0100139

SAF-RC-075
100-D/DR Burial Grounds & Remaining Sites – Soil Full Protocol
FINAL VALIDATION PACKAGE

COMPLETE COPY OF FINAL VALIDATION PACKAGE TO:

Kathy Wendt H4-21

COMMENTS:

SDG J01276 SAF-RC-075

Waste Site: 118-D-2:1

RECEIVED
NOV 16 2011
EDMC

Date: 28 October 2011
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: 100/D/DR Burial Grounds & Remaining Sites – Soil Full Protocol - Waste Subsite 118-D-2:1
Subject: Herbicides - Data Package No. J01276-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. J01276 prepared by TestAmerica Laboratory 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
J1KV47	9/12/11	Soil	C	See note 1
J1KV48	9/12/11	Soil	C	See note 1
J1KV49	9/12/11	Soil	C	See note 1
J1KV50	9/12/11	Soil	C	See note 1
J1KV51	9/12/11	Soil	C	See note 1
J1KV52	9/12/11	Soil	C	See note 1
J1KV53	9/12/11	Soil	C	See note 1
J1KV54	9/12/11	Soil	C	See note 1
J1KV55	9/12/11	Soil	C	See note 1
J1KV56	9/12/11	Soil	C	See note 1
J1KV57	9/12/11	Soil	C	See note 1
J1KV58	9/12/11	Soil	C	See note 1
J1KV59	9/12/11	Soil	C	See note 1

1 – Herbicides by 8151A.

Data validation was conducted in accordance with the Washington Closure Hanford Incorporated (WCH) validation statement of work and the 100 Area Burial Grounds Remedial Action Sampling and Analysis Plan (DOE/RL-2001-35, December 2001). 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".

Due to method blank contamination, all detected 2,4-DB (except J1KV57) results were raised to the RQL, qualified as undetected and flagged "U".

Due to method blank contamination, the 2,4-DB result in sample J1KV57 was qualified as undetected and flagged "U".

All other method blank results were acceptable.

<u>Field Blanks</u>

No field blank was 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.

Due to an LCS recovery outside QC limits (5%), all dinoseb results were qualified as estimates and flagged "J".

Due to MS and MSD recoveries outside QC limits (0% & 2%), all dinoseb results were qualified as estimates and flagged "J".

All other 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.

Due to an RPD outside QC limits (200%), all dinoseb results were qualified as estimates and flagged "J".

All other duplicate results were acceptable.

Field Duplicate Samples

One set of field duplicates (J1KV48/J1KV59) was submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicate results were 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. No RQLs were specified.

- **Completeness**

Data package No. J01276 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 method blank contamination, all detected 2,4-DB (except J1KV57) results were raised to the RQL, qualified as undetected and flagged "U".

- Due to method blank contamination, the 2,4-DB result in sample J1KV57 was qualified as undetected and flagged "U".

- Due to an LCS recovery outside QC limits (5%), all dinoseb results were qualified as estimates and flagged "J".

- Due to MS and MSD recoveries outside QC limits (0% & 2%), all dinoseb results were qualified as estimates and flagged "J".

- Due to an RPD outside QC limits (200%), all dinoseb 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-2001-35, Rev. 0, *100 Area Burial Grounds Remedial Action Sampling and Analysis Plan*, U.S. Department of Energy, December 2001.

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

HERBICIDE DATA QUALIFICATION SUMMARY*

SDG: J01276	REVIEWER: ELR	Project: 118-D-2:1	PAGE 1 OF 1
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Dinoseb	J	All	MS, MSD, LCS and RPD
2,4-DB	U at RQL	J1KV47, J1KV48 J1KV50, J1KV51 J1KV52, J1KV53 J1KV55, J1KV56 J1KV58	Method blank contamination
2,4-DB	U	J1KV57	Method blank contamination

* - 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: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV47

Lab Sample ID: 280-20242-1
Client Matrix: Solid

% Moisture: 1.2

10/22/01

Date Sampled: 09/12/2011 0915
Date Received: 09/14/2011 0900

8151A Herbicides (GC)

Analysis Method:	8151A	Analysis Batch:	280-87081	Instrument ID:	GCS_M
Prep Method:	8151A	Prep Batch:	280-86708	Initial Weight/Volume:	50.8 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/21/2011 0153			Injection Volume:	1 uL
Prep Date:	09/19/2011 1055			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2,4,5-T		2.3	U	2.3	20
2,4-Dichlorophenoxyacetic acid		14	U	14	80
2,4-DB		100 ~~[illegible]~~	J B X U	2.8	80
Dalapon		1.4	U	1.4	40
Dicamba		1.4	U	1.4	40
Dichlorprop		3.2	U	3.2	80
Dinoseb		1.4	U J	1.4	12
MCPA		2000	U	2000	8000
2,4,5-TP (Silvex)		1.4	U	1.4	20
MCPP		2000	U	2000	8000

Surrogate	%Rec	Qualifier	Acceptance Limits
DCAA	87		31 - 105

Analytical Data

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV48

Lab Sample ID: 280-20242-2
Client Matrix: Solid

% Moisture: 1.3

10/22/11

Date Sampled: 09/12/2011 0750
Date Received: 09/14/2011 0900

8151A Herbicides (GC)

Analysis Method:	8151A	Analysis Batch:	280-87081	Instrument ID:	GCS_M
Prep Method:	8151A	Prep Batch:	280-86708	Initial Weight/Volume:	50.8 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/21/2011 0215			Injection Volume:	1 uL
Prep Date:	09/19/2011 1055			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2,4,5-T		2.3	U	2.3	20
2,4-Dichlorophenoxyacetic acid		14	U	14	80
2,4-DB		100 ~~32~~	J B X U	2.8	80
Dalapon		1.4	U	1.4	40
Dicamba		1.4	U	1.4	40
Dichlorprop		3.2	U	3.2	80
Dinoseb		1.4	U J	1.4	12
MCPA		2000	U	2000	8000
2,4,5-TP (Silvex)		1.4	U	1.4	20
MCPP		2000	U	2000	8000

Surrogate	%Rec	Qualifier	Acceptance Limits
DCAA	82		31 - 105

Analytical Data

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J0127B

Client Sample ID: **J1KV49**

✓ 10/27/11

Lab Sample ID: 280-20242-3
Client Matrix: Solid

% Moisture: 0.9

Date Sampled: 09/12/2011 0755
Date Received: 09/14/2011 0900

8151A Herbicides (GC)

Analysis Method:	8151A	Analysis Batch:	280-87081	Instrument ID:	GCS_M
Prep Method:	8151A	Prep Batch:	280-86708	Initial Weight/Volume:	50.2 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/21/2011 0237			Injection Volume:	1 uL
Prep Date:	09/19/2011 1055			Result Type:	PRIMARY

Analyte DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2,4,5-T	2.3	U	2.3	20
2,4-Dichlorophenoxyacetic acid	14	U	14	80
2,4-DB	2.8	U	2.8	80
Dalapon	1.4	U	1.4	40
Dicamba	1.4	U	1.4	40
Dichlorprop	3.2	U	3.2	80
Dinoseb	1.4	U J	1.4	12
MCPA	2000	U	2000	8000
2,4,5-TP (Silvex)	1.4	U	1.4	20
MCPP	2000	U	2000	8000

Surrogate	%Rec	Qualifier	Acceptance Limits
DCAA	79		31 - 105

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV60

Lab Sample ID: 280-20242-4
Client Matrix: Solid

% Moisture: 2.8

10/22/11

Date Sampled: 09/12/2011 0805
Date Received: 09/14/2011 0900

8151A Herbicides (GC)

Analysis Method:	8151A	Analysis Batch:	280-87081	Instrument ID:	GCS_M
Prep Method:	8151A	Prep Batch:	280-86708	Initial Weight/Volume:	50.2 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/21/2011 0258			Injection Volume:	1 uL
Prep Date:	09/19/2011 1055			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2,4,5-T		2.4	U	2.4	21
2,4-Dichlorophenoxyacetic acid		14	U	14	82
2,4-DB		100	U JBX	2.9	82
Dalapon		1.4	U	1.4	41
Dicamba		1.4	U	1.4	41
Dichlorprop		3.3	U	3.3	82
Dinoseb		1.4 J	U	1.4	12
MCPA		2100	U	2100	8200
2,4,5-TP (Silvex)		1.4	U	1.4	21
MCPP		2100	U	2100	8200

Surrogate	%Rec	Qualifier	Acceptance Limits
DCAA	66		31 - 105

014

Client: Washington Closure Hanford

✓ 10/27/11

Job Number: 280-20242-1
Sdg Number: J01278

Client Sample ID: **J1KV51**

Lab Sample ID: 280-20242-5
Client Matrix: Solid

% Moisture: 0.9

Date Sampled: 09/12/2011 0807
Date Received: 09/14/2011 0900

8151A Herbicides (GC)

Analysis Method:	8151A	Analysis Batch:	280-87081	Instrument ID:	GCS_M
Prep Method:	8151A	Prep Batch:	280-86708	Initial Weight/Volume:	50.9 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/21/2011 0320			Injection Volume:	1 uL
Prep Date:	09/19/2011 1055			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2,4,5-T		2.3	U	2.3	20
2,4-Dichlorophenoxyacetic acid		14	U	14	79
2,4-DB		100 ~~14~~	JB U	2.8	79
Dalapon		1.4	U	1.4	40
Dicamba		1.4	U	1.4	40
Dichlorprop		3.2	U	3.2	79
Dinoseb		1.4	U J	1.4	12
MCPA		2000	U	2000	7900
2,4,5-TP (Silvex)		1.4	U	1.4	20
MCPP		2000	U	2000	7900

Surrogate	%Rec	Qualifier	Acceptance Limits
DCAA	83		31 - 105

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV52

Lab Sample ID: 280-20242-6
Client Matrix: Solid

% Moisture: 1.2

10/27/11

Date Sampled: 09/12/2011 0810
Date Received: 09/14/2011 0900

8151A Herbicides (GC)

Analysis Method:	8151A	Analysis Batch:	280-87081	Instrument ID:	GCS_M
Prep Method:	8151A	Prep Batch:	280-86708	Initial Weight/Volume:	50.7 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/21/2011 0341			Injection Volume:	1 uL
Prep Date:	09/19/2011 1055			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2,4,5-T		2.3	U	2.3	20
2,4-Dichlorophenoxyacetic acid		14	U	14	80
2,4-DB		100	U J B	2.8	80
Dalapon		1.4	U	1.4	40
Dicamba		1.4	U	1.4	40
Dichlorprop		3.2	U	3.2	80
Dinoseb		1.4	U J	1.4	12
MCPA		2000	U	2000	8000
2,4,5-TP (Silvex)		1.4	U	1.4	20
MCPP		2000	U	2000	8000

Surrogate	%Rec	Qualifier	Acceptance Limits
DCAA	69		31 - 105

016

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV53

Lab Sample ID: 280-20242-7
Client Matrix: Solid

% Moisture: 0.9

Date Sampled: 09/12/2011 0815
Date Received: 09/14/2011 0900

8151A Herbicides (GC)

Analysis Method:	8151A	Analysis Batch:	280-87081	Instrument ID:	GCS_M
Prep Method:	8151A	Prep Batch:	280-86708	Initial Weight/Volume:	50.1 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/21/2011 0403			Injection Volume:	1 uL
Prep Date:	09/19/2011 1055			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2,4,5-T		2.3	U	2.3	20
2,4-Dichlorophenoxyacetic acid		14	U	14	81
2,4-DB		100 ~~14~~	U JBX	2.8	81
Dalapon		1.4	U	1.4	40
Dicamba		1.4	U	1.4	40
Dichlorprop		3.2	U	3.2	81
Dinoseb		1.4	U J	1.4	12
MCPA		2000	U	2000	8100
2,4,5-TP (Silvex)		1.4	U	1.4	20
MCPP		2000	U	2000	8100

Surrogate	%Rec	Qualifier	Acceptance Limits
DCAA	78		31 - 105

017

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV64

Lab Sample ID: 280-20242-8
Client Matrix: Solid

% Moisture: 1.1

10/22/11

Date Sampled: 09/12/2011 0820
Date Received: 09/14/2011 0900

8151A Herbicides (GC)

Analysis Method:	8151A	Analysis Batch:	280-87081	Instrument ID:	GCS_M
Prep Method:	8151A	Prep Batch:	280-86708	Initial Weight/Volume:	50.0 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/21/2011 0445			Injection Volume:	1 uL
Prep Date:	09/19/2011 1055			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2,4,5-T		2.3	U	2.3	20
2,4-Dichlorophenoxyacetic acid		14	U	14	81
2,4-DB		2.8	U	2.8	81
Dalapon		1.4	U	1.4	40
Dicamba		1.4	U	1.4	40
Dichlorprop		3.2	U	3.2	81
Dinoseb		1.4	U J	1.4	12
MCPA		2000	U	2000	8100
2,4,5-TP (Silvex)		1.4	U	1.4	20
MCPP		2000	U	2000	8100

Surrogate	%Rec	Qualifier	Acceptance Limits
DCAA	65		31 - 105

018

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV55

Lab Sample ID: 280-20242-9
Client Matrix: Solid

% Moisture: 1.1

10/22/11

Date Sampled: 09/12/2011 0830
Date Received: 09/14/2011 0900

8151A Herbicides (GC)

Analysis Method:	8151A	Analysis Batch:	280-87081	Instrument ID:	GCS_M
Prep Method:	8151A	Prep Batch:	280-86708	Initial Weight/Volume:	51.3 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/21/2011 0507			Injection Volume:	1 uL
Prep Date:	09/19/2011 1055			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2,4,5-T		2.3	U	2.3	20
2,4-Dichlorophenoxyacetic acid		14	U	14	79
2,4-DB		100 ~~14~~	U JBX	2.8	79
Dalapon		1.4	U	1.4	39
Dicamba		1.4	U	1.4	39
Dichlorprop		3.2	U	3.2	79
Dinoseb		1.4	U J	1.4	12
MCPA		2000	U	2000	7900
2,4,5-TP (Silvex)		1.4	U	1.4	20
MCPP		2000	U	2000	7900

Surrogate	%Rec	Qualifier	Acceptance Limits
DCAA	75		31 - 105

019

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV56

Lab Sample ID: 280-20242-10
Client Matrix: Solid

% Moisture: 7.6

10/27/11

Date Sampled: 09/12/2011 0835
Date Received: 09/14/2011 0900

8151A Herbicides (GC)

Analysis Method:	8151A	Analysis Batch:	280-87081	Instrument ID:	GCS_M
Prep Method:	8151A	Prep Batch:	280-86708	Initial Weight/Volume:	50.7 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/21/2011 0530			Injection Volume:	1 uL
Prep Date:	09/19/2011 1055			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2,4,5-T		2.5	U	2.5	21
2,4-Dichlorophenoxyacetic acid		15	U	15	85
2,4-DB		100 ~~[illegible]~~	U JBX	3.0	85
Dalapon		1.5	U	1.5	43
Dicamba		1.5	U	1.5	43
Dichlorprop		3.4	U	3.4	85
Dinoseb		1.5	U J	1.5	13
MCPA		2100	U	2100	8500
2,4,5-TP (Silvex)		1.5	U	1.5	21
MCPP		2100	U	2100	8500

Surrogate	%Rec	Qualifier	Acceptance Limits
DCAA	95		31 - 105

020

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV57

Lab Sample ID: 280-20242-11
Client Matrix: Solid

% Moisture: 1.1

10/27/11

Date Sampled: 09/12/2011 0840
Date Received: 09/14/2011 0900

8151A Herbicides (GC)

Analysis Method:	8151A	Analysis Batch:	280-87081	Instrument ID:	GCS_M
Prep Method:	8151A	Prep Batch:	280-86708	Initial Weight/Volume:	50.0 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/21/2011 0554			Injection Volume:	1 uL
Prep Date:	09/19/2011 1055			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2,4,5-T		2.3	U	2.3	20
2,4-Dichlorophenoxyacetic acid		14	U	14	81
2,4-DB		26	J B X U	2.8	81
Dalapon		1.4	U	1.4	40
Dicamba		1.4	U	1.4	40
Dichlorprop		3.2	U	3.2	81
Dinoseb		1.4	U J	1.4	12
MCPA		2000	U	2000	8100
2,4,5-TP (Silvex)		1.4	U	1.4	20
MCPP		2000	U	2000	8100

Surrogate	%Rec	Qualifier	Acceptance Limits
DCAA	74		31 - 105

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV58

Lab Sample ID: 280-20242-12
Client Matrix: Solid

% Moisture: 1.1

10/27/11

Date Sampled: 09/12/2011 1020
Date Received: 09/14/2011 0900

8151A Herbicides (GC)

Analysis Method:	8151A	Analysis Batch:	280-87081	Instrument ID:	GCS_M
Prep Method:	8151A	Prep Batch:	280-86708	Initial Weight/Volume:	50.1 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/21/2011 0617			Injection Volume:	1 uL
Prep Date:	09/19/2011 1055			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2,4,5-T		2.3	U	2.3	20
2,4-Dichlorophenoxyacetic acid		14	U	14	81
2,4-DB		100 ~~[illegible]~~	UJBX	2.8	81
Dalapon		1.4	U	1.4	40
Dicamba		1.4	U	1.4	40
Dichlorprop		3.2	U	3.2	81
Dinoseb		1.4	U J	1.4	12
MCPA		2000	U	2000	8100
2,4,5-TP (Silvex)		1.4	U	1.4	20
MCPP		2000	U	2000	8100

Surrogate	%Rec	Qualifier	Acceptance Limits
DCAA	91		31 - 105

022

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV59

Lab Sample ID: 280-20242-13
Client Matrix: Solid

% Moisture: 1.3

10/27/11

Date Sampled: 09/12/2011 0750
Date Received: 09/14/2011 0900

8151A Herbicides (GC)

Analysis Method:	8151A	Analysis Batch:	280-87081	Instrument ID:	GCS_M
Prep Method:	8151A	Prep Batch:	280-86708	Initial Weight/Volume:	51.2 g
Dilution:	1.0			Final Weight/Volume:	10000 uL
Analysis Date:	09/21/2011 0639			Injection Volume:	1 uL
Prep Date:	09/19/2011 1055			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
2,4,5-T		2.3	U	2.3	20
2,4-Dichlorophenoxyacetic acid		14	U	14	79
2,4-DB		2.8	U	2.8	79
Dalapon		1.4	U	1.4	40
Dicamba		1.4	U	1.4	40
Dichlorprop		3.2	U	3.2	79
Dinoseb		1.4	U N J	1.4	12
MCPA		2000	U	2000	7900
2,4,5-TP (Silvex)		1.4	U	1.4	20
MCPP		2000	U	2000	7900

Surrogate	%Rec	Qualifier	Acceptance Limits
DCAA	68		31 - 105

023

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

CASE NARRATIVE

Client: Washington Closure Hanford

Project: WASHINGTON CLOSURE HANFORD

Report Number: 280-20242-1

SDG #: J01276
SAF#: RC-075

Date SDG Closed: September 14, 2011
Data Deliverable: 21 Day / Summary

CLIENT ID	LAB ID	ANALYSES REQUESTED	ANALYSES PERFORMED
J1KV47	280-20242-1	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV48	280-20242-2	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV49	280-20242-3	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV50	280-20242-4	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV51	280-20242-5	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV52	280-20242-6	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV53	280-20242-7	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV54	280-20242-8	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV55	280-20242-9	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV56	280-20242-10	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV57	280-20242-11	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV58	280-20242-12	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV59	280-20242-13	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A

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 9/14/2011; the samples arrived in good condition, properly preserved and on ice. The temperatures of the coolers at receipt were 3.8 C, 3.6 C, 4.8 C and 3.4 C.

GC SEMIVOLATILES - SW846 8082 - PCBs
The laboratory noted that a Sulfuric Acid clean-up was performed on sample J1KV57 to reduce matrix interferences.

Sample J1KV57 exhibited surrogate recoveries outside the control limits. The laboratory noted that this anomaly is due to obvious matrix interference; therefore, corrective action is deemed unnecessary.

The MS aliquot of the MS/MSD performed on sample J1KV50 exhibited a percent recovery outside the control limits for Aroclor 1016, and the associated sample result has been flagged "N". In addition, the RPD limit was exceeded for Aroclor 1016, and surrogate Tetrachloro-m-xylene was recovered outside control limits in the MS. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

No other anomalies were encountered.

GC SEMIVOLATILES - SW846 8151A - HERBICIDEs
In some cases, the RPD between the primary and confirmation columns exceeded 40% 2,4-DB. The lower of the two values have been reported, as matrix interference is evident. Associated results have been flagged with an "X".

Low levels of 2,4-DB are present in the method blank associated with batch 280-86708. Because the concentration in the method blank is not present at a level greater than half the reporting limit, corrective action is deemed unnecessary. Associated sample results present above the MDL and/or RL have been flagged with a "B".

The MS/MSD performed on sample J1KV59 exhibited percent recoveries outside the control limits for Dinoseb, and the associated sample result has been flagged "N". The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

No other anomalies were encountered.

GC SEMIVOLATILES - NWTPH-Dx - DRO
No anomalies were encountered.

HPLC - SW846 8310 - PAHs
No anomalies were encountered.

TOTAL METALS - SW846 6010B/7471A
Serial dilution of a digestate in batch 280-86260 indicates that physical and chemical interferences are present for several elements. Results have been flagged with an "X".

Low levels of Chromium are present in the method blank associated with batch 280-86260. Because the concentration in the method blank is not present at a level greater than half the reporting limit, 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 J1KV47; therefore, control limits are not applicable.

Silicon was recovered outside the control limits in the Matrix Spike performed on sample J1KV47, and the associated sample result has been flagged "N". 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.

The duplicate analysis of sample J1KV47 exhibited RPD data outside the control limits for Arsenic, Silicon and Sodium, 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.

4%, 3.8, 3.6, 3.4 / RISC 9/14

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-075-256	Page 1 of 3

Collector: Q Stowe	Company Contact: Joan Kessner; Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 8L; Data Turnaround: 21 Days
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 118-D-2:1 Burial Ground- Group A, Trench 1,2,3 & 6	SAF No.: RC-075	
Ice Chest No.: ERC-02-007	Field Logbook No.: EL-1607-12; COA: R118D22000	Method of Shipment: Fed Ex	
Shipped To: TestAmerica Incorporated, ~~Richland~~ Denver	Offsite Property No.: A100878/879	Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Rad < DOT

Special Handling and/or Storage

Cool 4 Deg. C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G	aG	aG	aG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	0	0	0
Volume	60mL	60mL	120mL	125mL	120mL	125mL	1000mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	TPH-Diesel Range - WTPH-D+	PAHs - 8310	PCBs - 8082	Chloro-Herbicides - EPA8151	See item (2) in Special Instructions.	Carbon-14; Tritium - H3	Nickel-63; Strontium-90 – Total Sr	Isotopic Plutonium
027									RCF	27384

Sample No.	Matrix *	Sample Date	Sample Time										
J1KV47	SOIL	9/12/11	0915	X		X	X	X	X				
J1KV48	SOIL	9/12/11	0750	X		X	X	X	X				
J1KV49	SOIL	9/12/11	0755	X		X	X	X	X				
J1KV50	SOIL	9/12/11	0805	X		X	X	X	X				
J1KV51	SOIL	9/12/11	0807	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	9/12/11 1400	D. Newman	9/12/11 1400
D. Newman	9/12/11 1540	A. Freier (106042)	1540 9-12-11
A. Freier (106042) (WCH)	1100 9-12-11	Fed Ex	
		9/14/11	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) (Mercury)

(2) Gamma Spec (Client List) (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)

REVIEWED BY CMB DATE 9/13/11

SDG 10476

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-075-256	Page 2 of 3

Collector: Q. Stowe	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code: 8L	Data Turnaround: 21 Days		
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 118-D-2:1 Burial Ground- Group A, Trench 1,2,3 & 6		SAF No.: RC-075
Ice Chest No.: ERC-02-007	Field Logbook No.: EL-1607-12	COA: R118D22000	Method of Shipment: Fed Ex
Shipped To: TestAmerica Incorporated, ~~Richland~~ Denver	Offsite Property No.: A100 878/879		Bill of Lading/Air Bill No.: See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Rad < DOT

Special Handling and/or Storage

Cool 4 Deg. C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G	aG	aG	aG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	0	0	0
Volume	60mL	60mL	120mL	125mL	120mL	125mL	1000mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 196	TPH-Diesel Range - WTPH-D+	PAHs - 8310	PCBs - 8082	Chloro-Herbicides - EPA8151	See item (2) in Special Instructions.	Carbon-14; Tritium - H3	Nickel-63; Strontium-90 – Total Sr	Isotopic Plutonium

028

RCF 27384

Sample No.	Matrix *	Sample Date	Sample Time									
J1KV52	SOIL	9/12/11	0810	X		X	X	X	X			
J1KV53	SOIL	9/12/11	0815	X		X	X	X	X			
J1KV54	SOIL	9/12/11	0820	X		X	X	X	X			
J1KV55	SOIL	9/12/11	0830	X		X	X	X	X			
J1KV56	SOIL	9/12/11	0835	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	9/12/11 1400	D. Newman	9/12/11 1400
D. Newman	9/12/11 1540	A. Freier (Bldg #2)	1540 9-12-11
A. Freier (WCH)	1100 9-13-11	Fed Ex	
			9/14/11 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) (Mercury)

(2) Gamma Spec (Client List) (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)

SDG J61276

REVIEWED BY CMB DATE 9/13/11

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-075-256	Page 1 of 3

Collector: Q Stone	Company Contact: Joan Kessner — Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 8L — Data Turnaround: 21 Days
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 118-D-2:1 Burial Ground- Group A, Trench 1,2,3 & 6	SAF No.: RC-075	
Ice Chest No.: ERC-02-007	Field Logbook No.: EL-1607-12 — COA: R118D22000	Method of Shipment: Fed Ex	
Shipped To: TestAmerica Incorporated, ~~Richland~~ Denver	Offsite Property No.: A100878/879	Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Rad < DOT

Special Handling and/or Storage

Cool 4 Deg. C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G	aG	aG	aG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	0	0	0
Volume	60mL	60mL	120mL	125mL	120mL	125mL	1000mL	1000mL	1000mL	1000mL

029

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions.	Chromium Hex - 196	TPH-Diesel Range - WTPH-D+	PAHs - 8310	PCBs - 8082	Chloro-Herbicides - EPA8151	See item (2) in Special Instructions.	Carbon-14; Tritium - H3	Nickel-63; Strontium-90 -- Total Sr	Isotopic Plutonium
J1KV57	SOIL	9/12/11	0840	X		X	X	X	X				
J1KV58	SOIL	9/12/11	1020	X		X	X	X	X				
J1KV59	SOIL	9/12/11	0750	X		X	X	X	X				
						1							

RCF 27384

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Quincy Stone	9/12/11 1400	D. Newman Denn Newman	9/12/11 1400
D. Newman Denn Newman	9/12/11 1540	A. Freier A. Freier (WC# 1060#2)	9-12-11 1540
A. Freier A. Freier (WC# 1060#2)	9-13-11 1100	Fed Ex	
		9/14/11 0700	

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) (Mercury)

(2) Gamma Spec (Client List) (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)

SDG J01276

REVIEWED BY CMB DATE 9/13/11

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

Appendix 5

Data Validation Supporting Documentation

GENERAL ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 118-D-211			DATA PACKAGE: J01276		
VALIDATOR: ELR		LAB: TAL		DATE: 10/23/11	
			SDG: J01276		
ANALYSES PERFORMED					
8015	8021	8141	8151A	8315	
		WTPH-HCID	WTPH-G	WTPH-D	

SAMPLES/MATRIX:			
J1KV47	J1KV48	J1KV49	J1KV50
J1KV51	J1KV52	J1KV53	J1KV54
J1KV55	J1KV56	J1KV57	J1KV58
J1KV59			
			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: 24 DB – U at RQL (all but 57)
57 – U

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: LCS – dinoseb – J all
MS/MSD – 2 + 0 – J all dinoseb

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: dinosch (2005) J all

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: 280-20242-1
Sdg Number: J01276

Method Blank - Batch: 280-86708

Method: 8151A
Preparation: 8151A

Lab Sample ID:	MB 280-86708/1-A	Analysis Batch:	280-87081	Instrument ID:	GCS_M
Client Matrix:	Solid	Prep Batch:	280-86708	Lab File ID:	063B6301.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50.5 g
Analysis Date:	09/21/2011 0746	Units:	ug/Kg	Final Weight/Volume:	10000 uL
Prep Date:	09/19/2011 1055			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	Result	Qual	MDL	RL
2,4,5-T	2.3	U	2.3	20
2,4-Dichlorophenoxyacetic acid	14	U	14	79
2,4-DB	4.44	J	2.8	79
Dalapon	1.4	U	1.4	40
Dicamba	1.4	U	1.4	40
Dichlorprop	3.2	U	3.2	79
Dinoseb	1.4	U	1.4	12
MCPA	2000	U	2000	7900
2,4,5-TP (Silvex)	1.4	U	1.4	20
MCPP	2000	U	2000	7900

Surrogate	% Rec	Acceptance Limits
DCAA	80	31 - 105

Lab Control Sample - Batch: 280-86708

Method: 8151A
Preparation: 8151A

Lab Sample ID:	LCS 280-86708/2-A	Analysis Batch:	280-87081	Instrument ID:	GCS_M
Client Matrix:	Solid	Prep Batch:	280-86708	Lab File ID:	046B4601.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50.0 g
Analysis Date:	09/21/2011 0132	Units:	ug/Kg	Final Weight/Volume:	10000 uL
Prep Date:	09/19/2011 1055			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
2,4,5-T	96.0	75.9	79	24 - 115	
2,4-Dichlorophenoxyacetic acid	92.0	78.2	85	32 - 115	J
2,4-DB	100	59.2	59	37 - 119	J
Dalapon	104	61.7	59	11 - 115	
Dicamba	92.0	72.0	78	11 - 115	
Dichlorprop	92.0	65.1	71	35 - 115	J
Dinoseb	92.0	4.20	5	5 - 168	J
MCPA	9320	7590	81	37 - 115	J
2,4,5-TP (Silvex)	92.0	72.8	79	53 - 134	
MCPP	9330	8170	88	48 - 132	

Surrogate	% Rec	Acceptance Limits
DCAA	74	31 - 105

036

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-86708

Method: 8151A
Preparation: 8151A

MS Lab Sample ID:	280-20242-13	Analysis Batch:	280-87081	Instrument ID:	GCS_M
Client Matrix:	Solid	Prep Batch:	280-86708	Lab File ID:	061B6101.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	50.2 g
Analysis Date:	09/21/2011 0700			Final Weight/Volume:	10000 uL
Prep Date:	09/19/2011 1055			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

MSD Lab Sample ID:	280-20242-13	Analysis Batch:	280-87081	Instrument ID:	GCS_M
Client Matrix:	Solid	Prep Batch:	280-86708	Lab File ID:	062B6201.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	51.1 g
Analysis Date:	09/21/2011 0721			Final Weight/Volume:	10000 uL
Prep Date:	09/19/2011 1055			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
2,4,5-T	76	77	24 - 115	1	40		
2,4-Dichlorophenoxyacetic acid	77	81	32 - 115	3	40	J	J
2,4-DB	56	55	37 - 119	3	50	J	J
Dalapon	66	68	11 - 115	1	50		
Dicamba	78	79	11 - 115	1	50		
Dichlorprop	68	67	35 - 115	3	50	J	J
Dinoseb	2	0	5 - 166	NC	50	J N	U N
MCPA	75	76	37 - 115	0	50	J	J
2,4,5-TP (Silvex)	75	76	53 - 134	1	40		
MCPP	85	85	48 - 132	3	50	J	J

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
DCAA	68	74	31 - 105

Date: 28 October 2011
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: 100/D/DR Burial Grounds & Remaining Sites – Soil Full Protocol - Waste Subsite 118-D-2:1
Subject: Wet Chemistry - Data Package No. J01276-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. J01276 prepared by TestAmerica Laboratory 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
J1KV47	9/12/11	Soil	C	See note 1
J1KV48	9/12/11	Soil	C	See note 1
J1KV49	9/12/11	Soil	C	See note 1
J1KV50	9/12/11	Soil	C	See note 1
J1KV51	9/12/11	Soil	C	See note 1
J1KV52	9/12/11	Soil	C	See note 1
J1KV53	9/12/11	Soil	C	See note 1
J1KV54	9/12/11	Soil	C	See note 1
J1KV55	9/12/11	Soil	C	See note 1
J1KV56	9/12/11	Soil	C	See note 1
J1KV57	9/12/11	Soil	C	See note 1
J1KV58	9/12/11	Soil	C	See note 1
J1KV59	9/12/11	Soil	C	See note 1

1 – Chromium VI by 7196A.

Data validation was conducted in accordance with the Washington Closure Hanford Incorporated (WCH) validation statement of work and the 100 Area Burial Grounds Remedial Action Sampling and Analysis Plan (DOE/RL-2001-35, December 2001). 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.

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 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 65% to 135%. 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 35, 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 (J1KV48/J1KV59) was submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. 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 J01276 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-2001-35, Rev. 0, *100 Area Burial Grounds Remedial Action Sampling and Analysis Plan*, U.S. Department of Energy, December 2001.

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

WET CHEMISTRY DATA QUALIFICATION SUMMARY*

SDG: J01276	REVIEWER: ELR	Project: 118-D-2:1	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

Sample Results Summary

TestAmerica TARL

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

Date: 30-Sep-11

Report No. : 48632

10/26/4

SDG No: J01276

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1257094 C14_CHEM_LSC									
J1KV53									
	MME001AJ	C-14	9.24E-02 +- 2.1E-01	U	pCi/g	100%	4.58E-01	5.00E+01	
J1KV54									
	MME011AJ	C-14	2.97E-02 +- 2.0E-01	U	pCi/g	100%	4.57E-01	5.00E+01	
J1KV55									
	MME031AJ	C-14	8.14E-02 +- 2.1E-01	U	pCi/g	100%	4.57E-01	5.00E+01	
J1KV56									
	MME041AJ	C-14	8.31E-02 +- 2.1E-01	U	pCi/g	100%	4.56E-01	5.00E+01	
J1KV57									
	MME091AJ	C-14	4.55E-01 +- 2.3E-01	U	pCi/g	100%	4.58E-01	5.00E+01	
J1KV58									
	MME1D1AJ	C-14	1.60E-01 +- 2.1E-01	U	pCi/g	100%	4.57E-01	5.00E+01	
J1KV59									
	MME1G1AJ	C-14	2.25E-01 +- 2.2E-01	U	pCi/g	100%	4.59E-01	5.00E+01	
1258059 7196_CR6									
J1KV47									
	MME0K1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	MME0K1AM	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	3.50E-01	0.0
J1KV48									
	MME0R1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
J1KV49									
	MME0T1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
J1KV50									
	MME0V1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
J1KV51									
	MME0W1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
J1KV52									
	MME0X1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
J1KV53									
	MME001AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
J1KV54									
	MME011AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
J1KV55									
	MME031AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
J1KV56									
	MME041AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
J1KV57									
	MME091AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
J1KV58									

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

Date: 30-Sep-11

TestAmerica TARL

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

Report No. : 48632

SDG No: J01276

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1258059	7196_CR6								
	J1KV58								
	MME1D1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	J1KV59								
	MME1G1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	

No. of Results: 224

10/24/11

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.

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

TestAmerica Laboratories, Inc.

September 30, 2011

Attention: Joan Kessner

SAF Number	:	RC-075
Date SDG Closed	:	September 13, 2011
Number of Samples	:	Thirteen (13)
Sample Type	:	Soil
SDG Number	:	J01276
Data Deliverable	:	21– Day / Summary

CASE NARRATIVE

I. Introduction

On September 13, 2011, thirteen 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
J1KV47	MME0K	SOIL	9/13/11
J1KV48	MME0R	SOIL	9/13/11
J1KV49	MME0T	SOIL	9/13/11
J1KV50	MME0V	SOIL	9/13/11
J1KV51	MME0W	SOIL	9/13/11
J1KV52	MME0X	SOIL	9/13/11
J1KV53	MME00	SOIL	9/13/11
J1KV54	MME01	SOIL	9/13/11
J1KV55	MME03	SOIL	9/13/11
J1KV56	MME04	SOIL	9/13/11
J1KV57	MME09	SOIL	9/13/11
J1KV58	MME1D	SOIL	9/13/11
J1KV59	MME1G	SOIL	9/13/11

II. Sample Receipt

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

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

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

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
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:
Sample J1KV53 tracer yield was not within the acceptance limits on the original count. The sample was re-counted for an acceptable yield. Except as note; the LCS, batch blank, samples and sample duplicate (J1KV47) results are within contractual requirements.

Uranium 234, 235 and 238 by method RL-ALP-015:
Sample J1KV53 tracer yield was not within the acceptance limits on the original count. The sample was re-counted for an acceptable yield. Except as noted; the LCS, batch blank, samples and sample duplicate (J1KV48) results are within contractual requirements.

Gas Proportional Counting
Strontium-90 by method RL-GPC-003:
The LCS, batch blank, samples and sample duplicate (J1KV53) results are within contractual requirements.

014

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 (J1KV52) results are within contractual requirements.

Liquid Scintillation Counting

Tritium by method RL-LSC-005:

The LCS, batch blank, samples and sample duplicate (J1KV51) results are within contractual requirements.

Carbon-14 by method RL-LSC-008:

The LCS, batch blank, samples and sample duplicate (J1KV49) results are within contractual requirements.

Nickel-63 by method RL-LCS-017:

The LCS, batch blank, samples and sample duplicate (J1KV50) results are within contractual requirements.

Chemical Analysis

Hexavalent Chromium by EPA method 7196A

The LCS, batch blank, samples, sample duplicate (J1KV47) and sample matrix spike (J1KV47) 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

015

TestAmerica Laboratories, Inc.

016

80

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-075-256	Page 1 of 6

Collector: Q Stowe	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code: 8L	Data Turnaround: 21 Days		
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 118-D-2:1 Burial Ground- Group A, Trench 1,2,3 & 6		SAF No.: RC-075
Ice Chest No.: NA	Field Logbook No.: EL-1607-12	COA: R118D22000	Method of Shipment: Hand deliver
Shipped To: TestAmerica Incorporated, Richland	Offsite Property No.: NA		Bill of Lading/Air Bill No.: NA

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Rad < DOT

Special Handling and/or Storage

Cool 4 Deg. C

J01276

J11130506

J11130506

Due 10-4-11

J11130506

SAMPLE ANALYSIS

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G	aG	aG	aG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	0	0	0
Volume	60mL	60mL	120mL	125mL	120mL	125mL	1000mL	1000mL	1000mL	1000mL
	See item (1) in Special Instructions.	Chromium Hex - 7196	TPH-Diesel Range - WTPH-D+	PAHs - 8310	PCBs - 8082	Chloro-Herbicides - EPA8151	See item (2) in Special Instructions.	Carbon-14; Tritium - H3	Nickel-63; Strontium-89,90 -- Total Sr	Isotopic Plutonium

RCF 27384

Sample No.	Matrix *	Sample Date	Sample Time									
J1KV47 MMEOX	SOIL	9/12/11	0915		X					X	X	X	X
J1KV48 MMEOR	SOIL	9/12/11	0750		X					X	X	X	X
J1KV49 MMEOT	SOIL	9/12/11	0755		X					X	X	X	X
J1KV50 MMEOV	SOIL	9/12/11	0805		X					X	X	X	X
J1KV51 MMEOW	SOIL	9/12/11	0807		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	9/12/11 1400	D. Newman	9/12/11 1400
D. Newman	9/12/11 1540	Burnham	9-12-11 1540
Burnham WDH	9-13-11 1240	J Stock TALL	9-13-11 1240

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) {Mercury}

(2) Gamma Spec (Client List) {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

REVIEWED BY AJ DATE 9-13-11

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-075-256	Page 2 of 6

Collector: C Stowe	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code: 8L	Data Turnaround: 21 Days		
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 118-D-2:1 Burial Ground- Group A, Trench 1,2,3 & 6		SAF No.: RC-075
Ice Chest No.: NA	Field Logbook No.: EL-1607-12	COA: R118D22000	Method of Shipment: Hand deliver
Shipped To: TestAmerica Incorporated, Richland	Offsite Property No.: NA		Bill of Lading/Air Bill No.: NA

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Rad < DOT

Special Handling and/or Storage

~~Cool 4 Deg. C~~ 9.12.11

None CMB

Preservation	None										
Type of Container	G/P										
No. of Container(s)	0										
Volume	1000mL										
SAMPLE ANALYSIS	Isotopic Uranium						RCF 27384				

J01276
J1I130506
Due 10-4-11

Sample No.	Matrix *	Sample Date	Sample Time	Isotopic Uranium									
J1KV47 MMEOK	SOIL	9/12/11	0915	X									
J1KV48 MMEOR	SOIL	9/12/11	0750	X									
J1KV49 MMEOT	SOIL	9/12/11	0755	X									
J1KV50 MMEOV	SOIL	9/12/11	0805	X									
J1KV51 MMEOW	SOIL	9/12/11	0807	X									

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Chancy Stowe	9/12/11 1400	D. Newman Den Newm	9/12/11 1400
D. Newman Den Newm	9/12/11 1540	CMM	9.12.11 1540
CMM WK4	9.13.11 1240	J Bock J Bock TAL	9-13-11 1240
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 AJ DATE 9-13-11

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.

017

81

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-075-256	Page 3 of 6

Collector: Q Stone	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code: 8L	Data Turnaround: 21 Days		
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 118-D-2:1 Burial Ground- Group A, Trench 1,2,3 & 6		SAF No.: RC-075
Ice Chest No.: NA	Field Logbook No.: EL-1607-12	COA: R118D22000	Method of Shipment: Hand deliver
Shipped To: TestAmerica Incorporated, Richland	Offsite Property No.: NA		Bill of Lading/Air Bill No.: NA

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Rad < DOT

Special Handling and/or Storage

Cool 4 Deg. C

J01276

J1I130506

Due 10-4-11

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G	aG	aG	aG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	0	0	0
Volume	60mL	60mL	120mL	125mL	120mL	125mL	1000mL	1000mL	1000mL	1000mL

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions.	Chromium Hex - 7196	TPH-Diesel Range - WTPH-D+	PAHs - 8310	PCBs - 8082	Chloro Herbicides - EPA8151	See item (2) in Special Instructions.	Carbon-14; Tritium - H3	Nickel-63; Strontium-89,90 – Total Sr	Isotopic Plutonium
J1KV52 MMEOX	SOIL	9/12/11	0810		X					X	X	X	X
J1KV53 MMEOO	SOIL	9/12/11	0815		X					X	X	X	X
J1KV54 MMEO1	SOIL	9/12/11	0820		X					X	X	X	X
J1KV55 MMEO3	SOIL	9/12/11	0830		X					X	X	X	X
J1KV56 MMEO4	SOIL	9/12/11	0835		X					X	X	X	X

RCF 27384

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Quincy Stone	9/12/11 1400	D. Newman Denni Newman	9/12/11 1400
D. Newman Denni Newman	9/12/11 1540	Bingham	1060 42 9-12-11 1540
Bingham	1060 42 9-13-11 1240	J. Bock J Bock TALL	9-13-11 1240

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) {Mercury}

(2) Gamma Spec (Client List) {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

Matrix *

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

REVIEWED BY AJ DATE 9-13-11

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

WCH-EE-011

TestAmerica Laboratories, Inc.

82

9vo 9/12/11

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-075-256	Page 4 of 6

Collector: Q Stowe	Company Contact: Joan Kessner — Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 8L — Data Turnaround: 21 Days
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 118-D-2:1 Burial Ground- Group A, Trench 1,2,3 & 6	SAF No.: RC-075	
Ice Chest No.: NA	Field Logbook No.: EL-1607-12 — COA: R118D22000	Method of Shipment: Hand deliver	
Shipped To: TestAmerica Incorporated, Richland	Offsite Property No.: NA	Bill of Lading/Air Bill No.: NA	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Rad < DOT

Special Handling and/or Storage

~~Cool 4 Deg C~~ 9.12.11
None CMB

J01276
J1I130506
Due 10-4-11

SAMPLE ANALYSIS

Preservation				None										
Type of Container				G/P										
No. of Container(s)				0										
Volume				1000mL										
				Isotopic Uranium							RCF	27384		
Sample No.	Matrix *	Sample Date	Sample Time											
J1KV52 mmE0X	SOIL	9/12/11	0810	X										
J1KV53 mmE00	SOIL	9/12/11	0815	X										
J1KV54 mmE01	SOIL	9/12/11	0820	X										
J1KV55 mmE03	SOIL	9/12/11	0830	X										
J1KV56 mmE04	SOIL	9/12/11	0835	X										

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Quincy Stowe	9/12/11 1400	D. Newman Dem Newman	9/12/11 1400
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
D. Newman Dem Newman	9/12/11 1540	CMB	1060#2 9.12.11 1540
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
CMB WD4	1060#3 9/13/11 1240	J. Rock J. Rock TALB	9-13-11 1240
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 AJ
DATE 9-13-11

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.

83

010

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-075-256	Page 5 of 6

Collector: Q Stone	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code: 8L	Data Turnaround: 21 Days		
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 118-D-2:1 Burial Ground- Group A, Trench 1,2,3 & 6		SAF No.: RC-075
Ice Chest No.: NA	Field Logbook No.: EL-1607-12	COA: R118D22000	Method of Shipment: Hand deliver
Shipped To: TestAmerica Incorporated, Richland	Offsite Property No.: NA		Bill of Lading/Air Bill No.: NA

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Rad < DOT

Special Handling and/or Storage

Cool 4 Deg. C

J01276

J1I130506

Due 10-4-11

020

SAMPLE ANALYSIS

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G	sG	sG	sG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	0	0	0
Volume	60mL	60mL	120mL	125mL	120mL	125mL	1000mL	1000mL	1000mL	1000mL
	See item (1) in Special Instructions.	Chromium Hex - 7196	TPH-Diesel Range - WTPH-D+	PAHs - 8310	PCBs - 8082	Chloro-Herbicides - EPA8151	See item (2) in Special Instructions.	Carbon-14; Tritium - H3	Nickel-63; Strontium-89,90 – Total Sr	Isotopic Plutonium
	Only 1			Only 1						

RCF 27384

Sample No.	Matrix *	Sample Date	Sample Time									
J1KV57 MMEO9	SOIL	9/12/11	0840		X					X	X	X	X
J1KV58 MMEID	SOIL	9/12/11	1020		X					X	X	X	X
J1KV59 MMEIG	SOIL	9/12/11	0750		X					X	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From: Quincy Stone	9/12/11 1400	Received By/Stored In: D. Newman	9/12/11 1400
Relinquished By/Removed From: D. Newman	9/12/11 1540	Received By/Stored In: Bingham	1060H2 9.12.11 1540
Relinquished By/Removed From: Bingham	1060H2 9.13.11 1240	Received By/Stored In: J. Stock	TALX 9-13-11 1240
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) (Mercury)

(2) Gamma Spec (Client List) (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)

REVIEWED BY AJ DATE 9-13-11

Matrix *

S=Soil
SS=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-075-256	Page 6 of 6
Collector: Q Stone	Company Contact: Joan Kessner; Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 8L; Data Turnaround: 21 Days
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 118-D-2:1 Burial Ground- Group A, Trench 1,2,3 & 6	SAF No.: RC-075	
Ice Chest No.: NA	Field Logbook No.: EL-1607-12; COA: R118D22000	Method of Shipment: Hand deliver	
Shipped To: TestAmerica Incorporated, Richland	Offsite Property No.: NA	Bill of Lading/Air Bill No.: NA	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Rad < DOT

Special Handling and/or Storage

~~Cool 4 Deg. C~~ 9.12.11 cms

None

J01276
J1I130506
Due 10-4-11

Preservation	None											
Type of Container	G/P											
No. of Container(s)	0											
Volume	1000mL											
SAMPLE ANALYSIS	Isotopic Uranium											
										RCF 2738		
Sample No.	Matrix *	Sample Date	Sample Time									
J1KV57 MME09	SOIL	9/12/11	0840	X								
J1KV58 MMEID	SOIL	9/12/11	1020	X								
J1KV59 MMEIG	SOIL	9/12/11	0250	X								

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From: Quincy Stone	9/12/11 1400	Received By/Stored In: D Newman Dennis Newman	9/12/11 1400
Relinquished By/Removed From: D. Newman Dennis Newman	9/12/11 1540	Received By/Stored In: Burgham	9-12-11 1540
Relinquished By/Removed From: Burgham	9-13-11 1240	Received By/Stored In: J Bock	9-13-11 1240
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

REVIEWED BY
DATE 9-13-11

Matrix *
S=Soil
SD=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.

85

Appendix 5

Data Validation Supporting Documentation

GENERAL CHEMISTRY ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT:	118-D-2.1		DATA PACKAGE:	JO1276	
VALIDATOR:	ELR	LAB: TAL		DATE: 10/23/11	
			SDG:	JO1276	

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			
JIKU47	JIKU51	JIKU54	JIKU57
JIKU48	JIKU52	JIKU55	JIKU58
JIKU49	JIKU53	JIKU56	JIKU59
JIKU50			
			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:

6. HOLDING TIMES (all levels)

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

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

Comments:

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

Date: 30-Sep-11

TestAmerica TARL

Ordered by Method, Batch No, QC Type,.

Report No. : 48632

SDG No.: J01276

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
MME8T1AC	C-14	7.27E+00 +- 5.2E-01		pCi/g	100%	99%	0.0	4.61E-01
7196_CR6								
1258059 MATRIX SPIKE, J1KV47								
MME0K1AL	HEXCHROME	8.81E+00 +- 0.0E+00		mg/kg	N/A	87%	-0.1	1.55E-01
1258059 LCS,								
MMF2P1AC	HEXCHROME	1.98E+01 +- 0.0E+00		mg/kg	N/A	99%	0.0	1.55E-01
1258059 BLANK QC,								
MMF2P1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A			1.55E-01

No. of Results: 26

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.

028

Date: 28 October 2011
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: 100/D/DR Burial Grounds & Remaining Sites – Soil Full Protocol - Waste Subsite 118-D-2:1
Subject: Radiochemistry - Data Package No. J01276-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. J01276 prepared by TestAmerica Laboratory 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
J1KV47	9/12/11	Soil	C	See note 1
J1KV48	9/12/11	Soil	C	See note 1
J1KV49	9/12/11	Soil	C	See note 1
J1KV50	9/12/11	Soil	C	See note 1
J1KV51	9/12/11	Soil	C	See note 1
J1KV52	9/12/11	Soil	C	See note 1
J1KV53	9/12/11	Soil	C	See note 1
J1KV54	9/12/11	Soil	C	See note 1
J1KV55	9/12/11	Soil	C	See note 1
J1KV56	9/12/11	Soil	C	See note 1
J1KV57	9/12/11	Soil	C	See note 1
J1KV58	9/12/11	Soil	C	See note 1
J1KV59	9/12/11	Soil	C	See note 1

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

Data validation was conducted in accordance with the Washington Closure Hanford Incorporated (WCH) validation statement of work and the 100 Area Burial Grounds Remedial Action Sampling and Analysis Plan (DOE/RL-2001-35, December 2001). 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 65-135%. 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 uranium-235 and plutonium-238 results were qualified as estimates and flagged "J".

Due to the lack of a matrix spike analysis, all tritium and carbon-14 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 35%, 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 duplicate results were acceptable.

Field Duplicates

One set of field duplicates (J1KV48/J1KV59) was submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicate results were acceptable.

- **Detection Levels**

Reported analytical detection levels for undetected analytes are compared against the project RQLs to ensure that laboratory detection levels meet the required criteria. All analytes met the RQL.

- **Completeness**

Data package No. J01276 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 uranium-235 and plutonium-238 results were qualified as estimates and flagged "J".

- Due to the lack of a matrix spike analysis, all tritium and carbon-14 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-2001-35, Rev. 0, *100 Area Burial Grounds Remedial Action Sampling and Analysis Plan*, U.S. Department of Energy, December 2001.

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: J01276	REVIEWER: ELR	Project: 118-D-2:1	PAGE 1 OF 1
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Tritium Carbon-14	J	All	No MS analysis
Plutonium-238 Uranium-235	J	All	No LCS analysis

* - 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: 30-Sep-11

Report No. : 48632

10/27/11

SDG No: J01276

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1257097	PUISO_PLATE_AEA								
	J1KV47								
	MME0K1AF	PU-238	0.00E+00 +- 6.7E-02	U J	pCi/g	98%	1.26E-01	1.00E+00	
		PU239/40	3.37E-02 +- 6.8E-02	U	pCi/g	98%	1.26E-01	1.00E+00	
	J1KV47 DUP								
	MME0K1AK	PU-238	0.00E+00 +- 6.5E-02	U	pCi/g	100%	1.23E-01	1.00E+00	
		PU239/40	0.00E+00 +- 6.5E-02	U	pCi/g	100%	1.23E-01	1.00E+00	200.0
	J1KV48								
	MME0R1AF	PU-238	0.00E+00 +- 6.5E-02	U J	pCi/g	89%	1.21E-01	1.00E+00	
		PU239/40	0.00E+00 +- 6.5E-02	U	pCi/g	89%	1.21E-01	1.00E+00	
	J1KV49								
	MME0T1AF	PU-238	0.00E+00 +- 7.2E-02	U J	pCi/g	94%	1.35E-01	1.00E+00	
		PU239/40	3.61E-02 +- 7.3E-02	U	pCi/g	94%	1.35E-01	1.00E+00	
	J1KV50								
	MME0V1AF	PU-238	0.00E+00 +- 8.1E-02	U J	pCi/g	80%	1.52E-01	1.00E+00	
		PU239/40	0.00E+00 +- 8.1E-02	U	pCi/g	80%	1.52E-01	1.00E+00	
	J1KV51								
	MME0W1AF	PU-238	0.00E+00 +- 5.5E-02	U J	pCi/g	100%	1.02E-01	1.00E+00	
		PU239/40	0.00E+00 +- 5.5E-02	U	pCi/g	100%	1.02E-01	1.00E+00	
	J1KV52								
	MME0X1AF	PU-238	0.00E+00 +- 7.3E-02	U J	pCi/g	97%	1.37E-01	1.00E+00	
		PU239/40	-1.83E-03 +- 7.3E-02	U	pCi/g	97%	1.37E-01	1.00E+00	
	J1KV53								
	MME002AF	PU-238	-1.53E-03 +- 6.1E-02	U J	pCi/g	100%	1.14E-01	1.00E+00	
		PU239/40	-3.05E-03 +- 6.1E-02	U	pCi/g	100%	1.27E-01	1.00E+00	
	J1KV54								
	MME011AF	PU-238	-4.21E-03 +- 5.6E-02	U J	pCi/g	100%	1.26E-01	1.00E+00	
		PU239/40	2.65E-02 +- 5.6E-02	U	pCi/g	100%	1.05E-01	1.00E+00	
	J1KV55								
	MME031AF	PU-238	-1.64E-03 +- 6.6E-02	U J	pCi/g	92%	1.23E-01	1.00E+00	
		PU239/40	-3.29E-03 +- 6.6E-02	U	pCi/g	92%	1.37E-01	1.00E+00	
	J1KV56								
	MME041AF	PU-238	0.00E+00 +- 6.4E-02	U J	pCi/g	100%	1.20E-01	1.00E+00	
		PU239/40	0.00E+00 +- 6.4E-02	U	pCi/g	100%	1.20E-01	1.00E+00	
	J1KV57								
	MME091AF	PU-238	-4.00E-03 +- 5.3E-02	U J	pCi/g	100%	1.20E-01	1.00E+00	
		PU239/40	2.52E-02 +- 5.3E-02	U	pCi/g	100%	9.94E-02	1.00E+00	
	J1KV58								
	MME1D1AF	PU-238	0.00E+00 +- 7.4E-02	U J	pCi/g	88%	1.38E-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.

010

Sample Results Summary

TestAmerica TARL

Date: 30-Sep-11

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

Report No. : 48632

10/27/11

SDG No: J01276

Batch	Client Id / Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1257097 PUISO_PLATE_AEA									
J1KV58									
	MME1D1AF	PU239/40	-1.85E-03 +- 7.4E-02	U	pCi/g	88%	1.38E-01	1.00E+00	
J1KV59									
	MME1G1AF	PU-238	-2.96E-03 +- 5.9E-02	U J	pCi/g	97%	1.24E-01	1.00E+00	
		PU239/40	-4.43E-03 +- 5.9E-02	U	pCi/g	97%	1.33E-01	1.00E+00	
1257096 UISO_IE_PLATE_AEA									
J1KV47									
	MME0K1AC	U-234	3.30E-01 +- 2.1E-01		pCi/g	87%	1.48E-01	1.00E+00	
		U-235	4.65E-02 +- 8.1E-02	U J	pCi/g	87%	1.54E-01	1.00E+00	
		U-238	2.74E-01 +- 1.9E-01		pCi/g	87%	1.48E-01	1.00E+00	
J1KV48									
	MME0R1AC	U-234	2.17E-01 +- 2.0E-01	U	pCi/g	60%	2.37E-01	1.00E+00	
		U-235	3.55E-02 +- 7.9E-02	U J	pCi/g	60%	1.65E-01	1.00E+00	
		U-238	2.62E-01 +- 2.2E-01		pCi/g	60%	2.15E-01	1.00E+00	
J1KV48 DUP									
	MME0R1AK	U-234	1.86E-01 +- 1.6E-01		pCi/g	76%	1.16E-01	1.00E+00	15.3
		U-235	0.00E+00 +- 6.2E-02	U	pCi/g	76%	1.16E-01	1.00E+00	200.0
		U-238	2.17E-01 +- 1.7E-01		pCi/g	76%	1.16E-01	1.00E+00	18.9
J1KV49									
	MME0T1AC	U-234	2.95E-01 +- 1.9E-01		pCi/g	85%	1.01E-01	1.00E+00	
		U-235	2.68E-02 +- 5.4E-02	U J	pCi/g	85%	1.01E-01	1.00E+00	
		U-238	2.95E-01 +- 1.9E-01		pCi/g	85%	1.01E-01	1.00E+00	
J1KV50									
	MME0V1AC	U-234	3.71E-01 +- 2.1E-01		pCi/g	99%	9.32E-02	1.00E+00	
		U-235	-2.49E-03 +- 5.0E-02	U J	pCi/g	99%	1.04E-01	1.00E+00	
		U-238	2.47E-01 +- 1.6E-01		pCi/g	99%	9.32E-02	1.00E+00	
J1KV51									
	MME0W1AC	U-234	1.46E-01 +- 1.4E-01		pCi/g	74%	1.10E-01	1.00E+00	
		U-235	0.00E+00 +- 5.9E-02	U J	pCi/g	74%	1.10E-01	1.00E+00	
		U-238	1.41E-01 +- 1.4E-01		pCi/g	74%	1.41E-01	1.00E+00	
J1KV52									
	MME0X1AC	U-234	9.94E-02 +- 1.2E-01	U	pCi/g	67%	1.43E-01	1.00E+00	
		U-235	0.00E+00 +- 6.9E-02	U J	pCi/g	67%	1.29E-01	1.00E+00	
		U-238	2.71E-01 +- 2.0E-01		pCi/g	67%	1.43E-01	1.00E+00	
J1KV53									
	MME002AC	U-234	6.30E-02 +- 2.1E-01	U	pCi/g	23%	5.94E-01	1.00E+00	
		U-235	-3.69E-02 +- 2.1E-01	U J	pCi/g	23%	5.74E-01	1.00E+00	
		U-238	2.84E-01 +- 3.8E-01	U	pCi/g	23%	5.53E-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

TestAmerica TARL

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

Date: 30-Sep-11

Report No. : 48632

10/27/11

SDG No: J01276

Batch	Client Id / Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1257096 UISO_IE_PLATE_AEA									
J1KV54									
	MME011AC	U-234	2.14E-01 +- 1.7E-01		pCi/g	91%	1.24E-01	1.00E+00	
		U-235	2.97E-02 +- 6.2E-02	U J	pCi/g	91%	1.12E-01	1.00E+00	
		U-238	3.64E-01 +- 2.3E-01		pCi/g	91%	1.51E-01	1.00E+00	
J1KV55									
	MME031AC	U-234	3.09E-01 +- 3.1E-01	U	pCi/g	36%	3.80E-01	1.00E+00	
		U-235	4.37E-02 +- 1.4E-01	U J	pCi/g	36%	3.67E-01	1.00E+00	
		U-238	4.50E-01 +- 3.8E-01		pCi/g	36%	3.53E-01	1.00E+00	
J1KV56									
	MME041AC	U-234	1.66E-01 +- 1.4E-01		pCi/g	92%	1.59E-01	1.00E+00	
		U-235	-1.29E-03 +- 5.2E-02	U J	pCi/g	92%	9.68E-02	1.00E+00	
		U-238	2.75E-01 +- 1.8E-01		pCi/g	92%	1.41E-01	1.00E+00	
J1KV57									
	MME091AC	U-234	2.43E-01 +- 1.8E-01		pCi/g	77%	1.14E-01	1.00E+00	
		U-235	0.00E+00 +- 6.1E-02	U J	pCi/g	77%	1.14E-01	1.00E+00	
		U-238	6.07E-02 +- 8.7E-02	U	pCi/g	77%	1.14E-01	1.00E+00	
J1KV58									
	MME1D1AC	U-234	1.33E-01 +- 1.2E-01		pCi/g	86%	1.00E-01	1.00E+00	
		U-235	0.00E+00 +- 5.3E-02	U J	pCi/g	86%	1.00E-01	1.00E+00	
		U-238	2.67E-01 +- 1.8E-01		pCi/g	86%	1.00E-01	1.00E+00	
J1KV59									
	MME1G1AC	U-234	1.48E-01 +- 1.3E-01		pCi/g	98%	9.36E-02	1.00E+00	
		U-235	-2.50E-03 +- 5.0E-02	U J	pCi/g	98%	1.04E-01	1.00E+00	
		U-238	2.48E-01 +- 1.7E-01		pCi/g	98%	9.36E-02	1.00E+00	
1257088 GAMMA_GS									
J1KV47									
	MME0K1AH	AMERICIUM 241	-3.30E-02 +- 1.8E-01	U	pCi/g		2.99E-01		
		CO-60	-7.19E-03 +- 2.0E-02	U	pCi/g		3.35E-02	5.00E-02	
		CS-137	4.02E-03 +- 2.0E-02	U	pCi/g		3.48E-02	1.00E-01	
		EU-152	-4.39E-02 +- 5.2E-02	U	pCi/g		8.42E-02	1.00E-01	
		EU-154	4.24E-03 +- 6.6E-02	U	pCi/g		1.16E-01	1.00E-01	
		EU-155	6.96E-02 +- 5.8E-02	U	pCi/g		1.01E-01	1.00E-01	
J1KV48									
	MME0R1AH	AMERICIUM 241	8.33E-03 +- 7.4E-02	U	pCi/g		1.24E-01		
		CO-60	-3.24E-04 +- 1.6E-02	U	pCi/g		2.85E-02	5.00E-02	
		CS-137	1.56E-02 +- 1.7E-02	U	pCi/g		3.03E-02	1.00E-01	
		EU-152	2.66E-03 +- 6.8E-02	U	pCi/g		7.86E-02	1.00E-01	
		EU-154	-2.89E-02 +- 5.4E-02	U	pCi/g		9.04E-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

Date: 30-Sep-11

TestAmerica TARL

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

Report No. : 48632

✓ 10/27/11

SDG No: J01276

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1257088 GAMMA_GS									
J1KV48									
	MME0R1AH	EU-155	-2.33E-03 +- 5.5E-02	U	pCi/g		9.25E-02	1.00E-01	
J1KV49									
	MME0T1AH	AMERICIUM 241	-1.98E-02 +- 4.6E-02	U	pCi/g		7.63E-02		
		CO-60	-1.58E-02 +- 2.3E-02	U	pCi/g		3.69E-02	5.00E-02	
		CS-137	2.14E-02 +- 2.5E-02	U	pCi/g		4.58E-02	1.00E-01	
		EU-152	3.64E-02 +- 8.2E-02	U	pCi/g		1.15E-01	1.00E-01	
		EU-154	-2.61E-02 +- 7.5E-02	U	pCi/g		1.28E-01	1.00E-01	
		EU-155	3.01E-03 +- 6.4E-02	U	pCi/g		1.08E-01	1.00E-01	
J1KV50									
	MME0V1AH	AMERICIUM 241	-4.88E-02 +- 1.1E-01	U	pCi/g		1.84E-01		
		CO-60	1.74E-02 +- 1.7E-02	U	pCi/g		3.21E-02	5.00E-02	
		CS-137	-1.12E-02 +- 1.7E-02	U	pCi/g		2.75E-02	1.00E-01	
		EU-152	3.69E-02 +- 4.0E-02	U	pCi/g		7.01E-02	1.00E-01	
		EU-154	-1.92E-02 +- 5.3E-02	U	pCi/g		9.08E-02	1.00E-01	
		EU-155	2.66E-02 +- 4.7E-02	U	pCi/g		8.01E-02	1.00E-01	
J1KV51									
	MME0W1AH	AMERICIUM 241	5.22E-02 +- 1.6E-01	U	pCi/g		2.70E-01		
		CO-60	1.97E-02 +- 1.7E-02	U	pCi/g		3.29E-02	5.00E-02	
		CS-137	-3.05E-03 +- 1.7E-02	U	pCi/g		2.85E-02	1.00E-01	
		EU-152	-3.03E-02 +- 4.3E-02	U	pCi/g		7.14E-02	1.00E-01	
		EU-154	-1.76E-02 +- 5.8E-02	U	pCi/g		9.89E-02	1.00E-01	
		EU-155	1.92E-02 +- 5.3E-02	U	pCi/g		8.90E-02	1.00E-01	
J1KV52									
	MME0X1AH	AMERICIUM 241	6.77E-02 +- 8.4E-02	U	pCi/g		1.45E-01		
		CO-60	6.00E-03 +- 1.2E-02	U	pCi/g		2.31E-02	5.00E-02	
		CS-137	-4.18E-03 +- 1.5E-02	U	pCi/g		2.44E-02	1.00E-01	
		EU-152	-2.16E-02 +- 3.1E-02	U	pCi/g		5.03E-02	1.00E-01	
		EU-154	2.13E-02 +- 4.3E-02	U	pCi/g		7.88E-02	1.00E-01	
		EU-155	5.59E-03 +- 3.6E-02	U	pCi/g		6.17E-02	1.00E-01	
J1KV52 DUP									
	MME0X1AK	AMERICIUM 241	-1.65E-02 +- 3.7E-02	U	pCi/g		6.21E-02		329.1
		CO-60	6.77E-04 +- 2.1E-02	U	pCi/g		3.67E-02	5.00E-02	159.5
		CS-137	-9.31E-03 +- 2.2E-02	U	pCi/g		3.76E-02	1.00E-01	-76.1
		EU-152	-5.23E-02 +- 6.6E-02	U	pCi/g		9.26E-02	1.00E-01	-83.2
		EU-154	4.13E-02 +- 6.8E-02	U	pCi/g		1.25E-01	1.00E-01	64.2
		EU-155	1.62E-02 +- 5.5E-02	U	pCi/g		9.20E-02	1.00E-01	97.2
J1KV53									

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: 30-Sep-11

Report No. : 48632

✓ 10/27/11

SDG No: J01276

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1257088 GAMMA_GS									
J1KV53									
	MME001AH	AMERICIUM 241	-4.17E-02 +- 6.7E-02	U	pCi/g		1.13E-01		
		CO-60	7.42E-03 +- 2.1E-02	U	pCi/g		4.00E-02	5.00E-02	
		CS-137	9.89E-05 +- 2.1E-02	U	pCi/g		3.72E-02	1.00E-01	
		EU-152	-1.03E-02 +- 5.3E-02	U	pCi/g		8.34E-02	1.00E-01	
		EU-154	2.21E-03 +- 6.4E-02	U	pCi/g		1.16E-01	1.00E-01	
		EU-155	-1.33E-02 +- 5.1E-02	U	pCi/g		8.64E-02	1.00E-01	
J1KV54									
	MME011AH	AMERICIUM 241	-4.05E-02 +- 7.5E-02	U	pCi/g		1.26E-01		
		CO-60	8.48E-04 +- 1.8E-02	U	pCi/g		3.24E-02	5.00E-02	
		CS-137	3.27E-04 +- 1.7E-02	U	pCi/g		2.87E-02	1.00E-01	
		EU-152	-7.20E-02 +- 1.4E-01	U	pCi/g		8.20E-02	1.00E-01	
		EU-154	-5.29E-02 +- 5.3E-02	U	pCi/g		8.52E-02	1.00E-01	
		EU-155	-1.16E-02 +- 5.5E-02	U	pCi/g		9.27E-02	1.00E-01	
J1KV55									
	MME031AH	AMERICIUM 241	1.83E-02 +- 7.5E-02	U	pCi/g		1.29E-01		
		CO-60	6.88E-03 +- 1.7E-02	U	pCi/g		3.05E-02	5.00E-02	
		CS-137	1.39E-02 +- 1.7E-02	U	pCi/g		2.98E-02	1.00E-01	
		EU-152	-8.21E-02 +- 9.6E-02	U	pCi/g		7.68E-02	1.00E-01	
		EU-154	-2.13E-02 +- 5.2E-02	U	pCi/g		8.92E-02	1.00E-01	
		EU-155	2.94E-02 +- 5.5E-02	U	pCi/g		9.46E-02	1.00E-01	
J1KV56									
	MME041AH	AMERICIUM 241	-3.28E-02 +- 1.7E-01	U	pCi/g		2.90E-01		
		CO-60	-1.45E-03 +- 1.9E-02	U	pCi/g		3.33E-02	5.00E-02	
		CS-137	3.37E-01 +- 6.0E-02		pCi/g		3.15E-02	1.00E-01	
		EU-152	9.82E-03 +- 4.8E-02	U	pCi/g		8.30E-02	1.00E-01	
		EU-154	-1.74E-02 +- 5.9E-02	U	pCi/g		9.95E-02	1.00E-01	
		EU-155	3.79E-02 +- 5.9E-02	U	pCi/g		9.84E-02	1.00E-01	
J1KV57									
	MME091AH	AMERICIUM 241	1.01E-02 +- 3.5E-02	U	pCi/g		5.83E-02		
		CO-60	1.34E-02 +- 2.0E-02	U	pCi/g		3.81E-02	5.00E-02	
		CS-137	1.98E-02 +- 2.2E-02	U	pCi/g		3.91E-02	1.00E-01	
		EU-152	-1.68E-02 +- 5.1E-02	U	pCi/g		8.69E-02	1.00E-01	
		EU-154	1.38E-03 +- 6.0E-02	U	pCi/g		1.06E-01	1.00E-01	
		EU-155	2.89E-02 +- 5.0E-02	U	pCi/g		8.66E-02	1.00E-01	
J1KV58									
	MME1D1AH	AMERICIUM 241	2.58E-02 +- 8.8E-02	U	pCi/g		1.50E-01		
		CO-60	4.28E-03 +- 1.4E-02	U	pCi/g		2.52E-02	5.00E-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.

014

Sample Results Summary

TestAmerica TARL

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

Date: 30-Sep-11

Report No. : 48632

10/27/11

SDG No: J01276

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1257088 GAMMA_GS									
J1KV58									
	MME1D1AH	CS-137	1.65E-02 +- 1.3E-02	U	pCi/g		2.48E-02	1.00E-01	
		EU-152	-8.59E-03 +- 3.3E-02	U	pCi/g		5.43E-02	1.00E-01	
		EU-154	-1.37E-02 +- 4.4E-02	U	pCi/g		7.66E-02	1.00E-01	
		EU-155	-2.47E-03 +- 3.7E-02	U	pCi/g		6.23E-02	1.00E-01	
J1KV59									
	MME1G1AH	AMERICIUM 241	-3.13E-02 +- 3.7E-02	U	pCi/g		6.08E-02		
		CO-60	4.56E-03 +- 2.0E-02	U	pCi/g		3.71E-02	5.00E-02	
		CS-137	9.27E-03 +- 2.1E-02	U	pCi/g		3.74E-02	1.00E-01	
		EU-152	-1.65E-02 +- 6.0E-02	U	pCi/g		9.11E-02	1.00E-01	
		EU-154	1.14E-02 +- 6.7E-02	U	pCi/g		1.20E-01	1.00E-01	
		EU-155	1.91E-02 +- 5.3E-02	U	pCi/g		9.00E-02	1.00E-01	
1257087 SRTOT_SEP_PRECIP_GPC									
J1KV47									
	MME0K1AD	STRONTIUM	4.65E-02 +- 6.8E-02	U	pCi/g	67%	1.46E-01		
J1KV48									
	MME0R1AD	STRONTIUM	6.23E-02 +- 7.9E-02	U	pCi/g	61%	1.67E-01		
J1KV49									
	MME0T1AD	STRONTIUM	3.73E-02 +- 6.6E-02	U	pCi/g	68%	1.46E-01		
J1KV50									
	MME0V1AD	STRONTIUM	7.83E-02 +- 8.3E-02	U	pCi/g	67%	1.70E-01		
J1KV51									
	MME0W1AD	STRONTIUM	1.74E-01 +- 1.1E-01	U	pCi/g	59%	1.89E-01		
J1KV52									
	MME0X1AD	STRONTIUM	4.33E-02 +- 7.7E-02	U	pCi/g	61%	1.70E-01		
J1KV53									
	MME001AD	STRONTIUM	-8.45E-03 +- 6.0E-02	U	pCi/g	67%	1.47E-01		
J1KV53 DUP									
	MME001AK	STRONTIUM	5.89E-02 +- 7.0E-02	U	pCi/g	65%	1.47E-01		267.0
J1KV54									
	MME011AD	STRONTIUM	7.36E-02 +- 8.2E-02	U	pCi/g	56%	1.70E-01		
J1KV55									
	MME031AD	STRONTIUM	5.02E-02 +- 1.5E-01	U	pCi/g	28%	3.36E-01		
J1KV56									
	MME041AD	STRONTIUM	1.02E-01 +- 8.9E-02	U	pCi/g	63%	1.75E-01		
J1KV57									
	MME091AD	STRONTIUM	2.57E-02 +- 7.3E-02	U	pCi/g	62%	1.67E-01		
J1KV58									

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

TestAmerica TARL

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

Date: 30-Sep-11

Report No. : 48632

10/27/11

SDG No: J01276

Batch	Client Id / Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1257087 SRTOT_SEP_PRECIP_GPC									
	J1KV58								
	MME1D1AD	STRONTIUM	4.73E-02 +- 7.4E-02	U	pCi/g	63%	1.80E-01		
	J1KV59								
	MME1G1AD	STRONTIUM	4.15E-02 +- 8.1E-02	U	pCi/g	56%	1.80E-01		
1257089 906.0_H3_LSC									
	J1KV47								
	MME0K1AG	H-3	7.56E-03 +- 1.7E-02	U J	pCi/g	100%	3.86E-02	4.00E+02	
	J1KV48								
	MME0R1AG	H-3	1.73E-02 +- 1.7E-02	U J	pCi/g	100%	3.83E-02	4.00E+02	
	J1KV49								
	MME0T1AG	H-3	4.20E-03 +- 1.6E-02	U J	pCi/g	100%	3.68E-02	4.00E+02	
	J1KV50								
	MME0V1AG	H-3	5.79E-02 +- 1.9E-02	J	pCi/g	100%	3.76E-02	4.00E+02	
	J1KV51								
	MME0W1AG	H-3	6.04E-02 +- 1.8E-02	J	pCi/g	100%	3.68E-02	4.00E+02	
	J1KV51 DUP								
	MME0W1AK	H-3	1.29E-01 +- 2.3E-02		pCi/g	100%	4.20E-02	4.00E+02	72.5
	J1KV52								
	MME0X1AG	H-3	9.27E-02 +- 1.7E-02	J	pCi/g	100%	3.16E-02	4.00E+02	
	J1KV53								
	MME001AG	H-3	1.10E-01 +- 2.0E-02	J	pCi/g	100%	3.62E-02	4.00E+02	
	J1KV54								
	MME011AG	H-3	7.15E-04 +- 1.8E-02	U J	pCi/g	100%	4.08E-02	4.00E+02	
	J1KV55								
	MME031AG	H-3	7.29E-03 +- 1.4E-02	U J	pCi/g	100%	3.20E-02	4.00E+02	
	J1KV56								
	MME041AG	H-3	1.47E-01 +- 2.3E-02	J	pCi/g	100%	3.88E-02	4.00E+02	
	J1KV57								
	MME091AG	H-3	4.76E-02 +- 1.7E-02	J	pCi/g	100%	3.55E-02	4.00E+02	
	J1KV58								
	MME1D1AG	H-3	2.29E-02 +- 1.8E-02	U J	pCi/g	100%	4.16E-02	4.00E+02	
	J1KV59								
	MME1G1AG	H-3	-1.91E-03 +- 1.4E-02	U J	pCi/g	100%	3.14E-02	4.00E+02	
1257090 NI63_LSC									
	J1KV47								
	MME0K1AE	NI-63	-4.21E-01 +- 5.9E+00	U	pCi/g	99%	1.28E+01	3.00E+01	
	J1KV48								
	MME0R1AE	NI-63	-2.51E+00 +- 6.3E+00	U	pCi/g	100%	1.61E+01	3.00E+01	
	J1KV49								

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

TestAmerica TARL

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

Date: 30-Sep-11

Report No. : 48632

10/27/11

SDG No: J01276

Batch	Client Id / Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1257090 NI63_LSC									
	J1KV49								
	MME0T1AE	NI-63	-1.30E+00 +- 5.8E+00	U	pCi/g	99%	1.26E+01	3.00E+01	
	J1KV50								
	MME0V1AE	NI-63	2.05E+00 +- 6.1E+00	U	pCi/g	100%	1.27E+01	3.00E+01	
	J1KV50 DUP								
	MME0V1AK	NI-63	1.19E+00 +- 6.1E+00	U	pCi/g	98%	1.29E+01	3.00E+01	53.2
	J1KV51								
	MME0W1AE	NI-63	-3.22E-01 +- 5.9E+00	U	pCi/g	100%	1.25E+01	3.00E+01	
	J1KV52								
	MME0X1AE	NI-63	-3.08E+00 +- 5.8E+00	U	pCi/g	97%	1.28E+01	3.00E+01	
	J1KV53								
	MME001AE	NI-63	1.20E+00 +- 6.0E+00	U	pCi/g	100%	1.28E+01	3.00E+01	
	J1KV54								
	MME011AE	NI-63	1.38E+00 +- 6.0E+00	U	pCi/g	100%	1.24E+01	3.00E+01	
	J1KV55								
	MME031AE	NI-63	-1.92E+00 +- 6.0E+00	U	pCi/g	98%	1.31E+01	3.00E+01	
	J1KV56								
	MME041AE	NI-63	-2.58E+00 +- 5.8E+00	U	pCi/g	100%	1.32E+01	3.00E+01	
	J1KV57								
	MME091AE	NI-63	-3.26E-01 +- 5.9E+00	U	pCi/g	100%	1.27E+01	3.00E+01	
	J1KV58								
	MME1D1AE	NI-63	-1.51E+00 +- 6.1E+00	U	pCi/g	95%	1.31E+01	3.00E+01	
	J1KV59								
	MME1G1AE	NI-63	6.46E+00 +- 6.4E+00	U	pCi/g	100%	1.25E+01	3.00E+01	
1257094 C14_CHEM_LSC									
	J1KV47								
	MME0K1AJ	C-14	-3.81E-02 +- 2.0E-01	U J	pCi/g	100%	4.57E-01	5.00E+01	
	J1KV48								
	MME0R1AJ	C-14	3.93E-02 +- 2.1E-01	U J	pCi/g	100%	4.57E-01	5.00E+01	
	J1KV49								
	MME0T1AJ	C-14	8.83E-02 +- 2.1E-01	U J	pCi/g	100%	4.59E-01	5.00E+01	
	J1KV49 DUP								
	MME0T1AK	C-14	5.85E-02 +- 2.1E-01	U	pCi/g	100%	4.59E-01	5.00E+01	40.7
	J1KV50								
	MME0V1AJ	C-14	1.44E-02 +- 2.0E-01	U J	pCi/g	100%	4.56E-01	5.00E+01	
	J1KV51								
	MME0W1AJ	C-14	1.11E-01 +- 2.1E-01	U J	pCi/g	100%	4.56E-01	5.00E+01	
	J1KV52								
	MME0X1AJ	C-14	9.97E-01 +- 2.6E-01	J	pCi/g	100%	4.57E-01	5.00E+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.

017

Sample Results Summary

TestAmerica TARL

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

Date: 30-Sep-11

Report No. : 48632

10/27/11

SDG No: J01276

Batch	Client Id / Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	MDC or MDA	CRDL	RPD
1257094	C14_CHEM_LSC								
	J1KV53								
	MME001AJ	C-14	9.24E-02 +- 2.1E-01	U J	pCi/g	100%	4.58E-01	5.00E+01	
	J1KV54								
	MME011AJ	C-14	2.97E-02 +- 2.0E-01	U J	pCi/g	100%	4.57E-01	5.00E+01	
	J1KV55								
	MME031AJ	C-14	8.14E-02 +- 2.1E-01	U J	pCi/g	100%	4.57E-01	5.00E+01	
	J1KV56								
	MME041AJ	C-14	8.31E-02 +- 2.1E-01	U J	pCi/g	100%	4.56E-01	5.00E+01	
	J1KV57								
	MME091AJ	C-14	4.55E-01 +- 2.3E-01	U J	pCi/g	100%	4.58E-01	5.00E+01	
	J1KV58								
	MME1D1AJ	C-14	1.60E-01 +- 2.1E-01	U J	pCi/g	100%	4.57E-01	5.00E+01	
	J1KV59								
	MME1G1AJ	C-14	2.25E-01 +- 2.2E-01	U J	pCi/g	100%	4.59E-01	5.00E+01	
1258059	7196_CR6								
	J1KV47								
	MME0K1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	MME0K1AM	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	3.50E-01	0.0
	J1KV48								
	MME0R1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	J1KV49								
	MME0T1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	J1KV50								
	MME0V1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	J1KV51								
	MME0W1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	J1KV52								
	MME0X1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	J1KV53								
	MME001AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	J1KV54								
	MME011AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	J1KV55								
	MME031AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	J1KV56								
	MME041AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	J1KV57								
	MME091AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A	1.55E-01	1.55E-01	
	J1KV58								

10/27/11

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

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

TestAmerica Laboratories, Inc.

September 30, 2011

Attention: Joan Kessner

SAF Number	:	RC-075
Date SDG Closed	:	September 13, 2011
Number of Samples	:	Thirteen (13)
Sample Type	:	Soil
SDG Number	:	J01276
Data Deliverable	:	21– Day / Summary

CASE NARRATIVE

I. Introduction

On September 13, 2011, thirteen 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
J1KV47	MME0K	SOIL	9/13/11
J1KV48	MME0R	SOIL	9/13/11
J1KV49	MME0T	SOIL	9/13/11
J1KV50	MME0V	SOIL	9/13/11
J1KV51	MME0W	SOIL	9/13/11
J1KV52	MME0X	SOIL	9/13/11
J1KV53	MME00	SOIL	9/13/11
J1KV54	MME01	SOIL	9/13/11
J1KV55	MME03	SOIL	9/13/11
J1KV56	MME04	SOIL	9/13/11
J1KV57	MME09	SOIL	9/13/11
J1KV58	MME1D	SOIL	9/13/11
J1KV59	MME1G	SOIL	9/13/11

II. Sample Receipt

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

020

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

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
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:
Sample J1KV53 tracer yield was not within the acceptance limits on the original count. The sample was re-counted for an acceptable yield. Except as note; the LCS, batch blank, samples and sample duplicate (J1KV47) results are within contractual requirements.

Uranium 234, 235 and 238 by method RL-ALP-015:
Sample J1KV53 tracer yield was not within the acceptance limits on the original count. The sample was re-counted for an acceptable yield. Except as noted; the LCS, batch blank, samples and sample duplicate (J1KV48) results are within contractual requirements.

Gas Proportional Counting
Strontium-90 by method RL-GPC-003:
The LCS, batch blank, samples and sample duplicate (J1KV53) results are within contractual requirements.

021

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 (J1KV52) results are within contractual requirements.

Liquid Scintillation Counting

Tritium by method RL-LSC-005:

The LCS, batch blank, samples and sample duplicate (J1KV51) results are within contractual requirements.

Carbon-14 by method RL-LSC-008:

The LCS, batch blank, samples and sample duplicate (J1KV49) results are within contractual requirements.

Nickel-63 by method RL-LCS-017:

The LCS, batch blank, samples and sample duplicate (J1KV50) results are within contractual requirements.

Chemical Analysis

Hexavalent Chromium by EPA method 7196A

The LCS, batch blank, samples, sample duplicate (J1KV47) and sample matrix spike (J1KV47) 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

022

TestAmerica Laboratories, Inc.

02380

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-075-256	Page 1 of 6

Collector: Q Stowe	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code: 8L	Data Turnaround: 21 Days		
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 118-D-2:1 Burial Ground- Group A, Trench 1,2,3 & 6		SAF No.: RC-075
Ice Chest No.: NA	Field Logbook No.: EL-1607-12	COA: R118D22000	Method of Shipment: Hand deliver
Shipped To: TestAmerica Incorporated, Richland	Offsite Property No.: NA		Bill of Lading/Air Bill No.: NA

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Rad < DOT

Special Handling and/or Storage

Cool 4 Deg. C

J01276

J11130506

Due 10-4-11

J11130506

SAMPLE ANALYSIS

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G	aG	aG	aG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	0	0	0
Volume	60mL	60mL	120mL	125mL	120mL	125mL	1000mL	1000mL	1000mL	1000mL
	See item (1) in Special Instructions.	Chromium Hex - 7196	TPH-Diesel Range - WTPH-D+	PAHs - 8310	PCBs - 8082	Chloro-Herbicides - EPA8151	See item (2) in Special Instructions.	Carbon-14; Tritium - H3	Nickel-63; Strontium-89,90 -- Total Sr	Isotopic Plutonium

RCF 27384

Sample No.	Matrix *	Sample Date	Sample Time									
J1KV47 MMEOX	SOIL	9/12/11	0915		X					X	X	X	X
J1KV48 MMEOR	SOIL	9/12/11	0750		X					X	X	X	X
J1KV49 MMEOT	SOIL	9/12/11	0755		X					X	X	X	X
J1KV50 MMEOV	SOIL	9/12/11	0805		X					X	X	X	X
J1KV51 MMEOW	SOIL	9/12/11	0807		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	9/12/11 1400	D. Newman	9/12/11 1400
D. Newman	9/12/11 1540	Christopher Bingham	9-12-11 1540
Christopher Bingham WBH	9-13-11 1240	Stock/Stock TALL	9-13-11 1240

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) {Mercury}

(2) Gamma Spec (Client List) {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

REVIEWED BY AJ DATE 9-13-11

Matrix *: S=Soil; SD=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-075-256	Page 2 of 6

Collector: C Stowe	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code: 8L	Data Turnaround: 21 Days		
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 118-D-2:1 Burial Ground- Group A, Trench 1,2,3 & 6		SAF No.: RC-075
Ice Chest No.: NA	Field Logbook No.: EL-1607-12	COA: R118D22000	Method of Shipment: Hand deliver
Shipped To: TestAmerica Incorporated, Richland	Offsite Property No.: NA		Bill of Lading/Air Bill No.: NA

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Rad < DOT

Special Handling and/or Storage

~~Cool 4 Deg. C~~ 9.12.11

None CMB

SAMPLE ANALYSIS

J01276

J1I130506

Due 10-4-11

RCF 27384

			Preservation	None									
			Type of Container	G/P									
			No. of Container(s)	0									
			Volume	1000mL									
				Isotopic Uranium									
Sample No.	Matrix *	Sample Date	Sample Time										
J1KV47 MMEOK	SOIL	9/12/11	0915	X									
J1KV48 MMEOR	SOIL	9/12/11	0750	X									
J1KV49 MMEOT	SOIL	9/12/11	0755	X									
J1KV50 MMEOV	SOIL	9/12/11	0805	X									
J1KV51 MMEOW	SOIL	9/12/11	0807	X									

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Chancy Stowe	9/12/11 1400	D. Newman	9/12/11 1400
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
D. Newman	9/12/11 1540	Birnham	1060#2 9.12.11 1540
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Birnham WCH	1060#2 9.13.11 1240	J Bock	TAL 9-13-11 1240
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 AJ DATE 9-13-11

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

02 of 81

Sw 9/12/11

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-075-256	Page 3 of 6

Collector: Q Stone	Company Contact: Joan Kessner — Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 8L — Data Turnaround: 21 Days
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 118-D-2:1 Burial Ground- Group A, Trench 1,2,3 & 6	SAF No.: RC-075	
Ice Chest No.: NA	Field Logbook No.: EL-1607-12 — COA: R118D22000	Method of Shipment: Hand deliver	
Shipped To: TestAmerica Incorporated, Richland	Offsite Property No.: NA	Bill of Lading/Air Bill No.: NA	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Rad < DOT

Special Handling and/or Storage

Cool 4 Deg. C

J01276

J1I130506

Due 10-4-11

SAMPLE ANALYSIS

			Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
			Type of Container	G/P	G/P	G	aG	aG	aG	G/P	G/P	G/P	G/P
			No. of Container(s)	1	1	1	1	1	1	1	0	0	0
			Volume	60mL	60mL	120mL	125mL	120mL	125mL	1000mL	1000mL	1000mL	1000mL
				See item (1) in Special Instructions.	Chromium Hex - 7196	TPH-Diesel Range - WTPH-D+	PAHs - 8310	PCBs - 8082	Chloro-Herbicides - EPA8151	See item (2) in Special Instructions.	Carbon-14; Tritium - H3	Nickel-63; Strontium-89,90 – Total Sr	Isotopic Plutonium
									RCF	27384			
Sample No.	Matrix *	Sample Date	Sample Time										
J1KV52 MMEOX	SOIL	9/12/11	0810		X					X	X	X	X
J1KV53 MMEOO	SOIL	9/12/11	0815		X					X	X	X	X
J1KV54 MMEO1	SOIL	9/12/11	0820		X					X	X	X	X
J1KV55 MMEO3	SOIL	9/12/11	0830		X					X	X	X	X
J1KV56 MMEO4	SOIL	9/12/11	0835		X					X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Quincy Stone	9/12/11 1400	D. Newman Denni Newman	9/12/11 1400
D. Newman Denni Newman	9/12/11 1540	Chris Bingham	106042 9-12-11 1540
Chris Bingham	106042 9-13-11 1240	J. Beck J Beck	TALE 9-13-11 1240

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) {Mercury}

(2) Gamma Spec (Client List) {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

REVIEWED BY AJ DATE 9-13-11

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.

023 82

TestAmerica Laboratories, Inc.

026 83

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-075-256	Page 4 of 6

Collector: Q Stowe	Company Contact: Joan Kessner — Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 8L — Data Turnaround: 21 Days
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 118-D-2:1 Burial Ground- Group A, Trench 1,2,3 & 6	SAF No.: RC-075	
Ice Chest No.: NA	Field Logbook No.: EL-1607-12 — COA: R118D22000	Method of Shipment: Hand deliver	
Shipped To: TestAmerica Incorporated, Richland	Offsite Property No.: NA	Bill of Lading/Air Bill No.: NA	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Rad < DOT

Special Handling and/or Storage

~~Cool 4 Deg. C~~ 9.12.11
None CMB

J01276
JI130506
Due 10-4-11

SAMPLE ANALYSIS

Preservation	None												
Type of Container	G/P												
No. of Container(s)	0												
Volume	1000mL												
	Isotopic Uranium									RCF	27384		
Sample No.	Matrix *	Sample Date	Sample Time										
J1KV52 mmE0X	SOIL	9/12/11	0810	X									
J1KV53 mmE00	SOIL	9/12/11	0815	X									
J1KV54 mmE01	SOIL	9/12/11	0820	X									
J1KV55 mmE03	SOIL	9/12/11	0830	X									
J1KV56 mmE04	SOIL	9/12/11	0835	X									

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From: Quincy Stowe	9/12/11 1400	Received By/Stored In: D. Newman Dennis Newman	9/12/11 1400
Relinquished By/Removed From: D. Newman Dennis Newman	9/12/11 1540	Received By/Stored In: Cindy Burnham	1060#2 9.12.11 1540
Relinquished By/Removed From: Cindy Burnham	1060#2 9/13/11 1240	Received By/Stored In: J. Bock J. Bock TALR	9-13-11 1240
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 AJ
DATE 9-13-11

Matrix *
S=Soil
SD=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-075-256	Page 5 of 8

Collector: Q Stone	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code: 8L	Data Turnaround: 21 Days		
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 118-D-2:1 Burial Ground- Group A, Trench 1,2,3 & 6		SAF No.: RC-075
Ice Chest No.: NA	Field Logbook No.: EL-1607-12	COA: R118D22000	Method of Shipment: Hand deliver
Shipped To: TestAmerica Incorporated, Richland	Offsite Property No.: NA		Bill of Lading/Air Bill No.: NA

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Rad < DOT

Special Handling and/or Storage

Cool 4 Deg. C

J01276

J1I130S06

Due 10-4-11

SAMPLE ANALYSIS

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G	aG	aG	G	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	0	0	0
Volume	60mL	60mL	120mL	125mL	120mL	125mL	1000mL	1000mL	1000mL	1000mL
	See item (1) in Special Instructions.	Chromium Hex - 7196	TPH-Diesel Range - WTPH-D+	PAHs - 8310	PCBs - 8082	Chloro-Herbicides - EPA8151	See item (2) in Special Instructions.	Carbon-14; Tritium - H3	Nickel-63; Strontium-89,90 – Total Sr	Isotopic Plutonium

RCF 27384

Sample No.	Matrix *	Sample Date	Sample Time									
J1KV57 MMEO9	SOIL	9/12/11	0840		X					X	X	X	X
J1KV58 MMEID	SOIL	9/12/11	1020		X					X	X	X	X
J1KV59 MMEIG	SOIL	9/12/11	0750		X					X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Quincy Stone	9/12/11 1400	D. Newman	9/12/11 1400
D. Newman	9/12/11 1540	Cynthia Bingham	1060172 9-12-11 1540
Cynthia Bingham	1060172 9-13-11 1240	J. Stock	9-13-11 1240

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) {Mercury}

(2) Gamma Spec (Client List) {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

REVIEWED BY AJ DATE 9-13-11

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

027 84

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-075-256	Page 6 of 6
Collector: Q Stone	Company Contact: Joan Kessner; Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 8L; Data Turnaround: 21 Days
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 118-D-2:1 Burial Ground- Group A, Trench 1,2,3 & 6	SAF No.: RC-075	
Ice Chest No.: NA	Field Logbook No.: EL-1607-12; COA: R118D22000	Method of Shipment: Hand deliver	
Shipped To: TestAmerica Incorporated, Richland	Offsite Property No.: NA	Bill of Lading/Air Bill No.: NA	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Rad < DOT

Special Handling and/or Storage

~~Cool 4 Deg. C~~ 9-12-11 CMB

None

J01276
J1I130506
Due 10-4-11

SAMPLE ANALYSIS

Preservation	None											
Type of Container	G/P											
No. of Container(s)	0											
Volume	1000mL											
	Isotopic Uranium											
Sample No.	Matrix *	Sample Date	Sample Time							RCF 2738		
J1KV57 MME09	SOIL	9/12/11	0840	X								
J1KV58 MME1D	SOIL	9/12/11	1020	X								
J1KV59 MME1G	SOIL	9/12/11	0750	X								

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From: Quincy Stone; Date/Time: 9/12/11 1400	Received By/Stored In: D Newman Denni Newman; Date/Time: 9/12/11 1400	
Relinquished By/Removed From: D. Newman Denni Newman; Date/Time: 9/12/11 1540	Received By/Stored In: Burgham; Date/Time: 9-12-11 1540	
Relinquished By/Removed From: Burgham; Date/Time: 9-13-11 1240	Received By/Stored In: J Bock; TALL 9-13-11 1240	
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	

Matrix *: S=Soil; SD=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

REVIEWED BY AJ DATE 9-13-11

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

WCH-EE-011

TestAmerica Laboratories, Inc.

028 85

Appendix 5

Data Validation Supporting Documentation

APPENDIX A

RADIOCHEMICAL DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT:	118-D-2:1		DATA PACKAGE:	J01276	
VALIDATOR:	ELR	LAB: TAL		DATE: 10/23/11	
			SDG:	J01276	

ANALYSES PERFORMED

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

SAMPLES/MATRIX

J1KU47	J1KU48	J1KV49	J1KV50
J1KV51	J1KV52	J1KV53	J1KV54
J1KV55	J1KV56	J1KV57	J1KV58
J1KV59			
			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-234 or U-235 LCS - J all

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 – J all

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: _____

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: NO 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: _____

_____

_____

_____

_____

Appendix 6

Additional Documentation Requested by Client

QC Results Summary

TestAmerica TARL

Ordered by Method, Batch No, QC Type,.

Date: 30-Sep-11

Report No. : 48632

SDG No.: J01276

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
PUISO_PLATE_AEA								
1257097 BLANK QC,								
MME8W1AA	PU-238	0.00E+00 +- 6.6E-02	U	pCi/g	100%			1.24E-01
	PU239/40	0.00E+00 +- 6.6E-02	U	pCi/g	100%			1.24E-01
1257097 LCS,								
MME8W1AC	PU239/40	6.80E+00 +- 1.7E+00		pCi/g	100%	102%	0.0	1.22E-01
UISO_IE_PLATE_AEA								
1257096 BLANK QC,								
MME8V1AA	U-234	5.02E-02 +- 7.2E-02	U	pCi/g	87%			9.41E-02
	U-235	0.00E+00 +- 5.0E-02	U	pCi/g	87%			9.41E-02
	U-238	-5.03E-03 +- 5.0E-02	U	pCi/g	87%			1.20E-01
1257096 LCS,								
MME8V1AC	U-234	3.86E+00 +- 1.1E+00		pCi/g	67%	119%	0.2	1.42E-01
	U-238	3.69E+00 +- 1.1E+00		pCi/g	67%	109%	0.1	1.27E-01
GAMMA_GS								
1257088 BLANK QC,								
MME8P1AA	AMERICIUM 241	-1.20E-02 +- 4.0E-02	U	pCi/g				6.81E-02
	CO-60	1.07E-03 +- 1.3E-02	U	pCi/g				2.51E-02
	CS-137	-7.87E-03 +- 1.4E-02	U	pCi/g				2.25E-02
	EU-152	-1.15E-03 +- 3.6E-02	U	pCi/g				6.41E-02
	EU-154	-3.47E-02 +- 4.3E-02	U	pCi/g				7.09E-02
	EU-155	-6.94E-03 +- 2.8E-02	U	pCi/g				4.84E-02
1257088 LCS,								
MME8P1AC	CS-137	1.07E+00 +- 1.5E-01		pCi/g		100%	0.0	3.04E-02
SRTOT_SEP_PRECIP_GPC								
1257087 BLANK QC,								
MME8N1AA	STRONTIUM	-1.91E-02 +- 4.6E-02	U	pCi/g	91%			1.15E-01
1257087 LCS,								
MME8N1AC	STRONTIUM	9.28E-01 +- 2.7E-01		pCi/g	89%	83%	-0.2	1.14E-01
906.0_H3_LSC								
1257089 BLANK QC,								
MME8Q1AA	H-3	4.75E-03 +- 1.6E-02	U	pCi/g	100%			3.63E-02
1257089 LCS,								
MME8Q1AC	H-3	2.57E-01 +- 2.3E-02		pCi/g	100%	104%	0.0	3.20E-02
NI63_LSC								
1257090 BLANK QC,								
MME8R1AA	NI-63	-1.25E-01 +- 6.5E+00	U	pCi/g	92%			1.40E+01
1257090 LCS,								
MME8R1AC	NI-63	4.83E+02 +- 4.9E+01		pCi/g	97%	78%	-0.2	1.27E+01
C14_CHEM_LSC								
1257094 BLANK QC,								
MME8T1AA	C-14	2.25E-03 +- 5.2E-03	U	pCi/g	100%			1.15E-02
1257094 LCS,								

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.

037

QC Results Summary

Date: 30-Sep-11

TestAmerica TARL

Ordered by Method, Batch No, QC Type,.

Report No. : 48632

SDG No.: J01276

Batch Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Tracer Yield	LCS Recovery	Bias	MDC|MDA
MME8T1AC	C-14	7.27E+00 +- 5.2E-01		pCi/g	100%	99%	0.0	4.61E-01
7196_CR6								
1258059 MATRIX SPIKE, J1KV47								
MME0K1AL	HEXCHROME	8.81E+00 +- 0.0E+00		mg/kg	N/A	87%	-0.1	1.55E-01
1258059 LCS,								
MMF2P1AC	HEXCHROME	1.98E+01 +- 0.0E+00		mg/kg	N/A	99%	0.0	1.55E-01
1258059 BLANK QC,								
MMF2P1AA	HEXCHROME	1.55E-01 +- 0.0E+00	U	mg/kg	N/A			1.55E-01

No. of Results: 26

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.

Date: 28 October 2011
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: 100/D/DR Burial Grounds & Remaining Sites – Soil Full Protocol - Waste Subsite 118-D-2:1
Subject: Polyaromatic Hydrocarbons - Data Package No. J01276-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. J01276 prepared by TestAmerica Laboratory 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
J1KV47	9/12/11	Soil	C	See note 1
J1KV48	9/12/11	Soil	C	See note 1
J1KV49	9/12/11	Soil	C	See note 1
J1KV50	9/12/11	Soil	C	See note 1
J1KV51	9/12/11	Soil	C	See note 1
J1KV52	9/12/11	Soil	C	See note 1
J1KV53	9/12/11	Soil	C	See note 1
J1KV54	9/12/11	Soil	C	See note 1
J1KV55	9/12/11	Soil	C	See note 1
J1KV56	9/12/11	Soil	C	See note 1
J1KV57	9/12/11	Soil	C	See note 1
J1KV58	9/12/11	Soil	C	See note 1
J1KV59	9/12/11	Soil	C	See note 1

1 – Polyaromatic hydrocarbons by 8310.

Data validation was conducted in accordance with the Washington Closure Hanford Incorporated (WCH) validation statement of work and the 100 Area Burial Grounds Remedial Action Sampling and Analysis Plan (DOE/RL-2001-35, December 2001). 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 Blanks

No field blank was 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 duplicate results were acceptable.

Field Duplicate Samples

One set of field duplicates (J1KV48/J1KV59) were submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field

duplicate results were 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. No RQLs were specified.

- **Completeness**

Data package No. J01276 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-2001-35, Rev. 0, *100 Area Burial Grounds Remedial Action Sampling and Analysis Plan*, U.S. Department of Energy, December 2001.

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 HYDROCARBONS DATA QUALIFICATION SUMMARY*

SDG: J01276	REVIEWER: ELR	Project: 118-D-2:1	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: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV47

10/27/11

Lab Sample ID: 280-20242-1
Client Matrix: Solid
% Moisture: 1.2

Date Sampled: 09/12/2011 0915
Date Received: 09/14/2011 0900

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-87149	Instrument ID:	CHHPLC_G
Prep Method:	3550C	Prep Batch:	280-86834	Initial Weight/Volume:	32.7 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	09/23/2011 0853			Injection Volume:	20 uL
Prep Date:	09/19/2011 1735			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		9.3	U	9.3	93
Acenaphthylene		8.4	U	8.4	93
Anthracene		2.8	U	2.8	19
Benzo[a]anthracene		3.0	U	3.0	14
Benzo[a]pyrene		6.0	U	6.0	14
Benzo[b]fluoranthene		3.9	U	3.9	14
Benzo[g,h,i]perylene		6.7	U	6.7	28
Benzo[k]fluoranthene		3.7	U	3.7	14
Chrysene		4.5	U	4.5	37
Dibenzo(a,h)anthracene		10	U	10	28
Fluoranthene		12	U	12	37
Fluorene		4.9	U	4.9	28
Indeno[1,2,3-cd]pyrene		11	U	11	28
Naphthalene		11	U	11	93
Phenanthrene		11	U	11	37
Pyrene		11	U	11	37

Surrogate	%Rec	Qualifier	Acceptance Limits
Terphenyl-d14 (SUR)	91		72 - 115

010

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

10/22/14

Client Sample ID: J1KV48

Lab Sample ID: 280-20242-2
Client Matrix: Solid
% Moisture: 1.3

Date Sampled: 09/12/2011 0750
Date Received: 09/14/2011 0900

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-87149	Instrument ID:	CHHPLC_G
Prep Method:	3550C	Prep Batch:	280-86834	Initial Weight/Volume:	31.6 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	09/23/2011 0924			Injection Volume:	20 uL
Prep Date:	09/19/2011 1735			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		9.6	U	9.6	96
Acenaphthylene		8.7	U	8.7	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		13	U	13	38
Fluorene		5.1	U	5.1	29
Indeno[1,2,3-cd]pyrene		12	U	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

011

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

10/27/11

Client Sample ID: **J1KV49**

Lab Sample ID: 280-20242-3
Client Matrix: Solid

% Moisture: 0.9

Date Sampled: 09/12/2011 0755
Date Received: 09/14/2011 0900

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-87149	Instrument ID:	CHHPLC_G
Prep Method:	3550C	Prep Batch:	280-86834	Initial Weight/Volume:	30.9 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	09/23/2011 0954			Injection Volume:	20 uL
Prep Date:	09/19/2011 1735			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		9.3	J	4.1	15
Benzo[g,h,i]perylene		7.1	U	7.1	29
Benzo[k]fluoranthene		3.9	J	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	Qualifier	Acceptance Limits
Terphenyl-d14 (SUR)	95		72 - 115

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01278

10/22/11

Client Sample ID: J1KV50

Lab Sample ID: 280-20242-4
Client Matrix: Solid

% Moisture: 2.8

Date Sampled: 09/12/2011 0805
Date Received: 09/14/2011 0900

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-87149	Instrument ID:	CHHPLC_G
Prep Method:	3550C	Prep Batch:	280-86834	Initial Weight/Volume:	31.3 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	09/23/2011 1126			Injection Volume:	20 uL
Prep Date:	09/19/2011 1735			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		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		7.1	U	7.1	30
Benzo[k]fluoranthene		3.9	U	3.9	15
Chrysene		4.8	U	4.8	39
Dibenzo(a,h)anthracene		11	U	11	30
Fluoranthene		13	U	13	39
Fluorene		5.2	U	5.2	30
Indeno[1,2,3-cd]pyrene		12	U	12	30
Naphthalene		12	U	12	99
Phenanthrene		12	U	12	39
Pyrene		12	U	12	39

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

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

10/27/11

Client Sample ID: J1KV51

Lab Sample ID: 280-20242-5
Client Matrix: Solid

% Moisture: 0.9

Date Sampled: 09/12/2011 0807
Date Received: 09/14/2011 0900

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-87149	Instrument ID:	CHHPLC_G
Prep Method:	3550C	Prep Batch:	280-86834	Initial Weight/Volume:	31.7 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	09/23/2011 1157			Injection Volume:	20 uL
Prep Date:	09/19/2011 1735			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		11	U	11	29
Fluoranthene		12	U	12	38
Fluorene		5.0	U	5.0	29
Indeno[1,2,3-cd]pyrene		11	U	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)	95		72 - 115

014

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01278

10/27/11

Client Sample ID: J1KV52

Lab Sample ID: 280-20242-6
Client Matrix: Solid

% Moisture: 1.2

Date Sampled: 09/12/2011 0810
Date Received: 09/14/2011 0900

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-87149	Instrument ID:	CHHPLC_G
Prep Method:	3550C	Prep Batch:	280-86834	Initial Weight/Volume:	30.8 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	09/23/2011 1227			Injection Volume:	20 uL
Prep Date:	09/19/2011 1735			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		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		7.1	U	7.1	30
Benzo[k]fluoranthene		3.9	U	3.9	15
Chrysene		4.8	U	4.8	39
Dibenzo(a,h)anthracene		11	U	11	30
Fluoranthene		13	U	13	39
Fluorene		5.2	U	5.2	30
Indeno[1,2,3-cd]pyrene		12	U	12	30
Naphthalene		12	U	12	99
Phenanthrene		12	U	12	39
Pyrene		12	U	12	39

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

015

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

10/27/11

Client Sample ID: J1KV63

Lab Sample ID: 280-20242-7
Client Matrix: Solid

% Moisture: 0.9

Date Sampled: 09/12/2011 0815
Date Received: 09/14/2011 0900

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-87149	Instrument ID:	CHHPLC_G
Prep Method:	3550C	Prep Batch:	280-86834	Initial Weight/Volume:	31.0 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	09/23/2011 1449			Injection Volume:	20 uL
Prep Date:	09/19/2011 1735			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		3.8	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		5.2	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	Qualifier	Acceptance Limits
Terphenyl-d14 (SUR)	94		72 - 115

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

10/27/11

Client Sample ID: J1KV54

Lab Sample ID: 280-20242-8
Client Matrix: Solid

% Moisture: 1.1

Date Sampled: 09/12/2011 0820
Date Received: 09/14/2011 0900

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-87149	Instrument ID:	CHHPLC_G
Prep Method:	3550C	Prep Batch:	280-86834	Initial Weight/Volume:	31.5 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	09/23/2011 1520			Injection Volume:	20 uL
Prep Date:	09/19/2011 1735			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		9.6	U	9.6	96
Acenaphthylene		8.7	U	8.7	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	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	12	29
Naphthalene		12	U	12	96
Phenanthrene		12	U	12	39
Pyrene		12	U	12	39

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

017

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Client Sample ID: **J1KV55**

Lab Sample ID: 280-20242-9
Client Matrix: Solid

% Moisture: 1.1

10/27/11

Date Sampled: 09/12/2011 0830
Date Received: 09/14/2011 0900

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-87149	Instrument ID:	CHHPLC_G
Prep Method:	3550C	Prep Batch:	280-86834	Initial Weight/Volume:	32.1 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	09/23/2011 1550			Injection Volume:	20 uL
Prep Date:	09/19/2011 1735			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		9.4	U	9.4	94
Acenaphthylene		8.5	U	8.5	94
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		6.8	U	6.8	28
Benzo[k]fluoranthene		3.7	U	3.7	14
Chrysene		4.6	U	4.6	38
Dibenzo(a,h)anthracene		10	U	10	28
Fluoranthene		12	U	12	38
Fluorene		5.0	U	5.0	28
Indeno[1,2,3-cd]pyrene		11	U	11	28
Naphthalene		11	U	11	94
Phenanthrene		11	U	11	38
Pyrene		11	U	11	38

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

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

10/27/11

Client Sample ID: J1KV56

Lab Sample ID: 280-20242-10
Client Matrix: Solid
% Moisture: 7.6

Date Sampled: 09/12/2011 0835
Date Received: 09/14/2011 0900

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-87149	Instrument ID:	CHHPLC_G
Prep Method:	3550C	Prep Batch:	280-86834	Initial Weight/Volume:	31.5 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	09/23/2011 1621			Injection Volume:	20 uL
Prep Date:	09/19/2011 1735			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	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)	97		72 - 115

Analytical Data

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

10/27/11

Client Sample ID: J1KV57

Lab Sample ID: 280-20242-11
Client Matrix: Solid

% Moisture: 1.1

Date Sampled: 09/12/2011 0840
Date Received: 09/14/2011 0900

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-87149	Instrument ID:	CHHPLC_G
Prep Method:	3550C	Prep Batch:	280-86834	Initial Weight/Volume:	31.4 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	09/23/2011 1651			Injection Volume:	20 uL
Prep Date:	09/19/2011 1735			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		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		4.1	U	4.1	14
Benzo[g,h,i]perylene		7.0	U	7.0	29
Benzo[k]fluoranthene		3.8	U	3.8	14
Chrysene		4.7	U	4.7	39
Dibenzo(a,h)anthracene		11	U	11	29
Fluoranthene		17	J	13	39
Fluorene		5.1	U	5.1	29
Indeno[1,2,3-cd]pyrene		12	U	12	29
Naphthalene		12	U	12	97
Phenanthrene		12	U	12	39
Pyrene		15	J	12	39

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

020

Client: Washington Closure Hanford

10/27/11

Job Number: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV58

Lab Sample ID: 280-20242-12
Client Matrix: Solid
% Moisture: 1.1

Date Sampled: 09/12/2011 1020
Date Received: 09/14/2011 0900

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-87149	Instrument ID:	CHHPLC_G
Prep Method:	3550C	Prep Batch:	280-86834	Initial Weight/Volume:	31.4 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	09/23/2011 1722			Injection Volume:	20 uL
Prep Date:	09/19/2011 1735			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		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		4.1	U	4.1	14
Benzo[g,h,i]perylene		7.0	U	7.0	29
Benzo[k]fluoranthene		3.8	U	3.8	14
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	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)	87		72 - 115

10/27/11

Analytical Data

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV59

Lab Sample ID: 280-20242-13
Client Matrix: Solid

% Moisture: 1.3

Date Sampled: 09/12/2011 0750
Date Received: 09/14/2011 0900

8310 PAHs (HPLC)

Analysis Method:	8310	Analysis Batch:	280-87149	Instrument ID:	CHHPLC_G
Prep Method:	3550C	Prep Batch:	280-86834	Initial Weight/Volume:	31.6 g
Dilution:	1.0			Final Weight/Volume:	4000 uL
Analysis Date:	09/23/2011 1752			Injection Volume:	20 uL
Prep Date:	09/19/2011 1735			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Acenaphthene		9.6	U	9.6	96
Acenaphthylene		8.7	U	8.7	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	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)	97		72 - 115

022

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

CASE NARRATIVE

Client: Washington Closure Hanford

Project: WASHINGTON CLOSURE HANFORD

Report Number: 280-20242-1

SDG #: J01276
SAF#: RC-075

Date SDG Closed: September 14, 2011
Data Deliverable: 21 Day / Summary

CLIENT ID	LAB ID	ANALYSES REQUESTED	ANALYSES PERFORMED
J1KV47	280-20242-1	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV48	280-20242-2	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV49	280-20242-3	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV50	280-20242-4	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV51	280-20242-5	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV52	280-20242-6	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV53	280-20242-7	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV54	280-20242-8	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV55	280-20242-9	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV56	280-20242-10	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV57	280-20242-11	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV58	280-20242-12	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV59	280-20242-13	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A

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 9/14/2011; the samples arrived in good condition, properly preserved and on ice. The temperatures of the coolers at receipt were 3.8 C, 3.6 C, 4.8 C and 3.4 C.

GC SEMIVOLATILES - SW846 8082 - PCBs
The laboratory noted that a Sulfuric Acid clean-up was performed on sample J1KV57 to reduce matrix interferences.

Sample J1KV57 exhibited surrogate recoveries outside the control limits. The laboratory noted that this anomaly is due to obvious matrix interference; therefore, corrective action is deemed unnecessary.

The MS aliquot of the MS/MSD performed on sample J1KV50 exhibited a percent recovery outside the control limits for Aroclor 1016, and the associated sample result has been flagged "N". In addition, the RPD limit was exceeded for Aroclor 1016, and surrogate Tetrachloro-m-xylene was recovered outside control limits in the MS. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

No other anomalies were encountered.

GC SEMIVOLATILES - SW846 8151A - HERBICIDEs
In some cases, the RPD between the primary and confirmation columns exceeded 40% 2,4-DB. The lower of the two values have been reported, as matrix interference is evident. Associated results have been flagged with an "X".

Low levels of 2,4-DB are present in the method blank associated with batch 280-86708. Because the concentration in the method blank is not present at a level greater than half the reporting limit, corrective action is deemed unnecessary. Associated sample results present above the MDL and/or RL have been flagged with a "B".

The MS/MSD performed on sample J1KV59 exhibited percent recoveries outside the control limits for Dinoseb, and the associated sample result has been flagged "N". The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

No other anomalies were encountered.

GC SEMIVOLATILES - NWTPH-Dx - DRO
No anomalies were encountered.

HPLC - SW846 8310 - PAHs
No anomalies were encountered.

TOTAL METALS - SW846 6010B/7471A
Serial dilution of a digestate in batch 280-86260 indicates that physical and chemical interferences are present for several elements. Results have been flagged with an "X".

Low levels of Chromium are present in the method blank associated with batch 280-86260. Because the concentration in the method blank is not present at a level greater than half the reporting limit, 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 J1KV47; therefore, control limits are not applicable.

Silicon was recovered outside the control limits in the Matrix Spike performed on sample J1KV47, and the associated sample result has been flagged "N". 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.

The duplicate analysis of sample J1KV47 exhibited RPD data outside the control limits for Arsenic, Silicon and Sodium, 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.

4%, 3.8, 3.6, 3.4 / RISC 9/14

QVG 9/12/11

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-075-256	Page 1 of 3

Collector: Q Stowe	Company Contact: Joan Kessner; Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 8L; Data Turnaround: 21 Days
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 118-D-2:1 Burial Ground- Group A, Trench 1,2,3 & 6	SAF No.: RC-075	
Ice Chest No.: ERC-02-007	Field Logbook No.: EL-1607-12; COA: R118D22000	Method of Shipment: Fed Ex	
Shipped To: QVG 9/12/11 TestAmerica Incorporated, ~~Richland~~ Denver	Offsite Property No.: A100878/879	Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Rad < DOT

Special Handling and/or Storage

Cool 4 Deg. C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G	aG	aG	aG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	0	0	0
Volume	60mL	60mL	120mL	125mL	120mL	125mL	1000mL	1000mL	1000mL	1000mL

SAMPLE ANALYSIS

026

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions.	Chromium Hex - 7196	TPH-Diesel Range - WTPH-D+	PAHs - 8310	PCBs - 8082	Chloro-Herbicides - RPA8151	See item (2) in Special Instructions.	Carbon-14; Tritium - H3	Nickel-63; Strontium-90 -- Total Sr	Isotopic Plutonium
					QVG 9/12/11						QVG 9/12/11	RCF	27384
J1KV47	SOIL	9/12/11	0915	X		X	X	X	X				
J1KV48	SOIL	9/12/11	0750	X		X	X	X	X				
J1KV49	SOIL	9/12/11	0755	X		X	X	X	X				
J1KV50	SOIL	9/12/11	0805	X		X	X	X	X				
J1KV51	SOIL	9/12/11	0807	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	9/12/11 1400	D. Newman	9/12/11 1400
D. Newman	9/12/11 1540	A. Freier (106042)	1540 9-12-11
A. Freier (106042) (WCH)	1100 9-12-11	Fed Ex	
			9/14/11 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) (Mercury)

(2) Gamma Spec (Client List) (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)

SDG 301276

REVIEWED BY CMB DATE 9/13/11

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-075-256	Page 2 of 3

Collector: Q Stowe	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code: 8L	Data Turnaround: 21 Days		
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 118-D-2:1 Burial Ground- Group A, Trench 1,2,3 & 6		SAF No.: RC-075
Ice Chest No.: ERC-02-007	Field Logbook No.: EL-1607-12	COA: R118D22000	Method of Shipment: Fed Ex
Shipped To: TestAmerica Incorporated, ~~Richland~~ Denver	Offsite Property No.: A100 878/879		Bill of Lading/Air Bill No.: See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Rad < DOT

Special Handling and/or Storage

Cool 4 Deg. C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G	aG	aG	aG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	0	0	0
Volume	60mL	60mL	120mL	125mL	120mL	125mL	1000mL	1000mL	1000mL	1000mL

SAMPLE ANALYSIS

027

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions.	Chromium Hex - 196	TPH-Diesel Range - WTPH-D+	PAHs - 8310	PCBs - 8082	Chloro-Herbicides - EPA8151	See item (2) in Special Instructions.	Carbon-14; Tritium - H3	Nickel-63; Strontium-90 – Total Sr	Isotopic Plutonium
J1KV52	SOIL	9/12/11	0810	X		X	X	X	X				
J1KV53	SOIL	9/12/11	0815	X		X	X	X	X				
J1KV54	SOIL	9/12/11	0820	X		X	X	X	X				
J1KV55	SOIL	9/12/11	0830	X		X	X	X	X				
J1KV56	SOIL	9/12/11	0835	X		X	X	X	X				

RCF 27384

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Quincy Stowe	9/12/11 1400	D. Newman	9/12/11 1400
D. Newman	9/12/11 1540	A. Freier (1060 #2)	1540 9-12-11
A. Freier (WCH 1060, #2)	1100 9-13-11	Fed Ex	
			9/14/11 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) (Mercury)

(2) Gamma Spec (Client List) (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)

506
J01276

REVIEWED BY CMB DATE 9/13/11

Matrix *: S=Soil, SD=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-075-256	Page 1 of 13

Collector: Q Stone	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code: 8L	Data Turnaround: 21 Days		
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 118-D-2:1 Burial Ground- Group A, Trench 1,2,3 & 6		SAF No.: RC-075
Ice Chest No.: ERC-02-007	Field Logbook No.: EL-1607-12	COA: R118D22000	Method of Shipment: Fed Ex
Shipped To: TestAmerica Incorporated, ~~Richland~~ Denver	Offsite Property No.: A100878/879		Bill of Lading/Air Bill No.: See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Rad < DOT

Special Handling and/or Storage

Cool 4 Deg. C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G	aG	aG	aG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	0	0	0
Volume	60mL	60mL	120mL	125mL	120mL	125mL	1000mL	1000mL	1000mL	1000mL

028

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions.	Chromium Hex - 7196	TPH-Diesel Range - WTPH-D+	PAHs - 8310	PCBs - 8082	Chloro-Herbicides - BPA8151	See item (2) in Special Instructions.	Carbon-14; Tritium - H3	Nickel-63; Strontium-90 -- Total Sr	Isotopic Plutonium
												RCF 27384	
J1KV57	SOIL	9/12/11	0840	X		X	X	X	X				
J1KV58	SOIL	9/12/11	1020	X		X	X	X	X				
J1KV59	SOIL	9/12/11	0750	X		X	X	X	X				

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Quincy Stone	9/12/11 1400	D. Newman Denn Newman	9/12/11 1400
D. Newman Denn Newman	9/12/11 1540	A. Freier A. Freier (1060#2)	1540 9-12-11
A. Freier A. Freier (WCH 1060#2)	1100 9-13-11	Fed Ex	

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) (Mercury)

(2) Gamma Spec (Client List) (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)

506
J01276

REVIEWED BY CMB DATE 9/13/11

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

Appendix 5

Data Validation Supporting Documentation

GENERAL ORGANIC DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 118-D-2:1			DATA PACKAGE: J01276		
VALIDATOR: ELR		LAB: TAL		DATE: 10/23/11	
			SDG: J01276		
ANALYSES PERFORMED					
8015	8021	8141	8151	8315	8310
		WTPH-HCID	WTPH-G	WTPH-D	

SAMPLES/MATRIX:

J1KV47	J1KV48	J1KV49	J1KV50
J1KV51	J1KV52	J1KV53	J1KV54
J1KV55	J1KV56	J1KV57	J1KV58
J1KV59			
			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 PTS

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 PTS

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: 280-20242-1
Sdg Number: J01276

Method Blank - Batch: 280-86834

Method: 8310
Preparation: 3550C

Lab Sample ID:	MB 280-86834/1-A	Analysis Batch:	280-87149	Instrument ID:	CHHPLC_G
Client Matrix:	Solid	Prep Batch:	280-86834	Lab File ID:	SIG10081.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30.3 g
Analysis Date:	09/23/2011 0752	Units:	ug/Kg	Final Weight/Volume:	4000 uL
Prep Date:	09/19/2011 1735			Injection Volume:	20 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	Result	Qual	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	3.2	U	3.2	15
Benzo[a]pyrene	6.3	U	6.3	15
Benzo[b]fluoranthene	4.2	U	4.2	15
Benzo[g,h,i]perylene	7.1	U	7.1	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	5.2	U	5.2	30
Indeno[1,2,3-cd]pyrene	12	U	12	30
Naphthalene	12	U	12	99
Phenanthrene	12	U	12	40
Pyrene	12	U	12	40

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

035

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Lab Control Sample - Batch: 280-86834

Method: 8310
Preparation: 3550C

Lab Sample ID:	LCS 280-86834/2-A	Analysis Batch:	280-87149	Instrument ID:	CHHPLC_G
Client Matrix:	Solid	Prep Batch:	280-86834	Lab File ID:	SIG10082.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	31.2 g
Analysis Date:	09/23/2011 0823	Units:	ug/Kg	Final Weight/Volume:	4000 uL
Prep Date:	09/19/2011 1735			Injection Volume:	20 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Acenaphthene	1920	2050	107	78 - 116	
Acenaphthylene	1920	1900	99	76 - 115	
Anthracene	1920	1920	100	74 - 115	
Benzo[a]anthracene	1920	2090	109	85 - 120	
Benzo[a]pyrene	1920	1990	103	74 - 121	
Benzo[b]fluoranthene	1920	2050	107	85 - 115	
Benzo[g,h,i]perylene	1920	2130	111	85 - 120	
Benzo[k]fluoranthene	1920	1990	104	85 - 115	
Chrysene	1920	1980	103	83 - 115	
Dibenzo(a,h)anthracene	1920	2040	106	83 - 115	
Fluoranthene	1920	2040	106	83 - 115	
Fluorene	1920	1970	102	80 - 115	
Indeno[1,2,3-cd]pyrene	1920	2100	109	85 - 123	
Naphthalene	1920	1930	100	80 - 121	
Phenanthrene	1920	2010	104	80 - 115	
Pyrene	1920	1990	104	75 - 116	

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

036

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-86834

Method: 8310
Preparation: 3550C

MS Lab Sample ID:	280-20242-3	Analysis Batch:	280-87149	Instrument ID:	CHHPLC_G
Client Matrix:	Solid	Prep Batch:	280-86834	Lab File ID:	SIG10086.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	32.6 g
Analysis Date:	09/23/2011 1025			Final Weight/Volume:	4000 uL
Prep Date:	09/19/2011 1735			Injection Volume:	20 uL
Leach Date:	N/A			Column ID:	PRIMARY

MSD Lab Sample ID:	280-20242-3	Analysis Batch:	280-87149	Instrument ID:	CHHPLC_G
Client Matrix:	Solid	Prep Batch:	280-86834	Lab File ID:	SIG10087.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30.9 g
Analysis Date:	09/23/2011 1056			Final Weight/Volume:	4000 uL
Prep Date:	09/19/2011 1735			Injection Volume:	20 uL
Leach Date:	N/A			Column ID:	PRIMARY

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Acenaphthene	103	102	78 - 116	4	20		
Acenaphthylene	95	94	76 - 115	4	21		
Anthracene	95	96	74 - 115	6	20		
Benzo[a]anthracene	104	107	85 - 120	8	20		
Benzo[a]pyrene	99	101	74 - 121	7	20		
Benzo[b]fluoranthene	102	105	85 - 115	8	20		
Benzo[g,h,i]perylene	107	109	85 - 120	8	20		
Benzo[k]fluoranthene	100	102	85 - 115	8	20		
Chrysene	95	98	83 - 115	8	20		
Dibenzo(a,h)anthracene	102	105	83 - 115	8	20		
Fluoranthene	102	104	83 - 115	8	20		
Fluorene	98	97	80 - 115	4	20		
Indeno[1,2,3-cd]pyrene	105	108	85 - 123	8	20		
Naphthalene	95	93	80 - 121	3	20		
Phenanthrene	99	100	80 - 115	6	20		
Pyrene	100	102	75 - 116	7	20		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
Terphenyl-d14 (SUR)	91	93	72 - 115

037

Date: 28 October 2011
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: 100/D/DR Burial Grounds & Remaining Sites – Soil Full Protocol - Waste Subsite 118-D-2:1
Subject: PCB - Data Package No. J01276-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. J01276 prepared by TestAmerica Laboratory 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
J1KV47	9/12/11	Soil	C	See note 1
J1KV48	9/12/11	Soil	C	See note 1
J1KV49	9/12/11	Soil	C	See note 1
J1KV50	9/12/11	Soil	C	See note 1
J1KV51	9/12/11	Soil	C	See note 1
J1KV52	9/12/11	Soil	C	See note 1
J1KV53	9/12/11	Soil	C	See note 1
J1KV54	9/12/11	Soil	C	See note 1
J1KV55	9/12/11	Soil	C	See note 1
J1KV56	9/12/11	Soil	C	See note 1
J1KV57	9/12/11	Soil	C	See note 1
J1KV58	9/12/11	Soil	C	See note 1
J1KV59	9/12/11	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.

Due to a matrix spike recovery outside QC limits (48%), all aroclor-1016 results were qualified as estimates and flagged "J".

All other 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.

Due to surrogate recoveries outside QC limits, all PCB results in sample J1KV57 were qualified as estimates and flagged "J".

All other 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.

Due to an RPD outside QC limits (66%), all aroclor-1016 results were qualified as estimates and flagged "J".

All other precision results were acceptable.

Field Duplicate Samples

One set of field duplicates (J1KV48/J1KV59) was submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicate results were 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. J01276 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 a matrix spike recovery outside QC limits (48%), all aroclor-1016 results were qualified as estimates and flagged "J".
- Due to surrogate recoveries outside QC limits, all PCB results in sample J1KV57 were qualified as estimates and flagged "J".
- Due to an RPD outside QC limits (66%), all aroclor-1016 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 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: J01276	REVIEWER: ELR	Project: 118-D-2:1	PAGE 1 OF 1
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Aroclor-1016	J	All	MS recovery & RPD
All	J	J1KV57	Surrogate 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: 280-20242-1
Sdg Number: J01276

V 10/27/11

Client Sample ID: J1KV47

Lab Sample ID: 280-20242-1
Client Matrix: Solid

% Moisture: 1.2

Date Sampled: 09/12/2011 0915
Date Received: 09/14/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-87452	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-87077	Initial Weight/Volume:	30.5 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	09/22/2011 1401			Injection Volume:	1 uL
Prep Date:	09/21/2011 1050			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.8	U J	2.8	10
Aroclor 1221		8.0	U	8.0	16
Aroclor 1232		2.0	U	2.0	10
Aroclor 1242		4.6	U	4.6	10
Aroclor 1248		4.6	U	4.6	10
Aroclor 1254		2.6	U	2.6	10
Aroclor 1260		2.6	U	2.6	10

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	113		59 - 130
Tetrachloro-m-xylene	98		53 - 128

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

10/27/4

Client Sample ID: J1KV48

Lab Sample ID: 280-20242-2
Client Matrix: Solid
% Moisture: 1.3

Date Sampled: 09/12/2011 0750
Date Received: 09/14/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-87452	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-87077	Initial Weight/Volume:	31.4 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	09/22/2011 1433			Injection Volume:	1 uL
Prep Date:	09/21/2011 1050			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.7	U J	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	113		59 - 130
Tetrachloro-m-xylene	99		53 - 128

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

10/27/11

Client Sample ID: J1KV49

Lab Sample ID: 280-20242-3
Client Matrix: Solid
% Moisture: 0.9

Date Sampled: 09/12/2011 0755
Date Received: 09/14/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-87452	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-87077	Initial Weight/Volume:	31.2 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	09/22/2011 1505			Injection Volume:	1 uL
Prep Date:	09/21/2011 1050			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.7	U J	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	108		59 - 130
Tetrachloro-m-xylene	102		53 - 128

Client: Washington Closure Hanford

10/22/11

Job Number: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV50

Lab Sample ID: 280-20242-4
Client Matrix: Solid
% Moisture: 2.8

Date Sampled: 09/12/2011 0805
Date Received: 09/14/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-87452	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-87077	Initial Weight/Volume:	31.2 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	09/22/2011 1537			Injection Volume:	1 uL
Prep Date:	09/21/2011 1050			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.7	U N J	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	108		59 - 130
Tetrachloro-m-xylene	99		53 - 128

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

10/27/11

Client Sample ID: J1KV51

Lab Sample ID: 280-20242-5
Client Matrix: Solid
% Moisture: 0.9

Date Sampled: 09/12/2011 0807
Date Received: 09/14/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-87452	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-87077	Initial Weight/Volume:	31.9 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	09/22/2011 1712			Injection Volume:	1 uL
Prep Date:	09/21/2011 1050			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.6	U J	2.6	9.5
Aroclor 1221		7.6	U	7.6	16
Aroclor 1232		1.9	U	1.9	9.5
Aroclor 1242		4.4	U	4.4	9.5
Aroclor 1248		4.4	U	4.4	9.5
Aroclor 1254		2.5	U	2.5	9.5
Aroclor 1260		2.5	U	2.5	9.5

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	111		59 - 130
Tetrachloro-m-xylene	100		53 - 128

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

10/22/11

Client Sample ID: J1KV62

Lab Sample ID: 280-20242-6
Client Matrix: Solid
% Moisture: 1.2

Date Sampled: 09/12/2011 0810
Date Received: 09/14/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-87452	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-87077	Initial Weight/Volume:	31.5 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	09/22/2011 1744			Injection Volume:	1 uL
Prep Date:	09/21/2011 1050			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.7	U J	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	112		59 - 130
Tetrachloro-m-xylene	97		53 - 128

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

10/22/11

Client Sample ID: J1KV53

Lab Sample ID: 280-20242-7
Client Matrix: Solid

% Moisture: 0.9

Date Sampled: 09/12/2011 0815
Date Received: 09/14/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-87452	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-87077	Initial Weight/Volume:	30.3 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	09/22/2011 1848			Injection Volume:	1 uL
Prep Date:	09/21/2011 1050			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.8	U J	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	107		59 - 130
Tetrachloro-m-xylene	93		53 - 128

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

10/27/11

Client Sample ID: J1KV54

Lab Sample ID: 280-20242-8
Client Matrix: Solid
% Moisture: 1.1

Date Sampled: 09/12/2011 0820
Date Received: 09/14/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-87452	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-87077	Initial Weight/Volume:	30.4 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	09/22/2011 1920			Injection Volume:	1 uL
Prep Date:	09/21/2011 1050			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.8	U J	2.8	10
Aroclor 1221		8.0	U	8.0	16
Aroclor 1232		2.0	U	2.0	10
Aroclor 1242		4.6	U	4.6	10
Aroclor 1248		4.6	U	4.6	10
Aroclor 1254		2.6	U	2.6	10
Aroclor 1260		2.6	U	2.6	10

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	110		59 - 130
Tetrachloro-m-xylene	95		53 - 128

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

10/27/11

Client Sample ID: J1KV55

Lab Sample ID: 280-20242-9
Client Matrix: Solid
% Moisture: 1.1

Date Sampled: 09/12/2011 0830
Date Received: 09/14/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-87452	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-87077	Initial Weight/Volume:	32.2 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	09/22/2011 1951			Injection Volume:	1 uL
Prep Date:	09/21/2011 1050			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.6	U J	2.6	9.4
Aroclor 1221		7.6	U	7.6	16
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	106		59 - 130
Tetrachloro-m-xylene	99		53 - 128

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

10/21/11

Client Sample ID: **J1KV56**

Lab Sample ID: 280-20242-10
Client Matrix: Solid
% Moisture: 7.6

Date Sampled: 09/12/2011 0835
Date Received: 09/14/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-87452	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-87077	Initial Weight/Volume:	30.4 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	09/22/2011 2023			Injection Volume:	1 uL
Prep Date:	09/21/2011 1050			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		3.0	U J	3.0	11
Aroclor 1221		8.6	U	8.6	18
Aroclor 1232		2.1	U	2.1	11
Aroclor 1242		5.0	U	5.0	11
Aroclor 1248		5.0	U	5.0	11
Aroclor 1254		2.8	U	2.8	11
Aroclor 1260		2.8	U	2.8	11

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	111		59 - 130
Tetrachloro-m-xylene	100		53 - 128

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV57

Lab Sample ID: 280-20242-11
Client Matrix: Solid

% Moisture: 1.1

10/27/11

Date Sampled: 09/12/2011 0840
Date Received: 09/14/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-87452	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-87077	Initial Weight/Volume:	32.3 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	09/22/2011 2055			Injection Volume:	1 uL
Prep Date:	09/21/2011 1050			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.6	U J	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	52	*	59 - 130
Tetrachloro-m-xylene	46	*	53 - 128

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV58

Lab Sample ID: 280-20242-12
Client Matrix: Solid

% Moisture: 1.1

10/27/11

Date Sampled: 09/12/2011 1020
Date Received: 09/14/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-87452	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-87077	Initial Weight/Volume:	31.1 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	09/22/2011 2127			Injection Volume:	1 uL
Prep Date:	09/21/2011 1050			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.7	U J	2.7	9.8
Aroclor 1221		7.8	U	7.8	16
Aroclor 1232		2.0	U	2.0	9.8
Aroclor 1242		4.5	U	4.5	9.8
Aroclor 1248		4.5	U	4.5	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	107		59 - 130
Tetrachloro-m-xylene	100		53 - 128

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV59

Lab Sample ID: 280-20242-13
Client Matrix: Solid

% Moisture: 1.3

10/27/11

Date Sampled: 09/12/2011 0750
Date Received: 09/14/2011 0900

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	280-87452	Instrument ID:	GCS_W
Prep Method:	3550C	Prep Batch:	280-87077	Initial Weight/Volume:	32.0 g
Dilution:	1.0			Final Weight/Volume:	5000 uL
Analysis Date:	09/22/2011 2158			Injection Volume:	1 uL
Prep Date:	09/21/2011 1050			Result Type:	PRIMARY

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
Aroclor 1016		2.6	U J	2.6	9.5
Aroclor 1221		7.6	U	7.6	16
Aroclor 1232		1.9	U	1.9	9.5
Aroclor 1242		4.4	U	4.4	9.5
Aroclor 1248		4.4	U	4.4	9.5
Aroclor 1254		2.5	U	2.5	9.5
Aroclor 1260		2.5	U	2.5	9.5

Surrogate	%Rec	Qualifier	Acceptance Limits
Decachlorobiphenyl	111		59 - 130
Tetrachloro-m-xylene	88		53 - 128

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

CASE NARRATIVE

Client: Washington Closure Hanford

Project: WASHINGTON CLOSURE HANFORD

Report Number: 280-20242-1

SDG #: J01276
SAF#: RC-075

Date SDG Closed: September 14, 2011
Data Deliverable: 21 Day / Summary

CLIENT ID	LAB ID	ANALYSES REQUESTED	ANALYSES PERFORMED
J1KV47	280-20242-1	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV48	280-20242-2	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV49	280-20242-3	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV50	280-20242-4	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV51	280-20242-5	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV52	280-20242-6	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV53	280-20242-7	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV54	280-20242-8	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV55	280-20242-9	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV56	280-20242-10	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV57	280-20242-11	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV58	280-20242-12	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV59	280-20242-13	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A

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 9/14/2011; the samples arrived in good condition, properly preserved and on ice. The temperatures of the coolers at receipt were 3.8 C, 3.6 C, 4.8 C and 3.4 C.

GC SEMIVOLATILES - SW846 8082 - PCBs
The laboratory noted that a Sulfuric Acid clean-up was performed on sample J1KV57 to reduce matrix interferences.

Sample J1KV57 exhibited surrogate recoveries outside the control limits. The laboratory noted that this anomaly is due to obvious matrix interference; therefore, corrective action is deemed unnecessary.

The MS aliquot of the MS/MSD performed on sample J1KV50 exhibited a percent recovery outside the control limits for Aroclor 1016, and the associated sample result has been flagged "N". In addition, the RPD limit was exceeded for Aroclor 1016, and surrogate Tetrachloro-m-xylene was recovered outside control limits in the MS. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

No other anomalies were encountered.

GC SEMIVOLATILES - SW846 8151A - HERBICIDEs
In some cases, the RPD between the primary and confirmation columns exceeded 40% 2,4-DB. The lower of the two values have been reported, as matrix interference is evident. Associated results have been flagged with an "X".

Low levels of 2,4-DB are present in the method blank associated with batch 280-86708. Because the concentration in the method blank is not present at a level greater than half the reporting limit, corrective action is deemed unnecessary. Associated sample results present above the MDL and/or RL have been flagged with a "B".

The MS/MSD performed on sample J1KV59 exhibited percent recoveries outside the control limits for Dinoseb, and the associated sample result has been flagged "N". The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

No other anomalies were encountered.

GC SEMIVOLATILES - NWTPH-Dx - DRO
No anomalies were encountered.

HPLC - SW846 8310 - PAHs
No anomalies were encountered.

TOTAL METALS - SW846 6010B/7471A
Serial dilution of a digestate in batch 280-86260 indicates that physical and chemical interferences are present for several elements. Results have been flagged with an "X".

Low levels of Chromium are present in the method blank associated with batch 280-86260. Because the concentration in the method blank is not present at a level greater than half the reporting limit, 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 J1KV47; therefore, control limits are not applicable.

Silicon was recovered outside the control limits in the Matrix Spike performed on sample J1KV47, and the associated sample result has been flagged "N". 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.

The duplicate analysis of sample J1KV47 exhibited RPD data outside the control limits for Arsenic, Silicon and Sodium, 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.

4%, 3.8, 3.6, 3.4 / RLSC 9/14

QNB 9/12/11

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-075-256	Page 1 of 3

Collector: Q Stowe	Company Contact: Joan Kessner — Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 8L — Data Turnaround: 21 Days
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 118-D-2:1 Burial Ground- Group A, Trench 1,2,3 & 6	SAF No.: RC-075	
Ice Chest No.: ERC-02-007	Field Logbook No.: EL-1607-12 — COA: R118D22000	Method of Shipment: Fed Ex	
Shipped To: QNB 9/12/11 TestAmerica Incorporated, ~~Richland~~ Denver	Offsite Property No.: A100878/879	Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Rad < DOT

Special Handling and/or Storage

Cool 4 Deg. C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G	aG	aG	aG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	0	0	0
Volume	60mL	60mL	120mL	125mL	120mL	125mL	1000mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	TPH-Diesel Range - WTPH-D+	PAHs - 8310	PCBs - 8082	Chloro-Herbicides - EPA8151	See item (2) in Special Instructions.	Carbon-14; Tritium - H3	Nickel-63; Strontium-89/90 -- Total Sr	Isotopic Plutonium
Sample No. / Matrix * / Sample Date / Sample Time										
J1KV47 / SOIL / 9/12/11 / 0915	X		X	X	X	X				
J1KV48 / SOIL / 9/12/11 / 0750	X		X	X	X	X				
J1KV49 / SOIL / 9/12/11 / 0755	X		X	X	X	X				
J1KV50 / SOIL / 9/12/11 / 0805	X		X	X	X	X				
J1KV51 / SOIL / 9/12/11 / 0807	X		X	X	X	X				

026

RCF 27384

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From: Quincy Stowe	Date/Time: 9/12/11 1400	Received By/Stored In: D. Newman	Date/Time: 9/12/11 1400
Relinquished By/Removed From: D. Newman	Date/Time: 9/12/11 1540	Received By/Stored In: 1060#2 A. Freier	Date/Time: 1540 9-12-11
Relinquished By/Removed From: WCH 1060#2 A. Freier	Date/Time: 1100 9-12-11	Received By/Stored In: Fed Ex	Date/Time:
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time: 9/14/11 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) (Mercury)

(2) Gamma Spec (Client List) (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)

REVIEWED BY CMB DATE 9/13/11

SDG J0L76

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-075-256	Page 2 of 3

Collector: Q. Stowe	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code: 8L	Data Turnaround: 21 Days		
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 118-D-2:1 Burial Ground- Group A, Trench 1,2,3 & 6		SAF No.: RC-075
Ice Chest No.: ERC-02-007	Field Logbook No.: EL-1607-12	COA: R118D22000	Method of Shipment: Fed Ex
Shipped To: TestAmerica Incorporated, ~~Richland~~ Denver	Offsite Property No.: A100 878/879		Bill of Lading/Air Bill No.: See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Rad < DOT

Special Handling and/or Storage

Cool 4 Deg. C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G	aG	aG	aG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	0	0	0
Volume	60mL	60mL	120mL	125mL	120mL	125mL	1000mL	1000mL	1000mL	1000mL

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions.	Chromium Hex - 7196	TPH-Diesel Range - WTPH-D+	PAHs - 8310	PCBs - 8082	Chloro-Herbicides - EPA8151	See item (2) in Special Instructions.	Carbon-14; Tritium - H3	Nickel-63; Strontium-90 -- Total Sr	Isotopic Plutonium
J1KV52	SOIL	9/12/11	0810	X		X	X	X	X				
J1KV53	SOIL	9/12/11	0815	X		X	X	X	X				
J1KV54	SOIL	9/12/11	0820	X		X	X	X	X				
J1KV55	SOIL	9/12/11	0830	X		X	X	X	X				
J1KV56	SOIL	9/12/11	0835	X		X	X	X	X				

RCF 27384

027

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Quincy Stowe	9/12/11 1400	D. Newman	9/12/11 1400
D. Newman	9/12/11 1540	1060 #2 A. Freier	1540 9-12-11
A. Freier (WCH)	1100 9-13-11	Fed Ex	
			9/14/11 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) (Mercury)

(2) Gamma Spec (Client List) (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)

SDG J61276

REVIEWED BY CMB DATE 9/13/11

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-075-256	Page 3 of 3

Collector: Q Stoma	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code: 8L	Data Turnaround: 21 Days		
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 118-D-2:1 Burial Ground- Group A, Trench 1,2,3 & 6		SAF No.: RC-075
Ice Chest No.: ERC-02-007	Field Logbook No.: EL-1607-12	COA: R118D22000	Method of Shipment: Fed Ex
Shipped To: TestAmerica Incorporated, ~~Richland~~ Denver	Offsite Property No.: A100878/879		Bill of Lading/Air Bill No.: SCC OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Rad < DOT

Special Handling and/or Storage

Cool 4 Deg. C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G	aG	aG	aG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	0	0	0
Volume	60mL	60mL	120mL	125mL	120mL	125mL	1000mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 196	TPH-Diesel Range - WTPH-D+	PAHs - 8310	PCBs - 8082	Chloro-Herbicides - EPA8151	See item (2) in Special Instructions.	Carbon-14; Tritium - H3	Nickel-63; Strontium-90 – Total Sr	Isotopic Plutonium

028

Sample No.	Matrix *	Sample Date	Sample Time										
J1KV57	SOIL	9/12/11	0840	X		X	X	X	X				
J1KV58	SOIL	9/12/11	1020	X		X	X	X	X				
J1KV59	SOIL	9/12/11	0750	X		X	X	X	X				
						/							

RCF 27384

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Quincy Stoma	9/12/11 1400	D. Newman Denn Newman	9/12/11 1400
D. Newman Denn Newman	9/12/11 1540	A. Freier A. Freier (106042)	9-12-11 1540
A. Freier A. Freier (WCH# 106042)	9-12-11 1100	Fed Ex	
		9/14/11 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) (Mercury)

(2) Gamma Spec (Client List) (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)

SDG J01276

REVIEWED BY CMB DATE 9/13/11

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

Appendix 5

Data Validation Supporting Documentation

PCB DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 118-D-211			DATA PACKAGE: J01276		
VALIDATOR: ELR		LAB: TAL		DATE: 10/23/11	
			SDG: J01276		
ANALYSES PERFORMED					
SW-846 8081	SW-846 8081 (TCLP)	SW-846 8082	SW-846 8081 (TCLP)		
SAMPLES/MATRIX					
J1KV47	J1KV51	J1KV54	J1KV57		
J1KV48	J1KV52	J1KV55	J1KV58		
J1KV49	J1KV53	J1KV56	J1KV59		
J1KV50					
				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: 57 - surr - J all

MS - 1014 - 487. - J all 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: 1014 - 1620 - Jall

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: 280-20242-1
Sdg Number: J01276

Method Blank - Batch: 280-87077

Method: 8082
Preparation: 3550C

Lab Sample ID:	MB 280-87077/1-A	Analysis Batch:	280-87452	Instrument ID:	GCS_W
Client Matrix:	Solid	Prep Batch:	280-87077	Lab File ID:	004F0401.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	31.4 g
Analysis Date:	09/22/2011 1257	Units:	ug/Kg	Final Weight/Volume:	5000 uL
Prep Date:	09/21/2011 1050			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	Result	Qual	MDL	RL
Aroclor 1016	2.6	U	2.6	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	Acceptance Limits
Decachlorobiphenyl	92	59 - 130
Tetrachloro-m-xylene	97	53 - 128

Lab Control Sample - Batch: 280-87077

Method: 8082
Preparation: 3550C

Lab Sample ID:	LCS 280-87077/2-A	Analysis Batch:	280-87452	Instrument ID:	GCS_W
Client Matrix:	Solid	Prep Batch:	280-87077	Lab File ID:	005F0501.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	32.1 g
Analysis Date:	09/22/2011 1329	Units:	ug/Kg	Final Weight/Volume:	5000 uL
Prep Date:	09/21/2011 1050			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Aroclor 1016	31.2	29.8	96	54 - 132	
Aroclor 1260	31.2	33.9	109	62 - 129	

Surrogate	% Rec	Acceptance Limits
Decachlorobiphenyl	108	59 - 130
Tetrachloro-m-xylene	96	53 - 128

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-87077

Method: 8082
Preparation: 3550C

MS Lab Sample ID:	280-20242-4	Analysis Batch:	280-87452	Instrument ID:	GCS_W
Client Matrix:	Solid	Prep Batch:	280-87077	Lab File ID:	010F1001.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30.5 g
Analysis Date:	09/22/2011 1608			Final Weight/Volume:	5000 uL
Prep Date:	09/21/2011 1050			Injection Volume:	1 uL
Leach Date:	N/A			Column ID:	PRIMARY

MSD Lab Sample ID:	280-20242-4	Analysis Batch:	280-87452	Instrument ID:	GCS_W
Client Matrix:	Solid	Prep Batch:	280-87077	Lab File ID:	011F1101.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	31.6 g
Analysis Date:	09/22/2011 1640			Final Weight/Volume:	5000 uL
Prep Date:	09/21/2011 1050			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	48	98	54 - 132	66	26	N	*
Aroclor 1260	85	113	62 - 129	25	26		

Surrogate	MS % Rec		MSD % Rec	Acceptance Limits
Decachlorobiphenyl	98		114	59 - 130
Tetrachloro-m-xylene	40	*	98	53 - 128

Date: 28 October 2011
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: 100/D/DR Burial Grounds & Remaining Sites – Soil Full Protocol - Waste Subsite 118-D-2:1
Subject: Inorganics - Data Package No. J01276-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. J01276 prepared by TestAmerica Laboratory 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
J1KV47	9/12/11	Soil	C	See note 1
J1KV48	9/12/11	Soil	C	See note 1
J1KV49	9/12/11	Soil	C	See note 1
J1KV50	9/12/11	Soil	C	See note 1
J1KV51	9/12/11	Soil	C	See note 1
J1KV52	9/12/11	Soil	C	See note 1
J1KV53	9/12/11	Soil	C	See note 1
J1KV54	9/12/11	Soil	C	See note 1
J1KV55	9/12/11	Soil	C	See note 1
J1KV56	9/12/11	Soil	C	See note 1
J1KV57	9/12/11	Soil	C	See note 1
J1KV58	9/12/11	Soil	C	See note 1
J1KV59	9/12/11	Soil	C	See note 1

1 - ICP metals (6010B) and mercury (7471A).

Data validation was conducted in accordance with the Washington Closure Hanford Incorporated (WCH) validation statement of work and the 100 Area Burial Grounds Remedial Action Sampling and Analysis Plan (DOE/RL-2001-35, December 2001). 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 28 days for mercury and 6 months for ICP metals.

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 blank 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.

Due to matrix spike recoveries outside QC limits, all antimony (53%) and silicon (-12%) results were qualified as estimates and flagged "J".

Due to an LCS recovery outside QC limits (23%), 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.

Due to RPDs outside QC limits, all silicon (47%) and sodium (32%) results were qualified as estimates and flagged "J".

All other laboratory duplicate results were acceptable.

Field Duplicate

One set of field duplicates (J1KV48/J1KV59) was submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field duplicate results were acceptable.

- **Analytical Detection Levels**

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

- **Completeness**

Data package No. J01276 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 (53%) and silicon (-12%) results were qualified as estimates and flagged "J".
- Due to an LCS recovery outside QC limits (23%), all silicon results were qualified as estimates and flagged "J".
- Due to RPDs outside QC limits, all silicon (47%) and sodium (32%) 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-2001-35, Rev. 0, *100 Area Burial Grounds Remedial Action Sampling and Analysis Plan*, U.S. Department of Energy, December 2001.

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

INORGANICS DATA QUALIFICATION SUMMARY*

SDG: J01276	REVIEWER: ELR	Project: 118-D-2:1	PAGE_1_OF_1
COMPOUND	QUALIFIER	SAMPLES AFFECTED	REASON
Antimony Silicon	J	All	MS recovery
Silicon	J	All	LCS recovery
Silicon Sodium	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

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV47

Lab Sample ID: 280-20242-1
Client Matrix: Solid

% Moisture: 1.2

10/22/11

Date Sampled: 09/12/2011 0915
Date Received: 09/14/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-88155	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-86260	Lab File ID:	26a092711.asc
Dilution:	1.0			Initial Weight/Volume:	1.13 g
Analysis Date:	09/27/2011 1619			Final Weight/Volume:	100 mL
Prep Date:	09/27/2011 0530				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7330	X	1.4	4.5
Antimony		0.34	U J	0.34	0.54
Arsenic		2.5	M	0.59	0.90
Barium		53.4	X	0.068	0.45
Beryllium		0.43		0.030	0.18
Boron		1.3	B	0.88	1.8
Cadmium		0.078	B	0.037	0.18
Calcium		7530	X	12.6	44.8
Chromium		8.5	X	0.052	0.18
Cobalt		8.9	X	0.090	0.90
Copper		18.3	X	0.19	0.90
Iron		19900	X	3.4	4.5
Lead		4.6		0.24	0.45
Magnesium		4770	X	3.3	17.9
Manganese		335	X	0.090	0.90
Molybdenum		0.44	B	0.23	1.8
Nickel		11.7	X	0.11	3.6
Potassium		1090		36.7	269
Selenium		0.77	U	0.77	0.90
Silicon		626	X M N J	5.1	9.0
Silver		0.14	U	0.14	0.18
Sodium		426	M J	52.8	107
Vanadium		49.6	X	0.084	1.8
Zinc		46.1	X	0.36	0.90

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-86968	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-86064	Lab File ID:	110920AA.txt
Dilution:	1.0			Initial Weight/Volume:	0.63 g
Analysis Date:	09/20/2011 0927			Final Weight/Volume:	50 mL
Prep Date:	09/19/2011 1450				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0053	U	0.0053	0.016

010

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV48

Lab Sample ID: 280-20242-2
Client Matrix: Solid

% Moisture: 1.3

10/27/11

Date Sampled: 09/12/2011 0750
Date Received: 09/14/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-88155	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-86260	Lab File ID:	26a092711.asc
Dilution:	1.0			Initial Weight/Volume:	1.15 g
Analysis Date:	09/27/2011 1630			Final Weight/Volume:	100 mL
Prep Date:	09/27/2011 0530				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4570	X	1.4	4.4
Antimony		0.33	U J	0.33	0.53
Arsenic		0.99		0.58	0.88
Barium		49.9	X	0.067	0.44
Beryllium		0.40		0.029	0.18
Boron		0.86	U	0.86	1.8
Cadmium		0.071	B	0.036	0.18
Calcium		4740	X	12.4	44.1
Chromium		4.0	X	0.051	0.18
Cobalt		8.9	X	0.088	0.88
Copper		16.2	X	0.19	0.88
Iron		22100	X	3.3	4.4
Lead		2.3		0.24	0.44
Magnesium		4090	X	3.3	17.8
Manganese		278	X	0.088	0.88
Molybdenum		0.36	B	0.23	1.8
Nickel		7.6	X	0.11	3.5
Potassium		734		36.1	264
Selenium		0.76	U	0.76	0.88
Silicon		418	X J	5.0	8.8
Silver		0.14	U	0.14	0.18
Sodium		319	J	52.0	106
Vanadium		57.5	X	0.083	1.8
Zinc		41.4	X	0.35	0.88

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-86968	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-86064	Lab File ID:	110920AA.txt
Dilution:	1.0			Initial Weight/Volume:	0.62 g
Analysis Date:	09/20/2011 0936			Final Weight/Volume:	50 mL
Prep Date:	09/19/2011 1450				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0054	U	0.0054	0.017

011

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV49

Lab Sample ID: 280-20242-3
Client Matrix: Solid

% Moisture: 0.9

10/22/11

Date Sampled: 09/12/2011 0755
Date Received: 09/14/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-88155	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-86260	Lab File ID:	26a092711.asc
Dilution:	1.0			Initial Weight/Volume:	1.05 g
Analysis Date:	09/27/2011 1633			Final Weight/Volume:	100 mL
Prep Date:	09/27/2011 0530				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7320	X	1.5	4.8
Antimony		0.37	U J	0.37	0.58
Arsenic		1.9		0.63	0.96
Barium		67.5	X	0.073	0.48
Beryllium		0.43		0.032	0.19
Boron		1.5	B	0.94	1.9
Cadmium		0.11	B	0.039	0.19
Calcium		6790	X	13.5	48.0
Chromium		9.4	X	0.056	0.19
Cobalt		8.1	X	0.096	0.96
Copper		16.9	X	0.21	0.96
Iron		20600	X	3.7	4.8
Lead		4.1		0.26	0.48
Magnesium		4790	X	3.6	19.2
Manganese		328	X	0.096	0.96
Molybdenum		0.25	U	0.25	1.9
Nickel		11.4	X	0.12	3.8
Potassium		1340		39.4	288
Selenium		0.83	U	0.83	0.96
Silicon		388	X J	5.4	9.6
Silver		0.15	U	0.15	0.19
Sodium		304	J	56.7	115
Vanadium		50.8	X	0.090	1.9
Zinc		43.7	X	0.38	0.96

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-86968	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-86064	Lab File ID:	110920AA.txt
Dilution:	1.0			Initial Weight/Volume:	0.67 g
Analysis Date:	09/20/2011 0938			Final Weight/Volume:	50 mL
Prep Date:	09/19/2011 1450				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.023		0.0050	0.015

012

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV50

Lab Sample ID: 280-20242-4
Client Matrix: Solid

% Moisture: 2.8

✓ 10/27/11

Date Sampled: 09/12/2011 0805
Date Received: 09/14/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-88155	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-86260	Lab File ID:	26a092711.asc
Dilution:	1.0			Initial Weight/Volume:	1.04 g
Analysis Date:	09/27/2011 1636			Final Weight/Volume:	100 mL
Prep Date:	09/27/2011 0530				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5490	X	1.5	4.9
Antimony		0.38	U J	0.38	0.59
Arsenic		1.5		0.65	0.99
Barium		83.5	X	0.075	0.49
Beryllium		0.42		0.033	0.20
Boron		0.97	U	0.97	2.0
Cadmium		0.10	B	0.041	0.20
Calcium		6760	X	14.0	49.5
Chromium		7.1	X	0.057	0.20
Cobalt		8.4	X	0.099	0.99
Copper		16.3	X	0.21	0.99
Iron		21100	X	3.8	4.9
Lead		3.2		0.27	0.49
Magnesium		4650	X	3.7	19.8
Manganese		315	X	0.099	0.99
Molybdenum		0.26	U	0.26	2.0
Nickel		9.9	X	0.12	4.0
Potassium		976		40.6	297
Selenium		0.85	U	0.85	0.99
Silicon		316	X J	5.6	9.9
Silver		0.16	U	0.16	0.20
Sodium		393	J	58.4	119
Vanadium		58.2	X	0.093	2.0
Zinc		42.8	X	0.39	0.99

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-86968	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-86064	Lab File ID:	110920AA.txt
Dilution:	1.0			Initial Weight/Volume:	0.69 g
Analysis Date:	09/20/2011 0940			Final Weight/Volume:	50 mL
Prep Date:	09/19/2011 1450				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0068	B	0.0049	0.015

013

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV51

Lab Sample ID: 280-20242-5
Client Matrix: Solid

% Moisture: 0.9

10/27/11

Date Sampled: 09/12/2011 0807
Date Received: 09/14/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-88155	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-86260	Lab File ID:	26a092711.asc
Dilution:	1.0			Initial Weight/Volume:	1.07 g
Analysis Date:	09/27/2011 1649			Final Weight/Volume:	100 mL
Prep Date:	09/27/2011 0530				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4660	X	1.5	4.7
Antimony		0.36	U J	0.36	0.57
Arsenic		0.85	B	0.62	0.94
Barium		45.4	X	0.072	0.47
Beryllium		0.43		0.031	0.19
Boron		0.92	U	0.92	1.9
Cadmium		0.091	B	0.039	0.19
Calcium		4700	X	13.3	47.1
Chromium		5.2	X	0.055	0.19
Cobalt		9.2	X	0.094	0.94
Copper		16.4	X	0.20	0.94
Iron		20800	X	3.6	4.7
Lead		2.4		0.25	0.47
Magnesium		4190	X	3.5	18.9
Manganese		280	X	0.094	0.94
Molybdenum		0.25	U	0.25	1.9
Nickel		9.6	X	0.12	3.8
Potassium		728		38.7	283
Selenium		0.81	U	0.81	0.94
Silicon		378	X J	5.3	9.4
Silver		0.15	U	0.15	0.19
Sodium		283	J	55.6	113
Vanadium		61.7	X	0.089	1.9
Zinc		42.7	X	0.38	0.94

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-86968	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-86064	Lab File ID:	110920AA.txt
Dilution:	1.0			Initial Weight/Volume:	0.66 g
Analysis Date:	09/20/2011 0943			Final Weight/Volume:	50 mL
Prep Date:	09/19/2011 1450				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.010	B	0.0051	0.016

014

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV52

Lab Sample ID: 280-20242-6
Client Matrix: Solid

% Moisture: 1.2

10/27/11

Date Sampled: 09/12/2011 0810
Date Received: 09/14/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-88155	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-86260	Lab File ID:	26a092711.asc
Dilution:	1.0			Initial Weight/Volume:	1.04 g
Analysis Date:	09/27/2011 1651			Final Weight/Volume:	100 mL
Prep Date:	09/27/2011 0530				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4060	X	1.5	4.9
Antimony		0.37	U J	0.37	0.58
Arsenic		0.64	U	0.64	0.97
Barium		54.5	X	0.074	0.49
Beryllium		0.41		0.032	0.19
Boron		0.95	U	0.95	1.9
Cadmium		0.076	B	0.040	0.19
Calcium		4330	X	13.7	48.7
Chromium		5.8	X	0.056	0.19
Cobalt		8.4	X	0.097	0.97
Copper		14.6	X	0.21	0.97
Iron		21600	X	3.7	4.9
Lead		2.0		0.26	0.49
Magnesium		4350	X	3.6	19.5
Manganese		275	X	0.097	0.97
Molybdenum		0.25	U	0.25	1.9
Nickel		12.8	X	0.12	3.9
Potassium		635		39.9	292
Selenium		0.84	U	0.84	0.97
Silicon		385	X J	5.5	9.7
Silver		0.16	U	0.16	0.19
Sodium		342	J	57.4	117
Vanadium		61.9	X	0.091	1.9
Zinc		39.6	X	0.39	0.97

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-86968	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-86064	Lab File ID:	110920AA.txt
Dilution:	1.0			Initial Weight/Volume:	0.61 g
Analysis Date:	09/20/2011 0945			Final Weight/Volume:	50 mL
Prep Date:	09/19/2011 1450				

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: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV53

Lab Sample ID: 280-20242-7
Client Matrix: Solid

% Moisture: 0.9

10/22/11

Date Sampled: 09/12/2011 0815
Date Received: 09/14/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-88155	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-86260	Lab File ID:	26a092711.asc
Dilution:	1.0			Initial Weight/Volume:	1.16 g
Analysis Date:	09/27/2011 1654			Final Weight/Volume:	100 mL
Prep Date:	09/27/2011 0530				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		4650	X	1.3	4.3
Antimony		0.33	U J	0.33	0.52
Arsenic		0.97		0.57	0.87
Barium		48.4	X	0.066	0.43
Beryllium		0.42		0.029	0.17
Boron		0.85	U	0.85	1.7
Cadmium		0.066	B	0.036	0.17
Calcium		6010	X	12.3	43.5
Chromium		5.6	X	0.050	0.17
Cobalt		8.2	X	0.087	0.87
Copper		15.1	X	0.19	0.87
Iron		21400	X	3.3	4.3
Lead		2.7		0.23	0.43
Magnesium		4230	X	3.2	17.4
Manganese		290	X	0.087	0.87
Molybdenum		0.23	U	0.23	1.7
Nickel		8.6	X	0.11	3.5
Potassium		772		35.6	261
Selenium		0.75	U	0.75	0.87
Silicon		385	X J	4.9	8.7
Silver		0.14	U	0.14	0.17
Sodium		305	J	51.3	104
Vanadium		60.1	X	0.082	1.7
Zinc		41.6	X	0.35	0.87

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-86968	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-86064	Lab File ID:	110920AA.txt
Dilution:	1.0			Initial Weight/Volume:	0.64 g
Analysis Date:	09/20/2011 0947			Final Weight/Volume:	50 mL
Prep Date:	09/19/2011 1450				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0052	U	0.0052	0.016

016

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV54

Lab Sample ID: 280-20242-8
Client Matrix: Solid

% Moisture: 1.1

10/22/11

Date Sampled: 09/12/2011 0820
Date Received: 09/14/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-88155	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-86260	Lab File ID:	26a092711.asc
Dilution:	1.0			Initial Weight/Volume:	1.11 g
Analysis Date:	09/27/2011 1657			Final Weight/Volume:	100 mL
Prep Date:	09/27/2011 0530				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5010	X	1.4	4.6
Antimony		0.35	U J	0.35	0.55
Arsenic		0.60	U	0.60	0.91
Barium		47.4	X	0.069	0.46
Beryllium		0.44		0.030	0.18
Boron		0.89	U	0.89	1.8
Cadmium		0.076	B	0.037	0.18
Calcium		5460	X	12.8	45.5
Chromium		5.1	X	0.053	0.18
Cobalt		8.9	X	0.091	0.91
Copper		16.3	X	0.20	0.91
Iron		23300	X	3.5	4.6
Lead		2.7		0.25	0.46
Magnesium		4680	X	3.4	18.2
Manganese		332	X	0.091	0.91
Molybdenum		0.24	U	0.24	1.8
Nickel		9.2	X	0.11	3.6
Potassium		807		37.3	273
Selenium		0.78	U	0.78	0.91
Silicon		414	X J	5.2	9.1
Silver		0.15	U	0.15	0.18
Sodium		317	J	53.7	109
Vanadium		65.1	X	0.086	1.8
Zinc		45.7	X	0.36	0.91

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-86968	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-86064	Lab File ID:	110920AA.txt
Dilution:	1.0			Initial Weight/Volume:	0.65 g
Analysis Date:	09/20/2011 0950			Final Weight/Volume:	50 mL
Prep Date:	09/19/2011 1450				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0052	U	0.0052	0.016

017

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV55

Lab Sample ID: 280-20242-9
Client Matrix: Solid

% Moisture: 1.1

10/27/11

Date Sampled: 09/12/2011 0830
Date Received: 09/14/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-88155	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-86260	Lab File ID:	26a092711.asc
Dilution:	1.0			Initial Weight/Volume:	1.00 g
Analysis Date:	09/27/2011 1659			Final Weight/Volume:	100 mL
Prep Date:	09/27/2011 0530				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		6600	X	1.6	5.1
Antimony		0.38	U J	0.38	0.61
Arsenic		1.7		0.67	1.0
Barium		45.1	X	0.077	0.51
Beryllium		0.46		0.033	0.20
Boron		0.99	U	0.99	2.0
Cadmium		0.068	B	0.041	0.20
Calcium		6670	X	14.3	50.5
Chromium		8.5	X	0.059	0.20
Cobalt		8.4	X	0.10	1.0
Copper		15.9	X	0.22	1.0
Iron		21200	X	3.8	5.1
Lead		4.0		0.27	0.51
Magnesium		5190	X	3.7	20.2
Manganese		339	X	0.10	1.0
Molybdenum		0.26	U	0.26	2.0
Nickel		11.5	X	0.12	4.0
Potassium		1180		41.4	303
Selenium		0.87	U	0.87	1.0
Silicon		331	X J	5.7	10.1
Silver		0.16	U	0.16	0.20
Sodium		289	J	59.6	121
Vanadium		56.1	X	0.095	2.0
Zinc		44.0	X	0.40	1.0

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-86968	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-86064	Lab File ID:	110920AA.txt
Dilution:	1.0			Initial Weight/Volume:	0.62 g
Analysis Date:	09/20/2011 0957			Final Weight/Volume:	50 mL
Prep Date:	09/19/2011 1450				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0059	B	0.0054	0.017

018

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV56

Lab Sample ID: 280-20242-10
Client Matrix: Solid

% Moisture: 7.6

10/27/11

Date Sampled: 09/12/2011 0835
Date Received: 09/14/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-88155	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-86260	Lab File ID:	26a092711.asc
Dilution:	1.0			Initial Weight/Volume:	1.10 g
Analysis Date:	09/27/2011 1702			Final Weight/Volume:	100 mL
Prep Date:	09/27/2011 0530				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7300	X	1.5	4.9
Antimony		0.37	U J	0.37	0.59
Arsenic		1.8		0.65	0.98
Barium		77.4	X	0.075	0.49
Beryllium		0.49		0.032	0.20
Boron		1.1	B	0.96	2.0
Cadmium		0.11	B	0.040	0.20
Calcium		5640	X	13.9	49.2
Chromium		9.0	X	0.057	0.20
Cobalt		9.1	X	0.098	0.98
Copper		17.5	X	0.21	0.98
Iron		22100	X	3.7	4.9
Lead		4.1		0.27	0.49
Magnesium		5020	X	3.6	19.7
Manganese		362	X	0.098	0.98
Molybdenum		0.26	U	0.26	2.0
Nickel		12.6	X	0.12	3.9
Potassium		1350		40.3	295
Selenium		0.85	U	0.85	0.98
Silicon		402	X J	5.6	9.8
Silver		0.16	U	0.16	0.20
Sodium		369	J	58.1	118
Vanadium		59.3	X	0.093	2.0
Zinc		45.8	X	0.39	0.98

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-86968	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-86064	Lab File ID:	110920AA.txt
Dilution:	1.0			Initial Weight/Volume:	0.68 g
Analysis Date:	09/20/2011 0959			Final Weight/Volume:	50 mL
Prep Date:	09/19/2011 1450				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0059	B	0.0053	0.016

019

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

10/27/4

Client Sample ID: J1KV57

Lab Sample ID: 280-20242-11
Client Matrix: Solid
% Moisture: 1.1

Date Sampled: 09/12/2011 0840
Date Received: 09/14/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-88155	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-86260	Lab File ID:	26a092711.asc
Dilution:	1.0			Initial Weight/Volume:	1.10 g
Analysis Date:	09/27/2011 1705			Final Weight/Volume:	100 mL
Prep Date:	09/27/2011 0530				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		7360	X	1.4	4.6
Antimony		0.35	U J	0.35	0.55
Arsenic		2.6		0.61	0.92
Barium		65.3	X	0.070	0.46
Beryllium		0.46		0.030	0.18
Boron		1.2	B	0.90	1.8
Cadmium		0.063	B	0.038	0.18
Calcium		7840	X	13.0	45.9
Chromium		10	X	0.053	0.18
Cobalt		8.8	X	0.092	0.92
Copper		17.4	X	0.20	0.92
Iron		21400	X	3.5	4.6
Lead		4.7		0.25	0.46
Magnesium		5280	X	3.4	18.4
Manganese		349	X	0.092	0.92
Molybdenum		0.24	U	0.24	1.8
Nickel		12.5	X	0.11	3.7
Potassium		1370		37.7	276
Selenium		0.79	U	0.79	0.92
Silicon		509	X J	5.2	9.2
Silver		0.15	U	0.15	0.18
Sodium		348	J	54.2	110
Vanadium		55.2	X	0.086	1.8
Zinc		46.0	X	0.37	0.92

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-86968	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-86064	Lab File ID:	110920AA.txt
Dilution:	1.0			Initial Weight/Volume:	0.63 g
Analysis Date:	09/20/2011 1001			Final Weight/Volume:	50 mL
Prep Date:	09/19/2011 1450				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0083	B	0.0053	0.016

020

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV58

Lab Sample ID: 280-20242-12
Client Matrix: Solid

% Moisture: 1.1

10/27/11

Date Sampled: 09/12/2011 1020
Date Received: 09/14/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-88155	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-86260	Lab File ID:	26a092711.asc
Dilution:	1.0			Initial Weight/Volume:	1.15 g
Analysis Date:	09/27/2011 1707			Final Weight/Volume:	100 mL
Prep Date:	09/27/2011 0530				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		5830	X	1.4	4.4
Antimony		0.33	U J	0.33	0.53
Arsenic		1.4		0.58	0.88
Barium		51.1	X	0.067	0.44
Beryllium		0.37		0.029	0.18
Boron		1.2	B	0.86	1.8
Cadmium		0.076	B	0.036	0.18
Calcium		5780	X	12.4	44.0
Chromium		6.5	X	0.051	0.18
Cobalt		7.3	X	0.088	0.88
Copper		16.0	X	0.19	0.88
Iron		18200	X	3.3	4.4
Lead		9.0		0.24	0.44
Magnesium		4310	X	3.3	17.6
Manganese		274	X	0.088	0.88
Molybdenum		0.23	U	0.23	1.8
Nickel		8.8	X	0.11	3.5
Potassium		1150		36.1	264
Selenium		0.76	U	0.76	0.88
Silicon		380	X J	5.0	8.8
Silver		0.14	U	0.14	0.18
Sodium		394	J	51.9	106
Vanadium		48.7	X	0.083	1.8
Zinc		37.4	X	0.35	0.88

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-86968	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-86064	Lab File ID:	110920AA.txt
Dilution:	1.0			Initial Weight/Volume:	0.67 g
Analysis Date:	09/20/2011 1004			Final Weight/Volume:	50 mL
Prep Date:	09/19/2011 1450				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0062	B	0.0050	0.015

021

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV59

Lab Sample ID: 280-20242-13
Client Matrix: Solid

% Moisture: 1.3

10/27/11

Date Sampled: 09/12/2011 0750
Date Received: 09/14/2011 0900

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	280-88155	Instrument ID:	MT_026
Prep Method:	3050B	Prep Batch:	280-86260	Lab File ID:	26a092711.asc
Dilution:	1.0			Initial Weight/Volume:	1.16 g
Analysis Date:	09/27/2011 1710			Final Weight/Volume:	100 mL
Prep Date:	09/27/2011 0530				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Aluminum		3940	X	1.4	4.4
Antimony		0.33	U J	0.33	0.52
Arsenic		0.63	B	0.58	0.87
Barium		50.6	X	0.066	0.44
Beryllium		0.40		0.029	0.17
Boron		0.86	U	0.86	1.7
Cadmium		0.081	B	0.036	0.17
Calcium		4730	X	12.3	43.7
Chromium		3.9	X	0.051	0.17
Cobalt		8.6	X	0.087	0.87
Copper		16.3	X	0.19	0.87
Iron		22000	X	3.3	4.4
Lead		2.2		0.24	0.44
Magnesium		3750	X	3.2	17.5
Manganese		294	X	0.087	0.87
Molybdenum		0.23	U	0.23	1.7
Nickel		6.8	X	0.11	3.5
Potassium		700		35.8	262
Selenium		0.75	U	0.75	0.87
Silicon		376	X J	4.9	8.7
Silver		0.14	U	0.14	0.17
Sodium		302	J	51.5	105
Vanadium		58.4	X	0.082	1.7
Zinc		41.3	X	0.35	0.87

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	280-86968	Instrument ID:	MT_033
Prep Method:	7471A	Prep Batch:	280-86064	Lab File ID:	110920AA.txt
Dilution:	1.0			Initial Weight/Volume:	0.62 g
Analysis Date:	09/20/2011 1006			Final Weight/Volume:	50 mL
Prep Date:	09/19/2011 1450				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		0.0054	U	0.0054	0.017

022

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

CASE NARRATIVE

Client: Washington Closure Hanford

Project: WASHINGTON CLOSURE HANFORD

Report Number: 280-20242-1

SDG #: J01276
SAF#: RC-075

Date SDG Closed: September 14, 2011
Data Deliverable: 21 Day / Summary

CLIENT ID	LAB ID	ANALYSES REQUESTED	ANALYSES PERFORMED
J1KV47	280-20242-1	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV48	280-20242-2	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV49	280-20242-3	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV50	280-20242-4	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV51	280-20242-5	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV52	280-20242-6	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV53	280-20242-7	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV54	280-20242-8	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV55	280-20242-9	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV56	280-20242-10	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV57	280-20242-11	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV58	280-20242-12	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV59	280-20242-13	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A

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 9/14/2011; the samples arrived in good condition, properly preserved and on ice. The temperatures of the coolers at receipt were 3.8 C, 3.6 C, 4.8 C and 3.4 C.

GC SEMIVOLATILES - SW846 8082 - PCBs
The laboratory noted that a Sulfuric Acid clean-up was performed on sample J1KV57 to reduce matrix interferences.

Sample J1KV57 exhibited surrogate recoveries outside the control limits. The laboratory noted that this anomaly is due to obvious matrix interference; therefore, corrective action is deemed unnecessary.

The MS aliquot of the MS/MSD performed on sample J1KV50 exhibited a percent recovery outside the control limits for Aroclor 1016, and the associated sample result has been flagged "N". In addition, the RPD limit was exceeded for Aroclor 1016, and surrogate Tetrachloro-m-xylene was recovered outside control limits in the MS. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

No other anomalies were encountered.

GC SEMIVOLATILES - SW846 8151A - HERBICIDES

In some cases, the RPD between the primary and confirmation columns exceeded 40% 2,4-DB. The lower of the two values have been reported, as matrix interference is evident. Associated results have been flagged with an "X".

Low levels of 2,4-DB are present in the method blank associated with batch 280-86708. Because the concentration in the method blank is not present at a level greater than half the reporting limit, corrective action is deemed unnecessary. Associated sample results present above the MDL and/or RL have been flagged with a "B".

The MS/MSD performed on sample J1KV59 exhibited percent recoveries outside the control limits for Dinoseb, and the associated sample result has been flagged "N". The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

No other anomalies were encountered.

GC SEMIVOLATILES - NWTPH-Dx - DRO

No anomalies were encountered.

HPLC - SW846 8310 - PAHs

No anomalies were encountered.

TOTAL METALS - SW846 6010B/7471A

Serial dilution of a digestate in batch 280-86260 indicates that physical and chemical interferences are present for several elements. Results have been flagged with an "X".

Low levels of Chromium are present in the method blank associated with batch 280-86260. Because the concentration in the method blank is not present at a level greater than half the reporting limit, 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 J1KV47; therefore, control limits are not applicable.

Silicon was recovered outside the control limits in the Matrix Spike performed on sample J1KV47, and the associated sample result has been flagged "N". 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.

The duplicate analysis of sample J1KV47 exhibited RPD data outside the control limits for Arsenic, Silicon and Sodium, 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.

4~~8~~, 3.8, 3.6, 3.4 / RI 5c 9/14

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-075-256	Page 1 of 3

Collector: Q Stowe	Company Contact: Joan Kessner; Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 8L; Data Turnaround: 21 Days
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 118-D-2:1 Burial Ground- Group A, Trench 1,2,3 & 6	SAF No.: RC-075	
Ice Chest No.: ERC-02-007	Field Logbook No.: EL-1607-12; COA: R118D22000	Method of Shipment: Fed Ex	
Shipped To: TestAmerica Incorporated, ~~Richland~~ Denver	Offsite Property No.: A100878/879	Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Rad < DOT

Special Handling and/or Storage

Cool 4 Deg. C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G	aG	aG	aG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	0	0	0
Volume	60mL	60mL	120mL	125mL	120mL	125mL	1000mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	TPH-Diesel Range - WTPH-D+	PAHs - 8310	PCBs - 8082	Chloro-Herbicides - EPA8151	See item (2) in Special Instructions.	Carbon-14; Tritium - H3	Nickel-63; Strontium-89/90 – Total Sr	Isotopic Plutonium
									RCF	27384

026

Sample No.	Matrix *	Sample Date	Sample Time										
J1KV47	SOIL	9/12/11	0915	X		X	X	X	X				
J1KV48	SOIL	9/12/11	0750	X		X	X	X	X				
J1KV49	SOIL	9/12/11	0755	X		X	X	X	X				
J1KV50	SOIL	9/12/11	0805	X		X	X	X	X				
J1KV51	SOIL	9/12/11	0807	X		X	X	X	X				

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From: Quincy Stowe	Date/Time: 9/12/11 1400	Received By/Stored In: D. Newman	Date/Time: 9/12/11 1400
Relinquished By/Removed From: D. Newman	Date/Time: 9/12/11 1540	Received By/Stored In: 1060#2 A. Freier	Date/Time: 1540 9-12-11
Relinquished By/Removed From: WCH A. Freier 1060#2	Date/Time: 1100 9-12-11	Received By/Stored In: Fed Ex	Date/Time:
Relinquished By/Removed From:	Date/Time:	Received By/Stored In:	Date/Time: 9/14/11 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) (Mercury)

(2) Gamma Spec (Client List) (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)

REVIEWED BY CMB DATE 9/13/11

SDG J04476

Matrix *: S=Soil; SD=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-075-256	Page 2 of 3

Collector: Q. Stowe	Company Contact: Joan Kessner; Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 8L; Data Turnaround: 21 Days
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 118-D-2:1 Burial Ground- Group A, Trench 1,2,3 & 6	SAF No.: RC-075	
Ice Chest No.: ERC-02-007	Field Logbook No.: EL-1607-12; COA: R118D22000	Method of Shipment: Fed Ex	
Shipped To: TestAmerica Incorporated, ~~Richland~~ Denver	Offsite Property No.: A100 878/879	Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Rad < DOT

Special Handling and/or Storage

Cool 4 Deg. C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G	aG	aG	aG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	0	0	0
Volume	60mL	60mL	120mL	125mL	120mL	125mL	1000mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	TPH-Diesel Range - WTPH-D+	PAHs - 8310	PCBs - 8082	Chloro-Herbicides - EPA8151	See item (2) in Special Instructions.	Carbon-14; Tritium - H3	Nickel-63; Strontium-89/90 – Total Sr	Isotopic Plutonium

027

RCF 27384

Sample No.	Matrix *	Sample Date	Sample Time									
J1KV52	SOIL	9/12/11	0810	X		X	X	X	X			
J1KV53	SOIL	9/12/11	0815	X		X	X	X	X			
J1KV54	SOIL	9/12/11	0820	X		X	X	X	X			
J1KV55	SOIL	9/12/11	0830	X		X	X	X	X			
J1KV56	SOIL	9/12/11	0835	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	9/12/11 1400	D. Newman	9/12/11 1400
D. Newman	9/12/11 1540	1060 #2 A. Freier	1540 9-12-11
WCH A. Freier	1060, #2 1100 9-13-11	Fed Ex	
			9/14/11 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) (Mercury)

(2) Gamma Spec (Client List) (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)

SDG J61276

REVIEWED BY CMB DATE 9/13/11

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-075-256	Page 1 of 13

Collector: Q Stone	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code: 8L	Data Turnaround: 21 Days		
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 118-D-2:1 Burial Ground- Group A, Trench 1,2,3 & 6		SAF No.: RC-075
Ice Chest No.: ERC-02-007	Field Logbook No.: EL-1607-12	COA: R118D22000	Method of Shipment: Fed Ex
Shipped To: TestAmerica Incorporated, ~~Richland~~ Denver	Offsite Property No.: A100878/879		Bill of Lading/Air Bill No.: See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Rad < DOT

Special Handling and/or Storage

Cool 4 Deg. C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G	aG	aG	aG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	0	0	0
Volume	60mL	60mL	120mL	125mL	120mL	125mL	1000mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 196	TPH-Diesel Range - WTPH-D+	PAHs - 8310	PCBs - 8082	Chloro-Herbicides - EPA8151	See item (2) in Special Instructions.	Carbon-14; Tritium - H3	Nickel-63; Strontium-89/90 -- Total Sr	Isotopic Plutonium

028

Sample No.	Matrix *	Sample Date	Sample Time										
J1KV57	SOIL	9/12/11	0840	X		X	X	X	X				
J1KV58	SOIL	9/12/11	1020	X		X	X	X	X				
J1KV59	SOIL	9/12/11	0750	X		X	X	X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Quincy Stone	9/12/11 1400	D. Newman	9/12/11 1400
D. Newman	9/12/11 1540	A. Freier (1060#2)	9/12/11 1540
A. Freier (WC# 1060#2)	9-13-11 1100	Fed Ex	

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) (Mercury)

(2) Gamma Spec (Client List) (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)

SDG J01276

REVIEWED BY DATE 9/13/11

Matrix *: S=Soil, SD=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

INORGANIC ANALYSIS DATA VALIDATION CHECKLIST

VALIDATION LEVEL:	A	B	C	D	E
PROJECT: 118-D-211			DATA PACKAGE: J01276		
VALIDATOR: ELR		LAB: TAL		DATE: 10/23/11	
			SDG: J01276		

ANALYSES PERFORMED					
SW-846/ICP	SW-846/GFAA	SW-846/Hg	SW-846 Cyanide		

SAMPLES/MATRIX			
J1KV47	J1KV56	J1KV53	J1KV56
J1KV48	J1KV51	J1KV54	J1KV57
J1KV49	J1KV52	J1KV55	J1KV58
			J1KV59
			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 FTS

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 - silicon (237%) - J all
MS - antimony (53%) silicon (-127%) - 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: silicon (47%) sodium (32%) - J all

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: 280-20242-1
Sdg Number: J01276

Method Blank - Batch: 280-86260

Method: 6010B
Preparation: 3050B

Lab Sample ID:	MB 280-86260/1-A	Analysis Batch:	280-88155	Instrument ID:	MT_026
Client Matrix:	Solid	Prep Batch:	280-86260	Lab File ID:	26a092711.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1 g
Analysis Date:	09/27/2011 1614	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	09/27/2011 0530				
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	14.1	U	14.1	50.0
Chromium	0.0870	B	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
Lead	0.27	U	0.27	0.50
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	0.40	U	0.40	1.0

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Lab Control Sample - Batch: 280-86260

Method: 6010B
Preparation: 3050B

Lab Sample ID:	LCS 280-86260/2-A	Analysis Batch:	280-88155	Instrument ID:	MT_026
Client Matrix:	Solid	Prep Batch:	280-86260	Lab File ID:	26a092711.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1 g
Analysis Date:	09/27/2011 1617	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	09/27/2011 0530				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Aluminum	200	182.3	91	82 - 116	
Antimony	50.0	48.74	97	82 - 110	
Arsenic	100	93.00	93	85 - 110	
Barium	200	190.5	95	87 - 112	
Beryllium	5.00	4.77	95	84 - 114	
Boron	100	94.23	94	81 - 110	
Cadmium	10.0	8.90	89	87 - 110	
Calcium	5000	4551	91	82 - 114	
Chromium	20.0	19.13	96	84 - 114	
Cobalt	50.0	47.18	94	87 - 110	
Copper	25.0	24.25	97	88 - 110	
Iron	100	96.17	96	87 - 120	
Lead	50.0	46.90	94	86 - 110	
Magnesium	5000	4621	92	90 - 110	
Manganese	50.0	47.48	95	88 - 110	
Molybdenum	100	93.96	94	86 - 110	
Nickel	50.0	48.39	97	87 - 110	
Potassium	5000	4827	97	89 - 110	
Selenium	200	198.5	99	83 - 110	
Silicon	1000	233.2	23	10 - 70	
Silver	5.00	4.63	93	87 - 114	
Sodium	5000	5200	104	90 - 112	
Vanadium	50.0	47.88	96	88 - 110	
Zinc	50.0	45.72	91	76 - 114	

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Matrix Spike - Batch: 280-86260

Method: 6010B
Preparation: 3050B

Lab Sample ID:	280-20242-1	Analysis Batch:	280-88155	Instrument ID:	MT_026
Client Matrix:	Solid	Prep Batch:	280-86260	Lab File ID:	26a092711.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.12 g
Analysis Date:	09/27/2011 1627	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	09/27/2011 0530				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Aluminum	7330		181	9499	1202	50 - 200	4
Antimony	0.34	U	45.2	23.84	53	20 - 200	
Arsenic	2.5		90.4	77.85	83	76 - 111	
Barium	53.4		181	213.7	89	52 - 159	
Beryllium	0.43		4.52	4.31	86	72 - 105	
Boron	1.3	B	90.4	75.86	83	75 - 107	
Cadmium	0.078	B	9.04	7.41	81	40 - 130	
Calcium	7530		4520	12960	120	43 - 165	
Chromium	8.5		18.1	25.15	92	70 - 200	
Cobalt	8.9		45.2	47.65	86	72 - 106	
Copper	18.3		22.6	39.79	95	37 - 187	
Iron	19900		90.4	23370	3806	70 - 200	4
Lead	4.6		45.2	41.79	82	70 - 200	
Magnesium	4770		4520	9519	105	64 - 145	
Manganese	335		45.2	398.8	141	40 - 200	4
Molybdenum	0.44	B	90.4	74.04	81	75 - 103	
Nickel	11.7		45.2	50.70	86	61 - 126	
Potassium	1090		4520	5501	98	56 - 172	
Selenium	0.77	U	181	161.6	89	76 - 104	
Silicon	626		904	522.0	-12	20 - 200	N
Silver	0.14	U	4.52	3.63	80	75 - 141	
Sodium	426		4520	4795	97	78 - 111	
Vanadium	49.6		45.2	102.8	118	50 - 169	
Zinc	46.1		45.2	90.33	98	70 - 200	

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Duplicate - Batch: 280-86260

Method: 6010B
Preparation: 3050B

Lab Sample ID:	280-20242-1	Analysis Batch:	280-88155	Instrument ID:	MT_026
Client Matrix:	Solid	Prep Batch:	280-86260	Lab File ID:	26a092711.asc
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	1.03 g
Analysis Date:	09/27/2011 1625	Units:	mg/Kg	Final Weight/Volume:	100 mL
Prep Date:	09/27/2011 0530				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Aluminum	7330		6104	18	40	
Antimony	0.34	U	0.37	NC	40	U
Arsenic	2.5		1.72	36	30	M
Barium	53.4		51.83	3	30	
Beryllium	0.43		0.415	3	30	
Boron	1.3	B	0.984	28	30	B
Cadmium	0.078	B	0.0894	14	30	B
Calcium	7530		6455	15	30	
Chromium	8.5		6.79	22	40	
Cobalt	8.9		8.80	1	30	
Copper	18.3		16.59	10	30	
Iron	19900		19830	0.5	40	
Lead	4.6		3.52	27	40	
Magnesium	4770		4960	4	30	
Manganese	335		285.8	16	40	
Molybdenum	0.44	B	0.26	NC	30	U
Nickel	11.7		10.50	11	30	
Potassium	1090		1028	6	40	
Selenium	0.77	U	0.85	NC	30	U
Silicon	626		389.0	47	40	M
Silver	0.14	U	0.16	NC	30	U
Sodium	426		309.3	32	30	M
Vanadium	49.6		45.40	9	30	
Zinc	46.1		41.86	10	40	

039

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Method Blank - Batch: 280-86064

Method: 7471A
Preparation: 7471A

Lab Sample ID:	MB 280-86064/1-A	Analysis Batch:	280-86968	Instrument ID:	MT_033
Client Matrix:	Solid	Prep Batch:	280-86064	Lab File ID:	110920AA.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	.6 g
Analysis Date:	09/20/2011 0918	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	09/19/2011 1450				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Mercury	0.0055	U	0.0055	0.017

Lab Control Sample - Batch: 280-86064

Method: 7471A
Preparation: 7471A

Lab Sample ID:	LCS 280-86064/2-A	Analysis Batch:	280-86968	Instrument ID:	MT_033
Client Matrix:	Solid	Prep Batch:	280-86064	Lab File ID:	110920AA.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	.6 g
Analysis Date:	09/20/2011 0920	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	09/19/2011 1450				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.417	0.464	111	87 - 111	

Matrix Spike - Batch: 280-86064

Method: 7471A
Preparation: 7471A

Lab Sample ID:	280-20242-1	Analysis Batch:	280-86968	Instrument ID:	MT_033
Client Matrix:	Solid	Prep Batch:	280-86064	Lab File ID:	110920AA.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.60 g
Analysis Date:	09/20/2011 0929	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	09/19/2011 1450				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.0053	U	0.422	0.469	111	87 - 111	

040

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Duplicate - Batch: 280-86064

Method: 7471A
Preparation: 7471A

Lab Sample ID:	280-20242-1	Analysis Batch:	280-86968	Instrument ID:	MT_033
Client Matrix:	Solid	Prep Batch:	280-86064	Lab File ID:	110920AA.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	0.61 g
Analysis Date:	09/20/2011 0932	Units:	mg/Kg	Final Weight/Volume:	50 mL
Prep Date:	09/19/2011 1450				
Leach Date:	N/A				

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Mercury	0.0053	U	0.00639	NC	20	B

041

Date: 28 October 2011
To: Washington Closure Hanford Inc. (technical representative)
From: ELR Consulting
Project: 100/D/DR Burial Grounds & Remaining Sites – Soil Full Protocol - Waste Subsite 118-D-2:1
Subject: Diesel Range Organics - Data Package No. J01276-TAL

INTRODUCTION

This memo presents the results of data validation on Data Package No. J01276 prepared by TestAmerica Laboratory 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
J1KV47	9/12/11	Soil	C	See note 1
J1KV48	9/12/11	Soil	C	See note 1
J1KV49	9/12/11	Soil	C	See note 1
J1KV50	9/12/11	Soil	C	See note 1
J1KV51	9/12/11	Soil	C	See note 1
J1KV52	9/12/11	Soil	C	See note 1
J1KV53	9/12/11	Soil	C	See note 1
J1KV54	9/12/11	Soil	C	See note 1
J1KV55	9/12/11	Soil	C	See note 1
J1KV56	9/12/11	Soil	C	See note 1
J1KV57	9/12/11	Soil	C	See note 1
J1KV58	9/12/11	Soil	C	See note 1
J1KV59	9/12/11	Soil	C	See note 1

1 – Diesel range organics by NWTPH-Dx.

Data validation was conducted in accordance with the Washington Closure Hanford Incorporated (WCH) validation statement of work and the 100 Area Burial Grounds Remedial Action Sampling and Analysis Plan (DOE/RL-2001-35, December 2001). 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 Blanks

No field blank was 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 duplicate results were acceptable.

Field Duplicate Samples

One set of field duplicates (J1KV48/J1KV59) were submitted for analysis. Field duplicates are compared using the same criteria as for laboratory duplicates. All field

duplicate results were 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. J01276 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-2001-35, Rev. 0, *100 Area Burial Grounds Remedial Action Sampling and Analysis Plan*, U.S. Department of Energy, December 2001.

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

DIESEL RANGE ORGANICS DATA QUALIFICATION SUMMARY*

SDG: J01276	REVIEWER: ELR	Project: 118-D-2:1	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: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV47

Lab Sample ID: 280-20242-1
Client Matrix: Solid

% Moisture: 1.2

10/27/11

Date Sampled: 09/12/2011 0915
Date Received: 09/14/2011 0900

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-88226	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-86976	Lab File ID:	009F0901.D
Dilution:	1.0			Initial Weight/Volume:	30.3 g
Analysis Date:	09/26/2011 1320			Final Weight/Volume:	1000 uL
Prep Date:	09/20/2011 1640			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		2100	J	1000	4000
C10-C28		1000	J	680	4000

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	104		49 - 115

010

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

10/27/11

Client Sample ID: J1KV48

Lab Sample ID: 280-20242-2
Client Matrix: Solid

% Moisture: 1.3

Date Sampled: 09/12/2011 0750
Date Received: 09/14/2011 0900

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-88226	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-86976	Lab File ID:	010F1001.D
Dilution:	1.0			Initial Weight/Volume:	31.7 g
Analysis Date:	09/26/2011 1354			Final Weight/Volume:	1000 uL
Prep Date:	09/20/2011 1640			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		1200	J	960	3800
C10-C28		990	J	650	3800

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	101		49 - 115

011

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV49

Lab Sample ID: 280-20242-3
Client Matrix: Solid

% Moisture: 0.9

10/22/11

Date Sampled: 09/12/2011 0755
Date Received: 09/14/2011 0900

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-88226	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-86976	Lab File ID:	011F1101.D
Dilution:	1.0			Initial Weight/Volume:	32.4 g
Analysis Date:	09/26/2011 1428			Final Weight/Volume:	1000 uL
Prep Date:	09/20/2011 1640			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		980	J	930	3700
C10-C28		880	J	630	3700

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	87		49 - 115

012

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

10/22/11

Client Sample ID: J1KV50

Lab Sample ID: 280-20242-4
Client Matrix: Solid

% Moisture: 2.8

Date Sampled: 09/12/2011 0805
Date Received: 09/14/2011 0900

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-88226	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-86976	Lab File ID:	012F1201.D
Dilution:	1.0			Initial Weight/Volume:	30.8 g
Analysis Date:	09/26/2011 1502			Final Weight/Volume:	1000 uL
Prep Date:	09/20/2011 1640			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		1000	U	1000	4000
C10-C28		680	U	680	4000

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	84		49 - 115

013

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

10/27/11

Client Sample ID: **J1KV51**

Lab Sample ID: 280-20242-5
Client Matrix: Solid

% Moisture: 0.9

Date Sampled: 09/12/2011 0807
Date Received: 09/14/2011 0900

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-88226	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-86976	Lab File ID:	013F1301.D
Dilution:	1.0			Initial Weight/Volume:	31.5 g
Analysis Date:	09/26/2011 1536			Final Weight/Volume:	1000 uL
Prep Date:	09/20/2011 1640			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		1100	J	960	3800
C10-C28		940	J	650	3800

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	96		49 - 115

014

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

10/27/11

Client Sample ID: J1KV52

Lab Sample ID: 280-20242-6
Client Matrix: Solid

% Moisture: 1.2

Date Sampled: 09/12/2011 0810
Date Received: 09/14/2011 0900

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-88226	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-86976	Lab File ID:	014F1401.D
Dilution:	1.0			Initial Weight/Volume:	31.8 g
Analysis Date:	09/26/2011 1610			Final Weight/Volume:	1000 uL
Prep Date:	09/20/2011 1640			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		950	U	950	3800
C10-C28		650	U	650	3800

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	88		49 - 115

015

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

10/27/11

Client Sample ID: J1KV53

Lab Sample ID: 280-20242-7
Client Matrix: Solid
% Moisture: 0.9

Date Sampled: 09/12/2011 0815
Date Received: 09/14/2011 0900

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-88226	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-86976	Lab File ID:	015F1501.D
Dilution:	1.0			Initial Weight/Volume:	31.5 g
Analysis Date:	09/26/2011 1644			Final Weight/Volume:	1000 uL
Prep Date:	09/20/2011 1640			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		960	U	960	3800
C10-C28		650	U	650	3800

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	93		49 - 115

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

10/27/11

Client Sample ID: J1KV54

Lab Sample ID: 280-20242-8
Client Matrix: Solid

% Moisture: 1.1

Date Sampled: 09/12/2011 0820
Date Received: 09/14/2011 0900

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-88226	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-86976	Lab File ID:	019F1901.D
Dilution:	1.0			Initial Weight/Volume:	31.9 g
Analysis Date:	09/26/2011 1859			Final Weight/Volume:	1000 uL
Prep Date:	09/20/2011 1640			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		980	J	950	3800
C10-C28		880	J	640	3800

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	93		49 - 115

017

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

10/27/11

Client Sample ID: J1KV55

Lab Sample ID: 280-20242-9
Client Matrix: Solid
% Moisture: 1.1

Date Sampled: 09/12/2011 0830
Date Received: 09/14/2011 0900

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-88226	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-86976	Lab File ID:	020F2001.D
Dilution:	1.0			Initial Weight/Volume:	32.0 g
Analysis Date:	09/26/2011 1933			Final Weight/Volume:	1000 uL
Prep Date:	09/20/2011 1640			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		1300	J	940	3800
C10-C28		640	U	640	3800

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	93		49 - 115

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV56

Lab Sample ID: 280-20242-10
Client Matrix: Solid

% Moisture: 7.6

10/27/11

Date Sampled: 09/12/2011 0835
Date Received: 09/14/2011 0900

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-88226	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-86976	Lab File ID:	021F2101.D
Dilution:	1.0			Initial Weight/Volume:	32.2 g
Analysis Date:	09/26/2011 2006			Final Weight/Volume:	1000 uL
Prep Date:	09/20/2011 1640			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		2500	J	1000	4000
C10-C28		830	J	680	4000

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	102		49 - 115

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Client Sample ID: **J1KV67**

Lab Sample ID: 280-20242-11
Client Matrix: Solid

% Moisture: 1.1

10/27/11

Date Sampled: 09/12/2011 0840
Date Received: 09/14/2011 0900

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-88226	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-86976	Lab File ID:	022F2201.D
Dilution:	1.0			Initial Weight/Volume:	31.8 g
Analysis Date:	09/26/2011 2041			Final Weight/Volume:	1000 uL
Prep Date:	09/20/2011 1640			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		1500	J	950	3800
C10-C28		840	J	650	3800

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	95		49 - 115

020

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV58

Lab Sample ID: 280-20242-12
Client Matrix: Solid

% Moisture: 1.1

10/27/11

Date Sampled: 09/12/2011 1020
Date Received: 09/14/2011 0900

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-88226	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-86976	Lab File ID:	023F2301.D
Dilution:	1.0			Initial Weight/Volume:	31.2 g
Analysis Date:	09/26/2011 2115			Final Weight/Volume:	1000 uL
Prep Date:	09/20/2011 1640			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		10000		970	3900
C10-C28		2000	J	660	3900

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	102		49 - 115

021

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Client Sample ID: J1KV59

Lab Sample ID: 280-20242-13
Client Matrix: Solid

% Moisture: 1.3

10/27/11

Date Sampled: 09/12/2011 0750
Date Received: 09/14/2011 0900

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	280-88226	Instrument ID:	GCS_U2
Prep Method:	3550C	Prep Batch:	280-86976	Lab File ID:	024F2401.D
Dilution:	1.0			Initial Weight/Volume:	30.8 g
Analysis Date:	09/26/2011 2149			Final Weight/Volume:	1000 uL
Prep Date:	09/20/2011 1640			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	MDL	RL
C10-C36		980	U	980	3900
C10-C28		670	U	670	3900

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	99		49 - 115

022

Appendix 4

Laboratory Narrative and Chain-of-Custody Documentation

CASE NARRATIVE

Client: Washington Closure Hanford

Project: WASHINGTON CLOSURE HANFORD

Report Number: 280-20242-1

SDG #: J01276
SAF#: RC-075

Date SDG Closed: September 14, 2011
Data Deliverable: 21 Day / Summary

CLIENT ID	LAB ID	ANALYSES REQUESTED	ANALYSES PERFORMED
J1KV47	280-20242-1	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV48	280-20242-2	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV49	280-20242-3	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV50	280-20242-4	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV51	280-20242-5	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV52	280-20242-6	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV53	280-20242-7	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV54	280-20242-8	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV55	280-20242-9	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV56	280-20242-10	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV57	280-20242-11	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV58	280-20242-12	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A
J1KV59	280-20242-13	6010/7471/WTPH-D+/8310/8082/8151	6010B/7471A/NWTPH-Dx/8310/8082/8151A

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 9/14/2011; the samples arrived in good condition, properly preserved and on ice. The temperatures of the coolers at receipt were 3.8 C, 3.6 C, 4.8 C and 3.4 C.

GC SEMIVOLATILES - SW846 8082 - PCBs
The laboratory noted that a Sulfuric Acid clean-up was performed on sample J1KV57 to reduce matrix interferences.

Sample J1KV57 exhibited surrogate recoveries outside the control limits. The laboratory noted that this anomaly is due to obvious matrix interference; therefore, corrective action is deemed unnecessary.

The MS aliquot of the MS/MSD performed on sample J1KV50 exhibited a percent recovery outside the control limits for Aroclor 1016, and the associated sample result has been flagged "N". In addition, the RPD limit was exceeded for Aroclor 1016, and surrogate Tetrachloro-m-xylene was recovered outside control limits in the MS. The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

No other anomalies were encountered.

GC SEMIVOLATILES - SW846 8151A - HERBICIDEs
In some cases, the RPD between the primary and confirmation columns exceeded 40% 2,4-DB. The lower of the two values have been reported, as matrix interference is evident. Associated results have been flagged with an "X".

Low levels of 2,4-DB are present in the method blank associated with batch 280-86708. Because the concentration in the method blank is not present at a level greater than half the reporting limit, corrective action is deemed unnecessary. Associated sample results present above the MDL and/or RL have been flagged with a "B".

The MS/MSD performed on sample J1KV59 exhibited percent recoveries outside the control limits for Dinoseb, and the associated sample result has been flagged "N". The acceptable LCS analysis data indicated that the analytical system was operating within control; therefore, corrective action is deemed unnecessary.

No other anomalies were encountered.

GC SEMIVOLATILES - NWTPH-Dx - DRO
No anomalies were encountered.

HPLC - SW846 8310 - PAHs
No anomalies were encountered.

TOTAL METALS - SW846 6010B/7471A
Serial dilution of a digestate in batch 280-86260 indicates that physical and chemical interferences are present for several elements. Results have been flagged with an "X".

Low levels of Chromium are present in the method blank associated with batch 280-86260. Because the concentration in the method blank is not present at a level greater than half the reporting limit, 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 J1KV47; therefore, control limits are not applicable.

Silicon was recovered outside the control limits in the Matrix Spike performed on sample J1KV47, and the associated sample result has been flagged "N". 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.

The duplicate analysis of sample J1KV47 exhibited RPD data outside the control limits for Arsenic, Silicon and Sodium, 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.

4%, 3.8, 3.6, 3.4 / RI SC 9/14

QNS 9/12/11

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-075-256	Page 1 of 3

Collector: Q Stowe	Company Contact: Joan Kessner — Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 8L — Data Turnaround: 21 Days
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 118-D-2:1 Burial Ground- Group A, Trench 1,2,3 & 6	SAF No.: RC-075	
Ice Chest No.: ERC-02-007	Field Logbook No.: EL-1607-12 — COA: R118D22000	Method of Shipment: Fed Ex	
Shipped To: QNS 9/12/11 TestAmerica Incorporated, ~~Richland~~ Denver	Offsite Property No.: A100878/879	Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Rad < DOT

Special Handling and/or Storage

Cool 4 Deg. C

026

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G	aG	aG	aG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	0	0	0
Volume	60mL	60mL	120mL	125mL	120mL	125mL	1000mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	TPH-Diesel Range - WTPH-D+	PAHs - 8310	PCBs - 8082	Chloro-Herbicides - EPA8151	See item (2) in Special Instructions.	Carbon-14; Tritium - H3	Nickel-63; Strontium-89/90 -- Total Sr	Isotopic Plutonium
									RCF	27384

Sample No.	Matrix *	Sample Date	Sample Time										
J1KV47	SOIL	9/12/11	0915	X		X	X	X	X				
J1KV48	SOIL	9/12/11	0750	X		X	X	X	X				
J1KV49	SOIL	9/12/11	0755	X		X	X	X	X				
J1KV50	SOIL	9/12/11	0805	X		X	X	X	X				
J1KV51	SOIL	9/12/11	0807	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	9/12/11 1400	D. Newman	9/12/11 1400
D. Newman	9/12/11 1540	A. Freier (1060#2)	1540 9-12-11
A. Freier (WCH 1060#2)	1100 9-12-11	Fed Ex	
			9/14/11 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) (Mercury)

(2) Gamma Spec (Client List) (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)

REVIEWED BY CMB DATE 9/13/11

SDG 50476

Matrix *: S=Soil, SD=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 COSTODY/SAMPLE ANALYSIS REQUEST	RC-075-256	Page 2 of 3

Collector: Q. Stowe	Company Contact: Joan Kessner — Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 8L — Data Turnaround: 21 Days
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 118-D-2:1 Burial Ground- Group A, Trench 1,2,3 & 6	SAF No.: RC-075	
Ice Chest No.: ERC-02-007	Field Logbook No.: EL-1607-12 — COA: R118D22000	Method of Shipment: Fed Ex	
Shipped To: TestAmerica Incorporated, ~~Richland~~ Denver	Offsite Property No.: A100 878/879	Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Rad < DOT

Special Handling and/or Storage

Cool 4 Deg. C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G	aG	aG	aG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	0	0	0
Volume	60mL	60mL	120mL	125mL	120mL	125mL	1000mL	1000mL	1000mL	1000mL

SAMPLE ANALYSIS

027

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions	Chromium Hex - 7196	TPH-Diesel Range - WTPH-D+	PAHs - 8310	PCBs - 8082	Chloro-Herbicides - EPA8151	See item (2) in Special Instructions	Carbon-14; Tritium - H3	Nickel-63; Strontium-90 -- Total Sr	Isotopic Plutonium
J1KV52	SOIL	9/12/11	0810	X		X	X	X	X				
J1KV53	SOIL	9/12/11	0815	X		X	X	X	X				
J1KV54	SOIL	9/12/11	0820	X		X	X	X	X				
J1KV55	SOIL	9/12/11	0830	X		X	X	X	X				
J1KV56	SOIL	9/12/11	0835	X		X	X	X	X				

RCF 27384

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Quincy Stowe	9/12/11 1400	D. Newman	9/12/11 1400
D. Newman	9/12/11 1540	A. Freier (1060 #2)	1540 9-12-11
A. Freier (WCH 1060, #2)	1100 9-13-11	Fed Ex	
			9/14/11 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) (Mercury)

(2) Gamma Spec (Client List) (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)

SDG J01276

REVIEWED BY CMB DATE 9/13/11

Matrix *: S=Soil; SD=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-075-256	Page 2 of 3

Collector: Q Stone	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code: 8L	Data Turnaround: 21 Days		
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Full Prot	Sampling Location: 118-D-2:1 Burial Ground- Group A, Trench 1,2,3 & 6		SAF No.: RC-075
Ice Chest No.: ERC-02-007	Field Logbook No.: EL-1607-12	COA: R118D22000	Method of Shipment: Fed Ex
Shipped To: TestAmerica Incorporated, ~~Richland~~ Denver	Offsite Property No.: A100878/879		Bill of Lading/Air Bill No.: See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Rad < DOT

Special Handling and/or Storage

Cool 4 Deg. C

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None	None	None
Type of Container	G/P	G/P	G	aG	aG	aG	G/P	G/P	G/P	G/P
No. of Container(s)	1	1	1	1	1	1	1	0	0	0
Volume	60mL	60mL	120mL	125mL	120mL	125mL	1000mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 196	TPH-Diesel Range - WTPH-D+	PAHs - 8310	PCBs - 8082	Chloro-Herbicides - BPA8151	See item (2) in Special Instructions.	Carbon-14; Tritium - H3	Nickel-63; Strontium-90 -- Total Sr	Isotopic Plutonium

028

Sample No.	Matrix *	Sample Date	Sample Time										
J1KV57	SOIL	9/12/11	0840	X		X	X	X	X				
J1KV58	SOIL	9/12/11	1020	X		X	X	X	X				
J1KV59	SOIL	9/12/11	0750	X		X	X	X	X				

RCF 27384

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Quincy Stone	9/12/11 1400	D. Newman	9/12/11 1400
D. Newman	9/12/11 1540	A. Freier (WCH #1060#2)	9-12-11 1540
A. Freier (WCH #1060#2)	9-13-11 1100	Fed Ex	
			9/14/11 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) (Mercury)

(2) Gamma Spec (Client List) (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155)

506
J61276

REVIEWED BY CMB DATE 9/13/11

Matrix *: S=Soil; SD=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:	118-D-2:1		DATA PACKAGE:	J01276	
VALIDATOR:	ELR	LAB: TAL		DATE: 10/23/11	
			SDG:	J01276	
ANALYSES PERFORMED					
8015	8021	8141	8151	8315	
		WTPH-HCID	WTPH-G	WTPH-D	
SAMPLES/MATRIX:					
J1KU47		J1KU51	J1KU54	J1KU57	
J1KU48		J1KU52	J1KU55	J1KU58	
J1KU49		J1KU53	J1KU56	J1KU59	
J1KU50					
					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:

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 TBS

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: 280-20242-1
Sdg Number: J01276

Method Blank - Batch: 280-86976

Method: NWTPH-Dx
Preparation: 3550C

Lab Sample ID:	MB 280-86976/1-A	Analysis Batch:	280-88226	Instrument ID:	GCS_U2
Client Matrix:	Solid	Prep Batch:	280-86976	Lab File ID:	005F0501.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	31.4 g
Analysis Date:	09/26/2011 1103	Units:	ug/Kg	Final Weight/Volume:	1000 uL
Prep Date:	09/20/2011 1640			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
C10-C36	950	U	950	3800
C10-C28	650	U	650	3800

Surrogate	% Rec	Acceptance Limits
o-Terphenyl	87	49 - 115

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 280-86976

Method: NWTPH-Dx
Preparation: 3550C

LCS Lab Sample ID:	LCS 280-86976/2-A	Analysis Batch:	280-88226	Instrument ID:	GCS_U2
Client Matrix:	Solid	Prep Batch:	280-86976	Lab File ID:	006F0601.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	30.4 g
Analysis Date:	09/26/2011 1137	Units:	ug/Kg	Final Weight/Volume:	1000 uL
Prep Date:	09/20/2011 1640			Injection Volume:	1 uL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 280-86976/3-A	Analysis Batch:	280-88226	Instrument ID:	GCS_U2
Client Matrix:	Solid	Prep Batch:	280-86976	Lab File ID:	008F0801.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	31.2 g
Analysis Date:	09/26/2011 1245	Units:	ug/Kg	Final Weight/Volume:	1000 uL
Prep Date:	09/20/2011 1640			Injection Volume:	1 uL
Leach Date:	N/A				

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
C10-C36	87	95	57 - 115	6	23		
C10-C28	87	95	53 - 115	6	23		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
o-Terphenyl	83	83	49 - 115

035

Client: Washington Closure Hanford

Job Number: 280-20242-1
Sdg Number: J01276

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-86976

Method: NWTPH-Dx
Preparation: 3550C

MS Lab Sample ID:	280-20242-7	Analysis Batch:	280-88226	Instrument ID:	GCS_U2
Client Matrix:	Solid	Prep Batch:	280-86976	Lab File ID:	017F1701.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	31.3 g
Analysis Date:	09/26/2011 1752			Final Weight/Volume:	1000 uL
Prep Date:	09/20/2011 1640			Injection Volume:	1 uL
Leach Date:	N/A				

MSD Lab Sample ID:	280-20242-7	Analysis Batch:	280-88226	Instrument ID:	GCS_U2
Client Matrix:	Solid	Prep Batch:	280-86976	Lab File ID:	018F1801.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	31.3 g
Analysis Date:	09/26/2011 1826			Final Weight/Volume:	1000 uL
Prep Date:	09/20/2011 1640			Injection Volume:	1 uL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
C10-C36	87	89	57 - 115	2	23		
C10-C28	87	89	56 - 115	1	23		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
o-Terphenyl	77	73	49 - 115

036