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**TestAmerica**  
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

**ANALYTICAL REPORT**

F10-013

Lot #: F9K170519  
SDG #: SL835

Mike Neely

CH2M Hill Plateau Remediation  
PO Box 1500, MS B6-06  
Richland, WA 99352

TESTAMERICA LABORATORIES, INC.



Michael C. Franks  
Project Manager

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MAR 18 2010

**EDMC**

December 12, 2009

# TestAmerica

## CASE NARRATIVE

THE LEADER IN ENVIRONMENTAL TESTING  
 CH2MHill Plateau Remediation Company  
 P.O. Box 1600  
 MS B3-60  
 Richland, Washington 99352  
 December 12, 2009  
 Attention: Mike Neely

TestAmerica Laboratories, Inc.

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SDG	: SL835
Number of Samples	: one sample
Sample Matrix	: Water
Data Deliverable	: Summary
Date SDG Closed	: November 17, 2009

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### II. Introduction

On November 17, 2009, one water sample was received by TestAmerica - St. Louis for chemical analysis. The samples were 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: F10-013

### 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.

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

**CH2M Hill Plateau Remediation Company**

June 18, 2009

SDG: «SDG»

TestAmerica Laboratories, Inc.

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

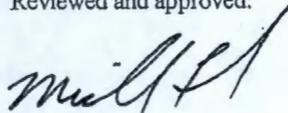
- **B** – For inorganic analyses, the sample result is greater than the MDL but less than the RL.
- **B** – For organic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **J** – For organic analyses, the sample is estimated and less 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.

There were no observations or nonconformances for the following methods:

Total 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 following signature has authorized release of the data contained in this hard copy data package.

Reviewed and approved:



Michael Franks  
St. Louis Project Manager

**METHODS SUMMARY**

SL835

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>	<u>PREPARATION METHOD</u>
Sulfide	SW846 9030	

**References:**

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

**SAMPLE SUMMARY**

SL835 : F9K170519

<u>WO #</u>	<u>SAMPLE#</u>	<u>CLIENT</u>	<u>SAMPLE ID</u>	<u>SAMPLED</u> <u>DATE</u>	<u>SAMP</u> <u>TIME</u>
LPLP2	001	B22T59		11/11/09	13:05

**NOTE(S) :**

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

SDG# 21835

CH2M Hill Plateau Remediation Company *SL 885 84613*

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST *CUR 95*

F10-013-035

PAGE 1 OF 1

<b>COLLECTOR</b> <i>Robt, Rose</i>		<b>COMPANY CONTACT</b> DYEKMAN, DL	<b>TELEPHONE NO.</b> 373-2530	<b>PROJECT COORDINATOR</b> DYEKMAN, DL	<b>PRICE CODE</b> 7N	<b>DATA TURNAROUND</b> 45 Days / 45 Days
<b>SAMPLING LOCATION</b> CS860 (299-E29-54); I-001EB		<b>PROJECT DESIGNATION</b> ARRA 200-LW-2 OU Characterization Vadose Zone - QC Sampling ("K" Well)		<b>SAF NO.</b> F10-013	<b>AIR QUALITY</b> <input type="checkbox"/>	
<b>ICE CHEST NO.</b> <i>GWS-139</i>		<b>FIELD LOGBOOK NO.</b> <i>HNF-N-576-3p83</i>	<b>ACTUAL SAMPLE DEPTH</b> <i>NIA</i>	<b>COA</b> 302143ES10	<b>METHOD OF SHIPMENT</b> FEDERAL EXPRESS	
<b>SHIPPED TO</b> TestAmerica St. Louis		<b>OFFSITE PROPERTY NO.</b> SEE PTR		<b>BILL OF LADING/AIR BILL NO.</b> SEE PTR <i>7981 4127 0356</i>		

<b>MATRIX*</b> A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	<b>POSSIBLE SAMPLE HAZARDS/ REMARKS</b> Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)	<b>PRESERVATION</b>	ZnAc+NaOH to pH >9/Cool~4C							
		<b>TYPE OF CONTAINER</b>	G/P							
		<b>NO. OF CONTAINER(S)</b>	3							
		<b>VOLUME</b>	500mL							
<b>SPECIAL HANDLING AND/OR STORAGE</b>		<b>SAMPLE ANALYSIS</b>	Sulfides - 9030 (Sulfide)							

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME						
B22T59	WATER	<i>11-16-09</i>	<i>1305</i>	<i>✓</i>					<i>3x 500 P</i>
									<i>606</i>
									<i>CR 11/17/09</i>

<b>CHAIN OF POSSESSION</b>			<b>SIGN/ PRINT NAMES</b>			<b>SPECIAL INSTRUCTIONS</b>		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	** The 200 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.				
<i>Steve Rost</i>	<i>11-16-09 15:29</i>	<i>MO-413 SSU-R1</i>	<i>11-16-09 15:29</i>					
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME					
<i>SSU-R-1</i>	<i>11-16-09</i>	<i>D. Parche</i>	<i>11-16-09</i>					
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME					
<i>D. Parche</i>	<i>11-16-09</i>	<i>Fed Ex</i>						
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME					
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME					
<i>FedEx</i>								

**ORIGINAL**

<b>LABORATORY SECTION</b>	<b>RECEIVED BY</b> <i>Craig Roberts</i>	<b>TITLE</b> <i>TAS+L</i>	<b>DATE/TIME</b> <i>11/17/09 0915</i>
<b>FINAL SAMPLE DISPOSITION</b>	<b>DISPOSAL METHOD</b>	<b>DISPOSED BY</b>	<b>DATE/TIME</b>

TestAmerica St. Louis

Detailed Results

Enter tracking number

Track

Detailed Results	Notifications
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Tracking no.: 798141270356

E-mail notifications

**Delivered**

Initiated Picked up In transit **Delivered**

**Delivered**  
Signed for by: B.DANIELS

Shipment Dates

Destination

Ship date  Nov 16, 2009  
Delivery date  Nov 17, 2009 9:11 AM

EARTH CITY, MO  
Signature Proof of Delivery

Shipment Facts

Help

Service type	Priority Overnight	Delivered to	Shipping/Receiving
Weight	13.0 lbs/5.9 kg	Reference	3D230 302143 ES10

Shipment Travel History

Help

Select time zone:  Select

Select time format: 12H | 24H

All shipment travel activity is displayed in local time for the location

Date/Time	Activity	Location	Details
Nov 17, 2009 9:11 AM	<b>Delivered</b>	EARTH CITY, MO	
Nov 17, 2009 6:28 AM	On FedEx vehicle for delivery	EARTH CITY, MO	
Nov 17, 2009 6:22 AM	At local FedEx facility	EARTH CITY, MO	
Nov 17, 2009 4:33 AM	At dest sort facility	BERKELEY, MO	
Nov 17, 2009 3:44 AM	Departed FedEx location	MEMPHIS, TN	
Nov 17, 2009 12:50 AM	Arrived at FedEx location	MEMPHIS, TN	
Nov 16, 2009 5:31 PM	Left FedEx origin facility	PASCO, WA	
Nov 16, 2009 3:21 PM	Picked up	PASCO, WA	
Nov 16, 2009 12:21 PM	Shipment information sent to FedEx		

Lot #(s): F9K170511  
513  
579

### CONDITION UPON RECEIPT FORM

Client: CHPRC  
Quote No: 8461, 84612, 84613  
COC/RFA No: see below

95

Initiated By: CR Date: 11/17/09 Time: 0915

#### Shipping Information

Shipper: FedEx UPS DHL Courier Client Other: \_\_\_\_\_ Multiple Packages: (Y) N  
Shipping # (s):\* \_\_\_\_\_ Sample Temperature (s):\*\* \_\_\_\_\_

1. <u>7981 4127 0356</u>	6. _____	1. <u>4</u>	6. _____
2. <u>4109 9728</u>	7. _____	2. <u>4</u>	7. _____
3. _____	8. _____	3. _____	8. _____
4. _____	9. _____	4. _____	9. _____
5. _____	10. _____	5. _____	10. _____

\*Numbered shipping lines correspond to Numbered Sample Temp lines

\*\*Sample must be received at 4°C ± 2°C. If not, note contents below. Temperature variance does NOT affect the following: Metals-Liquid or Rad tests- Liquid or Solids

Condition (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1. <u>(Y)</u> N	Are there custody seals present on the cooler?	8. <u>(Y)</u> N	Are there custody seals present on bottles?
2. Y <u>(N)</u> N/A	Do custody seals on cooler appear to be tampered with?	9. Y <u>(N)</u> N/A	Do custody seals on bottles appear to be tampered with?
3. <u>(Y)</u> N	Were contents of cooler frisked after opening, but before unpacking?	10. <u>(Y)</u> N N/A	Was sample received with proper pH? (If not, make note below)
4. <u>(Y)</u> N	Sample received with Chain of Custody?	11. <u>(Y)</u> N	Sample received in proper containers?
5. <u>(Y)</u> N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12. Y N <u>(N/A)</u>	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
6. Y <u>(N)</u>	Was sample received broken?	13. Y N <u>(N/A)</u>	Was Internal COC/Workshare received?
7. <u>(Y)</u> N	Is sample volume sufficient for analysis?	14. Y N <u>(N/A)</u>	Was pH taken by original TestAmerica lab?

<sup>1</sup> For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX and soils.

Notes: F-10-019-004  
~~F10-013~~ CR 11/17/09  
F10-013-035  
W10-011-175  
W10-011-174  
W10-011-162  
W10-011-168

#### Corrective Action:

Client Contact Name: \_\_\_\_\_ Informed by: \_\_\_\_\_  
 Sample(s) processed "as is"  
 Sample(s) on hold until: \_\_\_\_\_  
Project Management Review: Jayna K. Poth If released, notify: \_\_\_\_\_  
Date: 11-18-09

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED IN. IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR INITIAL AND THE DATE NEXT TO THAT ITEM.

# WET CHEMISTRY

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B22T59

General Chemistry

Lot-Sample #...: F9K170519-001

Work Order #...: LPLP2

Matrix.....: WATER

Date Sampled...: 11/11/09

Date Received...: 11/17/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Sulfide	ND	1.0	mg/L	SW846 9030	11/18/09	9322101
		Dilution Factor: 1		MDL.....: 0.083		

METHOD BLANK REPORT

General Chemistry

Client Lot #...: SL835

Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Sulfide	ND	Work Order #: LPQCD1AA 1.0	mg/L	MB Lot-Sample #: SW846 9030	F9K180000-101 11/18/09	9322101
		Dilution Factor: 1				

**NOTE(S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #...: SL835

Matrix.....: WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Total Sulfide	10.0	9.60	mg/L	96	SW846 9030	11/18/09	9322101
				Work Order #: LPQCD1AC LCS Lot-Sample#: F9K180000-101			
				Dilution Factor: 1			

**NOTE(S) :**

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #...: SL835  
 Date Sampled...: 11/11/09

Date Received...: 11/17/09

Matrix.....: WATER

PARAMETER	SAMPLE SPIKE		MEASURED		PERCENT	METHOD	PREPARATION-	PREP
	AMOUNT	AMT	AMOUNT	UNITS	RECOVERY		ANALYSIS DATE	BATCH #
Total Sulfide	ND	10.0	10.0	mg/L	100	SW846 9030	11/18/09	9322101
			Work Order #...: LPLP21AC		MS Lot-Sample #: F9K170519-001			
			Dilution Factor: 1					

**NOTE(S):**

Calculations are performed before rounding to avoid round-off errors in calculated results.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: F9K170519

Work Order #...: LPLP2-SMP  
LPLP2-DUP

Matrix.....: WATER

Date Sampled...: 11/11/09

Date Received...: 11/17/09

<u>PARAM</u>	<u>RESULT</u>	<u>DUPLICATE</u> <u>RESULT</u>	<u>UNITS</u>	<u>RPD</u> <u>RPD</u>	<u>LIMIT</u>	<u>METHOD</u>	<u>PREPARATION-</u> <u>ANALYSIS DATE</u>	<u>PREP</u> <u>BATCH #</u>
Total Sulfide	ND	ND	mg/L	0	(0-20)	SD Lot-Sample #: F9K170519-001 SW846 9030	11/18/09	9322101

Dilution Factor: 1