

June 27, 2017

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: 160-22644-1

TestAmerica Sample Delivery Group: SL2538
Client Project/Site: F17-014

For:

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

Attn: Mr. Scot Fitzgerald



Authorized for release by:
6/27/2017 9:15:01 AM

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

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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.

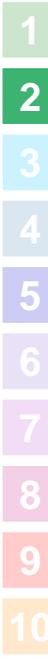


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Job ID: 160-22644-1

Laboratory: TestAmerica St. Louis

Narrative

CASE NARRATIVE

CH2MHill Plateau Remediation Company
P.O. Box 1600
Richland, Washington 99352
June 27, 2017
Attention: Scot Fitzgerald

SDG : SL2538
Number of Samples : 1 sample
Sample Matrix : Water
Data Deliverable : Summary
Date SDG Closed : June 2, 2017

II. Introduction

On June 2, 1 sample was 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: F17-014

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 a narrative note; however, they are flagged "D" due to a limitation in the LIMS.

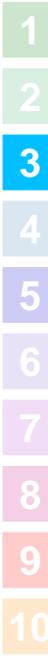
For solid matrices, all Metals analyses (including Hg) use a Standard Reference Material for the Laboratory Control Sample (LCS). Certificate for this source material may be obtained from TASL.

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, 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.

For extractable and volatile organic analyses, several analytes are considered poor performers and will not meet CHPRC QC limits. Per CHPRC direction, the lab's statistical limits have been reported. Excursions outside these statistical limits will include a non-conformance in the sections below.



Job ID: 160-22644-1 (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.
- **B** - For radiochemistry, Method Blank reported above the MDC. Sample activity is > 5% the method blank.
- **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/RL but not greater than 5% the MB.
- **D** - For all analyses, the sample result was obtained from the analysis of a dilution. For ICPMS Metals analyses, per standard practice, all 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 and will not be narrated below. Only dilutions above 2x will be narrated and considered a true dilution for these samples.
- **N** - For inorganics, rad 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.
- **P** - For organic analyses (PCB/Pests only), the aroclor target analyte has greater than 25% difference for detected concentrations between the two GC columns.
- **X**- Organics and Anions IC - Sample concentration over calibration and/or surrogate recovery outside QC limits.
- **X**- Inorganics - The analyte present in the original sample is > 4x the spike concentration.
- **X**- Radiochemistry - Carrier or Tracer recovery is outside limits.
- **Z**- Sample was prepped or analyzed beyond the specified sample holding time.
- **y** - RPD is outside established limits.

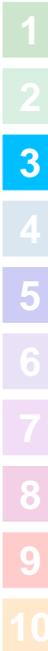
There were no observations or non-conformances associated with the following methods:

- ICPMS Metals
- TDS
- Alkalinity
- Sulfide
- TOC

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. 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



Login Sample Receipt Checklist

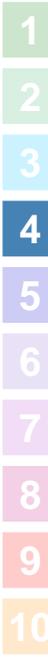
Client: CH2M Hill Plateau Remediation Company

Job Number: 160-22644-1
SDG Number: SL2538

Login Number: 22644
List Number: 1
Creator: Daniels, Brian J

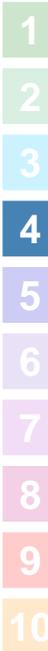
List Source: TestAmerica St. Louis

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	0.9
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	

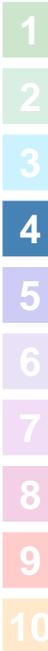


CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F17-014-098	PAGE 1 OF 1	
COLLECTOR	Roger Frensz Jr. /CHPRC	92538	COMPANY CONTACT	LYNCH, SA	PROJECT COORDINATOR	
SAMPLING LOCATION	C9563, I-010		TELEPHONE NO.	373-5586	LYNCH, SA	
ICE CHEST NO.	6256-02A		PROJECT DESIGNATION	FY2017 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water	SAF NO.	
SHIPPED TO	TestAmerica St. Louis		FIELD LOGBOOK NO.	HNF-N-645 2-51	F17-014	
			OFFSITE PROPERTY NO.	N11A	COA	
					302938	
					7792 81679870	
					BILL OF LADING/AIR BILL NO.	
MATRIX*	A=Air DL=Drum L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WF=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS *Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/JATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.	PRESERVATION	HCl or H2SO4 to pH <2/Conc. <=6C	ZnAc+NaOH to pH > 9/Conc. <=6C	Cool <=6C
			HOLDING TIME	6 Months	7 Days	14 Days
			TYPE OF CONTAINER	G/P	G/P	G/P
			NO. OF CONTAINER(S)	1	1	1
			VOLUME	500mL	500mL	250mL
			SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	16L1_TDS: COMMON;	9034_SULFIDE: COMMON;
			SPECIAL HANDLING AND/OR STORAGE	NA		SEE ITEM (2) IN SPECIAL INSTRUCTIONS
SAMPLE NO.		MATRIX*	SAMPLE DATE	SAMPLE TIME		
B398Y7		WATER	MAY 3 1 2017	1255		

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	TRVL-17-090	(1) 6020_METALS_ICPMS: COMMON {Chromium};
Roger Frensz Jr. /CHPRC	MAY 3 1 2017 1345	SSU#1	MAY 3 1 2017 1345	6020_METALS_ICPMS: COMMON (Add-on) {Iron, Manganese, Uranium};	(2) 310.1_ALKALINITY: COMMON; 310.1_ALKALINITY: COMMON (Add-on) {Bi-carbonate alkalinity, Carbonate alkalinity};
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
Janette Zunker /CHPRC	JUN 0 1 2017 0730	Janette Zunker /CHPRC	JUN 0 1 2017 0730		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
Janette Zunker /CHPRC	JUN 0 1 2017 1400	FEDEX	6/2/17 0900		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME		
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME		



0018/27/2017



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779281679870

Ship date:

Thu 6/01/2017

Actual delivery:

Fri 6/02/2017 8:46 am

RICHLAND, WA US

Delivered

Signed for by: B.DANIELS

EARTH CITY, MO US

Travel History

Date/Time	Activity	Location
6/02/2017 - Friday		
8:46 am	Delivered	EARTH CITY, MO
7:00 am	On FedEx vehicle for delivery	EARTH CITY, MO
6:53 am	At local FedEx facility	EARTH CITY, MO
5:07 am	At destination sort facility	BERKELEY, MO
4:22 am	Departed FedEx location	MEMPHIS, TN
12:20 am	Arrived at FedEx location	MEMPHIS, TN
6/01/2017 - Thursday		
4:57 pm	Left FedEx origin facility	PASCO, WA
3:57 pm	Shipment information sent to FedEx	
3:25 pm	Picked up	PASCO, WA

Shipment Facts

Tracking number	779281679870	Service	FedEx Standard Overnight
Weight	70 lbs / 31.75 kgs	Delivered To	Shipping/Receiving
Total pieces	1	Total shipment weight	70 lbs / 31.75 kgs
Terms	Recipient	Shipper reference	GWS-621
Packaging	Your Packaging	Special handling section	Deliver Weekday
Standard transit	6/02/2017 by 3:00 pm		



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Qualifiers

Metals

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

General Chemistry

Qualifier	Qualifier Description
B	Estimated result. Result is less than the RL, but greater than MDL
U	Analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)

Client: CH2M Hill Plateau Remediation Company
Project/Site: F17-014

TestAmerica Job ID: 160-22644-1
SDG: SL2538

Method	Method Description	Protocol	Laboratory
6020A	Metals (ICP/MS)	SW846	TAL SL
160.1	Solids, Total Dissolved (TDS)	MCAWW	TAL SL
310.1	Alkalinity	MCAWW	TAL SL
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	TAL SL
9060	Organic Carbon, Total (TOC)	SW846	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



Client: CH2M Hill Plateau Remediation Company
Project/Site: F17-014

TestAmerica Job ID: 160-22644-1
SDG: SL2538

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-22644-1	B398Y7	Water	05/31/17 12:55	06/02/17 09:00

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

June 27, 2017 Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F17-014

TestAmerica Job ID: 160-22644-1
SDG: SL2538

Method: 6020A - Metals (ICP/MS)

Client Sample ID: B398Y7
Date Collected: 05/31/17 12:55
Date Received: 06/02/17 09:00

Lab Sample ID: 160-22644-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	6.2	B D	10.0	4.0	ug/L		06/15/17 11:03	06/16/17 21:44	2
Iron	2650	D	50.0	20.0	ug/L		06/15/17 11:03	06/16/17 21:44	2
Manganese	67.7	D	2.0	0.90	ug/L		06/15/17 11:03	06/16/17 21:44	2
Uranium	0.71	B D	1.0	0.40	ug/L		06/15/17 11:03	06/16/17 21:44	2

General Chemistry

Client Sample ID: B398Y7
Date Collected: 05/31/17 12:55
Date Received: 06/02/17 09:00

Lab Sample ID: 160-22644-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	264		5.0	3.5	mg/L			06/07/17 09:12	1
Alkalinity	120		5.0	0.54	mg/L			06/12/17 22:11	1
Bicarbonate Alkalinity as CaCO3	120		5.0	0.54	mg/L			06/12/17 22:11	1
Carbonate Alkalinity as CaCO3	0.54	U	5.0	0.54	mg/L			06/12/17 22:11	1
Sulfide	2.9	B	10.9	2.2	mg/L		06/07/17 09:20	06/07/17 11:43	1
Total Organic Carbon	0.74	B	1.0	0.72	mg/L			06/23/17 21:03	1

Client: CH2M Hill Plateau Remediation Company
Project/Site: F17-014

TestAmerica Job ID: 160-22644-1
SDG: SL2538

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 160-313613/1-A
Matrix: Water
Analysis Batch: 314016

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 313613

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	4.0	U D	10.0	4.0	ug/L		06/15/17 11:03	06/16/17 19:29	2
Iron	20.0	U D	50.0	20.0	ug/L		06/15/17 11:03	06/16/17 19:29	2
Manganese	0.90	U D	2.0	0.90	ug/L		06/15/17 11:03	06/16/17 19:29	2
Uranium	0.40	U D	1.0	0.40	ug/L		06/15/17 11:03	06/16/17 19:29	2

Lab Sample ID: LCS 160-313613/2-A
Matrix: Water
Analysis Batch: 314016

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 313613

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Chromium	1000	981.0	D	ug/L		98	80 - 120
Iron	10000	10080	D	ug/L		101	80 - 120
Manganese	1000	1022	D	ug/L		102	80 - 120
Uranium	1000	1008	D	ug/L		101	80 - 120

Lab Sample ID: 160-22564-B-6-B MS
Matrix: Water
Analysis Batch: 314016

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 313613

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Chromium	4.0	U D	1000	995.4	D	ug/L		100	75 - 125
Iron	20.0	U D	10000	10080	D	ug/L		101	75 - 125
Manganese	0.90	U D	1000	1026	D	ug/L		103	75 - 125
Uranium	0.40	U D	1000	998.9	D	ug/L		100	75 - 125

Lab Sample ID: 160-22564-B-6-C MSD
Matrix: Water
Analysis Batch: 314016

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 313613

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chromium	4.0	U D	1000	975.9	D	ug/L		98	75 - 125	2	20
Iron	20.0	U D	10000	9871	D	ug/L		99	75 - 125	2	20
Manganese	0.90	U D	1000	1003	D	ug/L		100	75 - 125	2	20
Uranium	0.40	U D	1000	1010	D	ug/L		101	75 - 125	1	20

Method: 160.1 - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 160-312255/1
Matrix: Water
Analysis Batch: 312255

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	3.5	U	5.0	3.5	mg/L			06/07/17 09:12	1

Client: CH2M Hill Plateau Remediation Company
Project/Site: F17-014

TestAmerica Job ID: 160-22644-1
SDG: SL2538

Method: 160.1 - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 160-312255/2
Matrix: Water
Analysis Batch: 312255

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	500	508.0		mg/L		102	90 - 110

Lab Sample ID: 160-22644-1 DU
Matrix: Water
Analysis Batch: 312255

Client Sample ID: B398Y7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids (TDS)	264		264.0		mg/L		0	5

Method: 310.1 - Alkalinity

Lab Sample ID: MB 160-313080/1
Matrix: Water
Analysis Batch: 313080

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	0.54	U	5.0	0.54	mg/L			06/12/17 21:42	1
Bicarbonate Alkalinity as CaCO3	0.54	U	5.0	0.54	mg/L			06/12/17 21:42	1
Carbonate Alkalinity as CaCO3	0.54	U	5.0	0.54	mg/L			06/12/17 21:42	1

Lab Sample ID: HLCS 160-313080/3
Matrix: Water
Analysis Batch: 313080

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

Analyte	Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	400	370.0		mg/L		92	90 - 110
Bicarbonate Alkalinity as CaCO3	400	370.0		mg/L		92	90 - 110

Lab Sample ID: LCS 160-313080/2
Matrix: Water
Analysis Batch: 313080

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	200	186.0		mg/L		93	90 - 110
Bicarbonate Alkalinity as CaCO3	200	186.0		mg/L		93	90 - 110

Lab Sample ID: 160-22644-1 MS
Matrix: Water
Analysis Batch: 313080

Client Sample ID: B398Y7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	120		100	212.0		mg/L		92	80 - 120
Bicarbonate Alkalinity as CaCO3	120		100	212.0		mg/L		92	80 - 120

Client: CH2M Hill Plateau Remediation Company
Project/Site: F17-014

TestAmerica Job ID: 160-22644-1
SDG: SL2538

Method: 310.1 - Alkalinity (Continued)

Lab Sample ID: 160-22644-1 DU
Matrix: Water
Analysis Batch: 313080

Client Sample ID: B398Y7
Prep Type: Total/NA

Analyte	Sample	Sample	DU		Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Alkalinity	120		122.0		mg/L		2	20
Bicarbonate Alkalinity as CaCO3	120		122.0		mg/L		2	20
Carbonate Alkalinity as CaCO3	0.54	U	0.54	U	mg/L		NC	20

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 160-312260/1-A
Matrix: Water
Analysis Batch: 312286

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 312260

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Sulfide	2.2	U	10.9	2.2	mg/L		06/07/17 09:20	06/07/17 11:43	1

Lab Sample ID: LCS 160-312260/2-A
Matrix: Water
Analysis Batch: 312286

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 312260

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

Lab Sample ID: 160-22644-1 MS
Matrix: Water
Analysis Batch: 312286

Client Sample ID: B398Y7
Prep Type: Total/NA
Prep Batch: 312260

Analyte	Sample	Sample	Spike Added	MS		Unit	D	%Rec	%Rec. Limits
	Result	Qualifier		Result	Qualifier				
Sulfide	2.9	B	55.0	33.45		mg/L		56	51 - 105

Lab Sample ID: 160-22644-1 DU
Matrix: Water
Analysis Batch: 312286

Client Sample ID: B398Y7
Prep Type: Total/NA
Prep Batch: 312260

Analyte	Sample	Sample	DU		Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Sulfide	2.9	B	2.91	B	mg/L		0	20

Method: 9060 - Organic Carbon, Total (TOC)

Lab Sample ID: MB 160-315318/4
Matrix: Water
Analysis Batch: 315318

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Total Organic Carbon	0.72	U	1.0	0.72	mg/L			06/23/17 20:32	1

Lab Sample ID: LCS 160-315318/5
Matrix: Water
Analysis Batch: 315318

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

TestAmerica St. Louis

June 27, 2017 QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: F17-014

TestAmerica Job ID: 160-22644-1
SDG: SL2538

Lab Sample ID: 160-22644-1 MS
Matrix: Water
Analysis Batch: 315318

Client Sample ID: B398Y7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	0.74	B	5.00	5.58		mg/L		97	76 - 120

Lab Sample ID: 160-22644-1 DU
Matrix: Water
Analysis Batch: 315318

Client Sample ID: B398Y7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Organic Carbon	0.74	B	0.72	U	mg/L		NC	20

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

Client: CH2M Hill Plateau Remediation Company
Project/Site: F17-014

TestAmerica Job ID: 160-22644-1
SDG: SL2538

Metals

Prep Batch: 313613

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-22644-1	B398Y7	Total/NA	Water	3010A	
MB 160-313613/1-A	Method Blank	Total/NA	Water	3010A	
LCS 160-313613/2-A	Lab Control Sample	Total/NA	Water	3010A	
160-22564-B-6-B MS	Matrix Spike	Total/NA	Water	3010A	
160-22564-B-6-C MSD	Matrix Spike Duplicate	Total/NA	Water	3010A	

Analysis Batch: 314016

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-22644-1	B398Y7	Total/NA	Water	6020A	313613
MB 160-313613/1-A	Method Blank	Total/NA	Water	6020A	313613
LCS 160-313613/2-A	Lab Control Sample	Total/NA	Water	6020A	313613
160-22564-B-6-B MS	Matrix Spike	Total/NA	Water	6020A	313613
160-22564-B-6-C MSD	Matrix Spike Duplicate	Total/NA	Water	6020A	313613

General Chemistry

Analysis Batch: 312255

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-22644-1	B398Y7	Total/NA	Water	160.1	
MB 160-312255/1	Method Blank	Total/NA	Water	160.1	
LCS 160-312255/2	Lab Control Sample	Total/NA	Water	160.1	
160-22644-1 DU	B398Y7	Total/NA	Water	160.1	

Prep Batch: 312260

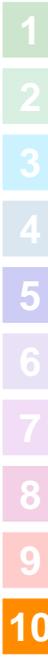
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-22644-1	B398Y7	Total/NA	Water	9030B	
MB 160-312260/1-A	Method Blank	Total/NA	Water	9030B	
LCS 160-312260/2-A	Lab Control Sample	Total/NA	Water	9030B	
160-22644-1 MS	B398Y7	Total/NA	Water	9030B	
160-22644-1 DU	B398Y7	Total/NA	Water	9030B	

Analysis Batch: 312286

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-22644-1	B398Y7	Total/NA	Water	9034	312260
MB 160-312260/1-A	Method Blank	Total/NA	Water	9034	312260
LCS 160-312260/2-A	Lab Control Sample	Total/NA	Water	9034	312260
160-22644-1 MS	B398Y7	Total/NA	Water	9034	312260
160-22644-1 DU	B398Y7	Total/NA	Water	9034	312260

Analysis Batch: 313080

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-22644-1	B398Y7	Total/NA	Water	310.1	
MB 160-313080/1	Method Blank	Total/NA	Water	310.1	
HLCS 160-313080/3	Lab Control Sample	Total/NA	Water	310.1	
LCS 160-313080/2	Lab Control Sample	Total/NA	Water	310.1	
160-22644-1 MS	B398Y7	Total/NA	Water	310.1	
160-22644-1 DU	B398Y7	Total/NA	Water	310.1	



June 27, 2017
QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: F17-014

TestAmerica Job ID: 160-22644-1
SDG: SL2538

General Chemistry (Continued)

Analysis Batch: 315318

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-22644-1	B398Y7	Total/NA	Water	9060	
MB 160-315318/4	Method Blank	Total/NA	Water	9060	
LCS 160-315318/5	Lab Control Sample	Total/NA	Water	9060	
160-22644-1 MS	B398Y7	Total/NA	Water	9060	
160-22644-1 DU	B398Y7	Total/NA	Water	9060	

