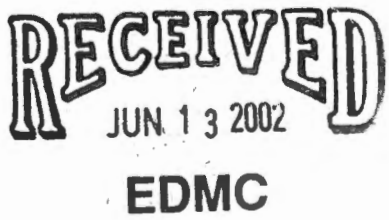
0057637 H1749

Lionville Laboratory, Inc.
VOA ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B02-055 #1749

RFW LOT # :0204L408

CLIENT ID	RFW #	MTX	PREP #	COLLECTN DATE	REC	EXT/PREP	ANALYSIS
B14HR8	001	S	02LVK122	04/16/02	04/17/02	N/A	04/17/02
B14HR9	002	S	02LVK122	04/16/02	04/17/02	N/A	04/17/02
B14HR9	002 MS	S	02LVK122	04/16/02	04/17/02	N/A	04/17/02
B14HR9	002 MSD	S	02LVK122	04/16/02	04/17/02	N/A	04/17/02
LAB QC:							
VBLKSN	MB1	S	02LVK122	N/A	N/A	N/A	04/17/02
VBLKSN	MB1 BS	S	02LVK122	N/A	N/A	N/A	04/17/02



LIONVILLE LABORATORY INC.

Client: TNU-HANFORD B02-055
LVL #: 0204L408
SDG/SAF #: H1749/B02-055

W.O. #: 11343-606-001-9999-00
Date Received: 04-17-2002

GC/MS VOLATILE

Two (2) soil (encore) samples were collected on 04-16-2002.

The samples were prepared according to method 5035. The samples and their associated QC samples were analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8260B for client specified volatile target compound Carbon Tetrachloride on 04-17-2002.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy with the exception of the some discrepancies, which have been recorded on the Sample Receipt Checklist (p.11).

2. The required analysis holding time was met.

3. All surrogate recoveries were within EPA QC limits.

4. All matrix spike recoveries were within EPA QC limits.

   All blank spike recoveries were within EPA QC limits.

   The target compounds are not included in the spiking solution. (CLP spike recoveries have been reported on the Form 3.)

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

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

7. The results for analyses have been reported as 'wet-weight' basis as per client instruction.

8. A low-level 1 ppb standard was analyzed before the sample analysis to demonstrate the low level detection of Carbon Tetrachloride.

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."

by _____ 04-22-02

J. Michael Taylor
President
Lionville Laboratory Incorporated

Date

som\group\data\voa\tnu-hanford\0204-408.doc

208 Welsh Pool Road • Lionville, PA 19341-1333 • (610) 280-3000 • Fax (610) 280-3041

GLOSSARY OF VOA DATA

DATA QUALIFIERS

U	=	Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
J	=	Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
B	=	This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
E	=	Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
D	=	Identifies all compounds identified in an analysis at a secondary dilution factor.
I	=	Interference.
NQ	=	Result qualitatively confirmed but not able to quantify.
N	=	Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
X	=	This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
Y	=	Additional qualifiers used as required are explained in the case narrative.

GLOSSARY OF VOA DATA

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 quantitation 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 quantitation modifications:

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

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

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

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

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

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

Lionville Laboratory, Inc.

Volatiles By GC/MS, Special List — Report Date: 04/22/02 09:43

RFW Batch Number: **0204L408** Client: **TNUHANFORD B02-055 H1749** Work Order: 11343606001 Page: 1a

	Cust ID:	B14HR8	B14HR9	B14HR9	B14HR9	VBLKSN	VBLKSN BS
Sample	RFW#:	001	002	002 MS	002 MSD	02LVK122-MB1	02LVK122-MB1
Information	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	0.725	1.06	0.962	1.02	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate Recovery	1,2-Dichloroethane-d4	106 %	107 %	104 %	101 %	91 %	97 %
	Toluene-d8	104 %	99 %	102 %	101 %	94 %	96 %
	Bromofluorobenzene	119 %	114 %	110 %	114 %	94 %	101 %
Methylene Chloride		1 JB	2 JB	2 BJ	3 BJ	3 J	5 BJ
Carbon Tetrachloride		0.7 U	1 U	1 U	1 U	1 U	1 U

*= Outside of EPA CLP QC limits.

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Lionville Laboratory Inc. Contract: 11343-606-001-9999-00

Lab Code: LVLI Case No.: SAS No.: SDG No.: 04L408

Matrix Spike - EPA Sample No.: B14HR9 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
1,1-Dichloroethene	48.077	0.0000	42.032	87	59-172
Trichloroethene	48.077	0.0000	48.442	101	62-137
Benzene	48.077	0.0000	48.955	102	66-142
Toluene	48.077	0.0000	48.056	100	59-139
Chlorobenzene	48.077	0.0000	49.644	103	60-133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	51.020	45.378	89	2	22	59-172
Trichloroethene	51.020	50.048	98	3	24	62-137
Benzene	51.020	50.781	100	2	21	66-142
Toluene	51.020	50.870	100	0	21	59-139
Chlorobenzene	51.020	51.289	100	3	21	60-133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

COMMENTS: _____

3B

SOIL VOLATILE BLANK SPIKE RECOVERY

Lab Name: Lionville Laboratory Inc. Contract: 11343-606-001-9999-00

Lab Code: LVLI Case No.: SAS No.: SDG No.: 04L408

Matrix Spike - EPA Sample No.: VBLKSN Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	BLANK CONCENTRATION (ug/Kg)	BS CONCENTRATION (ug/Kg)	BS % REC #	QC. LIMITS REC.
1,1-Dichloroethene	50.000	0.0000	49.174	98	59-172
Trichloroethene	50.000	0.0000	51.844	104	62-137
Benzene	50.000	0.0000	53.040	106	66-142
Toluene	50.000	0.0000	49.296	98	59-139
Chlorobenzene	50.000	0.0000	48.729	97	60-133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 5 outside limits

COMMENTS: _____

Lionville Laboratory Use Only

0204L408

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI — LIONVILLE LABORATORY INC.

Client INLL Hanford. B02-055

Est. Final Proj. Sampling Date

Project # 11343-606-001-9999-00

Project Contact/Phone #

Lionville Laboratory Project Manager OJ

QC SPEC Del STD TAT 3 day

Date Rec'd 04/17/02 Date Due 4-20-02

		A-C				D											
Refrigerator #		1				1											
#/Type Container	Liquid																
	Solid 3	Encore				4gl											
Volume	Liquid																
	Solid	5gr.				125											
Preservatives																	
ANALYSES REQUESTED →		ORGANIC							INORG								
		VOA	BNA	Pest/PCB	Herb				Metal	CN							
		↓ Lionville Laboratory Use Only ↓															
		0624x															

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0624x											
001	B14HR8			S	04/16/02	0855	3				1							
002	B14HR9			1	1	0805	3				1							

Special Instructions: SAF # B02-055

0624x - Carbon Tetrachloride + Methylenechloride

Run Matrix QC

Additional Sample - DO NOT analyze letter D for 001 and 002.

DATE/REVISIONS:

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

Lionville Laboratory Use Only

Samples were:
1) Shipped ✓ or Hand Delivered ____
Airbill # 790509185033
2) Ambient or Chilled
3) Received in Good Condition (Y) or N
4) Samples Properly Preserved (Y) or N
5) Received Within Holding Times (Y) or N

Tamper Resistant Seal was:
1) Present on Outer Package Y or (N)
2) Unbroken on Outer Package Y or N/A
3) Present on Sample (Y) or N
4) Unbroken on Sample (Y) or N
COC Record Present Upon Sample Rec't (Y) or N
Cooler Temp. 1.3 °C

Relinquished by	Received by	Date	Time
fedex	JTerry	04/17/02	0945

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL REWRITTEN		

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B02-055-1	Page 1 of 1
Collector: Jeff Gale/Doug Bowers /R. Thoren	Company Contact: Jand Borghese	Telephone No.: 372-9442	Project Coordinator: TRENT, SJ	Price Code: 8I
Project Designation: 200 Area RCRA Drilling Waste Designation	Sampling Location: 200 K East		SAF No.: B02-055	Air Quality ☐
Ice Chest No.: Shipping Jan 96-001	Field Logbook No.: EFL1133-10	COA: JRCRA14114	Method of Shipment: Fed Ex	Data Turnaround: usiness D
Shipped To: TMA/RECRA	Offsite Property No.: A0Z011Ø		Bill of Lading/Air Bill No.: See OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Possible carbon tetrachloride and methylene chloride

< 20000pCi/g per Historical Data

Special Handling and/or Storage

Cool to 4C

Preservation	Cool 4C	Cool 4C										
Type of Container	aG	P										
No. of Container(s)	1	3										
Volume	125mL	~~20ca~~ 5g MW 41.502										
SAMPLE ANALYSIS	VOA - 8260A (TCL) (Carbon tetrachloride)	VOA - 5035/8260 (TCL) (Methylenechloride)		JR Unit #								
Sample No.	Matrix *	Sample Date	Sample Time									
B14HR8	SOIL	4-16-02	0855	X	X		200E-01-0041					
B14HR9	SOIL	4-16-02	0805	X	X		200E-01-0036					

CHAIN OF POSSESSION

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
R. Thoren ERC	4-16-02 1430	FED EX	
Fed Ex	04/17/02 0945	J Perry	04/17/02 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
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

See COC comments and special instructions on SAF

Matrix *

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

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

BHI-EE-011 (03/01/2002)

LIONVILLE LABORATORY INCORPORATED
SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hanford

Purchase Order/Project:

DATE: 04/17/08

SAF# / SOW# / Release #: B02-055

Laboratory SDG #: 0204L408

NOTE: ALL ENTRIES MARKED "NO" MUST BE EXPLAINED IN THE COMMENT SECTION

1.	Custody seals on coolers or shipping container intact, signed and dated?	☐ Yes	☑ No	☐ N/A	☑ see Comment # (1)
2.	Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
3.	Airbill # recorded? 790509185033	☑ Yes	☐ No	☐ N/A	☐ see Comment #
4.	All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	☑ Yes	☐ No	☐ N/A	☑ see Comment # (2)
5.	Sample containers are intact?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
6.	Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ N/A	☑ see Comment # (3)
7.	All samples on coc received?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
8.	All sample label information matches coc?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
9.	Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	☐ Yes	☐ No	☑ N/A	☐ see Comment #
10.	Shipment meets LvLI Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	☑ Yes	☐ No	☐ N/A	☐ see Comment #
11.	Where applicable, bar code labels are affixed to coc?	☐ Yes	☐ No	☑ N/A	☐ see Comment #
12.	coc signed and dated?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
13.	coc faxed or emailed to client?	☐ Yes	☐ No	☐ N/A	☐ see Comment #
14.	Project Manager/Client contacted concerning discrepancies? (name/date)	☐ Yes	☐ No	☐ N/A	☐ see Comment #

Cooler # / temp and Comments:

Shipping Container 96-001

1.3°C

(1) Tape only. Not signed / dated.
(2) Not taped to inside of lid.
(3) Intact, Not signed / dated

Laboratory Sample Custodian: J Reay 04/17/08

Laboratory Project Manager: