TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. W06481I Reported as SL1320

C-14 CHPRC

Lot #: F2J240429

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

13715 Rider Trail North Earth City, MO 63045 **tel** 314.298.8566 **fax** 314.298.8757 **www.testamericainc.com**

TestAmerica

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	: SL1320
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: X12-031

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. 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.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

CH2M Hill Plateau Remediation Company

November 15, 2012

SDG: SL1320

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

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

F2J240429

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Carbon 14 by LSC	EERF C-01-1	

References:

EERF EERF

SAMPLE SUMMARY

F2J240429

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
MW36L	001	B2L768	10/01/12	09:54

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.

NOVEMBER 15, 2012

CH2MHill Plateau Remediation Company SL1320	CUR 256 CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # X12-031-047 Page 1 of 1

Collector	J. Aguilar	Contact/Requester	WATERS-HUSTED, K	Telephone No.	376-4650
SAF No.	X12-031	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	SEEPS/SPRINGS 2012	Logbook No.	HNF-N-506 46/62	Ice Chest No.	N/A
Shipped To (Lab)	TestAmerica Incorporated, Richland	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.	N/A
Protocol	SURV	Priority:	~~45~~ 30 Days	Offsite Property No.	N/A

POSSIBLE SAMPLE HAZARDS/REMARKS 30 SKS 10-3-12

** ** Contains Radioactive Material at concentations 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 401647.

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2L768	N	W	10-1-12	0954	1x20-mL P	Activity Scan	6 Months	None
B2L768	N	W	10-1-12	0954	2x1-L G/P	C14_LSC: C-14 (1) MWR04	6 Months	None

J2J020453
W06481I
Due 11/15/12

J2J020453

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
J. Aguilar			10-1-12 1245	SSU #1			10-1-12 1245
SSU #1		10-2-12	0800	ARMcIntyre			10-2-12 0800
ARMcIntyre			10-2-12 1055	J. Bock	J. Bock	TALR	10-2-12 1055
Sandra Seger	Sandra Seger		10-23-12 10:52	Steven Claxton	Steven Claxton		10-24-12 0930

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

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

PRINTED ON 4/18/2012

A-6004-842 (REV 2)

TestAmerica - St. Louis

Please use SDG Number: W06481I

SDG W06481I needs to be analyzed in its own batch. Batch must include a blank, LCS and duplicate sample

Due Date is 11/15/12

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sample Check-in List

Date/Time Received: 10-2-12 | 1055 Container GM Screen Result: (Airlock) .04 Initials [JB]
Sample GM Screen Result (Sample Receiving) .04 Initials [JB]

Client: PGW SDG #: W06481 NA [ ] SAF #: X12-031-047 NA [ ]
JB 10-2-12

Lot Number: J2J020453

Chain of Custody # X12-031-047

Shipping Container ID: hand delivered NA [JB] Air Bill Number: NA [JB]

Samples received inside shipping container/cooler/box Yes [JB] 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 [JB]
2. Custody Seals dated and signed? Yes [ ] No [ ] No Custody Seal [JB]
3. Cooler temperature: _____ °C NA [JB]
4. Vermiculite/packing materials is NA [JB] Wet [ ] Dry [ ]

Item 5 through 16 for samples. Initial appropriate response.

5. Chain of Custody record present? Yes [JB] No [ ]
6. Number of samples received (Each sample may contain multiple bottles): 1
7. Containers received: 1 x vial 20, 2 x 4p

8. Sample holding times exceeded? NA [ ] Yes [ ] No [JB]
9. Samples have:
   ___ tape
   JB custody seals
   ___ hazard labels
   JB appropriate sample labels
10. Matrix:
    ___ A (FLT, Wipe, Solid, Soil)
    ___ S (Air, Niosh 7400)
    JB I (Water)
    ___ T (Biological, Ni-63)
11. Samples:
    JB are in good condition
    ___ are broken
    ___ Other
    ___ are leaking
    ___ have air bubbles (Only for samples requiring no head space)
12. Sample pH appropriate for analysis requested Yes [JB] No [ ] NA [ ]
    (If acidification is necessary, then document sample ID, initial pH, amount of HNO_3 added and pH after addition on table overleaf)

    RPL ID # of preservative used : NA
13. Were any anomalies identified in sample receipt? Yes [ ] No [JB]
14. Description of anomalies (include sample numbers): NA [JB]

LS-023, Rev. 15, 07/11

See over for additional information.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

15. Sample Location, Sample Collector Listed on COC? * Yes [✓] No [ ]
*For documentation only. No corrective action needed.

16. Additional Information: N/A

[ ] Client/Courier denied temperature check. [✓] Client/Courier unpack cooler.

Sample Custodian: [signature] Date: 10-2-12

Client Informed on N/A by N/A Person contacted N/A

[✓] No action necessary; process as is

Project Manager [signature] Date 10-3-12

SAMPLE ID	Initial pH	Acid Amt	Final pH	SAMPLE ID	Initial pH	Acid Amt	Final pH

[✓] 10-2-12 [✓] 10-2-12

J2J020453 SKS 10-3-12

Print page | Close

FedEx

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 6:36 AM	On FedEx vehicle for delivery	EARTH CITY, MO	
Oct 24, 2012 6:33 AM	At local FedEx facility	EARTH CITY, MO	
Oct 24, 2012 5:16 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 5:31 PM	Shipment information sent to FedEx		

Print page | Close

FedEx

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 9:25 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	15.0 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 9:25 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 5:16 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 5:18 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		

NOVEMBER 15, 2012

TestAmerica - St. Louis

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

CUR Form #: 2 5 6

Lot #(s): 160-295
F2J240429
430

CONDITION UPON RECEIPT FORM

Client: CHPRC

Quote No: 90857

COC/RFA No: See Notes

Initiated By: SC Date: 10-24-12 Time: 0950

Shipping Information

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

Shipping # (s):*

1. 7939 1459 8320
2. 7939 1194 9780
3.
4.
5.
6.
7.
8.
9.
10.

Sample Temperature (s):**

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

ADMIN-0004 rev13, REVISED 05/27/11 \\Slsvr01\QA\FORMS\ST-LOUIS\ADMIN\Admin-0004 CUR.doc

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2L768

Radiochemistry

Lab Sample ID: F2J240429-001
Work Order: MW36L
Matrix: WATER

Date Collected: 10/01/12 0954
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	8.0	U	5.8	20.0	9.2	11/06/12	11/08/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

CH2M Hill Plateau Remediation DOE RL

Client Sample ID: B2L768 DUP

Radiochemistry

Lab Sample ID: F2J240429-001X
Work Order: MW36L
Matrix: WATER

Date Collected: 10/01/12 0954
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	8.6	U	5.9	20.0	9.3	11/06/12	11/08/12

NOTE(S)

Data are incomplete without the case narrative.

MDC is determined by instrument performance only.
Bold results are greater than the MDC.

U Result is less than the sample detection limit.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F2J240429
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: F2J240429
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 Date Sampled: 10/01/12
Matrix: WATER Date Received: 10/24/12

Parameter	Spike Amount	Spike Result	Total Uncert. (2σ +/-)	Spike Yld.	Sample Result	Total Uncert. (2 σ +/-)	QC Sample ID %YLD	QC Sample ID %REC	QC Control Limits
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: F2J240429
Matrix: WATER

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

Parameter	SAMPLE Result		Total Uncert. (2σ+/-)	% Yld	DUPLICATE Result		Total Uncert. (2 σ+/-)	% 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.