0099003

SAF-RC-107
100-H Remaining Sites Burial Grounds – Soil Full Protocol
FINAL VALIDATION PACKAGE

COMPLETE COPY OF FINAL VALIDATION PACKAGE TO:

Kathy Wendt H4-21

COMMENTS:

SDG JP0240 SAF-RC-107

RECEIVED
AUG 3 1 2011
EDMC

Waste Site: 132-H-3

Date: 23 August 2011
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: 100H Remaining Sites Burial Grounds – Soil Full Protocol - Waste Site 132-H-3
Subject: Wet Chemistry - Data Package No. JP0240-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. JP0240 prepared by TestAmerica Laboratories (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J1K8F2	7/26/11	Soil	C	See note 1
J1K8F3	7/26/11	Soil	C	See note 1
J1K8F4	7/26/11	Soil	C	See note 1
J1K8F5	7/26/11	Soil	C	See note 1
J1K8F6	7/26/11	Soil	C	See note 1
J1K8F7	7/26/11	Soil	C	See note 1
J1K8F8	7/26/11	Soil	C	See note 1
J1K8F9	7/26/11	Soil	C	See note 1
J1K8H0	7/26/11	Soil	C	See note 1
J1K8H1	7/26/11	Soil	C	See note 1
J1K8H2	7/26/11	Soil	C	See note 1

1 – Chromium VI by 7196A, anions by 300.0., nitrate/nitrite by 353.2, pH by 9045C.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the 100 Area Remedial Action Sampling and Analysis Plan (DOE/RL-96-22, September 2009). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

Holding Times

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 30 days for chromium VI, nitrate/nitrite, chloride, fluoride, bromide, sulfate; 48 hours for nitrate, nitrite and

orthophosphate; and immediate (24 hours) for pH.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

Due to the holding time being exceeded by greater than twice the limit, all detected pH, nitrate, nitrite and orthophosphate results were qualified as estimates and flagged "J".

Due to the holding time being exceeded by greater than twice the limit, all undetected nitrate, nitrite and orthophosphate results were qualified as rejected and flagged "UR".

All other holding times were acceptable.

- **Method Blanks**

Method Blanks

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. All blank results must fall below the contract required detection limit (CRQL) to be acceptable.

All method blank results were acceptable.

Field Blanks

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 70% to 130%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 69% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 130% or less than 70% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 130% and a sample result less than the IDL, no qualification is required.

All accuracy results were acceptable.

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All laboratory duplicate results were acceptable.

Field Duplicate

One set of field duplicates (J1K8F3/J1K8H2) were submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. The RPD for sulfate (32%) was outside QC limits. Under the WCH statement of work, no qualification is required. All field duplicate results were acceptable.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQLs) to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

- **Completeness**

Data package JP0240 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 87%.

MAJOR DEFICIENCIES

The following major deficiency was noted:

- Due to the holding time being exceeded by greater than twice the limit, all undetected nitrate, nitrite and orthophosphate results were qualified as rejected and flagged "UR".

Rejected data is unusable and should not be reported.

MINOR DEFICIENCIES

The following minor deficiency was noted:

- Due to the holding time being exceeded by greater than twice the limit, all detected pH, nitrate, nitrite and orthophosphate results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-96-22, Rev. 5, *100 Area Remedial Action Sampling and Analysis Plan*, U.S. Department of Energy, September 2009.

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

WET CHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: JP0240	REVIEWER: ELR	Project: 132-H-3	PAGE 1 OF 1
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
pH, nitrate	J	All	Hold time
Nitrite	J	J1K8F4	Hold time
Nitrite	UR	J1K8F2, J1K8F3 J1K8F5, J1K8F6 J1K8F7, J1K8F8 J1K8F9, J1K8H0 J1K8H1, J1K8H2	Hold time
Orthophosphate	J	J1K8F2, J1K8F4 J1K8F7, J1K8F8 J1K8F9, J1K8H1 J1K8H2	Hold time
Orthophosphate	UR	J1K8F3, J1K8F5 J1K8F6, J1K8H0	Hold time

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

Sample Results Summary

TestAmerica TARL

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

Date: 10-Aug-11

Report No. : 47756

8/22/11

SDG No: JP0240

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1208214	C14_CHEM_LSC								
	J1K8F5								
	MK70V1AK	C-14	-3.77E-02 +- 2.0E-01	U	pCi/g	100%	4.57E-01	5.00E+01	
	J1K8F6								
	MK70W1AK	C-14	8.64E-02 +- 2.1E-01	U	pCi/g	100%	4.54E-01	5.00E+01	
	J1K8F7								
	MK70X1AK	C-14	3.51E-01 +- 2.2E-01	U	pCi/g	100%	4.54E-01	5.00E+01	
	J1K8F8								
	MK7001AK	C-14	1.26E-01 +- 2.1E-01	U	pCi/g	100%	4.57E-01	5.00E+01	
	J1K8F9								
	MK7021AK	C-14	-7.82E-02 +- 2.0E-01	U	pCi/g	100%	4.57E-01	5.00E+01	
	J1K8H0								
	MK7031AK	C-14	2.94E-02 +- 2.0E-01	U	pCi/g	100%	4.54E-01	5.00E+01	
	J1K8H1								
	MK7061AK	C-14	1.62E-01 +- 2.1E-01	U	pCi/g	100%	4.55E-01	5.00E+01	
	J1K8H2								
	MK7071AK	C-14	1.15E-01 +- 2.1E-01	U	pCi/g	100%	4.54E-01	5.00E+01	
1208239	7196_CR6								
	J1K8F2								
	MK70F1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	MK70F1AP	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	3.50E-01	0.0
	J1K8F3								
	MK70L1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	J1K8F4								
	MK70P1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	J1K8F5								
	MK70V1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	J1K8F6								
	MK70W1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	J1K8F7								
	MK70X1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	J1K8F8								
	MK7001AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	J1K8F9								
	MK7021AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	J1K8H0								
	MK7031AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	J1K8H1								
	MK7061AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	J1K8H2								

TestAmerica

rptSTLRchSaSummary2 V5.2.15 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.

009

Sample Results Summary

Date: 10-Aug-11

TestAmerica TARL

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

Report No. : 47756 **SDG No:** JP0240

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1208239	7196_CR6								
	J1K8H2								
	MK7071AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
1215087	TC99_ETVDSK_LSC								
	J1K8F8								
	MK7002AG	TC-99	1.70E-01 +- 3.6E-01	U	pCi/g	100%	6.10E-01	1.50E+01	

No. of Results: 228

8/22/11

TestAmerica

rptSTLRchSaSummary2 V5.2.15 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.

010

Client: Washington Closure Hanford

8/22/11

Job Number: 280-18551-1
Sdg Number: JP0240

General Chemistry

Client Sample ID: **J1K8F2**

Lab Sample ID: 280-18551-1
Client Matrix: Solid
% Moisture: 3.4

Date Sampled: 07/26/2011 0755
Date Received: 07/28/2011 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate Nitrite as N-Soluble	0.52	B M	mg/Kg	0.29	0.73	1.0	353.2
Analysis Batch: 280-79521	Analysis Date: 08/02/2011 1432						DryWt Corrected: Y
Chloride-Soluble	2.7	B	mg/Kg	2.0	5.1	1.0	9056M
Analysis Batch: 280-79341	Analysis Date: 08/01/2011 1959						DryWt Corrected: Y
Nitrate as N-Soluble	0.81	B J	mg/Kg	0.32	2.5	1.0	9056M
Analysis Batch: 280-79325	Analysis Date: 08/01/2011 1959						DryWt Corrected: Y
Bromide-Soluble	0.39	U	mg/Kg	0.39	2.0	1.0	9056M
Analysis Batch: 280-79341	Analysis Date: 08/01/2011 1959						DryWt Corrected: Y
Nitrite as N-Soluble	0.34	U R	mg/Kg	0.34	2.5	1.0	9056M
Analysis Batch: 280-79325	Analysis Date: 08/01/2011 1959						DryWt Corrected: Y
Orthophosphate as P-Soluble	1.7	B J	mg/Kg	1.3	5.1	1.0	9056M
Analysis Batch: 280-79325	Analysis Date: 08/01/2011 1959						DryWt Corrected: Y
Sulfate-Soluble	5.3		mg/Kg	1.8	5.1	1.0	9056M
Analysis Batch: 280-79341	Analysis Date: 08/01/2011 1959						DryWt Corrected: Y
Fluoride-Soluble	1.1	B	mg/Kg	0.83	5.1	1.0	9056M
Analysis Batch: 280-79341	Analysis Date: 08/01/2011 1959						DryWt Corrected: Y

Analyte	Result	Qual	Units	RL	RL	Dil	Method
pH adj. to 25 deg C-Soluble	9.14	J	SU	0.0100	0.0100	1.0	9045C
Analysis Batch: 280-79321	Analysis Date: 07/29/2011 2103						DryWt Corrected: N
Percent Moisture	3.4		%	0.10	0.10	1.0	D-2216
Analysis Batch: 280-78836	Analysis Date: 07/28/2011 1640						DryWt Corrected: N

011

Client: Washington Closure Hanford

8/22/11

Job Number: 280-18551-1
Sdg Number: JP0240

General Chemistry

Client Sample ID: **J1K8F3**

Lab Sample ID: 280-18551-2
Client Matrix: Solid
% Moisture: 2.8

Date Sampled: 07/26/2011 0810
Date Received: 07/28/2011 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate Nitrite as N-Soluble	1.9		mg/Kg	0.30	0.75	1.0	353.2
Analysis Batch: 280-79521		Analysis Date: 08/02/2011 1431					DryWt Corrected: Y
Chloride-Soluble	4.6	B M	mg/Kg	2.0	5.1	1.0	9056M
Analysis Batch: 280-79341		Analysis Date: 08/01/2011 2016					DryWt Corrected: Y
Nitrate as N-Soluble	2.1	B J	mg/Kg	0.32	2.5	1.0	9056M
Analysis Batch: 280-79325		Analysis Date: 08/01/2011 2016					DryWt Corrected: Y
Bromide-Soluble	0.40	U	mg/Kg	0.40	2.0	1.0	9056M
Analysis Batch: 280-79341		Analysis Date: 08/01/2011 2016					DryWt Corrected: Y
Nitrite as N-Soluble	0.34	U R	mg/Kg	0.34	2.5	1.0	9056M
Analysis Batch: 280-79325		Analysis Date: 08/01/2011 2016					DryWt Corrected: Y
Orthophosphate as P-Soluble	1.3	U R	mg/Kg	1.3	5.1	1.0	9056M
Analysis Batch: 280-79325		Analysis Date: 08/01/2011 2016					DryWt Corrected: Y
Sulfate-Soluble	55.7		mg/Kg	1.8	5.1	1.0	9056M
Analysis Batch: 280-79341		Analysis Date: 08/01/2011 2016					DryWt Corrected: Y
Fluoride-Soluble	2.1	B	mg/Kg	0.84	5.1	1.0	9056M
Analysis Batch: 280-79341		Analysis Date: 08/01/2011 2016					DryWt Corrected: Y

Analyte	Result	Qual	Units	RL	RL	Dil	Method
pH adj. to 25 deg C-Soluble	9.20	J	SU	0.0100	0.0100	1.0	9045C
Analysis Batch: 280-79321		Analysis Date: 07/29/2011 2106					DryWt Corrected: N
Percent Moisture	2.8		%	0.10	0.10	1.0	D-2216
Analysis Batch: 280-78836		Analysis Date: 07/28/2011 1640					DryWt Corrected: N

Client: Washington Closure Hanford

8/22/11

Job Number: 280-18551-1
Sdg Number: JP0240

General Chemistry

Client Sample ID: **J1K8F4**

Lab Sample ID: 280-18551-3
Client Matrix: Solid
% Moisture: 2.4

Date Sampled: 07/26/2011 0820
Date Received: 07/28/2011 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate Nitrite as N-Soluble	0.75	B M	mg/Kg	0.30	0.76	1.0	353.2
Analysis Batch: 280-79521		Analysis Date: 08/02/2011 1437					DryWt Corrected: Y
Chloride-Soluble	4.8	B	mg/Kg	2.0	5.0	1.0	9056M
Analysis Batch: 280-79341		Analysis Date: 08/01/2011 2106					DryWt Corrected: Y
Nitrate as N-Soluble	1.4	B J	mg/Kg	0.31	2.5	1.0	9056M
Analysis Batch: 280-79325		Analysis Date: 08/01/2011 2106					DryWt Corrected: Y
Bromide-Soluble	0.39	U	mg/Kg	0.39	2.0	1.0	9056M
Analysis Batch: 280-79341		Analysis Date: 08/01/2011 2106					DryWt Corrected: Y
Nitrite as N-Soluble	0.69	B J	mg/Kg	0.33	2.5	1.0	9056M
Analysis Batch: 280-79325		Analysis Date: 08/01/2011 2106					DryWt Corrected: Y
Orthophosphate as P-Soluble	1.8	B J	mg/Kg	1.2	5.0	1.0	9056M
Analysis Batch: 280-79325		Analysis Date: 08/01/2011 2106					DryWt Corrected: Y
Sulfate-Soluble	21.1		mg/Kg	1.7	5.0	1.0	9056M
Analysis Batch: 280-79341		Analysis Date: 08/01/2011 2106					DryWt Corrected: Y
Fluoride-Soluble	1.6	B	mg/Kg	0.82	5.0	1.0	9056M
Analysis Batch: 280-79341		Analysis Date: 08/01/2011 2106					DryWt Corrected: Y

Analyte	Result	Qual	Units	RL	RL	Dil	Method
pH adj. to 25 deg C-Soluble	9.38	J	SU	0.0100	0.0100	1.0	9045C
Analysis Batch: 280-79321		Analysis Date: 07/29/2011 2109					DryWt Corrected: N
Percent Moisture	2.4		%	0.10	0.10	1.0	D-2216
Analysis Batch: 280-78836		Analysis Date: 07/28/2011 1640					DryWt Corrected: N

Client: Washington Closure Hanford

8/22/11

Job Number: 280-18551-1
Sdg Number: JP0240

General Chemistry

Client Sample ID: **J1K8F5**

Lab Sample ID: 280-18551-4
Client Matrix: Solid
% Moisture: 3.2

Date Sampled: 07/26/2011 0830
Date Received: 07/28/2011 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate Nitrite as N-Soluble	2.0		mg/Kg	0.31	0.77	1.0	353.2
Analysis Batch: 280-79521		Analysis Date: 08/02/2011 1459					DryWt Corrected: Y
Chloride-Soluble	3.1	B	mg/Kg	2.0	5.1	1.0	9056M
Analysis Batch: 280-79341		Analysis Date: 08/01/2011 2156					DryWt Corrected: Y
Nitrate as N-Soluble	2.2	B J	mg/Kg	0.32	2.5	1.0	9056M
Analysis Batch: 280-79325		Analysis Date: 08/01/2011 2156					DryWt Corrected: Y
Bromide-Soluble	0.39	U	mg/Kg	0.39	2.0	1.0	9056M
Analysis Batch: 280-79341		Analysis Date: 08/01/2011 2156					DryWt Corrected: Y
Nitrite as N-Soluble	0.34	U R	mg/Kg	0.34	2.5	1.0	9056M
Analysis Batch: 280-79325		Analysis Date: 08/01/2011 2156					DryWt Corrected: Y
Orthophosphate as P-Soluble	1.3	U R	mg/Kg	1.3	5.1	1.0	9056M
Analysis Batch: 280-79325		Analysis Date: 08/01/2011 2156					DryWt Corrected: Y
Sulfate-Soluble	17.0		mg/Kg	1.8	5.1	1.0	9056M
Analysis Batch: 280-79341		Analysis Date: 08/01/2011 2156					DryWt Corrected: Y
Fluoride-Soluble	1.8	B	mg/Kg	0.83	5.1	1.0	9056M
Analysis Batch: 280-79341		Analysis Date: 08/01/2011 2156					DryWt Corrected: Y

Analyte	Result	Qual	Units	RL	RL	Dil	Method
pH adj. to 25 deg C-Soluble	9.37	J	SU	0.0100	0.0100	1.0	9045C
Analysis Batch: 280-79321		Analysis Date: 07/29/2011 2110					DryWt Corrected: N
Percent Moisture	3.2		%	0.10	0.10	1.0	D-2216
Analysis Batch: 280-78836		Analysis Date: 07/28/2011 1640					DryWt Corrected: N

014

Client: Washington Closure Hanford

8/22/11

Job Number: 280-18551-1
Sdg Number: JP0240

General Chemistry

Client Sample ID: **J1K8F6**

Lab Sample ID: 280-18551-5
Client Matrix: Solid
% Moisture: 2.6

Date Sampled: 07/26/2011 0835
Date Received: 07/28/2011 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate Nitrite as N-Soluble	1.3		mg/Kg	0.31	0.77	1.0	353.2
Analysis Batch: 280-79521		Analysis Date: 08/02/2011 1501					DryWt Corrected: Y
Chloride-Soluble	3.4	B	mg/Kg	2.0	5.1	1.0	9056M
Analysis Batch: 280-79341		Analysis Date: 08/01/2011 2212					DryWt Corrected: Y
Nitrate as N-Soluble	1.5	B J	mg/Kg	0.32	2.6	1.0	9056M
Analysis Batch: 280-79325		Analysis Date: 08/01/2011 2212					DryWt Corrected: Y
Bromide-Soluble	0.40	U	mg/Kg	0.40	2.1	1.0	9056M
Analysis Batch: 280-79341		Analysis Date: 08/01/2011 2212					DryWt Corrected: Y
Nitrite as N-Soluble	0.35	U R	mg/Kg	0.35	2.6	1.0	9056M
Analysis Batch: 280-79325		Analysis Date: 08/01/2011 2212					DryWt Corrected: Y
Orthophosphate as P-Soluble	1.3	U R	mg/Kg	1.3	5.1	1.0	9056M
Analysis Batch: 280-79325		Analysis Date: 08/01/2011 2212					DryWt Corrected: Y
Sulfate-Soluble	17.0		mg/Kg	1.8	5.1	1.0	9056M
Analysis Batch: 280-79341		Analysis Date: 08/01/2011 2212					DryWt Corrected: Y
Fluoride-Soluble	1.8	B	mg/Kg	0.84	5.1	1.0	9056M
Analysis Batch: 280-79341		Analysis Date: 08/01/2011 2212					DryWt Corrected: Y

Analyte	Result	Qual	Units	RL	RL	Dil	Method
pH adj. to 25 deg C-Soluble	9.39	J	SU	0.0100	0.0100	1.0	9045C
Analysis Batch: 280-79321		Analysis Date: 07/29/2011 2112					DryWt Corrected: N
Percent Moisture	2.6		%	0.10	0.10	1.0	D-2216
Analysis Batch: 280-78836		Analysis Date: 07/28/2011 1640					DryWt Corrected: N

General Chemistry

Client Sample ID: **J1K8F7**

Lab Sample ID: 280-18551-6
Client Matrix: Solid
% Moisture: 3.4

Date Sampled: 07/26/2011 0845
Date Received: 07/28/2011 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate Nitrite as N-Soluble	0.34	B	mg/Kg	0.30	0.76	1.0	353.2
Analysis Batch: 280-79521	Analysis Date: 08/02/2011 1441						DryWt Corrected: Y
Chloride-Soluble	2.0	U	mg/Kg	2.0	5.1	1.0	9056M
Analysis Batch: 280-79341	Analysis Date: 08/01/2011 2229						DryWt Corrected: Y
Nitrate as N-Soluble	0.85	B J	mg/Kg	0.32	2.6	1.0	9056M
Analysis Batch: 280-79325	Analysis Date: 08/01/2011 2229						DryWt Corrected: Y
Bromide-Soluble	0.40	U	mg/Kg	0.40	2.1	1.0	9056M
Analysis Batch: 280-79341	Analysis Date: 08/01/2011 2229						DryWt Corrected: Y
Nitrite as N-Soluble	0.34	U R	mg/Kg	0.34	2.6	1.0	9056M
Analysis Batch: 280-79325	Analysis Date: 08/01/2011 2229						DryWt Corrected: Y
Orthophosphate as P-Soluble	2.6	B J	mg/Kg	1.3	5.1	1.0	9056M
Analysis Batch: 280-79325	Analysis Date: 08/01/2011 2229						DryWt Corrected: Y
Sulfate-Soluble	6.1		mg/Kg	1.8	5.1	1.0	9056M
Analysis Batch: 280-79341	Analysis Date: 08/01/2011 2229						DryWt Corrected: Y
Fluoride-Soluble	1.8	B	mg/Kg	0.84	5.1	1.0	9056M
Analysis Batch: 280-79341	Analysis Date: 08/01/2011 2229						DryWt Corrected: Y

Analyte	Result	Qual	Units	RL	RL	Dil	Method
pH adj. to 25 deg C-Soluble	9.24	J	SU	0.0100	0.0100	1.0	9045C
Analysis Batch: 280-79321	Analysis Date: 07/29/2011 2113						DryWt Corrected: N
Percent Moisture	3.4		%	0.10	0.10	1.0	D-2216
Analysis Batch: 280-78836	Analysis Date: 07/28/2011 1640						DryWt Corrected: N

016

General Chemistry

Client Sample ID: **J1K8F8**

Lab Sample ID: 280-18551-7
Client Matrix: Solid
% Moisture: 3.2

Date Sampled: 07/26/2011 0855
Date Received: 07/28/2011 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate Nitrite as N-Soluble	1.3		mg/Kg	0.30	0.74	1.0	353.2
Analysis Batch: 280-79521	Analysis Date: 08/02/2011 1452						DryWt Corrected: Y
Chloride-Soluble	3.0	B	mg/Kg	2.0	5.1	1.0	9056M
Analysis Batch: 280-79341	Analysis Date: 08/01/2011 2246						DryWt Corrected: Y
Nitrate as N-Soluble	1.6	B J	mg/Kg	0.32	2.6	1.0	9056M
Analysis Batch: 280-79325	Analysis Date: 08/01/2011 2246						DryWt Corrected: Y
Bromide-Soluble	0.40	U	mg/Kg	0.40	2.0	1.0	9056M
Analysis Batch: 280-79341	Analysis Date: 08/01/2011 2246						DryWt Corrected: Y
Nitrite as N-Soluble	0.34	U R	mg/Kg	0.34	2.6	1.0	9056M
Analysis Batch: 280-79325	Analysis Date: 08/01/2011 2246						DryWt Corrected: Y
Orthophosphate as P-Soluble	1.3	B J	mg/Kg	1.3	5.1	1.0	9056M
Analysis Batch: 280-79325	Analysis Date: 08/01/2011 2246						DryWt Corrected: Y
Sulfate-Soluble	20.4		mg/Kg	1.8	5.1	1.0	9056M
Analysis Batch: 280-79341	Analysis Date: 08/01/2011 2246						DryWt Corrected: Y
Fluoride-Soluble	1.4	B	mg/Kg	0.84	5.1	1.0	9056M
Analysis Batch: 280-79341	Analysis Date: 08/01/2011 2246						DryWt Corrected: Y

Analyte	Result	Qual	Units	RL	RL	Dil	Method
pH adj. to 25 deg C-Soluble	9.33	J	SU	0.0100	0.0100	1.0	9045C
Analysis Batch: 280-79321	Analysis Date: 07/29/2011 2114						DryWt Corrected: N
Percent Moisture	3.2		%	0.10	0.10	1.0	D-2216
Analysis Batch: 280-78836	Analysis Date: 07/28/2011 1640						DryWt Corrected: N

Client: Washington Closure Hanford

8/22/11

Job Number: 280-18551-1
Sdg Number: JP0240

General Chemistry

Client Sample ID: **J1K8F9**

Lab Sample ID: 280-18551-8
Client Matrix: Solid
% Moisture: 3.0

Date Sampled: 07/26/2011 0900
Date Received: 07/28/2011 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate Nitrite as N-Soluble	3.7		mg/Kg	0.29	0.73	1.0	353.2
Analysis Batch: 280-79521		Analysis Date: 08/02/2011 1453					DryWt Corrected: Y
Chloride-Soluble	3.2	B	mg/Kg	2.0	5.1	1.0	9056M
Analysis Batch: 280-79341		Analysis Date: 08/01/2011 2302					DryWt Corrected: Y
Nitrate as N-Soluble	4.0	J	mg/Kg	0.32	2.5	1.0	9056M
Analysis Batch: 280-79325		Analysis Date: 08/01/2011 2302					DryWt Corrected: Y
Bromide-Soluble	0.39	U	mg/Kg	0.39	2.0	1.0	9056M
Analysis Batch: 280-79341		Analysis Date: 08/01/2011 2302					DryWt Corrected: Y
Nitrite as N-Soluble	0.34	U R	mg/Kg	0.34	2.5	1.0	9056M
Analysis Batch: 280-79325		Analysis Date: 08/01/2011 2302					DryWt Corrected: Y
Orthophosphate as P-Soluble	2.0	B J	mg/Kg	1.3	5.1	1.0	9056M
Analysis Batch: 280-79325		Analysis Date: 08/01/2011 2302					DryWt Corrected: Y
Sulfate-Soluble	10.3		mg/Kg	1.7	5.1	1.0	9056M
Analysis Batch: 280-79341		Analysis Date: 08/01/2011 2302					DryWt Corrected: Y
Fluoride-Soluble	1.8	B	mg/Kg	0.83	5.1	1.0	9056M
Analysis Batch: 280-79341		Analysis Date: 08/01/2011 2302					DryWt Corrected: Y

Analyte	Result	Qual	Units	RL	RL	Dil	Method
pH adj. to 25 deg C-Soluble	9.24	J	SU	0.0100	0.0100	1.0	9045C
Analysis Batch: 280-79321		Analysis Date: 07/29/2011 2116					DryWt Corrected: N
Percent Moisture	3.0		%	0.10	0.10	1.0	D-2216
Analysis Batch: 280-78836		Analysis Date: 07/28/2011 1640					DryWt Corrected: N

018

Client: Washington Closure Hanford

8/22/11

Job Number: 280-18551-1
Sdg Number: JP0240

General Chemistry

Client Sample ID: **J1K8H0**

Lab Sample ID: 280-18551-9
Client Matrix: Solid
% Moisture: 3.6

Date Sampled: 07/26/2011 0910
Date Received: 07/28/2011 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate Nitrite as N-Soluble	0.31	U	mg/Kg	0.31	0.77	1.0	353.2
Analysis Batch: 280-79521		Analysis Date: 08/02/2011 1455					DryWt Corrected: Y
Chloride-Soluble	2.0	U	mg/Kg	2.0	5.1	1.0	9056M
Analysis Batch: 280-79341		Analysis Date: 08/01/2011 2319					DryWt Corrected: Y
Nitrate as N-Soluble	0.52	B J	mg/Kg	0.32	2.5	1.0	9056M
Analysis Batch: 280-79325		Analysis Date: 08/01/2011 2319					DryWt Corrected: Y
Bromide-Soluble	0.39	U	mg/Kg	0.39	2.0	1.0	9056M
Analysis Batch: 280-79341		Analysis Date: 08/01/2011 2319					DryWt Corrected: Y
Nitrite as N-Soluble	0.34	U R	mg/Kg	0.34	2.5	1.0	9056M
Analysis Batch: 280-79325		Analysis Date: 08/01/2011 2319					DryWt Corrected: Y
Orthophosphate as P-Soluble	1.3	U R	mg/Kg	1.3	5.1	1.0	9056M
Analysis Batch: 280-79325		Analysis Date: 08/01/2011 2319					DryWt Corrected: Y
Sulfate-Soluble	7.7		mg/Kg	1.8	5.1	1.0	9056M
Analysis Batch: 280-79341		Analysis Date: 08/01/2011 2319					DryWt Corrected: Y
Fluoride-Soluble	0.84	U	mg/Kg	0.84	5.1	1.0	9056M
Analysis Batch: 280-79341		Analysis Date: 08/01/2011 2319					DryWt Corrected: Y

Analyte	Result	Qual	Units	RL	RL	Dil	Method
pH adj. to 25 deg C-Soluble	9.37	J	SU	0.0100	0.0100	1.0	9045C
Analysis Batch: 280-79321		Analysis Date: 07/29/2011 2118					DryWt Corrected: N
Percent Moisture	3.6		%	0.10	0.10	1.0	D-2216
Analysis Batch: 280-78836		Analysis Date: 07/28/2011 1640					DryWt Corrected: N

019

Client: Washington Closure Hanford

8/22/11

Job Number: 280-18551-1
Sdg Number: JP0240

General Chemistry

Client Sample ID: **J1K8H1**

Lab Sample ID: 280-18551-10
Client Matrix: Solid
% Moisture: 2.2

Date Sampled: 07/26/2011 0920
Date Received: 07/28/2011 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate Nitrite as N-Soluble	0.49	B	mg/Kg	0.30	0.75	1.0	353.2
Analysis Batch: 280-79521	Analysis Date: 08/02/2011 1456						DryWt Corrected: Y
Chloride-Soluble	2.6	B	mg/Kg	2.0	5.1	1.0	9056M
Analysis Batch: 280-79341	Analysis Date: 08/01/2011 2336						DryWt Corrected: Y
Nitrate as N-Soluble	0.79	B J	mg/Kg	0.32	2.5	1.0	9056M
Analysis Batch: 280-79325	Analysis Date: 08/01/2011 2336						DryWt Corrected: Y
Bromide-Soluble	0.39	U	mg/Kg	0.39	2.0	1.0	9056M
Analysis Batch: 280-79341	Analysis Date: 08/01/2011 2336						DryWt Corrected: Y
Nitrite as N-Soluble	0.34	U R	mg/Kg	0.34	2.5	1.0	9056M
Analysis Batch: 280-79325	Analysis Date: 08/01/2011 2336						DryWt Corrected: Y
Orthophosphate as P-Soluble	1.3	U R	mg/Kg	1.3	5.1	1.0	9056M
Analysis Batch: 280-79325	Analysis Date: 08/01/2011 2336						DryWt Corrected: Y
Sulfate-Soluble	7.0		mg/Kg	1.8	5.1	1.0	9056M
Analysis Batch: 280-79341	Analysis Date: 08/01/2011 2336						DryWt Corrected: Y
Fluoride-Soluble	1.4	B	mg/Kg	0.83	5.1	1.0	9056M
Analysis Batch: 280-79341	Analysis Date: 08/01/2011 2336						DryWt Corrected: Y

Analyte	Result	Qual	Units	RL	RL	Dil	Method
pH adj. to 25 deg C-Soluble	9.37	J	SU	0.0100	0.0100	1.0	9045C
Analysis Batch: 280-79321	Analysis Date: 07/29/2011 2121						DryWt Corrected: N
Percent Moisture	2.2		%	0.10	0.10	1.0	D-2216
Analysis Batch: 280-78836	Analysis Date: 07/28/2011 1640						DryWt Corrected: N

020

General Chemistry

Client Sample ID: **J1K8H2**

Lab Sample ID: 280-18551-11
Client Matrix: Solid

% Moisture: 1.3

Date Sampled: 07/26/2011 0810
Date Received: 07/28/2011 0900

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Nitrate Nitrite as N-Soluble	0.70	B	mg/Kg	0.30	0.74	1.0	353.2
Analysis Batch: 280-79521		Analysis Date: 08/02/2011 1458					DryWt Corrected: Y
Chloride-Soluble	3.2	B	mg/Kg	2.0	5.0	1.0	9056M
Analysis Batch: 280-79341		Analysis Date: 08/01/2011 2352					DryWt Corrected: Y
Nitrate as N-Soluble	1.1	B J	mg/Kg	0.31	2.5	1.0	9056M
Analysis Batch: 280-79325		Analysis Date: 08/01/2011 2352					DryWt Corrected: Y
Bromide-Soluble	0.39	U	mg/Kg	0.39	2.0	1.0	9056M
Analysis Batch: 280-79341		Analysis Date: 08/01/2011 2352					DryWt Corrected: Y
Nitrite as N-Soluble	0.34	U R	mg/Kg	0.34	2.5	1.0	9056M
Analysis Batch: 280-79325		Analysis Date: 08/01/2011 2352					DryWt Corrected: Y
Orthophosphate as P-Soluble	1.2	U R	mg/Kg	1.2	5.0	1.0	9056M
Analysis Batch: 280-79325		Analysis Date: 08/01/2011 2352					DryWt Corrected: Y
Sulfate-Soluble	39.3		mg/Kg	1.7	5.0	1.0	9056M
Analysis Batch: 280-79341		Analysis Date: 08/01/2011 2352					DryWt Corrected: Y
Fluoride-Soluble	2.0	B	mg/Kg	0.82	5.0	1.0	9056M
Analysis Batch: 280-79341		Analysis Date: 08/01/2011 2352					DryWt Corrected: Y

Analyte	Result	Qual	Units	RL	RL	Dil	Method
pH adj. to 25 deg C-Soluble	9.37	J	SU	0.0100	0.0100	1.0	9045C
Analysis Batch: 280-79321		Analysis Date: 07/29/2011 2123					DryWt Corrected: N
Percent Moisture	1.3		%	0.10	0.10	1.0	D-2216
Analysis Batch: 280-78836		Analysis Date: 07/28/2011 1640					DryWt Corrected: N

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

August 10, 2011

Attention: Joan Kessner

SAF Number	:	RC-107
Date SDG Closed	:	July 27, 2011
Number of Samples	:	Eleven (11)
Sample Type	:	Soil
SDG Number	:	JP0240
Data Deliverable	:	7– Day / Summary

CASE NARRATIVE

I. Introduction

On July 27, 2011 eleven soil samples were received at TestAmerica for radiochemical analysis. Upon receipt, the samples were assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID:

WCH ID#	TARL ID#	MATRIX	DATE OF RECEIPT
J1K8F2	MK70F	SOIL	7/27/11
J1K8F3	MK70L	SOIL	7/27/11
J1K8F4	MK70P	SOIL	7/27/11
J1K8F5	MK70V	SOIL	7/27/11
J1K8F6	MK70W	SOIL	7/27/11
J1K8F7	MK70X	SOIL	7/27/11
J1K8F8	MK700	SOIL	7/27/11
J1K8F9	MK702	SOIL	7/27/11
J1K8H0	MK703	SOIL	7/27/11
J1K8H1	MK706	SOIL	7/27/11
J1K8H2	MK707	SOIL	7/27/11

II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in.

III. Analytical Results/Methodology

2800 George Washington Way Richland, WA 99354 tel 509.375.3131 fax 509.375.5590 www.testamericainc.com
TestAmerica Laboratories, Inc.

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:

Alpha Spectroscopy
Plutonium-238, -239/240 by method RL-ALP-002
Uranium 234, 235 and 238 by method RL-ALP-015
Gas Proportional Counting
Strontium-90 by method RL-GPC-003
Gamma Spectroscopy
Gamma Spec by method RL-GAM-001
Liquid Scintillation Counting
Technetium-99 by method RL-LSC-013
Tritium by method RL-LSC-005
Carbon-14 by method RL-LSC-008
Nickel-63 by method RL-LCS-017
Chemical Analysis
Hexavalent Chromium by EPA method 7196A

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

Alpha Spectroscopy
Plutonium-238, -239/240 by method RL-ALP-002:
The LCS, batch blank, samples and sample duplicate (J1K8F2) results are within contractual requirements.

Uranium 234, 235 and 238 by method RL-ALP-015:
The LCS, batch blank, samples and sample duplicate (J1K8F3) results are within contractual requirements.

Gas Proportional Counting
Strontium-90 by method RL-GPC-003:
The LCS, batch blank, samples and sample duplicate (J1K8H1) results are within contractual requirements.

Gamma Spectroscopy
Gamma Spec by method RL-GAM-001:

024

The CRDL was not met for some of the analytes. Except as noted, the LCS, batch blank, samples and sample duplicate (J1K8H0) results are within contractual requirements.

Liquid Scintillation Counting

Technetium-99 by method RL-LSC-013:

The sample matrix spike (J1K8F7) and sample J1K8F8 were switched during the original analysis. Sample J1K8F8 was re-analyzed in batch 1215087 to confirm the switch, the sample activity is below the CRDL. Except as noted; the LCS, batch blank, samples, sample duplicate (J1K8F6) and sample matrix spike (J1K8F7) results are within contractual requirements.

Tritium by method RL-LSC-005:

The LCS, batch blank, samples and sample duplicate (J1K8F8) results are within contractual requirements.

Carbon-14 by method RL-LSC-008:

The LCS, batch blank, samples and sample duplicate (J1K8F4) results are within contractual requirements.

Nickel-63 by method RL-LCS-017:

The LCS, batch blank, samples and sample duplicate (J1K8F5) results are within contractual requirements.

Chemical Analysis

Hexavalent Chromium by EPA method 7196A

The LCS, batch blank, samples, sample duplicate (J1K8F2), and sample matrix spike (J1K8F2) 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

025

TestAmerica Laboratories, Inc.

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-084	Page 1 of 6

Collector: Q Stowe	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code: ~~8L~~ 8B (on 7/26/11)	Data Turnaround: ~~21~~ 7 Days (on 7/26/11)		
Project Designation: 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 132-H-3 BCL-A Verification		SAF No.: RC-107
Ice Chest No.: NA	Field Logbook No.: EL 1627-05	COA: 0132H32000	Method of Shipment: Government Vehicle/FedEx
Shipped To: TestAmerica Incorporated, Richland	Offsite Property No.: NA		Bill of Lading/Air Bill No.: NA

POSSIBLE SAMPLE HAZARDS/REMARKS: None (on 7/26/11)

Special Handling and/or Storage: ~~None~~ Cool 4°C (on 7/26/11)

REVIEWED BY DATE 7-27-11

QNOC #27038 (Rev 7/27/11)
SDG #JP0240
COC #J1G270465
Report: 8/3/11

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions	Chromium Hex - 7196	See item (2) in Special Instructions	PCBs - 8082	PAHs - 8310	Carbon-14; Tritium - H3 Low Level Soil	See item (3) in Special Instructions	Isotopic Uranium	Isotopic Plutonium	Nickel-63; Strontium-89,90 – Total Sr
Preservation				None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None	None
Type of Container				G/P	G/P	G/P	aG	aG	G/P	G/P	G/P	G/P	G/P
No. of Container(s)				1	1	1	1	1	1	1	1	1	1
Volume				60mL	60mL	125mL	120mL	120mL	120mL	500mL	60mL	60mL	60mL
~~J1K8F0~~	~~SOIL~~												
~~J1K8F1~~	~~SOIL~~												
J1K8F2 MK70F	SOIL	~~7/27/11~~ 7/26/11	0755		X				X	X	X	X	X
J1K8F3 MK70L	SOIL	7/26/11	0810		X				X	X	X	X	X
J1K8F4 MK70P	SOIL	7/26/11	0820		X				X	X	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: Quincy Stowe	7/26/11 1545	Received By/Stored In: JU Fullmer	7/26/11 1545
Relinquished By/Removed From: JU Fullmer	7/26/11 1745	Received By/Stored In: Bingham	7/26/11 1745
Relinquished By/Removed From: Bingham	7/27/11 0840	Received By/Stored In: WCH A. Charles Hauffe	7/27/11 0840
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) IC Anions - 9056 Modified {Bromide, Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate}; NO2/NO3 - 353.2; pH (Soil) - 9045
(3) Gamma Spec - Client List {Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable}

J1G270465

JP0240 AP 7-27-11

Matrix *: S=Soil, SE=Sediment, SO=Solid, Sl=Sludge, W=Water, O=Oil, A=Air, DS=Drum Solids, DL=Drum Liquids, T=Tissue, Wf=Wipe, L=Liquid, V=Vegetation, X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

TestAmerica Laboratories, Inc.

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-084	Page 1 of 6

Collector: Q Stowe	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code: ~~8L~~ 8B	Data Turnaround: ~~21~~ 7 Days		
Project Designation: 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 132-H-3 BCL-A Verification		SAF No.: RC-107
Ice Chest No.: NA	Field Logbook No.: EL 1627-05	COA: 0132H32000	Method of Shipment: Government Vehicle/FedEx
Shipped To: TestAmerica Incorporated, Richland	Offsite Property No.: NA		Bill of Lading/Air Bill No.: NA

POSSIBLE SAMPLE HAZARDS/REMARKS

None

Special Handling and/or Storage

~~None~~ Cool 4C

DH 7/21/11

RW 7/27/11

SDG# JP0245
LOT# J1G270465

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None	None
Type of Container	G/P	G/P	G/P	aG	aG	G/P	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	60mL	60mL	125mL	120mL	120mL	120mL	500mL	60mL	60mL	60mL
SAMPLE ANALYSIS	See item (1) in Special Instructions	Chromium Hex - 7196	See item (2) in Special Instructions	PCBs - 8082	PAHs - 8310	Carbon-14; Tritium - H3 Low Level Soil	See item (3) in Special Instructions	Isotopic Uranium	Isotopic Plutonium	Nickel-63; Strontium-89,90 -- Total Sr

Sample No.	Matrix *	Sample Date	Sample Time									
J1K8F5 MK70V	SOIL	7/26/11	0830		X				X	X	X	X	X
J1K8F6 MK70W	SOIL	7/26/11	0835		X				X	X	X	X	X
J1K8F7 MK70X	SOIL	7/26/11	0845		X				X	X	X	X	X
J1K8F8 MK700	SOIL	7/26/11	0855		X				X	X	X	X	X
J1K8F9 MK702	SOIL	7/26/11	0900		X				X	X	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: Quincy Stowe	7/26/11 1545	JV Fullmer	7/26/11 1545
Relinquished By/Removed From: JV Fullmer	7/26/11 1745	Chris Bingham	7/26/11 1745
Relinquished By/Removed From: Chris Bingham	7/27/11 0840	Received By/Stored In: TAL Hayley Garnock	7/27/11 0840
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) IC Anions - 9056 Modified {Bromide, Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate}; NO2/NO3 - 353.2; pH (Soil) - 9045
(3) Gamma Spec - Client List {Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable}

REVIEWED BY DATE 7-27-11

JP0245
JP0240
JP0240 AP 7-26-11

Matrix *: S=Soil; SE=Sediment; SO=Solid; SJ=Sludge; W=Water; O=Oil; A=Air; DS=Drum Solids; DL=Drum Liquids; T=Tissue; WI=Wipe; L=Liquid; V=Vegetation; X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

TestAmerica Laboratories, Inc.

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-084	Page 5 of 6
Collector: Q Stowe	Company Contact: Joan Kessner; Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: ~~01~~ 03
Project Designation: 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 132-H-3 BCL-A Verification	SAF No.: RC-107	Data Turnaround: ~~21~~ 7 Days
Ice Chest No.: NA	Field Logbook No.: EL 1627-05; COA: 0132H32000	Method of Shipment: Government Vehicle/FedEx	
Shipped To: TestAmerica Incorporated, Richland	Offsite Property No.: NA	Bill of Lading/Air Bill No.: NA	

POSSIBLE SAMPLE HAZARDS/REMARKS: None 7/26/11

Special Handling and/or Storage: ~~None~~ Cool 4C DH 7/26/11

SDG # JP0248 LOT # J1G270465

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None	None
Type of Container	G/P	G/P	G/P	aG	aG	G/P	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	60mL	60mL	125mL	125mL	120mL	120mL	500mL	60mL	60mL	60mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	See item (2) in Special Instructions.	PCBs - 8082	PAHs - 8310	Carbon-14; Tritium - H3 Low Level Soil	See item (3) in Special Instructions.	Isotopic Uranium	Isotopic Plutonium	Nickel-63; Strontium-89,90 -- Total Sr

Sample No.	Matrix *	Sample Date	Sample Time									
J1K8H0 MK703	SOIL	7/26/11	0910		X				X	X	X	X	X
J1K8H1 MK706	SOIL	7/26/11	0920		X				X	X	X	X	X
J1K8H2 MK707	SOIL	7/26/11	0810		X				X	X	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From: Quinny Stowe	7/26/11 1545	Received By/Stored In: JV Fullmer	1545 7/26/11
Relinquished By/Removed From: JV Fullmer	7/26/11 1745	Received By/Stored In: Burgham	7/26/11 1745
Relinquished By/Removed From: Burgham	7/27/11 0840	Received By/Stored In: TL Carnes	WCH 0840 7/27/11
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) IC Anions - 9056 Modified {Bromide, Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate}; NO2/NO3 - 353.2; pH (Soil) - 9045
(3) Gamma Spec - Client List {Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable}

JP0240 ~~JP0245~~ AP 7-27-11 ~~JP0240~~ AP 7-26-11

REVIEWED BY AP DATE 7-27-11

Matrix *: S=Soil; SB=Sediment; SO=Solid; SL=Sludge; W=Water; O=Oil; A=Air; DS=Drum Solids; DL=Drum Liquids; T=Tissue; WI=Wipe; L=Liquid; V=Vegetation; X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

CASE NARRATIVE

Client: Washington Closure Hanford

Project: WASHINGTON CLOSURE HANFORD

Report Number: 280-18551-1

SDG #: JP0240
SAF#: RC-107

Date SDG Closed: July 28, 2011
Data Deliverable: 7 Day / Summary

CLIENT ID	LAB ID	ANALYSES REQUESTED	ANALYSES PERFORMED
J1K8F2	280-18551-1	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8F3	280-18551-2	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8F4	280-18551-3	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8F5	280-18551-4	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8F6	280-18551-5	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8F7	280-18551-6	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8F8	280-18551-7	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8F9	280-18551-8	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8H0	280-18551-9	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8H1	280-18551-10	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8H2	280-18551-11	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310

I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed in this Case Narrative. 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 signature on the Report Cover.

With exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. All laboratory quality control samples analyzed in conjunction with the samples in this project were within established control limits, with any exceptions noted. Calculations are performed before rounding to avoid round-off errors in calculated results.

This report includes reporting limits (RLs) less than TestAmerica Denver's practical quantitation limits. These reporting limits are being used specifically at the client's request to meet the needs of this project. Please note that data are not normally reported to these levels without qualification, since they are inherently less reliable and potentially less defensible than required by the current NELAC standards.

The results, RLs and MDLs included in this report have been adjusted for dry weight, as appropriate.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 7/28/2011; the samples arrived in good condition, properly preserved and on ice. The temperatures of the coolers at receipt were 4.2 C, 3.0 C, 4.2 C and 4.4 C.

GC SEMIVOLATILES - SW846 8082 - PCBs
No anomalies were encountered.

HPLC - SW846 8310 - PAHs
The RPD between the primary and confirmation columns exceeded 40% for analytes in samples J1K8F6 and J1K8H0. The lower of the two values have been reported, as matrix interference is evident. Associated results have been flagged with an "X".

The LCS associated with batch 280-78874 exhibited the percent recovery outside the control limits, biased high, for Indeno[1,2,3-cd]pyrene, and the associated sample results have been flagged "N". This is an indicator that data may be biased high. As no detectable concentrations of Indeno[1,2,3-cd]pyrene are present in the associated samples, corrective action is deemed unnecessary.

No other anomalies were encountered.

TOTAL METALS - SW846 6010B/7471A
Serial dilution of a digestate in batch 280-78800 indicates that physical and chemical interferences are present for Cobalt and Zinc. Results have been flagged with an "X".

Low levels of Calcium and Zinc are present in the method blank associated with batch 280-78800. Because the concentrations in the method blank are not present at levels greater than half the reporting limit or the associated sample amounts are twenty times greater than the method blank concentration, corrective action is deemed unnecessary.

It can be noted that the sample amount was greater than four times the spike amount for Aluminum, Iron and Manganese in the Matrix Spike performed on sample J1K8F2; therefore, control limits are not applicable.

No other anomalies were encountered.

GENERAL CHEMISTRY - MCAWW 353.2 - NITRATE+NITRITE as N
The Nitrate Nitrite as N duplicate analyses of samples J1K8F2 and J1K8F4 exhibited RPD data outside the control limits, and the associated sample results have been flagged "M". There is no indication that the analytical system was operating out of control, and method accuracy has been verified by the acceptable LCS analysis data; therefore, corrective action is deemed unnecessary.

No other anomalies were encountered.

GENERAL CHEMISTRY - SW846 9056M - ANIONS
The Chloride duplicate analysis of sample J1K8F3 exhibited RPD data outside the control limits, and the associated sample result has been flagged "M". There is no indication that the analytical system was operating out of control, and method accuracy has been verified by the acceptable LCS analysis data; therefore, corrective action is deemed unnecessary.

No other anomalies were encountered.

GENERAL CHEMISTRY - SW846 9045C - PH
No anomalies were encountered.

3.0/2.8/4.2/4.4/4.2

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-084	Page 1 of ~~2~~ 3

Collector Q Stowe	Company Contact Joan Kessner Telephone No. 509-375-4688	Project Coordinator KESSNER, JH	Price Code ~~81~~ 83 (qw 7/26/11)
Project Designation 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 132-H-3 BCL-A Verification	SAF No. RC-107	Data Turnaround ~~21~~ 7 Days (qw 7/26/11)
Ice Chest No. ERC-02-103	Field Logbook No. EL 1627-05 COA 0132H32000	Method of Shipment Government Vehicle/FedEx	
Shipped To 7/26/11 TestAmerica Incorporated, ~~Richland~~ Denver	Offsite Property No. A100824	Bill of Lading/Air Bill No. See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS
None qw 7/26/11

Special Handling and/or Storage
~~None~~ Cool 4°C
qw 7/26/11

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None	None
Type of Container	G/P	G/P	G/P	aG	aG	G/P	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	60mL	60mL	125mL	120mL	120mL	120mL	500mL	60mL	60mL	60mL
SAMPLE ANALYSIS	See item (1) in Special Instructions	Chromium Hex - 7196	See item (2) in Special Instructions	PCBs - 8082	PAHs - 8310	Carbon-14; Tritium - H3 Low Level Soil	See item (3) in Special Instructions	Isotopic Uranium	Isotopic Plutonium	Nickel-63; Strontium-89,90 – Total Sr

031

Sample No.	Matrix *	Sample Date	Sample Time									
~~J1K8F0~~	~~SOIL~~	qw	7/26/11									
~~J1K8F1~~	~~SOIL~~	qw	7/26/11									
J1K8F2	SOIL	7/26/11	0755	X		X	X	X				
J1K8F3	SOIL	7/26/11	0810	X		X	X	X				
J1K8F4	SOIL	7/26/11	0820	X		X	X	X				

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: Quincy Stowe	7/26/11 1545	JV Fullmer	1545 7/26/11
Relinquished By/Removed From: JV Fullmer	1745 7/26/11	Cynthia Burnham	1060 #1 1745 7/26/11
Relinquished By/Removed From: Cynthia Burnham	7/27/11 WCH 1130	Received By/Stored In: Fed Ex	
Relinquished By/Removed From		Received By/Stored In: [illegible]	7/28/11 0900
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)
(2) IC Anions - 9056 Modified (Bromide, Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate); NO2/NO3 - 353.2; pH (Soil) - 9045
(3) Gamma Spec - Client List (Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable)

REVIEWED BY [illegible] DATE 7-27-11

JP0240

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-084	Page 2 of ~~4~~ 3

Collector: Q Stowe	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code: ~~8L~~ 8R	Data Turnaround: ~~21~~ 7 Days		
Project Designation: 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 132-H-3 BCL-A Verification		SAF No.: RC-107
Ice Chest No.: ERC-02-103	Field Logbook No.: EL 1627-05	COA: 0132H32000	Method of Shipment: Government Vehicle/FedEx
Shipped To: TestAmerica Incorporated, ~~Richland~~ Denver	Offsite Property No.: A100824		Bill of Lading/Air Bill No.: See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

None

Special Handling and/or Storage

~~None~~ Cool 4C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None	None
Type of Container	G/P	G/P	G/P	aG	aG	G/P	G/P	G/P	G/P	G/P
No. of Container(s)	1		1	1	1	1	1	1	1	1
Volume	60mL	60mL	125mL	120mL	120mL	120mL	500mL	60mL	60mL	60mL

SAMPLE ANALYSIS

				See item (1) in Special Instructions	Chromium Hex - 7196	See item (2) in Special Instructions	PCBs - 8082	PAHs - 8310	Carbon-14; Tritium - H3 Low Level Soil	See item (3) in Special Instructions	Isotopic Uranium	Isotopic Plutonium	Nickel-63; Strontium-89,90 -- Total Sr
Sample No.	Matrix *	Sample Date	Sample Time										
J1K8F5	SOIL	7/26/11	0830	X		X	X	X					
J1K8F6	SOIL	7/26/11	0835	X		X	X	X					
J1K8F7	SOIL	7/26/11	0845	X		X	X	X					
J1K8F8	SOIL	7/26/11	0855	X		X	X	X					
J1K8F9	SOIL	7/26/11	0900	X		X	X	X					

032

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Quincy Stowe	7/26/11 1545	JV Fullmer	7/26/11 1545
JV Fullmer	7/26/11 1745	1060#1 Bingham	7/26/11 1745
1060 #1 Bingham	7/27/11 1130	WCH Fed Ex	
		7/28/11	0900

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)
(2) IC Anions - 9056 Modified (Bromide, Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate); NO2/NO3 - 353.2; pH (Soil) - 9045
(3) Gamma Spec - Client List (Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable)

REVIEWED BY
DATE

JP0240

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

DH 7/21/11

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-084	Page 2 of 3
Collector: Q Stowe	Company Contact: Joan Kessner; Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: ~~8L~~ 8S (on 7/26)
Project Designation: 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 132-H-3 BCL-A Verification	SAF No.: RC-107	Data Turnaround: ~~21~~ 7 Days (on 7/26)
Ice Chest No.: ERC-02-103	Field Logbook No.: EL 1627-05; COA: 0132H32000	Method of Shipment: Government Vehicle/FedEx	
Shipped To: TestAmerica Incorporated, ~~Richland~~ Denver 7/26/11 CMB	Offsite Property No.: A100824	Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS: None (on 7/26/11)

Special Handling and/or Storage: ~~None~~ Cool 4C DH 7/26/11

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None	None
Type of Container	G/P	G/P	G/P	aG	aG	G/P	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	60mL	60mL	125mL	120mL	120mL	120mL	500mL	60mL	60mL	60mL
SAMPLE ANALYSIS	See item (1) in Special Instructions	Chromium Hex - 7196	See item (2) in Special Instructions	PCBs - 8082	PAHs - 8310	Carbon-14; Tritium - H3 Low Level Soil	See item (3) in Special Instructions	Isotopic Uranium	Isotopic Plutonium	Nickel-63; Strontium-89,90 -- Total Sr

033

Sample No.	Matrix *	Sample Date	Sample Time										
J1K8H0	SOIL	7/26/11	0910	X		X	X	X					
J1K8H1	SOIL	7/26/11	0920	X		X	X	X					
J1K8H2	SOIL	7/26/11	0810	X		X	X	X					

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: Quince Stowe	7/26/11 1545	Received By/Stored In: JV Fullmer	7/26/11 1545
Relinquished By/Removed From: JV Fullmer	7/26/11 1745	Received By/Stored In: [illegible]	7/26/11 1745
Relinquished By/Removed From: [illegible]	7/27/11 1130	Received By/Stored In: Fed Ex	
Relinquished By/Removed From		Received By/Stored In: [illegible]	7/28/11 0900
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)
(2) IC Anions - 9056 Modified (Bromide, Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate); NO2/NO3 - 353.2; pH (Soil) - 9045
(3) Gamma Spec - Client List (Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, ~~Silver-108~~ metastable)

REVIEWED BY [illegible] DATE 7-27-11

JP0240

Matrix *: S=Soil; SE=Sediment; SO=Solid; Sl=Sludge; W = Water; O=Oil; A=Air; DS=Drum Solids; DL=Drum Liquids; T=Tissue; WI=Wipe; L=Liquid; V=Vegetation; X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 132-H-3			DATA PACKAGE: JP0240		
VALIDATOR: ELR		LAB: TAL		DATE: 8/21/11	
			SDG: JP0240		

ANALYSES PERFORMED					
Anions/IC	TOC	TOX	TPH-418.1	Oil and Grease	Alkalinity
Ammonia	BOD/COD	Chloride	Chromium-VI	pH	NO_3/NO_2
Sulfate	TDS	TKN	Phosphate		

SAMPLES/MATRIX				
J1K8F2	J1K8F3	J1K8F4	J1K8F5	J1K8F6
J1K8F7	J1K8F8	J1K8F9	J1K8H0	J1K8H1
J1K8H2				
				Soil

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? ..... Yes No N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? ..... Yes No N/A

Initial calibrations acceptable? ..... Yes No N/A

ICV and CCV checks performed on all instruments? ..... Yes No N/A

ICV and CCV checks acceptable? ..... Yes No N/A

Standards traceable? ..... Yes No N/A

Standards expired? ..... Yes No N/A

Calculation check acceptable? ..... Yes No N/A

Comments:

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) ..... Yes No N/A

ICB and CCB results acceptable? (Levels D, E) ..... Yes No N/A

Laboratory blanks analyzed? ..... Yes No N/A

Laboratory blank results acceptable? ..... Yes No N/A

Field blanks analyzed? (Levels C, D, E) ..... Yes No N/A

Field blank results acceptable? (Levels C, D, E) ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Comments: no FB

4. ACCURACY (Levels C, D, and E)

Spike samples analyzed? ..... Yes No N/A

Spike recoveries acceptable? ..... Yes No N/A

Sike standards NIST traceable? (Levels D, E) ..... Yes No N/A

Spike standards expired? (Levels D, E) ..... Yes No N/A

LCS/BSS samples analyzed? ..... Yes No N/A

LCS/BSS results acceptable? ..... Yes No N/A

Standards traceable? (Levels D, E) ..... Yes No N/A

Standards expired? (Levels D, E) ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Performance audit sample(s) analyzed? ..... Yes No N/A

Performance audit sample results acceptable? ..... Yes No N/A

Comments: no PAS

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? ..... Yes No N/A

Duplicate results acceptable? ..... Yes No N/A

MS/MSD standards NIST traceable? (Levels D, E) ..... Yes No N/A

MS/MSD standards expired? (Levels D, E) ..... Yes No N/A

Field duplicate RPD values acceptable? ..... Yes No N/A

Field split RPD values acceptable? ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Comments: sulfate - 32% - FD

6. HOLDING TIMES (all levels)

Samples properly preserved? ..... Yes No N/A

Sample holding times acceptable? ..... Yes No N/A

Comments: pH >2x - J all

nitrate, nitrite + orthophosphate - >2x J/UR all

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

7. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? ..... Yes No N/A

Results supported in the raw data? (Levels D, E) ..... Yes No N/A

Samples properly prepared? (Levels D, E) ..... Yes No N/A

Detection limits meet RDL? ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Comments:

Appendix 6

Additional Documentation Requested by Client

QC Results Summary

TestAmerica TARL

Ordered by Method, Batch No, QC Type,.

Date: 10-Aug-11

Report No. : 47756

SDG No.: JP0240

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
MK70X1AM	TC-99	1.80E+02 +- 1.0E+01		pCi/g	100%	81%	-0.2	6.07E-01
NI63_LSC								
1208212 BLANK QC,								
MK76W1AA	NI-63	-1.37E+00 +- 5.5E+00	U	pCi/g	100%			1.20E+01
1208212 LCS,								
MK76W1AC	NI-63	4.60E+02 +- 4.6E+01		pCi/g	97%	78%	-0.2	1.19E+01
C14_CHEM_LSC								
1208214 BLANK QC,								
MK76X1AA	C-14	-1.20E-03 +- 5.0E-03	U	pCi/g	100%			1.14E-02
1208214 LCS,								
MK76X1AC	C-14	7.34E+00 +- 5.2E-01		pCi/g	100%	100%	0.0	4.59E-01
7196_CR6								
1208239 MATRIX SPIKE, J1K8F2								
MK70F1AN	HEXCHROME	9.06E+00 +- 0.0E+00		mg/kg	N/A	88%	-0.1	1.55E-01
1208239 LCS,								
MK8A11AC	HEXCHROME	1.81E+01 +- 0.0E+00		mg/kg	N/A	91%	-0.1	1.55E-01
1208239 BLANK QC,								
MK8A11AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A			1.55E-01
TC99_ETVDSK_LSC								
1215087 BLANK QC,								
MLDQQ1AA	TC-99	1.54E-01 +- 3.6E-01	U	pCi/g	100%			6.11E-01
1215087 LCS,								
MLDQQ1AC	TC-99	6.11E+01 +- 3.7E+00		pCi/g	100%	88%	-0.1	6.10E-01

No. of Results: 33

TestAmerica rptSTLRchQcSummary V5.2.15 A2002

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

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

040

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Method Blank - Batch: 280-79521

Method: 353.2
Preparation: N/A

Lab Sample ID:	MB 280-78970/2-A	Analysis Batch:	280-79521	Instrument ID:	WC_Alp 2
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\0802ANXN
Dilution:	1.0	Leach Batch:	280-78970	Initial Weight/Volume:	1.0 mL
Analysis Date:	08/02/2011 1428	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	07/29/2011 1124				

Analyte	Result	Qual	MDL	RL
Nitrate Nitrite as N-Soluble	0.30	U	0.30	0.75

Method Blank - Batch: 280-79521

Method: 353.2
Preparation: N/A

Lab Sample ID:	MB 280-79120/1-A	Analysis Batch:	280-79521	Instrument ID:	WC_Alp 2
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\0802ANXN
Dilution:	1.0	Leach Batch:	280-79120	Initial Weight/Volume:	1.0 mL
Analysis Date:	08/02/2011 1516	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	07/30/2011 1105				

Analyte	Result	Qual	MDL	RL
Nitrate Nitrite as N-Soluble	0.30	U	0.30	0.75

041

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Method Reporting Limit Check - Batch: 280-79521

Method: 353.2
Preparation: N/A

Lab Sample ID:	MRL 280-79521/18	Analysis Batch:	280-79521	Instrument ID:	WC_Alp 2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\0802ANXN
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	100 mL
Analysis Date:	08/02/2011 1249	Units:	mg/L	Final Weight/Volume:	100 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate Nitrite as N-Soluble	0.100	0.0834	83	50 - 150	B

Lab Control Sample - Batch: 280-79521

Method: 353.2
Preparation: N/A

Lab Sample ID:	LCS 280-78970/1-A	Analysis Batch:	280-79521	Instrument ID:	WC_Alp 2
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\0802ANXN
Dilution:	1.0	Leach Batch:	280-78970	Initial Weight/Volume:	1.0 mL
Analysis Date:	08/02/2011 1429	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	07/29/2011 1124				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate Nitrite as N-Soluble	50.0	50.83	102	90 - 110	

042

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Matrix Spike - Batch: 280-79521

Method: 353.2
Preparation: N/A

Lab Sample ID:	280-18551-1	Analysis Batch:	280-79521	Instrument ID:	WC_Alp 2
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\0802ANXN
Dilution:	1.0	Leach Batch:	280-78970	Initial Weight/Volume:	1.0 mL
Analysis Date:	08/02/2011 1435	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	07/29/2011 1124				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Nitrate Nitrite as N-Soluble	0.52	B	41.4	40.40	96	90 - 110	

Matrix Spike - Batch: 280-79521

Method: 353.2
Preparation: N/A

Lab Sample ID:	280-18551-3	Analysis Batch:	280-79521	Instrument ID:	WC_Alp 2
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\0802ANXN
Dilution:	1.0	Leach Batch:	280-78970	Initial Weight/Volume:	1.0 mL
Analysis Date:	08/02/2011 1440	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	07/29/2011 1124				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Nitrate Nitrite as N-Soluble	0.75	B	41.0	41.38	99	90 - 110	

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Duplicate - Batch: 280-79521

Method: 353.2
Preparation: N/A

Lab Sample ID:	280-18551-1	Analysis Batch:	280-79521	Instrument ID:	WC_Alp 2
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\0802ANXN
Dilution:	1.0	Leach Batch:	280-78970	Initial Weight/Volume:	1.0 mL
Analysis Date:	08/02/2011 1434	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	07/29/2011 1124				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Nitrate Nitrite as N-Soluble	0.52	B	0.374	32	10	B M

Duplicate - Batch: 280-79521

Method: 353.2
Preparation: N/A

Lab Sample ID:	280-18551-3	Analysis Batch:	280-79521	Instrument ID:	WC_Alp 2
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\0802ANXN
Dilution:	1.0	Leach Batch:	280-78970	Initial Weight/Volume:	1.0 mL
Analysis Date:	08/02/2011 1438	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	07/29/2011 1124				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Nitrate Nitrite as N-Soluble	0.75	B	0.668	12	10	B M

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 280-79321

Method: 9045C
Preparation: N/A

LCS Lab Sample ID:	LCS 280-79321/4	Analysis Batch:	280-79321	Instrument ID:	WC_Orion 3 Star
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.0 mL
Analysis Date:	07/29/2011 2100	Units:	SU	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 280-79321/5	Analysis Batch:	280-79321	Instrument ID:	WC_Orion 3 Star
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.0 mL
Analysis Date:	07/29/2011 2101	Units:	SU	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
pH adj. to 25 deg C-Soluble	100	100	97 - 103	0	5		

Duplicate - Batch: 280-79321

Method: 9045C
Preparation: N/A

Lab Sample ID:	280-18551-1	Analysis Batch:	280-79321	Instrument ID:	WC_Orion 3 Star
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	280-79019	Initial Weight/Volume:	1.0 mL
Analysis Date:	07/29/2011 2104	Units:	SU	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	07/29/2011 1424				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
pH adj. to 25 deg C-Soluble	9.14	9.180	0.4	5	

Duplicate - Batch: 280-79321

Method: 9045C
Preparation: N/A

Lab Sample ID:	280-18551-9	Analysis Batch:	280-79321	Instrument ID:	WC_Orion 3 Star
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	280-79019	Initial Weight/Volume:	1.0 mL
Analysis Date:	07/29/2011 2120	Units:	SU	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	07/29/2011 1424				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
pH adj. to 25 deg C-Soluble	9.37	9.430	0.6	5	

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Method Blank - Batch: 280-79325

Method: 9056M
Preparation: N/A

Lab Sample ID:	MB 280-79298/2-A	Analysis Batch:	280-79325	Instrument ID:	WC_IC3
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	144.TXT
Dilution:	1.0	Leach Batch:	280-79298	Initial Weight/Volume:	1.0 mL
Analysis Date:	08/01/2011 1943	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	08/01/2011 1609				

Analyte	Result	Qual	MDL	RL
Nitrate as N-Soluble	0.31	U	0.31	2.5
Nitrite as N-Soluble	0.33	U	0.33	2.5
Orthophosphate as P-Soluble	1.2	U	1.2	5.0

Lab Control Sample - Batch: 280-79325

Method: 9056M
Preparation: N/A

Lab Sample ID:	LCS 280-79298/1-A	Analysis Batch:	280-79325	Instrument ID:	WC_IC3
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	143.TXT
Dilution:	1.0	Leach Batch:	280-79298	Initial Weight/Volume:	1.0 mL
Analysis Date:	08/01/2011 1926	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	08/01/2011 1609				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N-Soluble	50.0	48.74	97	90 - 110	
Nitrite as N-Soluble	50.0	48.90	98	90 - 110	
Orthophosphate as P-Soluble	50.0	49.83	100	90 - 110	

Matrix Spike - Batch: 280-79325

Method: 9056M
Preparation: N/A

Lab Sample ID:	280-18551-2	Analysis Batch:	280-79325	Instrument ID:	WC_IC3
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	148.TXT
Dilution:	1.0	Leach Batch:	280-79298	Initial Weight/Volume:	1.0 mL
Analysis Date:	08/01/2011 2049	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	08/01/2011 1609				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N-Soluble	2.1	B	51.0	52.50	99	80 - 120	
Nitrite as N-Soluble	0.34	U	50.9	47.72	94	80 - 120	
Orthophosphate as P-Soluble	1.3	U	51.0	53.74	105	80 - 120	

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Duplicate - Batch: 280-79325

Method: 9056M
Preparation: N/A

Lab Sample ID:	280-18551-2	Analysis Batch:	280-79325	Instrument ID:	WC_IC3
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	147.TXT
Dilution:	1.0	Leach Batch:	280-79298	Initial Weight/Volume:	1.0 mL
Analysis Date:	08/01/2011 2032	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	08/01/2011 1609				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Nitrate as N-Soluble	2.1	B	2.14	2	15	B
Nitrite as N-Soluble	0.34	U	0.34	NC	15	U
Orthophosphate as P-Soluble	1.3	U	1.3	NC	15	U

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Method Blank - Batch: 280-79341

Method: 9056M
Preparation: N/A

Lab Sample ID:	MB 280-79298/2-A	Analysis Batch:	280-79341	Instrument ID:	WC_IC3
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	144.TXT
Dilution:	1.0	Leach Batch:	280-79298	Initial Weight/Volume:	1.0 mL
Analysis Date:	08/01/2011 1943	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	08/01/2011 1609				

Analyte	Result	Qual	MDL	RL
Chloride-Soluble	2.0	U	2.0	5.0
Bromide-Soluble	0.38	U	0.38	2.0
Sulfate-Soluble	1.7	U	1.7	5.0
Fluoride-Soluble	0.81	U	0.81	5.0

Lab Control Sample - Batch: 280-79341

Method: 9056M
Preparation: N/A

Lab Sample ID:	LCS 280-79298/1-A	Analysis Batch:	280-79341	Instrument ID:	WC_IC3
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	143.TXT
Dilution:	1.0	Leach Batch:	280-79298	Initial Weight/Volume:	1.0 mL
Analysis Date:	08/01/2011 1926	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	08/01/2011 1609				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride-Soluble	250	243.2	97	90 - 110	
Bromide-Soluble	50.0	48.87	98	90 - 110	
Sulfate-Soluble	250	238.9	96	90 - 110	
Fluoride-Soluble	50.0	48.31	97	90 - 110	

Matrix Spike - Batch: 280-79341

Method: 9056M
Preparation: N/A

Lab Sample ID:	280-18551-2	Analysis Batch:	280-79341	Instrument ID:	WC_IC3
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	148.TXT
Dilution:	1.0	Leach Batch:	280-79298	Initial Weight/Volume:	1.0 mL
Analysis Date:	08/01/2011 2049	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	08/01/2011 1609				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Chloride-Soluble	4.6	B	255	253.6	99	80 - 120	
Bromide-Soluble	0.40	U	50.9	50.05	98	80 - 120	
Sulfate-Soluble	55.7		255	302.0	116	80 - 120	
Fluoride-Soluble	2.1	B	50.9	47.67	93	80 - 120	

Quality Control Results

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Duplicate - Batch: 280-79341

Method: 9056M
Preparation: N/A

Lab Sample ID:	280-18551-2	Analysis Batch:	280-79341	Instrument ID:	WC_IC3
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	147.TXT
Dilution:	1.0	Leach Batch:	280-79298	Initial Weight/Volume:	1.0 mL
Analysis Date:	08/01/2011 2032	Units:	mg/Kg	Final Weight/Volume:	1.0 mL
Prep Date:	N/A				
Leach Date:	08/01/2011 1609				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Chloride-Soluble	4.6	B	3.96	16	15	B M
Bromide-Soluble	0.40	U	0.39	NC	15	U
Sulfate-Soluble	55.7		54.67	2	15	
Fluoride-Soluble	2.1	B	2.20	3	15	B

049

Date: 23 August 2011
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: 100H Remaining Sites Burial Grounds – Soil Full Protocol - Waste Site 132-H-3
Subject: Radiochemistry - Data Package No. JP0240-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. JP0240 prepared by TestAmerica Laboratories (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J1K8F2	7/26/11	Soil	C	See note 1
J1K8F3	7/26/11	Soil	C	See note 1
J1K8F4	7/26/11	Soil	C	See note 1
J1K8F5	7/26/11	Soil	C	See note 1
J1K8F6	7/26/11	Soil	C	See note 1
J1K8F7	7/26/11	Soil	C	See note 1
J1K8F8	7/26/11	Soil	C	See note 1
J1K8F9	7/26/11	Soil	C	See note 1
J1K8H0	7/26/11	Soil	C	See note 1
J1K8H1	7/26/11	Soil	C	See note 1
J1K8H2	7/26/11	Soil	C	See note 1

1 – Gamma spectroscopy, alpha spectroscopy, tritium, technetium-99, carbon-14, nickel-63 and strontium-90.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the 100 Area Remedial Action Sampling and Analysis Plan (DOE/RL-96-22, September 2009). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Data Requested by Client

DATA QUALITY PARAMETERS

- **Holding Times**

Holding times are calculated from Chain-of-Custody forms to determine the validity of the results. The maximum holding time for radiochemical analysis is 6 months.

All holding times were acceptable.

- **Preparation (Method) Blanks**

Laboratory Blanks

Blank samples are analyzed to determine if positive results are due to laboratory reagent, sample container, or detector contamination. If blank analysis results indicate the presence of an analyte above the minimum detectable activity (MDA), the following qualifiers are applied: All positive sample results less than five times the highest blank concentration are qualified as estimates and flagged "J"; sample results below the MDA are qualified as undetected and flagged "U"; sample results above the MDA and greater than five times the highest blank concentration are not qualified.

All laboratory blank results were acceptable.

Field (Equipment) Blank

No equipment blanks were submitted for analysis.

- **Accuracy**

Accuracy is evaluated from laboratory control sample (LCS) or blank spike sample (BSS) batch samples and spiked samples from the analytical batch. Measured activities are compared to the known added amounts. The acceptable LCS or BSS and matrix spike (MS) recovery range is 70-130%. In addition, samples may be spiked with a radiochemical tracer to assist in isolating the radioisotope of interest with the yield of the tracer being used in calculating sample activity. The acceptable range for tracer recovery is 20% to 105%. Spike sample results outside the above ranges result in associated sample results being qualified as estimates, or not qualified, depending on the activity of the individual sample. Results are rejected for LCS/BSS recoveries of less than 30% and tracer recoveries of less than 20%, and tracer recoveries of greater than 115% for detected results.

Due to the lack of an LCS analysis, all plutonium-238 and uranium-235 results were qualified as estimates and flagged "J".

Due to the lack of a matrix spike analysis, all carbon-14 and tritium results were qualified as estimates and flagged "J".

All other accuracy results were acceptable.

- **Laboratory Duplicates**

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the contract required detection limit (CRDL) and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

Due to an RPD outside QC limits (56%), all cesium-137 results were qualified as estimates and flagged "J".

All other duplicate results were acceptable.

Field Duplicates

One set of field duplicates (J1K8F3/J1K8H2) were submitted for analysis. Laboratory duplicates are compared using the same criteria as for laboratory results. All field duplicate results are acceptable.

- **Detection Levels**

Reported analytical detection levels for undetected analytes are compared against the remaining waste sites RQLs to ensure that laboratory detection levels meet the required criteria. Seven analytes exceeded the RQL. Under the WCH statement of work, no qualification is required. All other analytes met the RQL.

- **Completeness**

Data package No. JP0240 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to the lack of an LCS analysis, all plutonium-238 and uranium-235 results were qualified as estimates and flagged "J".
- Due to the lack of a matrix spike analysis, all carbon-14 and tritium results were qualified as estimates and flagged "J".
- Due to an RPD outside QC limits (56%), all cesium-137 results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

Seven analytes exceeded the RQL. Under the WCH statement of work, no qualification is required.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*.

DOE/RL-96-22, Rev. 5, *100 Area Remedial Action Sampling and Analysis Plan*, U.S. Department of Energy, September 2009.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH statement of work are as follows:

U - Indicates the compound or analyte was analyzed for and not detected above the minimum detectable activity (MDA) in the sample. The value reported is the sample result corrected for sample dilution and moisture content by the laboratory. The data is usable for decision making purposes.

UJ - Indicates the compound or analyte was analyzed for and not detected at concentrations above the minimum detectable activity (MDA) in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate, but is usable for decision making purposes.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

Appendix 2

Summary of Data Qualification

RADIOCHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: JP0240	REVIEWER: ELR	Project: 132-H-3	PAGE 1 OF 1
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Plutonium-238 Uranium-235	J	All	No LCS analysis
Tritium Carbon-14	J	All	No MS analysis
Cesium-137	J	All	RPD

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

Sample Results Summary

TestAmerica TARL

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

Date: 10-Aug-11

Report No. : 47756

K 8/21/11

SDG No: JP0240

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1208217 PUISO_PLATE_AEA									
J1K8F2									
	MK70F1AL	PU-238	-1.49E-03 +- 5.9E-02	U J	pCi/g	96%	1.11E-01	1.00E+00	
		PU239/40	-1.49E-03 +- 5.9E-02	U	pCi/g	96%	1.11E-01	1.00E+00	
J1K8F2 DUP									
	MK70F1AM	PU-238	0.00E+00 +- 7.8E-02	U	pCi/g	89%	1.46E-01	1.00E+00	-200.0
		PU239/40	0.00E+00 +- 7.8E-02	U	pCi/g	89%	1.46E-01	1.00E+00	-200.0
J1K8F3									
	MK70L1AL	PU-238	0.00E+00 +- 6.8E-02	U J	pCi/g	100%	1.26E-01	1.00E+00	
		PU239/40	0.00E+00 +- 6.8E-02	U	pCi/g	100%	1.26E-01	1.00E+00	
J1K8F4									
	MK70P1AL	PU-238	-3.38E-03 +- 6.8E-02	U J	pCi/g	83%	1.41E-01	1.00E+00	
		PU239/40	0.00E+00 +- 6.7E-02	U	pCi/g	83%	1.26E-01	1.00E+00	
J1K8F5									
	MK70V1AL	PU-238	0.00E+00 +- 7.8E-02	U J	pCi/g	100%	1.45E-01	1.00E+00	
		PU239/40	-1.94E-03 +- 7.8E-02	U	pCi/g	100%	1.45E-01	1.00E+00	
J1K8F6									
	MK70W1AL	PU-238	-2.02E-03 +- 8.1E-02	U J	pCi/g	89%	1.51E-01	1.00E+00	
		PU239/40	1.61E-01 +- 1.6E-01	U	pCi/g	89%	1.51E-01	1.00E+00	
J1K8F7									
	MK70X1AL	PU-238	-1.78E-03 +- 7.1E-02	U J	pCi/g	100%	1.33E-01	1.00E+00	
		PU239/40	7.09E-02 +- 1.0E-01	U	pCi/g	100%	1.33E-01	1.00E+00	
J1K8F8									
	MK7001AL	PU-238	-1.62E-03 +- 6.5E-02	U J	pCi/g	90%	1.21E-01	1.00E+00	
		PU239/40	-1.62E-03 +- 6.5E-02	U	pCi/g	90%	1.21E-01	1.00E+00	
J1K8F9									
	MK7021AL	PU-238	0.00E+00 +- 7.0E-02	U J	pCi/g	99%	1.31E-01	1.00E+00	
		PU239/40	0.00E+00 +- 7.0E-02	U	pCi/g	99%	1.31E-01	1.00E+00	
J1K8H0									
	MK7031AL	PU-238	0.00E+00 +- 6.7E-02	U J	pCi/g	100%	1.25E-01	1.00E+00	
		PU239/40	0.00E+00 +- 6.7E-02	U	pCi/g	100%	1.25E-01	1.00E+00	
J1K8H1									
	MK7061AL	PU-238	-3.29E-03 +- 6.6E-02	U J	pCi/g	85%	1.37E-01	1.00E+00	
		PU239/40	0.00E+00 +- 6.6E-02	U	pCi/g	85%	1.23E-01	1.00E+00	
J1K8H2									
	MK7071AL	PU-238	0.00E+00 +- 7.8E-02	U J	pCi/g	98%	1.46E-01	1.00E+00	
		PU239/40	3.69E-02 +- 7.8E-02	U	pCi/g	98%	1.46E-01	1.00E+00	
1208215 UISO_IE_PLATE_AEA									
J1K8F2									

TestAmerica

rptSTLRchSaSummary2 V5.2.15 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.

010

Sample Results Summary

TestAmerica TARL

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

Date: 10-Aug-11

Report No. : 47756

8/21/11

SDG No: JP0240

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1208215 UISO_IE_PLATE_AEA									
J1K8F2									
	MK70F1AC	U-234	7.57E-01 +- 4.7E-01		pCi/g	43%	3.76E-01	1.00E+00	
		U-235	1.59E-01 +- 2.0E-01	U J	pCi/g	43%	2.73E-01	1.00E+00	
		U-238	3.24E-01 +- 2.9E-01		pCi/g	43%	2.99E-01	1.00E+00	
J1K8F3									
	MK70L1AC	U-234	1.36E-01 +- 1.3E-01		pCi/g	78%	1.26E-01	1.00E+00	
		U-235	0.00E+00 +- 5.6E-02	U J	pCi/g	78%	1.05E-01	1.00E+00	
		U-238	1.62E-01 +- 1.4E-01		pCi/g	78%	1.34E-01	1.00E+00	
J1K8F3 DUP									
	MK70L1AM	U-234	2.55E-01 +- 1.9E-01		pCi/g	76%	1.19E-01	1.00E+00	61.0
		U-235	1.91E-01 +- 1.6E-01		pCi/g	76%	1.19E-01	1.00E+00	200.0
		U-238	2.23E-01 +- 1.8E-01		pCi/g	76%	1.19E-01	1.00E+00	31.5
J1K8F4									
	MK70P1AC	U-234	3.45E-01 +- 2.1E-01		pCi/g	80%	1.21E-01	1.00E+00	
		U-235	0.00E+00 +- 5.4E-02	U J	pCi/g	80%	1.01E-01	1.00E+00	
		U-238	1.86E-01 +- 1.5E-01		pCi/g	80%	1.12E-01	1.00E+00	
J1K8F5									
	MK70V1AC	U-234	3.51E-01 +- 2.3E-01		pCi/g	71%	1.20E-01	1.00E+00	
		U-235	-1.60E-03 +- 6.4E-02	U J	pCi/g	71%	1.20E-01	1.00E+00	
		U-238	2.82E-01 +- 2.0E-01		pCi/g	71%	1.44E-01	1.00E+00	
J1K8F6									
	MK70W1AC	U-234	2.87E-01 +- 2.0E-01		pCi/g	73%	1.35E-01	1.00E+00	
		U-235	9.48E-02 +- 1.1E-01	U J	pCi/g	73%	1.24E-01	1.00E+00	
		U-238	1.90E-01 +- 1.6E-01		pCi/g	73%	1.35E-01	1.00E+00	
J1K8F7									
	MK70X1AC	U-234	3.35E-01 +- 2.6E-01		pCi/g	59%	2.88E-01	1.00E+00	
		U-235	-8.23E-03 +- 8.3E-02	U J	pCi/g	59%	1.97E-01	1.00E+00	
		U-238	6.73E-01 +- 3.8E-01		pCi/g	59%	2.66E-01	1.00E+00	
J1K8F8									
	MK7001AC	U-234	2.16E-01 +- 1.7E-01		pCi/g	72%	1.42E-01	1.00E+00	
		U-235	6.31E-02 +- 9.0E-02	U J	pCi/g	72%	1.18E-01	1.00E+00	
		U-238	1.83E-01 +- 1.6E-01		pCi/g	72%	1.51E-01	1.00E+00	
J1K8F9									
	MK7021AC	U-234	9.81E-02 +- 1.2E-01	U	pCi/g	74%	1.23E-01	1.00E+00	
		U-235	6.54E-02 +- 9.4E-02	U J	pCi/g	74%	1.23E-01	1.00E+00	
		U-238	2.94E-01 +- 2.1E-01		pCi/g	74%	1.23E-01	1.00E+00	
J1K8H0									
	MK7031AC	U-234	3.05E-01 +- 2.2E-01		pCi/g	65%	1.55E-01	1.00E+00	

TestAmerica

rptSTLRchSaSummary2 V5.2.15
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.

011

Sample Results Summary

Date: 10-Aug-11

TestAmerica TARL

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

Report No. : 47756

8/24/11

SDG No: JP0240

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1208215 UISO_IE_PLATE_AEA									
J1K8H0									
	MK7031AC	U-235	1.03E-01 +- 1.2E-01	U J	pCi/g	65%	1.29E-01	1.00E+00	
		U-238	1.70E-01 +- 1.6E-01		pCi/g	65%	1.29E-01	1.00E+00	
J1K8H1									
	MK7061AC	U-234	2.89E-01 +- 1.9E-01		pCi/g	78%	1.09E-01	1.00E+00	
		U-235	-1.45E-03 +- 5.8E-02	U J	pCi/g	78%	1.09E-01	1.00E+00	
		U-238	1.11E-01 +- 1.2E-01	U	pCi/g	78%	1.31E-01	1.00E+00	
J1K8H2									
	MK7071AC	U-234	3.11E-01 +- 2.2E-01		pCi/g	68%	1.46E-01	1.00E+00	
		U-235	3.28E-02 +- 7.0E-02	U J	pCi/g	68%	1.35E-01	1.00E+00	
		U-238	3.10E-01 +- 2.2E-01		pCi/g	68%	1.51E-01	1.00E+00	
1208208 GAMMA_GS									
J1K8F2									
	MK70F1AJ	AG-108M	2.38E-03 +- 1.4E-02	U	pCi/g		2.42E-02		
		AMERICIUM 241	-1.79E-01 +- 1.6E-01	U	pCi/g		2.67E-01		
		BA-133	-9.04E-04 +- 2.2E-02	U	pCi/g		3.25E-02		
		CO-60	-7.85E-03 +- 1.9E-02	U	pCi/g		3.13E-02	5.00E-02	
		CS-137	2.91E-02 +- 1.9E-02	U J	pCi/g		3.36E-02	1.00E-01	
		EU-152	6.17E-03 +- 5.0E-02	U	pCi/g		8.02E-02	1.00E-01	
		EU-154	3.15E-03 +- 5.9E-02	U	pCi/g		1.02E-01	1.00E-01	
		EU-155	3.97E-02 +- 5.4E-02	U	pCi/g		9.23E-02	1.00E-01	
J1K8F3									
	MK70L1AJ	AG-108M	1.60E-03 +- 1.0E-02	U	pCi/g		1.81E-02		
		AMERICIUM 241	-1.90E-02 +- 9.4E-02	U	pCi/g		1.54E-01		
		BA-133	-3.15E-03 +- 1.5E-02	U	pCi/g		2.27E-02		
		CO-60	-1.08E-03 +- 1.4E-02	U	pCi/g		2.52E-02	5.00E-02	
		CS-137	3.82E-04 +- 1.5E-02	U J	pCi/g		2.56E-02	1.00E-01	
		EU-152	-1.02E-02 +- 3.4E-02	U	pCi/g		5.86E-02	1.00E-01	
		EU-154	1.40E-02 +- 5.0E-02	U	pCi/g		8.89E-02	1.00E-01	
		EU-155	6.92E-02 +- 3.9E-02	U	pCi/g		6.94E-02	1.00E-01	
J1K8F4									
	MK70P1AJ	AG-108M	4.47E-04 +- 1.3E-02	U	pCi/g		2.31E-02		
		AMERICIUM 241	-7.45E-02 +- 7.7E-02	U	pCi/g		1.26E-01		
		BA-133	2.50E-02 +- 2.5E-02	U	pCi/g		3.70E-02		
		CO-60	-7.52E-03 +- 1.6E-02	U	pCi/g		2.66E-02	5.00E-02	
		CS-137	2.57E-02 +- 1.8E-02	U J	pCi/g		3.17E-02	1.00E-01	
		EU-152	-4.65E-02 +- 7.8E-02	U	pCi/g		7.76E-02	1.00E-01	
		EU-154	-1.02E-02 +- 5.3E-02	U	pCi/g		8.97E-02	1.00E-01	

TestAmerica

rptSTLRchSaSummary2 V5.2.15 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.

012

Sample Results Summary

TestAmerica TARL

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

Date: 10-Aug-11

Report No. : 47756

8/21/11

SDG No: JP0240

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1208208 GAMMA_GS									
J1K8F4									
	MK70P1AJ	EU-155	9.65E-03 +- 5.7E-02	U	pCi/g		9.50E-02	1.00E-01	
J1K8F5									
	MK70V1AJ	AG-108M	6.53E-03 +- 1.4E-02	U	pCi/g		2.52E-02		
		AMERICIUM 241	3.66E-03 +- 3.4E-02	U	pCi/g		5.73E-02		
		BA-133	-1.02E-02 +- 2.3E-02	U	pCi/g		3.27E-02		
		CO-60	5.74E-03 +- 1.9E-02	U	pCi/g		3.44E-02	5.00E-02	
		CS-137	1.92E-02 +- 2.1E-02	U J	pCi/g		3.73E-02	1.00E-01	
		EU-152	2.76E-02 +- 4.7E-02	U	pCi/g		8.41E-02	1.00E-01	
		EU-154	-4.60E-02 +- 5.8E-02	U	pCi/g		9.51E-02	1.00E-01	
		EU-155	-4.14E-03 +- 4.7E-02	U	pCi/g		7.79E-02	1.00E-01	
J1K8F6									
	MK70W1AJ	AG-108M	4.05E-03 +- 9.6E-03	U	pCi/g		1.69E-02		
		AMERICIUM 241	-9.64E-02 +- 8.9E-02	U	pCi/g		1.37E-01		
		BA-133	-6.76E-03 +- 1.6E-02	U	pCi/g		2.31E-02		
		CO-60	2.86E-03 +- 1.5E-02	U	pCi/g		2.74E-02	5.00E-02	
		CS-137	1.34E-01 +- 4.2E-02	J	pCi/g		2.26E-02	1.00E-01	
		EU-152	2.43E-03 +- 3.4E-02	U	pCi/g		5.98E-02	1.00E-01	
		EU-154	-1.42E-02 +- 4.6E-02	U	pCi/g		7.81E-02	1.00E-01	
		EU-155	4.82E-02 +- 3.7E-02	U	pCi/g		6.57E-02	1.00E-01	
J1K8F7									
	MK70X1AJ	AG-108M	7.82E-03 +- 1.8E-02	U	pCi/g		3.06E-02		
		AMERICIUM 241	2.73E-03 +- 4.4E-02	U	pCi/g		7.37E-02		
		BA-133	-1.32E-02 +- 3.0E-02	U	pCi/g		4.16E-02		
		CO-60	-4.54E-03 +- 2.1E-02	U	pCi/g		3.62E-02	5.00E-02	
		CS-137	1.69E-02 +- 2.3E-02	U J	pCi/g		4.15E-02	1.00E-01	
		EU-152	6.02E-03 +- 6.7E-02	U	pCi/g		9.96E-02	1.00E-01	
		EU-154	-2.18E-02 +- 6.4E-02	U	pCi/g		1.10E-01	1.00E-01	
		EU-155	9.76E-02 +- 6.0E-02	U	pCi/g		1.03E-01	1.00E-01	
J1K8F8									
	MK7001AJ	AG-108M	-4.73E-03 +- 1.3E-02	U	pCi/g		2.28E-02		
		AMERICIUM 241	-7.36E-02 +- 7.8E-02	U	pCi/g		1.28E-01		
		BA-133	3.58E-02 +- 2.4E-02	U	pCi/g		3.71E-02		
		CO-60	-5.71E-03 +- 1.7E-02	U	pCi/g		2.89E-02	5.00E-02	
		CS-137	2.76E-02 +- 1.8E-02	U J	pCi/g		3.21E-02	1.00E-01	
		EU-152	-1.31E-03 +- 8.7E-02	U	pCi/g		7.78E-02	1.00E-01	
		EU-154	-2.00E-02 +- 5.4E-02	U	pCi/g		9.03E-02	1.00E-01	
		EU-155	1.14E-02 +- 5.6E-02	U	pCi/g		9.47E-02	1.00E-01	

TestAmerica

rptSTLRchSaSummary2 V5.2.15
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.

013

Sample Results Summary

TestAmerica TARL

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

Date: 10-Aug-11

Report No. : 47756

9/21/11

SDG No: JP0240

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1208208 GAMMA_GS									
J1K8F9									
	MK7021AJ	AG-108M	-7.38E-04 +- 1.4E-02	U	pCi/g		2.31E-02		
		AMERICIUM 241	1.39E-01 +- 1.6E-01	U	pCi/g		2.84E-01		
		BA-133	-1.78E-02 +- 2.2E-02	U	pCi/g		3.02E-02		
		CO-60	-9.59E-03 +- 1.8E-02	U	pCi/g		3.07E-02	5.00E-02	
		CS-137	6.83E-02 +- 3.2E-02	J	pCi/g		3.11E-02	1.00E-01	
		EU-152	2.29E-02 +- 4.6E-02	U	pCi/g		7.77E-02	1.00E-01	
		EU-154	-1.40E-02 +- 5.9E-02	U	pCi/g		1.01E-01	1.00E-01	
		EU-155	-5.58E-03 +- 5.5E-02	U	pCi/g		9.10E-02	1.00E-01	
J1K8H0									
	MK7031AJ	AG-108M	-5.44E-03 +- 1.6E-02	U	pCi/g		2.64E-02		
		AMERICIUM 241	4.28E-03 +- 3.3E-02	U	pCi/g		5.63E-02		
		BA-133	3.80E-03 +- 2.4E-02	U	pCi/g		3.61E-02		
		CO-60	-2.50E-03 +- 1.6E-02	U	pCi/g		2.88E-02	5.00E-02	
		CS-137	4.89E-01 +- 8.1E-02	J	pCi/g		3.27E-02	1.00E-01	
		EU-152	-6.19E-03 +- 5.2E-02	U	pCi/g		8.25E-02	1.00E-01	
		EU-154	-3.16E-02 +- 5.1E-02	U	pCi/g		8.69E-02	1.00E-01	
		EU-155	-2.38E-02 +- 4.6E-02	U	pCi/g		7.56E-02	1.00E-01	
J1K8H0 DUP									
	MK7031AM	AG-108M	4.65E-03 +- 9.1E-03	U	pCi/g		1.61E-02		-2532.8
		AMERICIUM 241	-2.41E-02 +- 8.4E-02	U	pCi/g		1.36E-01		-286.2
		BA-133	9.46E-04 +- 1.4E-02	U	pCi/g		2.31E-02		120.3
		CO-60	-4.78E-03 +- 1.3E-02	U	pCi/g		2.28E-02	5.00E-02	-62.5
		CS-137	2.75E-01 +- 4.6E-02		pCi/g		2.18E-02	1.00E-01	56.0
		EU-152	2.88E-02 +- 3.2E-02	U	pCi/g		5.72E-02	1.00E-01	309.6
		EU-154	7.43E-03 +- 4.3E-02	U	pCi/g		7.61E-02	1.00E-01	-323.1
		EU-155	2.37E-02 +- 3.6E-02	U	pCi/g		6.24E-02	1.00E-01	-149992.7
J1K8H1									
	MK7061AJ	AG-108M	-1.39E-03 +- 1.8E-02	U	pCi/g		3.08E-02		
		AMERICIUM 241	-2.12E-02 +- 4.4E-02	U	pCi/g		7.27E-02		
		BA-133	1.26E-02 +- 3.1E-02	U	pCi/g		4.55E-02		
		CO-60	-1.77E-02 +- 2.2E-02	U	pCi/g		3.52E-02	5.00E-02	
		CS-137	1.27E-02 +- 2.5E-02	U J	pCi/g		4.42E-02	1.00E-01	
		EU-152	-5.04E-02 +- 6.5E-02	U	pCi/g		1.06E-01	1.00E-01	
		EU-154	-4.24E-02 +- 6.9E-02	U	pCi/g		1.16E-01	1.00E-01	
		EU-155	1.72E-04 +- 6.0E-02	U	pCi/g		1.01E-01	1.00E-01	
J1K8H2									
	MK7071AJ	AG-108M	-5.50E-03 +- 1.4E-02	U	pCi/g		2.43E-02		

TestAmerica

rptSTLRchSaSummary2 V5.2.15 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.

014

Sample Results Summary

Date: 10-Aug-11

TestAmerica TARL

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

Report No. : 47756

8/21/11 SDG No: JP0240

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1208208 GAMMA_GS									
J1K8H2									
	MK7071AJ	AMERICIUM 241	-4.73E-02 +- 8.0E-02	U	pCi/g		1.33E-01		
		BA-133	4.22E-02 +- 2.6E-02	U	pCi/g		4.01E-02		
		CO-60	1.22E-02 +- 1.8E-02	U	pCi/g		3.25E-02	5.00E-02	
		CS-137	6.25E-03 +- 1.9E-02	U J	pCi/g		3.22E-02	1.00E-01	
		EU-152	-2.91E-01 +- 7.8E-02	U	pCi/g		8.11E-02	1.00E-01	
		EU-154	-9.33E-02 +- 5.7E-02	U	pCi/g		8.49E-02	1.00E-01	
		EU-155	-1.88E-02 +- 5.8E-02	U	pCi/g		9.64E-02	1.00E-01	
1208209 SRTOT_SEP_PRECIP_GPC									
J1K8F2									
	MK70F1AD	STRONTIUM	4.50E-02 +- 8.7E-02	U	pCi/g	57%	1.92E-01		
J1K8F3									
	MK70L1AD	STRONTIUM	5.58E-02 +- 8.1E-02	U	pCi/g	57%	1.75E-01		
J1K8F4									
	MK70P1AD	STRONTIUM	1.51E-02 +- 7.9E-02	U	pCi/g	54%	1.84E-01		
J1K8F5									
	MK70V1AD	STRONTIUM	6.13E-02 +- 8.7E-02	U	pCi/g	54%	1.86E-01		
J1K8F6									
	MK70W1AD	STRONTIUM	1.04E-01 +- 9.4E-02	U	pCi/g	56%	1.85E-01		
J1K8F7									
	MK70X1AD	STRONTIUM	-2.75E-02 +- 8.3E-02	U	pCi/g	53%	2.06E-01		
J1K8F8									
	MK7001AD	STRONTIUM	8.17E-02 +- 8.9E-02	U	pCi/g	56%	1.85E-01		
J1K8F9									
	MK7021AD	STRONTIUM	6.25E-02 +- 9.5E-02	U	pCi/g	55%	2.05E-01		
J1K8H0									
	MK7031AD	STRONTIUM	2.04E-01 +- 1.1E-01		pCi/g	63%	1.63E-01		
J1K8H1									
	MK7061AD	STRONTIUM	2.20E-02 +- 8.2E-02	U	pCi/g	54%	1.88E-01		
J1K8H1 DUP									
	MK7061AM	STRONTIUM	4.81E-02 +- 7.9E-02	U	pCi/g	60%	1.73E-01		74.4
J1K8H2									
	MK7071AD	STRONTIUM	3.96E-03 +- 7.1E-02	U	pCi/g	64%	1.68E-01		
1208210 906.0_H3_LSC									
J1K8F2									
	MK70F1AH	H-3	-1.87E-03 +- 8.9E-03	U J	pCi/g	100%	2.04E-02	4.00E+02	
J1K8F3									
	MK70L1AH	H-3	6.75E-03 +- 7.5E-03	U J	pCi/g	100%	1.64E-02	4.00E+02	

TestAmerica

rptSTLRchSaSummary2 V5.2.15 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.

015

Sample Results Summary

Date: 10-Aug-11

TestAmerica TARL

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

Report No. : 47756

8/21/11

SDG No: JP0240

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1208210	906.0_H3_LSC								
	J1K8F4								
	MK70P1AH	H-3	7.40E-03 +- 7.5E-03	U J	pCi/g	100%	1.64E-02	4.00E+02	
	J1K8F5								
	MK70V1AH	H-3	7.79E-03 +- 7.9E-03	U J	pCi/g	100%	1.77E-02	4.00E+02	
	J1K8F6								
	MK70W1AH	H-3	5.62E-03 +- 9.0E-03	U J	pCi/g	100%	2.00E-02	4.00E+02	
	J1K8F7								
	MK70X1AH	H-3	7.57E-03 +- 8.0E-03	U J	pCi/g	100%	1.76E-02	4.00E+02	
	J1K8F8								
	MK7001AH	H-3	9.49E-03 +- 9.5E-03	U J	pCi/g	100%	2.07E-02	4.00E+02	
	J1K8F8 DUP								
	MK7001AM	H-3	7.27E-03 +- 1.3E-02	U	pCi/g	100%	2.79E-02	4.00E+02	26.5
	J1K8F9								
	MK7021AH	H-3	7.32E-03 +- 8.8E-03	U J	pCi/g	100%	1.93E-02	4.00E+02	
	J1K8H0								
	MK7031AH	H-3	3.18E-03 +- 8.2E-03	U J	pCi/g	100%	1.85E-02	4.00E+02	
	J1K8H1								
	MK7061AH	H-3	1.94E-03 +- 9.1E-03	U J	pCi/g	100%	2.06E-02	4.00E+02	
	J1K8H2								
	MK7071AH	H-3	-1.08E-03 +- 8.4E-03	U J	pCi/g	100%	1.92E-02	4.00E+02	
1208211	TC99_ETVDSK_LSC								
	J1K8F2								
	MK70F1AG	TC-99	-1.85E-01 +- 3.2E-01	U	pCi/g	100%	6.18E-01	1.50E+01	
	J1K8F3								
	MK70L1AG	TC-99	1.53E-01 +- 3.3E-01	U	pCi/g	100%	6.07E-01	1.50E+01	
	J1K8F4								
	MK70P1AG	TC-99	4.63E-02 +- 3.2E-01	U	pCi/g	100%	5.99E-01	1.50E+01	
	J1K8F5								
	MK70V1AG	TC-99	1.08E-01 +- 3.3E-01	U	pCi/g	100%	6.04E-01	1.50E+01	
	J1K8F6								
	MK70W1AG	TC-99	-2.82E-01 +- 3.1E-01	U	pCi/g	100%	6.08E-01	1.50E+01	
	J1K8F6 DUP								
	MK70W1AM	TC-99	-9.05E-02 +- 3.2E-01	U	pCi/g	100%	6.04E-01	1.50E+01	-102.8
	J1K8F7								
	MK70X1AG	TC-99	1.56E-01 +- 3.3E-01	U	pCi/g	100%	6.08E-01	1.50E+01	
	J1K8F9								
	MK7021AG	TC-99	3.00E-01 +- 3.4E-01	U	pCi/g	100%	6.10E-01	1.50E+01	
	J1K8H0								
	MK7031AG	TC-99	1.61E-01 +- 3.4E-01	U	pCi/g	100%	6.25E-01	1.50E+01	

TestAmerica

rptSTLRchSaSummary2 V5.2.15 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.

016

Sample Results Summary

Date: 10-Aug-11

TestAmerica TARL

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

Report No. : 47756

8/21/11

SDG No: JP0240

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1208211 TC99_ETVDSK_LSC									
J1K8H1									
	MK7061AG	TC-99	6.03E-02 +- 3.3E-01	U	pCi/g	100%	6.06E-01	1.50E+01	
J1K8H2									
	MK7071AG	TC-99	1.48E-01 +- 3.4E-01	U	pCi/g	100%	6.21E-01	1.50E+01	
1208212 NI63_LSC									
J1K8F2									
	MK70F1AE	NI-63	-3.51E+00 +- 5.6E+00	U	pCi/g	100%	1.25E+01	3.00E+01	
J1K8F3									
	MK70L1AE	NI-63	3.11E-01 +- 6.7E+00	U	pCi/g	91%	1.46E+01	3.00E+01	
J1K8F4									
	MK70P1AE	NI-63	-6.94E-01 +- 5.2E+00	U	pCi/g	99%	1.12E+01	3.00E+01	
J1K8F5									
	MK70V1AE	NI-63	3.17E+00 +- 6.6E+00	U	pCi/g	92%	1.37E+01	3.00E+01	
J1K8F5 DUP									
	MK70V1AM	NI-63	2.33E+00 +- 6.4E+00	U	pCi/g	94%	1.34E+01	3.00E+01	30.8
J1K8F6									
	MK70W1AE	NI-63	8.03E+00 +- 6.7E+00	U	pCi/g	91%	1.32E+01	3.00E+01	
J1K8F7									
	MK70X1AE	NI-63	-1.08E+00 +- 5.9E+00	U	pCi/g	97%	1.29E+01	3.00E+01	
J1K8F8									
	MK7001AE	NI-63	3.04E+00 +- 6.2E+00	U	pCi/g	98%	1.28E+01	3.00E+01	
J1K8F9									
	MK7021AE	NI-63	1.17E+00 +- 5.9E+00	U	pCi/g	100%	1.25E+01	3.00E+01	
J1K8H0									
	MK7031AE	NI-63	7.45E-01 +- 5.9E+00	U	pCi/g	96%	1.25E+01	3.00E+01	
J1K8H1									
	MK7061AE	NI-63	4.32E+00 +- 5.6E+00	U	pCi/g	97%	1.15E+01	3.00E+01	
J1K8H2									
	MK7071AE	NI-63	-1.30E-01 +- 5.7E+00	U	pCi/g	98%	1.22E+01	3.00E+01	
1208214 C14_CHEM_LSC									
J1K8F2									
	MK70F1AK	C-14	9.40E-02 +- 2.1E-01	U J	pCi/g	100%	4.57E-01	5.00E+01	
J1K8F3									
	MK70L1AK	C-14	1.26E-01 +- 2.1E-01	U J	pCi/g	100%	4.55E-01	5.00E+01	
J1K8F4									
	MK70P1AK	C-14	8.40E-02 +- 2.1E-01	U J	pCi/g	100%	4.57E-01	5.00E+01	
J1K8F4 DUP									
	MK70P1AM	C-14	-2.93E-02 +- 2.0E-01	U	pCi/g	100%	4.56E-01	5.00E+01	414.4
J1K8F5									

TestAmerica

rptSTLRchSaSummary2 V5.2.15 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.

017

Sample Results Summary

TestAmerica TARL

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

Date: 10-Aug-11

Report No. : 47756

SDG No: JP0240

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1208214 C14_CHEM_LSC									
J1K8F5									
	MK70V1AK	C-14	-3.77E-02 +- 2.0E-01	U J	pCi/g	100%	4.57E-01	5.00E+01	
J1K8F6									
	MK70W1AK	C-14	8.64E-02 +- 2.1E-01	U J	pCi/g	100%	4.54E-01	5.00E+01	
J1K8F7									
	MK70X1AK	C-14	3.51E-01 +- 2.2E-01	U J	pCi/g	100%	4.54E-01	5.00E+01	
J1K8F8									
	MK7001AK	C-14	1.26E-01 +- 2.1E-01	U J	pCi/g	100%	4.57E-01	5.00E+01	
J1K8F9									
	MK7021AK	C-14	-7.82E-02 +- 2.0E-01	U J	pCi/g	100%	4.57E-01	5.00E+01	
J1K8H0									
	MK7031AK	C-14	2.94E-02 +- 2.0E-01	U J	pCi/g	100%	4.54E-01	5.00E+01	
J1K8H1									
	MK7061AK	C-14	1.62E-01 +- 2.1E-01	U J	pCi/g	100%	4.55E-01	5.00E+01	
J1K8H2									
	MK7071AK	C-14	1.15E-01 +- 2.1E-01	U J	pCi/g	100%	4.54E-01	5.00E+01	
1208239 7196_CR6									
J1K8F2									
	MK70F1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	MK70F1AP	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	3.50E-01	0.0
J1K8F3									
	MK70L1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
J1K8F4									
	MK70P1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
J1K8F5									
	MK70V1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
J1K8F6									
	MK70W1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
J1K8F7									
	MK70X1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
J1K8F8									
	MK7001AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
J1K8F9									
	MK7021AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
J1K8H0									
	MK7031AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
J1K8H1									
	MK7061AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
J1K8H2									

K 8/21/11

TestAmerica

rptSTLRchSaSummary2 V5.2.15 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.

018

Sample Results Summary

Date: 10-Aug-11

TestAmerica TARL

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

Report No. : 47756 **SDG No:** JP0240

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1208239	7196_CR6								
~~J1K8H2~~									
	MK7071AA	HEXCHROME	~~1.55E-01 +- 0.0E+00~~	~~U~~	~~mg/kg~~	~~N/A~~	~~1.55E-01~~	~~1.55E-01~~	
1215087	TC99_ETVDSK_LSC								
J1K8F8									
	MK7002AG	TC-99	1.70E-01 +- 3.6E-01	U	pCi/g	100%	6.10E-01	1.50E+01	

No. of Results: 228

TestAmerica

rptSTLRchSaSummary2 V5.2.15
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.

019

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Certificate of Analysis

Washington Hanford Closure
2620 Fermi Avenue
Richland, WA 99354

August 10, 2011

Attention: Joan Kessner

SAF Number	:	RC-107
Date SDG Closed	:	July 27, 2011
Number of Samples	:	Eleven (11)
Sample Type	:	Soil
SDG Number	:	JP0240
Data Deliverable	:	7– Day / Summary

CASE NARRATIVE

I. Introduction

On July 27, 2011 eleven soil samples were received at TestAmerica for radiochemical analysis. Upon receipt, the samples were assigned the following laboratory ID number to correspond with the Washington Closure Hanford (WCH) specific ID:

WCH ID#	TARL ID#	MATRIX	DATE OF RECEIPT
J1K8F2	MK70F	SOIL	7/27/11
J1K8F3	MK70L	SOIL	7/27/11
J1K8F4	MK70P	SOIL	7/27/11
J1K8F5	MK70V	SOIL	7/27/11
J1K8F6	MK70W	SOIL	7/27/11
J1K8F7	MK70X	SOIL	7/27/11
J1K8F8	MK700	SOIL	7/27/11
J1K8F9	MK702	SOIL	7/27/11
J1K8H0	MK703	SOIL	7/27/11
J1K8H1	MK706	SOIL	7/27/11
J1K8H2	MK707	SOIL	7/27/11

II. Sample Receipt

The samples were received in good condition and no anomalies were noted during check-in.

III. Analytical Results/Methodology

2800 George Washington Way Richland, WA 99354 tel 509.375.3131 fax 509.375.5590 www.testamericainc.com
TestAmerica Laboratories, Inc.

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:

Alpha Spectroscopy
Plutonium-238, -239/240 by method RL-ALP-002
Uranium 234, 235 and 238 by method RL-ALP-015
Gas Proportional Counting
Strontium-90 by method RL-GPC-003
Gamma Spectroscopy
Gamma Spec by method RL-GAM-001
Liquid Scintillation Counting
Technetium-99 by method RL-LSC-013
Tritium by method RL-LSC-005
Carbon-14 by method RL-LSC-008
Nickel-63 by method RL-LCS-017
Chemical Analysis
Hexavalent Chromium by EPA method 7196A

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

Alpha Spectroscopy
Plutonium-238, -239/240 by method RL-ALP-002:
The LCS, batch blank, samples and sample duplicate (J1K8F2) results are within contractual requirements.

Uranium 234, 235 and 238 by method RL-ALP-015:
The LCS, batch blank, samples and sample duplicate (J1K8F3) results are within contractual requirements.

Gas Proportional Counting
Strontium-90 by method RL-GPC-003:
The LCS, batch blank, samples and sample duplicate (J1K8H1) results are within contractual requirements.

Gamma Spectroscopy
Gamma Spec by method RL-GAM-001:

The CRDL was not met for some of the analytes. Except as noted, the LCS, batch blank, samples and sample duplicate (J1K8H0) results are within contractual requirements.

Liquid Scintillation Counting

Technetium-99 by method RL-LSC-013:

The sample matrix spike (J1K8F7) and sample J1K8F8 were switched during the original analysis. Sample J1K8F8 was re-analyzed in batch 1215087 to confirm the switch, the sample activity is below the CRDL. Except as noted; the LCS, batch blank, samples, sample duplicate (J1K8F6) and sample matrix spike (J1K8F7) results are within contractual requirements.

Tritium by method RL-LSC-005:

The LCS, batch blank, samples and sample duplicate (J1K8F8) results are within contractual requirements.

Carbon-14 by method RL-LSC-008:

The LCS, batch blank, samples and sample duplicate (J1K8F4) results are within contractual requirements.

Nickel-63 by method RL-LCS-017:

The LCS, batch blank, samples and sample duplicate (J1K8F5) results are within contractual requirements.

Chemical Analysis

Hexavalent Chromium by EPA method 7196A

The LCS, batch blank, samples, sample duplicate (J1K8F2), and sample matrix spike (J1K8F2) 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

023

TestAmerica Laboratories, Inc.

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-084	Page 1 of 6

Collector Q Stowe	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH
Price Code ~~8L~~ 8B	Data Turnaround ~~21~~ 7 Days		
Project Designation 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 132-H-3 BCL-A Verification		SAF No. RC-107
Ice Chest No. NA	Field Logbook No. EL 1627-05	COA 0132H32000	Method of Shipment Government Vehicle/FedEx
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. NA		Bill of Lading/Air Bill No. NA

POSSIBLE SAMPLE HAZARDS/REMARKS
None

Special Handling and/or Storage
~~None~~ Cool 4°C

REVIEWED BY DATE 7-27-11

QuoK #27038
SDG #JP0240
COT #J1G270465
Report: 8/3/11

SAMPLE ANALYSIS

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None	None
Type of Container	G/P	G/P	G/P	aG	aG	G/P	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	60mL	60mL	125mL	120mL	120mL	120mL	500mL	60mL	60mL	60mL
	See item (1) in Special Instructions.	Chromium Hex - 7196	See item (2) in Special Instructions.	PCBs - 8082	PAHs - 8310	Carbon-14; Tritium - H3 Low Level Soil	See item (3) in Special Instructions.	Isotopic Uranium	Isotopic Plutonium	Nickel-63; Strontium-89,90 – Total Sr

Sample No.	Matrix *	Sample Date	Sample Time								
~~J1K8F0~~	~~SOIL~~										
~~J1K8F1~~	~~SOIL~~										
J1K8F2 MK70F	SOIL	~~7/27/11~~ 7/26/11	0755		X			X	X	X	X	X
J1K8F3 MK70L	SOIL	7/26/11	0810		X			X	X	X	X	X
J1K8F4 MK70P	SOIL	7/26/11	0820		X			X	X	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: Quincy Stowe	7/26/11 1545	JV Fullmer	7/26/11 1545
Relinquished By/Removed From: JV Fullmer	7/26/11 1745	Chris Bingham	7/26/11 1745
Relinquished By/Removed From: Chris Bingham	7/27/11 0840 WCH	H. Charles Hardy Cook	7/27/11 0840
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

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) IC Anions - 9056 Modified {Bromide, Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate}; NO2/NO3 - 353.2; pH (Soil) - 9045
(3) Gamma Spec - Client List {Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable}

J1G270465

JP0240 AP 7-27-11

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

TestAmerica Laboratories, Inc.

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-084	Page 1/2 of 6

Collector Q Stowe	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH
Price Code 8L 8B	Data Turnaround 21 Days		
Project Designation 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 132-H-3 BCL-A Verification		SAF No. RC-107
Ice Chest No. NA	Field Logbook No. EL 1627-05	COA 0132H32000	Method of Shipment Government Vehicle/FedEx
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. NA		Bill of Lading/Air Bill No. NA

POSSIBLE SAMPLE HAZARDS/REMARKS

None

Special Handling and/or Storage

None

REVIEWED BY DATE 7-27-11

Preservation	None											
Type of Container	G/P											
No. of Container(s)	1											
Volume	60mL											
SAMPLE ANALYSIS	Technetium-99											
Sample No.	Matrix *	Sample Date	Sample Time									
~~J1K8F0~~	~~SOIL~~	~~7/26/11~~										
~~J1K8F1~~	~~SOIL~~	~~7/26/11~~										
J1K8F2 MK70F	SOIL	7/26/11	0755	X								
J1K8F3 MK70L	SOIL	7/26/11	0810	X								
J1K8F4 MK70P	SOIL	7/26/11	0820	X								

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Quincy Stowe	7/26/11 1545	JU Fuller	7/26/11 1545
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JU Fuller	7/26/11 1745	Bingham	7/26/11 1745
Relinquished By/Received By	Date/Time	Received By/Stored In	Date/Time
Bingham	7/27/11 0840 WCH	H. Carnes	7/27/11 0840
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

SPECIAL INSTRUCTIONS

SDG # JP0248 RW 7/27/11
LOT # J1G270465

JP0240

~~JP0245~~

~~JP0240~~ AP 7-26-11

Matrix *

S=Soil
SE=Sediment
SO=Solid
SJ=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

92

0255

TestAmerica Laboratories, Inc.

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-084	Page 3 of 6

Collector Q Stowe	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH
Price Code ~~81~~ 813	Data Turnaround ~~21~~ 7 Days		
Project Designation 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 132-H-3 BCL-A Verification		SAF No. RC-107
Ice Chest No. NA	Field Logbook No. EL 1627-05	COA 0132H32000	Method of Shipment Government Vehicle/FedEx
Shipped To TestAmerica Incorporated, Richland	Offsite Property No. NA		Bill of Lading/Air Bill No. NA

POSSIBLE SAMPLE HAZARDS/REMARKS
None

Special Handling and/or Storage
~~None~~ Cool 4C
DH 7/24/11 RW 7/27/11

SDG# JP0245
LOT# J1G270465

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None	None
Type of Container	G/P	G/P	G/P	aG	aG	G/P	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	60mL	60mL	125mL	120mL	120mL	120mL	500mL	60mL	60mL	60mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	See item (2) in Special Instructions.	PCBs - 8082	PAHs - 8310	Carbon-14; Tritium - H3 Low Level Soil	See item (3) in Special Instructions.	Isotopic Uranium	Isotopic Plutonium	Nickel-63; Strontium-89,90 -- Total Sr

Sample No.	Matrix *	Sample Date	Sample Time									
J1K8F5 MK70V	SOIL	7/26/11	0830		X				X	X	X	X	X
J1K8F6 MK70W	SOIL	7/26/11	0835		X				X	X	X	X	X
J1K8F7 MK70X	SOIL	7/26/11	0845		X				X	X	X	X	X
J1K8F8 MK700	SOIL	7/26/11	0855		X				X	X	X	X	X
J1K8F9 MK702	SOIL	7/26/11	0900		X				X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Quincy Stowe	7/26/11 1545	JV Fullmer	7/26/11 1545
JV Fullmer	7/26/11 1745	Bingham	7/26/11 1745
Bingham	7/27/11 0840 WCH	TALD A. Curtis Hayflee	7/27/11 0840

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) IC Anions - 9056 Modified {Bromide, Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate}; NO2/NO3 - 353.2; pH (Soil) - 9045
(3) Gamma Spec - Client List {Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable}

REVIEWED BY DATE 7-27-11

~~JP0245~~ JP0240 JP0240 AP 7-26-11

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

93-TAL-026

TestAmerica Laboratories, Inc.

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-084	Page 4 of 6

Collector: Q Stowe	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code: ~~81~~ 88	Data Turnaround: ~~21~~ 7 Days		
Project Designation: 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 132-H-3 BCL-A Verification		SAF No.: RC-107
Ice Chest No.: NA	Field Logbook No.: EL 1627-05	COA: 0132H32000	Method of Shipment: Government Vehicle/FedEx
Shipped To: TestAmerica Incorporated, Richland	Offsite Property No.: NA		Bill of Lading/Air Bill No.: NA

POSSIBLE SAMPLE HAZARDS/REMARKS: None

Special Handling and/or Storage: None

Preservation	None											
Type of Container	G/P											
No. of Container(s)	1											
Volume	60mL											
SAMPLE ANALYSIS	Technetium-99											
Sample No.	Matrix *	Sample Date	Sample Time									
J1K8F5 MK70V	SOIL	7/26/11	0830	X								
J1K8F6 MK70W	SOIL	7/26/11	0835	X								
J1K8F7 MK70X	SOIL	7/26/11	0845	X								
J1K8F8 MK700	SOIL	7/26/11	0855	X								
J1K8F9 MK702	SOIL	7/26/11	0900	X								

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Quincy Stowe	7/26/11 1545	JV Fullmer	7/26/11 1545
JV Fullmer	7/26/11 1745	Cunningham	7/26/11 1745
Cunningham	7/27/11 0840	H. Carnes	7/27/11 0840
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

SPECIAL INSTRUCTIONS

SDG# JP0240 LOT# J1G270465

REVIEWED BY DATE 7-27-11

JP0240

~~JP0245~~

~~JP0240~~

~~JP020~~

Matrix *: S=Soil, SE=Sediment, SO=Solid, Sl=Sludge, W=Water, O=Oil, A=Air, DS=Drum Solids, DL=Drum Liquids, T=Tissue, Wi=Wipe, L=Liquid, V=Vegetation, X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

TestAmerica Laboratories, Inc.

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-084	Page 2 of 5
Collector: Q Stowe	Company Contact: Joan Kessner; Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 8L 8B5
Project Designation: 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 132-H-3 BCL-A Verification	SAF No.: RC-107	Data Turnaround: ~~21~~ 7 Days
Ice Chest No.: NA	Field Logbook No.: EL 1627-05; COA: 0132H32000	Method of Shipment: Government Vehicle/FedEx	
Shipped To: TestAmerica Incorporated, Richland	Offsite Property No.: NA	Bill of Lading/Air Bill No.: NA	

POSSIBLE SAMPLE HAZARDS/REMARKS: None 7/26/11

Special Handling and/or Storage: ~~None~~ Cool 4C DH 7/27/11

SDG # JP0248 LOT # J1G270465

SAMPLE ANALYSIS												
Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None	None
Type of Container	G/P	G/P	G/P	aG	aG	G/P	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	60mL	60mL	125mL	120mL	120mL	120mL	500mL	60mL	60mL	60mL
	See item (1) in Special Instructions.	Chromium Hex - 7196	See item (2) in Special Instructions	PCBs - 8082	PAHs - 8310	Carbon-14; Tritium - H3 Low Level Soil	See item (3) in Special Instructions.	Isotopic Uranium	Isotopic Plutonium	Nickel-63; Strontium-89,90 -- Total Sr

Sample No.	Matrix *	Sample Date	Sample Time										
J1K8H0 MK703	SOIL	7/26/11	0910		X				X	X	X	X	X
J1K8H1 MK706	SOIL	7/26/11	0920		X				X	X	X	X	X
J1K8H2 MK707	SOIL	7/26/11	0810		X				X	X	X	X	X

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: Quincy Stowe	Date/Time: 7/26/11 1545	Received By/Stored In: JV Fullmer	Date/Time: 1545 7/26/11
Relinquished By/Removed From: JV Fullmer	Date/Time: 1745 7/26/11	Received By/Stored In: Candace Burgham	Date/Time: 7/26/11 1745
Relinquished By/Removed From: Candace Burgham	Date/Time: WCH 7/27/11 0840	Received By/Stored In: TT Carnes	Date/Time: TRL 0840 7/27/11
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

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) IC Anions - 9056 Modified (Bromide, Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate); NO2/NO3 - 353.2; pH (Soil) - 9045
(3) Gamma Spec - Client List {Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable}

JP0240 ~~JP0245~~ AP 7-27-11 JP0240 AP 7-26-11

REVIEWED BY AP DATE 7-27-11

Matrix *: S=Soil; SE=Sediment; SO=Solid; Sl=Sludge; W = Water; O=Oil; A=Air; DS=Drum Solids; DL=Drum Liquids; T=Tissue; WI=Wipe; L=Liquid; V=Vegetation; X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-084	Page 6 of 6
Collector: Q Stowe	Company Contact: Joan Kessner; Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: ~~81~~ 8B (on 7/26/11); Data Turnaround: ~~21~~ 7 Days (on 7/26/11)
Project Designation: 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 132-H-3 BCL-A Verification	SAF No.: RC-107	
Ice Chest No.: NA	Field Logbook No.: EL 1627-05; COA: 0132H32000	Method of Shipment: Government Vehicle/FedEx	
Shipped To: TestAmerica Incorporated, Richland	Offsite Property No.: NA	Bill of Lading/Air Bill No.: NA	

POSSIBLE SAMPLE HAZARDS/REMARKS

None JV 7/26/11

Special Handling and/or Storage

None

SDG # JP0240 (on 7/27/11)
LOT # J1G270465 SAMPLE ANALYSIS

Preservation	None												
Type of Container	G/P												
No. of Container(s)	1												
Volume	60mL												
	Technetium-99												

Sample No.	Matrix *	Sample Date	Sample Time	Technetium-99
J1K8H0 MK703	SOIL	7/26/11	0910	X
J1K8H1 MK706	SOIL	7/26/11	0920	X
J1K8H2 MK707	SOIL	7/26/11	0810	X

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Ashley Stowe	7/26/11 1545	JV Fullmer	7/26/11 1545
JV Fullmer	7/26/11 1745	Chris Bingham	7/26/11 1745
Chris Bingham	7/27/11 0840	H. Carnes Stayler	7/27/11 0840
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

SPECIAL INSTRUCTIONS

REVIEWED BY DATE 7-27-11

JP0240
~~JP0245~~ AP 7-27-11
~~JP0240~~ AP 7-26-11

Matrix *
S=Soil
SE=Sediment
SO=Solid
SJ=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

TestAmerica Laboratories, Inc.

96

029

Appendix 5

Data Validation Supporting Documentation

APPENDIX A

RADIOCHEMICAL DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 132-14-3			DATA PACKAGE: JP0240		
VALIDATOR: BLR		LAB: TAL		DATE: 8/21/11	
			SDG: JP0240		

ANALYSES PERFORMED					
☐ Gross Alpha/Beta	☒ Strontium-90	☒ Technetium-99	☒ Alpha Spectroscopy	☒ Gamma Spectroscopy	
☐ Total Uranium	☐ Radium-22	☒ Tritium	X Ni-63	X C14	

SAMPLES/MATRIX				
JIK8F2	JIK8F3	JIK8F4	JIK8F5	JIK8F6
JIK8F7	JIK8F8	JIK8F9	JIK8H0	JIK8H1
JIK8H2				
				Soil

1. Completeness ..... ☐ N/A

Technical verification forms present? ..... Yes No N/A

Comments: _____

2. Initial Calibration (Levels D, E) ..... ☒ N/A

Instruments/detectors calibrated? ..... Yes No N/A

Initial calibration acceptable? ..... Yes No N/A

Standards NIST traceable? ..... Yes No N/A

Standards Expired? ..... Yes No N/A

Calculation check acceptable? ..... Yes No N/A

Comments: _____

3. Continuing Calibration (Levels D, E) ☒ N/A

Calibration checked within required frequency? ..... Yes No N/A

Calibration check acceptable? ..... Yes No N/A

Calibration check standards traceable? ..... Yes No N/A

Calibration check standards expired? ..... Yes No N/A

Calculation check acceptable? ..... Yes No N/A

Comments: _____

_____

_____

_____

_____

4. Background Counts (Levels D, E) ..... ☒ N/A

Background Counts checked within required frequency? ..... Yes No N/A

Background Counts acceptable? ..... Yes No N/A

Calculation check acceptable? ..... Yes No N/A

Comments: _____

_____

_____

_____

_____

5. Blanks (Levels B, C, D, E) ..... ☐ N/A

Method blank analyzed within required frequency? ..... Yes No N/A

Method blank results acceptable? ..... Yes No N/A

Analytes detected in method blank? ..... Yes No N/A

Field blank(s) analyzed? ..... Yes No N/A

Field blank results acceptable? ..... Yes No N/A

Analytes detected in field blank(s)? ..... Yes No N/A

Transcription/Calculation Errors? (Levels D, E) ..... Yes No N/A

Comments: no FB

6. Laboratory Control Samples or Blank Spike Samples (Levels C, D, E) ..... ☐ N/A

LCS /BSS analyzed within required frequency? ..... Yes No N/A

LCS/BSS recoveries acceptable? ..... Yes No N/A

LCS/BSS traceable? (Levels D,E) ..... Yes No N/A

LCS/BSS expired? (Levels D,E) ..... Yes No N/A

LCS/BSS levels correct? (Levels D,E) ..... Yes No N/A

Transcription/Calculation Errors? (Levels D, E) ..... Yes No N/A

Comments: no pu-238 or U-235 LCS - Jell

7. Chemical Carrier Recovery (Levels C, D, E) ..... ☒ N/A

Chemical carrier added? ..... Yes No N/A

Chemical recovery acceptable? ..... Yes No N/A

Chemical carrier traceable? (Levels D, E) ..... Yes No N/A

Chemical carrier expired? (Levels D, E) ..... Yes No N/A

Transcription/Calculation errors? (Levels D, E) ..... Yes No N/A

Comments: _____

8. Tracer Recovery (Levels C, D, E) ..... ☐ N/A

Tracer added? ..... Yes No N/A

Tracer recovery acceptable? ..... Yes No N/A

Tracer traceable? (Levels D, E) ..... Yes No N/A

Tracer expired? (Levels D, E) ..... Yes No N/A

Transcription/Calculation errors? (Levels D, E) ..... Yes No N/A

Comments: _____

9. Matrix Spikes (Levels C, D, E) ..... ☐ N/A

Matrix spike analyzed? ..... Yes No N/A

Spike recoveries acceptable? ..... Yes No N/A

Spike source traceable? (Levels D, E) ..... Yes No N/A

Spike source expired? Levels D, E) ..... Yes No N/A

Transcription/Calculation Errors? (Levels D, E) ..... Yes No N/A

Comments: no 3H or C14 MS - Jall

10. Duplicates (Levels C, D, E) ..... ☐ N/A

Duplicates Analyzed at required frequency? ..... Yes No N/A

RPD Values Acceptable? ..... Yes No N/A

Transcription/Calculation Errors? (Levels D, E) ..... Yes No N/A

Comments: CS-137 SrO_2 - - Jall

11. Field QC Samples (Levels C, D E) ..... ☐ N/A

Field duplicate sample(s) analyzed? ..... Yes No N/A

Field duplicate RPD values acceptable? ..... Yes No N/A

Field split sample(s) analyzed? ..... Yes No N/A

Field split RPD values acceptable? ..... Yes No N/A

Performance audit sample(s) analyzed? ..... Yes No N/A

Performance audit sample results acceptable? ..... Yes No N/A

Comments: F2/F3 -

No FD FS or PAS

12. Holding Times (All levels)

Are sample holding times acceptable? ..... Yes No N/A

Comments:

13. Results and Detection Limits (All Levels) ..... ☐ N/A

Results reported for all required sample analyses? ..... Yes No N/A

Results supported in raw data?(Levels D, E) ..... Yes No N/A

Results Acceptable? (Levels D, E) ..... Yes No N/A

Transcription/Calculation errors? (Levels D, E) ..... Yes No N/A

MDA's meet required detection limits? ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Comments: 7 over

Appendix 6

Additional Documentation Requested by Client

QC Results Summary

TestAmerica TARL

Ordered by Method, Batch No, QC Type,.

Date: 10-Aug-11

Report No. : 47756

SDG No.: JP0240

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
PUISO_PLATE_AEA								
1208217 BLANK QC,								
MK7621AA	PU-238	-2.00E-03 +- 8.0E-02	U	pCi/g	89%			1.50E-01
	PU239/40	0.00E+00 +- 8.0E-02	U	pCi/g	89%			1.50E-01
1208217 LCS,								
MK7621AC	PU239/40	8.17E+00 +- 2.0E+00		pCi/g	100%	118%	0.2	1.33E-01
UISO_IE_PLATE_AEA								
1208215 BLANK QC,								
MK7601AA	U-234	7.02E-03 +- 5.8E-02	U	pCi/g	87%			1.91E-01
	U-235	-5.69E-03 +- 5.7E-02	U	pCi/g	87%			1.36E-01
	U-238	1.98E-02 +- 5.7E-02	U	pCi/g	87%			1.49E-01
1208215 LCS,								
MK7601AC	U-234	3.22E+00 +- 9.4E-01		pCi/g	72%	101%	0.0	1.16E-01
	U-238	3.09E+00 +- 9.1E-01		pCi/g	72%	93%	-0.1	1.40E-01
GAMMA_GS								
1208208 BLANK QC,								
MK76Q1AA	AG-108M	-6.20E-03 +- 1.1E-02	U	pCi/g				1.83E-02
	AMERICIUM 241	-4.12E-02 +- 1.1E-01	U	pCi/g				1.91E-01
	BA-133	1.11E-03 +- 1.5E-02	U	pCi/g				2.41E-02
	CO-60	-4.26E-03 +- 1.3E-02	U	pCi/g				2.32E-02
	CS-137	-6.55E-03 +- 1.4E-02	U	pCi/g				2.32E-02
	EU-152	-1.10E-02 +- 3.5E-02	U	pCi/g				5.78E-02
	EU-154	-2.21E-02 +- 3.9E-02	U	pCi/g				6.52E-02
	EU-155	9.45E-03 +- 3.8E-02	U	pCi/g				6.53E-02
1208208 LCS,								
MK76Q1AC	CS-137	1.07E+00 +- 1.5E-01		pCi/g		99%	0.0	3.71E-02
SRTOT_SEP_PRECIP_GPC								
1208209 BLANK QC,								
MK76R1AA	STRONTIUM	-5.48E-03 +- 4.7E-02	U	pCi/g	93%			1.14E-01
1208209 LCS,								
MK76R1AC	STRONTIUM	9.73E-01 +- 2.8E-01		pCi/g	91%	86%	-0.1	1.22E-01
906.0_H3_LSC								
1208210 BLANK QC,								
MK76T1AA	H-3	1.42E-03 +- 1.2E-02	U	pCi/g	100%			2.72E-02
1208210 LCS,								
MK76T1AC	H-3	2.61E-01 +- 2.3E-02		pCi/g	100%	97%	0.0	3.11E-02
TC99_ETVDSK_LSC								
1208211 BLANK QC,								
MK76V1AA	TC-99	2.64E-03 +- 3.3E-01	U	pCi/g	100%			6.11E-01
1208211 LCS,								
MK76V1AC	TC-99	6.19E+01 +- 3.8E+00		pCi/g	100%	89%	-0.1	6.10E-01
1208211 MATRIX SPIKE, J1K8F7								

TestAmerica

rptSTLRchQcSummary V5.2.15 A2002

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

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

QC Results Summary

TestAmerica TARL

Ordered by Method, Batch No, QC Type,.

Date: 10-Aug-11

Report No. : 47756

SDG No.: JP0240

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
MK70X1AM	TC-99	1.80E+02 +- 1.0E+01		pCi/g	100%	81%	-0.2	6.07E-01
NI63_LSC								
1208212 BLANK QC,								
MK76W1AA	NI-63	-1.37E+00 +- 5.5E+00	U	pCi/g	100%			1.20E+01
1208212 LCS,								
MK76W1AC	NI-63	4.60E+02 +- 4.6E+01		pCi/g	97%	78%	-0.2	1.19E+01
C14_CHEM_LSC								
1208214 BLANK QC,								
MK76X1AA	C-14	-1.20E-03 +- 5.0E-03	U	pCi/g	100%			1.14E-02
1208214 LCS,								
MK76X1AC	C-14	7.34E+00 +- 5.2E-01		pCi/g	100%	100%	0.0	4.59E-01
7196_CR6								
1208239 MATRIX SPIKE, J1K8F2								
MK70F1AN	HEXCHROME	9.06E+00 +- 0.0E+00		mg/kg	N/A	88%	-0.1	1.55E-01
1208239 LCS,								
MK8A11AC	HEXCHROME	1.81E+01 +- 0.0E+00		mg/kg	N/A	91%	-0.1	1.55E-01
1208239 BLANK QC,								
MK8A11AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A			1.55E-01
TC99_ETVDSK_LSC								
1215087 BLANK QC,								
MLDQQ1AA	TC-99	1.54E-01 +- 3.6E-01	U	pCi/g	100%			6.11E-01
1215087 LCS,								
MLDQQ1AC	TC-99	6.11E+01 +- 3.7E+00		pCi/g	100%	88%	-0.1	6.10E-01

No. of Results: 33

TestAmerica

rptSTLRchQcSummary V5.2.15
A2002

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

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

039

Date: 23 August 2011
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: 100-H Remaining Sites Burial Grounds – Soil Full Protocol - Waste Site 132-H-3
Subject: Polyaromatic Hydrocarbons - Data Package No. JP0240-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. JP0240 prepared by TestAmerica Laboratories Inc. (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J1K8F2	7/26/11	Soil	C	See note 1
J1K8F3	7/26/11	Soil	C	See note 1
J1K8F4	7/26/11	Soil	C	See note 1
J1K8F5	7/26/11	Soil	C	See note 1
J1K8F6	7/26/11	Soil	C	See note 1
J1K8F7	7/26/11	Soil	C	See note 1
J1K8F8	7/26/11	Soil	C	See note 1
J1K8F9	7/26/11	Soil	C	See note 1
J1K8H0	7/26/11	Soil	C	See note 1
J1K8H1	7/26/11	Soil	C	See note 1
J1K8H2	7/26/11	Soil	C	See note 1

1 – Polyaromatic hydrocarbons by 8310.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the 100 Area Remedial Action Sampling and Analysis Plan (DOE/RL-96-22, September 2009). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Data Requested by Client

DATA QUALITY OBJECTIVES

Holding Times

Analytical holding times were assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as

follows: Samples must be extracted within 14 days of the date of sample collection and analyzed within 40 days from the date of extraction.

If holding times are exceeded, but not by greater than two times the limit, all associated sample results are qualified as estimates and flagged "J" for detects and "UJ" for non-detects. If holding times are exceeded by greater than two times the limit, all associated detectable sample results are qualified as estimates and flagged "J" and all non-detects are rejected and flagged "UR".

All holding times were acceptable.

- **Method Blanks**

Method blank analyses are conducted to determine the extent of laboratory contamination introduced through sampling, sample preparation and analysis. At least one acceptable method blank analysis must be conducted for every 20 samples. No contaminants should be present in the method blank. Analytical results for analytes present in any sample at less than five times the concentration of that analyte found in the associated blank are qualified as non-detects and flagged "U". Common laboratory contaminants present in samples at less than ten times the concentration of that analyte found in the associated blank are qualified as non-detects. If a sample result is less than the CRQL and is less than five times (or less than ten times for lab contaminants) the highest associated blank result, the sample result value is raised to the CRQL level and qualified as undetected "U".

All method blank results were acceptable.

Field (equipment) Blanks

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike/Matrix Spike Duplicate & Blank Spike Recoveries

Matrix spike/matrix spike duplicate analyses are used to assess the analytical accuracy of the reported data and the effect of the matrix on the ability to accurately quantify sample concentrations. Matrix spike/matrix spike duplicate analyses are performed in duplicate using five compounds for which percent recoveries must be within a range of 50-150% or within laboratory control limits. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Undetected sample results with spike recoveries below control limits are qualified as estimates and flagged "UJ". Undetected sample results

are not qualified if the spike recovery is above control limits. Sample results greater than five times the spike concentration require no qualification.

All accuracy results were acceptable.

Surrogate Recovery

The analyses of surrogate compounds provide a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the EPA CLP program. If two surrogates of the same class of compounds (base/neutral or acid) are out of control limits, all associated sample results greater than the contract required quantitation limit (CRQL) are qualified as estimates and flagged "J". Sample results less than the CRQL and below the lower control limit are qualified as estimates and flagged "UJ". Sample results less than the CRQL with recoveries above the upper control limit require no qualification. If a surrogate recovery is less than 10%, detects are qualified as estimates and flagged "J" and nondetects are rejected and flagged "UR".

All surrogate results were acceptable.

Precision

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike (MS)/matrix spike duplicate (MSD) results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed by the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. Samples results must be within RPD limits of +/-30%. If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

All laboratory duplicate results were acceptable.

Field Duplicate Samples

One set of field duplicates (J1K8F3/J1K8H2) were submitted for analysis. Laboratory duplicates are compared using the same criteria as for laboratory results. All field duplicate results are acceptable.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the required quantitation limits (RQL's) to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

- **Completeness**

Data package No. JP0240 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

None found.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*, March 2008.

DOE/RL-96-22, Rev. 5, *100 Area Remedial Action Sampling and Analysis Plan*, U.S. Department of Energy, September 2009.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the same quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

POLYAROMATIC HYDROCARBON DATA QUALIFICATION SUMMARY*

SDG: JP0240	REVIEWER: ELR	Project: 132-H-3	PAGE 1 OF 1
COMMENTS: No qualifiers assigned			

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Client Sample ID: **J1K8F2**

Lab Sample ID: 280-18551-1
Client Matrix: Solid
% Moisture: 3.4

Date Sampled: 07/26/2011 0755
Date Received: 07/28/2011 0900

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-79191	Instrument ID:	CHHPLC_G2_PAH
Prep Method:	3550C	Prep Batch:	280-78874	Initial Weight/Volume:	30.9 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	08/01/2011 1430			Injection Volume:	20 uL
Prep Date:	07/28/2011 2015			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		10	U	10	100
Acenaphthylene		9.0	U	9.0	100
Anthracene		3.1	U	3.1	20
Benzo[a]anthracene		3.2	U	3.2	15
Benzo[a]pyrene		6.4	U	6.4	15
Benzo[b]fluoranthene		4.2	U	4.2	15
Benzo[g,h,i]perylene		7.2	U	7.2	30
Benzo[k]fluoranthene		4.0	U	4.0	15
Chrysene		4.9	U	4.9	40
Dibenzo(a,h)anthracene		11	U	11	30
Fluoranthene		13	U	13	40
Fluorene		5.3	U	5.3	30
Indeno[1,2,3-cd]pyrene		12	U N	12	30
Naphthalene		12	U	12	100
Phenanthrene		12	U	12	40
Pyrene		12	U	12	40

Surrogate	%Rec	Qualifier	Acceptance Limits
Terphenyl-d14 (SUR)	99		72 - 115

8/21/11

010

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Client Sample ID: **J1K8F3**

Lab Sample ID: 280-18551-2
Client Matrix: Solid
% Moisture: 2.8

Date Sampled: 07/26/2011 0810
Date Received: 07/28/2011 0900

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-79191	Instrument ID:	CHHPLC_G2_PAH
Prep Method:	3550C	Prep Batch:	280-78874	Initial Weight/Volume:	32.4 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	08/01/2011 1500			Injection Volume:	20 uL
Prep Date:	07/28/2011 2015			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		9.5	U	9.5	95
Acenaphthylene		8.6	U	8.6	95
Anthracene		2.9	U	2.9	19
Benzo[a]anthracene		3.0	U	3.0	14
Benzo[a]pyrene		6.1	U	6.1	14
Benzo[b]fluoranthene		4.0	U	4.0	14
Benzo[g,h,i]perylene		6.9	U	6.9	29
Benzo[k]fluoranthene		3.8	U	3.8	14
Chrysene		4.6	U	4.6	38
Dibenzo(a,h)anthracene		10	U	10	29
Fluoranthene		12	U	12	38
Fluorene		5.0	U	5.0	29
Indeno[1,2,3-cd]pyrene		11	U N	11	29
Naphthalene		11	U	11	95
Phenanthrene		11	U	11	38
Pyrene		11	U	11	38

Surrogate	%Rec	Qualifier	Acceptance Limits
Terphenyl-d14 (SUR)	92		72 - 115

8/21/11

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Client Sample ID: **J1K8F4**

Lab Sample ID: 280-18551-3
Client Matrix: Solid
% Moisture: 2.4

Date Sampled: 07/26/2011 0820
Date Received: 07/28/2011 0900

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-79758	Instrument ID:	CHHPLC_G
Prep Method:	3550C	Prep Batch:	280-79681	Initial Weight/Volume:	30.8 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	08/04/2011 1543			Injection Volume:	20 uL
Prep Date:	08/03/2011 1540			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		10	U	10	100
Acenaphthylene		9.0	U	9.0	100
Anthracene		3.0	U	3.0	20
Benzo[a]anthracene		3.2	U	3.2	15
Benzo[a]pyrene		6.4	U	6.4	15
Benzo[b]fluoranthene		4.2	U	4.2	15
Benzo[g,h,i]perylene		7.2	U	7.2	30
Benzo[k]fluoranthene		3.9	U	3.9	15
Chrysene		4.8	U	4.8	40
Dibenzo(a,h)anthracene		11	U	11	30
Fluoranthene		13	U	13	40
Fluorene		5.3	U	5.3	30
Indeno[1,2,3-cd]pyrene		12	U	12	30
Naphthalene		12	U	12	100
Phenanthrene		12	U	12	40
Pyrene		12	U	12	40

Surrogate	%Rec	Qualifier	Acceptance Limits
Terphenyl-d14 (SUR)	92		72 - 115

K 8/21/11

012

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Client Sample ID: **J1K8F5**

Lab Sample ID: 280-18551-4
Client Matrix: Solid

% Moisture: 3.2

Date Sampled: 07/26/2011 0830
Date Received: 07/28/2011 0900

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-79191	Instrument ID:	CHHPLC_G2_PAH
Prep Method:	3550C	Prep Batch:	280-78874	Initial Weight/Volume:	31.8 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	08/01/2011 1703			Injection Volume:	20 uL
Prep Date:	07/28/2011 2015			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		9.7	U	9.7	97
Acenaphthylene		8.8	U	8.8	97
Anthracene		3.0	U	3.0	19
Benzo[a]anthracene		3.1	U	3.1	15
Benzo[a]pyrene		12	J	6.2	15
Benzo[b]fluoranthene		11	J	4.1	15
Benzo[g,h,i]perylene		7.0	U	7.0	29
Benzo[k]fluoranthene		7.3	J	3.8	15
Chrysene		12	J	4.7	39
Dibenzo(a,h)anthracene		11	U	11	29
Fluoranthene		22	J	13	39
Fluorene		5.1	U	5.1	29
Indeno[1,2,3-cd]pyrene		12	U N	12	29
Naphthalene		12	U	12	97
Phenanthrene		19	J	12	39
Pyrene		27	J	12	39

Surrogate	%Rec	Qualifier	Acceptance Limits
Terphenyl-d14 (SUR)	94		72 - 115

8/21/11

013

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Client Sample ID: **J1K8F6**

Lab Sample ID: 280-18551-5
Client Matrix: Solid

% Moisture: 2.6

Date Sampled: 07/26/2011 0835
Date Received: 07/28/2011 0900

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-79191	Instrument ID:	CHHPLC_G2_PAH
Prep Method:	3550C	Prep Batch:	280-78874	Initial Weight/Volume:	31.0 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	08/01/2011 1733			Injection Volume:	20 uL
Prep Date:	07/28/2011 2015			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		9.9	U	9.9	99
Acenaphthylene		8.9	U	8.9	99
Anthracene		3.0	U	3.0	20
Benzo[a]anthracene		19	X	3.2	15
Benzo[a]pyrene		20		6.4	15
Benzo[b]fluoranthene		29		4.2	15
Benzo[g,h,i]perylene		7.2	U	7.2	30
Benzo[k]fluoranthene		12	J	3.9	15
Chrysene		25	J	4.8	40
Dibenzo(a,h)anthracene		11	U	11	30
Fluoranthene		66		13	40
Fluorene		5.2	U	5.2	30
Indeno[1,2,3-cd]pyrene		12	U N	12	30
Naphthalene		12	U	12	99
Phenanthrene		54		12	40
Pyrene		53		12	40

Surrogate	%Rec	Qualifier	Acceptance Limits
Terphenyl-d14 (SUR)	100		72 - 115

8/21/11

014

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Client Sample ID: **J1K8F7**

Lab Sample ID: 280-18551-6
Client Matrix: Solid

% Moisture: 3.4

Date Sampled: 07/26/2011 0845
Date Received: 07/28/2011 0900

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-79191	Instrument ID:	CHHPLC_G2_PAH
Prep Method:	3550C	Prep Batch:	280-78874	Initial Weight/Volume:	30.1 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	08/01/2011 1804			Injection Volume:	20 uL
Prep Date:	07/28/2011 2015			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		10	U	10	100
Acenaphthylene		9.3	U	9.3	100
Anthracene		3.1	U	3.1	21
Benzo[a]anthracene		3.3	U	3.3	15
Benzo[a]pyrene		6.6	U	6.6	15
Benzo[b]fluoranthene		4.3	U	4.3	15
Benzo[g,h,i]perylene		7.4	U	7.4	31
Benzo[k]fluoranthene		4.1	U	4.1	15
Chrysene		5.0	U	5.0	41
Dibenzo(a,h)anthracene		11	U	11	31
Fluoranthene		13	U	13	41
Fluorene		5.4	U	5.4	31
Indeno[1,2,3-cd]pyrene		12	U N	12	31
Naphthalene		12	U	12	100
Phenanthrene		12	U	12	41
Pyrene		12	U	12	41

Surrogate	%Rec	Qualifier	Acceptance Limits
Terphenyl-d14 (SUR)	93		72 - 115

K 8/24/11

015

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Client Sample ID: **J1K8F8**

Lab Sample ID: 280-18551-7
Client Matrix: Solid
% Moisture: 3.2

Date Sampled: 07/26/2011 0855
Date Received: 07/28/2011 0900

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-79191	Instrument ID:	CHHPLC_G2_PAH
Prep Method:	3550C	Prep Batch:	280-78874	Initial Weight/Volume:	32.0 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	08/01/2011 1905			Injection Volume:	20 uL
Prep Date:	07/28/2011 2015			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		9.7	U	9.7	97
Acenaphthylene		8.7	U	8.7	97
Anthracene		3.0	U	3.0	19
Benzo[a]anthracene		3.1	U	3.1	15
Benzo[a]pyrene		6.2	U	6.2	15
Benzo[b]fluoranthene		4.1	U	4.1	15
Benzo[g,h,i]perylene		7.0	U	7.0	29
Benzo[k]fluoranthene		3.8	U	3.8	15
Chrysene		4.7	U	4.7	39
Dibenzo(a,h)anthracene		11	U	11	29
Fluoranthene		13	U	13	39
Fluorene		5.1	U	5.1	29
Indeno[1,2,3-cd]pyrene		12	U N	12	29
Naphthalene		12	U	12	97
Phenanthrene		12	U	12	39
Pyrene		12	U	12	39

Surrogate	%Rec	Qualifier	Acceptance Limits
Terphenyl-d14 (SUR)	96		72 - 115

8/21/11

016

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Client Sample ID: **J1K8F9**

Lab Sample ID: 280-18551-8
Client Matrix: Solid
% Moisture: 3.0

Date Sampled: 07/26/2011 0900
Date Received: 07/28/2011 0900

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-79191	Instrument ID:	CHHPLC_G2_PAH
Prep Method:	3550C	Prep Batch:	280-78874	Initial Weight/Volume:	32.2 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	08/01/2011 1936			Injection Volume:	20 uL
Prep Date:	07/28/2011 2015			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		9.6	U	9.6	96
Acenaphthylene		8.6	U	8.6	96
Anthracene		2.9	U	2.9	19
Benzo[a]anthracene		3.1	U	3.1	14
Benzo[a]pyrene		6.2	U	6.2	14
Benzo[b]fluoranthene		4.0	U	4.0	14
Benzo[g,h,i]perylene		6.9	U	6.9	29
Benzo[k]fluoranthene		3.8	U	3.8	14
Chrysene		4.7	U	4.7	38
Dibenzo(a,h)anthracene		11	U	11	29
Fluoranthene		12	U	12	38
Fluorene		5.1	U	5.1	29
Indeno[1,2,3-cd]pyrene		12	U N	12	29
Naphthalene		12	U	12	96
Phenanthrene		12	U	12	38
Pyrene		12	U	12	38

Surrogate	%Rec	Qualifier	Acceptance Limits
Terphenyl-d14 (SUR)	95		72 - 115

8/21/11

017

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Client Sample ID: **J1K8H0**

Lab Sample ID: 280-18551-9
Client Matrix: Solid
% Moisture: 3.6

Date Sampled: 07/26/2011 0910
Date Received: 07/28/2011 0900

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-79758	Instrument ID:	CHHPLC_G
Prep Method:	3550C	Prep Batch:	280-79681	Initial Weight/Volume:	31.1 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	08/04/2011 1715			Injection Volume:	20 uL
Prep Date:	08/03/2011 1540			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		10	U	10	100
Acenaphthylene		9.0	U	9.0	100
Anthracene		6.6	J	3.1	20
Benzo[a]anthracene		68		3.2	15
Benzo[a]pyrene		38		6.4	15
Benzo[b]fluoranthene		73		4.2	15
Benzo[g,h,i]perylene		12	J X	7.2	30
Benzo[k]fluoranthene		39		3.9	15
Chrysene		64		4.8	40
Dibenzo(a,h)anthracene		11	U	11	30
Fluoranthene		160		13	40
Fluorene		5.3	U	5.3	30
Indeno[1,2,3-cd]pyrene		32		12	30
Naphthalene		12	U	12	100
Phenanthrene		72		12	40
Pyrene		130		12	40

Surrogate	%Rec	Qualifier	Acceptance Limits
Terphenyl-d14 (SUR)	97		72 - 115

8/21/11

018

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Client Sample ID: **J1K8H1**

Lab Sample ID: 280-18551-10
Client Matrix: Solid
% Moisture: 2.2

Date Sampled: 07/26/2011 0920
Date Received: 07/28/2011 0900

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-79191	Instrument ID:	CHHPLC_G2_PAH
Prep Method:	3550C	Prep Batch:	280-78874	Initial Weight/Volume:	30.5 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	08/01/2011 2037			Injection Volume:	20 uL
Prep Date:	07/28/2011 2015			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		10	U	10	100
Acenaphthylene		9.1	U	9.1	100
Anthracene		3.1	U	3.1	20
Benzo[a]anthracene		3.2	U	3.2	15
Benzo[a]pyrene		6.4	U	6.4	15
Benzo[b]fluoranthene		4.2	U	4.2	15
Benzo[g,h,i]perylene		7.2	U	7.2	30
Benzo[k]fluoranthene		4.0	U	4.0	15
Chrysene		4.9	U	4.9	40
Dibenzo(a,h)anthracene		11	U	11	30
Fluoranthene		13	U	13	40
Fluorene		5.3	U	5.3	30
Indeno[1,2,3-cd]pyrene		12	U N	12	30
Naphthalene		12	U	12	100
Phenanthrene		12	U	12	40
Pyrene		12	U	12	40

Surrogate	%Rec	Qualifier	Acceptance Limits
Terphenyl-d14 (SUR)	95		72 - 115

8/24/11

019

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Client Sample ID: **J1K8H2**

Lab Sample ID: 280-18551-11
Client Matrix: Solid
% Moisture: 1.3

Date Sampled: 07/26/2011 0810
Date Received: 07/28/2011 0900

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-79191	Instrument ID:	CHHPLC_G2_PAH
Prep Method:	3550C	Prep Batch:	280-78874	Initial Weight/Volume:	31.1 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	08/01/2011 2107			Injection Volume:	20 uL
Prep Date:	07/28/2011 2015			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		9.8	U	9.8	98
Acenaphthylene		8.8	U	8.8	98
Anthracene		3.0	U	3.0	20
Benzo[a]anthracene		3.1	U	3.1	15
Benzo[a]pyrene		6.3	U	6.3	15
Benzo[b]fluoranthene		4.1	U	4.1	15
Benzo[g,h,i]perylene		7.0	U	7.0	29
Benzo[k]fluoranthene		3.9	U	3.9	15
Chrysene		4.7	U	4.7	39
Dibenzo(a,h)anthracene		11	U	11	29
Fluoranthene		13	U	13	39
Fluorene		5.2	U	5.2	29
Indeno[1,2,3-cd]pyrene		12	U N	12	29
Naphthalene		12	U	12	98
Phenanthrene		12	U	12	39
Pyrene		12	U	12	39

Surrogate	%Rec	Qualifier	Acceptance Limits
Terphenyl-d14 (SUR)	93		72 - 115

8/21/1

020

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

CASE NARRATIVE

Client: Washington Closure Hanford

Project: WASHINGTON CLOSURE HANFORD

Report Number: 280-18551-1

SDG #: JP0240
SAF#: RC-107

Date SDG Closed: July 28, 2011
Data Deliverable: 7 Day / Summary

CLIENT ID	LAB ID	ANALYSES REQUESTED	ANALYSES PERFORMED
J1K8F2	280-18551-1	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8F3	280-18551-2	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8F4	280-18551-3	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8F5	280-18551-4	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8F6	280-18551-5	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8F7	280-18551-6	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8F8	280-18551-7	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8F9	280-18551-8	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8H0	280-18551-9	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8H1	280-18551-10	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8H2	280-18551-11	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310

I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed in this Case Narrative. 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 signature on the Report Cover.

With exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. All laboratory quality control samples analyzed in conjunction with the samples in this project were within established control limits, with any exceptions noted. Calculations are performed before rounding to avoid round-off errors in calculated results.

This report includes reporting limits (RLs) less than TestAmerica Denver's practical quantitation limits. These reporting limits are being used specifically at the client's request to meet the needs of this project. Please note that data are not normally reported to these levels without qualification, since they are inherently less reliable and potentially less defensible than required by the current NELAC standards.

The results, RLs and MDLs included in this report have been adjusted for dry weight, as appropriate.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 7/28/2011; the samples arrived in good condition, properly preserved and on ice. The temperatures of the coolers at receipt were 4.2 C, 3.0 C, 4.2 C and 4.4 C.

GC SEMIVOLATILES - SW846 8082 - PCBs
No anomalies were encountered.

HPLC - SW846 8310 - PAHs
The RPD between the primary and confirmation columns exceeded 40% for analytes in samples J1K8F6 and J1K8H0. The lower of the two values have been reported, as matrix interference is evident. Associated results have been flagged with an "X".

The LCS associated with batch 280-78874 exhibited the percent recovery outside the control limits, biased high, for Indeno[1,2,3-cd]pyrene, and the associated sample results have been flagged "N". This is an indicator that data may be biased high. As no detectable concentrations of Indeno[1,2,3-cd]pyrene are present in the associated samples, corrective action is deemed unnecessary.

No other anomalies were encountered.

TOTAL METALS - SW846 6010B/7471A

Serial dilution of a digestate in batch 280-78800 indicates that physical and chemical interferences are present for Cobalt and Zinc. Results have been flagged with an "X".

Low levels of Calcium and Zinc are present in the method blank associated with batch 280-78800. Because the concentrations in the method blank are not present at levels greater than half the reporting limit or the associated sample amounts are twenty times greater than the method blank concentration, corrective action is deemed unnecessary.

It can be noted that the sample amount was greater than four times the spike amount for Aluminum, Iron and Manganese in the Matrix Spike performed on sample J1K8F2; therefore, control limits are not applicable.

No other anomalies were encountered.

GENERAL CHEMISTRY - MCAWW 353.2 - NITRATE+NITRITE as N

The Nitrate Nitrite as N duplicate analyses of samples J1K8F2 and J1K8F4 exhibited RPD data outside the control limits, and the associated sample results have been flagged "M". There is no indication that the analytical system was operating out of control, and method accuracy has been verified by the acceptable LCS analysis data; therefore, corrective action is deemed unnecessary.

No other anomalies were encountered.

GENERAL CHEMISTRY - SW846 9056M - ANIONS

The Chloride duplicate analysis of sample J1K8F3 exhibited RPD data outside the control limits, and the associated sample result has been flagged "M". There is no indication that the analytical system was operating out of control, and method accuracy has been verified by the acceptable LCS analysis data; therefore, corrective action is deemed unnecessary.

No other anomalies were encountered.

GENERAL CHEMISTRY - SW846 9045C - PH

No anomalies were encountered.

3.0/28/4.2/4.4/4.2

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-084	Page 1 of ~~4~~ 3

Collector Q Stowe	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH
Price Code ~~81~~ 83	Data Turnaround ~~21~~ 7 Days		
Project Designation 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 132-H-3 BCL-A Verification	SAF No. RC-107	
Ice Chest No. ERC-02-103	Field Logbook No. EL 1627-05	COA 0132H32000	Method of Shipment Government Vehicle/FedEx
Shipped To 7/26/11 TestAmerica Incorporated, ~~Richland~~ Denver	Offsite Property No. A100824		Bill of Lading/Air Bill No. See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS
None

Special Handling and/or Storage
~~None~~ Cool 4°C

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None	None
Type of Container	G/P	G/P	G/P	aG	aG	G/P	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	60mL	60mL	125mL	120mL	120mL	120mL	500mL	60mL	60mL	60mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	See item (2) in Special Instructions.	PCBs - 8082	PAHs - 8310	Carbon-14; Tritium - H3 Low Level Soil	See item (3) in Special Instructions.	Isotopic Uranium	Isotopic Plutonium	Nickel-63; Strontium-89,90 -- Total Sr

Sample No.	Matrix *	Sample Date	Sample Time									
~~J1K8F0~~	~~SOIL~~	~~7/26/11~~										
~~J1K8F1~~	~~SOIL~~	~~7/26/11~~										
J1K8F2	SOIL	7/26/11	0755	X		X	X	X				
J1K8F3	SOIL	7/26/11	0810	X		X	X	X				
J1K8F4	SOIL	7/26/11	0820	X		X	X	X				

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: Quincy Stowe	7/26/11 1545	JV Fullmer	7/26/11 1545
Relinquished By/Removed From: JV Fullmer	7/26/11 1745	Quincy Burnham	7/26/11 1745
Relinquished By/Removed From: Quincy Burnham	7/27/11 1130	Received By/Stored In: Fed Ex	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	7/28/11 0900
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)
(2) IC Anions - 9056 Modified (Bromide, Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate); NO2/NO3 - 353.2; pH (Soil) - 9045
(3) Gamma Spec - Client List (Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable)

REVIEWED BY
DATE 7-27-11

JP0240

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

DH 7/26/11

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-084	Page 2 of ~~2~~ 3

Collector Q Stowe	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH
Price Code ~~8L~~ 7/26/11 8R	Data Turnaround ~~21~~ 7 Days		
Project Designation 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 132-H-3 BCL-A Verification		SAF No. RC-107
Ice Chest No. ERC-02-103	Field Logbook No. EL 1627-05	COA 0132H32000	Method of Shipment Government Vehicle/FedEx
Shipped To TestAmerica Incorporated, ~~Richland~~ Denver DH 7/21/11	Offsite Property No. A100824		Bill of Lading/Air Bill No. See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS
None Que 7/26/11

Special Handling and/or Storage
~~None~~ Cool 4C
DH 7/21/11

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None	None
Type of Container	G/P	G/P	G/P	aG	aG	G/P	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	60mL	60mL	125mL	120mL	120mL	120mL	500mL	60mL	60mL	60mL
SAMPLE ANALYSIS	See item (1) in Special Instructions	Chromium Hex - 7196	See item (2) in Special Instructions	PCBs - 8082	PAHs - 8310	Carbon-14; Tritium - H3 Low Level Soil	See item (3) in Special Instructions	Isotopic Uranium	Isotopic Plutonium	Nickel-63; Strontium-89,90 – Total Sr

DH 7/26/11

025

Sample No.	Matrix *	Sample Date	Sample Time										
J1K8F5	SOIL	7/26/11	0830	X		X	X	X					
J1K8F6	SOIL	7/26/11	0835	X		X	X	X					
J1K8F7	SOIL	7/26/11	0845	X		X	X	X					
J1K8F8	SOIL	7/26/11	0855	X		X	X	X					
J1K8F9	SOIL	7/26/11	0906	X		X	X	X					

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From Quincy Stowe	7/26/11 1545	Received By/Stored In JV Fullmer	7/26/11 1545
Relinquished By/Removed From JV Fullmer	7/26/11 1745	Received By/Stored In Burnham	7/26/11 1060#1 1745
Relinquished By/Removed From 1060 #1 Burnham	7/27/11 WCH# 1130	Received By/Stored In Fed Ex	
Relinquished By/Removed From		Received By/Stored In WCH Courier	7/28/11 0900
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)
(2) IC Anions - 9056 Modified (Bromide, Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate); NO2/NO3 - 353.2; pH (Soil) - 9045
(3) Gamma Spec - Client List (Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable)

REVIEWED BY
DATE

JP0240

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

DH 7/21/11

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-084	Page 3 of 3

Collector: Q Stowe	Company Contact: Joan Kessner — Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: ~~81~~ 88 (on 7/26) — Data Turnaround: ~~21~~ 7 Days (on 7/26/11)
Project Designation: 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 132-H-3 BCL-A Verification	SAF No.: RC-107	
Ice Chest No.: ERC-02-103	Field Logbook No.: EL 1627-05 — COA: 0132H32000	Method of Shipment: Government Vehicle/FedEx	
Shipped To: TestAmerica Incorporated, ~~Richland~~ Denver 7/26/11 CMB	Offsite Property No.: A100824	Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

None on 7/26/11

Special Handling and/or Storage

~~None~~ Cool 4C
DH 7/26/11

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None	None
Type of Container	G/P	G/P	G/P	sG	sG	G/P	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	60mL	60mL	125mL	120mL	120mL	120mL	500mL	60mL	60mL	60mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	See item (2) in Special Instructions.	PCBs - 8082	PAHs - 8310	Carbon-14; Tritium - HB Low Level Soil	See item (3) in Special Instructions.	Isotopic Uranium	Isotopic Plutonium	Nickel-63; Strontium-89,90 – Total Sr
Sample No. / Matrix * / Sample Date / Sample Time										
J1K8H0 / SOIL / 7/26/11 / 0910	X		X	X	X					
J1K8H1 / SOIL / 7/26/11 / 0920	X		X	X	X					
J1K8H2 / SOIL / 7/26/11 / 0810	X		X	X	X					

DH 7/26/11

026

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Quincy Stowe	7/26/11 1545	JV Fullmer	7/26/11 1545
JV Fullmer	7/26/11 1746	[illegible]	7/26/11 1746
[illegible] #1	7/27/11 WCH 1130	Fed Ex	
		[illegible]	7/28/11 0900

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)
(2) IC Anions - 9056 Modified (Bromide, Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate); NO2/NO3 - 353.2; pH (Soil) - 9045
(3) Gamma Spec - Client List (Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, ~~Silver-108~~ metastable)

REVIEWED BY [illegible] DATE 7-27-11

JP0240

Matrix *: S=Soil, SE=Sediment, SO=Solid, Sl=Sludge, W = Water, O=Oil, A=Air, DS=Drum Solids, DL=Drum Liquids, T=Tissue, WI=Wipe, L=Liquid, V=Vegetation, X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

GENERAL ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 132-H-3			DATA PACKAGE: JP0240		
VALIDATOR: ELR		LAB: TAL		DATE: 8/21/11	
			SDG: JP0240		
ANALYSES PERFORMED					
8015	8021	8141	8151	8315	8310
		WTPH-HCID	WTPH-G	WTPH-D	

SAMPLES/MATRIX:

J1K8F2	J1K8F3	J1K8F4	J1K8F5
J1K8F6	J1K8F7	J1K8F8	J1K8F9
J1K8H0	J1K8H1	J1K8H2	
			Soil

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? ..... Yes (No) N/A

Comments:

2. INSTRUMENT TUNING AND CALIBRATION (Levels D and E)

Initial calibrations acceptable? ..... Yes No (N/A)

Continuing calibrations acceptable? ..... Yes No (N/A)

Standards traceable? ..... Yes No (N/A)

Standards expired? ..... Yes No (N/A)

Calculation check acceptable? ..... Yes No (N/A)

Comments:

GENERAL ORGANIC DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

Calibration blanks analyzed? (Levels D, E) ..... Yes No N/A

Calibration blank results acceptable? (Levels D, E) ..... Yes No N/A

Laboratory blanks analyzed? ..... Yes No N/A

Laboratory blank results acceptable? ..... Yes No N/A

Field/trip blanks analyzed? (Levels C, D, E) ..... Yes No N/A

Field/trip blank results acceptable? (Levels C, D, E) ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Comments: no FB

4. ACCURACY (Levels C, D, and E)

Surrogates/system monitoring compounds analyzed? ..... Yes No N/A

Surrogate/system monitoring compound recoveries acceptable? ..... Yes No N/A

Surrogates traceable? (Levels D, E) ..... Yes No N/A

Surrogates expired? (Levels D, E) ..... Yes No N/A

MS/MSD samples analyzed? ..... Yes No N/A

MS/MSD results acceptable? ..... Yes No N/A

MS/MSD standards NIST traceable? (Levels D, E) ..... Yes No N/A

MS/MSD standards expired? (Levels D, E) ..... Yes No N/A

LCS/BSS samples analyzed? ..... Yes No N/A

LCS/BSS results acceptable? ..... Yes No N/A

Standards traceable? (Levels D, E) ..... Yes No N/A

Standards expired? (Levels D, E) ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Performance audit sample(s) analyzed? ..... Yes No N/A

Performance audit sample results acceptable? ..... Yes No N/A

Comments: no PAS

GENERAL ORGANIC DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? ..... Yes No N/A

Duplicate results acceptable? ..... Yes No N/A

MS/MSD standards NIST traceable? (Levels D, E) ..... Yes No N/A

MS/MSD standards expired? (Levels D, E) ..... Yes No N/A

Field duplicate RPD values acceptable? ..... Yes No N/A

Field split RPD values acceptable? ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Comments:

6. HOLDING TIMES (all levels)

Samples properly preserved? ..... Yes No N/A

Sample holding times acceptable? ..... Yes No N/A

Comments:

GENERAL ORGANIC DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? ..... Yes No N/A

Results supported in the raw data? (Levels D, E) ..... Yes No N/A

Samples properly prepared? (Levels D, E) ..... Yes No N/A

Detection limits meet RDL? ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Comments: _____

9. SAMPLE CLEANUP (Levels D and E)

Fluoricil ® (or other aborbant) cleanup performed? ..... Yes No N/A

Lot check performed? ..... Yes No N/A

Check recoveries aceptable? ..... Yes No N/A

Check materials traceable? ..... Yes No N/A

Check materials Expired? ..... Yes No N/A

Analytical batch QC given similar cleanup? ..... Yes No N/A

Transcription/Calculation Errors? ..... Yes No N/A

Comments: _____

Appendix 6

Additional Documentation Requested by Client

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Method Blank - Batch: 280-78874

Method: 8310
Preparation: 3550C

Lab Sample ID:	MB 280-78874/1-A	Analysis Batch:	280-79191	Instrument ID:	CHHPLC_G2_PAH
Client Matrix:	Solid	Prep Batch:	280-78874	Lab File ID:	G0801008.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30.7 g
Analysis Date:	08/01/2011 1328	Units:	ug/Kg	Final Weight/Volume:	4000 uL
Prep Date:	07/28/2011 2015			Injection Volume:	20 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	Result	Qual	MDL	RL
Acenaphthene	9.8	U	9.8	98
Acenaphthylene	8.8	U	8.8	98
Anthracene	3.0	U	3.0	20
Benzo[a]anthracene	3.1	U	3.1	15
Benzo[a]pyrene	6.3	U	6.3	15
Benzo[b]fluoranthene	4.1	U	4.1	15
Benzo[g,h,i]perylene	7.0	U	7.0	29
Benzo[k]fluoranthene	3.9	U	3.9	15
Chrysene	4.7	U	4.7	39
Dibenzo(a,h)anthracene	11	U	11	29
Fluoranthene	13	U	13	39
Fluorene	5.2	U	5.2	29
Indeno[1,2,3-cd]pyrene	12	U	12	29
Naphthalene	12	U	12	98
Phenanthrene	12	U	12	39
Pyrene	12	U	12	39

Surrogate	% Rec	Acceptance Limits
Terphenyl-d14 (SUR)	97	72 - 115

033

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Lab Control Sample - Batch: 280-78874

Method: 8310
Preparation: 3550C

Lab Sample ID:	LCS 280-78874/2-A	Analysis Batch:	280-79191	Instrument ID:	CHHPLC_G2_PAH
Client Matrix:	Solid	Prep Batch:	280-78874	Lab File ID:	G0801009.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30.3 g
Analysis Date:	08/01/2011 1359	Units:	ug/Kg	Final Weight/Volume:	4000 uL
Prep Date:	07/28/2011 2015			Injection Volume:	20 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Acenaphthene	1980	1910	97	72 - 115	
Acenaphthylene	1980	1840	93	60 - 115	
Anthracene	1980	1870	94	61 - 115	
Benzo[a]anthracene	1980	2090	106	76 - 115	
Benzo[a]pyrene	1980	2050	103	69 - 115	
Benzo[b]fluoranthene	1980	2150	109	81 - 115	
Benzo[g,h,i]perylene	1980	2270	115	71 - 115	
Benzo[k]fluoranthene	1980	2120	107	85 - 115	
Chrysene	1980	1960	99	70 - 115	
Dibenzo(a,h)anthracene	1980	2220	112	79 - 115	
Fluoranthene	1980	1940	98	67 - 115	
Fluorene	1980	1920	97	72 - 115	
Indeno[1,2,3-cd]pyrene	1980	2340	118	76 - 115	N
Naphthalene	1980	1940	98	77 - 115	
Phenanthrene	1980	1910	97	79 - 115	
Pyrene	1980	1940	98	77 - 115	

Surrogate	% Rec	Acceptance Limits
Terphenyl-d14 (SUR)	96	72 - 115

034

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-78874

Method: 8310
Preparation: 3550C

MS Lab Sample ID:	280-18551-C-3-C MS	Analysis Batch:	280-79191	Instrument ID:	CHHPLC_G2_PAH
Client Matrix:	Solid	Prep Batch:	280-78874	Lab File ID:	G0801013.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	31.8 g
Analysis Date:	08/01/2011 1602			Final Weight/Volume:	4000 uL
Prep Date:	07/28/2011 2015			Injection Volume:	20 uL
Leach Date:	N/A			Column ID:	PRIMARY

MSD Lab Sample ID:	280-18551-C-3-D MSD	Analysis Batch:	280-79191	Instrument ID:	CHHPLC_G2_PAH
Client Matrix:	Solid	Prep Batch:	280-78874	Lab File ID:	G0801014.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30.5 g
Analysis Date:	08/01/2011 1632			Final Weight/Volume:	4000 uL
Prep Date:	07/28/2011 2015			Injection Volume:	20 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Acenaphthene	97	94	72 - 115	1	20		
Acenaphthylene	94	90	60 - 115	0	21		
Anthracene	92	90	61 - 115	1	20		
Benzo[a]anthracene	93	93	76 - 115	4	20		
Benzo[a]pyrene	93	93	69 - 115	4	20		
Benzo[b]fluoranthene	96	96	81 - 115	3	20		
Benzo[g,h,i]perylene	108	109	71 - 115	5	20		
Benzo[k]fluoranthene	102	101	85 - 115	3	20		
Chrysene	88	88	70 - 115	4	20		
Dibenzo(a,h)anthracene	113	112	79 - 115	3	20		
Fluoranthene	76	78	67 - 115	5	20		
Fluorene	98	94	72 - 115	0	20		
Indeno[1,2,3-cd]pyrene	112	115	76 - 115	6	20		
Naphthalene	98	94	77 - 115	1	20		
Phenanthrene	84	84	79 - 115	4	20		
Pyrene	78	81	77 - 115	6	20		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
Terphenyl-d14 (SUR)	97	98	72 - 115

035

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Method Blank - Batch: 280-79681

Method: 8310
Preparation: 3550C

Lab Sample ID:	MB 280-79681/1-A	Analysis Batch:	280-79758	Instrument ID:	CHHPLC_G
Client Matrix:	Solid	Prep Batch:	280-79681	Lab File ID:	G0804008.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	33.0 g
Analysis Date:	08/04/2011 1442	Units:	ug/Kg	Final Weight/Volume:	4000 uL
Prep Date:	08/03/2011 1540			Injection Volume:	20 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	Result	Qual	MDL	RL
Acenaphthene	9.1	U	9.1	91
Acenaphthylene	8.2	U	8.2	91
Anthracene	2.8	U	2.8	18
Benzo[a]anthracene	2.9	U	2.9	14
Benzo[a]pyrene	5.8	U	5.8	14
Benzo[b]fluoranthene	3.8	U	3.8	14
Benzo[g,h,i]perylene	6.5	U	6.5	27
Benzo[k]fluoranthene	3.6	U	3.6	14
Chrysene	4.4	U	4.4	36
Dibenzo(a,h)anthracene	10	U	10	27
Fluoranthene	12	U	12	36
Fluorene	4.8	U	4.8	27
Indeno[1,2,3-cd]pyrene	11	U	11	27
Naphthalene	11	U	11	91
Phenanthrene	11	U	11	36
Pyrene	11	U	11	36

Surrogate	% Rec	Acceptance Limits
Terphenyl-d14 (SUR)	93	72 - 115

036

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Lab Control Sample - Batch: 280-79681

Method: 8310
Preparation: 3550C

Lab Sample ID:	LCS 280-79681/2-A	Analysis Batch:	280-79758	Instrument ID:	CHHPLC_G
Client Matrix:	Solid	Prep Batch:	280-79681	Lab File ID:	G0804009.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	32.8 g
Analysis Date:	08/04/2011 1513	Units:	ug/Kg	Final Weight/Volume:	4000 uL
Prep Date:	08/03/2011 1540			Injection Volume:	20 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Acenaphthene	1830	1930	106	72 - 115	
Acenaphthylene	1830	1780	97	60 - 115	
Anthracene	1830	1770	97	61 - 115	
Benzo[a]anthracene	1830	1940	106	76 - 115	
Benzo[a]pyrene	1830	1800	98	69 - 115	
Benzo[b]fluoranthene	1830	1920	105	81 - 115	
Benzo[g,h,i]perylene	1830	1940	106	71 - 115	
Benzo[k]fluoranthene	1830	1860	102	85 - 115	
Chrysene	1830	1860	102	70 - 115	
Dibenzo(a,h)anthracene	1830	1920	105	79 - 115	
Fluoranthene	1830	1900	104	67 - 115	
Fluorene	1830	1840	100	72 - 115	
Indeno[1,2,3-cd]pyrene	1830	1950	107	76 - 115	
Naphthalene	1830	1810	99	77 - 115	
Phenanthrene	1830	1880	103	79 - 115	
Pyrene	1830	1850	101	77 - 115	

Surrogate	% Rec	Acceptance Limits
Terphenyl-d14 (SUR)	95	72 - 115

037

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-79681

Method: 8310
Preparation: 3550C

MS Lab Sample ID:	280-18551-3	Analysis Batch:	280-79758	Instrument ID:	CHHPLC_G
Client Matrix:	Solid	Prep Batch:	280-79681	Lab File ID:	G0804011.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	31.2 g
Analysis Date:	08/04/2011 1614			Final Weight/Volume:	4000 uL
Prep Date:	08/03/2011 1540			Injection Volume:	20 uL
Leach Date:	N/A			Column ID:	PRIMARY

MSD Lab Sample ID:	280-18551-3	Analysis Batch:	280-79758	Instrument ID:	CHHPLC_G
Client Matrix:	Solid	Prep Batch:	280-79681	Lab File ID:	G0804012.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30.5 g
Analysis Date:	08/04/2011 1644			Final Weight/Volume:	4000 uL
Prep Date:	08/03/2011 1540			Injection Volume:	20 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Acenaphthene	106	107	72 - 115	3	20		
Acenaphthylene	98	98	60 - 115	3	21		
Anthracene	96	97	61 - 115	3	20		
Benzo[a]anthracene	104	105	76 - 115	3	20		
Benzo[a]pyrene	97	98	69 - 115	3	20		
Benzo[b]fluoranthene	103	104	81 - 115	3	20		
Benzo[g,h,i]perylene	104	105	71 - 115	3	20		
Benzo[k]fluoranthene	100	101	85 - 115	3	20		
Chrysene	100	101	70 - 115	3	20		
Dibenzo(a,h)anthracene	103	103	79 - 115	3	20		
Fluoranthene	103	104	67 - 115	3	20		
Fluorene	100	100	72 - 115	3	20		
Indeno[1,2,3-cd]pyrene	105	106	76 - 115	3	20		
Naphthalene	99	100	77 - 115	3	20		
Phenanthrene	101	102	79 - 115	3	20		
Pyrene	100	101	77 - 115	3	20		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
Terphenyl-d14 (SUR)	94	95	72 - 115

Date: 23 August 2011
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: 100H Remaining Sites Burial Grounds – Soil Full Protocol - Waste Site 132-H-3
Subject: PCB - Data Package No. JP0240-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. JP0240 prepared by TestAmerica Laboratories (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J1K8F2	7/26/11	Soil	C	See note 1
J1K8F3	7/26/11	Soil	C	See note 1
J1K8F4	7/26/11	Soil	C	See note 1
J1K8F5	7/26/11	Soil	C	See note 1
J1K8F6	7/26/11	Soil	C	See note 1
J1K8F7	7/26/11	Soil	C	See note 1
J1K8F8	7/26/11	Soil	C	See note 1
J1K8F9	7/26/11	Soil	C	See note 1
J1K8H0	7/26/11	Soil	C	See note 1
J1K8H1	7/26/11	Soil	C	See note 1
J1K8H2	7/26/11	Soil	C	See note 1

1 – PCBs by 8082.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the 100 Area Remedial Action Sampling and Analysis Plan (DOE/RL-96-22, September 2009). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY OBJECTIVES

Holding Times

Holding times are not applicable for PCB analysis.

- **Method Blank**

Method blank analyses are performed to determine the extent of laboratory contamination introduced through sampling, sample preparation or analysis. At least one method blank analysis must be conducted for every 20 samples. Method blanks should not contain target compounds at a concentration greater than required quantitation limit (RQL). If target compounds are present, sample results less than five times the blank concentration are qualified as undetected and flagged "U". If the sample result is less than five times the blank concentration and less than RQL, the result is qualified as undetected and elevated to the RQL.

All method blank results were acceptable.

Field Blanks

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike & Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 50% to 150%. If spike recoveries are outside control limits, detected sample results less than five times the spike concentration are qualified as estimates and flagged "J". Non-detected sample results with spike recoveries outside control limits are qualified as estimates and flagged "UJ". Sample results greater than five times the spike concentration require no qualification.

All accuracy results were acceptable.

Surrogate Recovery

The analysis of surrogate compounds provides a measure of performance for individual samples. Matrix-specific surrogate compound recovery control windows have been established by the laboratory. When a surrogate compound recovery is outside the control window, all positively identified target compounds associated with the unacceptable surrogate recoveries are qualified as estimates and flagged "J". Non-detected compounds with surrogate recoveries less than the lower control limit are qualified as having an estimated detection limit and flagged "UJ". Non-detected compounds with surrogate recoveries above the upper control limit require no qualification.

All surrogate results were acceptable.

- **Precision**

Matrix Spike/Matrix Spike Duplicate Samples

Matrix spike/matrix spike duplicate results provide matrix-specific information on the precision of the method for specific target compound classes. Precision is expressed as the relative percent difference (RPD) between the recoveries of duplicate matrix spike analyses performed on a sample. For soil samples, results must be within RPD limits of plus/minus 30%. If RPD values are out of specification and the sample concentration is less than five times the spike concentration, all associated detected sample results are qualified as estimates and flagged "J". If RPD values are out of specification and the sample concentration is greater than five times the spike concentration, no qualification is required.

All precision results were acceptable.

Field Duplicate Samples

One set of field duplicates (J1K8F3/J1K8H2) were submitted for analysis. Laboratory duplicates are compared using the same criteria as for laboratory results. All field duplicate results are acceptable.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the 100 Area RQLs to ensure that laboratory detection levels meet the required criteria. All results met the RQL.

- **Completeness**

Data Package No. JP0240 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

None found.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*, March 2008.

DOE/RL-96-22, Rev. 5, *100 Area Remedial Action Sampling and Analysis Plan*, U.S. Department of Energy, September 2009.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with the procedures herein are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

PCB DATA QUALIFICATION SUMMARY*

SDG: JP0240	REVIEWER: ELR	Project: 132-H-3	PAGE 1 OF 1
COMMENTS: No qualifiers assigned			

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Client Sample ID: **J1K8F2**

Lab Sample ID: 280-18551-1
Client Matrix: Solid
% Moisture: 3.4

Date Sampled: 07/26/2011 0755
Date Received: 07/28/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-79609	Instrument ID:	GCS_P3
Prep Method:	3550C	Prep Batch:	280-78835	Initial Weight/Volume:	30.2 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	08/02/2011 1721			Injection Volume:	1 uL
Prep Date:	07/28/2011 1830			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.8	U	2.8	10
Aroclor 1221		8.2	U	8.2	17
Aroclor 1232		2.1	U	2.1	10
Aroclor 1242		4.8	U	4.8	10
Aroclor 1248		4.8	U	4.8	10
Aroclor 1254		2.7	U	2.7	10
Aroclor 1260		5.7	J	2.7	10

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	90		59 - 130
Tetrachloro-m-xylene	102		53 - 128

8/21/11

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Client Sample ID: **J1K8F3**

Lab Sample ID: 280-18551-2
Client Matrix: Solid
% Moisture: 2.8

Date Sampled: 07/26/2011 0810
Date Received: 07/28/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-79609	Instrument ID:	GCS_P3
Prep Method:	3550C	Prep Batch:	280-78835	Initial Weight/Volume:	30.8 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	08/02/2011 1742			Injection Volume:	1 uL
Prep Date:	07/28/2011 1830			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.8	U	2.8	10
Aroclor 1221		8.0	U	8.0	17
Aroclor 1232		2.0	U	2.0	10
Aroclor 1242		4.7	U	4.7	10
Aroclor 1248		4.7	U	4.7	10
Aroclor 1254		2.6	U	2.6	10
Aroclor 1260		2.6	U	2.6	10

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	97		59 - 130
Tetrachloro-m-xylene	99		53 - 128

8/21/11

011

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Client Sample ID: **J1K8F4**

Lab Sample ID: 280-18551-3
Client Matrix: Solid
% Moisture: 2.4

Date Sampled: 07/26/2011 0820
Date Received: 07/28/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-79609	Instrument ID:	GCS_P3
Prep Method:	3550C	Prep Batch:	280-78835	Initial Weight/Volume:	32.0 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	08/02/2011 1846			Injection Volume:	1 uL
Prep Date:	07/28/2011 1830			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.7	U	2.7	9.6
Aroclor 1221		7.7	U	7.7	16
Aroclor 1232		1.9	U	1.9	9.6
Aroclor 1242		4.5	U	4.5	9.6
Aroclor 1248		4.5	U	4.5	9.6
Aroclor 1254		2.5	U	2.5	9.6
Aroclor 1260		2.5	U	2.5	9.6

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	96		59 - 130
Tetrachloro-m-xylene	101		53 - 128

8/21/11

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Client Sample ID: **J1K8F5**

Lab Sample ID: 280-18551-4
Client Matrix: Solid
% Moisture: 3.2

Date Sampled: 07/26/2011 0830
Date Received: 07/28/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-79609	Instrument ID:	GCS_P3
Prep Method:	3550C	Prep Batch:	280-78835	Initial Weight/Volume:	30.3 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	08/02/2011 1929			Injection Volume:	1 uL
Prep Date:	07/28/2011 1830			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.8	U	2.8	10
Aroclor 1221		8.2	U	8.2	17
Aroclor 1232		2.0	U	2.0	10
Aroclor 1242		4.8	U	4.8	10
Aroclor 1248		4.8	U	4.8	10
Aroclor 1254		2.7	U	2.7	10
Aroclor 1260		2.7	U	2.7	10

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	91		59 - 130
Tetrachloro-m-xylene	102		53 - 128

8/21/11

013

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Client Sample ID: **J1K8F6**

Lab Sample ID: 280-18551-5
Client Matrix: Solid
% Moisture: 2.6

Date Sampled: 07/26/2011 0835
Date Received: 07/28/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-79609	Instrument ID:	GCS_P3
Prep Method:	3550C	Prep Batch:	280-78835	Initial Weight/Volume:	32.9 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	08/02/2011 1950			Injection Volume:	1 uL
Prep Date:	07/28/2011 1830			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.6	U	2.6	9.4
Aroclor 1221		7.5	U	7.5	15
Aroclor 1232		1.9	U	1.9	9.4
Aroclor 1242		4.4	U	4.4	9.4
Aroclor 1248		4.4	U	4.4	9.4
Aroclor 1254		2.4	U	2.4	9.4
Aroclor 1260		2.4	U	2.4	9.4

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	90		59 - 130
Tetrachloro-m-xylene	104		53 - 128

8/26/11

014

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Client Sample ID: **J1K8F7**

Lab Sample ID: 280-18551-6
Client Matrix: Solid
% Moisture: 3.4

Date Sampled: 07/26/2011 0845
Date Received: 07/28/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-79609	Instrument ID:	GCS_P3
Prep Method:	3550C	Prep Batch:	280-78835	Initial Weight/Volume:	31.0 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	08/02/2011 2033			Injection Volume:	1 uL
Prep Date:	07/28/2011 1830			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.8	U	2.8	10
Aroclor 1221		8.0	U	8.0	17
Aroclor 1232		2.0	U	2.0	10
Aroclor 1242		4.7	U	4.7	10
Aroclor 1248		4.7	U	4.7	10
Aroclor 1254		2.6	U	2.6	10
Aroclor 1260		2.6	U	2.6	10

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	93		59 - 130
Tetrachloro-m-xylene	97		53 - 128

8/21/11

015

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Client Sample ID: **J1K8F8**

Lab Sample ID: 280-18551-7
Client Matrix: Solid
% Moisture: 3.2

Date Sampled: 07/26/2011 0855
Date Received: 07/28/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-79609	Instrument ID:	GCS_P3
Prep Method:	3550C	Prep Batch:	280-78835	Initial Weight/Volume:	31.6 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	08/02/2011 2055			Injection Volume:	1 uL
Prep Date:	07/28/2011 1830			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.7	U	2.7	9.8
Aroclor 1221		7.9	U	7.9	16
Aroclor 1232		2.0	U	2.0	9.8
Aroclor 1242		4.6	U	4.6	9.8
Aroclor 1248		4.6	U	4.6	9.8
Aroclor 1254		2.5	U	2.5	9.8
Aroclor 1260		2.5	U	2.5	9.8

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	97		59 - 130
Tetrachloro-m-xylene	100		53 - 128

8/21/11

Analytical Data

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Client Sample ID: **J1K8F9**

Lab Sample ID: 280-18551-8
Client Matrix: Solid

% Moisture: 3.0

Date Sampled: 07/26/2011 0900
Date Received: 07/28/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-79609	Instrument ID:	GCS_P3
Prep Method:	3550C	Prep Batch:	280-78835	Initial Weight/Volume:	31.4 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	08/02/2011 2116			Injection Volume:	1 uL
Prep Date:	07/28/2011 1830			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.7	U	2.7	9.9
Aroclor 1221		7.9	U	7.9	16
Aroclor 1232		2.0	U	2.0	9.9
Aroclor 1242		4.6	U	4.6	9.9
Aroclor 1248		4.6	U	4.6	9.9
Aroclor 1254		2.6	U	2.6	9.9
Aroclor 1260		2.6	U	2.6	9.9

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	93		59 - 130
Tetrachloro-m-xylene	101		53 - 128

8/21/11

017

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Client Sample ID: **J1K8H0**

Lab Sample ID: 280-18551-9
Client Matrix: Solid
% Moisture: 3.6

Date Sampled: 07/26/2011 0910
Date Received: 07/28/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-79609	Instrument ID:	GCS_P3
Prep Method:	3550C	Prep Batch:	280-78835	Initial Weight/Volume:	30.6 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	08/02/2011 2137			Injection Volume:	1 uL
Prep Date:	07/28/2011 1830			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.8	U	2.8	10
Aroclor 1221		8.2	U	8.2	17
Aroclor 1232		2.0	U	2.0	10
Aroclor 1242		4.7	U	4.7	10
Aroclor 1248		4.7	U	4.7	10
Aroclor 1254		2.6	U	2.6	10
Aroclor 1260		2.6	U	2.6	10

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	78		59 - 130
Tetrachloro-m-xylene	99		53 - 128

8/21/11

018

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Client Sample ID: **J1K8H1**

Lab Sample ID: 280-18551-10
Client Matrix: Solid
% Moisture: 2.2

Date Sampled: 07/26/2011 0920
Date Received: 07/28/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-79609	Instrument ID:	GCS_P3
Prep Method:	3550C	Prep Batch:	280-78835	Initial Weight/Volume:	31.5 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	08/02/2011 1908			Injection Volume:	1 uL
Prep Date:	07/28/2011 1830			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.7	U	2.7	9.7
Aroclor 1221		7.8	U	7.8	16
Aroclor 1232		1.9	U	1.9	9.7
Aroclor 1242		4.5	U	4.5	9.7
Aroclor 1248		4.5	U	4.5	9.7
Aroclor 1254		2.5	U	2.5	9.7
Aroclor 1260		2.5	U	2.5	9.7

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	100		59 - 130
Tetrachloro-m-xylene	101		53 - 128

8/21/11

019

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Client Sample ID: **J1K8H2**

Lab Sample ID: 280-18551-11
Client Matrix: Solid
% Moisture: 1.3

Date Sampled: 07/26/2011 0810
Date Received: 07/28/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-79609	Instrument ID:	GCS_P3
Prep Method:	3550C	Prep Batch:	280-78835	Initial Weight/Volume:	30.4 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	08/02/2011 2159			Injection Volume:	1 uL
Prep Date:	07/28/2011 1830			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.8	U	2.8	10
Aroclor 1221		8.0	U	8.0	16
Aroclor 1232		2.0	U	2.0	10
Aroclor 1242		4.7	U	4.7	10
Aroclor 1248		4.7	U	4.7	10
Aroclor 1254		2.6	U	2.6	10
Aroclor 1260		2.6	U	2.6	10

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	100		59 - 130
Tetrachloro-m-xylene	99		53 - 128

8/21/11

020

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

CASE NARRATIVE

Client: Washington Closure Hanford

Project: WASHINGTON CLOSURE HANFORD

Report Number: 280-18551-1

SDG #: JP0240
SAF#: RC-107

Date SDG Closed: July 28, 2011
Data Deliverable: 7 Day / Summary

CLIENT ID	LAB ID	ANALYSES REQUESTED	ANALYSES PERFORMED
J1K8F2	280-18551-1	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8F3	280-18551-2	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8F4	280-18551-3	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8F5	280-18551-4	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8F6	280-18551-5	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8F7	280-18551-6	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8F8	280-18551-7	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8F9	280-18551-8	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8H0	280-18551-9	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8H1	280-18551-10	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8H2	280-18551-11	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310

I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed in this Case Narrative. 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 signature on the Report Cover.

With exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. All laboratory quality control samples analyzed in conjunction with the samples in this project were within established control limits, with any exceptions noted. Calculations are performed before rounding to avoid round-off errors in calculated results.

This report includes reporting limits (RLs) less than TestAmerica Denver's practical quantitation limits. These reporting limits are being used specifically at the client's request to meet the needs of this project. Please note that data are not normally reported to these levels without qualification, since they are inherently less reliable and potentially less defensible than required by the current NELAC standards.

The results, RLs and MDLs included in this report have been adjusted for dry weight, as appropriate.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 7/28/2011; the samples arrived in good condition, properly preserved and on ice. The temperatures of the coolers at receipt were 4.2 C, 3.0 C, 4.2 C and 4.4 C.

GC SEMIVOLATILES - SW846 8082 - PCBs
No anomalies were encountered.

HPLC - SW846 8310 - PAHs
The RPD between the primary and confirmation columns exceeded 40% for analytes in samples J1K8F6 and J1K8H0. The lower of the two values have been reported, as matrix interference is evident. Associated results have been flagged with an "X".

The LCS associated with batch 280-78874 exhibited the percent recovery outside the control limits, biased high, for Indeno[1,2,3-cd]pyrene, and the associated sample results have been flagged "N". This is an indicator that data may be biased high. As no detectable concentrations of Indeno[1,2,3-cd]pyrene are present in the associated samples, corrective action is deemed unnecessary.

No other anomalies were encountered.

TOTAL METALS - SW846 6010B/7471A

Serial dilution of a digestate in batch 280-78800 indicates that physical and chemical interferences are present for Cobalt and Zinc. Results have been flagged with an "X".

Low levels of Calcium and Zinc are present in the method blank associated with batch 280-78800. Because the concentrations in the method blank are not present at levels greater than half the reporting limit or the associated sample amounts are twenty times greater than the method blank concentration, corrective action is deemed unnecessary.

It can be noted that the sample amount was greater than four times the spike amount for Aluminum, Iron and Manganese in the Matrix Spike performed on sample J1K8F2; therefore, control limits are not applicable.

No other anomalies were encountered.

GENERAL CHEMISTRY - MCAWW 353.2 - NITRATE+NITRITE as N

The Nitrate Nitrite as N duplicate analyses of samples J1K8F2 and J1K8F4 exhibited RPD data outside the control limits, and the associated sample results have been flagged "M". There is no indication that the analytical system was operating out of control, and method accuracy has been verified by the acceptable LCS analysis data; therefore, corrective action is deemed unnecessary.

No other anomalies were encountered.

GENERAL CHEMISTRY - SW846 9056M - ANIONS

The Chloride duplicate analysis of sample J1K8F3 exhibited RPD data outside the control limits, and the associated sample result has been flagged "M". There is no indication that the analytical system was operating out of control, and method accuracy has been verified by the acceptable LCS analysis data; therefore, corrective action is deemed unnecessary.

No other anomalies were encountered.

GENERAL CHEMISTRY - SW846 9045C - PH

No anomalies were encountered.

3.0/28/4.2/4.4/4.2

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-084	Page 1 of ~~2~~ 3

Collector Q Stowe	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH
Project Designation 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 132-H-3 BCL-A Verification		SAF No. RC-107
Ice Chest No. ERC-02-103	Field Logbook No. EL 1627-05	COA 0132H32000	Method of Shipment Government Vehicle/FedEx
Shipped To 7/26/11 TestAmerica Incorporated, ~~Richland~~ Denver	Offsite Property No. A100824		Bill of Lading/Air Bill No. See OSPC

Price Code ~~81~~ 83

Data Turnaround ~~21~~ 7 Days

POSSIBLE SAMPLE HAZARDS/REMARKS
None

Special Handling and/or Storage
~~None~~ Cool 4°C

SAMPLE ANALYSIS

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None	None
Type of Container	G/P	G/P	G/P	aG	aG	G/P	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	60mL	60mL	125mL	120mL	120mL	120mL	500mL	60mL	60mL	60mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	See item (2) in Special Instructions.	PCBs - 8082	PAHs - 8310	Carbon-14; Tritium - H3 Low Level Soil	See item (3) in Special Instructions.	Isotopic Uranium	Isotopic Plutonium	Nickel-63; Strontium-89,90 – Total Sr

Sample No.	Matrix *	Sample Date	Sample Time									
~~J1K8F0~~	~~SOIL~~		7/26/11									
~~J1K8F1~~	~~SOIL~~		7/26/11									
J1K8F2	SOIL	7/26/11	0755	X		X	X	X				
J1K8F3	SOIL	7/26/11	0810	X		X	X	X				
J1K8F4	SOIL	7/26/11	0820	X		X	X	X				

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: Quincy Stowe	7/26/11 1545	JV Fullmer	7/26/11 1545
Relinquished By/Removed From: JV Fullmer	7/26/11 1745	Cindy Burgham	7/26/11 1060 #1 1745
Relinquished By/Removed From: Cindy Burgham	7/27/11 1130	Received By/Stored In: Fed Ex	Date/Time WCH
Relinquished By/Removed From	Date/Time	Received By/Stored In: [illegible]	7/28/11 0900
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)
(2) IC Anions - 9056 Modified (Bromide, Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate); NO2/NO3 - 353.2; pH (Soil) - 9045
(3) Gamma Spec - Client List (Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable)

REVIEWED BY [illegible] DATE 7-27-11

JP0240

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

DH 7/21/11

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-084	Page 2 of ~~4~~ 3
Collector: Q Stowe	Company Contact: Joan Kessner; Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: ~~8L~~ 8R 7/26/11
Project Designation: 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 132-H-3 BCL-A Verification	SAF No.: RC-107	Data Turnaround: ~~21~~ 7 Days 7/26/11
Ice Chest No.: ERC-02-103	Field Logbook No.: EL 1627-05; COA: 0132H32000	Method of Shipment: Government Vehicle/FedEx	
Shipped To: TestAmerica Incorporated, ~~Richland~~ Denver DH 7/21/11	Offsite Property No.: A100824	Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS
None 7/26/11

Special Handling and/or Storage
~~None~~ Cool 4C
DH 7/21/11

025

SAMPLE ANALYSIS												
Preservation				None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None	None
Type of Container				G/P	G/P	G/P	aG	aG	G/P	G/P	G/P	G/P	G/P
No. of Container(s)				1	1	1	1	1	1	1	1	1	1
Volume				60mL	60mL	125mL	120mL	120mL	120mL	500mL	60mL	60mL	60mL
				See item (1) in Special Instructions.	Chromium Hex - 7196	See item (2) in Special Instructions.	PCBs - 8082	PAHs - 8310	Carbon-14; Tritium - H3 Low Level Soil	See item (3) in Special Instructions.	Isotopic Uranium	Isotopic Plutonium	Nickel-63; Strontium-89,90 -- Total Sr
Sample No.	Matrix *	Sample Date	Sample Time										
J1K8F5	SOIL	7/26/11	0830	X		X	X	X					
J1K8F6	SOIL	7/26/11	0835	X		X	X	X					
J1K8F7	SOIL	7/26/11	0845	X		X	X	X					
J1K8F8	SOIL	7/26/11	0855	X		X	X	X					
J1K8F9	SOIL	7/26/11	0906	X		X	X	X					

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Quincy Stowe	7/26/11 1545	JV Fullmer	7/26/11 1545
JV Fullmer	7/26/11 1745	Cindy Dunham	7/26/11 1745
Cindy Dunham 1040 #4	7/27/11 1130 WCH	Fed Ex	
			7/28/11 0900

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)
(2) IC Anions - 9056 Modified (Bromide, Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate); NO2/NO3 - 353.2; pH (Soil) - 9045
(3) Gamma Spec - Client List (Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable)

REVIEWED BY
DATE

JP0240

Matrix *
S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

DH 7/21/11

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-084	Page 2 of 3
Collector: Q Stowe	Company Contact: Joan Kessner; Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: ~~81~~ 88 on 7/26/11
Project Designation: 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location: 132-H-3 BCL-A Verification	SAF No.: RC-107	Data Turnaround: ~~21~~ 7 Days on 7/26/11
Ice Chest No.: ERC-02-103	Field Logbook No.: EL 1627-05; COA: 0132H32000	Method of Shipment: Government Vehicle/FedEx	
Shipped To: TestAmerica Incorporated, ~~Richland~~ Denver 7/26/11 amB	Offsite Property No.: A100824	Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS: None on 7/26/11

Special Handling and/or Storage: ~~None~~ Cool 4C DH 7/21/11

026

SAMPLE ANALYSIS													
Preservation				None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None	None
Type of Container				G/P	G/P	G/P	aG	aG	G/P	G/P	G/P	G/P	G/P
No. of Container(s)				1	1	1	1	1	1	1	1	1	1
Volume				60mL	60mL	125mL	120mL	120mL	120mL	500mL	60mL	60mL	60mL
				See item (1) in Special Instructions.	Chromium Hex - 7196	See item (2) in Special Instructions.	PCBs - 8082	PAHs - 8310	Carbon-14; Tritium - H3 Low Level Soil	See item (3) in Special Instructions.	Isotopic Uranium	Isotopic Plutonium	Nickel-63; Strontium-89,90 -- Total Sr
Sample No.	Matrix *	Sample Date	Sample Time										
J1K8H0	SOIL	7/26/11	0910	X		X	X	X					
J1K8H1	SOIL	7/26/11	0920	X		X	X	X					
J1K8H2	SOIL	7/26/11	0810	X		X	X	X					

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: Quince Stowe	7/26/11 1545	Received By/Stored In: JV Fullmer	7/26/11 1545
Relinquished By/Removed From: JV Fullmer	7/26/11 1745	Received By/Stored In: [illegible]	7/26/11 1745
Relinquished By/Removed From: [illegible]	7/27/11 1130	Received By/Stored In: Fed Ex	
Relinquished By/Removed From		Received By/Stored In: [illegible]	7/28/11 0900
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)
(2) IC Anions - 9056 Modified (Bromide, Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate); NO2/NO3 - 353.2; pH (Soil) - 9045
(3) Gamma Spec - Client List (Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, ~~Silver-108~~ metastable)

REVIEWED BY [illegible] DATE 7-27-11

JP0240

Matrix *: S=Soil; SE=Sediment; SO=Solid; Sl=Sludge; W=Water; O=Oil; A=Air; DS=Drum Solids; DL=Drum Liquids; T=Tissue; Wl=Wipe; L=Liquid; V=Vegetation; X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

PCB DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 132-H-3			DATA PACKAGE: JP0240		
VALIDATOR: ELR		LAB: TAL		DATE: 8/21/11	
			SDG: JP0240		
ANALYSES PERFORMED					
SW-846 8081	SW-846 8081 (TCLP)	SW-846 8082	SW-846 8081 (TCLP)		
SAMPLES/MATRIX					
J1K8F2	J1K8F3	J1K8F4	J1K8F5		
J1K8F6	J1K8F7	J1K8F8	J1K8F9		
J1K8H0	J1K8H1	J1K8H2			
				Soil	

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? ..... Yes No N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations acceptable? ..... Yes No N/A

Continuing calibrations acceptable? ..... Yes No N/A

Standards traceable? ..... Yes No N/A

Standards expired? ..... Yes No N/A

Calculation check acceptable? ..... Yes No N/A

DDT and endrin breakdowns acceptable? ..... Yes No N/A

Comments:

PCB DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

Calibration blanks analyzed? (Levels D, E) ..... Yes No N/A
Calibration blank results acceptable? (Levels D, E) ..... Yes No N/A
Laboratory blanks analyzed? ..... Yes No N/A
Laboratory blank results acceptable? ..... Yes No N/A
Field/trip blanks analyzed? (Levels C, D, E) ..... Yes No N/A
Field/trip blank results acceptable? (Levels C, D, E) ..... Yes No N/A
Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Comments: no FB

4. ACCURACY (Levels C, D, and E)

Surrogates analyzed? ..... Yes No N/A
Surrogate recoveries acceptable? ..... Yes No N/A
Surrogates traceable? (Levels D, E) ..... Yes No N/A
Surrogates expired? (Levels D, E) ..... Yes No N/A
MS/MSD samples analyzed? ..... Yes No N/A
MS/MSD results acceptable? ..... Yes No N/A
MS/MSD standards NIST traceable? (Levels D, E) ..... Yes No N/A
MS/MSD standards expired? (Levels D, E) ..... Yes No N/A
LCS/BSS samples analyzed? ..... Yes No N/A
LCS/BSS results acceptable? ..... Yes No N/A
Standards traceable? (Levels D, E) ..... Yes No N/A
Standards expired? (Levels D, E) ..... Yes No N/A
Transcription/calculation errors? (Levels D, E) ..... Yes No N/A
Performance audit sample(s) analyzed? ..... Yes No N/A
Performance audit sample results acceptable? ..... Yes No N/A

Comments: no PAS

PCB DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? ..... Yes No N/A

Duplicate results acceptable? ..... Yes No N/A

MS/MSD standards NIST traceable? (Levels D, E) ..... Yes No N/A

MS/MSD standards expired? (Levels D, E) ..... Yes No N/A

Field duplicate RPD values acceptable? ..... Yes No N/A

Field split RPD values acceptable? ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Comments: _____

6. SYSTEM PERFORMANCE (Levels D and E)

Chromatographic performance acceptable? ..... Yes No N/A

Positive results resolved acceptably? ..... Yes No N/A

Comments: _____

7. HOLDING TIMES (all levels)

Samples properly preserved? ..... Yes No N/A

Sample holding times acceptable? ..... Yes No N/A

Comments: _____

PCB DATA VALIDATION CHECKLIST

8. COMPOUND IDENTIFICATION, QUANTITATION, AND DETECTION LIMITS (all levels)

Compound identification acceptable? (Levels D, E) ..... Yes No N/A

Compound quantitation acceptable? (Levels D, E) ..... Yes No N/A

Results reported for all requested analyses? ..... Yes No N/A

Results supported in the raw data? (Levels D, E) ..... Yes No N/A

Samples properly prepared? (Levels D, E) ..... Yes No N/A

Detection limits meet RDL? ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Comments: _____

9. SAMPLE CLEANUP (Levels D and E)

Fluoricil ® (or other absorbent) cleanup performed? ..... Yes No N/A

Lot check performed? ..... Yes No N/A

Check recoveries acceptable? ..... Yes No N/A

GPC cleanup performed? ..... Yes No N/A

GPC check performed? ..... Yes No N/A

GPC check recoveries acceptable? ..... Yes No N/A

GPC calibration performed? ..... Yes No N/A

GPC calibration check performed? ..... Yes No N/A

GPC calibration check retention times acceptable? ..... Yes No N/A

Check/calibration materials traceable? ..... Yes No N/A

Check/calibration materials Expired? ..... Yes No N/A

Analytical batch QC given similar cleanup? ..... Yes No N/A

Transcription/Calculation Errors? ..... Yes No N/A

Comments: _____

Appendix 6

Additional Documentation Requested by Client

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Method Blank - Batch: 280-78835

Method: 8082
Preparation: 3550C

Lab Sample ID:	MB 280-78835/1-A	Analysis Batch:	280-79609	Instrument ID:	GCS_P3
Client Matrix:	Solid	Prep Batch:	280-78835	Lab File ID:	081F8101.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30.2 g
Analysis Date:	08/02/2011 1638	Units:	ug/Kg	Final Weight/Volume:	5000 uL
Prep Date:	07/28/2011 1830			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	Result	Qual	MDL	RL
Aroclor 1016	2.8	U	2.8	9.9
Aroclor 1221	8.0	U	8.0	16
Aroclor 1232	2.0	U	2.0	9.9
Aroclor 1242	4.6	U	4.6	9.9
Aroclor 1248	4.6	U	4.6	9.9
Aroclor 1254	2.6	U	2.6	9.9
Aroclor 1260	2.6	U	2.6	9.9

Surrogate	% Rec	Acceptance Limits
Decachlorobiphenyl	101	59 - 130
Tetrachloro-m-xylene	97	53 - 128

Lab Control Sample - Batch: 280-78835

Method: 8082
Preparation: 3550C

Lab Sample ID:	LCS 280-78835/2-A	Analysis Batch:	280-79609	Instrument ID:	GCS_P3
Client Matrix:	Solid	Prep Batch:	280-78835	Lab File ID:	082F8201.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30.7 g
Analysis Date:	08/02/2011 1659	Units:	ug/Kg	Final Weight/Volume:	5000 uL
Prep Date:	07/28/2011 1830			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Aroclor 1016	32.6	34.3	105	54 - 132	
Aroclor 1260	32.6	35.0	107	62 - 129	

Surrogate	% Rec	Acceptance Limits
Decachlorobiphenyl	100	59 - 130
Tetrachloro-m-xylene	97	53 - 128

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-78835

Method: 8082
Preparation: 3550C

MS Lab Sample ID:	280-18551-2	Analysis Batch:	280-79609	Instrument ID:	GCS_P3
Client Matrix:	Solid	Prep Batch:	280-78835	Lab File ID:	085F8501.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30.1 g
Analysis Date:	08/02/2011 1804			Final Weight/Volume:	5000 uL
Prep Date:	07/28/2011 1830			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

MSD Lab Sample ID:	280-18551-2	Analysis Batch:	280-79609	Instrument ID:	GCS_P3
Client Matrix:	Solid	Prep Batch:	280-78835	Lab File ID:	086F8601.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30.5 g
Analysis Date:	08/02/2011 1825			Final Weight/Volume:	5000 uL
Prep Date:	07/28/2011 1830			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Aroclor 1016	111	122	54 - 132	8	26		
Aroclor 1260	111	115	62 - 129	2	26		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
Decachlorobiphenyl	108	98	59 - 130
Tetrachloro-m-xylene	110	105	53 - 128

134

Date: 23 August 2011
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: 100H Remaining Sites Burial Grounds – Soil Full Protocol - Waste Site 132-H-3
Subject: Inorganics - Data Package No. JP0240-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. JP0240 prepared by TestAmerica Laboratories (TAL). A list of samples validated along with the analyses reported and the method of analysis is provided in the following table.

Sample ID	Sample Date	Media	Validation	Analyte
J1K8F2	7/26/11	Soil	C	See note 1
J1K8F3	7/26/11	Soil	C	See note 1
J1K8F4	7/26/11	Soil	C	See note 1
J1K8F5	7/26/11	Soil	C	See note 1
J1K8F6	7/26/11	Soil	C	See note 1
J1K8F7	7/26/11	Soil	C	See note 1
J1K8F8	7/26/11	Soil	C	See note 1
J1K8F9	7/26/11	Soil	C	See note 1
J1K8H0	7/26/11	Soil	C	See note 1
J1K8H1	7/26/11	Soil	C	See note 1
J1K8H2	7/26/11	Soil	C	See note 1

1 - ICP metals (6010B) and mercury by 7471A.

Data validation was conducted in accordance with the Washington Closure Hanford (WCH) validation statement of work and the 100 Area Remedial Action Sampling and Analysis Plan (DOE/RL-96-22, September 2009). Appendices 1 through 6 provide the following information as indicated below:

Appendix 1. Glossary of Data Reporting Qualifiers
Appendix 2. Summary of Data Qualification
Appendix 3. Annotated Laboratory Reports
Appendix 4. Laboratory Narrative and Chain-of-Custody Documentation
Appendix 5. Data Validation Supporting Documentation
Appendix 6. Additional Documentation Requested by Client

DATA QUALITY PARAMETERS

Holding Times

Analytical holding times for metals are assessed to ascertain whether the holding time requirements were met by the laboratory. The holding time requirements are as follows: Soil samples must be analyzed within 6 months for ICP metals and 28 days for mercury.

All holding times were acceptable.

- **Preparation (Method) Blanks**

Preparation Blanks

At least one preparation blank, consisting of deionized distilled water processed through each sample preparation and analysis procedure, must be prepared and analyzed with every sample delivery group. In the case of positive blank results, samples with digestate concentrations less than five times the preparation blank value have had their associated values qualified as non-detected and flagged "UJ". Samples with concentrations of greater than five times the highest blank concentration do not require qualification.

In the case of negative blank results, if the absolute value exceeds the contract required detection limit (CRDL), all nondetects are rejected and flagged "UR" and all detects that are less than ten times the absolute value of the associated preparation blank result are qualified as estimates and flagged "J". If the absolute value of the negative preparation blank is greater than the instrument detection limit (IDL) and less than or equal to the CRDL, all nondetects are qualified as estimates and flagged "UJ" and all detects less than ten times the absolute value of the blank are qualified as estimates and flagged "J". If the sample results are greater than ten times the absolute value of the preparation blank, no qualification is necessary.

All preparation blank results were acceptable.

Field (Equipment) Blank

No field blanks were submitted for analysis.

- **Accuracy**

Matrix Spike and Laboratory Control Sample

Matrix spike (MS) and laboratory control sample (LCS) analyses are used to assess the analytical accuracy of the reported data. The matrix spike is used to assess the effect of the matrix on the ability to accurately quantify sample concentrations. Recoveries must fall within the range of 75% to 125%. Samples with a recovery of less than 30% and a sample result below the IDL are rejected and flagged "UR". Samples with a recovery of 30% to 74% and a sample result less than the IDL are qualified "UJ". Samples with a recovery of greater than 125% or less than 74% and a sample result greater than the IDL are qualified as estimates and flagged "J". Finally, for samples with a recovery greater than 125% and a sample result less than the IDL, no qualification is required.

Due to matrix spike recoveries outside QC limits, all antimony (64%) and silicon (25%) results were qualified as estimates and flagged "J".

Due to an LCS recovery outside QC limits (32%), all silicon results were qualified as estimates and flagged "J".

All other accuracy results were acceptable

- **Precision**

Laboratory Duplicate Samples

Analytical precision is expressed by the relative percent differences (RPD) between the recoveries of matrix spike duplicate (MSD) analyses performed on a sample in the analytical batch. Precision may alternatively be assessed using unspiked duplicate analyses performed on a sample in the analytical batch. If both sample and replicate activities (concentrations) are greater than five times the CRDL and the RPD is less than 30%, no qualification is required. If either activity (concentration) is less than five times the CRDL, the RPD control limit is less than or equal to two times the CRDL. If the RPD is outside the applicable control limit, associated results are qualified as estimated detects or estimated non-detects.

All laboratory duplicate results were acceptable.

Field Duplicate

One set of field duplicates (J1K8F3/J1K8H2) were submitted for analysis. Laboratory duplicates are compared using the same criteria as for laboratory results. All field duplicate results are acceptable.

- **Analytical Detection Levels**

Reported analytical detection levels are compared against the 100 Area RQLs to ensure that laboratory detection levels meet the required criteria. All results met the RQL.

- **Completeness**

Data package No. JP0240 was submitted for validation and verified for completeness. Completeness is based on the percentage of data determined to be valid (i.e., not rejected). The completion percentage was 100%.

MAJOR DEFICIENCIES

None found.

MINOR DEFICIENCIES

The following minor deficiencies were noted:

- Due to matrix spike recoveries outside QC limits, all antimony (64%) and silicon (25%) results were qualified as estimates and flagged "J".

- Due to an LCS recovery outside QC limits (32%), all silicon results were qualified as estimates and flagged "J".

Data flagged "J" indicates that the associated concentration is an estimate, but under the WCH statement of work, the data may be usable for decision-making purposes. All other validated results are considered accurate within the standard error associated with the methods.

REFERENCES

Washington Closure Hanford Contract #S00W307A00 (March 2008), *Data Validation Services*, March 2008.

DOE/RL-96-22, Rev. 5, *100 Area Remedial Action Sampling and Analysis Plan*, U.S. Department of Energy, September 2009.

Appendix 1

Glossary of Data Reporting Qualifiers

Qualifiers which may be applied by data validators in compliance with WCH validation SOW are as follows:

U - Indicates the compound or analyte was analyzed for and not detected in the sample. The value reported is the sample quantitation limit corrected for sample dilution and moisture content by the laboratory.

UJ - Indicates the compound or analyte was analyzed for and not detected in the sample. Due to a minor QC deficiency identified during the data validation, the associated quantitation limit is an estimate.

J - Indicates the compound or analyte was analyzed for and detected. Due to a minor QC deficiency identified during the data validation, the associated concentration is an estimate, but the data are usable for decision-making purposes.

BJ - Applied to inorganic analyses only. Indicates the analyte concentration was greater than the IDL but less than the CRDL and is considered an estimated value.

R - Indicates the compound or analyte was analyzed for, detected, and due to an identified major QC deficiency, the data are unusable.

UR - Indicates the compound or analyte was analyzed for and not detected in the sample. Additionally, the data is unusable due to an identified major QC deficiency.

NJ - Indicates presumptive evidence of a compound at an estimated value. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

N - Indicates presumptive evidence of a compound. The data may not be valid for some specific applications (i.e., usable for decision-making purposes).

Appendix 2

Summary of Data Qualification

METALS DATA QUALIFICATION SUMMARY*

SDG: JP0240	REVIEWER: ELR	Project: 132-H-3	PAGE 1 OF 1
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Antimony Silicon	J	All	MS recovery
Silicon	J	All	LCS recovery

* - The Qualified Data Summary Table includes laboratory applied "U" qualifiers not specifically identified here. The laboratory applied "U" qualifiers are included to minimize misinterpretation of results contained in the table.

Appendix 3

Annotated Laboratory Reports

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Client Sample ID: **J1K8F2**

8/22/11

Lab Sample ID: 280-18551-1
Client Matrix: Solid
% Moisture: 3.4

Date Sampled: 07/26/2011 0755
Date Received: 07/28/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-79175	Instrument ID:	MT_025
Prep Method:	3050B	Prep Batch:	280-78800	Lab File ID:	25A072911.asc
Dilution:	1.0			Initial Weight/Volume:	1.11 g
Analysis Date:	07/29/2011 1441			Final Weight/Volume:	100 mL
Prep Date:	07/28/2011 1405				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6780		1.4	4.7
Antimony		0.54	B J	0.35	0.56
Arsenic		3.3		0.62	0.93
Barium		50.0		0.071	0.47
Beryllium		0.091	B	0.031	0.19
Boron		1.1	B	0.91	1.9
Cadmium		0.10	B	0.038	0.19
Calcium		5750		13.2	46.6
Chromium		9.0		0.054	0.19
Cobalt		7.0	X	0.093	0.93
Copper		14.3		0.20	0.93
Iron		16700		3.5	4.7
Magnesium		4490		3.5	18.7
Manganese		282		0.093	0.93
Molybdenum		0.24	U	0.24	1.9
Nickel		9.8		0.11	3.7
Potassium		966		38.2	280
Selenium		0.80	U	0.80	0.93
Silicon		356	J	5.3	9.3
Silver		0.15	U	0.15	0.19
Sodium		246		55.0	112
Vanadium		41.0		0.088	1.9
Zinc		36.4	X	0.37	0.93
Lead		6.7		0.25	0.47

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-79376	Instrument ID:	MT_034
Prep Method:	7471A	Prep Batch:	280-78841	Lab File ID:	110801TA.txt
Dilution:	1.0			Initial Weight/Volume:	0.61 g
Analysis Date:	08/01/2011 1955			Final Weight/Volume:	50 mL
Prep Date:	08/01/2011 1310				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0056	U	0.0056	0.017

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Client Sample ID: **J1K8F3**

Lab Sample ID: 280-18551-2
Client Matrix: Solid

% Moisture: 2.8

8/22/11

Date Sampled: 07/26/2011 0810
Date Received: 07/28/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-79175	Instrument ID:	MT_025
Prep Method:	3050B	Prep Batch:	280-78800	Lab File ID:	25A072911.asc
Dilution:	1.0			Initial Weight/Volume:	1.07 g
Analysis Date:	07/29/2011 1451			Final Weight/Volume:	100 mL
Prep Date:	07/28/2011 1405				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6580		1.5	4.8
Antimony		0.37	U J	0.37	0.58
Arsenic		3.6		0.63	0.96
Barium		62.5		0.073	0.48
Beryllium		0.11	B	0.032	0.19
Boron		1.4	B	0.94	1.9
Cadmium		0.11	B	0.039	0.19
Calcium		7350		13.6	48.1
Chromium		10.6		0.056	0.19
Cobalt		6.4	X	0.096	0.96
Copper		13.5		0.21	0.96
Iron		16700		3.7	4.8
Magnesium		4540		3.6	19.2
Manganese		262		0.096	0.96
Molybdenum		0.25	U	0.25	1.9
Nickel		11.5		0.12	3.8
Potassium		1060		39.4	289
Selenium		0.83	U	0.83	0.96
Silicon		521	J	5.4	9.6
Silver		0.15	U	0.15	0.19
Sodium		352		56.8	115
Vanadium		41.6		0.090	1.9
Zinc		36.4	X	0.38	0.96
Lead		6.1		0.26	0.48

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-79376	Instrument ID:	MT_034
Prep Method:	7471A	Prep Batch:	280-78841	Lab File ID:	110801TA.txt
Dilution:	1.0			Initial Weight/Volume:	0.61 g
Analysis Date:	08/01/2011 1958			Final Weight/Volume:	50 mL
Prep Date:	08/01/2011 1310				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0056	U	0.0056	0.017

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

8/22/11

Client Sample ID: **J1K8F4**

Lab Sample ID: 280-18551-3
Client Matrix: Solid
% Moisture: 2.4

Date Sampled: 07/26/2011 0820
Date Received: 07/28/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-79175	Instrument ID:	MT_025
Prep Method:	3050B	Prep Batch:	280-78800	Lab File ID:	25A072911.asc
Dilution:	1.0			Initial Weight/Volume:	1.15 g
Analysis Date:	07/29/2011 1454			Final Weight/Volume:	100 mL
Prep Date:	07/28/2011 1405				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5340		1.4	4.5
Antimony		0.34	U J	0.34	0.53
Arsenic		2.9		0.59	0.89
Barium		57.8		0.068	0.45
Beryllium		0.029	U	0.029	0.18
Boron		0.87	U	0.87	1.8
Cadmium		0.087	B	0.037	0.18
Calcium		5710		12.6	44.6
Chromium		7.4		0.052	0.18
Cobalt		7.3	X	0.089	0.89
Copper		14.0		0.19	0.89
Iron		18400		3.4	4.5
Magnesium		3940		3.3	17.8
Manganese		265		0.089	0.89
Molybdenum		0.23	U	0.23	1.8
Nickel		10.4		0.11	3.6
Potassium		754		36.5	267
Selenium		0.77	U	0.77	0.89
Silicon		298	J	5.0	8.9
Silver		0.14	U	0.14	0.18
Sodium		300		52.6	107
Vanadium		51.6		0.084	1.8
Zinc		35.2	X	0.35	0.89
Lead		6.0		0.24	0.45

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-79376	Instrument ID:	MT_034
Prep Method:	7471A	Prep Batch:	280-78841	Lab File ID:	110801TA.txt
Dilution:	1.0			Initial Weight/Volume:	0.68 g
Analysis Date:	08/01/2011 2000			Final Weight/Volume:	50 mL
Prep Date:	08/01/2011 1310				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0050	U	0.0050	0.015

012

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

8/22/11

Client Sample ID: **J1K8F5**

Lab Sample ID: 280-18551-4
Client Matrix: Solid
% Moisture: 3.2

Date Sampled: 07/26/2011 0830
Date Received: 07/28/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-79175	Instrument ID:	MT_025
Prep Method:	3050B	Prep Batch:	280-78800	Lab File ID:	25A072911.asc
Dilution:	1.0			Initial Weight/Volume:	1.16 g
Analysis Date:	07/29/2011 1505			Final Weight/Volume:	100 mL
Prep Date:	07/28/2011 1405				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6280		1.4	4.5
Antimony		0.34	U J	0.34	0.53
Arsenic		3.2		0.59	0.89
Barium		49.3		0.068	0.45
Beryllium		0.050	B	0.029	0.18
Boron		0.87	U	0.87	1.8
Cadmium		0.11	B	0.037	0.18
Calcium		6550		12.6	44.5
Chromium		9.3		0.052	0.18
Cobalt		7.1	X	0.089	0.89
Copper		13.9		0.19	0.89
Iron		18300		3.4	4.5
Magnesium		4420		3.3	17.8
Manganese		268		0.089	0.89
Molybdenum		0.23	U	0.23	1.8
Nickel		11.1		0.11	3.6
Potassium		870		36.5	267
Selenium		0.77	U	0.77	0.89
Silicon		369	J	5.0	8.9
Silver		0.14	U	0.14	0.18
Sodium		299		52.5	107
Vanadium		48.0		0.084	1.8
Zinc		36.4	X	0.35	0.89
Lead		7.6		0.24	0.45

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-79376	Instrument ID:	MT_034
Prep Method:	7471A	Prep Batch:	280-78841	Lab File ID:	110801TA.txt
Dilution:	1.0			Initial Weight/Volume:	0.62 g
Analysis Date:	08/01/2011 2007			Final Weight/Volume:	50 mL
Prep Date:	08/01/2011 1310				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0055	U	0.0055	0.017

013

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

8/22/11

Client Sample ID: **J1K8F6**

Lab Sample ID: 280-18551-5
Client Matrix: Solid

% Moisture: 2.6

Date Sampled: 07/26/2011 0835
Date Received: 07/28/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-79175	Instrument ID:	MT_025
Prep Method:	3050B	Prep Batch:	280-78800	Lab File ID:	25A072911.asc
Dilution:	1.0			Initial Weight/Volume:	1.10 g
Analysis Date:	07/29/2011 1508			Final Weight/Volume:	100 mL
Prep Date:	07/28/2011 1405				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7340		1.4	4.7
Antimony		0.35	U J	0.35	0.56
Arsenic		3.3		0.62	0.93
Barium		55.9		0.071	0.47
Beryllium		0.063	B	0.031	0.19
Boron		1.0	B	0.91	1.9
Cadmium		0.086	B	0.038	0.19
Calcium		6720		13.2	46.7
Chromium		10		0.054	0.19
Cobalt		7.6	X	0.093	0.93
Copper		17.6		0.20	0.93
Iron		19600		3.5	4.7
Magnesium		5010		3.5	18.7
Manganese		305		0.093	0.93
Molybdenum		0.24	U	0.24	1.9
Nickel		10.8		0.11	3.7
Potassium		934		38.3	280
Selenium		0.80	U J	0.80	0.93
Silicon		291		5.3	9.3
Silver		0.15	U	0.15	0.19
Sodium		301		55.1	112
Vanadium		49.6		0.088	1.9
Zinc		37.7	X	0.37	0.93
Lead		7.5		0.25	0.47

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-79376	Instrument ID:	MT_034
Prep Method:	7471A	Prep Batch:	280-78841	Lab File ID:	110801TA.txt
Dilution:	1.0			Initial Weight/Volume:	0.63 g
Analysis Date:	08/01/2011 2009			Final Weight/Volume:	50 mL
Prep Date:	08/01/2011 1310				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0054	U	0.0054	0.017

014

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

K 8/22/11

Client Sample ID: J1K8F7

Lab Sample ID: 280-18551-6
Client Matrix: Solid
% Moisture: 3.4

Date Sampled: 07/26/2011 0845
Date Received: 07/28/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-79175	Instrument ID:	MT_025
Prep Method:	3050B	Prep Batch:	280-78800	Lab File ID:	25A072911.asc
Dilution:	1.0			Initial Weight/Volume:	1.17 g
Analysis Date:	07/29/2011 1510			Final Weight/Volume:	100 mL
Prep Date:	07/28/2011 1405				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7520		1.4	4.4
Antimony		0.34	U J	0.34	0.53
Arsenic		3.7		0.58	0.88
Barium		59.2		0.067	0.44
Beryllium		0.13	B	0.029	0.18
Boron		1.0	B	0.87	1.8
Cadmium		0.093	B	0.036	0.18
Calcium		6090		12.5	44.2
Chromium		11.6		0.051	0.18
Cobalt		6.1	X	0.088	0.88
Copper		14.3		0.19	0.88
Iron		16300		3.4	4.4
Magnesium		4100		3.3	17.7
Manganese		258		0.088	0.88
Molybdenum		0.30	B	0.23	1.8
Nickel		11.0		0.11	3.5
Potassium		1100		36.3	265
Selenium		0.76	U	0.76	0.88
Silicon		349	J	5.0	8.8
Silver		0.14	U	0.14	0.18
Sodium		235		52.2	106
Vanadium		39.0		0.083	1.8
Zinc		34.1	X	0.35	0.88
Lead		9.1		0.24	0.44

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-79376	Instrument ID:	MT_034
Prep Method:	7471A	Prep Batch:	280-78841	Lab File ID:	110801TA.txt
Dilution:	1.0			Initial Weight/Volume:	0.63 g
Analysis Date:	08/01/2011 2011			Final Weight/Volume:	50 mL
Prep Date:	08/01/2011 1310				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0055	U	0.0055	0.017

015

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

K 8/22/11

Client Sample ID: **J1K8F8**

Lab Sample ID: 280-18551-7
Client Matrix: Solid

% Moisture: 3.2

Date Sampled: 07/26/2011 0855
Date Received: 07/28/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-79175	Instrument ID:	MT_025
Prep Method:	3050B	Prep Batch:	280-78800	Lab File ID:	25A072911.asc
Dilution:	1.0			Initial Weight/Volume:	1.08 g
Analysis Date:	07/29/2011 1513			Final Weight/Volume:	100 mL
Prep Date:	07/28/2011 1405				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6680		1.5	4.8
Antimony		0.36	U J	0.36	0.57
Arsenic		3.9		0.63	0.96
Barium		52.4		0.073	0.48
Beryllium		0.072	B	0.032	0.19
Boron		0.94	U	0.94	1.9
Cadmium		0.087	B	0.039	0.19
Calcium		6690		13.5	47.8
Chromium		10.1		0.055	0.19
Cobalt		6.8	X	0.096	0.96
Copper		13.9		0.21	0.96
Iron		18200		3.6	4.8
Magnesium		4460		3.5	19.1
Manganese		278		0.096	0.96
Molybdenum		0.25	U	0.25	1.9
Nickel		10.9		0.12	3.8
Potassium		893		39.2	287
Selenium		0.82	U	0.82	0.96
Silicon		424	J	5.4	9.6
Silver		0.15	U	0.15	0.19
Sodium		308		56.4	115
Vanadium		48.4		0.090	1.9
Zinc		36.5	X	0.38	0.96
Lead		7.4		0.26	0.48

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-79376	Instrument ID:	MT_034
Prep Method:	7471A	Prep Batch:	280-78841	Lab File ID:	110801TA.txt
Dilution:	1.0			Initial Weight/Volume:	0.67 g
Analysis Date:	08/01/2011 2018			Final Weight/Volume:	50 mL
Prep Date:	08/01/2011 1310				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0051	U	0.0051	0.016

016

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

8/22/11

Client Sample ID: **J1K8F9**

Lab Sample ID: 280-18551-8
Client Matrix: Solid

% Moisture: 3.0

Date Sampled: 07/26/2011 0900
Date Received: 07/28/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-79175	Instrument ID:	MT_025
Prep Method:	3050B	Prep Batch:	280-78800	Lab File ID:	25A072911.asc
Dilution:	1.0			Initial Weight/Volume:	1.16 g
Analysis Date:	07/29/2011 1515			Final Weight/Volume:	100 mL
Prep Date:	07/28/2011 1405				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6960		1.4	4.4
Antimony		0.34	U J	0.34	0.53
Arsenic		3.5		0.59	0.89
Barium		57.8		0.068	0.44
Beryllium		0.11	B	0.029	0.18
Boron		1.4	B	0.87	1.8
Cadmium		0.097	B	0.036	0.18
Calcium		6160		12.5	44.5
Chromium		10.1		0.052	0.18
Cobalt		6.1	X	0.089	0.89
Copper		13.6		0.19	0.89
Iron		16600		3.4	4.4
Magnesium		4170		3.3	17.8
Manganese		265		0.089	0.89
Molybdenum		0.23	U	0.23	1.8
Nickel		10.7		0.11	3.6
Potassium		1060		36.5	267
Selenium		0.76	U	0.76	0.89
Silicon		466	J	5.0	8.9
Silver		0.14	U	0.14	0.18
Sodium		271		52.5	107
Vanadium		43.6		0.084	1.8
Zinc		34.9	X	0.35	0.89
Lead		6.8		0.24	0.44

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-79376	Instrument ID:	MT_034
Prep Method:	7471A	Prep Batch:	280-78841	Lab File ID:	110801TA.txt
Dilution:	1.0			Initial Weight/Volume:	0.63 g
Analysis Date:	08/01/2011 2021			Final Weight/Volume:	50 mL
Prep Date:	08/01/2011 1310				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0083	B	0.0054	0.017

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

8/22/11

Client Sample ID: J1K8H0

Lab Sample ID: 280-18551-9
Client Matrix: Solid
% Moisture: 3.6

Date Sampled: 07/26/2011 0910
Date Received: 07/28/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-79175	Instrument ID:	MT_025
Prep Method:	3050B	Prep Batch:	280-78800	Lab File ID:	25A072911.asc
Dilution:	1.0			Initial Weight/Volume:	1.00 g
Analysis Date:	07/29/2011 1518			Final Weight/Volume:	100 mL
Prep Date:	07/28/2011 1405				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5690		1.8	5.2
Antimony		0.39	U J	0.39	0.62
Arsenic		2.5		0.68	1.0
Barium		50.5		0.079	0.52
Beryllium		0.034	U	0.034	0.21
Boron		1.0	U	1.0	2.1
Cadmium		0.090	B	0.043	0.21
Calcium		6430		14.6	51.9
Chromium		7.0		0.060	0.21
Cobalt		8.5	X	0.10	1.0
Copper		13.5		0.23	1.0
Iron		22100		3.9	5.2
Magnesium		4190		3.8	20.8
Manganese		286		0.10	1.0
Molybdenum		0.27	U	0.27	2.1
Nickel		10.1		0.13	4.2
Potassium		782		42.5	311
Selenium		0.89	U	0.89	1.0
Silicon		467	J	5.9	10.4
Silver		0.17	U	0.17	0.21
Sodium		333		61.2	125
Vanadium		62.4		0.098	2.1
Zinc		41.6	X	0.41	1.0
Lead		6.1		0.28	0.52

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-79376	Instrument ID:	MT_034
Prep Method:	7471A	Prep Batch:	280-78841	Lab File ID:	110801TA.txt
Dilution:	1.0			Initial Weight/Volume:	0.69 g
Analysis Date:	08/01/2011 2023			Final Weight/Volume:	50 .mL
Prep Date:	08/01/2011 1310				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0050	U	0.0050	0.015

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Client Sample ID: **J1K8H1**

Lab Sample ID: 280-18551-10
Client Matrix: Solid

% Moisture: 2.2

8/22/11

Date Sampled: 07/26/2011 0920
Date Received: 07/28/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-79175	Instrument ID:	MT_025
Prep Method:	3050B	Prep Batch:	280-78800	Lab File ID:	25A072911.asc
Dilution:	1.0			Initial Weight/Volume:	1.18 g
Analysis Date:	07/29/2011 1520			Final Weight/Volume:	100 mL
Prep Date:	07/28/2011 1405				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6210		1.3	4.3
Antimony		0.33	U J	0.33	0.52
Arsenic		4.3		0.57	0.87
Barium		48.8		0.066	0.43
Beryllium		0.080	B	0.029	0.17
Boron		0.85	U	0.85	1.7
Cadmium		0.094	B	0.036	0.17
Calcium		6380		12.2	43.3
Chromium		10.7		0.050	0.17
Cobalt		6.1	X	0.087	0.87
Copper		15.9		0.19	0.87
Iron		16100		3.3	4.3
Magnesium		4240		3.2	17.3
Manganese		255		0.087	0.87
Molybdenum		0.23	U	0.23	1.7
Nickel		11.7		0.11	3.5
Potassium		841		35.5	260
Selenium		0.75	U	0.75	0.87
Silicon		349	J	4.9	8.7
Silver		0.14	U	0.14	0.17
Sodium		254		51.1	104
Vanadium		43.0		0.081	1.7
Zinc		32.8	X	0.35	0.87
Lead		10		0.23	0.43

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-79376	Instrument ID:	MT_034
Prep Method:	7471A	Prep Batch:	280-78841	Lab File ID:	110801TA.txt
Dilution:	1.0			Initial Weight/Volume:	0.65 g
Analysis Date:	08/01/2011 2025			Final Weight/Volume:	50 mL
Prep Date:	08/01/2011 1310				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0052	U	0.0052	0.016

019

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Client Sample ID: **J1K8H2**

Lab Sample ID: 280-18551-11
Client Matrix: Solid

% Moisture: 1.3

8/22/11

Date Sampled: 07/26/2011 0810
Date Received: 07/28/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-79175	Instrument ID:	MT_025
Prep Method:	3050B	Prep Batch:	280-78800	Lab File ID:	25A072911.asc
Dilution:	1.0			Initial Weight/Volume:	1.07 g
Analysis Date:	07/29/2011 1523			Final Weight/Volume:	100 mL
Prep Date:	07/28/2011 1405				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6680		1.5	4.7
Antimony		0.36	U J	0.36	0.57
Arsenic		4.1		0.62	0.95
Barium		67.2		0.072	0.47
Beryllium		0.10	B	0.031	0.19
Boron		1.4	B	0.93	1.9
Cadmium		0.11	B	0.039	0.19
Calcium		7580		13.3	47.3
Chromium		11.6		0.055	0.19
Cobalt		6.4	X	0.095	0.95
Copper		13.3		0.21	0.95
Iron		16800		3.6	4.7
Magnesium		4610		3.5	18.9
Manganese		270		0.095	0.95
Molybdenum		0.25	U	0.25	1.9
Nickel		11.9		0.12	3.8
Potassium		1120		38.8	284
Selenium		0.81	U	0.81	0.95
Silicon		424	J	5.4	9.5
Silver		0.15	U	0.15	0.19
Sodium		307		55.9	114
Vanadium		40.6		0.089	1.9
Zinc		34.9	X	0.38	0.95
Lead		5.9		0.26	0.47

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-79376	Instrument ID:	MT_034
Prep Method:	7471A	Prep Batch:	280-78841	Lab File ID:	110801TA.txt
Dilution:	1.0			Initial Weight/Volume:	0.65 g
Analysis Date:	08/01/2011 2028			Final Weight/Volume:	50 mL
Prep Date:	08/01/2011 1310				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0052	U	0.0052	0.016

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

CASE NARRATIVE

Client: Washington Closure Hanford

Project: WASHINGTON CLOSURE HANFORD

Report Number: 280-18551-1

SDG #: JP0240
SAF#: RC-107

Date SDG Closed: July 28, 2011
Data Deliverable: 7 Day / Summary

CLIENT ID	LAB ID	ANALYSES REQUESTED	ANALYSES PERFORMED
J1K8F2	280-18551-1	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8F3	280-18551-2	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8F4	280-18551-3	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8F5	280-18551-4	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8F6	280-18551-5	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8F7	280-18551-6	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8F8	280-18551-7	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8F9	280-18551-8	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8H0	280-18551-9	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8H1	280-18551-10	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310
J1K8H2	280-18551-11	6010/7471/9056M/353.2/9045/8082/8310	6010B/7471A/9056M/353.2/9045C/8082/8310

I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed in this Case Narrative. 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 signature on the Report Cover.

With exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. All laboratory quality control samples analyzed in conjunction with the samples in this project were within established control limits, with any exceptions noted. Calculations are performed before rounding to avoid round-off errors in calculated results.

This report includes reporting limits (RLs) less than TestAmerica Denver's practical quantitation limits. These reporting limits are being used specifically at the client's request to meet the needs of this project. Please note that data are not normally reported to these levels without qualification, since they are inherently less reliable and potentially less defensible than required by the current NELAC standards.

The results, RLs and MDLs included in this report have been adjusted for dry weight, as appropriate.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 7/28/2011; the samples arrived in good condition, properly preserved and on ice. The temperatures of the coolers at receipt were 4.2 C, 3.0 C, 4.2 C and 4.4 C.

GC SEMIVOLATILES - SW846 8082 - PCBs
No anomalies were encountered.

HPLC - SW846 8310 - PAHs
The RPD between the primary and confirmation columns exceeded 40% for analytes in samples J1K8F6 and J1K8H0. The lower of the two values have been reported, as matrix interference is evident. Associated results have been flagged with an "X".

The LCS associated with batch 280-78874 exhibited the percent recovery outside the control limits, biased high, for Indeno[1,2,3-cd]pyrene, and the associated sample results have been flagged "N". This is an indicator that data may be biased high. As no detectable concentrations of Indeno[1,2,3-cd]pyrene are present in the associated samples, corrective action is deemed unnecessary.

No other anomalies were encountered.

TOTAL METALS - SW846 6010B/7471A
Serial dilution of a digestate in batch 280-78800 indicates that physical and chemical interferences are present for Cobalt and Zinc. Results have been flagged with an "X".

Low levels of Calcium and Zinc are present in the method blank associated with batch 280-78800. Because the concentrations in the method blank are not present at levels greater than half the reporting limit or the associated sample amounts are twenty times greater than the method blank concentration, corrective action is deemed unnecessary.

It can be noted that the sample amount was greater than four times the spike amount for Aluminum, Iron and Manganese in the Matrix Spike performed on sample J1K8F2; therefore, control limits are not applicable.

No other anomalies were encountered.

GENERAL CHEMISTRY - MCAWW 353.2 - NITRATE+NITRITE as N
The Nitrate Nitrite as N duplicate analyses of samples J1K8F2 and J1K8F4 exhibited RPD data outside the control limits, and the associated sample results have been flagged "M". There is no indication that the analytical system was operating out of control, and method accuracy has been verified by the acceptable LCS analysis data; therefore, corrective action is deemed unnecessary.

No other anomalies were encountered.

GENERAL CHEMISTRY - SW846 9056M - ANIONS
The Chloride duplicate analysis of sample J1K8F3 exhibited RPD data outside the control limits, and the associated sample result has been flagged "M". There is no indication that the analytical system was operating out of control, and method accuracy has been verified by the acceptable LCS analysis data; therefore, corrective action is deemed unnecessary.

No other anomalies were encountered.

GENERAL CHEMISTRY - SW846 9045C - PH
No anomalies were encountered.

3.0/2.8/4.2/4.4/4.2

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-084	Page 1 of ~~4~~ 3

Collector Q Stowe	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH
Price Code ~~81~~ 83	Data Turnaround ~~21~~ 7 Days		
Project Designation 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 132-H-3 BCL-A Verification		SAF No. RC-107
Ice Chest No. ERC-02-103	Field Logbook No. EL 1627-05	COA 0132H32000	Method of Shipment Government Vehicle/FedEx
Shipped To 7/26/11 TestAmerica Incorporated, ~~Richland~~ Denver	Offsite Property No. A100824		Bill of Lading/Air Bill No. See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS
None

Special Handling and/or Storage
~~None~~ Cool 4°C

SAMPLE ANALYSIS

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None	None
Type of Container	G/P	G/P	G/P	aG	aG	G/P	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	60mL	60mL	125mL	120mL	120mL	120mL	500mL	60mL	60mL	60mL
SAMPLE ANALYSIS	See item (1) in Special Instructions	Chromium Hex - 7196	See item (2) in Special Instructions	PCBs - 8082	PAHs - 8310	Carbon-14; Tritium - HD Low Level Soil	See item (3) in Special Instructions	Isotopic Uranium	Isotopic Plutonium	Nickel-63; Strontium-89,90 -- Total Sr

Sample No.	Matrix *	Sample Date	Sample Time										
~~J1K8F0~~	~~SOIL~~	~~7/26/11~~	~~7/26/11~~										
~~J1K8F1~~	~~SOIL~~	~~7/26/11~~	~~7/26/11~~										
J1K8F2	SOIL	7/26/11	0755	X		X	X	X					
J1K8F3	SOIL	7/26/11	0810	X		X	X	X					
J1K8F4	SOIL	7/26/11	0820	X		X	X	X					

024

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: Quincy Stowe	7/26/11 1545	JV Fullmer	7/26/11 1545
Relinquished By/Removed From: JV Fullmer	7/26/11 1745	Cynthia Burnham	7/26/11 1060 #1 1745
Relinquished By/Removed From: Cynthia Burnham	7/27/11 1130 WCH	Received By/Stored In: Fed Ex	
Relinquished By/Removed From		Received By/Stored In	7/28/11 0900
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) IC Anions - 9056 Modified {Bromide, Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate}; NO2/NO3 - 353.2; pH (Soil) - 9045
(3) Gamma Spec - Client List {Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable}

REVIEWED BY
DATE 7-27-11

JP0240

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

DH 7/21/11

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-084	Page 2 of ~~2~~ 3

Collector Q Stowe	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH
Price Code ~~8L~~ 7/24/11 8R	Data Turnaround ~~21~~ Days 7		
Project Designation 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 132-H-3 BCL-A Verification		SAF No. RC-107
Ice Chest No. ERC-02-103	Field Logbook No. EL 1627-05	COA 0132H32000	Method of Shipment Government Vehicle/FedEx
Shipped To TestAmerica Incorporated, ~~Richland~~ Denver DH 7/21/11	Offsite Property No. A100824		Bill of Lading/Air Bill No. See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

None QW 7/26/11

Special Handling and/or Storage

~~None~~ Cool 4C

DH 7/21/11

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None	None
Type of Container	G/P	G/P	G/P	aG	aG	G/P	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	60mL	60mL	125mL	120mL	120mL	120mL	500mL	60mL	60mL	60mL

DH 7/21/11

025

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions.	Chromium Hex - 7196	See item (2) in Special Instructions.	PCBs - 8082	PAHs - 8310	Carbon-14; Tritium - HD Low Level Soil	See item (3) in Special Instructions.	Isotopic Uranium	Isotopic Plutonium	Nickel-63; Strontium-89,90 – Total Sr
J1K8F5	SOIL	7/26/11	0830	X		X	X	X					
J1K8F6	SOIL	7/26/11	0835	X		X	X	X					
J1K8F7	SOIL	7/26/11	0845	X		X	X	X					
J1K8F8	SOIL	7/26/11	0855	X		X	X	X					
J1K8F9	SOIL	7/26/11	0900	X		X	X	X					

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Quincy Stowe	7/26/11 1545	JV Fullmer	7/26/11 1545
JV Fullmer	7/26/11 1745	Bingham 1060 #1	7/26/11 1745
Bingham 1060 #1	7/27/11 1130	Fed Ex WCH#	
			7/28/11 0900

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) IC Anions - 9056 Modified {Bromide, Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate}; NO2/NO3 - 353.2; pH (Soil) - 9045
(3) Gamma Spec - Client List {Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable}

REVIEWED BY

DATE

JP0240

Matrix *

S=Soil
SE=Sediment
SO=Solid
SL=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

DH 7/21/11

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-107-084	Page 3 of 3

Collector Q Stowe	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH	Price Code ~~81~~ 88	Data Turnaround ~~21~~ 7 Days
Project Designation 100-H Remaining Sites Burial Grounds - Soil Full Protocol	Sampling Location 132-H-3 BCL-A Verification		SAF No. RC-107		
Ice Chest No. ERC-02-103	Field Logbook No. EL 1627-05	COA 0132H32000	Method of Shipment Government Vehicle/FedEx		
Shipped To TestAmerica Incorporated, ~~Richland~~ Denver 7/26/11	Offsite Property No. A100824		Bill of Lading/Air Bill No. See OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS
None

Special Handling and/or Storage
~~None~~ Cool 4C
DH 7/21/11

Preservation	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None	None
Type of Container	G/P	G/P	G/P	aG	aG	G/P	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Volume	60mL	60mL	125mL	120mL	120mL	120mL	500mL	60mL	60mL	60mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	See item (2) in Special Instructions.	PCBs - 8082	PAHs - 8310	Carbon-14; Tritium - H3 Low Level Soil	See item (3) in Special Instructions.	Isotopic Uranium	Isotopic Plutonium	Nickel-63; Strontium-89,90 -- Total Sr

026

Sample No.	Matrix *	Sample Date	Sample Time										
J1K8H0	SOIL	7/26/11	0910	X		X	X	X					
J1K8H1	SOIL	7/26/11	0920	X		X	X	X					
J1K8H2	SOIL	7/26/11	0810	X		X	X	X					

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: Quince Stowe	7/26/11 1545	Received By/Stored In: JV Fullmer	7/26/11 1545
Relinquished By/Removed From: JV Fullmer	7/26/11 1745	Received By/Stored In: [illegible]	7/26/11 1745
Relinquished By/Removed From: [illegible]	7/27/11 1130	Received By/Stored In: Fed Ex	
Relinquished By/Removed From		Received By/Stored In: [illegible]	7/28/11 0900
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Close-out List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)
(2) IC Anions - 9056 Modified {Bromide, Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Phosphorous in phosphate, Sulfate}; NO2/NO3 - 353.2; pH (Soil) - 9045
(3) Gamma Spec - Client List {Americium-241, Barium-133, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable}

REVIEWED BY [illegible] DATE 7-27-11

JP0240

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
Ve=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

WCH-EE-011

Appendix 5

Data Validation Supporting Documentation

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 132-H-1			DATA PACKAGE: JP0240		
VALIDATOR: ELR		LAB: TAL		DATE: 8/21/4	
			SDG: JP0240		

ANALYSES PERFORMED					
SW-846/ICP	SW-846/GFAA	SW-846/Hg	SW-846 Cyanide		

SAMPLES/MATRIX				
J1K8F2	J1K8F3	J1K8F4	J1K8F5	J1K8F6
J1K8F7	J1K8F8	J1K8F9	J1K8H0	J1K8H1
J1K8H2				
				soil

1. DATA PACKAGE COMPLETENESS AND CASE NARRATIVE

Technical verification documentation present? ..... Yes No N/A

Comments:

2. INSTRUMENT PERFORMANCE AND CALIBRATIONS (Levels D and E)

Initial calibrations performed on all instruments? ..... Yes No N/A

Initial calibrations acceptable? ..... Yes No N/A

ICP interference checks acceptable? ..... Yes No N/A

ICV and CCV checks performed on all instruments? ..... Yes No N/A

ICV and CCV checks acceptable? ..... Yes No N/A

Standards traceable? ..... Yes No N/A

Standards expired? ..... Yes No N/A

Calculation check acceptable? ..... Yes No N/A

Comments:

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

3. BLANKS (Levels B, C, D, and E)

ICB and CCB checks performed for all applicable analyses? (Levels D, E) ..... Yes No N/A

ICB and CCB results acceptable? (Levels D, E) ..... Yes No N/A

Laboratory blanks analyzed? ..... Yes No N/A

Laboratory blank results acceptable? ..... Yes No N/A

Field blanks analyzed? (Levels C, D, E) ..... Yes No N/A

Field blank results acceptable? (Levels C, D, E) ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Comments: no FB

4. ACCURACY (Levels C, D, and E)

MS/MSD samples analyzed? ..... Yes No N/A

MS/MSD results acceptable? ..... Yes No N/A

MS/MSD standards NIST traceable? (Levels D, E) ..... Yes No N/A

MS/MSD standards expired? (Levels D, E) ..... Yes No N/A

LCS/BSS samples analyzed? ..... Yes No N/A

LCS/BSS results acceptable? ..... Yes No N/A

Standards traceable? (Levels D, E) ..... Yes No N/A

Standards expired? (Levels D, E) ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Performance audit sample(s) analyzed? ..... Yes No N/A

Performance audit sample results acceptable? ..... Yes No N/A

Comments: LCS - 327o - silicon - J all
MS - antimony (543J) silicon (253o) - J all

no PAS

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

5. PRECISION (Levels C, D, and E)

Duplicate RPD values acceptable? ..... Yes No N/A

Duplicate results acceptable? ..... Yes No N/A

MS/MSD standards NIST traceable? (Levels D, E) ..... Yes No N/A

MS/MSD standards expired? (Levels D, E) ..... Yes No N/A

Field duplicate RPD values acceptable? ..... Yes No N/A

Field split RPD values acceptable? ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Comments: _____

6. ICP QUALITY CONTROL (Levels D and E)

ICP serial dilution samples analyzed? ..... Yes No N/A

ICP serial dilution %D values acceptable? ..... Yes No N/A

ICP post digestion spike required? ..... Yes No N/A

ICP post digestion spike values acceptable? ..... Yes No N/A

Standards traceable? ..... Yes No N/A

Standards expired? ..... Yes No N/A

Transcription/calculation errors? ..... Yes No N/A

Comments: _____

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

7. FURNACE AA QUALITY CONTROL (Levels D and E)

Duplicate injections performed as required? ..... Yes No N/A

Duplicate injection %RSD values acceptable? ..... Yes No N/A

Analytical spikes performed as required? ..... Yes No N/A

Analytical spike recoveries acceptable? ..... Yes No N/A

Standards traceable? ..... Yes No N/A

Standards expired? ..... Yes No N/A

MSA performed as required? ..... Yes No N/A

MSA results acceptable? ..... Yes No N/A

Transcription/calculation errors? ..... Yes No N/A

Comments: _____

8. HOLDING TIMES (all levels)

Samples properly preserved? ..... Yes No N/A

Sample holding times acceptable? ..... Yes No N/A

Comments: _____

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

9. RESULT QUANTITATION AND DETECTION LIMITS (all levels)

Results reported for all requested analyses? ..... Yes No N/A

Results supported in the raw data? (Levels D, E) ..... Yes No N/A

Samples properly prepared? (Levels D, E) ..... Yes No N/A

Detection limits meet RDL? ..... Yes No N/A

Transcription/calculation errors? (Levels D, E) ..... Yes No N/A

Comments:

Appendix 6

Additional Documentation Requested by Client

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Method Blank - Batch: 280-78800

Method: 6010B
Preparation: 3050B

Lab Sample ID:	MB 280-78800/1-A	Analysis Batch:	280-79175	Instrument ID:	MT_025
Client Matrix:	Solid	Prep Batch:	280-78800	Lab File ID:	25A072911.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1 g
Analysis Date:	07/29/2011 1437	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	07/28/2011 1405				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Aluminum	1.6	U	1.6	5.0
Antimony	0.38	U	0.38	0.60
Arsenic	0.66	U	0.66	1.0
Barium	0.076	U	0.076	0.50
Beryllium	0.033	U	0.033	0.20
Boron	0.98	U	0.98	2.0
Cadmium	0.041	U	0.041	0.20
Calcium	15.68	B	14.1	50.0
Chromium	0.058	U	0.058	0.20
Cobalt	0.10	U	0.10	1.0
Copper	0.22	U	0.22	1.0
Iron	3.8	U	3.8	5.0
Magnesium	3.7	U	3.7	20.0
Manganese	0.10	U	0.10	1.0
Molybdenum	0.26	U	0.26	2.0
Nickel	0.12	U	0.12	4.0
Potassium	41.0	U	41.0	300
Selenium	0.86	U	0.86	1.0
Silicon	5.7	U	5.7	10.0
Silver	0.16	U	0.16	0.20
Sodium	59.0	U	59.0	120
Vanadium	0.094	U	0.094	2.0
Zinc	0.532	B	0.40	1.0
Lead	0.27	U	0.27	0.50

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Lab Control Sample - Batch: 280-78800

Method: 6010B
Preparation: 3050B

Lab Sample ID:	LCS 280-78800/2-A	Analysis Batch:	280-79175	Instrument ID:	MT_025
Client Matrix:	Solid	Prep Batch:	280-78800	Lab File ID:	25A072911.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1 g
Analysis Date:	07/29/2011 1439	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	07/28/2011 1405				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Aluminum	200	197.4	99	82 - 116	
Antimony	50.0	48.05	96	82 - 110	
Arsenic	100	97.81	98	85 - 110	
Barium	200	198.6	99	87 - 112	
Beryllium	5.00	4.86	97	84 - 114	
Boron	100	94.89	95	81 - 110	
Cadmium	10.0	10.20	102	87 - 110	
Calcium	5000	4905	98	82 - 114	
Chromium	20.0	20.13	101	84 - 114	
Cobalt	50.0	49.19	98	87 - 110	
Copper	25.0	25.07	100	88 - 110	
Iron	100	102.1	102	87 - 120	
Magnesium	5000	4830	97	90 - 110	
Manganese	50.0	49.58	99	88 - 110	
Molybdenum	100	98.54	99	86 - 110	
Nickel	50.0	49.18	98	87 - 110	
Potassium	5000	5114	102	89 - 110	
Selenium	200	195.2	98	83 - 110	
Silicon	1000	322.5	32	10 - 70	
Silver	5.00	5.08	102	87 - 114	
Sodium	5000	5207	104	90 - 112	
Vanadium	50.0	49.92	100	88 - 110	
Zinc	50.0	47.67	95	76 - 114	
Lead	50.0	49.22	98	86 - 110	

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Matrix Spike - Batch: 280-78800

Method: 6010B
Preparation: 3050B

Lab Sample ID:	280-18551-1	Analysis Batch:	280-79175	Instrument ID:	MT_025
Client Matrix:	Solid	Prep Batch:	280-78800	Lab File ID:	25A072911.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.05 g
Analysis Date:	07/29/2011 1446	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	07/28/2011 1405				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Aluminum	6780		197	9308	1282	50 - 200	4
Antimony	0.54	B	49.3	32.12	64	20 - 200	
Arsenic	3.3		98.6	94.58	93	76 - 111	
Barium	50.0		197	252.2	103	52 - 159	
Beryllium	0.091	B	4.93	4.71	94	72 - 105	
Boron	1.1	B	98.6	87.98	88	75 - 107	
Cadmium	0.10	B	9.86	9.67	97	40 - 130	
Calcium	5750		4930	11540	117	43 - 165	
Chromium	9.0		19.7	31.89	116	70 - 200	
Cobalt	7.0		49.3	51.21	90	72 - 106	
Copper	14.3		24.7	36.83	91	37 - 187	
Iron	16700		98.6	16440	-278	70 - 200	4
Magnesium	4490		4930	9069	93	64 - 145	
Manganese	282		49.3	323.7	84	40 - 200	4
Molybdenum	0.24	U	98.6	90.97	92	75 - 103	
Nickel	9.8		49.3	56.72	95	61 - 126	
Potassium	966		4930	6166	105	56 - 172	
Selenium	0.80	U	197	180.8	92	76 - 104	
Silicon	356		986	598.8	25	20 - 200	
Silver	0.15	U	4.93	4.78	97	75 - 141	
Sodium	246		4930	5364	104	78 - 111	
Vanadium	41.0		49.3	89.71	99	50 - 169	
Zinc	36.4		49.3	78.41	85	70 - 200	
Lead	6.7		49.3	52.65	93	70 - 200	

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Duplicate - Batch: 280-78800

Method: 6010B
Preparation: 3050B

Lab Sample ID:	280-18551-1	Analysis Batch:	280-79175	Instrument ID:	MT_025
Client Matrix:	Solid	Prep Batch:	280-78800	Lab File ID:	25A072911.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.13 g
Analysis Date:	07/29/2011 1448	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	07/28/2011 1405				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Aluminum	6780		7372	8	40	
Antimony	0.54	B	0.35	NC	40	U
Arsenic	3.3		3.39	3	30	
Barium	50.0		57.39	14	30	
Beryllium	0.091	B	0.124	30	30	B
Boron	1.1	B	1.44	28	30	B
Cadmium	0.10	B	0.112	7	30	B
Calcium	5750		6097	6	30	
Chromium	9.0		10.85	18	40	
Cobalt	7.0		6.36	9	30	
Copper	14.3		14.00	2	30	
Iron	16700		16790	0.4	40	
Magnesium	4490		4088	9	30	
Manganese	282		272.8	3	40	
Molybdenum	0.24	U	0.246	NC	30	B
Nickel	9.8		10.23	4	30	
Potassium	966		1151	17	40	
Selenium	0.80	U	0.79	NC	30	U
Silicon	356		353.3	0.7	40	
Silver	0.15	U	0.15	NC	30	U
Sodium	246		246.8	0.4	30	
Vanadium	41.0		40.77	0.7	30	
Zinc	36.4		36.24	0.5	40	
Lead	6.7		9.33	32	40	

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Method Blank - Batch: 280-78841

Method: 7471A
Preparation: 7471A

Lab Sample ID:	MB 280-78841/1-A	Analysis Batch:	280-79376	Instrument ID:	MT_034
Client Matrix:	Solid	Prep Batch:	280-78841	Lab File ID:	110801TA.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.6 g
Analysis Date:	08/01/2011 1951	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	08/01/2011 1310				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Mercury	0.0055	U	0.0055	0.017

Lab Control Sample - Batch: 280-78841

Method: 7471A
Preparation: 7471A

Lab Sample ID:	LCS 280-78841/2-A	Analysis Batch:	280-79376	Instrument ID:	MT_034
Client Matrix:	Solid	Prep Batch:	280-78841	Lab File ID:	110801TA.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.6 g
Analysis Date:	08/01/2011 1953	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	08/01/2011 1310				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.417	0.418	100	87 - 111	

Matrix Spike - Batch: 280-78841

Method: 7471A
Preparation: 7471A

Lab Sample ID:	280-18551-3	Analysis Batch:	280-79376	Instrument ID:	MT_034
Client Matrix:	Solid	Prep Batch:	280-78841	Lab File ID:	110801TA.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.61 g
Analysis Date:	08/01/2011 2005	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	08/01/2011 1310				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.0050	U	0.420	0.411	98	87 - 111	

038

Client: Washington Closure Hanford

Job Number: 280-18551-1
Sdg Number: JP0240

Duplicate - Batch: 280-78841

Method: 7471A
Preparation: 7471A

Lab Sample ID:	280-18551-3	Analysis Batch:	280-79376	Instrument ID:	MT_034
Client Matrix:	Solid	Prep Batch:	280-78841	Lab File ID:	110801TA.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.65 g
Analysis Date:	08/01/2011 2002	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	08/01/2011 1310				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Mercury	0.0050	U	0.0052	NC	20	U

039