12/03/15 10:11	12/04/15 09:15
160-15217-11	B338V5	Water	12/03/15 12:25	12/04/15 09:15
160-15217-12	B338V6	Water	12/03/15 12:25	12/04/15 09:15
160-15217-13	B338V1	Water	12/03/15 11:52	12/04/15 09:15
160-15217-14	B338V2	Water	12/03/15 11:52	12/04/15 09:15
160-15217-15	B338T3	Water	12/03/15 11:18	12/04/15 09:15
160-15217-16	B338T4	Water	12/03/15 11:18	12/04/15 09:15
160-15217-17	B33902	Water	12/02/15 11:51	12/04/15 09:15
160-15217-18	B33901	Water	12/02/15 11:51	12/04/15 09:15
160-15217-19	B338Y0	Water	12/02/15 12:53	12/04/15 09:15
160-15217-20	B338X9	Water	12/02/15 12:53	12/04/15 09:15

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X15-068

TestAmerica Job ID: 160-15217-1
SDG: SL2043

Method: 6020A - Metals (ICP/MS)

Client Sample ID: B33918 — **Lab Sample ID: 160-15217-2**
Date Collected: 12/03/15 09:10 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	2.8		1.0	0.23	ug/L		12/14/15 14:13	12/17/15 16:22	2
Sodium	340000	D	250	119	ug/L		12/14/15 14:13	01/13/16 17:39	10
Potassium	78000	D	500	208	ug/L		12/14/15 14:13	01/13/16 17:39	10
Calcium	37900	D	500	341	ug/L		12/14/15 14:13	01/13/16 17:39	10
Magnesium	16300	D	250	28.0	ug/L		12/14/15 14:13	01/13/16 17:39	10

Client Sample ID: B33926 — **Lab Sample ID: 160-15217-3**
Date Collected: 12/03/15 08:37 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	1.2		1.0	0.23	ug/L		12/14/15 14:13	12/17/15 16:27	2
Sodium	249000	D	250	119	ug/L		12/14/15 14:13	01/13/16 17:43	10
Potassium	17600	D	500	208	ug/L		12/14/15 14:13	01/13/16 17:43	10
Calcium	38400	D	500	341	ug/L		12/14/15 14:13	01/13/16 17:43	10
Magnesium	15800	D	250	28.0	ug/L		12/14/15 14:13	01/13/16 17:43	10

Client Sample ID: B33930 — **Lab Sample ID: 160-15217-6**
Date Collected: 12/03/15 10:08 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	17.8		1.0	0.23	ug/L		12/14/15 14:13	12/17/15 16:40	2
Sodium	219000	D	250	119	ug/L		12/14/15 14:13	01/13/16 18:09	10
Potassium	10300	D	500	208	ug/L		12/14/15 14:13	01/13/16 18:09	10
Calcium	52700	D	500	341	ug/L		12/14/15 14:13	01/13/16 18:09	10
Magnesium	15700	D	250	28.0	ug/L		12/14/15 14:13	01/13/16 18:09	10

Client Sample ID: B33922 — **Lab Sample ID: 160-15217-7**
Date Collected: 12/03/15 09:41 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	7.1		1.0	0.23	ug/L		12/14/15 14:13	12/17/15 16:44	2
Sodium	133000	D	125	59.3	ug/L		12/14/15 14:13	01/13/16 18:13	5
Potassium	12600	D	250	104	ug/L		12/14/15 14:13	01/13/16 18:13	5
Calcium	48900	D	250	170	ug/L		12/14/15 14:13	01/13/16 18:13	5
Magnesium	15100	D	125	14.0	ug/L		12/14/15 14:13	01/13/16 18:13	5

Client Sample ID: B338R2 — **Lab Sample ID: 160-15217-9**
Date Collected: 12/03/15 10:11 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	187		1.0	0.23	ug/L		12/14/15 14:13	12/17/15 16:52	2
Sodium	30900		50.0	23.7	ug/L		12/14/15 14:13	01/13/16 18:22	2
Potassium	5750		100	41.6	ug/L		12/14/15 14:13	01/13/16 18:22	2
Calcium	87200		100	68.1	ug/L		12/14/15 14:13	01/13/16 18:22	2
Magnesium	20100		50.0	5.6	ug/L		12/14/15 14:13	01/13/16 18:22	2

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X15-068

TestAmerica Job ID: 160-15217-1
SDG: SL2043

Method: 6020A - Metals (ICP/MS)

Client Sample ID: B338V6 — **Lab Sample ID: 160-15217-12**
Date Collected: 12/03/15 12:25 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	10.6		1.0	0.23	ug/L		12/14/15 14:13	12/17/15 17:18	2
Sodium	449000	D	250	119	ug/L		12/14/15 14:13	01/13/16 18:35	10
Potassium	137000	D	500	208	ug/L		12/14/15 14:13	01/13/16 18:35	10
Calcium	24100	D	500	341	ug/L		12/14/15 14:13	01/13/16 18:35	10
Magnesium	11500	D	250	28.0	ug/L		12/14/15 14:13	01/13/16 18:35	10

Client Sample ID: B338V2 — **Lab Sample ID: 160-15217-14**
Date Collected: 12/03/15 11:52 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	6.1		1.0	0.23	ug/L		12/14/15 14:13	12/17/15 17:27	2
Sodium	112000	D	125	59.3	ug/L		12/14/15 14:13	01/13/16 18:44	5
Potassium	31900	D	250	104	ug/L		12/14/15 14:13	01/13/16 18:44	5
Calcium	48200	D	250	170	ug/L		12/14/15 14:13	01/13/16 18:44	5
Magnesium	15700	D	125	14.0	ug/L		12/14/15 14:13	01/13/16 18:44	5

Client Sample ID: B338T4 — **Lab Sample ID: 160-15217-16**
Date Collected: 12/03/15 11:18 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	26.4		1.0	0.23	ug/L		12/14/15 14:13	12/17/15 17:35	2
Sodium	31900		50.0	23.7	ug/L		12/14/15 14:13	01/13/16 19:05	2
Potassium	6740		100	41.6	ug/L		12/14/15 14:13	01/13/16 19:05	2
Calcium	55800		100	68.1	ug/L		12/14/15 14:13	01/13/16 19:05	2
Magnesium	14500		50.0	5.6	ug/L		12/14/15 14:13	01/13/16 19:05	2

Client Sample ID: B33902 — **Lab Sample ID: 160-15217-17**
Date Collected: 12/02/15 11:51 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	0.23	U	1.0	0.23	ug/L		12/14/15 14:13	12/17/15 17:40	2
Sodium	23100		50.0	23.7	ug/L		12/14/15 14:13	01/13/16 19:10	2
Potassium	7970		100	41.6	ug/L		12/14/15 14:13	01/13/16 19:10	2
Calcium	77300		100	68.1	ug/L		12/14/15 14:13	01/13/16 19:10	2
Magnesium	19600		50.0	5.6	ug/L		12/14/15 14:13	01/13/16 19:10	2

Client Sample ID: B338Y0 — **Lab Sample ID: 160-15217-19**
Date Collected: 12/02/15 12:53 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	5.7		1.0	0.23	ug/L		12/14/15 14:13	12/17/15 17:48	2
Sodium	113000	D	125	59.3	ug/L		12/14/15 14:13	01/13/16 19:18	5
Potassium	8140	D	250	104	ug/L		12/14/15 14:13	01/13/16 19:18	5
Calcium	46400	D	250	170	ug/L		12/14/15 14:13	01/13/16 19:18	5
Magnesium	14600	D	125	14.0	ug/L		12/14/15 14:13	01/13/16 19:18	5

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X15-068

TestAmerica Job ID: 160-15217-1
SDG: SL2043

Method: 6020A - Metals (ICP/MS) - Dissolved

Client Sample ID: B33917 — **Lab Sample ID: 160-15217-1**
Date Collected: 12/03/15 09:10 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	2.1		1.0	0.23	ug/L		12/14/15 14:13	12/17/15 15:53	2
Sodium	247000	D	250	119	ug/L		12/14/15 14:13	01/13/16 17:22	10
Potassium	57200	D	500	208	ug/L		12/14/15 14:13	01/13/16 17:22	10
Calcium	28900	D	500	341	ug/L		12/14/15 14:13	01/13/16 17:22	10
Magnesium	11800	D	250	28.0	ug/L		12/14/15 14:13	01/13/16 17:22	10

Client Sample ID: B33925 — **Lab Sample ID: 160-15217-4**
Date Collected: 12/03/15 08:37 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	0.96	B	1.0	0.23	ug/L		12/14/15 14:13	12/17/15 16:31	2
Sodium	247000	D	250	119	ug/L		12/14/15 14:13	01/13/16 17:47	10
Potassium	17600	D	500	208	ug/L		12/14/15 14:13	01/13/16 17:47	10
Calcium	39200	D	500	341	ug/L		12/14/15 14:13	01/13/16 17:47	10
Magnesium	15900	D	250	28.0	ug/L		12/14/15 14:13	01/13/16 17:47	10

Client Sample ID: B33929 — **Lab Sample ID: 160-15217-5**
Date Collected: 12/03/15 10:08 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	17.9		1.0	0.23	ug/L		12/14/15 14:13	12/17/15 16:35	2
Sodium	210000	D	250	119	ug/L		12/14/15 14:13	01/13/16 18:05	10
Potassium	9880	D	500	208	ug/L		12/14/15 14:13	01/13/16 18:05	10
Calcium	50100	D	500	341	ug/L		12/14/15 14:13	01/13/16 18:05	10
Magnesium	14700	D	250	28.0	ug/L		12/14/15 14:13	01/13/16 18:05	10

Client Sample ID: B33921 — **Lab Sample ID: 160-15217-8**
Date Collected: 12/03/15 09:41 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	7.5		1.0	0.23	ug/L		12/14/15 14:13	12/17/15 16:48	2
Sodium	128000	D	125	59.3	ug/L		12/14/15 14:13	01/13/16 18:18	5
Potassium	12400	D	250	104	ug/L		12/14/15 14:13	01/13/16 18:18	5
Calcium	48800	D	250	170	ug/L		12/14/15 14:13	01/13/16 18:18	5
Magnesium	14700	D	125	14.0	ug/L		12/14/15 14:13	01/13/16 18:18	5

Client Sample ID: B338R1 — **Lab Sample ID: 160-15217-10**
Date Collected: 12/03/15 10:11 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	195		1.0	0.23	ug/L		12/14/15 14:13	12/17/15 16:57	2
Sodium	30900		50.0	23.7	ug/L		12/14/15 14:13	01/13/16 18:26	2
Potassium	5680		100	41.6	ug/L		12/14/15 14:13	01/13/16 18:26	2
Calcium	89100		100	68.1	ug/L		12/14/15 14:13	01/13/16 18:26	2
Magnesium	20300		50.0	5.6	ug/L		12/14/15 14:13	01/13/16 18:26	2

Client Sample ID: B338V5 — **Lab Sample ID: 160-15217-11**
Date Collected: 12/03/15 12:25 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	11.4		1.0	0.23	ug/L		12/14/15 14:13	12/17/15 17:14	2

Method: 6020A - Metals (ICP/MS) - Dissolved (Continued)

Client Sample ID: B338V5 — **Lab Sample ID: 160-15217-11**
Date Collected: 12/03/15 12:25 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	439000	D	250	119	ug/L		12/14/15 14:13	01/13/16 18:31	10
Potassium	133000	D	500	208	ug/L		12/14/15 14:13	01/13/16 18:31	10
Calcium	23800	D	500	341	ug/L		12/14/15 14:13	01/13/16 18:31	10
Magnesium	11300	D	250	28.0	ug/L		12/14/15 14:13	01/13/16 18:31	10

Client Sample ID: B338V1 — **Lab Sample ID: 160-15217-13**
Date Collected: 12/03/15 11:52 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	6.2		1.0	0.23	ug/L		12/14/15 14:13	12/17/15 17:22	2
Sodium	113000	D	125	59.3	ug/L		12/14/15 14:13	01/13/16 18:39	5
Potassium	32600	D	250	104	ug/L		12/14/15 14:13	01/13/16 18:39	5
Calcium	49400	D	250	170	ug/L		12/14/15 14:13	01/13/16 18:39	5
Magnesium	15400	D	125	14.0	ug/L		12/14/15 14:13	01/13/16 18:39	5

Client Sample ID: B338T3 — **Lab Sample ID: 160-15217-15**
Date Collected: 12/03/15 11:18 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	26.7		1.0	0.23	ug/L		12/14/15 14:13	12/17/15 17:31	2
Sodium	33000		50.0	23.7	ug/L		12/14/15 14:13	01/13/16 19:01	2
Potassium	6950		100	41.6	ug/L		12/14/15 14:13	01/13/16 19:01	2
Calcium	57300		100	68.1	ug/L		12/14/15 14:13	01/13/16 19:01	2
Magnesium	15100		50.0	5.6	ug/L		12/14/15 14:13	01/13/16 19:01	2

Client Sample ID: B33901 — **Lab Sample ID: 160-15217-18**
Date Collected: 12/02/15 11:51 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	0.23	U	1.0	0.23	ug/L		12/14/15 14:13	12/17/15 17:44	2
Sodium	23700		50.0	23.7	ug/L		12/14/15 14:13	01/13/16 19:14	2
Potassium	7920		100	41.6	ug/L		12/14/15 14:13	01/13/16 19:14	2
Calcium	73400		100	68.1	ug/L		12/14/15 14:13	01/13/16 19:14	2
Magnesium	19500		50.0	5.6	ug/L		12/14/15 14:13	01/13/16 19:14	2

Client Sample ID: B338X9 — **Lab Sample ID: 160-15217-20**
Date Collected: 12/02/15 12:53 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	5.6		1.0	0.23	ug/L		12/14/15 14:13	12/17/15 17:52	2
Sodium	116000	D	125	59.3	ug/L		12/14/15 14:13	01/13/16 19:22	5
Potassium	8370	D	250	104	ug/L		12/14/15 14:13	01/13/16 19:22	5
Calcium	52400	D	250	170	ug/L		12/14/15 14:13	01/13/16 19:22	5
Magnesium	15000	D	125	14.0	ug/L		12/14/15 14:13	01/13/16 19:22	5

General Chemistry

Client Sample ID: B33918 — **Lab Sample ID: 160-15217-2**
Date Collected: 12/03/15 09:10 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**290**		5.0	0.54	mg/L			12/09/15 11:50	1
Bicarbonate Alkalinity as CaCO3	**290**		5.0	0.54	mg/L			12/09/15 11:50	1
Carbonate Alkalinity as CaCO3	0.54	U	5.0	0.54	mg/L			12/09/15 11:50	1
Hydroxide Alkalinity	0.54	U	5.0	0.54	mg/L			12/09/15 11:50	1

Client Sample ID: B33926 — **Lab Sample ID: 160-15217-3**
Date Collected: 12/03/15 08:37 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**222**		5.0	0.54	mg/L			12/09/15 11:50	1
Bicarbonate Alkalinity as CaCO3	**222**		5.0	0.54	mg/L			12/09/15 11:50	1
Carbonate Alkalinity as CaCO3	0.54	U	5.0	0.54	mg/L			12/09/15 11:50	1
Hydroxide Alkalinity	0.54	U	5.0	0.54	mg/L			12/09/15 11:50	1

Client Sample ID: B33930 — **Lab Sample ID: 160-15217-6**
Date Collected: 12/03/15 10:08 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**195**		5.0	0.54	mg/L			12/09/15 11:50	1
Bicarbonate Alkalinity as CaCO3	**195**		5.0	0.54	mg/L			12/09/15 11:50	1
Carbonate Alkalinity as CaCO3	0.54	U	5.0	0.54	mg/L			12/09/15 11:50	1
Hydroxide Alkalinity	0.54	U	5.0	0.54	mg/L			12/09/15 11:50	1

Client Sample ID: B33922 — **Lab Sample ID: 160-15217-7**
Date Collected: 12/03/15 09:41 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**170**		5.0	0.54	mg/L			12/09/15 11:50	1
Bicarbonate Alkalinity as CaCO3	**170**		5.0	0.54	mg/L			12/09/15 11:50	1
Carbonate Alkalinity as CaCO3	0.54	U	5.0	0.54	mg/L			12/09/15 11:50	1
Hydroxide Alkalinity	0.54	U	5.0	0.54	mg/L			12/09/15 11:50	1

Client Sample ID: B338R2 — **Lab Sample ID: 160-15217-9**
Date Collected: 12/03/15 10:11 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**198**		5.0	0.54	mg/L			12/09/15 11:50	1
Bicarbonate Alkalinity as CaCO3	**198**		5.0	0.54	mg/L			12/09/15 11:50	1
Carbonate Alkalinity as CaCO3	0.54	U	5.0	0.54	mg/L			12/09/15 11:50	1
Hydroxide Alkalinity	0.54	U	5.0	0.54	mg/L			12/09/15 11:50	1

Client Sample ID: B338V6 — **Lab Sample ID: 160-15217-12**
Date Collected: 12/03/15 12:25 — **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**371**		5.0	0.54	mg/L			12/09/15 11:50	1
Bicarbonate Alkalinity as CaCO3	**371**		5.0	0.54	mg/L			12/09/15 11:50	1
Carbonate Alkalinity as CaCO3	0.54	U	5.0	0.54	mg/L			12/09/15 11:50	1
Hydroxide Alkalinity	0.54	U	5.0	0.54	mg/L			12/09/15 11:50	1

General Chemistry

Client Sample ID: B338V2 **Lab Sample ID: 160-15217-14**
Date Collected: 12/03/15 11:52 **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**172**		5.0	0.54	mg/L			12/09/15 11:50	1
Bicarbonate Alkalinity as CaCO3	**172**		5.0	0.54	mg/L			12/09/15 11:50	1
Carbonate Alkalinity as CaCO3	0.54	U	5.0	0.54	mg/L			12/09/15 11:50	1
Hydroxide Alkalinity	0.54	U	5.0	0.54	mg/L			12/09/15 11:50	1

Client Sample ID: B338T4 **Lab Sample ID: 160-15217-16**
Date Collected: 12/03/15 11:18 **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**129**		5.0	0.54	mg/L			12/09/15 11:50	1
Bicarbonate Alkalinity as CaCO3	**129**		5.0	0.54	mg/L			12/09/15 11:50	1
Carbonate Alkalinity as CaCO3	0.54	U	5.0	0.54	mg/L			12/09/15 11:50	1
Hydroxide Alkalinity	0.54	U	5.0	0.54	mg/L			12/09/15 11:50	1

Client Sample ID: B33902 **Lab Sample ID: 160-15217-17**
Date Collected: 12/02/15 11:51 **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**120**		5.0	0.54	mg/L			12/09/15 11:50	1
Bicarbonate Alkalinity as CaCO3	**120**		5.0	0.54	mg/L			12/09/15 11:50	1
Carbonate Alkalinity as CaCO3	0.54	U	5.0	0.54	mg/L			12/09/15 11:50	1
Hydroxide Alkalinity	0.54	U	5.0	0.54	mg/L			12/09/15 11:50	1

Client Sample ID: B338Y0 **Lab Sample ID: 160-15217-19**
Date Collected: 12/02/15 12:53 **Matrix: Water**
Date Received: 12/04/15 09:15

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**162**		5.0	0.54	mg/L			12/09/15 11:50	1
Bicarbonate Alkalinity as CaCO3	**162**		5.0	0.54	mg/L			12/09/15 11:50	1
Carbonate Alkalinity as CaCO3	0.54	U	5.0	0.54	mg/L			12/09/15 11:50	1
Hydroxide Alkalinity	0.54	U	5.0	0.54	mg/L			12/09/15 11:50	1

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X15-068

TestAmerica Job ID: 160-15217-1
SDG: SL2043

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-227134/1-A
Matrix: Water
Analysis Batch: 228226

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 227134

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	0.23	U	1.0	0.23	ug/L		12/14/15 14:13	12/17/15 15:44	2

Lab Sample ID: MB 160-227134/1-A
Matrix: Water
Analysis Batch: 232300

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 227134

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	69.27		50.0	23.7	ug/L		12/14/15 14:13	01/13/16 17:13	2
Potassium	41.6	U	100	41.6	ug/L		12/14/15 14:13	01/13/16 17:13	2
Calcium	68.1	U	100	68.1	ug/L		12/14/15 14:13	01/13/16 17:13	2
Magnesium	5.6	U	50.0	5.6	ug/L		12/14/15 14:13	01/13/16 17:13	2

Lab Sample ID: LCS 160-227134/2-A
Matrix: Water
Analysis Batch: 228226

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 227134

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Uranium	1000	1010		ug/L		101	80 - 120

Lab Sample ID: LCS 160-227134/2-A
Matrix: Water
Analysis Batch: 232300

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 227134

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sodium	10000	10410		ug/L		104	80 - 120
Potassium	10000	10260		ug/L		103	80 - 120
Calcium	10000	10490		ug/L		105	80 - 120
Magnesium	10000	10460		ug/L		105	80 - 120

Lab Sample ID: 160-15217-1 MS
Matrix: Water
Analysis Batch: 228226

Client Sample ID: B33917
Prep Type: Dissolved
Prep Batch: 227134

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Uranium	2.1		1000	1005		ug/L		100	75 - 125

Lab Sample ID: 160-15217-1 MS
Matrix: Water
Analysis Batch: 232300

Client Sample ID: B33917
Prep Type: Dissolved
Prep Batch: 227134

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sodium	247000	D	10000	258800	D	ug/L		121	75 - 125
Potassium	57200	D	10000	68160	D	ug/L		110	75 - 125
Calcium	28900	D	10000	39580	D	ug/L		107	75 - 125
Magnesium	11800	D	10000	22970	D	ug/L		112	75 - 125

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 160-15217-1 MSD — **Client Sample ID: B33917**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 228226 — **Prep Batch: 227134**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Uranium	2.1		1000	991.7		ug/L		99	75 - 125	1	20

Lab Sample ID: 160-15217-1 MSD — **Client Sample ID: B33917**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 232300 — **Prep Batch: 227134**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sodium	247000	D	10000	257000	D	ug/L		102	75 - 125	1	20
Potassium	57200	D	10000	67030	D	ug/L		98	75 - 125	2	20
Calcium	28900	D	10000	39120	D	ug/L		102	75 - 125	1	20
Magnesium	11800	D	10000	23250	D	ug/L		115	75 - 125	1	20

Method: 310.1 - Alkalinity

Lab Sample ID: MB 160-226160/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 226160

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	0.54	U	5.0	0.54	mg/L			12/09/15 11:50	1
Bicarbonate Alkalinity as CaCO3	0.54	U	5.0	0.54	mg/L			12/09/15 11:50	1
Carbonate Alkalinity as CaCO3	0.54	U	5.0	0.54	mg/L			12/09/15 11:50	1
Hydroxide Alkalinity	0.54	U	5.0	0.54	mg/L			12/09/15 11:50	1

Lab Sample ID: HLCS 160-226160/3 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 226160

Analyte	Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	400	376.0		mg/L		94	90 - 110
Bicarbonate Alkalinity as CaCO3	400	376.0		mg/L		94	90 - 110

Lab Sample ID: LCS 160-226160/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 226160

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	200	189.0		mg/L		94	90 - 110
Bicarbonate Alkalinity as CaCO3	200	189.0		mg/L		94	90 - 110

Lab Sample ID: 160-15216-A-2 MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 226160

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	140		100	233.0		mg/L		93	80 - 120
Bicarbonate Alkalinity as CaCO3	140		100	233.0		mg/L		93	80 - 120

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X15-068

TestAmerica Job ID: 160-15217-1
SDG: SL2043

Method: 310.1 - Alkalinity (Continued)

Lab Sample ID: 160-15216-A-2 DU
Matrix: Water
Analysis Batch: 226160

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Alkalinity	140			140.0		mg/L				0	20
Bicarbonate Alkalinity as CaCO3	140			140.0		mg/L				0	20
Carbonate Alkalinity as CaCO3	0.54	U		0.54	U	mg/L				NC	20
Hydroxide Alkalinity	0.54	U		0.54	U	mg/L				NC	20

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: X15-068

TestAmerica Job ID: 160-15217-1
SDG: SL2043

Metals

Prep Batch: 227134

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-15217-1	B33917	Dissolved	Water	3010A	
160-15217-1 MS	B33917	Dissolved	Water	3010A	
160-15217-1 MSD	B33917	Dissolved	Water	3010A	
160-15217-2	B33918	Total/NA	Water	3010A	
160-15217-3	B33926	Total/NA	Water	3010A	
160-15217-4	B33925	Dissolved	Water	3010A	
160-15217-5	B33929	Dissolved	Water	3010A	
160-15217-6	B33930	Total/NA	Water	3010A	
160-15217-7	B33922	Total/NA	Water	3010A	
160-15217-8	B33921	Dissolved	Water	3010A	
160-15217-9	B338R2	Total/NA	Water	3010A	
160-15217-10	B338R1	Dissolved	Water	3010A	
160-15217-11	B338V5	Dissolved	Water	3010A	
160-15217-12	B338V6	Total/NA	Water	3010A	
160-15217-13	B338V1	Dissolved	Water	3010A	
160-15217-14	B338V2	Total/NA	Water	3010A	
160-15217-15	B338T3	Dissolved	Water	3010A	
160-15217-16	B338T4	Total/NA	Water	3010A	
160-15217-17	B33902	Total/NA	Water	3010A	
160-15217-18	B33901	Dissolved	Water	3010A	
160-15217-19	B338Y0	Total/NA	Water	3010A	
160-15217-20	B338X9	Dissolved	Water	3010A	
LCS 160-227134/2-A	Lab Control Sample	Total/NA	Water	3010A	
MB 160-227134/1-A	Method Blank	Total/NA	Water	3010A	

Analysis Batch: 228226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-15217-1	B33917	Dissolved	Water	6020A	227134
160-15217-1 MS	B33917	Dissolved	Water	6020A	227134
160-15217-1 MSD	B33917	Dissolved	Water	6020A	227134
160-15217-2	B33918	Total/NA	Water	6020A	227134
160-15217-3	B33926	Total/NA	Water	6020A	227134
160-15217-4	B33925	Dissolved	Water	6020A	227134
160-15217-5	B33929	Dissolved	Water	6020A	227134
160-15217-6	B33930	Total/NA	Water	6020A	227134
160-15217-7	B33922	Total/NA	Water	6020A	227134
160-15217-8	B33921	Dissolved	Water	6020A	227134
160-15217-9	B338R2	Total/NA	Water	6020A	227134
160-15217-10	B338R1	Dissolved	Water	6020A	227134
160-15217-11	B338V5	Dissolved	Water	6020A	227134
160-15217-12	B338V6	Total/NA	Water	6020A	227134
160-15217-13	B338V1	Dissolved	Water	6020A	227134
160-15217-14	B338V2	Total/NA	Water	6020A	227134
160-15217-15	B338T3	Dissolved	Water	6020A	227134
160-15217-16	B338T4	Total/NA	Water	6020A	227134
160-15217-17	B33902	Total/NA	Water	6020A	227134
160-15217-18	B33901	Dissolved	Water	6020A	227134
160-15217-19	B338Y0	Total/NA	Water	6020A	227134
160-15217-20	B338X9	Dissolved	Water	6020A	227134
LCS 160-227134/2-A	Lab Control Sample	Total/NA	Water	6020A	227134
MB 160-227134/1-A	Method Blank	Total/NA	Water	6020A	227134

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: X15-068

TestAmerica Job ID: 160-15217-1
SDG: SL2043

Analysis Batch: 232300

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-15217-1	B33917	Dissolved	Water	6020A	227134
160-15217-1 MS	B33917	Dissolved	Water	6020A	227134
160-15217-1 MSD	B33917	Dissolved	Water	6020A	227134
160-15217-2	B33918	Total/NA	Water	6020A	227134
160-15217-3	B33926	Total/NA	Water	6020A	227134
160-15217-4	B33925	Dissolved	Water	6020A	227134
160-15217-5	B33929	Dissolved	Water	6020A	227134
160-15217-6	B33930	Total/NA	Water	6020A	227134
160-15217-7	B33922	Total/NA	Water	6020A	227134
160-15217-8	B33921	Dissolved	Water	6020A	227134
160-15217-9	B338R2	Total/NA	Water	6020A	227134
160-15217-10	B338R1	Dissolved	Water	6020A	227134
160-15217-11	B338V5	Dissolved	Water	6020A	227134
160-15217-12	B338V6	Total/NA	Water	6020A	227134
160-15217-13	B338V1	Dissolved	Water	6020A	227134
160-15217-14	B338V2	Total/NA	Water	6020A	227134
160-15217-15	B338T3	Dissolved	Water	6020A	227134
160-15217-16	B338T4	Total/NA	Water	6020A	227134
160-15217-17	B33902	Total/NA	Water	6020A	227134
160-15217-18	B33901	Dissolved	Water	6020A	227134
160-15217-19	B338Y0	Total/NA	Water	6020A	227134
160-15217-20	B338X9	Dissolved	Water	6020A	227134
LCS 160-227134/2-A	Lab Control Sample	Total/NA	Water	6020A	227134
MB 160-227134/1-A	Method Blank	Total/NA	Water	6020A	227134

General Chemistry

Analysis Batch: 226160

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-15216-A-2 DU	Duplicate	Total/NA	Water	310.1	
160-15216-A-2 MS	Matrix Spike	Total/NA	Water	310.1	
160-15217-2	B33918	Total/NA	Water	310.1	
160-15217-3	B33926	Total/NA	Water	310.1	
160-15217-6	B33930	Total/NA	Water	310.1	
160-15217-7	B33922	Total/NA	Water	310.1	
160-15217-9	B338R2	Total/NA	Water	310.1	
160-15217-12	B338V6	Total/NA	Water	310.1	
160-15217-14	B338V2	Total/NA	Water	310.1	
160-15217-16	B338T4	Total/NA	Water	310.1	
160-15217-17	B33902	Total/NA	Water	310.1	
160-15217-19	B338Y0	Total/NA	Water	310.1	
HLCS 160-226160/3	Lab Control Sample	Total/NA	Water	310.1	
LCS 160-226160/2	Lab Control Sample	Total/NA	Water	310.1	
MB 160-226160/1	Method Blank	Total/NA	Water	310.1	