

March 22, 2016

# 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: 160-16237-1

TestAmerica Sample Delivery Group: SL2122  
Client Project/Site: F15-005

For:

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

Attn: Mr. Scot Fitzgerald



Authorized for release by:  
3/22/2016 7:01:30 PM

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

### LINKS

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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: 160-16237-1**

**Laboratory: TestAmerica St. Louis**

**Narrative**

**CASE NARRATIVE**

CH2MHill Plateau Remediation Company  
P.O. Box 1600  
Richland, Washington 99352  
March 22, 2016  
Attention: Scot Fitzgerald

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SDG : SL2122  
Number of Samples : 1 sample  
Sample Matrix : Water  
Data Deliverable : Summary  
Date SDG Closed : February 25, 2016

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II. Introduction

On February 25, 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: F15-005

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: 160-16237-1 (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: 238734**

The continuing calibration verification (CCV) associated with batch 160-238734 recovered outside acceptance criteria, low biased, for Chloromethane. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated samples were non-detect for this analyte, the data has been reported. (CCVIS 160-238734/5)

The following compounds did not meet the minimum relative response factor limits in the continuing calibration verification (CCV) associated with batch 160-238734: Acetone. A low level CCV was analyzed at the base reporting limit of 1ug/L and the affected analytes were detected. Affected target analytes recovering above the reporting limit in the associated samples will be qualified and reported. (CCVIS 160-238734/5)

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:

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F15-005

TestAmerica Job ID: 160-16237-1  
SDG: SL2122

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**Job ID: 160-16237-1 (Continued)**

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**Laboratory: TestAmerica St. Louis (Continued)**

Jayna Awalt  
St. Louis Project Manager

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Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 160-16237-1

SDG Number: SL2122

Login Number: 16237

List Number: 1

Creator: Clarke, Jill C

List Source: TestAmerica St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.5°
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	

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F15-005-677	PAGE 1 OF 1
COLLECTOR J.R. Aguilera/CHPRC	SL2122	COMPANY CONTACT SUMNER, LC	TELEPHONE NO. 376-3922	PROJECT COORDINATOR SUMNER, LC	PRICE CODE 7H
SAMPLING LOCATION 289-TA, Post Tc99IX Resin Tanks, Valve V06-Y22--FXR		PROJECT DESIGNATION 200W Pump & Treat - Treatment Plant Water Sampling		SAF NO. F15-005	AIR QUALITY <input type="checkbox"/>
ICE CHEST NO. GWS-086		FIELD LOGBOOK NO. HNF-N-491-15/10	ACTUAL SAMPLE DEPTH (N/A)	COA 303700	METHOD OF SHIPMENT FEDERAL EXPRESS
SHIPPED TO TestAmerica St. Louis		OFFSITE PROPERTY NO. (N/A)		BILL OF LADING/AIR BILL NO. F75725591963	

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS	PRESERVATION	HCI or H2SO4 to pH <2/Cool 14 Days
A=Air	*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. N/A	HOLDING TIME	
DL=Drum		TYPE OF CONTAINER	agS*
Liquids		NO. OF CONTAINER(S)	4
DS=Drum		VOLUME	40mL
Solids		SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS
L=Liquid		SAMPLE DATE	02-23-16
O=Oil		SAMPLE TIME	1030
O=Oil			
S=Soil			
SE=Sediment			
T=Tissue			
V=Vegetation			
W=Water			
WI=Wipe			
X=Other			

SAMPLE NO.	MATRIX*	
BB34FH2	WATER	

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM J.R. Aguilera/CHPRC	DATE/TIME FEB 23 2016 1205	RECEIVED BY/STORED IN R.A. Shepard/CHPRC	DATE/TIME FEB 23 2016 1205	TRVL-16-067	
RELINQUISHED BY/REMOVED FROM R.A. Shepard/CHPRC	DATE/TIME FEB 23 2016 1445	RECEIVED BY/STORED IN SSU-1	DATE/TIME FEB 23 2016 1245	(1) 8260_VOA_GCMS: CH 01 {Chloromethane}; 8260_VOA_GCMS: COMMON {Acetone, Carbon tetrachloride, Chloroform, Methylene chloride, Trichloroethene, Vinyl chloride}; 8260_VOA_GCMS: COMMON (Add-on) {cis-1,2-Dichloroethylene};	
RELINQUISHED BY/REMOVED FROM SSU-1	DATE/TIME FEB 24 2016 1145	RECEIVED BY/STORED IN CHPRC	DATE/TIME FEB 24 2016 1145		
RELINQUISHED BY/REMOVED FROM L.D. Whitford/CHPRC	DATE/TIME FEB 24 2016 1400	RECEIVED BY/STORED IN FEDEX	DATE/TIME FEB 24 2016 1400		
RELINQUISHED BY/REMOVED FROM FED EX	DATE/TIME	RECEIVED BY/STORED IN Brian Parise	DATE/TIME 2/25/16 0910		
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	
PRINTED ON 1/28/2016	FSR ID = FSR21657	TRVL NUM = TRVL-16-067		(A-6003-618 (REV 2))	





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### FedEx® Tracking

**775725591763**

Ship date:	Actual delivery:
<b>Wed 2/24/2016</b>	<b>Thu 2/25/2016 9:09 am</b>
RICHLAND, WA US	<b>Delivered</b> <i>Signed for by: B.DANIELS</i>
	EARTH CITY, MO US

#### Travel History

Date/Time	Activity	Location
<b>2/25/2016 - Thursday</b>		
9:09 am	Delivered	EARTH CITY, MO
6:31 am	On FedEx vehicle for delivery	EARTH CITY, MO
6:25 am	At local FedEx facility	EARTH CITY, MO
5:24 am	At destination sort facility	BERKELEY, MO
4:36 am	Departed FedEx location	MEMPHIS, TN
12:32 am	Arrived at FedEx location	MEMPHIS, TN
<b>2/24/2016 - Wednesday</b>		
4:54 pm	Left FedEx origin facility	PASCO, WA
3:21 pm	Picked up	PASCO, WA
2:54 pm	Shipment information sent to FedEx	

#### Shipment Facts

<b>Tracking number</b>	775725591763	<b>Service</b>	FedEx Priority Overnight
<b>Weight</b>	39 lbs / 17.69 kgs	<b>Delivered To</b>	Shipping/Receiving
<b>Total pieces</b>	1	<b>Total shipment weight</b>	39 lbs / 17.69 kgs
<b>Terms</b>	Recipient	<b>Shipper reference</b>	GWS-086
<b>Packaging</b>	Your Packaging	<b>Special handling section</b>	Deliver Weekday, Additional Handling Surcharge



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## Qualifiers

### GC/MS VOA

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)

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F15-005

TestAmerica Job ID: 160-16237-1  
SDG: SL2122

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

**Protocol References:**

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



March 22, 2016  
**Sample Summary**

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F15-005

TestAmerica Job ID: 160-16237-1  
SDG: SL2122

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<b>Lab Sample ID</b>	<b>Client Sample ID</b>	<b>Matrix</b>	<b>Collected</b>	<b>Received</b>
160-16237-1	B34FH2	Water	02/23/16 10:30	02/25/16 09:10

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March 22, 2016  
**Client Sample Results**

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: F15-005

TestAmerica Job ID: 160-16237-1  
 SDG: SL2122

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

**Client Sample ID: B34FH2**  
**Date Collected: 02/23/16 10:30**  
**Date Received: 02/25/16 09:10**

**Lab Sample ID: 160-16237-1**  
**Matrix: Water**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	0.34	U	2.0	0.34	ug/L			03/02/16 17:40	1
Carbon tetrachloride	0.13	U	1.0	0.13	ug/L			03/02/16 17:40	1
Chloroform	0.10	U	1.0	0.10	ug/L			03/02/16 17:40	1
Chloromethane	0.080	U	2.0	0.080	ug/L			03/02/16 17:40	1
cis-1,2-Dichloroethylene	0.090	U	1.0	0.090	ug/L			03/02/16 17:40	1
Methylene Chloride	0.27	U	1.0	0.27	ug/L			03/02/16 17:40	1
Trichloroethene	0.25	U	1.0	0.25	ug/L			03/02/16 17:40	1
Vinyl chloride	0.080	U	2.0	0.080	ug/L			03/02/16 17:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	84		75 - 129					03/02/16 17:40	1
4-Bromofluorobenzene (Surr)	104		81 - 130					03/02/16 17:40	1
Dibromofluoromethane (Surr)	94		81 - 124					03/02/16 17:40	1
Toluene-d8 (Surr)	115		87 - 128					03/02/16 17:40	1

March 22, 2016  
**QC Sample Results**

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F15-005

TestAmerica Job ID: 160-16237-1  
SDG: SL2122

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

**Lab Sample ID: MB 160-238734/9**  
**Matrix: Water**  
**Analysis Batch: 238734**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	0.34	U	2.0	0.34	ug/L			03/02/16 10:24	1
Carbon tetrachloride	0.13	U	1.0	0.13	ug/L			03/02/16 10:24	1
Chloroform	0.10	U	1.0	0.10	ug/L			03/02/16 10:24	1
Chloromethane	0.080	U	2.0	0.080	ug/L			03/02/16 10:24	1
cis-1,2-Dichloroethylene	0.090	U	1.0	0.090	ug/L			03/02/16 10:24	1
Methylene Chloride	0.27	U	1.0	0.27	ug/L			03/02/16 10:24	1
Trichloroethene	0.25	U	1.0	0.25	ug/L			03/02/16 10:24	1
Vinyl chloride	0.080	U	2.0	0.080	ug/L			03/02/16 10:24	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		75 - 129		03/02/16 10:24	1
4-Bromofluorobenzene (Surr)	107		81 - 130		03/02/16 10:24	1
Dibromofluoromethane (Surr)	95		81 - 124		03/02/16 10:24	1
Toluene-d8 (Surr)	115		87 - 128		03/02/16 10:24	1

**Lab Sample ID: LCS 160-238734/6**  
**Matrix: Water**  
**Analysis Batch: 238734**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	10.0	10.2		ug/L		102	69 - 129
Carbon tetrachloride	10.0	8.55		ug/L		86	83 - 125
Chloroform	10.0	8.74		ug/L		87	80 - 120
Chloromethane	10.0	8.32		ug/L		83	72 - 124
cis-1,2-Dichloroethylene	10.0	8.99		ug/L		90	80 - 120
Methylene Chloride	10.0	8.86		ug/L		89	80 - 120
Trichloroethene	10.0	9.29		ug/L		93	80 - 120
Vinyl chloride	10.0	9.52		ug/L		95	77 - 122

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	92		75 - 129
4-Bromofluorobenzene (Surr)	97		81 - 130
Dibromofluoromethane (Surr)	95		81 - 124
Toluene-d8 (Surr)	105		87 - 128

**Lab Sample ID: LCSD 160-238734/7**  
**Matrix: Water**  
**Analysis Batch: 238734**

**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
Acetone	10.0	9.21		ug/L		92	69 - 129	10	20
Carbon tetrachloride	10.0	8.89		ug/L		89	83 - 125	4	20
Chloroform	10.0	9.13		ug/L		91	80 - 120	4	20
Chloromethane	10.0	8.11		ug/L		81	72 - 124	3	20
cis-1,2-Dichloroethylene	10.0	9.26		ug/L		93	80 - 120	3	20
Methylene Chloride	10.0	8.96		ug/L		90	80 - 120	1	20
Trichloroethene	10.0	9.29		ug/L		93	80 - 120	0	20

TestAmerica St. Louis

March 22, 2016  
QC Sample Results

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F15-005

TestAmerica Job ID: 160-16237-1  
SDG: SL2122

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

Lab Sample ID: LCSD 160-238734/7

Client Sample ID: Lab Control Sample Dup

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 238734

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Vinyl chloride	10.0	9.52		ug/L		95	77 - 122	0	20
<b>Surrogate</b>	<b>%Recovery</b>	<b>LCSD Qualifier</b>	<b>Limits</b>						
1,2-Dichloroethane-d4 (Surr)	94		75 - 129						
4-Bromofluorobenzene (Surr)	96		81 - 130						
Dibromofluoromethane (Surr)	98		81 - 124						
Toluene-d8 (Surr)	101		87 - 128						

Lab Sample ID: 160-16258-B-1 MS

Client Sample ID: Matrix Spike

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 238734

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	0.34	U	10.0	9.05		ug/L		90	50 - 137		
Carbon tetrachloride	0.13	U	10.0	8.84		ug/L		88	77 - 131		
Chloroform	0.10	U	10.0	8.89		ug/L		89	80 - 120		
Chloromethane	0.080	U	10.0	7.54		ug/L		75	62 - 132		
cis-1,2-Dichloroethylene	0.090	U	10.0	9.03		ug/L		90	80 - 120		
Methylene Chloride	0.27	U	10.0	8.68		ug/L		87	80 - 120		
Trichloroethene	0.25	U	10.0	9.28		ug/L		93	81 - 125		
Vinyl chloride	0.080	U	10.0	8.91		ug/L		89	70 - 129		
<b>Surrogate</b>	<b>%Recovery</b>	<b>MS Qualifier</b>	<b>Limits</b>								
1,2-Dichloroethane-d4 (Surr)	90		75 - 129								
4-Bromofluorobenzene (Surr)	96		81 - 130								
Dibromofluoromethane (Surr)	96		81 - 124								
Toluene-d8 (Surr)	106		87 - 128								

Lab Sample ID: 160-16258-C-1 MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 238734

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	0.34	U	10.0	9.37		ug/L		94	50 - 137	4	20
Carbon tetrachloride	0.13	U	10.0	8.66		ug/L		87	77 - 131	2	20
Chloroform	0.10	U	10.0	8.86		ug/L		89	80 - 120	0	20
Chloromethane	0.080	U	10.0	8.06		ug/L		81	62 - 132	7	20
cis-1,2-Dichloroethylene	0.090	U	10.0	8.90		ug/L		89	80 - 120	1	20
Methylene Chloride	0.27	U	10.0	8.66		ug/L		87	80 - 120	0	20
Trichloroethene	0.25	U	10.0	9.31		ug/L		93	81 - 125	0	20
Vinyl chloride	0.080	U	10.0	9.72		ug/L		97	70 - 129	9	20
<b>Surrogate</b>	<b>%Recovery</b>	<b>MSD Qualifier</b>	<b>Limits</b>								
1,2-Dichloroethane-d4 (Surr)	92		75 - 129								
4-Bromofluorobenzene (Surr)	98		81 - 130								
Dibromofluoromethane (Surr)	97		81 - 124								
Toluene-d8 (Surr)	102		87 - 128								

TestAmerica St. Louis

March 22, 2016  
QC Association Summary

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F15-005

TestAmerica Job ID: 160-16237-1  
SDG: SL2122

GC/MS VOA

Analysis Batch: 238734

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-16237-1	B34FH2	Total/NA	Water	8260C	
160-16258-B-1 MS	Matrix Spike	Total/NA	Water	8260C	
160-16258-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260C	
LCS 160-238734/6	Lab Control Sample	Total/NA	Water	8260C	
LCSD 160-238734/7	Lab Control Sample Dup	Total/NA	Water	8260C	
MB 160-238734/9	Method Blank	Total/NA	Water	8260C	

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

March 22, 2016  
**Surrogate Summary**

Client: CH2M Hill Plateau Remediation Company  
Project/Site: F15-005

TestAmerica Job ID: 160-16237-1  
SDG: SL2122

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

**Matrix: Water**

**Prep Type: Total/NA**

**Percent Surrogate Recovery (Acceptance Limits)**

Lab Sample ID	Client Sample ID	12DCE	BFB	DBFM	TOL
		(75-129)	(81-130)	(81-124)	(87-128)
160-16237-1	B34FH2	84	104	94	115
160-16258-B-1 MS	Matrix Spike	90	96	96	106
160-16258-C-1 MSD	Matrix Spike Duplicate	92	98	97	102
LCS 160-238734/6	Lab Control Sample	92	97	95	105
LCSD 160-238734/7	Lab Control Sample Dup	94	96	98	101
MB 160-238734/9	Method Blank	87	107	95	115

**Surrogate Legend**

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

