

0001942

SAF-RC-020
100-BC Remaining Sites –
Soil Full Protocol
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt H4-21

KW 5/26/09
INITIAL/DATE

COMMENTS:

SDG J00458

SAF-RC-020

Rad only

Chem only

Rad & Chem

Complete

Partial

Waste Site: **100-B-21:4 acf stockpile**

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JUN 03 2009
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TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

WASHINGTON CLOSURE HANFORD

SDG #: J00458
SAF#: RC-020
Lot#: D9E060384

Date SDG Closed: May 6, 2009
Data Deliverable: 7 Day / Summary

Joan Kessner

Washington Closure Hanford
2620 Fermi Avenue
Richland, WA 99354



Sample ID Cross Reference Table

Client ID	Lab ID
J18R15	D9E060384-001

TestAmerica Denver

for Kae E. Yoder
Project Manager

May 13, 2009

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CASE NARRATIVE
J00458 / RC-020 / D9E060384

The following report contains the analytical results for one soil sample submitted to TestAmerica by Washington Closure Hanford. The sample was received May 6, 2009, according to documented sample acceptance procedures.

Client ID	Lab ID	Analyses Requested	Analyses Performed
J18R15	D9E060384-001	6010/7471	6010B/7471A

Dilution factors and qualifiers are provided to assist in the interpretation of the results. In some cases, due to interferences or analytes present above the linear calibration curve, samples must be analyzed at a dilution. For samples analyzed at a dilution, the reporting limits are adjusted relative to the dilution required. Dilutions made for reasons other than the presence of target compounds are addressed in the Supplemental QC Information section.

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. Please note that Non-Detect (U) results have been evaluated down to the Method Detection Limit (MDL) and should be considered Non-Detect (U) at the MDL. The results, RLs and MDLs included in this report have been adjusted for dry weight, as appropriate.

TestAmerica utilizes USEPA approved methods in all analytical work. The results apply only to the samples included in this report and meet all requirements of NELAC. All data have been reviewed for compliance with the laboratory QA/QC plan and have been found to be compliant with laboratory protocols, with the exception of any items noted below.

SUPPLEMENTAL QC INFORMATION

Sample Receipt

Samples were received in good condition at a temperature of 0.9°C. No anomalies were encountered during sample receipt.

The TCLP Metals 1311/6010B/7470A analyses for sample J18R15 were placed on hold, as instructed on the chain-of-custody. Client notified May 07, 2009.

Total Metals – SW846 6010B/7471A

Serial dilution of a digestate in analytical batch 9127186 indicates that physical and chemical interferences are present for several elements. Associated results in the analytical report have been flagged with an "L".

Low levels of Zinc and Chromium are present in the method blank associated with QC batch 9127186. Because the concentration in the method blank is not present at a level greater than the reporting limit, corrective action is deemed unnecessary.

Total Metals – SW846 6010B/7471A (cont.)

Percent recoveries were not calculated for Aluminum, Iron, and Manganese in the Matrix Spike performed on sample J18R15 due to the sample concentrations reading greater than four times the spike amounts. The acceptable LCS analysis data indicated that the analytical system was operating within control.

Silver and Mercury were recovered outside the QC control limits in the Matrix Spike performed on sample J18R15. 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.

I certify that this data package 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:



for Kae E. Yoder
Project Manager

Quality Control Definitions of Qualifiers

Qualifier	Definition
*	Surrogate or Relative Percent Difference (RPD) for the MS/MSD is outside control limits.
>	Wetchem: Result greater than the upper limit of the analytical range.
A	Organics: The TIC is a suspected aldol-condensation product.
B	Organics: Method blank contamination. The associated method blank contains the target analyte at a reportable level. Inorganics: Estimated result. Result is less than the RL, but greater than the MDL.
C	Inorganics: The analyte was detected in both the sample and the associated QC blank, and the sample concentration was $\leq 5x$ the blank concentration.
D	Organics/Wetchem: Analyte was reported from a dilution.
DIL	The concentration is estimated or not reported due to dilution or the presence of interfering analytes.
E	Organics: The concentration exceeds the calibration range. Inorganics: Reported value is estimated due to matrix interference.
FT	Wetchem: associated sample analysis is recommended to be performed in the field.
J	Organics: Estimated result. Result is less than RL. Estimated result – TIC. Inorganics: Method Blank contamination. The associated method blank contains the target analyte at a reportable level.
K	Benzo(b&k)fluoranthene are unresolved due to matrix interference. Result is reported as Benzo(b)fluoranthene.
L	Serial dilution of a digestate in the analytical batch indicates that physical and chemical interferences are present.
M	Inorganics: Sample duplicate precision not met.
MSB	The recovery and RPD were not calculated because the sample amount was greater than four times the spike amount.
N	All (except GCMS): MS/MSD or LCS recovery is outside control limits.
N	GC/MS ONLY: Presumptive evidence of compound based on mass spectral library search (TIC)
NC	The recovery and/or RPD were not calculated.
P	Organics (PCB only): Aroclor target analyte with greater than 25% difference between column analyses.
T	GC/MS ONLY: Spike and/or spike duplicate recovery is outside control limits.
TOC	Wetchem: Associated soil samples are not analyzed in quadruplicate.
U	All: Analyzed for but not detected above limiting criteria.
X	Organics: More than 40% difference between the primary and confirmation detector results. The lower of the two results is reported.
Y	Organics: More than 40% difference between the primary and confirmation detector results. The higher of the two results is reported.

Collector: C. Martinez/M. Simonds Company Contact: C. Martinez Telephone No.: 509-539-2816 Project Coordinator: KESSNER, JH Price Code: 85 7 hours

Project Designation: 100-BC Remaining Sites - Soil Full Protocol Sampling Location: 100-B-21:4 ac stockpile SAF No.: RC-020 Method of Shipment: Fed Ex

Ice Chest No.: Field Logbook No.: EPL1173-15 COA: R10B212600 Bill of Lading/Air Bill No.: See OSPC

Shipped To: TestAmerica Incorporated, Richland Offsite Property No.: POSSIBLE SAMPLE HAZARDS/REMARKS: None

Special Handling and/or Storage	Preservation	Type of Container	No. of Container(s)	Volume	See Item (1) in Special Instructions	See Item (2) in Special Instructions	See Item (3) in Special Instructions	Nickel-63 Strontium-90 Total Sr	Isotopic Plutonium	Isotopic Uranium
					None	None	None	None	None	
None	None	G/P	1	125mL	X	X	X	X	X	X

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Sign/Print Names	Date/Time
J18R15	SOIL	04/30/09	1055	[Signature]	1555

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
M. Simonds	4/30/09 1555	[Signature]	1555
[Signature]	4/30/09 1700	[Signature]	1700
[Signature]	4/30/09 1230	[Signature]	1230
[Signature]	5-5-09	[Signature]	5-5-09
[Signature]	5-5-09	[Signature]	5-5-09

SPECIAL INSTRUCTIONS
 (1) ICP Metals - 60107R (Client List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)
 (2) Metals by ICP (TCLP) - 1311/6010 (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); Mercury (TCLP) - 1311/7470
 (3) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Americium-241, Silver-108 metastable)

Hold for analysis for further instruction by J. Resner
 SIDL# 500458 WFH-57-a

LABORATORY SECTION: Received By: [Signature] Date/Time: 5/6/09 0945
 FINAL SAMPLE DISPOSITION: Disposal Method: [Signature] Title: Disposed By: [Signature] Date/Time: 5/6/09 0945

Quote - Protocol 81996

Analytical Due: 5-12-09

Report Due: 5-13-09

Sample Check-in List

Date/Time Received: 5/6/09 0945 GM Screen Result 14 microR/hr

Client: Washington Closure Hanford SDG #: J00458 NA [] SAF #: RL-020 NA []

Lot Number: D9E0100384 Chain of Custody # 7905 ^{as 5/6/09} RL-020-122

Shipping Container ID: WCH-08-045 Air Bill # 7965 8002 2300

1. Custody Seals on shipping container intact? NA [] Yes No []
2. Custody Seals dated and signed? NA [] Yes No []
3. Chain of Custody record present? NA [] Yes No []
4. Cooler Temperature: 0.9° NA []
5. Vermiculite/packing materials is NA [] Wet [] Dry
6. Number of samples in shipping container: 1
7. Sample holding times exceeded? NA [] Yes [] No
8. Samples have:
 - Tape
 - Custody Seals
 - Hazard Labels
 - Appropriate Sample Labels
9. Samples are:
 - In Good Condition
 - Broken
 - Leaking
 - Have Air Bubbles

(Only for samples requiring no head space.)
10. Sample pH taken? NA pH<2 [] pH>2 [] pH>9 [] Amount HNO₃ Added _____
11. Sample Location, Sample Collector Listed? *
*For documentation only. No corrective action needed.
12. Were any anomalies identified in sample receipt? Yes [] No
13. Description of anomalies (include sample numbers): _____

Sample Custodian: *Amy Bivall* Date: 5/6/09

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on _____ by _____ Person Contacted _____

[] No action necessary; process as is.

Project Manager *Walter F. Hand* Date 5-7-09

From: Origin ID: PSCA (509) 375-3131
Shipping Dept.
TESTAMERICA LABORATORIES
2800 GEORGE WASHINGTON WAY

RICHLAND, WA 99354



Ship Date: 05MAY09
ActWgt: 80.0 LB
CAD: 1033413/NET9011
Account#: S*****

Delivery Address Bar Code



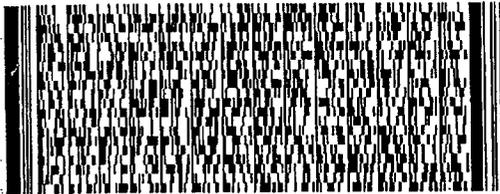
Ref # WCH-08-045
Invoice #
PO #
Dept #

SHIP TO: (303) 736-0100 BILL SENDER
SAMPLE RECEIVING DENVER
TESTAMERICA DENVER
4955 YARROW ST

ARVADA, CO 80002

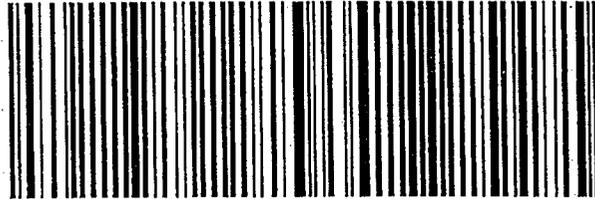
TRK# 7965 8002.2300
0201

WED - 06MAY A1
PRIORITY OVERNIGHT



XH WHHA

80002
CO-US
DEN



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METHODS SUMMARY

D9E060384

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>	<u>PREPARATION METHOD</u>
Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 3050B
Mercury in Solid Waste (Manual Cold-Vapor)	SW846 7471A	SW846 7471A
Method for Determination of Water Content of Soil	ASTM D 2216-90	ASTM D2216-90

References:

ASTM Annual Book Of ASTM Standards.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical
Methods", Third Edition, November 1986 and its updates.

METHOD / ANALYST SUMMARY

D9E060384

<u>ANALYTICAL METHOD</u>	<u>ANALYST</u>	<u>ANALYST ID</u>
ASTM D 2216-90	Reva M. Golden	010906
SW846 6010B	Lynn-Anne Trudell	006645
SW846 7471A	Christopher Grisdale	009582
SW846 7471A	Christopher Grisdale	9582

References:

ASTM Annual Book Of ASTM Standards.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical
Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

D9E060384

<u>WO #</u>	<u>SAMPLE#</u>	<u>CLIENT</u>	<u>SAMPLE ID</u>	<u>SAMPLED</u>	<u>SAMP</u>
				<u>DATE</u>	<u>TIME</u>
LCG78	001	J18R15		04/30/09	10:55

NOTE(S) :

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

QC DATA ASSOCIATION SUMMARY

D9E060384

Sample Preparation and Analysis Control Numbers

<u>SAMPLE#</u>	<u>MATRIX</u>	<u>ANALYTICAL METHOD</u>	<u>LEACH BATCH #</u>	<u>PREP BATCH #</u>	<u>MS RUN#</u>
001	SOLID	ASTM D 2216-90		9127127	9127075
	SOLID	SW846 7471A		9127113	9127064
	SOLID	SW846 6010B		9127186	9127118

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Total Metals

SW846 6010B/7471A

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Washington Closure Hanford LLC

Metals Sample Analysis Data Sheet

Lab Name: TESTAMERICA DENVER
 Lot/SDG Number: D9E060384
 Matrix: SOLID
 Date/Time Received: 05/06/09 09:45

Client Sample ID: J18R15
 Lab Sample ID: D9E060384-001
 Lab WorkOrder: LCG78
 Date/Time Collected: 04/30/09 10:55

Analysis Method: 6010B TOTAL % Moisture: 5.4 Basis: Dry Leach Date: Unit: mg/kg

QC Batch	Analyte	Conc.	MDL	RL	Q	Prep Date	Analysis Date	Dilution
9127186	Aluminum	6600	1.6	5.3		5/8/09	05/11/09 14:07	1
9127186	Antimony	0.59	0.40	0.63	B	5/8/09	05/11/09 14:07	1
9127186	Arsenic	3.3	0.70	1.1		5/8/09	05/11/09 14:07	1
9127186	Barium	54	0.080	0.53		5/8/09	05/11/09 14:07	1
9127186	Beryllium	0.74	0.035	0.21		5/8/09	05/11/09 14:07	1
9127186	Boron	1.0	1.0	2.1	U	5/8/09	05/11/09 14:07	1
9127186	Cadmium	0.043	0.043	0.21	U	5/8/09	05/11/09 14:07	1
9127186	Calcium	7400	15	53		5/8/09	05/11/09 14:07	1
9127186	Chromium	14	0.061	0.21		5/8/09	05/11/09 14:07	1
9127186	Cobalt	7.6	0.11	1.1	L	5/8/09	05/11/09 14:07	1
9127186	Copper	14	0.23	1.1		5/8/09	05/11/09 14:07	1
9127186	Iron	20000	4.0	5.3		5/8/09	05/11/09 14:07	1
9127186	Lead	5.3	0.29	0.53		5/8/09	05/11/09 14:07	1
9127186	Magnesium	4800	3.9	21		5/8/09	05/11/09 14:07	1
9127186	Manganese	290	0.11	1.1	L	5/8/09	05/11/09 14:07	1
9127186	Molybdenum	0.35	0.27	2.1	B	5/8/09	05/11/09 14:07	1
9127186	Nickel	12	0.13	4.2	L	5/8/09	05/11/09 14:07	1
9127186	Potassium	1000	43	320		5/8/09	05/11/09 14:07	1
9127186	Selenium	0.91	0.91	1.1	U	5/8/09	05/11/09 14:07	1
9127186	Silicon	150	2.2	11	L	5/8/09	05/11/09 14:07	1
9127186	Silver	0.17	0.17	0.21	UN	5/8/09	05/11/09 14:07	1
9127186	Sodium	280	62	130		5/8/09	05/11/09 14:07	1
9127186	Vanadium	59	0.099	2.1	L	5/8/09	05/11/09 14:07	1
9127186	Zinc	49	0.42	1.1	L	5/8/09	05/11/09 14:07	1

Analysis Method: 7471A TOTAL % Moisture: 5.4 Basis: Dry Leach Date: Unit: mg/kg

QC Batch	Analyte	Conc.	MDL	RL	Q	Prep Date	Analysis Date	Dilution
9127113	Mercury	0.098	0.0058	0.018	N	5/8/09	05/08/09 22:57	1

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Washington Closure Hanford LLC Metals Method Blank Analysis Data Sheet

Lab Name: TESTAMERICA DENVER

Lot/SDG Number: D9E060384

Lab Sample ID: D9E070000-186B Work Order: LCHN8 Analysis Method: 6010B TOTAL Matrix: SOLID Unit: mg/kg

QC Batch	Analyte	Conc.	MDL	RL	Q	Prep Date	Analysis Date	Dilution
9127186	Antimony	0.38	0.38	0.60	U	05/08/09	05/11/09 14:02	1
9127186	Arsenic	0.66	0.66	1.0	U	05/08/09	05/11/09 14:02	1
9127186	Iron	3.8	3.8	5.0	U	05/08/09	05/11/09 14:02	1
9127186	Lead	0.27	0.27	0.50	U	05/08/09	05/11/09 14:02	1
9127186	Magnesium	3.7	3.7	20	U	05/08/09	05/11/09 14:02	1
9127186	Manganese	0.10	0.10	1.0	U	05/08/09	05/11/09 14:02	1
9127186	Molybdenum	0.26	0.26	2.0	U	05/08/09	05/11/09 14:02	1
9127186	Barium	0.076	0.076	0.50	U	05/08/09	05/11/09 14:02	1
9127186	Nickel	0.12	0.12	4.0	U	05/08/09	05/11/09 14:02	1
9127186	Potassium	41	41	300	U	05/08/09	05/11/09 14:02	1
9127186	Beryllium	0.033	0.033	0.20	U	05/08/09	05/11/09 14:02	1
9127186	Selenium	0.86	0.86	1.0	U	05/08/09	05/11/09 14:02	1
9127186	Silicon	2.1	2.1	10	U	05/08/09	05/11/09 14:02	1
9127186	Silver	0.16	0.16	0.20	U	05/08/09	05/11/09 14:02	1
9127186	Sodium	59	59	120	U	05/08/09	05/11/09 14:02	1
9127186	Vanadium	0.094	0.094	2.0	U	05/08/09	05/11/09 14:02	1
9127186	Zinc	0.42	0.40	1.0	B	05/08/09	05/11/09 14:02	1
9127186	Chromium	0.088	0.058	0.20	B	05/08/09	05/11/09 14:02	1
9127186	Boron	0.98	0.98	2.0	U	05/08/09	05/11/09 14:02	1
9127186	Cadmium	0.041	0.041	0.20	U	05/08/09	05/11/09 14:02	1
9127186	Calcium	14	14	50	U	05/08/09	05/11/09 14:02	1
9127186	Cobalt	0.10	0.10	1.0	U	05/08/09	05/11/09 14:02	1
9127186	Copper	0.22	0.22	1.0	U	05/08/09	05/11/09 14:02	1
9127186	Aluminum	1.6	1.6	5.0	U	05/08/09	05/11/09 14:02	1

Lab Sample ID: D9E070000-113B Work Order: LCHKT Analysis Method: 7471A TOTAL Matrix: SOLID Unit: mg/kg

QC Batch	Analyte	Conc.	MDL	RL	Q	Prep Date	Analysis Date	Dilution
9127113	Mercury	0.0055	0.0055	0.017	U	05/08/09	05/08/09 22:52	1

Washington Closure Hanford LLC

Metals Laboratory Control Sample Analysis Data Sheet

Lab Name: TESTAMERICA DENVER

Lot/SDG Number: D9E060384

Lab Sample ID: D9E070000-186C

WorkOrder: LCHN8

Analysis Method: 6010B TOTAL

Matrix: SOLID Unit: mg/kg

QC Batch	Analyte	True	Found	%Rec	Q	Limits	Prep Date	Analysis Date	Dilution
9127186	Antimony	50.0	48.8	98		82 - 110	05/08/09	05/11/09 14:04	1
9127186	Arsenic	100	93.4	93		85 - 110	05/08/09	05/11/09 14:04	1
9127186	Iron	100	93.5	93		87 - 120	05/08/09	05/11/09 14:04	1
9127186	Lead	50.0	45.7	91		86 - 110	05/08/09	05/11/09 14:04	1
9127186	Magnesium	5000	4820	96		90 - 110	05/08/09	05/11/09 14:04	1
9127186	Manganese	50.0	46.3	93		88 - 110	05/08/09	05/11/09 14:04	1
9127186	Molybdenum	100	90.9	91		86 - 110	05/08/09	05/11/09 14:04	1
9127186	Barium	200	184	92		87 - 112	05/08/09	05/11/09 14:04	1
9127186	Nickel	50.0	44.3	89		87 - 110	05/08/09	05/11/09 14:04	1
9127186	Potassium	5000	4550	91		89 - 110	05/08/09	05/11/09 14:04	1
9127186	Beryllium	5.00	4.84	97		84 - 114	05/08/09	05/11/09 14:04	1
9127186	Selenium	200	178	89		83 - 110	05/08/09	05/11/09 14:04	1
9127186	Silicon	1000	339	34		10 - 70	05/08/09	05/11/09 14:04	1
9127186	Silver	5.00	4.33	87		87 - 114	05/08/09	05/11/09 14:04	1
9127186	Sodium	5000	4510	90		90 - 112	05/08/09	05/11/09 14:04	1
9127186	Vanadium	50.0	45.9	92		88 - 110	05/08/09	05/11/09 14:04	1
9127186	Zinc	50.0	47.6	95		76 - 114	05/08/09	05/11/09 14:04	1
9127186	Chromium	20.0	18.6	93		84 - 114	05/08/09	05/11/09 14:04	1
9127186	Boron	100	95.5	96		81 - 110	05/08/09	05/11/09 14:04	1
9127186	Cadmium	10.0	8.73	87		87 - 110	05/08/09	05/11/09 14:04	1
9127186	Calcium	5000	4870	97		82 - 114	05/08/09	05/11/09 14:04	1
9127186	Cobalt	50.0	44.7	89		87 - 110	05/08/09	05/11/09 14:04	1
9127186	Copper	25.0	23.5	94		88 - 110	05/08/09	05/11/09 14:04	1
9127186	Aluminum	200	193	97		82 - 116	05/08/09	05/11/09 14:04	1

Lab Sample ID: D9E070000-113C

WorkOrder: LCHKT

Analysis Method: 7471A TOTAL

Matrix: SOLID Unit: mg/kg

QC Batch	Analyte	True	Found	%Rec	Q	Limits	Prep Date	Analysis Date	Dilution
9127113	Mercury	0.417	0.419	101		87 - 111	05/08/09	05/08/09 22:54	1

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Washington Closure Hanford LLC

Metals Matrix Spike Analysis Data Sheet

Lab Name: TESTAMERICA DENVER

Lot/SDG Number: D9E060384

Client Sample ID: J18R15

Lab WorkOrder: LCG78

% Moisture: 5.4

Basis: Dry

Lab Sample ID: D9E060384-001S

Analysis Method 6010B TOTAL

Matrix: SOLID

Unit: mg/kg

QC Batch ID: 9127186

Analyte	Spike Amount	Sample Result	Q	MS Result	% Rec	Q	QC Limit	Prep Date	Analysis Date	Dilution
Aluminum	207	6600		8470		NC MSB	50 - 200	05/08/09	05/11/09 14:11	1
Antimony	51.8	0.59	B	31.9	60		20 - 200	05/08/09	05/11/09 14:11	1
Arsenic	104	3.3		87.7	81		76 - 111	05/08/09	05/11/09 14:11	1
Barium	207	54		230	85		52 - 159	05/08/09	05/11/09 14:11	1
Beryllium	5.18	0.74		5.11	84		72 - 105	05/08/09	05/11/09 14:11	1
Boron	104	1.0	U	84.3	81		75 - 107	05/08/09	05/11/09 14:11	1
Cadmium	10.4	0.043	U	7.92	76		40 - 130	05/08/09	05/11/09 14:11	1
Calcium	5180	7400		13500	117		43 - 165	05/08/09	05/11/09 14:11	1
Chromium	20.7	14		29.9	76		70 - 200	05/08/09	05/11/09 14:11	1
Cobalt	51.8	7.6	L	47.2	76		72 - 106	05/08/09	05/11/09 14:11	1
Copper	25.9	14		36.6	86		37 - 187	05/08/09	05/11/09 14:11	1
Iron	104	20000		21400		NC MSB	70 - 200	05/08/09	05/11/09 14:11	1
Lead	51.8	5.3		45.9	78		70 - 200	05/08/09	05/11/09 14:11	1
Magnesium	5180	4800		9600	92		64 - 145	05/08/09	05/11/09 14:11	1
Manganese	51.8	290	L	360		NC MSB	40 - 200	05/08/09	05/11/09 14:11	1
Molybdenum	104	0.35	B	80.6	77		75 - 103	05/08/09	05/11/09 14:11	1
Nickel	51.8	12	L	50.1	73		61 - 126	05/08/09	05/11/09 14:11	1
Potassium	5180	1000		5460	86		56 - 172	05/08/09	05/11/09 14:11	1
Selenium	207	0.91	U	160	77		76 - 104	05/08/09	05/11/09 14:11	1
Silicon	1040	150	L	352	20		20 - 200	05/08/09	05/11/09 14:11	1
Silver	5.18	0.17	UN	3.67	71	N	75 - 141	05/08/09	05/11/09 14:11	1
Sodium	5180	280		4630	84		78 - 111	05/08/09	05/11/09 14:11	1
Vanadium	51.8	59	L	97.8	75		50 - 169	05/08/09	05/11/09 14:11	1
Zinc	51.8	49	L	91.7	83		70 - 200	05/08/09	05/11/09 14:11	1

Client Sample ID: J18R15

Lab WorkOrder: LCG78

% Moisture: 5.4

Basis: Dry

Lab Sample ID: D9E060384-001S

Analysis Method 7471A TOTAL

Matrix: SOLID

Unit: mg/kg

QC Batch ID: 9127113

Analyte	Spike Amount	Sample Result	Q	MS Result	% Rec	Q	QC Limit	Prep Date	Analysis Date	Dilution
Mercury	0.426	0.098	N	0.451	83	N	87 - 111	05/08/09	05/08/09 22:59	1

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Washington Closure Hanford LLC

Metals Duplicate Sample Analysis Data Sheet

Lab Name: TESTAMERICA DENVER

Lot/SDG Number: D9E060384

Client Sample ID: J18R15 DUP

Lab WorkOrder: LCG78

% Moisture: 5.4

Basis: Dry

Lab Sample ID: D9E060384-001X

Analysis Method: 6010B TOTAL

Matrix: SOLID

Unit: mg/kg

Batch	Analyte	RPD Limit	Sample Result	Q	Duplicate Result	RPD	Q	Prep Date	Analysis Date	Dilution
9127186	Antimony	40	0.59	B	0.52	11	B	05/08/09	05/11/09 14:14	1
9127186	Arsenic	30	3.3		3.2	0.93		05/08/09	05/11/09 14:14	1
9127186	Iron	40	20000		19000	2.9		05/08/09	05/11/09 14:14	1
9127186	Lead	40	5.3		5.5	4.7		05/08/09	05/11/09 14:14	1
9127186	Magnesium	30	4800		5000	4.0		05/08/09	05/11/09 14:14	1
9127186	Manganese	40	290	L	310	5.5	L	05/08/09	05/11/09 14:14	1
9127186	Molybdenum	30	0.35	B	0.35	0.0	B	05/08/09	05/11/09 14:14	1
9127186	Barium	30	54		63	15		05/08/09	05/11/09 14:14	1
9127186	Nickel	30	12	L	13	9.4	L	05/08/09	05/11/09 14:14	1
9127186	Potassium	40	1000		990	2.1		05/08/09	05/11/09 14:14	1
9127186	Beryllium	30	0.74		0.69	6.1		05/08/09	05/11/09 14:14	1
9127186	Selenium	30	0.91	U	0.91	0	U	05/08/09	05/11/09 14:14	1
9127186	Silicon	40	150	L	200	32	L	05/08/09	05/11/09 14:14	1
9127186	Silver	30	0.17	UN	0.17	0	U	05/08/09	05/11/09 14:14	1
9127186	Sodium	30	280		270	3.2		05/08/09	05/11/09 14:14	1
9127186	Vanadium	30	59	L	53	9.4	L	05/08/09	05/11/09 14:14	1
9127186	Zinc	40	49	L	46	6.1	L	05/08/09	05/11/09 14:14	1
9127186	Chromium	40	14		12	20		05/08/09	05/11/09 14:14	1
9127186	Boron	30	1.0	U	1.0	0	U	05/08/09	05/11/09 14:14	1
9127186	Cadmium	30	0.043	U	0.043	0	U	05/08/09	05/11/09 14:14	1
9127186	Calcium	30	7400		7200	2.6		05/08/09	05/11/09 14:14	1
9127186	Cobalt	30	7.6	L	8.0	4.6	L	05/08/09	05/11/09 14:14	1
9127186	Copper	30	14		14	5.2		05/08/09	05/11/09 14:14	1
9127186	Aluminum	40	6600		6400	3.5		05/08/09	05/11/09 14:14	1

Client Sample ID: J18R15 DUP

Lab WorkOrder: LCG78

% Moisture: 5.4

Basis: Dry

Lab Sample ID: D9E060384-001X

Analysis Method: 7471A TOTAL

Matrix: SOLID

Unit: mg/kg

Batch	Analyte	RPD Limit	Sample Result	Q	Duplicate Result	RPD	Q	Prep Date	Analysis Date	Dilution
9127113	Mercury	20	0.098	N	0.086	13		05/08/09	05/08/09 23:01	1

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Percent Moisture

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Washington Closure Hanford LLC

Wet Chemistry Sample Analysis Data Sheet

Lab Name: TESTAMERICA DENVER
Lot/SDG Number: D9E060384
Matrix: SOLID
Date/Time Received: 05/06/09 09:45

Client Sample ID: J18R15
Lab Sample ID: D9E060384-001
Lab WorkOrder: LCG78
Date/Time Collected: 04/30/09 10:55

Analysis Method: D 2216-90 % Moisture: N/A Basis: Wet Leach Date: Unit: %

QC Batch	Analyte	Conc.	MDL	RL	Q	Prep Date	Analysis Date	Dilution
9127127	Percent Moisture	5.4	0.0	0.10		5/7/09	05/07/09 13:00	1

Wet Chemistry Duplicate Sample Analysis Data Sheet

Lab Name: TESTAMERICA DENVER

Lot/SDG Number: D9E060384

Client Sample ID: J18R15 DUP

Lab WorkOrder: LCG78

% Moisture: N/A

Basis: Wet

Lab Sample ID: D9E060384-001X

Analysis Method: D 2216-90

Matrix: SOLID

Unit: %

Batch	Analyte	RPD Limit	Sample Result	Q	Duplicate Result	RPD	Q	Prep Date	Analysis Date	Dilution
9127127	Percent Moisture	20	5.4		5.1	6.1		05/07/09	05/07/09 13:00	1