Analytical Data Package Prepared For

CH2M Hill Plateau Remediation

Radiochemical Analysis By

TestAmerica Inc

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

Assigned Laboratory Code: TARL

Data Package Contains 15 ***Pages***

Report No.: 68916

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.
W07520	F13-002	B35JH5	J6F230409-1	M8TFF1AC	9M8TFF10	6175020
		B35JH5	J6F230409-1	M8TFF1AF	9M8TFF10	6175021
		B35JH5	J6F230409-1	M8TFF1AA	9M8TFF10	6175022
		B35JH5	J6F230409-1	M8TFF1AD	9M8TFF10	6175023
		B35JH5	J6F230409-1	M8TFF1AE	9M8TFF10	6175024

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

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

July 7, 2016

Attention: Scot Fitzgerald

SAF Number	:	F13-002
Date SDG Closed	:	June 23, 2016
Number of Samples	:	One (1)
Sample Type	:	Water
SDG Number	:	W07520
Data Deliverable	:	7-Day / Summary

CASE NARRATIVE

I. Introduction

On June 23, 2016, one sample was received at TestAmerica (TARL). Upon receipt, the samples were assigned laboratory ID numbers to correspond with the CH2M specific IDs.

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:

Gamma Spectroscopy
Gamma Spec (LL) by method RL-GAM-001
Iodine-129 (LL) by method RL-GAM-002
Liquid Scintillation Counting
Carbon-14 by method RL-LSC-008
Technetium-99 by TEVA method RL-LSC-014
Tritium by method RL-LSC-005

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IV. Quality Control

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

QC and sample results are reported in the same units.

V. Comments

Gamma Spectroscopy

Gamma Spec (LL) by method RL-GAM-001:
No analytical or quality issues were noted. The sample results and associated batch QC results are within contractual requirements.

Iodine-129 (LL) by method RL-GAM-002:
There was insufficient sample volume provided to prepare a project-specific sample duplicate. An LCS duplicate was prepared to provide accuracy and precision measurements. The MDA for the LCS exceeds the CRDL. The MDA for the LCSD is within acceptance criteria, the LCS and LCSD recoveries are within acceptance criteria, and the LCS and LCSD meet duplicate agreement criteria. No other analytical or quality issues were noted. Except as noted, the sample results and associated batch QC results are within contractual requirements.

Liquid Scintillation Counting

Carbon-14 by method RL-LSC-008:
No analytical or quality issues were noted. The sample results and associated batch QC results are within contractual requirements.

Technetium-99 by TEVA method RL-LSC-014:
There was insufficient sample volume provided to prepare a project-specific sample duplicate. An LCS duplicate was prepared to provide accuracy and precision measurements. The LCS recovery is within acceptance criteria and the LCS and LCSD meet duplicate agreement criteria. No other analytical or quality issues were noted. Except as noted, the sample result and associated batch QC results are within contractual requirements.

Tritium by method RL-LSC-005:
The matrix spike is outside acceptance criteria however sample results are greater than five times the CRDL. No analytical or quality issues were noted. The sample results and associated batch QC results are within contractual requirements.

We certify that this data package is in compliance with the SOW, both technically and for completeness, including a full description of, explanation of, and corrective actions for, any and all deviations, from either the analyses requested or the case narrative requested. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager (or designee) and the laboratory's client services representative as verified by their signatures on this report.

CH2M Hill Plateau Remediation Company
July 7, 2016

Reviewed and approved:

Steven Campbell
Project Manager Assistant

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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.

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F13-002-1987	PAGE 1 OF 1
COLLECTOR B.E. Briggs CHPRC	COMPANY CONTACT SUMNER, LC	TELEPHONE NO. 376-3922	PROJECT COORDINATOR SUMNER, LC	PRICE CODE C05	DATA TURNAROUND 7 Days / 7 Days
SAMPLING LOCATION Catch Tank 344, V01-Y31 #2	PROJECT DESIGNATION 200W Pump & Treat - Extraction Well Water Sampling		SAF NO. F13-002	AIR QUALITY ☐	
ICE CHEST NO. (N/A)	FIELD LOGBOOK NO. HNF-N-491-15	ACTUAL SAMPLE DEPTH (N/A)	COA 303111	METHOD OF SHIPMENT GOVERNMENT VEHICLE	ORIGINAL
SHIPPED TO TestAmerica Incorporated, Richland	OFFSITE PROPERTY NO. (N/A)		BILL OF LADING/AIR BILL NO. (N/A)		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
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 are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. N/A

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	HNO3 to pH <2	None	HCl to pH <2	None	
HOLDING TIME	6 Months	6 Months	6 Months	6 Months	
TYPE OF CONTAINER	G/P	G/P	P	G/P	
NO. OF CONTAINER(S)	3	1	1	2	
VOLUME	1L	500mL	125mL	1L	
SAMPLE ANALYSIS	GAMMA LL: COBALT 60 LL (Cobalt-60);	C14_LSC: COMMON; TRITIUM_DIST_LSC: COMMON;	TC99_ETVDSK_LSC: COMMON;	I129LL_SEP_LEPS_GS: COMMON;	

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME				
B3HJH5	WATER	JUN 22 2016	0930	✓	✓	✓	✓

J6F230409
W07520
DUE: 06/30/16

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M18TFF

J6F230409

July 7, 2016

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	TRVL-16-137
B.E. Briggs CHPRC	JUN 22 2016 1040	J.C. Fulton CHPRC	JUN 22 2016 1040	
J.C. Fulton CHPRC	JUN 22 2016 1340	SSU-1	JUN 22 2016 1340	
SSU-1	JUN 23 2016 0700	J.C. Fulton CHPRC	JUN 23 2016 0700	
J.C. Fulton CHPRC	JUN 23 2016 0800	L. Anderson, TAR	JUN 23 2016 0800	
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

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PRINTED ON 6/14/2016 | FSR ID = FSR32160 | TRVL NUM = TRVL-16-137 | A-6003-618 (REV 2)

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Sample Check-in List

Date/Time Received: 06/23/16 0800 Container GM Screen Result: (Airlock) 0 cpm Initials LA
Sample GM Screen Result (Sample Receiving) 0 cpm Initials LA

Client: FLH SDG #: W07520 SAF #: F13-002 NA [ ]

Lot Number: Jlef230409

Chain of Custody # F13-002-1987

Shipping Container ID or Air Bill Number : _____ NA LA

Samples received inside shipping container/cooler/box Yes [LA] 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 [LA]
2. Custody Seals dated and signed? Yes [ ] No [ ] No Custody Seal [LA]
3. Cooler temperature: 5.3 °C ICE NA [ ]
4. Vermiculite/packing materials is NA [ ] Wet [LA] Dry [ ]

Item 5 through 16 for samples. Initial appropriate response.

5. Chain of Custody record present? Yes [LA] No [ ]
6. Number of samples received (Each sample may contain multiple bottles): 1
7. Containers received: 1x125P; 1x500mLP; 5xLP
8. Sample holding times exceeded? NA [ ] Yes [ ] No [LA]
9. Samples have: ____ tape ____ hazard labels LA custody seals LA appropriate sample labels
10. Matrix: ____ A (FLT, Wipe, Solid, Soil) LA I (Water) ____ S (Air, Niosh 7400) ____ T (Biological, Ni-63)
11. Samples:
LA 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 [LA] No [ ] NA [ ]
(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 [LA]
14. Description of anomalies (include sample numbers): NA [LA] _____
15. Sample Location, Sample Collector Listed on COC? * Yes [LA] No [ ]
*For documentation only. No corrective action needed.
16. Additional Information: N/A

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

Sample Check-in List completed by Sample Custodian:
Signature: J. Anderson Date: 06/23/16

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

LA No action necessary; process as is

Project Manager Stan Cupp Date 6/23/16

Sample Results Summary

Date: 07-Jul-16

TestAmerica Inc TARL

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

Report No. : 68916 **SDG No:** W07520

Batch	Client Id / Work Order	Parameter	Result +- CSU (2 s)	Qual	Units	Tracer Yield	MDL	CRDL	RPD
6175023 GAMMA_GS									
B35JH5									
	M8TFF1AD	CO-60	2.30E+00 +- 1.8E+00	U	pCi/L		3.80E+00	1.00E+01	
B35JH5 DUP									
	M8TFF1AL	CO-60	4.45E+00 +- 2.7E+00	U	pCi/L		5.42E+00	1.00E+01	63.8
6175024 I129LL_SEP_LEPS_GS									
B35JH5									
	M8TFF1AE	I129	5.27E+00 +- 9.7E-01		pCi/L	82%	8.35E-01	1.00E+00	
6175020 C14_LSC									
B35JH5									
	M8TFF1AC	C-14	1.13E+03 +- 6.7E+01		pCi/L	100%	1.80E+01	5.00E+01	
B35JH5 DUP									
	M8TFF1AH	C-14	1.10E+03 +- 6.5E+01		pCi/L	100%	1.81E+01	5.00E+01	2.9
6175021 TC99_ETVDSK_LSC									
B35JH5									
	M8TFF1AF	TC-99	3.35E+04 +- 7.2E+02		pCi/L	100%	9.61E+00	5.00E+01	
6175022 TRITIUM_DIST_LSC									
B35JH5									
	M8TFF1AA	H-3	1.75E+04 +- 8.4E+02		pCi/L	100%	3.06E+02	7.00E+02	
B35JH5 DUP									
	M8TFF1AK	H-3	1.77E+04 +- 8.5E+02		pCi/L	100%	3.03E+02	7.00E+02	1.2

No. of Results: 8

RPD - Relative Percent Difference.

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

QC Results Summary

TestAmerica Inc TARL

Ordered by Method, Batch No, QC Type,.

Date: 07-Jul-16

Report No. : 68916

SDG No.: W07520

Batch / Work Order	Parameter	Result +- CSU (2 s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDL
GAMMA_GS								
6175023 BLANK QC,								
M8TFL1AA	CO-60	-1.25E-01 +- 2.1E+00	U	pCi/L				3.76E+00
6175023 LCS,								
M8TFL1AC	CO-60	4.08E+01 +- 7.9E+00		pCi/L		108%	0.1	3.59E+00
I129LL_SEP_LEPS_GS								
6175024 BLANK QC,								
M8TFM1AA	I129	-4.97E-02 +- 2.6E-01	U	pCi/L	87%			4.68E-01
6175024 LCS,								
M8TFM1AD	I129	1.85E+01 +- 2.5E+00		pCi/L	79%	96%	0.0	9.43E-01
M8TFM1AC	I129	1.96E+01 +- 2.8E+00		pCi/L	82%	105%	0.0	1.08E+00
C14_LSC								
6175020 MATRIX SPIKE, B35JH5								
M8TFF1AG	C-14	3.75E+02 +- 1.1E+02		pCi/L	100%	79%	-0.2	1.81E+01
6175020 BLANK QC,								
M8TFH1AA	C-14	-1.31E+01 +- 8.7E+00	U	pCi/L	100%			1.79E+01
6175020 LCS,								
M8TFH1AC	C-14	4.65E+02 +- 3.1E+01		pCi/L	100%	97%	0.0	1.80E+01
TC99_ETVDSK_LSC								
6175021 BLANK QC,								
M8TFJ1AA	TC-99	4.33E+00 +- 4.6E+00	U	pCi/L	100%			9.65E+00
6175021 LCS,								
M8TFJ1AD	TC-99	1.02E+02 +- 7.4E+00		pCi/L	100%	94%	-0.1	9.76E+00
M8TFJ1AC	TC-99	1.03E+02 +- 7.4E+00		pCi/L	100%	94%	-0.1	9.73E+00
TRITIUM_DIST_LSC								
6175022 MATRIX SPIKE, B35JH5								
M8TFF1AJ	H-3	8.24E+03 +- 1.5E+03		pCi/L	100%	548%	4.5	3.52E+02
6175022 BLANK QC,								
M8TFK1AA	H-3	2.07E+02 +- 1.6E+02	U	pCi/L	100%			3.13E+02
6175022 LCS,								
M8TFK1AC	H-3	2.50E+03 +- 2.6E+02		pCi/L	100%	92%	-0.1	3.10E+02

No. of Results: 14

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: 07-Jul-16

Lab Name: TestAmerica Inc | **SDG:** W07520 | **Collection Date:** 6/22/2016 9:30:00 AM

Lot-Sample No.: J6F230409-1 | **Report No. :** 68916 | **Received Date:** 6/23/2016 8:00:00 AM

Client Sample ID: B35JH5 | **COC No. :** F13-002-1987 | **Matrix:** WATER

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: 6175020	C14_LSC			**Work Order:**	M8TFF1AC		**Report DB ID:**	9M8TFF10				
C-14	**1.13E+03**		2.4E+01	6.7E+01	1.80E+01	pCi/L	100%	*(62.7)*	6/30/16 08:50 p		0.075	LSC4
						8.70E+00	5.00E+01	*(33.7)*			L	
Batch: 6175021	TC99_ETVDSK_LSC			**Work Order:**	M8TFF1AF		**Report DB ID:**	9M8TFF10				
TC-99	**3.35E+04**		9.8E+01	7.2E+02	9.61E+00	pCi/L	100%	*(3482.6)*	6/28/16 09:07 p		0.1273	LSC10
						4.61E+00	5.00E+01	*(92.7)*			L	
Batch: 6175022	TRITIUM_DIST_LSC			**Work Order:**	M8TFF1AA		**Report DB ID:**	9M8TFF10				
H-3	**1.75E+04**		4.5E+02	8.4E+02	3.06E+02	pCi/L	100%	*(57.4)*	6/29/16 08:20 a		0.00501	LSC8
						1.46E+02	7.00E+02	*(41.8)*			L	
Batch: 6175023	GAMMA_GS			**Work Order:**	M8TFF1AD		**Report DB ID:**	9M8TFF10				
CO-60	**2.30E+00**	U	1.8E+00	1.8E+00	3.80E+00	pCi/L		*0.6*	6/29/16 11:35 a		2.0031	GER11$1
						1.91E+00	1.00E+01	*(2.5)*			L	
Batch: 6175024	I129LL_SEP_LEPS_GS			**Work Order:**	M8TFF1AE		**Report DB ID:**	9M8TFF10				
I129	**5.27E+00**		9.7E-01	9.7E-01	8.35E-01	pCi/L	82%	*(6.3)*	6/30/16 08:16 a		2.0291	LEP4$1
						3.44E-01	1.00E+00	*(10.9)*			L	

No. of Results: 5 **Comments:**

July 7, 2016

11/07/16

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

Date: 07-Jul-16

DUPLICATE RESULTS

Lab Name:	TestAmerica Inc	**SDG:**	W07520	**Collection Date:**	6/22/2016 9:30:00 AM
Lot-Sample No.:	J6F230409-1	**Report No. :**	68916	**Received Date:**	6/23/2016 8:00:00 AM
Client Sample ID:	B35JH5 DUP	**COC No. :**	F13-002-1987	**Matrix:**	WATER

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	CSU (2 s)	MDL, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDL, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 6175020	C14_LSC			**Work Order:**	M8TFF1AH	**Report DB ID:**	M8TFF1HR		**Orig Sa DB ID:**	9M8TFF10		
C-14	1.10E+03		2.4E+01	6.5E+01	1.81E+01	pCi/L	100%	(60.7)	6/30/16 10:58 p	0.075		LSC4
	1.13E+03		**RPD**	**2.9**		5.00E+01		(33.6)		L		
Batch: 6175022	TRITIUM_DIST_LSC			**Work Order:**	M8TFF1AK	**Report DB ID:**	M8TFF1KR		**Orig Sa DB ID:**	9M8TFF10		
H-3	1.77E+04		4.5E+02	8.5E+02	3.03E+02	pCi/L	100%	(58.6)	6/29/16 11:04 a	0.00502		LSC8
	1.75E+04		**RPD**	**1.2**		7.00E+02		(42.)		L		
Batch: 6175023	GAMMA_GS			**Work Order:**	M8TFF1AL	**Report DB ID:**	M8TFF1LR		**Orig Sa DB ID:**	9M8TFF10		
CO-60	4.45E+00	U	2.7E+00	2.7E+00	5.42E+00	pCi/L		0.82	6/29/16 06:35 p	2.0031		GER12$1
	2.30E+00	U	**RPD**	**63.8**		1.00E+01		(3.3)		L		

No. of Results: 3 **Comments:**

July 7, 2016

12015

FORM II

BLANK RESULTS

Date: 07-Jul-16

Lab Name: TestAmerica Inc **SDG:** W07520

Matrix: WATER **Report No. :** 68916

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: 6175020	C14_LSC			**Work Order:**	M8TFH1AA		**Report DB ID:**	M8TFH1AB				
C-14	-1.31E+01	U	7.2E+00	8.7E+00	1.79E+01	pCi/L	100%	-0.73	7/1/16 12:01 a		0.075	LSC4
					8.66E+00	5.00E+01		-(3.)			L	
Batch: 6175022	TRITIUM_DIST_LSC			**Work Order:**	M8TFK1AA		**Report DB ID:**	M8TFK1AB				
H-3	2.07E+02	U	1.3E+02	1.6E+02	3.13E+02	pCi/L	100%	0.66	6/29/16 12:27 p		0.00501	LSC8
					1.49E+02	7.00E+02		(2.6)			L	
Batch: 6175023	GAMMA_GS			**Work Order:**	M8TFL1AA		**Report DB ID:**	M8TFL1AB				
CO-60	-1.25E-01	U	2.1E+00	2.1E+00	3.76E+00	pCi/L		-0.03	6/29/16 11:36 a		2.0103	GER12$1
					1.89E+00	1.00E+01		-0.12			L	
Batch: 6175024	I129LL_SEP_LEPS_GS			**Work Order:**	M8TFM1AA		**Report DB ID:**	M8TFM1AB				
I129	-4.97E-02	U	2.6E-01	2.6E-01	4.68E-01	pCi/L	87%	-0.11	6/30/16 08:17 a		2.011	LEP5$1
					2.07E-01	1.00E+00		-0.39			L	
Batch: 6175021	TC99_ETVDSK_LSC			**Work Order:**	M8TFJ1AA		**Report DB ID:**	M8TFJ1AB				
TC-99	4.33E+00	U	4.1E+00	4.6E+00	9.65E+00	pCi/L	100%	0.45	6/28/16 10:12 p		0.1266	LSC10
					4.63E+00	5.00E+01		(1.9)			L	

No. of Results: 5 **Comments:**

July 7, 2016

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FORM II

LCS RESULTS

Date: 07-Jul-16

Lab Name: TestAmerica Inc **SDG:** W07520

Matrix: WATER **Report No. :** 68916

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: 6175020	C14_LSC			**Work Order:**	M8TFH1AC		**Report DB ID:**	M8TFH1CS					
C-14	4.65E+02		1.6E+01	3.1E+01	1.80E+01	pCi/L	100%	4.80E+02	9.61E+00	97%	7/1/16 12:49 a	0.075	LSC4
							Rec Limits:	80	120	0.0		L	
Batch: 6175022	TRITIUM_DIST_LSC			**Work Order:**	M8TFK1AC		**Report DB ID:**	M8TFK1CS					
H-3	2.50E+03		2.1E+02	2.6E+02	3.10E+02	pCi/L	100%	2.71E+03	8.12E+01	92%	6/29/16 01:50 p	0.00501	LSC8
							Rec Limits:	80	120	-0.1		L	
Batch: 6175023	GAMMA_GS			**Work Order:**	M8TFL1AC		**Report DB ID:**	M8TFL1CS					
CO-60	4.08E+01		7.9E+00	7.9E+00	3.59E+00	pCi/L		3.78E+01	3.23E-01	108%	6/29/16 11:36 a	2.0003	GER13$1
							Rec Limits:	80	120	0.1		L	
Batch: 6175024	I129LL_SEP_LEPS_GS			**Work Order:**	M8TFM1AC		**Report DB ID:**	M8TFM1CS					
I129	1.96E+01		2.8E+00	2.8E+00	1.08E+00	pCi/L	82%	1.87E+01	3.02E-01	105%	6/30/16 10:33 a	2.0549	LEP4$1
							Rec Limits:	80	120	0.0		L	
Batch: 6175024	I129LL_SEP_LEPS_GS			**Work Order:**	M8TFM1AD		**Report DB ID:**	M8TFM1DS					
I129	1.85E+01		2.5E+00	2.5E+00	9.43E-01	pCi/L	79%	1.92E+01	3.10E-01	96%	6/30/16 10:34 a	2.0038	LEP5$1
							Rec Limits:	80	120	0.0		L	
Batch: 6175021	TC99_ETVDSK_LSC			**Work Order:**	M8TFJ1AC		**Report DB ID:**	M8TFJ1CS					
TC-99	1.03E+02		6.8E+00	7.4E+00	9.73E+00	pCi/L	100%	1.09E+02	6.40E-01	94%	6/28/16 11:16 p	0.126	LSC10
							Rec Limits:	80	120	-0.1		L	
Batch: 6175021	TC99_ETVDSK_LSC			**Work Order:**	M8TFJ1AD		**Report DB ID:**	M8TFJ1DS					
TC-99	1.02E+02		6.8E+00	7.4E+00	9.76E+00	pCi/L	100%	1.09E+02	6.42E-01	94%	6/29/16 12:21 a	0.1256	LSC10
							Rec Limits:	80	120	-0.1		L	

No. of Results: 7 **Comments:**

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FORM II

Date: 07-Jul-16

MATRIX SPIKE RESULTS

Lab Name: TestAmerica Inc **SDG:** W07520

Lot-Sample No.: J6F230409-1, B35JH5 **Report No. :** 68916 **Matrix:** WATER

Parameter	SpikeResult, Orig Rst	Qual	Count Error (2 s)	CSU (2 s)	MDC|MDA	Rpt Unit	Yield	Rec-overy	Expected, Uncert	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 6175020	**Work Order:** M8TFF1AG			**Report DB ID:** M8TFF1GW			**Orig Sa DB ID:** 9M8TFF10					
C-14	3.75E+02		2.7E+01	1.1E+02	1.81E+01	pCi/L	100%	79.02%	4.75E+02	6/30/16 09:54 p	0.075	C14_LSC
	1.13E+03								9.51E+00		L	LSC4
Batch: 6175022	**Work Order:** M8TFF1AJ			**Report DB ID:** M8TFF1JW			**Orig Sa DB ID:** 9M8TFF10					
H-3	8.24E+03		5.8E+02	1.5E+03	3.52E+02	pCi/L	100%	547.93%	1.50E+03	6/29/16 09:42 a	0.0043	TRITIUM_DIST_LSC
	1.75E+04								4.51E+01		L	LSC8

Number of Results: 2

Comments:

July 7, 2016