

SAF-RC-207

Remedial Action of the 100-C-7 &

100-C-7:1 Waste Sites – In-Process

FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt H4-21 KW 1/30/13
 INITIAL/DATE

COMMENTS:

SDG J01676

SAF-RC-207

Rad only Chem only Rad & Chem

Complete Partial

Sample Location: 100-C-7:1

Analytical Data Package Prepared For
Washington Closure Hanford

Radiochemical Analysis By
TestAmerica

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

Assigned Laboratory Code: TARL

Data Package Contains 39 Pages

Report No.: 54362

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.
J01676	RC-207	J1R8F5	J3A220430-4	MXXNW1AC	9MXXNW10	3022054
		J1R8F6	J3A220430-3	MXXNV1AC	9MXXNV10	3022054
		J1R8F7	J3A220430-1	MXXNR1AC	9MXXNR10	3022054
		J1R8F8	J3A220430-2	MXXNT1AC	9MXXNT10	3022054
		J1R9N4	J3A220430-5	MXXNX1AC	9MXXNX10	3022054
		J1R9N5	J3A220430-6	MXXN01AC	9MXXN010	3022054
		J1R9N6	J3A220430-7	MXXN11AC	9MXXN110	3022054
		J1R9N7	J3A220430-8	MXXN21AC	9MXXN210	3022054
		J1R9N8	J3A220430-9	MXXN31AC	9MXXN310	3022054
		J1R9N9	J3A220430-10	MXXN41AC	9MXXN410	3022054
		J1R9P0	J3A220430-11	MXXN51AC	9MXXN510	3022054
		J1R9P1	J3A220430-12	MXXN61AC	9MXXN610	3022054
		J1R9P2	J3A220430-13	MXXN71AC	9MXXN710	3022054



THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

Washington Closure Hanford
2620 Fermi Avenue
Richland, WA 99354

TestAmerica Laboratories, Inc.

January 28, 2013

Attention: Joan Kessner

SAF Number	:	RC-207
Date SDG Closed	:	January 25, 2013
Number of Samples	:	Thirteen (13)
Sample Type	:	Soil
SDG Number	:	J01676
Data Deliverable	:	Quick Turn Metals / Summary

CASE NARRATIVE

I. Introduction

On January 22, 2013, thirteen soil samples were received at TestAmerica for analysis. Upon receipt, the samples were assigned the following laboratory ID numbers to correspond with the Washington Closure Hanford (WCH) specific ID;

<u>WCH ID#</u>	<u>TARL ID#</u>	<u>MATRIX</u>	<u>DATE OF RECEIPT</u>
J1R8F7	MXXNR	SOIL	1/22/13
J1R8F8	MXXNT	SOIL	1/22/13
J1R8F6	MXXNV	SOIL	1/22/13
J1R8F5	MXXNW	SOIL	1/22/13
J1R9N4	MXXNX	SOIL	1/22/13
J1R9N5	MXXN0	SOIL	1/22/13
J1R9N6	MXXN1	SOIL	1/22/13
J1R9N7	MXXN2	SOIL	1/22/13
J1R9N8	MXXN3	SOIL	1/22/13
J1R9N9	MXXN4	SOIL	1/22/13
J1R9P0	MXXN5	SOIL	1/22/13
J1R9P1	MXXN6	SOIL	1/22/13
J1R9P2	MXXN7	SOIL	1/22/13

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

Washington Closure Hanford
January 28, 2013

sample identification information, analytical results and the appropriate associated statistical errors.
The requested analyses were:

ICP Metals
ICP Metals by method SW-846 6010A
Chemical Analysis
Hexavalent Chromium by EPA method 7196A

IV. Quality Control

SDG J01676 includes a minimum of one Laboratory Control Samples (LCS), one method (reagent) blank, a duplicate sample, matrix spike sample and a matrix spike duplicate sample. Any exceptions have been noted in the "Comments" section.

Blanks and LCS are reported in mg/L units, other QC and sample results are reported in the same units.

V. Comments

ICP Metals

ICP Metals by method SW-846 6010A

One batch was analyzed for the samples with the standard metal request list.

Batch 3022052:

The MS and MSD recovery for Barium is not within the acceptance limits. All other batch QC is within the acceptance criteria. Except as noted; the LCS, batch blank, samples, sample duplicate, MS, MSD, ICB, ICV, CCB and CCV results are within contractual limits.

Chemical Analysis

Hexavalent Chromium by EPA method 7196A

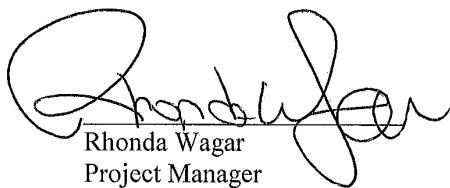
One batch was analyzed.

Batch 3022054:

The LCS, batch blank, samples, sample duplicate (J1R8F7) and sample matrix spike (J1R8F7) 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, $R = \text{constants} * f(x,y,z,...)$. 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</i> the <i>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%. $Lc = (1.645 * \text{Sqrt}(2 * (\text{BkgndCnt} / \text{BkgndCntMin}) / \text{SCntMin})) * (\text{ConvFct} / (\text{Eff} * \text{Yld} * \text{Abn} * \text{Vol})) * \text{IngrFct}$. 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%. $MDC = (4.65 * \text{Sqr}((\text{BkgndCnt} / \text{BkgndCntMin}) / \text{SCntMin}) + 2.71 / \text{SCntMin}) * (\text{ConvFct} / (\text{Eff} * \text{Yld} * \text{Abn} * \text{Vol})) * \text{IngrFct}$. 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 = $(S - D) / [\sqrt{(\text{TPUs}^2 + \text{TPUd}^2)}]$ 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: 28-Jan-13

TestAmerica TARL

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

Report No. : 54362

SDG No: J01676

Client Id Batch	Work Order	Parameter	Result +/- Uncertainty (2s)	Qual	Units	Tracer Yield	MDL	CRDL	RPD
3022054_7196_CR6									
J1R8F5	MXXNW1A	HEXCHROME	1.55E-01 +/- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
J1R8F6	MXXNV1AC	HEXCHROME	1.55E-01 +/- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
J1R8F7	MXXNR1AC	HEXCHROME	5.38E-01 +/- 0.0E+00		mg/kg	N/A	1.55E-01	1.55E-01	
	MXXNR1CF	HEXCHROME	4.38E-01 +/- 0.0E+00		mg/kg	N/A	1.55E-01	3.50E-01	20.5
J1R8F8	MXXNT1AC	HEXCHROME	1.55E-01 +/- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
J1R9N4	MXXNX1AC	HEXCHROME	5.64E+00 +/- 0.0E+00		mg/kg	N/A	1.55E-01	1.55E-01	
J1R9N5	MXXN01AC	HEXCHROME	1.55E-01 +/- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
J1R9N6	MXXN11AC	HEXCHROME	3.59E+00 +/- 0.0E+00		mg/kg	N/A	1.55E-01	1.55E-01	
J1R9N7	MXXN21AC	HEXCHROME	8.41E+00 +/- 0.0E+00		mg/kg	N/A	1.55E-01	1.55E-01	
J1R9N8	MXXN31AC	HEXCHROME	2.21E+00 +/- 0.0E+00		mg/kg	N/A	1.55E-01	1.55E-01	
J1R9N9	MXXN41AC	HEXCHROME	1.55E-01 +/- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
J1R9P0	MXXN51AC	HEXCHROME	7.94E-01 +/- 0.0E+00		mg/kg	N/A	1.55E-01	1.55E-01	
J1R9P1	MXXN61AC	HEXCHROME	2.25E+00 +/- 0.0E+00		mg/kg	N/A	1.55E-01	1.55E-01	
J1R9P2	MXXN71AC	HEXCHROME	1.55E-01 +/- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
No. of Results: 14									

TestAmerica rptSTLRchSaSum mary2 V5.2.23 A2002	RPD - Relative Percent Difference. U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or not identified by gamma scan software.
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QC Results Summary
TestAmerica TARL
 Ordered by Method, Batch No, QC Type,.

Date: 28-Jan-13

Report No. : 54362

SDG No.: J01676

Batch	Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDL
7196_CR6									
3022054	MATRIX SPIKE, J1R8F7								
	MXNMR1CE	HEXCHROME	2.59E+01 +- 0.0E+00		mg/kg	N/A	86%	-0.1	1.55E-01
3022054	LCS,								
	MXNRF1AC	HEXCHROME	1.62E+01 +- 0.0E+00		mg/kg	N/A	85%	-0.1	1.55E-01
3022054	BLANK QC,								
	MXNRF1AB	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A			1.55E-01
No. of Results: 3									

TestAmerica Bias - (Result/Expected)-1 as defined by ANSI N13.30.
 rptSTLRchQcSum U Qual - Analyzed for but not detected above limiting criteria. Limit criteria is less than the Mdc/Mda/Mdl, Total Uncert, CRDL, RDL or
 mary V5.2.23 not identified by gamma scan software.
 A2002

FORM I
SAMPLE RESULTS

Date: 28-Jan-13

Lab Name: TestAmerica
Lot-Sample No.: J3A220430-4
Client Sample ID: J1R8F5

SDG: J01676
Report No. : 54362
COC No. : RC-207-153

Collection Date: 1/22/2013 11:55:00 AM
Received Date: 1/22/2013 3:20:00 PM
Matrix: SOIL

Parameter	Result	Count	Total	MDL,	Rpt Unit,	Yield	Rst/MDL,	Analysis,	Total Sa	Aliquot	Primary
		Error (2 s)	Uncert(2 s)	Action Lev	Lc	CRDL(RL)	Rst/TotUncrt	Prep Date	Size	Size	Detector
Batch: 3022054 HEXCHROME	7196 CR6		Work Order: MXXNW1AC		Report DB ID: 9MXXNW10						
	1.55E-01	U	0.0E+00	1.55E-01	mg/kg	N/A	1.	1/22/13 06:30 p			2.5014
						1.55E-01	N/A				g

No. of Results: 1 Comments:

FORM I
SAMPLE RESULTS

Date: 28-Jan-13

Lab Name: TestAmerica
Lot-Sample No.: J3A220430-3
Client Sample ID: J1R8F6

SDG: J01676
Report No.: 54362
COC No.: RC-207-153

Collection Date: 1/22/2013 12:00:00 PM
Received Date: 1/22/2013 3:20:00 PM
Matrix: SOIL

Parameter	Result	Count	Total	MDL, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDL, Rst/TotUncert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3022054	7196 CR6	Work Order: MXXNV1AC	Report DB ID: 9MXXNV10								
HEXCHROME	1.55E-01 U	0.0E+00	1.55E-01 mg/kg	N/A	1.	1.55E-01	N/A	1/22/13 06:30 p	2.5093	g	

No. of Results: 1 Comments:

FORM I
SAMPLE RESULTS

Date: 28-Jan-13

Lab Name: TestAmerica
 Lot-Sample No.: J3A220430-1
 Client Sample ID: J1R8F7

SDG: J01676
 Report No.: 54362
 COC No.: RC-207-153

Collection Date: 1/22/2013 12:05:00 PM

Received Date: 1/22/2013 3:20:00 PM

Matrix: SOIL

Parameter	Result	Count	Total	MDL, Action Lev	Rpt Unit, L.C	Yield CRDL(RL)	Rst/MDL, Rst/TotUserrt	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3022054	7196 CR6	Work Order: MXXNR1AC	Report DB ID: 9MXXNR10								
HEXCHROME	5.38E-01	0.0E+00	1.55E-01	mg/kg	N/A	(3.5)	1/22/13 06:30 p		2.5096	g	

No. of Results: 1 Comments:

FORM I
SAMPLE RESULTS

Date: 28-Jan-13

Lab Name: TestAmerica
 Lot-Sample No.: J3A220430-2
 Client Sample ID: J1R8F8

SDG: J01676

Report No. : 54362

COC No. : RC-207-153

Collection Date: 1/22/2013 12:10:00 PM

Received Date: 1/22/2013 3:20:00 PM

Matrix: SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Ccount Error (2 s)	Total Uncert(2 s)	MDL, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDL, Rst/TotUncrt	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3022054 HEXCHROME	7196 CR6 1.55E-01 U			0.0E+00	Work Order: MXXNT1AC 0.55E-01 mg/kg	Report DB ID: 9MXXNT10 N/A			1/22/13 06:30 p 1.55E-01 N/A		2.5024 g	

No. of Results: 1 Comments:

FORM I
SAMPLE RESULTS

Date: 28-Jan-13

Lab Name: TestAmerica
Lot-Sample No.: J3A220430-5
Client Sample ID: J1R9N4

SDG: J01676
Report No. : 54362
COC No. : RC-207-167

Collection Date: 1/22/2013 11:10:00 AM
Received Date: 1/22/2013 3:20:00 PM
Matrix: SOIL

Parameter	Result	Count	Total	MDL,	Rpt Unit,	Yield	Rst/MDL,	Analysis,	Total Sa	Aliquot	Primary
		Error (2 s)	Uncert(2 s)	Action Lev	Lc	CRDL(RL)	Rst/TotUncrt	Prep Date	Size	Size	Detector
Batch: 3022054	7196 CR6	Work Order: MXXNNX1AC				Report DB ID: 9MXXNNX10					
HEXCROME	5.64E+00	0.0E+00	1.55E-01	mg/kg	N/A	(36.4)	1/22/13 06:30 p		2.4934	g	

No. of Results: 1 Comments:

FORM I
SAMPLE RESULTS

Date: 28-Jan-13

Lab Name: TestAmerica
Lot-Sample No.: J3A220430-6
Client Sample ID: J1R9N5

SDG: J01676
Report No.: 54362
COC No.: RC-207-167

Collection Date: 1/22/2013 11:15:00 AM
Received Date: 1/22/2013 3:20:00 PM
Matrix: SOIL

Parameter	Result	Count	Total	MDL,	Rpt Unit,	Yield	Rst/MDL,	Analysis,	Total Sa	Aliquot	Primary
		Error (2 s)	Uncert(2 s)	Action Lev	Lc	CRDL(RL)	Rst/TotUncrt	Prep Date	Size	Size	Detector
Batch: 3022054 HEXCHROME	7196 CR6		Work Order: MXXN01AC		Report DB ID: 9MXXN010						
	1.55E-01	U	0.0E+00	1.55E-01	mg/kg	N/A	1.	1/22/13 06:30 p	2.5094		g

No. of Results: 1 Comments:

FORM I
SAMPLE RESULTS

Date: 28-Jan-13

Lab Name: TestAmerica
Lot-Sample No.: J3A220430-7
Client Sample ID: J1R9N6

SDG: J01676
Report No.: 54362
COC No.: RC-207-167

Collection Date: 1/22/2013 11:20:00 AM
Received Date: 1/22/2013 3:20:00 PM
Matrix: SOIL

Parameter	Result	Count	Total	MDL, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDL, Rst/TotUncert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3022054	7196 CR6	Work Order: MXXN11AC					Report DB ID: 9MXXN110				
HEXCHROME	3.59E+00	0.0E+00	1.55E-01	mg/kg	N/A	(23.2)	1/22/13 06:30 p		2.5086	g	

No. of Results: 1 Comments:

FORM I
SAMPLE RESULTS

Date: 28-Jan-13

Lab Name: TestAmerica
Lot-Sample No.: J3A220430-8
Client Sample ID: J1R9N7

SDG: J01676
Report No. : 54362
COC No. : RC-207-167

Collection Date: 1/22/2013 11:25:00 AM
Received Date: 1/22/2013 3:20:00 PM
Matrix: SOIL

Parameter	Result	Count	Total	MDL, Action Lev	Rpt Unit, Lc	Yield	Rst/MDL, Rst/TotUncert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3022054	7196 CR6	Work Order: MXXN21AC	Report DB ID: 9MXXN210								
HEXCHROME	8.41E+00	0.0E+00	1.55E-01	mg/kg	N/A	(54.3)	1/22/13 06:30 p	2.5092		g	

No. of Results: 1 Comments:

FORM I
SAMPLE RESULTS

Date: 28-Jan-13

Lab Name: TestAmerica
Lot-Sample No.: J3A220430-9
Client Sample ID: J1R9N8

SDG: J01676
Report No.: 54362
COC No.: RC-207-167

Collection Date: 1/22/2013 11:30:00 AM

Received Date: 1/22/2013 3:20:00 PM

Matrix: SOIL

Parameter	Result	Count	Total	MDL, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDL, Rst/TotUncrt	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3022054	7196 CR6	Work Order: MXXN31AC					Report DB ID: 9MXXN310				
HEXCHROME	2.21E+00	0.0E+00	1.55E-01	mg/kg	N/A	(14.3)	1/22/13 06:30 p		2.4932	g	

No. of Results: 1 Comments:

FORM I
SAMPLE RESULTS

Date: 28-Jan-13

Lab Name: TestAmerica
Lot-Sample No.: J3A220430-10
Client Sample ID: J1R9N9

Parameter	Result	Qual	Count	Total	MDL _{Lc}	Rpt Unit, Lc	Yield	Rst/MDL, Rst/TotUncert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3022054	7196_CRF6			Work Order: MXNN41AC		Report DB ID: 9MXNN410						
HEXCHROME	1.55E-01	U	0.0E+00	1.55E-01	mg/kg	N/A	1.	1/22/13 06:30 p	2.5028		g	

No. of Results: 1 Comments:

FORM I
SAMPLE RESULTS

Date: 28-Jan-13

Lab Name: TestAmerica
Lot-Sample No.: J3A220430-11
Client Sample ID: J1R9P0

Parameter	Result	Count	Total	MDL,	Rpt Unit,	Yield	Rst/MDL,	Analysis,	Total Sa	Aliquot	Primary
		Qual	Uncert(2 s)	Action Lev	Lc	CRDL(RL)	RsU/TotUcert	Prep Date	Size	Size	Detector
Batch: 3022054	7196_CR6		Work Order: MXXN51AC			Report DB ID: 9MXXN510					
HEXCHROME	7.94E-01	0.0E+00	1.55E-01	mg/kg	N/A	(5.1)	1/22/13 06:30 p		2.5081		
					1.55E-01	N/A				g	
No. of Results: 1	Comments:										

FORM I
SAMPLE RESULTS

Date: 28-Jan-13

Lab Name: TestAmerica
Lot-Sample No.: J3A220430-12
Client Sample ID: J1R9P1

Parameter	Result	Count	Total	MDL,	Rpt Unit,	Yield	Rst/MDL,	Analysis,	Total Sa	Aliquot	Primary
		Qual	Error (2 s)	Action Lev	Lc	CRDL(Rl)	Rst/TotUncrt	Prep Date	Size	Size	Detector
Batch: 3022054	7196 CR6		Work Order: MXXN61AC			Report DB ID: 9MXXN610					
HEXCHROME	2.25E+00	0.0E+00	1.55E-01	mg/kg		N/A	(14.5)	1/22/13 06:30 p		2.5028	
						1.55E-01	N/A				g
No. of Results: 1	Comments:										

FORM I
SAMPLE RESULTS

Date: 28-Jan-13

Lab Name: TestAmerica
Lot-Sample No.: J3A220430-13
Client Sample ID: J1R9P2

SDG: J01676
Report No. : 54362
COC No. : RC-207-167

Collection Date: 1/22/2013 11:50:00 AM

Received Date: 1/22/2013 3:20:00 PM

Matrix: SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Count	Total	MDL, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDL, Rst/TotUncrt	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3022054	7196 CR6	Work Order: MXXN71AC					Report DB ID: 9MXXN710				
HEXCHROME	1.55E-01 U	0.0E+00	1.55E-01 mg/kg	N/A	N/A	1.55E-01	1/22/13 06:30 p	2.494 g			

No. of Results: 1 Comments:

FORM II

Date: 28-Jan-13

DUPLICATE RESULTS

Lab Name: TestAmerica
Lot-Sample No.: J3A220430-1
Client Sample ID: J1R8F7

SDG: J01676
Report No. : 54362
COC No. : RC-207-153

Collection Date: 1/22/2013 12:05:00 PM
Received Date: 1/22/2013 3:20:00 PM
Matrix: SOIL

Parameter	Result, Orig Rst	Qual	Count	Total Uncert(2 s)	MDL, Action Lev	Rpt Unit, CRDL	Rst/MDL, Rst/TotUncrt	Analysis, Prep Date	Total Sa Size	Alliquot Size	Primary Detector
Batch: 3022054	7196_CRG			Work Order: MXXNR1CF	Report DB ID: MXXNR1ER			Orig Sa DB ID: 9MXXNR10			
HEXCHROME	4.38E-01		0.0E+00	1.55E-01	mg/kg	N/A	(2.8)	1/22/13 06:30 p	2.5035		
	5.38E-01		RPD 20.5	3.50E-01		N/A				g	

No. of Results: 1 Comments:

FORM II
BLANK RESULTS

Date: 28-Jan-13

Lab Name: TestAmerica
 Matrix: SOIL

Parameter	Result	Qual	Count	Total	MDL, Lc	Rpt Unit, CRDL	Rst/MDL, Rst/TotalCert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3022054	7196_CR6		Work Order: MXRF1AB			Report DB ID: MXRF1AB					
HEXCHROME	1.55E-01	U	0.0E+00	1.55E-01	mg/kg	N/A	1.	1/22/13 06:30 p	2.5	g	

No. of Results: 1 Comments:

Date: 28-Jan-13

FORM II
LCS RESULTS

Lab Name: TestAmerica
Matrix: SOIL

SDG: J01676
Report No.: 54362

Parameter	Result	Qual	Count	Total Uncert(2 s)	MDL	Report Unit	Yield	Expected Uncert	Expected Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 3022054	7196_CRG			Work Order: MXRF1AC		Report DB ID: MXRF1AS						
HEXCHROME	1.62E+01	0.0E+00	1.55E-01	mg/kg	N/A	1.90E+01	N/A	85%	85%	1/22/13 06:30 p	2.5	

No. of Results: 1 Comments:

TestAmerica Bias - (Result/Expected)-1 as defined by ANSI N13.30.
RptSTLRchLcs
V5.2.23 A2002

FORM II
MATRIX SPIKE RESULTS

Date: 28-Jan-13

Lab Name: TestAmerica
 Lot-Sample No.: J3A220430-1, J1R8F7

SDG: J01676

Report No. : 54362

Matrix: SOIL

Parameter	SpikeResult, Orig Rst	Count	Total Uncert(2 s)	Rpt Unit, CRDL	Expected, Uncert	Analysis, Prep Date	Aliquot Size	Analy Method, Primary Detector
Batch: 3022054	Work Order: MXNR1CE	Report DB ID: MXNR1CW	0.0E+00	1.55E-01 mg/kg	Orig Sa DB ID: N/A	86.03%	3.01E+01	1/22/13 06:30 p
HEXCHROME	2.59E+01		0.00E+00				2.5081	7196_CR6

Number of Results: 1

Comments:

TestAmerica RER - Replicate Error Ratio = $(S-D)/[\sqrt{(sq(TPUs)+sq(TPUs))}]$ as defined by ICPT BOA.
 rptSTL.RhMs Bias - (Result/Expected)-1 as defined by ANSI N13.30.
 V5.2.23 A2002

Client_id	Matrix	Result	Cas_nbr	Parameter	Result	Qualifier	Units	Reporting_Limits_SReporting_Limits	Uncertainty_1s	Analyzed_AnalyzD	Decision_Level_Ic	LCSReco	AddeAnalysis_date_time	Batch_nor	Test_Met	Lab_sample_id
JR8F7	Soil	CS	7440-22-4	Ag	-4.79E-01	U	UG/G	1.01E-01	2.60E-01	0.248 G	1.4E-01	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F7	Soil	CS	7440-38-2	As	4.33E-01	U	UG/G	1.01E-01	2.00E-01	0.248 G	1.64E-01	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F7	Soil	CS	7440-39-3	Ba	7.63E-01	UG/G	2.02E-00	1.20E-01	0.248 G	9.90E-02	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0	
JR8F7	Soil	CS	7440-41-7	Beryllium	2.15E-01	UG/G	1.01E-01	7.60E-03	0.248 G	6.29E-03	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0	
JR8F7	Soil	CS	7440-41-7	Cadmium	9.41E-02	U	UG/G	2.02E-00	2.50E-02	0.248 G	2.04E-02	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F7	Soil	CS	7440-43-9	Chromium	3.98E-00	U	UG/G	1.01E-01	9.00E-02	0.248 G	7.38E-02	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F7	Soil	CS	7440-47-3	Lead	2.17E+00	U	UG/G	1.01E-01	9.00E-02	0.248 G	7.36E-02	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F7	Soil	CS	7782-49-2	Se	-5.72E-02	U	UG/G	1.01E-01	3.70E-01	0.248 G	3.05E-01	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F8	Soil	CS	7440-22-4	Ag	-3.29E-01	U	UG/G	1.01E-01	1.10E-01	0.247 G	8.68E-02	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F8	Soil	CS	7440-38-2	As	3.07E-01	U	UG/G	1.01E-01	5.40E-01	0.247 G	4.41E-01	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F8	Soil	CS	7440-39-3	Ba	1.34E+02	U	UG/G	2.02E+00	2.00E+00	0.247 G	1.63E+00	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F8	Soil	CS	7440-41-7	Beryllium	1.67E-01	UG/G	1.01E-01	1.60E-01	0.247 G	5.65E-03	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0	
JR8F8	Soil	CS	7440-39-3	Ba	2.63E-01	UG/G	2.02E+00	2.02E+00	0.247 G	1.74E-02	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0	
JR8F8	Soil	CS	7440-43-9	Cadmium	2.41E+00	U	UG/G	1.01E-01	2.00E-01	0.247 G	1.68E-01	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F8	Soil	CS	7440-47-3	Chromium	6.19E-02	U	UG/G	1.01E-01	4.30E-01	0.247 G	3.50E-01	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F8	Soil	CS	7439-92-1	Lead	1.93E+00	U	UG/G	1.01E-01	1.01E-01	0.247 G	4.38E-01	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F8	Soil	CS	7782-49-2	Se	2.73E-01	U	UG/G	1.01E-01	9.91E-01	0.247 G	1.05E-01	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F8	Soil	CS	7440-22-4	Ag	-3.30E-01	U	UG/G	1.01E-01	9.91E-01	0.247 G	7.70E-02	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F8	Soil	CS	7440-38-2	As	1.42E-01	U	UG/G	1.01E-01	9.98E-01	0.247 G	4.20E-02	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F8	Soil	CS	7440-39-3	Ba	2.63E-01	UG/G	2.02E+00	2.10E-02	0.247 G	1.50E-02	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0	
JR8F8	Soil	CS	7440-41-7	Beryllium	1.60E-01	UG/G	1.01E-01	1.20E-02	0.247 G	1.02E-02	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0	
JR8F8	Soil	CS	7440-43-9	Cadmium	6.19E-02	U	UG/G	1.01E-01	2.523 G	0.253 G	2.21E-02	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F8	Soil	CS	7440-47-3	Chromium	1.40E+00	U	UG/G	9.91E-01	9.91E-01	0.253 G	2.70E-01	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F8	Soil	CS	7439-92-1	Lead	1.20E+00	U	UG/G	9.91E-01	9.91E-01	0.253 G	2.523 G	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F8	Soil	CS	7782-49-2	Se	-7.78E-02	U	UG/G	9.91E-01	9.91E-01	0.253 G	2.60E-01	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F8	Soil	CS	7440-22-4	Ag	-3.39E-01	U	UG/G	9.94E+00	9.94E+00	0.254 G	9.28E-02	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F8	Soil	CS	7440-38-2	As	3.45E+01	U	UG/G	9.94E+00	9.94E+00	0.254 G	4.11E-01	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F8	Soil	CS	7440-39-3	Ba	1.39E+01	UG/G	1.01E-01	1.98E+00	0.254 G	1.21E-01	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0	
JR8F8	Soil	CS	7440-41-7	Beryllium	1.51E-01	UG/G	1.01E-01	1.98E+00	0.254 G	1.21E-01	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0	
JR8F8	Soil	CS	7440-43-9	Cadmium	7.04E-02	U	UG/G	9.94E+00	9.94E+00	0.254 G	1.39E-02	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F8	Soil	CS	7440-47-3	Chromium	1.24E+00	U	UG/G	9.94E+00	9.94E+00	0.254 G	1.60E-01	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F8	Soil	CS	7439-92-1	Lead	1.52E+00	U	UG/G	9.94E+00	9.94E+00	0.254 G	1.65E-02	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F8	Soil	CS	7782-49-2	Se	-1.12E+01	U	UG/G	1.01E-01	5.70E-01	0.254 G	3.33E-02	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F8	Soil	CS	7440-22-4	Ag	4.10E+01	U	UG/G	1.01E-01	1.70E-01	0.254 G	4.70E-01	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F8	Soil	CS	7440-38-2	As	8.67E-02	U	UG/G	1.01E-01	7.10E-01	0.254 G	5.85E-03	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F8	Soil	CS	7440-39-3	Ba	4.75E-01	UG/G	7.04E-02	0.202E+00	0.254 G	1.39E-02	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0	
JR8F8	Soil	CS	7440-41-7	Beryllium	1.87E-01	UG/G	1.01E-01	1.01E-01	0.254 G	8.61E-03	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0	
JR8F8	Soil	CS	7440-43-9	Cadmium	7.91E-02	U	UG/G	2.02E+00	2.02E+00	0.254 G	4.08E-01	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F8	Soil	CS	7440-47-3	Chromium	1.39E-01	UG/G	1.01E-01	1.01E-01	0.254 G	4.08E-01	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0	
JR8F8	Soil	CS	7439-92-1	Lead	1.22E+00	U	UG/G	1.01E-01	1.50E-01	0.254 G	1.39E-01	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F8	Soil	CS	7782-49-2	Se	-2.54E-01	U	UG/G	1.01E-01	2.02E+00	0.254 G	5.42E-02	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F8	Soil	CS	7440-38-2	As	2.47E-01	UG/G	9.98E+00	9.98E+00	0.255 G	1.02E-02	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0	
JR8F8	Soil	CS	7440-39-3	Ba	3.59E-01	UG/G	1.01E-01	1.01E-01	0.255 G	1.70E-02	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0	
JR8F8	Soil	CS	7440-41-7	Beryllium	1.60E-01	UG/G	1.01E-01	1.01E-01	0.255 G	1.80E-03	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0	
JR8F8	Soil	CS	7440-43-9	Cadmium	7.56E-02	U	UG/G	1.01E-01	1.98E+00	0.255 G	1.72E-02	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F8	Soil	CS	7440-47-3	Chromium	1.22E+00	U	UG/G	1.01E-01	1.01E-01	0.255 G	3.98E-01	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F8	Soil	CS	7439-92-1	Lead	1.62E+00	U	UG/G	1.01E-01	9.88E+00	0.255 G	3.54E-02	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F8	Soil	CS	7782-49-2	Se	-1.14E-02	U	UG/G	1.01E-01	1.01E-01	0.255 G	4.70E-02	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F8	Soil	CS	7440-38-2	As	2.31E-01	UG/G	1.01E-01	1.01E-01	0.255 G	2.04E-02	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0	
JR8F8	Soil	CS	7440-39-3	Ba	3.60E-01	UG/G	1.01E-01	1.01E-01	0.255 G	1.20E-02	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0	
JR8F8	Soil	CS	7440-41-7	Beryllium	1.61E-01	UG/G	1.01E-01	1.01E-01	0.255 G	1.80E-03	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0	
JR8F8	Soil	CS	7440-43-9	Cadmium	7.56E-02	U	UG/G	1.01E-01	1.98E+00	0.255 G	1.72E-02	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F8	Soil	CS	7440-47-3	Chromium	1.22E+00	U	UG/G	1.01E-01	1.01E-01	0.255 G	3.98E-01	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F8	Soil	CS	7439-92-1	Lead	1.62E+00	U	UG/G	1.01E-01	9.88E+00	0.255 G	2.18E-02	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F8	Soil	CS	7782-49-2	Se	-1.14E-02	U	UG/G	1.01E-01	1.01E-01	0.255 G	6.28E-01	3022052 46DQ	MXXN11A0	1/23/2013 7:23	3022052 46DQ	MXXN11A0
JR8F8	Soil	CS	7440-38-2													

Matrix	Result_LICas_nbr	Parameter	Result	Qualifier	Units	Reporting_Limits	SReporting_Limits	Uncertainty_1s	Analyzed	Decision_level	LCSReco	Analysis date	Batch nbr	Test Met Lab	sample_id
SOIL	CS	Beryllium	2.35E-01	UGG	9.96E-02	9.96E-02	8.80E-03	0.2509 G	7.23E-03	1/23/2013 8:35	3022052 4BDQ	MXXN51AA	MXXN51AA	MXXN51AA	
SOIL	CS	Cadmium	7.67E-02	U	U	1.98E-00	1.98E-00	2.50E-02	0.2509 G	7.26E-02	1/23/2013 8:35	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Chromium	6.66E+00	U	U	9.96E+00	9.96E+00	1.50E-01	0.2509 G	1.25E-01	1/23/2013 8:35	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Lead	1.00E+00	U	U	9.96E+00	9.96E+00	3.30E-01	0.2509 G	2.69E-01	1/23/2013 8:35	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Se	2.32E-02	U	U	9.96E+00	9.96E+00	5.70E-01	0.2509 G	4.72E-01	1/23/2013 8:35	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Beryllium	2.88E-01	U	U	9.96E+00	9.96E+00	4.0E-02	0.2502 G	3.32E-02	1/23/2013 8:39	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Cadmium	3.79E-02	U	U	9.96E+00	9.96E+00	2.10E-01	0.2502 G	1.76E-01	1/23/2013 8:39	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Chromium	5.11E-01	U	U	9.96E+00	9.96E+00	2.00E+00	0.2502 G	8.15E-02	1/23/2013 8:39	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Lead	1.96E-01	U	U	9.96E+00	9.96E+00	3.60E-03	0.2502 G	2.93E-03	1/23/2013 8:39	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Beryllium	4.28E-01	U	U	9.96E+00	9.96E+00	4.10E-01	0.2502 G	2.77E-02	1/23/2013 8:39	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Cadmium	1.51E-01	U	U	9.96E+00	9.96E+00	2.00E-00	0.2502 G	1.25E-01	1/23/2013 8:39	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Chromium	2.60E+00	U	U	9.96E+00	9.96E+00	2.90E-01	0.2502 G	2.35E-01	1/23/2013 8:39	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Lead	1.52E+00	U	U	9.96E+00	9.96E+00	2.80E-01	0.2502 G	2.27E-01	1/23/2013 8:39	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Beryllium	3.31E-01	U	U	9.96E+00	9.96E+00	3.30E-01	0.2502 G	2.73E-01	1/23/2013 8:39	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Cadmium	3.44E-01	U	U	9.96E+00	9.96E+00	9.70E-02	0.2513 G	8.00E-02	1/23/2013 8:39	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Chromium	3.12E-01	U	U	9.96E+00	9.96E+00	4.50E-01	0.2513 G	3.38E-01	1/23/2013 8:39	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Lead	4.22E+01	U	U	9.96E+00	9.96E+00	1.70E-01	0.2513 G	1.37E-01	1/23/2013 8:39	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Beryllium	2.20E+01	U	U	9.96E+00	9.96E+00	2.80E-03	0.2513 G	2.27E-03	1/23/2013 8:39	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Cadmium	7.21E-02	U	U	9.96E+00	9.96E+00	4.70E-02	0.2513 G	3.86E-02	1/23/2013 8:39	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Chromium	4.66E+00	U	U	9.96E+00	9.96E+00	1.30E-01	0.2513 G	1.10E-01	1/23/2013 8:39	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Lead	1.80E+00	U	U	9.96E+00	9.96E+00	4.50E-01	0.2513 G	3.68E-01	1/23/2013 8:39	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Beryllium	3.44E-02	U	U	9.96E+00	9.96E+00	1.01E-01	0.2475 G	8.35E-02	1/23/2013 8:44	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Cadmium	2.18E+00	U	U	9.96E+00	9.96E+00	1.01E-01	0.2475 G	1.24E-01	1/23/2013 8:44	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Chromium	2.18E+00	U	U	9.96E+00	9.96E+00	1.01E-01	0.2475 G	1.24E-01	1/23/2013 8:44	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Lead	4.33E+01	U	U	9.96E+00	9.96E+00	1.01E-01	0.2475 G	1.80E-01	1/23/2013 8:44	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Beryllium	2.97E+01	U	U	9.96E+00	9.96E+00	2.90E-01	0.2475 G	2.24E-01	1/23/2013 8:44	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Cadmium	6.71E+01	U	U	9.96E+00	9.96E+00	2.02E+00	0.2475 G	1.95E-01	1/23/2013 8:44	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Chromium	1.66E+01	U	U	9.96E+00	9.96E+00	1.01E-01	0.2475 G	8.39E-03	1/23/2013 8:44	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Lead	9.29E+02	U	U	9.96E+00	9.96E+00	2.02E+00	0.2475 G	3.92E-03	1/23/2013 8:44	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Beryllium	4.39E+00	U	U	9.96E+00	9.96E+00	1.01E-01	0.2475 G	1.24E-01	1/23/2013 8:44	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Cadmium	2.62E+00	U	U	9.96E+00	9.96E+00	1.50E-01	0.2475 G	1.21E-02	1/23/2013 8:44	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Chromium	9.22E+02	U	U	9.96E+00	9.96E+00	1.01E-01	0.2475 G	3.85E-02	1/23/2013 8:44	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Lead	7.78E+02	U	U	9.96E+00	9.96E+00	1.01E-01	0.2475 G	3.62E-01	1/23/2013 8:44	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Beryllium	2.97E+01	U	U	9.96E+00	9.96E+00	2.02E+00	0.2475 G	8.40E-02	1/23/2013 8:44	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Cadmium	6.71E+01	U	U	9.96E+00	9.96E+00	1.01E-01	0.2475 G	3.62E-01	1/23/2013 8:44	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Chromium	1.51E+01	U	U	9.96E+00	9.96E+00	1.01E-01	0.2475 G	3.62E-01	1/23/2013 8:44	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Lead	3.83E+02	U	U	9.96E+00	9.96E+00	3.20E+00	0.253 G	3.20E+00	1/23/2013 8:44	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Beryllium	4.39E+01	U	U	9.96E+00	9.96E+00	9.88E-02	0.253 G	4.99E-03	1/23/2013 8:44	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Cadmium	2.62E+01	U	U	9.96E+00	9.96E+00	1.98E-02	0.253 G	6.07E-02	1/23/2013 8:44	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Chromium	9.22E+02	U	U	9.96E+00	9.96E+00	1.01E-01	0.253 G	3.85E-02	1/23/2013 8:44	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Lead	7.78E+02	U	U	9.96E+00	9.96E+00	2.20E+00	0.253 G	1.79E-02	1/23/2013 8:44	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Beryllium	2.97E+01	U	U	9.96E+00	9.96E+00	1.01E-01	0.253 G	1.79E-02	1/23/2013 8:44	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Cadmium	6.71E+01	U	U	9.96E+00	9.96E+00	1.01E-01	0.253 G	1.79E-02	1/23/2013 8:44	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Chromium	1.51E+01	U	U	9.96E+00	9.96E+00	1.01E-01	0.253 G	1.79E-02	1/23/2013 8:44	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	CS	Lead	3.83E+02	U	U	9.96E+00	9.96E+00	2.20E+00	0.253 G	1.79E-02	1/23/2013 8:44	3022052 4BDQ	MXXN51AA	MXXN51AA	
SOIL	BLK	Beryllium	7.83E-04	U	MGL	5.00E-02	5.00E-02	1.20E-03	0.252 L	9.32E-04	1/23/2013 8:44	3022052 4BDQ	MXXP1C1AA	MXXP1C1AA	
SOIL	BLK	Cadmium	1.95E-03	U	MGL	5.00E-02	5.00E-02	1.10E-03	0.252 L	9.23E-04	1/23/2013 8:44	3022052 4BDQ	MXXP1C1AA	MXXP1C1AA	
SOIL	BLK	Chromium	8.18E-04	U	MGL	1.00E-02	1.00E-02	9.40E-05	0.252 L	7.73E-05	1/23/2013 8:44	3022052 4BDQ	MXXP1C1AA	MXXP1C1AA	
SOIL	BLK	Lead	4.47E-05	U	MGL	5.00E-04	5.00E-04	7.40E-05	0.252 L	6.07E-05	1/23/2013 8:44	3022052 4BDQ	MXXP1C1AA	MXXP1C1AA	
SOIL	BLK	Beryllium	1.76E-04	U	MGL	1.00E-02	1.00E-02	6.30E-04	0.252 L	5.20E-04	1/23/2013 8:44	3022052 4BDQ	MXXP1C1AA	MXXP1C1AA	
SOIL	BLK	Cadmium	4.27E-04	U	MGL	5.00E-02	5.00E-02	2.50E-03	0.252 L	4.20E-04	1/23/2013 8:44	3022052 4BDQ	MXXP1C1AA	MXXP1C1AA	
SOIL	BLK	Chromium	7.82E-02	U	MGL	1.00E-02	1.00E-02	1.40E-03	0.252 L	1.02E-03	1/23/2013 8:44	3022052 4BDQ	MXXP1C1AA	MXXP1C1AA	
SOIL	BLK	Lead	7.82E-02	U	MGL	1.00E-02	1.00E-02	1.40E-03	0.252 L	1.02E-03	1/23/2013 8:44	3022052 4BDQ	MXXP1C1AA	MXXP1C1AA	
SOIL	BLK	Beryllium	5.16E-01	U	MGL	1.00E-02	1.00E-02	9.92E-02	0.252 L	5.90E-01	1/23/2013 8:44	3022052 4BDQ	MXXP1C1AA	MXXP1C1AA	
SOIL	BLK	Cadmium	1.56E-02	U	MGL	1.00E-02	1.00E-02	9.92E-02	0.252 L	5.90E-01	1/23/2013 8:44	3022052 4BDQ	MXXP1C1AA	MXXP1C1AA	
SOIL	BLK	Chromium	1.79E-02	U	MGL	1.00E-02	1.00E-02	9.92E-02	0.252 L	5.90E-01	1/23/2013 8:44	3022052 4BDQ	MXXP1C1AA	MXXP1C1AA	
SOIL	BLK	Lead	1.79E-02	U	MGL	1.00E-02	1.00E-02	9.92E-02	0.252 L	5.90E-01	1/23/2013 8:44	3022052 4BDQ	MXXP1C1AA	MXXP1C1AA	
SOIL	BLK	Beryllium	1.79E-02	U	MGL	1.00E-02	1.00E-02	9.92E-02	0.252 L	5.90E-01	1/23/2013 8:44	3022052 4BDQ	MXXP1C1AA	MXXP1C1AA	
SOIL	BLK	Cadmium	1.79E-02	U	MGL	1.00E-02	1.00E-02	9.92E-02	0.252 L	5.90E-01	1/23/2013 8:44	3022052 4BDQ	MXXP1C1AA	MXXP1C1AA	
SOIL	BLK	Chromium	1.79E-02	U	MGL	1.00E-02	1.00E-02	9.92E-02	0.252 L	5.90E-01	1/23/2013 8:44	3022052 4BDQ	MXXP1C1AA	MXXP1C1AA	
SOIL	BLK	Lead	1.79E-02	U	MGL	1.00E-02	1.00E-02	9.92E-02	0.252 L	5.90E-01	1/23/2013 8:44	3022052 4BDQ	MXXP1C1AA	MXXP1C1AA	
SOIL	BLK	Beryllium	1.79E-02	U	MGL	1.00E-02	1.00E-02	9.92E-02	0.252 L	5.90E-01	1/23/2013 8:44	3022052 4BDQ	MXXP1C1AA	MXXP1C1AA	
SOIL	BLK	Cadmium	1.79E-02	U	MGL	1.00E-02	1.00E-02	9.92E-02	0.252 L	5.90E-01	1/23/2013 8:44	3022052 4BDQ	MXXP1C1AA	MXXP1C1AA	
SOIL	BLK	Chromium	1.79E-02	U	MGL	1.00E-02	1.00E-02	9.92E-02	0.252 L	5.90E-01	1/23/2013 8:44	3022052 4BDQ	MXXP1C1AA	MXXP1C1AA	
SOIL	BLK	Lead	1.79E-02	U	MGL	1.00E-02	1.00E-02	9.92E-02	0.252 L	5.90E-01	1/23/2013 8:44	30220			

	Matrix	Result	[Cas_nhr	Parameter	Result	Qualifier	Units	Reporting_Limits	Reporting_Limits	Uncertainty_1s	Analyzed_Acide	Analysis_date	Batch_nbr	Test_MetLab	sample_id
Client_id	SOIL	MSD	7782-49-2	Se	1.60E-02	0.252 L	9.32E+00	9.32E+00	6.00E-01	4.91E-01	0.81	1/23/2013 7:33	3022052 4eDQ	NXXNRTA0	

JR8F7

Richland Laboratory
Data Review Check List
Hexavalent Chromium

Batch Number(s): **3022054** Lab Sample Numbers or SDG: **J01676**

Method/Test/Parameter: Cr+6 RL-WC-003(Aqueous) RL-WC-004(Solid)

Review Item	Yes (✓)	No (✓)	N/A (✓)	2 nd Level Review (✓)
A. Initial Calibration				
1. Performed at required frequency with required number of levels?	✓			✗
2. Correlation coefficient greater than 0.97?	✓			✗
3. Initial calibration verification (ICV) analyzed immediately after calibration and results within 10% of expected?	✓			✗
4. Initial calibration blank (ICB) analyzed immediately after ICV and concentrations of all parameters \leq reporting limit?	✓			✗
B. Continuing Calibration				
1. CCV analyzed at required frequency and all parameters within 10% of expected?	✓			✗
2. CCB analyzed at required frequency and all results \leq reporting limit?	✓			✗
C. Sample Analysis			✓	✗
1. Were any samples with concentrations above the linear range diluted and reanalyzed?			✓	✗
2. Were all sample holding times met?	✓			✗
D. QC Samples				
1. All results for the preparation blank below limits?	✓			✗
2. LCS percent recovery within 85-115%	✓			✗
3. PbCrO ₄ percent recovery within 75-125%?	✓			✗
4. Sample and Duplicate within 20% (aqueous) or 35% (solid) RPD?	✓			✗
5. MS or MS/MSD recoveries within 85-115% (aqueous) or 75-125% (solid)?	✓			✗
6. On MS failure, PDMS within 85-115%?			✓	✗
E. Other			✓	✗
1. Are all nonconformances included and noted?			✓	✗
2. Is the correct date and time of analysis shown?	✓			✗
3. Did the analyst sign and date the front page of the analytical run?	✓			✗
4. Correct methodology used?	✓			✗
5. Transcriptions checked?	✓			✗
6. Calculations checked at minimum frequency?	✓			✗
7. Units checked?	✓			✗

Comments on any "No" response or list NCM number:

Analyst Beth Park Date 1/23/13 2nd Review
CG-231 Rev 1 5/12

Date 1/20/13

Lot No., Due Date: J3A220430; 01/23/2013
 Client, Site: 127642; S00X235B00 HANFORD
 QC Batch No., Method Test: 3022052; M6010_S 6010A
 SDG, Matrix: J01676; SOIL

1.0 Initial Calibration

1.1 Performed at required frequency with required number of levels?

Yes No N/A 2nd

1.2 Correlation coefficient within QC limits?

Yes No N/A 2nd

1.3 Initial calibration verification (ICV) analyzed immediately after calibr. and results within QC limits of +/- 10% at 0.75 ppm? Yes No N/A 2nd

1.4 ICB analyzed immediately after ICV and concentration of all parameters +/- report limit from zero? RL per RadCalc. Yes No N/A 2nd

2.0 Continuing Calibration

2.1 CCV analyzed at required frequency and all parameters within QC limits or +/- 10% at 0.7500 ppm? Yes No N/A 2nd

2.2 CCB analyzed at required frequency and all results +/- reporting limit from zero? Yes No N/A 2nd

3.0 Sample Analysis

3.1 Were any samples with concentration above the linear range diluted and reanalyzed? Yes No N/A 2nd

3.2 Were all sample holding times met? Yes No N/A 2nd

4.0 QC Samples

4.1 All results for the preparation blank < reporting limits? Yes No N/A 2nd

4.2 MS or MS/MSD recoveries within 20% at 1 ppm and within 20% RPD (for MSD)? Yes No N/A 2nd

4.3 LCS precent recovery within 20% at 1 ppm and 20% RPD (for LCSD)? Yes No N/A 2nd

4.4 Analytical spikes within QC limits where applicable? Yes No N/A 2nd

4.5 ICP only: One serial dilution performed and within 10% of parent per SDG? Yes No N/A 2nd

4.6 ICP only: RLV run per batch and within 20% of current values? Yes No N/A 2nd

4.7 ICP only: ICSA,ICSAB analyzed at the required frequencies and within 20% of values per dilution record? Yes No N/A 2nd

5.0 Other

5.1 Are all nonconformances included and noted? Yes No N/A 2nd

5.2 Is the correct date and time of analysis shown? Yes No N/A 2nd

5.3 Did the analyst sign and date the digestion log for the analytical run? Yes No N/A 2nd

5.4 Correct methodology used? Yes No N/A 2nd

5.5 Transcriptions checked? Yes No N/A 2nd

5.6 Calculations checked at minimum frequency? Yes No N/A 2nd

5.7 Units checked? Yes No N/A 2nd

5.8 Verified that appropriate data transferred to ReportDB? Yes No N/A 2nd

6.0 Comments on any 'No' response:

First Level *Ellys Bourg* Date 1/23/13 Second *Bjorn Dale* Date 1/23/13
 TestAmerica Richland
 QAS_RADCALCv4.8.58

Page 1

Clouseau Nonconformance Memo

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

NCM #: **10-22636**
NCM Initiated By: Philip Bouslaugh
Date Opened: 01/23/2013
Date Closed:

Classification: **Deficiency**
Status: **PMREVIEW**
Production Area: Classical Chemistry
Tests: 6010A
Lot #'s (Sample #'s): J3A220000 (52), J3A220430
(1,10,11,12,13,2,3,4,5,6,7,8,9
)
QC Batches: 3022052,

Nonconformance: Other (describe in detail)
Subcategory: Other (explanation required)

Problem Description / Root Cause

Name	Date	Description
Philip Bouslaugh	01/23/2013	Ba recovery did not meet the acceptable criteria in the matrix spike and matrix spike duplicate.

Corrective Action

Name	Date	Corrective Action
Philip Bouslaugh	01/23/2013	Data was submitted to client for review.

Client Notification Summary

Client	Project Manager	Notified	Response	How Notified	Note
			Response	Response Note	

Quality Assurance Verification

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

Approval History

Date Approved	Approved By	Position
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1/23/13

PAB

✓ BC 1/23/13

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						RC-207-153		Page <u>1</u> of <u>4</u>				
Collector R. Brackett	Company Contact Joan Kessner	Telephone No. 509-375-4688	Sampling Location 100-C-7:1(Section B, cell 2)	Project Coordinator KESSNER, JH	Price Code <u>8L</u>	Data Turnaround <u>21 Days</u>								
Project Designation Remedial Action of the 100-C-7 & 100-C-7:1 Waste Sites - I	Field Logbook No. EL-1655- <u>B</u> -F-1-2-1-3	COA R00C712600	SAF No. RC-207	Method of Shipment Hand deliver										
Ice Chest No. N/A	Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A	Bill of Lading/Air Bill No. N/A											
POSSIBLE SAMPLE HAZARDS/REMARKS <u>None</u>														
Special Handling and/or Storage <u>Cool 4 degrees centigrade</u>														
<u>J3A220430</u> <u>Due 1-25-13</u>														
Sample No.	Matrix *	Sample Date	Sample Time	SPECIAL INSTRUCTIONS						Matrix *				
J1R8F7 <u>YNTK</u>	Soil	01/22/13	1205	(1) Metals by ICP - 6010 - Quick Turn (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); Metals by ICP - 6010 - Quick Turn (Add On) (Beryllium)						S=Soil SE=Sediment SO=Solid SR=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WL=Wipe L=Liquid V=Vegetation X=Other				
J1R8F8 <u>YNTK</u>	Soil	01/22/13	1210											
J1R8F9 <u>YNTK</u>	Soil	01/22/13	1200											
J1R8F10 <u>YNTK</u>	Soil	01/22/13	1155											
CHAIN OF POSSESSION														
Relinquished By/Removed From <u>Review D</u>	Date/Time <u>1-22-13</u>	Received By/Stored In <u>1 Dan He</u>	Date/Time <u>1-22-13</u>	Reviewed In <u>1 Dan He</u>										
Relinquished By/Removed From <u>Review D</u>	Date/Time <u>1-22-13</u>	Received By/Stored In <u>Review D</u>	Date/Time <u>1-22-13</u>	Received By/Stored In <u>Review D</u>										
Relinquished By/Removed From <u>Review D</u>	Date/Time <u>1-22-13</u>	Received By/Stored In <u>Review D</u>	Date/Time <u>1-22-13</u>	Received By/Stored In <u>Review D</u>										
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	Received By/Stored In										
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	Received By/Stored In										
LABORATORY SECTION	Received By										Title			
FINAL SAMPLE DISPOSITION	Disposal Method										Disposed By			
												Date/Time		
												Date/Time		

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			RC-207-167		Page 1 of 2	
Collector R. Brackett	Company Contact Jean Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH.	Price Code <u>8L</u>	Data Turnaround <u>DATA 21 Days</u> <u>Quick Turn</u>			
Project Designation Remedial Action of the 100-C-7 & 100-C-7-1 Waste Sites - I	Sampling Location 100-C-7-1 (ACL)	SAF No. RC-207						
Ice Chest No. N/A	Field Logbook No. EL1655-A4 OG BFC 1-22-13	COA R00C712600	Method of Shipment Hand deliver					
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A	Bill of Lading/Air Bill No. N/A						
POSSIBLE SAMPLE HAZARDS/REMARKS None		Preservation G/P	Cool 4C G/P					
Special Handling and/or Storage Cool 4 degrees centigrade		Type of Container No. of Container(s) 1						
53A320430		Volume 125mL	125mL					
J11R94 SAMPLE ANALYSIS Due 1-23-13		See item (1) in Chromium Flex - 7196 - Quick Turn Special Instructions.						
Sample No.	Matrix *	Sample Date 01/22/13	Sample Time 1110					
J11R94 M-X-N-X	SOIL	01/22/13	1110	X				
J11R95 M-X-N-D	SOIL	01/22/13	1115	X				
J11R96 M-X-N-U	SOIL	01/22/13	1120	X				
J11R97 M-X-N-Z	SOIL	01/22/13	1125	X				
J11R98 M-X-N-2	SOIL	01/22/13	1130	X				
CHAIN OF POSSESSION		SPECIAL INSTRUCTIONS			Matrix *			
Relinquished By/Removed From <u>Don't have</u>	Date/Time 1-22-13	Received By/Stored In <u>Don't have</u>	Date/Time 1-22-13	(1) Metals by ICP - 6010 - Quick Turn [Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver]; Metals by ICP - 6010 - Quick Turn (Add On) [Beryllium]	S=Soil			
Relinquished By/Removed From <u>Don't have</u>	Date/Time 1-22-13	Received By/Stored In <u>Don't have</u>	Date/Time 1-22-13		SP=Sediment			
Relinquished By/Removed From <u>Don't have</u>	Date/Time 1-22-13	Received By/Stored In <u>Don't have</u>	Date/Time 1-22-13		SO=Solid			
Relinquished By/Removed From <u>Don't have</u>	Date/Time 1-22-13	Received By/Stored In <u>Don't have</u>	Date/Time 1-22-13		SH=Sludge			
Relinquished By/Removed From <u>Don't have</u>	Date/Time 1-22-13	Received By/Stored In <u>Don't have</u>	Date/Time 1-22-13		W=Water			
Relinquished By/Removed From <u>Don't have</u>	Date/Time 1-22-13	Received By/Stored In <u>Don't have</u>	Date/Time 1-22-13		O=Oil			
Relinquished By/Removed From <u>Don't have</u>	Date/Time 1-22-13	Received By/Stored In <u>Don't have</u>	Date/Time 1-22-13		A=Air			
Relinquished By/Removed From <u>Don't have</u>	Date/Time 1-22-13	Received By/Stored In <u>Don't have</u>	Date/Time 1-22-13		DS=Drum Solids			
Relinquished By/Removed From <u>Don't have</u>	Date/Time 1-22-13	Received By/Stored In <u>Don't have</u>	Date/Time 1-22-13		DL=Drum Liquids			
Relinquished By/Removed From <u>Don't have</u>	Date/Time 1-22-13	Received By/Stored In <u>Don't have</u>	Date/Time 1-22-13		T=Tissue			
Relinquished By/Removed From <u>Don't have</u>	Date/Time 1-22-13	Received By/Stored In <u>Don't have</u>	Date/Time 1-22-13		W=Wipe			
Relinquished By/Removed From <u>Don't have</u>	Date/Time 1-22-13	Received By/Stored In <u>Don't have</u>	Date/Time 1-22-13		L=Liquid			
Relinquished By/Removed From <u>Don't have</u>	Date/Time 1-22-13	Received By/Stored In <u>Don't have</u>	Date/Time 1-22-13		V=Vegetation			
Relinquished By/Removed From <u>Don't have</u>	Date/Time 1-22-13	Received By/Stored In <u>Don't have</u>	Date/Time 1-22-13		X=Other			
LABORATORY SECTION	Received By				Date/Time			
FINAL SAMPLE DISPOSITION	Disposal Method				Date/Time			

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-207-167	Page 2 of 2
Collector R. Brackett	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSENER, JH	Price Code 8L	Data Turnaround <u>DATA 6010- 21 Days Quick Turn</u>
Project Designation Remedial Action of the 100-C-7 & 100-C-7:1 Waste Sites - I	Sampling Location 100-C-7:1 (ACL)	SAF No. RC-207	Method of Shipment Hand deliver		
Ice Chest No. N/A	Field Logbook No. EL-1655-47 OS BF I. 22-13	COA R00C712600			
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A		
POSSIBLE SAMPLE HAZARDS/REMARKS <i>None</i>					
Special Handling and/or Storage <i>Cool + degrees centigrade</i>					
J1R9P1 220430 Jolene Due 1-23-13 SAMPLE ANALYSIS					
Sample No.	Matrix *	Sample Date <i>01/22/13</i>	Sample Time <i>1135</i>		
J1R9N9 WYXNS	SOIL	<i>01/22/13</i>	<i>X</i>	<i>X</i>	
J1R9P0 WYXNS	SOIL	<i>01/22/13</i>	<i>X</i>	<i>X</i>	
J1R9P1 WYXNS	SOIL	<i>01/22/13</i>	<i>X</i>	<i>X</i>	
J1R9P2 WYXNS	SOIL	<i>01/22/13</i>	<i>X</i>	<i>X</i>	
J1R9P3 (S)	SOIL	<i>01/22/13</i>			
CHAIN OF POSSESSION <i>1-22-13 ✓ Sign/Print Names</i>					
Relinquished By/Removed From <i>John H. Dickey</i>	Date/Time <i>1-22-13 13:00</i>	Received By/Stored In <i>John H. Dickey</i>	Date/Time <i>1-22-13 13:00</i>		
Relinquished By/Removed From <i>John H. Dickey</i>	Date/Time <i>1-22-13 15:20</i>	Received By/Stored In <i>John H. Dickey</i>	Date/Time <i>1-22-13 15:20</i>		
Relinquished By/Removed From <i>John H. Dickey</i>	Date/Time <i>1-22-13 15:20</i>	Received By/Stored In <i>John H. Dickey</i>	Date/Time <i>1-22-13 15:20</i>		
Relinquished By/Removed From <i>John H. Dickey</i>	Date/Time <i>1-22-13 15:20</i>	Received By/Stored In <i>John H. Dickey</i>	Date/Time <i>1-22-13 15:20</i>		
LABORATORY SECTION	Received By		Title		
FINAL SAMPLE DISPOSITION	Disposal Method		Date/Time	Date/Time	

(1) Metals by ICP - 6010 - Quick Turn {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Metals by ICP - 6010 - Quick Turn (Add On) {Beryllium}

S=Soil
SE=Sediment
SO=Solid
SP=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
L=Liquid
V=Vapors
E=Evaporation
X=Other



Date/Time

Disposed By

Sample Check-in List

Date/Time Received: 1-22-13 / 1520 Container GM Screen Result: (Airlock) • 4 Initials SP]
 Sample GM Screen Result (Sample Receiving) • 6 Initials SP]

Client: WCH SDG #: SD1676 NA [] SAF #: RL-207 NA []

Lot Number: J3A220430

Chain of Custody # RL-207-153, 165

Shipping Container ID: Hand deliv. NA pw Air Bill Number: _____ NA SP

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

Item 5 through 16 for samples. Initial appropriate response.

- | | | |
|---|--------------------|--------|
| 5. Chain of Custody record present? | Yes <u>SP</u>] | No [] |
| 6. Number of samples received (Each sample may contain multiple bottles): | <u>13</u> | |
| 7. Containers received: | <u>26 x 125 mL</u> | |

- | | | | |
|--|--|---------|----------------|
| 8. Sample holding times exceeded? | NA [] | Yes [] | No <u>SP</u>] |
| 9. Samples have: | tape <u>SP</u> hazard labels
<u>SP</u> custody seals <u>SP</u> appropriate sample labels | | |
| 10. Matrix: | <u>SP</u> A (FLT, Wipe, Solid, Soil) <u>SP</u> I (Water)
<u>SP</u> S (Air, Niosh 7400) <u>SP</u> T (Biological, Ni-63) | | |
| 11. Samples: | <u>SP</u> are in good condition <u>SP</u> are leaking
<u>SP</u> are broken <u>SP</u> have air bubbles (Only for samples requiring no head space)
<u>SP</u> Other _____ | | |
| 12. Sample pH appropriate for analysis requested
(If acidification is necessary, then document sample ID, initial pH, amount of HNO ₃ added and pH after addition on table overleaf) | Yes [] No [] NA <u>SP</u>]
<u>SP</u> | | |
| 13. RPL ID # of preservative used : <u>W/A</u> | | | |
| 14. Were any anomalies identified in sample receipt? | Yes [] No <u>SP</u>] | | |
| 14. Description of anomalies (include sample numbers): NA <u>SP</u> | | | |

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

16. Additional Information: N/A

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

Sample Custodian: Juli Beck Date: 1-22-13

Client Informed on _____ by _____ Person contacted _____

No action necessary; process as is
Project Manager  Date 10/22/13

JB220430

W 1/22/13

LS-023, Rev. 15, 07/11

See over for additional information.

Sample Preparation/Analysis																													
Analytical Data					Preparation/Analysis																								
Sample ID:		Prep Tech:		Comments:		Prep Tech:		Comments:																					
1/22/2013 6:33:33 PM		DW Alkaline Digestion by method 3060A		Pipet #:		Sep1 DT/Tm Tech:		Sep2 DT/Tm Tech:																					
127642, Washington Closure Hanford LLC		EA Chromium, Hexavalent (7196A)																											
Washington Closure Hanford LLC		51 CLIENT: HANFORD																											
AnalyDueDate: 01/23/2013																													
Batch: 3022054		SOIL		mg/kg		PM, Quote: RW2, 88144		Prep Tech:																					
SEQ Batch, Test: None																													
<table border="1"> <thead> <tr> <th>Work Ord. Lot, Sample Date</th><th>Total Amt/Unit</th><th>Total Acidified/Unit</th><th>Initial Aliquot Amt/Unit</th><th>Adj Aliq Amt (Un-Acidified)</th><th>QC Tracer Prep Date</th><th>Dish Yield</th><th>Ppt or Geometry</th><th>Count Time Min</th><th>Detector Id</th> </tr> </thead> <tbody> <tr> <td>15 MXXN7-1-AC</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>(24hr) Circle</td></tr> </tbody> </table>										Work Ord. Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Dish Yield	Ppt or Geometry	Count Time Min	Detector Id	15 MXXN7-1-AC									(24hr) Circle
Work Ord. Lot, Sample Date	Total Amt/Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	Dish Yield	Ppt or Geometry	Count Time Min	Detector Id																				
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18 MXXRFA-1-AC-D																													
<p>Comments:</p>																													
<p>All Clients for Batch: 127642, Washington Closure Hanford LLC Washington Closure Hanford LLC, RW2, 88144</p>																													
<p>MXNR1AC-SAMP Constituent List:</p>																													
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<p>MXXRFAA-BLK:</p>																													
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<p>WO Cnt: 17 ICOC v4.8.49</p>																													

