

SAF-RC-108
100-H Remaining Sites Burial Grounds –
Other
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt H4-21

KW 5/26/15
INITIAL/DATE

COMMENTS:

SDG JP0965

SAF-RC-108

Rad only

Chem only

Rad & Chem

Complete

Partial

Waste Site: 100-H-59:2 (anomalous bottle)

ANALYTICAL REPORT

Job Number: 280-69218-1

SDG Number: JP0965

Job Description: SAF# RC-108

For:

Washington Closure Hanford
2620 Fermi Avenue
Richland, WA 99354

Attention: Joan H Kessner



Approved for release.
Kae E Yoder
Senior Project Manager
5/21/2015 11:23 AM

Kae E Yoder, Senior Project Manager
4955 Yarrow Street, Arvada, CO, 80002
(303)736-0190
kae.yoder@testamericainc.com
05/21/2015

The test results in this report relate only to the samples in this report and meet all requirements of NELAP, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

TestAmerica Laboratories, Inc.

TestAmerica Denver 4955 Yarrow Street, Arvada, CO 80002
Tel (303) 736-0100 Fax (303) 431-7171 www.testamericainc.com



Table of Contents

Cover Title Page	1
Report Narrative	3
Data Qualifiers	4
Sample Summary	5
Method Summary	6
Method / Analyst Summary	7
Sample Results	8
Sample Datasheets	9
QC Results	10
Qc Reports	11
Qc Association Summary	15
Client Chain of Custody	16
Sample Receipt Checklist	17

CASE NARRATIVE

Client: Washington Closure Hanford

Project: WASHINGTON CLOSURE HANFORD

Job Number: 280-69218-1

SDG #: JP0965

SAF#: RC-108

Date SDG Closed: May 14, 2015
Data Deliverable: 7 Day / Summary

<u>CLIENT ID</u>	<u>LAB ID</u>	<u>ANALYSES REQUESTED</u>	<u>ANALYSES PERFORMED</u>
J1V718	280-69218-1	9056M	9056M

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 sample was received on 5/14/2015 9:15 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.5° C.

GENERAL CHEMISTRY - SW846 9056M - ANIONS

Chloride is present in the method blank associated with batch 280-277585 at 6.98 mg/kg, which is greater than the project specific reporting limit (PSRL) of 5 mg/kg. TestAmerica's practical quantitation limit (PQL) for Chloride is 30 mg/kg. The laboratory cannot maintain system cleanliness at this low level; therefore, corrective action is not initiated. It can be noted that the concentration found in the method blank is less than half of the laboratory standard PQL.

The Matrix Spike performed on sample J1V718 exhibited percent recoveries outside the control limits for Nitrite as N, Orthophosphate as P, Chloride, Sulfate and Fluoride, and the associated sample results have been flagged "N". There is no indication that the analytical systems were 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 J1V718 exhibited RPD data outside the control limits for Nitrate as N, Nitrite as N, Chloride and Sulfate, and the associated sample results have been flagged "M". There is no indication that the analytical systems were 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.

DATA REPORTING QUALIFIERS

Client: Washington Closure Hanford

Job Number: 280-69218-1

Sdg Number: JP0965

Lab Section	Qualifier	Description
General Chemistry	U	Analyzed for but not detected.
	B	Estimated result. Result is less than the RL, but greater than MDL
	N	MS, MSD: Spike recovery is outside acceptance limits.
	M	Sample duplicate precision not met.
	C	The analyte was detected in both the sample and the associated QC blank, and the sample concentration was $\leq 5X$ the blank concentration.

SAMPLE SUMMARY

Client: Washington Closure Hanford

Job Number: 280-69218-1
Sdg Number: JP0965

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
280-69218-1	J1V718	Solid	05/12/2015 1300	05/14/2015 0915

METHOD SUMMARY

Client: Washington Closure Hanford

Job Number: 280-69218-1
Sdg Number: JP0965

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
Anions, Ion Chromatography	TAL DEN	SW846 9056M	
Deionized Water Leaching Procedure	TAL DEN		ASTM DI Leach

Lab References:

TAL DEN = TestAmerica Denver

Method References:

ASTM = ASTM International

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: Washington Closure Hanford

Job Number: 280-69218-1

Sdg Number: JP0965

Method	Analyst	Analyst ID
SW846 9056M	Phan, Thu L	TLP

SAMPLE RESULTS

Analytical Data

Client: Washington Closure Hanford

Job Number: 280-69218-1

Sdg Number: JP0965

General Chemistry

Client Sample ID: J1V718

Lab Sample ID: 280-69218-1

Client Matrix: Solid

Date Sampled: 05/12/2015 1300

Date Received: 05/14/2015 0915

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Chloride-Soluble	20.8	M N C	mg/Kg	2.0	5.0	1.0	9056M
	Analysis Batch: 280-277585	Analysis Date: 05/15/2015	1904				DryWt Corrected: N
Nitrate as N-Soluble	1.9	B M	mg/Kg	0.31	2.5	1.0	9056M
	Analysis Batch: 280-277584	Analysis Date: 05/15/2015	1904				DryWt Corrected: N
Bromide-Soluble	0.39	U	mg/Kg	0.39	2.0	1.0	9056M
	Analysis Batch: 280-277585	Analysis Date: 05/15/2015	1904				DryWt Corrected: N
Nitrite as N-Soluble	1.2	B M N	mg/Kg	0.34	2.5	1.0	9056M
	Analysis Batch: 280-277584	Analysis Date: 05/15/2015	1904				DryWt Corrected: N
Orthophosphate as P-Soluble	1.2	U N	mg/Kg	1.2	5.0	1.0	9056M
	Analysis Batch: 280-277584	Analysis Date: 05/15/2015	1904				DryWt Corrected: N
Sulfate-Soluble	20.1	M N	mg/Kg	1.7	5.0	1.0	9056M
	Analysis Batch: 280-277585	Analysis Date: 05/15/2015	1904				DryWt Corrected: N
Fluoride-Soluble	2.5	B N	mg/Kg	0.82	5.0	1.0	9056M
	Analysis Batch: 280-277585	Analysis Date: 05/15/2015	1904				DryWt Corrected: N

QUALITY CONTROL RESULTS

Quality Control Results

Client: Washington Closure Hanford

Job Number: 280-69218-1
Sdg Number: JP0965

Method Blank - Batch: 280-277584

Method: 9056M
Preparation: N/A

Lab Sample ID: MB 280-277724/2-A	Analysis Batch: 280-277584	Instrument ID: WC_IonChrom11
Client Matrix: Solid	Prep Batch: N/A	Lab File ID: 0015.d
Dilution: 1.0	Leach Batch: 280-277724	Initial Weight/Volume: 5 mL
Analysis Date: 05/15/2015 1844	Units: mg/Kg	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: 05/15/2015 1633		

Analyte	Result	Qual	MDL	RL
Nitrate as N-Soluble	0.31	U	0.31	2.5
Nitrite as N-Soluble	0.34	U	0.34	2.5
Orthophosphate as P-Soluble	1.2	U	1.2	5.0

Method Reporting Limit Check - Batch: 280-277584

Method: 9056M
Preparation: N/A

Lab Sample ID: MRL 280-277584/3	Analysis Batch: 280-277584	Instrument ID: WC_IonChrom11
Client Matrix: Water	Prep Batch: N/A	Lab File ID: 0010.d
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 5 mL
Analysis Date: 05/15/2015 0925	Units: mg/L	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N-Soluble	0.200	0.216	108	50 - 150	B
Nitrite as N-Soluble	0.200	0.233	116	50 - 150	B
Orthophosphate as P-Soluble	0.200	0.237	119	50 - 150	B

Lab Control Sample - Batch: 280-277584

Method: 9056M
Preparation: N/A

Lab Sample ID: LCS 280-277724/1-A	Analysis Batch: 280-277584	Instrument ID: WC_IonChrom11
Client Matrix: Solid	Prep Batch: N/A	Lab File ID: 0014.d
Dilution: 1.0	Leach Batch: 280-277724	Initial Weight/Volume: 5 mL
Analysis Date: 05/15/2015 1825	Units: mg/Kg	Final Weight/Volume: 5 mL
Prep Date: N/A		
Leach Date: 05/15/2015 1633		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N-Soluble	50.0	48.86	98	90 - 110	
Nitrite as N-Soluble	50.0	47.19	94	90 - 110	
Orthophosphate as P-Soluble	50.0	50.18	100	90 - 110	

Quality Control Results

Client: Washington Closure Hanford

Job Number: 280-69218-1
Sdg Number: JP0965

Matrix Spike - Batch: 280-277584

Method: 9056M
Preparation: N/A

Lab Sample ID: 280-69218-1	Analysis Batch: 280-277584	Instrument ID: WC_IonChrom11
Client Matrix: Solid	Prep Batch: N/A	Lab File ID: 0018.d
Dilution: 1.0	Leach Batch: 280-277724	Initial Weight/Volume: 5 mL
Analysis Date: 05/15/2015 1944	Units: mg/Kg	Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: 05/15/2015 1633		

Analyte	Sample Result/Qual		Spike Amount	Result	% Rec.	Limit	Qual
Nitrate as N-Soluble	1.9	B	99.6	85.43	84	80 - 120	
Nitrite as N-Soluble	1.2	B	99.6	80.00	79	80 - 120	N
Orthophosphate as P-Soluble	1.2	U	99.6	77.82	78	80 - 120	N

Duplicate - Batch: 280-277584

Method: 9056M
Preparation: N/A

Lab Sample ID: 280-69218-1	Analysis Batch: 280-277584	Instrument ID: WC_IonChrom11
Client Matrix: Solid	Prep Batch: N/A	Lab File ID: 0017.d
Dilution: 1.0	Leach Batch: 280-277724	Initial Weight/Volume: 5 mL
Analysis Date: 05/15/2015 1924	Units: mg/Kg	Final Weight/Volume: 5 mL
Prep Date: N/A		25 uL
Leach Date: 05/15/2015 1633		

Analyte	Sample Result/Qual		Result	RPD	Limit	Qual
Nitrate as N-Soluble	1.9	B	2.52	28	15	M
Nitrite as N-Soluble	1.2	B	1.43	21	15	B M
Orthophosphate as P-Soluble	1.2	U	1.2	NC	15	U

Quality Control Results

Client: Washington Closure Hanford

Job Number: 280-69218-1
Sdg Number: JP0965

Method Blank - Batch: 280-277585

Method: 9056M
Preparation: N/A

Lab Sample ID:	MB 280-277724/2-A	Analysis Batch:	280-277585	Instrument ID:	WC_IonChrom11
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	0015.d
Dilution:	1.0	Leach Batch:	280-277724	Initial Weight/Volume:	5 mL
Analysis Date:	05/15/2015 1844	Units:	mg/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	05/15/2015 1633				

Analyte	Result	Qual	MDL	RL
Chloride-Soluble	6.98		2.0	5.0
Bromide-Soluble	0.39	U	0.39	2.0
Sulfate-Soluble	1.7	U	1.7	5.0
Fluoride-Soluble	0.82	U	0.82	5.0

Method Reporting Limit Check - Batch: 280-277585

Method: 9056M
Preparation: N/A

Lab Sample ID:	MRL 280-277585/3	Analysis Batch:	280-277585	Instrument ID:	WC_IonChrom11
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	0010.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	05/15/2015 0925	Units:	mg/L	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride-Soluble	2.50	2.33	93	50 - 150	B
Bromide-Soluble	0.200	0.212	106	50 - 150	
Sulfate-Soluble	2.50	2.41	96	50 - 150	B
Fluoride-Soluble	0.200	0.232	116	50 - 150	B

Lab Control Sample - Batch: 280-277585

Method: 9056M
Preparation: N/A

Lab Sample ID:	LCS 280-277724/1-A	Analysis Batch:	280-277585	Instrument ID:	WC_IonChrom11
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	0014.d
Dilution:	1.0	Leach Batch:	280-277724	Initial Weight/Volume:	5 mL
Analysis Date:	05/15/2015 1825	Units:	mg/Kg	Final Weight/Volume:	5 mL
Prep Date:	N/A				
Leach Date:	05/15/2015 1633				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Chloride-Soluble	1000	982.0	98	90 - 110	
Bromide-Soluble	50.0	49.86	100	90 - 110	
Sulfate-Soluble	1000	955.3	96	90 - 110	
Fluoride-Soluble	50.0	50.02	100	90 - 110	

Quality Control Results

Client: Washington Closure Hanford

Job Number: 280-69218-1
Sdg Number: JP0965

Matrix Spike - Batch: 280-277585

Method: 9056M
Preparation: N/A

Lab Sample ID: 280-69218-1
Client Matrix: Solid
Dilution: 1.0
Analysis Date: 05/15/2015 1944
Prep Date: N/A
Leach Date: 05/15/2015 1633

Analysis Batch: 280-277585
Prep Batch: N/A
Leach Batch: 280-277724
Units: mg/Kg

Instrument ID: WC_IonChrom11
Lab File ID: 0018.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL
25 uL

Analyte	Sample	Result/Qual	Spike Amount	Result	% Rec.	Limit	Qual
Chloride-Soluble	20.8		498	407.6	78	80 - 120	N
Bromide-Soluble	0.39	U	99.6	84.39	85	80 - 120	
Sulfate-Soluble	20.1		498	365.3	69	80 - 120	N
Fluoride-Soluble	2.5	B	99.6	56.55	54	80 - 120	N

Duplicate - Batch: 280-277585

Method: 9056M
Preparation: N/A

Lab Sample ID: 280-69218-1
Client Matrix: Solid
Dilution: 1.0
Analysis Date: 05/15/2015 1924
Prep Date: N/A
Leach Date: 05/15/2015 1633

Analysis Batch: 280-277585
Prep Batch: N/A
Leach Batch: 280-277724
Units: mg/Kg

Instrument ID: WC_IonChrom11
Lab File ID: 0017.d
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL
25 uL

Analyte	Sample	Result/Qual	Result	RPD	Limit	Qual
Chloride-Soluble	20.8		23.65	13	10	C M
Bromide-Soluble	0.39	U	0.39	NC	10	U
Sulfate-Soluble	20.1		17.10	16	10	M
Fluoride-Soluble	2.5	B	2.31	8	10	B

Quality Control Results

Client: Washington Closure Hanford

Job Number: 280-69218-1

Sdg Number: JP0965

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:280-277584					
LCS 280-277724/1-A	Lab Control Sample	S	Solid	9056M	
MB 280-277724/2-A	Method Blank	S	Solid	9056M	
280-69218-1	J1V718	S	Solid	9056M	
280-69218-1DU	Duplicate	S	Solid	9056M	
280-69218-1MS	Matrix Spike	S	Solid	9056M	
Analysis Batch:280-277585					
LCS 280-277724/1-A	Lab Control Sample	S	Solid	9056M	
MB 280-277724/2-A	Method Blank	S	Solid	9056M	
280-69218-1	J1V718	S	Solid	9056M	
280-69218-1DU	Duplicate	S	Solid	9056M	
280-69218-1MS	Matrix Spike	S	Solid	9056M	
Prep Batch: 280-277724					
LCS 280-277724/1-A	Lab Control Sample	S	Solid	DI Leach	
MB 280-277724/2-A	Method Blank	S	Solid	DI Leach	
280-69218-1	J1V718	S	Solid	DI Leach	
280-69218-1DU	Duplicate	S	Solid	DI Leach	
280-69218-1MS	Matrix Spike	S	Solid	DI Leach	

Report Basis

S = Soluble



90w/Permit/Insion

Project 28002142

Report Due: 5/21/2015

D.A. 5-14-15

TALs TAT: Rich SDY TAT

Temp 0.3 IR# 5
CF +0.2 Initials *AM*

Sample Check-in List

Date: 05/14/15 Date/Time Received: 5/14/15 9:15 GM Screen Result 12 microR/hr

Client: Washington Closure Hanford SDG #: 5P0965 NA [] SAF #: RC-108 NA []

Job Number: 69218 Chain of Custody # RC-108-056

Shipping Container ID: WCH-11-018 Air Bill # 773591302541

- Custody Seals on shipping container intact? NA [] Yes No []
- Custody Seals dated and signed? NA [] Yes No []
- Chain of Custody record present? NA [] Yes No []
- Cooler Temperature °C: 0.3 IRS ^{40.2} _{109.5} ¹¹⁻¹⁵ NA [] 5. Vermiculite/packing materials is NA [] Wet [] Dry
- Number of samples in shipping container: 1
- Sample holding times exceeded? NA [] Yes [] No
- Samples have:
 - Tape Hazard Labels
 - Custody Seals Appropriate Sample Labels
- Samples are:
 - In Good Condition Leaking
 - Broken Have Air Bubbles
 (Only for samples requiring no head space.)
- Sample pH taken? NA pH<2 [] pH>2 [] pH>9 [] Amount HNO₃ Added _____
- Sample Location, Sample Collector Listed? * *yes*
*For documentation only. No corrective action needed.
- Were any anomalies identified in sample receipt? Yes [] No
- Description of anomalies (include sample numbers): _____

Sample Custodian: *AK* Date: 5/14/15

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on _____ by _____ Person Contacted _____

[] No action necessary; process as is.

Project Manager *Darlene Bondy* Date 5-14-15

From: (509) 378-7492
1182 Shipping
US DOE c/o WCH
2345 Stevens Dr

Origin ID: PSCA



Ship Date: 13MAY16
ActWgt: 28.0 LB
CAD: 105286802HNET3810

Richland, WA 98354

Delivery Address Bar Code



BHP TO: (303) 736-0190

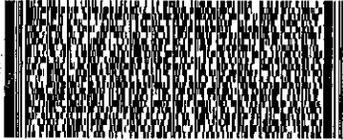
BILL THIRD PARTY

Kae Yoder
TestAmerica
4955 Yarrow St.
A131410
ARVADA, CO 80002

Ref # 0115822000
Invoice #
PO #
Dept #

THU - 14 MAY 10:30A
PRIORITY OVERNIGHT

TRK# 7735 9130 2541
(D201)



XH W H H A

80002
CO-US
DEN



ESXJAG18/EE48

After printing this label:

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of \$100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of \$100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is \$1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.