0096110

SAF-RC-190
100N Field Remediation – Soil In-Process
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt H4-21 KW 4/25/11
INITIAL/DATE

COMMENTS:

SDG JP0132 SAF-RC-190

Rad only Chem only ☑ Rad & Chem

☑ Complete Partial

Sample Location: 100-N-84:4

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MAY 11 2011
EDMC

AMENDED DATA

Analytical Data Package Prepared For

Washington Closure Hanford

Radiochemical Analysis By

TestAmerica

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

Assigned Laboratory Code: TARL

Data Package Contains 45 *Pages*

Report No.: 46140

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

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
JP0132	RC-190	J1FHX0	J1C230593-1	MF31N1AF	9MF31N10	1083083
		J1FHX0	J1C230593-1	MF31N1AD	9MF31N10	1083084
		J1FHX0	J1C230593-1	MF31N1AE	9MF31N10	1083085
		J1FHX0	J1C230593-1	MF31N1AC	9MF31N10	1083086
		J1FHX0	J1C230593-1	MF31N1AA	9MF31N10	1085047

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Amended Certificate of Analysis

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

TestAmerica Laboratories, Inc.

April 22, 2011
April 6, 2011

Attention: Joan Kessner

SAF Number	:	RC-190
Date SDG Closed	:	March 23, 2011
Number of Samples	:	One (1)
Sample Type	:	Soil
SDG Number	:	JP0132
Data Deliverable	:	7-- Day / Summary

AMENDED CASE NARRATIVE

I. Introduction

On March 23, 2011 one soil sample was received at TestAmerica for radiochemical analysis. Upon receipt, the sample was assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID:

WCH ID#	TARL ID#	MATRIX	DATE OF RECEIPT
J1FHX0	MF31F	SOIL	3/23/11

II. Sample Receipt

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

III. Analytical Results/Methodology

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

The requested analyses were:

Gas Proportional Counting
Gross Alpha by method RL-GPC-001
Gross Beta by method RL-GPC-001
Strontium-90 by method RL-GPC-003
Gamma Spectroscopy
Gamma Spec by method RL-GAM-001
Chemical Analysis
Hexavalent Chromium by EPA method 7196A

Washington Closure Hanford
April 22, 2011
April 6, 2011

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

Gas Proportional Counting

Gross Alpha by method RL-GPC-001:
Sample J1FHX0 and J1FHX0 DUP were analyzed with reduced aliquots based on weight screen results. Except as noted, the LCS, batch blank, sample and sample duplicate (J1FHX0) results are within contractual requirements.

Gross Beta by method RL-GPC-001 :
The LCS, batch blank, sample and sample duplicate (J1FHX0) results are within contractual requirements.

Strontium-90 by method RL-GPC-003 :
The LCS, batch blank, sample and sample duplicate (J1FHX0) results are within contractual requirements.

Gamma Spectroscopy

Gamma Spec by method RL-GAM-001 :
The CRDL was not met on some analytes due to reduced count time. The count time was reduced to meet the priority turn around time. There was insufficient volume for a duplicate. Sample J1FHX0 was recounted on a different detector for the duplicate (J1FHX0 DUP). Except as noted, the LCS, batch blank, sample and sample duplicate (J1FHX0) results are within contractual requirements.
There was insufficient volume for a duplicate. Sample J1FHX0 was recounted on a different detector for the duplicate (J1FHX0 DUP). The CRDL was not met on some analytes due to reduced count time. The count time was reduced to meet the priority turn around time. Except as noted, the LCS, batch blank, sample and sample duplicate (J1FHX0) results are within contractual requirements.

Chemical Analysis

Hexavalent Chromium by EPA method 7196A
The LCS, batch blank, sample, sample duplicate (J1FHX0) and the sample matrix spike (J1FHX0) results are within contractual requirements.

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

Washington Closure Hanford
April 22, 2011
April 6, 2011

Reviewed and approved:

Rhonda Wagar
Project Manager

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 = 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/?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) ***u_c - Combined Uncertainty.***	All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure of the uncertainty associated with the result, ***u_c the combined uncertainty.*** The uncertainty is absolute and in the same units as the result.
(#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 * Sqrt(2*(BkgrndCnt/BkgrndCntMin)/SCntMin)) * (ConvFct/(Eff*Yld*Abn*Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability. Lc cannot be calculated when the background count is zero.
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 * Sqrt((BkgrndCnt/BkgrndCntMin)/SCntMin) + 2.71/SCntMin) * (ConvFct/(Eff * Yld * Abn * Vol) * 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($TPUs^2$ + $TPUd^2$)] as defined by ICPT BOA where S is the original sample result, D is the result of the duplicate, TPUs is the total uncertainty of the original sample and TPUd is the total uncertainty of the duplicate sample.
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.

AMENDED DATA

Sample Results Summary

Date: 22-Apr-11

TestAmerica TARL

Ordered by Method, Batch No., Client Sample ID.

Report No. : 46140

SDG No: JP0132

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1083083 GAMMA_GS									
J1FHX0									
	MF31N1AF	AMERICIUM 241	-4.98E-02 +- 4.3E-02	U	pCi/g		7.01E-02		
		CO-60	9.64E-03 +- 2.5E-02	U	pCi/g		4.50E-02	5.00E-02	
		CS-137	1.73E-03 +- 2.3E-02	U	pCi/g		3.98E-02	1.00E-01	
		EU-152	-3.22E-02 +- 7.1E-02	U	pCi/g		1.04E-01	1.00E-01	
		EU-154	-1.93E-02 +- 7.6E-02	U	pCi/g		1.29E-01	1.00E-01	
		EU-155	3.01E-02 +- 5.9E-02	U	pCi/g		1.01E-01	1.00E-01	
		RA-226	5.55E-01 +- 1.1E-01		pCi/g		6.73E-02		
J1FHX0 DUP									
	MF31N1AG	AMERICIUM 241	2.65E-02 +- 9.6E-02	U	pCi/g		1.60E-01		-655.8
		CO-60	1.05E-02 +- 1.6E-02	U	pCi/g		2.88E-02	5.00E-02	9.0
		CS-137	7.71E-03 +- 1.4E-02	U	pCi/g		2.52E-02	1.00E-01	126.7
		EU-152	1.71E-03 +- 3.5E-02	U	pCi/g		5.87E-02	1.00E-01	-222.4
		EU-154	1.56E-02 +- 4.9E-02	U	pCi/g		8.81E-02	1.00E-01	-1863.0
		EU-155	5.61E-02 +- 4.0E-02	U	pCi/g		7.01E-02	1.00E-01	60.2
		RA-226	5.23E-01 +- 9.0E-02		pCi/g		4.35E-02		5.9
1083084 9310_ALPHABETA_GPC									
J1FHX0									
	MF31N1AD	ALPHA	1.37E+01 +- 6.1E+00		pCi/g	100%	6.15E+00	1.00E+01	
J1FHX0 DUP									
	MF31N1AH	ALPHA	6.51E+00 +- 4.2E+00		pCi/g	100%	5.75E+00	1.00E+01	71.5
1083085 9310_ALPHABETA_GPC									
J1FHX0									
	MF31N1AE	BETA	3.01E+01 +- 5.9E+00		pCi/g	100%	4.90E+00	1.50E+01	
J1FHX0 DUP									
	MF31N1AJ	BETA	2.44E+01 +- 5.1E+00		pCi/g	100%	4.80E+00	1.50E+01	21.1
1083086 SRTOT_SEP_PRECIP_GPC									
J1FHX0									
	MF31N1AC	STRONTIUM	2.07E-02 +- 7.5E-02	U	pCi/g	67%	1.72E-01		
J1FHX0 DUP									
	MF31N1AK	STRONTIUM	-7.48E-03 +- 6.5E-02	U	pCi/g	71%	1.57E-01		427.2
1085047 7196_CR6									
J1FHX0									
	MF31N1AA	HEXCHROME	1.46E-01 +- 0.0E+00	U	mg/kg	N/A	1.46E-01	1.55E-01	
	MF31N1AE	HEXCHROME	2.27E-01 +- 0.0E+00		mg/kg	N/A	1.42E-01		43.4

No. of Results: 22

TestAmerica

rptSTLRchSaSummary2 V5.2.12
A2002

RPD - Relative Percent Difference.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

AMENDED DATA

QC Results Summary

Date: 22-Apr-11

TestAmerica TARL

Ordered by Method, Batch No, QC Type,.

Report No. : 46140

SDG No.: JP0132

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
GAMMA_GS								
1083083 BLANK QC,								
MF4CW1AA	AMERICIUM 241	-3.87E-02 +- 4.4E-02	U	pCi/g				7.20E-02
	CO-60	-4.07E-04 +- 1.1E-02	U	pCi/g				1.98E-02
	CS-137	-1.18E-02 +- 1.1E-02	U	pCi/g				1.82E-02
	EU-152	1.64E-02 +- 3.4E-02	U	pCi/g				5.52E-02
	EU-154	-1.98E-03 +- 3.0E-02	U	pCi/g				5.41E-02
	EU-155	-4.12E-02 +- 3.1E-02	U	pCi/g				4.94E-02
	RA-226	8.43E-02 +- 4.3E-02	U	pCi/g				6.19E-02
1083083 LCS,								
MF4CW1AC	CS-137	1.13E+00 +- 1.6E-01		pCi/g		104%	0.0	4.14E-02
	RA-226	1.00E+00 +- 1.8E-01		pCi/g		88%	-0.1	6.94E-02
	RA-228	9.87E-01 +- 2.1E-01		pCi/g		105%	0.0	1.09E-01
	U-238	1.04E+00 +- 1.7E-01		pCi/g		87%	-0.1	7.53E-02
9310_ALPHABETA_GPC								
1083084 BLANK QC,								
MF4CX1AA	ALPHA	-2.95E-01 +- 5.9E-01	U	pCi/g	100%			1.98E+00
1083084 LCS,								
MF4CX1AC	ALPHA	7.60E+01 +- 1.7E+01		pCi/g	100%	92%	-0.1	2.48E+00
9310_ALPHABETA_GPC								
1083085 BLANK QC,								
MF4C01AA	BETA	-5.73E-01 +- 1.5E+00	U	pCi/g	100%			3.73E+00
1083085 LCS,								
MF4C01AC	BETA	6.75E+01 +- 1.0E+01		pCi/g	100%	103%	0.0	4.10E+00
SRTOT_SEP_PRECIP_GPC								
1083086 BLANK QC,								
MF4C11AA	STRONTIUM	3.04E-02 +- 5.3E-02	U	pCi/g	95%			1.17E-01
1083086 LCS,								
MF4C11AC	STRONTIUM	9.28E-01 +- 2.7E-01		pCi/g	96%	82%	-0.2	1.17E-01
7196_CR6								
1085047 MATRIX SPIKE, J1FHX0								
MF31N1AC	HEXCHROME	1.06E+01 +- 0.0E+00		mg/kg	N/A	94%	-0.1	1.53E-01
1085047 LCS,								
MF8AX1AC	HEXCHROME	1.81E+01 +- 0.0E+00		mg/kg	N/A	90%	-0.1	1.55E-01
1085047 BLANK QC,								
MF8X1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A			1.55E-01

No. of Results: 20

TestAmerica
rptSTLRchQcSummary V5.2.12
A2002

Bias - (Result/Expected)-1 as defined by ANSI N13.30.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 22-Apr-11

Lab Name:	TestAmerica	SDG:	JP0132	Collection Date:	3/22/2011 2:00:00 PM
Lot-Sample No.:	J1C230593-1	Report No. :	46140	Received Date:	3/23/2011 3:05:00 PM
Client Sample ID:	J1FHX0	COC No. :	RC-190-034	Matrix:	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 1083083	GAMMA_GS			**Work Order:** MF31N1AF			**Report DB ID:** 9MF31N10					
AMERICIUM 241	***-4.98E-02***	U	4.3E-02	4.3E-02	7.01E-02	pCi/g		*-0.71*	3/24/11 08:25 p		380.1	GER14$1
								-(2.3)			g	
CO-60	***9.64E-03***	U	2.5E-02	2.5E-02	4.50E-02	pCi/g		*0.21*	3/24/11 08:25 p		380.1	GER14$1
							5.00E-02	*0.77*			g	
CS-137	***1.73E-03***	U	2.3E-02	2.3E-02	3.98E-02	pCi/g		*0.04*	3/24/11 08:25 p		380.1	GER14$1
							1.00E-01	*0.15*			g	
EU-152	***-3.22E-02***	U	7.1E-02	7.1E-02	1.04E-01	pCi/g		*-0.31*	3/24/11 08:25 p		380.1	GER14$1
							1.00E-01	*-0.91*			g	
EU-154	***-1.93E-02***	U	7.6E-02	7.6E-02	1.29E-01	pCi/g		*-0.15*	3/24/11 08:25 p		380.1	GER14$1
							1.00E-01	*-0.51*			g	
EU-155	***3.01E-02***	U	5.9E-02	5.9E-02	1.01E-01	pCi/g		*0.3*	3/24/11 08:25 p		380.1	GER14$1
							1.00E-01	*(1.)*			g	
RA-226	***5.55E-01***		1.1E-01	1.1E-01	6.73E-02	pCi/g		*(8.3)*	3/24/11 08:25 p		380.1	GER14$1
						3.37E-02		*(9.7)*			g	
Batch: 1083084	9310_ALPHABETA_GPC			**Work Order:** MF31N1AD			**Report DB ID:** 9MF31N10					
ALPHA	***1.37E+01***		5.4E+00	6.1E+00	6.15E+00	pCi/g	100%	*(2.2)*	3/30/11 10:12 p		0.0503	GPC10B
						2.54E+00	1.00E+01	*(4.5)*			g	
Batch: 1083085	9310_ALPHABETA_GPC			**Work Order:** MF31N1AE			**Report DB ID:** 9MF31N10					
BETA	***3.01E+01***		4.4E+00	5.9E+00	4.90E+00	pCi/g	100%	*(6.1)*	3/30/11 09:19 a		0.2003	GPC32A
						2.28E+00	1.50E+01	*(10.1)*			g	
Batch: 1083086	SRTOT_SEP_PRECIP_GPC			**Work Order:** MF31N1AC			**Report DB ID:** 9MF31N10					

TestAmerica
rptSTLRchSample
V5.2.12 A2002

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software

AMENDED DATA

FORM I

SAMPLE RESULTS

Date: 22-Apr-11

Lab Name:	TestAmerica	**SDG:**	JP0132	**Collection Date:**	3/22/2011 2:00:00 PM
Lot-Sample No.:	J1C230593-1	**Report No. :**	46140	**Received Date:**	3/23/2011 3:05:00 PM
Client Sample ID:	J1FHX0	**COC No. :**	RC-190-034	**Matrix:**	SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
STRONTIUM	***2.07E-02***	U	7.5E-02	7.5E-02	1.72E-01	pCi/g	67%	*0.12*	4/1/11 06:12 p		6.0	GPC26A
						8.03E-02		*0.55*			g	
Batch: 1085047	7196_CR6			**Work Order:**	MF31N1AA		**Report DB ID:**	9MF31N10				
HEXCHROME	***1.46E-01***	U		0.0E+00	1.46E-01	mg/kg	N/A	*(1.)*	3/29/11 11:15 a		2.5	
							1.55E-01	*N/A*			g	

No. of Results: 11 **Comments:**

AMENDED DATA

TestAmerica
rptSTLRchSample
V5.2.12 A2002

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software

FORM II

Date: 22-Apr-11

DUPLICATE RESULTS

Lab Name:	TestAmerica	SDG:	JP0132	Collection Date:	3/22/2011 2:00:00 PM
Lot-Sample No.:	J1C230593-1	Report No. :	46140	Received Date:	3/23/2011 3:05:00 PM
Client Sample ID:	J1FHX0	COC No. :	RC-190-034	Matrix:	SOIL

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 1085047	7196_CR6			Work Order: MF31N1AE		Report DB ID: MF31N1ER			Orig Sa DB ID: 9MF31N10			
HEXCHROME	2.27E-01			0.0E+00	1.42E-01	mg/kg	N/A	(1.6)	3/29/11 11:15 a		2.5	
	1.46E-01	U	RPD 43.4					N/A			g	

No. of Results: 1 Comments:

TestAmerica Laboratories, Inc.

11

AMENDED DATA

TestAmerica
rptSTLRchDupV5.2
.12 A2002

RPD - Relative Percent Difference.
MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

FORM II

Date: 22-Apr-11

DUPLICATE RESULTS

Lab Name:	**TestAmerica**	**SDG:**	JP0132	**Collection Date:**	3/22/2011 2:00:00 PM
Lot-Sample No.:	**J1C230593-1**	**Report No. :**	46140	**Received Date:**	3/23/2011 3:05:00 PM
Client Sample ID:	**J1FHX0 DUP**	**COC No. :**	RC-190-034	**Matrix:**	SOIL

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 1083083	GAMMA_GS			**Work Order:** MF31N1AG		**Report DB ID:** MF31N1GR			**Orig Sa DB ID:** 9MF31N10			
AMERICIUM 241	2.65E-02	U	9.6E-02	9.6E-02	1.60E-01	pCi/g		0.17	3/25/11 12:02 a		380.1	GER11$1
	-4.98E-02	U	**RPD**	**-655.8**				0.55			g	
CO-60	1.05E-02	U	1.6E-02	1.6E-02	2.88E-02	pCi/g		0.37	3/25/11 12:02 a		380.1	GER11$1
	9.64E-03	U	**RPD**	**9.0**		5.00E-02		(1.3)			g	
CS-137	7.71E-03	U	1.4E-02	1.4E-02	2.52E-02	pCi/g		0.31	3/25/11 12:02 a		380.1	GER11$1
	1.73E-03	U	**RPD**	**126.7**		1.00E-01		(1.1)			g	
EU-152	1.71E-03	U	3.5E-02	3.5E-02	5.87E-02	pCi/g		0.03	3/25/11 12:02 a		380.1	GER11$1
	-3.22E-02	U	**RPD**	**-222.4**		1.00E-01		0.1			g	
EU-154	1.56E-02	U	4.9E-02	4.9E-02	8.81E-02	pCi/g		0.18	3/25/11 12:02 a		380.1	GER11$1
	-1.93E-02	U	**RPD**	**-1863.0**		1.00E-01		0.63			g	
EU-155	5.61E-02	U	4.0E-02	4.0E-02	7.01E-02	pCi/g		0.8	3/25/11 12:02 a		380.1	GER11$1
	3.01E-02	U	**RPD**	**60.2**		1.00E-01		(2.8)			g	
RA-226	5.23E-01		9.0E-02	9.0E-02	4.35E-02	pCi/g		(12.)	3/25/11 12:02 a		380.1	GER11$1
	5.55E-01		**RPD**	**5.9**				(11.6)			g	
Batch: 1083084	9310_ALPHABETA_GPC			**Work Order:** MF31N1AH		**Report DB ID:** MF31N1HR			**Orig Sa DB ID:** 9MF31N10			
ALPHA	6.51E+00		4.0E+00	4.2E+00	5.75E+00	pCi/g	100%	(1.1)	3/30/11 10:12 p		0.0501	GPC10C
	1.37E+01		**RPD**	**71.5**		1.00E+01		(3.1)			g	
Batch: 1083085	9310_ALPHABETA_GPC			**Work Order:** MF31N1AJ		**Report DB ID:** MF31N1JR			**Orig Sa DB ID:** 9MF31N10			
BETA	2.44E+01		4.0E+00	5.1E+00	4.80E+00	pCi/g	100%	(5.1)	3/30/11 09:19 a		0.2008	GPC32B
	3.01E+01		**RPD**	**21.1**		1.50E+01		(9.6)			g	

RPD - Relative Percent Difference.

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.

U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

AMENDED DATA

TestAmerica Laboratories, Inc.

FORM II

Date: 22-Apr-11

DUPLICATE RESULTS

Lab Name:	TestAmerica	SDG:	JP0132	Collection Date:	3/22/2011 2:00:00 PM
Lot-Sample No.:	J1C230593-1	Report No. :	46140	Received Date:	3/23/2011 3:05:00 PM
Client Sample ID:	J1FHX0 DUP	COC No. :	RC-190-034	Matrix:	SOIL

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 1083086	SRTOT_SEP_PRECIP_GPC			Work Order: MF31N1AK		Report DB ID: MF31N1KR			Orig Sa DB ID: 9MF31N10			
STRONTIUM	-7.48E-03	U	6.5E-02	6.5E-02	1.57E-01	pCi/g	71%	-0.05	4/1/11 06:12 p		6.0	GPC26B
	2.07E-02	U	RPD	427.2				-0.23			g	

No. of Results: 10 Comments:

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AMENDED DATA

TestAmerica
rptSTLRchDupV5.2
.12 A2002

RPD - Relative Percent Difference.
MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

FORM II

BLANK RESULTS

Date: 22-Apr-11

Lab Name: TestAmerica
Matrix: SOIL

SDG: JP0132
Report No. : 46140

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA ,	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 1085047	7196_CR6			**Work Order:**	MF8X1AA		**Report DB ID:**	MF8AX1AB				
HEXCHROME	1.55E-01	U		0.0E+00	1.55E-01	mg/kg	N/A	1.	3/29/11 11:15 a		2.5	
								N/A			g	
Batch: 1083083	GAMMA_GS			**Work Order:**	MF4CW1AA		**Report DB ID:**	MF4CW1AB				
AMERICIUM 241	-3.87E-02	U	4.4E-02	4.4E-02	7.20E-02	pCi/g		-0.54	3/24/11 08:26 p		348.0	GER10$1
								-(1.8)			g	
CO-60	-4.07E-04	U	1.1E-02	1.1E-02	1.98E-02	pCi/g		-0.02	3/24/11 08:26 p		348.0	GER10$1
						5.00E-02		-0.07			g	
CS-137	-1.18E-02	U	1.1E-02	1.1E-02	1.82E-02	pCi/g		-0.65	3/24/11 08:26 p		348.0	GER10$1
						1.00E-01		-(2.1)			g	
EU-152	1.64E-02	U	3.4E-02	3.4E-02	5.52E-02	pCi/g		0.3	3/24/11 08:26 p		348.0	GER10$1
						1.00E-01		0.96			g	
EU-154	-1.98E-03	U	3.0E-02	3.0E-02	5.41E-02	pCi/g		-0.04	3/24/11 08:26 p		348.0	GER10$1
						1.00E-01		-0.13			g	
EU-155	-4.12E-02	U	3.1E-02	3.1E-02	4.94E-02	pCi/g		-0.83	3/24/11 08:26 p		348.0	GER10$1
						1.00E-01		-(2.6)			g	
RA-226	8.43E-02	U	4.3E-02	4.3E-02	6.19E-02	pCi/g		(1.4)	3/24/11 08:26 p		348.0	GER10$1
					3.10E-02			(4.)			g	
Batch: 1083084	9310_ALPHABETA_GPC			**Work Order:**	MF4CX1AA		**Report DB ID:**	MF4CX1AB				
ALPHA	-2.95E-01	U	5.9E-01	5.9E-01	1.98E+00	pCi/g	100%	-0.15	3/30/11 10:12 p		0.0517	GPC10A
					7.24E-01	1.00E+01		-0.99			g	
Batch: 1083085	9310_ALPHABETA_GPC			**Work Order:**	MF4C01AA		**Report DB ID:**	MF4C01AB				
BETA	-5.73E-01	U	1.5E+00	1.5E+00	3.73E+00	pCi/g	100%	-0.15	3/30/11 09:19 a		0.2076	GPC32C
					1.73E+00	1.50E+01		-0.77			g	

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

TestAmerica
rptSTLRchBlank
V5.2.12 A2002

AMENDED DATA

FORM II

BLANK RESULTS

Date: 22-Apr-11

Lab Name: TestAmerica

Matrix: SOIL

SDG: JP0132

Report No. : 46140

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC | MDA ,	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 1083086	SRTOT_SEP_PRECIP_GPC			**Work Order:**	MF4C11AA		**Report DB ID:**	MF4C11AB				
STRONTIUM	3.04E-02	U	5.3E-02	5.3E-02	1.17E-01	pCi/g	95%	0.26	4/1/11 06:12 p		6.0	GPC26C
					5.43E-02			(1.1)			g	

No. of Results: 11 **Comments:**

TestAmerica Laboratories, Inc.

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AMENDED DATA

TestAmerica
rptSTLRchBlank
V5.2.12 A2002

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.

TestAmerica Laboratories, Inc.

FORM II

LCS RESULTS

Date: 22-Apr-11

Lab Name: TestAmerica

Matrix: SOIL

SDG: JP0132

Report No. : 46140

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 1085047	7196_CR6			**Work Order:**	MF8AX1AC		**Report DB ID:**	MF8AX1AS					
HEXCHROME	1.81E+01			0.0E+00	1.55E-01	mg/kg	N/A	2.00E+01		90%	3/29/11 11:15 a	2.5	
							Rec Limits:	80	120	-0.1		g	
Batch: 1083083	GAMMA_GS			**Work Order:**	MF4CW1AC		**Report DB ID:**	MF4CW1CS					
CS-137	1.13E+00		1.6E-01	1.6E-01	4.14E-02	pCi/g		1.09E+00	1.1E-02	104%	3/24/11 08:26 p	350.1	GER7$1
							Rec Limits:	70	130	0.0		g	
RA-226	1.00E+00		1.8E-01	1.8E-01	6.94E-02	pCi/g		1.14E+00	1.2E-02	88%	3/24/11 08:26 p	350.1	GER7$1
							Rec Limits:	70	130	-0.1		g	
RA-228	9.87E-01		2.1E-01	2.1E-01	1.09E-01	pCi/g		9.43E-01	9.7E-03	105%	3/24/11 08:26 p	350.1	GER7$1
							Rec Limits:	70	130	0.0		g	
U-238	1.04E+00		1.7E-01	1.7E-01	7.53E-02	pCi/g		1.20E+00	1.2E-02	87%	3/24/11 08:26 p	350.1	GER7$1
							Rec Limits:	70	130	-0.1		g	
Batch: 1083084	9310_ALPHABETA_GPC			**Work Order:**	MF4CX1AC		**Report DB ID:**	MF4CX1CS					
ALPHA	7.60E+01		7.6E+00	1.7E+01	2.48E+00	pCi/g	100%	8.30E+01	8.4E-01	92%	3/30/11 10:12 p	0.0545	GPC10D
							Rec Limits:	70	130	-0.1		g	
Batch: 1083085	9310_ALPHABETA_GPC			**Work Order:**	MF4C01AC		**Report DB ID:**	MF4C01CS					
BETA	6.75E+01		5.4E+00	1.0E+01	4.10E+00	pCi/g	100%	6.57E+01	2.5E+00	103%	3/30/11 09:19 a	0.2056	GPC32D
							Rec Limits:	70	130	0.0		g	
Batch: 1083086	SRTOT_SEP_PRECIP_GPC			**Work Order:**	MF4C11AC		**Report DB ID:**	MF4C11CS					
STRONTIUM	9.28E-01		1.2E-01	2.7E-01	1.17E-01	pCi/g	96%	1.13E+00	3.1E-02	82%	4/1/11 06:12 p	6.01	GPC26D
							Rec Limits:	70	130	-0.2		g	

No. of Results: 8 **Comments:**

AMENDED DATA

TestAmerica **Bias** - (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchLcs
V5.2.12 A2002

FORM II

MATRIX SPIKE RESULTS

Date: 22-Apr-11

Lab Name: TestAmerica SDG: JP0132

Lot-Sample No.: J1C230593-1, J1FHX0 Report No. : 46140 Matrix: SOIL

Parameter	SpikeResult, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC|MDA	Rpt Unit, CRDL	Yield	Rec-overy	Expected, Uncert	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 1085047	Work Order:	MF31N1AC		Report DB ID:	MF31N1CW		Orig Sa DB ID:	9MF31N10				
HEXCHROME	1.06E+01			0.0E+00	1.53E-01	mg/kg	N/A	94.26%	1.12E+01	3/29/11 11:15 a	2.5	7196_CR6
	1.46E-01										g	

Number of Results: 1

Comments:

TestAmerica Laboratories, Inc.

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AMENDED DATA

TestAmerica
rptSTLRchMs
V5.2.12 A2002

RER - Replicate Error Ratio = (S-D)/[sqrt(sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.
Bias - (Result/Expected)-1 as defined by ANSI N13.30.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist
RADIOCHEMISTRY, First Level Review

4AMENDED 4/6/11 7:PM

Lot No., Due Date: J1C230593; 03/30/2011
Client, Site: 127642; S00N063A00 HANFORD
QC Batch No., Method Test: 1083084; RALPHA-A Alpha by GPC-Am
SDG, Matrix: JP0132; SOIL

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 10-17940

First Level Thomas D Weed **Date** 4/4/11

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

AMENDED DATA

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

Batch Number: 1083084

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 ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery within contract acceptance criteria?	✓		
6. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
7. Do the MS/MSD results and yields meet acceptance criteria?			✓
8. Do the duplicate sample results and yields meet acceptance criteria?	✓		
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: Jodie G Date: 4/5/11

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

AMENDED DATA

Clouseau Nonconformance Memo

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

NCM #: **10-17940**
NCM Initiated By: Tom Mcginnis
Date Opened: 04/04/2011
Date Closed:

Classification: **Deficiency**
Status: **PMREVIEW**
Production Area: Environmental - Sep
Tests: Alpha by GPC-Am
Lot #'s (Sample #'s): J1C230593 (1), J1C240000 (84),
QC Batches: 1083084,

Nonconformance: Batch Result Out of Limits
Subcategory: Duplicate agreement exceeds acceptance limit

Problem Description / Root Cause

Name	Date	Description
Tom Mcginnis	04/04/2011	The duplicate agreement for sample J1C230593-1 exceeds acceptance criteria. The activity difference between the sample and duplicate is less than 1 CRDL (10 pCi/L). Results accepted.

Corrective Action

Name	Date	Corrective Action
Tom Mcginnis	04/04/2011	PM was made aware of the batch deficiency.

Client Notification Summary

Client	Project Manager	Notified	Response	How Notified	Note	Response	Response Note

Quality Assurance Verification

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

Approval History

Date Approved	Approved By	Position

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist
RADIOCHEMISTRY, First Level Review

3/31/2011 10:44:58 AM AMENDED DATA

Lot No., Due Date: J1C230593; 03/30/2011
Client, Site: 127642; S00N063A00 HANFORD
QC Batch No., Method Test: 1083085; RBETA-SR Beta by GPC-Sr/Y
SDG, Matrix: JP0132; SOIL

1.0 COC			
1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	✓		
2.0 QC Batch			
2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2.2 Are the QC appropriate for the analysis included in the batch?	✓		
2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	✓		
2.4 Does the Worksheets include a Tracer Vial label for each sample?			✓
3.0 QC & Samples			
3.1 Is the blank results, yield, and MDA within contract limits?	✓		
3.2 Is the LCS result, yield, and MDA within contract limits?	✓		
3.3 Are the MS/MSD results, yields, and MDA within contract limits?			✓
3.4 Are the duplicate result, yields, and MDAs within contract limits?	✓		
3.5 Are the sample yields and MDAs within contract limits?	✓		
4.0 Raw Data			
4.1 Were results calculated in the correct units?	✓		
4.2 Were analysis volumes entered correctly?	✓		
4.3 Were Yields entered correctly?			✓
4.4 Were spectra reviewed/meet contractual requirements?			✓
4.5 Were raw counts reviewed for anomalies?	✓		
5.0 Other			
5.1 Are all nonconformances included and noted?			✓
5.2 Are all required forms filled out?	✓		
5.3 Was the correct methodology used?	✓		
5.4 Was transcription checked?	✓		
5.5 Were all calculations checked at a minimum frequency?	✓		
5.6 Are worksheet entries complete and correct?	✓		

6.0 Comments on any No response:

Thomas D Me

First Level _____ **Date** 3/31/11

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

AMENDED DATA

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

Batch Number: 1083085

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 ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery within contract acceptance criteria?	✓		
6. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
7. Do the MS/MSD results and yields meet acceptance criteria?			✓
8. Do the duplicate sample results and yields meet acceptance criteria?	✓		
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 = 15.0 pci/g

Second Level Review: Rhonda [illegible] Date: 3/31/11

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist
RADIOCHEMISTRY, First Level Review

AMENDED DATA

Lot No., Due Date:	J1C230593; 03/30/2011
Client, Site:	127642; S00N063A00 HANFORD
QC Batch No., Method Test:	1083083; RGAMMA Gamma by GER
SDG, Matrix:	JP0132; SOIL

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 10-17833

First Level Lisa Anderson Date 3/25/11

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

AMENDED DATA

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

Batch Number: 1083083

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 ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery within contract acceptance criteria?	✓		
6. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
7. Do the MS/MSD results and yields meet acceptance criteria?			✓
8. Do the duplicate sample results and yields meet acceptance criteria?	✓		
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 = 0.1 pCi/g
See NCM #: 10-17833

Second Level Review: Rhonda Yeh Date: 3/25/11

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

AMENDED DATA

Clouseau
Nonconformance Memo

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

NCM #: 10-17833
NCM Initiated By: Lisa Antonson
Date Opened: 03/25/2011
Date Closed:

Classification: Anomaly
Status: PMREVIEW
Production Area: Counting
Tests: Gamma by GER
Lot #'s (Sample #'s): J1C230593 (1), J1C240000 (83),
QC Batches: 1083083,

Nonconformance: MDA not met
Subcategory: Data accepted

Problem Description / Root Cause

Name	Date	Description
Lisa Antonson	03/25/2011	CRDL is not met for all analytes due to reduced count time based on priority processing. Data accepted.

Corrective Action

Name	Date	Corrective Action
Lisa Antonson	03/25/2011	Data accepted.

Client Notification Summary

Client	Project Manager	Notified	Response	How Notified	Note	Response	Response Note

Quality Assurance Verification

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

Approval History

Date Approved	Approved By	Position

Date Printed: 3/25/2011

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review/Verification Checklist
RADIOCHEMISTRY, First Level Review

AMENDED DATA 4/5/2011 10:48:19 AM

Lot No., Due Date: J1C230593; 03/30/2011
Client, Site: 127642; S00N063A00 HANFORD
QC Batch No., Method Test: 1083086; RSRTOT SrTot by GPC
SDG, Matrix: JP0132; SOIL

1.0 COC	
1.1 Is the ICOC page complete; includes all applicable analysis, dates, SOP numbers, and revisions?	Yes ✓ No N/A
2.0 QC Batch	
2.1 Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	Yes ✓ No N/A
2.2 Are the QC appropriate for the analysis included in the batch?	Yes ✓ No N/A
2.3 Is the Analytical Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	Yes ✓ No N/A
2.4 Does the Worksheets include a Tracer Vial label for each sample?	Yes ✓ No N/A
3.0 QC & Samples	
3.1 Is the blank results, yield, and MDA within contract limits?	Yes ✓ No N/A
3.2 Is the LCS result, yield, and MDA within contract limits?	Yes ✓ No N/A
3.3 Are the MS/MSD results, yields, and MDA within contract limits?	Yes No N/A ✓
3.4 Are the duplicate result, yields, and MDAs within contract limits?	Yes ✓ No N/A
3.5 Are the sample yields and MDAs within contract limits?	Yes ✓ No N/A
4.0 Raw Data	
4.1 Were results calculated in the correct units?	Yes ✓ No N/A
4.2 Were analysis volumes entered correctly?	Yes ✓ No N/A
4.3 Were Yields entered correctly?	Yes ✓ No N/A
4.4 Were spectra reviewed/meet contractual requirements?	Yes No N/A ✓
4.5 Were raw counts reviewed for anomalies?	Yes ✓ No N/A
5.0 Other	
5.1 Are all nonconformances included and noted?	Yes No N/A ✓
5.2 Are all required forms filled out?	Yes ✓ No N/A
5.3 Was the correct methodology used?	Yes ✓ No N/A
5.4 Was transcription checked?	Yes ✓ No N/A
5.5 Were all calculations checked at a minimum frequency?	Yes ✓ No N/A
5.6 Are worksheet entries complete and correct?	Yes ✓ No N/A
6.0 Comments on any No response:	

First Level [signature] Date 4/5/11

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

AMENDED DATA

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

Batch Number: 1083086

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 ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery within contract acceptance criteria?	✓		
6. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
7. Do the MS/MSD results and yields meet acceptance criteria?			✓
8. Do the duplicate sample results and yields meet acceptance criteria?	✓		
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: Jodie C. Date: 4/5/11

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Richland Laboratory
Data Review Check List
Hexavalent Chromium

Batch Number(s): **105047**

Lab Sample Numbers or SDG:**JP0132**

Method/Test/Parameter: **Cr+6 in SOLID / RL-WC-004**

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level Review (✓)
A. Initial Calibration				
1. Performed at required frequency with required number of levels?	✓			
2. Correlation coefficient within QC limits?	✓			
3. Initial calibration verification (ICV) analyzed immediately after calibration and results within QC limits?	✓			
4. Initial calibration blank (ICB) analyzed immediately after ICV and concentrations of all parameters ≤ reporting limit?	✓			
B. Continuing Calibration				
1. CCV analyzed at required frequency and all parameters within QC limits?	✓			
2. CCB analyzed at required frequency and all results ≤ reporting limit?	✓			
C. Sample Analysis				
1. Were any samples with concentrations above the linear range for any parameter diluted and reanalyzed?			✓	
2. Were all sample holding times met?	✓			
D. QC Samples				
1. All results for the preparation blank below limits?	✓			
2. MS or MS/MSD recoveries within QC limits and %RPD (for MSD) acceptable?	✓			
3. LCS percent recovery within QC limits and %RPD (for LCSD) acceptable?	✓			
4. Analytical spikes within QC limits where applicable?	✓			
5. ICP only: One serial dilution performed per SDG?			✓	
6. ICP only: CRDL standard (CRI or CRA) analyzed at required frequency?			✓	
7. ICP only: Interference check samples (ICSA, ICSAB) and HICAL analyzed at the required frequencies and within QC limits?			✓	

Review Item	Yes (✓)	No (✓)	N/A (✓)	2nd Level Review (✓)
E. Other 1. Are all nonconformances included and noted?			✓	
2. Is the correct date and time of analysis shown?	✓			
3. Did the analyst sign and date the front page of the analytical run?	✓			
4. Correct methodology used?	✓			
5. Transcriptions checked?	✓			
6. Calculations checked at minimum frequency?	✓			
7. Units checked?	✓			

Comments on any "No" response

Analyst: _____ Date: 3-30-11

Second-Level Review: _____ Date: 3/30/11

TestAmerica Laboratories, Inc.

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-190-034	Page 1 of 1
Collector: BC Koelling / P. Wilson	Company Contact: Joan Kessner	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH	Price Code: 8KJ MAB 3-22-11
Project Designation: 100N Field Remediation - Soil In-Process	Sampling Location: 100-N-84:4		SAF No.: RC-190	Data Turnaround: ~~21~~ Days 7 Days MAB 3-22-11
Ice Chest No.: NA	Field Logbook No.: EL-1652-2	COA: R116N22000	Method of Shipment: ~~Fed Ex~~ Hand Delivery MAB 3-22-11	
Shipped To: TestAmerica Incorporated, Richland	Offsite Property No.: NA		Bill of Lading/Air Bill No.: ~~See OSPC~~ AF 3-22-11 NA	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactivity < DOT Limits JEB 3-23-11 3-23-11

Special Handling and/or Storage

Cool 4 degrees C

Quote #27038 CK
SDG# ~~JP0132~~ 8132
Lot # J1C230593
Due 3-30-11

Preservation	Cool 4C	Cool 4C	None	None	None	None				
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P				
No. of Container(s)	1	1	1	0	0	1				
Volume	60mL	60mL	500mL	500mL	500mL	60mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions	Chromium Hex - 7196 (Hexavalent Chromium)	See item (2) in Special Instructions	Gross Alpha & Gross Beta	Strontium-89,90 -- Total Sr	RCF GEA Shipping Screen				
	MAB 3-22-11					MAB 3-22-11				

Sample No.	Matrix *	Sample Date	Sample Time										
J1FHX0	SOIL	3-22-11	1400		✓	✓	✓	✓		MF3IN		27380	

J1C230593

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: Paul Wilson	Date/Time: 3-22-11/1410	Received By/Stored In: MA Bamberger	Date/Time: 1410 3-22-11
Relinquished By/Removed From: MA Bamberger	Date/Time: 1555 3-22-11	Received By/Stored In: A. Freier	Date/Time: 1555 3-22-11
Relinquished By/Removed From: A. Freier	Date/Time: 1505 3-23-11	Received By/Stored In: TALR Cameron Kroupa	Date/Time: 1505 3-23-11
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV) {Mercury}
(2) Gamma Spec (Client List) {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Radium-226}

REVIEWED BY JEB DATE 3-23-11

JP0132

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

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

AMENDED DATA

WCH-EE-011

AMENDED DATA

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sample Check-in List

Date/Time Received: 3.23.11 1505 GM Screen Result (out) .3 (in) .7 Initials[CK]

Client: WCH SDG #: JP0132 NA [ ] SAF #: RC-190 NA [ ]

Work Order Number: JTC230593 Chain of Custody # RC-190-034

Shipping Container ID: hand delivery NA [ ] Air Bill # _____ NA [CK]

Item 1 through 5 for shipping container only. Initial appropriate response.

1. Custody Seals on shipping container intact? Yes [CK] No [ ] No Custody Seal [ ]
2. Custody Seals dated and signed? Yes [CK] No [ ] No Custody Seal [ ]
3. Chain of Custody record present? Yes [CK] No [ ]
4. Cooler temperature: ON ICE NA [CK] 5.Vermiculite/packing materials is NA [ ] Wet [ ] Dry [CK]

Item 6 through 10 for samples. Initial appropriate response.

6. Number of samples in shipping container (Each sample may contain multiple bottles): 1 sample @ 1XJAR 60mLG & 1X500mLP per only
7. Sample holding times exceeded? NA [ ] Yes [ ] No [CK]
8. Samples have: (soil)
   ____tape ____hazard labels
   CK custody seals CK appropriate sample labels
9. Samples:
   CK are in good condition ____are leaking
   ____are broken ____have air bubbles (Only for samples requiring no head space)
10. Sample pH appropriate for analysis requested Yes [ ] No [ ] N/A [CK] (Note discrepancies in #13)
    (If acidification necessary, then document sample ID, initial pH, amount of HNO_3 added and pH after addition)

    RPL ID # of preservative used : _____
11. Sample Location, Sample Collector Listed? * Yes [CK] No [ ]
    *For documentation only. No corrective action needed.
12. Were any anomalies identified in sample receipt? Yes [ ] No [CK]
13. Description of anomalies (include sample numbers): NA [CK] _____

See other side for additional comments

Sample Custodian: Camera [signature] Date: 3.23.11 1505

Client Informed on _____ by _____ Person contacted _____

[✓] No action necessary; process as is

Project Manager [signature] Date 3/23/11

LS-023, Rev. 12, 10/10

Apex™ Non Reg

3/23/2011 7:28:35AM

Analysis Report for RCF27380

J1FHX0 SAF:RC-190 100NFR/100-N-84: SOIL SAMPLE 60mL aG JAR

GAMMA SPECTRUM ANALYSIS

Sample Identification	: RCF27380
Sample Description	: J1FHX0 SAF:RC-190 100NFR/100-N-84: SOIL SAMPLE 60mL aG JAR
Sample Type	: Non Standard Geometry
Sample Size	: 7.200E+01 grams
Facility	: Default
Sample Taken On	: 3/22/2011 2:00:00PM
Acquisition Started	: 3/23/2011 6:28:17AM
Procedure	: Non Standard Geometry
Operator	: RCT
Detector Name	: GEA2703
Geometry	: Non Standard Geometry
Live Time	: 3600.0 seconds
Real Time	: 3601.4 seconds
Dead Time	: 0.04 %
Peak Locate Threshold	: 3.00
Peak Locate Range (in channels)	: 40 - 4096
Peak Area Range (in channels)	: 40 - 4096
Identification Energy Tolerance	: 1.000 keV
Energy Calibration Used Done On	: 2/2/2011
Efficiency Calibration Used Done On	: 2/2/2011
Efficiency Calibration Description	: GEA2703 NSTD EC 020211 SN82751A-238
Sample Number	: 12840

"Qualitative Only"

INTERFERENCE CORRECTED REPORT

Nuclide Name		Nuclide Id Confidence	Wt mean Activity (pCi/grams)	Wt mean Activity Uncertainty	Comments
K-40		0.999	1.34E+01	2.51E+00	
RA-226d	@	0.345	3.66E-01	1.32E-01	

3/29/2011 6:43:59 PM

Sample Preparation/Analysis

Balance Id:1117411003

127642, Washington Closure Hanford LLC , Bechtel Hanford, Inc.

AY Gross Alpha Prp PRP003/GPC007
S7 Gross Alpha by GPC using Am-241 curve
5I CLIENT: HANFORD

Pipet #: _____

AnalyDueDate: 03/30/2011 JP0132

Sep1 DT/Tm Tech:

Batch: 1083084 SOIL pCi/g PM, Quote: RW2, 27038

SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: BockJ

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 MF31N-1-AD J1C230593-1-SAMP 03/22/2011 14:00		0.0503g,in AmtRec: 1XJAR60MLG,1X500MLP	#Containers: 2	1.5	50.3	100	10B	2302	3/30/11	
							Scr:	Alpha:		Beta:
2 MF31N-1-AH-X J1C230593-1-DUP 03/22/2011 14:00		0.0501g,in AmtRec: 1XJAR60MLG,1X500MLP	#Containers: 2		50.1		10C			
							Scr:	Alpha:		Beta:
3 MF4CX-1-AA-B J1C240000-84-BLK 03/24/2011 08:36 pd		0.0517g,in AmtRec:	#Containers: 1		1.3807g 1.3804g 0.3mg		10A			
							Scr:	Alpha:		Beta:
4 MF4CX-1-AC-C J1C240000-84-LCS 03/24/2011 08:36 pd		0.0545g,in AmtRec:	ASD5084 12/14/10,pd 04/04/05 #Containers: 1		1.3899g 1.3892g 0.7mg		10D			
							Scr:	Alpha:		Beta:

Comments: MF31N-SAMP ""

All Clients for Batch:
127642, Washington Closure Hanford LLC Bechtel Hanford, Inc. , RW2, 27038

17940

MF31N1AD-SAMP Constituent List:

ALPHA	RDL:1.00E+01	pCi/g	LCL:	UCL:	RPD:
MF4CX1AA-BLK:					
ALPHA	RDL:1.00E+01	pCi/g	LCL:	UCL:	RPD:
MF4CX1AC-LCS:					
Am-241	RDL:	pCi/g	LCL:70	UCL:130	RPD:35

AMENDED DATA

TestAmerica Laboratories, Inc.

33

Sample Preparation/Analysis

AY Gross Alpha Prp PRP003/GPC007
S7 Gross Alpha by GPC using Am-241 curve
5I CLIENT: HANFORD

Balance Id:1120421763,1117411003

Pipet #: _____

AnalyDueDate: 03/30/2011

Sep1 DT/Tm Tech:

Batch: 1083084 pCi/g

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: ,BockJ

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:

```
MF31N1AD-SAMP Calc Info:
    Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
MF4CX1AA-BLK:
    Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
MF4CX1AC-LCS:
    Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
```

AMENDED DATA

TestAmerica Laboratories, Inc.

4/4/2011 3:42:15 PM

ICOC Fraction Transfer/Status Report

AMENDED DATA

ByDate: 4/4/2010, 4/9/2011, Batch: '1083084', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
1083084						
AC		**Rev1C**	**BockJ**	3/29/2011 6:37:17 PM		
SC			MaucieriS	IsBatched	3/24/2011 8:52:19 AM	ICOC_RADCALC v4.8.49
SC			BockJ	InPrep	3/29/2011 6:37:17 PM	RL-GPC-007 REVISION 1
SC			BockJ	Prep2C	3/29/2011 6:44:18 PM	RL-GPC-007 REVISION 1
SC			DawkinsO	InCnt1	3/29/2011 7:06:39 PM	RL-CI-006 REVISION 1
SC			BlackCL	CalcC	3/31/2011 9:39:22 AM	RL-CI-006 REVISION 1
SC			ClarkR	InCnt1	3/31/2011 1:49:26 PM	RL-CI-006 REVISION 1
SC			ClarkR	CalcC	4/4/2011 2:04:35 PM	RL-CI-006 REVISION 1
SC			mcginnist	Rev1C	4/4/2011 3:42:07 PM	RL-DR-001 Rev 2
AC			**BockJ**	3/29/2011 6:44:18 PM		
AC			**DawkinsO**	3/29/2011 7:06:39 PM		
AC			**BlackCL**	3/31/2011 9:39:22		
AC			**ClarkR**	3/31/2011 1:49:26 PM		
AC			**ClarkR**	4/4/2011 2:04:35 PM		
AC			**mcginnist**	4/4/2011 3:42:07 PM		

AC: Accepting Entry; SC: Status Change

3/29/2011 6:45:20 PM

Sample Preparation/Analysis

Balance Id:1117411003

127642, Washington Closure Hanford LLC ,
Bechtel Hanford, Inc.

BB Gross Beta Prp PRP003/GPC007
S8 Gross Beta by GPC using Sr/Y-90 curve
5I CLIENT: HANFORD

Pipet #: _____

AnalyDueDate: 03/30/2011 JP0132

Sep1 DT/Tm Tech:

Batch: 1083085 SOIL pCi/g PM, Quote: RW2, 27038

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: BockJ

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 MF31N-1-AE J1C230593-1-SAMP 03/22/2011 14:00	AmtRec: 1XJAR60MLG,1X500MLP	0.2003g,in	#Containers: 2	1.5	200.3	50	32A	0944	3/30/11	
				Scr:		Alpha:		Beta:		
2 MF31N-1-AJ-X J1C230593-1-DUP 03/22/2011 14:00	AmtRec: 1XJAR60MLG,1X500MLP	0.2008g,in	#Containers: 2		200.8		32B			
				Scr:		Alpha:		Beta:		
3 MF4C0-1-AA-B J1C240000-85-BLK 03/24/2011 08:36 pd	AmtRec:	0.2076g,in	#Containers: 1		1.3959g 1.3959g 0mg		32C			
				Scr:		Alpha:		Beta:		
4 MF4C0-1-AC-C J1C240000-85-LCS 03/24/2011 08:36 pd	AmtRec:	0.2056g,in	BESD1692 03/02/11,pd 10/01/01 r #Containers: 1		1.3907g 1.3904g 0.3mg		32D			
				Scr:		Alpha:		Beta:		

Comments: MF31N-SAMP ""

All Clients for Batch:
127642, Washington Closure Hanford LLC Bechtel Hanford, Inc. , RW2, 27038

MF31N1AE-SAMP Constituent List:

BETA	RDL:1.50E+01	pCi/g	LCL:	UCL:	RPD:
MF4C01AA-BLK:					
BETA	RDL:1.50E+01	pCi/g	LCL:	UCL:	RPD:
MF4C01AC-LCS:					
Sr-90	RDL:	pCi/g	LCL:70	UCL:130	RPD:35

AMENDED DATA

TestAmerica Laboratories, Inc.

Sample Preparation/Analysis

BB Gross Beta Prp PRP003/GPC007
S8 Gross Beta by GPC using Sr/Y-90 curve
5I CLIENT: HANFORD

Balance Id:1117411003

Pipet #: _____

AnalyDueDate: 03/30/2011

Sep1 DT/Tm Tech:

Batch: 1083085 pCi/g

SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech: ,BockJ

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:

```
MF31N1AE-SAMP Calc Info:
    Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
MF4C01AA-BLK:
    Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
MF4C01AC-LCS:
    Uncert Level (#s).: 2    Decay to SaDt: Y    Blk Subt.: N    Sci.Not.: Y    ODRs: B
```

AMENDED DATA

3/31/2011 10:41:31 AM

ICOC Fraction Transfer/Status Report

AMENDED DATA

ByDate: 3/31/2010, 4/5/2011, Batch: '1083085', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
1083085						
AC		Rev1C	BockJ	3/29/2011 6:44:34 PM		
SC			MaucieriS	IsBatched	3/24/2011 8:52:24 AM	ICOC_RADCALC v4.8.49
SC			BockJ	InPrep	3/29/2011 6:44:34 PM	RL-GPC-007 REVISION 1
SC			BockJ	Prep2C	3/29/2011 6:45:26 PM	RL-GPC-007 REVISION 1
SC			DawkinsO	InCnt1	3/29/2011 7:06:41 PM	RL-CI-006 REVISION 1
SC			mcginnist	Rev1C	3/31/2011 10:41:24 AM	RL-DR-001 Rev 2
AC			BockJ	3/29/2011 6:45:26 PM		
AC			DawkinsO	3/29/2011 7:06:41 PM		
AC			mcginnist	3/31/2011 10:41:24		

AC: Accepting Entry; SC: Status Change

WCH Soil

3/24/2011 7:12:11 PM

Sample Preparation/Analysis

Balance Id:1120421763

127642, Washington Closure Hanford LLC , Bechtel Hanford, Inc.

AX Gamma Prp PRP003/GAM001
TA Gamma by HPGE
5I CLIENT: HANFORD

Pipet #:

AnalyDueDate: 03/30/2011

Sep1 DT/Tm Tech:

Batch: 1083083 SOIL pCi/g PM, Quote: RW2, 27038

Sep2 DT/Tm Tech:

SEQ Batch, Test: None All Tests: DWEA, 1083083 AXTA, 1083084 AYS7, 1083085 BBS8, 1083086 CHTH,

Prep Tech: BouslaughP

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 MF31N-1-AF J1C230593-1-SAMP 03/22/2011 14:00			380.10g,in AmtRec: 1XJAR60MLG,1X500MLP	380.10g #Containers: 2		5200	200	G14 Scr:	2345 Alpha:	3/24/11 DP Beta:	
2 MF31N-1-AG-X J1C230593-1-DUP 03/22/2011 14:00			AmtRec: 1XJAR60MLG,1X500MLP	#Containers: 2				G11 Scr:	0323 Alpha:	Beta:	
3 MF4CW-1-AA-B J1C240000-83-BLK 03/24/2011 08:36 pd			348.00g,in AmtRec:	348.00g #Containers: 1	osbk			G10 Scr:	2345 Alpha:	Beta:	
4 MF4CW-1-AC-C J1C240000-83-LCS 03/24/2011 08:36 pd			350.10g,in AmtRec:	350.10g #Containers: 1	qc20009 08/04/09,pd 09/01/09,r			G7 Scr:	2346 Alpha:	Beta:	

Comments: MF31N-SAMP "ISV. Recount DUP on a different detector."

All Clients for Batch:
127642, Washington Closure Hanford LLC Bechtel Hanford, Inc. , RW2, 27038

MF31N1AF-SAMP Constituent List:

Co-60	RDL:5.00E-02	pCi/g	LCL:	UCL:	RPD:	Cs-137	RDL:1.00E-01	pCi/g	LCL:70	UCL:130	RPD:35
Cs-137DA	RDL:1.00E-01	pCi/g	LCL:70	UCL:130	RPD:35	Eu-152	RDL:1.00E-01	pCi/g	LCL:	UCL:	RPD:
Eu-154	RDL:1.00E-01	pCi/g	LCL:	UCL:	RPD:	Eu-155	RDL:1.00E-01	pCi/g	LCL:	UCL:	RPD:

MF4CW1AA-BLK:

AMENDED DATA

TestAmerica Laboratories, Inc.

3/24/2011 7:12:12 PM

Sample Preparation/Analysis

AX Gamma Prp PRP003/GAM001
TA Gamma by HPGE
5I CLIENT: HANFORD

PRIORITY

Balance Id:1120373922
Pipet #:
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech: ,WoodT

AnalyDueDate: 03/30/2011

Batch: 1083083 pCi/g
SEQ Batch, Test: None

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:

```
MF4CW1AC-LCS:

MF31N1AF-SAMP Calc Info:
    Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
MF4CW1AA-BLK:
    Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
MF4CW1AC-LCS:
    Uncert Level (#s).: 2     Decay to SaDt: Y     Blk Subt.: N     Sci.Not.: Y     ODRs: B
```

AMENDED DATA

4/22/2011 2:26:04 PM

ICOC Fraction Transfer/Status Report

AMENDED DATA

ByDate: 4/22/2010, 4/27/2011, Batch: '1083083', User: 'ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
1083083						
AC		IsRpt	**BouslaughP**	3/24/2011 10:46:47		
SC			MaucieriS	IsBatched	3/24/2011 8:52:15 AM	ICOC_RADCALC v4.8.49
SC			BouslaughP	InPrep	3/24/2011 10:46:47 AM	RL-GAM-001 REVISION 1
SC			WoodT	Prep2C	3/24/2011 7:12:27 PM	RL-GAM-001 REVISION 1
SC			DawkinsO	InCnt1	3/24/2011 8:25:00 PM	RL-CI-C07 REVISION 1
SC			BlackCL	CalcC	3/25/2011 6:34:27 AM	RL-CI-007 REVISION 1
SC			antonsonl	Rev1C	3/25/2011 11:37:44 AM	RL-DR-001 Rev 2
SC			ICOC	IsRpt	4/12/2011 4:30:21 AM	ICOC_RADCALC v4.8.17
AC			**WoodT**	3/24/2011 7:12:27 PM		
AC			**DawkinsO**	3/24/2011 8:25:00 PM		
AC			**BlackCL**	3/25/2011 6:34:27		
AC			**antonsonl**	3/25/2011 11:37:44		

AC: Accepting Entry; SC: Status Change

3/24/2011 4:39:38 PM

Sample Preparation/Analysis

PRIORITY

Balance Id:1120373922

127642, Washington Closure Hanford LLC , Bechtel Hanford, Inc.

CH Sr-Total Prp PRP003, Sep GPC003
TH Total Strontium by GPC
5I CLIENT: HANFORD

Pipet #:

AnalyDueDate: 03/30/2011

Sep1 DT/Tm Tech: 10:10 4/1/11 APA

Batch: 1083086 SOIL pCi/g PM, Quote: RW2, 27038

Sep2 DT/Tm Tech:

SEQ Batch, Test: None All Tests: DWEA, 1083083 AXTA, 1083084 AYS7, 1083085 BBS8, 1083086 CHTH,

Prep Tech: BouslaughP

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 MF31N-1-AC J1C230593-1-SAMP 03/22/2011 14:00	AmtRec: 1XJAR60MLG,1X500MLP	6.00g,in #Containers: 2	SRTA20792 03/16/11	1.5	1.4749g -1.4081g 66.8 mg	50min	26A	1837	4/1/11 OP Scr: Alpha:	Beta:
2 MF31N-1-AK-X J1C230593-1-DUP 03/22/2011 14:00	AmtRec: 1XJAR60MLG,1X500MLP	6.00g,in #Containers: 2	SRTA20793 03/16/11		1.4895g -1.4188g 70.7mg		26B		Scr: Alpha:	Beta:
3 MF4C1-1-AA-B J1C240000-86-BLK 03/24/2011 08:36 pd	AmtRec:	6.00g,in #Containers: 1	SRTA20794 03/16/11		1.5193g -1.4243g 95.0mg		26C		Scr: Alpha:	Beta:
4 MF4C1-1-AC-C J1C240000-86-LCS 03/24/2011 08:36 pd	AmtRec:	6.01g,in #Containers: 1	STSB1579 03/10/11		1.4936g -1.3977g 95.9mg		26D		Scr: Alpha:	Beta:

Comments: ~~MF31N-SAMP "ISV. Recount DUP on a different detector."~~ 4/1/11 APA

All Clients for Batch:
127642, Washington Closure Hanford LLC Bechtel Hanford, Inc. , RW2, 27038

MF31N1AC-SAMP Constituent List:
Sr-90 RDL:1 pCi/g LCL:70 UCL:130 RPD:35
MF4C11AA-BLK:

MF4C11AC-LCS:

AMENDED DATA

TestAmerica Laboratories, Inc.

4/5/2011 10:44:49 AM

ICOC Fraction Transfer/Status Report

AMENDED DATA

ByDate: 4/5/2010, 4/10/2011, Batch: '1083086', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting			Comments
1083086						
AC		**Rev1C**	**BouslaughP**	3/24/2011 4:34:05 PM		
SC			MaucieriS	IsBatched	3/24/2011 8:52:28 AM	ICOC_RADCALC v4.8.49
SC			BouslaughP	InPrep	3/24/2011 4:34:05 PM	RL-PRP-003 REVISION 1
SC			WoodT	Prep1C	3/25/2011 2:57:00 AM	RL-PRP-003 REVISION 1
SC			BouslaughP	Prep1C	3/25/2011 10:29:58 AM	RL-PRP-003 REVISION 1
SC			AshworthA	Sep2C	4/1/2011 12:30:46 PM	RL-GPC-003 REVISION 1
SC			ClarkR	InCnt1	4/1/2011 12:50:34 PM	RL-CI-006 REVISION 1
SC			DawkinsO	CalcC	4/4/2011 11:58:55 PM	RL-CI-006 REVISION 1
SC			WhelandS	Rev1C	4/5/2011 10:44:37 AM	RL-DR-001 Rev 2
AC			**WoodT**	3/25/2011 2:57:00		
AC			**BouslaughP**	3/25/2011 10:29:58		
AC			**AshworthA**	4/1/2011 12:30:46 PM		
AC			**ClarkR**	4/1/2011 12:50:34 PM		
AC			**DawkinsO**	4/4/2011 11:58:55 PM		
AC			**WhelandS**	4/5/2011 10:44:37		

AC: Accepting Entry; SC: Status Change

TestAmerica Richland

Richland Wa.

Page 1

Grp Rec Cnt: 7

ICOCFractions v4.8.44

3/28/2011 12:40:49 PM

Sample Preparation/Analysis

127642, Washington Closure Hanford LLC
Bechtel Hanford, Inc.

DW Alkaline Digestion by method 3060A
EA Chromium, Hexavalent (7196A)
5I CLIENT: HANFORD

Balance Id:
Pipet #:

AnalyDueDate: 03/30/2011

Sep1 DT/Tm Tech:

Batch: 1085047 SOIL mg/kg PM, Quote: RW2, 27038
SEQ Batch, Test: None

Sep2 DT/Tm Tech:
Prep Tech:

TestAmerica Laboratories, Inc.

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 MF31N-1-AA J1C230593-1-SAMP 03/22/2011 14:00	AmtRec: 1XJAR60MLG,1X500MLP	#Containers: 2	Scr:	Alpha:	Beta:					
2 MF31N-1-AL-S J1C230593-1-MS 03/22/2011 14:00	AmtRec: 1XJAR60MLG,1X500MLP	#Containers: 2	Scr:	Alpha:	Beta:					
3 MF31N-1-AN-D J1C230593-1-MSD 03/22/2011 14:00	AmtRec: 1XJAR60MLG,1X500MLP	#Containers: 2	Scr:	Alpha:	Beta:					
4 MF31N-1-AP-X J1C230593-1-DUP 03/22/2011 14:00	AmtRec: 1XJAR60MLG,1X500MLP	#Containers: 2	Scr:	Alpha:	Beta:					
5 MF8AX-1-AA-B J1C260000-47-BLK 03/26/2011 12:25 pd	AmtRec:	#Containers: 1	Scr:	Alpha:	Beta:					
6 MF8AX-1-AC-C J1C260000-47-LCS 03/26/2011 12:25 pd	AmtRec:	#Containers: 1	Scr:	Alpha:	Beta:					

AMENDED DATA

3/28/2011 12:40:50 PM

Sample Preparation/Analysis

DW Alkaline Digestion by method 3060A
EA Chromium, Hexavalent (7196A)
5I CLIENT: HANFORD

Balance Id:
Pipet #:
Sep1 DT/Tm Tech:
Sep2 DT/Tm Tech:
Prep Tech:

AnalyDueDate: 03/30/2011

Batch: 1085047 mg/kg
SEQ Batch, Test: None

Work Order, Lot, Sample DateTime	Total Amt/Unit	Initial Aliquot Amt/Unit	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: MF31N-SAMP "ISV. Recount DUP on a different detector."

All Clients for Batch:
127642, Washington Closure Hanford LLC Bechtel Hanford, Inc. , RW2, 27038

MF31N1AA-SAMP Constituent List:
HEXCHROME RDL:0.1548 mg/kg LCL:80 UCL:120 RPD:20
MF31N1AL-MS Constituent List:
HEXCHROME RDL:0.35 mg/kg LCL:75 UCL:125 RPD:20
MF31N1AN-MSD:

MF8AX1AA-BLK:
HEXCHROME RDL:0.1548 mg/kg LCL: UCL: RPD:
MF8AX1AC-LCS:
HEXCHROME RDL:0.35 mg/kg LCL:80 UCL:120 RPD:20

MF31N1AA-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
MF31N1AL-MS Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
MF31N1AN-MSD:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
MF8AX1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
MF8AX1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

AMENDED DATA

TestAmerica Laboratories, Inc.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 280-13856-1

SDG Number: JP0132

Job Description: SAF# RC-190

For:
Washington Closure Hanford
2620 Fermi Avenue
Richland, WA 99354

Attention: Joan H Kessner

Approved for release.
Kae E Yoder
Project Manager II
4/12/2011 3:40 PM

Kae E Yoder
Project Manager II
kae.yoder@testamericainc.com
04/12/2011

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is E87667.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

TestAmerica Laboratories, Inc.
TestAmerica Denver 4955 Yarrow Street, Arvada, CO 80002
Tel (303) 736-0100 Fax (303) 431-7171 www.testamericainc.com

ACCREDITED IN ACCORDANCE WITH nelac

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CASE NARRATIVE

Client: Washington Closure Hanford

Project: WASHINGTON CLOSURE HANFORD

Report Number: 280-13856-1

SDG #: JP0132
SAF#: RC-190

Date SDG Closed: March 24, 2011
Data Deliverable: 7 Day / Summary

CLIENT ID	LAB ID	ANALYSES REQUESTED	ANALYSES PERFORMED
J1FHX0	280-13856-1	6010/7471	6010B/7471A

I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed in this Case Narrative. 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 signature on the Report Cover.

With exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. All laboratory quality control samples analyzed in conjunction with the samples in this project were within established control limits, with any exceptions noted. Calculations are performed before rounding to avoid round-off errors in calculated results.

This report includes reporting limits (RLs) less than TestAmerica Denver's practical quantitation limits. These reporting limits are being used specifically at the client's request to meet the needs of this project. Please note that data are not normally reported to these levels without qualification, since they are inherently less reliable and potentially less defensible than required by the current NELAC standards.

The results, RLs and MDLs included in this report have been adjusted for dry weight, as appropriate.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The sample was received on 3/24/2011; the sample arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 4.9 C.

TOTAL METALS - SW846 6010B/7471A
Silicon was recovered outside the control limits, biased low, in the LCS associated with batch 280-59234, and the associated sample result has been flagged "N". Silicon is a poor performer and has a history of reacting inconsistently. Data are reported as is.

It can be noted that the sample amount was greater than four times the spike amount for Aluminum, Iron and Manganese in the Matrix Spike performed on sample J1FHX0; therefore, control limits are not applicable.

No other anomalies were encountered.

DATA REPORTING QUALIFIERS

Client: Washington Closure Hanford

Job Number: 280-13856-1
Sdg Number: JP0132

Lab Section	Qualifier	Description
Metals		
	U	Analyzed for but not detected.
	B	Estimated result. Result is less than the RL, but greater than MDL
	4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.
	N	Recovery exceeds upper or lower control limits

METHOD SUMMARY

Client: Washington Closure Hanford

Job Number: 280-13856-1
Sdg Number: JP0132

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
Metals (ICP)	TAL DEN	SW846 6010B	
Preparation, Metals	TAL DEN		SW846 3050B
Mercury (CVAA)	TAL DEN	SW846 7471A	
Preparation, Mercury	TAL DEN		SW846 7471A
ASTM D-2216	TAL DEN	ASTM D-2216	

Lab References:

TAL DEN = TestAmerica Denver

Method References:

ASTM = ASTM International

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: Washington Closure Hanford

Job Number: 280-13856-1
Sdg Number: JP0132

Method	Analyst	Analyst ID
SW846 6010B	Harre, John K	JKH
SW846 7471A	Stoltz, Katie	KS
ASTM D-2216	Berry III, Paul B	PBB

SAMPLE SUMMARY

Client: Washington Closure Hanford

Job Number: 280-13856-1
Sdg Number: JP0132

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
280-13856-1	J1FHX0	Solid	03/22/2011 1400	03/24/2011 1226

SAMPLE RESULTS

Client: Washington Closure Hanford

Job Number: 280-13856-1
Sdg Number: JP0132

Client Sample ID: **J1FHX0**

Lab Sample ID: 280-13856-1
Client Matrix: Solid % Moisture: 14.1

Date Sampled: 03/22/2011 1400
Date Received: 03/24/2011 1226

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-59567	Instrument ID:	MT_025
Prep Method:	3050B	Prep Batch:	280-59234	Lab File ID:	25A2032511.asc
Dilution:	1.0			Initial Weight/Volume:	1.11 g
Analysis Date:	03/25/2011 1843			Final Weight/Volume:	100 mL
Prep Date:	03/25/2011 0730				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7580		1.6	5.2
Antimony		0.40	U	0.40	0.63
Arsenic		2.8		0.69	1.0
Barium		66.6		0.080	0.52
Beryllium		0.14	B	0.035	0.21
Boron		1.1	B	1.0	2.1
Cadmium		0.085	B	0.043	0.21
Calcium		7520		14.8	52.4
Chromium		13.9		0.061	0.21
Cobalt		7.0		0.10	1.0
Copper		16.3		0.23	1.0
Iron		17500		4.0	5.2
Lead		6.3		0.28	0.52
Magnesium		4320		3.9	21.0
Manganese		300		0.10	1.0
Molybdenum		0.29	B	0.27	2.1
Nickel		11.3		0.13	4.2
Potassium		1380		43.0	315
Selenium		0.90	U	0.90	1.0
Silicon		240	N	5.9	10.5
Silver		0.17	U	0.17	0.21
Sodium		279		61.9	126
Vanadium		43.5		0.099	2.1
Zinc		42.9		0.42	1.0

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-60074	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-59224	Lab File ID:	110330AA.txt
Dilution:	1.0			Initial Weight/Volume:	0.64 g
Analysis Date:	03/30/2011 1149			Final Weight/Volume:	50 mL
Prep Date:	03/30/2011 0830				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0060	U	0.0060	0.019

General Chemistry

Client Sample ID: **J1FHX0**

Lab Sample ID: 280-13856-1
Client Matrix: Solid

Date Sampled: 03/22/2011 1400
Date Received: 03/24/2011 1226

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	14.1		%	0.10	0.10	1.0	D-2216

Analysis Batch: 280-59203 Analysis Date: 03/24/2011 1400 DryWt Corrected: N

QUALITY CONTROL RESULTS

Client: Washington Closure Hanford

Job Number: 280-13856-1
Sdg Number: JP0132

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 280-59224					
LCS 280-59224/2-A	Lab Control Sample	T	Solid	7471A	
MB 280-59224/1-A	Method Blank	T	Solid	7471A	
280-13856-1	J1FHX0	T	Solid	7471A	
280-13856-1DU	Duplicate	T	Solid	7471A	
280-13856-1MS	Matrix Spike	T	Solid	7471A	
Prep Batch: 280-59234					
LCS 280-59234/2-A	Lab Control Sample	T	Solid	3050B	
MB 280-59234/1-A	Method Blank	T	Solid	3050B	
280-13856-1	J1FHX0	T	Solid	3050B	
280-13856-1DU	Duplicate	T	Solid	3050B	
280-13856-1MS	Matrix Spike	T	Solid	3050B	
Analysis Batch:280-59567					
LCS 280-59234/2-A	Lab Control Sample	T	Solid	6010B	280-59234
MB 280-59234/1-A	Method Blank	T	Solid	6010B	280-59234
280-13856-1	J1FHX0	T	Solid	6010B	280-59234
280-13856-1DU	Duplicate	T	Solid	6010B	280-59234
280-13856-1MS	Matrix Spike	T	Solid	6010B	280-59234
Analysis Batch:280-60074					
LCS 280-59224/2-A	Lab Control Sample	T	Solid	7471A	280-59224
MB 280-59224/1-A	Method Blank	T	Solid	7471A	280-59224
280-13856-1	J1FHX0	T	Solid	7471A	280-59224
280-13856-1DU	Duplicate	T	Solid	7471A	280-59224
280-13856-1MS	Matrix Spike	T	Solid	7471A	280-59224

Report Basis
T = Total

General Chemistry

Analysis Batch:280-59203					
280-13856-1	J1FHX0	T	Solid	D-2216	
280-13856-1DU	Duplicate	T	Solid	D-2216	

Report Basis
T = Total

Client: Washington Closure Hanford

Job Number: 280-13856-1
Sdg Number: JP0132

Method Blank - Batch: 280-59234

Method: 6010B
Preparation: 3050B

Lab Sample ID:	MB 280-59234/1-A	Analysis Batch:	280-59567	Instrument ID:	MT_025
Client Matrix:	Solid	Prep Batch:	280-59234	Lab File ID:	25A2032511.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1 g
Analysis Date:	03/25/2011 1838	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	03/25/2011 0730				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Aluminum	1.6	U	1.6	5.0
Antimony	0.38	U	0.38	0.60
Arsenic	0.66	U	0.66	1.0
Barium	0.076	U	0.076	0.50
Beryllium	0.033	U	0.033	0.20
Boron	0.98	U	0.98	2.0
Cadmium	0.041	U	0.041	0.20
Calcium	14.1	U	14.1	50.0
Chromium	0.058	U	0.058	0.20
Cobalt	0.10	U	0.10	1.0
Copper	0.22	U	0.22	1.0
Iron	3.8	U	3.8	5.0
Lead	0.27	U	0.27	0.50
Magnesium	3.7	U	3.7	20.0
Manganese	0.10	U	0.10	1.0
Molybdenum	0.26	U	0.26	2.0
Nickel	0.12	U	0.12	4.0
Potassium	41.0	U	41.0	300
Selenium	0.86	U	0.86	1.0
Silicon	5.7	U	5.7	10.0
Silver	0.16	U	0.16	0.20
Sodium	59.0	U	59.0	120
Vanadium	0.094	U	0.094	2.0
Zinc	0.40	U	0.40	1.0

Client: Washington Closure Hanford

Job Number: 280-13856-1
Sdg Number: JP0132

Lab Control Sample - Batch: 280-59234

Method: 6010B
Preparation: 3050B

Lab Sample ID:	LCS 280-59234/2-A	Analysis Batch:	280-59567	Instrument ID:	MT_025
Client Matrix:	Solid	Prep Batch:	280-59234	Lab File ID:	25A2032511.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1 g
Analysis Date:	03/25/2011 1841	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	03/25/2011 0730				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Aluminum	200	185.9	93	82 - 116	
Antimony	50.0	47.27	95	82 - 110	
Arsenic	100	94.35	94	85 - 110	
Barium	200	211.7	106	87 - 112	
Beryllium	5.00	4.96	99	84 - 114	
Boron	100	98.85	99	81 - 110	
Cadmium	10.0	10.54	105	87 - 110	
Calcium	5000	5092	102	82 - 114	
Chromium	20.0	20.25	101	84 - 114	
Cobalt	50.0	49.72	99	87 - 110	
Copper	25.0	23.93	96	88 - 110	
Iron	100	96.77	97	87 - 120	
Lead	50.0	46.31	93	86 - 110	
Magnesium	5000	4883	98	90 - 110	
Manganese	50.0	50.81	102	88 - 110	
Molybdenum	100	99.83	100	86 - 110	
Nickel	50.0	49.94	100	87 - 110	
Potassium	5000	5310	106	89 - 110	
Selenium	200	205.2	103	83 - 110	
Silicon	1000	23.36	2	10 - 70	N
Silver	5.00	5.40	108	87 - 114	
Sodium	5000	5211	104	90 - 112	
Vanadium	50.0	51.65	103	88 - 110	
Zinc	50.0	47.82	96	76 - 114	

Client: Washington Closure Hanford

Job Number: 280-13856-1
Sdg Number: JP0132

Matrix Spike - Batch: 280-59234

Method: 6010B
Preparation: 3050B

Lab Sample ID:	280-13856-1	Analysis Batch:	280-59567	Instrument ID:	MT_025
Client Matrix:	Solid	Prep Batch:	280-59234	Lab File ID:	25A2032511.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.03 g
Analysis Date:	03/25/2011 1850	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	03/25/2011 0730				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Aluminum	7580		226	9746	957	50 - 200	4
Antimony	0.40	U	56.5	31.50	56	20 - 200	
Arsenic	2.8		113	100.1	86	76 - 111	
Barium	66.6		226	297.1	102	52 - 159	
Beryllium	0.14	B	5.65	5.27	91	72 - 105	
Boron	1.1	B	113	97.32	85	75 - 107	
Cadmium	0.085	B	11.3	11.08	97	40 - 130	
Calcium	7520		5650	16110	152	43 - 165	
Chromium	13.9		22.6	37.10	103	70 - 200	
Cobalt	7.0		56.5	57.78	90	72 - 106	
Copper	16.3		28.2	40.20	85	37 - 187	
Iron	17500		113	17360	-165	70 - 200	4
Lead	6.3		56.5	50.97	79	70 - 200	
Magnesium	4320		5650	10420	108	64 - 145	
Manganese	300		56.5	375.9	134	40 - 200	4
Molybdenum	0.29	B	113	102.4	90	75 - 103	
Nickel	11.3		56.5	64.22	94	61 - 126	
Potassium	1380		5650	7113	101	56 - 172	
Selenium	0.90	U	226	205.3	91	76 - 104	
Silicon	240		1130	484.5	22	20 - 200	
Silver	0.17	U	5.65	5.67	100	75 - 141	
Sodium	279		5650	5881	99	78 - 111	
Vanadium	43.5		56.5	99.18	99	50 - 169	
Zinc	42.9		56.5	90.27	84	70 - 200	

Client: Washington Closure Hanford

Job Number: 280-13856-1
Sdg Number: JP0132

Duplicate - Batch: 280-59234

Method: 6010B
Preparation: 3050B

Lab Sample ID:	280-13856-1	Analysis Batch:	280-59567	Instrument ID:	MT_025
Client Matrix:	Solid	Prep Batch:	280-59234	Lab File ID:	25A2032511.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.13 g
Analysis Date:	03/25/2011 1848	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	03/25/2011 0730				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Aluminum	7580		7736	2	40	
Antimony	0.40	U	0.39	NC	40	U
Arsenic	2.8		3.34	17	30	
Barium	66.6		65.94	1	30	
Beryllium	0.14	B	0.149	10	30	B
Boron	1.1	B	1.0	NC	30	U
Cadmium	0.085	B	0.0927	9	30	B
Calcium	7520		8575	13	30	
Chromium	13.9		15.17	9	40	
Cobalt	7.0		6.90	0.8	30	
Copper	16.3		14.73	10	30	
Iron	17500		16260	8	40	
Lead	6.3		4.62	31	40	
Magnesium	4320		4436	3	30	
Manganese	300		286.5	5	40	
Molybdenum	0.29	B	0.27	NC	30	U
Nickel	11.3		11.97	6	30	
Potassium	1380		1315	5	40	
Selenium	0.90	U	0.89	NC	30	U
Silicon	240		310.0	26	40	N
Silver	0.17	U	0.16	NC	30	U
Sodium	279		308.3	10	30	
Vanadium	43.5		38.82	11	30	
Zinc	42.9		38.27	11	40	

Client: Washington Closure Hanford

Job Number: 280-13856-1
Sdg Number: JP0132

Method Blank - Batch: 280-59224

Method: 7471A
Preparation: 7471A

Lab Sample ID:	MB 280-59224/1-A	Analysis Batch:	280-60074	Instrument ID:	MT_033
Client Matrix:	Solid	Prep Batch:	280-59224	Lab File ID:	110330AA.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.60 g
Analysis Date:	03/30/2011 1144	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	03/30/2011 0830				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Mercury	0.0055	U	0.0055	0.017

Lab Control Sample - Batch: 280-59224

Method: 7471A
Preparation: 7471A

Lab Sample ID:	LCS 280-59224/2-A	Analysis Batch:	280-60074	Instrument ID:	MT_033
Client Matrix:	Solid	Prep Batch:	280-59224	Lab File ID:	110330AA.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.60 g
Analysis Date:	03/30/2011 1146	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	03/30/2011 0830				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.417	0.407	98	87 - 111	

Matrix Spike - Batch: 280-59224

Method: 7471A
Preparation: 7471A

Lab Sample ID:	280-13856-1	Analysis Batch:	280-60074	Instrument ID:	MT_033
Client Matrix:	Solid	Prep Batch:	280-59224	Lab File ID:	110330AA.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.62 g
Analysis Date:	03/30/2011 1153	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	03/30/2011 0830				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.0060	U	0.469	0.428	91	87 - 111	

Quality Control Results

Client: Washington Closure Hanford

Job Number: 280-13856-1
Sdg Number: JP0132

Duplicate - Batch: 280-59224

Method: 7471A
Preparation: 7471A

Lab Sample ID:	280-13856-1	Analysis Batch:	280-60074	Instrument ID:	MT_033
Client Matrix:	Solid	Prep Batch:	280-59224	Lab File ID:	110330AA.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.64 g
Analysis Date:	03/30/2011 1151	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	03/30/2011 0830				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Mercury	0.0060	U	0.0060	NC	20	U

Quality Control Results

Client: Washington Closure Hanford

Job Number: 280-13856-1
Sdg Number: JP0132

Duplicate - Batch: 280-59203

Method: D-2216
Preparation: N/A

Lab Sample ID:	280-13856-1	Analysis Batch:	280-59203	Instrument ID:	No Equipment
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	03/24/2011 1400	Units:	%	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Percent Moisture	14.1	16.0	12	20	

4.9° 3/24/11

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-190-034 | Page 1 of 1

Collector BC Koelling	**Company Contact** Joan Kessner	**Telephone No.** 375-4688	**Project Coordinator** KESSNER, JH
Price Code 8LJ MAB 3-22-11	**Data Turnaround** ~~21~~ Days 7 MAB 3-21-11		
Project Designation 100N Field Remediation - Soil In-Process	**Sampling Location** 100-N-84:4		**SAF No.** RC-190
Ice Chest No. WCH-08-042	**Field Logbook No.** EL-1652-2	**COA** R116N22000	**Method of Shipment** ~~Fed Ex~~ ~~Hand~~ Fed Ex MAB 3-22-11
Shipped To TestAmerica Incorporated, ~~Richland~~ Denver MAB 3-22-11	**Offsite Property No.** NA		**Bill of Lading/Air Bill No.** ~~See OSPG~~ NA AF 3-22-11 7945 6703 1657

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactivity < DOT Limits AF 3-22-11

Special Handling and/or Storage

Cool 4 degrees C

Preservation	Cool 4C	Cool 4C	None	None	None	None					
Type of Container	G/P	G/P	G/P	G/P	G/P	G/P					
No. of Container(s)	1	1	1	0	0	1					
Volume	60mL	60mL	500mL	500mL	500mL	60mL					
SAMPLE ANALYSIS	See item (1) in Special Instructions	Chromium Hex - 7196 (Hexavalent Chromium)	See item (2) in Special Instructions	Gross Alpha & Gross Beta	Strontium-89,90 -- Total Sr	RCF GEA Shipping Screen					
Sample No. / Matrix * / Sample Date / Sample Time											
J1FHX0 / SOIL / 3-22-11 / 1400	✓										RCF 27380

3-22-11

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Tael Wilson	3-22-11/1410	MA Bamberger MA Bamberger	1410 3-22-11
MA Bamberger	3-22-11 1555	A Freier A. Freier	1555 3-22-11
A. Freier A. Freier WCH	1055 3-23-11	Fed Ex	
		Jamie Dirlff	3/24/11 1000

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV) {Mercury}

(2) Gamma Spec (Client List) {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Radium-226}

REVIEWED BY JEB DATE 3-23-11

JP0132

Matrix *: S=Soil, SE=Sediment, SO=Solid, SI=Sludge, W = Water, O=Oil, A=Air, DS=Drum Solids, DL=Drum Liquids, T=Tissue, WI=Wipe, L=Liquid, V=Vegetation, X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Project 28002142 - 6010TR -S.1.d

Analytical Due:

Report Due: 3/31/11 (Rush 5 day TAT)

Sample Check-in List

Date/Time Received: 3/24/11 1000 GM Screen Result 13 microR/hr

Client: Washington Closure Hanford SDG #: JP0132 NA[ ] SAF #: RC-190 NA [ ]

Job Number: 138526 Chain of Custody # RC-190-034

Shipping Container ID: _____ Air Bill # 794567031679

1. Custody Seals on shipping container intact? NA [ ] Yes [✓] No [ ]
2. Custody Seals dated and signed? NA [ ] Yes [✓] No [ ]
3. Chain of Custody record present? NA [ ] Yes [✓] No [ ]
4. Cooler Temperature °C: 4.9 NA [ ] 5. Vermiculite/packing materials is NA [ ] Wet [ ] Dry [✓]
6. Number of samples in shipping container: 1
7. Sample holding times exceeded? NA [ ] Yes [ ] No [✓]
8. Samples have:
   - ✓ Tape
   - ✓ Custody Seals
   - ✓ Hazard Lables
   - ✓ Appropriate Sample Lables
9. Samples are:
   - ✓ In Good Condition
   - _____ Broken
   - _____ Leaking
   - _____ Have Air Bubbles (Only for samples requiring no head space.)
10. Sample pH taken? NA [✓] pH<2 [ ] pH>2 [ ] pH>9 [ ] **Amount HNO_3 Added** _____
11. Sample Location, Sample Collector Listed? *
    *For documentation only. No corrective action needed.
12. Were any anomalies identified in sample receipt? Yes [ ] No [✓]
13. Description of anomalies (include sample numbers): _____

Sample Custodian: _____ **Date:** 3/24/11

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on _____ by _____ Person Contacted _____

[ ] No action necessary, process as is.

Project Manager _____ Date 3/25/11

From: (509) 375-4640 Origin ID: PSCA
WCH MAILROOM
WASHINGTON CLOSURE HANFORD
2620 FERMI AVE

RICHLAND, WA 99354

J11151102250225

Ship Date: 23MAR11
ActWgt: 48.0 LB
CAD: 8897843/INET3130

Delivery Address Bar Code

Ref #
Invoice #
PO #
Dept #

SHIP TO: (303) 736-0100 BILL SENDER

Sample Recieving
Test America Denver
4955 YARROW ST

ARVADA, CO 80002

2 of 2

THU - 24 MAR A1
PRIORITY OVERNIGHT

MPS# 7945 6703 1679
0263
Mstr# 7945 6703 1657 0201

XH WHHA

80002
CO-US
DEN

50DG2/8DC9/7EFB

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