

DECEMBER 14, 2012

Analytical Data Package Prepared For

CH2M Hill Plateau Remediation

Radiochemical Analysis By

TestAmerica TARL

2800 G.W. Way, Richland Wa, 99354, (509)-375-3131.
Data Package Contains 61 Pages

Report Nbr: 53987

SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	LOT Nbr	WORK ORDER	RPT DB ID	BATCH
W06496	I13-004	B2MP47	J2K080444-1	MW9MD1A	9MW9MD10	2331077
	B2MP48		J2K080444-2	MW9ME1A	9MW9ME10	2331077
	B2MP55		J2K080444-3	MW9MF1A	9MW9MF10	2331077
	B2MP59		J2K080444-4	MW9MH1A	9MW9MH10	2331077
	B2MP63		J2K080444-5	MW9MJ1AA	9MW9MJ10	2331077
	B2MP64		J2K080444-6	MW9MK1A	9MW9MK10	2331077
I13-005	B2MP02		J2K140451-1	MXCHF1AA	9MXCHF10	2331077
	B2MP03		J2K140451-2	MXCHG1AA	9MXCHG10	2331077
	B2MP79		J2K140454-1	MXCHR1AA	9MXCHR10	2331077
I13-004	B2MYW8		J2K160457-1	MXDGQ1AA	9MXDGQ10	2331079
S13-012	B2N005		J2K160457-2	MXDGR1AA	9MXDGR10	2331079
	B2MVML7		J2K190434-1	MXD141AC	9MxD1410	2331077
	B2MVML7		J2K190434-1	MXD141AD	9MxD1410	2331080
S13-010	B2M4V9		J2K190435-1	MXD151AA	9MxD1510	2331077

Comments:

DECEMBER 14, 2012



THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

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

TestAmerica Laboratories, Inc.

December 14, 2012

Attention: Scot Fitzgerald

SAF Number	:	I13-004, I13-005, S13-010, S13-011, S13-012
Date SDG Closed	:	November 23, 2012
Number of Samples	:	Thirteen (13)
Sample Type	:	Water
SDG Number	:	W06496
Data Deliverable	:	30-Day / Summary

CASE NARRATIVE

I. Introduction

Between November 8, 2012 and November 19, 2012 thirteen 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>
B2MP47	MW9MD	11/08/12	WATER
B2MP48	MW9ME	11/08/12	WATER
B2MP55	MW9MF	11/08/12	WATER
B2MP59	MW9MH	11/08/12	WATER
B2MP63	MW9MJ	11/08/12	WATER
B2MP64	MW9MK	11/08/12	WATER
B2MP02	MXCHF	11/14/12	WATER
B2MP03	MXCHG	11/14/12	WATER
B2MP79	MXCHR	11/14/12	WATER
B2MYW8	MXDGQ	11/16/12	WATER
B2N005	MXDGR	11/16/12	WATER
B2MML7	MXD14	11/19/12	WATER
B2M4V9	MXD15	11/19/12	WATER

CH2M Hill Plateau Remediation Company
December 14, 2012

II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in.

During the bi-weekly phone call on September 5, 2012 TARL was notified that all groundwater samples received between October 1, 2012 – December 31, 2012 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:

Gamma Spectroscopy

Gamma Spec (LL) by method RL-GAM-001

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

Liquid Scintillation Counting

Mid Level Tritium by method RL-LSC-005

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.

V. Comments

Gamma Spectroscopy

Gamma Spec (LL) by method RL-GAM-001:

The LCS recovery for Cs-137 was low on the original count; a recount did not improve the recovery. There is insufficient sample volume remaining for a reanalysis. For more details refer to the SIR (CHPRC Tracking Number: SDR13-052) that is included in this report. Except as noted, the LCS, batch blank, samples and sample duplicate (B2MYW8) results are within contractual requirements.

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

The LCS, batch blank, samples and sample duplicate (B2MP47) results are within contractual requirements.

Liquid Scintillation Counting

Mid Level Tritium by method RL-LSC-005:

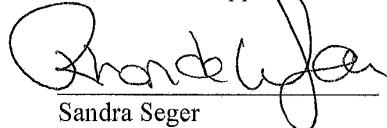
The LCS, batch blank, sample and sample duplicate (B2MML7) results are within contractual requirements.

DECEMBER 14, 2012

CH2M Hill Plateau Remediation Company
December 14, 2012

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:


for
Sandra Seger
Project Manager

SAMPLE ISSUE RESOLUTION

SIR NUM SDR13-052
REV NUM 0
DATE INITIATED 12/10/2012

SAMPLE EVENT INFORMATION

SAF NUM(S) S13-012
OPERABLE UNIT(S) NONE
PROJECT(S) SURV13
SAMPLE EVENT TITLE(S) SURV13
LABORATORY TestAmerica Incorporated, Richland

SAMPLING INFORMATION

NUMBER OF SAMPLES 2
SAMPLE NUMBERS B2MYW8, B2N005
SAMPLE MATRIX WATER
COLLECTION DATE 11/15/2012 - 11/15/2012
SDG NUM W06496

ISSUE BACKGROUND

CLASS Laboratory Issue
TYPE Quality Control Failure
DESCRIPTION The low level Gamma LCS recovery for Cs-137 was slightly below acceptance limits at 65%. The LCS was recounted but the Cs-137 recovery didn't improve. The first option would be to report the results with the slightly low Cs-137 recovery. The second option would be to re-analyze the batch but there is no sample volume remaining for sample B2MYW8 since the entire sample volume was used in the original batch (sample and sample duplicate) and sample B2N005 only has about 1 liter remaining for a re-analysis. The re-analysis batch would not include a sample duplicate.

DISPOSITION

DESCRIPTION PROPOSED DISPOSITION: Initiate SIR, report results as instructed and include comment in the case narrative.

JUSTIFICATION ACCEPTED DISPOSITION: Accept the proposed resolution.

SUBMITTED BY: Rhonda Wager/TARL DATE: 12/10/12
ACCEPTED BY: Scot Fitzgerald/CHPRC DATE: 12/10/12

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

Action Lev	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.
Batch	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
Bias	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
COC No	Chain of Custody Number assigned by the Client or TestAmerica.
Count Error (#s)	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.
Total Uncert (#s) <i>u_c - Combined Uncertainty.</i>	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, <i>u_c</i> the <i>combined uncertainty</i> . The uncertainty is absolute and in the same units as the result.
(#s), Coverage Factor	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
CRDL (RL)	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)
Lc	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%. $Lc = (1.645 * \text{Sqrt}(2 * (\text{BkgndCnt/BkgndCntMin}) / \text{SCntMin})) * (\text{ConvFct} / (\text{Eff} * \text{Yld} * \text{Abn} * \text{Vol})) * \text{IngrFct}$. 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.
Lot-Sample No	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.
MDC MDA	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%. $MDC = (4.65 * \text{Sqr}((\text{BkgndCnt/BkgndCntMin}) / \text{SCntMin}) + 2.71 / \text{SCntMin}) * (\text{ConvFct} / (\text{Eff} * \text{Yld} * \text{Abn} * \text{Vol})) * \text{IngrFct}$. For LSC methods the batch blank is used as a measure of the background variability.
Primary Detector	The instrument identifier associated with the analysis of the sample aliquot.
Ratio U-234/U-238	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.
Rst/MDC	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.
Rst/TotUcert	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.
Report DB No	Sample Identifier used by the report system. The number is based upon the first five digits of the Work Order Number .
RER	The equation Replicate Error Ratio = $(S-D)/[\sqrt{TPUs^2 + TPUs^2}]$ 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 TPUs is the total uncertainty of the duplicate sample.
SDG	Sample Delivery Group Number assigned by the Client or assigned by TestAmerica upon sample receipt.
Sum Rpt Alpha Spec Rst(s)	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.
Work Order	The LIMS software assign test specific identifier.
Yield	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.

DECEMBER 14, 2012

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TestAmerica Report

FormNbr: R FormatType: FEAD Version: 05 Rpt Nbr: 539877 File Name: h:\Reportdb\fead\VRad\W06496.Edd; h:\Reportdb\fead\VRad\Rad53987.Ed

Lab Code: TARL

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/ Solids%*:	Distilled Volume	Sample On Date:	Collection Date:
MW9SM10 B2MP47	9MW9SM10 B2MP47		MW6-SBB-A1	113-004	W06496					11/07/2012 07:45
Batch Analyte	Analyte	CAS# 15046-84-1	Result 7.61E-02	Unit pCi/L	CntU 2S 1.1E-01	TotU 2S 1.1E-01	Qual U	MDA 1.89E-01	TrcYield 91.4	Method 1129LL_SEP_LEPS 3.8913E+00
2331077 I-129	I-129									L 12/04/2012 09:24
Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/ Solids%*:	Distilled Volume	Sample On Date:	Collection Date:
9MW9MF10 B2MP55	9MW9MF10 B2MP55		MW6-SBB-A1	113-004	W06496					11/07/2012 12:10
Batch Analyte	Analyte	CAS# 15046-84-1	Result -2.09E-02	Unit pCi/L	CntU 2S 1.2E-01	TotU 2S 1.2E-01	Qual U	MDA 2.05E-01	TrcYield 94.3	Method 1129LL_SEP_LEPS 3.8647E+00
2331077 I-129	I-129									L 12/04/2012 12:50
Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/ Solids%*:	Distilled Volume	Sample On Date:	Collection Date:
9MW9MH10 B2MP59	9MW9MH10 B2MP59		MW6-SBB-A1	113-004	W06496					11/07/2012 11:20
Batch Analyte	Analyte	CAS# 15046-84-1	Result -3.40E-03	Unit pCi/L	CntU 2S 9.2E-02	TotU 2S 9.2E-02	Qual U	MDA 1.65E-01	TrcYield 92.2	Method 1129LL_SEP_LEPS 3.876E+00
2331077 I-129	I-129									L 12/04/2012 12:51
Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/ Solids%*:	Distilled Volume	Sample On Date:	Collection Date:
9MW9MJ10 B2MP63	9MW9MJ10 B2MP63		MW6-SBB-A1	113-004	W06496					11/07/2012 14:20
Batch Analyte	Analyte	CAS# 15046-84-1	Result -8.72E-02	Unit pCi/L	CntU 2S 1.2E-01	TotU 2S 1.2E-01	Qual U	MDA 1.99E-01	TrcYield 94.1	Method 1129LL_SEP_LEPS 3.8805E+00
2331077 I-129	I-129									L 12/04/2012 16:58
Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/ Solids%*:	Distilled Volume	Sample On Date:	Collection Date:
9MW9MK10 B2MP64	9MW9MK10 B2MP64		MW6-SBB-A1	113-004	W06496					11/07/2012 13:24
Batch Analyte	Analyte	CAS# 15046-84-1	Result -3.97E-02	Unit pCi/L	CntU 2S 9.1E-02	TotU 2S 9.1E-02	Qual U	MDA 1.57E-01	TrcYield 94.1	Method 1129LL_SEP_LEPS 3.8973E+00
2331077 I-129	I-129									L 12/04/2012 16:59
Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/ Solids%*:	Distilled Volume	Sample On Date:	Collection Date:
9MXCHF10 B2MP02	9MXCHF10 B2MP02		MW6-SBB-A1	113-005	W06496					11/07/2012 13:24
Batch Analyte	Analyte	CAS# 15046-84-1	Result -4.35E-02	Unit pCi/L	CntU 2S 8.5E-02	TotU 2S 8.5E-02	Qual U	MDA 1.47E-01	TrcYield 92.4	Method 1129LL_SEP_LEPS 3.8221E+00
2331077 I-129	I-129									L 12/04/2012 20:27

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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.

DECEMBER 14, 2012

12/13/2012 4:12:18 PM

TestAmerica Report

FormatType: FEAD Version: 05 Rpt Nbr: 539877 File Name: h:\Reportid\bedd\Feайд\Rad\W06496.Edd; h:\Reportid\bedd\Feайд\Rad\W539877.Edt
Lab Code: TARL

FormatNbr: R	Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/ Solids%*:	Distilled Volume	Sample On Date:	Collection Date:
9MXCHG10 B2MP03				MW6-SBB-A1 113-005	W06496						11/13/2012 12:54
Batch 2331077 I-129	Analyte CAS# 15046-84-1		Result 6.43E-01	Unit pCi/L	CntU 2S 2.4E-01	Qual 2.4E-01	MDA 2.09E-01	TrcYield 94.3	I129LL_SEP_LEPS 3.8509E+00	Unit L	12/04/2012 23:52
Lab Sample Id: 9MXCHR10 B2MP79	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/ Solids%*:	Distilled Volume	Sample On Date:	Collection Date:	11/14/2012 11:08
Batch 2331077 I-129	Analyte CAS# 15046-84-1	Result -1.00E-02	Unit pCi/L	CntU 2S 8.5E-02	Qual 8.5E-02	MDA 1.52E-01	TrcYield 92.7	I129LL_SEP_LEPS 3.8585E+00	Unit L	12/04/2012 23:53	
Lab Sample Id: 9MxD1410 B2MML7	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/ Solids%*:	Distilled Volume	Sample On Date:	Collection Date:	11/16/2012 10:59
Batch 2331080 H-3	Analyte CAS# 10028-17-8	Result -1.94E+00	Unit pCi/L	CntU 2S 1.1E+01	Qual 2.3E+01	MDA 2.46E+01	TrcYield 100.0	906.0ML_H3_LSC 1.0029E-02	Unit L	12/04/2012 06:53	
Batch 2331077 I-129	Analyte CAS# 15046-84-1	Result 4.29E-02	Unit pCi/L	CntU 2S 1.1E-01	Qual 1.1E-01	MDA 2.09E-01	TrcYield 89.5	I129LL_SEP_LEPS 3.7658E+00	Unit L	12/05/2012 06:42	
Lab Sample Id: 9MxD1510 B2M4V9	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/ Solids%*:	Distilled Volume	Sample On Date:	Collection Date:	11/16/2012 09:59
Batch 2331077 I-129	Analyte CAS# 15046-84-1	Result 1.29E+00	Unit pCi/L	CntU 2S 2.8E-01	Qual 2.8E-01	MDA 1.76E-01	TrcYield 87.6	I129LL_SEP_LEPS 3.7626E+00	Unit L	12/05/2012 06:44	
Lab Sample Id: 9MXDGQ10 B2MYW8	Client Id:	Test User	Contract Nbr	SAF Nbr	Sdg Nbr:	QC Type:	Moisture/ Solids%*:	Distilled Volume	Sample On Date:	Collection Date:	11/16/2012 12:39
Batch 2331079 BE-7	Analyte CAS# 13966-02-4	Result -5.85E+00	Unit pCi/L	CntU 2S 1.1E+01	Qual 1.1E+01	MDA 1.89E+01	TrcYield	GAMMALL_GS 2.0003E+00	Unit L	12/04/2012 10:28	
2331079 CO-60	Analyte CAS# 10198-40-0	Result 5.38E-01	Unit pCi/L	CntU 2S 1.3E+00	Qual U	MDA 2.66E+00	TrcYield	GAMMALL_GS 2.0003E+00	Unit L	12/04/2012 10:28	
2331079 CS-134	Analyte CAS# 13967-70-9	Result 5.19E-01	Unit pCi/L	CntU 2S 1.3E+00	Qual U	MDA 2.51E+00	TrcYield	GAMMALL_GS 2.0003E+00	Unit L	12/04/2012 10:28	
2331079 CS-137	Analyte CAS# 10045-97-3	Result -2.86E-01	Unit pCi/L	CntU 2S 1.3E+00	Qual U	MDA 2.33E+00	TrcYield	GAMMALL_GS 2.0003E+00	Unit L	12/04/2012 10:28	
2331079 EU-152	Analyte CAS# 14683-23-9	Result 1.57E+00	Unit pCi/L	CntU 2S 3.1E+00	Qual U	MDA 5.49E+00	TrcYield	GAMMALL_GS 2.0003E+00	Unit L	12/04/2012 10:28	
2331079 EU-154	Analyte CAS# 15585-10-1	Result -1.73E+00	Unit pCi/L	CntU 2S 3.6E+00	Qual U	MDA 6.31E+00	TrcYield	GAMMALL_GS 2.0003E+00	Unit L	12/04/2012 10:28	
2331079 EU-155	Analyte CAS# 14391-16-3	Result 4.00E-01	Unit pCi/L	CntU 2S 2.0E+00	Qual U	MDA 3.51E+00	TrcYield	GAMMALL_GS 2.0003E+00	Unit L	12/04/2012 10:28	
2331079 K-40	Analyte CAS# 13966-00-2	Result -2.80E+01	Unit pCi/L	CntU 2S 3.1E+01	Qual U	MDA 6.06E+01	TrcYield	GAMMALL_GS 2.0003E+00	Unit L	12/04/2012 10:28	
2331079 RU-106	Analyte CAS# 13967-48-1	Result -2.63E-01	Unit pCi/L	CntU 2S 1.1E+01	Qual U	MDA 1.94E+01	TrcYield	GAMMALL_GS 2.0003E+00	Unit L	12/04/2012 10:28	

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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.

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TestAmerica Report

FormNbr: R FormatType: FEAD Version: 05 Rpt Nbr: 539877 File Name: h:\Reportdb\fead\Rad\W06496.Edd, h:\Reportdb\fead\Rad\53987.Ed

Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAP Nbr	Sig Nbr:	QC Type:	Moisture/ Solids%*:	Distilled Volume	Sample On Date:	Collection Date:
2331079 SB-125	14234-35-6	-6.47E-01	pCi/L	2.9E+00	2.9E+00	U	5.11E+00	GAMMALL_GS	2.0003E+00	L 12/04/2012 10:28 1
9MXDGR10 B2N005	MW6-SBB-A1	S13-012	W06496							11/15/2012 13:19
Batch	Analyte	CAS#	Result	Unit	CntU 2S	Total 2S	Qual	MDA	TrcYield	Method
2331079 BE-7	13966-02-4	-4.78E+00	pCi/L	1.2E+01	1.2E+01	U	1.98E+01	GAMMALL_GS	2.0008E+00	L 12/04/2012 10:32 1
2331079 CO-60	10198-40-0	1.16E+00	pCi/L	1.5E+00	1.5E+00	U	2.88E+00	GAMMALL_GS	2.0008E+00	L 12/04/2012 10:32 1
2331079 CS-134	13967-70-9	6.53E-01	pCi/L	1.4E+00	1.4E+00	U	2.62E+00	GAMMALL_GS	2.0008E+00	L 12/04/2012 10:32 1
2331079 CS-137	10045-97-3	1.91E+00	pCi/L	1.5E+00	1.5E+00	U	2.76E+00	GAMMALL_GS	2.0008E+00	L 12/04/2012 10:32 1
2331079 EU-152	14683-23-9	1.71E+00	pCi/L	3.5E+00	3.5E+00	U	6.13E+00	GAMMALL_GS	2.0008E+00	L 12/04/2012 10:32 1
2331079 EU-154	15585-10-1	2.59E+00	pCi/L	4.6E+00	4.6E+00	U	8.74E+00	GAMMALL_GS	2.0008E+00	L 12/04/2012 10:32 1
2331079 EU-155	14391-16-3	-1.32E+00	pCi/L	3.0E+00	3.0E+00	U	4.98E+00	GAMMALL_GS	2.0008E+00	L 12/04/2012 10:32 1
2331079 K-40	13966-00-2	-2.71E+01	pCi/L	4.6E+01	4.6E+01	U	9.54E+01	GAMMALL_GS	2.0008E+00	L 12/04/2012 10:32 1
2331079 RU-106	13967-48-1	-9.39E-01	pCi/L	1.2E+01	1.2E+01	U	2.15E+01	GAMMALL_GS	2.0008E+00	L 12/04/2012 10:32 1
2331079 SB-125	14234-35-6	8.00E-01	pCi/L	3.1E+00	3.1E+00	U	5.62E+00	GAMMALL_GS	2.0008E+00	L 12/04/2012 10:32 1

TestAmerica
 rptFeaRadSummaryEdd 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.

DECEMBER 14, 2012

TestAmerica QC Blank Report										
FormNbr:	R	FormatType:	FEAD	VersionNbr:	05	File Name: h:\Reportdb\edt\Feed\VRad\W06496.Edd, h:\Reportdb\edt\Feed\VRad\53987.Ed				
Lab Sample Id:	MXEWWD1AB	Sdg/Rept Nbr:	W06496	53987	Collection Date:	11/07/2012 07:45				
Client Id:	NA	Matrix:	WATER	WATER	Sample On Date:					
Moisture/Solids%*:		QC Type:	BLK		Received Date:	11/08/2012				
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 # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt	Qu-al	Tracer	Spk Conc/ %Rec	Analy Method	Date/Time Analyzed	RER/ UCL
2331077 I-129	3.36E-03	pCi/L	1.1E-01	Uncert 2S	U	MDC	2.03E-01	92.7	12/05/2012 10:09	LCS LCL/UCL Typ
BLK	15046-84-1			1.1E-01						D

DECEMBER 14, 2012

Thursday, December 13, 2012

FormNbr: R

FormatType: FEAD

Lab Sample Id: MXEW/G1/AB

Client Id: NA

Moisture/Solids%*: MW6-SBB-A19981

File Name: h:\Report\bd\feed\VRad\W06496.Edd, h:\Report\bd\feed\VRad\53987.Ed

Collection Date: 11/15/2012 12:39

Sample On Date:

Received Date: 11/16/2012

TestAmerica QC Blank Report

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	F\$Suffix	RTyp
									AS	H

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu-al	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed
2331079	BE-7	3.11E+00	pCi/L	8.00E+00	U	1.45E+01		GAMMALL_GS	2.0004E+00	12/04/2012 10:32
BLK	13966-02-4			8.00E+00				GAMMALL_GS	2.0004E+00	12/04/2012 D
2331079	CO-60	5.47E-01	pCi/L	1.1E+00	U	2.24E+00				
BLK	10198-40-0			1.1E+00				GAMMALL_GS	2.0004E+00	10:32 D
2331079	CS-134	2.75E-01	pCi/L	1.1E+00	U	2.07E+00				
BLK	13967-70-9			1.1E+00				GAMMALL_GS	2.0004E+00	12/04/2012 D
2331079	CS-137	2.30E+00	pCi/L	1.3E+00	U	2.51E+00				
BLK	10045-97-3			1.3E+00				GAMMALL_GS	2.0004E+00	10:32 D
2331079	EU-152	4.12E-01	pCi/L	2.2E+00	U	3.94E+00				
BLK	14683-23-9			2.2E+00				GAMMALL_GS	2.0004E+00	12/04/2012 D
2331079	EU-154	1.44E+00	pCi/L	2.8E+00	U	5.80E+00				
BLK	15585-10-1			2.8E+00				GAMMALL_GS	2.0004E+00	10:32 D
2331079	EU-155	1.89E-01	pCi/L	1.5E+00	U	2.63E+00				
BLK	14391-16-3			1.5E+00				GAMMALL_GS	2.0004E+00	12/04/2012 D
2331079	K-40	-3.36E+01	pCi/L	3.1E+01	U	6.10E+01				
BLK	13966-00-2			3.1E+01				GAMMALL_GS	2.0004E+00	10:32 D
2331079	RU-106	-1.68E+00	pCi/L	8.5E+00	U	1.48E+01				
BLK	13967-48-1			8.5E+00				GAMMALL_GS	2.0004E+00	10:32 D
2331079	SB-125	1.27E+00	pCi/L	2.1E+00	U	3.90E+00				
BLK	14234-35-6			2.1E+00						

DECEMBER 14, 2012

TestAmerica QC Blank Report									
FormNbr:	R	FormatType:	FEAD	VersionNbr:	05	File Name:	h:\Reportdb\led\Feadi\VRad\W06496.Edd.h:\Reportdb\led\Feadi\VRad\53987.Edt	Lab Code: TARL	
Lab Sample Id:	MXEWH1AB	Sdg/Rept Nbr:	W06496	53987				Collection Date:	11/16/2012 10:59
Client Id:	NA	Matrix:	WATER	WATER				Sample On Date:	
Moisture/Solids%*:		QC Type:	BLK					Received Date:	11/19/2012
SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix
	MW6-SBB-A19881								AU
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu-al	Tracer	Spk Conc/ %Rec	Analy Method	RPD/ UCL
2331080	H-3	2.10E+01	pCi/L	2.4E+01	U	Yield	2.49E+01	906.0ML_H3_L	12/04/2012
BLK	10028-17-8			1.2E+01				L	06:53

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu-al	Tracer	Spk Conc/ %Rec	Analy Method	RPD/ UCL
2331080	H-3	2.10E+01	pCi/L	2.4E+01	U	Yield	2.49E+01	906.0ML_H3_L	12/04/2012
BLK	10028-17-8			1.2E+01				L	06:53

TestAmerica QC Control Sample Report										
Thursday, December 13, 2012	Format Type:	FEAD	Version Nbr:	05	File Name: h:\Reportdb\eddi\Feed\VRad\W06496.Edd.h:\Reportdb\eddi\Feed\VRad\W06496.Edd					
FormNbr: R	Lab Sample Id:	MXEW1DCS	Sdg/Rept Nbr:	W06496	53987	Collection Date: 11/07/2012 07:45				
Client Id:	NA	Matrix:	WATER	WATER		Sample On Date:				
Moisture/Solids%*:		QC Type:	BS			Received Date: 11/08/2012				
SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RType
	MW6-SBB-A19981								AR	H
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt	Qu- al	Tracer Yield	Spk Conc/ %Rec	Analy Method	Date/Time Analyzed	RPDI/ UCL
2331077	I-129	1.06E+01	pCi/L	1.3E+00	1.3E+00	2.35E-01	90.2	9.84E+00	12/05/2012 10:10	70
BS	15046-84-1						108.2			130
									LCS	R
									LCL/UCL	Typ

TestAmerica
rptFeedRadEdd 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.

DECEMBER 14, 2012

Lab Code: TARL

Thursday, December 13, 2012

FormNbr:	R	Format/Type:	FEAD	VersionNbr:	05	File Name:	h:\Reportdb\Feed\VRad\W06496.Edd
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Lab Sample Id:	MXEWG1CS	Sdg/Rept Nbr:	W06496	Collection Date:	11/15/2012 12:39
Client Id:	NA	Matrix:	WATER	Sample On Date:	
Moisture/Solids%*:		QC Type:	BS	Received Date:	11/16/2012

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	F\$Suffix	RTyp
	MW6-SBB-A19981								AT	H
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt	Qu-al	Tracer	SpK Conc/ %Rec	Analy Method	Aiq Size/	Date/Time Analyzed
2331079 CO-60	10198-40-0	3.62E+01	pCi/L	5.9E+00	5.9E+00	MDC	2.23E+00	3.54E+01	GAMMALL_GS	2.0002E+00 12/04/2012
BS	CS-137	3.20E+01	pCi/L	5.5E+00	2.23E+00			102.1	GAMMALL_GS	2.0002E+00 12/04/2012
2331079 10045-97-3	EU-152	5.94E+01	pCi/L	1.0E+01	4.88E+00			4.91E+01	GAMMALL_GS	2.0002E+00 12/04/2012
BS	14683-23-9			1.0E+01				65.0	GAMMALL_GS	2.0002E+00 12/04/2012
								7.45E+01		10:33
								79.8		
								L		
										10:33

TestAmerica
rptFeedRadEdd 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.

DECEMBER 14, 2012

TestAmerica QC Control Sample Report									
Thursday, December 13, 2012	FormNbr:	R	FormatType:	FEAD	VersionNbr:	05	File Name:	h:\ReportedbEdt\Fead\VRad\W06496.Edd, h:\ReportedbEdt\Fead\VRad\53987.Ed	
Lab Sample Id:	MXEWH1CS		Sdg/Rept Nbr:	W06496	53987			Collection Date:	11/16/2012 10:59
Client Id:	NA		Matrix:	WATER	WATER			Sample On Date:	
Moisture/Solids%*:			QC Type:	BS				Received Date:	11/19/2012
SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix RTyp
	MW6-SBB-A19981								AV H
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Tot/Cnt Unit	Qu- al	Spk Conc/ %Rec	Analy Method	Date/Time Analyzed	RPD/ UCL	LCS LCL/UCL
2331080 H-3		7.29E+03	8.4E+02	2.44E+01	8.99E+03	906.0ML_H3_L	12/04/2012 06:53		R D
BS	10028-17-8		5.8E+01		81.1			70	

DECEMBER 14, 2012

TestAmerica QC Duplicate Report										
FormNbr: R	FormatType: FEAD	VersionNbr: 05	File Name: h:\Reportdb\hed\Feed\W06496.Edd; h:\Reportdb\hed\Feed\W06496.Edd							
Lab Sample Id: MW9MD1CR	Matrix: WATER	Sdg/Rept Nbr: W06496	53987	Collection Date: 11/07/2012 07:45						
Client Id: B2MP47	QC Type: DUP	QC Type: DUP	WATER	Sample On Date:						
Moisture/Solids%*: I13-004	Contract Nbr MW6-SBB-A19981	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	Fsuffix RTyp AN H	
Batch # / Qc Type 2331077	Analyt/ CAS# I-129	Result/ Orig Rst 6.31E-02	Unit pCi/L	Tot/Cnt 8.8E-02	Qu-al U	Tracer MDC 1.70E-01	Spk Conc/ %Rec 93.5	Analy Method 129LL_SEP_L	Date/Time Analyzed 12/04/2012 09:26	
DUP	15046-84-1	-7.61E-02	8.8E-02				3.8805E+00 L	RER/ UCL 0.0 20.0	LCS LCL/UCL 2.2 3 D	

DECEMBER 14, 2012

TestAmerica QC Duplicate Report									
FormNbr:	R	FormatType:	FEAD	VersionNbr:	05	File Name:	h:\Reportdb\feed\Rad\W06496.Edd.h:\Reportdb\feed\Rad\53987.Ed		
Lab Sample Id:	MXD141ER	Sdg/Rept Nbr:	W06496	Collection Date:	11/16/2012 10:59				
Client Id:	B2MMI7	Matrix:	WATER	Sample On Date:					
Moisture/Solids%*:		QC Type:	DUP	Received Date:	11/19/2012				
SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix RTyp
S13-011	MW6-SBB-A19981								AO H
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Tot/Cnt Unit	Qu- al	Spk Conc/ %Rec	Analy Method	Avg Size/ Method	RER/ UCL	LCS LCL/UCL
2331080 H-3	-2.26E+01	pCi/L	Uncert 2S 2.2E+01	U	2.40E+01	100.0	906.0ML_H3_L 1.0017E-02	12/04/2012 0.0	R D
DUP	10028-17-8						L 06:53	20.0 0.0	3 3

TestAmerica
rpHeadRadEdd 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.

Thursday, December 13, 2012

Lab Code: TARL

TestAmerica QC Duplicate Report

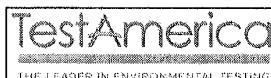
FormNbr:	R
FormatType:	FEAD
VersionNbr:	05
File Name:	h:\Reportdb\hedd\Fead\VRad\W06496.Edd; h:\Reportdb\hedd\Fead\VRad\53987.Ed

Lab Sample Id:	MXDGQ1CR
Client Id:	B2MYW8
Moisture/Solids%*:	

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix	RTyp				
Batch # / Qct 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	RER/ UCL	LCS LCL/UCL	R Typ
2331079 BE-7	-7.58E+00	pCi/L	7.6E+00	U	1.21E+01				GAMMALL_GS	1.8582E+00	12/04/2012	0.0	0.3	D
DUP 13966-02-4	-5.85E+00		7.6E+00						GAMMALL_GS	1.8582E+00	12/04/2012	0.0	3	
2331079 CO-60	-5.33E-01	pCi/L	9.3E-01	U	1.60E+00				GAMMALL_GS	1.8582E+00	12/04/2012	50216.	1.6	D
DUP 10198-40-0	5.38E-01		9.3E-01						GAMMALL_GS	1.8582E+00	12/04/2012	20.0	3	
2331079 CS-134	-1.05E+00	pCi/L	1.0E+00	U	1.63E+00				GAMMALL_GS	1.8582E+00	12/04/2012	0.0	2.1	D
DUP 13967-70-9	5.19E-01		1.0E+00						GAMMALL_GS	1.8582E+00	12/04/2012	20.0	3	
2331079 CS-137	6.31E-02	pCi/L	8.3E-01	U	1.55E+00				GAMMALL_GS	1.8582E+00	12/04/2012	0.0	0.6	D
DUP 10045-97-3	-2.86E-01		8.3E-01						GAMMALL_GS	1.8582E+00	12/04/2012	20.0	3	
2331079 EU-152	-1.43E-01	pCi/L	2.1E+00	U	3.64E+00				GAMMALL_GS	1.8582E+00	12/04/2012	240.1	1.2	D
DUP 14683-23-9	1.57E+00		2.1E+00						GAMMALL_GS	1.8582E+00	12/04/2012	20.0	3	
2331079 EU-154	-8.58E-01	pCi/L	3.5E+00	U	6.29E+00				GAMMALL_GS	1.8582E+00	12/04/2012	0.0	0.4	D
DUP 15585-10-1	-1.73E+00		3.5E+00						GAMMALL_GS	1.8582E+00	12/04/2012	20.0	3	
2331079 EU-155	5.87E-02	pCi/L	1.1E+00	U	2.01E+00				GAMMALL_GS	1.8582E+00	12/04/2012	148.8	0.4	D
DUP 14391-16-3	4.00E-01		1.1E+00						GAMMALL_GS	1.8582E+00	12/04/2012	20.0	3	
2331079 K-40	1.29E+00	pCi/L	2.0E+01	U	3.55E+01				GAMMALL_GS	1.8582E+00	12/04/2012	0.0	2.1	D
DUP 13966-00-2	-2.80E+01		2.0E+01						GAMMALL_GS	1.8582E+00	12/04/2012	20.0	3	
2331079 RU-106	-7.00E+00	pCi/L	7.7E+00	U	1.23E+01				GAMMALL_GS	1.8582E+00	12/04/2012	0.0	1.2	D
DUP 13967-48-1	-2.63E-01		7.7E+00						GAMMALL_GS	1.8582E+00	12/04/2012	20.0	3	
2331079 SB-125	4.24E-01	pCi/L	2.2E+00	U	4.01E+00				GAMMALL_GS	1.8582E+00	12/04/2012	0.0	0.7	D
DUP 14234-35-6	-6.47E-01		2.2E+00						GAMMALL_GS	1.8582E+00	12/04/2012	20.0	3	

DECEMBER 14, 2012

DECEMBER 14, 2012



Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

12/12/2012 11:00:30 AM

Lot No., Due Date: J2K160457; 12/21/2012
 Client, Site: 384868; PGW 615HANFORD HANFORD
 QC Batch No., Method Test: 2331079; RGAMMA Gamma by GER
 SDG, Matrix: W06496; 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:

NCM 10-22424

First Level


Krista Anderson

Date 12/18/12

TestAmerica Richland
QAS RADCALCV4.8.44

Page 1

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist RADIOCHEMISTRY Second Level Review

Batch Number: 2331079

Review Item	Yes (✓)	No (✗)	NA (✗)
A. Sample Analysis			
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. QC Samples			
1. Is the Minimum Detectable Activity for the blank result \leq 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 \leq 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?	✓		
C. Other			
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: CPOL = 6.0pc/l
Serial #: 15-22474

Second Level Review:

Date: 12/12/12

Clouseau

Nonconformance Memo



NCM #: **10-22424**
 NCM Initiated By: Lisa Antonson
 Date Opened: 12/12/2012
 Date Closed:

Classification: Anomaly
 Status: PMREVIEW
 Production Area: Environmental - Prep
 Tests: Gamma by GER
 Lot #'s (Sample #'s): J2K160457 (1,2), J2K260000 (79),
 QC Batches: 2331079,

Nonconformance: LCS result out of limits
 Subcategory: Analyte was recovered low in the LCS

Problem Description / Root Cause

Name	Date	Description
Lisa Antonson	12/12/2012	Cs-137 was recovered low at 65% in the LCS. A recount did not bring it within limits. There is no remaining sample for MXDGQ for reanalysis.

Corrective Action

Name	Date	Corrective Action
Lisa Antonson	12/12/2012	The client was contacted and the data will be accepted due to ISV for reanalysis.

Client Notification Summary

Client	Project Manager	Notified	Response	How Notified	Note

Quality Assurance Verification

Verified By	Due Date	Status	Notes
		This section not yet completed by QA.	

Approval History

Date Approved	Approved By	Position

DECEMBER 14, 2012



Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

12/6/2012 3:11:02 PM

Lot No., Due Date: J2K080444,J2K140451,J2K140454,J2K190434,J2K190435; 12/21/2012
Client, Site: 384868; PGW 615HANFORD HANFORD
QC Batch No., Method Test: 2331077; RGAMLEPS Gamma by LEPS
SDG, Matrix: W06496; 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 John Worth Date 12-6-12

TestAmerica Richland
QAS_RADCALcv4.8.44

Page 1

DECEMBER 14, 2012



THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

Batch Number: 2331077

Review Item	Yes (✓)	No (✗)	NA (✗)
A. Sample Analysis			
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. QC Samples			
1. Is the Minimum Detectable Activity for the blank result \leq 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 \leq 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?	✓		
C. Other			
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.

Date: 12/10/12

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

DECEMBER 14, 2012



Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

12/12/2012 11:22:30 AM

Lot No., Due Date: J2K190434; 12/21/2012
 Client, Site: 384868; PGW 615HANFORD HANFORD
 QC Batch No., Method Test: 2331080; RTRITIUM Midlevel Tritium
 SDG, Matrix: W06496; 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 12/12/12
 TestAmerica Richland
 QAS_RADCALv4.8.44

Page 1



THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

Batch Number: 2331080

Review Item	Yes (✓)	No (✗)	NA (✗)
A. Sample Analysis			
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. QC Samples			
1. Is the Minimum Detectable Activity for the blank result \leq 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 \leq 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?	✓		
C. Other			
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: CRDL = 30.0 pcu/l

Second Level Review: Shane Wagoner Date: 12/12/12

DECEMBER 14, 2012

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		C.O.C. # 113-004-010
				Page 1 of 1
Collector	F. M. Hall	Contact/Requester	Karen Waters-Husted	Telephone No.
SAF No.	113-004	Sampling Origin	Hanford Site	Purchase Order/Charge Code
Project Title	2UP1, NOVEMBER 2012	Logbook No.	HNF-N-506 12/12/2012	Ice Chest No.
Shipped To (Lab)	TestAmerica Incorporated, Richland	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No.
Protocol	CERCLA	Priority:	30 Days	PRIORITY
		SPECIAL INSTRUCTIONS		Hold Time
		200 Area 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"/>
				Preservative
				None
				None
POSSIBLE SAMPLE HAZARDS/REMARKS				
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)				
Sample No.	Filter *	Date	Time	No/Type Container
B2MP47	N	W	11-7-12 0245	1x20-mL P
B2MP47	N	W	↓	2x4-L G/P
<i>SAKOSOWNA WODOWA</i>				
Print Sign	Print Sign	Date/Time 11/08/2012	Date/Time 11/08/2012	Matrix *
F. M. Hall	SSU #1	NOV 07 2012	NOV 07 2012	S = Soil
Received By	Date/Time	Received By	Date/Time	DS = Drum Solids
SSU #1	11/08/2012	F. M. Hall	11/08/2012	SE = Sediment
Relinquished By	Date/Time	Received By	Date/Time	DL = Drum Liquids
RA Stereo	11/08/2012	RA Stereo	11/08/2012	SO = Solid
Relinquished By	Date/Time	Received By	Date/Time	T = Tissue
RA Stereo	11/08/2012	RA Stereo	11/08/2012	SL = Sludge
Relinquished By	Date/Time	Received By	Date/Time	WI = Wipe
J2K080444	11/08/2012	J2K080444	11/08/2012	W = Water
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)			Disposed By
				Date/Time
				A-6004-842 (REV 2)

DECEMBER 14, 2012

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST									
		C.O.C. # I13-004-011									
		Page 1 of 1									
Collector	F. M. Hall	Contact/Requester	Karen Waters-Husted		Telephone No.	376-4650					
SAF No.	I13-004	Sampling Origin	Hanford Site		Purchase Order/Charge Code	30007IES20					
Project Title	2UP1, NOVEMBER 2012	Logbook No.	HNF-N-506 49 / 74		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	PRIORITY	Offsite Property No.	N/A					
POSSIBLE SAMPLE HAZARDS/REMARKS					SPECIAL INSTRUCTIONS	Hold Time	Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
<small>** ** 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)</small>					<small>200 Area Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647.</small>						
52 KOSOYU WOODS											
Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative			
B2MP48	N	W	11-7-12	12:10	1x20-ml P	Activity Scan	6 Months	None			
B2MP48	N	W	↓	↓	2x4-L G/P	I129L_SEP_LEPS_GS_LL: I-129 (1) NAME	6 Months	None			
52 KOSOYU WOODS											

Relinquished By	F. M. Hall	Print	Sign	Date/Time 1505	Received By	Date/Time 1505	Print	Sign	Date/Time 1505	Matrix *
Relinquished By	<i>ssat #1</i>			11/8/12 0500	<i>KH</i>	Received By	<i>ssat #1</i>		NOV 07 2012	DS = Soil
Relinquished By	<i>KHS</i>			11/8/12 0500	<i>KH</i>	Received By	<i>KHS</i>		NOV 07 2012	SE = Sediment
Relinquished By	<i>KHS</i>			11/8/12 0500	<i>KH</i>	Received By	<i>KHS</i>		NOV 07 2012	SO = Solid
Relinquished By	<i>KHS</i>			11/8/12 0500	<i>KH</i>	Received By	<i>KHS</i>		NOV 07 2012	SL = Sludge
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)									Disposed By
										Date/Time

DECEMBER 14, 2012

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						C.O.C. # 113-004-012		
								Page 1 of 1		
Collector	F. M. Hall	Contact/Requester	Karen Waters-Husted		Telephone No.	376-4650				
SAF No.	113-004	Sampling Origin	Hanford Site		Purchase Order/Charge Code	300071ES20				
Project Title	2UP1, NOVEMBER 2012	Logbook No.	HNF-N-506 49 / 74		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	PRIORITY	Offsite Property No.	N/A				
					SPECIAL INSTRUCTIONS	Hold Time		Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
					200 Area Generator Knowledge Information Form applies. The CACN for all analytical work at WSFC is 401647.					
					Sample Analysis	Holding Time		Preservative		
Sample No.	Filter	*	Date	Time	No/Type Container					
B2MP55	N	W	11-7-12	11:20	1x20-ml_P	Activity Scan		6 Months		
B2MP55	N	W	✓	✓	2x4-L G/P	1129LL_SEP_LEPS_GS_LL: I-129 (1) MM9mf		6 Months		
					Disposed By	Date/Time		Matrix *		
Relinquished By	F. M. Hall	Print	Sign	Received By	Nov 07 2012	Sign	Nov 07 2012	Date/Time 1505	Matrix *	
Relinquished By	SSC #			Received By	11/8/12 0800			Date/Time		
Relinquished By	Richard J. Mohr			Received By	11-8-12 0800			Date/Time		
Relinquished By	Lucas Menezes			Received By	11-8-12 0800			Date/Time		
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)				Disposed By		Date/Time			
PRINTED O									A-6004-842 (REV 2)	

DECEMBER 14, 2012

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST										C.O.C. # 113-004-013
Collector	F. M. Haff	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650		Page 1 of 1					
SAF No.	113-004	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20							
Project Title	2UP1, NOVEMBER 2012	Logbook No.	HNF-N-506 <u>49</u> / <u>74-75</u>	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	PRIORITY	Offsite Property No.	N/A						
POSSIBLE SAMPLE HAZARDS/REMARKS *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)				SPECIAL INSTRUCTIONS		Hold Time	Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>					
				200 Area Generator Knowledge Information Form applies. The CACN for all analytical work at WSFC is 401647.								
Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time		Preservative			
B2MP59	N	W	11-7-12	1920	1x20-mL P	Activity Scan	6 Months		None			
B2MP59	N	W	✓	✓	2x4-L G/P	1129LL_SEP_LEPS_GS_LL: 1-129 (1) <u>Y0009111X</u>	6 Months		None			
<i>Sakosonu</i> <i>W000494</i>												
Relinquished By	F. M. Haff	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *			
Relinquished By	<i>SSC</i>	<i>SSC</i>	<i>SSC</i>	<i>11/12 0800</i>	<i>R.A. SPARAD</i>	<i>SSC</i>	<i>SSC</i>	<i>11/12 0800</i>	<i>SO</i>			
Relinquished By	<i>R.A. SPARAD</i>	<i>R.A. SPARAD</i>	<i>R.A. SPARAD</i>	<i>11/12 0800</i>	<i>Received By</i>	<i>Received By</i>	<i>Received By</i>	<i>Received By</i>	<i>SE</i>			
Relinquished By	<i>R.A. SPARAD</i>	<i>R.A. SPARAD</i>	<i>R.A. SPARAD</i>	<i>11/12 0800</i>	<i>Date/Time</i>	<i>Date/Time</i>	<i>Date/Time</i>	<i>Date/Time</i>	<i>SL</i>			
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)					Disposed By						
PRINTED O	10/10/2012					Date/Time						

DECEMBER 14, 2012

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST												
		C.O.C. # 113-004-014												
		Page 1 of 1												
Collector	F. M. Hall	Contact/Requester	Karen Waters-Husted		Telephone No.	376-4650								
SAF No.	113-004	Sampling Origin	Hanford Site		Purchase Order/Charge Code	300071ES20								
Project Title	2UPL, NOVEMBER 2012	Logbook No.	HNF-N-506 49 / 74		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		PRIORITY	Offsite Property No.	N/A							
POSSIBLE SAMPLE HAZARDS/REMARKS					SPECIAL INSTRUCTIONS	Hold Time	Total Activity Exemption: Yes <input checked="" 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)					200 Area Generator Knowledge Information Form applies. The CACN for all analytical work at WSCE is 401647.									
Sample No.	Filter *	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative							
B2MP63	N	W 11-7-12	1324	1x20-ml P	Activity Scan	6 Months	None							
B2MP63	N	W 11-7-12	1324	2x4-L GIP	1129LL_SEP_LEPS_GS_LL:1-129 (1) <i>Wm Wom</i>	6 Months	None							
Relinquished By	F. M. Hall	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *					
Relinquished By	<i>S S H</i>	<i>S S H</i>	<i>NOV 07 2012</i>	<i>11/8/12 0800</i>	<i>R M Shepard</i>	<i>R M Shepard</i>	<i>11/8/12 0800</i>	<i>NOV 07 2012</i>	S	= Soil	DS	= Drum Solids		
Relinquished By	<i>R M Shepard</i>	<i>R M Shepard</i>	<i>NOV 07 2012</i>	<i>11/8/12 0800</i>	<i>Karen Waters-Husted</i>	<i>Karen Waters-Husted</i>	<i>11/8/12 0800</i>	<i>NOV 07 2012</i>	SE	= Sediment	DL	= Drum Liquids		
Relinquished By									SL	= Sludge	T	= Tissue		
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)										Disposed By			
PRINTED O	10/10/2012										Date/Time			

DECEMBER 14, 2012

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						C.O.C. # 113-004-015																															
								Page 1 of 1																															
Collector	F. M. Hall	Contact/Requester	Karen Waters-Husted		Telephone No.	376-4650																																	
SAF No.	113-004	Sampling Origin	Hanford Site		Purchase Order/Charge Code	300071ES20																																	
Project Title	2UP1, NOVEMBER 2012	Logbook No.	HNF-N-506 11/12/08		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	PRIORITY	Offsite Property No.	N/A																																	
POSSIBLE SAMPLE HAZARDS/REMARKS				SPECIAL INSTRUCTIONS	Hold Time	Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																																	
				200 Area Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647.																																			
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Sample No.</th> <th>Filter</th> <th>*</th> <th>Date</th> <th>Time</th> <th>No/Type Container</th> <th>Sample Analysis</th> <th>Holding Time</th> <th colspan="2">Preservative</th> </tr> </thead> <tbody> <tr> <td>B2MP64</td> <td>N</td> <td>W</td> <td>11-7-12</td> <td>1324</td> <td>1x20-mL P</td> <td>Activity Scan</td> <td>6 Months</td> <td colspan="2">None</td> </tr> <tr> <td>B2MP64</td> <td>N</td> <td>W</td> <td>11-7-12</td> <td>1324</td> <td>2x4-L G/P</td> <td>129LL_SEP_LEPS_GS_LL: I-129 (1) <i>Wu9mK</i></td> <td>6 Months</td> <td colspan="2">None</td> </tr> </tbody> </table> <p><i>52K080444</i> <i>wu9mK</i></p>										Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative		B2MP64	N	W	11-7-12	1324	1x20-mL P	Activity Scan	6 Months	None		B2MP64	N	W	11-7-12	1324	2x4-L G/P	129LL_SEP_LEPS_GS_LL: I-129 (1) <i>Wu9mK</i>	6 Months	None	
Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative																															
B2MP64	N	W	11-7-12	1324	1x20-mL P	Activity Scan	6 Months	None																															
B2MP64	N	W	11-7-12	1324	2x4-L G/P	129LL_SEP_LEPS_GS_LL: I-129 (1) <i>Wu9mK</i>	6 Months	None																															
Relinquished By	F. M. Hall	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time	Matrix *																														
Relinquished By				NOV 07 2012	KAT Stepano		NOV 07 2012	11/12/08	S = Soil																														
Relinquished By				11/8/12 0800	Received By				SE = Sediment																														
Relinquished By				11/8/12 0800	Received By				SO = Solid																														
Relinquished By				11/8/12 0800	Received By				SL = Sludge																														
PRINTED O	10/10/2012	Disposal Method (e.g., Return to customer, per lab procedure, used in process)				Disposed By		Date/Time																															
A-6004-842 (REV 2)																																							

DECEMBER 14, 2012



Sample Check-in List

Date/Time Received: 11-8-12 @ 1300 Container GM Screen Result: (Airlock) .08 Initials [LV]
Sample GM Screen Result (Sample Receiving) .05 Initials [LV]

Client: PGH SDG #: WDOL496 NA [] SAF #: I13-004 NA []

Lot Number: SAK080444

Chain of Custody # I13-004-010; 11; 12; 13; 14; 15;

Shipping Container ID: Hand Delivery NA [LV] Air Bill Number: _____ N/A

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

Item 5 through 16 for samples. Initial appropriate response.

5. Chain of Custody record present? Yes [LV] No []
6. Number of samples received (Each sample may contain multiple bottles): 6
7. Containers received: 6X vial; 12X 4LP

8. Sample holding times exceeded? NA [] Yes [] No [LV]
9. Samples have:
tape LV 11-8-12
LV custody seals LV hazard labels
LV appropriate sample labels
10. Matrix:
A (FLT, Wipe, Solid, Soil) LV I (Water)
S (Air, Niosh 7400) LV T (Biological, Ni-63)
11. Samples:
LV are in good condition are leaking
 are broken have air bubbles (Only for samples requiring no head space)
 Other N/A
12. Sample pH appropriate for analysis requested Yes [LV] No [] NA []
(If acidification is necessary, then document sample ID, initial pH, amount of HNO₃ added and pH after addition on table overleaf)
13. RPL ID # of preservative used: N/A
14. Were any anomalies identified in sample receipt? Yes [] No [LV]
14. Description of anomalies (include sample numbers): NA [LV]

DECEMBER 14, 2012

TestAmerica

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

16. Additional Information: N/A

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

[24] Client/Courier unpack cooler.

Sample Custodian: LWGoos Date: 11-8-12

Date: 11-8-12

Client Informed on NA by NA Person contacted NA

[] No action necessary; process as is

Project Manager Laudice Vega Date 11-9-12

The figure consists of two hand-drawn titration curves plotted on lined notebook paper. A vertical black line separates the two curves.

Left Titration Curve:

- Initial pH: 10
- Final pH: 4
- Key points labeled: 10, 9, 8, 7, 6, 5, 4

Right Titration Curve:

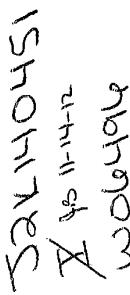
- Initial pH: 12
- Final pH: 4
- Key points labeled: 12, 11, 10, 9, 8, 7, 6, 5, 4

JAK080444

LS-023, Rev. 15, 07/11

See over for additional information.

DECEMBER 14, 2012

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				C.O.C. # II3-005-014	
						Page 1 of 1	
Collector	Robert Crow	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650		
SAF No.	II3-005	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20		
Project Title	2ZP1, NOVEMBER 2012	Logbook No.	HNF-N-506 <u>36 / 37</u>	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	PRIORITY	Offsite Property No.	N/A	
POSSIBLE SAMPLE HAZARDS/REMARKS			SPECIAL INSTRUCTIONS			Hold Time	
*** 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)			200 Area 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	Holding Time	Preservative
B2MP02	N	W <u>11-13-12</u>	<u>0900</u>	1x20-mL P	Activity Scan	6 Months	None
B2MP02	N	W <u>11-13-12</u>	<u>0900</u>	2x4-L G/P	1129LL_SEP_LEPS_GS_LL: 1-129 (1) <u>WNYC15</u>	6 Months	None
  J2K140451							
Relinquished By Robert Crow	Print R Crow	Sign NOV 13 2012	Date/Time 1404 Received By SSU-1	Print SSU-1	Sign NOV 13 2012	Date/Time 1404 Received By NOV 14 2012 0740	Matrix *
Relinquished By SSU-1	Print NOV 14 2012 0740	Sign NOV 14 2012 0740	Date/Time Received By NOV 14 2012 0940	Print NOV 14 2012 0940	Sign NOV 14 2012 0940	Date/Time Received By NOV 14 2012 0940	SO = Soil SE = Sediment SO = Solid SL = Sludge W = Water O = Oil A = Air
Relinquished By M Al White	Print M Al White	Sign NOV 14 2012 0940	Date/Time Received By NOV 14 2012 0940	Print NOV 14 2012 0940	Sign NOV 14 2012 0940	Date/Time Received By NOV 14 2012 0940	DS = Drum Solids DL = Drum Liquids T = Tissue WI = Wipe L = Liquid V = Vegetation X = Other
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)				Disposed By	Date/Time	
PRINTED ON	10/10/2012				Disposed By	Date/Time	

DECEMBER 14, 2012

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	
		C.O.C. #	II3-005-015
		Page 1 of 1	

Collector	Robert Crow	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650
SAF No.	I13-005	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20
Project Title	2ZP1, NOVEMBER 2012	Logbook No.	HNF-N-506 <u>36 / 37</u>	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	PRIORITY	Offsite Property No.
POSSIBLE SAMPLE HAZARDS/REMARKS			SPECIAL INSTRUCTIONS		
<small>*** 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)</small>			200 Area Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647.		
Sample No.	Filter	*	Date	Time	No/Type Container
B2MP03	N	W	<u>11/13/12</u>	<u>12:54</u>	1x20-ml_P
B2MP03	N	W	<u>11/13/12</u>	<u>12:54</u>	2x4-L_G/P
			Activity Scan 1129LL_SEP_LEPS_GS_LL:1-129 (1) YYXXCH15		
			Sample Analysis	Holding Time	Preservative
B2MP03				6 Months	None
B2MP03				6 Months	None

*Saximous
Woolsey*

Relinquished By	Print	Print	Date/Time	Received By	Date/Time	Print	Sign	Date/Time	Matrix *
Robert Crow	R Crow	NOV 14 2012	1403	550-1	NOV 13 2012			1403	Soil = Soil
Relinquished By			Date/Time	Received By	Date/Time				DS = Drum Solids
550-1			NOV 14 2012 0740	Malik White	NOV 14 2012 0740				SE = Sediment
Relinquished By			Date/Time	Received By	Date/Time				SO = Solid
Malik White			NOV 14 2012 0740	L	NOV 14 2012 0740				SL = Sludge
Relinquished By			Date/Time	Received By	Date/Time				WI = Water
			Received By						O = Oil
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time						V = Vegetation
PRINTED ON	10/10/2012								X = Other
A-6004-842 (REV 2)									

DECEMBER 14, 2012



Sample Check-in List

Date/Time Received: 11-14-12 / 0940 Container GM Screen Result: (Airlock) .05 Initials JZ
Sample GM Screen Result (Sample Receiving) .04 Initials JZ

Client: Pbw SDG #: WD4496 NA [] SAF #: I13-005 NA []

Lot Number: JK140451

Chain of Custody # I13-005014;015

Shipping Container ID: Hand deliv. NA b5 Air Bill Number: _____ NA b3

Samples received inside shipping container/cooler/box Yes b3 Continue with 1 through 4. Initial appropriate response.

No [] Go to 5, add comment to #16.

1. Custody Seals on shipping container intact? Yes b3 No [] No Custody Seal b3
2. Custody Seals dated and signed? Yes [] No [] No Custody Seal b3
3. Cooler temperature: _____ °C NA b3
4. Vermiculite/packing materials is NA b3 Wet [] Dry []

Item 5 through 16 for samples. Initial appropriate response.

5. Chain of Custody record present? Yes b3 No []
6. Number of samples received (Each sample may contain multiple bottles): 2
7. Containers received: 2 x vial 20 ; 4 x 410
8. Sample holding times exceeded? NA [] Yes [] No b3
9. Samples have:
b3 tape hazard labels
b3 custody seals appropriate sample labels
10. Matrix:
b3 A (FLT, Wipe, Solid, Soil) I (Water)
b3 S (Air, Niosh 7400) T (Biological, Ni-63)
11. Samples:
b3 are in good condition _____ are leaking
b3 are broken _____ have air bubbles (Only for samples requiring no head space)
Other N/A
12. Sample pH appropriate for analysis requested Yes b3 No [] NA []
(If acidification is necessary, then document sample ID, initial pH, amount of HNO₃ added and pH after addition on table overleaf)
13. RPL ID # of preservative used : N/A
14. Were any anomalies identified in sample receipt? Yes [] No b3
15. Description of anomalies (include sample numbers): NA b3

DECEMBER 14, 2012

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

16. Additional Information: N/A

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

Sample Custodian: Jane Beck Date: 11-14-12

Client Informed on NA by NA Person contacted NA

[] No action necessary; process as is

Project Manager Laundra Seeger Date 11-15-12

J2K 140451 SKS 11-15-12

DECEMBER 14, 2012

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						C.O.C. # I13-004-016	
								Page 1 of 1	
Collector	D.J. Woohie CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650				
SAF No.	113-004	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20				
Project Title	2UP1, NOVEMBER 2012	Logbook No.	HNF-N-506 48/90	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	CERCLA	Priority	30 Days	PRIORITY	Offsite Property No.	N/A			
POSSIBLE SAMPLE HAZARDS/REMARKS				SPECIAL INSTRUCTIONS	Hold Time	Total Activity Exemption: Yes <input checked="" 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)				200 Area 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	
B2MP79	N	W	11/14/12	1108	1x20-mL P	Activity Scan	6 Months	None	
B2MP79	N	W	11/14/12	↓	2x4-L G/P	1129LL_SEP_1EPS_GS_LL:1-129(1) M ACK R	6 Months	None	
<i>Sawyer</i>					 J2K140454				
Relinquished By D.J. Woohie CHPRC	Print <i>D.J. Woohie</i>	Sign <i>Nov 14 2012</i>	Date/Time 11/14/2012 12:30	Received By <i>M. A. White</i>	Print <i>M. A. White</i>	Sign <i>NOV 14 2012</i>	Date/Time 11/14/2012 12:30	Matrix *	
Relinquished By <i>M. A. White</i>	Print <i>M. A. White</i>	Sign <i>Nov 14 2012</i>	Date/Time 11/14/2012 1445	Received By <i>J. Scott Tarr</i>	Print <i>J. Scott Tarr</i>	Sign <i>NOV 14 2012</i>	Date/Time 11/14/2012 1445	Matrix *	
Relinquished By <i>M. A. White</i>	Print <i>M. A. White</i>	Sign <i>Nov 14 2012</i>	Date/Time 11/14/2012 1445	Received By <i>M. A. White</i>	Print <i>M. A. White</i>	Sign <i>NOV 14 2012</i>	Date/Time 11/14/2012 1445	Matrix *	
Relinquished By <i>M. A. White</i>	Print <i>M. A. White</i>	Sign <i>Nov 14 2012</i>	Date/Time 11/14/2012 1445	Received By <i>M. A. White</i>	Print <i>M. A. White</i>	Sign <i>NOV 14 2012</i>	Date/Time 11/14/2012 1445	Matrix *	
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)							Disposed By	
								Date/Time	

DECEMBER 14, 2012



Sample Check-in List

Date/Time Received: 11-14-12 / 1445 Container GM Screen Result: (Airlock) .04 Initials B
Sample GM Screen Result (Sample Receiving) .02 Initials B

Client: Pew SDG #: W006494 NA [] SAF #: I13-004 NA []

Lot Number: J2L140454

Chain of Custody # I13-004-016

Shipping Container ID: hand deliv. NA 16 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: 1x vial 20, 2 x 4LP
8. Sample holding times exceeded? NA [] Yes [] No B []
9. Samples have:
B tape hazard labels
B custody seals 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 N/A
12. Sample pH appropriate for analysis requested Yes B [] No [] NA []
(If acidification is necessary, then document sample ID, initial pH, amount of HNO₃ added and pH after addition on table overleaf)
13. RPL ID # of preservative used: N/A
14. Were any anomalies identified in sample receipt? Yes [] No B []
15. Description of anomalies (include sample numbers): NA B []

DECEMBER 14, 2012



15. Sample Location, Sample Collector Listed on COC? * Yes [] No []

*For documentation only. No corrective action needed.

16. Additional Information: N/A

Client/Courier denied temperature check.

[] Client/Courier unpack cooler.

Sample Custodian: John Beck Date: 11-14-12

Date: 11-14-12

Client Informed on NA by NA Person contacted NA

[✓] No action necessary; process as is

Project Manager Sandra Geer Date 11-15-12

J2K140454

SKS 11-15-12

LS-023, Rev. 15, 07/11

See over for additional information.

DECEMBER 14, 2012

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	
	C.O.C. # S13-012-172	Page 1 of 1

Collector FM Hall CHPRC	Contact/Requester Sampling Origin Sampling Site	Karen Waters-Husted Hanford Site	Telephone No. 376-4650																										
SAF No. S13-012	Logbook No. HNF-N-506 <u>SL 4Q</u>	Purchase Order/Charge Code Ice Chest No.	300071ES20 N/A																										
Project Title SURV, DECEMBER 2012	Method of Shipment	GOVERNMENT VEHICLE	Bill of Lading/Air Bill No. N/A																										
Shipped To (Lab) TestAmerica Incorporated, Richland	Priority: 30 Days	PRIORITY	Offsite Property No. N/A																										
POSSIBLE SAMPLE HAZARDS/REMARKS *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)		SPECIAL INSTRUCTIONS FY12 and FY13 samples cannot be in the same SDG. Site-Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647.																											
<table border="1"> <thead> <tr> <th>Sample No.</th> <th>Filter *</th> <th>Date</th> <th>Time</th> <th>No/Type Container</th> <th>Sample Analysis</th> <th>Holding Time</th> <th>Preservative</th> </tr> </thead> <tbody> <tr> <td>B2MYYW8</td> <td>N</td> <td>W</td> <td>11/15/12</td> <td>12:39</td> <td>1x20-mL P</td> <td>Activity Scan</td> <td>6 Months</td> <td>None</td> </tr> <tr> <td>B2MYYW8</td> <td>N</td> <td>W</td> <td>↓</td> <td>↓</td> <td>1x4-L G/P</td> <td>GAMMAALL_GS_List-1 (9) <u>MXD5Q</u></td> <td>6 Months</td> <td>HNO3 to pH <2</td> </tr> </tbody> </table> <p><i>SAKUOSEN WODUGAQ</i></p>				Sample No.	Filter *	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative	B2MYYW8	N	W	11/15/12	12:39	1x20-mL P	Activity Scan	6 Months	None	B2MYYW8	N	W	↓	↓	1x4-L G/P	GAMMAALL_GS_List-1 (9) <u>MXD5Q</u>	6 Months	HNO3 to pH <2
Sample No.	Filter *	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative																						
B2MYYW8	N	W	11/15/12	12:39	1x20-mL P	Activity Scan	6 Months	None																					
B2MYYW8	N	W	↓	↓	1x4-L G/P	GAMMAALL_GS_List-1 (9) <u>MXD5Q</u>	6 Months	HNO3 to pH <2																					

Sample No.	Filter *	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative	
B2MYYW8	N	W	11/15/12	12:39	1x20-mL P	Activity Scan	6 Months	None
B2MYYW8	N	W	↓	↓	1x4-L G/P	GAMMAALL_GS_List-1 (9) <u>MXD5Q</u>	6 Months	HNO3 to pH <2



Relinquished By SSU #1	Print FM Hall CHPRC	Sign NOV 15 2012	Date/Time 11-16-12 1200	Received By <i>ed Karen Edwards</i>	Print SSU #1	Date/Time NOV 15 2012	Sign <i>ed Karen Edwards</i>	Date/Time 11-16-12 1200	Matrix *
Relinquished By <i>Ed Karen Edwards</i>	Print FM Hall CHPRC	Sign NOV 15 2012	Date/Time 11-16-12 1315	Received By <i>ed Karen Edwards</i>	Print SSU #1	Date/Time NOV 15 2012	Sign <i>ed Karen Edwards</i>	Date/Time 11-16-12 1315	
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)				Disposed By				Date/Time

1315 11-16-12

PRINTED ON 10/24/2012

A-6004-842 (REV 2)

DECEMBER 14, 2012

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	
	C.O.C. # S13-012-173	
	Page 1 of 1	

Collector FM Hall CHPRC S13-012	Contact/Requester Sampling Origin Sampling Site	Karen Waters-Husted Hanford Site	Telephone No. 376-4650																										
SAF No.			Purchase Order/Charge Code 300071ES20																										
Project Title	SURV, DECEMBER 2012	Logbook No. HNF-N-506 <u>51/48</u>	Ice Chest No. N/A																										
Shipped To (Lab)	TestAmerica Incorporated, Richland	Method of Shipment GOVERNMENT VEHICLE	Bill of Lading/Air Bill No. N/A																										
Protocol	SURV	Priority: 30 Days	PRIORITY Offsite Property No. N/A																										
Possible Sample Hazards/Remarks *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)		SPECIAL INSTRUCTIONS FYI2 and FYI3 samples cannot be in the same SDG. Site-Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647.																											
<table border="1"> <thead> <tr> <th>Sample No.</th> <th>Filter *</th> <th>Date</th> <th>Time</th> <th>No/Type Container</th> <th>Sample Analysis</th> <th>Holding Time</th> <th>Preservative</th> </tr> </thead> <tbody> <tr> <td>B2N005</td> <td>N</td> <td>W</td> <td>11/15/12</td> <td>13:09</td> <td>1x20-mL P ↓</td> <td>Activity Scan GAMMALL_GS; List-1 (9) <u>MAXDISR</u></td> <td>6 Months</td> <td>None</td> </tr> <tr> <td>B2N005</td> <td>N</td> <td>W</td> <td>↓</td> <td>↓</td> <td>1x4-L G/P</td> <td></td> <td>6 Months</td> <td>HNO3 to pH <2</td> </tr> </tbody> </table>				Sample No.	Filter *	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative	B2N005	N	W	11/15/12	13:09	1x20-mL P ↓	Activity Scan GAMMALL_GS; List-1 (9) <u>MAXDISR</u>	6 Months	None	B2N005	N	W	↓	↓	1x4-L G/P		6 Months	HNO3 to pH <2
Sample No.	Filter *	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative																						
B2N005	N	W	11/15/12	13:09	1x20-mL P ↓	Activity Scan GAMMALL_GS; List-1 (9) <u>MAXDISR</u>	6 Months	None																					
B2N005	N	W	↓	↓	1x4-L G/P		6 Months	HNO3 to pH <2																					

Saxxons
woman

Relinquished By FM Hall CHPRC	Date/Time <u>1522</u> <u>11-16-12 1200</u>	Received By <u>Elaine Shellen</u>	Date/Time <u>1522</u> <u>11-16-12 1200</u>	Print <u>SSU #1</u>	Sign <u>NOV 15 2012</u>	Date/Time <u>1522</u> <u>11-16-12 1315</u>	Matrix *
Relinquished By <u>SSU #1</u>	Date/Time <u>11-16-12 1200</u>	Received By <u>Elaine Shellen</u>	Date/Time <u>11-16-12 1200</u>				
Relinquished By <u>Elaine Shellen</u>	Date/Time <u>11-16-12 1315</u>	Received By <u>SSU #1</u>	Date/Time <u>11-16-12 1315</u>				
Relinquished By	Date/Time	Received By	Date/Time	Disposed By		Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)						A-6004-842 (REV2)

DECEMBER 14, 2012



Sample Check-in List

Date/Time Received: 11-16-12 / 1315 Container GM Screen Result: (Airlock) 02 Initials BP]
Sample GM Screen Result (Sample Receiving) 04 Initials BP]

Client: Pbw SDG #: WD649P NA [] SAF #: S13-012-116-NA []
Lot Number: JAK10457 O12

Chain of Custody # S13-012-172; 173

Shipping Container ID: Land dev. NA PS Air Bill Number: _____ NA PS

Samples received inside shipping container/cooler/box Yes BP] Continue with 1 through 4. Initial appropriate response.

No [] Go to 5, add comment to #16.

1. Custody Seals on shipping container intact? Yes BP] No [] No Custody Seal BP]
2. Custody Seals dated and signed? Yes [] No [] No Custody Seal BP]
3. Cooler temperature: _____ °C NA BP]
4. Vermiculite/packing materials is NA BP] Wet [] Dry []

Item 5 through 16 for samples. Initial appropriate response.

5. Chain of Custody record present? Yes BP] No []
6. Number of samples received (Each sample may contain multiple bottles): 2
7. Containers received: 2 x vial 20; 2 x 4LP
8. Sample holding times exceeded? NA [] Yes [] No BP]
9. Samples have:
 tape hazard labels
 custody seals appropriate sample labels
10. Matrix:
 A (FLT, Wipe, Solid, Soil)
 S (Air, Niosh 7400) BP I (Water)
BP T (Biological, Ni-63)
11. Samples:
 are in good condition _____ are leaking
 are broken _____ have air bubbles (Only for samples requiring no head space)
 Other N/A
12. Sample pH appropriate for analysis requested Yes BP] No [] NA []
(If acidification is necessary, then document sample ID, initial pH, amount of HNO₃ added and pH after addition on table overleaf)
13. RPL ID # of preservative used: N/A
14. Were any anomalies identified in sample receipt? Yes [] No BP]
15. Description of anomalies (include sample numbers): NA BP

DECEMBER 14, 2012

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

Yes [] No []

16. Additional Information: NA

Client/Courier denied temperature check.

3] Client/Courier unpack cooler.

Sample Custodian:

Date: 11-16-12

Client Informed on NA by NA Person contacted NA

[] No action necessary; process as is

Project Manager Audrae Cooper Date 11-19-12

J2K160457 SKSII-19-12

DECEMBER 14, 2012

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	
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C.O.C. #
S13-011-082

Page 1 of 1

Collector	AL MCINTYRE / CHPRC	Contact/Requester	Karen Waters-Husted	Telephone No.	376-4650																																				
SAF No.	S13-011	Sampling Origin	Hanford Site	Purchase Order/Charge Code	300071ES20																																				
Project Title	SURV, NOVEMBER 2012	Logbook No.	HNF-N-506 <u>51</u> / <u>50</u>	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																																				
POSSIBLE SAMPLE HAZARDS/REMARKS			SPECIAL INSTRUCTIONS																																						
*** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5440.5 (1990/1993)			Holding Time Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> FY12 and FY13 samples cannot be in the same SDG. Site-Wide Generator Knowledge Information Form applies. The CACN for all analytical work at WSCF is 401647.																																						
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Sample No.</th> <th>Filter</th> <th>*</th> <th>Date</th> <th>Time</th> <th>No/Type Container</th> <th>Sample Analysis</th> <th>Holding Time</th> <th>Preservative</th> </tr> </thead> <tbody> <tr> <td>B2MML7</td> <td>N</td> <td>W</td> <td>11/16/12</td> <td>1059</td> <td>1x1-L P</td> <td>906.0ML_H3_LSC: Mid-level Tritium (1) Activity Scan</td> <td>6 Months</td> <td>None</td> </tr> <tr> <td>B2MML7</td> <td>N</td> <td>W</td> <td>↓</td> <td>↓</td> <td>1x20-mL P</td> <td></td> <td>6 Months</td> <td>None</td> </tr> <tr> <td>B2MML7</td> <td>N</td> <td>W</td> <td>↓</td> <td>↓</td> <td>2x4-L G/P</td> <td>1129LL_SEP_LEPS_GS_LL: I-129 (1) AND D24</td> <td>6 Months</td> <td>None</td> </tr> </tbody> </table>						Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative	B2MML7	N	W	11/16/12	1059	1x1-L P	906.0ML_H3_LSC: Mid-level Tritium (1) Activity Scan	6 Months	None	B2MML7	N	W	↓	↓	1x20-mL P		6 Months	None	B2MML7	N	W	↓	↓	2x4-L G/P	1129LL_SEP_LEPS_GS_LL: I-129 (1) AND D24	6 Months	None
Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative																																	
B2MML7	N	W	11/16/12	1059	1x1-L P	906.0ML_H3_LSC: Mid-level Tritium (1) Activity Scan	6 Months	None																																	
B2MML7	N	W	↓	↓	1x20-mL P		6 Months	None																																	
B2MML7	N	W	↓	↓	2x4-L G/P	1129LL_SEP_LEPS_GS_LL: I-129 (1) AND D24	6 Months	None																																	

TestAmerica Laboratories, Inc.

46

Relinquished By AL MCINTYRE / CHPRC	Print <u>John J.</u>	Date/Time NOV 16 2012 13:15	Received By SSU #1	Date/Time NOV 16 2012 13:15	Sign	Date/Time NOV 16 2012 13:15	Matrix *
Relinquished By SSU #1	Print <u>John J.</u>	Date/Time NOV 16 2012 13:15	Received By AL MCINTYRE	Date/Time NOV 16 2012 10:30	Sign	Date/Time NOV 16 2012 10:30	Matrix *
Relinquished By AL MCINTYRE	Print <u>John J.</u>	Date/Time NOV 16 2012 13:15	Received By SSU #1	Date/Time NOV 16 2012 10:30	Sign	Date/Time NOV 16 2012 10:30	Matrix *
Relinquished By FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By					

PRINTED ON 10/10/2012

Date/Time
A-6004-842 (REV2)



J2K190434
W00494

DECEMBER 14, 2012



Sample Check-in List

Date/Time Received: 11-19-12 C115 Container GM Screen Result: (Airlock) .03 Initials W
Sample GM Screen Result (Sample Receiving) .03 Initials W

Client: PGL SDG #: WA494 NA [] SAF #: S13-011 NA []

Lot Number: JAK190434

Chain of Custody # S13-011-082

Shipping Container ID: Hand Delivery NA 05 Air Bill Number: NAW

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

Item 5 through 16 for samples. Initial appropriate response.

5. Chain of Custody record present? Yes LV No []
6. Number of samples received (Each sample may contain multiple bottles): 1
7. Containers received: 1Xrial; 1XLP; 2XULP

8. Sample holding times exceeded? NA [] Yes [] No LV
9. Samples have:
tape LV hazard labels
LV custody seals LV appropriate sample labels
10. Matrix:
A (FLT, Wipe, Solid, Soil) LV I (Water)
S (Air, Niosh 7400) LV T (Biological, Ni-63)
11. Samples:
W are in good condition _____ are leaking
W are broken _____ have air bubbles (Only for samples requiring no head space)
Other N/A W1M9-12
12. Sample pH appropriate for analysis requested Yes LV No [] NA LIT
(If acidification is necessary, then document sample ID, initial pH, amount of HNO₃ added and pH after addition on table overleaf)
13. RPL ID # of preservative used: N/A
14. Were any anomalies identified in sample receipt? Yes [] No LV
14. Description of anomalies (include sample numbers): NA W

DECEMBER 14, 2012



15. Sample Location, Sample Collector Listed on COC? * Yes [] No []

*For documentation only. No corrective action needed.

16. Additional Information: N/A

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

[W] Client/Courier unpack cooler.

Sample Custodian: LV Goss Date: 11-19-17

Date: 11-19-12

Client Informed on NA by NA Person contacted NA

[] No action necessary; process as is

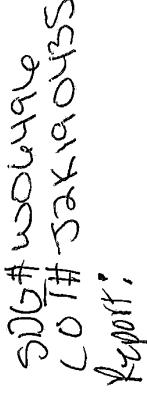
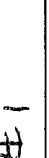
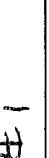
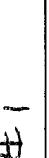
Project Manager Savisha Segeer Date 11-20-12

J2K190434 SKS 11-20-12

LS-023, Rev. 15, 07/11

See over for additional information.

DECEMBER 14, 2012

CH2MHill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST										C.O.C. # S13-010-159
												Page 1 of 1
Collector	AL MCINTYRE / CHPRC	Contact/Requester	Karen Waters-Husted		Telephone No.		376-4650					
SAF No.	S13-010	Sampling Origin	Hanford Site		Purchase Order/Charge Code		300071ES20					
Project Title	SURV, OCTOBER 2012	Logbook No.	HNF-N-506 51 / 50		Ice Chest No.		N/A					
Shipped To (Lab)	TestAmerica Incorporated, Richland	Method of Shipment	GOVERNMENT VEHICLE		Bill of Lading/Air Bill No.		N/A					
Protocol	SURV	Priority:	30 Days	PRIORITY	Offsite Property No.		N/A					
POSSIBLE SAMPLE HAZARDS/REMARKS *** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not releasable per DOE Order 5400.5 (1990/1993)				SPECIAL INSTRUCTIONS		HOLD TIME	Total Activity Exemption: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>					
				Sample Analysis		Holding Time	Preservative					
Sample No.	Filter	*	Date	Time	No/Type Container							
B2M479	N	W	11/12/12	0959	1x20-mL P	Activity Scan	6 Months	None				
B2M479	N	W	↓	↓	2x4-L G/P	1129LL_SEP_LEPS_GS_LL:1-129 (1) 	6 Months	None				
  J2K190435												
Relinquished By AL MCINTYRE / CHPRC	Print 	Date/Time NOV 16 2012 1315	Received By SSU	Date/Time NOV 16 2012 1315	Print NOV 16 2012 1315	Sign 	Date/Time NOV 16 2012 1315	Matrix *				
Relinquished By SSU	Print 	Date/Time NOV 16 2012 1315	Received By AL MCINTYRE / CHPRC	Date/Time NOV 16 2012 1315	Print NOV 16 2012 1315	Sign 	Date/Time NOV 16 2012 1315	Matrix *				
Relinquished By AL MCINTYRE / CHPRC	Print 	Date/Time NOV 16 2012 1315	Received By SSU	Date/Time NOV 16 2012 1315	Print NOV 16 2012 1315	Sign 	Date/Time NOV 16 2012 1315	Matrix *				
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)				Disposed By		Date/Time					
PRINTED ON	8/30/2012										A-6004-842 (REV 2)	

DECEMBER 14, 2012



Sample Check-in List

Date/Time Received: 11-19-12 C115 Container GM Screen Result: (Airlock) .03 Initials WV
Sample GM Screen Result (Sample Receiving) .03 Initials WV

Client: PGW SDG #: UN0494 NA [] SAF #: SL300513-010 NA []
SKS11-20-12

Lot Number: JAX190435

Chain of Custody # S13-010-159

Shipping Container ID: Hand Delivery NA WV Air Bill Number: _____ NA WV

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

Item 5 through 16 for samples. Initial appropriate response.

5. Chain of Custody record present? Yes WV No []
6. Number of samples received (Each sample may contain multiple bottles): 1
7. Containers received: 1xvial, 2x4LP

8. Sample holding times exceeded? NA [] Yes [] No WV
9. Samples have:
WV tape WV hazard labels
WV custody seals WV appropriate sample labels
10. Matrix:
WV A (FLT, Wipe, Solid, Soil) WV I (Water)
WV S (Air, Niosh 7400) WV T (Biological, Ni-63)
11. Samples:
WV are in good condition WV are leaking
WV are broken WV have air bubbles (Only for samples requiring no head space)
WV Other N/A
12. Sample pH appropriate for analysis requested Yes WV No [] NA []
(If acidification is necessary, then document sample ID, initial pH, amount of HNO₃ added and pH after addition on table overleaf)
13. RPL ID # of preservative used: WV
14. Were any anomalies identified in sample receipt? Yes [] No WV
15. Description of anomalies (include sample numbers): NA WV

DECEMBER 14, 2012

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THE LEADER IN ENVIRONMENTAL TESTING

15. Sample Location, Sample Collector Listed on COC? * Yes No

*For documentation only. No corrective action needed.

16. Additional Information: *N/A*

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

] Client/Courier unpack cooler.

Sample Custodian: LVP Date: 1-14-12

Client Informed on NA by NA Person contacted NA

No action necessary; process as is

Project Manager Sandra Sager, Date 11-20-12

A graph showing two titration curves on a grid. The x-axis is labeled "ACID AMOUNT" and the y-axis is labeled "pH". The left curve starts at pH ~11.5 and decreases to ~2.5. The right curve starts at pH ~11.5 and decreases to ~2.5. Both curves show a sharp initial drop followed by a leveling off.

J2K 190435

SKS 11-20-12

LS-023, Rev. 15, 07/11

See over for additional information.

DECEMBER 14, 2012

Sample Preparation/Analysis										Balance Id:1120403183		
AW Gamma Prg GAM001 TA Gamma by HPGE					Pipet #:							
5) CLIENT: HANFORD					Sep1 DT/Tm Tech:							
Sep2 DT/Tm Tech:					Sep2 DT/Tm 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	Time Min	Detector Id	Count On / Off (24hr) Circle	CR Analyst, Init/Date
< 1 MxDGQ-1-AA J2K160457-1-SAMP 11/15/2012 12:39	2000.30g,in	2000.30g										Comments:
2 MxDGQ-1-AC-X J2K160457-1-DUP 11/15/2012 12:39	1858.20g,in	1858.20g										Beta: 1.03E-03 uCi/Sa
3 MXDGR-1-AA J2K160457-2-SAMP 11/15/2012 13:19	2000.80g,in	2000.80g										Beta: 1.03E-03 uCi/Sa
4 MXEWG-1-AA-B J2K260000-79-BLK 11/27/2012 10:02 pd	2000.40g,in	2000.40g										Beta: 1.59E-04 uCi/Sa
5 MXEWG-1-AC-C J2K260000-79-LCS 11/27/2012 10:02 pd	2000.20g,in	2000.20g			QCAG1907 04/11/12,0d 11/17/03,r							Beta: 1.60E-04 uCi/Sa
Comments: MXEWG-BLK Comments:P-12-00228,P-12-00478										Scr:	G 18 / 1352	Beta: 1.59E-04 uCi/Sa
Comments: MXEWG-BLK Comments:P-12-00228,P-12-00478										Scr:	G 19 / 1353	Beta: 1.60E-04 uCi/Sa
All Clients For Batch: 384868, CH2M Hill Plateau Remediation Company										Pacific Northwest National Lab,	SS ,	57671
Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 pd - Prep Dt, dc - Date Cng, r - Reference Dt, ec -Enrichment Cell, ct-Cocktailed Added Richland Wa.										ISV - Insufficient Volume for Analysis	WO Cnt: 5	
MxDGQ1AA-SAMP Constituent List:										Prep_SampleRep v4.8.60		

DECEMBER 14, 2012

Sample Preparation/Analysis										Balance Id:1120403183																																																																			
AW Gamma Prp GAM001 TA Gamma by HPGE										Pipet #:																																																																			
5I CLIENT: HANFORD										Sep1 DT/Tm Tech:																																																																			
Batch: 2331079 SEC Batch, Test: None										Sep2 DT/Tm Tech:																																																																			
pCi/L										Prep Tech: RichardsonB																																																																			
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Cs-137	RDL:6	pCi/L	ICL:70	TCL:130	RDL:20	Cs-137DA	RDL:6.00E+00	pCi/L	ICL:	UCL:	RPD:																																																																		
K-40	RDL:--	pCi/L	ICL:70	TCL:130	RDL:20	Eu-155	RDL:0.-00E+00	pCi/L	ICL:	UCL:	RPD:																																																																		
RA-228	RDL:--	pCi/L	ICL:70	TCL:130	RDL:20	RA-228DA	RDL:0.-00E+00	pCi/L	ICL:	UCL:	RPD:																																																																		
U-238	RDL:--	pCi/L	ICL:70	TCL:130	RDL:20																																																																								
<table border="1"> <thead> <tr> <th>WORKING1AA-SAMP Calc Info:</th><th>Uncert Level (#s):</th><th>2</th><th>Decay to Snt: Y</th><th>Blk Subt.: N</th><th>Sci.Not.: Y</th><th>ODRS: B</th><th></th><th></th><th></th><th></th><th></th></tr> </thead> <tbody> <tr> <td>WORKING1AA-BLK:</td><td>Uncert Level (#s):</td><td>2</td><td>Decay to Snt: Y</td><td>Blk Subt.: N</td><td>Sci.Not.: Y</td><td>ODRS: B</td><td></td><td></td><td></td><td></td><td></td></tr> <tr> <td>WORKING1AC-LCS:</td><td>Uncert Level (#s):</td><td>2</td><td>Decay to Snt: Y</td><td>Blk Subt.: N</td><td>Sci.Not.: Y</td><td>ODRS: B</td><td></td><td></td><td></td><td></td><td></td></tr> <tr> <td></td><td>Uncert Level (#s):</td><td>2</td><td>Decay to Snt: Y</td><td>Blk Subt.: N</td><td>Sci.Not.: Y</td><td>ODRS: B</td><td></td><td></td><td></td><td></td><td></td></tr> </tbody> </table>												WORKING1AA-SAMP Calc Info:	Uncert Level (#s):	2	Decay to Snt: Y	Blk Subt.: N	Sci.Not.: Y	ODRS: B						WORKING1AA-BLK:	Uncert Level (#s):	2	Decay to Snt: Y	Blk Subt.: N	Sci.Not.: Y	ODRS: B						WORKING1AC-LCS:	Uncert Level (#s):	2	Decay to Snt: Y	Blk Subt.: N	Sci.Not.: Y	ODRS: B							Uncert Level (#s):	2	Decay to Snt: Y	Blk Subt.: N	Sci.Not.: Y	ODRS: B																							
WORKING1AA-SAMP Calc Info:	Uncert Level (#s):	2	Decay to Snt: Y	Blk Subt.: N	Sci.Not.: Y	ODRS: B																																																																							
WORKING1AA-BLK:	Uncert Level (#s):	2	Decay to Snt: Y	Blk Subt.: N	Sci.Not.: Y	ODRS: B																																																																							
WORKING1AC-LCS:	Uncert Level (#s):	2	Decay to Snt: Y	Blk Subt.: N	Sci.Not.: Y	ODRS: B																																																																							
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<table border="1"> <thead> <tr> <th>TestAmerica</th><th>Key: In - Initial Amt, f - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2</th><th>Page 2</th><th>ISV - Insufficient Volume for Analysis</th><th>WO Cnt: 5</th><th>Prep_SamplePrep v4.8.60</th></tr> </thead> <tbody> <tr> <td>Richland Wa.</td><td>pd - Prep Dt, dc - Date Chg, r - Reference Dt, ct-Cocktailled Added</td><td></td><td></td><td></td><td></td></tr> </tbody> </table>												TestAmerica	Key: In - Initial Amt, f - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2	Page 2	ISV - Insufficient Volume for Analysis	WO Cnt: 5	Prep_SamplePrep v4.8.60	Richland Wa.	pd - Prep Dt, dc - Date Chg, r - Reference Dt, ct-Cocktailled Added																																																										
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Richland Wa.	pd - Prep Dt, dc - Date Chg, r - Reference Dt, ct-Cocktailled Added																																																																												

DECEMBER 14, 2012

12/12/2012 10:55:58 AM	ICOC Fraction Transfer/Status Report				
ByDate: 12/13/2011, 12/17/2012, Batch: '2331079', User: *ALL Order By DateTimeAccepting					
Q	Batch	Work Ord	CurStatus	Accepting	Comments
2331079					
AC		Rev1C	RichardsonB	11/28/2012 9:48:13	
SC		davilan	IsBatched	11/27/2012 10:03:42 AM	ICOC_RADCALC v4.8.49
SC		RichardsonB	InPrep	11/28/2012 9:48:13 AM	RL-PRP-004 REVISION 2
SC		SannohS	InPrep	12/4/2012 10:19:46 AM	RL-PRP-004 REVISION 2
SC		SannohS	Prep1C	12/4/2012 10:21:12 AM	RL-PRP-004 REVISION 2
SC		HiattC	InCnt1	12/4/2012 10:25:25 AM	RL-CI-007 REV. 2
SC		ClarkR	CalcC	12/4/2012 2:21:35 PM	RL-CI-007 REV. 2
SC		HiattC	InCnt1	12/5/2012 10:15:16 AM	RL-CI-007 REV. 2
SC		ClarkR	CalcC	12/5/2012 2:22:58 PM	RL-CI-007 REV. 2
SC		antonsonl	Rev1C	12/12/2012 10:55:46 AM	RL-DR-001 Rev 2
AC		SannohS		12/4/2012 10:19:46	
AC		SannohS		12/4/2012 10:21:12	
AC		HiattC		12/4/2012 10:25:25	
AC		ClarkR		12/4/2012 2:21:35 PM	
AC		HiattC		12/5/2012 10:15:16	
AC		ClarkR		12/5/2012 2:22:58 PM	
AC		antonsonl		12/12/2012 10:55:46	

AC: Accepting Entry; SC: Status Change

TestAmerica Richland
Richland Wa.

Page 1

Grp Rec Cnt:8
ICOCFractions v4.8.44

DECEMBER 14, 2012

12/4/2012 9:04:46 AM

384868, CH2M Hill Plateau Remediation Company

BN I-129 Prp/Sep GAM002
Pacific Northwest National Lab

TB Gamma by LEPD

51 CLIENT: HANFORD

AnalyDueDate: 12/21/2012

Batch: 2331077 WATER pCi/L

SEQ Batch, Test: None All Tests: 2331077 BNTB,

Balance Id:1120482733

Pipet #: _____

Sep1 DT/Tm Tech:

PM, Quote: SS , 57671

Sep2 DT/Tm Tech:

Prep Tech: ,HoganH

Sample Preparation/Analysis

Work Ord. Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Dish Yield	Ppt or Geometry	Count Min	Detector Id	Count On Off (24hr) Circle	CR Analyst Init/Date	Comments:
1 MW9MD-1-AA	3891.30g,in	3891.30g	ITA12426	33.8mg	09/18/12	200	24	1244	24	1244	12/12/2012	
J2K080444-1-SAMP					AmRec: 1XVIAL20 2X4 LP	#Containers: 3			Scr:	Alpha: -7.42E-04 uCi/Sa	Beta: -1.72E-04 uCi/Sa	
11/07/2012 07:45												
2 MW9MD-1-AC-X	3880.50g,in	3880.50g	ITA12427	34.6mg	09/18/12	25	1244	1244	25	1244	12/12/2012	
J2K080444-1-DUP					AmRec: 1XVIAL20 2X4 LP	#Containers: 3			Scr:	Alpha: -7.42E-04 uCi/Sa	Beta: -1.72E-04 uCi/Sa	
11/07/2012 07:45												
3 MW9ME-1-AA	3864.70g,in	3864.70g	ITA12428	34.9mg	09/18/12	200	24	1610	24	1610	12/12/2012	
J2K080444-2-SAMP					AmRec: 1XVIAL20 2X4 LP	#Containers: 3			Scr:	Alpha: -7.42E-04 uCi/Sa	Beta: -1.72E-04 uCi/Sa	
11/07/2012 12:10												
4 MW9MF-1-AA	3876.00g,in	3876.00g	ITA12429	34.1mg	09/18/12	25	1611	1611	25	1611	12/12/2012	
J2K080444-3-SAMP					AmRec: 1XVIAL20 2X4 LP	#Containers: 3			Scr:	Alpha: -3.69E-05 uCi/Sa	Beta: 5.77E-03 uCi/Sa	1.2E-01L
11/07/2012 11:20												
5 MW9MH-1-AA	3880.50g,in	3880.50g	ITA12430	34.8mg	09/18/12	200	24	2018	24	2018	12/12/2012	
J2K080444-4-SAMP					AmRec: 1XVIAL20 2X4 LP	#Containers: 3			Scr:	Alpha: 8.15E-04 uCi/Sa	Beta: 6.89E-04 uCi/Sa	
11/07/2012 14:20												
6 MW9MJ-1-AA	3897.30g,in	3897.30g	ITA12431	34.8mg	09/18/12	25	2019	2019	25	2019	12/12/2012	
J2K080444-5-SAMP					AmRec: 1XVIAL20 2X4 LP	#Containers: 3			Scr:	Alpha: -4.92E-04 uCi/Sa	Beta: 2.33E-03 uCi/Sa	
11/07/2012 13:24												
7 MW9MK-1-AA	3877.40g,in	3877.40g	ITA12432	32.5mg	09/18/12	200	24	2347	24	2347	12/12/2012	
J2K080444-6-SAMP					AmRec: 1XVIAL20 2X4 LP	#Containers: 3			Scr:	Alpha: 2.84E-04 uCi/Sa	Beta: 3.28E-03 uCi/Sa	
11/07/2012 13:24												

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 v4.8.60

DECEMBER 14, 2012

Sample Preparation/Analysis										Balance Id:1120482733			
BN I-129 Prp/Sep GAM002 TB Gamma by LEPD 51 CLIENT: HANFORD										Pipet #: _____			
Sep1 DT/Tm Tech:										Sep1 DT/Tm Tech:			
Sep2 DT/Tm Tech:										Prep Tech: ,HoganH			
PM, Quote: SS , 57671										Prep Tech: ,HoganH			
Work Ord, Lot, Sample Date	Total Amp/Unit	Total Acidified/Unit	Initial Aliquot Amp/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:
8 MXCHGF-1-AA 	3822.10g,in	3822.10g,in	3822.10g,in	3822.10g,in	ITA12433	09/18/12	34.2mg	15	2348	04/12/12			
J2K140451-1-SAMP 	3850.90g,in	3850.90g,in	3850.90g,in	3850.90g,in	ITA12434	09/18/12	34.9mg	200	bf	03/2			
11/13/2012 09:00					AmRec: IXVAL20:2X4LP	#Containers: 3							
9 MXCHG-1-AA 	3858.50g,in	3858.50g,in	3858.50g,in	3858.50g,in	ITA12435	09/18/12	34.3mg	15	0313	2			
11/13/2012 12:54					AmRec: IXVAL20:2X4LP	#Containers: 3							
10 MXCHR-1-AA 	3765.80g,in	3765.80g,in	3765.80g,in	3765.80g,in	ITA12436	09/18/12	33.1mg	200	L4	1002	12/5/12	Beta: -3.44E-04 uCi/Sa	
11/14/2012 11:08					AmRec: IXVAL20:1:XL_P:2X4LP	#Containers: 3							
11 MXD14-1-AC 	3762.60g,in	3762.60g,in	3762.60g,in	3762.60g,in	ITA12437	09/18/12	32.4mg	15	1004	12/5/12	Beta: -6.64E-07 uCi/Sa		
11/16/2012 10:59					AmRec: IXVAL20:2X4LP	#Containers: 3							
12 MXD15-1-AA 	3964.10g,in	3964.10g,in	3964.10g,in	3964.10g,in	ITA12438	09/18/12	34.3mg	200	L4	1329			
11/16/2012 09:59					AmRec: IXVAL20:2X4LP	#Containers: 3							
13 MXEWD-1-AA-B 	3976.10g,in	3976.10g,in	3976.10g,in	3976.10g,in	ISD1488	10/08/12	34.4mg	15	1330				
11/27/2012 10:02 pd					AmRec:	#Containers: 1							
14 MXEWD-1-AC-C 					AmRec:	#Containers: 1							
11/27/2012 10:02 pd					AmRec:	#Containers: 1							
ISV - Insufficient Volume for Analysis										WO Cnt: 14			
TestAmerica Richland Wa.	Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sept1, s2 - Sep2 pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added									Prep_SamplePrep v4.8.60			

DECEMBER 14, 2012

Sample Preparation/Analysis										Balance Id:1120482733		
BN I-129 Prp/Sep GAM002 TB Gamma by LEPD 51 CLIENT: HANFORD										Pipet #: _____		
AnalyDueDate: 12/21/2012 Batch: 2331077 SEQ Batch, Test: None										Sep1 DT/Tm Tech:		
pCi/L 										Sep2 DT/Tm Tech:		
Prep Tech: HoganH 												
Work Ord. Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj. Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date	Comments:
Comments: MXEWD-BLK	P-12-00579,S-12-00193,P-12-00237,P-12-00570,S-12-00139,S-12-00188,S-12-00141,P-12-00569,P-12-00540,"HH 12/04/12","HH 11/29/12" <i>P-12-00540 S-12-00780 S-12-00228 12/4/12</i>											
All Clients for Batch: 384868, CHEM Hill Plateau Remediation Company Pacific Northwest National Lab, SS , 57671												
MW9MD1AA-SAMP Constituent List: I-129 RDL: 0 .50E+00 pCi/L LCL: UCL: RPD: MXEWD1AA-BLK: I-129 RDL: 0 .50E+00 pCi/L LCL: UCL: RPD: MXEWD1AC-LCS: I-129 RDL:5 pCi/L LCL:70 UCL:130 RPD:20 MW9MD1AA-SAMP Calc Info: Uncert Level (#s) : 2 Decay to Subt: Y Blk Subt.: N Sci.Not.: Y ODRS: B MXEWD1AA-BLK: Uncert Level (#s) : 2 Decay to Subt: Y Blk Subt.: N Sci.Not.: Y ODRS: B MXEWD1AC-LCS: Uncert Level (#s) : 2 Decay to Subt: Y Blk Subt.: N Sci.Not.: Y ODRS: B												
TestAmerica Richland Wa.	Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 pd - Prep Dt, dc - Date Chg, r - Reference Dt, ec-Enrichment Cell, ct-Cocktailed Added ISV - Insufficient Volume for Analysis WO Cnt: 14 Prep_SamplePrep v4.8.60											

DECEMBER 14, 2012

ICOC Fraction Transfer/Status Report					
ByDate: 12/7/2011, 12/11/2012, Batch: '2331077', User: *ALL Order By Date/TimeAccepting					
Q	Batch	Work Ord	CurStatus	Accepting	Comments
2331077					
AC		Rev1C	HoganH	11/29/2012 10:36:53	
SC		davilan	IsBatched	11/27/2012 10:03:30 AM	ICOC_RADCALC v4.8.49
SC		HoganH	Prep1C	11/29/2012 10:36:53 AM	RL-PRP-004 REVISION 2
SC		HoganH	Sep2C	12/4/2012 8:53:51 AM	RL-GAM-002 REVISION 3
SC		ClarkR	InCnt1	12/4/2012 9:22:00 AM	RL-CI-007 REV. 2
SC		ClarkR	CalcC	12/5/2012 3:10:43 PM	RL-CI-007 REV. 2
SC		nortonj	Rev1C	12/6/2012 3:10:02 PM	RL-DR-001 Rev 2
AC		HoganH		12/4/2012 8:53:51	
AC		ClarkR		12/4/2012 9:22:00	
AC		ClarkR		12/5/2012 3:10:43 PM	
AC		nortonj		12/6/2012 3:10:02 PM	

AC: Accepting Entry; SC: Status Change

TestAmerica Richland
Richland Wa.

Page 1

Grp Rec Cnt:5
ICOCFractions v4.8.44

DECEMBER 14, 2012

Sample Preparation/Analysis									
38488, CH2M Hill Plateau Remediation Company Pacific Northwest National Lab	AR H-3 Prp/Sep LSC005 To Tritium - Measure by Liquid Scint	Pipet #:							
AnalyDueDate: 12/21/2012	51 CLIENT: HANFORD	Sep1 DT/Tm Tech:							
Batch: 2331080	WATER	pCi/L	PM, Quote: SS , 57671						Sep2 DT/Tm Tech:
SEQ Batch, Test: None									Prep Tech:
1 MXD14-1-AD									
J2K190434-1-SAMP									
11/16/2012 10:59									
J2K190434-1-DUP									
11/16/2012 10:59									
2 MXD14-1-AE-X									
J2K190434-1-DUP									
11/16/2012 10:59									
3 MXEWH-1-AA-B									
J2K260000-80-BLK									
11/27/2012 10:02 pd									
4 MXEWH-1-AC-C									
J2K260000-80-LCS									
11/27/2012 10:02 pd									
5 MXEWH-1-AD-BN									
J2K260000-80-BLK									
11/27/2012 10:02 pd									
Comments:									
All Clients for Batch: 384868 , CH2M Hill Plateau Remediation Company									Pacific Northwest National Lab , SS , 57671
MXD141AD-SAMP Constituent List: H-3 RDL:3.00E+01 pCi/L ICL: UCL:									RPD :
TestAmerica Richland Wa.	Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2 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

DECEMBER 14, 2012

11/27/2012 10:02:33 AM		Sample Preparation/Analysis										Balance Id:	
		AR H-3 Ptp/Sep LSC005 To Tritium - Midlevel, by Liquid Scint										Pipet #: _____	
AnalyDueDate: 12/21/2012		51 CLIENT: HANFORD										Sep1 DTTm Tech:	
Batch: 2331080		pCi/L										Sep2 DTTm Tech:	
SEQ Batch, Test: None												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	Dish Yield	Ppt or Geometry	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, InitDate	Comments:	
MXEWHLAA-BLK: H-3	RDL: 3.00E+01	pCi/L	ICL:	UCL:	RPD:								
MXEWHLAC-LCS: H-3	RDL: 3.00E+01	pCi/L	ICL:	UCL:	RPD:								
MXEWHLAD-IBLK: H-3	RDL: 3.00E+01	pCi/L	ICL:	UCL:	RPD:								
MXD141AD-SAMP Calc Info: Uncert Level1 (#s) : 2		Decay to Sadt: Y		Blk Subt.: N		Sci.Not.: Y		ODRs: B					
MXEWHLAA-BLK: Uncert Level1 (#s) : 2		Decay to Sadt: Y		Blk Subt.: N		Sci.Not.: Y		ODRs: B					
MXEWHLAC-LCS: Uncert Level1 (#s) : 2		Decay to Sadt: Y		Blk Subt.: N		Sci.Not.: Y		ODRs: B					
MXEWHLAD-IBLK: Uncert Level1 (#s) : 2		Decay to Sadt: Y		Blk Subt.: N		Sci.Not.: Y		ODRs: B					

DECEMBER 14, 2012

12/12/2012 11:21:34 AM	ICOC Fraction Transfer/Status Report				
ByDate: 12/13/2011, 12/17/2012, Batch: '2331080', User: *ALL Order By DateTimeAccepting					
Q	Batch	Work Ord	CurStatus	Accepting	Comments
2331080					
AC		Rev1C	NyeM	12/4/2012 11:18:58	
SC			davilan	IsBatched	11/27/2012 10:03:49 AM ICOC_RADCALC v4.8.49
SC			NyeM	InPrep	12/4/2012 11:18:58 AM RL-LSC-005 REVISION 2
SC			NyeM	Sep1C	12/4/2012 12:47:09 PM RL-LSC-005 REVISION 2
SC			ClarkR	InCnt1	12/4/2012 12:54:01 PM RL-CI-005 REV. 2
SC			ClarkR	CalcC	12/11/2012 2:51:03 PM RL-CI-005 REV. 2
SC			antonsonl	Rev1C	12/12/2012 11:21:25 AM RL-DR-001 Rev 2
AC			NyeM		12/4/2012 12:47:09
AC			ClarkR		12/4/2012 12:54:01
AC			ClarkR		12/11/2012 2:51:03
AC			antonsonl		12/12/2012 11:21:25

AC: Accepting Entry; SC: Status Change

TestAmerica Richland
Richland Wa.

Page 1

Grp Rec Cnt: 5
ICOCCFractions v4.8.44