0076489

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

RECEIVED
MAR 18 2008
EDMC

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt H4-21 KW 3/17/08
INITIAL/DATE

COMMENTS:

SDG K1116 SAF RC-074

Rad only X Chem only Rad & Chem

X Complete Partial

Waste Sites: 100-D-61, post remediation

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-074 K1116

RECEIVED MAR 2008

DATE RECEIVED: 02/07/08 LVL LOT # :0802L562

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J169L8	001	S	08LE0072	02/05/08	02/11/08	02/27/08
J169L8	001 MS	S	08LE0072	02/05/08	02/11/08	02/26/08
J169L8	001 MSD	S	08LE0072	02/05/08	02/11/08	02/27/08

LAB QC:

SBLKSK	MB1	S	08LE0072	N/A	02/11/08	02/27/08
SBLKSK	MB1 BS	S	08LE0072	N/A	02/11/08	02/25/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-074
LVL #: 0802L562
SDG/SAF # K1116 / RC-074

W.O. #: 11343-606-001-9999-00
Date Received: 02-07-2008

SEMIVOLATILE

One (1) soil sample was collected on 02-05-2008.

The sample and its associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3540C on 02-11-2008 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 02-25,26,27-2008.

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. The sample was extracted and analyzed within holding time.

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

3. Samples J169L8 MS, J169L8 MSD and 08LE0072-MB1 required a 2-fold dilution.

4. All surrogate recoveries were within acceptance criteria.

5. One (1) of one hundred and twenty-eight (128) matrix spike recoveries was 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. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

r:\group\data\2008\bna\tnu\0802-562ks1.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.

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

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

2/29/08
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 08MS018

Initiator: Sharon Saylor
Date: 2-27-08
Client: TWU RCOM K1116

Batch: 0802LS62
Samples: msd, BS
Method: SW846/MCAWW/CLP/

Parameter: 8270
Matrix: SOLIO
Prep Batch: 0F1E0071

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 low recovery of 4-chloroaniline in the msd but ms + BS are ok

② low recovery of 2,4-dinitrophenol, pentachlorophenol + 4,6-dinitro-2-methyl phenol in the BS but msd & ms are ok

2. Known or Probable Causes(s)

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: 2/28/08

__ 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: 2/29/08 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

Report Date: 02/28/08 08:04

RFW Batch Number: 0802L562 Client: TNUHANFORD RC-074 K1116 Work Order: 11343606001 Page: 1a

000000008

	Cust ID:	J169L8	J169L8	J169L8	SBLKSK	SBLKSK BS
Sample Information	RFW#:	001	001 MS	001 MSD	08LE0072-MB1	08LE0072-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	2.00	2.00	1.00	2.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Nitrobenzene-d5	61 %	61 %	68 %	67 %	59 %
	2-Fluorobiphenyl	62 %	83 %	73 %	64 %	70 %
	Terphenyl-d14	77 %	98 %	73 %	73 %	78 %
	Phenol-d5	64 %	72 %	73 %	67 %	67 %
	2-Fluorophenol	65 %	74 %	73 %	68 %	69 %
	2,4,6-Tribromophenol	26 %	39 %	24 %	39 %	31 %
Phenol		420 U	76 %	77 %	330 U	70 %
bis(2-Chloroethyl)ether		420 U	61 %	58 %	330 U	56 %
2-Chlorophenol		420 U	73 %	72 %	330 U	66 %
1,3-Dichlorobenzene		420 U	63 %	60 %	330 U	61 %
1,4-Dichlorobenzene		420 U	64 %	61 %	330 U	62 %
1,2-Dichlorobenzene		420 U	68 %	65 %	330 U	65 %
2-Methylphenol		420 U	72 %	74 %	330 U	64 %
2,2'-oxybis(1-Chloropropane)		420 U	63 %	67 %	330 U	60 %
3/4 Methylphenol		420 U	80 %	73 %	330 U	68 %
N-Nitroso-di-n-propylamine		420 U	68 %	68 %	330 U	63 %
Hexachloroethane		420 U	59 %	62 %	330 U	57 %
Nitrobenzene		420 U	58 %	63 %	330 U	59 %
Isophorone		420 U	70 %	77 %	330 U	65 %
2-Nitrophenol		420 U	68 %	67 %	330 U	65 %
2,4-Dimethylphenol		420 U	54 %	67 %	330 U	55 %
bis(2-Chloroethoxy)methane		420 U	65 %	69 %	330 U	61 %
2,4-Dichlorophenol		420 U	68 %	68 %	330 U	64 %
1,2,4-Trichlorobenzene		420 U	63 %	62 %	330 U	63 %
Naphthalene		420 U	66 %	64 %	330 U	64 %
4-Chloroaniline		420 U	28 %	19 * %	330 U	48 %
Hexachlorobutadiene		420 U	67 %	65 %	330 U	70 %
4-Chloro-3-methylphenol		420 U	73 %	84 %	330 U	71 %
2-Methylnaphthalene		420 U	72 %	73 %	330 U	68 %
Hexachlorocyclopentadiene		420 U	80 %	81 %	330 U	53 %
2,4,6-Trichlorophenol		420 U	36 %	37 %	330 U	46 %
2,4,5-Trichlorophenol		1000 U	60 %	59 %	830 U	64 %

*= Outside of EPA CLP QC limits.

Cust ID:	J169L8		J169L8		J169L8		SBLKSK		SBLKSK BS	
RFW#:	001		001 MS		001 MSD		08LE0072-MB1		08LE0072-MB1	
2-Chloronaphthalene	420	U	80	%	70	%	330	U	66	%
2-Nitroaniline	1000	U	85	%	83	%	830	U	70	%
Dimethylphthalate	420	U	85	%	75	%	330	U	67	%
Acenaphthylene	420	U	84	%	74	%	330	U	69	%
2,6-Dinitrotoluene	420	U	84	%	69	%	330	U	70	%
3-Nitroaniline	1000	U	57	%	81	%	830	U	68	%
Acenaphthene	420	U	81	%	68	%	330	U	68	%
2,4-Dinitrophenol	1000	U	101	%	71	%	830	U	9 *	%
4-Nitrophenol	1000	U	85	%	44	%	830	U	40	%
Dibenzofuran	420	U	86	%	76	%	330	U	72	%
2,4-Dinitrotoluene	420	U	88	%	72	%	330	U	72	%
Diethylphthalate	420	U	86	%	73	%	330	U	69	%
4-Chlorophenyl-phenylether	420	U	82	%	66	%	330	U	69	%
Fluorene	420	U	84	%	62	%	330	U	69	%
4-Nitroaniline	1000	U	68	%	77	%	830	U	72	%
4,6-Dinitro-2-methylphenol	1000	U	102	%	77	%	830	U	17 *	%
N-Nitrosodiphenylamine (1)	420	U	74	%	65	%	330	U	56	%
4-Bromophenyl-phenylether	420	U	77	%	56	%	330	U	59	%
Hexachlorobenzene	420	U	95	%	80	%	330	U	72	%
Pentachlorophenol	1000	U	98	%	55	%	830	U	23 *	%
Phenanthrene	420	U	89	%	69	%	330	U	71	%
Anthracene	420	U	94	%	70	%	330	U	73	%
Carbazole	420	U	96	%	97	%	330	U	73	%
Di-n-butylphthalate	420	U	89	%	74	%	330	U	71	%
Fluoranthene	420	U	96	%	71	%	330	U	77	%
Pyrene	420	U	92	%	78	%	330	U	72	%
Butylbenzylphthalate	420	U	96	%	85	%	330	U	72	%
3,3'-Dichlorobenzidine	420	U	48	%	23	%	330	U	58	%
Benzo(a)anthracene	420	U	86	%	72	%	330	U	67	%
Chrysene	420	U	88	%	73	%	330	U	70	%
bis(2-Ethylhexyl)phthalate	89	JB	94	%	89	%	90	J	70	%
Di-n-octyl phthalate	420	U	89	%	89	%	330	U	71	%
Benzo(b)fluoranthene	420	U	86	%	67	%	330	U	67	%
Benzo(k)fluoranthene	420	U	83	%	71	%	330	U	66	%
Benzo(a)pyrene	420	U	84	%	69	%	330	U	64	%
Indeno(1,2,3-cd)pyrene	420	U	80	%	76	%	330	U	61	%
Dibenz(a,h)anthracene	420	U	78	%	72	%	330	U	60	%
Benzo(g,h,i)perylene	420	U	80	%	74	%	330	U	62	%

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

000000009

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J169L8

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

Client: TNUHANFORD RC-074 K1116

Matrix: (soil/water) SOIL

Lab Sample ID: 0802L562-001

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

Lab File ID: D022704

Level: (low/med) LOW

Date Received: 02/07/08

% Moisture: 20 decanted: (Y/N)__

Date Extracted: 02/11/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 02/27/08

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.	ALDOL CONDENSATE	5.436	600	JA
2.	ALDOL CONDENSATE	6.078	600	JA
3.	UNKNOWN	6.923	7000	JB
4.	UNKNOWN	7.844	100000	JB
5.	UNKNOWN	21.687	1000	JB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKSK

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

Client: TNUHANFORD RC-074 K1116

Matrix: (soil/water) SOIL

Lab Sample ID: 08LE0072-MB1

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

Lab File ID: D022703

Level: (low/med) LOW

Date Received: 02/11/08

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

Date Extracted: 02/11/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 02/27/08

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	4.604	200	J
2.	UNKNOWN	6.907	200	J
3.	ALDOL CONDENSATE	7.358	400	JA
4.	UNKNOWN	7.866	100000	J
5.	UNKNOWN	21.691	400	J

Lionville Laboratory Use Only

8025562

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

598 SMG

VLI

000000012

Client: TNU HANFORD SAF# RC-074

Final Proj. Sampling Date

Project# 11343-606-001-9999-00

Project Contact/Phone#

Lionville Laboratory Project Manager O JOHNSON

SW846 Del STD TAT 15 DAY

Date Rec'd 2-7-08 Date Due 2-22-08

		A							B							
Refrigerator #		2							2							
#/Type Container	Liquid / Solid	16							16		W/		LEACHATE			
Volume		60							60		MX					
Preservatives		/														
ANALYSES REQUESTED →		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Herb				TCLP Metal	Hg	CN	Cr+6				

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only													
									0625-4						TCLP		ICR6		RCRATC		
Soil	001	J16968			Soil	2-5-08	0951		X						X		X		X		
Sediment	002	J16969					0953								X		X				
Solid	003	J169M0					1001								X		X				
Sludge	004	J169M1					1008								X		X				
Water	005	J169M2					1330								X		X				
Oil	006	J16968 TCLP of 001			L	*													X		
Air	007	L9 002																	X		
Drum Solids	008	M0 003																	X		
Drum Liquids	009	M1 004																	X		
ER/TCLP Leachate	010	M2 005																	X		
Wipe																					
Other																					
Fish																					

Special Instructions: Run Matrix Qc

Special Instructions:

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

* See Labchron

Relinquished by	Received by	Date	Time
D E	V. Hernandez	2-7-08	0925

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-074-057	Page 1 of 1
Collector: D.W. Shea/Sub-contractor / Dawn Everhart	Company Contact: D.W.Shea	Telephone No.: 521-6014	Project Coordinator: KESSNER, JH	Price Code: 8K / Data Turnaround: 15 days
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Quick Tu	Sampling Location: 100-D-61, post remediation		SAF No.: RC-074	
Ice Chest No.: EBC-02-404	Field Logbook No.: EL-1607-23 DWS 2/5/08	COA: R00d612600	Method of Shipment: Fed Ex	
Shipped To: EBERLINE SERVICES / RICHLAND	Offsite Property No.: A 080181 (~~See OPSC~~)		Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

None known

Special Handling and/or Storage

Preservation	None	Cool 4C	cool 4°C									
Type of Container	G	aG										
No. of Container(s)	1	1	0									
Volume	60ml.	60ml.										

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL)	Cr+6							
69L8	SOIL	2/5/08	0951	✓	✓	✓							
69L9	SOIL		0953	✓		✓							
69M0	SOIL		1001	✓	no DWS	✓							
69M1	SOIL		1008	✓		✓							
69M2	SOIL		1330	✓		✓							

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By/Removed From: D. Everhart	Received By/Stored In: DWSHEA	2/5/08 1418
Relinquished By/Removed From: DWSHEA	Received By/Stored In: Fridge 3A	2/5/08 1730
Relinquished By/Removed From: Fridge 3A	Received By/Stored In: M Singleton	2-6-08 0750
Relinquished By/Removed From: M Singleton	Received By/Stored In: FED EX	2-6-08 1500
Relinquished By/Removed From: Fed Ex	Received By/Stored In:	2-7-08 0925
Relinquished By/Removed From:	Received By/Stored In:	

SPECIAL INSTRUCTIONS

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

please add Cr+6 to analysis
DWShea 2/5/08

samples from 3728 Ref # 34
Custodian removed samples for shipping on 2/6/08
Sampler unavailable to relinquish

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

CH-EE-011

000000013

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

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

Date: 2-7-08

LvLI Batch #: 08021562

Sample Custodian:

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7992 6783 9470
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 2.1	°C	Cooler # ERC-02-404
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.

SR-002-B.doc

RECEIVED MAR 2008

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-074 K1116

DATE RECEIVED: 02/07/08 LVL LOT # :0802L562

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J169L8						
TCLP	001	S	08LT0012	02/05/08	02/18/08	02/19/08
J169L9						
TCLP	002	S	08LT0012	02/05/08	02/18/08	02/19/08
J169M0						
TCLP	003	S	08LT0012	02/05/08	02/18/08	02/19/08
J169M1						
TCLP	004	S	08LT0012	02/05/08	02/18/08	02/19/08
J169M2						
TCLP	005	S	08LT0012	02/05/08	02/18/08	02/19/08
J169L8						
SILVER, TCLP LEACHAT	006	W	08L0081	02/19/08	02/25/08	02/26/08
SILVER, TCLP LEACHAT	006 MS	W	08L0081	02/19/08	02/25/08	02/26/08
ARSENIC, TCLP LEACHA	006	W	08L0081	02/19/08	02/25/08	02/21/08
ARSENIC, TCLP LEACHA	006 REP	W	08L0076	02/19/08	02/20/08	02/21/08
ARSENIC, TCLP LEACHA	006 MS	W	08L0081	02/19/08	02/25/08	02/21/08
BARIUM, TCLP LEACHAT	006	W	08L0081	02/19/08	02/25/08	02/21/08
BARIUM, TCLP LEACHAT	006 REP	W	08L0076	02/19/08	02/20/08	02/21/08
BARIUM, TCLP LEACHAT	006 MS	W	08L0081	02/19/08	02/25/08	02/21/08
CADMIUM, TCLP LEACHA	006	W	08L0081	02/19/08	02/25/08	02/21/08
CADMIUM, TCLP LEACHA	006 REP	W	08L0076	02/19/08	02/20/08	02/21/08
CADMIUM, TCLP LEACHA	006 MS	W	08L0081	02/19/08	02/25/08	02/21/08
CHROMIUM, TCLP LEACH	006	W	08L0081	02/19/08	02/25/08	02/21/08
CHROMIUM, TCLP LEACH	006 REP	W	08L0076	02/19/08	02/20/08	02/21/08
CHROMIUM, TCLP LEACH	006 MS	W	08L0081	02/19/08	02/25/08	02/21/08
MERCURY, TCLP LEACHA	006	W	08C0035	02/19/08	02/20/08	02/21/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-074 K1116

DATE RECEIVED: 02/07/08 LVL LOT # :0802L562

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MERCURY, TCLP LEACHA	006 REP	W	08C0035	02/19/08	02/20/08	02/21/08
MERCURY, TCLP LEACHA	006 MS	W	08C0035	02/19/08	02/20/08	02/21/08
LEAD, TCLP LEACHATE	006	W	08L0081	02/19/08	02/25/08	02/21/08
LEAD, TCLP LEACHATE	006 REP	W	08L0076	02/19/08	02/20/08	02/21/08
LEAD, TCLP LEACHATE	006 MS	W	08L0081	02/19/08	02/25/08	02/21/08
SELENIUM, TCLP LEACH	006	W	08L0081	02/19/08	02/25/08	02/21/08
SELENIUM, TCLP LEACH	006 REP	W	08L0076	02/19/08	02/20/08	02/21/08
SELENIUM, TCLP LEACH	006 MS	W	08L0081	02/19/08	02/25/08	02/21/08
J169L9						
SILVER, TCLP LEACHAT	007	W	08L0081	02/19/08	02/25/08	02/26/08
SILVER, TCLP LEACHAT	007 REP	W	08L0081	02/19/08	02/25/08	02/26/08
ARSENIC, TCLP LEACHA	007	W	08L0081	02/19/08	02/25/08	02/21/08
BARIUM, TCLP LEACHAT	007	W	08L0081	02/19/08	02/25/08	02/21/08
CADMIUM, TCLP LEACHA	007	W	08L0081	02/19/08	02/25/08	02/21/08
CHROMIUM, TCLP LEACH	007	W	08L0081	02/19/08	02/25/08	02/21/08
MERCURY, TCLP LEACHA	007	W	08C0035	02/19/08	02/20/08	02/21/08
LEAD, TCLP LEACHATE	007	W	08L0081	02/19/08	02/25/08	02/21/08
SELENIUM, TCLP LEACH	007	W	08L0081	02/19/08	02/25/08	02/21/08
J169M0						
SILVER, TCLP LEACHAT	008	W	08L0081	02/19/08	02/25/08	02/26/08
ARSENIC, TCLP LEACHA	008	W	08L0081	02/19/08	02/25/08	02/21/08
BARIUM, TCLP LEACHAT	008	W	08L0081	02/19/08	02/25/08	02/21/08
CADMIUM, TCLP LEACHA	008	W	08L0081	02/19/08	02/25/08	02/21/08
CHROMIUM, TCLP LEACH	008	W	08L0081	02/19/08	02/25/08	02/21/08
MERCURY, TCLP LEACHA	008	W	08C0035	02/19/08	02/20/08	02/21/08
LEAD, TCLP LEACHATE	008	W	08L0081	02/19/08	02/25/08	02/21/08
SELENIUM, TCLP LEACH	008	W	08L0081	02/19/08	02/25/08	02/21/08
J169M1						
SILVER, TCLP LEACHAT	009	W	08L0081	02/19/08	02/25/08	02/26/08
ARSENIC, TCLP LEACHA	009	W	08L0081	02/19/08	02/25/08	02/21/08
BARIUM, TCLP LEACHAT	009	W	08L0081	02/19/08	02/25/08	02/21/08
CADMIUM, TCLP LEACHA	009	W	08L0081	02/19/08	02/25/08	02/21/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-074 K1116

DATE RECEIVED: 02/07/08 LVL LOT # :0802L562

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CHROMIUM, TCLP LEACH	009	W	08L0081	02/19/08	02/25/08	02/21/08
MERCURY, TCLP LEACHA	009	W	08C0035	02/19/08	02/20/08	02/21/08
LEAD, TCLP LEACHATE	009	W	08L0081	02/19/08	02/25/08	02/21/08
SELENIUM, TCLP LEACH	009	W	08L0081	02/19/08	02/25/08	02/21/08
J169M2						
SILVER, TCLP LEACHAT	010	W	08L0081	02/19/08	02/25/08	02/26/08
ARSENIC, TCLP LEACHA	010	W	08L0081	02/19/08	02/25/08	02/21/08
BARIUM, TCLP LEACHAT	010	W	08L0081	02/19/08	02/25/08	02/21/08
CADMIUM, TCLP LEACHA	010	W	08L0081	02/19/08	02/25/08	02/21/08
CHROMIUM, TCLP LEACH	010	W	08L0081	02/19/08	02/25/08	02/21/08
MERCURY, TCLP LEACHA	010	W	08C0035	02/19/08	02/20/08	02/21/08
LEAD, TCLP LEACHATE	010	W	08L0081	02/19/08	02/25/08	02/21/08
SELENIUM, TCLP LEACH	010	W	08L0081	02/19/08	02/25/08	02/21/08

LAB QC:

SILVER LABORATORY	LC1 BS	W	08L0081	N/A	02/25/08	02/26/08
SILVER, TCLP LEACHAT	MB1	W	08L0081	N/A	02/25/08	02/26/08
SILVER, TCLP LEACHAT	MB2	W	08L0081	N/A	02/25/08	02/26/08
ARSENIC LABORATORY	LC1 BS	W	08L0076	N/A	02/20/08	02/21/08
ARSENIC, TCLP LEACHA	MB1	W	08L0076	N/A	02/20/08	02/21/08
ARSENIC, TCLP LEACHA	MB2	W	08L0076	N/A	02/20/08	02/21/08
BARIUM LABORATORY	LC1 BS	W	08L0076	N/A	02/20/08	02/21/08
BARIUM, TCLP LEACHAT	MB1	W	08L0076	N/A	02/20/08	02/21/08
BARIUM, TCLP LEACHAT	MB2	W	08L0076	N/A	02/20/08	02/21/08
CADMIUM LABORATORY	LC1 BS	W	08L0076	N/A	02/20/08	02/21/08
CADMIUM, TCLP LEACHA	MB1	W	08L0076	N/A	02/20/08	02/21/08
CADMIUM, TCLP LEACHA	MB2	W	08L0076	N/A	02/20/08	02/21/08
CHROMIUM LABORATORY	LC1 BS	W	08L0076	N/A	02/20/08	02/21/08
CHROMIUM, TCLP LEACH	MB1	W	08L0076	N/A	02/20/08	02/21/08
CHROMIUM, TCLP LEACH	MB2	W	08L0076	N/A	02/20/08	02/21/08
MERCURY LABORATORY	LC1 BS	W	08C0035	N/A	02/20/08	02/21/08
MERCURY, TOTAL	MB1	W	08C0035	N/A	02/20/08	02/21/08
MERCURY, TCLP LEACHA	MB2	W	08C0035	N/A	02/20/08	02/21/08
LEAD LABORATORY	LC1 BS	W	08L0076	N/A	02/20/08	02/21/08
LEAD, TCLP LEACHATE	MB1	W	08L0076	N/A	02/20/08	02/21/08

Lionville Laboratory, Inc.
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TNUHANFORD RC-074 K1116

DATE RECEIVED: 02/07/08 LVL LOT # :0802L562

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
LEAD, TCLP LEACHATE	MB2	W	08L0076	N/A	02/20/08	02/21/08
SELENIUM LABORATORY	LC1 BS	W	08L0076	N/A	02/20/08	02/21/08
SELENIUM, TCLP LEACH	MB1	W	08L0076	N/A	02/20/08	02/21/08
SELENIUM, TCLP LEACH	MB2	W	08L0076	N/A	02/20/08	02/21/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-074
LVL#: 0802L562
SDG/SAF#: K1116/RC-074

W.O.#: 11343-606-001-9999-00
Date Received: 02-07-08

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.

1. This narrative covers the analyses of 5 TCLP leachate samples.

2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary. The samples were reported with 6-fold dilutions for ICP metals (except Silver) 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 LOQ).

6. All preparation/method blanks (MB) were within method criteria {less than the Limit of Quantitation (3-10X the LOD), MB value less than 5% of the RCRA limit, 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 with the exception of 08L0076-LC1 for Silver at 17.7%. Refer to the Inorganics Laboratory Control Standards Report. The samples were redigested for Silver in batch 08L0081 and run, without dilution, in file PS0226C.

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

10. The TCLP extract from sample J169L8 was selected for the matrix spike (MS) for this

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 21 pages.

analytical batch.

11. The matrix spike for Silver was below 50% recovery (5.2%). The recovery in the TCLP Leachate was below 80-120% of the action level so standard addition was not required per Federal Register, Vol.57, No.227, Nov. 24, 1992, page 55117.

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. For Silver, the data has been reported to the Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification. The most recently determined IDL for this analyte is greater than the default LOD's currently in use. LOD studies for the second instrument are in process.

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

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

2/28/08
Date

jjw/m02-562

LVLI
LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within th
Lot#: 08021562

Leaching Procedure: __1310 X 1311 __1312 __Other:_____

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

Metals Digestion Methods: __3005A X 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	X 6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	X 6010B		__200.7				__99
Beryllium	__6010B		__200.7				__99
Bismuth	__6010B [1]		__200.7 [1]			__1620	__99
Boron	__6010B		__200.7				__99
Cadmium	X 6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	__6010B		__200.7				__99
Chromium	X 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	X 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	X 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	X 6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	__6010B [1]		__200.7			__1620	__99
Silica	__6010B		__200.7			__1620	__99
Silver	X 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 02/27/08

CLIENT: TNUHANFORD RC-074 K1116 LVL LOT #: 0802L562

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-006	J169L8	Silver, TCLP Leachate	4.5	u	UG/L	4.5	1.0
		Arsenic, TCLP Leachate	30.0	u	UG/L	30.0	6.0
		Barium, TCLP Leachate	289		UG/L	6.0	6.0
		Cadmium, TCLP Leachate	3.0	u	UG/L	3.0	6.0
		Chromium, TCLP Leachate	12.0	u	UG/L	12.0	6.0
		Mercury, TCLP Leachate	0.06	u	UG/L	0.06	1.0
		Lead, TCLP Leachate	18.0	u	UG/L	18.0	6.0
		Selenium, TCLP Leachate	36.0	u	UG/L	36.0	6.0
-007	J169L9	Silver, TCLP Leachate	4.5	u	UG/L	4.5	1.0
		Arsenic, TCLP Leachate	30.0	u	UG/L	30.0	6.0
		Barium, TCLP Leachate	354		UG/L	6.0	6.0
		Cadmium, TCLP Leachate	3.0	u	UG/L	3.0	6.0
		Chromium, TCLP Leachate	12.0	u	UG/L	12.0	6.0
		Mercury, TCLP Leachate	0.06	u	UG/L	0.06	1.0
		Lead, TCLP Leachate	18.0	u	UG/L	18.0	6.0
		Selenium, TCLP Leachate	36.0	u	UG/L	36.0	6.0
-008	J169M0	Silver, TCLP Leachate	4.5	u	UG/L	4.5	1.0
		Arsenic, TCLP Leachate	30.0	u	UG/L	30.0	6.0
		Barium, TCLP Leachate	366		UG/L	6.0	6.0
		Cadmium, TCLP Leachate	3.0	u	UG/L	3.0	6.0
		Chromium, TCLP Leachate	12.0	u	UG/L	12.0	6.0
		Mercury, TCLP Leachate	0.06	u	UG/L	0.06	1.0
		Lead, TCLP Leachate	18.0	u	UG/L	18.0	6.0
		Selenium, TCLP Leachate	36.0	u	UG/L	36.0	6.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/27/08

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SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-009	J169M1	Silver, TCLP Leachate	4.5	u	UG/L	4.5	1.0
		Arsenic, TCLP Leachate	30.0	u	UG/L	30.0	6.0
		Barium, TCLP Leachate	324		UG/L	6.0	6.0
		Cadmium, TCLP Leachate	3.0	u	UG/L	3.0	6.0
		Chromium, TCLP Leachate	12.0	u	UG/L	12.0	6.0
		Mercury, TCLP Leachate	0.06	u	UG/L	0.06	1.0
		Lead, TCLP Leachate	18.0	u	UG/L	18.0	6.0
		Selenium, TCLP Leachate	36.0	u	UG/L	36.0	6.0
-010	J169M2	Silver, TCLP Leachate	6.0		UG/L	4.5	1.0
		Arsenic, TCLP Leachate	30.0	u	UG/L	30.0	6.0
		Barium, TCLP Leachate	350		UG/L	6.0	6.0
		Cadmium, TCLP Leachate	3.0	u	UG/L	3.0	6.0
		Chromium, TCLP Leachate	12.0	u	UG/L	12.0	6.0
		Mercury, TCLP Leachate	0.06	u	UG/L	0.06	1.0
		Lead, TCLP Leachate	18.0	u	UG/L	18.0	6.0
		Selenium, TCLP Leachate	36.0	u	UG/L	36.0	6.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 02/27/08

CLIENT: TNUHANFORD RC-074 K1116 LVL LOT #: 0802L562

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	08L0081-MB1	Silver, TCLP Leachate	4.5	u	UG/L	4.5	1.0
BLANK2	08L0081-MB2	Silver, TCLP Leachate	4.5	u	UG/L	4.5	1.0
BLANK1	08L0076-MB1	Arsenic, TCLP Leachate	5.0	u	UG/L	5.0	1.0
		Barium, TCLP Leachate	1.0	u	UG/L	1.0	1.0
		Cadmium, TCLP Leachate	0.50	u	UG/L	0.50	1.0
		Chromium, TCLP Leachate	2.0	u	UG/L	2.0	1.0
		Lead, TCLP Leachate	3.0	u	UG/L	3.0	1.0
		Selenium, TCLP Leachate	6.0	u	UG/L	6.0	1.0
BLANK2	08L0076-MB2	Arsenic, TCLP Leachate	30.0	u	UG/L	30.0	6.0
		Barium, TCLP Leachate	6.0	u	UG/L	6.0	6.0
		Cadmium, TCLP Leachate	3.0	u	UG/L	3.0	6.0
		Chromium, TCLP Leachate	12.0	u	UG/L	12.0	6.0
		Lead, TCLP Leachate	18.0	u	UG/L	18.0	6.0
		Selenium, TCLP Leachate	36.0	u	UG/L	36.0	6.0
BLANK1	08C0035-MB1	Mercury, Total	0.06	u	UG/L	0.06	1.0
BLANK2	08C0035-MB2	Mercury, TCLP Leachate	0.06	u	UG/L	0.06	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 02/27/08

CLIENT: TNUHANFORD RC-074 K1116 LVL LOT #: 0802L562

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-006	J169L8	Silver, TCLP Leachate	260	4.5 u	5000	5.2	1.0
		Arsenic, TCLP Leachate	4910	30.0 u	5000	98.3	6.0
		Barium, TCLP Leachate	96000	289	100000	95.7	6.0
		Cadmium, TCLP Leachate	984	3.0 u	1000	98.4	6.0
		Chromium, TCLP Leachat	4960	12.0 u	5000	99.2	6.0
		Mercury, TCLP Leachate	192	0.06u	200	96.2	50.0
		Lead, TCLP Leachate	5030	18.0 u	5000	100.5	6.0
		Selenium, TCLP Leachat	1010	36.0 u	1000	100.5	6.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 02/27/08

CLIENT: TNUHANFORD RC-074 K1116 LVL LOT #: 0802L562

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-006REP	J169L8	Arsenic, TCLP Leachate	30.0 u	30.0 u	NC	6.0
		Barium, TCLP Leachate	289	282	2.4	6.0
		Cadmium, TCLP Leachate	3.0 u	3.0 u	NC	6.0
		Chromium, TCLP Leachate	12.0 u	12.0 u	NC	6.0
		Mercury, TCLP Leachate	0.06u	0.06u	NC	1.0
		Lead, TCLP Leachate	18.0 u	18.0 u	NC	6.0
		Selenium, TCLP Leachate	36.0 u	36.0 u	NC	6.0
-007REP	J169L9	Silver, TCLP Leachate	4.5 u	4.5 u	NC	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 02/27/08

CLIENT: TNUHANFORD RC-074 K1116 LVL LOT #: 0802L562

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	08L0081-LC1	Silver, LCS	422	500	UG/L	84.5
LCS1	08L0076-LC1	Arsenic, LCS	9550	10000	UG/L	95.5
		Barium, LCS	5000	5000	UG/L	100.1
		Cadmium, LCS	242	250	UG/L	96.6
		Chromium, LCS	492	500	UG/L	98.4
		Lead, LCS	2470	2500	UG/L	98.7
		Selenium, LCS	9260	10000	UG/L	92.6
LCS1	08C0035-LC1	Mercury, LCS	5.0	5.0	UG/L	100.1

Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 422

Analyst: TEB
Date 2/20/08
Start Time/Temp: 1250 | 98°
End Time/Temp: 1450 | 94°

Instrument ID Hg3.1
Balance #: ✓NA
Pipette Calibration (Daily) Y ✓

Prep Batch: 08C0035
Worksheet: HG022101
SOP No. ME-HgCVAA, Rev. 02

pH < 2 for Liquids? ✓ Yes __ 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			33mL	33mL	
0.2 µg/L	PA	0.0667				
1.0	5T	0.334				
2.0	3VG	0.667				
5.0	L15	1.667				
10.0	X0	3.334				
ICV	A9	0.0834	2.5			
CCV	HH	0.167	5.0			
ICB/CCB	537					
MB1	UT					PBW135
LC1	A27	0.167	5.0			LCSW135
08022605-001	NR					2
001R	Z					
001S	F8	0.334	1.0			
~~08022616-007~~	~~12V~~					
~~007R~~	~~81G~~					
~~007S~~	~~2B~~ NOT SPIKE					
~~008~~	~~016~~ SPIKE 2/20/08					
~~009~~	~~QT~~					
~~010~~	~~3P~~					
~~08022617-001~~	~~G12~~					
~~001R~~	~~PT~~					
~~001S~~	~~K34~~					
08022508-004	H5					
004S	B14	0.667	200			
004T	31	0.667	200			
005	TR					

~~NOT DIGESTED TEB 2/20/08~~

Standard:	ID	Prep Date/Time
ICAL/MS	R16072-75-07B	2/20/08 1105
ICV/CCV/LCS	45 6072-75-08A	↓

Reviewed By/Date: [illegible] 2/22/08

see book # 9368 for std traceability information

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

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

ME-HgCVAA-Prep1007

Page #:

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Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 0420

Analyst: CB
Date 2/20/08
Start Time/Temp: see page
End Time/Temp: 0419

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

Prep Batch: 08C0035
Worksheet: HG022101
SOP No. ME-HgCVAA, Rev. 02

pH < 2 for Liquids? ✓ Yes __ 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.
08J2L562-006	PT			33mL	33mL	
006R	X5					
006S	OF	0.667	200			
007	88					
008	A94					
009	C15					
010	H					
08LT0012-LB1	P18					

CB 2/20/08

Standard:	ID	Prep Date/Time
CAL/MS		
CV/CCV/LCS	see page 0419	

Reviewed By/Date: [illegible] 2/22/08

see book # 9368 for std traceability information

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

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

ME-HgCVAA-Prep1007

Page #:

000000016

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 08L0081
Date/Time Initiated: 2/25/08 1115
Date/Time Completed: 2/25/08 1700
Analyst(s): MW
Matrix: Soil Water Other: Leachate
Instr. Type: AA (ICP)
Parameters: As - redigest of 08L0076

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

Method: SW (circle)
3005A
(3010A)
3015
3020A
7060A (As/Se)
7760A (Ag)
3050B
3051
CLP ILMO3.0
ILMO4.0

DW 200.7 (1994)
200.9
3113B
MCAWW 200.7 (1982)
200 (AA)
206.2 (As/Se)
SM 3030C (NC)
Other glass

Bach Batt/TMW

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
08021619-004		100mL	100mL	<2	TC	N/A	clear/colorless	N/A	N/A
004S	1ml RERA								
004T	1								
005							yellow		
08021562-006							colorless		
006S	1ml RERA								
007									
007R									
008									
009									
010									
08LT0012-LB1					✓	✓			
08L0081-MB1									
LB1	1.0ml	✓	✓	✓			✓	✓	✓

MW 2/25/08

Spiking IDs:
MS #: 6072-073-05

LCS #: 8072-072-02
03
04
05

Reagent IDs:
HNO_3 EZ2071
HCL
H_2O_2
1:1 HNO_3
1:1 HCL 6072-069-03

File ID#: IC008101
LIMS Transfer: (Y) N updated
Data Review By/Date: PMB, 02/25/08

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 08L0076
Date/Time Initiated: 2/20/08 1000
Date/Time Completed: 2/20/08 1500
Analyst(s): MW
Matrix: Soil / Water Other: leach
Instr. Type: AA / ICP
Parameters: RERA / RERA + UTS

Digested / Undigested (circle one)
Balance #:
Balance Cal Verif: Y NA
Hot Plate Temp: 94°

Method: SW (circle)
3005A
3010A
3015
3020A
7060A (As/Se)
7760A (Ag)
3050B
3051
CLP ILMO3.0
ILMO4.0

DW 200.7 (1994)
200.9
3113B
MCAWW 200.7 (1982)
200 (AA)
206.2 (As/Se)
SM 3030C (NC)
Other glass

MW/Beck, Beth.

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
0802L562-006		100 ml	100 ml	<2	TC	N/A	cloudy/colorless		
006R									
006S	1.0 ml								
007							clear		
008									
009									
010									
0801LSD8-004							cloudy/yell	wrong line MW 2/20/08	
004S	1.0 ml *								
004T	1 *								
005							yellow		
08LT0017-LB1					✓		clear/colorless		
08L0076-MB1									
LC1	1.0 ml	✓	✓	✓		✓	✓	✓	

MW 2/20/08

Spiking IDs:
MS #: 6072-073-03
1 1 -05
* UTS SPIKE

LCS #: 8072-072-02
03
04
05

Reagent IDs:
HNO_3 E22071
HCL
H_2O_2
1:1 HNO_3
1:1 HCL 6072-069-03

File ID#: IC007601
LIMS Transfer: Y N Updated
Data Review By/Date: PMP, 02/21/08

nville Laboratory Use Only

8026562

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

nt TNU HANFORD SAF# RC-074

Final Proj. Sampling Date

ect# 11343-606-001-9999-00

ect Contact/Phone#

nville Laboratory Project Manager O JOHNSON

SW846 Del STD TAT 15 DAY

e Rec'd 2-7-08 Date Due 2-22-08

		A						B							
Refrigerator #		2						2							
#/Type Container	Liquid / Solid	1G						1G		W/ MT		LEACHATE			
Volume		60						60							
Preservatives		—													
ANALYSES REQUESTED		ORGANIC						INORG							
		VOA	BNA	Pest/PCB	Herb			TCLP Metal Hg	CN	Cr+6					

MATRIX CODES: Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP, Leachate, Wipe, Other, Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only											
									0625-H					TCLP		ICR6		RCRATCL	
	001	J169L8			Soil	2-5-08	0951		X					X		X			
	002	J169L9					0953							X		X			
	003	J169M0					1001							X		X			
	004	J169M1					1008							X		X			
	005	J169M2					1330							X		X			
	006	J169L8 TCLP of 001				*												X	
	007	L9 002																X	
	008	M0 003																X	
	009	M1 004																X	
	010	M2 005																X	

Special Instructions: Run Matrix QC

Special Instructions:

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

* See Labchron

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	2-7-08	0925

Relinquished by	Received by	Date	Time

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

548 ORG

LVLI

0000000019

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-074-057

Collector: D.W. Shea/Sub-contractor / Dawn Everhart	Company Contact: D.W.Shea	Telephone No.: 521-6014	Project Coordinator: KESSNER, JH
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Quick Tu	Sampling Location: 100-D-61, post remediation		SAF No.: RC-074
Chest No.: EBC-02-404	Field Logbook No.: EL-1607-73 DWS 2/5/08	COA: R00d612600	Method of Shipment: Fed Ex
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: ~~See OPSC~~ A 080181		Bill of Lading/Air Bill No.: See OSPC

Price Code: 8K

Data Turnaround: 15 days

POSSIBLE SAMPLE HAZARDS/REMARKS

None known

Special Handling and/or Storage

2-6-08

Preservation	None	Cool 4C	cool 4°C									
Type of Container	G	uG										
No. of Container(s)	1	1	0									
Volume	60ml.	60ml.										
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL)	Cr+6									
Sample No. / Matrix * / Sample Date / Sample Time												
69L8 / SOIL / 2/5/08 / 0951	✓	✓	✓									
69L9 / SOIL /	✓		✓									
69M0 / SOIL /	✓	no MS/MSD	✓									
69M1 / SOIL / 1008	✓		✓									
69M2 / SOIL / 1330	✓		✓									

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: D. Everhart	1418	Received By/Stored In: DWS DWSHEA	2/5/08 1418
Relinquished By/Removed From: DWS DWSHEA	2/5/08 1730	Received By/Stored In: Fridge 3A	2/5/08 1730
Relinquished By/Removed From: Fridge 3A	2-6-08 0750	Received By/Stored In: M Singleton	2-6-08 0750
Relinquished By/Removed From: M Singleton	2-6-08 1500	Received By/Stored In: FED EX	
Relinquished By/Removed From: Fed Ex	2-7-08 0925	Received By/Stored In:	2-7-08 0925
Relinquished By/Removed From:		Received By/Stored In:	

SPECIAL INSTRUCTIONS

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

please add Cr+6 to analysis
DWShea 2/5/08

samples from 3728 Ref # 34.
Custodian removed samples for shipping on 2/6/08.
Sampler unavailable to relinquish

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

HH-EE-011

000000020

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

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

Date: 2-7-08

LvLI Batch #: 08021562

Sample Custodian:

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7992 6783 9470
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 2.1 °C		Cooler # ERC-02-404
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

SR-002-B.doc

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-074 K1116

RECEIVED MAR 2008

DATE RECEIVED: 02/07/08 LVL LOT # :08021562

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J169L8						
% SOLIDS	001	S	08L%S016	02/05/08	02/08/08	02/11/08
CHROMIUM VI	001	S	08LVI011	02/05/08	02/12/08	02/12/08
TCLP	001	S	08LT0012	02/05/08	02/18/08	02/19/08
J169L9						
% SOLIDS	002	S	08L%S016	02/05/08	02/08/08	02/11/08
CHROMIUM VI	002	S	08LVI011	02/05/08	02/12/08	02/12/08
TCLP	002	S	08LT0012	02/05/08	02/18/08	02/19/08
J169M0						
% SOLIDS	003	S	08L%S016	02/05/08	02/08/08	02/11/08
CHROMIUM VI	003	S	08LVI011	02/05/08	02/12/08	02/12/08
TCLP	003	S	08LT0012	02/05/08	02/18/08	02/19/08
J169M1						
% SOLIDS	004	S	08L%S016	02/05/08	02/08/08	02/11/08
CHROMIUM VI	004	S	08LVI011	02/05/08	02/12/08	02/12/08
CHROMIUM VI	004 REP	S	08LVI011	02/05/08	02/12/08	02/12/08
CHROMIUM VI	004 MS	S	08LVI011	02/05/08	02/12/08	02/12/08
CHROMIUM VI	004 MSD	S	08LVI011	02/05/08	02/12/08	02/12/08
TCLP	004	S	08LT0012	02/05/08	02/18/08	02/19/08
J169M2						
% SOLIDS	005	S	08L%S016	02/05/08	02/08/08	02/11/08
% SOLIDS	005 REP	S	08L%S016	02/05/08	02/08/08	02/11/08
CHROMIUM VI	005	S	08LVI011	02/05/08	02/12/08	02/12/08
TCLP	005	S	08LT0012	02/05/08	02/18/08	02/19/08

LAB QC:

CHROMIUM VI	MB1	S	08LVI011	N/A	02/12/08	02/12/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-074 K1116

DATE RECEIVED: 02/07/08 LVL LOT # :0802L562

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CHROMIUM VI	MB1 BS	S	08LVI011	N/A	02/12/08	02/12/08
CHROMIUM VI	MB1 BSD	S	08LVI011	N/A	02/12/08	02/12/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-074 K1116
LVL#: 0802L562

W.O.#: 11343-606-001-9999-00
Date Received: 02-07-08

INORGANIC NARRATIVE

1. This narrative covers the analyses of 5 soil samples.

2. The samples were 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 samples that met LvLI's sample acceptance policy.

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 matrix spike (MS) recovery for Insoluble Chromium VI was within the 75-125% control limits however MS recovery for Soluble Chromium VI was above the control limit that may be attributed to the high background color of the digestate and the necessity to dilute to diminish that color.

8. The replicate analysis for Percent Solids was within the 20% Relative Percent Difference (RPD) control limit however replicate analysis for Chromium VI was outside the control limit that may be attributed to sample inhomogeneity .

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

2/29/08
Date

njp\02-562

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 12 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

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 02/25/08

CLIENT: TNUHANFORD RC-074 K1116 LVL LOT #: 0802L562

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J169L8	% Solids	79.8	%	0.01	1.0
		Chromium VI	0.29	MG/KG	0.25	1.0
-002	J169L9	% Solids	90.1	%	0.01	1.0
		Chromium VI	0.38	MG/KG	0.22	1.0
-003	J169M0	% Solids	90.7	%	0.01	1.0
		Chromium VI	0.22 u	MG/KG	0.22	1.0
-004	J169M1	% Solids	93.4	%	0.01	1.0
		Chromium VI	0.36	MG/KG	0.21	1.0
-005	J169M2	% Solids	88.2	%	0.01	1.0
		Chromium VI	0.69	MG/KG	0.23	1.0

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INORGANICS METHOD BLANK DATA SUMMARY PAGE 02/25/08

CLIENT: TNUHANFORD RC-074 K1116

LVL LOT #: 0802L562

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	08LVI011-MB1	Chromium VI	0.20 u	MG/KG	0.20	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 02/25/08

CLIENT: TNUHANFORD RC-074 K1116 LVL LOT #: 0802L562

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-004	J169M1	Soluble Chromium VI	7.1	0.36	4.3	158.2	2.0
		Insoluble Chromium VI	1330	0.36	1250	105.9	100
BLANK10	08LVI011-MB1	Soluble Chromium VI	4.1	0.20u	4.0	103.0	1.0
		Insoluble Chromium VI	1220	0.20u	1240	98.8	100

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 02/25/08

CLIENT: TNUHANFORD RC-074 K1116

LVL LOT #: 0802L562

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-004REP	J169M1	Chromium VI	0.36	0.21u	200	1.0
-005REP	J169M2	% Solids	88.2	87.0	1.4	1.0

ionville Laboratory Use Only

08025562

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

lent TNL HANFORD SAF# RC-074

t. Final Proj. Sampling Date

oject# 1343-606-001-9999-00

oject Contact/Phone#

onville Laboratory Project Manager O JOHNSON

: SW846 Del STD TAT 15 DAY

ate Rec'd 2-7-08 Date Due 2-22-08

Refrigerator #		A: 2						B: 2						
#/Type Container	Liquid / Solid	16						16		W/		LEACHATE		
Volume		60						60		Mt.				
Preservatives		/												
ANALYSES REQUESTED →		ORGANIC: VOA	BNA	Pest/PCB	Herb			INORG: TCLP Metal Hg	CN	Cr+6				
Liomville Laboratory Use Only			0625-H					ITCLP		ICR6		RCRATCL		

MATRIX CODES: Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP Leachate, Wipe, Other, Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected
	001	J169L8			Soil	2-5-08	0951
	002	J169L9					0953
	003	J169M0					1001
	004	J169M1					1008
	005	J169M2					1330
	006	J169L8 TCLP of 001					
	007	L9 002					
	008	M0 003					
	009	M1 004					
	010	M2 005					

Special Instructions: Run Matrix QC

Special Instructions:

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

* See Labchron

Relinquished by	Received by	Date	Time
Fed Ex	V. Hernandez	2-7-08	0925

Relinquished by	Received by	Date	Time

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

00000010

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-074-057	Page 1 of 1
Collector: D.W. Shea/Sub-contractor / Dawn Everhart	Company Contact: D.W.Shea; Telephone No.: 521-6014	Project Coordinator: KESSNER, JH	Price Code: 8K; Data Turnaround: 15 days
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Quick Tu	Sampling Location: 100-D-61, post remediation	SAF No.: RC-074	
Ice Chest No.: EBC-02-404	Field Logbook No.: EL-1607-73 DWS 2/5/08; COA: R00d612600	Method of Shipment: Fed Ex	
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: ~~See OPSC~~ A 080181	Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS: None known

Special Handling and/or Storage

Preservation	None	Cool 4C	cool 4°C									
Type of Container	G	aG										
No. of Container(s)	1	1	0									
Volume	60mL	60mL										
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Semi-VOA - 8270A (TCL)	Cr+6									
Sample No. / Matrix * / Sample Date / Sample Time												
169L8 / SOIL / 2/5/08 / 0951	✓	✓	✓									
169L9 / SOIL /	✓		✓									
169M0 / SOIL / 1001	✓	no DWS	✓									
169M1 / SOIL / 1008	✓		✓									
169M2 / SOIL / 1330	✓		✓									

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: D. Everhart	1418	Received By/Stored In: DWSHEA	2/5/08 1418
Relinquished By/Removed From: DWSHEA	2/5/08 1730	Received By/Stored In: Fridge 3A	2/5/08 1730
Relinquished By/Removed From: Fridge 3A	2-6-08 0750	Received By/Stored In: MJ Singleton	2-6-08 0750
Relinquished By/Removed From: MJ Singleton	2-6-08 1500	Received By/Stored In: FED EX	
Relinquished By/Removed From: Fed Ex	2-7-08 0925	Received By/Stored In:	2-7-08 0925
Relinquished By/Removed From:		Received By/Stored In:	

SPECIAL INSTRUCTIONS

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

please add Cr+6 to analysis
DWShea 2/5/08

samples from 3728 Ref # 3A
Custodian removed samples for shipping on 2/6/08
Sampler unavailable to relinquish

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

CH-EE-011

000000011

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

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

Date: 2-7-08

LvLI Batch #: 08021562

Sample Custodian:

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7992 6783 9470
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 2.1	°C	Cooler # ERC-02-404
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.

SR-002-B.doc