

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 16 Pages

Report No.: 68420

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.
W07428	F16-020	B34T26	J6C250428-1	M8E5N1AA	9M8E5N10	6088045
		B34T30	J6C250428-2	M8E5P1AA	9M8E5P10	6088045



## Certificate of Analysis

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

April 13, 2016

Attention: Scot Fitzgerald

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SAF Number	:	F16-020
Date SDG Closed	:	March 25, 2016
Number of Samples	:	Two (2)
Sample Type	:	Water
SDG Number	:	W07428
Data Deliverable	:	30-Day / Summary

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### CASE NARRATIVE

#### **I. Introduction**

On March 25, 2016, two samples were 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:

**Liquid Scintillation Counting**  
Technetium-99 by TEVA method RL-LSC-014

CH2M Hill Plateau Remediation Company  
April 13, 2016

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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

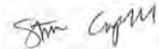
##### **Liquid Scintillation Counting**

Technetium-99 by TEVA method RL-LSC-014:

The blank result is above the MDA but below CRDL. No other analytical or quality issues were noted. Except as 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.

Reviewed and approved:



Digitally signed by  
Steven Campbell  
Date: 2016.04.13  
15:34:51 -07'00'

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Steven Campbell  
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,  $R = \text{constants} * f(x,y,z,...)$ . 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

<b>Action Lev</b>	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.
<b>Batch</b>	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
<b>Bias</b>	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
<b>COC No</b>	Chain of Custody Number assigned by the Client or TestAmerica.
<b>Count Error (#s)</b>	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.
<b>CSU (#s) <i>u<sub>c</sub> Combined Standard Uncert.</i></b>	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<sub>c</sub> the combined standard uncertainty</i> . The uncertainty is absolute and in the same units as the result.
<b>(#s), Coverage Factor</b>	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
<b>CRDL (RL)</b>	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)
<b>Lc</b>	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.
<b>Lot-Sample No</b>	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.
<b>MDC MDA</b>	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.
<b>Primary Detector</b>	The instrument identifier associated with the analysis of the sample aliquot.
<b>Ratio U-234/U-238</b>	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.
<b>Rst/MDC</b>	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.
<b>Rst/TotUcert</b>	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.
<b>Report DB No</b>	Sample Identifier used by the report system. The number is based upon the first five digits of the <b>Work Order</b> Number.
<b>RER</b>	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.
<b>SDG</b>	Sample Delivery Group Number assigned by the Client or assigned by TestAmerica upon sample receipt.
<b>Sum Rpt Alpha Spec Rst(s)</b>	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.
<b>Work Order</b>	The LIMS software assign test specific identifier.
<b>Yield</b>	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.

**SAMPLE ISSUE RESOLUTION**

<b>SIR NUM</b>	SIR16-288
<b>REV NUM</b>	0
<b>DATE INITIATED</b>	3/31/2016

**SAMPLE EVENT INFORMATION**

**SAF NUM(S)** F16-020  
**OPERABLE UNIT(S)** 200-DV-1  
**PROJECT(S)** 200-DV-1  
**SAMPLE EVENT TITLE(S)** 200-DV-1 OU Waste Sites  
**LABORATORY** TestAmerica Incorporated, Richland

**SAMPLING INFORMATION**

**NUMBER OF SAMPLES** 2  
**SAMPLE NUMBERS** B34T26, B34T30  
**SAMPLE MATRIX** SOIL  
**COLLECTION DATE** 3/25/2016 - 3/25/2016  
**SDG NUM** W07428

**ISSUE BACKGROUND**

**CLASS** Chain of Custody Issue (Field)  
**TYPE** No Unit Type Noted For Sample Depths  
**DESCRIPTION** COC F16-020-077 SAMPLE B34T26  
 COC F16-020-081 SAMPLE B34T30  
 NO UNITS FOR ACTUAL SAMPLE DEPTH

**DISPOSITION**

**DESCRIPTION** DOCUMENT AND CLOSE  
**JUSTIFICATION** DOCUMENT AND CLOSE

SUBMITTED BY: Gayelyn Gibson DATE: 03/28/2016  
 ACCEPTED BY: Kirsten Killand DATE: 03/31/2016

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F16-020-077	PAGE 1 OF 1
COLLECTOR <i>SM Sexton</i>	COMPANY CONTACT TODAK, D	TELEPHONE NO. 376-6427	PROJECT COORDINATOR TODAK, D	PRICE CODE SH	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C9550, Core 14, B340W7	PROJECT DESIGNATION 200-DV-1 Operable Unit Characterization of Waste Sites Phase 3 Sampling	FIELD LOGBOOK NO. <i>N/A</i>	SAF NO. F16-020	AIR QUALITY <input type="checkbox"/>	METHOD OF SHIPMENT SAF 3-25-16 GOVERNMENT VEHICLE <b>ORIGINAL</b>
ICE CHEST NO.	ACTUAL SAMPLE DEPTH <i>110.2-111.2</i>	OFFSITE PROPERTY NO. <i>N/A</i>	COA 302914	BILL OF LADING/AIR BILL NO. <i>N/A</i>	

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS	PRESERVATION	HOLDING TIME	TYPE OF CONTAINER	NO. OF CONTAINER(S)	VOLUME	SAMPLE ANALYSIS
A=Air DL=Drum L=Liquid S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/TATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1, NA	None	6 Months	None	1	60mL	TOB ETYDSC LSC COMMON
B3426	SOIL						

*J60250428*  
*WDM428*  
*M865N*



CHAIN OF POSSESSION	SIGN/ PRINT NAMES	RECEIVED BY/STORED IN	DATE/TIME	SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM <i>SM Sexton</i>	<i>J. Bock</i>	J. Bock, TARL	3-25-16/1510	Sample From HEIS #: B340W7 Actual Aliquot Collection Depth: 110.2-111.2
RELINQUISHED BY/REMOVED FROM				
RELINQUISHED BY/REMOVED FROM				
RELINQUISHED BY/REMOVED FROM				
RELINQUISHED BY/REMOVED FROM				
RELINQUISHED BY/REMOVED FROM				

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

FRS ID = FSR25904      TRVL NUM = TRVL-16-100      A-6003-618 (REV 2)

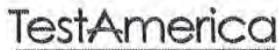
PRINTED ON 2/29/2016

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F16-020-081	PAGE 1 OF 1
COLLECTOR <i>SM Sexton</i>	COMPANY CONTACT TODAK, D	TELEPHONE NO. 376-6427	PROJECT COORDINATOR TODAK, D	PRICE CODE 8H	DATA TURNAROUND 30 Days / 30 Days
SAMPLING LOCATION C9550, Core 23, B340V5	PROJECT DESIGNATION 200-DV-1 Operable Unit Characterization of Waste Sites Phase 3 Sampling	ACTUAL SAMPLE DEPTH 154.0 - 155.0	SAF NO. F16-020	AIR QUALITY <input type="checkbox"/>	ORIGINAL
ICE CHEST NO.	FIELD LOGBOOK NO. N/A	OFFSITE PROPERTY NO. N/A	COA 302914	METHOD OF SHIPMENT GOVERNMENT VEHICLE <i>Company</i>	
SHIPPED TO TestAmerica Incorporated, Richland		BILL OF LADING/AIR BILL NO. N/A			

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 are not be regulated for transportation per 49 CFR/DATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. NA	PRESERVATION None	HOLDING TIME 6 Months	TYPE OF CONTAINER None	NO. OF CONTAINER(S) 1	VOLUME 60mL	SAMPLE ANALYSIS TC9, ET05K, LSC, COMMON	
SPECIAL HANDLING AND/OR STORAGE		<p style="text-align: center;"><i>Jucasova</i> <i>WDR1428</i> <i>M8658</i></p>						
7 B34030	SOIL	MATRIX*	SAMPLE DATE 3/25/16	SAMPLE TIME 1419				X

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM <i>SM Sexton</i>	DATE/TIME 3/25/16 1510	RECEIVED BY/STORED IN <i>Mark J. Bock-TALL</i>	DATE/TIME 3/25/16 1419	Sample From HEIS #: B340V5 Actual Aliquot Collection	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	Depth: 154.0 - 155.0	
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
PRINTED ON 2/29/2016	FSR ID = FSR25906	TRVL NUM = TRVL-16-1300	A-6003-618 (REV 2) 1300



Sample Check-in List

Date/Time Received: 3-25-16/1510 Container GM Screen Result: (Airlock) 0 epm Initials [B]
Sample GM Screen Result (Sample Receiving) 0 epm Initials [B]

Client: FLH SDG #: WDN428 SAF #: F16-020 NA [ ]

Lot Number: J6C250428

Chain of Custody # F16-020-077, 081

Shipping Container ID or 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): 2
7. Containers received: 2 x 60 mlp

8. Sample holding times exceeded? NA [ ] Yes [ ] No [B]
9. Samples have: tape hazard labels custody seals [B] appropriate sample labels

10. Matrix: [B] A (FLT, Wipe, Solid, Soil) 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

12. Sample pH appropriate for analysis requested Yes [ ] No [ ] NA [B]
(If acidification is necessary go to pH area & document sample ID, initial pH, amount of HNO3 added and pH after addition on table)

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

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

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

16. Additional Information: w/A

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

Sample Check-in List completed by Sample Custodian:
Signature: [Signature] Date: 3-25-16

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

[X] No action necessary; process as is
Project Manager: [Signature] Date: 3-28-16

**Sample Results Summary**

Date: 13-Apr-16

**TestAmerica Inc TARL**

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

Report No. : 68420

SDG No: W07428

Batch	Client Id Work Order	Parameter	Result +- CSU ( 2 s)	Qual	Units	Tracer Yield	MDL	CRDL	RPD
6088045	TC99_ETVDSK_LSC								
	<b>B34T26</b>								
	M8E5N1AA	Tc-99	1.11E+01 +- 5.8E-01		pCi/g	100%	5.70E-01	1.50E+00	
	<b>B34T26 DUP</b>								
	M8E5N1AC	Tc-99	1.04E+01 +- 5.8E-01		pCi/g	100%	6.09E-01	1.50E+00	6.6
	<b>B34T30</b>								
	M8E5P1AA	Tc-99	4.58E+01 +- 1.4E+00		pCi/g	100%	5.85E-01	1.50E+00	
	<b>No. of Results: 3</b>								

TestAmerica Inc RPD - Relative Percent Difference.

rptTALRchSaSum  
mary2 V5.5.1  
A2002

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

Date: 13-Apr-16

Report No. : 68420

SDG No.: W07428

Batch	Work Order	Parameter	Result +- CSU ( 2 s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDL
<b>TC99_ETVDSK_LSC</b>									
6088045	MATRIX SPIKE, B34T30								
	M8E5P1AC	Tc-99	1.99E+02 +- 6.4E+00		pCi/g	100%	88%	-0.1	6.09E-01
6088045	BLANK QC,								
	M8E691AA	Tc-99	1.20E+00 +- 3.2E-01		pCi/g	100%			6.09E-01
6088045	LCS,								
	M8E691AC	Tc-99	3.07E+01 +- 1.1E+00		pCi/g	100%	96%	0.0	5.76E-01
<b>No. of Results: 3</b>									

Date: 13-Apr-16

FORM I  
SAMPLE RESULTS

Lab Name: TestAmerica Inc  
Lot-Sample No.: J6C250428-1  
Client Sample ID: B34T26

SDG: W07428  
Report No.: 68420  
COC No.: F16-020-077

Collection Date: 3/25/2016 11:37:00 AM  
Received Date: 3/25/2016 3:10:00 PM  
Matrix: SOIL

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: 6088045	TC99_ETVDSK_LSC				Work Order: M8E5N1AA	Report DB ID: 9M8E5N10						
Tc-99	1.11E+01		5.0E-01	5.8E-01	5.70E-01 pCi/g	2.73E-01	100%	(19.5)	4/8/16 01:37 p		2.14	LSC8
						1.50E+00		(38.5)			g	

No. of Results: 1    Comments:

TestAmerica Inc    MDC|MDA<sub>A</sub>Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.

rptSTLRchSample  
V5.5.1 A2002

Date: 13-Apr-16

FORM I  
SAMPLE RESULTS

Lab Name: TestAmerica Inc  
Lot-Sample No.: J6C250428-2  
Client Sample ID: B34T30

SDG: W07428  
Report No.: 68420  
COC No.: F16-020-081

Collection Date: 3/25/2016 2:19:00 PM  
Received Date: 3/25/2016 3:10:00 PM  
Matrix: SOIL

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: 6088045	TC99_ETVDSK_LSC		9.3E-01	1.4E+00	M8E5P1AA	Report DB ID: 9M8E5P10						
Tc-99	4.58E+01		9.3E-01	1.4E+00	5.85E-01 pCi/g	2.81E-01	100%	(78.3)	4/8/16 03:42 p		2.08	LSC8
						1.50E+00		(63.6)			g	

No. of Results: 1    Comments:

TestAmerica Inc    MDC|MDA<sub>A</sub>Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.

rptSTLRchSample  
V5.5.1 A2002

FORM II

Date: 13-Apr-16

DUPLICATE RESULTS

Lab Name: TestAmerica Inc  
Lot-Sample No.: J6C250428-1  
Client Sample ID: B34T26 DUP

SDG: W07428  
Report No.: 68420  
COC No.: F16-020-077

Collection Date: 3/25/2016 11:37:00 AM  
Received Date: 3/25/2016 3:10:00 PM  
Matrix: SOIL

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: 6088045	TC99_ETVDSK_LSC				Work Order: M8E5N1AC	Report DB ID: M8E5N1CR			Orig Sa DB ID: 9M8E5N10			
Tc-99	1.04E+01		5.0E-01	5.8E-01	6.09E-01	pCi/g	100%	(17.1)	4/8/16 02:39 p		2.01	LSC8
	1.11E+01		RPD 6.6			1.50E+00		(35.9)			g	

No. of Results: 1    Comments:

TestAmerica Inc    RPD    - Relative Percent Difference.  
rptSTLRchDupV5.    MDC\MDA\_Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.  
5.1 A2002

FORM II  
BLANK RESULTS

Date: 13-Apr-16

Lab Name: TestAmerica Inc  
Matrix: SOIL

SDG: W07428  
Report No.: 68420

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: 6088045	TC99_ETVDSK_LSC											
Tc-99	1.20E+00		2.9E-01	3.2E-01	6.09E-01	pCi/g	100%	(2.)	4/8/16 05:48 p		2.0	LSC8
					2.92E-01	1.50E+00		(7.4)			g	

Work Order: M8E691AA      Report DB ID: M8E691AB

No. of Results: 1      Comments:

TestAmerica Inc      MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.  
rptSTL\_RchBlank  
V5.5.1 A2002

Date: 13-Apr-16

FORM II  
LCS RESULTS

Lab Name: TestAmerica Inc  
Matrix: SOIL

SDG: W07428  
Report No.: 68420

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: 6088045	TC99_ETVDSK_LSC					Work Order: M8E691AC							
Tc-99	3.07E+01		7.7E-01	1.1E+00	5.76E-01	pCi/g	100%	3.19E+01	1.83E-01	96%	4/8/16 06:50 p	2.12	LSC8
							Rec Limits:	70	130	0.0		g	

No. of Results: 1      Comments:

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

rptSTLRchLcs  
V5.5.1 A2002

FORM II  
MATRIX SPIKE RESULTS

Date: 13-Apr-16

Lab Name: TestAmerica Inc      SDG: W07428      Report No.: 68420      Matrix: SOIL  
Lot-Sample No.: J6C250428-2, B34T30

Parameter	SpikeResult, Orig Rst	Count Error (2 s)	CSU (2 s)	MDC MDA	Rpt Unit	Yield	Rec-covery	Expected, Uncert	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 6088045											
	Work Order: M8E5P1AC		Report DB ID: M8E5P1CW								
Tc-99	1.99E+02	2.1E+00	6.4E+00	6.09E-01 pCi/g		100%	87.59%	2.27E+02	4/8/16 04:45 p	2.0	TC99_ETVDSK_LSC
	4.58E+01							1.30E+00		g	LSC8

Number of Results: 1

Comments:

TestAmerica Inc      RER      - Replicate Error Ratio = (S-D)/[sqrt((sq(TPUs)+sq(TPUd))] as defined by ICPT BOA.  
rptSTLRchMs      Bias      - (Result/Expected)-1 as defined by ANSI N13.30.  
V5.5.1 A2002