0079260

SAF-RC-029
Remaining Sites Confirmation Sampling - Soil
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt H4-21 KW 10/31/08
INITIAL/DATE

COMMENTS:

SDG K1338 SAF RC-029

Rad only X Chem only Rad & Chem

X Complete Partial

Waste Site: 100-D-78

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NOV 07 2008
EDMC

LIONVILLE LABORATORY INC.

27 October 2008

RECEIVED
OCT 2008

Joan Kessner
WC-Hanford, Inc.
2620 Fermi Avenue
MSIN H9-03
Richland, WA 99354

Subject: Analytical Data Package

Dear Ms. Kessner:

Enclosed are the hard copy analytical reports for the batch number/fraction indicated (marked X) in the following table:

LvLI Batch #	0809L122
SDG #	K1338
SAF #	RC-029
Date Received	9/17/08
# Samples	8
Matrix	SOIL
Volatiles	
Semivolatiles	
Pest/PCB	
Glycols	
DRO/KRO/GRO	
GC Alcohols	
Herbicides	
Metals	X
Inorganics	X

The electronic data deliverable (EDD) will be emailed shortly. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely,
Lionville Laboratory Incorporated

Orlette S. Johnson
Project Manager
r:\group\pm\orlette\hanford\data\b_ltrs.doc

208 Welsh Pool Road • Exton, PA 19341- 1313 • (610) 280-3000 • Fax (610) 280-3041

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OCT 2008

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1338

DATE RECEIVED: 09/17/08 LVL LOT # :0809L122

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17FK8						
% SOLIDS	001	S	08L%S077	09/15/08	09/17/08	09/18/08
% SOLIDS	001 REP	S	08L%S077	09/15/08	09/17/08	09/18/08
BROMIDE BY IC	001	S	08LICS80	09/15/08	10/16/08	10/16/08
CHLORIDE BY IC	001	S	08LICS80	09/15/08	10/16/08	10/16/08
FLUORIDE BY IC	001	S	08LICS80	09/15/08	10/16/08	10/16/08
NITRITE BY IC	001	S	08LICS80	09/15/08	10/16/08	10/16/08
NITRATE BY IC	001	S	08LICS80	09/15/08	10/16/08	10/16/08
PHOSPHATE BY IC	001	S	08LICS80	09/15/08	10/16/08	10/16/08
CHROMIUM VI	001	S	08LVI063	09/15/08	09/18/08	09/18/08
CHROMIUM VI	001 REP	S	08LVI063	09/15/08	09/18/08	09/18/08
CHROMIUM VI	001 MS	S	08LVI063	09/15/08	09/18/08	09/18/08
CHROMIUM VI	001 MSD	S	08LVI063	09/15/08	09/18/08	09/18/08
SULFATE BY IC	001	S	08LICS80	09/15/08	10/16/08	10/17/08
NITRITE	001	S	08LN3S30	09/15/08	10/12/08	10/12/08
NITRATE	001	S	08LN3S30	09/15/08	10/12/08	10/12/08
PH	001	S	08LPH048	09/15/08	09/18/08	09/18/08
PH	001 REP	S	08LPH048	09/15/08	09/18/08	09/18/08
J17FK9						
% SOLIDS	002	S	08L%S077	09/15/08	09/17/08	09/18/08
BROMIDE BY IC	002	S	08LICS80	09/15/08	10/16/08	10/16/08
CHLORIDE BY IC	002	S	08LICS80	09/15/08	10/16/08	10/16/08
FLUORIDE BY IC	002	S	08LICS80	09/15/08	10/16/08	10/16/08
NITRITE BY IC	002	S	08LICS80	09/15/08	10/16/08	10/16/08
NITRATE BY IC	002	S	08LICS80	09/15/08	10/16/08	10/16/08
PHOSPHATE BY IC	002	S	08LICS80	09/15/08	10/16/08	10/17/08
CHROMIUM VI	002	S	08LVI063	09/15/08	09/18/08	09/18/08
SULFATE BY IC	002	S	08LICS80	09/15/08	10/16/08	10/17/08
NITRITE	002	S	08LN3S30	09/15/08	10/12/08	10/12/08
NITRATE	002	S	08LN3S30	09/15/08	10/12/08	10/12/08
PH	002	S	08LPH048	09/15/08	09/18/08	09/18/08
J17FL0						
% SOLIDS	003	S	08L%S077	09/15/08	09/17/08	09/18/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1338

DATE RECEIVED: 09/17/08 LVL LOT # :0809L122

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BROMIDE BY IC	003	S	08LICS80	09/15/08	10/16/08	10/16/08
CHLORIDE BY IC	003	S	08LICS80	09/15/08	10/16/08	10/16/08
FLUORIDE BY IC	003	S	08LICS80	09/15/08	10/16/08	10/16/08
NITRITE BY IC	003	S	08LICS80	09/15/08	10/16/08	10/16/08
NITRATE BY IC	003	S	08LICS80	09/15/08	10/16/08	10/16/08
PHOSPHATE BY IC	003	S	08LICS80	09/15/08	10/16/08	10/17/08
CHROMIUM VI	003	S	08LVI063	09/15/08	09/18/08	09/18/08
SULFATE BY IC	003	S	08LICS80	09/15/08	10/16/08	10/17/08
NITRITE	003	S	08LN3S30	09/15/08	10/12/08	10/12/08
NITRATE	003	S	08LN3S30	09/15/08	10/12/08	10/12/08
PH	003	S	08LPH048	09/15/08	09/18/08	09/18/08
J17FL1						
% SOLIDS	004	S	08L%S077	09/15/08	09/17/08	09/18/08
BROMIDE BY IC	004	S	08LICS80	09/15/08	10/16/08	10/16/08
CHLORIDE BY IC	004	S	08LICS80	09/15/08	10/16/08	10/16/08
FLUORIDE BY IC	004	S	08LICS80	09/15/08	10/16/08	10/16/08
NITRITE BY IC	004	S	08LICS80	09/15/08	10/16/08	10/16/08
NITRATE BY IC	004	S	08LICS80	09/15/08	10/16/08	10/16/08
PHOSPHATE BY IC	004	S	08LICS80	09/15/08	10/16/08	10/16/08
CHROMIUM VI	004	S	08LVI063	09/15/08	09/18/08	09/18/08
SULFATE BY IC	004	S	08LICS80	09/15/08	10/16/08	10/17/08
NITRITE	004	S	08LN3S30	09/15/08	10/12/08	10/12/08
NITRATE	004	S	08LN3S30	09/15/08	10/12/08	10/12/08
PH	004	S	08LPH048	09/15/08	09/18/08	09/18/08
J17FL3						
% SOLIDS	005	S	08L%S077	09/15/08	09/17/08	09/18/08
BROMIDE BY IC	005	S	08LICS80	09/15/08	10/16/08	10/16/08
CHLORIDE BY IC	005	S	08LICS80	09/15/08	10/16/08	10/16/08
FLUORIDE BY IC	005	S	08LICS80	09/15/08	10/16/08	10/16/08
NITRITE BY IC	005	S	08LICS80	09/15/08	10/16/08	10/16/08
NITRATE BY IC	005	S	08LICS80	09/15/08	10/16/08	10/16/08
PHOSPHATE BY IC	005	S	08LICS80	09/15/08	10/16/08	10/16/08
CHROMIUM VI	005	S	08LVI063	09/15/08	09/18/08	09/18/08
SULFATE BY IC	005	S	08LICS80	09/15/08	10/16/08	10/17/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1338

DATE RECEIVED: 09/17/08 LVL LOT # :0809L122

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
NITRITE	005	S	08LN3S30	09/15/08	10/12/08	10/12/08
NITRATE	005	S	08LN3S30	09/15/08	10/12/08	10/12/08
PH	005	S	08LPH048	09/15/08	09/18/08	09/18/08
J17HM2						
% SOLIDS	006	S	08L%S077	09/15/08	09/17/08	09/18/08
BROMIDE BY IC	006	S	08LICS80	09/15/08	10/16/08	10/16/08
CHLORIDE BY IC	006	S	08LICS80	09/15/08	10/16/08	10/16/08
FLUORIDE BY IC	006	S	08LICS80	09/15/08	10/16/08	10/16/08
NITRITE BY IC	006	S	08LICS80	09/15/08	10/16/08	10/16/08
NITRATE BY IC	006	S	08LICS80	09/15/08	10/16/08	10/16/08
PHOSPHATE BY IC	006	S	08LICS80	09/15/08	10/16/08	10/16/08
CHROMIUM VI	006	S	08LVI063	09/15/08	09/18/08	09/18/08
SULFATE BY IC	006	S	08LICS80	09/15/08	10/16/08	10/17/08
NITRITE	006	S	08LN3S30	09/15/08	10/12/08	10/12/08
NITRATE	006	S	08LN3S30	09/15/08	10/12/08	10/12/08
PH	006	S	08LPH048	09/15/08	09/18/08	09/18/08
J17HM3						
% SOLIDS	007	S	08L%S077	09/15/08	09/17/08	09/18/08
BROMIDE BY IC	007	S	08LICS80	09/15/08	10/16/08	10/16/08
CHLORIDE BY IC	007	S	08LICS80	09/15/08	10/16/08	10/16/08
FLUORIDE BY IC	007	S	08LICS80	09/15/08	10/16/08	10/16/08
NITRITE BY IC	007	S	08LICS80	09/15/08	10/16/08	10/16/08
NITRATE BY IC	007	S	08LICS80	09/15/08	10/16/08	10/16/08
PHOSPHATE BY IC	007	S	08LICS80	09/15/08	10/16/08	10/16/08
CHROMIUM VI	007	S	08LVI063	09/15/08	09/18/08	09/18/08
SULFATE BY IC	007	S	08LICS80	09/15/08	10/16/08	10/16/08
NITRITE	007	S	08LN3S30	09/15/08	10/12/08	10/12/08
NITRATE	007	S	08LN3S30	09/15/08	10/12/08	10/12/08
PH	007	S	08LPH048	09/15/08	09/18/08	09/18/08
J17HM4						
% SOLIDS	008	S	08L%S077	09/15/08	09/17/08	09/18/08
BROMIDE BY IC	008	S	08LICS80	09/15/08	10/16/08	10/16/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1338

DATE RECEIVED: 09/17/08 LVL LOT # :0809L122

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BROMIDE BY IC	008 REP	S	08LICS80	09/15/08	10/16/08	10/16/08
BROMIDE BY IC	008 MS	S	08LICS80	09/15/08	10/16/08	10/17/08
CHLORIDE BY IC	008	S	08LICS80	09/15/08	10/16/08	10/16/08
CHLORIDE BY IC	008 REP	S	08LICS80	09/15/08	10/16/08	10/16/08
CHLORIDE BY IC	008 MS	S	08LICS80	09/15/08	10/16/08	10/17/08
FLUORIDE BY IC	008	S	08LICS80	09/15/08	10/16/08	10/16/08
FLUORIDE BY IC	008 REP	S	08LICS80	09/15/08	10/16/08	10/16/08
FLUORIDE BY IC	008 MS	S	08LICS80	09/15/08	10/16/08	10/17/08
NITRITE BY IC	008	S	08LICS80	09/15/08	10/16/08	10/16/08
NITRITE BY IC	008 REP	S	08LICS80	09/15/08	10/16/08	10/16/08
NITRITE BY IC	008 MS	S	08LICS80	09/15/08	10/16/08	10/17/08
NITRATE BY IC	008	S	08LICS80	09/15/08	10/16/08	10/16/08
NITRATE BY IC	008 REP	S	08LICS80	09/15/08	10/16/08	10/16/08
NITRATE BY IC	008 MS	S	08LICS80	09/15/08	10/16/08	10/17/08
PHOSPHATE BY IC	008	S	08LICS80	09/15/08	10/16/08	10/16/08
PHOSPHATE BY IC	008 REP	S	08LICS80	09/15/08	10/16/08	10/16/08
PHOSPHATE BY IC	008 MS	S	08LICS80	09/15/08	10/16/08	10/17/08
CHROMIUM VI	008	S	08LVI063	09/15/08	09/18/08	09/18/08
SULFATE BY IC	008	S	08LICS80	09/15/08	10/16/08	10/16/08
SULFATE BY IC	008 REP	S	08LICS80	09/15/08	10/16/08	10/16/08
SULFATE BY IC	008 MS	S	08LICS80	09/15/08	10/16/08	10/17/08
NITRITE	008	S	08LN3S30	09/15/08	10/12/08	10/12/08
NITRITE	008 REP	S	08LN3S30	09/15/08	10/12/08	10/12/08
NITRITE	008 MS	S	08LN3S30	09/15/08	10/12/08	10/12/08
NITRATE	008	S	08LN3S30	09/15/08	10/12/08	10/12/08
NITRATE	008 REP	S	08LN3S30	09/15/08	10/12/08	10/12/08
NITRATE	008 MS	S	08LN3S30	09/15/08	10/12/08	10/12/08
PH	008	S	08LPH048	09/15/08	09/18/08	09/18/08

LAB QC:

BROMIDE BY IC	MB1	S	08LICS80	N/A	10/16/08	10/16/08
BROMIDE BY IC	MB1 BS	S	08LICS80	N/A	10/16/08	10/16/08
CHLORIDE BY IC	MB1	S	08LICS80	N/A	10/16/08	10/16/08
CHLORIDE BY IC	MB1 BS	S	08LICS80	N/A	10/16/08	10/16/08
FLUORIDE BY IC	MB1	S	08LICS80	N/A	10/16/08	10/16/08
FLUORIDE BY IC	MB1 BS	S	08LICS80	N/A	10/16/08	10/16/08
NITRITE BY IC	MB1	S	08LICS80	N/A	10/16/08	10/16/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1338

DATE RECEIVED: 09/17/08 LVL LOT # :0809L122

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
NITRITE BY IC	MB1 BS	S	08LICS80	N/A	10/16/08	10/16/08
NITRATE BY IC	MB1	S	08LICS80	N/A	10/16/08	10/16/08
NITRATE BY IC	MB1 BS	S	08LICS80	N/A	10/16/08	10/16/08
PHOSPHATE BY IC	MB1	S	08LICS80	N/A	10/16/08	10/16/08
PHOSPHATE BY IC	MB1 BS	S	08LICS80	N/A	10/16/08	10/16/08
CHROMIUM VI	MB1	S	08LVI063	N/A	09/18/08	09/18/08
CHROMIUM VI	MB1 BS	S	08LVI063	N/A	09/18/08	09/18/08
CHROMIUM VI	MB1 BSD	S	08LVI063	N/A	09/18/08	09/18/08
SULFATE BY IC	MB1	S	08LICS80	N/A	10/16/08	10/16/08
SULFATE BY IC	MB1 BS	S	08LICS80	N/A	10/16/08	10/16/08
NITRITE	MB1	S	08LN3S30	N/A	10/12/08	10/12/08
NITRITE	MB1 BS	S	08LN3S30	N/A	10/12/08	10/12/08
NITRITE	MB1 BSD	S	08LN3S30	N/A	10/12/08	10/12/08
NITRATE	MB1	S	08LN3S30	N/A	10/12/08	10/12/08
NITRATE	MB1 BS	S	08LN3S30	N/A	10/12/08	10/12/08
NITRATE	MB1 BSD	S	08LN3S30	N/A	10/12/08	10/12/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: WC-HANFORD RC-029 K1338
LVL#: 0809L122

W.O.#: 60049-001-001-0001-00
Date Received: 09-17-08

INORGANIC NARRATIVE

1. This narrative covers the analyses of 8 soil samples.

2. The samples were prepared and analyzed in accordance with the methods indicated on the attached glossary. Elevated reporting limits associated with Phosphate sample J17FK9 is the result of the necessity of dilution required to diminish matrix interference.

   Lionville Lab (LvL) is NELAP accredited by the State of Pennsylvania. For a complete list of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager. LvL certifies that all test results meet the requirements of NELAC with any exception noted in the following statements.

3. Sample holding times as required by the method and/or contract were met.

4. The results presented in this report are derived from samples that met LvLI's sample acceptance policy.

5. The method blanks were within the method criteria with the exception of 08LICS80-MB1 for Sulfate that was above the reporting limit of 2.5 mg/Kg at 3.5 mg/Kg.

6. The Laboratory Control Samples (LCS) were within the laboratory control limits with the exception of 08LICS80 for Sulfate that was below the 90-110% control limits at 89.3%. The duplicate LCS for Nitrate and Nitrite were within the 20% Relative Percent Difference (RPD) control limit.

7. The matrix spike recoveries were within the 75-125% control limits.

8. The replicate analyses were within the 20% RPD control limit.

9. Results for soil samples are reported on a dry weight basis.

10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory

10/22/08
Date

njp\i09--122

The results presented in this report relate to the analytical testing and conditions of the samples upon receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 20 pages.

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

	ASTM	SW846	OTHER
% Ash	__ D2216-80		
% Moisture	__ D2216-80		__ ILMO4.0 (e)
% Solids	✓ D2216-80		__ ILMO4.0 (e)
% Volatile Solids	__ D2216-80		
ASTM Extraction in Water	__ D3987-81/85		
BTU	__ D240-87		
CEC		__ 9081	__ c
Chromium VI		✓ 3060A/7196A	
Corrosivity ___ by coupon ___ by pH		__ 1110(mod) __ 9045C	
Cyanide, Total		__ 9010B	__ ILMO4.0 (e)
Cyanide, Reactive		__ Section 7.3/9014	
Halides, Extractable Organic		__ 9020B	__ EPA 600/4/84-008
Halides, Total		__ 9020B	__ EPA 600/4/84-008
EP Toxicity		__ 1310A	
Flash Point		__ 1010	
Ignitability		__ 1010	
Oil & Grease		__ 9071A	
Carbon, Total Organic		__ 9060	__ Lloyd Kahn (mod)
Oxygen Bomb Prep for Anions	__ D240-87(mod)	__ 5050	
Petroleum Hydrocarbons, Total Recoverable		__ 9071	__ EPA 418.1
pH, Soil		✓ 9045~~C~~ D AB 10-21-08	
Sulfide, Reactive		__ Section 7.3/9030B	
Sulfide		__ 9030B(mod)	
Specific Gravity	__ D1429-76C/	__ D5057-90	
Sulfur, Total		__ 9056	
Synthetic Preparation Leach		__ 1312	
Paint Filter		__ 9095A	

Other: Bromide, Chloride, Fluoride, Nitrite, **Method:** EPA 300.0

Other: Nitrate, Phosphate, Sulfate **Method**

Nitrate as N
Nitrite as N } EPA 353.2 (mod.)

L-WI-034/B-01/01

000000007

Lionville Laboratory Incorporated

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

* = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.
MS = Matrix Spike.
MSD = Matrix Spike Duplicate.
REP = Sample Replicate
LC = Laboratory Control Sample.
NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).

3. Test Methods for Evaluating Solid Waste (USEPA SW-846).

a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).

b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).

c. Method of Soil Analysis, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).

d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).

e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.

f. Code of Federal Regulations.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 10/21/08

CLIENT: WC-HANFORD RC-029 K1338 LVL LOT #: 0809L122
WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J17FK8	% Solids	95.2		%	0.01	1.0
		Bromide by IC	2.6	u	MG/KG	2.6	1.0
		Chloride by IC	2.6	u	MG/KG	2.6	1.0
		Fluoride by IC	2.6	u	MG/KG	2.6	1.0
		Nitrite by IC	2.61	u	MG/KG	2.61	1.0
		Nitrate by IC	2.61	u	MG/KG	2.61	1.0
		Phosphate by IC	2.6	u	MG/KG	2.6	1.0
		Chromium VI	0.26		MG/KG	0.21	1.0
		Sulfate by IC	340		MG/KG	26.1	10.0
		Nitrite, as N	0.20	u	MG/KG	0.20	1.0
		Nitrate, as N	0.36		MG/KG	0.20	1.0
		pH	10.3		SOIL PH	0.01	1.0
-002	J17FK9	% Solids	98.7		%	0.01	1.0
		Bromide by IC	2.5	u	MG/KG	2.5	1.0
		Chloride by IC	2.5	u	MG/KG	2.5	1.0
		Fluoride by IC	2.5	u	MG/KG	2.5	1.0
		Nitrite by IC	2.50	u	MG/KG	2.50	1.0
		Nitrate by IC	6.13		MG/KG	2.50	1.0
		Phosphate by IC	25.0	u	MG/KG	25.0	10.0
		Chromium VI	0.20	u	MG/KG	0.20	1.0
		Sulfate by IC	15000		MG/KG	2500	1000
		Nitrite, as N	0.30	u	MG/KG	0.30	1.0
		Nitrate, as N	1.8		MG/KG	0.30	1.0
		pH	3.6		SOIL PH	0.01	1.0
-003	J17FL0	% Solids	98.1		%	0.01	1.0
		Bromide by IC	2.4	u	MG/KG	2.4	1.0
		Chloride by IC	2.4	u	MG/KG	2.4	1.0
		Fluoride by IC	2.4	u	MG/KG	2.4	1.0
		Nitrite by IC	2.44	u	MG/KG	2.44	1.0
		Nitrate by IC	2.44	u	MG/KG	2.44	1.0
		Phosphate by IC	125		MG/KG	97.5	40.0
		Chromium VI	0.20	u	MG/KG	0.20	1.0
		Sulfate by IC	1130		MG/KG	97.5	40.0
		Nitrite, as N	0.22	u	MG/KG	0.22	1.0
		Nitrate, as N	0.35		MG/KG	0.22	1.0
		pH	7.5		SOIL PH	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 10/21/08

CLIENT: WC-HANFORD RC-029 K1338 LVL LOT #: 0809L122
WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	J17FL1	% Solids	92.0		%	0.01	1.0
		Bromide by IC	2.7	u	MG/KG	2.7	1.0
		Chloride by IC	2.7	u	MG/KG	2.7	1.0
		Fluoride by IC	2.7	u	MG/KG	2.7	1.0
		Nitrite by IC	2.72	u	MG/KG	2.72	1.0
		Nitrate by IC	2.72	u	MG/KG	2.72	1.0
		Phosphate by IC	2.7	u	MG/KG	2.7	1.0
		Chromium VI	0.22	u	MG/KG	0.22	1.0
		Sulfate by IC	448		MG/KG	13.6	5.0
		Nitrite, as N	0.21	u	MG/KG	0.21	1.0
		Nitrate, as N	0.21	u	MG/KG	0.21	1.0
		pH	8.4		SOIL PH	0.01	1.0
-005	J17FL3	% Solids	95.9		%	0.01	1.0
		Bromide by IC	2.5	u	MG/KG	2.5	1.0
		Chloride by IC	2.5	u	MG/KG	2.5	1.0
		Fluoride by IC	2.5	u	MG/KG	2.5	1.0
		Nitrite by IC	2.49	u	MG/KG	2.49	1.0
		Nitrate by IC	2.49	u	MG/KG	2.49	1.0
		Phosphate by IC	2.5	u	MG/KG	2.5	1.0
		Chromium VI	0.21	u	MG/KG	0.21	1.0
		Sulfate by IC	529		MG/KG	24.9	10.0
		Nitrite, as N	0.20	u	MG/KG	0.20	1.0
		Nitrate, as N	0.20	u	MG/KG	0.20	1.0
		pH	3.8		SOIL PH	0.01	1.0
-006	J17HM2	% Solids	99.6		%	0.01	1.0
		Bromide by IC	2.3	u	MG/KG	2.3	1.0
		Chloride by IC	2.3	u	MG/KG	2.3	1.0
		Fluoride by IC	2.3	u	MG/KG	2.3	1.0
		Nitrite by IC	2.30	u	MG/KG	2.30	1.0
		Nitrate by IC	4.66		MG/KG	2.30	1.0
		Phosphate by IC	2.3	u	MG/KG	2.3	1.0
		Chromium VI	0.20	u	MG/KG	0.20	1.0
		Sulfate by IC	720		MG/KG	46.1	20.0
		Nitrite, as N	0.18	u	MG/KG	0.18	1.0
		Nitrate, as N	0.89		MG/KG	0.18	1.0
		pH	7.9		SOIL PH	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 10/21/08

CLIENT: WC-HANFORD RC-029 K1338 LVL LOT #: 0809L122

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-007	J17HM3	% Solids	96.5		%	0.01	1.0
		Bromide by IC	2.5	u	MG/KG	2.5	1.0
		Chloride by IC	2.5	u	MG/KG	2.5	1.0
		Fluoride by IC	2.5	u	MG/KG	2.5	1.0
		Nitrite by IC	2.51	u	MG/KG	2.51	1.0
		Nitrate by IC	2.51	u	MG/KG	2.51	1.0
		Phosphate by IC	2.5	u	MG/KG	2.5	1.0
		Chromium VI	0.21	u	MG/KG	0.21	1.0
		Sulfate by IC	58.5		MG/KG	2.5	1.0
		Nitrite, as N	0.20	u	MG/KG	0.20	1.0
		Nitrate, as N	0.20	u	MG/KG	0.20	1.0
		pH	9.3		SOIL PH	0.01	1.0
-008	J17HM4	% Solids	94.8		%	0.01	1.0
		Bromide by IC	2.7	u	MG/KG	2.7	1.0
		Chloride by IC	2.7	u	MG/KG	2.7	1.0
		Fluoride by IC	2.7	u	MG/KG	2.7	1.0
		Nitrite by IC	2.69	u	MG/KG	2.69	1.0
		Nitrate by IC	2.69	u	MG/KG	2.69	1.0
		Phosphate by IC	2.7	u	MG/KG	2.7	1.0
		Chromium VI	0.21	u	MG/KG	0.21	1.0
		Sulfate by IC	111		MG/KG	2.7	1.0
		Nitrite, as N	0.21	u	MG/KG	0.21	1.0
		Nitrate, as N	0.21	u	MG/KG	0.21	1.0
		pH	9.0		SOIL PH	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 10/21/08

CLIENT: WC-HANFORD RC-029 K1338 LVL LOT #: 0809L122

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	08LICS80-MB1	Bromide by IC	2.5 u	MG/KG	2.5	1.0
		Chloride by IC	2.5 u	MG/KG	2.5	1.0
		Fluoride by IC	2.5 u	MG/KG	2.5	1.0
		Nitrite by IC	2.50 u	MG/KG	2.50	1.0
		Nitrate by IC	2.50 u	MG/KG	2.50	1.0
		Phosphate by IC	2.5 u	MG/KG	2.5	1.0
		Sulfate by IC	3.5	MG/KG	2.5	1.0
BLANK10	08LVI063-MB1	Chromium VI	0.20 u	MG/KG	0.20	1.0
BLANK10	08LN3S30-MB1	Nitrite, as N	0.27 u	MG/KG	0.27	1.0
		Nitrate, as N	0.27 u	MG/KG	0.27	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 10/21/08

CLIENT: WC-HANFORD RC-029 K1338 LVL LOT #: 0809L122

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J17FK8	Soluble Chromium VI	4.3	0.26	4.2	96.6	1.0
		Insoluble Chromium VI	1210	0.26	1180	101.9	100
-008	J17HM4	Bromide by IC	101	0.0	101	100	2.0
		Chloride by IC	99.7	0.0	101	98.7	2.0
		Fluoride by IC	104	0.54	101	102.5	2.0
		Nitrite by IC	101	2.69u	101	99.6	2.0
		Nitrate by IC	101	2.69u	101	100.5	2.0
		Phosphate by IC	110	2.7 u	101	108.6	2.0
		Sulfate by IC	213	111	101	101.0	2.0
		Nitrite, as N	5.0	0.21u	4.9	102.0	1.0
		Nitrate, as N	4.9	0.21u	4.9	100	1.0
BLANK10	08LICS80-MB1	Bromide by IC	60.5	2.5 u	62.9	96.1	1.0
		Chloride by IC	59.1	2.5 u	62.9	93.9	1.0
		Fluoride by IC	60.1	2.5 u	62.9	95.6	1.0
		Nitrite by IC	60.2	2.50u	62.9	95.7	1.0
		Nitrate by IC	60.0	2.50u	62.9	95.3	1.0
		Phosphate by IC	62.6	2.5 u	62.9	99.5	1.0
		Sulfate by IC	59.8	3.5	62.9	89.3	1.0
BLANK10	08LVI063-MB1	Soluble Chromium VI	4.0	0.20u	4.0	100.8	1.0
		Insoluble Chromium VI	1090	0.20u	1210	90.1	100
BLANK10	08LN3S30-MB1	Nitrite, as N	7.5	0.27u	7.3	102.6	1.0
		Nitrite, as N MSD	7.6	0.27u	7.5	102.2	1.0
		Nitrate, as N	7.6	0.27u	7.3	102.8	1.0
		Nitrate, as N MSD	7.5	0.27u	7.5	100.8	1.0

Lionville Laboratory, Inc.

INORGANICS DUPLICATE SPIKE REPORT 10/21/08

CLIENT: WC-HANFORD RC-029 K1338 LVL LOT #: 0809L122

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	SPIKE#1 %RECOV	SPIKE#2 %RECOV	%DIFF
BLANK10	08LN3S30-MB1	Nitrite, as N	102.6	102.2	0.39
		Nitrate, as N	102.8	100.8	2.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 10/21/08

CLIENT: WC-HANFORD RC-029 K1338

LVL LOT #: 0809L122

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR (REP)
-001REP	J17FK8	% Solids	95.2	96.2	1.0	1.0
		Chromium VI	0.26	0.28	8.0	1.0
		pH	10.3	10.3	0.0	1.0
-008REP	J17HM4	Bromide by IC	2.7 u	2.5 u	NC	1.0
		Chloride by IC	2.7 u	2.5 u	NC	1.0
		Fluoride by IC	2.7 u	2.5 u	NC	1.0
		Nitrite by IC	2.69u	2.50u	NC	1.0
		Nitrate by IC	2.69u	2.50u	NC	1.0
		Phosphate by IC	2.7 u	2.5 u	NC	1.0
		Sulfate by IC	111	105	6.0	1.0
		Nitrite, as N	0.21u	0.20u	NC	1.0
		Nitrate, as N	0.21u	0.20u	NC	1.0

nville Laboratory Use Only

8091122

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

000000016

nt W.C. Hanford SAF# RC-029

Final Proj. Sampling Date

ect# 60049-001-001-0001-00

ect Contact/Phone#

vlle Laboratory Project Manager O. Johnson

SW846 Del STD TAT 15 days

Rec'd 9-17-08 Date Due 10-2-08

		A		B	C	D			
Refrigerator #		3		3	3	3			
#/Type Container	Liquid / Solid								
Volume		250		125	125	250			
Preservatives		–		–	–	–			
ANALYSES REQUESTED →	ORGANIC: VOA, BNA, Pest/PCB, Herb	INORG: Metal	CN	IC	HEP	PH			

MATRIX CODES: Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP Leachate, Wipe, Other, Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Met①		IC①	ICR6	IPH			
	001	J17FK8			Soil	9-15-08	0935	X		X	X	X			
	002	J17FK9					1015	X		X	X	X			
	003	J17FL0					1020	X		X	X	X			
	004	J17FL1					1035	X		X	X	X			
	005	J17FL3					1048	X		X	X	X			
	006	J17HM2					1054	X		X	X	X			
	007	J17HM3					1200	X		X	X	X			
	008	J17HM4					1207	X		X	X	X			

Lionville Laboratory Use Only

cial Instructions: Run matrix QC

met① = HSL + B, Mo, Si NOTL

IC① = Br, Cl, Fl, SO4, PO4, NO2, NO3

Special Instructions:

1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
DE	K. Hammond	9/17/08	[illegible]

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		"COMPOSITE WASTE"	

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-029-048	Page 2 of 5

Collector C. Martinez	Company Contact H. Sulloway	Telephone No. 372-9363	Project Coordinator KESSNER, JH
Price Code 8C	Data Turnaround 15 Days		
Project Designation Remaining Sites Confirmation Sampling - Soil	Sampling Location 100-D-78		SAF No. RC-029
Ice Chest No. ERC-96-030	Field Logbook No. EL-1601-2	COA 010D78A000	Method of Shipment Fed Ex
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A080351		Bill of Lading/Air Bill No. See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

None

Special Handling and/or Storage

None

Preservation	None	None	Cool 4C	Cool 4C	None						
Type of Container	P	G/P	G/P	G/P	G/P						
No. of Container(s)	1	1	1	1	1						
Volume	1000mL	250mL	125mL	125mL	250mL						
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	Chromium Hex - 7196	See item (3) in Special Instructions.	pH (Soil) - 9045						

BH 9/11/08

Sample No.	Matrix *	Sample Date	Sample Time										
~~J17FK4~~	~~SOIL~~	~~9/11/08~~	~~1315~~										
~~J17FK5~~	~~SOIL~~	~~9/11/08~~	~~1335~~										
~~J17FK6~~	~~SOIL~~	~~9/11/08~~	~~1355~~										
~~J17FK7~~	~~SOIL~~	~~9/11/08~~	~~1405~~										
J17FK8	SOIL	9/15/08	0935		✓	✓	✓	✓					

9/15/08

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time 1430	Received By/Stored In	Date/Time
[illegible] 9-15-08		Joshua DuShea	9/15/08 1435
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Joshua DuShea 9/15/08	1823	Fridge 3A	9/15/08 1823
Relinquished By/Removed From	Date/Time 0900	Received By/Stored In	Date/Time 0900
Fridge 3A/J.E. Bernhard	9-16-08	J.E. Bernhard	9-16-08
Relinquished By/Removed From	Date/Time 0930	Received By/Stored In	Date/Time
J.E. Bernhard VCH	9-16-08	FED EX	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Fed Ex	9-17-08 0925	[illegible]	9-17-08 0925
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Americium-241); Gross Alpha & Gross Beta
(2) ICP Metals - 6010TR (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)
(3) IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

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

VCH-EE-011

000000017

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-029-057	Page 1 of 2

Collector C. Martinez SEE D. ROS	Company Contact H. Sulloway	Telephone No. 372-9363	Project Coordinator KESSNER, JH
Price Code 8C	Data Turnaround 15 Days		
Project Designation Remaining Sites Confirmation Sampling - Soil	Sampling Location 100-D-78		SAF No. RC-029
Ice Chest No. ERC-96-030	Field Logbook No. EL-1601-2	COA 010D78A000	Method of Shipment Fed Ex
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080351		Bill of Lading/Air Bill No. See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

None

Special Handling and/or Storage

None

Preservation	None	None	Cool 4C	Cool 4C	None						
Type of Container	P	G/P	G/P	G/P	G/P						
No. of Container(s)	1	1	1	1	1						
Volume	1000mL	250mL	125mL	125mL	250mL						
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	Chromium Hex - 7196	See item (3) in Special Instructions.	pH (Soil) - 9045						

Sample No.	Matrix *	Sample Date	Sample Time										
J17HM2	SOIL	9/15/08	1054		✓	✓	✓	✓					
J17HM3	SOIL	↓	1200		✓	✓	✓	✓					
J17HM4	SOIL	↓	1207		✓	✓	✓	✓					
J17HM5	SOIL												
J17HM6	SOIL												

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[signature]	1435 9-15-08	Dwshea Dwshea	9/15/08 1435
Dwshea Dwshea	9/15/08 1823	Fridge 3A	9/15/08 1823
Fridge 3A / J.E. Bernhard	9-16-08 0900	J.E. Bernhard	9-16-08 0900
J.E. Bernhard	9-16-08 0930	FED EX	
FED EX	9-17-08 0925	[signature]	9-17-08 0925

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Americium-241); Gross Alpha & Gross Beta
(2) ICP Metals - 6010TR (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)
(3) IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

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

VCH-EE-011

000000018

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-029-048	Page 3 of 5

Collector C. Martinez SEE D. RIOS	Company Contact H. Sulloway	Telephone No. 372-9363	Project Coordinator KESSNER, JH
Price Code 8C	Data Turnaround 15 Days		
Project Designation Remaining Sites Confirmation Sampling - Soil	Sampling Location 100-D-78		SAF No. RC-029
Ice Chest No. ERC-96-030	Field Logbook No. EL-1601-2	COA 010D78A000	Method of Shipment Fed Ex
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080351		Bill of Lading/Air Bill No. See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

None

Special Handling and/or Storage

None

Preservation	None	None	Cool 4C	Cool 4C	None						
Type of Container	P	G/P	G/P	G/P	G/P						
No. of Container(s)	1	1	1	1	1						
Volume	1000mL	250mL	125mL	125mL	250mL						
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	Chromium Hex - 7196	See item (3) in Special Instructions.	pH (Soil) - 9045						

Sample No.	Matrix *	Sample Date	Sample Time										
J17FK9	SOIL	9/15/08	1015	DWS 9/15/08	✓	✓	✓	✓					
J17FL0	SOIL	↓	1020		✓	✓	✓	✓					
J17FL1	SOIL	↓	1035		✓	✓	✓	✓					
J17FL2	SOIL												
J17FL3	SOIL	9/15/08	1348		✓	✓	✓	✓					

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time 1435	Received By/Stored In	Date/Time
[signature]	9-15-08	DWSHEA DWSHEA	9/15/08 1435
Relinquished By/Removed From	Date/Time 1823	Received By/Stored In	Date/Time
DWSHEA DWSHEA	9/15/08	Fridge 3A	9/15/08 1823
Relinquished By/Removed From	Date/Time 0900	Received By/Stored In	Date/Time 0900
Fridge 3A / J.E. Bernhard	9-16-08	J.E. Bernhard	9-16-08
Relinquished By/Removed From	Date/Time 0980	Received By/Stored In	Date/Time
J.E. Bernhard NZH	9-16-08	FED EX	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
FED EX	9-17-08 0925	[signature]	9-17-08 0925
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Americium-241); Gross Alpha & Gross Beta
(2) ICP Metals - 6010TR (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)
(3) IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

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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

VCH-EE-011

000000019

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: W.C. Hanford

Project/SAF/SOW/Release #: RC-029

Date: 9-17-08

LvLI Batch #: 0809L 122

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7980 1267 1170
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 21°	°C	Cooler # ERC-96-030
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A
Person Contacted _____		Date _____	

LvLI

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1338

RECEIVED
OCT 2008

DATE RECEIVED: 09/17/08 LVL LOT # :0809L122

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
IRON, TOTAL	001 MS	S	08L0355	09/15/08	09/29/08	10/12/08
MERCURY, TOTAL	001	S	08C0171	09/15/08	09/25/08	09/26/08
MERCURY, TOTAL	001 REP	S	08C0171	09/15/08	09/25/08	09/26/08
MERCURY, TOTAL	001 MS	S	08C0171	09/15/08	09/25/08	09/26/08
POTASSIUM, TOTAL	001	S	08L0355	09/15/08	09/29/08	10/12/08
POTASSIUM, TOTAL	001 REP	S	08L0355	09/15/08	09/29/08	10/12/08
POTASSIUM, TOTAL	001 MS	S	08L0355	09/15/08	09/29/08	10/12/08
MAGNESIUM, TOTAL	001	S	08L0355	09/15/08	09/29/08	10/12/08
MAGNESIUM, TOTAL	001 REP	S	08L0355	09/15/08	09/29/08	10/12/08
MAGNESIUM, TOTAL	001 MS	S	08L0355	09/15/08	09/29/08	10/12/08
MANGANESE, TOTAL	001	S	08L0355	09/15/08	09/29/08	10/12/08
MANGANESE, TOTAL	001 REP	S	08L0355	09/15/08	09/29/08	10/12/08
MANGANESE, TOTAL	001 MS	S	08L0355	09/15/08	09/29/08	10/12/08
MOLYBDENUM, TOTAL	001	S	08L0355	09/15/08	09/29/08	10/12/08
MOLYBDENUM, TOTAL	001 REP	S	08L0355	09/15/08	09/29/08	10/12/08
MOLYBDENUM, TOTAL	001 MS	S	08L0355	09/15/08	09/29/08	10/12/08
SODIUM, TOTAL	001	S	08L0355	09/15/08	09/29/08	10/12/08
SODIUM, TOTAL	001 REP	S	08L0355	09/15/08	09/29/08	10/12/08
SODIUM, TOTAL	001 MS	S	08L0355	09/15/08	09/29/08	10/12/08
NICKEL, TOTAL	001	S	08L0355	09/15/08	09/29/08	10/12/08
NICKEL, TOTAL	001 REP	S	08L0355	09/15/08	09/29/08	10/12/08
NICKEL, TOTAL	001 MS	S	08L0355	09/15/08	09/29/08	10/12/08
LEAD, TOTAL	001	S	08L0355	09/15/08	09/29/08	10/12/08
LEAD, TOTAL	001 REP	S	08L0355	09/15/08	09/29/08	10/12/08
LEAD, TOTAL	001 MS	S	08L0355	09/15/08	09/29/08	10/12/08
ANTIMONY, TOTAL	001	S	08L0355	09/15/08	09/29/08	10/12/08
ANTIMONY, TOTAL	001 REP	S	08L0355	09/15/08	09/29/08	10/12/08
ANTIMONY, TOTAL	001 MS	S	08L0355	09/15/08	09/29/08	10/12/08
SELENIUM, TOTAL	001	S	08L0355	09/15/08	09/29/08	10/12/08
SELENIUM, TOTAL	001 REP	S	08L0355	09/15/08	09/29/08	10/12/08
SELENIUM, TOTAL	001 MS	S	08L0355	09/15/08	09/29/08	10/12/08
SILICON, TOTAL	001	S	08L0355	09/15/08	09/29/08	10/12/08
SILICON, TOTAL	001 REP	S	08L0355	09/15/08	09/29/08	10/12/08
SILICON, TOTAL	001 MS	S	08L0355	09/15/08	09/29/08	10/12/08
VANADIUM, TOTAL	001	S	08L0355	09/15/08	09/29/08	10/12/08
VANADIUM, TOTAL	001 REP	S	08L0355	09/15/08	09/29/08	10/12/08
VANADIUM, TOTAL	001 MS	S	08L0355	09/15/08	09/29/08	10/12/08
ZINC, TOTAL	001	S	08L0355	09/15/08	09/29/08	10/12/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1338

DATE RECEIVED: 09/17/08 LVL LOT # :0809L122

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ZINC, TOTAL	001 REP	S	08L0355	09/15/08	09/29/08	10/12/08
ZINC, TOTAL	001 MS	S	08L0355	09/15/08	09/29/08	10/12/08
J17FK9						
SILVER, TOTAL	002	S	08L0355	09/15/08	09/29/08	10/12/08
ALUMINUM, TOTAL	002	S	08L0355	09/15/08	09/29/08	10/12/08
ARSENIC, TOTAL	002	S	08L0355	09/15/08	09/29/08	10/12/08
BORON, TOTAL	002	S	08L0355	09/15/08	09/29/08	10/12/08
BARIUM, TOTAL	002	S	08L0355	09/15/08	09/29/08	10/12/08
BERYLLIUM, TOTAL	002	S	08L0355	09/15/08	09/29/08	10/12/08
CALCIUM, TOTAL	002	S	08L0355	09/15/08	09/29/08	10/12/08
CADMIUM, TOTAL	002	S	08L0355	09/15/08	09/29/08	10/12/08
COBALT, TOTAL	002	S	08L0355	09/15/08	09/29/08	10/12/08
CHROMIUM, TOTAL	002	S	08L0355	09/15/08	09/29/08	10/12/08
COPPER, TOTAL	002	S	08L0355	09/15/08	09/29/08	10/12/08
IRON, TOTAL	002	S	08L0355	09/15/08	09/29/08	10/12/08
MERCURY, TOTAL	002	S	08C0171	09/15/08	09/25/08	09/26/08
POTASSIUM, TOTAL	002	S	08L0355	09/15/08	09/29/08	10/12/08
MAGNESIUM, TOTAL	002	S	08L0355	09/15/08	09/29/08	10/12/08
MANGANESE, TOTAL	002	S	08L0355	09/15/08	09/29/08	10/12/08
MOLYBDENUM, TOTAL	002	S	08L0355	09/15/08	09/29/08	10/12/08
SODIUM, TOTAL	002	S	08L0355	09/15/08	09/29/08	10/12/08
NICKEL, TOTAL	002	S	08L0355	09/15/08	09/29/08	10/12/08
LEAD, TOTAL	002	S	08L0355	09/15/08	09/29/08	10/12/08
ANTIMONY, TOTAL	002	S	08L0355	09/15/08	09/29/08	10/12/08
SELENIUM, TOTAL	002	S	08L0355	09/15/08	09/29/08	10/12/08
SILICON, TOTAL	002	S	08L0355	09/15/08	09/29/08	10/12/08
VANADIUM, TOTAL	002	S	08L0355	09/15/08	09/29/08	10/12/08
ZINC, TOTAL	002	S	08L0355	09/15/08	09/29/08	10/12/08
J17FL0						
SILVER, TOTAL	003	S	08L0355	09/15/08	09/29/08	10/12/08
ALUMINUM, TOTAL	003	S	08L0355	09/15/08	09/29/08	10/12/08
ARSENIC, TOTAL	003	S	08L0355	09/15/08	09/29/08	10/12/08
BORON, TOTAL	003	S	08L0355	09/15/08	09/29/08	10/12/08
BARIUM, TOTAL	003	S	08L0355	09/15/08	09/29/08	10/12/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1338

DATE RECEIVED: 09/17/08 LVL LOT # :0809L122

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BERYLLIUM, TOTAL	003	S	08L0355	09/15/08	09/29/08	10/12/08
CALCIUM, TOTAL	003	S	08L0355	09/15/08	09/29/08	10/12/08
CADMIUM, TOTAL	003	S	08L0355	09/15/08	09/29/08	10/12/08
COBALT, TOTAL	003	S	08L0355	09/15/08	09/29/08	10/12/08
CHROMIUM, TOTAL	003	S	08L0355	09/15/08	09/29/08	10/12/08
COPPER, TOTAL	003	S	08L0355	09/15/08	09/29/08	10/12/08
IRON, TOTAL	003	S	08L0355	09/15/08	09/29/08	10/12/08
MERCURY, TOTAL	003	S	08C0171	09/15/08	09/25/08	09/26/08
POTASSIUM, TOTAL	003	S	08L0355	09/15/08	09/29/08	10/12/08
MAGNESIUM, TOTAL	003	S	08L0355	09/15/08	09/29/08	10/12/08
MANGANESE, TOTAL	003	S	08L0355	09/15/08	09/29/08	10/12/08
MOLYBDENUM, TOTAL	003	S	08L0355	09/15/08	09/29/08	10/12/08
SODIUM, TOTAL	003	S	08L0355	09/15/08	09/29/08	10/12/08
NICKEL, TOTAL	003	S	08L0355	09/15/08	09/29/08	10/12/08
LEAD, TOTAL	003	S	08L0355	09/15/08	09/29/08	10/12/08
ANTIMONY, TOTAL	003	S	08L0355	09/15/08	09/29/08	10/12/08
SELENIUM, TOTAL	003	S	08L0355	09/15/08	09/29/08	10/12/08
SILICON, TOTAL	003	S	08L0355	09/15/08	09/29/08	10/12/08
VANADIUM, TOTAL	003	S	08L0355	09/15/08	09/29/08	10/12/08
ZINC, TOTAL	003	S	08L0355	09/15/08	09/29/08	10/12/08
J17FL1						
SILVER, TOTAL	004	S	08L0355	09/15/08	09/29/08	10/12/08
ALUMINUM, TOTAL	004	S	08L0355	09/15/08	09/29/08	10/12/08
ARSENIC, TOTAL	004	S	08L0355	09/15/08	09/29/08	10/12/08
BORON, TOTAL	004	S	08L0355	09/15/08	09/29/08	10/12/08
BARIUM, TOTAL	004	S	08L0355	09/15/08	09/29/08	10/12/08
BERYLLIUM, TOTAL	004	S	08L0355	09/15/08	09/29/08	10/12/08
CALCIUM, TOTAL	004	S	08L0355	09/15/08	09/29/08	10/12/08
CADMIUM, TOTAL	004	S	08L0355	09/15/08	09/29/08	10/12/08
COBALT, TOTAL	004	S	08L0355	09/15/08	09/29/08	10/12/08
CHROMIUM, TOTAL	004	S	08L0355	09/15/08	09/29/08	10/12/08
COPPER, TOTAL	004	S	08L0355	09/15/08	09/29/08	10/12/08
IRON, TOTAL	004	S	08L0355	09/15/08	09/29/08	10/12/08
MERCURY, TOTAL	004	S	08C0171	09/15/08	09/25/08	09/26/08
POTASSIUM, TOTAL	004	S	08L0355	09/15/08	09/29/08	10/12/08
MAGNESIUM, TOTAL	004	S	08L0355	09/15/08	09/29/08	10/12/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1338

DATE RECEIVED: 09/17/08 LVL LOT # :0809L122

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MANGANESE, TOTAL	004	S	08L0355	09/15/08	09/29/08	10/12/08
MOLYBDENUM, TOTAL	004	S	08L0355	09/15/08	09/29/08	10/12/08
SODIUM, TOTAL	004	S	08L0355	09/15/08	09/29/08	10/12/08
NICKEL, TOTAL	004	S	08L0355	09/15/08	09/29/08	10/12/08
LEAD, TOTAL	004	S	08L0355	09/15/08	09/29/08	10/12/08
ANTIMONY, TOTAL	004	S	08L0355	09/15/08	09/29/08	10/12/08
SELENIUM, TOTAL	004	S	08L0355	09/15/08	09/29/08	10/12/08
SILICON, TOTAL	004	S	08L0355	09/15/08	09/29/08	10/12/08
VANADIUM, TOTAL	004	S	08L0355	09/15/08	09/29/08	10/12/08
ZINC, TOTAL	004	S	08L0355	09/15/08	09/29/08	10/12/08
J17FL3						
SILVER, TOTAL	005	S	08L0355	09/15/08	09/29/08	10/12/08
ALUMINUM, TOTAL	005	S	08L0355	09/15/08	09/29/08	10/12/08
ARSENIC, TOTAL	005	S	08L0355	09/15/08	09/29/08	10/12/08
BORON, TOTAL	005	S	08L0355	09/15/08	09/29/08	10/12/08
BARIUM, TOTAL	005	S	08L0355	09/15/08	09/29/08	10/12/08
BERYLLIUM, TOTAL	005	S	08L0355	09/15/08	09/29/08	10/12/08
CALCIUM, TOTAL	005	S	08L0355	09/15/08	09/29/08	10/12/08
CADMIUM, TOTAL	005	S	08L0355	09/15/08	09/29/08	10/12/08
COBALT, TOTAL	005	S	08L0355	09/15/08	09/29/08	10/12/08
CHROMIUM, TOTAL	005	S	08L0355	09/15/08	09/29/08	10/12/08
COPPER, TOTAL	005	S	08L0355	09/15/08	09/29/08	10/12/08
IRON, TOTAL	005	S	08L0355	09/15/08	09/29/08	10/12/08
MERCURY, TOTAL	005	S	08C0171	09/15/08	09/25/08	09/26/08
POTASSIUM, TOTAL	005	S	08L0355	09/15/08	09/29/08	10/12/08
MAGNESIUM, TOTAL	005	S	08L0355	09/15/08	09/29/08	10/12/08
MANGANESE, TOTAL	005	S	08L0355	09/15/08	09/29/08	10/12/08
MOLYBDENUM, TOTAL	005	S	08L0355	09/15/08	09/29/08	10/12/08
SODIUM, TOTAL	005	S	08L0355	09/15/08	09/29/08	10/12/08
NICKEL, TOTAL	005	S	08L0355	09/15/08	09/29/08	10/12/08
LEAD, TOTAL	005	S	08L0355	09/15/08	09/29/08	10/12/08
ANTIMONY, TOTAL	005	S	08L0355	09/15/08	09/29/08	10/12/08
SELENIUM, TOTAL	005	S	08L0355	09/15/08	09/29/08	10/12/08
SILICON, TOTAL	005	S	08L0355	09/15/08	09/29/08	10/12/08
VANADIUM, TOTAL	005	S	08L0355	09/15/08	09/29/08	10/12/08
ZINC, TOTAL	005	S	08L0355	09/15/08	09/29/08	10/12/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1338

DATE RECEIVED: 09/17/08 LVL LOT # :0809L122

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17HM2						
SILVER, TOTAL	006	S	08L0355	09/15/08	09/29/08	10/12/08
ALUMINUM, TOTAL	006	S	08L0355	09/15/08	09/29/08	10/12/08
ARSENIC, TOTAL	006	S	08L0355	09/15/08	09/29/08	10/12/08
BORON, TOTAL	006	S	08L0355	09/15/08	09/29/08	10/12/08
BARIUM, TOTAL	006	S	08L0355	09/15/08	09/29/08	10/12/08
BERYLLIUM, TOTAL	006	S	08L0355	09/15/08	09/29/08	10/12/08
CALCIUM, TOTAL	006	S	08L0355	09/15/08	09/29/08	10/12/08
CADMIUM, TOTAL	006	S	08L0355	09/15/08	09/29/08	10/12/08
COBALT, TOTAL	006	S	08L0355	09/15/08	09/29/08	10/12/08
CHROMIUM, TOTAL	006	S	08L0355	09/15/08	09/29/08	10/12/08
COPPER, TOTAL	006	S	08L0355	09/15/08	09/29/08	10/12/08
IRON, TOTAL	006	S	08L0355	09/15/08	09/29/08	10/12/08
MERCURY, TOTAL	006	S	08C0171	09/15/08	09/25/08	09/26/08
POTASSIUM, TOTAL	006	S	08L0355	09/15/08	09/29/08	10/12/08
MAGNESIUM, TOTAL	006	S	08L0355	09/15/08	09/29/08	10/12/08
MANGANESE, TOTAL	006	S	08L0355	09/15/08	09/29/08	10/12/08
MOLYBDENUM, TOTAL	006	S	08L0355	09/15/08	09/29/08	10/12/08
SODIUM, TOTAL	006	S	08L0355	09/15/08	09/29/08	10/12/08
NICKEL, TOTAL	006	S	08L0355	09/15/08	09/29/08	10/12/08
LEAD, TOTAL	006	S	08L0355	09/15/08	09/29/08	10/12/08
ANTIMONY, TOTAL	006	S	08L0355	09/15/08	09/29/08	10/12/08
SELENIUM, TOTAL	006	S	08L0355	09/15/08	09/29/08	10/12/08
SILICON, TOTAL	006	S	08L0355	09/15/08	09/29/08	10/12/08
VANADIUM, TOTAL	006	S	08L0355	09/15/08	09/29/08	10/12/08
ZINC, TOTAL	006	S	08L0355	09/15/08	09/29/08	10/12/08
J17HM3						
SILVER, TOTAL	007	S	08L0355	09/15/08	09/29/08	10/12/08
ALUMINUM, TOTAL	007	S	08L0355	09/15/08	09/29/08	10/12/08
ARSENIC, TOTAL	007	S	08L0355	09/15/08	09/29/08	10/12/08
BORON, TOTAL	007	S	08L0355	09/15/08	09/29/08	10/12/08
BARIUM, TOTAL	007	S	08L0355	09/15/08	09/29/08	10/12/08
BERYLLIUM, TOTAL	007	S	08L0355	09/15/08	09/29/08	10/12/08
CALCIUM, TOTAL	007	S	08L0355	09/15/08	09/29/08	10/12/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1338

DATE RECEIVED: 09/17/08 LVL LOT # :0809L122

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CADMIUM, TOTAL	007	S	08L0355	09/15/08	09/29/08	10/12/08
COBALT, TOTAL	007	S	08L0355	09/15/08	09/29/08	10/12/08
CHROMIUM, TOTAL	007	S	08L0355	09/15/08	09/29/08	10/12/08
COPPER, TOTAL	007	S	08L0355	09/15/08	09/29/08	10/12/08
IRON, TOTAL	007	S	08L0355	09/15/08	09/29/08	10/12/08
MERCURY, TOTAL	007	S	08C0171	09/15/08	09/25/08	09/26/08
POTASSIUM, TOTAL	007	S	08L0355	09/15/08	09/29/08	10/12/08
MAGNESIUM, TOTAL	007	S	08L0355	09/15/08	09/29/08	10/12/08
MANGANESE, TOTAL	007	S	08L0355	09/15/08	09/29/08	10/12/08
MOLYBDENUM, TOTAL	007	S	08L0355	09/15/08	09/29/08	10/12/08
SODIUM, TOTAL	007	S	08L0355	09/15/08	09/29/08	10/12/08
NICKEL, TOTAL	007	S	08L0355	09/15/08	09/29/08	10/12/08
LEAD, TOTAL	007	S	08L0355	09/15/08	09/29/08	10/12/08
ANTIMONY, TOTAL	007	S	08L0355	09/15/08	09/29/08	10/12/08
SELENIUM, TOTAL	007	S	08L0355	09/15/08	09/29/08	10/12/08
SILICON, TOTAL	007	S	08L0355	09/15/08	09/29/08	10/12/08
VANADIUM, TOTAL	007	S	08L0355	09/15/08	09/29/08	10/12/08
ZINC, TOTAL	007	S	08L0355	09/15/08	09/29/08	10/12/08
J17HM4						
SILVER, TOTAL	008	S	08L0355	09/15/08	09/29/08	10/12/08
ALUMINUM, TOTAL	008	S	08L0355	09/15/08	09/29/08	10/12/08
ARSENIC, TOTAL	008	S	08L0355	09/15/08	09/29/08	10/12/08
BORON, TOTAL	008	S	08L0355	09/15/08	09/29/08	10/12/08
BARIUM, TOTAL	008	S	08L0355	09/15/08	09/29/08	10/12/08
BERYLLIUM, TOTAL	008	S	08L0355	09/15/08	09/29/08	10/12/08
CALCIUM, TOTAL	008	S	08L0355	09/15/08	09/29/08	10/12/08
CADMIUM, TOTAL	008	S	08L0355	09/15/08	09/29/08	10/12/08
COBALT, TOTAL	008	S	08L0355	09/15/08	09/29/08	10/12/08
CHROMIUM, TOTAL	008	S	08L0355	09/15/08	09/29/08	10/12/08
COPPER, TOTAL	008	S	08L0355	09/15/08	09/29/08	10/12/08
IRON, TOTAL	008	S	08L0355	09/15/08	09/29/08	10/12/08
MERCURY, TOTAL	008	S	08C0171	09/15/08	09/25/08	09/26/08
POTASSIUM, TOTAL	008	S	08L0355	09/15/08	09/29/08	10/12/08
MAGNESIUM, TOTAL	008	S	08L0355	09/15/08	09/29/08	10/12/08
MANGANESE, TOTAL	008	S	08L0355	09/15/08	09/29/08	10/12/08
MOLYBDENUM, TOTAL	008	S	08L0355	09/15/08	09/29/08	10/12/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1338

DATE RECEIVED: 09/17/08 LVL LOT # :0809L122

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SODIUM, TOTAL	008	S	08L0355	09/15/08	09/29/08	10/12/08
NICKEL, TOTAL	008	S	08L0355	09/15/08	09/29/08	10/12/08
LEAD, TOTAL	008	S	08L0355	09/15/08	09/29/08	10/12/08
ANTIMONY, TOTAL	008	S	08L0355	09/15/08	09/29/08	10/12/08
SELENIUM, TOTAL	008	S	08L0355	09/15/08	09/29/08	10/12/08
SILICON, TOTAL	008	S	08L0355	09/15/08	09/29/08	10/12/08
VANADIUM, TOTAL	008	S	08L0355	09/15/08	09/29/08	10/12/08
ZINC, TOTAL	008	S	08L0355	09/15/08	09/29/08	10/12/08

LAB QC:

SILVER LABORATORY	LC1 BS	S	08L0355	N/A	09/29/08	10/10/08
SILVER, TOTAL	MB1	S	08L0355	N/A	09/29/08	10/10/08
ALUMINUM LABORTORY	LC1 BS	S	08L0355	N/A	09/29/08	10/10/08
ALUMINUM, TOTAL	MB1	S	08L0355	N/A	09/29/08	10/10/08
ARSENIC LABORATORY	LC1 BS	S	08L0355	N/A	09/29/08	10/10/08
ARSENIC, TOTAL	MB1	S	08L0355	N/A	09/29/08	10/10/08
BORON LABORATORY	LC1 BS	S	08L0355	N/A	09/29/08	10/10/08
BORON, TOTAL	MB1	S	08L0355	N/A	09/29/08	10/10/08
BARIUM LABORATORY	LC1 BS	S	08L0355	N/A	09/29/08	10/10/08
BARIUM, TOTAL	MB1	S	08L0355	N/A	09/29/08	10/10/08
BERYLLIUM LABORATORY	LC1 BS	S	08L0355	N/A	09/29/08	10/10/08
BERYLLIUM, TOTAL	MB1	S	08L0355	N/A	09/29/08	10/10/08
CALCIUM LABORATORY	LC1 BS	S	08L0355	N/A	09/29/08	10/10/08
CALCIUM, TOTAL	MB1	S	08L0355	N/A	09/29/08	10/10/08
CADMIUM LABORATORY	LC1 BS	S	08L0355	N/A	09/29/08	10/10/08
CADMIUM, TOTAL	MB1	S	08L0355	N/A	09/29/08	10/10/08
COBALT LABORATORY	LC1 BS	S	08L0355	N/A	09/29/08	10/10/08
COBALT, TOTAL	MB1	S	08L0355	N/A	09/29/08	10/10/08
CHROMIUM LABORATORY	LC1 BS	S	08L0355	N/A	09/29/08	10/10/08
CHROMIUM, TOTAL	MB1	S	08L0355	N/A	09/29/08	10/10/08
COPPER LABORATORY	LC1 BS	S	08L0355	N/A	09/29/08	10/10/08
COPPER, TOTAL	MB1	S	08L0355	N/A	09/29/08	10/10/08
IRON LABORATORY	LC1 BS	S	08L0355	N/A	09/29/08	10/10/08
IRON, TOTAL	MB1	S	08L0355	N/A	09/29/08	10/10/08
MERCURY LABORATORY	LC1 BS	S	08C0171	N/A	09/25/08	09/26/08
MERCURY, TOTAL	MB1	S	08C0171	N/A	09/25/08	09/26/08
POTASSIUM LABORATORY	LC1 BS	S	08L0355	N/A	09/29/08	10/10/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-029 K1338

DATE RECEIVED: 09/17/08 LVL LOT # :0809L122

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
POTASSIUM, TOTAL	MB1	S	08L0355	N/A	09/29/08	10/10/08
MAGNESIUM LABORATORY	LC1 BS	S	08L0355	N/A	09/29/08	10/10/08
MAGNESIUM, TOTAL	MB1	S	08L0355	N/A	09/29/08	10/10/08
MANGANESE LABORATORY	LC1 BS	S	08L0355	N/A	09/29/08	10/10/08
MANGANESE, TOTAL	MB1	S	08L0355	N/A	09/29/08	10/10/08
MOLYBDENUM LABORATOR	LC1 BS	S	08L0355	N/A	09/29/08	10/10/08
MOLYBDENUM, TOTAL	MB1	S	08L0355	N/A	09/29/08	10/10/08
SODIUM LABORATORY	LC1 BS	S	08L0355	N/A	09/29/08	10/10/08
SODIUM, TOTAL	MB1	S	08L0355	N/A	09/29/08	10/10/08
NICKEL LABORATORY	LC1 BS	S	08L0355	N/A	09/29/08	10/10/08
NICKEL, TOTAL	MB1	S	08L0355	N/A	09/29/08	10/10/08
LEAD LABORATORY	LC1 BS	S	08L0355	N/A	09/29/08	10/10/08
LEAD, TOTAL	MB1	S	08L0355	N/A	09/29/08	10/10/08
ANTIMONY LABORATORY	LC1 BS	S	08L0355	N/A	09/29/08	10/10/08
ANTIMONY, TOTAL	MB1	S	08L0355	N/A	09/29/08	10/10/08
SELENIUM LABORATORY	LC1 BS	S	08L0355	N/A	09/29/08	10/10/08
SELENIUM, TOTAL	MB1	S	08L0355	N/A	09/29/08	10/10/08
SILICON LABORATORY	LC1 BS	S	08L0355	N/A	09/29/08	10/10/08
SILICON, TOTAL	MB1	S	08L0355	N/A	09/29/08	10/10/08
VANADIUM LABORATORY	LC1 BS	S	08L0355	N/A	09/29/08	10/10/08
VANADIUM, TOTAL	MB1	S	08L0355	N/A	09/29/08	10/10/08
ZINC LABORATORY	LC1 BS	S	08L0355	N/A	09/29/08	10/10/08
ZINC, TOTAL	MB1	S	08L0355	N/A	09/29/08	10/10/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: WC-HANFORD RC-029
LVL#: 0809L122
SDG/SAF#: K1338/RC-029

W.O.#: 60049-001-001-0001-00
Date Received: 09-17-08

METALS CASE NARRATIVE

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvLI) certifies that all test results meet the requirements of NELAC except as noted below.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise.

1. This narrative covers the analyses of 8 soil samples.

2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary.

3. All analyses were performed within the required holding times.

4. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury).

5. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the LOQ).

6. The preparation/method blank for 1 analyte was outside method criteria. {less than the Limit of Quantitation (3-10X the LOD), or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.

   a). The MB result for Sodium was greater than the Limit of Quantitation (LOQ) {3-10x the (LOD) Limit of Detection} and all samples, with the exception of sample J17FK8, read less than 20 times the MB concentration. However, no corrective action criteria for MBs were provided in SW846 method 6010B. The sample results were reported herein "uncorrected" for the levels found in the MB.

7. All ICP Interference Check Standards were within control limits.

8. All laboratory control samples (LCS) were within the 80-120% control limits with the

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 32 pages.

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exception of Silicon at 37.2%. Refer to the Inorganics Laboratory Control Standards Report. Associated sample results may be biased low for Silicon.

9. The matrix spike (MS) recoveries for 6 analytes were outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.

10. For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial dilution are performed. A PDS was prepared at meaningful concentration level for the following analytes:

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J17FK8	Aluminum	22,000	86.9
	Calcium	22,000	96.9
	Iron	22,000	89.6
	Manganese	1,000	97.7
	Antimony	100	93.8
	Silicon	2,100	96.6

11. The duplicate analyses for 1 analyte was outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

12. For the purposes of this report, the data has been reported to the Limit of Detection (LOD). Values between the LOD and the Limit of Quantitation (LOQ) are acquired in a region of less-certain quantification.

13. LvLI is NELAP accredited by the state of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

14. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, 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.

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

10/21/08
Date

jjw/m09-122

LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

he following methods are used as reference for the digestion and analysis of samples contained within th

ot#: 0809L122

eaching Procedure: __1310 __1311 __1312 __Other:_____

LP Metals __ Digestion and __ Analysis Methods: __ILM03.0 __ILM04.0

Metals Digestion Methods: __3005A __3010A __3015 __3020A X3050B __3051 __200.7 __SS17
__Other: _____

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
Aluminum	X6010B		__200.7				__99
Antimony	X6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	X6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	X6010B		__200.7				__99
Beryllium	X6010B		__200.7				__99
Bismuth	__6010B [1]		__200.7 [1]			__1620	__99
Boron	X6010B		__200.7				__99
Cadmium	X6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	X6010B		__200.7				__99
Chromium	X6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	X6010B		__200.7				__99
Copper	X6010B	__7211 [5]	__200.7	__220.2			__99
Iron	X6010B		__200.7				__99
Lead	X6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	__6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	X6010B		__200.7				__99
Manganese	X6010B		__200.7				__99
Mercury	__7470A [3]	X7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	X6010B		__200.7				__99
Nickel	X6010B		__200.7				__99
Potassium	X6010B	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010B [1]		__200.7 [1]			__1620	__99
Selenium	X6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	X6010B [1]		__200.7			__1620	__99
Silica	__6010B		__200.7			__1620	__99
Silver	X6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	X6010B	__7770 [4]	__200.7	__273.1 [4]			__99
Strontium	__6010B		__200.7				__99
Thallium	__6010B	__7841 [5]	__200.7	__279.2	__200.9		__99
Tin	__6010B		__200.7				__99
Titanium	__6010B		__200.7				__99
Uranium	__6010B [1]		__200.7 [1]			__1620	__99
Vanadium	X6010B		__200.7				__99
Zinc	X6010B		__200.7				__99
Zirconium	__6010B [1]		__200.7 [1]			__1620	__99

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

* = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.
MS = Matrix Spike.
MSD = Matrix Spike Duplicate.
REP = Sample Replicate
LCS = Laboratory Control Sample.
NC = Not calculated.

ANALYTICAL METAL METHODS

1. Not included in the method element list.

2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, approximately 0.3 grams of sample is taken to a final volume of 50 mL (including all reagents).

3. Flame AA.

4. Graphite Furnace AA.

L-WI-033/N-04/98

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 10/15/08

CLIENT: WC-HANFORD RC-029 K1338

LVL LOT #: 0809L122

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J17FK8	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	5060	MG/KG	3.0	1.0
		Arsenic, Total	2.3	MG/KG	0.37	1.0
		Boron, Total	1.0	MG/KG	0.37	1.0
		Barium, Total	60.6	MG/KG	0.07	1.0
		Beryllium, Total	0.35	MG/KG	0.04	1.0
		Calcium, Total	8760	MG/KG	3.0	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Cobalt, Total	8.6	MG/KG	0.15	1.0
		Chromium, Total	7.5	MG/KG	0.15	1.0
		Copper, Total	14.4	MG/KG	0.15	1.0
		Iron, Total	24500	MG/KG	3.4	1.0
		Mercury, Total	0.01	MG/KG	0.009	1.0
		Potassium, Total	908	MG/KG	3.0	1.0
		Magnesium, Total	4330	MG/KG	1.9	1.0
		Manganese, Total	311	MG/KG	0.03	1.0
		Molybdenum, Total	0.43	MG/KG	0.22	1.0
		Sodium, Total	416	MG/KG	1.5	1.0
		Nickel, Total	9.0	MG/KG	0.15	1.0
		Lead, Total	3.1	MG/KG	0.22	1.0
		Antimony, Total	0.22 u	MG/KG	0.22	1.0
		Selenium, Total	0.45 u	MG/KG	0.45	1.0
		Silicon, Total	436	MG/KG	3.0	1.0
		Vanadium, Total	66.3	MG/KG	0.10	1.0
		Zinc, Total	44.4	MG/KG	0.45	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 10/15/08

CLIENT: WC-HANFORD RC-029 K1338 LVL LOT #: 0809L122

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	J17FK9	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Aluminum, Total	9480	MG/KG	3.1	1.0
		Arsenic, Total	3.1	MG/KG	0.38	1.0
		Boron, Total	2.8	MG/KG	0.38	1.0
		Barium, Total	77.6	MG/KG	0.08	1.0
		Beryllium, Total	0.31	MG/KG	0.04	1.0
		Calcium, Total	19400	MG/KG	3.1	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Cobalt, Total	3.7	MG/KG	0.15	1.0
		Chromium, Total	15.6	MG/KG	0.15	1.0
		Copper, Total	14.9	MG/KG	0.15	1.0
		Iron, Total	35100	MG/KG	3.5	1.0
		Mercury, Total	0.009	MG/KG	0.008	1.0
		Potassium, Total	1520	MG/KG	3.1	1.0
		Magnesium, Total	1920	MG/KG	1.9	1.0
		Manganese, Total	132	MG/KG	0.03	1.0
		Molybdenum, Total	0.48	MG/KG	0.23	1.0
		Sodium, Total	3040	MG/KG	1.5	1.0
		Nickel, Total	4.9	MG/KG	0.15	1.0
		Lead, Total	7.3	MG/KG	0.23	1.0
		Antimony, Total	0.23 u	MG/KG	0.23	1.0
		Selenium, Total	0.46 u	MG/KG	0.46	1.0
		Silicon, Total	353	MG/KG	3.1	1.0
		Vanadium, Total	76.9	MG/KG	0.11	1.0
		Zinc, Total	32.0	MG/KG	0.46	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 10/15/08

CLIENT: WC-HANFORD RC-029 K1338

LVL LOT #: 0809L122

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	J17FL0	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	7770	MG/KG	2.9	1.0
		Arsenic, Total	3.5	MG/KG	0.36	1.0
		Boron, Total	1.6	MG/KG	0.36	1.0
		Barium, Total	84.8	MG/KG	0.07	1.0
		Beryllium, Total	0.38	MG/KG	0.04	1.0
		Calcium, Total	9790	MG/KG	2.9	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Cobalt, Total	8.1	MG/KG	0.14	1.0
		Chromium, Total	12.7	MG/KG	0.14	1.0
		Copper, Total	16.4	MG/KG	0.14	1.0
		Iron, Total	23000	MG/KG	3.3	1.0
		Mercury, Total	0.009	MG/KG	0.009	1.0
		Potassium, Total	1410	MG/KG	2.9	1.0
		Magnesium, Total	4630	MG/KG	1.8	1.0
		Manganese, Total	329	MG/KG	0.03	1.0
		Molybdenum, Total	0.45	MG/KG	0.22	1.0
		Sodium, Total	212	MG/KG	1.4	1.0
		Nickel, Total	12.1	MG/KG	0.14	1.0
		Lead, Total	4.8	MG/KG	0.22	1.0
		Antimony, Total	0.22 u	MG/KG	0.22	1.0
		Selenium, Total	0.43 u	MG/KG	0.43	1.0
		Silicon, Total	342	MG/KG	2.9	1.0
		Vanadium, Total	55.6	MG/KG	0.10	1.0
		Zinc, Total	42.6	MG/KG	0.43	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 10/15/08

CLIENT: WC-HANFORD RC-029 K1338 LVL LOT #: 0809L122

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	J17PL1	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Aluminum, Total	6870	MG/KG	3.2	1.0
		Arsenic, Total	3.2	MG/KG	0.40	1.0
		Boron, Total	1.6	MG/KG	0.40	1.0
		Barium, Total	73.8	MG/KG	0.08	1.0
		Beryllium, Total	0.38	MG/KG	0.04	1.0
		Calcium, Total	9360	MG/KG	3.2	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Cobalt, Total	8.0	MG/KG	0.16	1.0
		Chromium, Total	11.2	MG/KG	0.16	1.0
		Copper, Total	15.7	MG/KG	0.16	1.0
		Iron, Total	23100	MG/KG	3.6	1.0
		Mercury, Total	0.009u	MG/KG	0.009	1.0
		Potassium, Total	1150	MG/KG	3.2	1.0
		Magnesium, Total	4480	MG/KG	2.0	1.0
		Manganese, Total	314	MG/KG	0.03	1.0
		Molybdenum, Total	0.45	MG/KG	0.24	1.0
		Sodium, Total	234	MG/KG	1.6	1.0
		Nickel, Total	10.7	MG/KG	0.16	1.0
		Lead, Total	4.0	MG/KG	0.24	1.0
		Antimony, Total	0.24 u	MG/KG	0.24	1.0
		Selenium, Total	0.48 u	MG/KG	0.48	1.0
		Silicon, Total	356	MG/KG	3.2	1.0
		Vanadium, Total	57.9	MG/KG	0.11	1.0
		Zinc, Total	42.4	MG/KG	0.48	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 10/15/08

CLIENT: WC-HANFORD RC-029 K1338 LVL LOT #: 0809L122

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	J17FL3	Silver, Total	0.09	MG/KG	0.08	1.0
		Aluminum, Total	2050	MG/KG	3.0	1.0
		Arsenic, Total	1.4	MG/KG	0.38	1.0
		Boron, Total	0.76	MG/KG	0.38	1.0
		Barium, Total	9.2	MG/KG	0.08	1.0
		Beryllium, Total	0.10	MG/KG	0.04	1.0
		Calcium, Total	768	MG/KG	3.0	1.0
		Cadmium, Total	0.07	MG/KG	0.04	1.0
		Cobalt, Total	2.4	MG/KG	0.15	1.0
		Chromium, Total	5.1	MG/KG	0.15	1.0
		Copper, Total	7.6	MG/KG	0.15	1.0
		Iron, Total	6470	MG/KG	3.4	1.0
		Mercury, Total	0.03	MG/KG	0.01	1.0
		Potassium, Total	115	MG/KG	3.0	1.0
		Magnesium, Total	833	MG/KG	1.9	1.0
		Manganese, Total	53.5	MG/KG	0.03	1.0
		Molybdenum, Total	0.23 u	MG/KG	0.23	1.0
		Sodium, Total	39.9	MG/KG	1.5	1.0
		Nickel, Total	3.9	MG/KG	0.15	1.0
		Lead, Total	5.9	MG/KG	0.23	1.0
		Antimony, Total	0.23 u	MG/KG	0.23	1.0
		Selenium, Total	0.45 u	MG/KG	0.45	1.0
		Silicon, Total	306	MG/KG	3.0	1.0
		Vanadium, Total	8.4	MG/KG	0.11	1.0
		Zinc, Total	24.6	MG/KG	0.45	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 10/15/08

CLIENT: WC-HANFORD RC-029 K1338 LVL LOT #: 0809L122

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-006	J17HM2	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Aluminum, Total	4830	MG/KG	3.0	1.0
		Arsenic, Total	2.3	MG/KG	0.37	1.0
		Boron, Total	1.7	MG/KG	0.37	1.0
		Barium, Total	72.0	MG/KG	0.07	1.0
		Beryllium, Total	0.33	MG/KG	0.04	1.0
		Calcium, Total	6890	MG/KG	3.0	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Cobalt, Total	9.8	MG/KG	0.15	1.0
		Chromium, Total	8.5	MG/KG	0.15	1.0
		Copper, Total	14.5	MG/KG	0.15	1.0
		Iron, Total	27300	MG/KG	3.3	1.0
		Mercury, Total	0.05	MG/KG	0.008	1.0
		Potassium, Total	791	MG/KG	3.0	1.0
		Magnesium, Total	4690	MG/KG	1.8	1.0
		Manganese, Total	325	MG/KG	0.03	1.0
		Molybdenum, Total	0.69	MG/KG	0.22	1.0
		Sodium, Total	275	MG/KG	1.5	1.0
		Nickel, Total	11.5	MG/KG	0.15	1.0
		Lead, Total	8.8	MG/KG	0.22	1.0
		Antimony, Total	0.22 u	MG/KG	0.22	1.0
		Selenium, Total	0.44 u	MG/KG	0.44	1.0
		Silicon, Total	295	MG/KG	3.0	1.0
		Vanadium, Total	71.1	MG/KG	0.10	1.0
		Zinc, Total	50.4	MG/KG	0.44	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 10/15/08

CLIENT: WC-HANFORD RC-029 K1338

LVL LOT #: 0809L122

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-007	J17HM3	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Aluminum, Total	5480	MG/KG	3.0	1.0
		Arsenic, Total	2.0	MG/KG	0.38	1.0
		Boron, Total	1.5	MG/KG	0.38	1.0
		Barium, Total	60.0	MG/KG	0.08	1.0
		Beryllium, Total	0.34	MG/KG	0.04	1.0
		Calcium, Total	7630	MG/KG	3.0	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Cobalt, Total	9.6	MG/KG	0.15	1.0
		Chromium, Total	10.2	MG/KG	0.15	1.0
		Copper, Total	15.4	MG/KG	0.15	1.0
		Iron, Total	26600	MG/KG	3.4	1.0
		Mercury, Total	0.01	MG/KG	0.008	1.0
		Potassium, Total	930	MG/KG	3.0	1.0
		Magnesium, Total	4750	MG/KG	1.9	1.0
		Manganese, Total	333	MG/KG	0.03	1.0
		Molybdenum, Total	0.42	MG/KG	0.23	1.0
		Sodium, Total	255	MG/KG	1.5	1.0
		Nickel, Total	12.2	MG/KG	0.15	1.0
		Lead, Total	6.3	MG/KG	0.23	1.0
		Antimony, Total	0.23 u	MG/KG	0.23	1.0
		Selenium, Total	0.45 u	MG/KG	0.45	1.0
		Silicon, Total	302	MG/KG	3.0	1.0
		Vanadium, Total	70.3	MG/KG	0.11	1.0
		Zinc, Total	48.0	MG/KG	0.45	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 10/15/08

CLIENT: WC-HANFORD RC-029 K1338 LVL LOT #: 0809L122

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-008	J17HM4	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Aluminum, Total	6420	MG/KG	3.2	1.0
		Arsenic, Total	3.1	MG/KG	0.40	1.0
		Boron, Total	1.1	MG/KG	0.40	1.0
		Barium, Total	65.4	MG/KG	0.08	1.0
		Beryllium, Total	0.30	MG/KG	0.04	1.0
		Calcium, Total	8530	MG/KG	3.2	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Cobalt, Total	7.1	MG/KG	0.16	1.0
		Chromium, Total	12.9	MG/KG	0.16	1.0
		Copper, Total	13.9	MG/KG	0.16	1.0
		Iron, Total	20400	MG/KG	3.6	1.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Potassium, Total	1140	MG/KG	3.2	1.0
		Magnesium, Total	4760	MG/KG	2.0	1.0
		Manganese, Total	299	MG/KG	0.03	1.0
		Molybdenum, Total	0.41	MG/KG	0.24	1.0
		Sodium, Total	242	MG/KG	1.6	1.0
		Nickel, Total	11.7	MG/KG	0.16	1.0
		Lead, Total	3.5	MG/KG	0.24	1.0
		Antimony, Total	0.24 u	MG/KG	0.24	1.0
		Selenium, Total	0.48 u	MG/KG	0.48	1.0
		Silicon, Total	414	MG/KG	3.2	1.0
		Vanadium, Total	47.5	MG/KG	0.11	1.0
		Zinc, Total	38.5	MG/KG	0.48	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 10/15/08

CLIENT: WC-HANFORD RC-029 K1338 LVL LOT #: 0809L122

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	08L0355-MB1	Silver, Total	0.10 u	MG/KG	0.10	1.0
		Aluminum, Total	4.0 u	MG/KG	4.0	1.0
		Arsenic, Total	0.50 u	MG/KG	0.50	1.0
		Boron, Total	0.50 u	MG/KG	0.50	1.0
		Barium, Total	0.24	MG/KG	0.10	1.0
		Beryllium, Total	0.05 u	MG/KG	0.05	1.0
		Calcium, Total	13.1	MG/KG	4.0	1.0
		Cadmium, Total	0.05 u	MG/KG	0.05	1.0
		Cobalt, Total	0.20 u	MG/KG	0.20	1.0
		Chromium, Total	0.20 u	MG/KG	0.20	1.0
		Copper, Total	0.59	MG/KG	0.20	1.0
		Iron, Total	9.3	MG/KG	4.5	1.0
		Potassium, Total	4.0 u	MG/KG	4.0	1.0
		Magnesium, Total	3.4	MG/KG	2.5	1.0
		Manganese, Total	0.04 u	MG/KG	0.04	1.0
		Molybdenum, Total	0.30 u	MG/KG	0.30	1.0
		Sodium, Total	15.2	MG/KG	2.0	1.0
		Nickel, Total	0.35	MG/KG	0.20	1.0
		Lead, Total	0.30 u	MG/KG	0.30	1.0
		Antimony, Total	0.30 u	MG/KG	0.30	1.0
		Selenium, Total	0.60 u	MG/KG	0.60	1.0
		Silicon, Total	4.0 u	MG/KG	4.0	1.0
		Vanadium, Total	0.14 u	MG/KG	0.14	1.0
		Zinc, Total	0.94	MG/KG	0.60	1.0
BLANK1	08C0171-MB1	Mercury, Total	0.01 u	MG/KG	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 10/15/08

CLIENT: WC-HANFORD RC-029 K1338 LVL LOT #: 0809L122

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J17FK8	Silver, Total	3.5	0.07u	3.7	94.6	1.0
		Aluminum, Total	5990	5060	148	624.1*	1.0
		Arsenic, Total	139	2.3	148	92.1	1.0
		Boron, Total	68.4	1.0	74.0	91.1	1.0
		Barium, Total	196	60.6	148	91.6	1.0
		Beryllium, Total	3.9	0.35	3.7	95.9	1.0
		Calcium, Total	12600	8760	1850	209.2*	1.0
		Cadmium, Total	3.4	0.04u	3.7	91.9	1.0
		Cobalt, Total	43.9	8.6	37.0	95.4	1.0
		Chromium, Total	21.6	7.5	14.8	95.3	1.0
		Copper, Total	32.6	14.4	18.5	98.4	1.0
		Iron, Total	26800	24500	74.0	3029 *	1.0
		Mercury, Total	0.18	0.01	0.16	106.3	1.0
		Potassium, Total	2780	908	1850	101.3	1.0
		Magnesium, Total	6270	4330	1850	104.5	1.0
		Manganese, Total	360	311	37.0	131.6*	1.0
		Molybdenum, Total	68.8	0.43	74.0	92.4	1.0
		Sodium, Total	2280	416	1850	100.8	1.0
		Nickel, Total	44.0	9.0	37.0	94.6	1.0
		Lead, Total	37.8	3.1	37.0	93.8	1.0
		Antimony, Total	21.7	0.22u	37.0	58.6	1.0
		Selenium, Total	117	0.45u	148	79.2	1.0
		Silicon, Total	703	436	74.0	360.8*	1.0
		Vanadium, Total	108	66.3	37.0	112.4	1.0
		Zinc, Total	83.2	44.4	37.0	104.9	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 10/15/08

CLIENT: WC-HANFORD RC-029 K1338

LVL LOT #: 0809L122

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J17FK8	Silver, Total	0.07u	0.08u	NC	1.0
		Aluminum, Total	5060	5400	6.6	1.0
		Arsenic, Total	2.3	2.0	14.0	1.0
		Boron, Total	1.0	1.1	9.5	1.0
		Barium, Total	60.6	63.8	5.1	1.0
		Beryllium, Total	0.35	0.38	8.9	1.0
		Calcium, Total	8760	8880	1.3	1.0
		Cadmium, Total	0.04u	0.04u	NC	1.0
		Cobalt, Total	8.6	9.2	6.7	1.0
		Chromium, Total	7.5	7.9	5.2	1.0
		Copper, Total	14.4	14.8	2.7	1.0
		Iron, Total	24500	26300	6.9	1.0
		Mercury, Total	0.01	0.08	141.6	1.0
		Potassium, Total	908	929	2.3	1.0
		Magnesium, Total	4330	4660	7.3	1.0
		Manganese, Total	311	326	4.6	1.0
		Molybdenum, Total	0.43	0.51	15.9	1.0
		Sodium, Total	416	503	19.0	1.0
		Nickel, Total	9.0	10.5	15.4	1.0
		Lead, Total	3.1	3.0	3.3	1.0
		Antimony, Total	0.22u	0.23u	NC	1.0
		Selenium, Total	0.45u	0.46u	NC	1.0
		Silicon, Total	436	399	8.9	1.0
		Vanadium, Total	66.3	69.7	5.0	1.0
		Zinc, Total	44.4	47.5	6.7	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 10/15/08

CLIENT: WC-HANFORD RC-029 K1338 LVL LOT #: 0809L122

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	08L0355-LC1	Silver, LCS	50.0	50.0	MG/KG	100
		Aluminum, LCS	501	500	MG/KG	100.1
		Arsenic, LCS	944	1000	MG/KG	94.4
		Boron, LCS	474	500	MG/KG	94.8
		Barium, LCS	495	500	MG/KG	99.0
		Beryllium, LCS	24.6	25.0	MG/KG	98.4
		Calcium, LCS	2510	2500	MG/KG	100.6
		Cadmium, LCS	24.0	25.0	MG/KG	96.0
		Cobalt, LCS	245	250	MG/KG	98.1
		Chromium, LCS	49.6	50.0	MG/KG	99.2
		Copper, LCS	124	125	MG/KG	99.1
		Iron, LCS	503	500	MG/KG	100.6
		Potassium, LCS	2400	2500	MG/KG	96.0
		Magnesium, LCS	2480	2500	MG/KG	99.2
		Manganese, LCS	74.8	75.0	MG/KG	99.7
		Molybdenum, LCS	488	500	MG/KG	97.7
		Sodium, LCS	2390	2500	MG/KG	95.6
		Nickel, LCS	197	200	MG/KG	98.4
		Lead, LCS	242	250	MG/KG	96.9
		Antimony, LCS	283	300	MG/KG	94.3
		Selenium, LCS	923	1000	MG/KG	92.3
		Silicon, LCS	186	500	MG/KG	37.2
		Vanadium, LCS	250	250	MG/KG	99.8
		Zinc, LCS	99.6	100	MG/KG	99.6
LCS1	08C0171-LC1	Mercury, LCS	5.1	4.7	MG/KG	109.0

Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 498

Analyst: UB
Date 9/25/08
Start Time/Temp: 1435 | 95°
End Time/Temp: 1505 | 95°

Instrument ID HG3.1
Balance #: B29 /NA
Pipette Calibration (Daily) Y ✓

Prep Batch: 08C0171
Worksheet: HG092601
SOP No. ME-HgCVAA, Rev. 02

pH < 2 for Liquids? __ Yes ✓NA No (If no: designate affected samples in Comments column, and initiate an SDR)

NOTE: The Inital/Final Volume for water samples = 33mL, unless otherwise noted.
The Final volume for soil samples = 50mL, unless otherwise noted.

LvLI Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
Blank	297			10mL	50mL	
0.2 µg/L	C15	0.100				
1.0	857	0.500				
2.0	I4	1.000				
5.0	WN	2.500				
10.0	KX	5.000				
ICV	R	0.125	2.5			
CCV	2I	0.250	5.0			
ICB/CCB	B6					90.50L
MB1	CB2			0.30		PBS171 100.0
LC1	OF	*	*	0.30		LCSS171 ⊥
0809L106-001	C9			0.35		R 99.98
001R	3			0.31		⊥
001S	UT	0.500	1.0	0.35		⊥
002	L53			0.33		99.90
003	95			0.38		99.91
004	X0			0.33		R 99.87
0809L122-001	92			0.34		95.21
001R	1721			0.37		⊥
001S	2B	0.500	1.0	0.33		⊥
002	G12			0.37		98.67
003	886			0.35		98.14
004	35			0.38		92.05
005	X5			0.31		95.86
006	500			0.36		99.55
007	LV			0.38		96.57
008	C8			0.33		94.82

Standard:	ID	Prep Date/Time
ICAL/MS	R16072-78-14B	9/25/08 0950
ICV/CCV/LCS	US 6072-78-15A	⊥

Reviewed By/Date: [signature] 10/8/08

see book # 9368 for std traceability information

Soil LCS =US Metals in soil No.3; True Value = 4.70 mg/Kg
Catalogue #1RM-021, Lot # E021

Water Matrix Spiking Solution Concentration = 0.1 µg/ml
Water LCS Spiking Concentration: 1.0 µg/ml

Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 498

Analyst: EA
Date 9/25/08
Start Time/Temp: See page
End Time/Temp: 040

Instrument ID HG3.1
Balance #: B29 ✓ /NA
Pipette Calibration (Daily) Y ✓

Prep Batch: 08C0171
Worksheet: H0092601
SOP No. ME-HgCVAA, Rev. 02

pH < 2 for Liquids? __ Yes NA No (If no: designate affected samples in Comments column, and initiate an SDR)

NOTE: The Inital/Final Volume for water samples = 33mL, unless otherwise noted.
The Final volume for soil samples = 50mL, unless otherwise noted.

LvLI Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
0809L123-001	401			0.34	50mL	
001R	H3			0.32		
001S	F2	0.5000	1.0	0.34		
0809L141-021	JS			0.36		R 85.98
022	HR			0.35		I 87.48
~~0809L154-001~~	~~RU~~					
~~Sample 001R~~	~~AH~~					
~~duplicate analysis 001S~~	~~40~~					

EA 9/25/08

Standard:	ID	Prep Date/Time
ICB/MS		
ICV/CCV/LCS	See page 040	

Reviewed By/Date: [signature] 10/8

see book # 9368 for std traceability information

ICS =US Metals in soil No.3; True Value = 4.70 mg/Kg
logue #1RM-021, Lot # E021

Water Matrix Spiking Solution Concentration = 0.1 µg/ml
Water LCS Spiking Concentration: 1.0 µg/ml

HgCVAA-Prep1007

Lionville Laboratory Incorporated

LOGBOOK #: 10

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 08L0355
Date/Time Initiated: 9/29/08 1645
Date/Time Completed: 9/29/08 2030
Analyst(s): MW
Matrix: (Soil) Water Other:
Instr. Type: AA (ICP)
Parameters: lee trochloy

(Digested) / Undigested (circle one)
Balance #: B20
Balance Cal Verif: (Y) NA
Hot Plate Temp: 93

Method: SW (circle)
3005A
3010A
3015
3020A
7060A (As/Se)
7760A (Ag)
(3050B)
3051

DW 200.7 (1994)
200.9
3113B

MCAWW 200.7 (1982)
200 (AA)
206.2 (As/Se)

SM 3030C (NC)

CLP ILMO3.0
ILMO4.0

Other

TNV

COC Batch #	Spike Vol(s) (mL)	Initial Wt/Vol (g/mL)	Final Vol (mL)	pH <2	Type: To/So/TC	Texture	Color/Appearance	Artifact	Turb
0809L106-001		1.32gm	100ml	<2	TO	coarse	light brown soil	rocks	RAD
001R		1.35gm							
001S	1.0ml *	1.33gm							
002		1.45gm							
003		1.50gm							
004		1.44gm							RAD
0809L122-001		1.41gm				fine	brown soil		
001R		1.38gm							
001S	1.0ml	1.42gm							
002		1.32gm					tan soil		
003		1.41gm							
004		1.35gm					brown soil		
005		1.38gm				coarse	amber/black-sandy	vegetation	
006		1.36gm				fine	grayish brown soil	rocks	
007		1.38gm					brown soil		
008		1.33gm							
0809L123-001 (*)		1.42gm				coarse	dark gray rocks	N/A	
001R		1.33gm							
001S	1.0ml	1.49gm							
0809L173-001		1.39gm				fine	brown soil	N/A	
001R		1.34gm							
001S	1.0ml	1.40gm							
08L0355-MB1		1.0gm				coarse	boiling chips		
LC1	1.0ml *	1.0gm							

— end of data MW 9/29/08 —

Spiking IDs:
MS #: 8100-04-01
02
03
6012-78-07
LCS #: 08
09
10
11

Reagent IDs:
HNO_3 G11022
HCL G26054
H_2O_2 G15A18
1:1 HNO_3 9789-083-08
1:1 HCL

File ID#: IC035501 IC0355
IC035502 IC0355

LIMS Transfer: (Y) N updated

Data Review By/Date: 10/7/08

(*) rocks broken up into smaller pieces prior to digestion.

onville Laboratory Use Only

'8091122

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

ent W.C. Hanford SAF# RC-029

Final Proj. Sampling Date

oject# 60049-001-001-0001-00

oject Contact/Phone#

nville Laboratory Project Manager O. Johnson

SW846 Del STP TAT 15 days

te Rec'd 9-17-08 Date Due 10-2-08

		A								B	C	D			
Refrigerator #									3		3	3	3		
#/Type Container	Liquid														
	Solid														
Volume									250		125	125	250		
Preservatives									–		–	HNO3	–		
ANALYSES REQUESTED		ORGANIC							INORG		IC	ICP	PH		
		VOA	BNA	Pest/PCB	Herb				TCLP Metal	CN	Anions	Metals			

TRIX DES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only							Met①		IC①	ICP6	IPH			
Soil	001	J17FK8			Soil	9-15-08	0935								X		X	X	X			
Sediment	002	J17FK9					1015								X		X	X	X			
Solid	003	J17FL0					1020								X		X	X	X			
Sludge	004	J17FL1					1035								X		X	X	X			
Water	005	J17FL3					1348								X		X	X	X			
Oil	006	J17HM2					1054								X		X	X	X			
Air	007	J17HM3					1200								X		X	X	X			
Drum Solids	008	J17HM4					1207								X		X	X	X			
Drum Liquids																						
EP/TCLP Leachate																						
Wipe																						
Other																						
Fish																						

ecial Instructions: Run matrix QC

met① = HSL + B, Mo, Si
NOTL

IC① = Br, Cl, Fl, SO4, PO4, NO2, NO3

Special Instructions:

1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
DE	[illegible]	9/17/08	[illegible]

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		"COMPOSITE WASTE"	

000000028

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-029-048	Page 2 of 5

Collector C. Martinez	Company Contact H. Sulloway	Telephone No. 372-9363	Project Coordinator KESSNER, JH
Project Designation Remaining Sites Confirmation Sampling - Soil	Sampling Location 100-D-78		SAF No. RC-029
Ice Chest No. ERC-96-030	Field Logbook No. EL-1601-2	COA 010D78A000	Method of Shipment Fed Ex
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. A08035		Bill of Lading/Air Bill No. See OSPC

Price Code 8C

Data Turnaround 15 Days

000000029

POSSIBLE SAMPLE HAZARDS/REMARKS

None

Special Handling and/or Storage

None

Preservation	None	None	Cool 4C	Cool 4C	None						
Type of Container	P	G/P	G/P	G/P	G/P						
No. of Container(s)	1	1	1	1	1						
Volume	1000mL	250mL	125mL	125mL	250mL						
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	Chromium Hex - 7196	See item (3) in Special Instructions.	pH (Soil) - 9045						

Bt 9/11/08

Sample No.	Matrix *	Sample Date	Sample Time										
~~J17FK4~~	~~SOIL~~	~~9/11/08~~	~~1315~~										
~~J17FK5~~	~~SOIL~~	~~9/11/08~~	~~1335~~										
~~J17FK6~~	~~SOIL~~	~~9/11/08~~	~~1355~~										
~~J17FK7~~	~~SOIL~~	~~9/11/08~~	~~1405~~										
J17FK8	SOIL	9/15/08	0935		✓	✓	✓	✓					

9/15/08

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time 1435	Received By/Stored In	Date/Time
[signature]	9-15-08	Joshua DuShea	9/15/08 1435
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Joshua DuShea	9/15/08 1823	Fridge 3A	9/15/08 1823
Relinquished By/Removed From	Date/Time 0900	Received By/Stored In	Date/Time 0900
Fridge 3A/J.E. Bernhard	9-16-08	J.E. Bernhard	9-16-08
Relinquished By/Removed From	Date/Time 0950	Received By/Stored In	Date/Time
J.E. Bernhard WCH	9-16-08	FED EX	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
FED EX	9-17-08 0925	[signature]	9-17-08 0925
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Americium-241); Gross Alpha & Gross Beta
(2) ICP Metals - 6010TR (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)
(3) IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

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-029-057	Page 1 of 2

Collector C. Martinez	Company Contact H. Sulloway	Telephone No. 372-9363	Project Coordinator KESSNER, JH	Price Code 8C	Data Turnaround 15 Days
Project Designation Remaining Sites Confirmation Sampling - Soil	Sampling Location 100-D-78		SAF No. RC-029		
Ice Chest No. ERC-96-030	Field Logbook No. EL-1601-2	COA 010D78A000	Method of Shipment Fed Ex		
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080351		Bill of Lading/Air Bill No. See OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

None

Special Handling and/or Storage

None

Preservation	None	None	Cool 4C	Cool 4C	None						
Type of Container	P	G/P	G/P	G/P	G/P						
No. of Container(s)	1	1	1	1	1						
Volume	1000mL	250mL	125mL	125mL	250mL						
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	Chromium Hex - 7196	See item (3) in Special Instructions.	pH (Soil) - 9045						

Sample No.	Matrix *	Sample Date	Sample Time										
J17HM2	SOIL	9/15/08	1054		✓	✓	✓	✓					
J17HM3	SOIL	↓	1200		✓	✓	✓	✓					
J17HM4	SOIL	↓	1207		✓	✓	✓	✓					
J17HM5	SOIL												
J17HM6	SOIL												

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From	1435 9-15-08	Dwshea DWSHEA	9/15/08 1435
Relinquished By/Removed From: Dwshea DWSHEA	9/15/08 1823	Fridge 3A	9/15/08 1823
Relinquished By/Removed From: Fridge 3A / J.E. Bernhard	0900 9-16-08	J.E. Bernhard	0900 9-16-08
Relinquished By/Removed From: J.E. Bernhard	0930 9-16-08	FED EX	
Relinquished By/Removed From: FED EX	9-17-08 0925		9-17-08 0925
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Americium-241); Gross Alpha & Gross Beta
(2) ICP Metals - 6010TR (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)
(3) IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

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

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

WCH-EE-011

000000030

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-029-048	Page 3 of 5

Collector C. Martinez SEE D. RIOS	Company Contact H. Sulloway	Telephone No. 372-9363	Project Coordinator KESSNER, JH
Price Code 8C	Data Turnaround 15 Days		
Project Designation Remaining Sites Confirmation Sampling - Soil	Sampling Location 100-D-78		SAF No. RC-029
Ice Chest No. ERC-96-030	Field Logbook No. EL-1601-2	COA 010D78A000	Method of Shipment Fed Ex
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080351		Bill of Lading/Air Bill No. See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

None

Special Handling and/or Storage

None

Preservation	None	None	Cool 4C	Cool 4C	None						
Type of Container	P	G/P	G/P	G/P	G/P						
No. of Container(s)	1	1	1	1	1						
Volume	1000mL	250mL	125mL	125mL	250mL						
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	Chromium Hex - 7196	See item (3) in Special Instructions.	pH (Soil) - 9045						

Sample No.	Matrix *	Sample Date	Sample Time										
J17FK9	SOIL	9/15/08	1015		✓	✓	✓	✓					
J17FL0	SOIL	↓	1020	DWS 9/15/08	✓	✓	✓	✓					
J17FL1	SOIL		1035		✓	✓	✓	✓					
J17FL2	SOIL												
J17FL3	SOIL	9/15/08	1348		✓	✓	✓	✓					

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time 1435	Received By/Stored In	Date/Time
[signature]	9-15-08	DWSHEA DWSHEA	9/15/08 1435
Relinquished By/Removed From	Date/Time 1823	Received By/Stored In	Date/Time
DWSHEA DWSHEA	9/15/08	Fridge 3A	9/15/08 1823
Relinquished By/Removed From	Date/Time 0900	Received By/Stored In	Date/Time 0900
Fridge 3A / J.E. Bernhard	9-16-08	J.E. Bernhard	9-16-08
Relinquished By/Removed From	Date/Time 0930	Received By/Stored In	Date/Time
J.E. Bernhard	9-16-08	FED EX	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[signature]	9-17-08 0925	[signature]	9-17-08 0925
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Gross Alpha & Gross Beta
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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

000000031

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: W.C. Hanford

Project/SAF/SOW/Release #: RC-029

Date: 9-17-08

LvLI Batch #: 0809L 122

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7980 1267 1170
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 21°	°C	Cooler # ERC-96-030
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LvLI