





14 February 2003

Joan Kessner  
Bechtel-Hanford, Inc.  
3190 Washington Way  
MSIN H9-03  
Richland, WA 99352

**Subject: Contract No. 630  
Analytical Data Package**

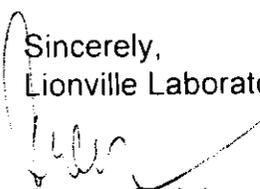
Dear Ms. Kessner:

Enclosed are the hard copy analytical reports for the batch number/fraction indicated (marked X) in the following table:

LvLI Batch #	0302L699
SDG #	H2071
SAF #	B02-024
Date Received	2-8-03
# Samples	1
Matrix	Other Solid
Volatiles	X
Semivolatiles	
Pest/PCB	
DRO	
GRO	
Metals	
Inorganics	

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

FEB 2003

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

02/08/03

Lionville Laboratory, Inc.  
VOA ANALYTICAL DATA PACKAGE FOR  
TNU-HANFORD B02-024 H2071

DATE RECEIVED: 02/08/03

LVL LOT # :0302L699

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00BT2	001	S	03LVX039	02/06/03	N/A	02/11/03
J00BT2	001 MS	S	03LVX039	02/06/03	N/A	02/11/03
J00BT2	001 MSD	S	03LVX039	02/06/03	N/A	02/11/03

LAB QC:

VBLKGJ	MB1	S	03LVX039	N/A	N/A	02/11/03
VBLKGJ	MB1 BS	S	03LVX039	N/A	N/A	02/11/03



Client: TNU-HANFORD B02-024  
LVL #: 0302L699  
SDG/SAF # H2071/B02-024

W.O. #: 11343-606-001-9999-00  
Date Received: 02-08-2003

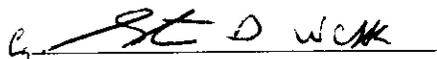
### GC/MS VOLATILE

One (1) soil sample was collected on 02-06-2003.

The sample and its associated QC samples were analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8260B for TCL volatile target compounds on 02-11-2003.

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 a sample that met LvLI's sample acceptance policy.
2. The required holding time for analysis was met.
3. Non-target compounds were detected in the sample.
4. One (1) fifteen (15) surrogate recoveries was outside EPA QC limits. The analysis of associated matrix spike duplicate fulfills the reanalysis requirement of sample J00BT2 MS.
5. All matrix spike recoveries were within EPA QC limits.
6. All blank spike recoveries were within EPA QC limits.
7. The method blank contained the common laboratory contaminant Methylene Chloride at a level less than 3x the CRQL.
8. Internal standard area and retention time criteria were met.
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."

  
J. Michael Taylor

President  
Lionville Laboratory Incorporated

02-12-03  
Date

son\group\data\voa\tnu-hanford\0302-699.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 12 pages.

02

## 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.

## 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.



## TECHNICAL FLAGS FOR MANUAL INTEGRATION

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

- MP** - Missed Peak: manually added peak not found by automatic quan program.
- PA** - Peak Assignment: quan report was changed to reflect correct peak assignment.
- RI** - Routine Integration: routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the dichlorobenzene isomers on the VOA packed column and benzo(b)fluoranthene/benzo(k)fluoranthene which are poorly resolved on the BNA column.
- SP** - Split Peak: the automatic integration improperly split the peak; a manual integration was performed to get the correct area.
- CB** - Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.
- PI** - Proper Integration: a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.



Cust ID: J00BT2 J00BT2 J00BT2 VBLKGJ VBLKGJ BS

RFW#: 001 001 MS 001 MSD 03LVX039-MB1 03LVX039-MB1

Chlorobenzene	5 U	95 %	110 %	5 U	101 %
Ethylbenzene	5 U	5 U	5 U	5 U	5 U
Styrene	5 U	5 U	5 U	5 U	5 U
Xylene (total)	5 U	5 U	5 U	5 U	5 U

\*= Outside of EPA CLP QC limits.

07

1E  
VOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J00BT2

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: \_\_\_\_\_

SAS No.: \_\_\_\_\_ SDG No.: \_\_\_\_\_

Matrix: (soil/water) SOIL

Lab Sample ID: 0302L699-001

Sample wt/vol: 5.60 (g/mL) G

Lab File ID: x021111

Level: (low/med) LOW

Date Received: 02/08/03

% Moisture: not dec. 8

Date Analyzed: 02/11/03

Column: (pack/cap) CAP

Dilution Factor: 0.893

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALKANE	18.587	20	J
2.	ALKANE	18.988	20	J

1E  
VOLATILE ORGANICS ANALYSIS SHEET  
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKGJ

Lab Name: Lionville Labs, Inc. Contract: 11343606001

Lab Code: Lionvi Case No.: \_\_\_\_\_

SAS No.: \_\_\_\_\_ SDG No.: \_\_\_\_\_

Matrix: (soil/water) SOIL

Lab Sample ID: 03LVX039-MB1

Sample wt/vol: 5.00 (g/mL) G

Lab File ID: x021106

Level: (low/med) LOW

Date Received: 02/11/03

% Moisture: not dec. 0

Date Analyzed: 02/11/03

Column: (pack/cap) CAP

Dilution Factor: 1.00

Number TICs found: 0

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

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

09



Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			B02-024-85	
Collector Doug Bowers		Company Contact Jeff Lerch	Telephone No. 373-5904	Project Coordinator KESSNER, JH	Price Code 2703 Data Turnaround	
Project Designation 618-4 Burial Ground - Anomalous Waste (Solids)		Sampling Location 300-FF-1	SAF No. B02-024	Air Quality <input type="checkbox"/> CONTACT 3 DAY OR JOAN KESSNER ASAP		
Ice Chest No. <b>ERC 01031</b>		Field Logbook No. EL-1395-7	COA RG61842600	Method of Shipment Fed EX		
Shipped To TMA/RECRA		Offsite Property No. <b>A070129</b>		Bill of Lading/Air Bill No. <b>SEE O57C</b>		
POSSIBLE SAMPLE HAZARDS/REMARKS <b>Radioactive</b> <b>Tie to JOOBT1</b> <b>Special Handling and/or Storage</b> <b>Cool 4°C</b>			Preservation <b>COOL 4C</b>			
			Type of Container <b>AGS</b>			
			No. of Container(s) <b>1</b>			
			Volume <b>500 ml</b>			
SAMPLE ANALYSIS			SPECIAL INSTRUCTIONS <b>VOA</b> <b>8-60</b>	<b>RF 2.6.03</b>		
Sample No.	Matrix *	Sample Date	Sample Time			
<del>JOOBT1</del>	OTHER SOLID	<del>2.6.03</del>		<del>X</del>		
JOOBT2	OTHER SOLID	2.6.03	1420	X		
	OTHER SOLID					
	OTHER SOLID					
	OTHER SOLID					
CHAIN OF POSSESSION			Sign/Print Names		SPECIAL INSTRUCTIONS	
Relinquished By/Removed From <i>Doug Bowers</i>	Date/Time 2-6-03	Received By/Stored In <i>Ref IA 3728</i>	Date/Time 2-6-03/1670	(H) Metals by ICP (TCLP) - 1311/0010 (Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver); Mercury (TCLP) - 1311/7990 <b>RF 2.6.03</b>  Personnel not available to relinquish samples from the 3728 Ref # <b>IA</b> on <b>2/21/03</b>		Matrix *
Relinquished By/Removed From <i>REF IA 3728</i>	Date/Time 2703 0830	Received By/Stored In <i>SIGALE/Dal</i>	Date/Time 2703 0830			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
Relinquished By/Removed From <i>SSGAL/Dal</i>	Date/Time 2703 0830	Received By/Stored In <i>FED EX</i>	Date/Time			
Relinquished By/Removed From <i>FED EX</i>	Date/Time 2.5.03 1140	Received By/Stored In <i>Paul King</i>	Date/Time 2.8.03 1140			
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time			
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time			
LABORATORY SECTION	Received By	Title	Date/Time			
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time			

# LIONVILLE LABORATORY INCORPORATED

## SAMPLE RECEIPT CHECKLIST

CLIENT: HANFORD

Purchase Order/Project:

DATE: 2-8-03

AF# / SOW# / Release #: B02-024

Laboratory SDG #: 0302699

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

- |  |   |                             |   |  |
|--|---|-----------------------------|---|--|
| 1. Custody seals on coolers or shipping container intact, signed and dated?  | <input type="checkbox"/> Yes            | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 2. Outside of coolers or shipping containers are free from damage?   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 3. Airbill # recorded?   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> 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) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 5. Sample containers are intact?   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 6. Custody seals on sample containers intact, signed and dated?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 7. All samples on coc received?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 8. All sample label information matches coc?   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 9. Laboratory QC samples designated on coc? (QC stickers placed on bottles?)   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 10. Shipment meets LvLI Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 11. Where applicable, bar code labels are affixed to coc?  | <input type="checkbox"/> Yes            | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> see Comment # |
| 12. coc signed and dated?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 13. coc will be faxed or emailed to client?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |
| 14. Project Manager/Client contacted concerning discrepancies? (name/date)   | <input type="checkbox"/> Yes            | <input type="checkbox"/> No | <input type="checkbox"/> N/A            | <input type="checkbox"/> see Comment # |

Cooler # / temp (°C) and Comments:

2-01-031 4.2°

Laboratory Sample Custodian: [Signature]

Laboratory Project Manager: