

FEBRUARY 21, 2013

Analytical Data Package Prepared For
CH2M Hill Plateau Remediation

Radiochemical Analysis By
TestAmerica

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

Assigned Laboratory Code: TARL

Data Package Contains 19 Pages

Report No.: 54634

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.
W06532	F13-001	B2N373	J3A300418-1	MX1VQ1AA	9MX1VQ10	3031045



Certificate of Analysis

TestAmerica Laboratories, Inc.

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

February 21, 2013

Attention: Scot Fitzgerald

SAF Number : F13-001
Date SDG Closed : January 29, 2013
Number of Samples : One (1)
Sample Type : Water
SDG Number : W06532
Data Deliverable : 30 Day / 30 Day Summary

CASE NARRATIVE

I. Introduction

On January 29, 2013, one water sample was received at TestAmerica (TARL). Upon receipt, the sample was assigned the following laboratory ID number to correspond with the CH2M specific ID:

Table with 4 columns: CH2M ID#, TARL ID#, MATRIX, DATE OF RECEIPT. Row 1: B2N373, MX1VQ, WATER, 1/29/13

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:

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

IV. Quality Control

CH2M Hill Plateau Remediation Company
February 21, 2013

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

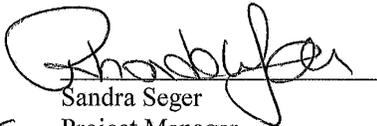
Gamma Spectroscopy

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

The LCS, batch blank, sample and sample duplicate (B2N373) results are within contractual requirements.

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

Reviewed and approved:


Sandra Seger
Project Manager

bar

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 the 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%. $Lc = (1.645 * \sqrt{2 * (BkgrndCnt / BkgrndCntMin) / SCntMin}) * (ConvFct / (Eff * Yld * Abn * Vol) * IngrFct)$. 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.

Sample Results Summary

Date: 21-Feb-13

TestAmerica TARL

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

Report No. : 54634

SDG No: W06532

Client Id		Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDL	CRDL	RPD
Batch	Work Order								
3031045	I129LL_SEP_LEPS_GS								
B2N373									
	MX1VQ1AA I129		7.96E-01 +- 2.1E-01		pCi/L	99%	1.67E-01	5.00E-01	
B2N373 DUP									
	MX1VQ1AC I129		8.43E-01 +- 2.2E-01		pCi/L	103%	2.14E-01	5.00E-01	5.8
No. of Results:		2							

TestAmerica RPD - Relative Percent Difference.

rptSTLRchSaSum
mary2 V5.2.23
A2002

QC Results Summary
TestAmerica TARL
 Ordered by Method, Batch No, QC Type,.

Date: 21-Feb-13

Report No. : 54634

SDG No.: W06532

Batch	Work Order	Parameter	Result +/- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDL
I129LL_SEP_LEPS_GS	3031045	BLANK QC,							
	MX1361AA	I129	1.19E-01 +- 9.9E-02	U	pCi/L	104%			1.44E-01
	3031045	LCS,							
	MX1361AC	I129	1.02E+01 +- 1.2E+00		pCi/L	102%	99%	0.0	2.75E-01
No. of Results:		2							

TestAmerica
 rptSTLRchQcSummary V5.2.23
 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.

Date: 21-Feb-13

FORM I
SAMPLE RESULTS

Lab Name: TestAmerica
 Lot-Sample No.: J3A300418-1
 Client Sample ID: B2N373
 SDG: W06532
 Report No.: 54634
 COC No.: F13-001-087
 Collection Date: 1/28/2013 12:50:00 PM
 Received Date: 1/29/2013 10:05:00 AM
 Matrix: WATER

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3031045	I129LL_SEP_LEPS_GS											
I129	7.96E-01		2.1E-01	2.1E-01	1.67E-01	pCi/L	99%	(4.8)	2/18/13 08:13 p		3.8077	LEP5\$1
						8.32E-02	5.00E-01	(7.7)			L	

Work Order: MX1VQ1AA Report DB ID: 9MX1VQ10

No. of Results: 1 Comments:

TestAmerica MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
 rp|STLRchSample 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.
 V5.2.23 A2002

FORM II

Date: 21-Feb-13

DUPLICATE RESULTS

Lab Name: TestAmerica **SDG:** W06532 **Collection Date:** 1/28/2013 12:50:00 PM
Lot-Sample No.: J3A300418-1 **Report No.:** 54634 **Received Date:** 1/29/2013 10:05:00 AM
Client Sample ID: B2N373 DUP **COC No.:** F13-001-087 **Matrix:** WATER

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3031045	1129LL_SEP_LEPS_GS								Orig Sa DB ID: 9MX1VQ10			
1129	8.43E-01		2.2E-01	2.2E-01	2.14E-01	pCi/L	103%	(3.9)	2/18/13 11:43 p		3.7918	LEP4\$1
	7.96E-01		RPD 5.8			5.00E-01	(7.8)				L	

No. of Results: 1 Comments:

TestAmerica RPD - Relative Percent Difference.
rp\$TLRchDupV5. MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
 2.23 AZ002

Date: 21-Feb-13

FORM II

BLANK RESULTS

Lab Name: TestAmerica SDG: W06532 Report No.: 54634
 Matrix: WATER

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL, Lc	Rpt Unit, CRDL	Yield	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3031045	1129LL_SEP_LEPS_GS											
1129	1.19E-01	U	9.9E-02	9.9E-02	1.44E-01 7.24E-02	pCi/L	104%	0.83 (2.4)	2/18/13 11:45 p		3.806 L	LEP5\$1

No. of Results: 1 Comments:

TestAmerica MDC\MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
 rpt\$TLRchBlank 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.
 V5.2.23 A2002

Date: 21-Feb-13

FORM II

LCS RESULTS

Lab Name: TestAmerica SDG: W06532
 Matrix: WATER Report No.: 54634

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDL	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
3031045	1.02E+01		1.2E+00	1.2E+00	2.75E-01	pCi/L	102%	1.03E+01	1.71E-01	99%	2/19/13 06:34 a	3.8032	LEP4\$1
I129										0.0		L	
Batch: I129LL_SEP_LEPS_GS Work Order: MX1361AC Report DB ID: MX1361CS													
Rec Limits: 70 130 0.0													

No. of Results: 1 Comments:

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

rp1STLRchLcs
 V5.2.23 A2002

Lot No., Due Date: J3A300418; 02/28/2013
Client, Site: 108302; FLH HANFORD
QC Batch No., Method Test: 3031045; RGAMLEPS Gamma by LEPS
SDG, Matrix: W06532; WATER

1.0 COC

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

2.0 QC Batch

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

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

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

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

3.0 QC & Samples

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

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

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

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

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

4.0 Raw Data

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

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

4.3 Were Yields entered correctly? Yes No N/A

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

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

5.0 Other

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

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

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

5.4 Was transcription checked? Yes No N/A

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

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

6.0 Comments on any No response:

First Level *[Signature]* Date *2/20/13*



Data Review Checklist
RADIOCHEMISTRY
 Second Level Review

Batch Number: 3031045

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: QDL = 0.5 pCi/L

Second Level Review: [Signature] Date: 2/21/13

CH2MHILL Plateau Remediation Company		CHAIN OF CUSTODY / SAMPLE ANALYSIS REQUEST		F13-001-087	PAGE 1 OF 1
COLLECTOR <i>Karin Crow, white</i>	COMPANY CONTACT TODAK, D	TELEPHONE NO. 376-6427	PROJECT COORDINATOR TODAK, D	PRICE CODE 7H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C8720; I-003	PROJECT DESIGNATION FY2013 200-ZP-1 Remedial Action Wells Sampling and Analysis - Water	SAF NO. F13-001		AIR QUALITY	<input type="checkbox"/>
ICE CHEST NO. <i>N/A</i>	FIELD LOGBOOK NO. <i>INF-N-567-26/1</i>	ACTUAL SAMPLE DEPTH <i>319 FT</i>		METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO TestAmerica Incorporated, Richland	OFFSITE PROPERTY NO. SEE PTR	BILL OF LADING/AIR BILL NO. SEE PTR			

MATRIX* A=Air DL=Drum L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS **Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR/DATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.**	PRESERVATION None	HOLDING TIME 6 Months	TYPE OF CONTAINER G/P	NO. OF CONTAINER(S) 2	VOLUME 4L	SAMPLE ANALYSIS 1129LL_SEP_LE PS_GS: COMMON;
SPECIAL HANDLING AND/OR STORAGE							
SAMPLE NO. B2N373	MATRIX* WATER	SAMPLE DATE <i>1/28/13</i>	SAMPLE TIME <i>1250</i>				

MTING

Due: 2/28/13

33A300414
w06532



CHAIN OF POSSESSION		SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM <i>Ed Kavre Ed 2/28/13</i>	DATE/TIME <i>1-28-13 1410</i>	RECEIVED BY/STORED IN <i>SSC #1</i>	DATE/TIME <i>1-28-13 1410</i>
RELINQUISHED BY/REMOVED FROM <i>56 Z 1</i>	DATE/TIME <i>JAN 29 2013 0700</i>	RECEIVED BY/STORED IN <i>Alvarez R. 2/28/13</i>	DATE/TIME <i>JAN 29 2013 0800</i>
RELINQUISHED BY/REMOVED FROM <i>Alvarez R. 2/28/13</i>	DATE/TIME <i>JAN 29 2013 1005</i>	RECEIVED BY/STORED IN <i>56 Z 1</i>	DATE/TIME <i>JAN 29 2013 1005</i>
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
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

TRVL 12- 119



Sample Check-in List

Date/Time Received: 1-29-13/1005 Container GM Screen Result: (Airlock) .6 Initials [B]
Sample GM Screen Result (Sample Receiving) .4 Initials [B]

Client: FLH SDG #: W06532 NA [] SAF #: F13-001 NA []

Lot Number: J3A350418

Chain of Custody # F13-001-087

Shipping Container ID: hand delivered NA [B] 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: 2 x 4LP

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

9. Samples have: tape hazard labels
[B] custody seals [B] appropriate sample labels

10. Matrix: A (FLT, Wipe, Solid, Soil) [B] I (Water)
S (Air, Niosh 7400) T (Biological, Ni-63)

11. Samples: [B] are in good condition _____ are leaking
are broken _____ have air bubbles (Only for samples requiring no head space)
Other 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)
RPL ID # of preservative used : N/A

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

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

FLH

2/15/2013 12:45:38 PM **Sample Preparation/Analysis** Balance Id: 1120482733

108302, CH2M Hill Plateau Remediation DOE RL BN I-129 Prp/Sep GAM002 Pipet #: _____
 , Waste Management Federal Servi TB Gamma by LEPD 5I CLIENT: HANFORD

Analyte: 02/28/2013 **PM, Quote:** SS, 29754 **Sep1 DT/Tm Tech:** _____
Batch: 3031045 **WATER** pCi/L **Sep2 DT/Tm Tech:** _____
 SEQ Batch, Test: None **Prep Tech:** NyeP

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Amt/Unit Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Inrt/Date	Comments:
1 MX1VQ-1-AA J3A300418-1-SAMP 01/29/2013 12:50	3807.70g.in	3807.70g.in	3807.70g	3807.70g	ITA12658 01/29/13			36.8mg	200	L5	2333	2/18/1300	
2 MX1VQ-1-AC-X J3A300418-1-DUP 01/29/2013 12:50	3791.80g.in	3791.80g.in	3791.80g	3791.80g	ITA12659 01/29/13			38.0mg		L4	0303		Alpha: 1.26E-05 uCi/Sa Beta: 9.81E-04 uCi/Sa
3 MX136-1-AA-B J3A310000-45-BLK 01/31/2013 11:50 pd	3806.00g.in	3806.00g.in	3806.00g	3806.00g	ITA12660 01/29/13			38.6mg		L5	0305		Alpha: 1.26E-05 uCi/Sa Beta: 9.81E-04 uCi/Sa
4 MX136-1-AC-C J3A310000-45-LCS 01/31/2013 11:50 pd	3803.20g.in	3803.20g.in	3803.20g	3803.20g	ISD1522 01/17/13			38.2mg		L4	0954	2/19/1300H	Alpha: _____ Beta: _____

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

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

ISV - Insufficient Volume for Analysis
 WO Cnt: 4
 Prep_SamplePrep v4.8.61

1/23/2013 1:24:36 PM

Sample Preparation/Analysis

Balance Id:1120421763

AW Gamma Prp GAM001
TA Gamma by HPGE
01 STANDARD TEST SET

Pipet #:

AnalyDueDate: 02/07/2013

Sep1 DT/Tm Tech:

Batch: 3021045

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

pCi/g

Prep Tech: SannohS

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

Comments:

All Clients for Batch:
1436771, EJ, 91055

MXW401AA-SAMP Constituent List:

CS-137	RDL:	pCi/g	LCL:70	UCL:130	RPD:35	CS-137DA	RDL:	PCI/g	LCL:70	UCL:130	RPD:35			
MXXCALAA-BLK:	RDL:	pCi/g	LCL:	UCL:	RPD:	CS-137DA	RDL:	PCI/g	LCL:	UCL:	RPD:			
CS-137	RDL:0.2	pCi/g	LCL:70	UCL:130	RPD:35	CS-137DA	RDL:0.2	PCI/g	LCL:70	UCL:130	RPD:35			

MXW401AA-SAMP Calc Info:

Uncert Level (#s):	2	Decay to SaDt:	Y	Blk Subt.:	N	Sci. Not.:	Y	ODRs:	B
Uncert Level (#s):	2	Decay to SaDt:	Y	Blk Subt.:	N	Sci. Not.:	Y	ODRs:	B
Uncert Level (#s):	2	Decay to SaDt:	Y	Blk Subt.:	N	Sci. Not.:	Y	ODRs:	B

2/20/2013 1:11:03 PM

ICOC Fraction Transfer/Status Report

ByDate: 2/21/2012, 2/25/2013, Batch: '3031045', User: *ALL Order By DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting	Comments
3031045				
AC	Rev1C	NyeP	2/11/2013 12:40:14	
SC		nyep	IsBatched	2/11/2013 11:26:06 AM ICOC_RADCALC v4.8.49
SC		NyeP	InPrep	2/11/2013 12:40:14 PM RL-GAM-002 REVISION 3
SC		NortonJ	InSep1	2/15/2013 8:49:05 AM RL-GAM-002 REVISION 3
SC		HiattC	InCnt1	2/15/2013 1:26:55 PM RL-CI-007 REV. 2
SC		DawkinsO	CalcC	2/19/2013 10:20:28 PM RL-CI-007 REV. 2
SC		antonsoni	Rev1C	2/20/2013 1:10:56 PM RL-DR-001 Rev 2
AC		NortonJ	2/15/2013 8:49:05	
AC		HiattC	2/15/2013 1:26:55 PM	
AC		DawkinsO	2/19/2013 10:20:28	
AC		antonsoni	2/20/2013 1:10:56 PM	

AC: Accepting Entry; SC: Status Change

TestAmerica Richland
Richland Wa.