

Analytical Data Package Prepared For

# CH2M Hill Plateau Remediation

Radiochemical Analysis By

TestAmerica Inc TARL

2800 G.W. Way, Richland Wa, 99354, (509)-375-3131.

Data Package Contains \_\_\_ Pages

Report Nbr: 57381

SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	LOT Nbr	WORK ORDER	RPT DB ID	BATCH
W06596	I13-037	B2PW89	J3I030413-1	MITDD1AA	9MITDD10	3261062
		B2PW89	J3I030413-1	MITDD1AC	9MITDD10	3261057
		B2PW89	J3I030413-1	MITDD1AD	9MITDD10	3261058
		B2PW89	J3I030413-1	MITDD1AE	9MITDD10	3261059
	I13-036	B2PW63	J3I050422-1	MIVCC1AA	9MIVCC10	3248061
		S13-009	B2R0C9	J3I060459-1	M1V2H1AA	9M1V2H10
	B2R0D0		J3I060459-2	M1V2J1AA	9M1V2J10	3261061
	B2R0D6		J3I060459-3	M1V2K1AA	9M1V2K10	3261061
	B2R0J6		J3I060459-4	M1V2M1AA	9M1V2M10	3261061
	W13-009	B2PY19	J3I090411-1	M1WAD1AA	9M1WAD10	3261060
B2PY20		J3I090411-2	M1WAE1AA	9M1WAE10	3261060	
B2PY41		J3I090411-3	M1WAH1AA	9M1WAH10	3261060	
B2PY25		J3I090411-4	M1WAJ1AA	9M1WAJ10	3261060	
B2PY49		J3I090411-5	M1WAK1AA	9M1WAK10	3261060	
B2PY34		J3I110431-1	M1WXA1AA	9M1WXA10	3261060	

Comments:

Report Nbr: 57381

SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	LOT Nbr	WORK ORDER	RPT DB ID	BATCH
W06596	S13-009	B2R0C2	J3I110432-1	MIWXG1AA	9M1WXXG10	3261060
		B2R0H9	J3I110432-2	MIWXH1AA	9M1WXXH10	3261060

Comments:



THE LEADER IN ENVIRONMENTAL TESTING

### Certificate of Analysis

CH2M Hill Plateau Remediation Company  
 P.O. Box 1600  
 Mail Stop – R3-60  
 Richland, WA 99352

October 21, 2013

Attention: Scot Fitzgerald

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SAF Number	:	I13-036, I13-037, S13-009, W13-009
Date SDG Closed	:	September 12, 2013
Number of Samples	:	Fourteen (14)
Sample Type	:	Water
SDG Number	:	W06596
Data Deliverable	:	30-Day / Summary

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### CASE NARRATIVE

#### I. Introduction

Between August 28, 2013 and September 9, 2013, fourteen water samples were received at TestAmerica (TARL). Upon receipt, the samples were assigned the following laboratory ID numbers to correspond with the CH2M specific IDs:

<u>CH2M ID#</u>	<u>TARL ID#</u>	<u>DATE OF RECEIPT</u>	<u>MATRIX</u>
B2PW89	M1TDD	8/28/13	WATER
B2PW63	M1VCC	9/05/13	WATER
B2R0C9	M1V2H	9/05/13	WATER
B2R0D0	M1V2J	9/05/13	WATER
B2R0D6	M1V2K	9/05/13	WATER
B2R0J6	M1V2M	9/05/13	WATER
B2PY19	M1WAD	9/05/13	WATER
B2PY20	M1WAE	9/05/13	WATER
B2PY41	M1WAH	9/05/13	WATER
B2PY25	M1WAJ	9/05/13	WATER
B2PY49	M1WAK	9/05/13	WATER
B2PY34	M1WXA	9/09/13	WATER

CH2M Hill Plateau Remediation Company  
October 21, 2013

B2R0C2	M1WXG	9/09/13	WATER
B2R0H9	M1WXH	9/09/13	WATER

## II. Sample Receipt

The samples were received in good condition. Sample B2PW63 was received at 20.4°C. For more details refer to the SIR (CHPRC Tracking Number: SDR13-237) that is included in this report. No other anomalies were noted during check-in.

During the bi-weekly phone call on January 9, 2013 TARL was notified that all groundwater samples received after January 1, 2013 will have a 30 day turnaround time regardless if the chain of custodies have a turn around time that is greater than 30 days.

## III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

### Gas Proportional Counting

Gross Alpha by method RL-GPC-001

Gross Beta by method RL-GPC-001

Strontium-90 by method RL-GPC-003

### Gamma Spectroscopy

Iodine-129 (LL) by method RL-GAM-002

### Liquid Scintillation Counting

Technetium-99 by method RL-LSC-013

Tritium by method RL-LSC-005

### Chemical Analysis

Hexavalent Chromium by EPA method 7196A

## IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

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**V. Comments**

**Gas Proportional Counting**

Gross Alpha by method RL-GPC-001:

Sample B2PW89 and B2PW89 DUP were analyzed with reduced aliquots based on weight screen results. Except as noted, the LCS, batch blank, samples and sample duplicate (B2PW89) results are within contractual requirements.

Gross Beta by method RL-GPC-001:

Sample B2PW89 and B2PW89 DUP were analyzed with reduced aliquots based on weight screen results. The blank activity is slightly greater than the CRDL. The blank does not exceed 5% of the activity present in samples therefore the data is acceptable (Section 3.2.0). Except as noted, the LCS, batch blank, samples and sample duplicate (B2PW89) results are within contractual requirements.

Strontium-90 by method RL-GPC-003:

The LCS, batch blank, samples and sample duplicate (B2PW89) results are within contractual requirements.

**Gamma Spectroscopy**

Iodine-129 (LL) by method RL-GAM-002:

The LCS, batch blank, samples and sample duplicate (B2PY19) results are within contractual requirements.

**Liquid Scintillation Counting**

Technetium-99 by method RL-LSC-013:

The LCS, batch blank, samples, sample duplicate (B2R0C9) and sample matrix spike (B2R0D0) results are within contractual requirements.

Tritium by method RL-LSC-005:

The LCS, batch blank, samples and sample duplicate (B2PW89) results are within contractual requirements.

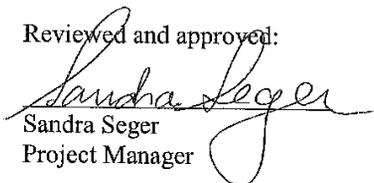
**Chemical Analysis**

Hexavalent Chromium by EPA method 7196A

The LCS, batch blank, samples, sample duplicate (B2PW63) sample matrix spike (B2PW63) and matrix spike duplicate (B2PW63) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

  
Sandra Seger  
Project Manager

**SAMPLE ISSUE RESOLUTION**

**SIR NUM** SDR13-237  
**REV NUM** 0  
**DATE INITIATED** 9/6/2013

**SAMPLE EVENT INFORMATION**

**SAF NUM(S)** I13-036  
**OPERABLE UNIT(S)** 100-KR-4  
**PROJECT(S)** CERC13  
**SAMPLE EVENT TITLE(S)** CERC13  
**LABORATORY** TestAmerica Incorporated, Richland

**SAMPLING INFORMATION**

**NUMBER OF SAMPLES** 1  
**SAMPLE NUMBERS** B2PW63  
**SAMPLE MATRIX** WATER  
**COLLECTION DATE** 9/5/2013 - 9/5/2013  
**SDG NUM** W06596

**ISSUE BACKGROUND**

**CLASS** Field Sampling Issue  
**TYPE** Incorrect Sample Preservation

**DESCRIPTION** The listed sample was not received on ice. The sample temperature was 20.4°C at time of receipt. The chain of custody requires a sample storage temperature of 4°C.  
  
This is a known issue with samples that are delivered to TARL the same day of sampling. Even in the presence of ice, the samples have insufficient time to cool to the required storage temperature prior to receipt at TARL sample receiving.

**DISPOSITION**

**DESCRIPTION** Proposed Disposition:  
Initiate SIR, proceed with sample analysis, and note sample as-received condition in the case narrative.  
**JUSTIFICATION** Accepted Disposition: Accept proposed disposition.

Submitted by: Sandra Seger / TARL Date: 9/6/2013  
Accepted by: J.G. Douglas / CHPRC Date: 9/6/2013

# SAMPLE ISSUE RESOLUTION

<b>SIR NUM</b>	SDR14-024
<b>REV NUM</b>	0
<b>DATE INITIATED</b>	10/30/2013

## SAMPLE EVENT INFORMATION

**SAF NUM(S)** I13-037  
**OPERABLE UNIT(S)** 100-NR-2  
**PROJECT(S)** CERC13  
**SAMPLE EVENT TITLE(S)** CERC13  
**LABORATORY** TestAmerica Incorporated, Richland

## SAMPLING INFORMATION

**NUMBER OF SAMPLES** 1  
**SAMPLE NUMBERS** B2PW89  
**SAMPLE MATRIX** WATER  
**COLLECTION DATE** 8/28/2013 - 8/28/2013  
**SDG NUM** W06596

## ISSUE BACKGROUND

**CLASS** Chain of Custody Issue (Field)  
**TYPE** Incorrect Relinquish/Receipt Date/Time  
**DESCRIPTION** W06596, COC# I13-037-042, Sample B2PW89, There is no relinquished/ or received time on the first line.

## DISPOSITION

**DESCRIPTION** PROPOSED DISPOSITION: Document the excursion, insert the SIR into the data package and close the SIR.

**JUSTIFICATION** ACCEPTED DISPOSITION: Accept the proposed resolution.  
  
 SUBMITTED BY: Sara Champoux/CHPRC Date: 10/30/13  
 ACCEPTED BY: Susan Puckett/CHPRC Date: 10/30/13

**Drinking Water Method Cross References**

DRINKING WATER ASTM METHOD CROSS REFERENCES		
Referenced Method	Isotope(s)	TestAmerica Richland's SOP No.
EPA 901.1	Cs-134, I-131	RL-GAM-001
EPA 900.0	Alpha & Beta	RL-GPC-001
EPA 00-02	Gross Alpha (Coprecipitation)	RL-GPC-002
EPA 903.0	Total Alpha Radium (Ra-226)	RL-RA-002
EPA 903.1	Ra-226	RL-RA-001
EPA 904.0	Ra-228	RL-RA-001
EPA 905.0	Sr-89/90	RL-GPC-003
ASTM D5174	Uranium	RL-KPA-003
EPA 906.0	Tritium	RL-LSC-005

**Results in this report relate only to the sample(s) analyzed.**

**Uncertainty Estimation**

TestAmerica Richland has adopted the internationally accepted approach to estimating uncertainties described in "NIST Technical Note 1297, 1994 Edition". The approach, "Law of Propagation of Errors", involves the identification of all variables in an analytical method which are used to derive a result. These variables are related to the analytical result (R) by some functional relationship,  $R = \text{constants} * f(x,y,z,...)$ . The components (x,y,z) are evaluated to determine their contribution to the overall method uncertainty. The individual component uncertainties ( $u_i$ ) are then combined using a statistical model that provides the most probable overall uncertainty value. All component uncertainties are categorized as type A, evaluated by statistical methods, or type B, evaluated by other means. Uncertainties not included in the components, such as sample homogeneity, are combined with the component uncertainty as the square root of the sum-of-the-squares of the individual uncertainties. The uncertainty associated with the derived result is the combined uncertainty ( $u_c$ ) multiplied by the coverage factor (1,2, or 3).

When three or more sample replicates are used to derive the analytical result, the type A uncertainty is the standard deviation of the mean value ( $S/\sqrt{n}$ ), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviation.

The derivation of the general "Law of Propagation of Errors" equations and specific example are available on request.

## Report Definitions

<b>Action Lev</b>	An agreed upon activity level used to trigger some action when the final result is greater than or equal to the Action Level. Often the Action Level is related to the Decision Limit.
<b>Batch</b>	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
<b>Bias</b>	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
<b>COC No</b>	Chain of Custody Number assigned by the Client or TestAmerica.
<b>Count Error (#s)</b>	Poisson counting statistics of the gross sample count and background. The uncertainty is absolute and in the same units as the result. For Liquid Scintillation Counting (LSC) the batch blank count is the background.
<b>Total Uncert (#s) <math>u_c</math> - Combined Uncertainty.</b>	All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure of the uncertainty associated with the result, $u_c$ the combined uncertainty. The uncertainty is absolute and in the same units as the result.
<b>(#s), Coverage Factor</b>	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
<b>CRDL (RL)</b>	Contractual Required Detection Limit as defined in the Client's Statement Of Work or TestAmerica "default" nominal detection limit. Often referred to the reporting level (RL)
<b>Lc</b>	Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume associated with the sample. The Type I error probability is approximately 5%. $Lc = (1.645 * \sqrt{2 * (BkgrndCnt / BkgrndCntMin) / SCntMin}) * (ConvFct / (Eff * Yld * Abn * Vol) * IngrFct)$ . For LSC methods the batch blank is used as a measure of the background variability. Lc cannot be calculated when the background count is zero.
<b>Lot-Sample No</b>	The number assigned by the LIMS software to track samples received on the same day for a given client. The sample number is a sequential number assigned to each sample in the Lot.
<b>MDC MDA</b>	Detection Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume with a Type I and II error probability of approximately 5%. $MDC = (4.65 * \sqrt{(BkgrndCnt / BkgrndCntMin) / SCntMin}) * (ConvFct / (Eff * Yld * Abn * Vol) * IngrFct)$ . For LSC methods the batch blank is used as a measure of the background variability.
<b>Primary Detector</b>	The instrument identifier associated with the analysis of the sample aliquot.
<b>Ratio U-234/U-238</b>	The U-234 result divided by the U-238 result. The U-234/U-238 ratio for natural uranium in NIST SRM 4321C is 1.038.
<b>Rst/MDC</b>	Ratio of the Result to the MDC. A value greater than 1 may indicate activity above background at a high level of confidence. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
<b>Rst/TotUcert</b>	Ratio of the Result to the Total Uncertainty. If the uncertainty has a coverage factor of 2 a value greater than 1 may indicate activity above background at approximately the 95% level of confidence assuming a two-sided confidence interval. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
<b>Report DB No</b>	Sample Identifier used by the report system. The number is based upon the first five digits of the Work Order Number.
<b>RER</b>	The equation Replicate Error Ratio = $(S-D) / [\sqrt{TPUs^2 + TPUD^2}]$ as defined by ICPT BOA where S is the original sample result, D is the result of the duplicate, TPUs is the total uncertainty of the original sample and TPUD is the total uncertainty of the duplicate sample.
<b>SDG</b>	Sample Delivery Group Number assigned by the Client or assigned by TestAmerica upon sample receipt.
<b>Sum Rpt Alpha Spec Rst(s)</b>	The sum of the reported alpha spec results for tests derived from the same sample excluding duplicate result where the results are in the same units.
<b>Work Order</b>	The LIMS software assign test specific identifier.
<b>Yield</b>	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.

10/21/2013 1:17:48 PM

TestAmerica Inc Report

Lab Code: TARL

FormNbr: R FormatType: FEAD Version: 05 Rpt Nbr: 57381 File Name: h:\Reportdb\edd\FeadIVRad\W06596.Edd, h:\Reportdb\edd\FeadIVRad\57381.Ed

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/Solids%*:	Distilled Volume	Sample On Date:	Collection Date:
9M1TDD10 B2PW89			MW6-SBB-A1	113-037	W06596					
Batch	Analyte	CAS#	Result	Unit	CntU 2S	Qual	MDA	TrcYield	Method	Alq Size
3261062	H-3	10028-17-8	1.17E+04	pCi/L	3.7E+02	5.1E+02	2.90E+02	100.0	906.0_H3_LSC	5.008E-03
3261057	ALPHA	12587-46-1	1.34E+00	pCi/L	1.6E+00	1.6E+00	2.74E+00	100.0	9310_ALPHA BETA	9.24E-02
3261058	BETA	12587-47-2	4.16E+03	pCi/L	2.3E+01	5.4E+02	2.36E+00	100.0	9310_ALPHA BETA	1.85E-01
3261059	Sr-90	10098-97-2	1.90E+03	pCi/L	9.6E+00	3.3E+02	9.09E-01	72.7	SRISO_SEP_PRE	1.013E+00

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/Solids%*:	Distilled Volume	Sample On Date:	Collection Date:
9M1V2H10 B2R0C9			MW6-SBB-A1	S13-009	W06596					
Batch	Analyte	CAS#	Result	Unit	CntU 2S	Qual	MDA	TrcYield	Method	Alq Size
3261061	TC-99	14133-76-7	8.05E+03	pCi/L	4.9E+01	4.5E+02	9.21E+00	100.0	TC99_SEP_LSC	1.26E-01

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/Solids%*:	Distilled Volume	Sample On Date:	Collection Date:
9M1V2J10 B2R0D0			MW6-SBB-A1	S13-009	W06596					
Batch	Analyte	CAS#	Result	Unit	CntU 2S	Qual	MDA	TrcYield	Method	Alq Size
3261061	TC-99	14133-76-7	8.29E+03	pCi/L	4.9E+01	4.6E+02	9.25E+00	100.0	TC99_SEP_LSC	1.255E-01

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/Solids%*:	Distilled Volume	Sample On Date:	Collection Date:
9M1V2K10 B2R0D6			MW6-SBB-A1	S13-009	W06596					
Batch	Analyte	CAS#	Result	Unit	CntU 2S	Qual	MDA	TrcYield	Method	Alq Size
3261061	TC-99	14133-76-7	2.20E+01	pCi/L	4.5E+00	6.3E+00	9.22E+00	100.0	TC99_SEP_LSC	1.261E-01

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/Solids%*:	Distilled Volume	Sample On Date:	Collection Date:
9M1V2M10 B2R0J6			MW6-SBB-A1	S13-009	W06596					
Batch	Analyte	CAS#	Result	Unit	CntU 2S	Qual	MDA	TrcYield	Method	Alq Size
3261061	TC-99	14133-76-7	2.00E+01	pCi/L	4.5E+00	6.2E+00	9.23E+00	100.0	TC99_SEP_LSC	1.257E-01

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/Solids%*:	Distilled Volume	Sample On Date:	Collection Date:
9M1WAD10 B2PY19			MW6-SBB-A1	W13-009	W06596					
Batch	Analyte	CAS#	Result	Unit	CntU 2S	Qual	MDA	TrcYield	Method	Alq Size
3261060	I-129	15046-84-1	4.99E+00	pCi/L	6.5E-01	6.5E-01	2.52E-01	92.7	I129LL_SEP_LEPS	3.9125E+00

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/Solids%*:	Distilled Volume	Sample On Date:	Collection Date:
TestAmerica Inc										
rptFeadRadSummaryEdd v3.48										

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.  
 J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).  
 B Qual- Analyte was found in the associated laboratory blank above the MDC.



Monday, October 21, 2013

### TestAmerica Inc QC Blank Report

Lab Code: TARL

FormNbr: R      FormatType: FEAD      VersionNbr: 05      File Name: h:\Reportdb\ledd\Fead\VRad\W06596.Edd, h:\Reportdb\ledd\Fead\VRad\57381.Ed

**Lab Sample Id:** M10671AB      **Sdg/Rept Nbr:** W06596      **Collection Date:** 08/28/2013 09:37  
**Client Id:** NA      **Matrix:** WATER      **Sample On Date:**  
**Moisture/Solids%\*:**      **QC Type:** BLK      **Received Date:** 08/28/2013

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	F Suffix	R Typ
3261057	MW6-SBB-A19981								AN	H
BLK	12587-46-1									

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Qu- al	MDC	Tracer Yield	Spk Concl/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS	R
3261057	ALPHA	1.80E-01	pCi/L	U	4.81E-01	100.0		9310_ALPHA	1.999E-01	10/15/2013			LCLUCL	D
BLK	12587-46-1								L	18:35				

TestAmerica Inc  
rpt\FeadRadEdd v3.68

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.  
 J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).  
 B Qual- Analyte was found in the associated laboratory blank above the MDC.

Monday, October 21, 2013

### TestAmerica Inc QC Blank Report

Lab Code: TARL

FormNbr: R      FormatType: FEAD      VersionNbr: 05      File Name: h:\Reportdb\edd\FeadIVRad\W06596.Edd, h:\Reportdb\edd\FeadIVRad\57381.Ed

**Lab Sample Id:** M10681AB      **Sdg/Rept Nbr:** W06596      **57381**      **Collection Date:** 08/28/2013 09:37  
**Client Id:** NA      **Matrix:** WATER      **WATER**  
**Moisture/Solids%\*:**      **QC Type:** BLK      **Received Date:** 08/28/2013

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp
	MW6-SBB-A19981								AP	H

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Concl/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCS/UCL	R Typ
3261058	BETA	4.22E+00	pCi/L	1.3E+00		1.86E+00	100.0		9310_ALPHA	2.00E-01	10/15/2013 11:15				D
BLK	12587-47-2			1.2E+00											

TestAmerica Inc  
rptFeadRadEdd v3.68

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.  
 J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).  
 B Qual- Analyte was found in the associated laboratory blank above the MDC.

Monday, October 21, 2013

### TestAmerica Inc QC Blank Report

Lab Code: TARL

FormNbr: R      FormatType: FEAD      VersionNbr: 05      File Name: h:\Reportdb\ledd\Fead\VRad\W06596.Edd, h:\Reportdb\ledd\Fead\VRad\57381.Ed

**Lab Sample Id:** M10691AB      **Sdg/Rept Nbr:** W06596      **57381**      **Collection Date:** 08/28/2013 09:37  
**Client Id:** NA      **Matrix:** WATER      **WATER**  
**Moisture/Solids%\*:**      **QC Type:** BLK      **Received Date:** 08/28/2013

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RType
3261059	MW6-SBB-A19981								AR	H
BLK	10098-97-2									

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Concl/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCLUCL	Typ
3261059	Sr-90	1.33E-01	pCi/L	4.5E-01	U	9.64E-01	71.9		SRISO_SEP_P	1.001E+00	10/10/2013 13:02				D
BLK	10098-97-2			4.5E-01						L					

TestAmerica Inc  
rptFeadRadEdd v3.68

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.  
 J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).  
 B Qual- Analyte was found in the associated laboratory blank above the MDC.

Monday, October 21, 2013

### TestAmerica Inc QC Blank Report

Lab Code: TARL

FormNbr: R      FormatType: FEAD      VersionNbr: 05      File Name: h:\Reportdb\edd\FeadIVRad\W06596.Edd, h:\Reportdb\edd\FeadIVRad\57381.Ed

**Lab Sample Id:** M107A1AB      **Sdg/Rept Nbr:** W06596      **Collection Date:** 09/04/2013 08:51  
**Client Id:** NA      **Matrix:** WATER      **Sample On Date:**  
**Moisture/Solids%\*:**      **QC Type:** BLK      **Received Date:** 09/05/2013

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	F Suffix	RTyp
3261060	MW6-SBB-A19981									
BLK	15046-84-1									

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Concl/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
3261060	I-129	-4.03E-02	pCi/L	9.4E-02	U	1.63E-01	95.1		1129LL_SEP_L	3.9614E+00	10/08/2013				D
BLK	15046-84-1			9.4E-02						L	23:58				

TestAmerica Inc  
rptFeadRadEdd v3.68

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.  
 J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).  
 B Qual- Analyte was found in the associated laboratory blank above the MDC.

Monday, October 21, 2013

### TestAmerica Inc QC Blank Report

Lab Code: TARL

FormNbr: R      FormatType: FEAD      VersionNbr: 05      File Name: h:\Reportdb\edd\FeadIVRad\W06596.Edd, h:\Reportdb\edd\FeadIVRad\57381.Ed

**Lab Sample Id:** M107D1AB      **Sdg/Rept Nbr:** W06596      **57381**      **Collection Date:** 09/04/2013 08:51  
**Client Id:** NA      **Matrix:** WATER      **WATER**  
**Moisture/Solids%\*:**      **QC Type:** BLK      **Received Date:** 09/05/2013

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RType
	MW6-SBB-A19981								AV	H

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
3261061	TC-99	1.65E+00	pCi/L	3.3E+00	U	5.78E+00	100.0		TC99_SEP_LS	2.009E-01	10/04/2013 07:04				D
BLK	14133-76-7			2.4E+00											

TestAmerica Inc  
rptFeadRadEdd v3.68

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.  
 J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).  
 B Qual- Analyte was found in the associated laboratory blank above the MDC.

Monday, October 21, 2013

### TestAmerica Inc QC Blank Report

Lab Code: TARL

FormNbr: R      FormatType: FEAD      VersionNbr: 05      File Name: h:\Reportdb\edd\Fead\W06596.Edd, h:\Reportdb\edd\Fead\W06596.Edd

**Lab Sample Id:** M107F1AB      **Sdg/Rept Nbr:** W06596      **Collection Date:** 08/28/2013 09:37  
**Client Id:** NA      **Matrix:** WATER      **Sample On Date:**  
**Moisture/Solids%\*:**      **QC Type:** BLK      **Received Date:** 08/28/2013

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	F Suffix	R Typ
	MW6-SBB-A19981								AX	H

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert.2S	Qu- al	MDC	Tracer Yield	Spk Concl/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
3261062	H-3	2.18E+02	pCi/L	1.5E+02	U	3.10E+02	100.0		906.0_H3_LSC	5.034E-03	09/29/2013 02:04				D
BLK	10028-17-8			1.3E+02						L					

TestAmerica Inc  
rptFeadRadEdd v3.68

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.  
 J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).  
 B Qual- Analyte was found in the associated laboratory blank above the MDC.

Monday, October 21, 2013

### TestAmerica Inc QC Control Sample Report

Lab Code: TARL

FormNbr: R    FormatType: FEAD    VersionNbr: 05    File Name: h:\Reportdb\ledd\Fead\VRad\W06596.Edd, h:\Reportdb\ledd\Fead\VRad\57381.Ed

**Lab Sample Id:** M10671CS    **Sdg/Rept Nbr:** W06596    **57381**    **Collection Date:** 08/28/2013 09:37  
**Client Id:** NA    **Matrix:** WATER    **WATER**  
**Moisture/Solids%\*:**    **QC Type:** BS    **Received Date:** 08/28/2013

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RType
	MW6-SBB-A19981								AO	H

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Concl/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
3261057 BS	ALPHA 12587-46-1	2.50E+01	pCi/L	6.4E+00 1.7E+00		7.47E-01	100.0	2.37E+01 105.7	9310_ALPHA	2.00E-01 L	10/15/2013 18:35	UCL	UCL	70	D
														130	

TestAmerica Inc  
rptFeadRadEdd v3.68

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.  
 J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).  
 B Qual- Analyte was found in the associated laboratory blank above the MDC.

Monday, October 21, 2013

### TestAmerica Inc QC Control Sample Report

Lab Code: TARL

FormNbr: R      FormatType: FEAD      VersionNbr: 05      File Name: h:\Reportdb\edd\Fead\VRad\W06596.Edd; h:\Reportdb\edd\Fead\VRad\57381.Ed

**Lab Sample Id:** M10681CS      **Sdg/Rept Nbr:** W06596      **57381**      **Collection Date:** 08/28/2013 09:37  
**Client Id:** NA      **Matrix:** WATER      **WATER**  
**Moisture/Solids%\*:**      **QC Type:** BS      **Received Date:** 08/28/2013

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	F Suffix	R Typ
	MW6-SBB-A19981								AQ	H

Batch # / Gc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Qu- al	Tot/Cnt Uncert 2S	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
3261058	BETA	2.65E+01	pCi/L		3.9E+00	1.83E+00	100.0	2.30E+01	9310_ALPHAB	2.00E-01	10/15/2013			70	D
BS	12587-47-2				1.9E+00			115.3		L	11:15			130	

TestAmerica Inc  
rptFeadRadEdd v3.68

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.  
 J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).  
 B Qual- Analyte was found in the associated laboratory blank above the MDC.

Monday, October 21, 2013

### TestAmerica Inc QC Control Sample Report

Lab Code: TARL

FormNbr: R    FormatType: FEAD    VersionNbr: 05    File Name: h:\Reportdb\edd\Fead\VRad\W06596.Edd, h:\Reportdb\edd\Fead\VRad\57381.Ed

**Lab Sample Id:** M10691CS    **Sdg/Rept Nbr:** W06596    **57381**    **Collection Date:** 08/28/2013 09:37  
**Client Id:** NA    **Matrix:** WATER    **WATER**  
**Moisture/Solids%\*:**    **QC Type:** BS    **Received Date:** 08/28/2013

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RType
	MW6-SBB-A19981								AS	H

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Concl/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Type
3261059	SR-90	6.59E+00	pCi/L	1.4E+00		1.15E+00	56.2	6.84E+00	SRISO_SEP_P	1.0061E+00	10/10/2013			70	D
BS	10098-97-2			8.2E-01				96.4		L	13:02			130	

TestAmerica Inc  
 rptFeadRadEdd v3.68

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.  
 J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).  
 B Qual - Analyte was found in the associated laboratory blank above the MDC.

Monday, October 21, 2013

### TestAmerica Inc QC Control Sample Report

Lab Code: TARL

FormNbr: R      FormatType: FEAD      VersionNbr: 05      File Name: h:\Reportdb\edd\Fead\Rad\W06596.Edd, h:\Reportdb\edd\Fead\Rad\57381.Ed

**Lab Sample Id:** M107A1CS      **Sdgs/Rept Nbr:** W06596      **57381**      **Collection Date:** 09/04/2013 08:51  
**Client Id:** NA      **Matrix:** WATER      **WATER**  
**Moisture/Solids%\*:**      **QC Type:** BS      **Received Date:** 09/05/2013

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	F Suffix	R Typ
	MW6-SBB-A19981								AU	H

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Concl/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCS/UCL	R Typ
3201060	I-129	9.92E+00	pCi/L	1.2E+00		2.26E-01	92.8	9.66E+00	1129LL_SEP_L	3.9645E+00	10/09/2013			70	D
BS	15046-84-1			1.2E+00				102.7		L	07:20			130	

TestAmerica Inc  
rptFeadRadEdd v3.68

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.  
 J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).  
 B Qual- Analyte was found in the associated laboratory blank above the MDC.

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Monday, October 21, 2013

### TestAmerica Inc QC Control Sample Report

Lab Code: TARL

FormNbr: R      FormatType: FEAD      VersionNbr: 05      File Name: h:\Reportdb\ledd\Fead\W06596.Edd, h:\Reportdb\ledd\Fead\W06596.Edd, h:\Reportdb\ledd\Fead\W06596.Edd

**Lab Sample Id:** M107D1CS      **Sdg/Rept Nbr:** W06596      **57381**      **Collection Date:** 09/04/2013 08:51  
**Client Id:** NA      **Matrix:** WATER      **WATER**  
**Moisture/Solids%\*:**      **QC Type:** BS      **Received Date:** 09/05/2013

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RType
3261061	MW6-SBB-A19981								AW	H
BS										

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Concl/ %Rec	Analy Method	TC99_SEP_LS	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	Typ
3261061	TC-99	3.05E+02	pCi/L	2.0E+01		5.80E+00	100.0	3.40E+02	TC99		2.002E-01	10/04/2013 08:07			70	D
BS	14133-76-7			7.8E+00				89.9			L				130	

TestAmerica Inc  
rptFeadRadEdd v3.68

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.  
 J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).  
 B Qual- Analyte was found in the associated laboratory blank above the MDC.

1/1



Monday, October 21, 2013

### TestAmerica Inc QC Duplicate Report

Lab Code: TARL

FormNbr: R      FormatType: FEAD      VersionNbr: 05      File Name: h:\Reportdb\edd\Fead\VRad\W06596.Edd, h:\Reportdb\edd\Fead\VRad\57381.Ed

**Lab Sample Id:** M1TDD1FR      **Sdg/Rept Nbr:** W06596      **57381**      **Collection Date:** 08/28/2013 09:37  
**Client Id:** B2PW89      **Matrix:** WATER      **QC Type:** DUP      **Sample On Date:**  
**Moisture/Solids%\*:**      **Received Date:** 08/28/2013

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Concl/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCLUCL	RTyp
3261057	ALPHA	2.54E-01	pCi/L	1.5E+00	U	2.75E+00	100.0		9310_ALPHA	9.24E-02	10/15/2013	136.4	1.		D
DUP	12587-46-1	1.34E+00		1.5E+00						L	18:35	20.0	3		H

TestAmerica Inc  
 rptFeadRadEdd v3.68

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U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.  
 J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).  
 B Qual- Analyte was found in the associated laboratory blank above the MDC.

Monday, October 21, 2013

### TestAmerica Inc QC Duplicate Report

Lab Code: TARL

FormNbr: R      FormatType: FEAD      VersionNbr: 05      File Name: h:\Reportdb\edd\Fead\Rad\W06596.Edd, h:\Reportdb\edd\Fead\Rad\57381.Ed

**Lab Sample Id:** M1TDD1GR      **Sdgs/Rept Nbr:** W06596      **Collection Date:** 08/28/2013 09:37  
**Client Id:** B2PW89      **Matrix:** WATER      **Decant:** WATER      **Sample On Date:**  
**Moisture/Solids%\*:**      **QC Type:** DUP      **Received Date:** 08/28/2013

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	Fsuffix	RTyp
113-037	MW6-SBB-A19981								BA	H

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
3261058	BETA	4.43E+03	pCi/L	5.7E+02		2.24E+00	100.0		9310_ALPHAB	1.85E-01	10/15/2013	6.3	0.7		D
DUP	12587-47-2	4.16E+03		2.3E+01						L	11:15	20.0	3		

TestAmerica Inc  
rpfFeadRadEdd v3.68

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.  
 J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).  
 B Qual- Analyte was found in the associated laboratory blank above the MDC.

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Monday, October 21, 2013

### TestAmerica Inc QC Duplicate Report

Lab Code: TARL

FormNbr: R      FormatType: FEAD      VersionNbr: 05      File Name: h:\Reportdb\edd\Fead\Rad\W06596.Edd, h:\Reportdb\edd\Fead\Rad\57381.Ed

**Lab Sample Id:** M1TDD1HR      **Sdg/Rept Nbr:** W06596      **Collection Date:** 08/28/2013 09:37  
**Client Id:** B2PW89      **Matrix:** WATER      **Sample On Date:**  
**Moisture/Solids%\*:**      **QC Type:** DUP      **Received Date:** 08/28/2013

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	F Suffix	R Typ
113-037	MW6-SBB-A19981								BB	H

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Concl/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
3261059	SI-90	1.85E+03	pCi/L	3.2E+02		8.87E-01	73.6		SRISO_SEP_P	1.0132E+00	10/10/2013	2.7	0.2		D
DUP	10098-97-2	1.90E+03		9.5E+00						L	13:02	20.0	3		

TestAmerica Inc  
rpf\feadRadEdd v3.68

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.  
 J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).  
 B Qual - Analyte was found in the associated laboratory blank above the MDC.

Monday, October 21, 2013

### TestAmerica Inc QC Duplicate Report

Lab Code: TARL

FormNbr: R      FormatType: FEAD      VersionNbr: 05      File Name: h:\Reportdb\edd\Feed\Rad\W06596.Edd, h:\Reportdb\edd\Feed\Rad\57381.Ed

**Lab Sample Id:** M1TDD1JR      **Sdrg/Rept Nbr:** W06596      **Collection Date:** 08/28/2013 09:37  
**Client Id:** B2PW89      **Matrix:** WATER      **Sample On Date:**  
**Moisture/Solids%\*:**      **QC Type:** DUP      **Received Date:** 08/28/2013

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	Fsuffix	RTyp
113-037	MW6-SBB-A19981								BC	H

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
3261062	H-3	1.13E+04	pCi/L	5.0E+02		2.90E+02	100.0		906.0_H3_LSC	5.025E-03	09/29/2013 00:42	3.8	1.2		D
DUP	10028-17-8	1.17E+04		3.6E+02						L		20.0	3		

TestAmerica Inc  
rpfFeedRadEdd v3.68

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.  
 J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).  
 B Qual- Analyte was found in the associated laboratory blank above the MDC.

Monday, October 21, 2013

### TestAmerica Inc QC Duplicate Report

Lab Code: TARL

Form Nbr: R    FormatType: FEAD    VersionNbr: 05    File Name: h:\Reportdb\edd\Fead\W06596.Edd, h:\Reportdb\edd\Fead\W06596.Edd, h:\Reportdb\edd\Fead\W06596.Edd

**Lab Sample Id:** M1V2H1CR    **Sdgs/Rept Nbr:** W06596    **Collection Date:** 09/04/2013 08:51  
**Client Id:** B2R0C9    **Matrix:** WATER    **Decant:** WATER    **Sample On Date:**  
**Moisture/Solids%\*:**    **QC Type:** DUP    **Received Date:** 09/05/2013

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RType
S13-009	MW6-SBB-A19981								BD	H

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Concl/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	Type
3261061	TC-99	8.67E+03	pCi/L	4.8E+02		9.13E+00	100.0		TC99_SEP_LS	1.271E-01	10/04/2013 01:50	7.3	1.8		D
DUP	14133-76-7	8.05E+03		5.0E+01						L		20.0	3		

TestAmerica Inc    rptFeadRadEdd v3.68    U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.  
 J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).  
 B Qual - Analyte was found in the associated laboratory blank above the MDC.

Monday, October 21, 2013

### TestAmerica Inc QC Duplicate Report

Lab Code: TARL

FormNbr: R    FormatType: FEAD    VersionNbr: 05    File Name: h:\Reportdb\edd\Fead\VRad\W06596.Edd, h:\Reportdb\edd\Fead\VRad\57381.Ed

**Lab Sample Id:** M1WAD1CR    **Sdg/Rept Nbr:** W06596    **Collection Date:** 09/04/2013 08:51  
**Client Id:** B2PY19    **Matrix:** WATER    **Decant:** WATER    **Sample On Date:**  
**Moisture/Solids%\*:**    **QC Type:** DUP    **Received Date:** 09/05/2013

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	F-Suffix	RType
W13-009	MW6-SBB-A19981								BF	H

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
3261060	I-129	5.07E+00	pCi/L	6.9E-01		2.46E-01	90.5		1129LL_SEP_L	3.8753E+00	10/08/2013	1.7	0.2		D
DUP	15046-84-1	4.99E+00		6.9E-01						L	09:17	20.0	3		

TestAmerica Inc    rptFeadRadEdd v3.68    U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.  
 J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).  
 B Qual- Analyte was found in the associated laboratory blank above the MDC.

Monday, October 21, 2013

### TestAmerica Inc Qc Matrix Spike Report

Lab Code: TARL

FormNbr: R      FormatType: FEAD      VersionNbr: 05      File Name: h:\Report\bbedd\Fead\IVRad\W06596.Edd, h:\Report\bbedd\Fead\IVRad\57381.Ed

**Lab Sample Id:** M1V2J1CW      **Sdrg/Rept Nbr:** W06596      **57381**      **Collection Date:** 09/04/2013 08:51  
**Client Id:** B2R0D0      **Matrix:** WATER      **QC Type:** MS      **Sample On Date:**  
**Moisture/Solids%\*:**      **Received Date:** 09/05/2013

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	Fsuffix	RTyp
S13-009	MW6-SBB-A19981								BE	H

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Concl/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	Typ
3261061	TC-99	3.08E+03	pCi/L	7.8E+02		9.28E+00	100.0	3.60E+03	TC99_SEP_LS	1.253E-01	10/04/2013			60	D
MS	14133-76-7			5.8E+01				85.6		L	03:56			140	

TestAmerica Inc  
rptfFeadRadEdd v3.68

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.  
 J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).  
 B Qual- Analyte was found in the associated laboratory blank above the MDC.





Data Review/Verification Checklist  
RADIOCHEMISTRY, First Level Review

10/16/2013 8:10:36 AM

Lot No., Due Date: J31030413; 10/14/2013  
Client, Site: 384868; A210440HANFORD HANFORD  
QC Batch No., Method Test: 3261057; RALPHA-A Alpha by GPC-Am  
SDG, Matrix: W06596; WATER

1.0 COC

1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?  Yes  No  N/A

2.0 QC Batch

2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?  Yes  No  N/A

2.2 Are the QC appropriate for the analysis included in the batch?  Yes  No  N/A

2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?  Yes  No  N/A

2.4 Does the Worksheets include a Tracer Vial label for each sample?  Yes  No  N/A

3.0 QC & Samples

3.1 Is the blank results, yield, and MDA within contract limits?  Yes  No  N/A

3.2 Is the LCS result, yield, and MDA within contract limits?  Yes  No  N/A

3.3 Are the MS/MSD results, yields, and MDA within contract limits?  Yes  No  N/A

3.4 Are the duplicate result, yields, and MDAs within contract limits?  Yes  No  N/A

3.5 Are the sample yields and MDAs within contract limits?  Yes  No  N/A

4.0 Raw Data

4.1 Were results calculated in the correct units?  Yes  No  N/A

4.2 Were analysis volumes entered correctly?  Yes  No  N/A

4.3 Were Yields entered correctly?  Yes  No  N/A

4.4 Were spectra reviewed/meet contractual requirements?  Yes  No  N/A

4.5 Were raw counts reviewed for anomalies?  Yes  No  N/A

5.0 Other

5.1 Are all nonconformances included and noted?  Yes  No  N/A

5.2 Are all required forms filled out?  Yes  No  N/A

5.3 Was the correct methodology used?  Yes  No  N/A

5.4 Was transcription checked?  Yes  No  N/A

5.5 Were all calculations checked at a minimum frequency?  Yes  No  N/A

5.6 Are worksheet entries complete and correct?  Yes  No  N/A

6.0 Comments on any No response:  Yes  No  N/A

*Thomas ME*  
First Level \_\_\_\_\_ Date 10/16/13



THE LEADER IN ENVIRONMENTAL TESTING

**Data Review Checklist**  
**RADIOCHEMISTRY**  
 Second Level Review

Batch Number: 3261057

Review Item	Yes (✓)	No (✓)	NA (✓)
<b>A. Sample Analysis</b>			
1. Are the sample yields within acceptance criteria?			✓
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
<b>B. QC Samples</b>			
1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery within contract acceptance criteria?	✓		
6. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
7. Do the MS/MSD results and yields meet acceptance criteria?			✓
8. Do the duplicate sample results and yields meet acceptance criteria?	✓		
<b>C. Other</b>			
1. Are all Non-conformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Second Level Review: Sandra Segee Date: 10-18-13

LS-038B, Rev. 10, 9/07



Data Review/Verification Checklist  
RADIOCHEMISTRY, First Level Review

10/16/2013 8:09:04 AM

Lot No., Due Date: J31030413; 10/14/2013  
Client, Site: 384868; A210440HANFORD HANFORD  
QC Batch No., Method Test: 3261058; RBETA-SR Beta by GPC-Sr/Y  
SDG, Matrix: W06596; WATER

1.0 QC

1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions? Yes No N/A

2.0 QC Batch

2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet? Yes No N/A

2.2 Are the QC appropriate for the analysis included in the batch? Yes No N/A

2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc? Yes No N/A

2.4 Does the Worksheets include a Tracer Vial label for each sample? Yes No N/A

3.0 QC & Samples

3.1 Is the blank results, yield, and MDA within contract limits? Yes No N/A

3.2 Is the LCS result, yield, and MDA within contract limits? Yes No N/A

3.3 Are the MS/MSD results, yields, and MDA within contract limits? Yes No N/A

3.4 Are the duplicate result, yields, and MDAs within contract limits? Yes No N/A

3.5 Are the sample yields and MDAs within contract limits? Yes No N/A

4.0 Raw Data

4.1 Were results calculated in the correct units? Yes No N/A

4.2 Were analysis volumes entered correctly? Yes No N/A

4.3 Were Yields entered correctly? Yes No N/A

4.4 Were spectra reviewed/meet contractual requirements? Yes No N/A

4.5 Were raw counts reviewed for anomalies? Yes No N/A

5.0 Other

5.1 Are all nonconformances included and noted? Yes No N/A

5.2 Are all required forms filled out? Yes No N/A

5.3 Was the correct methodology used? Yes No N/A

5.4 Was transcription checked? Yes No N/A

5.5 Were all calculations checked at a minimum frequency? Yes No N/A

5.6 Are worksheet entries complete and correct? Yes No N/A

6.0 Comments on any No response: NCM 10-24932

*Thomas DME*  
First Level \_\_\_\_\_ Date 10/16/13



**Data Review Checklist**  
**RADIOCHEMISTRY**  
 Second Level Review

Batch Number: 3261058

Review Item	Yes (✓)	No (✓)	NA (✓)
<b>A. Sample Analysis</b>			
1. Are the sample yields within acceptance criteria?			✓
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
<b>B. QC Samples</b>			
1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?		✓	
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?		✓	
5. Is the LCS recovery within contract acceptance criteria?	✓		
6. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
7. Do the MS/MSD results and yields meet acceptance criteria?			✓
8. Do the duplicate sample results and yields meet acceptance criteria?	✓		
<b>C. Other</b>			
1. Are all Non-conformances included and noted?	✓		
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: See Ncm 10-24932

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Second Level Review: *Sandra Seger* Date: 10-18-13

LS-038B, Rev. 10, 9/07

**Clouseau  
Nonconformance Memo**



NCM #: <b>10-24932</b> NCM Initiated By: Tom McGinnis Date Opened: 10/16/2013 Date Closed:	Classification: <b>Deficiency</b> Status: <b>PMREVIEW</b> Production Area: Environmental - Sep Tests: Beta by GPC-Sr/Y Lot #'s (Sample #'s): J31030413 (1), J31180000 (58), QC Batches: 3261058,
Nonconformance: Batch Result Out of Limits Subcategory: Blank activity exceeds RDL	

**Problem Description / Root Cause**

<u>Name</u>	<u>Date</u>	<u>Description</u>
Tom McGinnis	10/16/2013	The blank activity is greater than the CRDL. Sample activities are greater than 5 times the CRDL. Blank activity is acceptable.

**Corrective Action**

<u>Name</u>	<u>Date</u>	<u>Corrective Action</u>
Tom McGinnis	10/16/2013	The PM was notified of the batch deficiency.

**Client Notification Summary**

<u>Client</u>	<u>Project Manager</u>	<u>Notified</u>	<u>Response</u>	<u>How Notified</u>	<u>Note</u>
			<u>Response</u>		<u>Response Note</u>

**Quality Assurance Verification**

<u>Verified By</u>	<u>Due Date</u>	<u>Status</u>	<u>Notes</u>
			This section not yet completed by QA.

**Approval History**

<u>Date Approved</u>	<u>Approved By</u>	<u>Position</u>
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Data Review/Verification Checklist  
RADIOCHEMISTRY, First Level Review

10/14/2013 8:30:40 AM

Lot No., Due Date: J31030413; 10/14/2013  
Client, Site: 384868; A210440HANFORD HANFORD  
QC Batch No., Method Test: 3261059; RSR85907 Sr-85/90 by GPC-7  
SDG, Matrix: W06596; WATER

1.0 COC

1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions? Yes No N/A

2.0 QC Batch

2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet? Yes No N/A

2.2 Are the QC appropriate for the analysis included in the batch? Yes No N/A

2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc? Yes No N/A

2.4 Does the Worksheets include a Tracer Vial label for each sample? Yes No N/A

3.0 QC & Samples

3.1 Is the blank results, yield, and MDA within contract limits? Yes No N/A

3.2 Is the LCS result, yield, and MDA within contract limits? Yes No N/A

3.3 Are the MS/MSD results, yields, and MDA within contract limits? Yes No N/A

3.4 Are the duplicate result, yields, and MDAs within contract limits? Yes No N/A

3.5 Are the sample yields and MDAs within contract limits? Yes No N/A

4.0 Raw Data

4.1 Were results calculated in the correct units? Yes No N/A

4.2 Were analysis volumes entered correctly? Yes No N/A

4.3 Were Yields entered correctly? Yes No N/A

4.4 Were spectra reviewed/meet contractual requirements? Yes No N/A

4.5 Were raw counts reviewed for anomalies? Yes No N/A

5.0 Other

5.1 Are all nonconformances included and noted? Yes No N/A

5.2 Are all required forms filled out? Yes No N/A

5.3 Was the correct methodology used? Yes No N/A

5.4 Was transcription checked? Yes No N/A

5.5 Were all calculations checked at a minimum frequency? Yes No N/A

5.6 Are worksheet entries complete and correct? Yes No N/A

6.0 Comments on any No response:

First Level

*[Signature]* Date 10/14/13



**Data Review Checklist**  
**RADIOCHEMISTRY**  
 Second Level Review

Batch Number: 3261059

Review Item	Yes (✓)	No (✓)	NA (✓)
<b>A. Sample Analysis</b>			
1. Are the sample yields within acceptance criteria?	✓		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
<b>B. QC Samples</b>			
1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery within contract acceptance criteria?	✓		
6. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
7. Do the MS/MSD results and yields meet acceptance criteria?			✓
8. Do the duplicate sample results and yields meet acceptance criteria?	✓		
<b>C. Other</b>			
1. Are all Non-conformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Second Level Review: *Sandra Segger* Date: 10-15-13

LS-038B, Rev. 10, 9/07



Data Review/Verification Checklist  
RADIOCHEMISTRY, First Level Review

10/10/2013 3:10:31 PM

Lot No., Due Date: J31090411, J31110431, J31110432; 10/14/2013  
Client, Site: 384868; A210440 HANFORD HANFORD  
QC Batch No., Method Test: 3261060; RGAMLEPS Gamma by LEPS  
SDG, Matrix: W06596; WATER

1.0 COC

1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions? Yes No N/A

2.0 QC Batch

2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet? Yes No N/A

2.2 Are the QC appropriate for the analysis included in the batch? Yes No N/A

2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc? Yes No N/A

2.4 Does the Worksheets include a Tracer Vial label for each sample? Yes No N/A

3.0 QC & Samples

3.1 Is the blank results, yield, and MDA within contract limits? Yes No N/A

3.2 Is the LCS result, yield, and MDA within contract limits? Yes No N/A

3.3 Are the MS/MSD results, yields, and MDA within contract limits? Yes No N/A

3.4 Are the duplicate result, yields, and MDAs within contract limits? Yes No N/A

3.5 Are the sample yields and MDAs within contract limits? Yes No N/A

4.0 Raw Data

4.1 Were results calculated in the correct units? Yes No N/A

4.2 Were analysis volumes entered correctly? Yes No N/A

4.3 Were Yields entered correctly? Yes No N/A

4.4 Were spectra reviewed/meet contractual requirements? Yes No N/A

4.5 Were raw counts reviewed for anomalies? Yes No N/A

5.0 Other

5.1 Are all nonconformances included and noted? Yes No N/A

5.2 Are all required forms filled out? Yes No N/A

5.3 Was the correct methodology used? Yes No N/A

5.4 Was transcription checked? Yes No N/A

5.5 Were all calculations checked at a minimum frequency? Yes No N/A

5.6 Are worksheet entries complete and correct? Yes No N/A

6.0 Comments on any No response:

First Level

*Lisa Antonsen* Date 10/10/13

TestAmerica Richland  
QAS\_RADCALCv4.8.44



**Data Review Checklist**  
**RADIOCHEMISTRY**  
Second Level Review

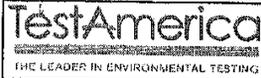
Batch Number: 3261060

Review Item	Yes (✓)	No (✓)	NA (✓)
<b>A. Sample Analysis</b>			
1. Are the sample yields within acceptance criteria?	✓		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
<b>B. QC Samples</b>			
1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery within contract acceptance criteria?	✓		
6. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
7. Do the MS/MSD results and yields meet acceptance criteria?			✓
8. Do the duplicate sample results and yields meet acceptance criteria?	✓		
<b>C. Other</b>			
1. Are all Non-conformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Second Level Review: *Pandra Seeger* Date: 10-15-13

LS-038B, Rev. 10, 9/07



Data Review/Verification Checklist  
RADIOCHEMISTRY, First Level Review

10/21/2013 10:05:48 AM

Lot No., Due Date: J31060459; 10/14/2013  
Client, Site: 384868; A210440HANFORD HANFORD  
QC Batch No., Method Test: 3261061; RTC99 Tc-99 by LSC  
SDG, Matrix: W06596; WATER

1.0 COC

1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions? Yes No N/A

2.0 QC Batch

2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet? Yes No N/A

2.2 Are the QC appropriate for the analysis included in the batch? Yes No N/A

2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc? Yes No N/A

2.4 Does the Worksheets include a Tracer Vial label for each sample? Yes No N/A

3.0 QC & Samples

3.1 Is the blank results, yield, and MDA within contract limits? Yes No N/A

3.2 Is the LCS result, yield, and MDA within contract limits? Yes No N/A

3.3 Are the MS/MSD results, yields, and MDA within contract limits? Yes No N/A

3.4 Are the duplicate result, yields, and MDAs within contract limits? Yes No N/A

3.5 Are the sample yields and MDAs within contract limits? Yes No N/A

4.0 Raw Data

4.1 Were results calculated in the correct units? Yes No N/A

4.2 Were analysis volumes entered correctly? Yes No N/A

4.3 Were Yields entered correctly? Yes No N/A

4.4 Were spectra reviewed/meet contractual requirements? Yes No N/A

4.5 Were raw counts reviewed for anomalies? Yes No N/A

5.0 Other

5.1 Are all nonconformances included and noted? Yes No N/A

5.2 Are all required forms filled out? Yes No N/A

5.3 Was the correct methodology used? Yes No N/A

5.4 Was transcription checked? Yes No N/A

5.5 Were all calculations checked at a minimum frequency? Yes No N/A

5.6 Are worksheet entries complete and correct? Yes No N/A

6.0 Comments on any No response:

First Level *Lisa Anderson* Date *10/21/13*



THE LEADER IN ENVIRONMENTAL TESTING

**Data Review Checklist**  
**RADIOCHEMISTRY**  
 Second Level Review

Batch Number: 3261061

Review Item	Yes (✓)	No (✓)	NA (✓)
<b>A. Sample Analysis</b>			
1. Are the sample yields within acceptance criteria?			✓
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?			
3. Are the correct isotopes reported?	✓		
<b>B. QC Samples</b>			
1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery within contract acceptance criteria?	✓		
6. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
7. Do the MS/MSD results and yields meet acceptance criteria?	✓		
8. Do the duplicate sample results and yields meet acceptance criteria?	✓		
<b>C. Other</b>			
1. Are all Non-conformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Second Level Review: *Sandra Lopez* Date: 10-21-13

LS-038B, Rev. 10, 9/07



Data Review/Verification Checklist  
RADIOCHEMISTRY, First Level Review

10/2/2013 7:51:06 AM

Lot No., Due Date: J31030413; 10/14/2013  
Client, Site: 384868; A210440HANFORD HANFORD  
QC Batch No., Method Test: 3261062; RTRITIUM H-3 by LSC  
SDG, Matrix: W06596; WATER

1.0 COC

1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?  Yes  No  N/A

2.0 QC Batch

2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?  Yes  No  N/A

2.2 Are the QC appropriate for the analysis included in the batch?  Yes  No  N/A

2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?  Yes  No  N/A

2.4 Does the Worksheets include a Tracer Vial label for each sample?  Yes  No  N/A

3.0 QC & Samples

3.1 Is the blank results, yield, and MDA within contract limits?  Yes  No  N/A

3.2 Is the LCS result, yield, and MDA within contract limits?  Yes  No  N/A

3.3 Are the MS/MSD results, yields, and MDA within contract limits?  Yes  No  N/A

3.4 Are the duplicate result, yields, and MDAs within contract limits?  Yes  No  N/A

3.5 Are the sample yields and MDAs within contract limits?  Yes  No  N/A

4.0 Raw Data

4.1 Were results calculated in the correct units?  Yes  No  N/A

4.2 Were analysis volumes entered correctly?  Yes  No  N/A

4.3 Were Yields entered correctly?  Yes  No  N/A

4.4 Were spectra reviewed/meet contractual requirements?  Yes  No  N/A

4.5 Were raw counts reviewed for anomalies?  Yes  No  N/A

5.0 Other

5.1 Are all nonconformances included and noted?  Yes  No  N/A

5.2 Are all required forms filled out?  Yes  No  N/A

5.3 Was the correct methodology used?  Yes  No  N/A

5.4 Was transcription checked?  Yes  No  N/A

5.5 Were all calculations checked at a minimum frequency?  Yes  No  N/A

5.6 Are worksheet entries complete and correct?  Yes  No  N/A

6.0 Comments on any No response:  Yes  No  N/A

*Thomas AM*

First Level Date 10/2/13



THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist  
RADIOCHEMISTRY  
Second Level Review

Batch Number: 3261062

Review Item	Yes (✓)	No (✓)	NA (✓)
<b>A. Sample Analysis</b>			
1. Are the sample yields within acceptance criteria?			✓
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?			
3. Are the correct isotopes reported?	✓		
<b>B. QC Samples</b>			
1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			
5. Is the LCS recovery within contract acceptance criteria?	✓		✓
6. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
7. Do the MS/MSD results and yields meet acceptance criteria?			✓
8. Do the duplicate sample results and yields meet acceptance criteria?	✓		
<b>C. Other</b>			
1. Are all Non-conformances included and noted?			✓
2. Are all required forms filled out?			
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Second Level Review: Sandra Seger Date: 10-8-13

LS-038B, Rev. 10, 9/07



**Richland Laboratory  
Data Review Check List  
Hexavalent Chromium**

Batch Number(s):	3248061	Lab Sample Numbers or SDG:	W06596		
Method/Test/Parameter: Cr+6 <input checked="" type="checkbox"/> RL-WC-003(Aqueous) <input type="checkbox"/> RL-WC-004(Solid)					
Review Item	Yes (✓)	No (✓)	N/A (✓)	2 <sup>nd</sup> Level Review (✓)	
<b>A. Initial Calibration</b>					
1. Performed at required frequency with required number of levels?	✓			✓	
2. Correlation coefficient greater than 0.97?	✓			✓	
3. Initial calibration verification (ICV) analyzed immediately after calibration and results within 10% of expected?	✓			✓	
4. Initial calibration blank (ICB) analyzed immediately after ICV and concentrations of all parameters ≤ reporting limit?	✓			✓	
<b>B. Continuing Calibration</b>					
1. CCV analyzed at required frequency and all parameters within 10% of expected?	✓			✓	
2. CCB analyzed at required frequency and all results ≤ reporting limit?	✓			✓	
<b>C. Sample Analysis</b>					
1. Were any samples with concentrations above the linear range diluted and reanalyzed?			✓	✓	
2. Were all sample holding times met?	✓			✓	
<b>D. QC Samples</b>					
1. All results for the preparation blank below limits?	✓			✓	
2. LCS percent recovery within 85-115%	✓			✓	
3. PbCrO <sub>4</sub> percent recovery within 75-125%?			✓	✓	
4. Sample and Duplicate within 20% (aqueous) or 35% (solid) RPD?			✓	✓	
5. MS or MS/MSD recoveries within 85-115% (aqueous) or 75-125% (solid)?	✓			✓	
6. On MS failure, PDMS within 85-115%?			✓	✓	
<b>E. Other</b>					
1. Are all nonconformances included and noted?			✓	✓	
2. Is the correct date and time of analysis shown?	✓			✓	
3. Did the analyst sign and date the front page of the analytical run?	✓			✓	
4. Correct methodology used?	✓			✓	
5. Transcriptions checked?	✓			✓	
6. Calculations checked at minimum frequency?	✓			✓	
7. Units checked?	✓			✓	

Comments on any "No" response or list NCM number:  
10-24543

Analyst H. Rahari Date 9/5/13 2<sup>nd</sup> Review [Signature] Date 9/5/13

<b>CH2MHHI Plateau Remediation Company</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>		C.O.C. # <b>113-037-042</b>
Collector Frank Hill	Contact/Requester Karen Waters-Husted	Telephone No. 509-376-4650	Page 1 of 1	
SAF No. 113-037	Sampling Origin Hanford Site	Purchase Order/Charge Code 30007IES20		
Project Title 100NR2, SEPTEMBER 2013	Logbook No. HNF-N-5065 / 48	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 CERCLA	Priority: 30 Days	Offsite Property No. N/A		
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> *** 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)				
<b>SPECIAL INSTRUCTIONS</b> 100 Area Generator Knowledge Information Form applies. The CACN for all analytical work at WSCP is 401647. FY12 and FY13 samples cannot be in the same SDG.			Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Sample No. B2PW89	Filter N	* W	Date AUG 28 2013 09:37	Time 09:37
Sample No. B2PW89	No/Type Container 1x1-L P	Sample Analysis 906.0_TRITIUM_LSC: COMMON	Holding Time 6 Months	Preservative None
Sample No. B2PW89	No/Type Container 1x1-L P	Sample Analysis 9310_ALPHABETA_GPC: COMMON	Holding Time 6 Months	Preservative HNO3 to pH <2
Sample No. B2PW89	No/Type Container 1x20-mL P	Sample Analysis Activity Scan	Holding Time 6 Months	Preservative None
Sample No. B2PW89	No/Type Container 3x1-L GIP	Sample Analysis SRISO_SEP_PRECIP_GPC: COMMON	Holding Time 6 Months	Preservative HNO3 to pH <2

335030413  
 W065916



Relinquished By Frank Hill	Date/Time AUG 28 2013	Received By L.D. WALL	Date/Time AUG 28 2013	Sign [Signature]	Date/Time AUG 28 2013	Matrix * S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
Relinquished By L.D. WALL	Date/Time 8/28/13 12:25	Received By [Signature]	Date/Time 8/28/13 12:25	Sign [Signature]	Date/Time 8/28/13 12:25	DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
Relinquished By [Signature]	Date/Time 8/28/13 09:37	Received By [Signature]	Date/Time 8/28/13 09:37	Sign [Signature]	Date/Time 8/28/13 09:37	
Relinquished By [Signature]	Date/Time 8/28/13 09:37	Received By [Signature]	Date/Time 8/28/13 09:37	Sign [Signature]	Date/Time 8/28/13 09:37	
Disposal Method (e.g., Return to customer, per lab procedure, used in process)						Disposed By
<b>FINAL SAMPLE DISPOSITION</b>						Date/Time

A-6004-842 (REV 2)

PRINTED ON 7/29/2013

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Sample Check-in List

Date/Time Received: 8-28-13 / 12:25 Container GM Screen Result: (Airlock) 20 cpm Initials [B] ]  
Sample GM Screen Result (Sample Receiving) 20 cpm Initials [B] ]

Client: Plw SDG #: W06596 SAF #: I13-037 NA [B] ]

Lot Number: JSI030413

Chain of Custody # I13-037-040

Shipping Container ID or Air Bill Number: hand de cur 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: \_\_\_\_\_ °C NA [B] ]
- 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: 1x vial 20; 5x LP

- 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 go to pH area & document sample ID, initial pH, amount of HNO<sub>3</sub> added and pH after addition on table)

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

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

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

16. Additional Information: W/A

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

Sample Check-in List completed by Sample Custodian:  
Signature: [Signature] Date: 8-28-13

Client Notification needed? Yes [ ] No [B] ] Date: \_\_\_\_\_  
By: \_\_\_\_\_  
Person contacted: \_\_\_\_\_

No action necessary, process as is  
Project Manager: [Signature] Date: 9/3/13

CH2M Hill Plateau Remediation Company		C.O.C. # <b>113-036-002</b>	
Page 1 of 1			
Collector <b>L.D. Wall CH2M</b>	Contact/Requester Karen Waters-Husted	Telephone No. 509-376-4650	
SAF No. 113-036	Sampling Origin Hanford Site	Purchase Order/Charge Code 30007IES20	
Project Title 100KR4, SEPTEMBER 2013	Logbook No. HNF-N-506 <i>36 / 90</i>	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 CERCLA	Priority: 30 Days	Offsite Property No. N/A	
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> ** 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)			
<b>SPECIAL INSTRUCTIONS</b> 100 Area Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647. FY12 and FY13 samples cannot be in the same SDG.		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Sample No.	Filter	* Date	Time
B2PW63	N	W 9-5-13	0921
B2PW63	N	W 9-5-13	0921
Sample Analysis		Holding Time	Preservative
7196_CR6: COMMON		24 Hours	Cool-4C
Activity Scan		6 Months	None

531050422  
 W06596  
  
 J31050422

Relinquished By <b>L.D. Wall CH2M</b>	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time SEP 05 2013	Received By <b>KA SHERRO</b>	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time SEP 05 2013
Relinquished By <b>KA SHERRO</b>	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time SEP 05 2013	Received By <b>J. Brock</b>	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Date/Time 9-5-13 1205
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time

S	=	Soil	DS	=	Drum Solids
SE	=	Sediment	DL	=	Drum Liquids
SO	=	Solid	T	=	Tissue
SL	=	Sludge	WI	=	Wipe
W	=	Water	L	=	Liquid
O	=	OH	V	=	Vegetation
A	=	Air	X	=	Other

Disposed By  
 Disposal Method (e.g., Return to customer, per lab procedure, used in process)  
 Date/Time  
 A-6004-842 (REV 2)



THE LEADER IN ENVIRONMENTAL TESTING

Sample Check-in List

Date/Time Received: 9-5-13/1205 Container GM Screen Result: (Airlock) 40 cpm Initials [B]
Sample GM Screen Result (Sample Receiving) 40 cpm Initials [B]

Client: Pbw SDG #: W00596 SAF #: I13-036 NA [ ]

Lot Number: S3I050422

Chain of Custody # I13-036-002

Shipping Container ID or Air Bill Number: Hand deliv. NA [SKS]

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: 20.4c not on ice 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: 1x vial 20, 1x 500 mL AG

- 8. Sample holding times exceeded? NA [ ] Yes [ ] No [B]
9. Samples have: tape hazard labels SKS 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 [SKS] No [ ] NA [SKS] SKS 9-5-13
(If acidification is necessary go to pH area & document sample ID, initial pH, amount of HNO3 added and pH after addition on table)

- 13. Were any anomalies identified in sample receipt? Yes [ ] No [B]
14. Description of anomalies (include sample numbers): NA [B]

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

16. Additional Information: W/A B 9-5-13 Sample was not on ice and warm - 20.4c

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

Sample Check-in List completed by Sample Custodian:
Signature: [Signature] Date: 9-5-13

Client Notification needed? Yes [ ] No [B] Date:
By:
Person contacted:

[B] No action necessary; process as is
Project Manager: [Signature] Date: 9/5/13

CH2MHHI Plateau Remediation Company		C.O.C.# S13-009-118	
Page 1 of 1			
Collector	LD. Wall CHPRC	Contact/Requester	Karen Waters-Husted
SAF No.	S13-009	Sampling Origin	Hanford Site
Project Title	SURV, SEPTEMBER 2013	Logbook No.	HNF-N-506 36/87
Shipped To (Lab)	TestAmerica Incorporated, Richland	Method of Shipment	GOVERNMENT VEHICLE
Protocol	SURV	Priority:	30 Days PRIORITY
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> ** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1995)		<b>SPECIAL INSTRUCTIONS</b> Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Site-Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647.	
Sample No.	Filter *	Date	Time
B2R0C9	N	W 9-4-13	0851
B2R0C9	N	W 9-4-13	0851
	No/Type Container	Sample Analysis	Holding Time
	1x20-mL P	Activity Scan	6 Months
	3x1-L GIP	TC99_SEP_LSC: COMMON	6 Months
			Preservative
			None
			HCl to pH <2



J31060459  
W06596

Relinquished By	LD. Wall CHPRC	Print	Sign	Date/Time	1500	Matrix *	DS = Drum Solids
Relinquished By	SSU #1	Received By	Roy A Shepard	SEP 04 2013	1500	DL = Drum Liquids	SE = Sediment
Relinquished By	Roy A Shepard	Received By	Roy A Shepard	SEP 05 2013 0730	1500	SO = Solid	SL = Sludge
Relinquished By	Roy A Shepard	Received By	J. Beck	SEP 05 2013 1205	1500	W = Water	WI = Wipe
Relinquished By	Roy A Shepard	Received By	J. Beck	SEP 05 2013 1205	1500	L = Liquid	V = Vegetation
Relinquished By	Roy A Shepard	Received By	J. Beck	SEP 05 2013 1205	1500	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 8/13/2013		A-6004-842 (REV 2)					

<b>CH2M Hill Plateau Remediation Company</b> L.D. Wall CHRC		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>		C.O.C. # <b>S13-009-119</b> Page 1 of 1				
Collector	Contact/Requester	Karen Waters-Husted		Telephone No.	509-376-4650			
SAF No.	S13-009	Sampling Origin	Hanford Site		Purchase Order/Charge Code	30007IES20		
Project Title	SURV, SEPTEMBER 2013		Logbook No.	HNF-N-506 36/87	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		Offsite Property No.	N/A	
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> ** 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)			<b>SPECIAL INSTRUCTIONS</b> Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> 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
B2R0D0	N	W	9-4-13	0851	1x20-mL P	Activity Scan	6 Months	None
B2R0D0	N	W	9-4-13	0851	3x1-L G/P	TC99_SEP_LSC: COMMON	6 Months	HCl to pH <2

S31060459  
W06594

Relinquished By	LD. Wall CHRC	Date/Time	1500 SEP 04 2013	Received By	554 #1	Print	Sign	Date/Time	1500 SEP 04 2013	Matrix *
Relinquished By	554 #1	Date/Time	0730 SEP 05 2013	Received By	Roy A Shepard			Date/Time	0730 SEP 05 2013	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	Roy A Shepard	Date/Time	1205 SEP 05 2013	Received By	J. Beck	Book	Tape	Date/Time	1205 SEP 05 2013	
Relinquished By		Date/Time		Received By				Date/Time		
<b>FINAL SAMPLE DISPOSITION</b>		Disposal Method (e.g., Return to customer, per lab procedure, used in process)			Disposed By		Date/Time			

A-6004-842 (REV 2)

PRINTED ON 8/13/2013

CH2M Hill Plateau Remediation Company		C.O.C.# S13-009-120	
Collector L.D. Wall CHPRC		Page 1 of 1	
SAF No. S13-009	Contact/Requester Karen Waters-Husted	Telephone No. 509-376-4650	
Project Title SURV, SEPTEMBER 2013	Sampling Origin Hanford Site	Purchase Order/Charge Code 300071ES20	
Shipped To (Lab) TestAmerica Incorporated, Richland	Logbook No. HNF-N-506 36/87	Ice Chest No. N/A	
Protocol SURV	Method of Shipment GOVERNMENT VEHICLE	Bill of Lading/Air Bill No. N/A	
Priority: 30 Days		Offsite Property No. N/A	
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> *** 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)		<b>SPECIAL INSTRUCTIONS</b> Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Site-Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647.	
Sample No.	Filter *	Date	Time
B2R0D6	N	9-24-13	1145
B2R0D6	N	9-24-13	1145
No/Type Container		Sample Analysis	
1x20-mL P		Activity Scan	
3x1-L G/P		TC99_SEP_LSC: COMMON	
Holding Time		Preservative	
6 Months		None	
6 Months		HCl to pH <2	

J5100459  
 W066594

Relinquished By L.D. Wall CHPRC	Print Sign	SEP 04 2013 1500	Received By 554 #1	Print Sign	SEP 04 2013 1500	Date/Time	SEP 04 2013 1500	Matrix *
Relinquished By Roy A Sheppard	Print Sign	SEP 05 2013 1205	Received By Roy A Sheppard	Print Sign	SEP 05 2013 1205	Date/Time	SEP 05 2013 1205	Matrix *
Relinquished By Roy A Sheppard	Print Sign	SEP 05 2013 1205	Received By Roy A Sheppard	Print Sign	SEP 05 2013 1205	Date/Time	SEP 05 2013 1205	Matrix *
Relinquished By	Print Sign	SEP 05 2013 1205	Received By	Print Sign	SEP 05 2013 1205	Date/Time	SEP 05 2013 1205	Matrix *
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Disposed By		Date/Time		
PRINTED ON 8/13/2013		A-6004-842 (REV 2)						

CH2M Hill Plateau Remediation Company		C.O.C.# S13-009-124	
Collector	LD. Wall CHPRC	Contact/Requester	Karen Waters-Husted
SAF No.	S13-009	Telephone No.	509-376-4650
Project Title	SURV, SEPTEMBER 2013	Purchase Order/Charge Code	30007IES20
Shipped To (Lab)	TestAmerica Incorporated, Richland	Ice Chest No.	N/A
Protocol	SURV	Bill of Lading/Air Bill No.	N/A
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> *** 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)		Offsite Property No.	N/A
SPECIAL INSTRUCTIONS Hold Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Site-Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647.		Priority:	30 Days
Sample No.	Filter	No/Type Container	Sample Analysis
B2R0J6	N W	1x20-mL P	Activity Scan
B2R0J6	N W	3x1-L GIP	TC99_SEP_L-SC: COMMON
		Holding Time	Preservative
		6 Months	None
		6 Months	HCl to pH <2

S330001SA  
W066594

Relinquished By	LD. Wall CHPRC	Date/Time	1500 SEP 04 2013	Received By	SS47#1	Date/Time	1500 SEP 04 2013	Sign		Print		Matrix *
Relinquished By	SS47#1	Date/Time	0730 SEP 05 2013	Received By	Roy A Shepard	Date/Time	0730 SEP 05 2013	Sign	[Signature]	Print		Matrix *
Relinquished By	Roy A Shepard	Date/Time	1205 SEP 05 2013	Received By	S. Bouc	Date/Time	1205 SEP 05 2013	Sign	[Signature]	Print		Matrix *
Relinquished By		Date/Time		Received By		Date/Time		Sign		Print		Matrix *
<b>FINAL SAMPLE DISPOSITION</b> Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Disposed By		Date/Time								
PRINTED ON 8/13/2013		A-6004-842 (REV 2)										

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Sample Check-in List

Date/Time Received: 9-5-13/1205 Container GM Screen Result: (Airlock) 20 cpm Initials [B]
Sample GM Screen Result (Sample Receiving) 40 cpm Initials [B]

Client: Plw SDG #: W06594 SAF #: S13-009 NA [ ]

Lot Number: J3I060459

Chain of Custody # S13-009-118, 119, 120, 124

Shipping Container ID or Air Bill Number: Hand de Qu NA [SIS]

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: °C NA [B]
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): 4
7. Containers received: 4 x 20ml vial, 12 x LP

- 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 [ ]
13. Were any anomalies identified in sample receipt? Yes [ ] No [B]
14. Description of anomalies (include sample numbers): NA [B]

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

16. Additional Information: N/A

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

Sample Check-in List completed by Sample Custodian:
Signature: Jan a Brock Date: 9-5-13

Client Notification needed? Yes [ ] No [B] Date:
By:
Person contacted:

[SIS] No action necessary; process as is
Project Manager: Sandra Sager Date: 9-9-13

CH2M Hill Plateau Remediation Company		C.O.C.# <b>W13-009-035</b>					
Collector <b>L.D. Wall CHPRC</b>		Contact/Requester <b>Karen Waters-Husted</b>	Telephone No. <b>509-376-4650</b>				
SAF No. <b>W13-009</b>		Sampling Origin <b>Hanford Site</b>	Purchase Order/Charge Code <b>300071ES20</b>				
Project Title <b>RCRA, SEPTEMBER 2013</b>		Logbook No. <b>HNF-N-506 36 / 87</b>	Ice Chest No. <b>N/A</b>				
Shipped To (Lab) <b>TestAmerica Incorporated, Richland</b>		Method of Shipment <b>GOVERNMENT VEHICLE</b>	Bill of Lading/Air Bill No. <b>N/A</b>				
Protocol <b>RCRA</b>		Priority: <b>30 Days</b>	Offsite Property No. <b>N/A</b>				
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> *** 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)		<b>SPECIAL INSTRUCTIONS</b> Hold Time    Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> 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
B2PY19	N	W 9-4-13	0851	1x20-mL P	Activity Scan	6 Months	None
B2PY19	N	W 9-4-13	0851	2x4-L G/P	H29LL_SEP_LEPS_GS_LL: COMMON MWDAD	6 Months	None

331010111  
W06516



J31090411

Relinquished By <b>L.D. Wall CHPRC</b>	Date/Time <b>SEP 04 2013 1500</b>	Received By <b>SSU #1</b>	Print <b>SEP 04 2013</b>	Sign <b>[Signature]</b>	Date/Time <b>SEP 04 2013</b>	Matrix *
Relinquished By <b>SSU #1</b>	Date/Time <b>SEP 05 2013</b>	Received By <b>Roy A Shepard</b>	Print <b>SEP 05 2013</b>	Sign <b>[Signature]</b>	Date/Time <b>SEP 05 2013 0730</b>	= Soil    DS = Drum Solids = Sediment    DL = Drum Liquids = Solid    T = Tissue = Sludge    WI = Wipe = Water    L = Liquid = Oil    V = Vegetation = Air    X = Other
Relinquished By <b>Roy A Shepard</b>	Date/Time <b>SEP 05 2013 1205</b>	Received By <b>S. Bork</b>	Print <b>SEP 05 2013</b>	Sign <b>[Signature]</b>	Date/Time <b>SEP 05 2013 1205</b>	
Relinquished By	Date/Time	Received By	Print	Sign	Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Disposed By		Date/Time
PRINTED ON 8/13/2013						

A-6004-842 (REV 2)

CH2MHill Plateau Remediation Company		C.O.C. # W13-009-036	
Collector LD. Wall CH2MHC		Contact/Requester Karen Waters-Husted	Telephone No. 509-376-4650
SAF No. W13-009		Sampling Origin Hanford Site	Purchase Order/Charge Code 30007IES20
Project Title RCRA, SEPTEMBER 2013		Logbook No. HNF-N-506 36 / 82	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 RCRA		Priority: 30 Days	Offsite Property No. N/A
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> ** ** 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 <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Site Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647.			
Sample No.	Filter	* Date	Time
B2PY20	N	W 9-4-13	0851
B2PY20	N	W 9-4-13	0851
No./Type Container		Sample Analysis	Holding Time
1x20-mL P		Activity Scan	6 Months
2x4-L G/P		1129LL_SEP_LEPS_GS_LL: COMMON	6 Months
		MIWAE	None
			None

3310910411  
W06594

Relinquished By LD. Wall CH2MHC	Date/Time SEP 04 2013 1500	Received By SSA #1	Date/Time SEP 04 2013 1500	Matrix * S
Relinquished By SSA #1	Date/Time SEP 05 2013 0730	Received By Roy A Shepard	Date/Time SEP 05 2013 0730	DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
Relinquished By Roy A Shepard	Date/Time SEP 05 2013 1205	Received By J. Boyd	Date/Time SEP 05 2013 1205	Soil Sediment Solid Sludge Water Oil Air
Relinquished By	Date/Time	Received By	Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Date/Time
PRINTED ON 8/13/2013				

A-6004-842 (REV 2)

CH2M Hill Plateau Remediation Company		C.O.C. # <b>W13-009-041</b>	
Collector <b>LD. Wall CH/PRC</b>		Contact/Requester Karen Waters-Husted	Telephone No. 509-376-4650
SAF No. W13-009		Sampling Origin Hanford Site	Purchase Order/Charge Code 300071ES20
Project Title RCRA, SEPTEMBER 2013		Logbook No. HNF-N-306 <b>36 / 87</b>	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 RCRA		Priority: 30 Days	Offsite Property No. N/A
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> *** 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)		<b>SPECIAL INSTRUCTIONS</b> Hold Time Site Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647.	
Sample No.	Filter	* Date	Time
B2PY41	N	W 9-4-13	1038
B2PY41	N	W 9-4-13	1038
No/Type Container		Sample Analysis	
1x20-mL P		Activity Scan	
2x4-L G/P		I129LL_SEP_LEPS_GS_LL: COMMON <b>MMWSAH</b>	
Holding Time		Preservative	
6 Months		None	
6 Months		None	

351090411  
w06594

Relinquished By <b>LD. Wall CH/PRC</b>	Date/Time SEP 04 2013 1500	Received By <b>SSU #1</b>	Print SEP 04 2013 1500	Sign	Matrix *
Relinquished By <b>SSU #1</b>	Date/Time SEP 05 2013 0730	Received By Roy A Shepard	Date/Time SEP 05 2013 0730	Sign	Matrix *
Relinquished By <b>Roy A Shepard</b>	Date/Time SEP 05 2013 1205	Received By <b>S. BOLL</b>	Date/Time SEP 05 2013 1205	Sign	Matrix *
Relinquished By	Date/Time	Received By	Date/Time	Sign	Matrix *
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Date/Time	
PRINTED ON 8/13/2013		A-6004-842 (REV 2)			

<b>CH2MHill Plateau Remediation Company</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>		C.O.C. # <b>W13-009-037</b>				
Collector <b>L.D. Wall CHPRC</b>		Contact/Requester <b>Karen Waters-Husted</b>	Telephone No. <b>509-376-4650</b>	Page 1 of 1				
SAF No. <b>W13-009</b>		Sampling Origin <b>Hanford Site</b>	Purchase Order/Charge Code <b>30007IES20</b>					
Project Title <b>RCRA, SEPTEMBER 2013</b>		Logbook No. <b>HNF-N-506 36 / 37</b>	Ice Chest No. <b>N/A</b>					
Shipped To (Lab) <b>TestAmerica Incorporated, Richland</b>		Method of Shipment <b>GOVERNMENT VEHICLE</b>	Bill of Lading/Air Bill No. <b>N/A</b>					
Protocol <b>RCRA</b>		Priority: <b>30 Days</b>	Offsite Property No. <b>N/A</b>					
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b>		<b>SPECIAL INSTRUCTIONS</b>	<b>Hold Time</b>	Total Activity Exemption: Yes <input 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)		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
B2PY25	N	W	9-4-13	1445	1x20-mL P	Activity Scan	6 Months	None
B2PY25	N	W	9-4-13	1445	2x4-L G/P	1129LL_SEP_LEPS_GS_LL: COMMON	6 Months	None

*Handwritten:* 331010411  
W130594

Relinquished By <b>L.D. Wall CHPRC</b>	Date/Time <b>SEP 04 2013 1500</b>	Received By <i>[Signature]</i>	Date/Time <b>SEP 04 2013 1500</b>	Print <b>SPU #1</b>	Sign <i>[Signature]</i>	Matrix *
Relinquished By <i>[Signature]</i>	Date/Time <b>SEP 05 2013 0730</b>	Received By <b>Roy A Shepard</b>	Date/Time <b>SEP 05 2013 0730</b>			
Relinquished By <b>Roy A Shepard</b>	Date/Time <b>SEP 05 2013 1205</b>	Received By <i>[Signature]</i>	Date/Time <b>SEP 05 2013 1205</b>			
Relinquished By	Date/Time	Received By	Date/Time			

FINAL SAMPLE DISPOSITION: Disposal Method (e.g., Return to customer, per lab procedure, used in process)

CH2M Hill Plateau Remediation Company		C.O.C. # <b>W13-009-043</b>	
Collector <b>LD. Wall CHPRC</b>		Contact/Requester Karen Waters-Husted	Telephone No. 509-376-4650
SAF No. W13-009		Sampling Origin Hanford Site	Purchase Order/Charge Code 30007IES20
Project Title RCRA, SEPTEMBER 2013		Logbook No. HNF-N-506 36 / 87	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 RCRA		Priority: 30 Days	Offsite Property No. N/A
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> ** 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 Site Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647.		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Sample No. B2PY49	Filter N	Date 9-4-13	Time 1336
No./Type Container 2x4-L-GIP	Sample Analysis 1129LL_SEP_LEPS_GS_LL: COMMON MIWAK		Holding Time 6 Months
Preservative None			

331010111  
W06596

Relinquished By <b>LD. Wall CHPRC</b>	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Received By <b>SS4 #1</b>	Print <i>[Signature]</i>	Date/Time 1500 SEP 04 2013	Matrix * S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
Relinquished By <b>SS4 #1</b>	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Received By <b>Roy A Shepard</b>	Print <i>[Signature]</i>	Date/Time 0730 SEP 05 2013	DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
Relinquished By <b>Roy A Shepard</b>	Print <i>[Signature]</i>	Sign <i>[Signature]</i>	Received By <b>J. Beck</b>	Print <i>[Signature]</i>	Date/Time 1205 SEP 05 2013	
Relinquished By	Print	Sign	Received By	Print	Date/Time	
<b>FINAL SAMPLE DISPOSITION</b>		Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Disposed By		Date/Time

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Sample Check-in List

Date/Time Received: 9-5-13 / 1205 Container GM Screen Result: (Airlock) 20 cpm Initials [B] Sample GM Screen Result (Sample Receiving) 40 cpm Initials [B]

Client: Pbw SDG #: W06596 SAF #: W13-009 NA [.]

Lot Number: 332090411

Chain of Custody # W13-009-035; 036; 041; 037; 043

Shipping Container ID or Air Bill Number: Hand de Qu 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: \_\_\_\_\_ °C NA [B]
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): 5
7. Containers received: 5 x vial 20; 10 x 4LP

- 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 [B] 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 go to pH area & document sample ID, initial pH, amount of HNO3 added and pH after addition on table)

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

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

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

16. Additional Information: N/A

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

Sample Check-in List completed by Sample Custodian: Signature: [Signature] Date: 9-5-13

Client Notification needed? Yes [ ] No [B] Date: \_\_\_\_\_ By: \_\_\_\_\_ Person contacted: \_\_\_\_\_

[B] No action necessary; process as is Project Manager: [Signature] Date: 9-9-13

<b>CH2M Hill Plateau Remediation Company</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>		C.O.C.# <b>W13-009-040</b>
Collector <b>L.D. Wall CHPRC</b>	Contact/Requester Karen Waters-Eusted	Telephone No. 509-376-4650	Page 1 of 1	
SAF No. W13-009	Sampling Origin Hanford Site	Purchase Order/Charge Code 300071ES20		
Project Title RCRA, SEPTEMBER 2013	Logbook No. HNF-N-506 36/90	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 RCRA	Priority: 30 Days	Offsite Property No. N/A		
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> *** 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)				
<b>SPECIAL INSTRUCTIONS</b> Hold Time      Total Activity Exemption: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				
Site Waste 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
B2PY34	N	W	9-9-13	1205	1X20-ML P	Activity Scan	6 Months	None
B2PY34	N	W	9-9-13	1205	2x4-L G/P	1129LL_SEP_LEPS_GS_LL: COMMON	6 Months	None



J3I110431

33I110431  
wds696

Relinquished By L.D. Wall CHPRC	Date/Time SEP 05 2013 1530	Received By SSU#1	Date/Time SEP 05 2013 1530	Sign L.D. Wall	Matrix * 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
Relinquished By SSU#1	Date/Time SEP 09 2013 1300	Received By L.D. Wall CHPRC	Date/Time SEP 09 2013 1130	Sign L.D. Wall		
Relinquished By L.D. Wall CHPRC	Date/Time SEP 09 2013 1300	Received By J Soul from TALE	Date/Time SEP 09 2013 1300	Sign J Soul from TALE		
Relinquished By Date/Time				Disposed By Date/Time		
<b>FINAL SAMPLE DISPOSITION</b>				Disposal Method (e.g., Return to customer, per lab procedure, used in process)		

PRINTED ON 8/13/2013      A-6004-842 (REV 2)



Sample Check-in List

Date/Time Received: 9-9-13/1320 Container GM Screen Result: (Airlock) 40 cpm Initials [B]
Sample GM Screen Result (Sample Receiving) 20 cpm Initials [B]

Client: P6W SDG #: W06596 SAF #: W13-009 NA [ ]

Lot Number: J3I110431

Chain of Custody # W13-009-040

Shipping Container ID or 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: °C NA [B]
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, 2 x 4LP

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 go to pH area & document sample ID, initial pH, amount of HNO3 added and pH after addition on table)

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

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

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

16. Additional Information: N/A

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

Sample Check-in List completed by Sample Custodian:
Signature: [Signature] Date: 9-9-13

Client Notification needed? Yes [ ] No [B] Date:
By:
Person contacted:

[B] No action necessary; process as is
Project Manager [Signature] Date 9-11-13

<b>CH2M Hill Plateau Remediation Company</b>		<b>CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST</b>		C.O.C. # <b>S13-009-117</b>	
Collector <b>LD. Wall CHPRC</b>	Contact/Requester <b>Karen Waters-Husted</b>	Telephone No. <b>509-376-4650</b>	Page 1 of 1		
SAF No. <b>S13-009</b>	Sampling Origin <b>Hanford Site</b>	Purchase Order/Charge Code <b>30007IES20</b>			
Project Title <b>SURV, SEPTEMBER 2013</b>	Logbook No. <b>HNF-N-506 36 / 90</b>	Ice Chest No. <b>N/A</b>			
Shipped To (Lab) <b>TestAmerica Incorporated, Richland</b>	Method of Shipment <b>GOVERNMENT VEHICLE</b>	Bill of Lading/Air Bill No. <b>N/A</b>			
Protocol <b>SURV</b>	Priority: <b>30 Days</b>	Offsite Property No. <b>N/A</b>			
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b>		<b>SPECIAL INSTRUCTIONS</b>		<b>Hold Time</b>	
** ** 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)		Site-Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647.		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Sample No.	Filter	Date	Time	No/Type Container	Sample Analysis
B2ROC2	N	9-5-13	1045	1x20-mL P	Activity Scan
B2ROC2	N	9-5-13	1045	2x4-L G/P	1129LL_SEP_LEPS_GS_LL: COMMON

SSI 110432  
W06594



J31110432

Relinquished By <b>LD. Wall CHPRC</b>	Print <b>SSI #1</b>	Sign <i>LD. Wall</i>	Date/Time <b>SEP 05 2013</b>	Received By <b>SSI #1</b>	Sign <i>LD. Wall</i>	Date/Time <b>SEP 05 2013</b>	Print <b>SSI #1</b>	Matrix *
Relinquished By <b>SSI #1</b>	Print <b>SSI #1</b>	Sign <i>LD. Wall</i>	Date/Time <b>SEP 09 2013</b>	Received By <b>LD. Wall CHPRC</b>	Sign <i>LD. Wall</i>	Date/Time <b>SEP 09 2013</b>	Print <b>SSI #1</b>	Matrix *
Relinquished By <b>LD. Wall CHPRC</b>	Print <b>SSI #1</b>	Sign <i>LD. Wall</i>	Date/Time <b>SEP 09 2013</b>	Received By <b>SSI #1</b>	Sign <i>LD. Wall</i>	Date/Time <b>SEP 09 2013</b>	Print <b>SSI #1</b>	Matrix *
Relinquished By	Print	Sign	Date/Time	Received By	Sign	Date/Time	Print	Matrix *

Disposed By

Disposal Method (e.g., Return to customer, per lab procedure, used in process)

Date/Time

CH2M Hill Plateau Remediation Company		C.O.C. # S13-009-123	
Collector: L.D. Wall CHPRC		Contact/Requester: Karen Waters-Husted	Telephone No. 509-376-4650
SAF No. S13-009		Sampling Origin: Hanford Site	Purchase Order/Charge Code 300071ES20
Project Title: SURV, SEPTEMBER 2013		Logbook No. HNF-N-506 36 / 90-91	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	Offsite Property No. N/A
<b>POSSIBLE SAMPLE HAZARDS/REMARKS</b> *** 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 <input checked="" type="checkbox"/> No <input type="checkbox"/>
Site-Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647.			
Sample No.	Filter *	Date	Time
B2R0H9	N	9-9-13	1310
B2R0H9	N	9-5-13	1310
Sample Analysis		Activity Scan	1129LL_SEP_LEPS_GS_LL: COMMON
Holding Time		6 Months	None
Preservative		6 Months	None

SSI 110432  
W06594

Relinquished By: L.D. Wall CHPRC	Date/Time: 1520	Sign: SSW #1	Received By: SSW #1	Date/Time: 1520	Matrix * S = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
Relinquished By: SSW #1	Date/Time: SEP 05 2013	Sign: L.D. Wall	Received By: L.D. Wall CHPRC	Date/Time: SEP 09 2013	DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
Relinquished By: L.D. Wall CHPRC	Date/Time: SEP 09 2013	Sign: L.D. Wall	Received By: L.D. Wall CHPRC	Date/Time: SEP 09 2013	
Relinquished By: SSW #1	Date/Time: SEP 09 2013	Sign: SSW #1	Received By: SSW #1	Date/Time: SEP 09 2013	
FINAL SAMPLE DISPOSITION		Disposal Method (e.g., Return to customer, per lab procedure, used in process)		Date/Time	

A-6004-842 (REV 2)

PRINTED ON 8/13/2013

TestAmerica

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Sample Check-in List

Date/Time Received: 9-9-13 / 1320 Container GM Screen Result: (Airlock) 40 cpm Initials [B]
Sample GM Screen Result (Sample Receiving) 20 cpm Initials [B]

Client: P6W SDG #: W06596 SAF #: S13-009 NA [ ]

Lot Number: 335110432

Chain of Custody # S13-009-117; 123

Shipping Container ID or 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: \_\_\_\_\_ °C NA [B]
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): 2
7. Containers received: 2 x vial 20; 4 x 4LP

- 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 go to pH area & document sample ID, initial pH, amount of HNO3 added and pH after addition on table)

- 13. Were any anomalies identified in sample receipt? Yes [ ] No [B]
14. Description of anomalies (include sample numbers): NA [B] ]

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

16. Additional Information: N/A

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

Sample Check-in List completed by Sample Custodian:
Signature: [Signature] Date: 9-9-13

Client Notification needed? Yes [ ] No [B] Date:
By:
Person contacted:

[B] No action necessary; process as is
Project Manager [Signature] Date 9-11-13



10/15/2013 2:16:30 PM **Sample Preparation/Analysis** Balance Id:1120482733

AZ Gross Alpha Prp GPC001  
S7 Gross Alpha by GPC using Am-241 curve  
5I CLIENT: HANFORD

AnalyDueDate: 10/14/2013  
Batch: 3261057  
SEQ Batch, Test: None

pCi/L

Sep1 DT/Tm Tech: Sep2 DT/Tm Tech: Prep Tech: SannoHS

Work Ord. Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On   Off (24hr) Circle	CR Analyst, Init/Date	Comments:
<b>Comments:</b> M1067-BLK Comments-P-13-00514,P-13-00527," Samples were reduced due to weight screen. S.I.E.S 10/09/13"													
<b>All Clients for Batch:</b>													
384868, CH2M Hill Plateau Remediation Company Pacific Northwest National Lab, SS , 57671													
<b>M1067LAC-SAMP Constituent List:</b>													
ALPHA	RDL:3.00E+00	pCi/L	LCL:	UCL:	RPD:								
M10671AA-BLK:													
ALPHA	RDL:3.00E+00	pCi/L	LCL:	UCL:	RPD:								
M10671AC-LCS:													
Am-241	RDL:	pCi/L	LCL:70	UCL:130	RPD:20								
<b>M10671AC-SAMP Calc Info:</b>													
Uncert Level (#s):	2	Decay to SaDt:	Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B							
M10671AA-BLK:													
Uncert Level (#s):	2	Decay to SaDt:	Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B							
M10671AC-LCS:													
Uncert Level (#s):	2	Decay to SaDt:	Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B							

TestAmerica Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 2  
Richland Wa. pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added

ISV - Insufficient Volume for Analysis  
WO Cnt: 4  
Prep\_SamplePrep v4.8.65

10/16/2013 8:10:00 AM

# ICOC Fraction Transfer/Status Report

ByDate: 10/16/2012, 10/21/2013, Batch: '3261057', User: \*ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting	Comments
<b>3261057</b>				
AC		<b>Rev1C</b>	<b>SannohS</b> 10/9/2013 8:13:11	
SC		mcginnist	IsBatched 9/20/2013 1:15:46 PM	ICOC_RADCALC v4.8.49
SC		SannohS	InPrep 10/9/2013 8:13:11 AM	RL-GPC-001 REVISION 3
SC		HayesA	Sep2C 10/15/2013 2:25:00 PM	RL-GPC-001 REVISION 3
SC		BullJ	InCnt1 10/15/2013 2:34:13 PM	RL-CI-006 REVISION 5
SC		DawkinsO	CalcC 10/16/2013 1:08:37 AM	RL-CI-006 REVISION 5
SC		mcginnist	Rev1C 10/16/2013 8:09:51 AM	RL-DR-001 Rev 4
AC		<b>HayesA</b>	10/15/2013 2:25:00	
AC		<b>BullJ</b>	10/15/2013 2:34:13	
AC		<b>DawkinsO</b>	10/16/2013 1:08:37	
AC		<b>mcginnist</b>	10/16/2013 8:09:51	

AC: Accepting Entry; SC: Status Change

TestAmerica Richland  
Richland Wa.

**10/15/2013 9:10:04 AM** **Sample Preparation/Analysis** **Balance Id: 1120482733**

384868, CH2M Hill Plateau Remediation Company **BC Gross Beta Prp GPC001** **Pipet #:**

, Pacific Northwest National Lab **S8 Gross Beta by GPC using Sr/Y-90 curve** **Sep1 DT/Tm Tech:**

**Analyte Due Date: 10/14/2013** **51 CLIENT: HANFORD** **Sep2 DT/Tm Tech:**

**Batch: 3261058 WATER pCi/L** **PM, Quote: SS, 57671** **Prep Tech: BourneD,SannohS**

SEQ Batch, Test: None All Tests: 3261057 AZS7, 3261058 BCS8, 3261059 CLTL, 3261062 ARS6.

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Allquot Amt/Unit	Adj Allq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On   Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 MITDD-1-AD J31030413-1-SAMP 08/28/2013 09:37	185.00g,in	185.00g	185.00g	185.00g					700	28A	1254	10/15/13/MS	
2 MITDD-1-AG-X J31030413-1-DUP 08/28/2013 09:37	185.00g,in	185.00g	185.00g	185.00g	#Containers: 6				79.6mg	28B		Beta: 7.45E-06 uCi/Sa	
3 MIT068-1-AA-B J31180000-58-BLK 09/18/2013 12:14 pd	200.00g,in	200.00g	200.00g	200.00g	#Containers: 6				0.2mg	28C		Beta: 7.45E-06 uCi/Sa	
4 MIT068-1-AC-C J31180000-58-LCS 09/18/2013 12:14 pd	200.00g,in	200.00g	200.00g	200.00g	#Containers: 1	BESB4237 09/17/13,pd			0.2mg	28D		Beta:	

TestAmerica Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 1  
Richland Wa. pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added

ISV - Insufficient Volume for Analysis **WO Cnt: 4**  
Prep\_SamplePrep v4.8.65

10/15/2013 9:10:05 AM **Sample Preparation/Analysis** Balance Id: 1120482733

BC Gross Beta Prp GPC001 Pipet #:  
 S8 Gross Beta by GPC using Sr/Y-90 curve  
 51 CLIENT: HANFORD Sep1 DT/Tm Tech:  
 Sep2 DT/Tm Tech:  
 Prep Tech: SannoHS

Analyte Due Date: 10/14/2013 pCi/L

Batch: 3261058  
 SEQ Batch, Test: None

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On   Off (24hr) Circle	CR Analyst, Init/Date	Comments:
<b>Comments:</b> M1068-BLK Comments-P-13-00514,P-13-00527,* Samples were reduced due to weight screen. S.E.S 10/09/13*													
<b>All Clients for Batch:</b>													
384868, CH2M Hill Plateau Remediation Company Pacific Northwest National Lab, SS , 57671													
<b>M1068IAD-SAMP Constituent List:</b>													
BETA	RDL:4.00E+00	pCi/L	LCL:	UCL:	RPD:								
M1068IAA-BLK:													
BETA	RDL:4.00E+00	pCi/L	LCL:	UCL:	RPD:								
M1068IAC-LCS:													
Sr-90	RDL:	pCi/L	LCL:70	UCL:130	RPD:20								
<b>M1068IAD-SAMP Calc Info:</b>													
Uncert Level (#s): 2	Decay to Sadt: Y	Blk Subt.: N	Sci. Not.: Y	ODRs: B									
M1068IAA-BLK:													
Uncert Level (#s): 2	Decay to Sadt: Y	Blk Subt.: N	Sci. Not.: Y	ODRs: B									
M1068IAC-LCS:													
Uncert Level (#s): 2	Decay to Sadt: Y	Blk Subt.: N	Sci. Not.: Y	ODRs: B									

TestAmerica Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 2  
 Richland Wa. pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added  
 ISV - Insufficient Volume for Analysis  
 WO Cnt: 4  
 Prep\_SamplePrep v4.8.65

10/15/2013 4:02:14 PM

# ICOC Fraction Transfer/Status Report

ByDate: 10/15/2012, 10/20/2013, Batch: '3261058', User: \*ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting	Comments
<b>3261058</b>				
AC	Rev1C	SannohS	10/9/2013 8:25:44	
SC		mcginnist	IsBatched	9/20/2013 1:15:50 PM
SC		SannohS	InPrep	10/9/2013 8:25:44 AM
SC		HayesA	Sep2C	10/15/2013 9:21:22 AM
SC		BullJ	InCnt1	10/15/2013 9:29:20 AM
SC		BullJ	CalcC	10/15/2013 1:35:02 PM
SC		mcginnist	Rev1C	10/15/2013 4:02:07 PM
AC		HayesA	10/15/2013 9:21:22	ICOC_RADCALC v4.8.49
AC		BullJ	10/15/2013 9:29:20	RL-GPC-001 REVISION 3
AC		BullJ	10/15/2013 1:35:02	RL-GPC-001 REVISION 3
AC		mcginnist	10/15/2013 4:02:07	RL-CI-006 REVISION 5
				RL-CI-006 REVISION 5
				RL-DR-001 Rev 4

AC: Accepting Entry; SC: Status Change

TestAmerica Richland  
Richland Wa.

10/7/2013 1:50:38 PM

**Sample Preparation/Analysis**

Balance Id: 1120403183  
Pipet #:

CL Sr-90 Prp/Sep GPC003(GPC004)  
TL Sr-85 by NaI and Sr-90 by GPC 7 day ingrowth  
5I CLIENT: HANFORD

Sep1 DT/Tm Tech: 09/27/2013 12:23, BourneD  
Sep2 DT/Tm Tech: 10/07/2013 09:54, BourneD

PM, Quote: SS, 57671  
Prep Tech: BourneD, WattN

384868, CH2M Hill Plateau Remediation Company  
Pacific Northwest National Lab

Batch: 3261059 WATER pCi/L  
SEQ Batch, Test: None

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On   Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 MITDD-1-AE	1013.00g, in	1013.00g	1013.00g	1013.00g	src1507	09/18/13	8.8mg	1.8mg	100	31A	1822	10/9/13pd	
J31030413-1-SAMP													
09/27/2013 12:23, st, 10/07/2013													
09/28/2013 09:37	AmfRec: 1XVIAL20;5XLP #Containers: 6												
2 MITDD-1-AH-X	1013.20g, in	1013.20g	1013.20g	1013.20g	src1508	09/18/13	8.9mg	2.5mg		31B	1822	10/9/13pd	Beta: 7.45E-06 uCi/Sa
J31030413-1-DUP	J31D 1351 10/10/13pd												
08/28/2013 09:37	AmfRec: 1XVIAL20;5XLP #Containers: 6												
3 MIT069-1-AA-B	1001.00g, in	1001.00g	1001.00g	1001.00g	src1509	09/18/13	8.7mg	1.8mg		31C	1822	10/9/13pd	Beta: 7.45E-06 uCi/Sa
J31180000-59-BLK	31D 1351 10/10/13pd												
09/18/2013 12:14 pd	AmfRec: #Containers: 1												
4 MIT069-1-AC-C	1006.10g, in	1006.10g	1006.10g	1006.10g	stsf0350	09/18/13	6.8mg	1.9mg		31D	1822	10/9/13pd	Beta:
J31180000-59-LCS	31D 1351 10/10/13pd												
09/18/2013 12:14 pd	AmfRec: #Containers: 1												
Alpha: Beta:													

TestAmerica Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 1  
pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added

Richland Wa. ISV - Insufficient Volume for Analysis

WO Cnt: 4  
Prep\_SamplePrep v4.8.65

10/7/2013 1:50:39 PM

**Sample Preparation/Analysis**  
 Balance Id: 1120403183  
 Pipet #: \_\_\_\_\_  
 Sep1 DT/7m Tech: \_\_\_\_\_  
 Sep2 DT/7m Tech: \_\_\_\_\_  
 Prep Tech: BourneD, WattN

CL Sr-90 Prp/Sep GPC003(GPC004)  
 TL Sr-85 by Nal and Sr-90 by GPC 7 day ingrowth  
 5I CLIENT: HANFORD

Analyte Due Date: 10/14/2013

Batch: 3261059  
 SEQ Batch, Test: None

pCi/L

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On   Off (24hr) Circle	CR Analyst, Init/Date	Comments:
<b>Comments:</b> M1069-BLK Commentsp-13-00441,p-13-00238,S-13-00259,P-13-00529,P-13-00136,P-13-00474												
<b>All Clients for Batch:</b>												
384668, CHEM Hill Plateau Remediation Company Pacific Northwest National Lab, SS , 57671												
<b>M1069IAE-SAMP Constituent List:</b>												
Sr-85	RDL:	pCi/L	LCL:20	UCL:105	RPD:20	Sr-90	RDL:2	pCi/L	LCL:70	UCL:130	RPD:20	
M1069IAA-BLK:												
Sr-85	RDL:	pCi/L	LCL:20	UCL:105	RPD:20	Sr-90	RDL:2	pCi/L	LCL:	UCL:	RPD:	
M1069IAC-LCS:												
Sr-85	RDL:	pCi/L	LCL:20	UCL:105	RPD:20	Sr-90	RDL:2	pCi/L	LCL:70	UCL:130	RPD:20	
<b>M1069IAE-SAMP Calc Info:</b>												
Uncert Level (#s):: 2 Decay to Sadt: Y Blk Subt.: N Sci.Not.: Y ODRs: B												
M1069IAA-BLK: Uncert Level (#s):: 2 Decay to Sadt: Y Blk Subt.: N Sci.Not.: Y ODRs: B												
M1069IAC-LCS: Uncert Level (#s):: 2 Decay to Sadt: Y Blk Subt.: N Sci.Not.: Y ODRs: B												

TestAmerica Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 2  
 Richland Wa. pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added

WO Cnt: 4  
 Prep\_SamplePrep v4.8.66

10/14/2013 8:29:55 AM

# ICOC Fraction Transfer/Status Report

ByDate: 10/14/2012, 10/19/2013, Batch: '3261059', User: \*ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting	Comments
3261059				
AC	Rev1C	WattN	9/23/2013 2:11:32 PM	
SC		mcginnist	IsBatched 9/20/2013 1:15:53 PM	ICOC_RADCALC v4.8.49
SC		WattN	InPrep 9/23/2013 2:11:32 PM	RL-PRP-004 REVISION 2
SC		WattN	Prep1C 9/23/2013 2:15:48 PM	RL-PRP-004 REVISION 2
SC		BourneD	Sep1C 9/27/2013 1:55:13 PM	RL-GPC-010 REVISION 2
SC		BourneD	Prep2C 10/7/2013 1:22:25 PM	RL-GPC-010 REVISION 3
SC		BullJ	InCnt1 10/7/2013 2:22:38 PM	RL-CI-006 REVISION 5
SC		DawkinsO	InRev1 10/10/2013 11:18:39 PM	RL-CI-006 REVISION 5
SC		antonsonl	Rev1C 10/14/2013 8:29:46 AM	RL-DR-001 Rev 4
AC		WattN	9/23/2013 2:15:48 PM	
AC		BourneD	9/27/2013 1:55:13 PM	
AC		BourneD	10/7/2013 1:22:25 PM	
AC		BullJ	10/7/2013 2:22:38 PM	
AC		DawkinsO	10/10/2013 11:18:39	
AC		antonsonl	10/14/2013 8:29:46	

AC: Accepting Entry; SC: Status Change

TestAmerica Richland  
Richland Wa.

10/8/2013 8:41:43 AM		Sample Preparation/Analysis		Balance Id: 1120482733									
384868, CH2M Hill Plateau Remediation Company Pacific Northwest National Lab		BN I-129 Prp/Sep GAM002 TB Gamma by LEPD 5I CLIENT: HANFORD		Pipet #:									
Analyte Due Date: 10/14/2013		PM, Quote: SS, 57671		Sep1 DT/Tm Tech:									
Batch: 3261060 WATER pCi/L		SEQ Batch, Test: None All Tests: 3261060 BNTB,		Sep2 DT/Tm Tech:									
Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Ur-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On   Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 M1WAD-1-AA	3912.50g.in	3912.50g	ITAI13311	08/07/13	34.3mg	200	L4	12:37	Alpha: 2.56E-03 uCi/Sa	Beta: -8.53E-04 uCi/Sa	10-8-13		
J31090411-1-SAMP													
09/04/2013 08:51													
2 M1WAD-1-AC-X	3875.30g.in	3875.30g	ITAI13312	08/07/13	33.5mg	15			Alpha: 2.56E-03 uCi/Sa	Beta: -8.53E-04 uCi/Sa			
J31090411-1-DUP													
09/04/2013 08:51													
3 M1WAE-1-AA	3883.60g.in	3883.60g	ITAI13313	08/07/13	33.5mg	1606	L4	10/8/13	Alpha: 2.56E-03 uCi/Sa	Beta: -8.53E-04 uCi/Sa			
J31090411-2-SAMP													
09/04/2013 08:51													
4 M1WAH-1-AA	3871.80g.in	3871.80g	ITAI13314	08/07/13	32.3mg	15			Alpha: 4.81E-04 uCi/Sa	Beta: 6.83E-04 uCi/Sa			
J31090411-3-SAMP													
09/04/2013 10:38													
5 M1WAL-1-AA	3875.80g.in	3875.80g	ITAI13315	08/07/13	35.1mg	14	2001	10/8/13	Alpha: 3.24E-04 uCi/Sa	Beta: -8.53E-05 uCi/Sa			
J31090411-4-SAMP													
09/04/2013 11:45													
6 M1WAK-1-AA	3592.10g.in	3592.10g	ITAI13316	08/07/13	35.2mg	15	2002		Alpha: 1.08E-03 uCi/Sa	Beta: -2.58E-04 uCi/Sa			
J31090411-5-SAMP													
09/04/2013 13:35													
7 M1WXA-1-AA	3865.60g.in	3865.60g	ITAI13317	08/07/13	34.4mg	14	2334		Alpha: 4.59E-04 uCi/Sa	Beta: -2.56E-04 uCi/Sa			
J31110431-1-SAMP													
09/05/2013 12:05													

TestAmerica Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 1  
 Richland Wa. pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added  
 ISV - Insufficient Volume for Analysis  
 WO Cnt: 7  
 Prep\_SamplePrep v4.8.65

10/8/2013 8:41:43 AM **Sample Preparation/Analysis** Balance Id: 1120482733

384888, CH2M Hill Plateau Remediation Company BN I-129 Prp/Sep GAM002  
 Pacific Northwest National Lab TB Gamma by LEPD  
 5I CLIENT: HANFORD

Analyte: **PM, Quote: SS, 57671** pCi/L

Batch: 3261060 WATER  
 SEQ Batch, Test: None

Sep1 DT/Tm Tech: Sep2 DT/Tm Tech: Prep Tech: SannoHS

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On   Off (24hr) Circle	CR Analyst, Init/Date	Comments:
8 M1WXG-1-AA	3861.80g	3861.80g	ITA13318	08/07/13	34.4mg	200	L5	2335	10/8/13	Alpha: -8.36E-04 uCi/Sa	Beta: 5.97E-04 uCi/Sa		
J31110432-1-SAMP	3855.70g	3855.70g	ITA13319	08/07/13	34.7mg	44	0318			Alpha: -1.59E-04 uCi/Sa	Beta: -4.27E-04 uCi/Sa		
09/05/2013 10:45	3961.40g	3961.40g	ITA13320	08/07/13	35.2mg	15	0318			Alpha: -1.59E-04 uCi/Sa	Beta: -4.27E-04 uCi/Sa		
8 M1WXH-1-AA	3964.50g	3964.50g	ISD1589	07/19/13	34.9mg	15	1040	10/9/13					
J31180000-60-BLK	3964.50g	3964.50g	ISD1589	07/19/13	34.9mg	15	1040	10/9/13					
09/18/2013 12:14 pd													
10 M107A-1-AA-B													
J31180000-60-LCS													
09/18/2013 12:14 pd													

TestAmerica Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 2  
 Richland Wa. pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktail Added

ISV - Insufficient Volume for Analysis  
 WO Crit: 11  
 Prep\_SamplePrep v4.8.65

10/8/2013 8:41:44 AM

**Sample Preparation/Analysis**

Balance Id: 1120482733  
Pipet #:

BN I-129 Prp/Sep GAM002  
TB Gamma by LEPD  
5I CLIENT: HANFORD

Sep1 DT/Tm Tech:  
Sep2 DT/Tm Tech:

Prep Tech: Norton,J,SannoinS

Count On | Off  
(24hr) Circle

Comments:

Work Ord, Lot, Sample Date

Total Amt/Unit

Total Acclified/Unit

Initial Aliquot Amt/Unit

Adj Aliq Amt (Un-Acclified)

QC Tracer Prep Date

Tracer Yield

Dish Size

Ppt or Geometry

Count Time Min

Detector Id

CR Analyst, Init/Date

Batch: 3261060  
SEQ Batch, Test: None

pCi/L

Comments: M107A-BLK \*Comments S-12-00193\*,P-13-00094,P-13-00571,P-13-00289,P-13-00441,S-13-00068,S-13-00358,S-12-00061

All Clients for Batch:  
384868, CH2M Hill Plateau Remediation Company Pacific Northwest National Lab, SS , 57671

M1WAD1AA-SAMP Constituent List:  
I-129 RDL:0.50E+00 pCi/L LCL: UCL: RPD:  
M107A1AA-BLK:  
I-129 RDL:0.50E+00 pCi/L LCL: UCL: RPD:  
M107A1AC-LCS:  
I-129 RDL:5 pCi/L LCL:70 UCL:130 RPD:20

M1WAD1AA-SAMP Calc Info:  
Uncert Level (#s):: 2 Decay to SaDt: Y Blk Subt.: N Sci.Mot.: Y ODRs: B  
M107A1AA-BLK:  
Uncert Level (#s):: 2 Decay to SaDt: Y Blk Subt.: N Sci.Mot.: Y ODRs: B  
M107A1AC-LCS:  
Uncert Level (#s):: 2 Decay to SaDt: Y Blk Subt.: N Sci.Mot.: Y ODRs: B

TestAmerica Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 3  
Richland Wa. pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added

ISV - Insufficient Volume for Analysis  
WO Cnt: 11  
Prep\_SamplePrep v4.8.65

10/10/2013 3:08:11 PM

# ICOC Fraction Transfer/Status Report

ByDate: 10/10/2012, 10/15/2013, Batch: '3261060', User: \*ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting	Comments
<b>3261060</b>				
AC	Rev1C	SannohS	9/25/2013 9:24:15	
SC		mcginnist	IsBatched 9/20/2013 1:15:57 PM	ICOC_RADCALC v4.8.49
SC		SannohS	InPrep 9/25/2013 9:24:15 AM	RL-GAM-002 REVISION 3
SC		NortonJ	InSep1 10/7/2013 8:44:11 AM	RL-GAM-002 REVISION 3
SC		NortonJ	InCnt1 10/8/2013 9:05:23 AM	RL-CI-007 REVISION 3
SC		NortonJ	inCnt1 10/8/2013 9:05:53 AM	RL-CI-007 REVISION 3
SC		DawkinsO	CalcC 10/10/2013 12:36:46 AM	RL-CI-007 REVISION 3
SC		antonsonl	Rev1C 10/10/2013 3:08:01 PM	RL-DR-001 Rev 4
AC		NortonJ	10/7/2013 8:44:11	
AC		NortonJ	10/8/2013 9:05:23	
AC		NortonJ	10/8/2013 9:05:53	
AC		DawkinsO	10/10/2013 12:36:46	
AC		antonsonl	10/10/2013 3:08:01	

AC: Accepting Entry; SC: Status Change

TestAmerica Richland  
Richland Wa.

Balance Id:1120403183

Pipet #:

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech: ,WattN

Sample Preparation/Analysis

AM Tc-99 Prp/Sep LSC013  
S5 Technetium-99 by Liquid Scint  
51 CLIENT: HANFORD

PM, Quote: SS , 57671

pCi/L

WATER

Batch: 3261061  
SEQ Batch, Test: None

9/23/2013 2:54:45 PM

384688, CH2M Hill Plateau Remediation Company  
Pacific Northwest National Lab

AnalyteDueDate: 10/14/2013

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On   Off (24hr) Circle	CR Analyst, Infr/Date	Comments:
1 M1V2H-1-AA	126.00g.in		126.00g.in	126.00g									
J31060459-1-SAMP													
09/04/2013 08:51													
2 M1V2H-1-AC-X	127.10g.in		127.10g.in	127.10g									
J31060459-1-DUP													
09/04/2013 08:51													
3 M1V2J-1-AA	125.50g.in		125.50g.in	125.50g									
J31060459-2-SAMP													
09/04/2013 08:51													
4 M1V2J-1-AC-S	125.30g.in		125.30g.in	125.30g									
J31060459-2-MS													
09/04/2013 08:51													
5 M1V2K-1-AA	126.10g.in		126.10g.in	126.10g									
J31060459-3-SAMP													
09/04/2013 11:45													
6 M1V2M-1-AA	125.70g.in		125.70g.in	125.70g									
J31060459-4-SAMP													
09/04/2013 13:36													
7 M107D-1-AA-B	200.90g.in		200.90g.in	200.90g									
J31180000-61-BLK													
09/18/2013 12:14 pd													

WO

TestAmerica Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 1  
 Richland Wa. pd - Prep Dt, dc - Date Cng, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added  
 ISV - Insufficient Volume for Analysis  
 WO Cnt: 7  
 Prep\_SamplePrep v4.8.65

9/23/2013 2:54:46 PM **Sample Preparation/Analysis** Balance Id:1120403183

AM Tc-99 Pp/Sep LSC013 Pipet #:  
 S5 Technetium-99 by Liquid Scint Sep1 DT/Tm Tech:  
 5I CLIENT: HANFORD Sep2 DT/Tm Tech:  
 Prep Tech: WattN

AnalyDueDate: 10/14/2013 pCi/L

Batch: 3261061  
 SEQ Batch, Test: None

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Defector Id	Count On   Off (24hr) Circle	CR Analyst, Init/Date	Comments:
8 M107D-1-AC-C	200.20g.in		200.20g	200.20g	tcse2759								
J31180000-61-LCS					06/15/13.pd								
09/18/2013 12:14 pd					07/01/05.r								
9 M107D-1-AD-BN													
J31180000-61-IBLK													
09/18/2013 12:14 pd													

Alpha: Beta: Alpha: Beta: Alpha: Beta:

TestAmerica Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 2  
 Richland Wa. pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added  
 ISV - Insufficient Volume for Analysis WO Cnt: 9  
 Prep\_SamplePrep v4.8.65

9/23/2013 2:54:46 PM

Sample Preparation/Analysis

Balance Id:

AM Tc-99 Prp/Sep LSC013

Pipet #:

S5 Technetium-99 by Liquid Scint

Sep1 DT/Tm Tech:

51 CLIENT: HANFORD

Sep2 DT/Tm Tech:

pCi/L

Batch: 3261061

SEQ Batch, Test: None

Prep Tech:



Work Ord. Lot, Sample Date	Total Amt/Unit	Total Acified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On   Off (24hr) Circle	CR Analyst, Init/Date	Comments:
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Comments: M107D-BLK Commentsp-13-00441.p-13-00238

All Clients for Batch: 384868, CHEM Hill Plateau Remediation Company Pacific Northwest National Lab, SS , 57671

M1V2H1AA-SAMP Constituent List:

TC-99	RDL:1.50E+01	pCi/L	LCL:70	UCL:130	RPD:20								
M1V2J1AC-MS:													
M107D1AA-BLK:	RDL:1.50E+01	pCi/L	LCL:	UCL:	RPD:								
TC-99													
M107D1AC-LCS:													
TC-99	RDL:15	pCi/L	LCL:70	UCL:130	RPD:20								
M107D1AD-IBLK:													
TC-99	RDL:1.50E+01	pCi/L	LCL:	UCL:	RPD:								
M1V2H1AA-SAMP Calc Info:													
Uncert Level (#s):	2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B								
M1V2J1AC-MS:													
Uncert Level (#s):	2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B								
M107D1AA-BLK:													
Uncert Level (#s):	2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B								
M107D1AC-LCS:													
Uncert Level (#s):	2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B								
M107D1AD-IBLK:													
Uncert Level (#s):	2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B								

10/21/2013 10:05:06 AM

# ICOC Fraction Transfer/Status Report

ByDate: 10/21/2012, 10/26/2013, Batch: '3261061', User: \*ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting	Comments
<b>3261061</b>				
AC		Rev1C	WattN 9/23/2013 2:37:40 PM	
SC			mcginnist IsBatched 9/20/2013 1:16:03 PM	ICOC_RADCALC v4.8.49
SC			WattN InPrep 9/23/2013 2:37:40 PM	RL-PRP-004 REVISION 2
SC			WattN Prep1C 9/23/2013 2:54:53 PM	RL-PRP-004 REVISION 2
SC			JorgensonD Sep2C 10/3/2013 2:44:06 PM	RL-LSC-013 REVISION 2
SC			NortonJ InCnt1 10/3/2013 2:48:33 PM	RL-CI-005 REVISION 3
SC			BullJ CalcC 10/4/2013 1:00:57 PM	RL-CI-005 REVISION 3
SC			antonsonl Rev1C 10/21/2013 10:04:48 AM	RL-DR-001 Rev 4
AC			WattN 9/23/2013 2:54:53 PM	
AC			JorgensonD 10/3/2013 2:44:06 PM	
AC			NortonJ 10/3/2013 2:48:33 PM	
AC			BullJ 10/4/2013 1:00:57 PM	
AC			antonsonl 10/21/2013 10:04:48	

AC: Accepting Entry; SC: Status Change

TestAmerica Richland  
Richland Wa.

47

9/20/2013 1:05:33 PM **Sample Preparation/Analysis**

384868, CH2M Hill Plateau Remediation Company **AR H-3 Prp/Sep LSC005**  
Pacific Northwest National Lab **S6 Tritium by Liquid Scint**  
**5I CLIENT: HANFORD**

**Analyte:** WATER **pCi/L** **PM, Quote: SS, 57671**

**Batch:** 3261062 **WATER** **SEP1 DT/Tm Tech:** **SEP2 DT/Tm Tech:**

SEQ Batch, Test: None

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On (24hr) Circle	CR Analyst, Init/Date	Comments:
1 M1TDD-1-AA													
J3I030413-1-SAMP													
08/28/2013 09:37													Beta: 7.45E-06 uCi/6sa
2 M1TDD-1-AJ-X													
J3I030413-1-DUP													
08/28/2013 09:37													Beta: 7.45E-06 uCi/6sa
3 M107F-1-AA-B													
J3I180000-62-BLK													
09/18/2013 12:14 pd													Beta:
4 M107F-1-AC-C													
J3I180000-62-LCS													
09/18/2013 12:14 pd													Beta:
5 M107F-1-AD-BN													
J3I180000-62-BLK													
09/18/2013 12:14 pd													Beta:

**Comments:**

All Clients for Batch: 384868, CH2M Hill Plateau Remediation Company Pacific Northwest National Lab, SS, 57671

M1TDD1AA-SAMP Constituent List:  
H-3 RDL:400 pCi/L ICL:70 UCL:130 RPD:20

TestAmerica Key: in - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 1  
Richland Wa. pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added

ISV - Insufficient Volume for Analysis  
WO Cnt: 5  
ICOC v4.8.49

9/20/2013 1:05:33 PM

Sample Preparation/Analysis

Balance Id:

AR H-3 Prp/Sep LSC005  
S6 Tritium by Liquid Scint  
51 CLIENT: HANFORD

Pipet #:

AnalyDueDate: 10/14/2013

Sep1 DT/Tm Tech:

Batch: 3261062

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

pcil/L

Prep Tech:

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On   Off (24hr) Circle	CR Analyst, Init/Date	Comments:
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M107FLAA-BLK: H-3	RDL:400	pci/L	LCL:	UCL:	RPD:								
M107FIAC-LCS: H-3	RDL:400	pci/L	LCL:70	UCL:130	RPD:20								
M107FIAD-IBLK: H-3	RDL:400	pci/L	LCL:	UCL:	RPD:								
M1EDD1AA-SAMP Calc Info: Uncert Level (#s): 2			Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B							
M107FLAA-BLK: Uncert Level (#s): 2			Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B							
M107FIAC-LCS: Uncert Level (#s): 2			Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B							
M107FIAD-IBLK: Uncert Level (#s): 2			Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B							

10/2/2013 7:50:32 AM

# ICOC Fraction Transfer/Status Report

ByDate: 10/2/2012, 10/7/2013, Batch: '3261062', User: \*ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting	Comments
<b>3261062</b>				
AC	Rev1C	NortonP	9/28/2013 1:28:22 PM	
SC		NortonP	Sep1C 9/28/2013 1:28:22 PM	RL-LSC-005 REVISION 4
SC		NortonJ	InCnt1 9/28/2013 3:03:06 PM	RL-CI-005 REVISION 3
SC		NortonJ	CalcC 9/30/2013 8:34:15 PM	RL-CI-005 REVISION 3
SC		mcginnist	Rev1C 10/2/2013 7:50:21 AM	RL-DR-001 Rev 4
AC		NortonJ	9/28/2013 3:03:06 PM	
AC		NortonJ	9/30/2013 8:34:15 PM	
AC		mcginnist	10/2/2013 7:50:21	

AC: Accepting Entry; SC: Status Change

TestAmerica Richland  
Richland Wa.

**Sample Preparation/Analysis**

Balance Id: \_\_\_\_\_ Pipet #: \_\_\_\_\_

Sep1 DT/Tm Tech: \_\_\_\_\_ Sep2 DT/Tm Tech: \_\_\_\_\_

Prep Tech: \_\_\_\_\_

CR Analyst, Init/Date: \_\_\_\_\_

Comments: \_\_\_\_\_

88 NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION

EA Chromium, Hexavalent (7196A)

5I CLIENT: HANFORD

PM, Quote: SS, 57671

Batch: 3248061 WATER mg/L

SEQ Batch, Test: None All Tests: 3248061 88EA,

384868, CH2M Hill Plateau Remediation Company

Pacific Northwest National Lab

Initial Aliquot Amt/Unit

QC Tracer Prep Date

Count Time Min

Detector Id

Count On | Off (24hr) Circle

Work Order, Lot, Sample Date Time

Total Amt/Unit

AmiRec: 1XVIAL20;1X500MLAG #Containers: 2

AmiRec: 1XVIAL20;1X500MLAG #Containers: 2

AmiRec: 1XVIAL20;1X500MLAG #Containers: 2

AmiRec: 1XVIAL20;1X500MLAG #Containers: 2

AmiRec: 1XVIAL20;1X500MLAG #Containers: 1

AmiRec: 1XVIAL20;1X500MLAG #Containers: 1

1 M1VCC-1-AA

J3I050422-1-SAMP

09/05/2013 09:21

2 M1VCC-1-AC-S

J3I050422-1-MS

09/05/2013 09:21

3 M1VCC-1-AD-D

J3I050422-1-MSD

09/05/2013 09:21

4 M1VCC-1-AE-X

J3I050422-1-DUP

09/05/2013 09:21

5 M1VCR-1-AA-B

J3I050000-61-BLK

09/05/2013 14:06 pd

6 M1VCR-1-AC-C

J3I050000-61-LCS

09/05/2013 14:06 pd

TestAmerica Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 1

Richland Wa. pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktalled Added

ISV - Insufficient Volume for Analysis

WO Cnt: 6

ICOC v4.8.49

19/5/2013 2:06:30 PM

**Sample Preparation/Analysis**

Balance Id: \_\_\_\_\_ Pipet #: \_\_\_\_\_

88 NO SAMPLE PREPARATION PERFORMED / DIRECT INJECTION  
EA Chromium, Hexavalent (7196A)  
5I CLIENT: HANFORD

Analyte Due Date: 10/04/2013

Batch: 3248061 mg/L

SEQ Batch, Test: None

Work Order, Lot, Sample Date	Time	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Count Time (Min)	Detector Id	Count On   Off (24hr) Circle	CR Analyst, Init/Date	Comments:
<b>Comments:</b>									
All Clients for Batch:									
384868, CH2M Hill Plateau Remediation Company Pacific Northwest National Lab, SS , 57671									
M1VCCLAA-SAMP Constituent List:									
M1VCCLAC-MS Constituent List:									
M1VCCLAD-MSD:									
M1VCR1AA-BLK:									
M1VCR1AC-ICS:									
M1VCCLAA-SAMP Calc Info:									
Uncert Level (#s) :	2	Decay to SaDt: Y	Blk Subt.: N	Sci. Not.: Y	ODRs: B				
M1VCCLAC-MS Calc Info:									
Uncert Level (#s) :	2	Decay to SaDt: Y	Blk Subt.: N	Sci. Not.: Y	ODRs: B				
M1VCCLAD-MSD:									
Uncert Level (#s) :	2	Decay to SaDt: Y	Blk Subt.: N	Sci. Not.: Y	ODRs: B				
M1VCR1AA-BLK:									
Uncert Level (#s) :	2	Decay to SaDt: Y	Blk Subt.: N	Sci. Not.: Y	ODRs: B				
M1VCR1AC-ICS:									
Uncert Level (#s) :	2	Decay to SaDt: Y	Blk Subt.: N	sci. Not.: Y	ODRs: B				

TestAmerica Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 Page 2

Richland Wa. pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cook/failed Added

ISV - Insufficient Volume for Analysis WO Cnt: 6 ICOC v4.8.49