

DECEMBER 13, 2012

# 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: 160-912-1

TestAmerica Sample Delivery Group: SL1331\_W06493I  
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:  
12/13/2012 2:12:08 PM

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

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



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

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

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

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

TestAmerica Job ID: 160-912-1  
SDG: SL1331\_W06493I

**Job ID: 160-912-1**

**Laboratory: TestAmerica St. Louis**

**Narrative**

**CASE NARRATIVE**

CH2MHill Plateau Remediation Company  
P.O. Box 1600  
MS B3-60  
Richland, Washington 99352  
December 13, 2012  
Attention: Scot Fitzgerald

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SDG : SL1331  
Number of Samples : 1sample  
Sample Matrix : Water  
Data Deliverable : Summary  
Date SDG Closed : November 14, 2012

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II. Introduction

On November 22, 2012, 1 water sample was received by TestAmerica - St. Louis for chemical analysis. The sample was received within temperature criteria. See the COC and CUR forms for documentation of any variations on receipt conditions and temperature. Upon receipt, the samples were given laboratory Ids to correspond with specific client Ids. Please refer to the Sample Summary sheets attached to this case narrative. This report is incomplete without the narrative.

**TARL is currently investigating the C14 method due to the low results reported for the CY2011 blind samples. Per SDR13-039, samples were sent to TASL for C14 analysis.**

The following SAFs are associated with this SDG: S13-010

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



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**Job ID: 160-912-1 (Continued)**

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

reporting limits, whichever is applicable.

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

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

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 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** SDR13-039  
**REV NUM** 0  
**DATE INITIATED** 11/13/2012



**SAMPLE EVENT INFORMATION**

**SAF NUM(S)** S13-010  
**OPERABLE UNIT(S)** NONE  
**PROJECT(S)** SURV13  
**SAMPLE EVENT TITLE(S)** SURV13  
**LABORATORY** TestAmerica Incorporated, Richland

**SAMPLING INFORMATION**

**NUMBER OF SAMPLES** 1  
**SAMPLE NUMBERS** B2MDJ8  
**SAMPLE MATRIX** WATER  
**COLLECTION DATE** 11/1/2012 - 11/1/2012  
**SDG NUM** W06493

**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 sample and submit the final report & EDD for the SDG included on this SIR.

**DISPOSITION**

**DESCRIPTION** PROPOSED DISPOSITION: TARL will initiate SIR and ship the sample to TASL. TASL will report the sample discussed above as W06493I and include comments in the case narrative.

**JUSTIFICATION**

ACCEPTED DISPOSITION: Accept proposed resolution.  
 SUBMITTED BY: Sandra Seger/TARL DATE: 11/13/12  
 ACCEPTED BY: Karen Waters-Husted/CHPRC DATE: 11/13/12

**CH2M Hill Plateau Remediation Company** *CWR* **SL-1331** *475*

**CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

C.O.C. # **S13-010-738**  
Page 1 of 1

**Collector** F. M. Hall **Contact/Requester** Karen Waters-Husted **Telephone No.** 376-4650

**SAF No.** S13-010 **Sampling Origin** Hanford Site **Purchase Order/Charge Code** 30007IES20

**Project Title** SURV, OCTOBER 2012 **Logbook No.** HNF-N-506 **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:** 30 Days **Priority** **Offsite Property No.** N/A

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

**SPECIAL INSTRUCTIONS** Hold Time **Total Activity Exemption:** Yes  No   
 FY12 and FY13 samples cannot be in the same SDG. 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	Activity Scan	Sample Analysis	Holding Time	Preservative
B2MDJ8	N	11/1/12	0930	1x20-mL P	Activity Scan	ML7 P7	6 Months	None
B2MDJ8	N			2x4-L G/P	1129LL_SEP_LEPS_GS_LL: I-129 (1)		6 Months	None
B2MDJ8	N			1x1-L P	9310_ALPHABETA_GPC: Alpha + Beta (2)		6 Months	HNO3 to pH <2
B2MDJ8	N			2x1-L G/P	C14_LSC: C-14 (1)		6 Months	None
B2MDJ8	N			1x1-L G/P	PUISO_PLATE_AEA: Pu-238 + 239/240 (2)		6 Months	HNO3 to pH <2
B2MDJ8	N			3x1-L G/P	SRISO_SEP_PRECIP_GPC: Sr-90 (1)		6 Months	HNO3 to pH <2
B2MDJ8	N			1x500-mL P	TC99_ETVDSK_LSC: Tc-99 (1)		6 Months	HCl to pH <2
B2MDJ8	N			1x500-mL G/P	UTOT_KPA: Uranium (1)		6 Months	HNO3 to pH <2

*SDG # W064931 11-7-12*  
*LOT # J2K020408 J2K020408*  
*Report: 12-7-12*

**J2K020408**  **2xL (carbons)**

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
F. M. Hall			NOV 01 2012 1240	B.E. Briggs			NOV 01 2012 1240
B.E. Briggs			NOV 01 2012 1435	J. Beck			NOV 01 2012 1435
Sandra Seger			NOV 13 2012 13:07	Steven Clayton			NOV 14 2012 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** Disposed By \_\_\_\_\_ Date/Time \_\_\_\_\_

Please use SDG Number: W06493I

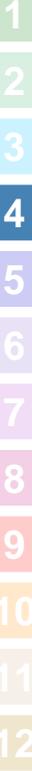
SDG W06493I needs to be analyzed in its own batch. Batch must include a blank, LCS and duplicate sample

SDG Closure Date is 11/12/12

Due Date is 12/13/12

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



DECEMBER 13, 2012

Sample Check-in List

Date/Time Received: 11-1-12 / 1435 Container GM Screen Result: (Airlock) .04 Initials BS  
Sample GM Screen Result (Sample Receiving) .04 Initials BS

Client: PBW SDG #: W04493I NA [ ] SAF #: S13-010 NA [ ]

Lot Number: J2K020408

Chain of Custody # S13-010-738

Shipping Container ID: Hand drawn NA BS Air Bill Number: \_\_\_\_\_ NA BS

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

Item 5 through 16 for samples. Initial appropriate response.

- 5. Chain of Custody record present? Yes BS ] No [ ]
- 6. Number of samples received (Each sample may contain multiple bottles): 1
- 7. Containers received: 1 x vial 20; 2 x 500 mL; 7 x LP; 2 x 4LP

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

9. Samples have:  
BS tape custody seals BS hazard labels appropriate sample labels

10. Matrix:  
\_\_\_\_\_ A (FLT, Wipe, Solid, Soil) BS I (Water)  
\_\_\_\_\_ S (Air, Niosh 7400) \_\_\_\_\_ T (Biological, Ni-63)

11. Samples:  
BS 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 W ] No [ ] NA [ ]  
(If acidification is necessary, then document sample ID, initial pH, amount of HNO<sub>3</sub> added and pH after addition on table overleaf)

RPL ID # of preservative used: N/A

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

14. Description of anomalies (include sample numbers): NA BS



**IMPORTANT!**  
 FedEx returns to normal operations in the Northeast, [Learn More](#)



**794065825110**

Ship (P/U) date :  
**Tues 11/13/2012 4:01 pm**  
 RICHLAND, WA US



Actual delivery :  
**Wed 11/14/2012 9:26 am**  
 EARTH CITY, MO US

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

**Travel History**

Date/Time	Activity	Location
- 11/14/2012 - Wednesday		
9:26 am	Delivered	EARTH CITY, MO
7:46 am	On FedEx vehicle for delivery	EARTH CITY, MO
7:40 am	At local FedEx facility	EARTH CITY, MO
5:09 am	At destination sort facility	BERKELEY, MO
4:25 am	Departed FedEx location	MEMPHIS, TN
12:12 am	Arrived at FedEx location	MEMPHIS, TN
- 11/13/2012 - Tuesday		
5:07 pm	Left FedEx origin facility	PASCO, WA
4:01 pm	Picked up	PASCO, WA
3:11 pm	Shipment information sent to FedEx	

Local Scan Time

**Shipment Facts**

Tracking number	794065825110	Service	FedEx Priority Overnight
Weight	8 lbs	Delivered To	Shipping/Receiving
Total pieces	1	Total shipment weight	8 lbs / 3.6 kgs
Packaging	Your Packaging	Special handling section	Deliver Weekday



DECEMBER 13, 2012

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Lot #(s): 160-912  
160-913  
160-914

CUR Form #: 4 7 5

CONDITION UPON RECEIPT FORM

Client: CHPRC



Quote No:

COC/RFA No: ~~S13-010-738, I13-007-007, 009~~ See notes

11-14-12 SC

Initiated By: SC

Date: 11-14-12

Time: 0930

Shipping Information

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

Shipping # (s):\*

Sample Temperature (s):\*\*

1. 7940 6582 5110	6. _____	1. Ambient	6. _____
2. 7940 6333 1629	7. _____	2. 3	7. _____
3. 7940 6344 0940	8. _____	3. 2	8. _____
4. 7940 6345 9206	9. _____	4. 2	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; 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? (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?

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

Notes:

COCs S13-010-738, I13-007-007, W13-011-051  
-009 -052  
-008 -058  
-010

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: 11-14-12

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

Login Sample Receipt Checklist

Client: CH2M Hill Plateau Remediation Company

Job Number: 160-912-1

SDG Number: SL1331\_W06493I

Login Number: 912

List Number: 1

Creator: Claxton, Steven

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: 160-912-1

SDG Number: SL1331\_W06493I

Login Number: 912

List Number: 1

Creator: Claxton, Steven

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	



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

TestAmerica Job ID: 160-912-1  
SDG: SL1331\_W06493I

## Qualifiers

### Rad

Qualifier	Qualifier Description
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)
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

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

TestAmerica Job ID: 160-912-1  
SDG: SL1331\_W06493I

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Method	Method Description	Protocol	Laboratory
C-01-1	Carbon-14 (EERF C-01-1)	EERF	TAL SL

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**Protocol References:**

EERF = EERF

**Laboratory References:**

TAL SL = TestAmerica St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566



DECEMBER 13, 2012  
Sample Summary

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

TestAmerica Job ID: 160-912-1  
SDG: SL1331\_W06493I

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Lab Sample ID	Client Sample ID	Matrix	Collected	Received
160-912-1	B2MDJ8	Water	11/01/12 09:30	11/14/12 09:30

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DECEMBER 13, 2012  
Detection Summary

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

TestAmerica Job ID: 160-912-1  
SDG: SL1331\_W06493I

**Client Sample ID: B2MDJ8**

**Lab Sample ID: 160-912-1**

No Detections

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

TestAmerica Job ID: 160-912-1  
SDG: SL1331\_W06493I

Method: C-01-1 - Carbon-14 (EERF C-01-1)

Client Sample ID: B2MDJ8  
Date Collected: 11/01/12 09:30  
Date Received: 11/14/12 09:30

Lab Sample ID: 160-912-1  
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Carbon-14	7.04	U	4.19	4.19	7.04	pCi/L	11/30/12 10:57	12/03/12 18:25	1



**DECEMBER 13, 2012**  
**QC Sample Results**

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

TestAmerica Job ID: 160-912-1  
SDG: SL1331\_W064931

**Method: C-01-1 - Carbon-14 (EERF C-01-1)**

**Lab Sample ID: MB 160-18974/1-A**  
**Matrix: Water**  
**Analysis Batch: 19488**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 18974**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Carbon-14	7.11	U	4.18	4.19	7.11	pCi/L	11/30/12 10:57	12/03/12 16:10	1

**Lab Sample ID: LCS 160-18974/2-A**  
**Matrix: Water**  
**Analysis Batch: 19488**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 18974**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits
Carbon-14	1130	739.9		82.3	7.20	pCi/L	66	38 - 112

**Lab Sample ID: 160-912-1 MS**  
**Matrix: Water**  
**Analysis Batch: 19488**

**Client Sample ID: B2MDJ8**  
**Prep Type: Total/NA**  
**Prep Batch: 18974**

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	MDC	Unit	%Rec	%Rec. Limits
Carbon-14	7.04	U	1120	1011		112	7.06	pCi/L	90	37 - 121

**Lab Sample ID: 160-912-1 DU**  
**Matrix: Water**  
**Analysis Batch: 19488**

**Client Sample ID: B2MDJ8**  
**Prep Type: Total/NA**  
**Prep Batch: 18974**

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	MDC	Unit	RER	RER Limit
Carbon-14	7.04	U	7.05	U	4.27	7.05	pCi/L	0.15	1

DECEMBER 13, 2012  
QC Association Summary

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

TestAmerica Job ID: 160-912-1  
SDG: SL1331\_W06493I

Rad

Prep Batch: 18974

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
160-912-1	B2MDJ8	Total/NA	Water	LSC_Dist_Susp	
160-912-1 DU	B2MDJ8	Total/NA	Water	LSC_Dist_Susp	
160-912-1 MS	B2MDJ8	Total/NA	Water	LSC_Dist_Susp	
LCS 160-18974/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	
MB 160-18974/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	

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