RECEIVED
JUN 10 2002
EDMC

0057263 H1691

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B99-093 H1691

DATE RECEIVED: 01/30/02 LVL LOT # :0201L881

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B140T8						
% MOISTURE	001	SO	02L%S011	01/28/02	02/06/02	02/07/02
% MOISTURE	001 REP	SO	02L%S011	01/28/02	02/06/02	02/07/02
% SOLIDS	001	SO	02L%S011	01/28/02	02/06/02	02/07/02
% SOLIDS	001 REP	SO	02L%S011	01/28/02	02/06/02	02/07/02
B140T9						
% MOISTURE	002	SO	02L%S011	01/28/02	02/06/02	02/07/02
% SOLIDS	002	SO	02L%S011	01/28/02	02/06/02	02/07/02
B140V0						
% MOISTURE	003	SO	02L%S011	01/28/02	02/06/02	02/07/02
% SOLIDS	003	SO	02L%S011	01/28/02	02/06/02	02/07/02
B140V1						
% MOISTURE	004	SO	02L%S011	01/28/02	02/06/02	02/07/02
% SOLIDS	004	SO	02L%S011	01/28/02	02/06/02	02/07/02
B140V2						
% MOISTURE	005	SO	02L%S011	01/28/02	02/06/02	02/07/02
% SOLIDS	005	SO	02L%S011	01/28/02	02/06/02	02/07/02
B140V3						
% MOISTURE	006	SO	02L%S011	01/28/02	02/06/02	02/07/02
% SOLIDS	006	SO	02L%S011	01/28/02	02/06/02	02/07/02
B140V4						
% MOISTURE	007	SO	02L%S011	01/28/02	02/06/02	02/07/02
% SOLIDS	007	SO	02L%S011	01/28/02	02/06/02	02/07/02
B140V5						
% MOISTURE	008	SO	02L%S011	01/28/02	02/06/02	02/07/02

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B99-093 H1691

DATE RECEIVED: 01/30/02 LVL LOT # :0201L881

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
% SOLIDS	008	SO	02L%S011	01/28/02	02/06/02	02/07/02

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD B99-093 H1691
LVL#: 0201L881

W.O.#: 11343-606-001-9999-00
Date Received: 01-30-02

INORGANIC NARRATIVE

1. This narrative covers the analyses of 8 solid samples.

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

3. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.

4. Sample holding times as required by the method and/or contract were met.

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

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.

for Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

02-13-02
Date

njp\i01-881

The results presented in this report relate to the analytical testing and conditions of the samples upon receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 11 pages.

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

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**

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

* = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.
MS = Matrix Spike.
MSD = Matrix Spike Duplicate.
REP = Sample Replicate
LC = Laboratory Control Sample.
NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).

3. Test Methods for Evaluating Solid Waste (USEPA SW-846).

a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).

b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).

c. Method of Soil Analysis, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).

d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).

e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.

f. Code of Federal Regulations.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 02/07/02

CLIENT: TNUHANFORD B99-093 H1691 LVL LOT #: 0201L881

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B140T8	% Moisture	34.6	%	0.01	1.0
		% Solids	65.4	%	0.01	1.0
-002	B140T9	% Moisture	45.8	%	0.01	1.0
		% Solids	54.2	%	0.01	1.0
-003	B140V0	% Moisture	41.2	%	0.01	1.0
		% Solids	58.8	%	0.01	1.0
-004	B140V1	% Moisture	26.1	%	0.01	1.0
		% Solids	73.9	%	0.01	1.0
-005	B140V2	% Moisture	14.0	%	0.01	1.0
		% Solids	86.0	%	0.01	1.0
-006	B140V3	% Moisture	41.5	%	0.01	1.0
		% Solids	58.5	%	0.01	1.0
-007	B140V4	% Moisture	6.1	%	0.01	1.0
		% Solids	93.9	%	0.01	1.0
-008	B140V5	% Moisture	8.9	%	0.01	1.0
		% Solids	91.1	%	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 02/07/02

CLIENT: TNUHANFORD B99-093 H1691

LVL LOT #: 0201L881

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	B140T8	% Moisture	34.6	34.3	0.70	1.0
		% Solids	65.4	65.7	0.37	1.0

Lionville Laboratory Use Only

0201L881

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

Client TNU-Hanford B99-093

Est. Final Proj. Sampling Date

Project # 11343-606-001-9999-00

Project Contact/Phone #

Lionville Laboratory Project Manager OJ

QC SPEC Del STD TAT 30 days

Date Rec'd 1-30-02 Date Due ~~2-28-02~~ 3-1-02

Refrigerator #		A															
#/Type Container	Liquid	~~1AG~~															
	Solid	1AG															
Volume	Liquid																
	Solid	250															
Preservatives																	
ANALYSES REQUESTED →		ORGANIC: TCL VOA	BNA	Pest/PCB	Herb				INORG: Metal	CN							
		Lionville Laboratory Use Only: OGZ4X 1% MST															

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	OGZ4X 1% MST
001	B14OT8			SO	1-28-02	1010	X
002	T9					1031	X
003	V0					1057	X
004	V1					1108	X
005	V2					1122	X
006	V3					1134	X
007	V4					1233	X
008	V5					1244	X

Special Instructions: SAF # B99-093

Run Matrix QC

DATE/REVISIONS:

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

Lionville Laboratory Use Only

Samples were:
1) Shipped ✓ or Hand Delivered
Airbill # SEE below
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
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. 3 °C

Discrepancies Between Samples Labels and COC Record? Y or (N)

NOTES: 4235 7955 0800

Relinquished by	Received by	Date	Time
FEDEX	Carla Hanf	1-30-02	1010

Relinquished by	Received by	Date	Time
COMPOSITE WASTE		ORIGINAL REWRITTEN	

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-093-39	Page 1 of 2

Collector: Doug Bowers	Company Contact: Virginia Rohay — Telephone No.: 372-9100	Project Coordinator: TRENT, SJ	Price Code: 9N — Data Turnaround: 45 Days
Project Designation: 200-ZP-2 Passive Soil Vapor Extraction - Other Solid	Sampling Location: 200 West	SAF No.: B99-093	Air Quality ☐
Ice Chest No.: ERC-01-021	Field Logbook No.: EL 1517-2 — COA: R20ZP2DP60	Method of Shipment: Federal Express	
Shipped To: TMA/RECRA	Offsite Property No.: A020089	Bill of Lading/Air Bill No.: 4235795 5-0800	

POSSIBLE SAMPLE HAZARDS/REMARKS

Samples did not originate in radiological controlled area. No total activity associated with sample/samples. RTI-29-02

Preservation	Cool 4C										
Type of Container	G										
No. of Container(s)	1										
Volume	250mL										
SAMPLE ANALYSIS	VOA - 8260A (TCL) (Carbon tetrachloride); Moisture Content - D2216										

Sample No.	Matrix *	Sample Date	Sample Time										
B140T8	OTHER SOLID	1-28-02	1010	X									
B140T9	OTHER SOLID	1-28-02	1031	X									
B140V0	OTHER SOLID	1-28-02	1057	X									
B140V1	OTHER SOLID	1-28-02	1108	X									
B140V2	OTHER SOLID	1-28-02	1122	X									

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Doug Bowers	1-29-02/1440	R of 2B 3728	1-29-02/1440
R of 2B 3728	1.29.02 0900	R Thoren	1.29.02 0900
R Thoren SRC	1.29.02 0900	FEDEX	
FEDEX	1-30-02 1010	Carl Henry	1-30-02 1010

SPECIAL INSTRUCTIONS

** Laboratory may use medium level preparation for VOA. They are to report any other halogenated compounds found.

** Laboratory must include the % Moisture data as part of all hard copy reports.

Samples stored in Ref.# 2B at the 3728 Shipping Facility on 1 128 02

Collector not available to relinquish samples on 1 129 02 for shipment.

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

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

BHI-EE-011 (10/99)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		B99-093-39	Page 2 of 2
Collector: Doug Bowers	Company Contact: Virginia Rohay	Telephone No.: 372-9100	Project Coordinator: TRENT, SJ	Price Code: 9N
Project Designation: 200-ZP-2 Passive Soil Vapor Extraction - Other Solid	Sampling Location: 200 West		SAF No.: B99-093	Air Quality ☐
Ice Chest No.: ERC-01-021	Field Logbook No.: EL 1517-2	COA: R20ZP2DP60	Method of Shipment: Federal Express	Data Turnaround: 45 Days
Shipped To: TMA/RECRA	Offsite Property No.: AØ 20089		Bill of Lading/Air Bill No.: 42357955-0880	

POSSIBLE SAMPLE HAZARDS/REMARKS
Samples did not originate in radiological controlled area. No total activity associated with sample/samples.
Special Instructions: RTe 1-29-02

Preservation	Cool 4C											
Type of Container	G											
No. of Container(s)	1											
Volume	250mL											
SAMPLE ANALYSIS	VOA - 8260A (TCL) (Carbon tetrachloride); Moisture Content - D2216											

Sample No.	Matrix *	Sample Date	Sample Time										
B140V3	OTHER SOLID		1134	X									
B140V4	OTHER SOLID		1233	X									
B140V5	OTHER SOLID		1244	X									

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Doug Bowers Doug Bowers	1-28-02/1440	R of 2B 3728	1-28-02/1440
R of 2B 3728	1.29.02 0900	R Thorsen	1.29.02 0900
R. Thorsen ERC	1.29.02 0900		
FEDEX	1-30-02 1010	Bob Hand	1-30-02 1010

SPECIAL INSTRUCTIONS
** Laboratory may use medium level preparation for VOA. They are to report any other halogenated compounds found.
** Laboratory must include the % Moisture data as part of all hard copy reports.

SAMPLES STORED IN REF.# 2B AT THE 3728 SHIPPING FACILITY ON 1/28/02 COLLECTOR NOT AVAILABLE TO RELINQUISH SAMPLES ON 1/29/02 FOR SHIPMENT.
RT 1.29.01

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

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

BHI-EE-011 (10/99)

10

Figure 1. Sample Check-in List

Date/Time Received: 1-30-02 1010

SDG#: 02011881

Work Order Number: _____ SAF# B99-093

Shipping Container ID: ERC-01-02 Chain of Custody # B99-093-39

1. Custody Seals on shipping container intact? Yes [✓] No [ ]
2. Custody Seals dated and signed? Yes [✓] No [ ]
3. Chain-of-Custody record present? Yes [✓] No [ ]
4. Cooler temperature 3°
5. Vermiculite/packing materials is Wet [✓] Dry [ ]
6. Number of samples in shipping container: 12
7. Sample holding times exceeded? Yes [ ] No [✓]

8. Samples have:
   - ✓ tape
   - ✓ custody seals
   - ___ hazard labels
   - ___ appropriate sample labels

9. Samples are:
   - ✓ in good condition
   - ___ broken
   - ___ leaking
   - ___ have air bubbles

10. Were any anomalies identified in sample receipt? Yes [ ] No [✓]
11. Description of anomalies (include sample numbers): _____

Sample Custodian/Laboratory: Carla Hemy Date: 1-30-02

Telephoned to: _____ On _____ By _____

Lionville Laboratory, Inc.
VOA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B99-093 H1691

DATE RECEIVED: 01/30/02 LVL LOT # :0201L881

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B140T8	001 M1	SO	02LVH027	01/28/02	N/A	02/01/02
B140T8	001 MS M1	SO	02LVH027	01/28/02	N/A	02/01/02
B140T8	001 MSD M1	SO	02LVH027	01/28/02	N/A	02/01/02
B140T9	002 M1	SO	02LVH027	01/28/02	N/A	02/01/02
B140V0	003 M1	SO	02LVH027	01/28/02	N/A	02/01/02
B140V1	004 M1	SO	02LVH027	01/28/02	N/A	02/01/02
B140V2	005 M1	SO	02LVH032	01/28/02	N/A	02/05/02
B140V3	006 M1	SO	02LVH027	01/28/02	N/A	02/01/02
B140V4	007 M1	SO	02LVH032	01/28/02	N/A	02/05/02
B140V5	008 M1	SO	02LVH032	01/28/02	N/A	02/05/02

LAB QC:

VBLKJC	MB1	S	02LVH027	N/A	N/A	02/01/02
VBLKJC	MB1 BS	S	02LVH027	N/A	N/A	02/01/02
VBLKJG	MB1	S	02LVH032	N/A	N/A	02/05/02
VBLKJG	MB1 BS	S	02LVH032	N/A	N/A	02/05/02

RECEIVED
FEB 2002

LIONVILLE LABORATORY INC.

Client: TNU-HANFORD B99-093
LVL #: 0201L881
SDG/SAF #: H1691/B99-093

W.O. #: 11343-606-001-9999-00
Date Received: 01-30-2002

GC/MS VOLATILE

Eight (8) solid samples were collected on 01-28-2002.

The samples and their associated QC samples were analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8260A for client specified Volatile target compounds on 02-01,05-2002.

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.

2. The analysis holding time was met.

3. Non-target compounds were detected in the samples.

4. All samples required medium level analyses and additional dilutions due to high levels of target compound.

5. All surrogate recoveries were within EPA QC limits.

6. The matrix spike recoveries were within EPA QC limits.

7. The blank spike recoveries were within EPA QC limits.

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."

by J. Michael Taylor
President
Lionville Laboratory Incorporated

02-13-02
Date

som\group\data\voa\tnu-hanford\0201-881.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 2 0 pages.

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

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.

VLI
HONVILLE LABORATORY INC.

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.

Lionville Laboratory, Inc.

Volatiles By GC/MS, Special List

Report Date: 02/12/02 11:54

RFW Batch Number: **0201L881** Client: **TNUHANFORD B99-093 H1691** Work Order: 11343606001 Page: 1a

	Cust ID:	B140T8	B140T8	B140T8	B140T9	B140V0	B140V1
Sample Information	RFW#:	001	001 MS	001 MSD	002	003	004
	Matrix:	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
	D.F.:	100	100	100	95.2	100	93.0
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
	Level:	MED	MED	MED	MED	MED	MED
Surrogate Recovery	1,2-Dichloroethane-d4	87 %	93 %	88 %	87 %	84 %	83 %
	Toluene-d8	103 %	98 %	96 %	102 %	98 %	102 %
	Bromofluorobenzene	91 %	94 %	94 %	93 %	88 %	89 %
Carbon Tetrachloride		1600000	108 %	94 %	810000	1400000	800000

	Cust ID:	B140V2	B140V3	B140V4	B140V5	VBLKJC	VBLKJC BS
Sample Information	RFW#:	005	006	007	008	02LVH027-MB1	02LVH027-MB1
	Matrix:	SOLID	SOLID	SOLID	SOLID	SOIL	SOIL
	D.F.:	9.52	87.0	1.90	1.86	2.00	2.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
	Level:	MED	MED	MED	MED	MED	MED
Surrogate Recovery	1,2-Dichloroethane-d4	94 %	86 %	93 %	95 %	91 %	92 %
	Toluene-d8	110 %	100 %	108 %	110 %	108 %	102 %
	Bromofluorobenzene	103 %	89 %	112 %	112 %	96 %	100 %
Carbon Tetrachloride		74000	1500000	2900	6400	620 U	101 %

*= Outside of EPA CLP QC limits.

Lionville Laboratory, Inc.

Volatiles By GC/MS, Special List

Report Date: 02/12/02 11:54

RFW Batch Number: **0201L881** Client: **TNUHANFORD B99-093 H1691** Work Order: 11343606001 Page: 2a

	Cust ID:	**VBLKJG**	**VBLKJG BS**
Sample Information	RFW#:	**02LVH032-MB1**	**02LVH032-MB1**
	Matrix:	SOIL	SOIL
	D.F.:	2.00	2.00
	Units:	UG/KG	UG/KG
	Level:	MED	MED

Surrogate Recovery	1,2-Dichloroethane-d4	92	%	95	%
	Toluene-d8	109	%	108	%
	Bromofluorobenzene	96	%	105	%

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Carbon Tetrachloride	620	U	97	%

*= Outside of EPA CLP QC limits.

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VOLATILE ORGANICS ANALYSIS SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B140T8

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) SOLID Lab Sample ID: 0201L881-001

Sample wt/vol: 4.00 (g/mL) G Lab File ID: h020110

Level: (low/med) MED Date Received: 01/30/02

% Moisture: not dec. 35 Date Analyzed: 02/01/02

Column: (pack/cap) CAP Dilution Factor: 100

Number TICs found: 0

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

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

1E

VOLATILE ORGANICS ANALYSIS SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B140T9

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) SOLID Lab Sample ID: 0201L881-002

Sample wt/vol: 4.20 (g/mL) G Lab File ID: h020111

Level: (low/med) MED Date Received: 01/30/02

% Moisture: not dec. 46 Date Analyzed: 02/01/02

Column: (pack/cap) CAP Dilution Factor: 95.2

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 75092	METHYLENE CHLORIDE	10.62	90000	NJ
2.	SILOXANE	22.240	100000	J

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B140V0

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) SOLID Lab Sample ID: 0201L881-003

Sample wt/vol: 4.00 (g/mL) G Lab File ID: h020112

Level: (low/med) MED Date Received: 01/30/02

% Moisture: not dec. 41 Date Analyzed: 02/01/02

Column: (pack/cap) CAP Dilution Factor: 100

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 75092	METHYLENE CHLORIDE	10.613	100000	NJ

1E

VOLATILE ORGANICS ANALYSIS SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B140V1

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) SOLID Lab Sample ID: 0201L881-004

Sample wt/vol: 4.30 (g/mL) G Lab File ID: h020113

Level: (low/med) MED Date Received: 01/30/02

% Moisture: not dec. 26 Date Analyzed: 02/01/02

Column: (pack/cap) CAP Dilution Factor: 93.0

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 75092	METHYLENE CHLORIDE	10.619	90000	NJ

1E

VOLATILE ORGANICS ANALYSIS SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B140V2

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) SOLID Lab Sample ID: 0201L881-005

Sample wt/vol: 4.20 (g/mL) G Lab File ID: h020510

Level: (low/med) MED Date Received: 01/30/02

% Moisture: not dec. 14 Date Analyzed: 02/05/02

Column: (pack/cap) CAP Dilution Factor: 9.52

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 75092	METHYLENE CHLORIDE	10.584	6000	NJ

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VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B140V3

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) SOLID Lab Sample ID: 0201L881-006

Sample wt/vol: 4.60 (g/mL) G Lab File ID: h020115

Level: (low/med) MED Date Received: 01/30/02

% Moisture: not dec. 41 Date Analyzed: 02/01/02

Column: (pack/cap) CAP Dilution Factor: 87.0

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 75092	METHYLENE CHLORIDE	10.609	100000	NJ

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B140V4

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) SOLID Lab Sample ID: 0201L881-007

Sample wt/vol: 4.20 (g/mL) G Lab File ID: h020511

Level: (low/med) MED Date Received: 01/30/02

% Moisture: not dec. 6 Date Analyzed: 02/05/02

Column: (pack/cap) CAP Dilution Factor: 1.90

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 75092	METHYLENE CHLORIDE	10.603	1000	NJ
2.	UNKNOWN	24.464	700	J

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VOLATILE ORGANICS ANALYSIS SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B140V5

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) SOLID Lab Sample ID: 0201L881-008

Sample wt/vol: 4.30 (g/mL) G Lab File ID: h020512

Level: (low/med) MED Date Received: 01/30/02

% Moisture: not dec. 9 Date Analyzed: 02/05/02

Column: (pack/cap) CAP Dilution Factor: 1.86

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 75092	METHYLENE CHLORIDE	10.603	1000	NJ

RECEIVED FEB 2002

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VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKJC

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) SOIL Lab Sample ID: 02LVH027-MB1

Sample wt/vol: 4.00 (g/mL) G Lab File ID: h020105

Level: (low/med) MED Date Received: 02/01/02

% Moisture: not dec. 0 Date Analyzed: 02/01/02

Column: (pack/cap) CAP Dilution Factor: 2.00

Number TICs found: 0

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

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

1E

VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKJG

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) SOIL Lab Sample ID: 02LVH032-MB1

Sample wt/vol: 4.00 (g/mL) G Lab File ID: h020506

Level: (low/med) MED Date Received: 02/05/02

% Moisture: not dec. 0 Date Analyzed: 02/05/02

Column: (pack/cap) CAP Dilution Factor: 2.00

Number TICs found: 0

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

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

Lionville Laboratory Use Only
0201L881

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client TNU-Hanford B99-093

Est. Final Proj. Sampling Date

Project # 11343-606-001-9999-00

Project Contact/Phone #

Lionville Laboratory Project Manager OJ

QC SPEC Del STD TAT 30 days

Date Rec'd 1-30-02 Date Due 3-1-02 ~~2-28-02~~ ~~1-30-02~~

Refrigerator #		A																
#/Type Container	Liquid	~~1AG~~	CK 1-30-02															
	Solid	1AG																
Volume	Liquid																	
	Solid	250																
Preservatives																		
ANALYSES REQUESTED →		ORGANIC								INORG								
		TCL VOA	BNA	Pest/PCB	Herb					Metal	CN							
		Lionville Laboratory Use Only																
		0624X 3% MST																

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 3% MST
001	B14OT8			SO	1-30-02	1010	X
002	T9					1031	X
003	V0					1057	X
004	V1					1108	X
005	V2					1122	X
006	V3					1139	X
007	V4					1233	X
008	V5					1244	X

Special Instructions: SAF # B99-093
Run Matrix QC

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

Lionville Laboratory Use Only

Samples were:
1) Shipped ✓ or
Hand Delivered
Airbill # See below
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
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. 3 °C

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES: 4235 7955 0800

Relinquished by	Received by	Date	Time
FEDEX	[illegible]	1-30-02	1010

Relinquished by	Received by	Date	Time
COMPOSITE WASTE		ORIGINAL REWRITTEN	

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-093-39	Page 1 of 2

Collector: Doug Bowers	Company Contact: Virginia Rohay	Telephone No.: 372-9100	Project Coordinator: TRENT, SJ
Price Code: 9N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: 200-ZP-2 Passive Soil Vapor Extraction - Other Solid	Sampling Location: 200 West	SAF No.: B99-093	
Ice Chest No.: ERC-01-021	Field Logbook No.: EL 1517-2	COA: R20ZP2DP60	Method of Shipment: Federal Express
Shipped To: TMA/RECRA	Offsite Property No.: A020089	Bill of Lading/Air Bill No.: 423557955-0800	

POSSIBLE SAMPLE HAZARDS/REMARKS

Samples did not originate in radiological controlled area. No total activity associated with sample/samples. RT1-29-02

Preservation	Cool 4C										
Type of Container	G										
No. of Container(s)	1										
Volume	250mL										
SAMPLE ANALYSIS	VOA - 8260A (TCL) (Carbon tetrachloride); Moisture Content - D2216										

Sample No.	Matrix *	Sample Date	Sample Time										
B140T8	OTHER SOLID	1-28-02	1010	X									
B140T9	OTHER SOLID	1-28-02	1031	X									
B140V0	OTHER SOLID	1-28-02	1057	X									
B140V1	OTHER SOLID	1-28-02	1108	X									
B140V2	OTHER SOLID	1-28-02	1122	X									

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Doug Bowers	1-29-02/1440	Ref 2B 3728	1-29-02/1440
Ref 2B 3728	1.29.02 0900	R Thover	1.29.02 0900
R Thover	1.29.02 0900	FEDEX	
FEDEX	1-30-02 1010	Carl Henry	1-30-02 1010

SPECIAL INSTRUCTIONS

** Laboratory may use medium level preparation for VOA. They are to report any other halogenated compounds found.

** Laboratory must include the % Moisture data as part of all hard copy reports.

Samples stored in Ref.# 2B at the 3728 Shipping Facility on 1 12 8 02
Collector not available to relinquish samples on 1 12 9 02 for shipment.

Matrix *
S=Soil
SD=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
L=Liquid
Ve=Vegetation
X=Other

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

BHI-EE-011 (10/99)

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-093-39	Page 2 of 2

Collector: Doug Bowers	Company Contact: Virginia Rohay — Telephone No.: 372-9100	Project Coordinator: TRENT, SJ	Price Code: 9N — Data Turnaround: 45 Days
Project Designation: 200-ZP-2 Passive Soil Vapor Extraction - Other Solid	Sampling Location: 200 West	SAF No.: B99-093	Air Quality ☐
Ice Chest No.: ERC.01-021	Field Logbook No.: EL 1517-2 — COA: R20ZP2DP60	Method of Shipment: Federal Express	
Shipped To: TMA/RECRA	Offsite Property No.: AØ 20089	Bill of Lading/Air Bill No.: 42357955-0880	

POSSIBLE SAMPLE HAZARDS/REMARKS
Samples did not originate in radiological controlled area. No total activity associated with sample/samples.
Special Instructions: RTe 1.29.02

Preservation	Cool 4C											
Type of Container	G											
No. of Container(s)	1											
Volume	250mL											
SAMPLE ANALYSIS	VOA - 8260A (TCL) (Carbon tetrachloride); Moisture Content - D2216											

Sample No.	Matrix *	Sample Date	Sample Time										
B140V3	OTHER SOLID		1134	X									
B140V4	OTHER SOLID		1233	X									
B140V5	OTHER SOLID		1244	X									

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From: Doug Bowers	Doug Bowers	1-28-02/1440	AP 2B 3728	1-28-02/1440
Relinquished By/Removed From: Ref 2B 3728		1.29.02 0900	Received By/Stored In: R Thorp	1.29.02 0900
Relinquished By/Removed From: R Thorp		1.29.02 0900	Received By/Stored In: ERC	1.29.02
Relinquished By/Removed From: FEDEX		1-30-02 1010	Received By/Stored In: Carl Hemp	1-30-02 1010
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
** Laboratory may use medium level preparation for VOA. They are to report any other halogenated compounds found.
** Laboratory must include the % Moisture data as part of all hard copy reports.

SAMPLES STORED IN REF.# 2B AT THE 3728 SHIPPING FACILITY ON 1/28/02 COLLECTOR NOT AVAILABLE TO RELINQUISH SAMPLES ON 1/29/02 FOR SHIPMENT.
KT 1.29.01

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

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

BHI-EE-011 (10/99)