0077010

SAF-RC-074
100-D/DR Burial Grounds & Remaining Sites – Soil Quick Turn
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt H4-21 KW 4/15/08
INITIAL/DATE

COMMENTS:

SDG K1162 SAF RC-074

Rad only X Chem only Rad & Chem

X Complete Partial

Waste Sites: 100-D-56 chromate soils for treatment study

RECEIVED
MAY 01 2008
EDMC

LIONVILLE LABORATORY INC.

11 April 2008

RECEIVED APR 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 #	0803L817
SDG #	K1162
SAF #	RC-074
Date Received	3/27/08
# Samples	1
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\tnu-hanford\data\b_ltrs.doc

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

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-074 K1162

RECEIVED APR 2008

DATE RECEIVED: 03/26/08 LVL LOT # :0803L817

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16HW3						
% SOLIDS	001	S	08L%S029	03/24/08	04/01/08	04/02/08
% SOLIDS	001 REP	S	08L%S029	03/24/08	04/01/08	04/02/08
CHROMIUM VI	001	S	08LVI030	03/24/08	04/02/08	04/02/08
CHROMIUM VI	001 REP	S	08LVI030	03/24/08	04/02/08	04/02/08
TCLP	001	S	08LT0025	03/24/08	04/01/08	04/02/08

LAB QC:

CHROMIUM VI	MB1	S	08LVI030	N/A	04/02/08	04/02/08
CHROMIUM VI	MB1 BS	S	08LVI030	N/A	04/02/08	04/02/08
CHROMIUM VI	MB1 BSD	S	08LVI030	N/A	04/02/08	04/02/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-074 K1162
LVL#: 0803L817

W.O.#: 11343-606-001-9999-00
Date Received: 03-26-08

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 did not meet LvLI's sample acceptance policy as noted on the Sample Receipt Checklist.

5. The method blank for Chromium VI was within the method criteria.

6. The Laboratory Control Samples (LCS) for Chromium VI were within the laboratory control limits.

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

8. Matrix spike analysis was not performed for Chromium VI due to the expected high background concentration of the target analyte.

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 Incorporated

4/9/08
Date

njp\i03-817

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 11 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		__ 9045C	
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

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 04/04/08

CLIENT: TNUHANFORD RC-074 K1162 LVL LOT #: 0803L817

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J16HW3	% Solids	95.1	%	0.01	1.0
		Chromium VI	5660	MG/KG	421	2000

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 04/04/08

CLIENT: TNUHANFORD RC-074 K1162 LVL LOT #: 0803L817

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	08LVI030-MB1	Chromium VI	0.20 u	MG/KG	0.20	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 04/04/08

CLIENT: TNUHANFORD RC-074 K1162 LVL LOT #: 0803L817

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
BLANK10	08LVI030-MB1	Soluble Chromium VI	4.0	0.20u	4.0	100.6	1.0
		Insoluble Chromium VI	1220	0.20u	1240	98.7	100

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 04/04/08

CLIENT: TNUHANFORD RC-074 K1162 LVL LOT #: 0803L817

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J16HW3	% Solids	95.1	95.4	0.29	1.0
		Chromium VI	5660	5480	3.3	2000

nville Laboratory Use Only
803L817

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

00000000

nt TNU RC-074-062

Final Proj. Sampling Date

ject# 11343-606-001-9999

ject Contact/Phone#

nville Laboratory Project Manager Arlette Johnson

SW846 Del Std TAT 7 day

e Rec'd 3/26/08 Date Due 4-2-08

Refrigerator #																			
#/Type Container	Liquid / Solid														A 3 1 pail				
Volume															5 gal				
Preservatives																			
ANALYSES REQUESTED →		ORGANIC VOA	ORGANIC BNA	ORGANIC Pest/PCB	ORGANIC Herb		LEACHATE		INORG Metal	INORG CN									
		Lionville Laboratory Use Only																	

RIX
IES:
Soil
Sediment
Solid
Sludge
Water
Oil
Air
Drum
Solids
Drum
Liquids
EP/TOLP
Leachate
Wipe
Other
Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected						MCRTC	ITCLP	METD		ICRG					
001	J16HW3	✓	✓	S	3/24/08	1400							X	X		X					
002	J16HW3 TCLP of 001	✓	✓	L								X		~~X~~							
~~003~~	~~J16HW~~ WE 3-26-08													WE 3-26-08							

cial Instructions:
ET(D) = Cr

Special Instructions:
1. Contact Rich Weiss on analyses and instructions
2. for treatment study
3.
4.
5.
6.

elinquished by	Received by	Date	Time
d Ex	A. Cowen	3/26/08	0935

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN			

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-074-062	Page #Error of #Error Date 3/24/08
llector D.W. Shea/Sub-contractor	Company Contact D.W.Shea	Telephone No. 521-6014	Project Coordinator KESSNER, JH	Price Code / Data Turnaround See instructions
oject Designation 100-D/DR Burial Grounds & Remaining Sites - Soil Quick Tu	Sampling Location 100-D-56 chromate soils for treatment study		SAF No. RC-074	
Chest No. POLY BUCKET	Field Logbook No. EL-1607-3	COA RERDF2Y000	Method of Shipment Fed Ex	
ipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. ~~See OPSC~~ DAS 3/25/08	A080202	Bill of Lading/Air Bill No. SEE OSPC	

OSSIBLE SAMPLE HAZARDS/REMARKS

r+6

pecial Handling and/or Storage

NONE

Preservation												
Type of Container	pail											
No. of Container(s)	1											
Volume	5 gal											
SAMPLE ANALYSIS	see special instructions											

Sample No.	Matrix *	Sample Date	Sample Time										
6HW3	SOIL	3/24/08	1406	✓									

CHAIN OF POSSESSION		Sign/Print Names	
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
SHEA DWShea	3/24/08 1807	Fridge 3A	3/24/08 1807
inquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
260 BATELLE	3/25/08 1215	DAVID ST. JOHN David St John	3/25/08 1215
inquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
DAVID ST. JOHN David St John	3/25/08 1215	FED EX	
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Fed Ex	3/26/08 0935	A. Covey	3/26/08 0935
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

Contact Rich Weiss @ 509-372-9631 on analyses & work instructions for treatment study, also for turnaround time

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

00000010

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU
Project/SAF/SOW/Release #: RC-074

Date: 3/26/08

LvLI Batch #: 0803L817

Sample Custodian: A. Cover

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7918 7264 48
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 14	°C	Cooler # pail no cooler
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~~ 1849-08	☑ No	See #5 (temp > 6°C)
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☐ N/A

Person Contacted _____ Date _____

LvLI LIONVILLE LABORATORY INC

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-074 K1162

RECEIVED APR 2008

DATE RECEIVED: 03/26/08 LVL LOT # :0803L81

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16HW3						
TCLP	001	S	08LT0025	03/24/08	04/01/08	04/02/08
CHROMIUM, TOTAL	001	S	08L0126	03/24/08	04/02/08	04/03/08
CHROMIUM, TOTAL	001 REP	S	08L0126	03/24/08	04/02/08	04/03/08
CHROMIUM, TOTAL	001 MS	S	08L0126	03/24/08	04/02/08	04/03/08
CHROMIUM, TCLP LEACH	002	W	08L0127	04/02/08	04/02/08	04/03/08
CHROMIUM, TCLP LEACH	002 REP	W	08L0127	04/02/08	04/02/08	04/03/08
CHROMIUM, TCLP LEACH	002 MS	W	08L0127	04/02/08	04/02/08	04/03/08

LAB QC:

CHROMIUM LABORATORY	LC1 BS	S	08L0126	N/A	04/02/08	04/03/08
CHROMIUM, TOTAL	MB1	S	08L0126	N/A	04/02/08	04/03/08
CHROMIUM LABORATORY	LC1 BS	W	08L0127	N/A	04/02/08	04/03/08
CHROMIUM, TCLP LEACH	MB1	W	08L0127	N/A	04/02/08	04/03/08
CHROMIUM, TCLP LEACH	MB2	W	08L0127	N/A	04/02/08	04/03/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-074
LVL#: 0803L817
SDG/SAF#: K1162/RC-074

W.O.#: 11343-606-001-9999-00
Date Received: 03-26-08

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 1 soil sample and 1 TCLP leachate.

2. All samples were run at a 6-fold dilution due to high concentration.

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.

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

6. All preparation/method blanks (MB) were within 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.

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) recovery for 1 analyte was outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.

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 15 pages.

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 analyte:

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J16HW3	Chromium	12,000	94.7

11. The duplicate analyses were within the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

12. The TCLP extract from sample J16HW3 was selected for the matrix spike (MS) for this analytical batch.

13. The matrix spike for Chromium was below 50% recovery (25.4%). The recovery in the TCLP Leachate was outside 80-120% of the action level so standard addition was not required per Federal Register, Vol.57, No.227, Nov. 24, 1992, page 55117.

14. 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.

15. 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.

16. 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

4/7/08
Date

alm/m03-817

LvLI
LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

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

Lot#: 08031817

Leaching Procedure: __1310 __1311 __1312 __Other:_____

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

Metals Digestion Methods: __3005A ✓3010A __3015 __3020A ✓3050B __3051 __200.7 __SS17
__Other: _____

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
Aluminum	__6010B		__200.7				__99
Antimony	__6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	__6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	__6010B		__200.7				__99
Beryllium	__6010B		__200.7				__99
Bismuth	__6010B [1]		__200.7 [1]			__1620	__99
Boron	__6010B		__200.7				__99
Cadmium	__6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	__6010B		__200.7				__99
Chromium	✓6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	__6010B		__200.7				__99
Copper	__6010B	__7211 [5]	__200.7	__220.2			__99
Iron	__6010B		__200.7				__99
Lead	__6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	__6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	__6010B		__200.7				__99
Manganese	__6010B		__200.7				__99
Mercury	__7470A [3]	__7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	__6010B		__200.7				__99
Nickel	__6010B		__200.7				__99
Potassium	__6010B	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010B [1]		__200.7 [1]			__1620	__99
Selenium	__6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	__6010B [1]		__200.7			__1620	__99
Silica	__6010B		__200.7			__1620	__99
Silver	__6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	__6010B	__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	__6010B		__200.7				__99
Zinc	__6010B		__200.7				__99
Zirconium	__6010B [1]		__200.7 [1]			__1620	__99

Other:_____ Method:_____

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 04/04/08

CLIENT: TNUHANFORD RC-074 K1162

LVL LOT #: 0803L817

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J16HW3	Chromium, Total	5910	MG/KG	2.8	6.0
-002	J16HW3	Chromium, TCLP Leachate	293000	UG/L	27.6	6.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 04/04/08

CLIENT: TNUHANFORD RC-074 K1162

LVL LOT #: 0803L817

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	08L0126-MB1	Chromium, Total	0.46	u	MG/KG	0.46	1.0
BLANK1	08L0127-MB1	Chromium, TCLP Leachate	4.6	u	UG/L	4.6	1.0
BLANK2	08L0127-MB2	Chromium, TCLP Leachate	4.6	u	UG/L	4.6	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 04/04/08

CLIENT: TNUHANFORD RC-074 K1162 LVL LOT #: 0803L817

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J16HW3	Chromium, Total	5850	5910	20.2	-290. *	6.0
-002	J16HW3	Chromium, TCLP Leachat	295000	293000	5000	25.4*	6.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 04/04/08

CLIENT: TNUHANFORD RC-074 K1162 LVL LOT #: 0803L817

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J16HW3	Chromium, Total	5910	5820	1.4	6.0
-002REP	J16HW3	Chromium, TCLP Leachate	293000	287000	2.2	6.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 04/04/08

CLIENT: TNUHANFORD RC-074 K1162 LVL LOT #: 0803L817

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	08L0126-LC1	Chromium, LCS	48.2	50.0	MG/KG	96.4
LCS1	08L0127-LC1	Chromium, LCS	486	500	UG/L	97.3

Lionville Laboratory Incorporated

Logbook #: 443

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 08L 0126
Date/Time Initiated: 4/2/08 1445
Date/Time Completed: 4/2/08 1700
Analyst(s): TED
Matrix: (Soil) Water Other:
Instr. Type: AA (ICP)
Parameters: See Backlog

(Digested) / Undigested (circle one)
Balance #: B29
Balance Cal Verif: (✓) NA
Hot Plate Temp:

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

TNU/BB

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
08031817-001		1.04	100mL	NA	TOT	fine	BROWN	NA	NA
001R		1.18							
001S	1.0	1.04							
08031723-003		1.01					PAINT CHIPS		
009		1.04 TE 4/2/08							
* 009S	1.0	~~0.~~ 0.49 TE 4/2/08							
* 0175 009T TE 4/2/08	1.0	0.66							
* 011		0.83							
013		1.01							
* 015		0.73							
017		1.02							
08L0126-MB1		1.0					TE NA		
LC1	1.0	1.0					TE 4/2/08		

TED 4/2/08

Spiking IDs:
MS #: 8100-04-01
02
03
6072-078-07
LCS #: 08
09
010
011

Reagent IDs:
HNO_3 E46025
HCL E45047
H_2O_2 E44A06
1:1 HNO_3 9789-07-06
1:1 HCL

File ID#: IC012601
LIMS Transfer: (Y) N updated
Data Review By/Date: PMP. 04/03/08

* Samples had limited volume. TED 4/2/08

L-SPI-3020-A-0601

Lionville Laboratory Incorporated Logbook #: 440

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 08L0127
Date/Time Initiated: 4/2/08 1530
Date/Time Completed: 4/2/08 1745
Analyst(s): TEA
Matrix: Soil (Water) Other:
Instr. Type: AA (ICP)
Parameters: Cr

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

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

TNU

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
08031817-002		50mL	50mL	<2	TC	NA	Yellow	NA	NA
002R									
0025	0.500								
08L0127-MB1							Clear		
08L0025-MB1 (MB2)									
LC1	0.500								

TEA 4/7/08

Spiking IDs:
MS #: 6072-073-03

LCS #: 6072-78-08
09
10
11

Reagent IDs:
HNO_3 E46025
HCL
H_2O_2
1:1 HNO_3
1:1 HCL 6072-069-03

File ID#: ICO12701
LIMS Transfer: (Y) N Updated
Data Review By/Date: PMP, 04/03/08

onville Laboratory Use Only
803L817

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

ent TNU RC-074-062

. Final Proj. Sampling Date

ject# 11343-606-001-9999

ject Contact/Phone#

nville Laboratory Project Manager Arlette Johnson

SW846 Del Std TAT 7 day

te Rec'd 3/26/08 Date Due 4-2-08

Refrigerator #																					
#/Type Container	Liquid															A					
	Solid															3					
																1 pail					
Volume																5 gal					
Preservatives																—					
ANALYSES REQUESTED →		ORGANIC												INORG							
		VOA	BNA	Pest/PCB	Herb		LEACHATE							Metal	CN						
							Lionville Laboratory Use Only														
							MCRTC	ITCLP	METD		ICR6										
001	J16HW3	✓	✓	S	3/24/08	1400		X	X		X										
002	J16HW3 TCLP of 001	✓	✓	L			X		~~X~~												
~~003~~	~~J16HW~~ we 3-26-08								we 3-26-08												

TRIX DES: Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum, Solids, Drum, Liquids, EP/TCLP, Leachate, Wipe, Other, Fish

ecial Instructions:
ET(D) = Cr

Special Instructions:
1. Contact Rich Weiss on analyses and instructions
2. for treatment study
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
d Ex	A Cowen	3/26/08	0935

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN			

000000013

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-074-062	Page #Error of #Error ~~Date~~ 3/24/08
Collector: D.W. Shea/Sub-contractor	Company Contact: D.W.Shea	Telephone No.: 521-6014	Project Coordinator: KESSNER, JH	Price Code / Data Turnaround: see instructions
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Quick Tu	Sampling Location: 100-D-56 chromate soils for treatment study		SAF No.: RC-074	
Ice Chest No.: POLY BUCKET	Field Logbook No.: EL-1607-3	COA: RERDF2Y000	Method of Shipment: Fed Ex	
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: ~~See OPSC~~ DAS 3/25/08 A080202		Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Cr+6

Special Handling and/or Storage

NONE

Preservation											
Type of Container	pail										
No. of Container(s)	1										
Volume	5 gal										
SAMPLE ANALYSIS	see special instructions										

Sample No.	Matrix *	Sample Date	Sample Time										
J16HW3	SOIL	3/24/08	1406	✓									

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: DSHEA DWShea	3/24/08 1807	Received By/Stored In: Fridge 3A	3/24/08 1807
Relinquished By/Removed From: 1060 BATELLE	3/25/08 1215	Received By/Stored In: DAVID ST. JOHN	3/25/08 1215
Relinquished By/Removed From: DAVID ST. JOHN	3/25/08 1215	Received By/Stored In: FED EX.	
Relinquished By/Removed From: Fed Ex	3/26/08 0935	Received By/Stored In: A. Covey	3/26/08 0935
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

Contact Rich Weiss @ 509-372-9631 on analyses & work instructions for treatment study; also for turnaround time

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

000000014

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU

Project/SAF/SOW/Release #: RC-074

Date: 8/26/08

LvLI Batch #: 0803L817

Sample Custodian: A. Cover

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7918 7264 4813
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 14	°C	Cooler # pail no cooler
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