TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

TestAmerica Job ID: 280-96360-1
TestAmerica Sample Delivery Group: DN0131
Client Project/Site: S17-004
Revision: 1

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

Attn: Mr. Scot Fitzgerald

Darlene Bandy

Authorized for release by:
5/26/2017 6:42:40 PM

Darlene Bandy, Project Management Assistant I
(303)736-0100
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LINKS

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Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

SAMPLE ISSUE RESOLUTION (SIR) REPORT

SIR Number: SIR17-0783
Rev. Number: 0
Date Initiated: 06/06/2017

SAMPLE EVENT INFORMATION

SAF NUM(S): S17-004

LABORATORY: TADN

SAMPLING INFORMATION

NUMBER OF SAMPLES: 1

SAMPLE NUMBERS: B393D6

SAMPLE MATRIX: WATER

SDG NUM(S): DN0131

ISSUE BACKGROUND

CLASS: Chain of Custody Issue (Field)

TYPE: No/Illegible Relinquish/Receipt Date/Time

DESCRIPTION: COC S17-004-040, Missing time in the second relinquished by box.

RESOLUTION

PROPOSED RESOLUTION: DOCUMENT AND CLOSE

FINAL RESOLUTION: DOCUMENT AND CLOSE

SUBMITTED BY:

CUTSFORTH, EC — 06/06/2017

ACCEPTED BY:

KILLAND, KE — 06/29/2017

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Job ID: 280-96360-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: CH2M Hill Plateau Remediation Company

Job Number: 280-96360-1

SDG #: DN0131
SAF#(s): S17-004

Date SDG Closed: April 26, 2017
Data Deliverable: 30 Day / Summary

With exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. All laboratory quality control samples analyzed in conjunction with the samples in this project were within established control limits, with any exceptions noted. Calculations are performed before rounding to avoid round-off errors in calculated results.

LCS/LCSD = Laboratory Control Sample/Laboratory Control Sample Duplicate
MS/MSD = Matrix Spike/Matrix Spike Duplicate

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

Revision 1
Sample ID for 280-96360-7 was corrected from B393P9 to B396P9, to match the chain of custody.

RECEIPT
The samples were received on 04/26/2017; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 1.7 C.

6010C - Total Metals (ICP)
Calcium was detected in method blank MB 280-371321/1-A at a level that was above the reporting limit (RL). The associated sample concentrations were >20x the method blank concentration; therefore, corrective action is deemed unnecessary.

Barium, Magnesium, Manganese, Silver, Sodium, and Strontium were detected in method blank MB 280-371321/1-A at levels that were above the method detection limit (MDL) but below the reporting limit (RL). The values should be considered estimates, and have been flagged “B”. Because the concentrations in the method blank were not present at levels greater than half the RL, corrective action is deemed unnecessary. If the associated samples reported a result above the MDL and/or RL and the method blank concentration was greater than 5% of the sample concentration, the result has been flagged “C”.

The low level continuing calibration verification (CCVL) associated with analysis batch 373855 recovered above the upper control limit for Sodium. The samples associated with this CCVL were >10x the CCVL concentration for the affected element and the high-level CCV (CCVH)/CCB were in control; therefore, corrective action is deemed unnecessary.

Sodium recovered above the upper control limit in a Continuing Calibration Verification (CCV) associated with the method blank and serial dilution for analysis batch 373855. As Sodium was less than half the RL in the method blank and the serial dilution was within control limits, corrective action is deemed unnecessary.

No additional analytical or quality issues were noted.

Job ID: 280-96360-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

6010C - Dissolved Metals (ICP)

Calcium, Magnesium, and Sodium were detected in method blank MB 280-371846/1-A at levels that were above the method detection limit (MDL) but below the reporting limit (RL). The values should be considered estimates, and have been flagged “B”. Because the concentrations in the method blank were not present at levels greater than half the RL, corrective action is deemed unnecessary. If the associated samples reported a result above the MDL and/or RL and the method blank concentration was greater than 5% of the sample concentration, the result has been flagged “C”.

No additional analytical or quality issues were noted.

6020A - Total Metals (ICP/MS)

The Chain of Custody requests “6020_METALS_ICPMS: GW 01” analysis. Service List “6020_METALS_ICPMS: GW 01” includes Aluminum and Strontium, and while TestAmerica Denver holds Washington State (WDOE) accreditation for method 6020A, Aluminum and Strontium are currently listed on the certificate as having interim accreditation. TestAmerica Denver is pursuing full WDOE accreditation for these two elements. As instructed by the client, the laboratory proceeded with the requested Aluminum and Strontium analyses by method 6020A.

Lead was detected in method blank MB 280-371322/1-A at a level that was above the method detection limit (MDL) but below the reporting limit (RL). The value should be considered an estimate, and has been flagged “B”. Because the concentration in the method blank was not present at a level greater than half the RL, corrective action is deemed unnecessary. If the associated samples reported a result above the MDL and/or RL and the method blank concentration was greater than 5% of the sample concentration, the result has been flagged “C”.

The accuracy and precision of Strontium in the MS/MSD performed on sample B396P9 (280-96360-7) in prep batch 371322 could not be reliably calculated due to the sample concentration reading greater than four times the spike amount. Control limits are not applicable and the MS/MSD results have been flagged “X”.

No additional analytical or quality issues were noted.

6020A - Dissolved Metals (ICP/MS)

The Chain of Custody requests “6020_METALS_ICPMS: GW 01” analysis. Service List “6020_METALS_ICPMS: GW 01” includes Aluminum and Strontium, and while TestAmerica Denver holds Washington State (WDOE) accreditation for method 6020A, Aluminum and Strontium are currently listed on the certificate as having interim accreditation. TestAmerica Denver is pursuing full WDOE accreditation for these two elements. As instructed by the client, the laboratory proceeded with the requested Aluminum and Strontium analyses by method 6020A.

The accuracy and precision of Strontium in the MS/MSD performed on sample B393M6 (280-96360-6) in prep batch 371808 could not be reliably calculated due to the sample concentration reading greater than four times the spike amount. Control limits are not applicable and the MS/MSD results have been flagged “X”.

No additional analytical or quality issues were noted.

9020B - Total Organic Halogens

No analytical or quality issues were noted.

9060A - Total Organic Carbon

Total Organic Carbon was detected in method blank MB 280-373693/5 at a level that was above the method detection limit (MDL) but below the reporting limit (RL). The value should be considered an estimate, and has been flagged “B”. Because the concentration in the method blank was not present at a level greater than half the RL, corrective action is deemed unnecessary. If the associated samples reported a result above the MDL and/or RL and the method blank concentration was greater than 5% of the sample concentration, the result has been flagged “C”.

No additional analytical or quality issues were noted.

We certify that this data package is in compliance with the SOW, both technically and for completeness, including a full description of,

Job ID: 280-96360-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

explanation of, and corrective actions for, any and all deviations, from either the analyses requested or the case narrative requested. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager or designee and the laboratory's client services representative as verified by their signature on this report.

Reviewed and approved:

Darlene Bandy
Project Management Assistant

Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 280-96360-1
SDG Number: DN0131

Login Number: 96360
List Number: 1
Creator: Pottruff, Reed W

List Source: TestAmerica Denver

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	1.7°C
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 (excluding tests with immediate HTs)	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

50165

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # S17-004-511

Collector	Larry Rosane /CHPRC DN0131	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	S17-004	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071
Project Title	SURV, APRIL 2017	Logbook No.	HNF-N-506 91/87	Ice Chest No.	GWS-485
Shipped To (Lab)	TestAmerica Denver	Method of Shipment	Commercial Carrier	Bill of Lading/Air Bill No.	278989852509
Protocol	CERCLA	Priority:	30 Days **PRIORITY**	Offsite Property No.	7828

POSSIBLE SAMPLE HAZARDS/REMARKS

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B396P6	N	W	4/25/17	0730	1x1-L aGs*	9020_TOX: COMMON	28 Days	H2SO4 to pH <2/Cool <=6C
B396P6	N	W	↓	↓	1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C

280-96360 Chain of Custody

1.7 IR # 70.0 Transfer RP 4-26-17

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Larry Rosane /CHPRC	Larry Rosane		APR 25 2017 1230	Janelle Zunker CHPRC			APR 25 2017 1230
Janelle Zunker CHPRC			APR 25 2017 1400	FEDEX			
FedEx				Reed Pettruff	Reed Pettruff		4-26-17 0800

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 3/9/2017 FSR ID = FSR42340 A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # S17-004-510

Collector	Larry Rosane /CHPRC DW0131	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	S17-004	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071
Project Title	SURV, APRIL 2017	Logbook No.	HNF-N-506 91/87	Ice Chest No.	GWS-485
Shipped To (Lab)	TestAmerica Denver	Method of Shipment	Commercial Carrier	Bill of Lading/Air Bill No.	7789898852581
Protocol	CERCLA	Priority:	30 Days **PRIORITY**	Offsite Property No.	7828

POSSIBLE SAMPLE HAZARDS/REMARKS

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B396P5	N	W	4/25/17	1144	1x1-L aGs*	9020_TOX: COMMON	28 Days	H2SO4 to pH <2/Cool <=6C
B396P5	N	W	↓	↓	1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2/Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Larry Rosane /CHPRC	Larry Rosane		APR 25 2017 1230	Janelle Zunker CHPRC			APR 25 2017 1330
Janelle Zunker CHPRC			APR 25 2017 1400		FEDEX		
Fed Ex				Rec'd Pat Hruff	Rec'd Pat	4-26-17	0900

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 3/9/2017 FSR ID = FSR25744 A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # S17-004-041

Collector	Juan Aguilar /CHPRC DN0131	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	S17-004	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071
Project Title	SURV, APRIL 2017	Logbook No.	HNF-N-506 88/43	Ice Chest No.	GWS-~~1019~~ 921~~2617~~ 485
Shipped To (Lab)	TestAmerica Denver	Method of Shipment	Commercial Carrier	Bill of Lading/Air Bill No.	7789898 5 2559
Protocol	CERCLA	Priority: 30 Days	PRIORITY	Offsite Property No.	7828

POSSIBLE SAMPLE HAZARDS/REMARKS

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B393F1	N	W	4-25-17	1019	1x500-mL G/P	6010_METALS_ICP: COMMON; 6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 03	6 Months	HNO3 to pH <2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Juan Aguilar /CHPRC			APR 25 2017 1050	Janelle Zunker CHPRC			APR 25 2017 1050
Janelle Zunker CHPRC			APR 25 2017 1400	FEDEX			
Fed Ex				Reed Pott	Reed Pottorff		4-26-17 0900

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 3/9/2017 FSR ID = FSR25742 A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # S17-004-040

Collector	Juan Aguilar /CHPRC DN0131	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	S17-004	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071
Project Title	SURV, APRIL 2017	Logbook No.	HNF-N-506 88 / 43	Ice Chest No.	9242017 ~~GWS 649~~ GWS-485
Shipped To (Lab)	TestAmerica Denver	Method of Shipment	Commercial Carrier	Bill of Lading/Air Bill No.	7789818852509 7828
Protocol	CERCLA	Priority:	30 Days **PRIORITY**	Offsite Property No.	

POSSIBLE SAMPLE HAZARDS/REMARKS

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B393D6	N	W	4-25-17	0942	1x500-mL G/P	6010_METALS_ICP: COMMON; 6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 03	6 Months	HNO3 to pH <2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Juan Aguilar /CHPRC			APR 25 2017 1010	Janelle Zunker CHPRC			APR 25 2017 1010
Janelle Zunker CHPRC			APR 25 2017	FEDEX			
RP 4-26-17 Fed Ex				Reed Pottruff	Reed Pottruff		4-26-17 0900

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 3/9/2017 FSR ID = FSR42041 A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # S17-004-042

Page 1 of 1

Collector	Juan Aguilar /CHPRC DN0131	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	S17-004	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071
Project Title	SURV, APRIL 2017	Logbook No.	HNF-N-506 88 / 43	Ice Chest No.	GWS-485
Shipped To (Lab)	TestAmerica Denver	Method of Shipment	Commercial Carrier	Bill of Lading/Air Bill No.	7789 8985 2509
Protocol	CERCLA	Priority:	30 Days **PRIORITY**	Offsite Property No.	7828

POSSIBLE SAMPLE HAZARDS/REMARKS

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B393F7	N	W	4-25-17	1210	1x500-mL G/P	6010_METALS_ICP: COMMON; 6020_METALS_ICPMS: Uranium (1); 6010_METALS_ICP: GW 03	6 Months	HNO3 to pH <2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Juan Aguilar /CHPRC			APR 2 5 2017 1230	Janelle Zunker CHPRC			APR 2 5 2017 1230
Relinquished By: Janelle Zunker CHPRC			APR 2 5 2017 1400	Received By: FEDEX			Date/Time
Relinquished By: Fed Ex			Date/Time	Received By: Reed Pottruff	Reed Pottruff	4-26-17	Date/Time 0900
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 3/13/2017 FSR ID = FSR25494 A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company

RP4-26-17

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # S17-004-514

Collector	Larry Rosane /CHPRC ~~DN051~~ DN0131	Contact/Requester	Karen Waters-Husted
Telephone No.	509-376-4650	SAF No.	S17-004
Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071
Project Title	SURV, APRIL 2017	Logbook No.	HNF-N-506 91 187
Ice Chest No.	GWS-485	Shipped To (Lab)	TestAmerica Denver
Method of Shipment	Commercial Carrier	Bill of Lading/Air Bill No.	7789 8983 2509
Protocol	CERCLA	Priority:	30 Days **PRIORITY**
Offsite Property No.	7828		

POSSIBLE SAMPLE HAZARDS/REMARKS

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B393M6	Y	W	4/25/17	0936	1x500-mL G/P	6020_METALS_ICPMS: GW 01; 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2
B396P9	N	W	↓	↓	1x500-mL G/P	6020_METALS_ICPMS: GW 01; 6010_METALS_ICP: GW 04	6 Months	HNO3 to pH <2

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Larry Rosane /CHPRC	Larry Rosane		APR 25 2017 1230	Janelle Zunker CHPRC			APR 25 2017 1230
Janelle Zunker CHPRC			APR 25 2017 1400	092425 ~~FEDEX~~ FEDEX			
Fed Ex				Reed Pottruff			4-26-17 0900

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 3/9/2017 FSR ID = FSR42347 A-6004-842 (REV 2)

FedEx ® Tracking

778989852509

Ship date:
Tue 4/25/2017

Richland, WA US

Delivered
Signed for by: S.WOODERMAN

Actual delivery:
Wed 4/26/2017 8:55 am

ARVADA, CO US

Travel History

Date/Time	Activity	Location
- 4/26/2017 - Wednesday		
8:55 am	Delivered	ARVADA, CO
8:37 am	On FedEx vehicle for delivery	ARVADA, CO
8:19 am	At local FedEx facility	ARVADA, CO
5:18 am	At destination sort facility	DENVER, CO
4:04 am	Departed FedEx location	MEMPHIS, TN
12:42 am	Arrived at FedEx location	MEMPHIS, TN
- 4/25/2017 - Tuesday		
4:52 pm	Left FedEx origin facility	PASCO, WA
4:10 pm	Shipment information sent to FedEx	
3:20 pm	Picked up	PASCO, WA

Shipment Facts

Tracking number	778989852509	**Service**	FedEx Priority Overnight
Weight	50 lbs / 22.68 kgs	**Dimensions**	16x16x17 in.
Signature services	Direct signature required	**Delivered To**	Shipping/Receiving
Total pieces	1	**Total shipment weight**	50 lbs / 22.68 kgs
Terms	Third Party	**Shipper reference**	7828
Packaging	Your Packaging	**Special handling section**	Deliver Weekday, Additional Handling Surcharge, Direct Signature Required
Standard transit	4/26/2017 by 10:30 am		

© FedEx 1995-2017

Definitions/Glossary

Client: CH2M Hill Plateau Remediation Company
Project/Site: S17-004

TestAmerica Job ID: 280-96360-1
SDG: DN0131

Qualifiers

Metals

Qualifier	Qualifier Description
U	Analyzed for but not detected.
B	Estimated result. Result is less than the RL, but greater than MDL
C	The analyte was detected in both the sample and the associated QC blank, and the sample concentration was </= 5X the blank concentration.
X	See case narrative notes for explanation of the 'X' flag

General Chemistry

Qualifier	Qualifier Description
U	Analyzed for but not detected.
B	Estimated result. Result is less than the RL, but greater than MDL
C	The analyte was detected in both the sample and the associated QC blank, and the sample concentration was </= 5X the blank concentration.

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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
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: S17-004

TestAmerica Job ID: 280-96360-1
SDG: DN0131

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL DEN
6020A	Metals (ICP/MS)	SW846	TAL DEN
9020B	Organic Halides, Total (TOX)	SW846	TAL DEN
9060A	Organic Carbon, Total (TOC)	SW846	TAL DEN

Protocol References:

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

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: S17-004

TestAmerica Job ID: 280-96360-1
SDG: DN0131

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-96360-1	B396P6	Water	04/25/17 07:30	04/26/17 09:00
280-96360-2	B396P5	Water	04/25/17 11:44	04/26/17 09:00
280-96360-3	B393F1	Water	04/25/17 10:19	04/26/17 09:00
280-96360-4	B393D6	Water	04/25/17 09:42	04/26/17 09:00
280-96360-5	B393F7	Water	04/25/17 12:10	04/26/17 09:00
280-96360-6	B393M6	Water	04/25/17 09:36	04/26/17 09:00
280-96360-7	B396P9	Water	04/25/17 09:36	04/26/17 09:00

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: S17-004

TestAmerica Job ID: 280-96360-1
SDG: DN0131

Method: 6010C - Metals (ICP)

Client Sample ID: B393F1 — **Lab Sample ID: 280-96360-3**
Date Collected: 04/25/17 10:19 — **Matrix: Water**
Date Received: 04/26/17 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	5.2	U	20.0	5.2	ug/L		05/12/17 14:30	05/15/17 15:49	1
Arsenic	**10**	**B**	15.0	4.4	ug/L		05/12/17 14:30	05/15/17 15:49	1
Barium	**20.7**	**C**	10.0	0.82	ug/L		05/12/17 14:30	05/16/17 21:07	1
Beryllium	0.47	U	1.0	0.47	ug/L		05/12/17 14:30	05/15/17 15:49	1
Cadmium	0.45	U	5.0	0.45	ug/L		05/12/17 14:30	05/15/17 15:49	1
Calcium	**30000**		200	34.5	ug/L		05/12/17 14:30	05/15/17 15:49	1
Chromium	**2.4**	**B**	10.0	0.66	ug/L		05/12/17 14:30	05/15/17 15:49	1
Cobalt	1.2	U	10.0	1.2	ug/L		05/12/17 14:30	05/15/17 15:49	1
Copper	4.2	U	15.0	4.2	ug/L		05/12/17 14:30	05/15/17 15:49	1
Iron	**24.4**	**B**	100	22.0	ug/L		05/12/17 14:30	05/15/17 15:49	1
Magnesium	**9260**		200	10.7	ug/L		05/12/17 14:30	05/15/17 15:49	1
Manganese	**0.69**	**B C**	10.0	0.26	ug/L		05/12/17 14:30	05/15/17 15:49	1
Nickel	2.6	U	40.0	2.6	ug/L		05/12/17 14:30	05/15/17 15:49	1
Potassium	**6470**		3000	237	ug/L		05/12/17 14:30	05/15/17 15:49	1
Silver	**2.2**	**B C**	10.0	0.93	ug/L		05/12/17 14:30	05/15/17 15:49	1
Sodium	**29500**		1000	117	ug/L		05/12/17 14:30	05/16/17 21:07	1
Strontium	**152**		10.0	0.30	ug/L		05/12/17 14:30	05/15/17 15:49	1
Vanadium	**22.9**		10.0	1.1	ug/L		05/12/17 14:30	05/15/17 15:49	1
Zinc	4.5	U	20.0	4.5	ug/L		05/12/17 14:30	05/15/17 15:49	1

Client Sample ID: B393D6 — **Lab Sample ID: 280-96360-4**
Date Collected: 04/25/17 09:42 — **Matrix: Water**
Date Received: 04/26/17 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	5.2	U	20.0	5.2	ug/L		05/12/17 14:30	05/15/17 16:01	1
Arsenic	**13.0**	**B**	15.0	4.4	ug/L		05/12/17 14:30	05/15/17 16:01	1
Barium	**30.6**	**C**	10.0	0.82	ug/L		05/12/17 14:30	05/16/17 21:20	1
Beryllium	0.47	U	1.0	0.47	ug/L		05/12/17 14:30	05/15/17 16:01	1
Cadmium	0.45	U	5.0	0.45	ug/L		05/12/17 14:30	05/15/17 16:01	1
Calcium	**33400**		200	34.5	ug/L		05/12/17 14:30	05/15/17 16:01	1
Chromium	**6.1**	**B**	10.0	0.66	ug/L		05/12/17 14:30	05/15/17 16:01	1
Cobalt	1.2	U	10.0	1.2	ug/L		05/12/17 14:30	05/15/17 16:01	1
Copper	4.2	U	15.0	4.2	ug/L		05/12/17 14:30	05/15/17 16:01	1
Iron	**63.1**	**B**	100	22.0	ug/L		05/12/17 14:30	05/15/17 16:01	1
Magnesium	**10300**		200	10.7	ug/L		05/12/17 14:30	05/15/17 16:01	1
Manganese	**1.1**	**B C**	10.0	0.26	ug/L		05/12/17 14:30	05/15/17 16:01	1
Nickel	2.6	U	40.0	2.6	ug/L		05/12/17 14:30	05/15/17 16:01	1
Potassium	**7300**		3000	237	ug/L		05/12/17 14:30	05/15/17 16:01	1
Silver	**2.2**	**B C**	10.0	0.93	ug/L		05/12/17 14:30	05/15/17 16:01	1
Sodium	**26800**		1000	117	ug/L		05/12/17 14:30	05/16/17 21:20	1
Strontium	**179**		10.0	0.30	ug/L		05/12/17 14:30	05/15/17 16:01	1
Vanadium	**20.3**		10.0	1.1	ug/L		05/12/17 14:30	05/15/17 16:01	1
Zinc	4.5	U	20.0	4.5	ug/L		05/12/17 14:30	05/15/17 16:01	1

Client Sample ID: B393F7 — **Lab Sample ID: 280-96360-5**
Date Collected: 04/25/17 12:10 — **Matrix: Water**
Date Received: 04/26/17 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	5.2	U	20.0	5.2	ug/L		05/12/17 14:30	05/15/17 16:04	1
Arsenic	**8.3**	**B**	15.0	4.4	ug/L		05/12/17 14:30	05/15/17 16:04	1

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: S17-004

TestAmerica Job ID: 280-96360-1
SDG: DN0131

Method: 6010C - Metals (ICP) (Continued)

Client Sample ID: B393F7 — **Lab Sample ID: 280-96360-5**
Date Collected: 04/25/17 12:10 — **Matrix: Water**
Date Received: 04/26/17 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	32.0	C	10.0	0.82	ug/L		05/12/17 14:30	05/16/17 21:23	1
Beryllium	0.47	U	1.0	0.47	ug/L		05/12/17 14:30	05/15/17 16:04	1
Cadmium	0.45	U	5.0	0.45	ug/L		05/12/17 14:30	05/15/17 16:04	1
Calcium	36400		200	34.5	ug/L		05/12/17 14:30	05/15/17 16:04	1
Chromium	2.8	B	10.0	0.66	ug/L		05/12/17 14:30	05/15/17 16:04	1
Cobalt	1.2	U	10.0	1.2	ug/L		05/12/17 14:30	05/15/17 16:04	1
Copper	4.2	U	15.0	4.2	ug/L		05/12/17 14:30	05/15/17 16:04	1
Iron	80.3	B	100	22.0	ug/L		05/12/17 14:30	05/15/17 16:04	1
Magnesium	10900		200	10.7	ug/L		05/12/17 14:30	05/15/17 16:04	1
Manganese	2.8	B C	10.0	0.26	ug/L		05/12/17 14:30	05/15/17 16:04	1
Nickel	2.6	U	40.0	2.6	ug/L		05/12/17 14:30	05/15/17 16:04	1
Potassium	7500		3000	237	ug/L		05/12/17 14:30	05/15/17 16:04	1
Silver	2.1	B C	10.0	0.93	ug/L		05/12/17 14:30	05/15/17 16:04	1
Sodium	29800		1000	117	ug/L		05/12/17 14:30	05/16/17 21:23	1
Strontium	188		10.0	0.30	ug/L		05/12/17 14:30	05/15/17 16:04	1
Vanadium	18.3		10.0	1.1	ug/L		05/12/17 14:30	05/15/17 16:04	1
Zinc	4.5	U	20.0	4.5	ug/L		05/12/17 14:30	05/15/17 16:04	1

Client Sample ID: B396P9 — **Lab Sample ID: 280-96360-7**
Date Collected: 04/25/17 09:36 — **Matrix: Water**
Date Received: 04/26/17 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	24.7	B	100	4.4	ug/L		05/12/17 14:30	05/15/17 16:06	1
Calcium	55900		200	34.5	ug/L		05/12/17 14:30	05/15/17 16:06	1
Iron	38.4	B	100	22.0	ug/L		05/12/17 14:30	05/15/17 16:06	1
Magnesium	15400		200	10.7	ug/L		05/12/17 14:30	05/15/17 16:06	1
Potassium	5920		3000	237	ug/L		05/12/17 14:30	05/15/17 16:06	1
Sodium	23500		1000	117	ug/L		05/12/17 14:30	05/16/17 21:25	1
Vanadium	12.4		10.0	1.1	ug/L		05/12/17 14:30	05/15/17 16:06	1

Method: 6010C - Metals (ICP) - Dissolved

Client Sample ID: B393M6 — **Lab Sample ID: 280-96360-6**
Date Collected: 04/25/17 09:36 — **Matrix: Water**
Date Received: 04/26/17 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	17.3	B	100	4.4	ug/L		05/03/17 07:40	05/04/17 02:58	1
Calcium	49200		200	34.5	ug/L		05/03/17 07:40	05/04/17 02:58	1
Iron	22.0	U	100	22.0	ug/L		05/03/17 07:40	05/04/17 16:47	1
Magnesium	15300		200	10.7	ug/L		05/03/17 07:40	05/04/17 02:58	1
Potassium	5350		3000	237	ug/L		05/03/17 07:40	05/04/17 02:58	1
Sodium	22800		1000	117	ug/L		05/03/17 07:40	05/04/17 02:58	1
Vanadium	11.9		10.0	1.1	ug/L		05/03/17 07:40	05/04/17 02:58	1

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: S17-004

TestAmerica Job ID: 280-96360-1
SDG: DN0131

Method: 6020A - Metals (ICP/MS)

Client Sample ID: B393F1 — **Lab Sample ID: 280-96360-3**
Date Collected: 04/25/17 10:19 — **Matrix: Water**
Date Received: 04/26/17 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	1.6		1.0	0.050	ug/L		05/15/17 07:16	05/15/17 17:37	1

Client Sample ID: B393D6 — **Lab Sample ID: 280-96360-4**
Date Collected: 04/25/17 09:42 — **Matrix: Water**
Date Received: 04/26/17 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	4.8		1.0	0.050	ug/L		05/15/17 07:16	05/15/17 17:40	1

Client Sample ID: B393F7 — **Lab Sample ID: 280-96360-5**
Date Collected: 04/25/17 12:10 — **Matrix: Water**
Date Received: 04/26/17 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	2.4		1.0	0.050	ug/L		05/15/17 07:16	05/15/17 17:44	1

Client Sample ID: B396P9 — **Lab Sample ID: 280-96360-7**
Date Collected: 04/25/17 09:36 — **Matrix: Water**
Date Received: 04/26/17 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	18.2	B	50.0	13.0	ug/L		05/15/17 07:16	05/15/17 17:48	1
Antimony	0.40	U	2.0	0.40	ug/L		05/15/17 07:16	05/15/17 17:48	1
Arsenic	4.6	B	5.0	0.33	ug/L		05/15/17 07:16	05/15/17 17:48	1
Barium	31.9		1.0	0.29	ug/L		05/15/17 07:16	05/15/17 17:48	1
Beryllium	0.080	U	1.0	0.080	ug/L		05/15/17 07:16	05/15/17 17:48	1
Cadmium	0.27	U	1.0	0.27	ug/L		05/15/17 07:16	05/15/17 17:48	1
Chromium	12.7		2.0	0.50	ug/L		05/15/17 07:16	05/15/17 17:48	1
Cobalt	0.057	B	1.0	0.054	ug/L		05/15/17 07:16	05/15/17 17:48	1
Copper	0.59	B	2.0	0.56	ug/L		05/15/17 07:16	05/15/17 17:48	1
Lead	0.18	U	1.0	0.18	ug/L		05/15/17 07:16	05/15/17 17:48	1
Manganese	1.4		1.0	0.31	ug/L		05/15/17 07:16	05/15/17 17:48	1
Molybdenum	3.0		2.0	0.14	ug/L		05/15/17 07:16	05/15/17 17:48	1
Nickel	0.30	U	2.0	0.30	ug/L		05/15/17 07:16	05/15/17 17:48	1
Selenium	1.3	B	5.0	0.70	ug/L		05/15/17 07:16	05/15/17 17:48	1
Silver	0.033	U	5.0	0.033	ug/L		05/15/17 07:16	05/15/17 17:48	1
Strontium	400		10.0	0.30	ug/L		05/15/17 07:16	05/15/17 17:48	1
Thallium	0.050	U	1.0	0.050	ug/L		05/15/17 07:16	05/15/17 17:48	1
Thorium	1.2	U	5.0	1.2	ug/L		05/15/17 07:16	05/15/17 17:48	1
Tin	0.77	U	10.0	0.77	ug/L		05/15/17 07:16	05/15/17 17:48	1
Uranium	3.2		1.0	0.050	ug/L		05/15/17 07:16	05/15/17 17:48	1
Zinc	2.0	U	10.0	2.0	ug/L		05/15/17 07:16	05/15/17 17:48	1

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

Client Sample ID: B393M6 — **Lab Sample ID: 280-96360-6**
Date Collected: 04/25/17 09:36 — **Matrix: Water**
Date Received: 04/26/17 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	13.0	U	50.0	13.0	ug/L		05/03/17 07:40	05/03/17 23:06	1
Antimony	0.48	B	2.0	0.40	ug/L		05/03/17 07:40	05/03/17 23:06	1
Arsenic	5.2		5.0	0.33	ug/L		05/03/17 07:40	05/03/17 23:06	1
Barium	32.7		1.0	0.29	ug/L		05/03/17 07:40	05/03/17 23:06	1

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: S17-004

TestAmerica Job ID: 280-96360-1
SDG: DN0131

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

Client Sample ID: B393M6 — **Lab Sample ID: 280-96360-6**
Date Collected: 04/25/17 09:36 — **Matrix: Water**
Date Received: 04/26/17 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.080	U	1.0	0.080	ug/L		05/03/17 07:40	05/03/17 23:06	1
Cadmium	0.27	U	1.0	0.27	ug/L		05/03/17 07:40	05/03/17 23:06	1
Chromium	**12.6**		2.0	0.50	ug/L		05/03/17 07:40	05/03/17 23:06	1
Cobalt	0.054	U	1.0	0.054	ug/L		05/03/17 07:40	05/03/17 23:06	1
Copper	0.56	U	2.0	0.56	ug/L		05/03/17 07:40	05/03/17 23:06	1
Lead	0.18	U	1.0	0.18	ug/L		05/03/17 07:40	05/03/17 23:06	1
Manganese	**0.65**	**B**	1.0	0.31	ug/L		05/03/17 07:40	05/03/17 23:06	1
Molybdenum	**2.8**		2.0	0.14	ug/L		05/03/17 07:40	05/03/17 23:06	1
Nickel	**0.32**	**B**	2.0	0.30	ug/L		05/03/17 07:40	05/03/17 23:06	1
Selenium	**1.4**	**B**	5.0	0.70	ug/L		05/03/17 07:40	05/03/17 23:06	1
Silver	0.033	U	5.0	0.033	ug/L		05/03/17 07:40	05/03/17 23:06	1
Strontium	**380**		10.0	0.30	ug/L		05/03/17 07:40	05/03/17 23:06	1
Thallium	0.050	U	1.0	0.050	ug/L		05/03/17 07:40	05/03/17 23:06	1
Thorium	1.2	U	5.0	1.2	ug/L		05/03/17 07:40	05/03/17 23:06	1
Tin	0.77	U	10.0	0.77	ug/L		05/03/17 07:40	05/03/17 23:06	1
Uranium	**3.5**		1.0	0.050	ug/L		05/03/17 07:40	05/03/17 23:06	1
Zinc	2.0	U	10.0	2.0	ug/L		05/03/17 07:40	05/03/17 23:06	1

General Chemistry

Client Sample ID: B396P6 — **Lab Sample ID: 280-96360-1**
Date Collected: 04/25/17 07:30 — **Matrix: Water**
Date Received: 04/26/17 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Halogens - Dup	7.7	U	30.0	7.7	ug/L			05/15/17 09:11	1
Total Organic Carbon - Average	**232**	**B C**	1000	155	ug/L			05/15/17 15:48	1

Client Sample ID: B396P5 — **Lab Sample ID: 280-96360-2**
Date Collected: 04/25/17 11:44 — **Matrix: Water**
Date Received: 04/26/17 09:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Halogens - Dup	7.7	U	30.0	7.7	ug/L			05/15/17 09:11	1
Total Organic Carbon - Average	**2490**	**C**	1000	155	ug/L			05/15/17 16:03	1

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: S17-004

TestAmerica Job ID: 280-96360-1
SDG: DN0131

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 280-371321/1-A
Matrix: Water
Analysis Batch: 373667

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 371321

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	5.2	U	20.0	5.2	ug/L		05/12/17 14:30	05/15/17 15:44	1
Arsenic	4.4	U	15.0	4.4	ug/L		05/12/17 14:30	05/15/17 15:44	1
Beryllium	0.47	U	1.0	0.47	ug/L		05/12/17 14:30	05/15/17 15:44	1
Boron	4.4	U	100	4.4	ug/L		05/12/17 14:30	05/15/17 15:44	1
Cadmium	0.45	U	5.0	0.45	ug/L		05/12/17 14:30	05/15/17 15:44	1
Calcium	868.7		200	34.5	ug/L		05/12/17 14:30	05/15/17 15:44	1
Chromium	0.66	U	10.0	0.66	ug/L		05/12/17 14:30	05/15/17 15:44	1
Cobalt	1.2	U	10.0	1.2	ug/L		05/12/17 14:30	05/15/17 15:44	1
Copper	4.2	U	15.0	4.2	ug/L		05/12/17 14:30	05/15/17 15:44	1
Iron	22.0	U	100	22.0	ug/L		05/12/17 14:30	05/15/17 15:44	1
Magnesium	19.20	B	200	10.7	ug/L		05/12/17 14:30	05/15/17 15:44	1
Manganese	0.790	B	10.0	0.26	ug/L		05/12/17 14:30	05/15/17 15:44	1
Nickel	2.6	U	40.0	2.6	ug/L		05/12/17 14:30	05/15/17 15:44	1
Potassium	237	U	3000	237	ug/L		05/12/17 14:30	05/15/17 15:44	1
Silver	1.69	B	10.0	0.93	ug/L		05/12/17 14:30	05/15/17 15:44	1
Strontium	0.700	B	10.0	0.30	ug/L		05/12/17 14:30	05/15/17 15:44	1
Vanadium	1.1	U	10.0	1.1	ug/L		05/12/17 14:30	05/15/17 15:44	1
Zinc	4.5	U	20.0	4.5	ug/L		05/12/17 14:30	05/15/17 15:44	1

Lab Sample ID: MB 280-371321/1-A
Matrix: Water
Analysis Batch: 373855

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 371321

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	1.90	B	10.0	0.82	ug/L		05/12/17 14:30	05/16/17 21:02	1
Sodium	409.3	B	1000	117	ug/L		05/12/17 14:30	05/16/17 21:02	1

Lab Sample ID: LCS 280-371321/2-A
Matrix: Water
Analysis Batch: 373667

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 371321

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	500	522.8		ug/L		105	80 - 120
Arsenic	1000	1013		ug/L		101	80 - 120
Beryllium	50.0	48.08		ug/L		96	80 - 120
Boron	1000	1054		ug/L		105	80 - 120
Cadmium	100	103.6		ug/L		104	80 - 120
Calcium	50000	50480		ug/L		101	80 - 120
Chromium	200	206.3		ug/L		103	80 - 120
Cobalt	500	499.5		ug/L		100	80 - 120
Copper	250	266.0		ug/L		106	80 - 120
Iron	1000	973.5		ug/L		97	80 - 120
Magnesium	50000	49100		ug/L		98	80 - 120
Manganese	500	481.5		ug/L		96	80 - 120
Nickel	500	495.4		ug/L		99	80 - 120
Potassium	50000	51980		ug/L		104	80 - 120
Silver	50.0	55.29		ug/L		111	80 - 120
Strontium	1000	980.6		ug/L		98	80 - 120

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: S17-004

TestAmerica Job ID: 280-96360-1
SDG: DN0131

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 280-371321/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373667 — **Prep Batch: 371321**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vanadium	500	501.3		ug/L		100	80 - 120
Zinc	500	459.4		ug/L		92	80 - 120

Lab Sample ID: LCS 280-371321/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373855 — **Prep Batch: 371321**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	2000	2196		ug/L		110	80 - 120
Sodium	50000	53450		ug/L		107	80 - 120

Lab Sample ID: 280-96360-3 MS — **Client Sample ID: B393F1**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373667 — **Prep Batch: 371321**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	5.2	U	500	531.2		ug/L		106	75 - 125
Arsenic	10	B	1000	1033		ug/L		102	75 - 125
Beryllium	0.47	U	50.0	48.64		ug/L		97	75 - 125
Boron	25.7	B	1000	1099		ug/L		107	75 - 125
Cadmium	0.45	U	100	105.1		ug/L		105	75 - 125
Calcium	30000		50000	81750		ug/L		104	75 - 125
Chromium	2.4	B	200	210.2		ug/L		104	75 - 125
Cobalt	1.2	U	500	502.8		ug/L		101	75 - 125
Copper	4.2	U	250	270.5		ug/L		108	75 - 125
Iron	24.4	B	1000	1001		ug/L		98	75 - 125
Magnesium	9260		50000	59160		ug/L		100	75 - 125
Manganese	0.69	B C	500	485.9		ug/L		97	75 - 125
Nickel	2.6	U	500	497.5		ug/L		100	75 - 125
Potassium	6470		50000	59890		ug/L		107	75 - 125
Silver	2.2	B C	50.0	55.84		ug/L		107	75 - 125
Strontium	152		1000	1147		ug/L		99	75 - 125
Vanadium	22.9		500	529.0		ug/L		101	75 - 125
Zinc	4.5	U	500	468.1		ug/L		94	75 - 125

Lab Sample ID: 280-96360-3 MS — **Client Sample ID: B393F1**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373855 — **Prep Batch: 371321**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	20.7	C	2000	2218		ug/L		110	75 - 125
Sodium	29500		50000	86450		ug/L		114	75 - 125

Lab Sample ID: 280-96360-3 MSD — **Client Sample ID: B393F1**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373667 — **Prep Batch: 371321**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	5.2	U	500	514.6		ug/L		103	75 - 125	3	20

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: S17-004

TestAmerica Job ID: 280-96360-1
SDG: DN0131

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 280-96360-3 MSD — **Client Sample ID: B393F1**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373667 — **Prep Batch: 371321**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	10	B	1000	1012		ug/L		100	75 - 125	2	20
Beryllium	0.47	U	50.0	47.29		ug/L		95	75 - 125	3	20
Boron	25.7	B	1000	1069		ug/L		104	75 - 125	3	20
Cadmium	0.45	U	100	103.4		ug/L		103	75 - 125	2	20
Calcium	30000		50000	78240		ug/L		97	75 - 125	4	20
Chromium	2.4	B	200	205.4		ug/L		102	75 - 125	2	20
Cobalt	1.2	U	500	490.0		ug/L		98	75 - 125	3	20
Copper	4.2	U	250	261.8		ug/L		105	75 - 125	3	20
Iron	24.4	B	1000	978.2		ug/L		95	75 - 125	2	20
Magnesium	9260		50000	57520		ug/L		97	75 - 125	3	20
Manganese	0.69	B C	500	475.2		ug/L		95	75 - 125	2	20
Nickel	2.6	U	500	485.3		ug/L		97	75 - 125	2	20
Potassium	6470		50000	58190		ug/L		103	75 - 125	3	20
Silver	2.2	B C	50.0	55.40		ug/L		106	75 - 125	1	20
Strontium	152		1000	1113		ug/L		96	75 - 125	3	20
Vanadium	22.9		500	518.9		ug/L		99	75 - 125	2	20
Zinc	4.5	U	500	455.9		ug/L		91	75 - 125	3	20

Lab Sample ID: 280-96360-3 MSD — **Client Sample ID: B393F1**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373855 — **Prep Batch: 371321**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Barium	20.7	C	2000	2193		ug/L		109	75 - 125	1	20
Sodium	29500		50000	84880		ug/L		111	75 - 125	2	20

Lab Sample ID: MB 280-371846/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 372145 — **Prep Batch: 371846**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	4.4	U	100	4.4	ug/L		05/03/17 07:40	05/04/17 02:47	1
Calcium	49.19	B	200	34.5	ug/L		05/03/17 07:40	05/04/17 02:47	1
Magnesium	12.53	B	200	10.7	ug/L		05/03/17 07:40	05/04/17 02:47	1
Potassium	237	U	3000	237	ug/L		05/03/17 07:40	05/04/17 02:47	1
Sodium	147.8	B	1000	117	ug/L		05/03/17 07:40	05/04/17 02:47	1
Vanadium	1.1	U	10.0	1.1	ug/L		05/03/17 07:40	05/04/17 02:47	1

Lab Sample ID: MB 280-371846/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 372339 — **Prep Batch: 371846**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	22.0	U	100	22.0	ug/L		05/03/17 07:40	05/04/17 16:37	1

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: S17-004

TestAmerica Job ID: 280-96360-1
SDG: DN0131

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 280-371846/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 372145 — **Prep Batch: 371846**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1000	1002		ug/L		100	80 - 120
Calcium	50000	46370		ug/L		93	80 - 120
Magnesium	50000	50900		ug/L		102	80 - 120
Potassium	50000	50360		ug/L		101	80 - 120
Sodium	50000	53200		ug/L		106	80 - 120
Vanadium	500	533.2		ug/L		107	80 - 120

Lab Sample ID: LCS 280-371846/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 372339 — **Prep Batch: 371846**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	1000	956.2		ug/L		96	80 - 120

Lab Sample ID: 280-96360-6 MS — **Client Sample ID: B393M6**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 372145 — **Prep Batch: 371846**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	17.3	B	1000	1039		ug/L		102	75 - 125
Calcium	49200		50000	96680		ug/L		95	75 - 125
Magnesium	15300		50000	67320		ug/L		104	75 - 125
Potassium	5350		50000	57190		ug/L		104	75 - 125
Sodium	22800		50000	76660		ug/L		108	75 - 125
Vanadium	11.9		500	560.2		ug/L		110	75 - 125

Lab Sample ID: 280-96360-6 MS — **Client Sample ID: B393M6**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 372339 — **Prep Batch: 371846**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	22.0	U	1000	970.4		ug/L		97	75 - 125

Lab Sample ID: 280-96360-6 MSD — **Client Sample ID: B393M6**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 372145 — **Prep Batch: 371846**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	17.3	B	1000	1032		ug/L		101	75 - 125	1	20
Calcium	49200		50000	93650		ug/L		89	75 - 125	3	20
Magnesium	15300		50000	65050		ug/L		100	75 - 125	3	20
Potassium	5350		50000	54850		ug/L		99	75 - 125	4	20
Sodium	22800		50000	73880		ug/L		102	75 - 125	4	20
Vanadium	11.9		500	539.8		ug/L		106	75 - 125	4	20

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: S17-004

TestAmerica Job ID: 280-96360-1
SDG: DN0131

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 280-96360-6 MSD — **Client Sample ID: B393M6**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 372339 — **Prep Batch: 371846**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	22.0	U	1000	935.2		ug/L		94	75 - 125	4	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 280-371322/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373685 — **Prep Batch: 371322**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	13.0	U	50.0	13.0	ug/L		05/15/17 07:16	05/15/17 17:29	1
Antimony	0.40	U	2.0	0.40	ug/L		05/15/17 07:16	05/15/17 17:29	1
Arsenic	0.33	U	5.0	0.33	ug/L		05/15/17 07:16	05/15/17 17:29	1
Barium	0.29	U	1.0	0.29	ug/L		05/15/17 07:16	05/15/17 17:29	1
Beryllium	0.080	U	1.0	0.080	ug/L		05/15/17 07:16	05/15/17 17:29	1
Cadmium	0.27	U	1.0	0.27	ug/L		05/15/17 07:16	05/15/17 17:29	1
Chromium	0.50	U	2.0	0.50	ug/L		05/15/17 07:16	05/15/17 17:29	1
Cobalt	0.054	U	1.0	0.054	ug/L		05/15/17 07:16	05/15/17 17:29	1
Copper	0.56	U	2.0	0.56	ug/L		05/15/17 07:16	05/15/17 17:29	1
Lead	0.361	B	1.0	0.18	ug/L		05/15/17 07:16	05/15/17 17:29	1
Manganese	0.31	U	1.0	0.31	ug/L		05/15/17 07:16	05/15/17 17:29	1
Molybdenum	0.14	U	2.0	0.14	ug/L		05/15/17 07:16	05/15/17 17:29	1
Nickel	0.30	U	2.0	0.30	ug/L		05/15/17 07:16	05/15/17 17:29	1
Selenium	0.70	U	5.0	0.70	ug/L		05/15/17 07:16	05/15/17 17:29	1
Silver	0.033	U	5.0	0.033	ug/L		05/15/17 07:16	05/15/17 17:29	1
Strontium	0.30	U	10.0	0.30	ug/L		05/15/17 07:16	05/15/17 17:29	1
Thallium	0.050	U	1.0	0.050	ug/L		05/15/17 07:16	05/15/17 17:29	1
Thorium	1.2	U	5.0	1.2	ug/L		05/15/17 07:16	05/15/17 17:29	1
Tin	0.77	U	10.0	0.77	ug/L		05/15/17 07:16	05/15/17 17:29	1
Uranium	0.050	U	1.0	0.050	ug/L		05/15/17 07:16	05/15/17 17:29	1
Zinc	2.0	U	10.0	2.0	ug/L		05/15/17 07:16	05/15/17 17:29	1

Lab Sample ID: LCS 280-371322/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373685 — **Prep Batch: 371322**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	400	400.9		ug/L		100	80 - 120
Antimony	40.0	37.87		ug/L		95	80 - 120
Arsenic	40.0	37.19		ug/L		93	80 - 120
Beryllium	40.0	40.67		ug/L		102	80 - 120
Cadmium	40.0	39.50		ug/L		99	80 - 120
Chromium	40.0	40.52		ug/L		101	80 - 120
Cobalt	40.0	40.35		ug/L		101	80 - 120
Copper	40.0	40.32		ug/L		101	80 - 120
Lead	40.0	41.50		ug/L		104	80 - 120
Manganese	40.0	41.82		ug/L		105	80 - 120
Molybdenum	40.0	40.09		ug/L		100	80 - 120
Selenium	40.0	39.27		ug/L		98	80 - 120

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: S17-004

TestAmerica Job ID: 280-96360-1
SDG: DN0131

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

Lab Sample ID: LCS 280-371322/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 373685 **Prep Batch: 371322**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Silver	40.0	40.28		ug/L		101	80 - 120
Strontium	40.0	39.67		ug/L		99	80 - 120
Thallium	40.0	40.37		ug/L		101	80 - 120
Thorium	40.0	38.65		ug/L		97	80 - 120
Tin	40.0	40.54		ug/L		101	80 - 120
Uranium	40.0	38.92		ug/L		97	80 - 120
Zinc	40.0	41.70		ug/L		104	80 - 120

Lab Sample ID: 280-96360-7 MS **Client Sample ID: B396P9**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 373685 **Prep Batch: 371322**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	18.2	B	400	406.0		ug/L		97	75 - 125
Antimony	0.40	U	40.0	40.00		ug/L		100	75 - 125
Arsenic	4.6	B	40.0	43.59		ug/L		98	75 - 125
Barium	31.9		40.0	71.91		ug/L		100	75 - 125
Beryllium	0.080	U	40.0	40.67		ug/L		102	75 - 125
Cadmium	0.27	U	40.0	40.55		ug/L		101	75 - 125
Chromium	12.7		40.0	53.41		ug/L		102	75 - 125
Cobalt	0.057	B	40.0	40.36		ug/L		101	75 - 125
Copper	0.59	B	40.0	40.42		ug/L		100	75 - 125
Lead	0.18	U	40.0	41.38		ug/L		103	75 - 125
Manganese	1.4		40.0	42.82		ug/L		104	75 - 125
Molybdenum	3.0		40.0	43.59		ug/L		102	75 - 125
Nickel	0.30	U	40.0	41.13		ug/L		103	75 - 125
Selenium	1.3	B	40.0	41.41		ug/L		100	75 - 125
Silver	0.033	U	40.0	39.73		ug/L		99	75 - 125
Strontium	400		40.0	441.9	X	ug/L		104	75 - 125
Thallium	0.050	U	40.0	40.58		ug/L		101	75 - 125
Thorium	1.2	U	40.0	39.98		ug/L		100	75 - 125
Tin	0.77	U	40.0	41.46		ug/L		104	75 - 125
Uranium	3.2		40.0	43.05		ug/L		100	75 - 125
Zinc	2.0	U	40.0	39.26		ug/L		98	75 - 125

Lab Sample ID: 280-96360-7 MSD **Client Sample ID: B396P9**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 373685 **Prep Batch: 371322**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	18.2	B	400	426.6		ug/L		102	75 - 125	5	20
Antimony	0.40	U	40.0	40.08		ug/L		100	75 - 125	0	20
Arsenic	4.6	B	40.0	42.98		ug/L		96	75 - 125	1	20
Barium	31.9		40.0	75.89		ug/L		110	75 - 125	5	20
Beryllium	0.080	U	40.0	40.25		ug/L		101	75 - 125	1	20
Cadmium	0.27	U	40.0	41.29		ug/L		103	75 - 125	2	20
Chromium	12.7		40.0	52.83		ug/L		100	75 - 125	1	20
Cobalt	0.057	B	40.0	40.28		ug/L		101	75 - 125	0	20
Copper	0.59	B	40.0	40.21		ug/L		99	75 - 125	0	20

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: S17-004

TestAmerica Job ID: 280-96360-1
SDG: DN0131

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

Lab Sample ID: 280-96360-7 MSD
Matrix: Water
Analysis Batch: 373685

Client Sample ID: B396P9
Prep Type: Total/NA
Prep Batch: 371322

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	0.18	U	40.0	40.93		ug/L		102	75 - 125	1	20
Manganese	1.4		40.0	41.00		ug/L		99	75 - 125	4	20
Molybdenum	3.0		40.0	43.26		ug/L		101	75 - 125	1	20
Nickel	0.30	U	40.0	41.12		ug/L		103	75 - 125	0	20
Selenium	1.3	B	40.0	41.67		ug/L		101	75 - 125	1	20
Silver	0.033	U	40.0	39.84		ug/L		100	75 - 125	0	20
Strontium	400		40.0	454.9	X	ug/L		136	75 - 125	3	20
Thallium	0.050	U	40.0	40.40		ug/L		101	75 - 125	0	20
Thorium	1.2	U	40.0	39.33		ug/L		98	75 - 125	2	20
Tin	0.77	U	40.0	42.44		ug/L		106	75 - 125	2	20
Uranium	3.2		40.0	42.80		ug/L		99	75 - 125	1	20
Zinc	2.0	U	40.0	40.83		ug/L		102	75 - 125	4	20

Lab Sample ID: MB 280-371808/1-A
Matrix: Water
Analysis Batch: 372188

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 371808

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	13.0	U	50.0	13.0	ug/L		05/03/17 07:40	05/03/17 22:55	1
Antimony	0.40	U	2.0	0.40	ug/L		05/03/17 07:40	05/03/17 22:55	1
Arsenic	0.33	U	5.0	0.33	ug/L		05/03/17 07:40	05/03/17 22:55	1
Barium	0.29	U	1.0	0.29	ug/L		05/03/17 07:40	05/03/17 22:55	1
Beryllium	0.080	U	1.0	0.080	ug/L		05/03/17 07:40	05/03/17 22:55	1
Cadmium	0.27	U	1.0	0.27	ug/L		05/03/17 07:40	05/03/17 22:55	1
Chromium	0.50	U	2.0	0.50	ug/L		05/03/17 07:40	05/03/17 22:55	1
Cobalt	0.054	U	1.0	0.054	ug/L		05/03/17 07:40	05/03/17 22:55	1
Copper	0.56	U	2.0	0.56	ug/L		05/03/17 07:40	05/03/17 22:55	1
Lead	0.18	U	1.0	0.18	ug/L		05/03/17 07:40	05/03/17 22:55	1
Manganese	0.31	U	1.0	0.31	ug/L		05/03/17 07:40	05/03/17 22:55	1
Molybdenum	0.14	U	2.0	0.14	ug/L		05/03/17 07:40	05/03/17 22:55	1
Nickel	0.30	U	2.0	0.30	ug/L		05/03/17 07:40	05/03/17 22:55	1
Selenium	0.70	U	5.0	0.70	ug/L		05/03/17 07:40	05/03/17 22:55	1
Silver	0.033	U	5.0	0.033	ug/L		05/03/17 07:40	05/03/17 22:55	1
Strontium	0.30	U	10.0	0.30	ug/L		05/03/17 07:40	05/03/17 22:55	1
Thallium	0.050	U	1.0	0.050	ug/L		05/03/17 07:40	05/03/17 22:55	1
Thorium	1.2	U	5.0	1.2	ug/L		05/03/17 07:40	05/03/17 22:55	1
Tin	0.77	U	10.0	0.77	ug/L		05/03/17 07:40	05/03/17 22:55	1
Uranium	0.050	U	1.0	0.050	ug/L		05/03/17 07:40	05/03/17 22:55	1
Zinc	2.0	U	10.0	2.0	ug/L		05/03/17 07:40	05/03/17 22:55	1

Lab Sample ID: LCS 280-371808/2-A
Matrix: Water
Analysis Batch: 372188

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 371808

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	400	412.8		ug/L		103	80 - 120
Antimony	40.0	38.60		ug/L		96	80 - 120
Arsenic	40.0	39.71		ug/L		99	80 - 120
Barium	40.0	41.56		ug/L		104	80 - 120

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: S17-004

TestAmerica Job ID: 280-96360-1
SDG: DN0131

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

Lab Sample ID: LCS 280-371808/2-A
Matrix: Water
Analysis Batch: 372188

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 371808

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	40.0	39.55		ug/L		99	80 - 120
Cadmium	40.0	41.02		ug/L		103	80 - 120
Chromium	40.0	41.05		ug/L		103	80 - 120
Cobalt	40.0	42.29		ug/L		106	80 - 120
Copper	40.0	42.32		ug/L		106	80 - 120
Lead	40.0	45.71		ug/L		114	80 - 120
Manganese	40.0	42.31		ug/L		106	80 - 120
Molybdenum	40.0	40.99		ug/L		102	80 - 120
Nickel	40.0	43.78		ug/L		109	80 - 120
Selenium	40.0	41.53		ug/L		104	80 - 120
Silver	40.0	42.58		ug/L		106	80 - 120
Strontium	40.0	40.93		ug/L		102	80 - 120
Thallium	40.0	45.17		ug/L		113	80 - 120
Thorium	40.0	41.79		ug/L		104	80 - 120
Tin	40.0	41.99		ug/L		105	80 - 120
Uranium	40.0	43.58		ug/L		109	80 - 120
Zinc	40.0	44.33		ug/L		111	80 - 120

Lab Sample ID: 280-96360-6 MS
Matrix: Water
Analysis Batch: 372188

Client Sample ID: B393M6
Prep Type: Dissolved
Prep Batch: 371808

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	13.0	U	400	427.1		ug/L		107	75 - 125
Antimony	0.48	B	40.0	39.47		ug/L		97	75 - 125
Arsenic	5.2		40.0	45.59		ug/L		101	75 - 125
Barium	32.7		40.0	75.53		ug/L		107	75 - 125
Beryllium	0.080	U	40.0	42.07		ug/L		105	75 - 125
Cadmium	0.27	U	40.0	41.67		ug/L		104	75 - 125
Chromium	12.6		40.0	53.18		ug/L		101	75 - 125
Cobalt	0.054	U	40.0	40.88		ug/L		102	75 - 125
Copper	0.56	U	40.0	41.58		ug/L		104	75 - 125
Lead	0.18	U	40.0	44.95		ug/L		112	75 - 125
Manganese	0.65	B	40.0	39.72		ug/L		98	75 - 125
Molybdenum	2.8		40.0	43.65		ug/L		102	75 - 125
Nickel	0.32	B	40.0	41.23		ug/L		102	75 - 125
Selenium	1.4	B	40.0	42.50		ug/L		103	75 - 125
Silver	0.033	U	40.0	41.03		ug/L		103	75 - 125
Strontium	380		40.0	422.4	X	ug/L		107	75 - 125
Thallium	0.050	U	40.0	44.55		ug/L		111	75 - 125
Thorium	1.2	U	40.0	42.57		ug/L		106	75 - 125
Tin	0.77	U	40.0	41.73		ug/L		104	75 - 125
Uranium	3.5		40.0	47.65		ug/L		110	75 - 125
Zinc	2.0	U	40.0	42.23		ug/L		106	75 - 125

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: S17-004

TestAmerica Job ID: 280-96360-1
SDG: DN0131

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

Lab Sample ID: 280-96360-6 MSD — **Client Sample ID: B393M6**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 372188 — **Prep Batch: 371808**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	13.0	U	400	406.1		ug/L		102	75 - 125	5	20
Antimony	0.48	B	40.0	39.91		ug/L		99	75 - 125	1	20
Arsenic	5.2		40.0	43.46		ug/L		96	75 - 125	5	20
Barium	32.7		40.0	73.36		ug/L		102	75 - 125	3	20
Beryllium	0.080	U	40.0	39.82		ug/L		100	75 - 125	5	20
Cadmium	0.27	U	40.0	41.52		ug/L		104	75 - 125	0	20
Chromium	12.6		40.0	50.91		ug/L		96	75 - 125	4	20
Cobalt	0.054	U	40.0	39.68		ug/L		99	75 - 125	3	20
Copper	0.56	U	40.0	39.63		ug/L		99	75 - 125	5	20
Lead	0.18	U	40.0	43.84		ug/L		110	75 - 125	2	20
Manganese	0.65	B	40.0	40.27		ug/L		99	75 - 125	1	20
Molybdenum	2.8		40.0	42.90		ug/L		100	75 - 125	2	20
Nickel	0.32	B	40.0	40.65		ug/L		101	75 - 125	1	20
Selenium	1.4	B	40.0	42.25		ug/L		102	75 - 125	1	20
Silver	0.033	U	40.0	40.11		ug/L		100	75 - 125	2	20
Strontium	380		40.0	416.5	X	ug/L		92	75 - 125	1	20
Thallium	0.050	U	40.0	43.56		ug/L		109	75 - 125	2	20
Thorium	1.2	U	40.0	41.49		ug/L		104	75 - 125	3	20
Tin	0.77	U	40.0	40.89		ug/L		102	75 - 125	2	20
Uranium	3.5		40.0	46.19		ug/L		107	75 - 125	3	20
Zinc	2.0	U	40.0	45.29		ug/L		113	75 - 125	7	20

Method: 9020B - Organic Halides, Total (TOX)

Lab Sample ID: MB 280-373670/2 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373670

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Halogens - Dup	7.7	U	30.0	7.7	ug/L			05/15/17 09:11	1

Lab Sample ID: LCS 280-373670/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373670

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Halogens - Dup	100	95.18		ug/L		95	80 - 120

Lab Sample ID: LCSD 280-373670/5 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373670

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Halogens - Dup	100	94.69		ug/L		95	80 - 120	1	23

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: S17-004

TestAmerica Job ID: 280-96360-1
SDG: DN0131

Method: 9020B - Organic Halides, Total (TOX) (Continued)

Lab Sample ID: 280-96360-1 MS — **Client Sample ID: B396P6**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373670

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Halogens - Dup	7.7	U	100	90.53		ug/L		91	75 - 125

Lab Sample ID: 280-96360-1 MSD — **Client Sample ID: B396P6**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373670

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Halogens - Dup	7.7	U	100	76.06		ug/L		76	75 - 125	17	23

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 280-373693/5 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373693

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Average	174.9	B	1000	155	ug/L			05/15/17 14:47	1

Lab Sample ID: LCS 280-373693/3 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373693

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Average	25000	24180		ug/L		97	80 - 120

Lab Sample ID: LCSD 280-373693/4 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373693

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Average	25000	24270		ug/L		97	80 - 120	0	20

Lab Sample ID: 280-96360-2 MS — **Client Sample ID: B396P5**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373693

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Average	2490	C	25000	26490		ug/L		96	75 - 125

Lab Sample ID: 280-96360-2 MSD — **Client Sample ID: B396P5**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373693

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Average	2490	C	25000	26410		ug/L		96	75 - 125	0	20

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: S17-004

TestAmerica Job ID: 280-96360-1
SDG: DN0131

Metals

Prep Batch: 371321

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-96360-3	B393F1	Total/NA	Water	3010A	
280-96360-4	B393D6	Total/NA	Water	3010A	
280-96360-5	B393F7	Total/NA	Water	3010A	
280-96360-7	B396P9	Total/NA	Water	3010A	
MB 280-371321/1-A	Method Blank	Total/NA	Water	3010A	
LCS 280-371321/2-A	Lab Control Sample	Total/NA	Water	3010A	
280-96360-3 MS	B393F1	Total/NA	Water	3010A	
280-96360-3 MSD	B393F1	Total/NA	Water	3010A	

Prep Batch: 371322

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-96360-3	B393F1	Total/NA	Water	3020A	
280-96360-4	B393D6	Total/NA	Water	3020A	
280-96360-5	B393F7	Total/NA	Water	3020A	
280-96360-7	B396P9	Total/NA	Water	3020A	
MB 280-371322/1-A	Method Blank	Total/NA	Water	3020A	
LCS 280-371322/2-A	Lab Control Sample	Total/NA	Water	3020A	
280-96360-7 MS	B396P9	Total/NA	Water	3020A	
280-96360-7 MSD	B396P9	Total/NA	Water	3020A	

Prep Batch: 371808

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-96360-6	B393M6	Dissolved	Water	3005A	
MB 280-371808/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-371808/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
280-96360-6 MS	B393M6	Dissolved	Water	3005A	
280-96360-6 MSD	B393M6	Dissolved	Water	3005A	

Prep Batch: 371846

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-96360-6	B393M6	Dissolved	Water	3005A	
MB 280-371846/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 280-371846/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
280-96360-6 MS	B393M6	Dissolved	Water	3005A	
280-96360-6 MSD	B393M6	Dissolved	Water	3005A	

Analysis Batch: 372145

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-96360-6	B393M6	Dissolved	Water	6010C	371846
MB 280-371846/1-A	Method Blank	Total Recoverable	Water	6010C	371846
LCS 280-371846/2-A	Lab Control Sample	Total Recoverable	Water	6010C	371846
280-96360-6 MS	B393M6	Dissolved	Water	6010C	371846
280-96360-6 MSD	B393M6	Dissolved	Water	6010C	371846

Analysis Batch: 372188

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-96360-6	B393M6	Dissolved	Water	6020A	371808
MB 280-371808/1-A	Method Blank	Total Recoverable	Water	6020A	371808
LCS 280-371808/2-A	Lab Control Sample	Total Recoverable	Water	6020A	371808
280-96360-6 MS	B393M6	Dissolved	Water	6020A	371808
280-96360-6 MSD	B393M6	Dissolved	Water	6020A	371808

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: S17-004

TestAmerica Job ID: 280-96360-1
SDG: DN0131

Analysis Batch: 372339

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-96360-6	B393M6	Dissolved	Water	6010C	371846
MB 280-371846/1-A	Method Blank	Total Recoverable	Water	6010C	371846
LCS 280-371846/2-A	Lab Control Sample	Total Recoverable	Water	6010C	371846
280-96360-6 MS	B393M6	Dissolved	Water	6010C	371846
280-96360-6 MSD	B393M6	Dissolved	Water	6010C	371846

Analysis Batch: 373667

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-96360-3	B393F1	Total/NA	Water	6010C	371321
280-96360-4	B393D6	Total/NA	Water	6010C	371321
280-96360-5	B393F7	Total/NA	Water	6010C	371321
280-96360-7	B396P9	Total/NA	Water	6010C	371321
MB 280-371321/1-A	Method Blank	Total/NA	Water	6010C	371321
LCS 280-371321/2-A	Lab Control Sample	Total/NA	Water	6010C	371321
280-96360-3 MS	B393F1	Total/NA	Water	6010C	371321
280-96360-3 MSD	B393F1	Total/NA	Water	6010C	371321

Analysis Batch: 373685

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-96360-3	B393F1	Total/NA	Water	6020A	371322
280-96360-4	B393D6	Total/NA	Water	6020A	371322
280-96360-5	B393F7	Total/NA	Water	6020A	371322
280-96360-7	B396P9	Total/NA	Water	6020A	371322
MB 280-371322/1-A	Method Blank	Total/NA	Water	6020A	371322
LCS 280-371322/2-A	Lab Control Sample	Total/NA	Water	6020A	371322
280-96360-7 MS	B396P9	Total/NA	Water	6020A	371322
280-96360-7 MSD	B396P9	Total/NA	Water	6020A	371322

Analysis Batch: 373855

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-96360-3	B393F1	Total/NA	Water	6010C	371321
280-96360-4	B393D6	Total/NA	Water	6010C	371321
280-96360-5	B393F7	Total/NA	Water	6010C	371321
280-96360-7	B396P9	Total/NA	Water	6010C	371321
MB 280-371321/1-A	Method Blank	Total/NA	Water	6010C	371321
LCS 280-371321/2-A	Lab Control Sample	Total/NA	Water	6010C	371321
280-96360-3 MS	B393F1	Total/NA	Water	6010C	371321
280-96360-3 MSD	B393F1	Total/NA	Water	6010C	371321

General Chemistry

Analysis Batch: 373670

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-96360-1	B396P6	Total/NA	Water	9020B	
280-96360-2	B396P5	Total/NA	Water	9020B	
MB 280-373670/2	Method Blank	Total/NA	Water	9020B	
LCS 280-373670/4	Lab Control Sample	Total/NA	Water	9020B	
LCSD 280-373670/5	Lab Control Sample Dup	Total/NA	Water	9020B	
280-96360-1 MS	B396P6	Total/NA	Water	9020B	
280-96360-1 MSD	B396P6	Total/NA	Water	9020B	

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: S17-004

TestAmerica Job ID: 280-96360-1
SDG: DN0131

General Chemistry (Continued)

Analysis Batch: 373693

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-96360-1	B396P6	Total/NA	Water	9060A	
280-96360-2	B396P5	Total/NA	Water	9060A	
MB 280-373693/5	Method Blank	Total/NA	Water	9060A	
LCS 280-373693/3	Lab Control Sample	Total/NA	Water	9060A	
LCSD 280-373693/4	Lab Control Sample Dup	Total/NA	Water	9060A	
280-96360-2 MS	B396P5	Total/NA	Water	9060A	
280-96360-2 MSD	B396P5	Total/NA	Water	9060A	