0077268

SAF-RC-007
100-N Ancillary Facilities & 190-DR ETF
Analytical Data Requirements - Liquid
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Amy Hood	X0-18	KW 5/15/08 INITIAL/DATE
Tom Edmundson	X0-18	KW 5/15/08 INITIAL/DATE

COMMENTS:

SDG K1203 **SAF-RC-007**

Rad only X Chem only Rad & Chem

X Complete Partial

Waste Site: 1330-N Waste Pad 2nd Event

LIONVILLE LABORATORY INC.

13 May 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 #	0804L963
SDG #	K1203
SAF #	RC-007
Date Received	4/22/08
# Samples	1
Matrix	WATER
Volatiles	X
Semivolatiles	
Pest/PCB	X
Glycols	
DRO/KRO/GRO	X
GC Alcohols	
Herbicides	
Metals	X
Inorganics	X

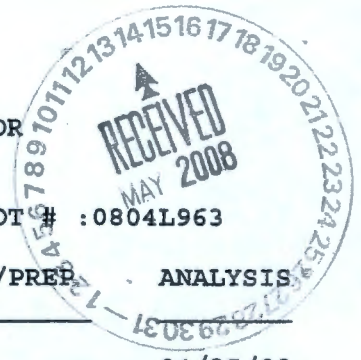
The electronic data deliverable (EDD) will be emailed shortly. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely,
Lionville Laboratory Incorporated

Orlette S. Johnson
Project Manager

r:\group\pm\orlette\tnu-hanford\data\b_ltrs.doc

Lionville Laboratory, Inc.
VOA ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-007 K1203



DATE RECEIVED: 04/22/08 LVL LOT # :0804L963

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16MM5	001	W	08LVG073	04/17/08	N/A	04/25/08
J16MM5	001 D1	W	08LVG073	04/17/08	N/A	04/25/08
J16MM6	002	W	08LVG073	04/17/08	N/A	04/25/08
J16MM6	002 MS	W	08LVG073	04/17/08	N/A	04/25/08
J16MM6	002 MSD	W	08LVG073	04/17/08	N/A	04/25/08
LAB QC:						
VBLKYP	MB1	W	08LVG073	N/A	N/A	04/25/08
VBLKYP	MB1 BS	W	08LVG073	N/A	N/A	04/25/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-007
LVL #: 0804L963
SDG/SAF # RC-007 K1203

W.O. #: 11343-606-001-9999-00
Date Received: 04-22-2008

GC/MS VOLATILE

Two (2) water samples were collected on 04-17-2008.

The samples and their associated QC samples were analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8260B for TCL volatile target compounds on 04-25-2008.

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. Samples were analyzed within required holding time.
2. Non-target compounds were detected in the samples.
3. All surrogate recoveries were within acceptance criteria.
4. One (1) of fifty (50) matrix spike recoveries were outside acceptance criteria.
5. All blank spike recoveries were within acceptance criteria.
6. The method blanks were below the reporting limit for all target compounds
7. All internal standard area and retention time criteria were met.
8. Sample J16MM5 DL required a 1000-fold instrument dilution due to high levels of target compounds.

r:\group\data\2008\voa\tnu\0804-963kw2.doc

LIONVILLE LABORATORY INC.

9. The pH of sample J16MM5 exceeded 2.0 which may indicate the sample may not have been properly preserved. A copy of the Sample Discrepancy Report (SDR) 08VT019 has been included in the data package.

10. A manual spectral search was performed for the compounds Benzyl Alcohol and 2-Pentanone due to the non-availability of a reference standard. These compounds were not detected in these samples.

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

12. 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.

13. "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

4/30/08
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 080019

Initiator: MSchmidt
Date: 4/25/08
Client: TNL

Batch: 080L963
Samples: 001A
Method: SW846/MCAWW/CLP/

Parameter: Oil&G
Matrix: Solids
Prep Batch: -

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)

Vial / COC say preserved; PH=7

2. Known or Probable Causes(s)

3. Discussion and Proposed Action
Other Description:

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

Analyze, Report, Narrate

4. Project Manager Instructions...signature/date: 4/25/08
__ 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: 4/29/08
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 for diposition.

Route
__ Lab Manager: Daniels
1 Project Mgr (circle): Johnson / Stone
__ Sample Prep (circle): Ford
__ Log-in: King

Route
__ Metals: Welsh / _____
__ Inorganic: Perrone / _____
__ GC/LC: Carey / _____
2 MS VOA: Rubino / MFS
__ MS BNA: Carden / _____
__ Other: _____

QA-139-A-0208

GLOSSARY

DATA QUALIFIERS

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

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

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

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

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

I = Interference.

NQ = Result qualitatively confirmed but not able to quantify.

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

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

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

GLOSSARY

ABBREVIATIONS

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

TECHNICAL FLAGS FOR MANUAL INTEGRATION

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

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

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

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

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

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

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

Volatiles by GC/MS, Appendix IX List — Report Date: 04/29/08 13:53

RFW Batch Number: 0804L963 — Client: TNU-HANFORD RC-007 — Work Order: 11343606001 — Page: 1a

	Cust ID:	J16MM5	J16MM5	J16MM6	J16MM6	J16MM6	VBLKYP
Sample Information	RFW#:	001	001 DL	002	002 MS	002 MSD	08LVG073-MB1
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1000	1.00	1.00	1.00	1.00
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Surrogate Recovery	1,2-Dichloroethane-d4	76 %	88 %	84 %	85 %	87 %	89 %
	Toluene-d8	107 %	97 %	95 %	99 %	100 %	96 %
	Bromofluorobenzene	114 %	105 %	99 %	102 %	107 %	105 %
Vinyl Chloride		10 U	10000 U	10 U	93 %	86 %	10 U
Methylene Chloride		5 JB	4800 JBD	5 JB	91 %	90 %	4 J
Acetone		1100 EB	1800 JBD	7 JB	135 * %	123 %	5 J
Carbon Disulfide		5 U	5000 U	5 U	118 %	111 %	5 U
1,1-Dichloroethene		5 U	5000 U	5 U	107 %	104 %	5 U
1,1-Dichloroethane		5 U	5000 U	5 U	104 %	102 %	5 U
1,2-Dichloroethene (total)		5 U	5000 U	5 U	105 %	99 %	5 U
Cis-1,2-dichloroethene		5 U	5000 U	5 U	106 %	99 %	5 U
Trans-1,2-dichloroethene		5 U	5000 U	5 U	105 %	99 %	5 U
Chloroform		5 U	5000 U	5 U	101 %	97 %	5 U
1,2-Dichloroethane		5 U	5000 U	5 U	96 %	94 %	5 U
2-Butanone		51000 E	120000 D	10 U	142 %	140 %	10 U
1,1,1-Trichloroethane		5 U	5000 U	5 U	96 %	90 %	5 U
Carbon Tetrachloride		5 U	5000 U	5 U	96 %	89 %	5 U
Trichloroethene		5 U	5000 U	5 U	108 %	101 %	5 U
1,1,2-Trichloroethane		5 U	5000 U	5 U	110 %	105 %	5 U
Benzene		5 U	5000 U	5 U	101 %	98 %	5 U
4-Methyl-2-pentanone		400 E	10000 U	10 U	137 %	140 %	10 U
2-Hexanone		5 J	10000 U	10 U	138 %	139 %	10 U
Tetrachloroethene		5 U	5000 U	5 U	111 %	103 %	5 U
Toluene		5 U	5000 U	5 U	111 %	107 %	5 U
Chlorobenzene		5 U	5000 U	5 U	104 %	98 %	5 U
1,3- and 1,4-Xylene		5 U	5000 U	5 U	109 %	103 %	5 U
1,2-Xylene		5 U	5000 U	5 U	115 %	111 %	5 U
Xylene (total)		5 U	5000 U	5 U	111 %	105 %	5 U
N-Butanol		4100 E	250000 U	250 U	250 U	250 U	250 U
Propionitrile (Ethyl Cyanide)		50 U	50000 U	50 U	50 U	50 U	50 U

*= Outside of EPA CLP QC limits.

Cust ID: VBLKYP BS

Sample Information
RFW#: 08LVG073-MB1
Matrix: WATER
D.F.: 1.00
Units: ug/L

Surrogate Recovery	1,2-Dichloroethane-d4	84	%
	Toluene-d8	98	%
	Bromofluorobenzene	105	%

Vinyl Chloride	86	%
Methylene Chloride	93	%
Acetone	94	%
Carbon Disulfide	116	%
1,1-Dichloroethene	102	%
1,1-Dichloroethane	97	%
1,2-Dichloroethene (total)	98	%
Cis-1,2-dichloroethene	99	%
Trans-1,2-dichloroethene	97	%
Chloroform	93	%
1,2-Dichloroethane	88	%
2-Butanone	108	%
1,1,1-Trichloroethane	88	%
Carbon Tetrachloride	89	%
Trichloroethene	100	%
1,1,2-Trichloroethane	99	%
Benzene	94	%
4-Methyl-2-pentanone	111	%
2-Hexanone	111	%
Tetrachloroethene	98	%
Toluene	103	%
Chlorobenzene	97	%
1,3- and 1,4-Xylene	101	%
1,2-Xylene	107	%
Xylene (total)	103	%
N-Butanol	250	U
Propionitrile (Ethyl Cyanide)	50	U

*= Outside of EPA CLP QC limits.

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J16MM5

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) WATER Lab Sample ID: 0804L963-001

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: q042506

Level: (low/med) LOW Date Received: 04/22/08

% Moisture: not dec. _____ Date Analyzed: 04/25/08

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

Number TICs found: 11

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	4.209	300	J
2.		UNKNOWN	6.825	20	J
3.		UNKNOWN	11.972	800	J
4.		KETONE	12.970	100	J
5.		UNKNOWN	13.176	200	J
6.		UNKNOWN	13.602	50	J
7.		UNKNOWN	15.354	70	J
8.		UNKNOWN	16.419	200	J
9.		UNKNOWN	16.857	20	J
10.		UNKNOWN	16.973	20	J
11.		UNKNOWN	17.009	20	J

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J16MM5DL

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) WATER Lab Sample ID: 0804L963-001 DL

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: q042511

Level: (low/med) LOW Date Received: 04/22/08

% Moisture: not dec. _____ Date Analyzed: 04/25/08

Column: (pack/cap) CAP Dilution Factor: 1000

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

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

FORM 1 VOA-TIC 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J16MM6

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) WATER Lab Sample ID: 0804L963-002

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: q042510

Level: (low/med) LOW Date Received: 04/22/08

% Moisture: not dec. _____ Date Analyzed: 04/25/08

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

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

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

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKYP

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) WATER Lab Sample ID: 08LVG073-MB1

Sample wt/vol: 5.00 (g/mL) ML Lab File ID: q042505

Level: (low/med) LOW Date Received: 04/25/08

% Moisture: not dec. _____ Date Analyzed: 04/25/08

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

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	21.566	10	J

FORM 1 VOA-TIC 1/87 Rev.

Custody Transfer Record/Lab Work Request

LvLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Lionville Laboratory Use Only: 0804L963

000000014

Client: TNU HANFORD SAF# RC-007

Est. Final Proj. Sampling Date:

Project#: 11343-606-001-9999-00

Project Contact/Phone#:

Lionville Laboratory Project Manager: O. JOHNSON

QC: SW846 Del: STD TAT: 7Day

Date Rec'd: 4-22-08 Date Due: 4-29-08

	A		B			C		D		E
Refrigerator #	6		3			3		3		3
#/Type Container Liquid	1G		1G			1G		1P		1G
#/Type Container Solid										
Volume	4l		250			1000		125		125
Preservatives	HCL		—			—		HNO3		—
ANALYSES REQUESTED	ORGANIC: VOA	BNA	PCB	Herb		TPH Diesel		INORG: Metal Hg	CN	CONTROL
Lionville Laboratory Use Only	0624X (wg 4-23-08)	0624N (wg 4-23-08)	OPCB			ODRO		Met(1)		IIGN

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	A		B			C		D		E
001	J16MM5			W	4-17-08	1415	X		X			X		X		X
002	J16MM6			W	4-17-08	1620	X		X			X		X		X

Special Instructions: Run matrix QC

Met(1) = HSL + Li, Sn NOTL, CO

Special Instructions:

1. include motor oil with DRO
2. 4-23-08 0624X to 0624N
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
Fed Ex	V. Nimeck	4/22/08	0945

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-007-027 | Page 1 of 1

Collector: Edmundson/Isom/Perry	Company Contact: Tom Edmundson	Telephone No.: 376-4058	Project Coordinator: KESSNER, JH
Price Code: 7K/5 NO 4/21/08	Data Turnaround: ~~15~~ Days 7 TRE 4-17-08		
Project Designation: 100-N Ancillary Facilities & 190-DR ETF Analytical Data Re	Sampling Location: 1330-N Waste Pad 2nd Event	SAF No.: RC-007	
Ice Chest No.: ERC-96-511	Field Logbook No.: EL-1516-12	COA: RD4MXX2F00	Method of Shipment: Fed Ex
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080238		Bill of Lading/Air Bill No.: See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

Cool to 4c

Preservation	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	Cool 4C	HCl or H2SO4 to pH <2 Coo	None	HCl to pH <2 Cool 4C			
Type of Container	G/P	G/P	G/P	aG TRE 4-17-08	aGs*	G	aG			
No. of Container(s)	1	1	1	~~1~~ 1	~~2~~ 1	1	~~5~~ 1 TRE 4-17-08			
Volume	1000mL	1000mL	~~500mL~~ 125mL	~~1000mL~~ 250mL	40mL	~~250mL~~ 125mL TRE 4-17-08	1000mL			
SAMPLE ANALYSIS	Gross Alpha; Gross Beta TRE	See item (1) in Special Instructions. 4/17/08	See item (2) in Special Instructions.	PCBs - 8082 –	See item (3) in Special Instructions.	Ignitability - 1010 –	See item (4) in Special Instructions.			

Sample No.	Matrix *	Sample Date	Sample Time									
16MM5	WATER	4-17-08	1415			✓	✓	✓	✓	✓		
16MM6	WATER	4-17-08	1620			✓	✓	✓	✓	✓		

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
J.R. Eberline / J.R Edmundson	4-17-08 1850	1060 Battelle #2C	4-17-08 1850
060/2C 4/21/08 4/22/08	1000	MStankovich	4/21/08 1000
MStankovich WCH	4/21/08 1500	FedEx	
Fed Ex	4/22/08 0945	Victor Hernandez	4/22/08 0945

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Antimony-125, Barium-133, Radium-226, Radium-228}

(2) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Aluminum, Antimony, Beryllium, Calcium, Copper, Iron, Lithium, Magnesium, Manganese, Nickel, Potassium, Silica, Sodium, Vanadium, Zinc}; Mercury - 7470 - (CV)

(3) VOA - 8260A (ETF) {1,1,1-Trichloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1-Butanol, 2-Butanone, 2-Hexanone, 2-Pentanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Benzyl alcohol, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroform, cis-1,2-Dichloroethylene, Ethyl cyanide, Methylenechloride, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, Trichloroethene, Vinyl chloride, Xylenes (total)}

(4) TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range}; TPH-Diesel Range - WTPH-D - Add On {Total petroleum hydrocarbons - motor oil (high boiling)}

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

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

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

CH-EE-011

000000015

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD Date: 4/22/08

Project: SAF/SOW/Release #: RC-007

LvLI Batch #: 0804L963 Sample Custodian: Victor Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FED EX		Airbill # 7998 4072 6890
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 3.8	°C	Cooler # ERC-96-511
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	Metals PH Neutral
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 O-J.		Date 4-22-08	

LVLI LIONVILLE LABORATORY INC.

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-007 K1203

DATE RECEIVED: 04/22/08 LVL LOT # :0804L963

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16MM5	001	W	08LE0193	04/17/08	04/23/08	04/24/08
J16MM6	002	W	08LE0193	04/17/08	04/23/08	04/24/08
LAB QC:						
PBLKPJ	MB1	W	08LE0193	N/A	04/23/08	04/24/08
PBLKPJ	MB1 BS	W	08LE0193	N/A	04/23/08	04/24/08
PBLKPJ	MB1 BSD	W	08LE0193	N/A	04/23/08	04/24/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-007
LVL #: 0804L963
SDG/SAF # K1203 / RC-007

W.O. #: 11343-606-001-9999-00
Date Received: 04-22-2008

PCB

Two (2) water samples were collected on 04-17-2008.

The samples and their associated QC samples were extracted on 04-23-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 04-24-2008. The extraction procedure was based on method 3520C and the extracts were analyzed based on method 8082.

The following is a summary of the 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. Samples were extracted and analyzed within required holding time
2. The samples and their associated QC samples received Copper-Sulfur and Sulfuric Acid cleanups according to Lionville Laboratory SOPs based on SW846 methods 3660A and 3665A respectively.
3. The method blank was below the reporting limits for all target compounds.
4. All surrogate recoveries were within acceptance criteria.
5. All blank spike recoveries were within acceptance criteria.
6. The initial calibrations associated with this data set were within acceptance criteria.
7. The continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
8. 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.

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

LIONVILLE LABORATORY INC.

9. 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

5/6/08
Date

GLOSSARY OF DATA

DATA QUALIFIERS

U	=	Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
J	=	Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification 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.
E	=	Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
I	=	Interference.
.I	=	Indicates an interference on one analytical column only. Result is reported from remaining analytical column.

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking 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	=	Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
NS	=	Not Spiked.
SP	=	Indicates Spiked Compound.
P	=	This flag is used for an PESTICIDE/PCB target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
D	=	This flag identifies all compounds identified in an analysis at a secondary dilution factor.
C	=	This flag applies to a compound that has been confirmed by GC/MS.
NPM	=	No pattern match for multi-component target analytes.

Lionville Laboratory, Inc.

PCBs by GC

Report Date: 04/25/08 11:11

RFW Batch Number: **0804L963** Client: **TNU-HANFORD RC-007** Work Order: 11343606001 Page: 1

	Cust ID:	J16MM5	J16MM6	PBLKPJ	PBLKPJ BS	PBLKPJ BSD
Sample Information	RFW#:	001	002	08LE0193-MB1	08LE0193-MB1	08LE0193-MB1
	Matrix:	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	UG/L	UG/L	UG/L	UG/L	UG/L
Surrogate:	Tetrachloro-m-xylene	85 %	86 %	86 %	98 %	95 %
	Decachlorobiphenyl	28 %	51 %	76 %	106 %	106 %
		fl	fl	fl	fl	fl
Aroclor-1016		1.8 U	1.8 U	0.40 U	86 %	85 %
Aroclor-1221		1.8 U	1.8 U	0.40 U	0.40 U	0.40 U
Aroclor-1232		1.8 U	1.8 U	0.40 U	0.40 U	0.40 U
Aroclor-1242		1.8 U	1.8 U	0.40 U	0.40 U	0.40 U
Aroclor-1248		1.8 U	1.8 U	0.40 U	0.40 U	0.40 U
Aroclor-1254		1.8 U	1.8 U	0.40 U	0.40 U	0.40 U
Aroclor-1260		1.8 U	1.8 U	0.40 U	90 %	90 %

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

000000005

Lionville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 04/23/08 Extraction Batch No: 08LE0193 Analyst: MF Method: CONT3520

Test: OPCB Cleanup Date: 04/24/08 Analyst: MF Client: TNU-HANFORD RC-007

LIMS Report Date: 04/24/08 Solvent: DCM/ACETONE Adsorbent: H2SO4

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0804L963-	TNU-HANFORD RC-007										
001	J16MM5	7	220	1.0		10		1.0	N	0.0	45.45
002	J16MM6	7	220	1.0		10		1.0	N	0.0	45.45
08LE0193-MB1	PBLKPJ	7	1000	1.0		10		1.0	N	0.0	10.00
08LE0193-MB1 -S	PBLKPJ	7	1000	1.0	1.0	10		1.0	N	0.0	10.00
08LE0193-MB1 -T	PBLKPJ	7	1000	1.0	1.0	10		1.0	N	0.0	10.00

Comments:
Surrogate: 250 UL OLM PSURR 89916405
Spike: 250 UL AR1660 89916602

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
all	[signature]	4/24/08 1400	SZ	4/24/08 14:10	GC

00000000

nville Laboratory Use Only

1804L963

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

000000007

nt TNU HANFORD SAF# RC-007

Final Proj. Sampling Date

ect# 11343-606-001-9999-00

ect Contact/Phone#

nville Laboratory Project Manager O. JOHNSON

SW846 Del STD TAT 7Day

e Rec'd 4-22-08 Date Due 4-29-08

	A		B			C		D		E
Refrigerator #	6		3			3		3		3
#/Type Container Liquid / Solid	1G		1G			1G		1P		1G
Volume	4l		250			1000		125		125
Preservatives	HCl		—			—		HNO3		—
ANALYSES REQUESTED	ORGANIC: VOA	BNA	PCB	Herb		TPH Diesel		INORG: Metal Hg	CN	Ignitability
Lionville Laboratory Use Only	0624A		OPCB			ODRO		MetⒸ		IIGN

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

Lab ID	Client ID/Description	MS	MSD	Matrix	Date Collected	Time Collected	A	B	C	D	E
001	J16MM5			W	4-17-08	1415	X	X	X	X	X
002	J16MM6			W	4-17-08	1620	X	X	X	X	X

ecial Instructions: Run matrix QC

metⒸ = HSL + Li, Sn

NOTL, CO

Special Instructions:

1. include motor oil (ORO) with DRO
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[signature]	V. [signature]	4/22/08	0945

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-007-027

Collector: Edmundson/Isom/Perry	Company Contact: Tom Edmundson; Telephone No.: 376-4058	Project Coordinator: KESSNER, JH	Price Code: 7K5 no 4208; Data Turnaround: ~~15~~ Days 7 TRE 4-17-08
Project Designation: 100-N Ancillary Facilities & 190-DR ETF Analytical Data Re	Sampling Location: 1330-N Waste Pad 2nd Event	SAF No.: RC-007	
Ice Chest No.: ERC-96-511	Field Logbook No.: EL-1516-12; COA: RD4MXX2F00	Method of Shipment: Fed Ex	
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080238	Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

Cool to 4c

Preservation	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	Cool 4C	HCl or H2SO4 to pH <2 Coo	None	HCl to pH <2 Cool 4C			
Type of Container	G/P	G/P	G/P	aG TRE 4-17-08	aGs*	G	aG			
No. of Container(s)	1	1	1	~~1~~ 1	~~1~~ 1	1	~~5~~ 1 TRE 4-17-08			
Volume	1000mL	1000mL	~~500mL~~ 125mL	~~1000mL~~ 250mL	40mL	~~250mL~~ 125mL	1000mL TRE 4-17-08			
SAMPLE ANALYSIS	Gross Alpha: Gross Beta TRE	See item (1) in Special Instructions. 4/17/08	See item (2) in Special Instructions.	PCBs - 8082	See item (3) in Special Instructions.	Ignitability - 1010	See item (4) in Special Instructions.			
Sample No.	Matrix *	Sample Date	Sample Time							
116MM5	WATER	4-17-08	1415			✓	✓	✓	✓	✓
116MM6	WATER	4-17-08	1620			✓	✓	✓	✓	✓

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
T.R. Edmundson TR Edmundson	4-17-08 1850	1060 Battelle #2C	4-17-08 1850
1060/2C 4/21/08	1000	MStankovich	4/21/08 1000
MStankovich WCH	4/21/08 1500	FedEx	
Fed Ex	4/22/08 0945	Victor Hernandez	4/22/08 0945

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Antimony-125, Barium-133, Radium-226, Radium-228)
(2) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); ICP Metals - 6010A (Supertrace Add-On) (Aluminum, Antimony, Beryllium, Calcium, Copper, Iron, Lithium, Magnesium, Manganese, Nickel, Potassium, Silica, Sodium, Vanadium, Zinc); Mercury - 7470 - (CV)
(3) VOA - 8260A (ETF) (1,1,1-Trichloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1-Butanol, 2-Butanone, 2-Hexanone, 2-Pentanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Benzyl alcohol, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroform, cis-1,2-Dichloroethylene, Ethyl cyanide, Methylenechloride, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, Trichloroethene, Vinyl chloride, Xylenes (total))
(4) TPH-Diesel Range - WTPH-D (Total petroleum hydrocarbons - diesel range); TPH-Diesel Range - WTPH-D - Add On (Total petroleum hydrocarbons - motor oil (high boiling))

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

Matrix *

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

LABORATORY SECTION — Received By: ____ Title: ____

FINAL SAMPLE DISPOSITION — Disposal Method: ____ Disposed By: ____ Date/Time: ____

VCH-EE-011

0000000008

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD Date: 4/22/08

Project: (SAF)/SOW/Release #: RC-007

LvLI Batch #: 0804L963 Sample Custodian: Kristi Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or (Shipped)?	Carrier FedEx		Airbill # 7998 4072 6890
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plastic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received (cooled) or ambient?	Temp 3.8	°C	Cooler # ERC-96-511
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	Metals PH Neutral
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 O.J.		Date 4-22-08	

LvLI LIONVILLE LABORATORY INC.

Lionville Laboratory, Inc.

DRO ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-007 K1203

DATE RECEIVED: 04/22/08 LVL LOT # :0804L963

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16MM5	001	W	08LE0194	04/17/08	04/23/08	04/25/08
J16MM6	002	W	08LE0194	04/17/08	04/23/08	04/25/08
LAB QC:						
BLK	MB1	W	08LE0194	N/A	04/23/08	04/24/08
BLK	MB1 BS	W	08LE0194	N/A	04/23/08	04/24/08
BLK	MB1 BSD	W	08LE0194	N/A	04/23/08	04/24/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-007
LVL #: 0804L963
SDG/SAF # K1203 / RC-007

W.O. #: 11343-606-001-9999-00
Date Received: 04-22-2008

DIESEL RANGE ORGANICS

Two (2) water samples were collected on 04-17-2008.

The samples and their associated QC samples were extracted on 04-23-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 04-24,25-2008. The extraction procedure was based on method 3520C and the extracts were analyzed based on method 8015B.

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

1. All required holding times for extraction and analysis have been met..
2. The method blank was below the reporting limits for all target compounds.
3. One (1) of five (5) surrogate recoveries was outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
4. The blank spike recoveries were within acceptance criteria.
5. The sample J16MM5 required a 10-fold dilution due to high concentrations of non-target and target analytes.
6. All initial calibrations associated with this data set were within acceptance criteria.
7. The continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

LIONVILLE LABORATORY INC.

8. 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.

9. 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

5/6/08
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 08GC052

Initiator: CAC
Date: 04/29/08
Client: TNU

Batch: 0804L963
Samples: 002
Method: SW846/MCAWW/CLP/

Parameter: ODRO
Matrix: water
Prep Batch: 08LE0194

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)

surrogate recovery is low

2. Known or Probable Causes(s)

3. Discussion and Proposed Action

Other Description:

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

No volume to reextract

Narrate DS.

4. Project Manager Instructions...signature/date: gh 5/6/08

✓ 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: KDS 5/2/08

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 for diposition.

Route
__ Lab Manager: Daniels
__ Project Mgr (circle): Johnson / Stone
__ Sample Prep (circle): Ford
__ Log-in: King

Route
__ Metals: Welsh / _____
__ Inorganic: Perrone / _____
__ GC/LC: Carey / _____
__ MS VOA: Rubino / _____
__ MS BNA: Carden / _____
__ Other: _____

GLOSSARY OF DATA

DATA QUALIFIERS

U	=	Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
J	=	Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification 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.
E	=	Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
I	=	Interference.
.I	=	Indicates an interference on one analytical column only. Result is reported from remaining analytical column.

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking 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	=	Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
NS	=	Not Spiked.
SP	=	Indicates Spiked Compound.
P	=	This flag is used for an PESTICIDE/PCB target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
D	=	This flag identifies all compounds identified in an analysis at a secondary dilution factor.
C	=	This flag applies to a compound that has been confirmed by GC/MS.
NPM	=	No pattern match for multi-component target analytes.

Lionville Laboratory, Inc.

DIESEL RANGE ORGANICS BY GC

Report Date: 04/28/08 12:55

RFW Batch Number: **0804L963** Client: **TNU-HANFORD RC-007** Work Order: 11343606001 Page: 1

	Cust ID:	J16MM5	J16MM6	BLK	BLK BS	BLK BSD
Sample Information	RFW#:	001	002	08LE0194-MB1	08LE0194-MB1	08LE0194-MB1
	Matrix:	WATER	WATER	WATER	WATER	WATER
	D.F.:	10.0	1.00	1.00	1.00	1.00
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L

p-Terphenyl	D	%	29 *	%	86	%	83	%	56	%	
		fl		fl		fl		fl		fl	fl
Diesel Range Organics	49000		2000		100	U	92	%	68	%	
Motor Oil Range Organics	61900	U	306	U	300	U	NS		NS		

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 04/23/08 Extraction Batch No: 08LE0194 Analyst: MF Method: CONT3520

Test: ODRO Cleanup Date: Analyst: Client: TNU-HANFORD RC-007

LIMS Report Date: 04/24/08 Solvent: DCM,HEXANE Adsorbent:

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0804L963-	TNU-HANFORD RC-007										
001	J16MM5	7	970	1.0		20.0		1.0	N	0.0	20.62
002	J16MM6	7	980	1.0		1.0		1.0	N	0.0	1.02
08LE0194-MB1	BLK	7	1000	1.0		1.0		1.0	N	0.0	1.00
08LE0194-MB1 -S	BLK	7	1000	1.0	1.0	1.0		1.0	N	0.0	1.00
08LE0194-MB1 -T	BLK	7	1000	1.0	1.0	1.0		1.0	N	0.0	1.00

Comments: 001 SMPL FV EXTR 2 LAYERS
Surrogate: 1.0 ML ODRO SURR 86971901
Spike: 1.0 ML ODRO DIESEL SPIKE 86971902

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
dll		4/24/08 1400	SZ	4/24/08 14:10	GC

00000007

…ville Laboratory Use Only
8042963

Custody Transfer Record/Lab Work Request

Page 1 of 1

LvLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

…t TNU HANFORD SAF# RC-007

Final Proj. Sampling Date

…ct# 11343-606-001-9999-00

…ot Contact/Phone#

…ville Laboratory Project Manager O. JOHNSON

SW846 Del STD TAT 7Day

Rec'd 4-22-08 Date Due 4-29-08

	A		B			C		D		E
Refrigerator #	6		3			3		3		3
#/Type Container Liquid / Solid	1G		1G			1G		1P		1G
Volume	4?		250			1000		125		125
Preservatives	HCL		–			–		HNO3		–
ANALYSES REQUESTED	ORGANIC: VOA	BNA	PCB	Herb		TPH Diesel		INORG: Metal Hg	CN	Nitrate

Lionville Laboratory Use Only: 0624X, OPCB, ODRO, Met①, IIGN

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

Lab ID	Client ID/Description	MS	MSD	Matrix	Date Collected	Time Collected	A	B	C	D	E
001	J16MM5			W	4-17-08	1415	X	X	X	X	X
002	J16MM6			W	4-17-08	1620	X	X	X	X	X

…cial Instructions: Run matrix QC

Met① = HSL + Li, Sa
NOTL, CO

Special Instructions:
1. include ~~ORO~~ motor oil with ORO
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
[signature]	V. [signature]	4/22/08	0945					ORIGINAL REWRITTEN		"COMPOSITE WASTE"	

00000008

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-007-027	Page 1 of 1
Collector: Edmundson/Isom/Perry	Company Contact: Tom Edmundson; Telephone No.: 376-4058	Project Coordinator: KESSNER, JH	Price Code: 7K/S (no 4/21/08); Data Turnaround: ~~15~~ Days 7 TRE 4-17-08
Project Designation: 100-N Ancillary Facilities & 190-DR ETF Analytical Data Re	Sampling Location: 1330-N Waste Pad 2nd Event	SAF No.: RC-007	
Ice Chest No.: ERC-96-511	Field Logbook No.: EL-1516-12; COA: RD4MXX2F00	Method of Shipment: Fed Ex	
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080238	Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS: N/A

Special Handling and/or Storage: Cool to 4c

Preservation	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	Cool 4C	HCl or H2SO4 to pH <2 Coo	None	HCl to pH <2 Cool 4C			
Type of Container	G/P	G/P	G/P	aG TRE 4-17-08	aGs*	G	aG			
No. of Container(s)	1	1	1	~~1~~ 1	~~2~~ 1	1	~~5~~ 1 TRE 4-17-08			
Volume	1000mL	1000mL	~~500mL~~ 125mL	~~1000mL~~ 250mL	40mL	~~250mL~~ 125mL TRE 4-17-08	1000mL			
SAMPLE ANALYSIS	Gross Alpha; Gross Beta TRE	See item (1) in Special Instructions. 4/17/08	See item (2) in Special Instructions.	PCBs - 8082	See item (3) in Special Instructions.	Ignitability - 1010	See item (4) in Special Instructions.			
Sample No.	Matrix *	Sample Date	Sample Time							
6MM5	WATER	4-17-08	1415			✓	✓	✓	✓	✓
6MM6	WATER	4-17-08	1620			✓	✓	✓	✓	✓

CHAIN OF POSSESSION	Sign/Print Names			
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	
JR Edmundson	4-17-08 1850	1060 Battelle #2C	4-17-08 1850	
Relinquished By/Removed From 4/21/08 060/2C	Date/Time 4/21/08 1000	Received By/Stored In MStanlcouch	Date/Time 1000 4/21/08	
Relinquished By/Removed From WCH MStanlcouch	Date/Time 1500 4/21/08	Received By/Stored In FedEx	Date/Time	
Relinquished By/Removed From FedEx	Date/Time 4/22/08 0945	Received By/Stored In Victor Hernandez	Date/Time 4/22/08 0945	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time	

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Antimony-125, Barium-133, Radium-226, Radium-228}

(2) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Aluminum, Antimony, Beryllium, Calcium, Copper, Iron, Lithium, Magnesium, Manganese, Nickel, Potassium, Silica, Sodium, Vanadium, Zinc}; Mercury - 7470 - (CV)

(3) VOA - 8260A (ETF) {1,1,1-Trichloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1-Butanol, 2-Butanone, 2-Hexanone, 2-Pentanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Benzyl alcohol, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroform, cis-1,2-Dichloroethylene, Ethyl cyanide, Methylenechloride, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, Trichloroethene, Vinyl chloride, Xylenes (total)}

(4) TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range}; TPH-Diesel Range - WTPH-D - Add On {Total petroleum hydrocarbons - motor oil (high boiling)}

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

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

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

CH-EE-011

6000000000

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD Date: 4/22/08

Project/SAF/SOW/Release #: RC-007

LvLI Batch #: 0804L963 Sample Custodian: Vicki Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7998 4072 6890
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 3.8	°C	Cooler # ERC-96-511
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	Metals PH Neutral
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 O-J		Date 4-22-08	

LVLI LIONVILLE LABORATORY INC.

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-007 K1203

DATE RECEIVED: 04/22/08 LVL LOT # :0804L963

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16MM5						
SILVER, TOTAL	001	W	08L0175	04/17/08	05/01/08	05/01/08
SILVER, TOTAL	001 REP	W	08L0175	04/17/08	05/01/08	05/01/08
SILVER, TOTAL	001 MS	W	08L0175	04/17/08	05/01/08	05/01/08
ALUMINUM, TOTAL	001	W	08L0175	04/17/08	05/01/08	05/01/08
ALUMINUM, TOTAL	001 REP	W	08L0175	04/17/08	05/01/08	05/01/08
ALUMINUM, TOTAL	001 MS	W	08L0175	04/17/08	05/01/08	05/01/08
ARSENIC, TOTAL	001	W	08L0175	04/17/08	05/01/08	05/01/08
ARSENIC, TOTAL	001 REP	W	08L0175	04/17/08	05/01/08	05/01/08
ARSENIC, TOTAL	001 MS	W	08L0175	04/17/08	05/01/08	05/01/08
BARIUM, TOTAL	001	W	08L0175	04/17/08	05/01/08	05/01/08
BARIUM, TOTAL	001 REP	W	08L0175	04/17/08	05/01/08	05/01/08
BARIUM, TOTAL	001 MS	W	08L0175	04/17/08	05/01/08	05/01/08
BERYLLIUM, TOTAL	001	W	08L0175	04/17/08	05/01/08	05/01/08
BERYLLIUM, TOTAL	001 REP	W	08L0175	04/17/08	05/01/08	05/01/08
BERYLLIUM, TOTAL	001 MS	W	08L0175	04/17/08	05/01/08	05/01/08
CALCIUM, TOTAL	001	W	08L0175	04/17/08	05/01/08	05/01/08
CALCIUM, TOTAL	001 REP	W	08L0175	04/17/08	05/01/08	05/01/08
CALCIUM, TOTAL	001 MS	W	08L0175	04/17/08	05/01/08	05/01/08
CADMIUM, TOTAL	001	W	08L0175	04/17/08	05/01/08	05/01/08
CADMIUM, TOTAL	001 REP	W	08L0175	04/17/08	05/01/08	05/01/08
CADMIUM, TOTAL	001 MS	W	08L0175	04/17/08	05/01/08	05/01/08
CHROMIUM, TOTAL	001	W	08L0175	04/17/08	05/01/08	05/01/08
CHROMIUM, TOTAL	001 REP	W	08L0175	04/17/08	05/01/08	05/01/08
CHROMIUM, TOTAL	001 MS	W	08L0175	04/17/08	05/01/08	05/01/08
COPPER, TOTAL	001	W	08L0175	04/17/08	05/01/08	05/01/08
COPPER, TOTAL	001 REP	W	08L0175	04/17/08	05/01/08	05/01/08
COPPER, TOTAL	001 MS	W	08L0175	04/17/08	05/01/08	05/01/08
IRON, TOTAL	001	W	08L0175	04/17/08	05/01/08	05/01/08
IRON, TOTAL	001 REP	W	08L0175	04/17/08	05/01/08	05/01/08
IRON, TOTAL	001 MS	W	08L0175	04/17/08	05/01/08	05/01/08
MERCURY, TOTAL	001	W	08C0074	04/17/08	04/24/08	04/25/08
POTASSIUM, TOTAL	001	W	08L0175	04/17/08	05/01/08	05/01/08
POTASSIUM, TOTAL	001 REP	W	08L0175	04/17/08	05/01/08	05/01/08
POTASSIUM, TOTAL	001 MS	W	08L0175	04/17/08	05/01/08	05/01/08
LITHIUM, TOTAL	001	W	08L0175	04/17/08	05/01/08	05/01/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-007

DATE RECEIVED: 04/22/08 LVL LOT # :0804L963

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
LITHIUM, TOTAL	001 REP	W	08L0175	04/17/08	05/01/08	05/01/08
LITHIUM, TOTAL	001 MS	W	08L0175	04/17/08	05/01/08	05/01/08
MAGNESIUM, TOTAL	001	W	08L0175	04/17/08	05/01/08	05/01/08
MAGNESIUM, TOTAL	001 REP	W	08L0175	04/17/08	05/01/08	05/01/08
MAGNESIUM, TOTAL	001 MS	W	08L0175	04/17/08	05/01/08	05/01/08
MANGANESE, TOTAL	001	W	08L0175	04/17/08	05/01/08	05/01/08
MANGANESE, TOTAL	001 REP	W	08L0175	04/17/08	05/01/08	05/01/08
MANGANESE, TOTAL	001 MS	W	08L0175	04/17/08	05/01/08	05/01/08
SODIUM, TOTAL	001	W	08L0175	04/17/08	05/01/08	05/01/08
SODIUM, TOTAL	001 REP	W	08L0175	04/17/08	05/01/08	05/01/08
SODIUM, TOTAL	001 MS	W	08L0175	04/17/08	05/01/08	05/01/08
NICKEL, TOTAL	001	W	08L0175	04/17/08	05/01/08	05/01/08
NICKEL, TOTAL	001 REP	W	08L0175	04/17/08	05/01/08	05/01/08
NICKEL, TOTAL	001 MS	W	08L0175	04/17/08	05/01/08	05/01/08
LEAD, TOTAL	001	W	08L0175	04/17/08	05/01/08	05/01/08
LEAD, TOTAL	001 REP	W	08L0175	04/17/08	05/01/08	05/01/08
LEAD, TOTAL	001 MS	W	08L0175	04/17/08	05/01/08	05/01/08
SILICA, TOTAL	001	W	08L0175	04/17/08	05/01/08	05/01/08
SILICA, TOTAL	001 REP	W	08L0175	04/17/08	05/01/08	05/01/08
SILICA, TOTAL	001 MS	W	08L0175	04/17/08	05/01/08	05/01/08
ANTIMONY, TOTAL	001	W	08L0175	04/17/08	05/01/08	05/01/08
ANTIMONY, TOTAL	001 REP	W	08L0175	04/17/08	05/01/08	05/01/08
ANTIMONY, TOTAL	001 MS	W	08L0175	04/17/08	05/01/08	05/01/08
SELENIUM, TOTAL	001	W	08L0175	04/17/08	05/01/08	05/01/08
SELENIUM, TOTAL	001 REP	W	08L0175	04/17/08	05/01/08	05/01/08
SELENIUM, TOTAL	001 MS	W	08L0175	04/17/08	05/01/08	05/01/08
VANADIUM, TOTAL	001	W	08L0175	04/17/08	05/01/08	05/01/08
VANADIUM, TOTAL	001 REP	W	08L0175	04/17/08	05/01/08	05/01/08
VANADIUM, TOTAL	001 MS	W	08L0175	04/17/08	05/01/08	05/01/08
ZINC, TOTAL	001	W	08L0175	04/17/08	05/01/08	05/01/08
ZINC, TOTAL	001 REP	W	08L0175	04/17/08	05/01/08	05/01/08
ZINC, TOTAL	001 MS	W	08L0175	04/17/08	05/01/08	05/01/08
J16MM6						
SILVER, TOTAL	002	W	08L0175	04/17/08	05/01/08	05/01/08
ALUMINUM, TOTAL	002	W	08L0175	04/17/08	05/01/08	05/01/08
ARSENIC, TOTAL	002	W	08L0175	04/17/08	05/01/08	05/01/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-007

DATE RECEIVED: 04/22/08 LVL LOT # :0804L963

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BARIUM, TOTAL	002	W	08L0175	04/17/08	05/01/08	05/01/08
BERYLLIUM, TOTAL	002	W	08L0175	04/17/08	05/01/08	05/01/08
CALCIUM, TOTAL	002	W	08L0175	04/17/08	05/01/08	05/01/08
CADMIUM, TOTAL	002	W	08L0175	04/17/08	05/01/08	05/01/08
CHROMIUM, TOTAL	002	W	08L0175	04/17/08	05/01/08	05/01/08
COPPER, TOTAL	002	W	08L0175	04/17/08	05/01/08	05/01/08
IRON, TOTAL	002	W	08L0175	04/17/08	05/01/08	05/01/08
MERCURY, TOTAL	002	W	08C0074	04/17/08	04/24/08	04/25/08
MERCURY, TOTAL	002 REP	W	08C0074	04/17/08	04/24/08	04/25/08
MERCURY, TOTAL	002 MS	W	08C0074	04/17/08	04/24/08	04/25/08
POTASSIUM, TOTAL	002	W	08L0175	04/17/08	05/01/08	05/01/08
LITHIUM, TOTAL	002	W	08L0175	04/17/08	05/01/08	05/01/08
MAGNESIUM, TOTAL	002	W	08L0175	04/17/08	05/01/08	05/01/08
MANGANESE, TOTAL	002	W	08L0175	04/17/08	05/01/08	05/01/08
SODIUM, TOTAL	002	W	08L0175	04/17/08	05/01/08	05/01/08
NICKEL, TOTAL	002	W	08L0175	04/17/08	05/01/08	05/01/08
LEAD, TOTAL	002	W	08L0175	04/17/08	05/01/08	05/01/08
SILICA, TOTAL	002	W	08L0175	04/17/08	05/01/08	05/01/08
ANTIMONY, TOTAL	002	W	08L0175	04/17/08	05/01/08	05/01/08
SELENIUM, TOTAL	002	W	08L0175	04/17/08	05/01/08	05/01/08
VANADIUM, TOTAL	002	W	08L0175	04/17/08	05/01/08	05/01/08
ZINC, TOTAL	002	W	08L0175	04/17/08	05/01/08	05/01/08

AB QC:

SILVER LABORATORY	LC1 BS	W	08L0175	N/A	05/01/08	05/01/08
SILVER, TOTAL	MB1	W	08L0175	N/A	05/01/08	05/01/08
ALUMINUM LABORTORY	LC1 BS	W	08L0175	N/A	05/01/08	05/01/08
ALUMINUM, TOTAL	MB1	W	08L0175	N/A	05/01/08	05/01/08
ARSENIC LABORATORY	LC1 BS	W	08L0175	N/A	05/01/08	05/01/08
ARSENIC, TOTAL	MB1	W	08L0175	N/A	05/01/08	05/01/08
BARIUM LABORATORY	LC1 BS	W	08L0175	N/A	05/01/08	05/01/08
BARIUM, TOTAL	MB1	W	08L0175	N/A	05/01/08	05/01/08
BERYLLIUM LABORATORY	LC1 BS	W	08L0175	N/A	05/01/08	05/01/08
BERYLLIUM, TOTAL	MB1	W	08L0175	N/A	05/01/08	05/01/08
CALCIUM LABORATORY	LC1 BS	W	08L0175	N/A	05/01/08	05/01/08
CALCIUM, TOTAL	MB1	W	08L0175	N/A	05/01/08	05/01/08
CADMIUM LABORATORY	LC1 BS	W	08L0175	N/A	05/01/08	05/01/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-007

DATE RECEIVED: 04/22/08 LVL LOT # :0804L963

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CADMIUM, TOTAL	MB1	W	08L0175	N/A	05/01/08	05/01/08
CHROMIUM LABORATORY	LC1 BS	W	08L0175	N/A	05/01/08	05/01/08
CHROMIUM, TOTAL	MB1	W	08L0175	N/A	05/01/08	05/01/08
COPPER LABORATORY	LC1 BS	W	08L0175	N/A	05/01/08	05/01/08
COPPER, TOTAL	MB1	W	08L0175	N/A	05/01/08	05/01/08
IRON LABORATORY	LC1 BS	W	08L0175	N/A	05/01/08	05/01/08
IRON, TOTAL	MB1	W	08L0175	N/A	05/01/08	05/01/08
MERCURY LABORATORY	LC1 BS	W	08C0074	N/A	04/24/08	04/25/08
MERCURY, TOTAL	MB1	W	08C0074	N/A	04/24/08	04/25/08
MERCURY, TCLP LEACHA	MB2	W	08C0074	N/A	04/24/08	04/25/08
POTASSIUM LABORATORY	LC1 BS	W	08L0175	N/A	05/01/08	05/01/08
POTASSIUM, TOTAL	MB1	W	08L0175	N/A	05/01/08	05/01/08
LITHIUM LABORATORY	LC1 BS	W	08L0175	N/A	05/01/08	05/01/08
LITHIUM, TOTAL	MB1	W	08L0175	N/A	05/01/08	05/01/08
MAGNESIUM LABORATORY	LC1 BS	W	08L0175	N/A	05/01/08	05/01/08
MAGNESIUM, TOTAL	MB1	W	08L0175	N/A	05/01/08	05/01/08
MANGANESE LABORATORY	LC1 BS	W	08L0175	N/A	05/01/08	05/01/08
MANGANESE, TOTAL	MB1	W	08L0175	N/A	05/01/08	05/01/08
SODIUM LABORATORY	LC1 BS	W	08L0175	N/A	05/01/08	05/01/08
SODIUM, TOTAL	MB1	W	08L0175	N/A	05/01/08	05/01/08
NICKEL LABORATORY	LC1 BS	W	08L0175	N/A	05/01/08	05/01/08
NICKEL, TOTAL	MB1	W	08L0175	N/A	05/01/08	05/01/08
LEAD LABORATORY	LC1 BS	W	08L0175	N/A	05/01/08	05/01/08
LEAD, TOTAL	MB1	W	08L0175	N/A	05/01/08	05/01/08
SILICA LABORATORY	LC1 BS	W	08L0175	N/A	05/01/08	05/01/08
SILICA, TOTAL	MB1	W	08L0175	N/A	05/01/08	05/01/08
ANTIMONY LABORATORY	LC1 BS	W	08L0175	N/A	05/01/08	05/01/08
ANTIMONY, TOTAL	MB1	W	08L0175	N/A	05/01/08	05/01/08
SELENIUM LABORATORY	LC1 BS	W	08L0175	N/A	05/01/08	05/01/08
SELENIUM, TOTAL	MB1	W	08L0175	N/A	05/01/08	05/01/08
VANADIUM LABORATORY	LC1 BS	W	08L0175	N/A	05/01/08	05/01/08
VANADIUM, TOTAL	MB1	W	08L0175	N/A	05/01/08	05/01/08
ZINC LABORATORY	LC1 BS	W	08L0175	N/A	05/01/08	05/01/08
ZINC, TOTAL	MB1	W	08L0175	N/A	05/01/08	05/01/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-007
LVL#: 0804L963
SDG/SAF#: K1203RC-007

W.O.#: 11343-606-001-9999-00
Date Received: 04-22-08

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 2 water samples.

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

   Sample J16MM5 was prepped at a 100-fold dilution and sample J16MM6, J16MM6 rep, and J16MM6 spike were prepped at ten fold dilutions for Mercury because the purple color was not maintained after the addition of potassium permanganate as per method criteria.

   Samples J16MM5 and J16MM6 were prepped at 10-fold dilutions for ICP metals due to sample matrix and sample volume.

   All samples were rerun for Aluminum, Iron, Potassium, Sodium, and Zinc on a different instrument. Potassium, and Sodium were rerun in files PS0501A and PS0501B due to CCVs that were outside the 90-110% control limits. Aluminum, Iron, and Zinc were also rerun in file PS0501A and PS0501B due to sample matrix.

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

4. Please refer to the Sample Receipt Check List for sample discrepancies in LvLI's sample acceptance policy.

5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury) for all data contained within this report.

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

7. All preparation/method blanks (MB) were within method criteria {less than the Limit of

LvLI
LIONVILLE LABORATORY INC.

Quantitation (3-10X the LOD), all sample concentrations were greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.

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

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

10. The matrix spike (MS) recoveries for 2 analytes were outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.

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

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J16MM5	Iron	42,000	96.0
	Zinc	3,600	88.0

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

13. 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.

14. 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.

15. 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

5/9/08
Date

alm/m04-963

METALS METHOD GLOSSARY

ıe following methods are used as reference for the digestion and analysis of samples contained within th
ɔt#: 0804L963

eaching Procedure: __1310 __1311 __1312 __Other:_____

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

etals Digestion Methods: ✓3005A __3010A __3015 __3020A __3050B __3051 __200.7 __SS17
__Other: _____

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
luminum	✓6010B		__200.7				__99
ntimony	✓6010B	__7041 [5]	__200.7	__204.2			__99
rsenic	✓6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
arium	✓6010B		__200.7				__99
eryllium	✓6010B		__200.7				__99
ismuth	__6010B [1]		__200.7 [1]			__1620	__99
oron	__6010B		__200.7				__99
admium	✓6010B	__7131A [5]	__200.7	__213.2			__99
alcium	__6010B		__200.7				__99
hromium	✓6010B	__7191 [5]	__200.7	__218.2			__SS17
obalt	__6010B		__200.7				__99
opper	✓6010B	__7211 [5]	__200.7	__220.2			__99
on	✓6010B		__200.7				__99
ead	✓6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
ithium	✓6010B	__7430 [4]	__200.7			__1620	__99
agnesium	✓6010B		__200.7				__99
anganese	✓6010B		__200.7				__99
ercury	✓7470A [3]	__7471A [3]	__245.1 [2]	__245.5 [2]			__99
olybdenum	__6010B		__200.7				__99
ickel	✓6010B		__200.7				__99
otassium	✓6010B	__7610 [4]	__200.7	__258.1 [4]			__99
are Earths	__6010B [1]		__200.7 [1]			__1620	__99
elenium	✓6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
ilicon	__6010B [1]		__200.7			__1620	__99
ilica	✓6010B		__200.7			__1620	__99
ilver	✓6010B	__7761 [5]	__200.7	__272.2			__99
odium	✓6010B	__7770 [4]	__200.7	__273.1 [4]			__99
trontium	__6010B		__200.7				__99
hallium	__6010B	__7841 [5]	__200.7	__279.2	__200.9		__99
in	__6010B		__200.7				__99
itanium	__6010B		__200.7				__99
ranium	__6010B [1]		__200.7 [1]			__1620	__99
anadium	✓6010B		__200.7				__99
inc	✓6010B		__200.7				__99
irconium	__6010B [1]		__200.7 [1]			__1620	__99

)ther:_____ 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.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/05/08

CLIENT: TNU-HANFORD RC-007 LVL LOT #: 0804L963

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J16MM5	Silver, Total	10.0	u	UG/L	10.0	1.0
		Aluminum, Total	547		UG/L	400	1.0
		Arsenic, Total	432		UG/L	50.0	1.0
		Barium, Total	22.7		UG/L	10.0	1.0
		Beryllium, Total	5.0	u	UG/L	5.0	1.0
		Calcium, Total	10600		UG/L	400	1.0
		Cadmium, Total	5.0	u	UG/L	5.0	1.0
		Chromium, Total	181		UG/L	20.0	1.0
		Copper, Total	1050		UG/L	20.0	1.0
		Iron, Total	2520000		UG/L	450	1.0
		Mercury, Total	6.0	u	UG/L	6.0	100
		Potassium, Total	175000		UG/L	4930	1.0
		Lithium, Total	4.0	u	UG/L	4.0	1.0
		Magnesium, Total	2800		UG/L	250	1.0
		Manganese, Total	24300		UG/L	4.0	1.0
		Sodium, Total	7860		UG/L	200	1.0
		Nickel, Total	155		UG/L	20.0	1.0
		Lead, Total	982		UG/L	30.0	1.0
		SILICA , Total	2680		UG/L	840	2.1
		Antimony, Total	114		UG/L	30.0	1.0
		Selenium, Total	350		UG/L	60.0	1.0
		Vanadium, Total	14.0	u	UG/L	14.0	1.0
		Zinc, Total	216000		UG/L	60.0	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/05/08

CLIENT: TNU-HANFORD RC-007 LVL LOT #: 0804L963

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	J16MM6	Silver, Total	10.0	u	UG/L	10.0	1.0
		Aluminum, Total	400	u	UG/L	400	1.0
		Arsenic, Total	50.0	u	UG/L	50.0	1.0
		Barium, Total	99.8		UG/L	10.0	1.0
		Beryllium, Total	5.0	u	UG/L	5.0	1.0
		Calcium, Total	6040		UG/L	400	1.0
		Cadmium, Total	5.0	u	UG/L	5.0	1.0
		Chromium, Total	20.0	u	UG/L	20.0	1.0
		Copper, Total	20.0	u	UG/L	20.0	1.0
		Iron, Total	12600		UG/L	450	1.0
		Mercury, Total	0.60	u	UG/L	0.60	10.0
		Potassium, Total	16000		UG/L	4930	1.0
		Lithium, Total	4.0	u	UG/L	4.0	1.0
		Magnesium, Total	4180		UG/L	250	1.0
		Manganese, Total	90.6		UG/L	4.0	1.0
		Sodium, Total	53500		UG/L	200	1.0
		Nickel, Total	20.0	u	UG/L	20.0	1.0
		Lead, Total	30.0	u	UG/L	30.0	1.0
		SILICA , Total	840	u	UG/L	840	2.1
		Antimony, Total	30.0	u	UG/L	30.0	1.0
		Selenium, Total	60.0	u	UG/L	60.0	1.0
		Vanadium, Total	14.0	u	UG/L	14.0	1.0
		Zinc, Total	113		UG/L	60.0	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 05/05/08

CLIENT: TNU-HANFORD RC-007 LVL LOT #: 0804L963

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	08L0175-MB1	Silver, Total	1.0	u	UG/L	1.0	1.0
		Aluminum, Total	47.6		UG/L	40.0	1.0
		Arsenic, Total	5.0	u	UG/L	5.0	1.0
		Barium, Total	1.0	u	UG/L	1.0	1.0
		Beryllium, Total	0.50	u	UG/L	0.50	1.0
		Calcium, Total	77.4		UG/L	40.0	1.0
		Cadmium, Total	0.50	u	UG/L	0.50	1.0
		Chromium, Total	2.0	u	UG/L	2.0	1.0
		Copper, Total	2.0	u	UG/L	2.0	1.0
		Iron, Total	45.0	u	UG/L	45.0	1.0
		Potassium, Total	493	u	UG/L	493	1.0
		Lithium, Total	0.40	u	UG/L	0.40	1.0
		Magnesium, Total	41.9		UG/L	25.0	1.0
		Manganese, Total	0.44		UG/L	0.40	1.0
		Sodium, Total	227		UG/L	20.0	1.0
		Nickel, Total	2.0	u	UG/L	2.0	1.0
		Lead, Total	3.0	u	UG/L	3.0	1.0
		SILICA , Total	84.0	u	UG/L	84.0	2.1
		Antimony, Total	3.0	u	UG/L	3.0	1.0
		Selenium, Total	6.0	u	UG/L	6.0	1.0
		Vanadium, Total	1.4	u	UG/L	1.4	1.0
		Zinc, Total	6.0	u	UG/L	6.0	1.0
BLANK1	08C0074-MB1	Mercury, Total	0.06	u	UG/L	0.06	1.0
BLANK2	08C0074-MB2	Mercury, TCLP Leachate	0.06	u	UG/L	0.06	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 05/05/08

CLIENT: TNU-HANFORD RC-007 LVL LOT #: 0804L963

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J16MM5	Silver, Total	469	10.0 u	500	93.9	1.0
		Aluminum, Total	18600	547	20000	90.4	1.0
		Arsenic, Total	19400	432	20000	94.7	1.0
		Barium, Total	19600	22.7	20000	98.0	1.0
		Beryllium, Total	479	5.0 u	500	95.9	1.0
		Calcium, Total	250000	10600	250000	95.9	1.0
		Cadmium, Total	456	5.0 u	500	91.3	1.0
		Chromium, Total	2090	181	2000	95.3	1.0
		Copper, Total	3500	1050	2500	98.2	1.0
		Iron, Total	2440000	2520000	10000	-790. *	1.0
		Potassium, Total	396000	175000	250000	88.3	1.0
		Lithium, Total	10300	4.0 u	10000	102.8	1.0
		Magnesium, Total	229000	2800	250000	90.5	1.0
		Manganese, Total	29100	24300	5000	96.5*	1.0
		Sodium, Total	245000	7860	250000	94.8	1.0
		Nickel, Total	4780	155	5000	92.6	1.0
		Lead, Total	5460	982	5000	89.5	1.0
		SILICA , Total	21900	2680	21400	90.0	2.1
		Antimony, Total	4640	114	5000	90.5	1.0
		Selenium, Total	19100	350	20000	93.8	1.0
		Vanadium, Total	4790	14.0 u	5000	95.7	1.0
		Zinc, Total	217000	216000	5000	14.7*	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 05/05/08

CLIENT: TNU-HANFORD RC-007 LVL LOT #: 0804L963

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-002	J16MM6	Mercury, Total	9.8	0.60u	10.0	98.3	10.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 05/05/08

CLIENT: TNU-HANFORD RC-007 LVL LOT #: 0804L963

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J16MM5	Silver, Total	10.0 u	10.0 u	NC	1.0
		Aluminum, Total	547	583	6.3	1.0
		Arsenic, Total	432	435	0.78	1.0
		Barium, Total	22.7	22.5	0.88	1.0
		Beryllium, Total	5.0 u	5.0 u	NC	1.0
		Calcium, Total	10600	10500	0.97	1.0
		Cadmium, Total	5.0 u	5.0 u	NC	1.0
		Chromium, Total	181	189	4.1	1.0
		Copper, Total	1050	1070	2.0	1.0
		Iron, Total	2520000	2540000	0.68	1.0
		Potassium, Total	175000	174000	0.81	1.0
		Lithium, Total	4.0 u	4.0 u	NC	1.0
		Magnesium, Total	2800	2820	0.41	1.0
		Manganese, Total	24300	24700	1.8	1.0
		Sodium, Total	7860	7420	5.7	1.0
		Nickel, Total	155	155	0.13	1.0
		Lead, Total	982	981	0.15	1.0
		SILICA , Total	2680	2880	7.2	2.1
		Antimony, Total	114	88.7	24.8	1.0
		Selenium, Total	350	373	6.2	1.0
		Vanadium, Total	14.0 u	14.0 u	NC	1.0
		Zinc, Total	216000	217000	0.41	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 05/05/08

CLIENT: TNU-HANFORD RC-007 LVL LOT #: 0804L963

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-002REP	J16MM6	Mercury, Total	0.60u	0.60u	NC	10.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 05/05/08

CLIENT: TNU-HANFORD RC-007 LVL LOT #: 0804L963

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	08L0175-LC1	Silver, LCS	491	500	UG/L	98.2
		Aluminum, LCS	5210	5000	UG/L	104.2
		Arsenic, LCS	9480	10000	UG/L	94.8
		Barium, LCS	4960	5000	UG/L	99.3
		Beryllium, LCS	243	250	UG/L	97.3
		Calcium, LCS	24800	25000	UG/L	99.3
		Cadmium, LCS	239	250	UG/L	95.7
		Chromium, LCS	487	500	UG/L	97.4
		Copper, LCS	1240	1250	UG/L	98.8
		Iron, LCS	5070	5000	UG/L	101.3
		Potassium, LCS	24900	25000	UG/L	99.6
		Lithium, LCS	5210	5000	UG/L	104.3
		Magnesium, LCS	24300	25000	UG/L	97.3
		Manganese, LCS	744	750	UG/L	99.1
		Sodium, LCS	25900	25000	UG/L	103.6
		Nickel, LCS	1930	2000	UG/L	96.7
		Lead, LCS	2410	2500	UG/L	96.3
		SILICA , LCS	9900	10700	UG/L	92.6
		Antimony, LCS	2910	3000	UG/L	97.0
		Selenium, LCS	9610	10000	UG/L	96.1
		Vanadium, LCS	2440	2500	UG/L	97.6
		Zinc, LCS	1000	1000	UG/L	100.4
LCS1	08C0074-LC1	Mercury, LCS	5.1	5.0	UG/L	102.0

Lionville Laboratory Incorporated Logbook #: 440

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 08L0175
Date/Time Initiated: 5/1/08 1100
Date/Time Completed: 5/1/08 1500
Analyst(s): MW
Matrix: Soil (Water) Other:
Instr. Type: AA (ICP)
Parameters: See Logbook

(Digested) / Undigested (circle one)
Balance #: N/A
Balance Cal Verif: Y (NA)
Hot Plate Temp: 92°

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 teflon

W.E. TW/ESI-Heo

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
0804L963-001		10ml	50ml	>2	TO	N/A	brown sediment		
001R			100						
001S	1.0ml								
002							trace sediment		
0804L907-001		100ml		<2			clear/colorless		
0804L002-001									
001R									
001S	1.0ml								
08L0175-MB1									
LC1	1.0ml								

MS 5/1/08

Spiking IDs:
MS #: 8100-04-01
02
03
6072-78-07
LCS #: 08
09
10
11

Reagent IDs:
HNO_3 E46025
HCL E45047
H_2O_2
1:1 HNO_3
1:1 HCL

File ID#: ICP17501 ICP17502

LIMS Transfer: (Y) N Updated

Data Review By/Date: PMP, 05/02/08

onville Laboratory
corporated

MERCURY PREPARATION

Logbook # 422

alyst: CED
te 4/24/08
rt Time/Temp: 0955 / 95 [4/25/08]
d Time/Temp: 1155 / 96°

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

Prep Batch: 08C0074
Worksheet: HG042501
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	NR			33mL	33mL	used 2x KMnO4
0.2 ug/L	GR	0.0667				
1.0	JI	0.334				
2.0	PC	0.667				
5.0	95	1.667				
10.0	3H	3.334				
ICV	P18	0.0834	2.5			
CCV	857	0.167	5.0			
ICB/CCB	UT					
MBI	PI					PBW174
LCI	TR	0.167	5.0			LCSW174
0804L963-001	CYD			~~33~~ 0.33mL		did not hold color &
002	ST			3.3mL		limit'd vol.
002R	71L					
002S	S	0.334	1.0			
0804L975-004	816			33mL		
009	F8					
016	154					
016R	L53					
016S	WK	0.334	1.0			
016T	A1	0.334	1.0			
017	Cm					
0804L981-001	CB2					
001R	55					
001S	PT	0.334	1.0			
0804L959-001	P18					
001R	X8					

rd:	ID	Prep Date/Time
IS	RI 6072-78-14B	4/24/08 1350
V/LCS	US 6072-78-15A	

Reviewed By/Date: [signature] 4/30/08

see book # 9768 for std traceability information

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

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

VAA-Prep1007

*Adj. pH to <2 in tube per pm (?? 4/24/08)

Page #:

000000000018

ville Laboratory
rporated

MERCURY PREPARATION

st: TP
4/24/08
Time/Temp:
ime/Temp: see pg 84

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

Logbook # 422
Prep Batch: 08L00784
Worksheet: HG042501
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.
8042959-001S	A901	0.334	1.0	33mL	33mL	
002	5GH5			~~16.5mL~~ 33mL **		
8042952-004	JS					
004R	I4					
004S	700	0.667	200			
005	503					
006	BLV					
042870-005	AP					
006	N60					
006S	76	0.667	200			
006T	417	0.667	200			
007	R					
08LT0033-L01	IC					

TP 4/24/08

ID	Prep Date/Time
CS	See page 84

Reviewed By/Date: [signature] 4/30/08

see book # 9368 for std traceability information

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

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

A-Prep1007

** did not hold color, reprepared to 33mL b/c used 2x KMnO4 TP 4/25/08

Page #:

000000019

Custody Transfer Record/Lab Work Request

Lionville Laboratory Use Only

0804L963

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LvLI

000000020

Client TNU HANFORD SAF# RC-007

Est. Final Proj. Sampling Date

Project# 11343-606-001-9999-00

Project Contact/Phone#

Lionville Laboratory Project Manager O. JOHNSON

QC SW846 Del STD TAT 7 Day

Date Rec'd 4-22-08 Date Due 4-29-08

	A		B			C		D		E					
Refrigerator #	6		3			3		3		3					
#/Type Container (Liquid / Solid)	1G		1G			1G		1P		1G					
Volume	4l		250			1000		125		125					
Preservatives	HCl		—			—		HNO3		—					
ANALYSES REQUESTED	ORGANIC: VOA	BNA	PCB	Herb		TPH Diesel		INORG: Metal Hg	CN	Nitrate					

Lionville Laboratory Use Only

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0624 X (wy 4-23-08) / 0624 N (wy 4-23-08)		OPCB			ODRO		MetⓘD		IIGN					
001	J16MM5			W	4-17-08	1415	X		X			X		X		X					
002	J16MM6			W	4-17-08	1620	X		X			X		X		X					

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

Special Instructions: Run matrix QC

Met① = HSL + Li, Sn
NOTL, CO

Special Instructions:

1. include ~~ORO~~ motor oil with DRO
4-23-08 2. 0624 X to 0624 N
3.
4.
5.
6.

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
FedEx	V. [illegible]	4/22/08	0945								

ORIGINAL REWRITTEN

COMPOSITE

nville Laboratory Use Only

18042963

Custody Transfer Record/Lab Work Request

LVLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

nt TNU HANFORD SAF# RC-007

Final Proj. Sampling Date

ject# 11343-606-001-9999-00

ject Contact/Phone#

nville Laboratory Project Manager O. JOHNSON

SW846 Del STD TAT 7Day

e Rec'd 4-22-08 Date Due 4-29-08

		A		B			C		D		E
Refrigerator #		6		3			3		3		3
#/Type Container	Liquid	1G		1G			1G		1P		1G
	Solid										
Volume		40		250			1000		125		125
Preservatives		HCL		–			–		HNO3		–
ANALYSES REQUESTED →		ORGANIC					TPH Diesel		INORG		Nitrate
		VOA	BNA	PCB	Herb				Metal Hg	CN	

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

Lionville Laboratory Use Only: A: 0624A; B: OPCB; C: ODRO; D: MeT(1); E: IIGN

Lab ID	Client ID/Description	MS	MSD	Matrix	Date Collected	Time Collected	A	B	C	D	E
001	J16MM5			W	4-17-08	1415	X	X	X	X	X
002	J16MM6			W	4-17-08	1620	X	X	X	X	X

Special Instructions: Run matrix QC

met(1) = HSL + Li, Sr
NOTL, CO

Special Instructions:
1. include motor oil (ORO) with DRO
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
FedEx	V. [signature]	4/22/08	0945					ORIGINAL REWRITTEN		"COMPOSITE WASTE"	

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-007-027	Page 1 of 1

ollector: Edmundson/Isom/Perry
Company Contact: Tom Edmundson
Telephone No.: 376-4058
Project Coordinator: KESSNER, JH
Price Code: ~~7K~~ J (no 4/21/08)
Data Turnaround: ~~15~~ 7 Days TRE 4-17-08

roject Designation: 100-N Ancillary Facilities & 190-DR ETF Analytical Data Re
Sampling Location: 1330-N Waste Pad 2nd Event
SAF No.: RC-007

e Chest No.: ERC-96-511
Field Logbook No.: EL-1516-12
COA: RD4MXX2F00
Method of Shipment: Fed Ex

hipped To: EBERLINE SERVICES / LIONVILLE
Offsite Property No.: A080238
Bill of Lading/Air Bill No.: See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS
N/A

Special Handling and/or Storage
Cool to 4c

Preservation				HNO3 to pH <2	~~HNO3 to pH <2~~	HNO3 to pH <2	Cool 4C	HCl or H2SO4 to pH <2 Coo	None	HCl to pH <2 Cool 4C			
Type of Container				G/P	~~G/P~~	G/P	aG	aGs*	G	aG			
No. of Container(s)				1	~~1~~	1	~~1~~ 1	~~2~~ 1	1	~~5~~ 1 TRE 4-17-08			
Volume				1000mL	~~1000mL~~	~~500mL~~ 125ml	~~1000mL~~ 250ml	40mL	~~250mL~~ 125ml	1000mL TRE 4-17-08			
SAMPLE ANALYSIS				Gross Alpha; Gross Beta	~~See item (1) in Special Instructions.~~ TRE 4/17/08	See item (2) in Special Instructions.	PCBs - 8082	See item (3) in Special Instructions.	Ignitability - 1010	See item (4) in Special Instructions.			
Sample No.	Matrix *	Sample Date	Sample Time										
16MM5	WATER	4-17-08	1415			✓	✓	✓	✓	✓			
16MM6	WATER	4-17-08	1620			✓	✓	✓	✓	✓			

TRE 4-17-08

CHAIN OF POSSESSION	Date/Time	Sign/Print Names Received By/Stored In	Date/Time
Relinquished By/Removed From: T.R. Edmundson	4-17-08 1850	1060 Battelle #2C	4-17-08 1850
Relinquished By/Removed From: 1060/2C 4/21/08	4/21/08 1000	Received By/Stored In: MStankovich	4/21/08 1000
Relinquished By/Removed From: WCH MStankovich	4/21/08 1500	Received By/Stored In	Fed Ex
Relinquished By/Removed From: Fed Ex	4/22/08 0945	Received By/Stored In: [illegible] Hernandez	4/22/08 0945
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

~~(1) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Antimony-125, Barium-133, Radium-226, Radium-228}~~

(2) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Aluminum, Antimony, Beryllium, Calcium, Copper, Iron, Lithium, Magnesium, Manganese, Nickel, Potassium, Silica, Sodium, Vanadium, Zinc}; Mercury - 7470 - (CV)

(3) VOA - 8260A (ETF) {1,1,1-Trichloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1-Butanol, 2-Butanone, 2-Hexanone, 2-Pentanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Benzyl alcohol, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroform, cis-1,2-Dichloroethylene, Ethyl cyanide, Methylenechloride, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, Trichloroethene, Vinyl chloride, Xylenes (total)}

(4) TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range}; TPH-Diesel Range - WTPH-D - Add On {Total petroleum hydrocarbons - motor oil (high boiling)}

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

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

LABORATORY SECTION — Received By | Title

FINAL SAMPLE DISPOSITION — Disposal Method | Disposed By | Date/Time

CH-EE-011

0000000022

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD Date: 4/22/08

Project/SAF/SOW/Release #: RC-007

LvLI Batch #: 0804L963 Sample Custodian: Kristen Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7998 4072 6890
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 3.8°	°C	Cooler # ERC-96-511
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	Metals PH Neutral
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 O-J.		Date 4-22-08	

LVLI LIONVILLE LABORATORY INC.

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-007 K1203

DATE RECEIVED: 04/22/08 LVL LOT # :08041963

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16MM5						
IGNITABILITY	001	W	08LFP009	04/17/08	04/28/08	04/28/08
J16MM6						
IGNITABILITY	002	W	08LFP009	04/17/08	04/28/08	04/28/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-007 K1203
LVL#: 0805L963

W.O.#: 11343-606-001-9999-00
Date Received: 04-22-08

INORGANIC NARRATIVE

1. This narrative covers the analysis of 2 liquid samples.

2. The samples were prepared and analyzed in accordance with the method 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 Laboratory Control Samples (LCS) were within the method criteria.

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

5/13/08
Date

njp\i04-963

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 8 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**		

* Liquid samples

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.

Inorganic Data Summary Report
Physical Testing Observation

Client: TNU-HANFORD RC-007 K1203
LVL#: 0804L963

W.O.#: 11343-601-001-9999-00
Date Received: 04-22-08

Analyte:	**Observation:**
Ignitability	Samples J16MM5 and J16MM6 did not ignite. The samples were heated to approximately 220°F. p-Xylene was used to determined the accuracy of the ignitability apparatus. The p-Xylene will ignite at 81°F +/- 1°F. For this test, the p-Xylene ignited at 82°F.

njp\i04-963.pt2

LIONVILLE LABORATORY INC.

Lionville Laboratory Use Only

0804L963

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

00000006

Client: TNU HANFORD SAF# RC-007

Est. Final Proj. Sampling Date

Project# 11343-606-001-9999-00

Project Contact/Phone#

Lionville Laboratory Project Manager: O. JOHNSON

QC: SW846 Del: STD TAT: 7Day

Date Rec'd: 4-22-08 Date Due: 4-29-08

	A	B	C	D	E
Refrigerator #	6	3	3	5	3
#/Type Container Liquid / Solid	1G	1G	1G	1P	1G
Volume	41	250	1000	125	125
Preservatives	HCL	—	—	HNO3	—
ANALYSES REQUESTED	ORGANIC: VOA (wy 4-23-08)	PCB	TPH Diesel	INORG: Metal	Sulfide
Lionville Laboratory Use Only	0624X (wy 4-23-08 0624N)	OPCB	ODRO	Met①	IIGN

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	A	B	C	D	E
001	J16MM5			W	4-17-08	1415	X	X	X	X	X
002	J16MM6			W	4-17-08	1620	X	X	X	X	X

Special Instructions: Run matrix QC

Met① = HSL + Li, Sn
NOTL, CO

Special Instructions:

1. include ~~ORO~~ motor oil with DRO
4-23-08 2. 0624X to 0624N
3.
4.
5.
6.

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
FedEx	[signature]	4/22/08	0945					ORIGINAL REWRITTEN		"COMPOSITE	

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-007-027 | Page 1 of 1

Collector: Edmundson/Isom/Perry	Company Contact: Tom Edmundson	Telephone No.: 376-4058	Project Coordinator: KESSNER, JH
Price Code: 7K/5 no 4/21/08	Data Turnaround: ~~15~~ Days 7 TRE 4-17-08		
Project Designation: 100-N Ancillary Facilities & 190-DR ETF Analytical Data Re	Sampling Location: 1330-N Waste Pad 2nd Event		SAF No.: RC-007
Ice Chest No.: ERC-96-511	Field Logbook No.: EL-1516-12	COA: RD4MXX2F00	Method of Shipment: Fed Ex
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080238		Bill of Lading/Air Bill No.: See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

Cool to 4c

SAMPLE ANALYSIS

Preservation	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	Cool 4C	HCl or H2SO4 to pH <2 Coo	None	HCl to pH <2 Cool 4C			
Type of Container	G/P	G/P	G/P	aG TRE 4-17-08	aGs*	G	aG			
No. of Container(s)	1	1	1	~~1~~ 1	~~2~~ 1	1	~~5~~ 1 TRE 4-17-08			
Volume	1000mL	1000mL	~~500mL~~ 125mL	~~1000mL~~ 250mL	40mL	~~250mL~~ 125mL TRE 4-17-08	1000mL			
	Gross Alpha; Gross Beta TRE	See item (1) in Special Instructions. 4/17/08	See item (2) in Special Instructions.	PCBs - 8082	See item (3) in Special Instructions.	Ignitability - 1010	See item (4) in Special Instructions.			
Sample No.	Matrix *	Sample Date	Sample Time							
6MM5	WATER	4-17-08	1415			✓	✓	✓	✓	✓
6MM6	WATER	4-17-08	1620			✓	✓	✓	✓	✓

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
K. Edmundson / SR Edmundson	4-17-08 1850	1060 Battelle #2C	4-17-08 1850
Relinquished By/Removed From 4/21/08 260/ZC 4/21/08	Date/Time 4/22/08 1000	Received By/Stored In MStankovich	Date/Time 1000 4/21/08
Relinquished By/Removed From WCH MStankovich	Date/Time 1500 4/21/08	Received By/Stored In FedEx	Date/Time
Relinquished By/Removed From FedEx	Date/Time 4/22/08 0945	Received By/Stored In Victor Hernandez	Date/Time 4/22/08 0945
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Antimony-125, Barium-133, Radium-226, Radium-228}

(2) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver}; ICP Metals - 6010A (Supertrace Add-On) {Aluminum, Antimony, Beryllium, Calcium, Copper, Iron, Lithium, Magnesium, Manganese, Nickel, Potassium, Silica, Sodium, Vanadium, Zinc}; Mercury - 7470 - (CV)

(3) VOA - 8260A (ETF) {1,1,1-Trichloroethane, 1,1,2-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, 1,2-Dichloroethane, 1-Butanol, 2-Butanone, 2-Hexanone, 2-Pentanone, 4-Methyl-2-Pentanone, Acetone, Benzene, Benzyl alcohol, Carbon disulfide, Carbon tetrachloride, Chlorobenzene, Chloroform, cis-1,2-Dichloroethylene, Ethyl cyanide, Methylenechloride, Tetrachloroethene, Toluene, trans-1,2-Dichloroethylene, Trichloroethene, Vinyl chloride, Xylenes (total)}

(4) TPH-Diesel Range - WTPH-D {Total petroleum hydrocarbons - diesel range}; TPH-Diesel Range - WTPH-D - Add On {Total petroleum hydrocarbons - motor oil (high boiling)}

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

Matrix *

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

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

CH-EE-011

00000000007

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD Date: 4/22/08

Project (SAF)/SOW/Release #: RC-007

LvLI Batch #: 0804L963 Sample Custodian: Vita Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7998 4072 6890
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 3.8	°C	Cooler # ERC-96-511
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	Metals PH Neutral
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 O-J-		Date 4-22-08	

LvLI LIONVILLE LABORATORY INC.