

APRIL 11, 2013

# 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: 160-1879-1

TestAmerica Sample Delivery Group: SL1368  
Client Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

For:

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

Attn: General Mailbox



Authorized for release by:  
4/11/2013 2:47:28 PM

Jayna Awalt  
Project Manager I  
[jayna.awalt@testamericainc.com](mailto:jayna.awalt@testamericainc.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:  
[www.testamericainc.com](http://www.testamericainc.com)

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

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

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**Job ID: 160-1879-1**

**Laboratory: TestAmerica St. Louis**

**Narrative**

**CASE NARRATIVE**

CH2MHill Plateau Remediation Company  
P.O. Box 1600  
MS B3-60  
Richland, Washington 99352  
April 11, 2013  
Attention: Scot Fitzgerald

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SDG : SL1368  
Number of Samples : 1 sample  
Sample Matrix : Water  
Data Deliverable : Summary  
Date SDG Closed : March 27, 2013

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II. Introduction

On March 27, 2013, 1 water sample was received by TestAmerica - St. Louis for chemical analysis. The sample was received within temperature criteria. See the COC and CUR forms for documentation of any variations on receipt conditions and temperature. Upon receipt, the 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: W13-003

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 a LCS/LCS duplicate.

Deviation from Request: None

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



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**Job ID: 160-1879-1 (Continued)**

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

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.
- **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.

**Gasoline**

**Batch: 43067**

The following sample in batch 43067 was received outside of holding time, but analyzed within the 2x holding time: B2NKV7 (160-1879-1). Per SDR13-128, sample was received outside of hold due to instrumentation issues at the on-site lab. Sample was analyzed within two times hold and data is reported.

The pH for the following sample in batch 43067 was greater than 2: B2NKV7 (160-1879-1) The sample had acceptable results. No further action is required.

I certify that this Summary Package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. The Laboratory Manager or a designee, as verified by the signature on the cover page has authorized release of the data contained in this hard copy data package.

Reviewed and approved:

Jayna Awalt  
St. Louis Project Manager



# SAMPLE ISSUE RESOLUTION

<b>SIR NUM</b>	SDR13-128
<b>REV NUM</b>	0
<b>DATE INITIATED</b>	3/27/2013



## SAMPLE EVENT INFORMATION

**SAF NUM(S)** W13-003  
**OPERABLE UNIT(S)** NONE  
**PROJECT(S)** RCRA13  
**SAMPLE EVENT TITLE(S)** RCRA13  
**LABORATORY** TestAmerica St. Louis

## SAMPLING INFORMATION

**NUMBER OF SAMPLES** 1  
**SAMPLE NUMBERS** B2NKV7  
**SAMPLE MATRIX** WATER  
**COLLECTION DATE** 3/7/2013 - 3/7/2013  
**SDG NUM** **SL1368**

## ISSUE BACKGROUND

**CLASS** Laboratory Issue  
**TYPE** Analysis Holding Time Exceeded  
**DESCRIPTION** Sample was received outside of hold time due to instrumentation issues at on-site lab. Sample will be analyzed within two times hold.

## DISPOSITION

**DESCRIPTION** PROPOSED DISPOSITION: TASL PROPOSES TO ANALYZE AND REPORT SAMPLE WITHIN TWO TIMES HOLD TIME. WILL NARRATE EXCURSION IN REPORT.

**JUSTIFICATION** ACCEPTED DISPOSITION: Accept proposed resolution  
 SUBMITTED BY: Jayna Awalt/TASL Date: 3/27/13  
 ACCEPTED BY: Karen Waters-Husted/CHPRC Date: 3/27/13

**CH2M Hill Plateau Remediation Company**  
 W13-003-046  
 Page 1 of 2

**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

Collector: JANELLE ZUNKER  
 SAF No.: W13-003  
 Project Title: RCRA, MARCH 2013  
 Shipped To (Lab): Waste Sampling & Characterization  
 Protocol: RCRA

Contact/Requester: Karen Waters-Husted  
 Sampling Origin: Hanford Site  
 Logbook No.: HNF-N-50656/116  
 Method of Shipment: GOVERNMENT VEHICLE  
 Priority: 31 Days

Telephone No.: 376-4650  
 Purchase Order/Charge Code: 300071ES20  
 Ice Chest No.: 655-001  
 Bill of Lading/Air Bill No.: 799369074096  
 Offsite Property No.: N/A

**POSSIBLE SAMPLE HAZARDS/REMARKS**  
 \*\*\* Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993) \*\*\*

**SPECIAL INSTRUCTIONS**  
 Hold Time:  No  
 Site: Wide Generator Knowledge Information Form applies.  
 The CACN for all analytical work at WSCF is 401647.

Total Activity Exemption: Yes  No

Sample No.	Filter	* No/Type Container	No/Type Container	Time	Date	Time	Sample Analysis	Holding Time	Preservative
B2NLD5	N	W	1x1-L aGs*	MAR 07 2013	0852		9020_TOX: TOX (1)	28 Days	H2SO4 to pH <2/Cool-4C
B2NLD5	N	W	1x250-mL aG				9060_TOX: TOX (1)	28 Days	HCl or H2SO4 to pH <2/Cool-4C
B2NLD4	N	W	1x1-L aGs*				9020_TOX: TOX (1)	28 Days	H2SO4 to pH <2/Cool-4C
B2NLD4	N	W	1x250-mL aG				9060_TOX: TOX (1)	28 Days	HCl or H2SO4 to pH <2/Cool-4C
B2NKV7	N	W	1x250-mL GIP				2320_ALKALINITY: Alkalinity (1)	14 Days	Cool-4C
B2NKV7	N	W	1x100-mL GIP				9040_METALS_ICP: List-3 (18)	6 Months	HNO3 to pH <2
B2NKV7	N	W	3x40-mL aGs*				8260_VOA_GCIMS: List-2 (25)	14 Days	HCl or H2SO4 to pH <2/Cool-4C
B2NKV7	N	W	1x1-L aGs*				9020_TOX: TOX (1)	28 Days	H2SO4 to pH <2/Cool-4C
B2NKV7	N	W	1x250-mL aG				9060_TOX: TOX (1)	28 Days	HCl or H2SO4 to pH <2/Cool-4C
B2NKV7	N	W	1x500-mL GIP				Gross Alpha	6 Months	None
B2NKV7	N	W	3x1-L aG				TPH-Diesel Range - WTPH-D	14/40 Days	HCl to pH <2/Cool-4C
B2NKV7	N	W	3x40-mL aGs*				TPH-Gasoline Range - WTPH-G	14 Days	HCl to pH <2/Cool-4C
B2NKV9	N	W	1x600-mL GIP				6010_METALS_ICP: List-3 (18)	6 Months	HNO3 to pH <2
B2NLD3	N	W	1x1-L aGs*				9020_TOX: TOX (1)	28 Days	H2SO4 to pH <2/Cool-4C

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
JANELLE ZUNKER	Janelle Zunker		MAR 07 2013 0852	C Johnson	C Johnson		MAR 07 2013 1000	S = Soil DS = Drum Solids SE = Sediment DL = Drum Liquids SO = Solid T = Tissue SL = Sludge WI = Wipe L = Water LI = Liquid O = Oil V = Vegetation A = Air X = Other
C Johnson	C Johnson		3/26/13 0929	Janelle Zunker	Janelle Zunker		3/26/13 0929	
Janelle Zunker	Janelle Zunker		3/26/13 1400	Fed Ex	Fed Ex		3/27/13 1000	

**FINAL SAMPLE DISPOSITION**  
 Disposal Method (e.g., Return to customer, per lab procedure, used in process):  
 Disposed By: [Signature]  
 Date/Time: 3/27/13 1000





<b>799369074096</b>			
Ship (P/U) date : <b>Tues 3/26/2013 4:11 pm</b> RICHLAND, WA US		Actual delivery : <b>Wed 3/27/2013 10:02 am</b> EARTH CITY, MO US	
<b>Delivered</b> Signed for by: J.CLARKE			
<b>Travel History</b>			
<b>Date/Time</b>	<b>Activity</b>	<b>Location</b>	
- 3/27/2013 - Wednesday			
10:02 am	Delivered	EARTH CITY, MO	
7:16 am	On FedEx vehicle for delivery	EARTH CITY, MO	
7:08 am	At local FedEx facility	EARTH CITY, MO	
5:21 am	At destination sort facility	BERKELEY, MO	
4:33 am	Departed FedEx location	MEMPHIS, TN	
12:15 am	Arrived at FedEx location	MEMPHIS, TN	
- 3/26/2013 - Tuesday			
5:07 pm	Left FedEx origin facility	PASCO, WA	
4:11 pm	Picked up	PASCO, WA	
12:45 pm	Shipment information sent to FedEx		
Local Scan Time			
<b>Shipment Facts</b>			
<b>Tracking number</b>	799369074096	<b>Service</b>	FedEx Priority Overnight
<b>Weight</b>	85 lbs	<b>Dimensions</b>	29x16x16 in.
<b>Delivered To</b>	Shipping/Receiving	<b>Total pieces</b>	1
<b>Total shipment weight</b>	85 lbs / 38.6 kgs	<b>Shipper reference</b>	GWS-001
<b>Packaging</b>	Your Packaging	<b>Special handling section</b>	Deliver Weekday, Additional Handling Surcharge



Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 160-1879-1

SDG Number: SL1368

Login Number: 1879

List Number: 1

Creator: McNairy, Jason

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	
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?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	False	Refer to Job Narrative for details.
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	



**Qualifiers**

**GC 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.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
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)
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: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-1879-1  
SDG: SL1368

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Method	Method Description	Protocol	Laboratory
8015B	Gasoline Range Organics - (GC)	SW846	TAL SL

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**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



APRIL 11, 2013  
Sample Summary

Client: CH2M Hill Plateau Remediation Company  
Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-1879-1  
SDG: SL1368

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Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-1879-1	B2NKV7	Water	03/07/13 08:52	03/27/13 11:59

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**APRIL 11, 2013**  
**Detection Summary**

Client: CH2M Hill Plateau Remediation Company  
Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-1879-1  
SDG: SL1368

**Client Sample ID: B2NKV7**

**Lab Sample ID: 160-1879-1**

No Detections.

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This Detection Summary does not include radiochemical test results.

TestAmerica St. Louis

**APRIL 11, 2013**  
**Client Sample Results**

Client: CH2M Hill Plateau Remediation Company  
 Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-1879-1  
 SDG: SL1368

**Client Sample ID: B2NKV7**

**Lab Sample ID: 160-1879-1**

**Date Collected: 03/07/13 08:52**

**Matrix: Water**

**Date Received: 03/27/13 11:59**

**Method: 8015B - Gasoline Range Organics - (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (C6-C12)	0.010	U	0.10	0.010	mg/L			03/28/13 15:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Trifluorotoluene (Surr)	111		53 - 140					03/28/13 15:24	1

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Client: CH2M Hill Plateau Remediation Company  
Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-1879-1  
SDG: SL1368

**Method: 8015B - Gasoline Range Organics - (GC)**

Lab Sample ID: MB 160-43067/1

Matrix: Water

Analysis Batch: 43067

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (C6-C12)	0.010	U	0.10	0.010	mg/L			03/28/13 14:16	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
Trifluorotoluene (Surr)	113		53 - 140					03/28/13 14:16	1

Lab Sample ID: LCS 160-43067/4

Matrix: Water

Analysis Batch: 43067

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (C6-C12)	1.00	1.03		mg/L		103	74 - 111
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
Trifluorotoluene (Surr)	109		53 - 140				

Lab Sample ID: 160-1879-1 MS

Matrix: Water

Analysis Batch: 43067

Client Sample ID: B2NKV7

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (C6-C12)	0.010	U	1.00	1.03		mg/L		103	74 - 115
Surrogate	MS %Recovery	MS Qualifier	Limits						
Trifluorotoluene (Surr)	108		53 - 140						

Lab Sample ID: 160-1879-1 MSD

Matrix: Water

Analysis Batch: 43067

Client Sample ID: B2NKV7

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (C6-C12)	0.010	U	1.00	1.03		mg/L		103	74 - 115	0	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
Trifluorotoluene (Surr)	107		53 - 140								

APRIL 11, 2013  
QC Association Summary

Client: CH2M Hill Plateau Remediation Company  
Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-1879-1  
SDG: SL1368

GC VOA

Analysis Batch: 43067

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-1879-1	B2NKV7	Total/NA	Water	8015B	
160-1879-1 MS	B2NKV7	Total/NA	Water	8015B	
160-1879-1 MSD	B2NKV7	Total/NA	Water	8015B	
LCS 160-43067/4	Lab Control Sample	Total/NA	Water	8015B	
MB 160-43067/1	Method Blank	Total/NA	Water	8015B	

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Client: CH2M Hill Plateau Remediation Company  
 Project/Site: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-1879-1  
 SDG: SL1368

**Method: 8015B - Gasoline Range Organics - (GC)**

**Matrix: Water**

**Prep Type: Total/NA**

**Percent Surrogate Recovery (Acceptance Limits)**

Lab Sample ID	Client Sample ID	TFT1 (53-140)
160-1879-1	B2NKV7	111
160-1879-1 MS	B2NKV7	108
160-1879-1 MSD	B2NKV7	107
LCS 160-43067/4	Lab Control Sample	109
MB 160-43067/1	Method Blank	113

**Surrogate Legend**

TFT = Trifluorotoluene (Surr)

