

NOVEMBER 19, 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: 160-4144-1

TestAmerica Sample Delivery Group: SL1406
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:
11/19/2013 9:33:15 AM

Jayna Awalt, Project Manager I
(314)298-8566

jayna.awalt@testamericainc.com

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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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11

12



Table of Contents

Cover Page	1
Table of Contents	2
Case Narrative	3
Chain of Custody	7
Receipt Checklists	18
Definitions/Glossary	22
Method Summary	23
Sample Summary	24
Detection Summary	25
Client Sample Results	26
QC Sample Results	27
QC Association Summary	29

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

TestAmerica Job ID: 160-4144-1
SDG: SL1406

Job ID: 160-4144-1

Laboratory: TestAmerica St. Louis

Narrative

CASE NARRATIVE

CH2MHill Plateau Remediation Company
P.O. Box 1600
MS B3-60
Richland, Washington 99352
November 19, 2013
Attention: Scot Fitzgerald

SDG : SL1406
Number of Samples : 5 samples
Sample Matrix : Water
Data Deliverable : Summary
Date SDG Closed : October 25, 2013

II. Introduction

Between October 17 and October 25, 5 water samples were received by TestAmerica - St. Louis for chemical analysis. The samples were received within temperature criteria. See the COC and receipt checklist 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: I14-003, I14-007

On 10/22/13, sample B2RW25 was received for sulfide analysis with a pH of 7. Per SDR14-018, the sulfide analysis was cancelled.

On 10/24/13, sample B2RW30 was received for sulfide analysis with a pH of 7. Per SDR14-021, the sulfide analysis was cancelled.

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.



Job ID: 160-4144-1 (Continued)

Laboratory: TestAmerica St. Louis (Continued)

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.
- **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.

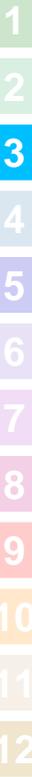
There were no observations or nonconformances for the following methods:

Sulfide

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

SIR NUM SDR14-018
REV NUM 0
DATE INITIATED 10/22/2013



SAMPLE EVENT INFORMATION

SAF NUM(S) I14-007
OPERABLE UNIT(S)
PROJECT(S) CERC14
SAMPLE EVENT TITLE(S) CERC14
LABORATORY TestAmerica St. Louis

SAMPLING INFORMATION

NUMBER OF SAMPLES 1
SAMPLE NUMBERS B2RW25
SAMPLE MATRIX WATER
COLLECTION DATE -
SDG NUM

ISSUE BACKGROUND

CLASS Field Sampling Issue
TYPE Incorrect Sample Preservation
DESCRIPTION Sample was received with all bottles for Sulfide analysis with pH of 7. The pH should have been >9.

DISPOSITION

DESCRIPTION PROPOSED DISPOSITION: TASL PROPOSES TO PRESERVE AND PROCEED WITH ANALYSIS NOTING IN THE CASE NARRATIVE OR CANCEL ANALYSIS

JUSTIFICATION ACCEPTED DISPOSITION: Cancel analysis.

SUBMITTED BY: Jayna Awalt/TASL Date: 10/22/13
ACCEPTED BY: Jim Douglas/CHPRC Date: 10/22/13

SAMPLE ISSUE RESOLUTION

SIR NUM SDR14-021
REV NUM 0
DATE INITIATED 10/24/2013



SAMPLE EVENT INFORMATION

SAF NUM(S) I14-007
OPERABLE UNIT(S)
PROJECT(S) CERC14
SAMPLE EVENT TITLE(S) CERC14
LABORATORY TestAmerica St. Louis

SAMPLING INFORMATION

NUMBER OF SAMPLES 1
SAMPLE NUMBERS B2RW30
SAMPLE MATRIX WATER
COLLECTION DATE -
SDG NUM

ISSUE BACKGROUND

CLASS Field Sampling Issue
TYPE Incorrect Sample Preservation
DESCRIPTION 3 bottles for Sulfide sample received today at TASL with pH of 7.

DISPOSITION

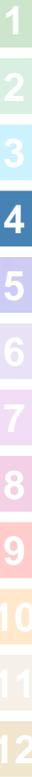
DESCRIPTION PROPOSED DISPOSITION: TASL PROPOSES TO CORRECT PH AND PROCEED WITH ANALYSIS NOTING IN CASE NARRATIVE OR CANCEL ANALYSIS

JUSTIFICATION ACCEPTED DISPOSITION: Cancel the Analysis

SUBMITTED BY: Jayna Awalt/TASL Date: 10/24/13
ACCEPTED BY: Jim Douglas/CHPRC Date: 10/24/13

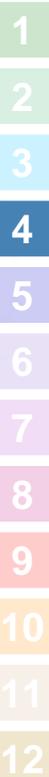
CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		C.O.C. # I14-007-073	
SAF No. I14-007		Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
Project Title 2ZPI, NOVEMBER 2013		Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Shipped To (Lab) TestAmerica St. Louis		Logbook No.	HNF-N-50658/16	Ice Chest No.	GWS-186-2
Protocol CERCLA		Method of Shipment	Commercial Carrier	Bill of Lading/Air Bill No.	7919 2465 6100
Priority: 30 Days		Offsite Property No.	N/A	Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
<p>POSSIBLE SAMPLE HAZARDS/REMARKS</p> <p>*** 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)</p> <p>SPECIAL INSTRUCTIONS Hold Time 200 Area Generator Knowledge Information Form applies. The CACN for analytical work at WSCF is 401647. FY13 and FY14 samples cannot be in the same SDG.</p>					
Sample No.	Filter	*	Date	Time	No/Type Container
B2T1H7	N	W	10/15/13	0745	3x500-mL G/P
B2T1H7	N	W			1x20-mL P
Sample Analysis			Holding Time	Preservative	
COMMON			7 Days	ZnAc+NaOH to pH > 9/Cool~4C	
Activity Scan			6 Months	None	

Relinquished By Frank Hill	Print 	Sign	Date/Time OCT 15 2013 1542	Received By SSU #	Print SSU #	Sign	Date/Time OCT 15 2013 1542	Matrix *
Relinquished By SSU-1	Print 	Sign	Date/Time OCT 16 2013 0900	Received By B.E. Briggs CHPRC	Print B.E. Briggs	Sign CHPRC	Date/Time OCT 16 2013 0900	S = Soil SE = Sediment SO = Solid SL = Sludge W = Water A = Air
Relinquished By B.E. Briggs CHPRC	Print 	Sign	Date/Time OCT 16 2013 1400	Received By FEDEX	Print FEDEX	Sign	Date/Time OCT 16 2013 1400	DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
Relinquished By Brian Daniels	Print 	Sign	Date/Time 10/17/13 0910	Received By Brian Daniels	Print Brian Daniels	Sign	Date/Time 10/17/13 0910	
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Disposed By		Date/Time		



CH2M Hill Plateau Remediation Company		C.O.C. # I14-007-035	
51-1406		Page 1 of 1	
Collector	Frank Hall	Contact/Requester	Karen Waters-Husted
SAF No.	I14-007	Sampling Origin	Hanford Site
Project Title	2ZPI, NOVEMBER 2013	Logbook No.	HNF-N-506 58/16
Shipped To (Lab)	TestAmerica St. Louis	Method of Shipment	Commercial Carrier
Protocol	CERCLA	Priority:	30 Days PRIORITY
POSSIBLE SAMPLE HAZARDS/REMARKS		Hold Time	Offsite Property No.
*** 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)		200 Area Generator Knowledge Information Form applies. The CACN for analytical work at WSCF is 401647. FY13 and FY14 samples cannot be in the same SDG.	N/A
		Total Activity Exemption:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Sample No.	Filter	No/Type Container	Sample Analysis
B2RW52	N	3x500-mL G/P	9034_SULFIDE: COMMON
B2RW52	N	1x20-mL P	Activity Scan
		Time	Holding Time
		10/15/13 1002 ↓	7 Days
		↓	6 Months
			Preservative
			ZnAc+NaOH to pH > 9/Cool~4C
			None

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Frank Hall			OCT 15 2013 1542z	SSU #1			OCT 15 2013 1542z
Relinquished By				Received By			
SSU-1			OCT 16 2013 0900	B.E. Briggs		Bel Briggs	OCT 16 2013 0900
Relinquished By				Received By			
B.E. Briggs			OCT 16 2013 1400	FEDEX			
Relinquished By				Received By			
CHPRC				Chuan Dandi		RD	10/13 0910
FINAL SAMPLE DISPOSITION				Disposal Method (e.g., Return to customer, per lab procedure, used in process)			
11/19/2013				Date/Time			





796924656100

Ship (P/U) date :
Wed 10/16/2013 3:31 pm
 RICHLAND, WA US



Delivered

Signed for by: B.DANIELS

Actual delivery :
Thur 10/17/2013 9:01 am
 EARTH CITY, MO US

Travel History

Date/Time	Activity	Location
- 10/17/2013 - Thursday		
9:01 am	Delivered	EARTH CITY, MO
7:02 am	On FedEx vehicle for delivery	EARTH CITY, MO
6:58 am	At local FedEx facility	EARTH CITY, MO
5:15 am	At destination sort facility	BERKELEY, MO
4:32 am	Departed FedEx location	MEMPHIS, TN
12:29 am	Arrived at FedEx location	MEMPHIS, TN
- 10/16/2013 - Wednesday		
5:16 pm	Left FedEx origin facility	PASCO, WA
3:31 pm	Picked up	PASCO, WA
11:45 am	Shipment information sent to FedEx	

Local Scan Time

Shipment Facts

Tracking number	796924656100	Service	FedEx Priority Overnight
Weight	49 lbs	Dimensions	16x15x17 in.
Delivered To	Shipping/Receiving	Total pieces	1
Total shipment weight	49 lbs / 22.2 kgs	Shipper reference	GWS-186-2
Packaging	Your Packaging	Special handling section	Deliver Weekday, Additional Handling Surcharge



CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		C.O.C.# I14-003-017	
SA1406		Page 1 of 1			
Collector	Frank Hall	Contact/Requester	Karen Waters-Husted	Telephone No.	509-376-4650
SAF No.	I14-003	Sampling Origin	Hanford Site	Purchase Order/Charge Code	30007IES20
Project Title	2ZP1, OCTOBER 2013	Logbook No.	HNF-N-506 58/17	Ice Chest No.	GWS-186-2
Shipped To (Lab)	TestAmerica St. Louis	Method of Shipment	Commercial Carrier	Bill of Lading/Air Bill No.	7969 2465 6100
Protocol	CERCLA	Priority:	30 Days	Offsite Property No.	N/A
POSSIBLE SAMPLE HAZARDS/REMARKS			SPECIAL INSTRUCTIONS	Hold Time	Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
*** 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)			200 Area Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647. FY13 and FY14 samples cannot be in the same SDG.		
Sample No.	Filter	* Date	Time	No/Type Container	Sample Analysis
B2R4D2	N	W 10/5/13	1435	3x500-mL G/P	9034_SULFIDE: COMMON
B2R4D2	N	W	↓	1x20-mL P	Activity Scan
					Holding Time
					7 Days
					6 Months
					ZnAc+NaOH to pH > 9/Cool~4C
					None

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Frank Hall			OCT 15 2013	SSU #1			OCT 15 2013
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
SSU-1			OCT 16 2013 0900	B.E. Briggs CHPRC			OCT 16 2013 0900
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
B.E. Briggs CHPRC			OCT 16 2013 1400	FEDEX			OCT 16 2013 1400
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
				Brian Daniels			10/17/13 910
FINAL SAMPLE DISPOSITION							
Disposal Method (e.g., Return to customer, per lab procedure, used in process)							
Disposed By							
Date/Time							





796924656100

Ship (P/U) date :
Wed 10/16/2013 3:31 pm
 RICHLAND, WA US



Delivered

Signed for by: B DANIELS

Actual delivery :
Thur 10/17/2013 9:01 am
 EARTH CITY, MO US

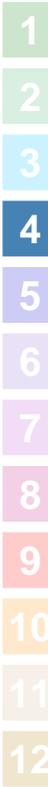
Travel History

Date/Time	Activity	Location
- 10/17/2013 - Thursday		
9:01 am	Delivered	EARTH CITY, MO
7:02 am	On FedEx vehicle for delivery	EARTH CITY, MO
6:58 am	At local FedEx facility	EARTH CITY, MO
5:15 am	At destination sort facility	BERKELEY, MO
4:32 am	Departed FedEx location	MEMPHIS, TN
12:29 am	Arrived at FedEx location	MEMPHIS, TN
- 10/16/2013 - Wednesday		
5:16 pm	Left FedEx origin facility	PASCO, WA
3:31 pm	Picked up	PASCO, WA
11:45 am	Shipment information sent to FedEx	

Local Scan Time

Shipment Facts

Tracking number	796924656100	Service	FedEx Priority Overnight
Weight	49 lbs	Dimensions	16x15x17 in.
Delivered To	Shipping/Receiving	Total pieces	1
Total shipment weight	49 lbs / 22.2 kgs	Shipper reference	GWS-186-2
Packaging	Your Packaging	Special handling section	Deliver Weekday, Additional Handling Surcharge



CH2M Hill Plateau Remediation Company CM 318 SL1406		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST C.O.C. # I14-003-018 Page 1 of 1	
Collector: F. M. Hall	Contact/Requester: Karen Waters-Husted	Telephone No.: 509-376-4650	Purchase Order/Charge Code: 300071ES20
SAF No.: I14-003	Sampling Origin: Hanford Site	Logbook No.: HNF-N-506 58/20	Ice Chest No.: GWS-279
Project Title: 2ZP1, OCTOBER 2013	Method of Shipment: Commercial Carrier	Shipped To (Lab): TestAmerica St. Louis	Bill of Lading/Air Bill No.: 7969 3729 8300
Protocol: CERCLA	Priority: 30 Days	Offsite Property No.: N/A	Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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 200 Area Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647. FY13 and FY14 samples cannot be in the same SDG.	Hold Time	Holding Time	Preservative
Sample No.	Filter *	Date	Time
B2R4D8	N	10/17/13	0810
B2R4D8	N	↓	↓
No/Type Container	Sample Analysis	Holding Time	Preservative
3x500-mL G/P	9034_SULFIDE: COMMON	7 Days	ZnAc+NaOH to pH > 9/Cool~4C
1x20-mL P	Activity Scan	6 Months	None

Relinquished By: F. M. Hall	Date/Time: OCT 17 2013 0900	Received By: BEBriggs	Date/Time: OCT 17 2013 0900
Relinquished By: BEBriggs	Date/Time: 10/17/2013-1400	Received By: FEDEX	Date/Time:
Relinquished By: Fed Ex	Date/Time:	Received By: Robert L. Castilb	Date/Time:
Relinquished By:	Date/Time:	Received By: Robert L. Castilb	Date/Time: 10/18/13/0915
Relinquished By:	Date/Time:	Received By:	Date/Time:
Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By:	Date/Time:	Date/Time:
FINAL SAMPLE DISPOSITION	Disposed By:	Date/Time:	Date/Time:





796937298300

Ship (P/U) date :
Thur 10/17/2013 3:49 pm
 RICHLAND, WA US



Delivered
 Signed for by: J CLARK

Actual delivery :
Fri 10/18/2013 9:07 am
 EARTH CITY, MO US

Travel History

Date/Time	Activity	Location
- 10/18/2013 - Friday		
9:07 am	Delivered	EARTH CITY, MO
7:22 am	On FedEx vehicle for delivery	EARTH CITY, MO
7:15 am	At local FedEx facility	EARTH CITY, MO
5:17 am	At destination sort facility	BERKELEY, MO
4:30 am	Departed FedEx location	MEMPHIS, TN
12:19 am	Arrived at FedEx location	MEMPHIS, TN
- 10/17/2013 - Thursday		
5:09 pm	Left FedEx origin facility	PASCO, WA
3:49 pm	Picked up	PASCO, WA
1:40 pm	Shipment information sent to FedEx	

Local Scan Time

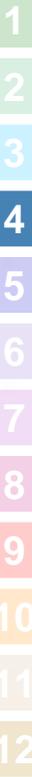
Shipment Facts

Tracking number	796937298300	Service	FedEx Priority Overnight
Weight	17 lbs	Delivered To	Shipping/Receiving
Total pieces	1	Total shipment weight	17 lbs / 7.7 kgs
Shipper reference	GWS-279	Packaging	Your Packaging
Special handling section	Deliver Weekday, Additional Handling Surcharge		



CH2M Hill Plateau Remediation Company SL1406		C.O.C. # 114-003-020	
CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		Page 1 of 1	
Collector F. M. Hall	Contact/Requester Karen Waters-Husted	Telephone No. 509-376-4650	
SAF No. 114-003	Sampling Origin Hanford Site	Purchase Order/Charge Code 300071ES20	
Project Title ZP1, OCTOBER 2013	Logbook No. HNF-N-506 6116	Ice Chest No. GWS-139-09-2.32	
Shipped To (Lab) TestAmerica St. Louis	Method of Shipment Commercial Carrier	Bill of Lading/Air Bill No.	
Protocol CERCLA	Priority: 30 Days	Offsite Property No. 7969 9417 3366	
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 200 Area Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647. FY13 and FY14 samples cannot be in the same SDG.			
Total Activity Exemption: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
Sample No. B2R4H0	Filter N	Date 10/24/13 1055	Time ↓
Sample No. B2R4H0	Filter N	Date ↓	Time ↓
No./Type Container 3x500-mL G/P	Sample Analysis 9034_SULFIDE: COMMON	Holding Time 7 Days	Preservative ZnAc+NaOH to pH > 9/Cool-4C
No./Type Container 1x20-mL P	Sample Analysis Activity Scan	Holding Time 6 Months	Preservative None

Relinquished By F. M. Hall	Print 	Sign OCT 24 2013 12:10	Date/Time OCT 24 2013	Received By FED-X	Print X	Sign OCT 24 2013	Date/Time OCT 24 2013
Relinquished By	Print Fed Ex	Sign OCT 24 2013 12:10	Date/Time OCT 24 2013	Received By Jill Clark Fincher	Print Jill Clark Fincher	Sign 10-25-13	Date/Time 0910
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Disposal Method (e.g., Return to customer, per lab procedure, used in process)				Disposed By			
FINAL SAMPLE DISPOSITION				Date/Time			





796994173366

Ship (P/U) date :
Thur 10/24/2013 4:05 pm
 RICHLAND, WA, US



Delivered
 Signed for by: J CLARK

Actual delivery :
Fri 10/25/2013 9:04 am
 EARTH CITY, MO, US

Travel History

Date/Time	Activity	Location
- 10/25/2013 - Friday		
9:04 am	Delivered	EARTH CITY, MO
7:08 am	On FedEx vehicle for delivery	EARTH CITY, MO
7:02 am	At local FedEx facility	EARTH CITY, MO
5:09 am	At destination sort facility	BERKELEY, MO
4:23 am	Departed FedEx location	MEMPHIS, TN
12:18 am	Arrived at FedEx location	MEMPHIS, TN
- 10/24/2013 - Thursday		
5:08 pm	Left FedEx origin facility	PASCO, WA
4:05 pm	Picked up	PASCO, WA
2:43 pm	Shipment information sent to FedEx	

Local Scan Time

Shipment Facts

Tracking number	796994173366	Service	FedEx Priority Overnight
Weight	14 lbs	Delivered To	Shipping/Receiving
Total pieces	1	Total shipment weight	14 lbs / 6.4 kgs
Shipper reference	GWS-232	Packaging	Your Packaging
Special handling section	Deliver Weekday, Additional Handling Surcharge		



CH2M Hill Plateau Remediation Company SL1406		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # I14-007-031
Collector F. M. Hall	Contact/Requester Karen Waters-Husted	Telephone No. 509-376-4650	Page 1 of 1			
SAF No. I14-007	Sampling Origin Hanford Site	Purchase Order/Charge Code 300071ES20				
Project Title ZP1, NOVEMBER 2013	Logbook No. HNF-N-506 100/7	Ice Chest No. GWS-276				
Shipped To (Lab) TestAmerica St. Louis	Method of Shipment Commercial Carrier	Bill of Lading/Air Bill No. 79169 5902 8715				
Protocol CERCLA	Priority: 30 Days	Offsite Property No. N/A				
POSSIBLE SAMPLE HAZARDS/REMARKS ** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CRF but are not releasable per DOE Order 5400.5 (1990/1993)						
SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> 200 Area Generator Knowledge Information Form applies. The CACN for analytical work at WSCF is 401647. FY13 and FY14 samples cannot be in the same SDG.						
Sample No. B2RW25	Filter N	* W	Date 10/21/13	Time 0908	No./Type Container 3x500-mL G/P	
Sample No. B2RW25	Filter N	* W	Date ↓	Time ↓	No./Type Container 1x20-mL P	
Sample Analysis 9034_SULFIDE: COMMON			Holding Time 7 Days	Preservative ZnAc+NaOH to pH > 9/Cool~4C		
Activity Scan			Holding Time 6 Months	Preservative None		

Relinquished By F. M. Hall	Print 	Sign Sign	Date/Time OCT 21 2013 1015	Received By Barb Briggs	Print Barb Briggs	Sign Sign	Date/Time OCT 21 2013 1015	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	
Relinquished By Barb Briggs	Print Barb Briggs	Sign Sign	Date/Time OCT 21 2013 1400	Received By FEDEX	Print FEDEX	Sign Sign	Date/Time 11/20/13 0900		
Relinquished By FEDEX	Print FEDEX	Sign Sign	Date/Time 11/20/13 0900	Received By Brian Daniels	Print Brian Daniels	Sign Sign	Date/Time 11/20/13 0900		
Relinquished By 1/19	Print 1/19	Sign Sign	Date/Time 1/19	Received By 1/19	Print 1/19	Sign Sign	Date/Time 1/19		
Disposal Method (e.g., Return to customer, per lab procedure, used in process)								Disposed By	Date/Time
ORIGINAL SAMPLE DISPOSITION								Disposed By	Date/Time



CH2M Hill Plateau Remediation Company		C.O.C.# II4-007-032	
SCOTT KING SAF No. II4-007		Contact/Requester Karen Waters-Husted	Telephone No. 509-376-4650
Project Title 2ZP1, NOVEMBER 2013		Sampling Origin Hanford Site	Purchase Order/Charge Code 300071ES20
Shipped To (Lab) TestAmerica St. Louis		Logbook No. HNF-N-506 600/9	Ice Chest No. GWS-205
Protocol CERCLA		Method of Shipment Commercial Carrier	Bill of Lading/Air Bill No. 7969 7953 8571
Priority: 30 Days		Priority: PRIORITY	Offsite Property No. N/A
<p>POSSIBLE SAMPLE HAZARDS/REMARKS *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CRF but are not releasable per DOE Order 5400.5 (1990/1993)</p>			
<p>SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> 200 Area Generator Knowledge Information Form applies. The CACN for analytical work at WSCF is 401647. FY13 and FY14 samples cannot be in the same SDG.</p>			
Sample No.	Filter	* Date	Time
B2RW30	N	W OCT 22 2013	1307
B2RW30	N	W	↓
No./Type Container	Sample Analysis	Holding Time	Preservative
3x500-mL G/P	9034_SULFIDE: COMMON	7 Days	ZnAc+NaOH to pH > 9/Cool~4C
1x20-mL P	Activity Scan	6 Months	None

Relinquished By SCOTT KING	Print 	Date/Time OCT 22 2013 / 1450	Received By SSU #1	Print 	Date/Time OCT 22 2013 / 1450	Sign	Matrix *
Relinquished By SSU-1	Print 	Date/Time OCT 22 2013 / 0710	Received By KC Patterson	Print 	Date/Time OCT 22 2013 / 0730	Sign	Matrix *
Relinquished By KC Patterson	Print 	Date/Time OCT 22 2013 / 0710	Received By FEDEX	Print 	Date/Time OCT 22 2013 / 0710	Sign	Matrix *
Relinquished By	Print 	Date/Time OCT 22 2013 / 0710	Received By Brian Daniels	Print 	Date/Time 10/24/13	Sign	Matrix *
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Disposed By		Date/Time	
PRINTED ON 9/24/2013		A-6004-842 (REV 2)					



Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 160-4144-1

SDG Number: SL1406

Login Number: 4144

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	
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.	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	



Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 160-4144-1

SDG Number: SL1406

Login Number: 4145

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	
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.	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	



Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 160-4144-1

SDG Number: SL1406

Login Number: 4152

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	
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.	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	



Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 160-4144-1

SDG Number: SL1406

Login Number: 4240

List Number: 1

Creator: Clarke, Jill C

List Source: TestAmerica St. Louis

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Qualifiers

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.
□	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)
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: S,W,I,A ,X SAFS- GROUNDWATER

TestAmerica Job ID: 160-4144-1
SDG: SL1406

Method	Method Description	Protocol	Laboratory
9034	Sulfide, Acid Soluble and Insoluble (Titrimetric)	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



NOVEMBER 19, 2013
Sample Summary

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

TestAmerica Job ID: 160-4144-1
SDG: SL1406

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-4144-1	B2T1H7	Water	10/15/13 07:45	10/17/13 09:10
160-4144-2	B2RW52	Water	10/15/13 10:02	10/17/13 09:10
160-4145-1	B2R4D2	Water	10/15/13 14:35	10/17/13 09:10
160-4152-1	B2R4D8	Water	10/17/13 08:10	10/18/13 09:15
160-4240-1	B2R4H0	Water	10/24/13 10:55	10/25/13 09:10

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NOVEMBER 19, 2013
Detection Summary

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

TestAmerica Job ID: 160-4144-1
SDG: SL1406

Client Sample ID: B2T1H7

Lab Sample ID: 160-4144-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfide	0.17	B	1.0	0.083	mg/L	1		9034	Total/NA

Client Sample ID: B2RW52

Lab Sample ID: 160-4144-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfide	0.17	B	1.0	0.083	mg/L	1		9034	Total/NA

Client Sample ID: B2R4D2

Lab Sample ID: 160-4145-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfide	0.27	B	1.0	0.083	mg/L	1		9034	Total/NA

Client Sample ID: B2R4D8

Lab Sample ID: 160-4152-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfide	0.17	B	1.0	0.083	mg/L	1		9034	Total/NA

Client Sample ID: B2R4H0

Lab Sample ID: 160-4240-1

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica St. Louis

NOVEMBER 19, 2013
Client Sample Results

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

TestAmerica Job ID: 160-4144-1
 SDG: SL1406

Client Sample ID: B2T1H7
 Date Collected: 10/15/13 07:45
 Date Received: 10/17/13 09:10

Lab Sample ID: 160-4144-1
 Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	0.17	B	1.0	0.083	mg/L			10/21/13 17:23	1

Client Sample ID: B2RW52
 Date Collected: 10/15/13 10:02
 Date Received: 10/17/13 09:10

Lab Sample ID: 160-4144-2
 Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	0.17	B	1.0	0.083	mg/L			10/21/13 17:23	1

Client Sample ID: B2R4D2
 Date Collected: 10/15/13 14:35
 Date Received: 10/17/13 09:10

Lab Sample ID: 160-4145-1
 Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	0.27	B	1.0	0.083	mg/L			10/21/13 17:23	1

Client Sample ID: B2R4D8
 Date Collected: 10/17/13 08:10
 Date Received: 10/18/13 09:15

Lab Sample ID: 160-4152-1
 Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	0.17	B	1.0	0.083	mg/L			10/21/13 17:23	1

Client Sample ID: B2R4H0
 Date Collected: 10/24/13 10:55
 Date Received: 10/25/13 09:10

Lab Sample ID: 160-4240-1
 Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	0.083	U	1.0	0.083	mg/L			10/28/13 11:03	1

NOVEMBER 19, 2013
QC Sample Results

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

TestAmerica Job ID: 160-4144-1
SDG: SL1406

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

Lab Sample ID: MB 160-80123/1
Matrix: Water
Analysis Batch: 80123

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	0.083	U	1.0	0.083	mg/L			10/21/13 17:23	1

Lab Sample ID: LCS 160-80123/2
Matrix: Water
Analysis Batch: 80123

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	10.0	9.17		mg/L		91	70 - 130

Lab Sample ID: 160-4144-1 MS
Matrix: Water
Analysis Batch: 80123

Client Sample ID: B2T1H7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	0.17	B	10.0	9.07		mg/L		89	70 - 130

Lab Sample ID: 160-4144-1 DU
Matrix: Water
Analysis Batch: 80123

Client Sample ID: B2T1H7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Sulfide	0.17	B		0.166	B	mg/L		0	20

Lab Sample ID: MB 160-81551/1
Matrix: Water
Analysis Batch: 81551

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	0.083	U	1.0	0.083	mg/L			10/28/13 11:03	1

Lab Sample ID: LCS 160-81551/2
Matrix: Water
Analysis Batch: 81551

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	10.0	9.60		mg/L		96	70 - 130

Lab Sample ID: 160-4240-1 MS
Matrix: Water
Analysis Batch: 81551

Client Sample ID: B2R4H0
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	0.083	U	10.0	9.60		mg/L		96	70 - 130

Lab Sample ID: 160-4240-1 DU
Matrix: Water
Analysis Batch: 81551

Client Sample ID: B2R4H0
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Sulfide	0.083	U		0.083	U	mg/L		NC	20

TestAmerica St. Louis

NOVEMBER 19, 2013
QC Sample Results

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

TestAmerica Job ID: 160-4144-1
SDG: SL1406

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NOVEMBER 19, 2013
QC Association Summary

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

TestAmerica Job ID: 160-4144-1
SDG: SL1406

General Chemistry

Analysis Batch: 80123

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-4144-1	B2T1H7	Total/NA	Water	9034	
160-4144-1 DU	B2T1H7	Total/NA	Water	9034	
160-4144-1 MS	B2T1H7	Total/NA	Water	9034	
160-4144-2	B2RW52	Total/NA	Water	9034	
160-4145-1	B2R4D2	Total/NA	Water	9034	
160-4152-1	B2R4D8	Total/NA	Water	9034	
LCS 160-80123/2	Lab Control Sample	Total/NA	Water	9034	
MB 160-80123/1	Method Blank	Total/NA	Water	9034	

Analysis Batch: 81551

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-4240-1	B2R4H0	Total/NA	Water	9034	
160-4240-1 DU	B2R4H0	Total/NA	Water	9034	
160-4240-1 MS	B2R4H0	Total/NA	Water	9034	
LCS 160-81551/2	Lab Control Sample	Total/NA	Water	9034	
MB 160-81551/1	Method Blank	Total/NA	Water	9034	