0075838

SAF-RC-054
118-K-1 Burial Grounds – Soil Quick Turn
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt H4-21 KW 1/9/08
INITIAL/DATE

COMMENTS:

SDG K1045 **SAF-RC-054**

Rad only X Chem only Rad & Chem

X Complete Partial

Waste Site: 118-K-1

RECEIVED
JAN 14 2008
EDMC

LIONVILLE LABORATORY INC.

4 January 2008

RECEIVED JAN 2008

Joan Kessner
WC-Hanford
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 #	0712L262
SDG #	K1045
SAF #	RC-054
Date Received	12/4/07
# Samples	1
Matrix	SOIL
Volatiles	X
Semivolatiles	X
Pest/PCB	
PAH	
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\tnu-hanford\data\b_ltrs.doc

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-054 K1045

RECEIVED JAN 2008

DATE RECEIVED: 12/04/07 LVL LOT # :0712L2

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16330						
TCLP	001	S	07LT0148	11/28/07	12/04/07	12/05/07
SILVER, TOTAL	001	S	07L0614	11/28/07	12/07/07	12/07/07
SILVER, TOTAL	001 REP	S	07L0614	11/28/07	12/07/07	12/07/07
SILVER, TOTAL	001 MS	S	07L0614	11/28/07	12/07/07	12/07/07
ALUMINUM, TOTAL	001	S	07L0614	11/28/07	12/07/07	12/07/07
ALUMINUM, TOTAL	001 REP	S	07L0614	11/28/07	12/07/07	12/07/07
ALUMINUM, TOTAL	001 MS	S	07L0614	11/28/07	12/07/07	12/07/07
ARSENIC, TOTAL	001	S	07L0614	11/28/07	12/07/07	12/07/07
ARSENIC, TOTAL	001 REP	S	07L0614	11/28/07	12/07/07	12/07/07
ARSENIC, TOTAL	001 MS	S	07L0614	11/28/07	12/07/07	12/07/07
BORON, TOTAL	001	S	07L0614	11/28/07	12/07/07	12/07/07
BORON, TOTAL	001 REP	S	07L0614	11/28/07	12/07/07	12/07/07
BORON, TOTAL	001 MS	S	07L0614	11/28/07	12/07/07	12/07/07
BARIUM, TOTAL	001	S	07L0614	11/28/07	12/07/07	12/07/07
BARIUM, TOTAL	001 REP	S	07L0614	11/28/07	12/07/07	12/07/07
BARIUM, TOTAL	001 MS	S	07L0614	11/28/07	12/07/07	12/07/07
BERYLLIUM, TOTAL	001	S	07L0614	11/28/07	12/07/07	12/07/07
BERYLLIUM, TOTAL	001 REP	S	07L0614	11/28/07	12/07/07	12/07/07
BERYLLIUM, TOTAL	001 MS	S	07L0614	11/28/07	12/07/07	12/07/07
BISMUTH, TOTAL	001	S	07L0614	11/28/07	12/07/07	12/07/07
BISMUTH, TOTAL REP	001 REP	S	07L0614	11/28/07	12/07/07	12/07/07
BISMUTH, TOTAL SPIKE	001 MS	S	07L0614	11/28/07	12/07/07	12/07/07
CALCIUM, TOTAL	001	S	07L0614	11/28/07	12/07/07	12/07/07
CALCIUM, TOTAL	001 REP	S	07L0614	11/28/07	12/07/07	12/07/07
CALCIUM, TOTAL	001 MS	S	07L0614	11/28/07	12/07/07	12/07/07
CADMIUM, TOTAL	001	S	07L0614	11/28/07	12/07/07	12/07/07
CADMIUM, TOTAL	001 REP	S	07L0614	11/28/07	12/07/07	12/07/07
CADMIUM, TOTAL	001 MS	S	07L0614	11/28/07	12/07/07	12/07/07
COBALT, TOTAL	001	S	07L0614	11/28/07	12/07/07	12/07/07
COBALT, TOTAL	001 REP	S	07L0614	11/28/07	12/07/07	12/07/07
COBALT, TOTAL	001 MS	S	07L0614	11/28/07	12/07/07	12/07/07
CHROMIUM, TOTAL	001	S	07L0614	11/28/07	12/07/07	12/07/07
CHROMIUM, TOTAL	001 REP	S	07L0614	11/28/07	12/07/07	12/07/07
CHROMIUM, TOTAL	001 MS	S	07L0614	11/28/07	12/07/07	12/07/07
COPPER, TOTAL	001	S	07L0614	11/28/07	12/07/07	12/07/07

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-054 K1045

DATE RECEIVED: 12/04/07 LVL LOT # :0712L262

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
COPPER, TOTAL	001 REP	S	07L0614	11/28/07	12/07/07	12/07/07
COPPER, TOTAL	001 MS	S	07L0614	11/28/07	12/07/07	12/07/07
IRON, TOTAL	001	S	07L0614	11/28/07	12/07/07	12/07/07
IRON, TOTAL	001 REP	S	07L0614	11/28/07	12/07/07	12/07/07
IRON, TOTAL	001 MS	S	07L0614	11/28/07	12/07/07	12/07/07
MERCURY, TOTAL	001	S	07C0219	11/28/07	12/06/07	12/10/07
MERCURY, TOTAL	001 REP	S	07C0219	11/28/07	12/06/07	12/10/07
MERCURY, TOTAL	001 MS	S	07C0219	11/28/07	12/06/07	12/10/07
POTASSIUM, TOTAL	001	S	07L0614	11/28/07	12/07/07	12/07/07
POTASSIUM, TOTAL	001 REP	S	07L0614	11/28/07	12/07/07	12/07/07
POTASSIUM, TOTAL	001 MS	S	07L0614	11/28/07	12/07/07	12/07/07
LITHIUM, TOTAL	001	S	07L0614	11/28/07	12/07/07	12/07/07
LITHIUM, TOTAL	001 REP	S	07L0614	11/28/07	12/07/07	12/07/07
LITHIUM, TOTAL	001 MS	S	07L0614	11/28/07	12/07/07	12/07/07
MAGNESIUM, TOTAL	001	S	07L0614	11/28/07	12/07/07	12/07/07
MAGNESIUM, TOTAL	001 REP	S	07L0614	11/28/07	12/07/07	12/07/07
MAGNESIUM, TOTAL	001 MS	S	07L0614	11/28/07	12/07/07	12/07/07
MANGANESE, TOTAL	001	S	07L0614	11/28/07	12/07/07	12/07/07
MANGANESE, TOTAL	001 REP	S	07L0614	11/28/07	12/07/07	12/07/07
MANGANESE, TOTAL	001 MS	S	07L0614	11/28/07	12/07/07	12/07/07
MOLYBDENUM, TOTAL	001	S	07L0614	11/28/07	12/07/07	12/07/07
MOLYBDENUM, TOTAL	001 REP	S	07L0614	11/28/07	12/07/07	12/07/07
MOLYBDENUM, TOTAL	001 MS	S	07L0614	11/28/07	12/07/07	12/07/07
SODIUM, TOTAL	001	S	07L0614	11/28/07	12/07/07	12/07/07
SODIUM, TOTAL	001 REP	S	07L0614	11/28/07	12/07/07	12/07/07
SODIUM, TOTAL	001 MS	S	07L0614	11/28/07	12/07/07	12/07/07
NICKEL, TOTAL	001	S	07L0614	11/28/07	12/07/07	12/07/07
NICKEL, TOTAL	001 REP	S	07L0614	11/28/07	12/07/07	12/07/07
NICKEL, TOTAL	001 MS	S	07L0614	11/28/07	12/07/07	12/07/07
PHOSPHORUS, TOTAL	001	S	07L0614	11/28/07	12/07/07	12/10/07
PHOSPHORUS, TOTAL	001 REP	S	07L0614	11/28/07	12/07/07	12/10/07
PHOSPHORUS, TOTAL	001 MS	S	07L0614	11/28/07	12/07/07	12/10/07
LEAD, TOTAL	001	S	07L0614	11/28/07	12/07/07	12/07/07
LEAD, TOTAL	001 REP	S	07L0614	11/28/07	12/07/07	12/07/07
LEAD, TOTAL	001 MS	S	07L0614	11/28/07	12/07/07	12/07/07
ANTIMONY, TOTAL	001	S	07L0614	11/28/07	12/07/07	12/07/07
ANTIMONY, TOTAL	001 REP	S	07L0614	11/28/07	12/07/07	12/07/07
ANTIMONY, TOTAL	001 MS	S	07L0614	11/28/07	12/07/07	12/07/07

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-054 K1045

DATE RECEIVED: 12/04/07 LVL LOT # :0712L262

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SELENIUM, TOTAL	001	S	07L0614	11/28/07	12/07/07	12/07/07
SELENIUM, TOTAL	001 REP	S	07L0614	11/28/07	12/07/07	12/07/07
SELENIUM, TOTAL	001 MS	S	07L0614	11/28/07	12/07/07	12/07/07
SILICON, TOTAL	001	S	07L0614	11/28/07	12/07/07	12/07/07
SILICON, TOTAL	001 REP	S	07L0614	11/28/07	12/07/07	12/07/07
SILICON, TOTAL	001 MS	S	07L0614	11/28/07	12/07/07	12/07/07
TIN, TOTAL	001	S	07L0614	11/28/07	12/07/07	12/07/07
TIN, TOTAL	001 REP	S	07L0614	11/28/07	12/07/07	12/07/07
TIN, TOTAL	001 MS	S	07L0614	11/28/07	12/07/07	12/07/07
STRONTIUM, TOTAL	001	S	07L0614	11/28/07	12/07/07	12/07/07
STRONTIUM, TOTAL	001 REP	S	07L0614	11/28/07	12/07/07	12/07/07
STRONTIUM, TOTAL	001 MS	S	07L0614	11/28/07	12/07/07	12/07/07
THALLIUM, TOTAL	001	S	07L0614	11/28/07	12/07/07	12/07/07
THALLIUM, TOTAL	001 REP	S	07L0614	11/28/07	12/07/07	12/07/07
THALLIUM, TOTAL	001 MS	S	07L0614	11/28/07	12/07/07	12/07/07
URANIUM, TOTAL	001	S	07L0614	11/28/07	12/07/07	12/07/07
URANIUM, TOTAL	001 REP	S	07L0614	11/28/07	12/07/07	12/07/07
URANIUM, TOTAL	001 MS	S	07L0614	11/28/07	12/07/07	12/07/07
VANADIUM, TOTAL	001	S	07L0614	11/28/07	12/07/07	12/07/07
VANADIUM, TOTAL	001 REP	S	07L0614	11/28/07	12/07/07	12/07/07
VANADIUM, TOTAL	001 MS	S	07L0614	11/28/07	12/07/07	12/07/07
ZINC, TOTAL	001	S	07L0614	11/28/07	12/07/07	12/07/07
ZINC, TOTAL	001 REP	S	07L0614	11/28/07	12/07/07	12/07/07
ZINC, TOTAL	001 MS	S	07L0614	11/28/07	12/07/07	12/07/07

LAB QC:

SILVER LABORATORY	LC1 BS	S	07L0614	N/A	12/07/07	12/07/07
SILVER, TOTAL	MB1	S	07L0614	N/A	12/07/07	12/07/07
ALUMINUM LABORTORY	LC1 BS	S	07L0614	N/A	12/07/07	12/07/07
ALUMINUM, TOTAL	MB1	S	07L0614	N/A	12/07/07	12/07/07
ARSENIC LABORATORY	LC1 BS	S	07L0614	N/A	12/07/07	12/07/07
ARSENIC, TOTAL	MB1	S	07L0614	N/A	12/07/07	12/07/07
BORON LABORATORY	LC1 BS	S	07L0614	N/A	12/07/07	12/07/07
BORON, TOTAL	MB1	S	07L0614	N/A	12/07/07	12/07/07
BARIUM LABORATORY	LC1 BS	S	07L0614	N/A	12/07/07	12/07/07
BARIUM, TOTAL	MB1	S	07L0614	N/A	12/07/07	12/07/07
BERYLLIUM LABORATORY	LC1 BS	S	07L0614	N/A	12/07/07	12/07/07

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-054 K1045

DATE RECEIVED: 12/04/07 LVL LOT # :0712L262

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BERYLLIUM, TOTAL	MB1	S	07L0614	N/A	12/07/07	12/07/07
BISMUTH, LCS	LC1 BS	S	07L0614	N/A	12/07/07	12/07/07
BISMUTH, TOTAL	MB1	S	07L0614	N/A	12/07/07	12/07/07
CALCIUM LABORATORY	LC1 BS	S	07L0614	N/A	12/07/07	12/07/07
CALCIUM, TOTAL	MB1	S	07L0614	N/A	12/07/07	12/07/07
CADMIUM LABORATORY	LC1 BS	S	07L0614	N/A	12/07/07	12/07/07
CADMIUM, TOTAL	MB1	S	07L0614	N/A	12/07/07	12/07/07
COBALT LABORATORY	LC1 BS	S	07L0614	N/A	12/07/07	12/07/07
COBALT, TOTAL	MB1	S	07L0614	N/A	12/07/07	12/07/07
CHROMIUM LABORATORY	LC1 BS	S	07L0614	N/A	12/07/07	12/07/07
CHROMIUM, TOTAL	MB1	S	07L0614	N/A	12/07/07	12/07/07
COPPER LABORATORY	LC1 BS	S	07L0614	N/A	12/07/07	12/07/07
COPPER, TOTAL	MB1	S	07L0614	N/A	12/07/07	12/07/07
IRON LABORATORY	LC1 BS	S	07L0614	N/A	12/07/07	12/07/07
IRON, TOTAL	MB1	S	07L0614	N/A	12/07/07	12/07/07
MERCURY LABORATORY	LC1 BS	S	07C0219	N/A	12/06/07	12/10/07
MERCURY, TOTAL	MB1	S	07C0219	N/A	12/06/07	12/10/07
POTASSIUM LABORATORY	LC1 BS	S	07L0614	N/A	12/07/07	12/07/07
POTASSIUM, TOTAL	MB1	S	07L0614	N/A	12/07/07	12/07/07
LITHIUM LABORATORY	LC1 BS	S	07L0614	N/A	12/07/07	12/07/07
LITHIUM, TOTAL	MB1	S	07L0614	N/A	12/07/07	12/07/07
MAGNESIUM LABORATORY	LC1 BS	S	07L0614	N/A	12/07/07	12/07/07
MAGNESIUM, TOTAL	MB1	S	07L0614	N/A	12/07/07	12/07/07
MANGANESE LABORATORY	LC1 BS	S	07L0614	N/A	12/07/07	12/07/07
MANGANESE, TOTAL	MB1	S	07L0614	N/A	12/07/07	12/07/07
MOLYBDENUM LABORATOR	LC1 BS	S	07L0614	N/A	12/07/07	12/07/07
MOLYBDENUM, TOTAL	MB1	S	07L0614	N/A	12/07/07	12/07/07
SODIUM LABORATORY	LC1 BS	S	07L0614	N/A	12/07/07	12/07/07
SODIUM, TOTAL	MB1	S	07L0614	N/A	12/07/07	12/07/07
NICKEL LABORATORY	LC1 BS	S	07L0614	N/A	12/07/07	12/07/07
NICKEL, TOTAL	MB1	S	07L0614	N/A	12/07/07	12/07/07
PHOSPHORUS LCS	LC1 BS	S	07L0614	N/A	12/07/07	12/10/07
PHOSPHORUS, TOTAL	MB1	S	07L0614	N/A	12/07/07	12/10/07
LEAD LABORATORY	LC1 BS	S	07L0614	N/A	12/07/07	12/07/07
LEAD, TOTAL	MB1	S	07L0614	N/A	12/07/07	12/07/07
ANTIMONY LABORATORY	LC1 BS	S	07L0614	N/A	12/07/07	12/07/07
ANTIMONY, TOTAL	MB1	S	07L0614	N/A	12/07/07	12/07/07
SELENIUM LABORATORY	LC1 BS	S	07L0614	N/A	12/07/07	12/07/07

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-054 K1045

DATE RECEIVED: 12/04/07 LVL LOT # :0712L262

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SELENIUM, TOTAL	MB1	S	07L0614	N/A	12/07/07	12/07/07
SILICON LABORATORY	LC1 BS	S	07L0614	N/A	12/07/07	12/07/07
SILICON, TOTAL	MB1	S	07L0614	N/A	12/07/07	12/07/07
TIN LABORATORY	LC1 BS	S	07L0614	N/A	12/07/07	12/07/07
TIN, TOTAL	MB1	S	07L0614	N/A	12/07/07	12/07/07
STRONTIUM LCS STANDA	LC1 BS	S	07L0614	N/A	12/07/07	12/07/07
STRONTIUM, TOTAL	MB1	S	07L0614	N/A	12/07/07	12/07/07
THALLIUM LABORATORY	LC1 BS	S	07L0614	N/A	12/07/07	12/07/07
THALLIUM, TOTAL	MB1	S	07L0614	N/A	12/07/07	12/07/07
URANIUM LABORATORY	LC1 BS	S	07L0614	N/A	12/07/07	12/07/07
URANIUM, TOTAL	MB1	S	07L0614	N/A	12/07/07	12/07/07
VANADIUM LABORATORY	LC1 BS	S	07L0614	N/A	12/07/07	12/07/07
VANADIUM, TOTAL	MB1	S	07L0614	N/A	12/07/07	12/07/07
ZINC LABORATORY	LC1 BS	S	07L0614	N/A	12/07/07	12/07/07
ZINC, TOTAL	MB1	S	07L0614	N/A	12/07/07	12/07/07

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-054
LVL#: 0712L262
SDG/SAF#: K1045/RC-054

W.O.#: 11343-606-001-9999-00
Date Received: 12-04-07

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 analysis of 1 soil sample. The analysis of the TCLP leachate was canceled per client request.

2. The sample was prepared and analyzed in accordance with methods checked on the attached glossary.

   The ICP metal sample was run with a 3-fold dilution. All dilutions were due to sample matrix

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 PQL).

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

   a). The MB results for Zinc was greater than the Practical Quantitation Limit (PQL) {3 x the (IDL) Instrument Detection Level} and the sample 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.

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 20 pages.

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

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

8. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to the Inorganics Laboratory Control Standards Report.

9. The matrix spike (MS) recoveries for 7 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 serial dilution is performed for Mercury. A PDS was prepared at meaningful concentration level for the following analytes:

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J163T3	Aluminum	66,000	104.2
	Calcium	66,000	101.5
	Iron	66,000	115.0
	Manganese	3,000	107.7
	Phosphorus	6,000	94.8
	Antimony	300	103.8
	Silicon	6,000	108.4

11. The duplicate analyses for 8 analytes were 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.

for

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

1/4/08
Date

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within t

Lot#: 0712L262

Leaching Procedure: __1310 __1311 __1312 __Other:_____

CLP 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	X 6010B		__200.7				__99
Antimony	X 6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	X 6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	X 6010B		__200.7				__99
Beryllium	X 6010B		__200.7				__99
Bismuth	X 6010B [1]		__200.7 [1]			__1620	__99
Boron	X 6010B		__200.7				__99
Cadmium	X 6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	X 6010B		__200.7				__99
Chromium	X 6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	X 6010B		__200.7				__99
Copper	X 6010B	__7211 [5]	__200.7	__220.2			__99
Iron	X 6010B		__200.7				__99
Lead	X 6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	X 6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	X 6010B		__200.7				__99
Manganese	X 6010B		__200.7				__99
Mercury	__7470A [3]	X 7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	X 6010B		__200.7				__99
Nickel	X 6010B		__200.7				__99
Potassium	X 6010B	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010B [1]		__200.7 [1]			__1620	__99
Selenium	X 6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	X 6010B [1]		__200.7			__1620	__99
Silica	__6010B		__200.7			__1620	__99
Silver	X 6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	X 6010B	__7770 [4]	__200.7	__273.1 [4]			__99
Strontium	X 6010B		__200.7				__99
Thallium	X 6010B	__7841 [5]	__200.7	__279.2 __200.9			__99
Tin	X 6010B		__200.7				__99
Titanium	__6010B		__200.7				__99
Uranium	X 6010B [1]		__200.7 [1]			__1620	__99
Vanadium	X 6010B		__200.7				__99
Zinc	X 6010B		__200.7				__99
Zirconium	__6010B [1]		__200.7 [1]			__1620	__99

Other: Phophorus Method: 6010

L-WI-033/M-03/01

000000008

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 12/14/07

CLIENT: TNUHANFORD RC-054 K1045

LVL LOT #: 0712L262

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J16330	Silver, Total	0.30 u	MG/KG	0.30	3.0
		Aluminum, Total	4610	MG/KG	11.9	3.0
		Arsenic, Total	1.8	MG/KG	1.5	3.0
		Boron, Total	2.5	MG/KG	1.5	3.0
		Barium, Total	40.6	MG/KG	0.30	3.0
		Beryllium, Total	0.44	MG/KG	0.15	3.0
		Bismuth, Total	1.8 u	MG/KG	1.8	3.0
		Calcium, Total	4710	MG/KG	11.9	3.0
		Cadmium, Total	0.15 u	MG/KG	0.15	3.0
		Cobalt, Total	4.7	MG/KG	0.59	3.0
		Chromium, Total	5.3	MG/KG	0.59	3.0
		Copper, Total	11.3	MG/KG	0.59	3.0
		Iron, Total	13600	MG/KG	13.4	3.0
		Mercury, Total	0.009	MG/KG	0.008	1.0
		Potassium, Total	897	MG/KG	11.9	3.0
		Lithium, Total	4.2	MG/KG	0.12	3.0
		Magnesium, Total	2830	MG/KG	7.4	3.0
		Manganese, Total	207	MG/KG	0.12	3.0
		Molybdenum, Total	0.89 u	MG/KG	0.89	3.0
		Sodium, Total	270	MG/KG	5.9	3.0
		Nickel, Total	6.8	MG/KG	0.59	3.0
		Phosphorus, Total	666	MG/KG	14.8	3.0
		Lead, Total	2.2	MG/KG	0.89	3.0
		Antimony, Total	0.89 u	MG/KG	0.89	3.0
		Selenium, Total	1.8 u	MG/KG	1.8	3.0
		Silicon, Total	1480	MG/KG	11.9	3.0
		Tin, Total	1.8 u	MG/KG	1.8	3.0
		Strontium, Total	19.7	MG/KG	0.09	3.0
		Thallium, Total	2.3	MG/KG	1.8	3.0
		Uranium, Total	5.9 u	MG/KG	5.9	3.0
		Vanadium, Total	34.4	MG/KG	0.42	3.0
		Zinc, Total	50.1	MG/KG	1.8	3.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 12/14/07

CLIENT: TNUHANFORD RC-054 K1045

LVL LOT #: 0712L262

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	07L0614-MB1	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Aluminum, Total	3.7 u	MG/KG	3.7	1.0
		Arsenic, Total	0.46 u	MG/KG	0.46	1.0
		Boron, Total	0.46 u	MG/KG	0.46	1.0
		Barium, Total	0.09 u	MG/KG	0.09	1.0
		Beryllium, Total	0.05 u	MG/KG	0.05	1.0
		Bismuth, Total	0.55 u	MG/KG	0.55	1.0
		Calcium, Total	21.6	MG/KG	3.7	1.0
		Cadmium, Total	0.05 u	MG/KG	0.05	1.0
		Cobalt, Total	0.18 u	MG/KG	0.18	1.0
		Chromium, Total	0.18 u	MG/KG	0.18	1.0
		Copper, Total	0.24	MG/KG	0.18	1.0
		Iron, Total	84.2	MG/KG	4.1	1.0
		Potassium, Total	3.7 u	MG/KG	3.7	1.0
		Lithium, Total	0.05	MG/KG	0.04	1.0
		Magnesium, Total	2.3 u	MG/KG	2.3	1.0
		Manganese, Total	0.27	MG/KG	0.04	1.0
		Molybdenum, Total	0.28 u	MG/KG	0.28	1.0
		Sodium, Total	10.9	MG/KG	1.8	1.0
		Nickel, Total	0.18 u	MG/KG	0.18	1.0
		Phosphorus, Total	4.6 u	MG/KG	4.6	1.0
		Lead, Total	0.28 u	MG/KG	0.28	1.0
		Antimony, Total	0.28 u	MG/KG	0.28	1.0
		Selenium, Total	0.55 u	MG/KG	0.55	1.0
		Silicon, Total	7.8	MG/KG	3.7	1.0
		Tin, Total	1.3	MG/KG	0.55	1.0
		Strontium, Total	0.03	MG/KG	0.03	1.0
		Thallium, Total	0.55 u	MG/KG	0.55	1.0
		Uranium, Total	1.8 u	MG/KG	1.8	1.0
		Vanadium, Total	0.13 u	MG/KG	0.13	1.0
		Zinc, Total	8.1	MG/KG	0.55	1.0
BLANK1	07C0219-MB1	Mercury, Total	0.01 u	MG/KG	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 12/14/07

CLIENT: TNUHANFORD RC-054 K1045

LVL LOT #: 0712L262

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J16330	Silver, Total	4.5	0.30u	4.9	91.8	3.0
		Aluminum, Total	5550	4610	198	474.3*	3.0
		Arsenic, Total	179	1.8	198	89.6	3.0
		Boron, Total	93.5	2.5	98.9	92.0	3.0
		Barium, Total	226	40.6	198	93.8	3.0
		Beryllium, Total	4.9	0.44	4.9	91.1	3.0
		Bismuth, Total	228	1.8 u	247	92.0	3.0
		Calcium, Total	8400	4710	2470	149.4	3.0
		Cadmium, Total	4.5	0.15u	4.9	91.8	3.0
		Cobalt, Total	51.5	4.7	49.5	94.5	3.0
		Chromium, Total	23.7	5.3	19.8	92.9	3.0
		Copper, Total	37.7	11.3	24.7	106.9	3.0
		Iron, Total	16800	13600	98.9	3269 *	3.0
		Mercury, Total	0.15	0.009	0.13	104.5	1.0
		Potassium, Total	3310	897	2470	97.7	3.0
		Lithium, Total	98.6	4.2	98.9	95.4	3.0
		Magnesium, Total	5860	2830	2470	122.5	3.0
		Manganese, Total	304	207	49.5	196.2*	3.0
		Molybdenum, Total	86.5	0.89u	98.9	87.5	3.0
		Sodium, Total	2550	270	2470	92.3	3.0
		Nickel, Total	52.9	6.8	49.5	93.1	3.0
		Phosphorus, Total	1260	666	247	240.0	3.0
		Lead, Total	47.7	2.2	49.5	91.9	3.0
		Antimony, Total	33.0	0.89u	49.5	66.7	3.0
		Selenium, Total	156	1.8 u	198	78.8	3.0
		Silicon, Total	2490	1480	98.9	1022 *	3.0
		Tin, Total	86.5	1.8 u	98.9	87.5	3.0
		Strontium, Total	116	19.7	98.9	97.4	3.0
		Thallium, Total	181	2.3	198	90.1	3.0
		Uranium, Total	228	5.9 u	247	92.2	3.0
		Vanadium, Total	76.1	34.4	49.5	84.2	3.0
		Zinc, Total	106	50.1	49.5	112.3	3.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 12/14/07

CLIENT: TNUHANFORD RC-054 K1045

LVL LOT #: 0712L262

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J16330	Silver, Total	0.30u	0.30u	NC	3.0
		Aluminum, Total	4610	5000	8.0	3.0
		Arsenic, Total	1.8	2.2	20.0	3.0
		Boron, Total	2.5	1.8	32.6	3.0
		Barium, Total	40.6	47.2	15.0	3.0
		Beryllium, Total	0.44	0.38	13.0	3.0
		Bismuth, Total	1.8 u	1.8 u	NC	3.0
		Calcium, Total	4710	5220	10.3	3.0
		Cadmium, Total	0.15u	0.15u	NC	3.0
		Cobalt, Total	4.7	5.4	13.9	3.0
		Chromium, Total	5.3	5.4	1.9	3.0
		Copper, Total	11.3	13.3	16.3	3.0
		Iron, Total	13600	15100	11.0	3.0
		Mercury, Total	0.009	0.00u	NC	1.0
		Potassium, Total	897	1230	31.6	3.0
		Lithium, Total	4.2	6.2	38.5	3.0
		Magnesium, Total	2830	3470	20.3	3.0
		Manganese, Total	207	252	19.9	3.0
		Molybdenum, Total	0.89u	0.89u	NC	3.0
		Sodium, Total	270	216	22.3	3.0
		Nickel, Total	6.8	11.2	48.9	3.0
		Phosphorus, Total	666	893	29.1	3.0
		Lead, Total	2.2	2.2	0.00	3.0
		Antimony, Total	0.89u	0.89u	NC	3.0
		Selenium, Total	1.8 u	1.8 u	NC	3.0
		Silicon, Total	1480	2200	39.1	3.0
		Tin, Total	1.8 u	1.8 u	NC	3.0
		Strontium, Total	19.7	20.4	3.5	3.0
		Thallium, Total	2.3	1.8	24.4	3.0
		Uranium, Total	5.9 u	5.9 u	NC	3.0
		Vanadium, Total	34.4	30.3	12.7	3.0
		Zinc, Total	50.1	60.6	19.0	3.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 12/14/07

CLIENT: TNUHANFORD RC-054 K1045 LVL LOT #: 0712L262

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	07L0614-LC1	Silver, LCS	46.8	50.0	MG/KG	93.6
		Aluminum, LCS	504	500	MG/KG	100.8
		Arsenic, LCS	912	1000	MG/KG	91.2
		Boron, LCS	466	500	MG/KG	93.1
		Barium, LCS	483	500	MG/KG	96.6
		Beryllium, LCS	23.8	25.0	MG/KG	95.2
		Bismuth, LCS	235	250	MG/KG	94.0
		Calcium, LCS	2390	2500	MG/KG	95.6
		Cadmium, LCS	23.4	25.0	MG/KG	93.6
		Cobalt, LCS	238	250	MG/KG	95.2
		Chromium, LCS	47.8	50.0	MG/KG	95.6
		Copper, LCS	121	125	MG/KG	97.0
		Iron, LCS	486	500	MG/KG	97.2
		Potassium, LCS	2390	2500	MG/KG	95.6
		Lithium, LCS	493	500	MG/KG	98.5
		Magnesium, LCS	2360	2500	MG/KG	94.3
		Manganese, LCS	73.2	75.0	MG/KG	97.6
		Molybdenum, LCS	463	500	MG/KG	92.6
		Sodium, LCS	2350	2500	MG/KG	94.2
		Nickel, LCS	189	200	MG/KG	94.5
		Phosphorus, LCS	229	250	MG/KG	91.6
		Lead, LCS	238	250	MG/KG	95.0
		Antimony, LCS	280	300	MG/KG	93.4
		Selenium, LCS	888	1000	MG/KG	88.8
		Silicon, LCS	556	500	MG/KG	111.2
		Tin, LCS	472	500	MG/KG	94.5
		Strontium, LCS	485	500	MG/KG	97.0
		Thallium, LCS	929	1000	MG/KG	92.9
		Uranium, LCS	237	250	MG/KG	94.9
		Vanadium, LCS	240	250	MG/KG	95.9
		Zinc, LCS	97.1	100	MG/KG	97.1
LCS1	07C0219-LC1	Mercury, LCS	4.5	4.7	MG/KG	96.6

Lionville Laboratory Incorporated

Logbook #: DIX 1

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 07LC0614
Date/Time Initiated: 12/7/07 8:45AM
Date/Time Completed: 12/7/07 11:35AM
Analyst(s): JW/KMC
Matrix: (Soil) Water Other:
Instr. Type: AA (ICP)
Parameters: See backlog

Digested / Undigested (circle one)
Balance #: 1370
Balance Cal Verif: (Y) NA
Hot Plate Temp: 91°

Method: SW 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 Teflon

TLM (Re-Digestion)

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
07LC262-001		1.07g	100mL	N/A	TO	Not Fine	Brown soil	Rocks	N/A
-001B		1.07g	↓	↓	↓	↓	↓	↓	↓
☆ -003	1.0mL	1.07g	↓	↓	↓	↓	↓	↓	↓
07LC614-MB1		1.09g	↓	↓	↓	N/A	Boiling chips	N/A	↓
☆ -LC1	1.0mL	1g	↓	↓	↓	↓	↓	↓	↓

TLM 12/7/07

Spiking IDs:
MS #: 8100-04-01
↓ ↓ -02
-03
(6072-077) -01
LCS #: ↓ ↓ -02
-03
-04
-05

Reagent IDs:
HNO_3 EDC035
HCL E33033
H_2O_2 EDC014
1:1 HNO_3 0584-0066-01
1:1 HCL

File ID#: I.061401
LIMS Transfer: (Y) N Updated
Data Review By/Date: PMP, 12/07/07

☆ Also 0.25mL B: -6072-076-06
P -6072-071-08
U -6072-070-16

L-SPI-3020-A-0601

Lionville Laboratory
Incorporated

MERCURY PREPARATION

Logbook # 0376

Analyst: TEB
Date: 12/6/07
Start Time/Temp: 1550 | 94°
End Time/Temp: 1620 | 95°

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

Prep Batch: 0720219 TE 12/11/07
Worksheet: HG 121001
OP 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	92			10mL	50mL	
0.2 µg/L	PT	0.100				
1.0	AHA	0.500				
2.0	503	1.000				
5.0	27	2.500				
10.0	290	5.000				
ICV	8H	0.125	2.5			
CCV	R2	0.250	5.0			
ICB/CCB	3H/8					90.50L
MB1	LIS			0.30		PBS119 100.00
LCI	AH	*	*	0.33		LCSS119
0712L272-001	1721			0.35		95.50
001R	P13			0.30		
001S	C9	0.500	1.0	0.35		
002	P5			0.34		89.14
003	U3			0.35		91.18
004	C7			0.31		89.69
005	222			0.32		89.95
006	SM			0.33		89.38
007	11A			0.37		89.57
008	J1			0.30		90.60
009	3V5			0.41		90.21
010	555			0.34		94.93
011	X3			0.31		88.05
0712L262-001	OLN			0.40		94.52
001R	A27			0.35		
001S	S	0.500	1.0	0.40		

Standard:	ID	Prep Date/Time
IC/MS	R1 6072-75-07B	12/6/07 1230
ICV/CCV/LCS	US 6072-75-08A	

Reviewed By/Date: [signature] 12/14/07

see book # 9368 for std traceability information

*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

ville Laboratory
orporated

MERCURY PREPARATION

Logbook # 0326

Analyst: TRB
12/6/07
Time/Temp: See page 099
Time/Temp:

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

Prep Batch: 07C0219
Worksheet: HG121001
OP 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.
0712L263-001	PA			0.33	50mL	90.70
001R	NR			0.32	↓	↓
001S	NB	0.500	1.0	0.33	↓	
002	TR			0.31	↓	R 92.00

TRB 12/6/07

Standard:	ID	Prep Date/Time
ALMS		
CCV/CCV/LCS	See page 099	

Reviewed By/Date: [signature] 12/14/07

see book # 9368 for std traceability information

LCS =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

Page #:

Lionville Laboratory Use Only

07121262

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI

Client TNU HANFORD SAF# RC-054

Est. Final Proj. Sampling Date

Project# 11343-606-001-9999-00

Project Contact/Phone#

Lionville Laboratory Project Manager OJohnson

QC SW846 Del STD TAT 7Day

Date Rec'd 12-4-07 Date Due 12-11-07

		A							B							
Refrigerator #		6							3							
#/Type Container	Liquid															
	Solid	1G						1	1G		1G		1	LEACHATE	LEACHATE	
Volume		1000						1	1000		1000		1			
Preservatives																
ANALYSES REQUESTED →		ORGANIC: VOA	ORGANIC: BNA	ORGANIC: ~~Pest/PCB~~	ORGANIC: ~~Herb~~	TCLP Semi VOA	TCLP VOA	LEACHATE	INORG: TCLP Metal	INORG: ~~Hg~~	INORG: CN	ICP Met 6010A		PH	LEACHATE	LEACHATE

MATRIX CODES:
S- Soil
SE- Sediment
SO- Solid
SL- Sludge
W- Water
O- Oil
A- Air
DS- Drum Solids
DL- Drum Liquids
L- EP/TCLP Leachate
WI- Wipe
X- Other
F- Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only: 06244	06254			ITCLP	ITCLV	Met①	ITCLP		ICPMet②		IPH	06251	06241	
001	I 16330	✓	✓	Soil	11/28/07	1424	X	X			X	X		X		X	X	X			
002	TCLP of 001			L	*								X						X		
003	TCLV of 001			L	*															X	

Special Instructions:

Met① = RCRATCW

Met② = HSL + B-, Bi, Li, Mo, P-, SI, Sn, Sr, U

*See Labchron

Special Instructions:

ICP Metals ② 1. 6010A (add on) {antimony, Beryllium, Nickel, Thallium}

2. Leach and Hold all wait for approval from Joan K.

3.

4.

5.

6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	12/4/07	0930

Relinquished by	Received by	Date	Time

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

0000000018

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-054-030	Page 1 of 1

ollector Rory Steffler	Company Contact Doug Bowers	Telephone No. 531-0701	Project Coordinator KESSNER, JH
Price Code 8J	Data Turnaround 7 day		
oject Designation 118-K-1 Burial Grounds - Soil Quick Turn	Sampling Location 118-K-1		SAF No. RC-054
e Chest No. ERC-02-006 ~~ERC-04-003~~	Field Logbook No. EL1602-3	COA R118K12600	Method of Shipment Fed Ex
ipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A0800~~85~~60		Bill of Lading/Air Bill No. See OSAC

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None			
Type of Container	aG	aG	aG (1)	aG (1)	aG (1)	aG (1)	aG (1)			
No. of Container(s)	1	1	x0	x0	x0	x0	x0			
Volume	1000mL	1000mL	1000mL	1000mL	1000mL	1000mL	1000mL			
SAMPLE ANALYSIS	ICP Metals - 6010A (Add-on) {Antimony, Beryllium, Nickel, Thallium}	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	~~IC Anions - 300.0~~, pH (Soil) - 9045 (1)	TCLP Semi-VOA - 1311/8270A	TCLP VOA -- 1311/8260A			
Sample No.	Matrix *	Sample Date	Sample Time								
16330	SOIL	11-28-07	1424	X	X	X	X	X	X	X	

CHAIN OF POSSESSION		Sign/Print Names	
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Z Steffler R.Z. Steffler	1500 11-28-07	Doug Bowers Doug Bowers	11-28-07/1500
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Doug Bowers Doug Bowers	11-28-07/1700	A of IA 3728	11-28-07/1700
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
F IA 3728	12-3-07 0945	H Singleton	12-3-07 0945
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
H Singleton	12-3-07 1500	FEDEX	
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
FEDEX	12-4-07 0930	Ted Nunnally	12-4-07 0930
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

Run VOA's and TCLP VOA's, run Semi VOA's and TCLP Semi VOA's, run ICP metals and TCLP metal, from volumes provided. Run TCLP extraction on VOA's, Semi-VOA's and Metals then wait for Joan Kessners approval to run. Run pH from either left over material.

(1) Metals by ICP (TCLP) - 1311/6010 {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; Mercury (TCLP) - 1311/7470

samples from 3728 Ref # IA
3728 Custodian removed samples for shipping on 12 / 3 / 07.
Sampler unavailable to relinquish

D 78 11-28-01 (1)

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

ABORATORY SECTION	Received By	Title	Date/Time
INAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

000000019

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Date: 12-4-07

Project/SAP/SOW/Release #: RC-054

LvLI Batch #: 0712L262

Sample Custodian: Victor Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FED EX		Airbill # 79180901 1044
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 plastic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3°	°C	Cooler # ERC-02-006
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, TDC, 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

000000020

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-054 K1045

RECEIVED JAN 2008

DATE RECEIVED: 12/04/07 LVL LOT # :071[illegible]262

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16330						
% SOLIDS	001	S	07L%S151	11/28/07	12/05/07	12/06/07
% SOLIDS	001 REP	S	07L%S151	11/28/07	12/05/07	12/06/07
PH	001	S	07LPH075	11/28/07	12/06/07	12/06/07
PH	001 REP	S	07LPH075	11/28/07	12/06/07	12/06/07
TCLP	001	S	07LT0148	11/28/07	12/04/07	12/05/07
TCLP LEACHATE	001	S	07LTV149	11/28/07	12/04/07	12/05/07

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-054 K1045
LVL#: 0712L262

W.O.#: 11343-606-001-9999-00
Date Received: 12-04-07

INORGANIC NARRATIVE

1. This narrative covers the analyses of 1 soil sample.

2. The sample was prepared and analyzed in accordance with the methods checked on the attached glossary.

   LvLI 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. LvLI 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 a sample that met LvLI's sample acceptance policy.

5. The replicate analyses were within the 20% Relative Percent Difference (RPD) control limit.

6. 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 Incorporated

12/14/07
Date

njp\i12-262

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 9 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 D	__ EPA 418.1
pH, Soil		✓ 9045~~C~~ D 12-13-01	
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:	**Method:**		
Other:	**Method**		

L-WI-034/B-01/01

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 12/12/07

CLIENT: TNUHANFORD RC-054 K1045

LVL LOT #: 0712L262

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J16330	% Solids	94.5	%	0.01	1.0
		pH	8.4	SOIL PH	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 12/12/07

CLIENT: TNUHANFORD RC-054 K1045 LVL LOT #: 0712L262

WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J16330	% Solids	94.5	94.4	0.14	1.0
		pH	8.4	8.3	0.8	1.0

Lionville Laboratory Use Only

07121262

Custody Transfer Record/Lab Work Request

Page 1 of 1

VLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client TNU HANFORD SAF# RC-054

Est. Final Proj. Sampling Date

Project# 11343-606-001-9999-00

Project Contact/Phone#

Lionville Laboratory Project Manager OJohnson

QC SW846 Del STD TAT 7Day

Date Rec'd 12-4-07 Date Due 12-11-07

		A							B							
Refrigerator #		6							3							
#/Type Container	Liquid															
	Solid	1G						LEACHATE	1G		1G			LEACHATE	LEACHATE	
Volume		1000							1000		100 ml 12-4-4					
Preservatives																
ANALYSES REQUESTED →		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Herb	TCLP semi VOA	TCLP VOA		TCLP Metal	CN	ICP 6010	Met	PH			

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only: 06244	06254		ITCLP	ITCLV	Met(1)	ITCLP		ICPMet(2)		IPH	06251	06241	
S- Soil	001	I 16330	✓	✓	Soil	11/28/07	1424	X1	X		X	X		X1		X	X	X			
SE- Sediment	002	I TCLP 0F001			L	*							X						X		
SO- Solid	003	I TCLV 0F001			L	I														X	
SL- Sludge																					
W- Water																					
O- Oil																					
A- Air																					
DS- Drum Solids																					
DL- Drum Liquids																					
L- EP/TCLP Leachate																					
WI- Wipe																					
X- Other																					
F- Fish																					

Special Instructions:

Met(1) = RCRATCW

Met(2) - HSL + B-, Bi, Li
Mo. P-, SI, Sn,
Sr. U

*See Labchron

Special Instructions:

ICP Metals (2) 1. 6010A (add on) {antimony, Beryllium, Nickel, Thallium}

2. Leach and Hold all wait for approval from Jean K.

3.

4.

5.

6.

Relinquished by	Received by	Date	Time
[signature]	[signature]	12/4/7	0930

Relinquished by	Received by	Date	Time

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

000000007

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-054-030	Page 1 of 1
Collector: Rory Steffler	Company Contact: Doug Bowers; Telephone No.: 531-0701	Project Coordinator: KESSNER, JH	Price Code: 8J; Data Turnaround: 7 day
Project Designation: 118-K-1 Burial Grounds - Soil Quick Turn	Sampling Location: 118-K-1	SAF No.: RC-054	
Ice Chest No.: ERC-02-006 ~~ERC-04-003~~	Field Logbook No.: EL1602-3; COA: R118K12600	Method of Shipment: Fed Ex	
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A0800~~85~~60	Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None				
Type of Container	aG	aG	aG (1)	aG (1)	aG (1)	aG (1)	aG (1)				
No. of Container(s)	1	1	10	10	10	10	10				
Volume	1000mL	1000mL	1000mL	1000mL	1000mL	1000mL	1000mL				
SAMPLE ANALYSIS	ICP Metals - 6010A (Add-on) (Antimony, Beryllium, Nickel, Thallium)	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	~~IC Anions 9056~~, pH (Soil) - 9045 (1)	TCLP Semi-VOA - 1311/8270A	TCLP VOA -- 1311/8260A				
Sample No.	Matrix *	Sample Date	Sample Time								
16330	SOIL	11-28-07	1424	X	X	X	X	X	X	X	

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From: RZ Steffler R.Z. Steffler, Date/Time: 1500 11-28-07	Received By/Stored In: Doug Bowers Doug Bowers, Date/Time: 11-28-07/1500	
Relinquished By/Removed From: Doug Bowers Doug Bowers, Date/Time: 11-28-07/1700	Received By/Stored In: Air/IA 3728, Date/Time: 11-28-07/1700	
Relinquished By/Removed From: Ref IA 3728, Date/Time: 12-3-07 0945	Received By/Stored In: Kit Singleton, Date/Time: 12-3-07 0945	
Relinquished By/Removed From: Kit Singleton, Date/Time: 12-3-07 1500	Received By/Stored In: FEDEX, Date/Time:	
Relinquished By/Removed From: FedEx, Date/Time: 12-4-07 0930	Received By/Stored In: Ted Nunnally, Date/Time: 12-4-07 0930	
Relinquished By/Removed From: Date/Time:	Received By/Stored In: Date/Time:	

SPECIAL INSTRUCTIONS

Run VOA's and TCLP VOA's, run Semi VOA's and TCLP Semi VOA's, run ICP metals and TCLP metal, from volumes provided. Run TCLP extraction on VOA's, Semi-VOA's and Metals then wait for Joan Kessners approval to run. Run pH from either left over material.

(1) Metals by ICP (TCLP) - 1311/6010 (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); Mercury (TCLP) - 1311/7470

samples from 3728 Ref # IA.
3728 Custodian removed samples for shipping on 12/3/07.
Sampler unavailable to relinquish

D78 11-28-01 (1)

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

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Project/SAP/SOW/Release #: RC-054

Date: 12-4-07

LvLI Batch #: 0712L262

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FED EX		Airbill # 79180901 1044
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 plastic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3°	°C	Cooler # ERC-02-006
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.
VOA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-054 K1045

RECEIVED
JAN 2008

DATE RECEIVED: 12/04/07 LVL LOT # :07[illegible]262

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16330	001	S	07LVK142	11/28/07	N/A	12/09/07
J16330	001 MS	S	07LVK142	11/28/07	N/A	12/09/07
J16330	001 MSD	S	07LVK142	11/28/07	N/A	12/09/07

LAB QC:

VBLKPH	MB1	S	07LVK142	N/A	N/A	12/09/07
VBLKPH	MB1 BS	S	07LVK142	N/A	N/A	12/09/07

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-054
LVL #: 0712L262
SDG/SAF # K1045/RC-054

W.O. #: 11343-606-001-9999-00
Date Received: 12-04-2007

GC/MS VOLATILE

One (1) soil sample was collected on 11-28-2007.

The sample and its associated QC samples were analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8260B for TCL volatile target compounds on 12-09-2007.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise. The following is a summary of QC results accompanying the sample results. Lionville Laboratory Inc (LvLI) certifies that all test results meet the requirements of NELAC except as noted below:

1. All results presented in this report are derived from a sample that met LvLI's sample acceptance policy.

2. The sample was analyzed within required holding time.

3. Non-target compounds were detected in the samples.

4. One (1) of fifteen (15) surrogate recoveries was outside acceptance criteria. Associated matrix spike analyses fulfilled its reanalysis requirement. (J16330)

5. Thirteen (13) of seventy (70) matrix spike recoveries were outside acceptance criteria.

6. All blank spike recoveries were within acceptance criteria.

7. The method blank contained the common laboratory contaminant Methylene Chloride at a level less than 2X the CRQL.

8. All internal standard area and retention time criteria were met.

r:\group\data\voa\tnu-hanford\0711-262ks1.doc

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 pages.

LIONVILLE LABORATORY INC.

9. Manual integrations are performed according to SOP QA-125 to produce quality data with utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags for Manual Integration").

10. All calibrations met criteria.

11. 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.

12. "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."

Carl Schendel
for Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

12/12/07
Date

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

GLOSSARY

DATA QUALIFIERS

U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.

J = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

D = Identifies all compounds identified in an analysis at a secondary dilution factor.

I = Interference.

NQ = Result qualitatively confirmed but not able to quantify.

N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.

X = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).

Y = Additional qualifiers used as required are explained in the case narrative.

GLOSSARY

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	=	Suffix added to sample number to indicate that results are from a diluted analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
SP, Z	=	Indicates Spiked Compound.

TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following 'flags' are used to indicate the technical reasons for quan modifications:

MP - **Missed Peak:** Manually added peak not found by automatic quan program.

PA - **Peak Assignment:** Quan report was changed to reflect correct peak assignment.

RI - **Routine Integration:** Routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the Dichlorobenzene isomers on the VOA packed column and Benzo (b) fluoranthene /Benzo (k) fluoranthene which are poorly resolve on the BNA column.

SP - **Split Peak:** The automatic integration improperly split the peak; a manual integration was performed to get the correct area.

CB - **Co-elution/ Background:** Peak was manually integrated to eliminate contribution from co-eluting compounds, background signal, or other interference.

PI - **Proper Integration:** A peak with poor or inconsistent integration (i.e., excessive tail) was properly integrated manually.

Lionville Laboratory, Inc.

Volatiles by GC/MS, HSL List

Report Date: 12/11/07 12:16

RFW Batch Number: 0712L262 Client: TNUHANFORD RC-054 K1045 Work Order: 11343606001 Page: 1a

	Cust ID:	J16330	J16330	J16330	VBLKPH	VBLKPH BS
Sample Information	RFW#:	001	001 MS	001 MSD	07LVK142-MB1	07LVK142-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	0.962	0.943	0.926	1.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Toluene-d8	106 %	111 %	94 %	108 %	113 %
	Bromofluorobenzene	123 * %	120 %	96 %	112 %	112 %
	1,2-Dichloroethane-d4	117 %	124 %	116 %	109 %	99 %
Chloromethane		10 U	75 %	72 %	10 U	83 %
Bromomethane		10 U	117 %	114 %	10 U	118 %
Vinyl Chloride		10 U	109 %	107 %	10 U	113 %
Chloroethane		10 U	114 %	114 %	10 U	120 %
Methylene Chloride		8 B	103 %	103 %	14	97 %
Acetone		10 U	385 * %	419 * %	10 U	186 %
Carbon Disulfide		5 U	122 %	118 %	5 U	120 %
1,1-Dichloroethene		5 U	114 %	111 %	5 U	114 %
1,1-Dichloroethane		5 U	116 %	116 %	5 U	114 %
1,2-Dichloroethene (total)		5 U	108 %	106 %	5 U	105 %
Chloroform		5 U	118 %	117 %	5 U	111 %
1,2-Dichloroethane		5 U	128 %	124 %	5 U	102 %
2-Butanone		10 U	278 * %	294 * %	10 U	140 %
1,1,1-Trichloroethane		5 U	109 %	108 %	5 U	110 %
Carbon Tetrachloride		5 U	106 %	106 %	5 U	111 %
Bromodichloromethane		5 U	116 %	116 %	5 U	104 %
1,2-Dichloropropane		5 U	114 %	115 %	5 U	107 %
cis-1,3-Dichloropropene		5 U	132 * %	126 %	5 U	112 %
Trichloroethene		5 U	102 %	102 %	5 U	96 %
Dibromochloromethane		5 U	124 %	120 %	5 U	100 %
1,1,2-Trichloroethane		5 U	125 %	121 %	5 U	96 %
Benzene		5 U	109 %	108 %	5 U	106 %
Trans-1,3-Dichloropropene		5 U	135 * %	133 * %	5 U	105 %
Bromoform		5 U	125 %	127 %	5 U	93 %
4-Methyl-2-pentanone		10 U	191 * %	196 * %	10 U	98 %
2-Hexanone		10 U	249 * %	271 * %	10 U	134 %
Tetrachloroethene		5 U	98 %	94 %	5 U	105 %
1,1,2,2-Tetrachloroethane		5 U	144 * %	132 * %	5 U	91 %
Toluene		5 U	110 %	106 %	5 U	108 %

*= Outside of EPA CLP QC limits.

000000007

RFW Batch Number: 0712L262 Client: TNUHANFORD RC-054 K1045 Work Order: 11343606001 Page: 1b

Cust ID:	J16330		J16330		J16330		VBLKPH		VBLKPH BS	
RFW#:	001		001 MS		001 MSD		07LVK142-MB1		07LVK142-MB1	
Chlorobenzene	5	U	104	%	102	%	5	U	102	%
Ethylbenzene	5	U	101	%	99	%	5	U	110	%
Styrene	5	U	102	%	98	%	5	U	102	%
Xylenes (total)	5	U	97	%	94	%	5	U	102	%
cis-1,2-dichloroethene	5	U	108	%	108	%	5	U	104	%
trans-1,2-dichloroethene	5	U	107	%	104	%	5	U	106	%

*= Outside of EPA CLP QC limits.

000000008

Lionville Laboratory Use Only

07121262

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI

Client TNU HANFORD SAF# RC-054

Est. Final Proj. Sampling Date

Project# 11343-606-001-9999-00

Project Contact/Phone#

Lionville Laboratory Project Manager O Johnson

QC SW846 Del STD TAT 7Day

Date Rec'd 12-4-07 Date Due 12-11-07

		A							B							
Refrigerator #		6							3							
#/Type Container	Liquid / Solid	1G							1G		1G			LEACHATE	LEACHATE	
Volume		1000							1000		1000					
Preservatives																
ANALYSES REQUESTED		ORGANIC							INORG							
		VOA	BNA			TCLP Semi WA	TCLP VOA		TCLP Metal	CN	ICP 6010A	MET	PH			

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	06244	06254			ITCLP	ITCLV	MetO	ITCLP		ICPMetO		IPH	06254	06244
S- Soil SS- Sediment SO- Solid SL- Sludge W- Water O- Oil A- Air DS- Drum Solids DL- Drum Liquids L- EP/TCLP Leachate WI- Wipe X- Other F- Fish	001	I 16330	✓	✓	Soil	11/28/07	1424	X	X			X	X		X		X	X	X		
	002	TCLP 0F001			L	*								X						X	
	003	TCLV 0F001			L	*															X

Lionville Laboratory Use Only

Special Instructions:

MetO = RCRATCW

MetO2 = HSL + B-, Bi, Li, Mo, P-, SI, Sn, Sr, U

*See Labchron

Special Instructions:

ICP MetO2 1. 6010A (add on) {antimony, Beryllium, Nickel, Thallium}

2. Leach and Hold all wait for approval from Frank.

3.

4.

5.

6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	12/4/07	0930

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-054-030	Page 1 of 1

Collector: Rory Steffler	Company Contact: Doug Bowers	Telephone No.: 531-0701	Project Coordinator: KESSNER, JH
Price Code: 8J	Data Turnaround: 7 day		
Project Designation: 118-K-1 Burial Grounds - Soil Quick Turn	Sampling Location: 118-K-1		SAF No.: RC-054
Ice Chest No.: ERC-02-0006 ~~ERC-04-003~~ 12-3-07	Field Logbook No.: EL1602-3	COA: R118K12600	Method of Shipment: Fed Ex
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A0800 85 60 12-3-07		Bill of Lading/Air Bill No.: See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None			
Type of Container	aG	aG	aG (1)	aG (1)	aG (1)	aG (1)	aG (1)			
No. of Container(s)	1	1	10	10	10	10	10			
Volume	1000mL	1000mL	1000mL	1000mL	1000mL	1000mL	1000mL			
SAMPLE ANALYSIS	ICP Metals - 6010A (Add-on) (Antimony, Beryllium, Nickel, Thallium)	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	~~IC Anions - 300.0~~, pH (Soil) - 9045 (1)	TCLP Semi-VOA - 1311/8270A	TCLP VOA -- 1311/8260A			

Sample No.	Matrix *	Sample Date	Sample Time										
16330	SOIL	11-28-07	1424	X	X	X	X	X	X	X			

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: RZ Steffler R.Z. Steffler	1500 11-28-07	Received By/Stored In: Doug Bowers Doug Bowers	11-28-07/1500
Relinquished By/Removed From: Doug Bowers Doug Bowers	11-28-07/1700	Received By/Stored In: Air IA 3728	11-28-07/1700
Relinquished By/Removed From: Ref IA. 3728	12-3-07 0945	Received By/Stored In: K Washington	12-3-07 0945
Relinquished By/Removed From: K Washington	12-3-07 1500 (WCH)	Received By/Stored In: FEDEX	
Relinquished By/Removed From: FedEx	12-4-07 0930	Received By/Stored In: Curt Nieuwenhuis	12-4-07 0930
Relinquished By/Removed From:		Received By/Stored In:	

SPECIAL INSTRUCTIONS

Run VOA's and TCLP VOA's, run Semi VOA's and TCLP Semi VOA's, run ICP metals and TCLP metal, from volumes provided. Run TCLP extraction on VOA's, Semi-VOA's and Metals then wait for Joan Kessners approval to run. Run pH from either left over material.

(1) Metals by ICP (TCLP) - 1311/6010 (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); Mercury (TCLP) - 1311/7470

samples from 3728 Ref # IA.
3728 Custodian removed samples for shipping on 12/3/07.
Sampler unavailable to relinquish

DJB 11-28-07 (1)

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

00000010

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Project/SAP/SOW/Release #: RC-054

Date: 12-4-07

LvLI Batch #: 0712L262

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FED EX		Airbill # 7918 0901 1044
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 plastic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3°	°C	Cooler # ERC-02-006
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

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J16330

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 0712L262-001

Sample wt/vol: 5.20 (g/mL) G Lab File ID: K120905

Level: (low/med) LOW Date Received: 12/04/07

% Moisture: not dec. 5 Date Analyzed: 12/09/07

Column: (pack/cap) CAP Dilution Factor: 0.962

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	SILOXANE	22.101	10	J
2.	SILOXANE	24.566	10	J

FORM 1 VOA-TIC 1/87 Rev.

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKPH

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: 07LVK142-MB1

Sample wt/vol: 5.00 (g/mL) G Lab File ID: K120904

Level: (low/med) LOW Date Received: 12/09/07

% Moisture: not dec. 0 Date Analyzed: 12/09/07

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

FORM 1 VOA-TIC 1/87 Rev.

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-054 K1045

RECEIVED
JAN 2008

DATE RECEIVED: 12/04/07 LVL LOT # :

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16330	001	S	07LE0674	11/28/07	12/04/07	12/06/07
J16330	001 MS	S	07LE0674	11/28/07	12/04/07	12/07/07
J16330	001 MSD	S	07LE0674	11/28/07	12/04/07	12/07/07

LAB QC:

SBLKQO	MB1	S	07LE0674	N/A	12/04/07	12/06/07
SBLKQO	MB1 BS	S	07LE0674	N/A	12/04/07	12/06/07

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-054
LVL #: 0712L262
SDG/SAF # K1045 / RC-054

W.O. #: 11343-606-001-9999-00
Date Received: 12-04-2007

SEMIVOLATILE

One (1) soil sample was collected on 11-28-2007.

The sample and its associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3540C on 12-04-2007 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 12-06,07-2007.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise. The following is a summary of QC results accompanying the sample results. Lionville Laboratory Inc (LvLI) certifies that all test results meet the requirements of NELAC except as noted below:

1. All results presented in this report are derived from a sample that met LvLI's sample acceptance policy Samples were extracted and analyzed within holding times.

2. The sample was extracted and analyzed within required hold time.

3. Non-target compounds were detected in these samples.

4. All surrogate recoveries were within acceptance criteria.

5. Sixteen (16) of one hundred and twenty-eight (128) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

6. Three (3) of sixty-four (64) blank spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

7. The method blank was below the reporting limit for all target compounds.

8. Internal standard area and retention time criteria were met.

r:\group\data\2007\bna\tnu-hanford\0711-262ks1.doc

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 14 pages.

LIONVILLE LABORATORY INC.

9. All calibrations met criteria.

10. Manual integrations are performed according to SOP QA-125 to produce quality data with the utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").

11. 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.

12. 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

12/12/07
Date

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

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 0745256

Initiator: Sharon Saylor
Date: 12-10-07
Client: Thu RCOSY K1045

Batch: 0712L262
Samples: 001ms, msd, BS
Method: (SW846)/MCAWW/CLP/

Parameter: 8270
Matrix: SOLID
Prep Batch: 07160674

1. Reason for SDR

a. COC Discrepancy
__ Tech Profile Error __ Client Request __ Sampler Error on C-O-C
__ Transcription Error __ Wrong Test Code __ Other _____

b. General Discrepancy
__ Missing Sample/Extract* __ Container Broken __ Wrong Sample Pulled __ Label ID's Illegible
__ Hold Time Exceeded __ Insufficient Sample* __ Preservation Wrong __ Received Past Hold
__ Improper Bottle Type __ Not Amenable to Analysis

Note*: Verified by [Log-In] or [Prep Group] (circle)...signature/date: _____

c. Problem (Include all relevant specific results; attach data if necessary)

(1) no recovery of hexachlorocyclopentadiene in the ms, msd but BS is ok
(2) low recovery of several spike analytes in the ms, msd, + BS
All surrogates within criteria

2. Known or Probable Causes(s) (1) cmpd subject to thermal decomposition in the inlet of the GC/MS chromatograph, chemical reactions in acetone solution, and photochemical decomposition
(2) quadriphenyls subject to erratic chromatographic behavior; others sporadic

3. Discussion and Proposed Action Other Description: narrate

__ Re-log
__ Entire Batch
__ Following Samples: _____
__ Re-leach
__ Re-extract
__ Re-digest
__ Revise EDD
__ Change Test Code to _____
__ Place On/Take Off Hold (circle)

4. Project Manager Instructions...signature/date: 12/10/07
__ Concur with Proposed Action
__ Disagree with Proposed Action; See Instruction
✓ Include in Case Narrative
__ Client Contacted:
Date/Person _____
__ Add
__ Cancel

5. Final Action...signature/date: KAA 12-11-07 Other Explanation:
__ Verified re-[log][leach][extract][digest][analysis] (circle)
✓ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

When Final Action has been recorded, forward original to QA Specialist for distribution and filing.

Route	Distribution of Completed SDR	Route	Distribution of Completed SDR
__	X Initiator	__	__ Metals: Beegle
__	X Lab General Manager: M. Taylor	__	__ Inorganic: Perrone
(1)	X Project Mgr: Stone/Johnson	__	__ GC/LC: Kiger
__	__ Data Management: Stilwell	(2)	X MS: Rychlak/Daley
__	__ Sample Prep: Beegle/Kiger	__	__ Log-in: Perry
		__	__ Admin: _____
		__	__ Other: _____

QA-105-A-0805

GLOSSARY

DATA QUALIFIERS

U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.

J = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

D = Identifies all compounds identified in an analysis at a secondary dilution factor.

I = Interference.

NQ = Result qualitatively confirmed but not able to quantify.

A = Indicates that a TIC is a suspected aldol-condensation product.

N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.

X = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).

Y = Additional qualifiers used as required are explained in the case narrative.

GLOSSARY

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	=	Suffix added to sample number to indicate that results are from a diluted analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
SP, Z	=	Indicates Spiked Compound.

TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following "flags" are used to indicate the technical reasons for quan modifications:

MP - Missed Peak: manually added peak not found by automatic quan program.

PA - Peak Assignment: quan report was changed to reflect correct peak assignment.

RI - Routine Integration: routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the dichlorobenzene isomers on the VOA packed column and benzo(b)fluoranthene/benzo(k)fluoranthene which are poorly resolved on the BNA column.

SP - Split Peak: the automatic integration improperly split the peak; a manual integration was performed to get the correct area.

CB - Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.

PI - Proper Integration: a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

RFW Batch Number: 0712L262 Client: TNUHANFORD RC-054 K1045 Work Order: 11343606001 Report Date: 12/10/07 15:28 Page: 1a

	Cust ID:	J16330	J16330	J16330	SBLKQO	SBLKQO BS
Sample Information	RFW#:	001	001 MS	001 MSD	07LE0674-MB1	07LE0674-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Nitrobenzene-d5	92 %	59 %	57 %	73 %	56 %
	2-Fluorobiphenyl	95 %	103 %	110 %	76 %	92 %
	Terphenyl-d14	54 %	49 %	55 %	98 %	98 %
	Phenol-d5	87 %	81 %	82 %	74 %	94 %
	2-Fluorophenol	98 %	91 %	87 %	81 %	96 %
	2,4,6-Tribromophenol	89 %	119 %	88 %	49 %	87 %
		fl	fl	fl	fl	fl
Phenol		350 U	72 %	82 %	330 U	89 %
bis(2-Chloroethyl)ether		350 U	66 %	69 %	330 U	74 %
2-Chlorophenol		350 U	91 %	104 %	330 U	100 %
1,3-Dichlorobenzene		350 U	65 %	73 %	330 U	78 %
1,4-Dichlorobenzene		350 U	68 %	75 %	330 U	81 %
1,2-Dichlorobenzene		350 U	74 %	83 %	330 U	83 %
2-Methylphenol		350 U	84 %	97 %	330 U	89 %
2,2'-oxybis(1-Chloropropane)		350 U	67 %	73 %	330 U	78 %
3/4 Methylphenol		350 U	86 %	95 %	330 U	94 %
N-Nitroso-di-n-propylamine		350 U	75 %	78 %	330 U	84 %
Hexachloroethane		350 U	69 %	82 %	330 U	81 %
Nitrobenzene		350 U	53 %	54 %	330 U	54 %
Isophorone		350 U	56 * %	58 * %	330 U	60 %
2-Nitrophenol		350 U	59 %	58 %	330 U	58 %
2,4-Dimethylphenol		350 U	64 %	67 %	330 U	48 * %
bis(2-Chloroethoxy)methane		350 U	50 %	51 %	330 U	55 %
2,4-Dichlorophenol		350 U	58 %	66 %	330 U	61 %
1,2,4-Trichlorobenzene		350 U	55 * %	60 %	330 U	56 * %
Naphthalene		350 U	58 %	65 %	330 U	61 %
4-Chloroaniline		350 U	24 %	26 %	330 U	36 %
Hexachlorobutadiene		350 U	58 %	67 %	330 U	60 %
4-Chloro-3-methylphenol		350 U	58 * %	63 %	330 U	64 %
2-Methylnaphthalene		350 U	54 * %	60 %	330 U	57 * %
Hexachlorocyclopentadiene		350 U	0 * %	0 * %	330 U	70 %
2,4,6-Trichlorophenol		350 U	99 %	117 %	330 U	94 %
2,4,5-Trichlorophenol		880 U	109 %	126 %	830 U	102 %

*= Outside of EPA CLP QC limits.

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RFW Batch Number: 0712L262 Client: TNUHANFORD RC-054 K1045 Work Order: 11343606001 Page: 1b

Cust ID:	J16330		J16330		J16330		SBLKQO		SBLKQO BS	
RFW#:	001		001 MS		001 MSD		07LE0674-MB1		07LE0674-MB1	
2-Chloronaphthalene	350	U	85	%	98	%	330	U	85	%
2-Nitroaniline	880	U	101	%	116	%	830	U	95	%
Dimethylphthalate	350	U	97	%	107	%	330	U	96	%
Acenaphthylene	350	U	85	%	101	%	330	U	89	%
2,6-Dinitrotoluene	350	U	94	%	107	%	330	U	91	%
3-Nitroaniline	880	U	71	%	104	%	830	U	87	%
Acenaphthene	350	U	84	%	97	%	330	U	88	%
2,4-Dinitrophenol	880	U	97	%	114	%	830	U	39	%
4-Nitrophenol	880	U	154 *	%	193 *	%	830	U	92	%
Dibenzofuran	350	U	89	%	108	%	330	U	92	%
2,4-Dinitrotoluene	350	U	104	%	116	%	330	U	98	%
Diethylphthalate	350	U	91	%	109	%	330	U	95	%
4-Chlorophenyl-phenylether	350	U	76	%	100	%	330	U	92	%
Fluorene	350	U	74	%	99	%	330	U	91	%
4-Nitroaniline	880	U	97	%	130 *	%	830	U	94	%
4,6-Dinitro-2-methylphenol	880	U	150 *	%	129	%	830	U	57	%
N-Nitrosodiphenylamine (1)	42	J	105	%	88	%	330	U	78	%
4-Bromophenyl-phenylether	350	U	203 *	%	189 *	%	330	U	82	%
Hexachlorobenzene	350	U	98	%	90	%	330	U	97	%
Pentachlorophenol	880	U	128	%	109	%	830	U	71	%
Phenanthrene	350	U	92	%	82	%	330	U	96	%
Anthracene	350	U	94	%	84	%	330	U	99	%
Carbazole	350	U	104	%	92	%	330	U	100	%
Di-n-butylphthalate	80	J	91	%	85	%	330	U	96	%
Fluoranthene	350	U	71	%	71	%	330	U	105	%
Pyrene	350	U	43 *	%	51	%	330	U	95	%
Butylbenzylphthalate	350	U	51	%	63	%	330	U	92	%
3,3'-Dichlorobenzidine	350	U	52	%	74	%	330	U	83	%
Benzo(a)anthracene	350	U	70	%	101	%	330	U	100	%
Chrysene	350	U	58	%	76	%	330	U	98	%
bis(2-Ethylhexyl)phthalate	31	JB	42 *	%	56	%	27	J	91	%
Di-n-octyl phthalate	350	U	43 *	%	54	%	330	U	82	%
Benzo(b)fluoranthene	350	U	75	%	81	%	330	U	91	%
Benzo(k)fluoranthene	350	U	63	%	83	%	330	U	98	%
Benzo(a)pyrene	350	U	68	%	83	%	330	U	96	%
Indeno(1,2,3-cd)pyrene	350	U	69	%	78	%	330	U	101	%
Dibenz(a,h)anthracene	350	U	68	%	83	%	330	U	103	%
Benzo(g,h,i)perylene	350	U	64	%	77	%	330	U	102	%

(1) - Cannot be separated from Diphenylamine. *= Outside of EPA CLP QC limits.

000000009

onville Laboratory Use Only

07121262

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI

ent TNU HANFORD SAF# RC-054

. Final Proj. Sampling Date

ject# 11343-606-001-9999-00

ject Contact/Phone#

nville Laboratory Project Manager OJohnson

SW846 Del STD TAT 7Day

te Rec'd 12-4-07 Date Due 12-11-07

		A							B							
Refrigerator #		6							3							
#/Type Container	Liquid	16					1	LEACHATE	16		16	1	1	LEACHATE	LEACHATE	
#/Type Container	Solid															
Volume		1000					1		1000		1000	1	1			
Preservatives							1									
ANALYSES REQUESTED	ORGANIC	VOA	BNA	Pest/PCB	Herb	TCLP Semi VOA	TCLP VOA		INORG TCLP Metal	CN	ICP Met 6010A		PH			

Lionville Laboratory Use Only

TRIX DES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	06244	06254			ITCLP	ITCLV	Met①	ITCLP		ICPMet②		IPH	06254	06244	
Soil	001	I 16330	✓	✓	Soil	11/28/7	1424	X	X			X	X		X		X	X	X			
Sediment	002	TCLP of 001			L	*								X						X		
Solid	003	TCLV of 001			L																X	
Sludge																						
Water																						
Oil																						
Air																						
Drum Solids																						
Drum Liquids																						
EP/TCLP Leachate																						
Wipe																						
Other																						
Fish																						

Special Instructions:

Met① = RCRATCW

Special Instructions:

ICP Metals② 1. 6010A (add on) {antimony, Beryllium, Nickel, Thallium}

2. Leach and Hold all wait for approval from Jeank.

3.

4.

5.

6.

*See Labchron

Relinquished by	Received by	Date	Time
		12/4/7	0930

Relinquished by	Received by	Date	Time

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

0100000000

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-054-030	Page 1 of 1

ollector Rory Steffler	Company Contact Doug Bowers	Telephone No. 531-0701	Project Coordinator KESSNER, JH
Price Code 8J	Data Turnaround 7 day		
roject Designation 118-K-1 Burial Grounds - Soil Quick Turn	Sampling Location 118-K-1		SAF No. RC-054
e Chest No. ERC-02-006 ~~ERC-04-003~~	Field Logbook No. EL1602-3	COA R118K12600	Method of Shipment Fed Ex
hipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A0800B560		Bill of Lading/Air Bill No. See BSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None			
Type of Container	aG	aG	aG (1)	aG (1)	aG (1)	aG (1)	aG (1)			
No. of Container(s)	1	1	10	10	10	10	10			
Volume	1000mL	1000mL	1000mL	1000mL	1000mL	1000mL	1000mL			
SAMPLE ANALYSIS	ICP Metals - 6010A (Add-on) (Antimony, Beryllium, Nickel, Thallium)	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL)	VOA - 8260A (TCL)	~~IC Anions - 9056~~, pH (Soil) - 9045 (1)	TCLP Semi-VOA - 1311/8270A	TCLP VOA - 1311/8260A			
Sample No.	Matrix *	Sample Date	Sample Time								
116330	SOIL	11-28-07	1424	X	X	X	X	X	X	X	

CHAIN OF POSSESSION	Sign/Print Names		
elinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
RZ Steffler R.Z. Steffler	1500 11-28-07	Doug Bowers Doug Bowers	11-28-07/1500
elinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Doug Bowers Doug Bowers	11-28-07/1700	Air/A 3728	11-28-07/1700
elinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
ICF IA 3728	12-3-07 0945		12-3-07 0945
elinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
	12-3-07 1500	FEDEX	
elinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Fed Ex	12-4-07 0930		12-4-07 0930
elinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

Run VOA's and TCLP VOA's, run Semi VOA's and TCLP Semi VOA's, run ICP metals and TCLP metal, from volumes provided. Run TCLP extraction on VOA's, Semi-VOA's and Metals then wait for Joan Kessners approval to run. Run pH from either left over material.

(1) Metals by ICP (TCLP) - 1311/6010 (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); Mercury (TCLP) - 1311/7470

samples from 3728 Ref # IA
3728 Custodian removed samples for shipping on 12/3/07.
Sampler unavailable to relinquish

DJB 11-28-07 (1)

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

000000011

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Project/SAP/SOW/Release #: RC-054

Date: 12-4-07

LvLI Batch #: 0712L262

Sample Custodian: Victor Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier: FED EX		Airbill # 79180901 1044
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 plastic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3°	°C	Cooler # ERC-02-006
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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16330

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD RC-054 K1045

Matrix: (soil/water) SOIL

Lab Sample ID: 0712L262-001

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: N120614

Level: (low/med) LOW

Date Received: 12/04/07

% Moisture: 5 decanted: (Y/N)__

Date Extracted: 12/04/07

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 12/06/07

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.868	400000	JB
2.	UNKNOWN	14.579	10000	J
3.	UNKNOWN	17.134	30000	J
4.	UNKNOWN	19.182	3000	J
5.	ALKANE	22.207	3000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKQO

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD RC-054 K1045

Matrix: (soil/water) SOIL

Lab Sample ID: 07LE0674-MB1

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: N120613

Level: (low/med) LOW

Date Received: 12/04/07

% Moisture: _____ decanted: (Y/N)__

Date Extracted: 12/04/07

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 12/06/07

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	3.972	400	J
2.	UNKNOWN	4.905	400000	J
3.	ALDOL CONDENSATE	5.829	1000	JA
4.	UNKNOWN	10.319	200	J
5.	UNKNOWN	18.687	600	J