SAF-NFM-005
ERDF Near Field Monitoring – Air Filter Analysis
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

No Distribution Required KW 9/2/16
INITIAL/DATE

COMMENTS:

SDG NFM0171 SAF NFM-005

☑ Rad only Chem only Rad & Chem

☑ Complete Partial

Sample Location: ERDF Near Field Monitoring

Analytical Data Package Prepared For

Washington Closure Hanford

Radiochemical Analysis By

TestAmerica Inc

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

Assigned Laboratory Code: TARL

Data Package Contains 20 *Pages*

Report No.: 69084

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.
NFM0171	NFM-005	S979268	J6G180408-1	M8X2L1AA	9M8X2L10	6200050
		S979271	J6G180408-2	M8X2M1AA	9M8X2M10	6200050
		S979272	J6G180408-3	M8X2N1AA	9M8X2N10	6200050

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

August 1, 2016

Attention: Joan Kessner

SAF Number	:	NFM-005
Date SDG Closed	:	July 11, 2016
Number of Samples	:	Three (3)
Sample Type	:	Filter
SDG Number	:	NFM0171
Data Deliverable	:	21– Day / Summary

CASE NARRATIVE

I. Introduction

On July 11, 2016, three filter samples were received at TestAmerica for radiochemical analysis. Upon receipt, the samples were assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID:

WCH ID#	TARL ID#	MATRIX	DATE OF RECEIPT
S979268	M8X2L	FILTER	7/11/16
S979271	M8X2M	FILTER	7/11/16
S979272	M8X2N	FILTER	7/11/16

II. Sample Receipt

The samples were 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-008
Gross Beta by method RL-GPC-008

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
Simultaneous Gross Alpha and Gross Beta by method RL-GPC-008:
The LCS, batch blank and sample 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:

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.
CSU (#s) *u_c Combined Standard Uncert.*	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 standard 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|MDL	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: 01-Aug-16

TestAmerica Inc TARL

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

Report No. : 69084 **SDG No:** NFM0171

Batch	Client Id / Work Order	Parameter	Result +- CSU (2 s)	Qual	Units	Tracer Yield	MDL	CRDL	RPD
6200050	ALPHA_GPC								
	S979268								
	M8X2L1AA	Alpha	8.71E-01 +- 2.4E-01		pCi/sample	100%	8.00E-02	1.10E-01	
		Beta	1.01E+01 +- 1.6E+00		pCi/sample	100%	2.22E-01	1.10E-01	
	S979271								
	M8X2M1AA	Alpha	6.06E-01 +- 1.9E-01		pCi/sample	100%	8.32E-02	1.10E-01	
		Beta	8.11E+00 +- 1.3E+00		pCi/sample	100%	2.38E-01	1.10E-01	
	S979272								
	M8X2N1AA	Alpha	8.87E-01 +- 2.4E-01		pCi/sample	100%	9.95E-02	1.10E-01	
		Beta	8.73E+00 +- 1.4E+00		pCi/sample	100%	2.38E-01	1.10E-01	

No. of Results: 6

TestAmerica Inc RPD - Relative Percent Difference.

rptTALRchSaSummary2 V5.6 A2002

QC Results Summary

Date: 01-Aug-16

TestAmerica Inc TARL

Ordered by Method, Batch No, QC Type,.

Report No. : 69084 **SDG No.:** NFM0171

Batch Work Order	Parameter	Result +- CSU (2 s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDL
ALPHA_GPC								
6200050 BLANK QC,								
M8X2W1AA	Alpha	6.79E-02 +- 6.7E-02	U	uCi/sample	100%			8.92E-02
	Beta	1.49E-01 +- 1.6E-01	U	uCi/sample	100%			2.56E-01
6200050 LCS,								
M8X2W1AC	Alpha	1.62E+01 +- 3.2E+00		uCi/sample	100%	90%	-0.1	8.00E-02
	Beta	6.24E+00 +- 1.0E+00		uCi/sample	100%	83%	-0.2	2.37E-01

No. of Results: 4

TestAmerica Inc
rptSTLRchQcSummary V5.6 A2002

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

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

FORM I

SAMPLE RESULTS

Date: 01-Aug-16

Lab Name: TestAmerica Inc
Lot-Sample No.: J6G180408-1
Client Sample ID: S979268

SDG: NFM0171
Report No. : 69084
COC No. : 20160707WCH

Collection Date: 7/7/2016 7:37:00 AM
Received Date: 7/11/2016 2:15:00 PM
Matrix: OTHER OTHERSOLID

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	CSU (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: 6200050	ALPHA_GPC			**Work Order:** M8X2L1AA		**Report DB ID:** 9M8X2L10						
Alpha	8.71E-01		1.7E-01	2.4E-01	8.00E-02	pCi/sample	100%	*(10.9)*	7/26/16 07:17 p	1.0	1.0	GPC29C
						3.59E-02	1.10E-01	*(7.3)*		Sample	Sample	
Beta	1.01E+01		3.4E-01	1.6E+00	2.22E-01	pCi/sample	100%	*(45.4)*	7/26/16 07:17 p	1.0	1.0	GPC29C
						1.08E-01	1.10E-01	*(12.9)*		Sample	Sample	

No. of Results: 2 **Comments:**

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, Mdc/Mda/Mdl, Total Uncert, RDL or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 01-Aug-16

Lab Name: TestAmerica Inc
Lot-Sample No.: J6G180408-2
Client Sample ID: S979271

SDG: NFM0171
Report No. : 69084
COC No. : 20160707WCH

Collection Date: 7/7/2016 7:47:00 AM
Received Date: 7/11/2016 2:15:00 PM
Matrix: OTHER OTHERSOLID

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	CSU (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: 6200050	ALPHA_GPC			**Work Order:** M8X2M1AA		**Report DB ID:** 9M8X2M10						
Alpha	**6.06E-01**		1.5E-01	1.9E-01	8.32E-02	pCi/sample	100%	*(7.3)*	7/26/16 07:17 p	1.0	1.0	GPC29D
						3.75E-02	1.10E-01	*(6.4)*		Sample	Sample	
Beta	**8.11E+00**		3.2E-01	1.3E+00	2.38E-01	pCi/sample	100%	*(34.1)*	7/26/16 07:17 p	1.0	1.0	GPC29D
						1.16E-01	1.10E-01	*(12.8)*		Sample	Sample	

No. of Results: 2 **Comments:**

TestAmerica Inc
rptSTLRchSample
V5.6 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, Mdc/Mda/Mdl, Total Uncert, RDL or not identified by gamma scan software.

FORM I

SAMPLE RESULTS

Date: 01-Aug-16

Lab Name: TestAmerica Inc
Lot-Sample No.: J6G180408-3
Client Sample ID: S979272

SDG: NFM0171
Report No. : 69084
COC No. : 20160707WCH

Collection Date: 7/7/2016 7:30:00 AM
Received Date: 7/11/2016 2:15:00 PM
Matrix: OTHER OTHERSOLID

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	CSU (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: 6200050	ALPHA_GPC			**Work Order:** M8X2N1AA		**Report DB ID:** 9M8X2N10						
Alpha	**8.87E-01**		1.6E-01	2.4E-01	9.95E-02	pCi/sample	100%	*(8.9)*	7/27/16 11:19 a	1.0	1.0	GPC29A
						4.56E-02	1.10E-01	*(7.5)*		Sample	Sample	
Beta	**8.73E+00**		3.3E-01	1.4E+00	2.38E-01	pCi/sample	100%	*(36.7)*	7/27/16 11:19 a	1.0	1.0	GPC29A
						1.16E-01	1.10E-01	*(12.8)*		Sample	Sample	

No. of Results: 2 **Comments:**

TestAmerica Inc
rptSTLRchSample
V5.6 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, Mdc/Mda/Mdl, Total Uncert, RDL or not identified by gamma scan software.

FORM II

BLANK RESULTS

Date: 01-Aug-16

Lab Name: TestAmerica Inc **SDG:** NFM0171

Matrix: OTHER **Report No. :** 69084

Parameter	Result	Qual	Count Error (2 s)	CSU (2 s)	MDL, Lc	Rpt Unit, CRDL	Yield	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 6200050	ALPHA_GPC			**Work Order:**	M8X2W1AA	**Report DB ID:**	M8X2W1AB					
Alpha	6.79E-02	U	6.6E-02	6.7E-02	8.92E-02	pCi/sample	100%	0.76	7/27/16 11:19 a	1.0	1.0	GPC29B
					4.05E-02	1.10E-01		(2.)		Sample	Sample	
Beta	1.49E-01	U	1.6E-01	1.6E-01	2.56E-01	pCi/sample	100%	0.58	7/27/16 11:19 a	1.0	1.0	GPC29B
					1.25E-01	1.10E-01		(1.9)		Sample	Sample	

No. of Results: 2 **Comments:**

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, Mdc/Mda/Mdl, Total Uncert, RDL or not identified by gamma scan software.

FORM II

LCS RESULTS

Date: 01-Aug-16

Lab Name: TestAmerica Inc **SDG:** NFM0171

Matrix: OTHER **Report No. :** 69084

Parameter	Result	Qual	Count Error (2 s)	CSU (2 s)	MDL	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 6200050	ALPHA_GPC			**Work Order:** M8X2W1AC			**Report DB ID:** M8X2W1CS						
Alpha	1.62E+01		4.6E-01	3.2E+00	8.00E-02	pCi/sample	100%	1.80E+01	6.1E-01	90%	7/27/16 11:19 a	1.0	GPC29C
						Rec Limits:				-0.1		Sample	
Beta	6.24E+00		3.2E-01	1.0E+00	2.37E-01	pCi/sample	100%	7.49E+00	1.5E-01	83%	7/27/16 11:19 a	1.0	GPC29C
						Rec Limits:				-0.2		Sample	

No. of Results: 2 **Comments:**

TestAmerica
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Data Review/Verification Checklist

RADIOCHEMISTRY, First Level Review

7/28/2016 9:49:41 AM

Lot No., Due Date: J6G180408; 08/01/2016
Client, Site: 127642; S00W235B00 HANFORD
QC Batch No., Method Test: 6200050; RAB-P/SR Alpha,Beta by GPC
SDG, Matrix: NFM0171; OTHER

	Yes	No	N/A
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:

First Level Jodie Co **Date** 7/28/16

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

Batch Number: 6200050

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 Nonconformances (NCM) included and noted?			✓
2. Was the correct methodology used?	✓		
3. Were units checked?	✓		

Comments on any "No" response:

Second Level Review: [signature] Date: 8/1/16

DR-001, Rev. 01, 10/30/2013

SDG#: NFM0171 | SAF#: NFM-005

Mission Support Alliance	CHAIN OF CUSTODY FOR PSRP AIR SAMPLE ANALYSIS	SAF No. NFM - Air	COC No. 2016070ZWCH

Sample Collector	Company Contact	Telephone No.	Project Designation	Please refer to laboratory contract scope of work for composite and data deliverable details
Felipe Garcia	Craig J Perkins	376-2049	PSRP	

POSSIBLE SAMPLE HAZARDS	Field Logbook No. / Page No.	Shipment	Shipped To	Contract / Project no.
N/A	N/A	Govt Vehicle	Test America	WCH Samples

EDP Code	Analysis	Comments	EDP Code	Analysis	Comments
N482	Beta, Alpha	M8X2L M/B	N/A	N/A	N/A
N517	Beta, Alpha	M8X2M	N/A	N/A	N/A
N518	Beta, Alpha	M8X2N	N/A	N/A	N/A J6G180408
N548	Beta, Alpha		N/A	N/A	N/A NFM0171
N549	Beta, Alpha		N/A	N/A	N/A DUE: 08/01/16
N579	Beta, Alpha		N/A	N/A	N/A
N580	Beta, Alpha		N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A

CHAIN OF POSSESSION		PRINT AND SIGN NAMES		SPECIAL INSTRUCTIONS
Relinquished By/Removed From: Felipe Garcia Felipe G	Date/Time: 930 7/7/2016	Received By/Stored In: 2774 WB "Steve" 2	Date/Time: 930 7/7/2016	**Bill of Lading Information**
Relinquished By/Removed From: 2774 WB "Steve" 2	Date/Time: 915 7/11/2016	Received By/Stored In: Felipe Garcia Felipe G	Date/Time: 915 7/11/2016	☐ FedEx ☐ UPS ☐ Other ☐ N/A
Relinquished By/Removed From: Felipe Garcia Felipe G	Date/Time: 7/11/2016	Received By/Stored In: Jack J. Bock TALR 7-11-16	Date/Time: 1415	Tracking #:
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	HPT Sign/Date: Felipe Garcia 7/11/2016
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	Radiological Survey Report: NAG-0432
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	Reviewed By:

LABORATORY SECTION	Received By	Title	Date/Time

Due: 8/1/16

J6G180408

A-6006-498 (REV 4)

TestAmerica Laboratories, Inc.

ABCASH 2 (C02 - Ver 2.0)
Report Date: 7/7/16 10:15

SAMPLE CUSTODY CHANGE LIST

PS 2 of 2

~~Page 1 of 1~~

CUSTODY CHANGE REASON: ES to GEL/TestAmerica

Custody Changed By: [redacted] Garza, Phil

SAF #:

Sample Number	Location Code	Off Date/Time	Sample Collected by
S979255	N548	07 / 06 / 2016 09:42	Garza, Phil
S979256	N549	07 / 06 / 2016 10:03	Garza, Phil
S979263	N579	07 / 06 / 2016 09:56	Garza, Phil
S979264	N580	07 / 06 / 2016 09:48	Garza, Phil
S979268 M8X2L	N482	07 / 07 / 2016 07:37	Garza, Phil
S979271 M8X2M	N517	07 / 07 / 2016 07:47	Garza, Phil
S979272 M8X2N	N518	07 / 07 / 2016 07:30	Garza, Phil

NFM-005

J6G180408
NFM0171
DUE: 08/01/16

Total Custody Changes: 7

Delivered to: ☐ 222 S ☐ PFP ☐ GEL ☑ TestAmerica ☐ MO-285 ☐ Other

Delivered by: N/R ~~Date/Time:~~

Received by: N/R Date/Time:

ABCASH 2 Database Version 2.4.001

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Sample Check-in List

Date/Time Received: 7-11-16 / 1415 Container GM Screen Result: (Airlock) 0 cpm Initials [JB]
Sample GM Screen Result (Sample Receiving) 0 cpm Initials [JB]

Client: WCH SDG #: NFM0171 SAF #: NFM-005 NA [ ]

Lot Number: JLG1804408

Chain of Custody # 20160707WCH

Shipping Container ID or Air Bill Number : _____ NA [JB]

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

Item 5 through 16 for samples. Initial appropriate response.

5. Chain of Custody record present? Yes [JB] No [ ]
6. Number of samples received (Each sample may contain multiple bottles): 3
7. Containers received: 3X FILTERS
8. Sample holding times exceeded? NA [ ] Yes [ ] No [JB]
9. Samples have: _____tape _____hazard labels _____custody seals JB appropriate sample labels
10. Matrix: _____A (FLT, Wipe, Solid, Soil) _____I (Water) JB S (Air, Niosh 7400) _____T (Biological, Ni-63)
11. Samples:
    JB are in good condition _____are leaking _____are broken
    _____have air bubbles (Only for samples requiring no head space) _____Other _____
12. Sample pH appropriate for analysis requested Yes [ ] No [ ] NA [JB]
    (If acidification is necessary go to pH area & document sample ID, initial pH, amount of HNO_3 added and pH after addition on table)
13. Were any anomalies identified in sample receipt? Yes [ ] No [JB]
14. Description of anomalies (include sample numbers): NA [JB]
15. Sample Location, Sample Collector Listed on COC? * Yes [JB] No [ ]
    *For documentation only. No corrective action needed.
16. Additional Information: N/A

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

Sample Check-in List completed by Sample Custodian:
Signature: _____ Date: 7-11-16

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

[X] No action necessary; process as is

Project Manager _____ Date 7/18/16

7/18/2016 11:24:16 AM

Sample Preparation/Analysis

Balance Id:,,

127642, Washington Closure Hanford LLC
Washington Closure Hanford LLC

BE Gross Alpha/Beta Prp GPC008
S9 Gross Alpha and Beta by GPC using Pu-239,Sr/Y90
01 STANDARD TEST SET

Pipet #: _____

AnalyDueDate: 08/01/2016

Sep1 DT/Tm Tech:

Batch: 6200050 OTHER pCi/sampl PM, Quote: RW2, 91174

SEQ Batch, Test: None

Sep2 DT/Tm Tech:

Prep Tech:

Work Ord, Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Tracer Yield	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On | Off (24hr) Circle	CR Analyst, Init/Date	Comments:
1 M8X2L-1-AA J6G180408-1-SAMP 07/07/2016 07:37			AmtRec: 1XFILTER		#Containers: 1				Scr:	29C	2237	7/26/16 AD	Alpha: Beta:
2 M8X2M-1-AA J6G180408-2-SAMP 07/07/2016 07:47			AmtRec: 1XFILTER		#Containers: 1				Scr:	29D			Alpha: Beta:
3 M8X2N-1-AA J6G180408-3-SAMP 07/07/2016 07:30			AmtRec: 1XFILTER		#Containers: 1				Scr:	29A	1437	7/26/16 JM	Alpha: Beta:
4 M8X2W-1-AA-B J6G180000-50-BLK 07/18/2016 11:24 pd			AmtRec:		#Containers: 1				Scr:	29B			Alpha: Beta:
5 M8X2W-1-AC-C J6G180000-50-LCS 07/18/2016 11:24 pd			AmtRec:		#Containers: 1	RDQC 8675			Scr:	29C			Alpha: Beta:

TestAmerica Richland Wa.

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

Page 1

ISV - Insufficient Volume for Analysis

WO Cnt: 5

ICOC v4.9.0

Sample Preparation/Analysis

BE Gross Alpha/Beta Prp GPC008
S9 Gross Alpha and Beta by GPC using Pu-239,Sr/Y90
01 STANDARD TEST SET

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

AnalyDueDate: 08/01/2016

Batch: 6200050 **pCi/sampl**
SEQ Batch, Test: None

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

Comments:

All Clients for Batch:
127642, Washington Closure Hanford LLC Washington Closure Hanford LLC, RW2, 91174

M8X2L1AA-SAMP Constituent List:

M8X2W1AA-BLK:

M8X2W1AC-LCS:

M8X2L1AA-SAMP Calc Info:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M8X2W1AA-BLK:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B
M8X2W1AC-LCS:
Uncert Level (#s).: 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

7/28/2016 9:48:57 AM

ICOC Fraction Transfer/Status Report

ByDate: 7/29/2015, 8/2/2016, Batch: '6200050', User: *ALL Order By DateTimeAccepting

Q	Batch	Work Ord	CurStatus	Accepting			SOPs,Reagents,Comments
6200050							
AC			**Rev1C**	**BullJ**	7/22/2016 11:38:07		
SC				wagarr	IsBatched	7/18/2016 11:23:47 AM	ICOC_RADCALC v4.9.0
SC				BullJ	InCnt1	7/22/2016 11:38:07 AM	RL-CI-006 REVISION 6
SC				WoodT	Prep1C	7/27/2016 8:03:12 AM	RL-GPC-008 REV 6
SC				DawkinsO	CalcC	7/27/2016 11:47:17 PM	RL-CI-006 REVISION 6
SC				carnesj	Rev1C	7/28/2016 9:48:43 AM	RL-DR-001 Rev 7
AC				**WoodT**	7/27/2016 8:03:12		
AC				**DawkinsO**	7/27/2016 11:47:17		
AC				**carnesj**	7/28/2016 9:48:43		

AC: Accepting Entry; SC: Status Change