TestAmerica

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ANALYTICAL REPORT

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

TestAmerica Job ID: 160-17667-1
TestAmerica Sample Delivery Group: SL2212
Client Project/Site: X16-037

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

Attn: Mr. Scot Fitzgerald

Authorized for release by:
6/28/2016 6:32:49 PM

Jayna Awalt, Project Manager II
(314)298-8566
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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: 160-17667-1

Laboratory: TestAmerica St. Louis

Narrative

CASE NARRATIVE

CH2MHill Plateau Remediation Company
P.O. Box 1600
Richland, Washington 99352
June 28, 2016
Attention: Scot Fitzgerald

SDG	: SL2212
Number of Samples	: 4 samples
Sample Matrix	: Water
Data Deliverable	: Summary
Date SDG Closed	: June 4, 2016

II. Introduction

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

The following SAFs are associated with this SDG: X16-037

III. Analytical Results/ Methodology

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

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

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

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

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

Job ID: 160-17667-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

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.

IV. Definitions

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

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

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

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

Volatiles

Batch: 254846

Toluene was detected in method blank MB 160-254846/9 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged "J'. If the associated sample reported a result above the MDL and/or RL, the result has been flagged "B".

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

Alkalinity

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

Job ID: 160-17667-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

St. Louis Project Manager

Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 160-17667-1
SDG Number: SL2212

Login Number: 17667
List Number: 1
Creator: McKinney, Gerrod E

List Source: TestAmerica St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.5
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").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

CH2MHill Plateau Remediation Company 512212

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **X16-037-166**

Collector	K.C. Patterson/CHPRC	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	X16-037	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	304027
Project Title	100-KW Rebound Study, May 31, 2016	**Logbook No.**	HNF-N-506 85/71	**Ice Chest No.**	6W05-509
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7764 4133 2237
Protocol	CERCLA	**Priority:**	**30 Days** **PRIORITY**	**Offsite Property No.**	N/A

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
Special Handling:N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B35M39	N	W	JUN 02 2016	1255	1x500-mL G/P	310.1_ALKALINITY: GW 01	14 Days	Cool <=6C
B35M39	N	W	↓	↓	4x40-mL aGs*	8260_VOA_GCMS: COMMON	14 Days	HCl or H2SO4 to pH <2/Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
K.C. Patterson/CHPRC			JUN 02 2016 1445	SSU#1			JUN 02 2016 1445
SSU#1			JUN 03 2016 0645	Lesly Wall /CHPRC		Lesly Wall	JUN 03 2016 0645
Lesly Wall /CHPRC		Lesly Wall	JUN 03 2016 1400	FEDEX			
FED EX				C McK Gerrod McKinney			060416 0820

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 5/23/2016 FSR ID = FSR32425 A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company 82212

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **X16-037-167**

Collector	K.C. Patterson/CHPRC	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	X16-037	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	304027
Project Title	100-KW Rebound Study, May 31, 2016	**Logbook No.**	HNF-N-506 85 / 71	**Ice Chest No.**	GW5-509
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7764 4133 2237
Protocol	CERCLA	**Priority:**	**30 Days** **PRIORITY**	**Offsite Property No.**	N/A

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

Special Handling:N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B35M40	N	W	JUN 0 2 2016	1255	1x500-mL G/P	310.1_ALKALINITY: GW 01	14 Days	Cool <=6C
B35M40	N	W	↓	↓	4x40-mL aGs*	8260_VOA_GCMS: COMMON	14 Days	HCl or H2SO4 to pH <2/Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
K.C. Patterson/CHPRC			JUN 0 2 2016 1445	SSU-1			JUN 0 2 2016 1445
SSU-1			JUN 0 3 2016 0645	Lesly Wall /CHPRC			JUN 0 3 2016 0645
Lesly Wall /CHPRC			JUN 0 3 2016 1400	FEDEX			
FED EX				GERROD McKINNEY 060416 0820			

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 5/23/2016 FSR ID = FSR32425 A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company 812212

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **X16-037-171**

Collector	K.C. Patterson/CHPRC	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	X16-037	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	304027
Project Title	100-KW Rebound Study, May 31, 2016	**Logbook No.**	HNF-N-506 83/79	**Ice Chest No.**	GWS-~~500~~ 430 TLD 06/03/16
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7764432596 23
Protocol	CERCLA	**Priority:**	**30 Days** **PRIORITY**	**Offsite Property No.**	N/A

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
Special Handling:N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B35M95	N	W	JUN 03 2016	0940	1x500-mL G/P	310.1_ALKALINITY: GW 01	14 Days	Cool <=6C
B35M95	N	W	↓	↓	4x40-mL aGs*	8260_VOA_GCMS: COMMON	14 Days	HCl or H2SO4 to pH <2/Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
K.C. Patterson/CHPRC			JUN 03 2016 1007	Lesly Wall /CHPRC	Lesly Wall		JUN 03 2016 1007
Lesly Wall /CHPRC	Lesly Wall		JUN 03 2016 1400	FEDEX			
FEDEX				Gerrod McKinney 060416 0820			

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 5/23/2016 FSR ID = FSR26447 A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company 82212

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C. # **X16-037-174**

Collector	K.C. Patterson/CHPRC	**Contact/Requester**	Karen Waters-Husted	**Telephone No.**	509-376-4650
SAF No.	X16-037	**Sampling Origin**	Hanford Site	**Purchase Order/Charge Code**	304027
Project Title	100-KW Rebound Study, May 31, 2016	**Logbook No.**	HNF-N-506 83/79	**Ice Chest No.**	GLOS-~~500~~ 430 KLB 06/03/16
Shipped To (Lab)	TestAmerica St. Louis	**Method of Shipment**	Commercial Carrier	**Bill of Lading/Air Bill No.**	7764432596 23
Protocol	CERCLA	**Priority:**	**30 Days** **PRIORITY**	**Offsite Property No.**	N/A

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
Special Handling:N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B35MD7	N	W	JUN 03 2016	0810	1x500-mL G/P	310.1_ALKALINITY: GW 01	14 Days	Cool <=6C
B35MD7	N	W	↓	↓	4x40-mL aGs*	8260_VOA_GCMS: COMMON	14 Days	HCl or H2SO4 to pH <2/Cool <=6C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
K.C. Patterson/CHPRC			JUN 03 2016 1007	Lesly Wall /CHPRC		Lesly Wall	JUN 03 2016 1007
Lesly Wall /CHPRC		Lesly Wall	JUN 03 2016 1400	FEDEX			
FEDEX				GERROD MCKINNEY		McK	060416 0820

Matrix *

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

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

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776441332237

Ship date:
Fri 6/03/2016

RICHLAND, WA US

Delivered
Signed for by J CLARK

Actual delivery:
Sat 6/04/2016 8:14 am

EARTH CITY, MO US

Travel History

Date/Time	Activity	Location
- 6/04/2016 - Saturday		
8:14 am	Delivered	EARTH CITY, MO
7:32 am	On FedEx vehicle for delivery	EARTH CITY, MO
7:26 am	At local FedEx facility	EARTH CITY, MO
5:14 am	At destination sort facility	BERKELEY, MO
4:30 am	Departed FedEx location	MEMPHIS, TN
12:28 am	Arrived at FedEx location	MEMPHIS, TN
- 6/03/2016 - Friday		
5:00 pm	Left FedEx origin facility	PASCO, WA
3:23 pm	Picked up	PASCO, WA
2:15 pm	Shipment information sent to FedEx	

Shipment Facts

Tracking number	776441332237	**Service**	FedEx Priority Overnight
Weight	78 lbs / 35.38 kgs	**Dimensions**	28x16x16 in.
Delivered To	Shipping/Receiving	**Total pieces**	1
Total shipment weight	78 lbs / 35.38 kgs	**Terms**	Recipient
Shipper reference	GWS-509	**Packaging**	Your Packaging
Special handling section	For Saturday Delivery, Additional Handling Surcharge		

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776443259623

Ship date
Fri 6/03/2016

RICHLAND, WA US

Delivered
Signed for by: J.CLARK

Actual delivery
Sat 6/04/2016 8:14 am

EARTH CITY, MO US

Travel History

Date/Time	Activity	Location
- 6/04/2016 - Saturday		
8:14 am	Delivered	EARTH CITY, MO
7:33 am	On FedEx vehicle for delivery	EARTH CITY, MO
7:27 am	At local FedEx facility	EARTH CITY, MO
5:14 am	At destination sort facility	BERKELEY, MO
4:30 am	Departed FedEx location	MEMPHIS, TN
12:28 am	Arrived at FedEx location	MEMPHIS, TN
- 6/03/2016 - Friday		
5:00 pm	Left FedEx origin facility	PASCO, WA
4:09 pm	Shipment information sent to FedEx	
3:23 pm	Picked up	PASCO, WA

Shipment Facts

Tracking number	776443259623	Service	FedEx Priority Overnight
Weight	44 lbs / 19.96 kgs	Delivered To	Shipping/Receiving
Total pieces	1	Total shipment weight	44 lbs / 19.96 kgs
Terms	Recipient	Shipper reference	GWS-430
Packaging	Your Packaging	Special handling section	For Saturday Delivery

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Definitions/Glossary

Client: CH2M Hill Plateau Remediation Company
Project/Site: X16-037

TestAmerica Job ID: 160-17667-1
SDG: SL2212

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
U	Analyzed for but not detected.

Glossary

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

Method Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: X16-037

TestAmerica Job ID: 160-17667-1
SDG: SL2212

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds (GC/MS)	SW846	TAL SL
310.1	Alkalinity	MCAWW	TAL SL

Protocol References:

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

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

Laboratory References:

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

Sample Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: X16-037

TestAmerica Job ID: 160-17667-1
SDG: SL2212

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-17667-1	B35M39	Water	06/02/16 12:55	06/04/16 08:20
160-17667-2	B35M40	Water	06/02/16 12:55	06/04/16 08:20
160-17667-3	B35M95	Water	06/03/16 09:40	06/04/16 08:20
160-17667-4	B35MD7	Water	06/03/16 08:10	06/04/16 08:20

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X16-037

TestAmerica Job ID: 160-17667-1
SDG: SL2212

Method: 8260C - Volatile Organic Compounds (GC/MS)

Client Sample ID: B35M39
Date Collected: 06/02/16 12:55
Date Received: 06/04/16 08:20

Lab Sample ID: 160-17667-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.17	U	1.0	0.17	ug/L			06/06/16 11:48	1
1,1,2-Trichloroethane	0.13	U	1.0	0.13	ug/L			06/06/16 11:48	1
1,1-Dichloroethane	0.070	U	1.0	0.070	ug/L			06/06/16 11:48	1
1,1-Dichloroethene	0.10	U	1.0	0.10	ug/L			06/06/16 11:48	1
1,2-Dichloroethane	0.22	U	1.0	0.22	ug/L			06/06/16 11:48	1
2-Butanone (MEK)	**0.50**	**J**	5.0	0.47	ug/L			06/06/16 11:48	1
4-Methyl-2-pentanone (MIBK)	0.22	U	5.0	0.22	ug/L			06/06/16 11:48	1
Acetone	0.55	U	2.0	0.55	ug/L			06/06/16 11:48	1
Benzene	0.10	U	1.0	0.10	ug/L			06/06/16 11:48	1
Carbon disulfide	0.10	U	1.0	0.10	ug/L			06/06/16 11:48	1
Carbon tetrachloride	0.18	U	1.0	0.18	ug/L			06/06/16 11:48	1
Chlorobenzene	0.11	U	1.0	0.11	ug/L			06/06/16 11:48	1
Chloroform	**0.31**	**J**	1.0	0.10	ug/L			06/06/16 11:48	1
Ethylbenzene	0.12	U	1.0	0.12	ug/L			06/06/16 11:48	1
Methylene Chloride	0.27	U	1.0	0.27	ug/L			06/06/16 11:48	1
Tetrachloroethene	0.18	U	1.0	0.18	ug/L			06/06/16 11:48	1
Toluene	0.14	U	1.0	0.14	ug/L			06/06/16 11:48	1
Trichloroethene	**3.4**		1.0	0.25	ug/L			06/06/16 11:48	1
Vinyl chloride	0.19	U	2.0	0.19	ug/L			06/06/16 11:48	1
Xylenes, Total	0.26	U	3.0	0.26	ug/L			06/06/16 11:48	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*06/06/16 11:48*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*75 - 129*		*06/06/16 11:48*	*1*
4-Bromofluorobenzene (Surr)	*109*		*81 - 130*		*06/06/16 11:48*	*1*
Dibromofluoromethane (Surr)	*96*		*81 - 124*		*06/06/16 11:48*	*1*
Toluene-d8 (Surr)	*107*		*87 - 128*		*06/06/16 11:48*	*1*

Client Sample ID: B35M40
Date Collected: 06/02/16 12:55
Date Received: 06/04/16 08:20

Lab Sample ID: 160-17667-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.17	U	1.0	0.17	ug/L			06/06/16 12:12	1
1,1,2-Trichloroethane	0.13	U	1.0	0.13	ug/L			06/06/16 12:12	1
1,1-Dichloroethane	0.070	U	1.0	0.070	ug/L			06/06/16 12:12	1
1,1-Dichloroethene	0.10	U	1.0	0.10	ug/L			06/06/16 12:12	1
1,2-Dichloroethane	0.22	U	1.0	0.22	ug/L			06/06/16 12:12	1
2-Butanone (MEK)	0.47	U	5.0	0.47	ug/L			06/06/16 12:12	1
4-Methyl-2-pentanone (MIBK)	0.22	U	5.0	0.22	ug/L			06/06/16 12:12	1
Acetone	0.55	U	2.0	0.55	ug/L			06/06/16 12:12	1
Benzene	0.10	U	1.0	0.10	ug/L			06/06/16 12:12	1
Carbon disulfide	0.10	U	1.0	0.10	ug/L			06/06/16 12:12	1
Carbon tetrachloride	0.18	U	1.0	0.18	ug/L			06/06/16 12:12	1
Chlorobenzene	0.11	U	1.0	0.11	ug/L			06/06/16 12:12	1
Chloroform	**0.32**	**J**	1.0	0.10	ug/L			06/06/16 12:12	1
Ethylbenzene	0.12	U	1.0	0.12	ug/L			06/06/16 12:12	1
Methylene Chloride	0.27	U	1.0	0.27	ug/L			06/06/16 12:12	1
Tetrachloroethene	0.18	U	1.0	0.18	ug/L			06/06/16 12:12	1

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X16-037

TestAmerica Job ID: 160-17667-1
SDG: SL2212

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: B35M40
Date Collected: 06/02/16 12:55
Date Received: 06/04/16 08:20

Lab Sample ID: 160-17667-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	0.14	U	1.0	0.14	ug/L			06/06/16 12:12	1
Trichloroethene	**3.4**		1.0	0.25	ug/L			06/06/16 12:12	1
Vinyl chloride	0.19	U	2.0	0.19	ug/L			06/06/16 12:12	1
Xylenes, Total	0.26	U	3.0	0.26	ug/L			06/06/16 12:12	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*06/06/16 12:12*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*75 - 129*		*06/06/16 12:12*	*1*
4-Bromofluorobenzene (Surr)	*108*		*81 - 130*		*06/06/16 12:12*	*1*
Dibromofluoromethane (Surr)	*97*		*81 - 124*		*06/06/16 12:12*	*1*
Toluene-d8 (Surr)	*105*		*87 - 128*		*06/06/16 12:12*	*1*

Client Sample ID: B35M95
Date Collected: 06/03/16 09:40
Date Received: 06/04/16 08:20

Lab Sample ID: 160-17667-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.17	U	1.0	0.17	ug/L			06/06/16 12:35	1
1,1,2-Trichloroethane	0.13	U	1.0	0.13	ug/L			06/06/16 12:35	1
1,1-Dichloroethane	0.070	U	1.0	0.070	ug/L			06/06/16 12:35	1
1,1-Dichloroethene	0.10	U	1.0	0.10	ug/L			06/06/16 12:35	1
1,2-Dichloroethane	0.22	U	1.0	0.22	ug/L			06/06/16 12:35	1
2-Butanone (MEK)	**0.60**	**J**	5.0	0.47	ug/L			06/06/16 12:35	1
4-Methyl-2-pentanone (MIBK)	0.22	U	5.0	0.22	ug/L			06/06/16 12:35	1
Acetone	0.55	U	2.0	0.55	ug/L			06/06/16 12:35	1
Benzene	0.10	U	1.0	0.10	ug/L			06/06/16 12:35	1
Carbon disulfide	0.10	U	1.0	0.10	ug/L			06/06/16 12:35	1
Carbon tetrachloride	0.18	U	1.0	0.18	ug/L			06/06/16 12:35	1
Chlorobenzene	0.11	U	1.0	0.11	ug/L			06/06/16 12:35	1
Chloroform	**0.32**	**J**	1.0	0.10	ug/L			06/06/16 12:35	1
Ethylbenzene	0.12	U	1.0	0.12	ug/L			06/06/16 12:35	1
Methylene Chloride	0.27	U	1.0	0.27	ug/L			06/06/16 12:35	1
Tetrachloroethene	0.18	U	1.0	0.18	ug/L			06/06/16 12:35	1
Toluene	0.14	U	1.0	0.14	ug/L			06/06/16 12:35	1
Trichloroethene	**5.6**		1.0	0.25	ug/L			06/06/16 12:35	1
Vinyl chloride	0.19	U	2.0	0.19	ug/L			06/06/16 12:35	1
Xylenes, Total	0.26	U	3.0	0.26	ug/L			06/06/16 12:35	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*06/06/16 12:35*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*75 - 129*		*06/06/16 12:35*	*1*
4-Bromofluorobenzene (Surr)	*110*		*81 - 130*		*06/06/16 12:35*	*1*
Dibromofluoromethane (Surr)	*98*		*81 - 124*		*06/06/16 12:35*	*1*
Toluene-d8 (Surr)	*101*		*87 - 128*		*06/06/16 12:35*	*1*

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X16-037

TestAmerica Job ID: 160-17667-1
SDG: SL2212

Method: 8260C - Volatile Organic Compounds (GC/MS)

Client Sample ID: B35MD7
Date Collected: 06/03/16 08:10
Date Received: 06/04/16 08:20

Lab Sample ID: 160-17667-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.17	U	1.0	0.17	ug/L			06/06/16 12:59	1
1,1,2-Trichloroethane	0.13	U	1.0	0.13	ug/L			06/06/16 12:59	1
1,1-Dichloroethane	0.070	U	1.0	0.070	ug/L			06/06/16 12:59	1
1,1-Dichloroethene	0.10	U	1.0	0.10	ug/L			06/06/16 12:59	1
1,2-Dichloroethane	0.22	U	1.0	0.22	ug/L			06/06/16 12:59	1
2-Butanone (MEK)	0.47	U	5.0	0.47	ug/L			06/06/16 12:59	1
4-Methyl-2-pentanone (MIBK)	0.22	U	5.0	0.22	ug/L			06/06/16 12:59	1
Acetone	0.55	U	2.0	0.55	ug/L			06/06/16 12:59	1
Benzene	0.10	U	1.0	0.10	ug/L			06/06/16 12:59	1
Carbon disulfide	0.10	U	1.0	0.10	ug/L			06/06/16 12:59	1
Carbon tetrachloride	0.18	U	1.0	0.18	ug/L			06/06/16 12:59	1
Chlorobenzene	0.11	U	1.0	0.11	ug/L			06/06/16 12:59	1
Chloroform	**0.29**	**J**	1.0	0.10	ug/L			06/06/16 12:59	1
Ethylbenzene	0.12	U	1.0	0.12	ug/L			06/06/16 12:59	1
Methylene Chloride	0.27	U	1.0	0.27	ug/L			06/06/16 12:59	1
Tetrachloroethene	0.18	U	1.0	0.18	ug/L			06/06/16 12:59	1
Toluene	0.14	U	1.0	0.14	ug/L			06/06/16 12:59	1
Trichloroethene	**2.6**		1.0	0.25	ug/L			06/06/16 12:59	1
Vinyl chloride	0.19	U	2.0	0.19	ug/L			06/06/16 12:59	1
Xylenes, Total	0.26	U	3.0	0.26	ug/L			06/06/16 12:59	1

Tentatively Identified Compound	*Est. Result*	*Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*06/06/16 12:59*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*75 - 129*		*06/06/16 12:59*	*1*
4-Bromofluorobenzene (Surr)	*105*		*81 - 130*		*06/06/16 12:59*	*1*
Dibromofluoromethane (Surr)	*95*		*81 - 124*		*06/06/16 12:59*	*1*
Toluene-d8 (Surr)	*102*		*87 - 128*		*06/06/16 12:59*	*1*

General Chemistry

Client Sample ID: B35M39
Date Collected: 06/02/16 12:55
Date Received: 06/04/16 08:20

Lab Sample ID: 160-17667-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**126**		5.0	0.54	mg/L			06/16/16 11:24	1
Bicarbonate Alkalinity	**126**		5.0	0.54	mg/L			06/16/16 11:24	1
Carbonate Alkalinity	0.54	U	5.0	0.54	mg/L			06/16/16 11:24	1
Hydroxide Alkalinity	0.54	U	5.0	0.54	mg/L			06/16/16 11:24	1

Client Sample ID: B35M40
Date Collected: 06/02/16 12:55
Date Received: 06/04/16 08:20

Lab Sample ID: 160-17667-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**128**		5.0	0.54	mg/L			06/16/16 11:24	1
Bicarbonate Alkalinity	**128**		5.0	0.54	mg/L			06/16/16 11:24	1
Carbonate Alkalinity	0.54	U	5.0	0.54	mg/L			06/16/16 11:24	1
Hydroxide Alkalinity	0.54	U	5.0	0.54	mg/L			06/16/16 11:24	1

Client Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X16-037

TestAmerica Job ID: 160-17667-1
SDG: SL2212

General Chemistry

Client Sample ID: B35M95
Date Collected: 06/03/16 09:40
Date Received: 06/04/16 08:20

Lab Sample ID: 160-17667-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**124**		5.0	0.54	mg/L			06/16/16 11:24	1
Bicarbonate Alkalinity	**124**		5.0	0.54	mg/L			06/16/16 11:24	1
Carbonate Alkalinity	0.54	U	5.0	0.54	mg/L			06/16/16 11:24	1
Hydroxide Alkalinity	0.54	U	5.0	0.54	mg/L			06/16/16 11:24	1

Client Sample ID: B35MD7
Date Collected: 06/03/16 08:10
Date Received: 06/04/16 08:20

Lab Sample ID: 160-17667-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**112**		5.0	0.54	mg/L			06/16/16 11:24	1
Bicarbonate Alkalinity	**112**		5.0	0.54	mg/L			06/16/16 11:24	1
Carbonate Alkalinity	0.54	U	5.0	0.54	mg/L			06/16/16 11:24	1
Hydroxide Alkalinity	0.54	U	5.0	0.54	mg/L			06/16/16 11:24	1

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X16-037

TestAmerica Job ID: 160-17667-1
SDG: SL2212

Method: 8260C - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 160-254846/9
Matrix: Water
Analysis Batch: 254846

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.17	U	1.0	0.17	ug/L			06/06/16 09:04	1
1,1,2-Trichloroethane	0.13	U	1.0	0.13	ug/L			06/06/16 09:04	1
1,1-Dichloroethane	0.070	U	1.0	0.070	ug/L			06/06/16 09:04	1
1,1-Dichloroethene	0.10	U	1.0	0.10	ug/L			06/06/16 09:04	1
1,2-Dichloroethane	0.22	U	1.0	0.22	ug/L			06/06/16 09:04	1
2-Butanone (MEK)	0.47	U	5.0	0.47	ug/L			06/06/16 09:04	1
4-Methyl-2-pentanone (MIBK)	0.22	U	5.0	0.22	ug/L			06/06/16 09:04	1
Acetone	0.55	U	2.0	0.55	ug/L			06/06/16 09:04	1
Benzene	0.10	U	1.0	0.10	ug/L			06/06/16 09:04	1
Carbon disulfide	0.10	U	1.0	0.10	ug/L			06/06/16 09:04	1
Carbon tetrachloride	0.18	U	1.0	0.18	ug/L			06/06/16 09:04	1
Chlorobenzene	0.11	U	1.0	0.11	ug/L			06/06/16 09:04	1
Chloroform	0.10	U	1.0	0.10	ug/L			06/06/16 09:04	1
Ethylbenzene	0.12	U	1.0	0.12	ug/L			06/06/16 09:04	1
Methylene Chloride	0.27	U	1.0	0.27	ug/L			06/06/16 09:04	1
Tetrachloroethene	0.18	U	1.0	0.18	ug/L			06/06/16 09:04	1
Toluene	0.173	J	1.0	0.14	ug/L			06/06/16 09:04	1
Trichloroethene	0.25	U	1.0	0.25	ug/L			06/06/16 09:04	1
Vinyl chloride	0.19	U	2.0	0.19	ug/L			06/06/16 09:04	1
Xylenes, Total	0.26	U	3.0	0.26	ug/L			06/06/16 09:04	1

Tentatively Identified Compound	*MB Est. Result*	*MB Qualifier*	*Unit*	*D*	*RT*	*CAS No.*	*Prepared*	*Analyzed*	*Dil Fac*
Tentatively Identified Compound	*None*		*ug/L*					*06/06/16 09:04*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*75 - 129*		*06/06/16 09:04*	*1*
4-Bromofluorobenzene (Surr)	*110*		*81 - 130*		*06/06/16 09:04*	*1*
Dibromofluoromethane (Surr)	*100*		*81 - 124*		*06/06/16 09:04*	*1*
Toluene-d8 (Surr)	*108*		*87 - 128*		*06/06/16 09:04*	*1*

Lab Sample ID: LCS 160-254846/6
Matrix: Water
Analysis Batch: 254846

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	10.0	10.7		ug/L		107	85 - 116
1,1,2-Trichloroethane	10.0	10.4		ug/L		104	80 - 120
1,1-Dichloroethane	10.0	9.86		ug/L		99	80 - 120
1,1-Dichloroethene	10.0	10.6		ug/L		106	80 - 120
1,2-Dichloroethane	10.0	9.18		ug/L		92	80 - 115
2-Butanone (MEK)	10.0	9.35		ug/L		93	67 - 127
4-Methyl-2-pentanone (MIBK)	10.0	9.65		ug/L		97	75 - 126
Acetone	10.0	11.8		ug/L		118	69 - 129
Benzene	10.0	10.2		ug/L		102	80 - 120
Carbon disulfide	10.0	10.3		ug/L		103	80 - 121
Carbon tetrachloride	10.0	10.8		ug/L		108	83 - 125
Chlorobenzene	10.0	10.2		ug/L		102	80 - 120

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X16-037

TestAmerica Job ID: 160-17667-1
SDG: SL2212

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 160-254846/6
Matrix: Water
Analysis Batch: 254846

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloroform	10.0	9.86		ug/L		99	80 - 120
Ethylbenzene	10.0	10.2		ug/L		102	80 - 120
Methylene Chloride	10.0	9.51		ug/L		95	80 - 120
Tetrachloroethene	10.0	11.0		ug/L		110	83 - 123
Toluene	10.0	10.8		ug/L		108	80 - 120
Trichloroethene	10.0	10.6		ug/L		106	80 - 120
Vinyl chloride	10.0	10.3		ug/L		103	77 - 122
Xylenes, Total	20.0	21.6		ug/L		108	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*90*		*75 - 129*
4-Bromofluorobenzene (Surr)	*100*		*81 - 130*
Dibromofluoromethane (Surr)	*101*		*81 - 124*
Toluene-d8 (Surr)	*101*		*87 - 128*

Lab Sample ID: LCSD 160-254846/7
Matrix: Water
Analysis Batch: 254846

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	10.0	11.1		ug/L		111	85 - 116	4	20
1,1,2-Trichloroethane	10.0	10.3		ug/L		103	80 - 120	1	20
1,1-Dichloroethane	10.0	10.2		ug/L		102	80 - 120	4	20
1,1-Dichloroethene	10.0	10.8		ug/L		108	80 - 120	3	20
1,2-Dichloroethane	10.0	9.38		ug/L		94	80 - 115	2	20
2-Butanone (MEK)	10.0	9.71		ug/L		97	67 - 127	4	20
4-Methyl-2-pentanone (MIBK)	10.0	9.83		ug/L		98	75 - 126	2	20
Acetone	10.0	10.8		ug/L		108	69 - 129	8	20
Benzene	10.0	10.6		ug/L		106	80 - 120	4	20
Carbon disulfide	10.0	10.7		ug/L		107	80 - 121	4	20
Carbon tetrachloride	10.0	10.8		ug/L		108	83 - 125	1	20
Chlorobenzene	10.0	10.3		ug/L		103	80 - 120	0	20
Chloroform	10.0	9.98		ug/L		100	80 - 120	1	20
Ethylbenzene	10.0	10.0		ug/L		100	80 - 120	1	20
Methylene Chloride	10.0	9.85		ug/L		98	80 - 120	3	20
Tetrachloroethene	10.0	10.9		ug/L		109	83 - 123	1	20
Toluene	10.0	10.8		ug/L		108	80 - 120	0	20
Trichloroethene	10.0	10.9		ug/L		109	80 - 120	2	20
Vinyl chloride	10.0	10.6		ug/L		106	77 - 122	2	20
Xylenes, Total	20.0	21.7		ug/L		109	80 - 120	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*93*		*75 - 129*
4-Bromofluorobenzene (Surr)	*100*		*81 - 130*
Dibromofluoromethane (Surr)	*102*		*81 - 124*
Toluene-d8 (Surr)	*100*		*87 - 128*

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X16-037

TestAmerica Job ID: 160-17667-1
SDG: SL2212

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-17666-B-6 MS
Matrix: Water
Analysis Batch: 254846

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	0.17	U	10.0	10.7		ug/L		107	82 - 124
1,1,2-Trichloroethane	0.13	U	10.0	9.48		ug/L		95	80 - 120
1,1-Dichloroethane	0.070	U	10.0	10.1		ug/L		101	80 - 122
1,1-Dichloroethene	0.10	U	10.0	10.4		ug/L		104	80 - 120
1,2-Dichloroethane	0.22	U	10.0	9.03		ug/L		90	80 - 120
2-Butanone (MEK)	0.47	U	10.0	8.20		ug/L		82	53 - 145
4-Methyl-2-pentanone (MIBK)	0.22	U	10.0	8.92		ug/L		89	70 - 131
Acetone	0.55	U	10.0	10.0		ug/L		100	50 - 137
Benzene	0.10	U	10.0	10.4		ug/L		104	80 - 120
Carbon disulfide	0.10	U	10.0	10.6		ug/L		106	80 - 121
Carbon tetrachloride	0.18	U	10.0	10.7		ug/L		107	77 - 131
Chlorobenzene	0.11	U	10.0	10.4		ug/L		104	80 - 120
Chloroform	0.10	U	10.0	9.97		ug/L		100	80 - 120
Ethylbenzene	0.12	U	10.0	10.4		ug/L		104	84 - 125
Methylene Chloride	1.3		10.0	10.8		ug/L		95	80 - 120
Tetrachloroethene	0.18	U	10.0	11.0		ug/L		110	80 - 126
Toluene	0.16	J B	10.0	10.9		ug/L		108	85 - 123
Trichloroethene	0.25	U	10.0	10.6		ug/L		106	81 - 125
Vinyl chloride	0.19	U	10.0	10.0		ug/L		100	70 - 129
Xylenes, Total	0.26	U	20.0	22.5		ug/L		113	80 - 120

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*89*		*75 - 129*
4-Bromofluorobenzene (Surr)	*99*		*81 - 130*
Dibromofluoromethane (Surr)	*97*		*81 - 124*
Toluene-d8 (Surr)	*101*		*87 - 128*

Lab Sample ID: 160-17666-C-6 MSD
Matrix: Water
Analysis Batch: 254846

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	0.17	U	10.0	10.1		ug/L		101	82 - 124	6	20
1,1,2-Trichloroethane	0.13	U	10.0	10.4		ug/L		104	80 - 120	10	20
1,1-Dichloroethane	0.070	U	10.0	9.75		ug/L		98	80 - 122	3	20
1,1-Dichloroethene	0.10	U	10.0	9.46		ug/L		95	80 - 120	10	20
1,2-Dichloroethane	0.22	U	10.0	9.47		ug/L		95	80 - 120	5	20
2-Butanone (MEK)	0.47	U	10.0	9.33		ug/L		93	53 - 145	13	20
4-Methyl-2-pentanone (MIBK)	0.22	U	10.0	9.76		ug/L		98	70 - 131	9	20
Acetone	0.55	U	10.0	9.21		ug/L		92	50 - 137	9	20
Benzene	0.10	U	10.0	10.0		ug/L		100	80 - 120	4	20
Carbon disulfide	0.10	U	10.0	9.66		ug/L		97	80 - 121	9	20
Carbon tetrachloride	0.18	U	10.0	10.1		ug/L		101	77 - 131	6	20
Chlorobenzene	0.11	U	10.0	10.1		ug/L		101	80 - 120	3	20
Chloroform	0.10	U	10.0	9.94		ug/L		99	80 - 120	0	20
Ethylbenzene	0.12	U	10.0	9.75		ug/L		97	84 - 125	7	20
Methylene Chloride	1.3		10.0	10.8		ug/L		95	80 - 120	0	20
Tetrachloroethene	0.18	U	10.0	10.2		ug/L		102	80 - 126	8	20

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X16-037

TestAmerica Job ID: 160-17667-1
SDG: SL2212

Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 160-17666-C-6 MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 254846

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Toluene	0.16	J B	10.0	10.3		ug/L		101	85 - 123	6	20
Trichloroethene	0.25	U	10.0	9.61		ug/L		96	81 - 125	10	20
Vinyl chloride	0.19	U	10.0	9.61		ug/L		96	70 - 129	4	20
Xylenes, Total	0.26	U	20.0	21.1		ug/L		106	80 - 120	6	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*91*		*75 - 129*
4-Bromofluorobenzene (Surr)	*103*		*81 - 130*
Dibromofluoromethane (Surr)	*102*		*81 - 124*
Toluene-d8 (Surr)	*103*		*87 - 128*

Method: 310.1 - Alkalinity

Lab Sample ID: MB 160-256779/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 256779

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	0.54	U	5.0	0.54	mg/L			06/16/16 11:24	1
Bicarbonate Alkalinity	0.54	U	5.0	0.54	mg/L			06/16/16 11:24	1
Carbonate Alkalinity	0.54	U	5.0	0.54	mg/L			06/16/16 11:24	1
Hydroxide Alkalinity	0.54	U	5.0	0.54	mg/L			06/16/16 11:24	1

Lab Sample ID: HLCS 160-256779/3 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 256779

Analyte	Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	403	380.0		mg/L		94	90 - 110
Bicarbonate Alkalinity	403	380.0		mg/L		94	90 - 110

Lab Sample ID: LCS 160-256779/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 256779

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	201	192.0		mg/L		95	90 - 110
Bicarbonate Alkalinity	201	192.0		mg/L		95	90 - 110

Lab Sample ID: 160-17667-1 MS — **Client Sample ID: B35M39**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 256779

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	126		101	222.0		mg/L		95	80 - 120
Bicarbonate Alkalinity	126		101	222.0		mg/L		95	80 - 120

QC Sample Results

Client: CH2M Hill Plateau Remediation Company
Project/Site: X16-037

TestAmerica Job ID: 160-17667-1
SDG: SL2212

Method: 310.1 - Alkalinity (Continued)

Lab Sample ID: 160-17667-1 DU
Matrix: Water
Analysis Batch: 256779

Client Sample ID: B35M39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Alkalinity	126			126.0		mg/L				0	20
Bicarbonate Alkalinity	126			126.0		mg/L				0	20
Carbonate Alkalinity	0.54	U		0.54	U	mg/L				NC	20
Hydroxide Alkalinity	0.54	U		0.54	U	mg/L				NC	20

QC Association Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: X16-037

TestAmerica Job ID: 160-17667-1
SDG: SL2212

GC/MS VOA

Analysis Batch: 254846

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-17666-B-6 MS	Matrix Spike	Total/NA	Water	8260C	
160-17666-C-6 MSD	Matrix Spike Duplicate	Total/NA	Water	8260C	
160-17667-1	B35M39	Total/NA	Water	8260C	
160-17667-2	B35M40	Total/NA	Water	8260C	
160-17667-3	B35M95	Total/NA	Water	8260C	
160-17667-4	B35MD7	Total/NA	Water	8260C	
LCS 160-254846/6	Lab Control Sample	Total/NA	Water	8260C	
LCSD 160-254846/7	Lab Control Sample Dup	Total/NA	Water	8260C	
MB 160-254846/9	Method Blank	Total/NA	Water	8260C	

General Chemistry

Analysis Batch: 256779

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-17667-1	B35M39	Total/NA	Water	310.1	
160-17667-1 DU	B35M39	Total/NA	Water	310.1	
160-17667-1 MS	B35M39	Total/NA	Water	310.1	
160-17667-2	B35M40	Total/NA	Water	310.1	
160-17667-3	B35M95	Total/NA	Water	310.1	
160-17667-4	B35MD7	Total/NA	Water	310.1	
HLCS 160-256779/3	Lab Control Sample	Total/NA	Water	310.1	
LCS 160-256779/2	Lab Control Sample	Total/NA	Water	310.1	
MB 160-256779/1	Method Blank	Total/NA	Water	310.1	

Surrogate Summary

Client: CH2M Hill Plateau Remediation Company
Project/Site: X16-037

TestAmerica Job ID: 160-17667-1
SDG: SL2212

Method: 8260C - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		12DCE	BFB	DBFM	TOL
Lab Sample ID	**Client Sample ID**	**(75-129)**	**(81-130)**	**(81-124)**	**(87-128)**
160-17666-B-6 MS	Matrix Spike	89	99	97	101
160-17666-C-6 MSD	Matrix Spike Duplicate	91	103	102	103
160-17667-1	B35M39	90	109	96	107
160-17667-2	B35M40	94	108	97	105
160-17667-3	B35M95	94	110	98	101
160-17667-4	B35MD7	92	105	95	102
LCS 160-254846/6	Lab Control Sample	90	100	101	101
LCSD 160-254846/7	Lab Control Sample Dup	93	100	102	100
MB 160-254846/9	Method Blank	94	110	100	108

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)