

NOVEMBER 15, 2012

TestAmerica - St. Louis

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. W06483I Reported as SL1319

C-14 CHPRC

Lot #: F2J240430

CH2M Hill Plateau Remediation DOE RL

CH2M Hill Plateau Remediation
PO Box 1600, MS H8-41
Richland, WA 99352

TESTAMERICA LABORATORIES, INC.



Jayna Awalt
Project Manager

November 13, 2012

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THE LEADER IN ENVIRONMENTAL TESTING

CASE NARRATIVE

CH2MHill Plateau Remediation Company
 P.O. Box 1600
 MS B3-60
 Richland, Washington 99352
 November 15, 2012
 Attention: Scot Fitzgerald

TestAmerica Laboratories, Inc.

SDG	: SL1319
Number of Samples	: one sample
Sample Matrix	: Water
Data Deliverable	: Summary
Date SDG Closed	: October 24, 2012

II. Introduction

On October 24, 2012, 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: X13-001

TARL is currently investigating the C14_LSC: C-14 (1) method due to low results reported for the CY2011 blind samples. Per SDR13-020, samples were sent to TASL for C14 analysis. The SIR request is included with this report.

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.

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THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

CH2M Hill Plateau Remediation Company

November 15, 2012

SDG: SL1319

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

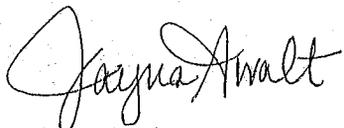
- **B** – For inorganic analyses, the sample result is greater than the MDL but less than the RL.
- **B** – For organic analyses, Method Blank contamination. The Method Blank contains the target analyte at a concentration above the MDL.
- **J** – For organic analyses, the sample is estimated and less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

Carbon 14

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:



Jayna Awalt
St. Louis Project Manager

SAMPLE ISSUE RESOLUTION

SIR NUM SDR13-020
REV NUM 0
DATE INITIATED 10/23/2012

SAMPLE EVENT INFORMATION

SAF NUM(S) X13-001, X12-031
OPERABLE UNIT(S) NONE
PROJECT(S) SURV13, SURV12
SAMPLE EVENT TITLE(S) SURV13, SURV12
LABORATORY TestAmerica Incorporated, Richland

SAMPLING INFORMATION

NUMBER OF SAMPLES 2
SAMPLE NUMBERS B2L768, B2M7B6
SAMPLE MATRIX WATER
COLLECTION DATE 10/1/2012 - 10/10/2012
SDG NUM W06481, W06483

ISSUE BACKGROUND

CLASS Laboratory Issue
TYPE Sample Diversion Initiated by Laboratory
DESCRIPTION TARL is currently investigating the C14_LSC: C-14 (1) method due to the low results reported for the CY2011 blind samples. TARL would like permission to send the C14 fractions to TASL. TASL will analyze the C14 samples and submit the final reports & EDDs for the SDGs included on this SIR.

DISPOSITION

DESCRIPTION Proposed Disposition: TARL will initiate SIR and ship the samples to TASL. TASL will report the samples discussed above as W06481I and W06483I. Comments will be included in the case narratives.

JUSTIFICATION Accepted Disposition: Accept the proposed resolution.

Submitted by: Sandra Seger/TARL Date: 10/23/12
Accepted by: Karen Waters-Husted/CHPRC Date: 10/23/12

METHODS SUMMARY

F2J240430

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>	<u>PREPARATION METHOD</u>
Carbon 14 by LSC	EERF C-01-1	

References:

EERF EERF

SAMPLE SUMMARY

F2J240430

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MW36M	001	B2M7B6	10/10/12	11:03

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.

CH2MHHI Plateau Remediation Company
 SL1319
 CWR
 256
 CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST
 C.O.C.# X13-001-146
 Page 1 of 1

Collector: J. Aguilar
 SAF No. X13-001
 Project Title: AQUIFER TUBES, OCTOBER 2012
 Shipped To (Lab): TestAmerica Incorporated, Richland
 Protocol: SURV
 Contact/Requester: Karen Waters-Husted
 Sampling Origin: Hanford Site
 Logbook No. HNF-N-506 44/71,72
 Method of Shipment: GOVERNMENT VEHICLE
 Priority: 30 Days
 Telephone No. 376-4650
 Purchase Order/Charge Code: 303064
 Ice Chest No. N/A
 Bill of Lading/Air Bill No. N/A
 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 No
 Site Wide Generator Knowledge Information Form applies.
 The CACN for all analytical work at WSCF is TBD.
 FY12 and FY13 samples cannot be in the same SDG.

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2M7B6	N	W	10-10-12	1103	1x500-mL aG	7196_CR6: Hexavalent Chromium (1)	24 Hours	Cool-4C
B2M7B6	N	W	10-10-12	1103	1x1-L P	906.0_H3_LSC: Tritium (1)	6 Months	None
B2M7B6	N	W	10-10-12	1103	1x20-mL P	Activity Scan	6 Months	None
B2M7B6	N	W	10-10-12	1103	2x1-L GP	C14_LSC: C-14 (1)	6 Months	None

325100442
 w06483I
 Due 11/14/12

 J2J100442

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *
J. Aguilar			10-10-12 1420	J. Beck			10-10-12 1420	S = Soil, SE = Sediment, SO = Solid, SL = Sludge, W = Water, O = Oil, A = Air, DS = Drum Solids, DL = Drum Liquids, T = Tissue, WI = Wipe, L = Liquid, V = Vegetation, X = Other
SANDRA SEGER			10-23-12 10:51	Karen Clayton			10-23-12 1420	
Relinquished By				Received By				
Relinquished By				Received By				

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

Please use SDG Number: W06483I

SDG W06483I needs to be analyzed in its own batch. Batch must include a blank, LCS and duplicate sample

Due Date is 11/14/12

If due date is met then the price code is 7M 30 Days / 45 Days which is \$105 per sample plus QC

CRDL is 200 pCi/l



Sample Check-in List

Date/Time Received: 10-10-12 | 1420 Container GM Screen Result: (Airlock) .04 Initials [B]]
Sample GM Screen Result (Sample Receiving) .06 Initials [B]]

Client: Pkw SDG #: W006483 NA [] SAF #: X13-001 NA []

Lot Number: 525100442

Chain of Custody # X13-001-146

Shipping Container ID: hand deliv. NA [B] Air Bill Number: NA [B]

Samples received inside shipping container/cooler/box Yes [B]] Continue with 1 through 4. Initial appropriate response.
No []] Go to 5, add comment to #16.

1. Custody Seals on shipping container intact? Yes [] No [] No Custody Seal [B]

2. Custody Seals dated and signed? Yes [] No [] No Custody Seal [B]

3. Cooler temperature: 1.3 °C NA []

4. Vermiculite/packing materials is NA [B] Wet [] Dry []

Item 5 through 16 for samples. Initial appropriate response.

5. Chain of Custody record present? Yes [B]] No []

6. Number of samples received (Each sample may contain multiple bottles): 1

7. Containers received: 1 x Vial 20; 3 x 40; 1 x 500 ml

8. Sample holding times exceeded? NA [] Yes [] No [B]

9. Samples have: tape hazard labels
[B] custody seals [B] appropriate sample labels

10. Matrix: A (FLT, Wipe, Solid, Soil) [B] I (Water)
S (Air, Niosh 7400) T (Biological, Ni-63)

11. Samples: [B] are in good condition are leaking
are broken have air bubbles (Only for samples requiring no head space)
Other:

12. Sample pH appropriate for analysis requested Yes [B]] No [] NA []
(If acidification is necessary, then document sample ID, initial pH, amount of HNO₃ added and pH after addition on table overleaf)
RPL ID # of preservative used: NA

13. Were any anomalies identified in sample receipt? Yes [] No [B]

14. Description of anomalies (include sample numbers): NA [B]

 Print page |  Close



Detailed Results

Tracking no.: 793914598320		Select time format: 12H
Delivered		
Delivered Signed for by: B.DANIELS		
Shipment Dates	Destination	
Ship date Oct 23, 2012	EARTH CITY, MO	
Delivery date Oct 24, 2012 9:25 AM	Signature Proof of Delivery	

Shipment Options
Hold at FedEx Location Hold at FedEx Location service is not available for this shipment.

Shipment Facts			
Service type	Priority Overnight	Delivered to	Shipping/Receiving
Weight	25.0 lbs/11.3 kg	Reference	GWS-242

Shipment Travel History			
Select time zone: Local Scan Time			
All shipment travel activity is displayed in local time for the location			
Date/Time	Activity	Location	Details
Oct 24, 2012 9:25 AM	Delivered	EARTH CITY, MO	
Oct 24, 2012 6:38 AM	On FedEx vehicle for delivery	EARTH CITY, MO	
Oct 24, 2012 6:38 AM	At local FedEx facility	EARTH CITY, MO	
Oct 24, 2012 6:16 AM	At destination sort facility	BERKELEY, MO	
Oct 24, 2012 4:26 AM	Departed FedEx location	MEMPHIS, TN	
Oct 24, 2012 1:00 AM	Arrived at FedEx location	MEMPHIS, TN	
Oct 23, 2012 6:13 PM	Left FedEx origin facility	PASCO, WA	
Oct 23, 2012 4:00 PM	Picked up	PASCO, WA	
Oct 23, 2012 6:31 PM	Shipment information sent to FedEx		

Print page | Close



Detailed Results

Tracking no.: 793911949780		Select time format: 12H	
Delivered		Delivered Signed for by: B.DANIELS	
Shipment Dates		Destination	
Ship date Oct 23, 2012		EARTH CITY, MO	
Delivery date Oct 24, 2012 9:26 AM		Signature Proof of Delivery	

Shipment Options	
Hold at FedEx Location Hold at FedEx Location service is not available for this shipment.	

Shipment Facts			
Service type	Priority Overnight	Delivered to	Shipping/Receiving
Weight	16.0 lbs/6.8 kg		

Shipment Travel History			
Select time zone: Local Scan Time			
All shipment travel activity is displayed in local time for the location			
Date/Time	Activity	Location	Details
Oct 24, 2012 9:26 AM	Delivered	EARTH CITY, MO	
Oct 24, 2012 6:38 AM	On FedEx vehicle for delivery	EARTH CITY, MO	
Oct 24, 2012 6:34 AM	At local FedEx facility	EARTH CITY, MO	
Oct 24, 2012 6:10 AM	At destination sort facility	BERKELEY, MO	
Oct 24, 2012 4:26 AM	Departed FedEx location	MEMPHIS, TN	
Oct 24, 2012 1:06 AM	Arrived at FedEx location	MEMPHIS, TN	
Oct 23, 2012 5:13 PM	Left FedEx origin facility	PASCO, WA	
Oct 23, 2012 4:09 PM	Picked up	PASCO, WA	
Oct 23, 2012 3:21 PM	Shipment information sent to FedEx		

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THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): 160-795
F2J240429
4 430

CUR Form #: 2 5 6

CONDITION UPON RECEIPT FORM

Client: CHPRC

Quote No: 90657

COC/RFA No: See Notes

Initiated By: SC

Date: 10-24-12 Time: 0930

Shipping Information

Shipper: FedEx UPS DHL Courier Client Other: _____ Multiple Packages: Y N

Shipping # (s):*	Sample Temperature (s):**
1. <u>7939 1459 8320</u>	1. <u>4 Ambient</u>
2. <u>7939 1194 9780</u>	2. _____
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____
6. _____	6. _____
7. _____	7. _____
8. _____	8. _____
9. _____	9. _____
10. _____	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; Rad tests- Liquid or Solids; Perchlorate

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

1. <input checked="" type="radio"/> Y <input type="radio"/> N	Are there custody seals present on the cooler?	8. <input checked="" type="radio"/> Y <input type="radio"/> N	Are there custody seals present on bottles?
2. <input type="radio"/> Y <input checked="" type="radio"/> N <input type="radio"/> N/A	Do custody seals on cooler appear to be tampered with?	9. <input type="radio"/> Y <input checked="" type="radio"/> N <input type="radio"/> N/A	Do custody seals on bottles appear to be tampered with?
3. <input checked="" type="radio"/> Y <input type="radio"/> N	Were contents of cooler frisked after opening, but before unpacking?	10. <input checked="" type="radio"/> Y <input type="radio"/> N <input type="radio"/> N/A	Was sample received with proper pH ¹ ? (if not, make note below)
4. <input checked="" type="radio"/> Y <input type="radio"/> N	Sample received with Chain of Custody?	11. <input type="radio"/> Y <input type="radio"/> N <input checked="" type="radio"/> N/A	Containers for C-14, H-3 & I-129/131 marked with "Do Not Preserve" label?
5. <input checked="" type="radio"/> Y <input type="radio"/> N <input type="radio"/> N/A	Does the Chain of Custody match sample ID's on the container(s)?	12. <input checked="" type="radio"/> Y <input type="radio"/> N	Sample received in proper containers?
6. <input type="radio"/> Y <input checked="" type="radio"/> N	Was sample received broken?	13. <input type="radio"/> Y <input type="radio"/> N <input checked="" type="radio"/> N/A	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)
7. <input checked="" type="radio"/> Y <input type="radio"/> N	Is sample volume sufficient for analysis?	14. <input type="radio"/> Y <input type="radio"/> N <input checked="" type="radio"/> N/A	Was Internal COC/Workshare received?

¹ For DOE-AL (Pantex, LANL, Sandia) sites, pH of ALL containers received must be verified, EXCEPT VOA, TOX, Oil & Grease and soils.

Notes:

COCs I13-002-145, X12-031-047, X13-001-146

Corrective Action:

Client Contact Name: _____

Informed by: _____

Sample(s) processed "as is"

Sample(s) on hold until: _____

If released, notify: _____

Project Management Review: Jayna Swalt

Date: 10-24-12

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.

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2M7B6

Radiochemistry

Lab Sample ID: F2J240430-001
 Work Order: MW36M
 Matrix: WATER

Date Collected: 10/10/12 1103
 Date Received: 10/24/12 0930

Parameter	Result	Qual	Total Uncert. (2 σ +/-)	RL	MDC	Prep Date	Analysis Date
Carbon 14 by EERF C-01-1				pCi/L		Batch # 2311049	Yld %
Carbon 14	63		10	20	9	11/06/12	11/09/12

NOTE (S)

Data are incomplete without the case narrative.
 MDC is determined by instrument performance only.
 Bold results are greater than the MDC.

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2M7B6 DUP

Radiochemistry

Lab Sample ID: F2J240430-001X
 Work Order: MW36M
 Matrix: WATER

Date Collected: 10/10/12 1103
 Date Received: 10/24/12 0930

Parameter	Result	Qual	Total Uncert. (2 σ +/-)	RL	MDC	Prep Date	Analysis Date
Carbon 14 by EERF C-01-1				pCi/L		Batch # 2311049	Yld %
Carbon 14	93		13	20	9	11/06/12	11/09/12

NOTE (S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.

Bold results are greater than the MDC.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F2J240430
 Matrix: WATER

Parameter	Result	Qual	Total Uncert. (2 σ +/-)	RL	MDC	Prep Date	Lab Sample ID Analysis Date
Carbon 14 by EERF C-01-1			pCi/L	Batch #	2311049	Yld %	F2K060000-049B
Carbon 14	-0.6	U	5.4	20.0	9.3	11/06/12	11/08/12

NOTE (S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only

Bold results are greater than the MDC.

U Result is less than the sample detection limit.

Laboratory Control Sample Report

Radiochemistry

Client Lot ID: F2J240430
 Matrix: WATER

Parameter	Spike Amount	Result	Total Uncert. (2 σ +/-)	MDC	% Yld	% Rec	Lab Sample ID QC Control Limits
Carbon 14 by EERF C-01-1			pCi/L	C-01-1			F2K060000-049C
Carbon 14	1130	1100	120	9		98	(38 - 112)
	Batch #:	2311049		Analysis Date:	11/08/12		

NOTE(S)

MDC is determined by instrument performance only
 Calculations are performed before rounding to avoid round-off error in calculated results

MATRIX SPIKE REPORT

Radiochemistry

Client Lot Id: F2J240429
 Matrix: WATER

Date Sampled: 10/01/12
 Date Received: 10/24/12

Parameter	Spike Amount	Spike Result	Total Uncert. (2σ +/-)	Spike Yld.	Sample Result	Total Uncert. (2σ +/-)	QC Sample ID		QC Control Limits
							%YLD	%REC	
Carbon 14 by EERF C-01-1			pCi/L		C-01-1		F2J240429-001		
Carbon 14	1120	734	82		8.0	5.8		65	(37-121)
	Batch #:	2311049		Analysis Date:		11/08/12			
Carbon 14 by EERF C-01-1			pCi/L		C-01-1		F2J240430-001		
Carbon 14	1120	838	93		63	10		69	(37-121)
	Batch #:	2311049		Analysis Date:		11/09/12			

NOTE(S)

Data are incomplete without the case narrative.
 Calculations are performed before rounding to avoid round-off errors in calculated results.

DUPLICATE EVALUATION REPORT

Radiochemistry

Client Lot ID: F2J240430
 Matrix: WATER

Date Sampled: 10/01/12
 Date Received: 10/24/12

Parameter	SAMPLE Result	Total Uncert. (2σ +/-)	% Yld	DUPLICATE Result	Total Uncert. (2σ +/-)	% Yld	QC Sample ID Precision
Carbon 14 by EERF C-01-1			pCi/L	C-01-1			F2J240429-001
Carbon 14	8.0 U	5.8		8.6 U	5.9		8 %RPD
	Batch #:	2311049 (Sample)		2311049 (Duplicate)			
Carbon 14 by EERF C-01-1			pCi/L	C-01-1			F2J240430-001
Carbon 14	63	10		93	13		40 %RPD
	Batch #:	2311049 (Sample)		2311049 (Duplicate)			

NOTE(S)

Data are incomplete without the case narrative.
 Calculations are performed before rounding to avoid round-off error in calculated results

U Result is less than the sample detection limit.