0059550

SAF-B01-054

100 B/C Area Effluent Pipeline & Proximity Site Remediation Activities - Full Protocol

FINAL DATA PACKAGE

FAX RESULTS TO:

Dave Shea 373-1395 ____N/A_____
INITIAL/DATE

VERIFICATION OF CLIENT RECEIPT:

Phone or CC:Mail to Dave Shea _____N/A_____
INITIAL/DATE

COMPLETE COPY OF DATA PACKAGE TO:

Dave Shea X3-40 BJ
INITIAL/DATE

Dean Strom X3-40 BJ
INITIAL/DATE

Jeanette Duncan BJ
INITIAL/DATE

4/23

COMMENTS: (PLEASE INCLUDE THE FOLLOWING ON THE FAX COVER SHEET)

SDG (_H2138__) SAF-B01-054

Rad only Chem only X Rad & Chem

X Complete Partial

Waste Site/Sample Location: 1607-B-11 Septic System

RECEIVED
MAY 30 2003
EDMC

LIONVILLE LABORATORY INC.

17 April 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 #	0304L120
SDG #	H2138
SAF #	B01-054
Date Received	4-04-03
# Samples	6
Matrix	Soil
Volatiles	
Semivolatiles	X
Pest/PCB	X
DRO/KRO/GRO	
GC Alcohols	
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

RECEIVED
APR 2003

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

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RECEIVED
APR 2003

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B01-054 H2138

DATE RECEIVED: 04/04/03 LVL LOT # :0304L120

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00KW4	001	S	03LE0401	04/02/03	04/07/03	04/09/03
J00KW4	001 MS	S	03LE0401	04/02/03	04/07/03	04/09/03
J00KW4	001 MSD	S	03LE0401	04/02/03	04/07/03	04/09/03
J00KV9	002	S	03LE0401	04/02/03	04/07/03	04/09/03
J00KW0	003	S	03LE0401	04/02/03	04/07/03	04/09/03
J00KW1	004	S	03LE0401	04/02/03	04/07/03	04/09/03
J00KW2	005	S	03LE0401	04/02/03	04/07/03	04/09/03
J00KW3	006	S	03LE0401	04/02/03	04/07/03	04/09/03

LAB QC:

SBLKQW	MB1	S	03LE0401	N/A	04/07/03	04/08/03
SBLKQW	MB1 BS	S	03LE0401	N/A	04/07/03	04/08/03

LIONVILLE LABORATORY INC.

Client: TNU-HANFORD B01-054
LVL #: 0304L120
SDG/SAF # H2138/B01-054

W.O. #: 11343-606-001-9999-00
Date Received: 04-04-2003

SEMIVOLATILE

Six (6) soil samples were collected on 04-02-2003.

The samples and their associated QC samples were extracted according to Lionville Laboratory OPs based on method 3550 on 04-07-2003 and analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 04-08,09-2003.

The following is a summary of the QC results accompanying the 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. Samples were extracted and analyzed within required holding time.

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

4. Samples J00KW1 and J00KV9 required 2 and 10-fold dilution respectively due to the sample matrix.

5. All surrogate recoveries were within EPA QC limits.

6. Two (2) of twenty-two (22) matrix spike recoveries were outside EPA QC limits.

7. One (1) of eleven (11) blank spike recoveries was outside EPA QC limits.

8. Internal standard area criteria were not met for samples J00KV9 and J00KW1; however, the GC/MS instrument was inspected for possible malfunction and was judged to be functioning properly and all surrogate recoveries were within QC limits; consequently, the samples were not reanalyzed.

9. Manual integrations are performed according to OP 21-06A-125 to produce quality data with the utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").

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

Pat G

J. Michael Taylor
President
Lionville Laboratory Incorporated

04-15-03
Date

som\gorup\data\bna\tnu-hanford-0304-120.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 9 pages.

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

GLOSSARY

DATA QUALIFIERS

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

GLOSSARY

ABBREVIATIONS

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

TECHNICAL FLAGS FOR MANUAL INTEGRATION

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

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

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

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

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

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

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

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

RFW Batch Number: **0304L120** Client: **TNUHANFORD B01-054 H2138** Work Order: 11343606001 Report Date: 04/11/03 11:17 Page: 1a

	Cust ID:	J00KW4		J00KW4		J00KW4		J00KV9		J00KW0		J00KW1	
Sample Information	RFW#:	001		001 MS		001 MSD		002		003		004	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.00		1.00		1.00		10.0		1.00		2.00	
	Units:	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Surrogate Recovery	Nitrobenzene-d5	88	%	82	%	81	%	67	%	81	%	70	%
	2-Fluorobiphenyl	91	%	87	%	85	%	83	%	90	%	83	%
	Terphenyl-d14	113	%	110	%	107	%	80	%	112	%	93	%
	Phenol-d5	83	%	79	%	77	%	72	%	80	%	70	%
	2-Fluorophenol	83	%	78	%	77	%	71	%	80	%	67	%
	2,4,6-Tribromophenol	83	%	81	%	77	%	76	%	88	%	86	%
		fl		fl		fl		fl		fl		fl	
Phenol		330	U	77	%	74	%	3500	U	350	U	680	U
bis(2-Chloroethyl)ether		330	U	330	U	330	U	3500	U	350	U	680	U
2-Chlorophenol		330	U	76	%	75	%	3500	U	350	U	680	U
1,3-Dichlorobenzene		330	U	330	U	330	U	3500	U	350	U	680	U
1,4-Dichlorobenzene		330	U	75	%	73	%	3500	U	350	U	680	U
1,2-Dichlorobenzene		330	U	330	U	330	U	3500	U	350	U	680	U
2-Methylphenol		330	U	330	U	330	U	3500	U	350	U	680	U
2,2'-oxybis(1-Chloropropane)		330	U	330	U	330	U	3500	U	350	U	680	U
3- and/or 4-Methylphenol		330	U	330	U	330	U	3500	U	350	U	680	U
N-Nitroso-di-n-propylamine		330	U	74	%	73	%	3500	U	350	U	680	U
Hexachloroethane		330	U	330	U	330	U	3500	U	350	U	680	U
Nitrobenzene		330	U	330	U	330	U	3500	U	350	U	680	U
Isophorone		330	U	330	U	330	U	3500	U	350	U	680	U
2-Nitrophenol		330	U	330	U	330	U	3500	U	350	U	680	U
2,4-Dimethylphenol		330	U	330	U	330	U	3500	U	350	U	680	U
bis(2-Chloroethoxy)methane		330	U	330	U	330	U	3500	U	350	U	680	U
2,4-Dichlorophenol		330	U	330	U	330	U	3500	U	350	U	680	U
1,2,4-Trichlorobenzene		330	U	76	%	75	%	3500	U	350	U	680	U
Naphthalene		330	U	330	U	330	U	3500	U	350	U	680	U
4-Chloroaniline		330	U	330	U	330	U	3500	U	350	U	680	U
Hexachlorobutadiene		330	U	330	U	330	U	3500	U	350	U	680	U
4-Chloro-3-methylphenol		330	U	78	%	76	%	3500	U	350	U	680	U
2-Methylnaphthalene		330	U	330	U	330	U	3500	U	350	U	680	U
Hexachlorocyclopentadiene		330	U	330	U	330	U	3500	U	350	U	680	U
2,4,6-Trichlorophenol		330	U	330	U	330	U	3500	U	350	U	680	U
2,4,5-Trichlorophenol		840	U	840	U	840	U	8800	U	860	U	1700	U

*= Outside of EPA CLP QC limits.

RFW Batch Number: **0304L120** Client: **TNUHANFORD B01-054 H2138** Work Order: 11343606001 Page: 1b

Cust ID:	J00KW4		J00KW4		J00KW4		J00KV9		J00KW0		J00KW1	
RFW#:	001		001 MS		001 MSD		002		003		004	
2-Chloronaphthalene	330	U	330	U	330	U	3500	U	350	U	680	U
2-Nitroaniline	840	U	840	U	840	U	8800	U	860	U	1700	U
Dimethylphthalate	330	U	330	U	330	U	3500	U	350	U	680	U
Acenaphthylene	330	U	330	U	330	U	3500	U	350	U	680	U
2,6-Dinitrotoluene	330	U	330	U	330	U	3500	U	350	U	680	U
3-Nitroaniline	840	U	840	U	840	U	8800	U	860	U	1700	U
Acenaphthene	330	U	81	%	80	%	3500	U	350	U	680	U
2,4-Dinitrophenol	840	U	840	U	840	U	8800	U	860	U	1700	U
4-Nitrophenol	840	U	102	%	96	%	8800	U	860	U	1700	U
Dibenzofuran	330	U	330	U	330	U	3500	U	350	U	680	U
2,4-Dinitrotoluene	330	U	99 *	%	95 *	%	3500	U	350	U	680	U
Diethylphthalate	330	U	330	U	330	U	3500	U	350	U	680	U
4-Chlorophenyl-phenylether	330	U	330	U	330	U	3500	U	350	U	680	U
Fluorene	330	U	330	U	330	U	3500	U	350	U	680	U
4-Nitroaniline	840	U	840	U	840	U	8800	U	860	U	1700	U
4,6-Dinitro-2-methylphenol	840	U	840	U	840	U	8800	U	860	U	1700	U
N-Nitrosodiphenylamine (1)	330	U	330	U	330	U	3500	U	350	U	680	U
4-Bromophenyl-phenylether	330	U	330	U	330	U	3500	U	350	U	680	U
Hexachlorobenzene	330	U	330	U	330	U	3500	U	350	U	680	U
Pentachlorophenol	840	U	96	%	91	%	8800	U	860	U	1700	U
Phenanthrene	330	U	330	U	330	U	3500	U	350	U	680	U
Anthracene	330	U	330	U	330	U	3500	U	350	U	680	U
Carbazole	330	U	330	U	330	U	3500	U	350	U	680	U
Di-n-butylphthalate	76	J	68	J	71	J	3500	U	350	U	680	U
Fluoranthene	330	U	330	U	330	U	3500	U	350	U	680	U
Pyrene	330	U	103	%	99	%	3500	U	350	U	680	U
Butylbenzylphthalate	330	U	330	U	330	U	3500	U	350	U	680	U
3,3'-Dichlorobenzidine	330	U	330	U	330	U	3500	U	350	U	680	U
Benzo(a)anthracene	330	U	330	U	330	U	3500	U	350	U	680	U
Chrysene	330	U	330	U	330	U	3500	U	350	U	680	U
bis(2-Ethylhexyl)phthalate	330	U	330	U	330	U	3500	U	350	U	680	
Di-n-octyl phthalate	330	U	330	U	330	U	3500	U	350	U	680	U
Benzo(b)fluoranthene	330	U	330	U	330	U	3500	U	350	U	680	U
Benzo(k)fluoranthene	330	U	330	U	330	U	3500	U	350	U	680	U
Benzo(a)pyrene	330	U	330	U	330	U	3500	U	350	U	680	U
Indeno(1,2,3-cd)pyrene	330	U	330	U	330	U	3500	U	350	U	680	U
Dibenz(a,h)anthracene	330	U	330	U	330	U	3500	U	350	U	680	U
Benzo(g,h,i)perylene	330	U	330	U	330	U	3500	U	350	U	680	U

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

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

Report Date: 04/11/03 11:17

RFW Batch Number: **0304L120** Client: **TNUHANFORD B01-054 H2138** Work Order: 11343606001 Page: 2a

	Cust ID:	J00KW2		J00KW3		SBLKQW		SBLKQW BS	
Sample Information	RFW#:	005		006		03LE0401-MB1		03LE0401-MB1	
	Matrix:	SOIL		SOIL		SOIL		SOIL	
	D.F.:	1.00		1.00		1.00		1.00	
	Units:	ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Surrogate Recovery	Nitrobenzene-d5	72	%	71	%	80	%	84	%
	2-Fluorobiphenyl	81	%	79	%	85	%	87	%
	Terphenyl-d14	106	%	106	%	90	%	96	%
	Phenol-d5	71	%	67	%	76	%	81	%
	2-Fluorophenol	72	%	70	%	75	%	80	%
	2,4,6-Tribromophenol	80	%	77	%	76	%	86	%
Phenol		350	U	350	U	330	U	77	%
bis(2-Chloroethyl)ether		350	U	350	U	330	U	330	U
2-Chlorophenol		350	U	350	U	330	U	76	%
1,3-Dichlorobenzene		350	U	350	U	330	U	330	U
1,4-Dichlorobenzene		350	U	350	U	330	U	74	%
1,2-Dichlorobenzene		350	U	350	U	330	U	330	U
2-Methylphenol		350	U	350	U	330	U	330	U
2,2'-oxybis(1-Chloropropane)		350	U	350	U	330	U	330	U
3- and/or 4-Methylphenol		350	U	350	U	330	U	330	U
N-Nitroso-di-n-propylamine		350	U	350	U	330	U	72	%
Hexachloroethane		350	U	350	U	330	U	330	U
Nitrobenzene		350	U	350	U	330	U	330	U
Isophorone		350	U	350	U	330	U	330	U
2-Nitrophenol		350	U	350	U	330	U	330	U
2,4-Dimethylphenol		350	U	350	U	330	U	330	U
bis(2-Chloroethoxy)methane		350	U	350	U	330	U	330	U
2,4-Dichlorophenol		350	U	350	U	330	U	330	U
1,2,4-Trichlorobenzene		350	U	350	U	330	U	79	%
Naphthalene		350	U	350	U	330	U	330	U
4-Chloroaniline		350	U	350	U	330	U	330	U
Hexachlorobutadiene		350	U	350	U	330	U	330	U
4-Chloro-3-methylphenol		350	U	350	U	330	U	79	%
2-Methylnaphthalene		350	U	350	U	330	U	330	U
Hexachlorocyclopentadiene		350	U	350	U	330	U	330	U
2,4,6-Trichlorophenol		350	U	350	U	330	U	330	U
2,4,5-Trichlorophenol		870	U	880	U	840	U	840	U

*= Outside of EPA CLP QC limits.

Cust ID:	J00KW2		J00KW3		SBLKQW		SBLKQW BS	
RFW#:	005		006		03LE0401-MB1		03LE0401-MB1	
2-Chloronaphthalene	350	U	350	U	330	U	330	U
2-Nitroaniline	870	U	880	U	840	U	840	U
Dimethylphthalate	350	U	350	U	330	U	330	U
Acenaphthylene	350	U	350	U	330	U	330	U
2,6-Dinitrotoluene	350	U	350	U	330	U	330	U
3-Nitroaniline	870	U	880	U	840	U	840	U
Acenaphthene	350	U	350	U	330	U	79	%
2,4-Dinitrophenol	870	U	880	U	840	U	840	U
4-Nitrophenol	870	U	880	U	840	U	97	%
Dibenzofuran	350	U	350	U	330	U	330	U
2,4-Dinitrotoluene	350	U	350	U	330	U	95 *	%
Diethylphthalate	350	U	350	U	330	U	330	U
4-Chlorophenyl-phenylether	350	U	350	U	330	U	330	U
Fluorene	350	U	350	U	330	U	330	U
4-Nitroaniline	870	U	880	U	840	U	840	U
4,6-Dinitro-2-methylphenol	870	U	880	U	840	U	840	U
N-Nitrosodiphenylamine (1)	350	U	350	U	330	U	330	U
4-Bromophenyl-phenylether	350	U	350	U	330	U	330	U
Hexachlorobenzene	350	U	350	U	330	U	330	U
Pentachlorophenol	870	U	880	U	840	U	93	%
Phenanthrene	350	U	350	U	330	U	330	U
Anthracene	350	U	350	U	330	U	330	U
Carbazole	350	U	350	U	330	U	330	U
Di-n-butylphthalate	350	U	350	U	330	U	330	U
Fluoranthene	350	U	350	U	330	U	330	U
Pyrene	350	U	350	U	330	U	83	%
Butylbenzylphthalate	350	U	350	U	330	U	330	U
3,3'-Dichlorobenzidine	350	U	350	U	330	U	330	U
Benzo(a)anthracene	350	U	350	U	330	U	330	U
Chrysene	350	U	350	U	330	U	330	U
bis(2-Ethylhexyl)phthalate	350	U	350	U	330	U	330	U
Di-n-octyl phthalate	350	U	350	U	330	U	330	U
Benzo(b)fluoranthene	350	U	350	U	330	U	330	U
Benzo(k)fluoranthene	350	U	350	U	330	U	330	U
Benzo(a)pyrene	350	U	350	U	330	U	330	U
Indeno(1,2,3-cd)pyrene	350	U	350	U	330	U	330	U
Dibenz(a,h)anthracene	350	U	350	U	330	U	330	U
Benzo(g,h,i)perylene	350	U	350	U	330	U	330	U

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

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J00KW4

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

Client: TNUHANFORD B01-054 H2138

Matrix: (soil/water) SOIL

Lab Sample ID: 0304L120-001

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

Lab File ID: C040908

Level: (low/med) LOW

Date Received: 04/04/03

% Moisture: 0 decanted: (Y/N)__

Date Extracted: 04/07/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 04/09/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 4

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.596	100	J
2.	ALDOL CONDENSATE	7.822	100	JAB
3.	ALDOL CONDENSATE	8.341	10000	JAB
4.	ALDOL CONDENSATE	9.832	100	JAB

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J00KV9

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

Client: TNUHANFORD B01-054 H2138

Matrix: (soil/water) SOIL

Lab Sample ID: 0304L120-002

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

Lab File ID: C040820

Level: (low/med) LOW

Date Received: 04/04/03

% Moisture: 5 decanted: (Y/N)__

Date Extracted: 04/07/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 04/09/03

Injection Volume: 2.0(uL)

Dilution Factor: 10.0

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	8.296	20000	JAB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J00KW0

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

Client: TNUHANFORD B01-054 H2138

Matrix: (soil/water) SOIL

Lab Sample ID: 0304L120-003

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

Lab File ID: C040911

Level: (low/med) LOW

Date Received: 04/04/03

% Moisture: 3 decanted: (Y/N)__

Date Extracted: 04/07/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 04/09/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.405	100	J
2.	UNKNOWN	7.596	100	J
3.	ALDOL CONDENSATE	7.821	200	JAB
4.	ALDOL CONDENSATE	8.341	10000	JAB
5. 79-34-5	1,1,2,2-TETRACHLOROETHANE	9.839	200	JN

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J00KW1

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

Client: TNUHANFORD B01-054 H2138

Matrix: (soil/water) SOIL

Lab Sample ID: 0304L120-004

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

Lab File ID: C040821

Level: (low/med) LOW

Date Received: 04/04/03

% Moisture: 3 decanted: (Y/N)__

Date Extracted: 04/07/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 04/09/03

Injection Volume: 2.0(uL)

Dilution Factor: 2.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	8.332	10000	JAB

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J00KW2

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

Client: TNUHANFORD B01-054 H2138

Matrix: (soil/water) SOIL

Lab Sample ID: 0304L120-005

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

Lab File ID: C040912

Level: (low/med) LOW

Date Received: 04/04/03

% Moisture: 4 decanted: (Y/N)__

Date Extracted: 04/07/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 04/09/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN			J
2.	UNKNOWN	7.398	90	J
3.	UNKNOWN	7.597	100	J
4.	ALDOL CONDENSATE	7.814	100	JAB
5.	ALDOL CONDENSATE	8.342	10000	JAB
6. 79-34-5	1,1,2,2-TETRACHLOROETHANE	9.841	100	JN

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J00KW3

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

Client: TNUHANFORD B01-054 H2138

Matrix: (soil/water) SOIL

Lab Sample ID: 0304L120-006

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

Lab File ID: C040913

Level: (low/med) LOW

Date Received: 04/04/03

% Moisture: 5 decanted: (Y/N)__

Date Extracted: 04/07/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 04/09/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	6.356	400	JA
2.	UNKNOWN	7.404	500	J
3.	UNKNOWN	7.595	100	J
4.	ALDOL CONDENSATE	8.332	10000	JAB
5. 79-34-5	1,1,2,2-TETRACHLOROETHANE	9.839	100	JN

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKQW

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

Client: TNUHANFORD B01-054 H2138

Matrix: (soil/water) SOIL

Lab Sample ID: 03LE0401-MB1

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

Lab File ID: C040818

Level: (low/med) LOW

Date Received: 04/07/03

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

Date Extracted: 04/07/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 04/08/03

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 3

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	7.819	200	JA
2.	ALDOL CONDENSATE	8.339	10000	JA
3.	ALDOL CONDENSATE	9.821	100	JA

Lionville Laboratory Use Only

0304L120

Custody Transfer Record/Lab Work Request

LIONVILLE LABORATORY INC.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU-Hanford B01-054

Est. Final Proj. Sampling Date:

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

Project Contact/Phone #:

Lionville Laboratory Project Manager: Arlette Johnson

QC: SPEC Del: STD TAT: 7 days

Date Rec'd: 4.4.03 Date Due: 4-11-03

		A	B	C	D	E
Refrigerator #		6				1
#/Type Container	Liquid					
	Solid	1 jar	1 jar	1 jar	1 jar	1 jar
Volume	Liquid					
	Solid	250	120	60	120	60
Preservatives		—	—	—	—	—
ANALYSES REQUESTED		ORGANIC: VOA	BNA	Pest/PCB	Herb	PCB
		INORG: Metal	CN	Hex Chrome		
Lionville Laboratory Use Only			0625H	0608H	0PCB	MRCRA10 / ICR6

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	0625H	0608H	0PCB	MRCRA10	ICR6
001	J00KW4			S	4.2.03	1002	X	X	X	X	X
002	J00KV9					1017	X	X	X	X	X
003	J00KW0					1031	X	X	X	X	X
004	J00KW1					1046	X	X	X	X	X
005	J00KW2					1104	X	X	X	X	X
006	J00KW3					1104	X	X	X	X	X

Special Instructions: SAF # B01-054

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. 0.3 °C

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

NOTES:
#7915 66605 66607/0.3°C - 7915 66605 66630

Relinquished by	Received by	Date	Time
FedEx	[illegible]	4.4.03	1005

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL REWRITTEN		

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B01-054-023	Page 2 of 2

Collector: D.Shea	Company Contact: D.Shea; Telephone No.: 521-6014	Project Coordinator: KESSNER, JH	Price Code: 8L; Data Turnaround: ~~21~~ 7 Days 4/2/03
Project Designation: 100 B/C Area Effluent Pipeline & Proximity Site Remediatio	Sampling Location: 100 BC, 1607-B-11 Septic system	SAF No.: B01-054	Air Quality
Ice Chest No.: ERC 99 071	Field Logbook No.: EL-1573; COA: R607BB2F00	Method of Shipment: FEDEX	
Shipped To: TMA/RECRA	Offsite Property No.: A030177	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation			Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None		
Type of Container			G/P	G/P	G/P	aG	aG	aG	G/P	G/P		
No. of Container(s)			1	0 DWS 4/1/03	1	1	1	1	1	1		
Volume			120mL	120mL	60mL	250g	120g	60mL	500mL	60mL		
SAMPLE ANALYSIS			See item (1) in Special Instructions.	ICP Metals - 6010A (Add-on) {Chromium, Lead}; Mercury - 7471 - (CV)	Chromium Hex - 7196	Semi-VOA - 8270A (TCL)	Pesticides - 8081	PCBs - 8082	See item (2) in Special Instructions. DWS 4/1/03	Gross Alpha; Gross Beta		
Sample No.	Matrix *	Sample Date	Sample Time									
J00KW4	SOIL	4/2/03	1002	✓	✓	✓	✓	✓	✓	✓	✓	

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	[signature]	4/2/03 1652	Fridge 3B	4/2/03 1652
Relinquished By/Removed From	REF 3B 4303	0900	SJGA [signature] 4303	0900
Relinquished By/Removed From	SJGA [signature] 4303	0900	FED EX	
Relinquished By/Removed From	Fed Ex	4-4-03/1005	[signature]	4-4-03/1005
Relinquished By/Removed From			Received By/Stored In	
Relinquished By/Removed From			Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Selenium, Silver}
(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241, ~~Silver-108 metastable~~, Uranium-238}
DWS 4/1/03

Personnel not available to relinquish samples from the 3728 Ref # 3B on 4/3/03

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

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B01-054-023	Page 1 of 2

Collector: D.Shea	Company Contact: D.Shea — Telephone No.: 521-6014	Project Coordinator: KESSNER, JH	Price Code: 8L — Data Turnaround: ~~21~~ 7 Days 4/2/03
Project Designation: 100 B/C Area Effluent Pipeline & Proximity Site Remediatio	Sampling Location: 100 BC, 1607-B-11 Septic system	SAF No.: B01-054	Air Quality:
Ice Chest No.: ERC 99 071	Field Logbook No.: EL-1573 — COA: R607BB2F00	Method of Shipment: FED EX	
Shipped To: TMA/RECRA	Offsite Property No.: A030177	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation			Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None		
Type of Container			G/P	G/P	G/P	aG	aG	aG	G/P	G/P		
No. of Container(s)			1	1 Todd 4/1/03	1	1	1	1	1	1		
Volume			120mL	120mL	60mL	250g	120g	60mL	500mL	500mL		
SAMPLE ANALYSIS			See item (1) in Special Instructions.	ICP Metals - 6010A (Add-on) {Chromium, Lead}; Mercury - 7471 - (CV)	Chromium Hex - 7196	Semi-VOA - 8270A (TCL)	Pesticides - 8081	PCBs - 8082	See item (2) in Special Instructions.	Gross Alpha; Gross Beta		
Sample No.	Matrix *	Sample Date	Sample Time									
J00KV9	SOIL	4/2/03	1017	✓	✓	✓	✓	✓	✓	✓	✓	
J00KW0	SOIL	↓	1031	✓	✓	✓	✓	✓	✓	✓	✓	
J00KW1	SOIL		1046	✓	✓	✓	✓	✓	✓	✓	✓	
J00KW2	SOIL		1104	✓	✓	✓	✓	✓	✓	✓	✓	
J00KW3	SOIL		1104	✓	✓	✓	✓	✓	✓	✓	✓	

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	DWShea DWShea	4/2/03 1652	Fridge 3B	4/2/03 1652
Relinquished By/Removed From	REF 3B	4303 0900	SJGALLEGOS	4303 0900
Relinquished By/Removed From	SJGALLEGOS	4303 0900	FED EX	
Relinquished By/Removed From	[illegible]	4-4-03/1005	[illegible]	4-4-03/1005
Relinquished By/Removed From			Received By/Stored In	
Relinquished By/Removed From			Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Selenium, Silver}
(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241, ~~Silver-108 metastable~~, Uranium-238}

DWS 4/1/03

Personnel not available to relinquish samples from the 3728 Ref # 3B on 4/5/03

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	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

DATE: 4.4.03

Purchase Order/Project:

SAF# / SOW# / Release #: B01-054

Laboratory SDG #: 0304L120

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 #
2. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
3. Airbill # recorded?	☑ 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 #
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 #
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 will be 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 (°C) and Comments:

ERC 99-071 / 0.3°C

ERC 02-403 / 0.8°C

Laboratory Sample Custodian: D. Grimes

Laboratory Project Manager:

20

RECEIVED
APR 2003

Lionville Laboratory, Inc.
PEST/PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B01-054 H2138

DATE RECEIVED: 04/04/03 LVL LOT # :0304L120

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00KW4	001	S	03LE0402	04/02/03	04/07/03	04/09/03
J00KW4	001 MS	S	03LE0402	04/02/03	04/07/03	04/09/03
J00KW4	001 MSD	S	03LE0402	04/02/03	04/07/03	04/09/03
J00KV9	002	S	03LE0402	04/02/03	04/07/03	04/09/03
J00KW0	003	S	03LE0402	04/02/03	04/07/03	04/09/03
J00KW1	004	S	03LE0402	04/02/03	04/07/03	04/09/03
J00KW2	005	S	03LE0402	04/02/03	04/07/03	04/09/03
J00KW3	006	S	03LE0402	04/02/03	04/07/03	04/09/03

LAB QC:

PBLKQC	MB1	S	03LE0402	N/A	04/07/03	04/09/03
PBLKQC	MB1 BS	S	03LE0402	N/A	04/07/03	04/09/03

JBr 4/11/03

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD B01-054
LVL #: 0304L120
SDG/SAF #: H2138/B01-054

W.O. #: 11343-606-001-9999-00
Date Received: 04-04-03

PESTICIDE

The set of samples consisted of six (6) soil samples collected on 04-02-03.

The samples and their associated QC samples were extracted on 04-07-03 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 04-09-03. The extraction procedure was based on method 3540 and the extracts were analyzed based on method 8081A.

The following is a summary of the QC results accompanying the 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. All required holding times for extraction and analysis have been met.

3. Sample J00KV9 received a Florisil and a Sulfur cleanup.

4. The method blank was below the reporting limits for all target compounds.

5. One (1) of twenty (20) surrogate recoveries was outside QC limits; however, the surrogate recovery acceptance criteria were met (i.e., no more than one outlier per sample).

6. One (1) of six (6) blank spike recoveries was outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

7. Three (3) of twelve (12) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

8. All initial calibrations associated with this data set were within acceptance criteria .

9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 14 pages.

10 I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy 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

4/11/03
Date

pef\r:\group\data\pest\tnu hanford\04L-120.pes

LIONVILLE LABORATORY INC.

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 03GC105

Initiator: Bryce Santoro
Date: 4/9/03
Client: TNV

Batch: 0304L120
Samples: BS, MS
Method: SW846/MCAWW/CLP/

Parameter: 0608H
Matrix: Soil
Prep Batch: 03E0402

1. Reason for SDR

a. COC Discrepancy __ Tech Profile Error __ Client Request __ Sampler Error on C-O-C __ Transcription Error __ Wrong Test Code __ Other _____

b. General Discrepancy

__ Missing Sample/Extract* __ Container Broken __ Wrong Sample Pulled __ Label ID's Illegible
__ Hold Time Exceeded __ Insufficient Sample* __ Preservation Wrong __ Received Past Hold
__ Improper Bottle Type __ Not Amenable to Analysis

Note*: Verified by [Log-In] or [Prep Group] (circle)...signature/date: _____

c. Problem (Include all relevant specific results; attach data if necessary)

(1) High Endrin recoveries in MS and BS. MSD is good
(2) High Dieldrin and DDT recoveries in MS. MSD and BS are good
All samples clean.

2. Known or Probable Causes(s)

3. Discussion and Proposed Action Other Description: Unrate

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

4. Project Manager Instructions...signature/date: 4/9/03

__ 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: 4/9/03 Other Explanation:

__ Verified re-[log][leach][extract][digest][analysis] (circle)
✓ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

When Final Action has been recorded, forward original to QA Specialist for distribution and filing.

Route	Distribution of Completed SDR	Route	Distribution of Completed SDR
__	X Initiator	__	__ Metals: Beegle
__	X Lab General Manager: M. Taylor	__	__ Inorganic: Perrone
✓	X Project Mgr: Stone/Johnson/Haslett	__	__ GC/LC: Kiger
__	X Technical Mgr: Wesson/Daniels	__	__ MS: Rychlak/Layman
__	X QA (file)	__	__ Log-in: Melnic
__	__ Data Management: Feldman	__	__ Admin: Soos
__	__ Sample Prep: Beegle/Kiger	__	__ Other: _____

A

GLOSSARY OF PESTICIDE/PCB 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.

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.

SP = Indicates Spiked Compound.

GLOSSARY OF PESTICIDE/PCB DATA

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.

R:/SHARE/HPLC/PESTICIDE/PCBGLOS

Lionville Laboratory, Inc.

Pesticide/PCBs by GC, CLP List

Report Date: 04/09/03 12:26

RFW Batch Number: **0304L120** Client: **TNUHANFORD B01-054 H2138** Work Order: 11343606001 Page: 1

	Cust ID:	J00KW4	J00KW4	J00KW4	J00KV9	J00KW0	J00KW1
Sample Information	RFW#:	001	001 MS	001 MSD	002	003	004
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	95 %	115 %	100 %	100 %	100 %	110 %
	Decachlorobiphenyl	105 %	135 * %	100 %	95 %	105 %	115 %
		fl	fl	fl	fl	fl	fl
Alpha-BHC		1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Beta-BHC		1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Delta-BHC		1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
gamma-BHC (Lindane)		1.7 U	92 %	84 %	1.7 U	1.7 U	1.7 U
Heptachlor		1.7 U	124 %	96 %	1.7 U	1.7 U	1.7 U
Aldrin		1.7 U	114 %	90 %	1.7 U	1.7 U	1.7 U
Heptachlor epoxide		1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Endosulfan I		1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Dieldrin		3.3 U	128 * %	96 %	3.5 U	3.5 U	3.4 U
4,4'-DDE		3.3 U	3.3 U	3.3 U	3.5 U	3.5 U	3.4 U
Endrin		3.3 U	153 * %	114 %	3.5 U	3.5 U	3.4 U
Endosulfan II		3.3 U	3.3 U	3.3 U	3.5 U	3.5 U	3.4 U
4,4'-DDD		3.3 U	3.3 U	3.3 U	3.5 U	3.5 U	3.4 U
Endosulfan sulfate		3.3 U	3.3 U	3.3 U	3.5 U	3.5 U	3.4 U
4,4'-DDT		3.3 U	128 * %	98 %	3.5 U	3.5 U	3.4 U
Methoxychlor		17 U	17 U	17 U	17 U	17 U	17 U
Endrin ketone		3.3 U	3.3 U	3.3 U	3.5 U	3.5 U	3.4 U
Endrin aldehyde		3.3 U	3.3 U	3.3 U	3.5 U	3.5 U	3.4 U
alpha-Chlordane		1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
gamma-Chlordane		1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Toxaphene		170 U	170 U	170 U	170 U	170 U	170 U

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

Lionville Laboratory, Inc.

Pesticide/PCBs by GC, CLP List

Report Date: 04/09/03 12:26

RFW Batch Number: **0304L120** Client: **TNUHANFORD B01-054 H2138** Work Order: 11343606001 Page: 2

	Cust ID:	J00KW2	J00KW3	PBLKQC	PBLKQC BS
Sample Information	RFW#:	005	006	03LE0402-MB1	03LE0402-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	105 %	105 %	100 %	110 %
	Decachlorobiphenyl	105 %	110 %	100 %	120 %
Alpha-BHC		1.7 U	1.7 U	1.7 U	1.7 U
Beta-BHC		1.7 U	1.7 U	1.7 U	1.7 U
Delta-BHC		1.7 U	1.7 U	1.7 U	1.7 U
gamma-BHC (Lindane)		1.7 U	1.7 U	1.7 U	92 %
Heptachlor		1.7 U	1.7 U	1.7 U	112 %
Aldrin		1.7 U	1.7 U	1.7 U	100 %
Heptachlor epoxide		1.7 U	1.7 U	1.7 U	1.7 U
Endosulfan I		1.7 U	1.7 U	1.7 U	1.7 U
Dieldrin		3.5 U	3.5 U	3.3 U	115 %
4,4'-DDE		3.5 U	3.5 U	3.3 U	3.3 U
Endrin		3.5 U	3.5 U	3.3 U	138 * %
Endosulfan II		3.5 U	3.5 U	3.3 U	3.3 U
4,4'-DDD		3.5 U	3.5 U	3.3 U	3.3 U
Endosulfan sulfate		3.5 U	3.5 U	3.3 U	3.3 U
4,4'-DDT		3.5 U	3.5 U	3.3 U	109 %
Methoxychlor		17 U	17 U	17 U	17 U
Endrin ketone		3.5 U	3.5 U	3.3 U	3.3 U
Endrin aldehyde		3.5 U	3.5 U	3.3 U	3.3 U
alpha-Chlordane		1.7 U	1.7 U	1.7 U	1.7 U
gamma-Chlordane		1.7 U	1.7 U	1.7 U	1.7 U
Toxaphene		170 U	170 U	170 U	170 U

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

Lionville Laboratory Use Only

0304L120

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI LIONVILLE LABORATORY INC.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU-Hanford B01-054

Est. Final Proj. Sampling Date:

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

Project Contact/Phone #:

Lionville Laboratory Project Manager: Arlette Johnson

QC: SPEC Del: STD TAT: 7days

Date Rec'd: 4.4.03 Date Due: 4-11-03

		A	B	C	D	E
Refrigerator #		6				
#/Type Container	Liquid					
	Solid	1aq	1aq	1aq	1aq	1aq
Volume	Liquid					
	Solid	250	120	60	120	60
Preservatives		—	—	—	—	—
ANALYSES REQUESTED		ORGANIC: VOA	BNA	Pest/PCB	Herb	PCB
		INORG: Metal	CN	Hex Chrome		
Lionville Laboratory Use Only			0625H	0608H		0PCB
						MRCRA10
						IcR6

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	0625H	0608H	0PCB	MRCRA10	IcR6
001	JOOKW4			S	4.2.03	1002	X	X	X	X	X
002	JOOKV9					1017	X	X	X	X	X
003	JOOKW0					1031	X	X	X	X	X
004	JOOKW1					1046	X	X	X	X	X
005	JOOKW2					1104	X	X	X	X	X
006	JOOKW3					1104	X	X	X	X	X

Special Instructions: SAF # B01-054

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. 0.3 °C

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

NOTES:

#7915 66605 66607/0.8°C - 7915 66605 66630

Relinquished by	Received by	Date	Time
Fed Ex	[illegible]	4.4.03	1005

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL REWRITTEN		

Bechtel Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

B01-054-023

Collector: D.Shea	Company Contact: D.Shea	Telephone No.: 521-6014	Project Coordinator: KESSNER, JH
Price Code: 8L	Data Turnaround: 7 ~~21~~ Days 4/2/03	Air Quality	
Project Designation: 100 B/C Area Effluent Pipeline & Proximity Site Remediatio	Sampling Location: 100 BC, 1607-B-11 Septic system	SAF No.: B01-054	
Ice Chest No.: ERC 99 071	Field Logbook No.: EL-1573	COA: R607BB2F00	Method of Shipment: FED EX
Shipped To: TMA/RECRA	Offsite Property No.: A030177		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G/P	G/P		
No. of Container(s)	1	0 DWS 4/1/03	1	1	1	1	1	1		
Volume	120mL	120mL	60mL	250g	120g	60mL	500mL	60mL		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	ICP Metals - 6010A (Add-on) {Chromium, Lead}; Mercury - 7471 - (CV)	Chromium Hex - 7196	Semi-VOA - 8270A (TCL)	Pesticides - 8081	PCBs - 8082	See item (2) in Special Instructions.	Gross Alpha; Gross Beta		

Sample No.	Matrix *	Sample Date	Sample Time										
J00KW4	SOIL	4/2/03	1002	✓	✓	✓	✓	✓	✓	✓	✓		

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: [signature]	4/2/03 1652	Fridge 3B	4/2/03 1652
Relinquished By/Removed From: REF 3B	4303 0900	Received By/Stored In: S.J. GALES [signature]	4303 0900
Relinquished By/Removed From: S.J. GALES [signature]	4303 0900	Received By/Stored In: FED EX	
Relinquished By/Removed From: FED EX	4-4-03/1005	Received By/Stored In: [signature]	4-4-03/1005
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Selenium, Silver}
(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241, ~~Silver-108 metastable~~, Uranium-238}
DWS 4/1/03

Personnel not available to relinquish samples from the 3728 Ref # 3B on 4/3/03

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

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

Bechtel Hanford Inc. | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** | B01-054-023

Collector: D.Shea	Company Contact: D.Shea	Telephone No.: 521-6014	Project Coordinator: KESSNER, JH
Price Code: 8L	Data Turnaround: Air Quality 7 ~~21~~ Days 4/2/03		
Project Designation: 100 B/C Area Effluent Pipeline & Proximity Site Remediatio	Sampling Location: 100 BC, 1607-B-11 Septic system		SAF No.: B01-054
Ice Chest No.: ERC 99 071	Field Logbook No.: EL-1573	COA: R607BB2F00	Method of Shipment: FED EX
Shipped To: TMA/RECRA	Offsite Property No.: A030177		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation			Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None		
Type of Container			G/P	G/P	G/P	aG	aG	aG	G/P	G/P		
No. of Container(s)			1	1	1	1	1	1	1	1		
Volume			120mL	120mL	60mL	250g	120g	60mL	500mL	500mL		
SAMPLE ANALYSIS			See item (1) in Special Instructions.	ICP Metals - 6010A (Add-on) {Chromium, Lead}; Mercury - 7471 - (CV)	Chromium Hex - 7196	Semi-VOA - 8270A (TCL)	Pesticides - 8081	PCBs - 8082	See item (2) in Special Instructions.	Gross Alpha; Gross Beta		
Sample No.	Matrix *	Sample Date	Sample Time									
J00KV9	SOIL	4/2/03	1017	✓	✓	✓	✓	✓	✓	✓		
J00KW0	SOIL		1031	✓	✓	✓	✓	✓	✓	✓		
J00KW1	SOIL		1046	✓	✓	✓	✓	✓	✓	✓		
J00KW2	SOIL		1104	✓	✓	✓	✓	✓	✓	✓		
J00KW3	SOIL		1104	✓	✓	✓	✓	✓	✓	✓		

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
DWSHEA DWSHEA	4/2/03 1652	Fridge 3B	4/2/03 1652
REF 3B	4303 0900	SIGNATURE	4303 0900
SIGNATURE	4303 0900	FED EX	
Fed Ex	4.4.03/1005	[illegible]	4.4.03/1005

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Selenium, Silver}
(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241, ~~Silver-108 metastable~~, Uranium-238}

DWS 4/1/03

Personnel not available to relinquish samples from the 3728 Ref # 3B on 4/3/03

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

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

From: SHIPPING DEPT (509)376-7768
FLUOR HANFORD
2355 STEVENS DR BLDG 1162

RICHLAND, WA, 99352

REVENUE BARCODE

FedEx.

To: RECRA LAB NET (610)280-3012

208 WELCH POOL ROAD
PROPERTY CONTROL# A030177
LIONVILLE, PA, 19341

SHIP DATE: 03APR03
WEIGHT: 73 LBS

#ERC 02-403 / 0.8

Ref: R607BB2F00

DELIVERY ADDRESS BARCODE(FEDEX-EDR)

TRK # 7915 6665 6607 FORM 0201

FedEx PRIORITY OVERNIGHT

PHL

FRI
A2

Deliver by:
04APR03

19341-PA-US XB NMZA

Shipping Label

Vie

1. Use the "Print" feature from your browser to send this page to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping label pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is $500, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

12

From: SHIPPING DEPT (509)376-7768
FLUOR HANFORD
2355 STEVENS DR BLDG 1162

RICHLAND, WA, 99352

REVENUE BARCODE

FedEx.

To: RECRA LAB NET (610)280-3012

SHIP DATE: 03APR03
WEIGHT: 43 LBS

208 WELCH POOL ROAD
PROPERTY CONTROL# A030177
LIONVILLE, PA, 19341

#CRC 99-071 / 0.3°C

Ref: R607BB2F00

DELIVERY ADDRESS BARCODE(FEDEX-EDR)

TRK # 7915 6665 6630 FORM 0201

FedEx PRIORITY OVERNIGHT

FRI
A2

PHL

19341-PA-US XB NMZA

Deliver by:
04APR03

Shipping Label

Vie

1. Use the "Print" feature from your browser to send this page to your laser or inkjet printer.
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LIONVILLE LABORATORY INCORPORATED
SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hanford

DATE: 4.4.03

Purchase Order/Project:

SAF# / SOW# / Release #: B01-054

Laboratory SDG #: 0304L120

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 #
2. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
3. Airbill # recorded?	☑ 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 #
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 #
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 will be 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 (°C) and Comments:

ERC 99-071 / 0.3°C

ERC 02-403 / 0.8°C

Laboratory Sample Custodian: D. Grimes

Laboratory Project Manager:

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B01-054 H2138

RECEIVED
APR 2003

DATE RECEIVED: 04/04/03 LVL LOT # :0304L120

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00KW4	001	S	03LE0402	04/02/03	04/07/03	04/09/03
J00KW4	001 MS	S	03LE0402	04/02/03	04/07/03	04/09/03
J00KW4	001 MSD	S	03LE0402	04/02/03	04/07/03	04/09/03
J00KV9	002	S	03LE0402	04/02/03	04/07/03	04/09/03
J00KW0	003	S	03LE0402	04/02/03	04/07/03	04/10/03
J00KW1	004	S	03LE0402	04/02/03	04/07/03	04/10/03
J00KW2	005	S	03LE0402	04/02/03	04/07/03	04/09/03
J00KW3	006	S	03LE0402	04/02/03	04/07/03	04/09/03

LAB QC:

PBLKQC	MB1	S	03LE0402	N/A	04/07/03	04/09/03
PBLKQC	MB1 BS	S	03LE0402	N/A	04/07/03	04/09/03

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD B01-054
LVL #: 0304L120
SDG/SAF #: H2138/B01-054

W.O. #: 11343-606-001-9999-00
Date Received: 04-04-03

PCB

The set of samples consisted of six (6) soil samples collected on 04-02-03.

The samples and their associated QC samples were extracted on 04-07-03 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 04-09,10-03. The extraction procedure was based on method 3540 and the extracts were analyzed based on method 8082.

The following is a summary of the QC results accompanying the 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. All required holding times for extraction and analysis have been met.

3. All samples and their associated QC samples received a Sulfuric Acid cleanup.

4. The method blank was below the reporting limits for all target compounds.

5. All surrogate recoveries were within acceptance criteria.

6. All blank spike recoveries were within acceptance criteria.

7. All matrix spike recoveries were within acceptance criteria.

8. All initial calibrations associated with this data set were within acceptance criteria .

9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

10 I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy 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

4/14/03
Date

pef\r:\group\data\pest\tnu hanford\04L-120.pcb

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 11 pages.

GLOSSARY OF PESTICIDE/PCB 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.

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.

SP = Indicates Spiked Compound.

GLOSSARY OF PESTICIDE/PCB DATA

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.

R:/SHARE/HPLC/PESTICIDE/PCBGLOS

Lionville Laboratory, Inc.

PCBs by GC

Report Date: 04/10/03 13:27

RFW Batch Number: **0304L120** Client: **TNUHANFORD B01-054 H2138** Work Order: 11343606001 Page: 1

	Cust ID:	J00KW4	J00KW4	J00KW4	J00KV9	J00KW0	J00KW1
Sample Information	RFW#:	001	001 MS	001 MSD	002	003	004
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	90 %	85 %	95 %	95 %	85 %	95 %
	Decachlorobiphenyl	100 %	100 %	105 %	90 %	95 %	105 %
Aroclor-1016		33 U	95 %	100 %	35 U	35 U	34 U
Aroclor-1221		67 U	67 U	67 U	70 U	69 U	69 U
Aroclor-1232		33 U	33 U	33 U	35 U	35 U	34 U
Aroclor-1242		33 U	33 U	33 U	35 U	35 U	34 U
Aroclor-1248		33 U	33 U	33 U	35 U	35 U	34 U
Aroclor-1254		33 U	33 U	33 U	35 U	35 U	34 U
Aroclor-1260		33 U	99 %	102 %	35 U	35 U	34 U

	Cust ID:	J00KW2	J00KW3	PBLKQC	PBLKQC BS
Sample Information	RFW#:	005	006	03LE0402-MB1	03LE0402-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	95 %	95 %	90 %	90 %
	Decachlorobiphenyl	95 %	100 %	100 %	105 %
Aroclor-1016		35 U	35 U	33 U	99 %
Aroclor-1221		70 U	70 U	67 U	67 U
Aroclor-1232		35 U	35 U	33 U	33 U
Aroclor-1242		35 U	35 U	33 U	33 U
Aroclor-1248		35 U	35 U	33 U	33 U
Aroclor-1254		35 U	35 U	33 U	33 U
Aroclor-1260		35 U	35 U	33 U	102 %

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

Lionville Laboratory Use Only

0304L120

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI LIONVILLE LABORATORY INC.

9

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU-Hanford B01-054

Est. Final Proj. Sampling Date:

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

Project Contact/Phone #:

Lionville Laboratory Project Manager: Arlette Johnson

QC: SPEC Del: STD TAT: 7 days

Date Rec'd: 4.4.03 Date Due: 4-11-03

		A	B	C	D	E
Refrigerator #		6				1
#/Type Container	Liquid					
	Solid	1 jar	1 jar	1 jar	1 jar	1 jar
Volume	Liquid					
	Solid	250	120	60	120	60
Preservatives		—	—	—	—	—
ANALYSES REQUESTED →		ORGANIC: VOA	BNA	Pest/PCB	Herb	PCB
		INORG: Metal	CN	Hex Chrome		
Lionville Laboratory Use Only			8625H	8080H		OPCB	MRCRA10	ICR6

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	8625H	8080H	OPCB	MRCRA10	ICR6
001	J00KW4			S	4.2.03	1002	X	X	X	X	X
002	J00KV9					1017	X	X	X	X	X
003	J00KW0					1031	X	X	X	X	X
004	J00KW1					1046	X	X	X	X	X
005	J00KW2					1104	X	X	X	X	X
006	J00KW3					1104	X	X	X	X	X

Special Instructions: SAF # B01-054

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. 0.3 °C

Discrepancies Between Samples Labels and COC Record? Y or N

NOTES: #7915 6665 6607/0.8°C - #7915 6665 6630

Relinquished by	Received by	Date	Time
FedEx	D Johnson	4.4.03	1005

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL REWRITTEN		

Bechtel Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

B01-054-023

Collector: D.Shea	Company Contact: D.Shea	Telephone No.: 521-6014	Project Coordinator: KESSNER, JH
Price Code: 8L	Data Turnaround: 7 ~~21~~ Days 4/2/03	Air Quality	
Project Designation: 100 B/C Area Effluent Pipeline & Proximity Site Remediatio	Sampling Location: 100 BC, 1607-B-11 Septic system		SAF No.: B01-054
Ice Chest No.: ERC 99 071	Field Logbook No.: EL-1573	COA: R607BB2F00	Method of Shipment: FED EX
Shipped To: TMA/RECRA	Offsite Property No.: A030177		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G/P	G/P		
No. of Container(s)	1	0 DWS 4/1/03	1	1	1	1	1	1		
Volume	120mL	120mL	60mL	250g	120g	60mL	500mL	60mL		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	ICP Metals - 6010A (Add-on) {Chromium, Lead}; Mercury - 7471 - (CV)	Chromium Hex - 7196	Semi-VOA - 8270A (TCL)	Pesticides - 8081	PCBs - 8082	See item (2) in Special Instructions. DWS 4/1/03	Gross Alpha; Gross Beta		
Sample No. / Matrix * / Sample Date / Sample Time										
J00KW4 / SOIL / 4/2/03 / 1002	✓	✓	✓	✓	✓	✓	✓	✓		

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	[signature]	4/2/03 1652	Fridge 3B	4/2/03 1652
Relinquished By/Removed From	REF 3B	4303 0900	S.J.GALE [signature]	4303 0900
Relinquished By/Removed From	S.J.GALE [signature]	4303 0900	FED EX	
Relinquished By/Removed From	FED EX	4-4-03/1005	[signature]	4-4-03/1005
Relinquished By/Removed From			Received By/Stored In	
Relinquished By/Removed From			Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Selenium, Silver}
(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241, ~~Silver-108 metastable~~, Uranium-238} DWS 4/1/03

Personnel not available to relinquish samples from the 3728 Ref # 3B on 4/3/03

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

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

Collector	Company Contact	Telephone No.	Project Coordinator	Price Code	Data Turnaround
D.Shea	D.Shea	521-6014	KESSNER, JH	8L	7 ~~21~~ Days 4/2/03

Project Designation	Sampling Location	SAF No.	Air Quality
100 B/C Area Effluent Pipeline & Proximity Site Remediatio	100 BC, 1607-B-11 Septic system	B01-054	

Ice Chest No.	Field Logbook No.	COA	Method of Shipment
ERC 99 071	EL-1573	R607BB2F00	FED EX

Shipped To	Offsite Property No.	Bill of Lading/Air Bill No.
TMA/RECRA	A030177	SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation			Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None		
Type of Container			G/P	G/P	G/P	aG	aG	aG	G/P	G/P		
No. of Container(s)			1	1 DWS 4/1/03	1	1	1	1	1	1		
Volume			120mL	120mL	60mL	250g	120g	60mL	500mL	60mL		
SAMPLE ANALYSIS			See item (1) in Special Instructions.	ICP Metals - 6010A (Add-on) {Chromium, Lead}; Mercury - 7471 - (CV)	Chromium Hex - 7196	Semi-VOA - 8270A (TCL)	Pesticides - 8081	PCBs - 8082	See item (2) in Special Instructions. DWS 4/1/03	Gross Alpha; Gross Beta		
Sample No.	Matrix *	Sample Date	Sample Time									
J00KV9	SOIL	4/2/03	1017	✓	✓	✓	✓	✓	✓	✓	✓	
J00KW0	SOIL	↓	1031	✓	✓	✓	✓	✓	✓	✓	✓	
J00KW1	SOIL	↓	1046	✓	✓	✓	✓	✓	✓	✓	✓	
J00KW2	SOIL	↓	1104	✓	✓	✓	✓	✓	✓	✓	✓	
J00KW3	SOIL	↓	1104	✓	✓	✓	✓	✓	✓	✓	✓	

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	DWShea DWShea	4/2/03 1652	Fridge 3B	4/2/03 1652
Relinquished By/Removed From	REF 3B	4303 0900	SJGALE	4303 0900
Relinquished By/Removed From	SJGALE	4303 0900	FED EX	
Relinquished By/Removed From	Fed Ex	4.4.03/1005	[illegible]	4.4.03/1005
Relinquished By/Removed From			Received By/Stored In	
Relinquished By/Removed From			Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Selenium, Silver}
(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241, ~~Silver-108 metastable~~, Uranium-238}
DWS 4/1/03

Personnel not available to relinquish samples from the 3728 Ref # 3B on 4/5/03

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

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

From: SHIPPING DEPT (509)376-7768
FLUOR HANFORD
2355 STEVENS DR BLDG 1162

RICHLAND, WA, 99352

REVENUE BARCODE

FedEx.

To: RECRA LAB NET (610)280-3012

208 WELCH POOL ROAD
PROPERTY CONTROL# A030177
LIONVILLE, PA, 19341

SHIP DATE: 03APR03
WEIGHT: 73 LBS

ERC 02-403 / 0.

Ref: R607BB2F00

DELIVERY ADDRESS BARCODE(FEDEX-EDR)

TRK # 7915 6665 6607 5QSM 0201

FedEx **PRIORITY OVERNIGHT**

FRI
A2
Deliver by:
04APR03

PHL

19341-PA-US **XB NMZA**

Shipping Label

Vie

1. Use the "Print" feature from your browser to send this page to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping label pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com. FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery, misdelivery, or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim. Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental, consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss. Maximum for items of extraordinary value is $500, e.g. jewelry, precious metals, negotiable instruments and other items listed in our Service Guide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

From: SHIPPING DEPT (509)376-7768
FLUOR HANFORD
2355 STEVENS DR BLDG 1162

RICHLAND, WA, 99352

REVENUE BARCODE

FedEx.

To: RECRA LAB NET (610)280-3012

208 WELCH POOL ROAD
PROPERTY CONTROL# A030177
LIONVILLE, PA, 19341

SHIP DATE: 03APR03
WEIGHT: 43 LBS

#CRC 99-071 / 0.3%

Ref: R607BB2F00

DELIVERY ADDRESS BARCODE(FEDEX-EDR)

TRK # 7915 6665 6630 E98M 0201

FedEx PRIORITY OVERNIGHT

PHL

FRI
A2
Deliver by:
04APR03

19341-PA-US XB NMZA

Shipping Label

Vie

1. Use the "Print" feature from your browser to send this page to your laser or inkjet printer.
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LIONVILLE LABORATORY INCORPORATED
SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hanford

DATE: 4.4.03

Purchase Order/Project:

SAF# / SOW# / Release #: B01-054

Laboratory SDG #: 03041120

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 #
2. Outside of coolers or shipping containers are free from damage?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
3. Airbill # recorded?	☒ 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 #
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 #
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 LvL1 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 will be 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 (°C) and Comments:

ERC 99-071 / 0.3°C

ERC 02-403 / 0.8°C

Laboratory Sample Custodian: D. Ignacio

Laboratory Project Manager:

11

RECEIVED
APR 2003

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B01-054 H2138

DATE RECEIVED: 04/04/03 LVL LOT # :0304L120

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00KW4						
SILVER, TOTAL	001	S	03L0186	04/02/03	04/08/03	04/09/03
SILVER, TOTAL	001 REP	S	03L0186	04/02/03	04/08/03	04/09/03
SILVER, TOTAL	001 MS	S	03L0186	04/02/03	04/08/03	04/09/03
ARSENIC, TOTAL	001	S	03L0186	04/02/03	04/08/03	04/09/03
ARSENIC, TOTAL	001 REP	S	03L0186	04/02/03	04/08/03	04/09/03
ARSENIC, TOTAL	001 MS	S	03L0186	04/02/03	04/08/03	04/09/03
BARIUM, TOTAL	001	S	03L0186	04/02/03	04/08/03	04/09/03
BARIUM, TOTAL	001 REP	S	03L0186	04/02/03	04/08/03	04/09/03
BARIUM, TOTAL	001 MS	S	03L0186	04/02/03	04/08/03	04/09/03
CADMIUM, TOTAL	001	S	03L0186	04/02/03	04/08/03	04/09/03
CADMIUM, TOTAL	001 REP	S	03L0186	04/02/03	04/08/03	04/09/03
CADMIUM, TOTAL	001 MS	S	03L0186	04/02/03	04/08/03	04/09/03
CHROMIUM, TOTAL	001	S	03L0186	04/02/03	04/08/03	04/09/03
CHROMIUM, TOTAL	001 REP	S	03L0186	04/02/03	04/08/03	04/09/03
CHROMIUM, TOTAL	001 MS	S	03L0186	04/02/03	04/08/03	04/09/03
MERCURY, TOTAL	001	S	03C0078	04/02/03	04/09/03	04/10/03
LEAD, TOTAL	001	S	03L0186	04/02/03	04/08/03	04/09/03
LEAD, TOTAL	001 REP	S	03L0186	04/02/03	04/08/03	04/09/03
LEAD, TOTAL	001 MS	S	03L0186	04/02/03	04/08/03	04/09/03
SELENIUM, TOTAL	001	S	03L0186	04/02/03	04/08/03	04/09/03
SELENIUM, TOTAL	001 REP	S	03L0186	04/02/03	04/08/03	04/09/03
SELENIUM, TOTAL	001 MS	S	03L0186	04/02/03	04/08/03	04/09/03
J00KV9						
SILVER, TOTAL	002	S	03L0186	04/02/03	04/08/03	04/09/03
ARSENIC, TOTAL	002	S	03L0186	04/02/03	04/08/03	04/09/03
BARIUM, TOTAL	002	S	03L0186	04/02/03	04/08/03	04/09/03
CADMIUM, TOTAL	002	S	03L0186	04/02/03	04/08/03	04/09/03
CHROMIUM, TOTAL	002	S	03L0186	04/02/03	04/08/03	04/09/03
MERCURY, TOTAL	002	S	03C0078	04/02/03	04/09/03	04/10/03
MERCURY, TOTAL	002 REP	S	03C0078	04/02/03	04/09/03	04/10/03
MERCURY, TOTAL	002 MS	S	03C0078	04/02/03	04/09/03	04/10/03
LEAD, TOTAL	002	S	03L0186	04/02/03	04/08/03	04/09/03
SELENIUM, TOTAL	002	S	03L0186	04/02/03	04/08/03	04/09/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B01-054 H2138

DATE RECEIVED: 04/04/03 LVL LOT # :0304L120

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00KW0						
SILVER, TOTAL	003	S	03L0186	04/02/03	04/08/03	04/09/03
ARSENIC, TOTAL	003	S	03L0186	04/02/03	04/08/03	04/09/03
BARIUM, TOTAL	003	S	03L0186	04/02/03	04/08/03	04/09/03
CADMIUM, TOTAL	003	S	03L0186	04/02/03	04/08/03	04/09/03
CHROMIUM, TOTAL	003	S	03L0186	04/02/03	04/08/03	04/09/03
MERCURY, TOTAL	003	S	03C0078	04/02/03	04/09/03	04/10/03
LEAD, TOTAL	003	S	03L0186	04/02/03	04/08/03	04/09/03
SELENIUM, TOTAL	003	S	03L0186	04/02/03	04/08/03	04/09/03
J00KW1						
SILVER, TOTAL	004	S	03L0186	04/02/03	04/08/03	04/09/03
ARSENIC, TOTAL	004	S	03L0186	04/02/03	04/08/03	04/09/03
BARIUM, TOTAL	004	S	03L0186	04/02/03	04/08/03	04/09/03
CADMIUM, TOTAL	004	S	03L0186	04/02/03	04/08/03	04/09/03
CHROMIUM, TOTAL	004	S	03L0186	04/02/03	04/08/03	04/09/03
MERCURY, TOTAL	004	S	03C0078	04/02/03	04/09/03	04/10/03
LEAD, TOTAL	004	S	03L0186	04/02/03	04/08/03	04/09/03
SELENIUM, TOTAL	004	S	03L0186	04/02/03	04/08/03	04/09/03
J00KW2						
SILVER, TOTAL	005	S	03L0186	04/02/03	04/08/03	04/09/03
ARSENIC, TOTAL	005	S	03L0186	04/02/03	04/08/03	04/09/03
BARIUM, TOTAL	005	S	03L0186	04/02/03	04/08/03	04/09/03
CADMIUM, TOTAL	005	S	03L0186	04/02/03	04/08/03	04/09/03
CHROMIUM, TOTAL	005	S	03L0186	04/02/03	04/08/03	04/09/03
MERCURY, TOTAL	005	S	03C0078	04/02/03	04/09/03	04/10/03
LEAD, TOTAL	005	S	03L0186	04/02/03	04/08/03	04/09/03
SELENIUM, TOTAL	005	S	03L0186	04/02/03	04/08/03	04/09/03
J00KW3						
SILVER, TOTAL	006	S	03L0186	04/02/03	04/08/03	04/09/03
ARSENIC, TOTAL	006	S	03L0186	04/02/03	04/08/03	04/09/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B01-054 H2138

DATE RECEIVED: 04/04/03 LVL LOT # :0304L120

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BARIUM, TOTAL	006	S	03L0186	04/02/03	04/08/03	04/09/03
CADMIUM, TOTAL	006	S	03L0186	04/02/03	04/08/03	04/09/03
CHROMIUM, TOTAL	006	S	03L0186	04/02/03	04/08/03	04/09/03
MERCURY, TOTAL	006	S	03C0078	04/02/03	04/09/03	04/10/03
LEAD, TOTAL	006	S	03L0186	04/02/03	04/08/03	04/09/03
SELENIUM, TOTAL	006	S	03L0186	04/02/03	04/08/03	04/09/03

LAB QC:

SILVER LABORATORY	LC1 BS	S	03L0186	N/A	04/08/03	04/09/03
SILVER, TOTAL	MB1	S	03L0186	N/A	04/08/03	04/09/03
ARSENIC LABORATORY	LC1 BS	S	03L0186	N/A	04/08/03	04/09/03
ARSENIC, TOTAL	MB1	S	03L0186	N/A	04/08/03	04/09/03
BARIUM LABORATORY	LC1 BS	S	03L0186	N/A	04/08/03	04/09/03
BARIUM, TOTAL	MB1	S	03L0186	N/A	04/08/03	04/09/03
CADMIUM LABORATORY	LC1 BS	S	03L0186	N/A	04/08/03	04/09/03
CADMIUM, TOTAL	MB1	S	03L0186	N/A	04/08/03	04/09/03
CHROMIUM LABORATORY	LC1 BS	S	03L0186	N/A	04/08/03	04/09/03
CHROMIUM, TOTAL	MB1	S	03L0186	N/A	04/08/03	04/09/03
MERCURY LABORATORY	LC1 BS	S	03C0078	N/A	04/09/03	04/10/03
MERCURY, TOTAL	MB1	S	03C0078	N/A	04/09/03	04/10/03
LEAD LABORATORY	LC1 BS	S	03L0186	N/A	04/08/03	04/09/03
LEAD, TOTAL	MB1	S	03L0186	N/A	04/08/03	04/09/03
SELENIUM LABORATORY	LC1 BS	S	03L0186	N/A	04/08/03	04/09/03
SELENIUM, TOTAL	MB1	S	03L0186	N/A	04/08/03	04/09/03

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD B01-054
LVL#: 0304L120
SDG/SAF#: H2138/B01-054

W.O.#: 11343-606-001-9999-00
Date Received: 04-04-03

METALS CASE NARRATIVE

1. This narrative covers the analyses of 6 soil samples.

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

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

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

5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits.

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

7. All preparation/method blanks (MB) were within method criteria {less than the Practical Quantitation Limit (3X the IDL), MB value less than 5% of the RCRA limit, or samples 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. All matrix spike (MS) recoveries were within the 75-125% control limits. Refer to the Inorganics Accuracy Report.

11. The duplicate analyses for 4 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

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 17 pages.

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

12. For the purposes of this report, the data has been reported to the Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.

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.

for Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

04-13-03
Date

gmb/m04-120

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this Lot#: 0304L120

Leaching Procedure: __1310 __1311 __1312 __Other:_____

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

Metals Digestion Methods: __3005A __3010A __3015 __3020A ✓3050B __3051 __200.7 __SS17
__Other: _____

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
Aluminum	__6010B		__200.7				__99
Antimony	✓6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	✓6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	✓6010B		__200.7				__99
Beryllium	__6010B		__200.7				__99
Bismuth	__6010B [1]		__200.7 [1]			__1620	__99
Boron	__6010B		__200.7				__99
Cadmium	✓6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	✓6010B		__200.7				__99
Chromium	✓6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	__6010B		__200.7				__99
Copper	__6010B	__7211 [5]	__200.7	__220.2			__99
Iron	__6010B		__200.7				__99
Lead	✓6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	__6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	__6010B		__200.7				__99
Manganese	__6010B		__200.7				__99
Mercury	__7470A [3]	✓7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	__6010B		__200.7				__99
Nickel	__6010B		__200.7				__99
Potassium	__6010B	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010B [1]		__200.7 [1]			__1620	__99
Selenium	✓6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	__6010B [1]		__200.7			__1620	__99
Silica	✓6010B		__200.7			__1620	__99
Silver	✓6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	__6010B	__7770 [4]	__200.7	__273.1 [4]			__99
Strontium	__6010B		__200.7				__99
Thallium	__6010B	__7841 [5]	__200.7	__279.2__200.9			__99
Tin	__6010B		__200.7				__99
Titanium	__6010B		__200.7				__99
Uranium	__6010B [1]		__200.7 [1]			__1620	__99
Vanadium	__6010B		__200.7				__99
Zinc	__6010B		__200.7				__99
Zirconium	__6010B [1]		__200.7 [1]			__1620	__99

Other:_____ **Method:**_____

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

ANALYTICAL METAL METHODS

1. Not included in the method element list.

2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, approximately 0.3 grams of sample is taken to a final volume of 50 mL (including all reagents).

3. Flame AA.

4. Graphite Furnace AA.

L-WI-033/N-04/98

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 04/11/03

CLIENT: TNUHANFORD B01-054 H2138 LVL LOT #: 0304L120

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J00KW4	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	0.33 u	MG/KG	0.33	1.0
		Barium, Total	1.5	MG/KG	0.009	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	0.25	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	0.32	MG/KG	0.25	1.0
		Selenium, Total	0.34 u	MG/KG	0.34	1.0
-002	J00KV9	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	5.9	MG/KG	0.36	1.0
		Barium, Total	76.5	MG/KG	0.01	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	14.0	MG/KG	0.06	1.0
		Mercury, Total	0.03	MG/KG	0.02	1.0
		Lead, Total	10.3	MG/KG	0.27	1.0
		Selenium, Total	0.37 u	MG/KG	0.37	1.0
-003	J00KW0	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	3.6	MG/KG	0.36	1.0
		Barium, Total	52.8	MG/KG	0.01	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	10.7	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	8.0	MG/KG	0.26	1.0
		Selenium, Total	0.37 u	MG/KG	0.37	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 04/11/03

CLIENT: TNUHANFORD B01-054 H2138 LVL LOT #: 0304L120

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	J00KW1	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	3.1	MG/KG	0.35	1.0
		Barium, Total	48.6	MG/KG	0.01	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	8.2	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	6.3	MG/KG	0.26	1.0
		Selenium, Total	0.36 u	MG/KG	0.36	1.0
-005	J00KW2	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	3.7	MG/KG	0.37	1.0
		Barium, Total	54.0	MG/KG	0.01	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	10.6	MG/KG	0.06	1.0
		Mercury, Total	0.02	MG/KG	0.02	1.0
		Lead, Total	7.6	MG/KG	0.27	1.0
		Selenium, Total	0.38 u	MG/KG	0.38	1.0
-006	J00KW3	Silver, Total	0.07 u	MG/KG	0.07	1.0
		Arsenic, Total	3.4	MG/KG	0.33	1.0
		Barium, Total	52.9	MG/KG	0.009	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	9.7	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Lead, Total	7.6	MG/KG	0.24	1.0
		Selenium, Total	0.34 u	MG/KG	0.34	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 04/11/03

CLIENT: TNUHANFORD B01-054 H2138 LVL LOT #: 0304L120

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	03L0186-MB1	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	0.35 u	MG/KG	0.35	1.0
		Barium, Total	0.05	MG/KG	0.01	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	0.13	MG/KG	0.06	1.0
		Lead, Total	0.26 u	MG/KG	0.26	1.0
		Selenium, Total	0.36 u	MG/KG	0.36	1.0
BLANK1	03C0078-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 04/11/03

CLIENT: TNUHANFORD B01-054 H2138

LVL LOT #: 0304L120

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J00KW4	Silver, Total	4.4	0.08u	4.5	97.8	1.0
		Arsenic, Total	167	0.33u	180	92.7	1.0
		Barium, Total	170	1.5	180	93.3	1.0
		Cadmium, Total	4.2	0.04u	4.5	93.3	1.0
		Chromium, Total	17.5	0.25	18.0	95.8	1.0
		Lead, Total	42.5	0.32	45.1	93.5	1.0
		Selenium, Total	165	0.34u	180	91.3	1.0
-002	J00KV9	Mercury, Total	0.18	0.03	0.15	96.8	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 04/11/03

CLIENT: TNUHANFORD B01-054 H2138 LVL LOT #: 0304L120

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J00KW4	Silver, Total	0.08u	0.07u	NC	1.0
		Arsenic, Total	0.33u	0.38	NC	1.0
		Barium, Total	1.5	1.1	30.8	1.0
		Cadmium, Total	0.04u	0.04u	NC	1.0
		Chromium, Total	0.25	0.22	13.4	1.0
		Lead, Total	0.32	0.24	25.6	1.0
		Selenium, Total	0.34u	0.32u	NC	1.0
-002REP	J00KV9	Mercury, Total	0.03	0.02	46.8	1.0

QC
4/11/03

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 04/11/03

CLIENT: TNUHANFORD B01-054 H2138

LVL LOT #: 0304L120

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	03L0186-LC1	Silver, LCS	49.4	50.0	MG/KG	98.8
		Arsenic, LCS	956	1000	MG/KG	95.6
		Barium, LCS	490	500	MG/KG	98.1
		Cadmium, LCS	24.3	25.0	MG/KG	97.2
		Chromium, LCS	49.9	50.0	MG/KG	99.8
		Lead, LCS	242	250	MG/KG	97.0
		Selenium, LCS	939	1000	MG/KG	93.9
LCS1	03C0078-LC1	Mercury, LCS	6.2	6.2	MG/KG	100.6

Lionville Laboratory Use Only

0304L120

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI LIONVILLE LABORATORY INC.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU-Hanford B01-054

Est. Final Proj. Sampling Date:

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

Project Contact/Phone #:

Lionville Laboratory Project Manager: Arlette Johnson

QC: SPEC Del: STD TAT: 7days

Date Rec'd: 4.4.03 Date Due: 4-11-03

		A	B	C	D	E
Refrigerator #		6	—	—	—	1
#/Type Container	Liquid					
	Solid	1aq	1aq	1aq	1aq	1aq
Volume	Liquid					
	Solid	250	120	60	120	60
Preservatives		—	—	—	—	—

ANALYSES REQUESTED →

ORGANIC					INORG		
VOA	BNA	Pest/PCB	Herb	PCB	Metal	CN	Hex Chrome

Lionville Laboratory Use Only

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	0625H	0608H	0PCB	MRCRA10	ICR6
001	J00KW4			S	4.2.03	1002	X	X	X	X	X
002	J00KV9					1017	X	X	X	X	X
003	J00KW0					1031	X	X	X	X	X
004	J00KW1					1046	X	X	X	X	X
005	J00KW2					1104	X	X	X	X	X
006	J00KW3					1104	X	X	X	X	X

Special Instructions: SAF # B01-054

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. 0.3 °C

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

NOTES:

#7915 (0605 (0607 (0.3°C - 7915 (0605 (0630

Relinquished by	Received by	Date	Time
Fed Ex	[illegible]	4.4.03	1005

Relinquished by	Received by	Date	Time
COMPOSITE WASTE			

ORIGINAL REWRITTEN

14

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B01-054-023	Page 2 of 2

Collector: D.Shea	Company Contact: D.Shea — Telephone No.: 521-6014	Project Coordinator: KESSNER, JH	Price Code: 8L — Data Turnaround: 7 ~~21~~ Days 4/2/03
Project Designation: 100 B/C Area Effluent Pipeline & Proximity Site Remediatio	Sampling Location: 100 BC, 1607-B-11 Septic system	SAF No.: B01-054	Air Quality
Ice Chest No.: ERC 99 071	Field Logbook No.: EL-1573 — COA: R607BB2F00	Method of Shipment: FED EX	
Shipped To: TMA/RECRA	Offsite Property No.: A030177	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G/P	G/P		
No. of Container(s)	1	0 DWS 4/1/03	1	1	1	1	1	1		
Volume	120mL	120mL	60mL	250g	120g	60mL	500mL	60mL		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	ICP Metals - 6010A (Add-on) {Chromium, Lead}; Mercury - 7471 - (CV)	Chromium Hex - 7196	Semi-VOA - 8270A (TCL)	Pesticides - 8081	PCBs - 8082	See item (2) in Special Instructions. DWS 4/1/03	Gross Alpha; Gross Beta		

Sample No.	Matrix *	Sample Date	Sample Time										
J00KW4	SOIL	4/2/03	1002	✓	✓	✓	✓	✓	✓	✓	✓		

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: [illegible]	4/2/03 1652	Fridge 3B	4/2/03 1652
Relinquished By/Removed From: REF 3B	4303 0900	S.J.GALLOWAY	4303 0900
Relinquished By/Removed From: S.J.GALLOWAY	4303 0900	FED EX	
Relinquished By/Removed From: Fed Ex	4.4.03/1005	[illegible]	4.4.03/1005
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Selenium, Silver}
(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241, ~~Silver-108 metastable~~, Uranium-238}
DWS 4/1/03

Personnel not available to relinquish samples from the 3728 Ref # 3B on 4/3/03

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B01-054-023	Page 1 of 2

Collector: D.Shea	Company Contact: D.Shea — Telephone No.: 521-6014	Project Coordinator: KESSNER, JH	Price Code: 8L — Data Turnaround: Air Quality 7 ~~21~~ Days 4/2/03
Project Designation: 100 B/C Area Effluent Pipeline & Proximity Site Remediatio	Sampling Location: 100 BC, 1607-B-11 Septic system	SAF No.: B01-054	
Ice Chest No.: ERC 99 071	Field Logbook No.: EL-1573 — COA: R607BB2F00	Method of Shipment: FED EX	
Shipped To: TMA/RECRA	Offsite Property No.: A030177	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G/P	G/P		
No. of Container(s)	1	1 ~~0~~ 4/1/03	1	1	1	1	1	1		
Volume	120mL	120mL	60mL	250g	120g	60mL	500mL	60mL		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	ICP Metals - 6010A (Add-on) {Chromium, Lead}; Mercury - 7471 - (CV)	Chromium Hex - 7196	Semi-VOA - 8270A (TCL)	Pesticides - 8081	PCBs - 8082	See item (2) in Special Instructions.	Gross Alpha; Gross Beta		

Sample No.	Matrix *	Sample Date	Sample Time										
J00KV9	SOIL	4/2/03	1017	✓	✓	✓	✓	✓	✓	✓	✓		
J00KW0	SOIL	↓	1031	✓	✓	✓	✓	✓	✓	✓	✓		
J00KW1	SOIL		1046	✓	✓	✓	✓	✓	✓	✓	✓		
J00KW2	SOIL		1104	✓	✓	✓	✓	✓	✓	✓	✓		
J00KW3	SOIL		1104	✓	✓	✓	✓	✓	✓	✓	✓		

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By/Removed From: DWShea DWShea	Received By/Stored In: Fridge 3B	4/2/03 1652
Relinquished By/Removed From: REF 3B	Received By/Stored In: SJGALE	4303 0900
Relinquished By/Removed From: SJGALE	Received By/Stored In: FED EX	4303 0900
Relinquished By/Removed From: Fed Ex	Received By/Stored In: [illegible]	4.4.03/1005
Relinquished By/Removed From	Received By/Stored In	
Relinquished By/Removed From	Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Selenium, Silver}
(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241, ~~Silver-108 metastable~~, Uranium-238}

DWS 4/1/03

Personnel not available to relinquish samples from the 3728 Ref # 3B on 4/3/03

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	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 **DATE:** 4.4.03

Purchase Order/Project:

SAF# / SOW# / Release #: B01-054

Laboratory SDG #: 03041120

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 #
2. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	☐ N/A	☐ see Comment #
3. Airbill # recorded?	☑ 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 #
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 #
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 will be 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 (°C) and Comments:

ERC 99-071 / 0.3°C

ERC 02-403 / 0.8°C

Laboratory Sample Custodian: D. Grimes

Laboratory Project Manager:

RECEIVED
APR 2003

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B01-054 H2138

DATE RECEIVED: 04/04/03 LVL LOT # :0304L120

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00KW4						
% SOLIDS	001	S	03L%S047	04/02/03	04/07/03	04/08/03
CHROMIUM VI	001	S	03LVI020	04/02/03	04/08/03	04/08/03
CHROMIUM VI	001 REP	S	03LVI020	04/02/03	04/08/03	04/08/03
CHROMIUM VI	001 MS	S	03LVI020	04/02/03	04/08/03	04/08/03
CHROMIUM VI	001 MSD	S	03LVI020	04/02/03	04/08/03	04/08/03
J00KV9						
% SOLIDS	002	S	03L%S047	04/02/03	04/07/03	04/08/03
CHROMIUM VI	002	S	03LVI020	04/02/03	04/08/03	04/08/03
J00KW0						
% SOLIDS	003	S	03L%S047	04/02/03	04/07/03	04/08/03
CHROMIUM VI	003	S	03LVI020	04/02/03	04/08/03	04/08/03
J00KW1						
% SOLIDS	004	S	03L%S047	04/02/03	04/07/03	04/08/03
% SOLIDS	004 REP	S	03L%S047	04/02/03	04/07/03	04/08/03
CHROMIUM VI	004	S	03LVI020	04/02/03	04/08/03	04/08/03
J00KW2						
% SOLIDS	005	S	03L%S047	04/02/03	04/07/03	04/08/03
CHROMIUM VI	005	S	03LVI020	04/02/03	04/08/03	04/08/03
J00KW3						
% SOLIDS	006	S	03L%S047	04/02/03	04/07/03	04/08/03
CHROMIUM VI	006	S	03LVI020	04/02/03	04/08/03	04/08/03
LAB QC:						
CHROMIUM VI	MB1	S	03LVI020	N/A	04/08/03	04/08/03

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B01-054 H2138

DATE RECEIVED: 04/04/03 LVL LOT # :0304L120

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CHROMIUM VI	MB1 BS	S	03LVI020	N/A	04/08/03	04/08/03
CHROMIUM VI	MB1 BSD	S	03LVI020	N/A	04/08/03	04/08/03

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD B01-054 H2138
LVL#: 0304L120

W.O.#: 11343-606-001-9999-00
Date Received: 04-04-03

INORGANIC NARRATIVE

1. This narrative covers the analyses of 6 soil samples.

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

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

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

5. The method blank for Chromium VI was within the method criteria.

6. The Laboratory Control Samples (LCS) for Chromium VI were within the laboratory control limits.

7. The matrix spike recoveries for Chromium VI were within the 75-125% control limits.

8. The replicate analyses for Percent Solids and Chromium VI were within the 20% Relative Percent Difference (RPD) control limit.

9. Results for solid samples are reported on a dry weight basis.

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

Pat G

for Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

04-09-03
Date

njp\i04- 120

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 13 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**

Lionville Laboratory Incorporated

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

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

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

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

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

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

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

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

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

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

f. Code of Federal Regulations.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 04/08/03

CLIENT: TNUHANFORD B01-054 H2138 LVL LOT #: 0304L120

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J00KW4	% Solids	99.9	%	0.01	1.0
		Chromium VI	0.40 u	MG/KG	0.40	1.0
-002	J00KV9	% Solids	95.5	%	0.01	1.0
		Chromium VI	0.42 u	MG/KG	0.42	1.0
-003	J00KW0	% Solids	96.5	%	0.01	1.0
		Chromium VI	0.41 u	MG/KG	0.41	1.0
-004	J00KW1	% Solids	97.2	%	0.01	1.0
		Chromium VI	0.41 u	MG/KG	0.41	1.0
-005	J00KW2	% Solids	95.6	%	0.01	1.0
		Chromium VI	0.42 u	MG/KG	0.42	1.0
-006	J00KW3	% Solids	95.4	%	0.01	1.0
		Chromium VI	0.42 u	MG/KG	0.42	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 04/08/03

CLIENT: TNUHANFORD B01-054 H2138

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

LVL LOT #: 0304L120

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	03LVI020-MB1	Chromium VI	0.40 u	MG/KG	0.40	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 04/08/03

CLIENT: TNUHANFORD B01-054 H2138

LVL LOT #: 0304L120

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J00KW4	Soluble Chromium VI	4.3	0.40u	4.0	108.8	1.0
		Insoluble Chromium VI	1440	0.40u	1510	94.8	100
BLANK10	03LVI020-MB1	Soluble Chromium VI	3.9	0.40u	4.0	97.8	1.0
		Insoluble Chromium VI	1320	0.40u	1250	105.8	100

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 04/08/03

CLIENT: TNUHANFORD B01-054 H2138

LVL LOT #: 0304L120

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J00KW4	Chromium VI	0.40u	0.40u	NC	1.0
-004REP	J00KW1	% Solids	97.2	96.2	1.1	1.0

Lionville Laboratory Use Only
0304L120

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI LIONVILLE LABORATORY INC.

10

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU-Hanford B01-054

Est. Final Proj. Sampling Date:

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

Project Contact/Phone #:

Lionville Laboratory Project Manager: Arlette Johnson

QC: SPEC Del: STD TAT: 7 days

Date Rec'd: 4.4.03 Date Due: 4-11-03

		A	B	C	D	E
Refrigerator #		6				1
#/Type Container	Liquid					
	Solid	1 aq	1 aq	1 aq	1 aq	1 aq
Volume	Liquid					
	Solid	250	120	60	120	60
Preservatives		—	—	—	—	—
ANALYSES REQUESTED →		ORGANIC: VOA	BNA	Pest/PCB	Herb	PCB
		INORG: Metal	CN	Hex Chrome		
Lionville Laboratory Use Only			0625H	0608H		0PCB
						MRCRA10
						ICR6

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	0625H	0608H	0PCB	MRCRA10	ICR6
001	J00KW4			S	4.2.03	1002	X	X	X	X	X
002	J00KV9					1017	X	X	X	X	X
003	J00KW0					1031	X	X	X	X	X
004	J00KW1					1046	X	X	X	X	X
005	J00KW2					1104	X	X	X	X	X
006	J00KW3					1104	X	X	X	X	X

Special Instructions: SAF # B01-054

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. 0.3 °C

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

NOTES:

#7915 66665 66607/0.3°C - 7915 66665 66630

Relinquished by	Received by	Date	Time
Fed Ex	D Johnson	4.4.03	1005

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL REWRITTEN		

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B01-054-023	Page 2 of 2

Collector: D.Shea	Company Contact: D.Shea; Telephone No.: 521-6014	Project Coordinator: KESSNER, JH	Price Code: 8L; Data Turnaround: 7 ~~21~~ Days 4/2/03
Project Designation: 100 B/C Area Effluent Pipeline & Proximity Site Remediatio	Sampling Location: 100 BC, 1607-B-11 Septic system	SAF No.: B01-054	Air Quality
Ice Chest No.: ERC 99 071	Field Logbook No.: EL-1573; COA: R607BB2F00	Method of Shipment: FED EX	
Shipped To: TMA/RECRA	Offsite Property No.: A030177	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G/P	G/P		
No. of Container(s)	1	0 DWS 4/1/03	1	1	1	1	1	1		
Volume	120mL	120mL	60mL	250g	120g	60mL	500mL	60mL		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	ICP Metals - 6010A (Add-on) {Chromium, Lead}; Mercury - 7471 - (CV)	Chromium Hex - 7196	Semi-VOA - 8270A (TCL)	Pesticides - 8081	PCBs - 8082	See item (2) in Special Instructions.	Gross Alpha; Gross Beta		

Sample No.	Matrix *	Sample Date	Sample Time										
J00KW4	SOIL	4/2/03	1002	✓	✓	✓	✓	✓	✓	✓	✓		

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: [illegible]	4/2/03 1652	Fridge 3B	4/2/03 1652
Relinquished By/Removed From: REF 3B 4303	0900	SJGALE [illegible] 4303	0900
Relinquished By/Removed From: SJGALE [illegible] 4303	0900	FED EX	
Relinquished By/Removed From: Fed Ex	4-4-03/1005	[illegible]	4-4-03/1005
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Selenium, Silver}
(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241, ~~Silver-108 metastable~~, Uranium-238}
DWS 4/1/03

Personnel not available to relinquish samples from the 3728 Ref # 3B on 4/3/03

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

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

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B01-054-023	Page 1 of 2

Collector: D.Shea	Company Contact: D.Shea — Telephone No.: 521-6014	Project Coordinator: KESSNER, JH	Price Code: 8L — Data Turnaround: Air Quality 7 ~~21~~ Days 4/2/03
Project Designation: 100 B/C Area Effluent Pipeline & Proximity Site Remediatio	Sampling Location: 100 BC, 1607-B-11 Septic system	SAF No.: B01-054	
Ice Chest No.: ERC 99 071	Field Logbook No.: EL-1573 — COA: R607BB2F00	Method of Shipment: FED EX	
Shipped To: TMA/RECRA	Offsite Property No.: A030177	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G/P	G/P		
No. of Container(s)	1	1 Tows 4/1/03	1	1	1	1	1	1		
Volume	120mL	120mL	60mL	250g	120g	60mL	500mL	500mL		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	ICP Metals - 6010A (Add-on) {Chromium, Lead}; Mercury - 7471 - (CV)	Chromium Hex - 7196	Semi-VOA - 8270A (TCL)	Pesticides - 8081	PCBs - 8082	See item (2) in Special Instructions.	Gross Alpha; Gross Beta		
Sample No. / Matrix * / Sample Date / Sample Time										
J00KV9 / SOIL / 4/2/03 / 1017	✓	✓	✓	✓	✓	✓	✓	✓		
J00KW0 / SOIL / ↓ / 1031	✓	✓	✓	✓	✓	✓	✓	✓		
J00KW1 / SOIL / ↓ / 1046	✓	✓	✓	✓	✓	✓	✓	✓		
J00KW2 / SOIL / ↓ / 1104	✓	✓	✓	✓	✓	✓	✓	✓		
J00KW3 / SOIL / ↓ / 1104	✓	✓	✓	✓	✓	✓	✓	✓		

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	DWShea DWShea	4/2/03 1652	Fridge 3B	4/2/03 1652
Relinquished By/Removed From	REF 3B	4303 0900	SIGNED	4303 0900
Relinquished By/Removed From	SIGNED	4303 0900	FED EX	
Relinquished By/Removed From	Fed Ex	4.4.03/1005	[illegible]	4.4.03/1005
Relinquished By/Removed From			Received By/Stored In	
Relinquished By/Removed From			Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Selenium, Silver}
(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241, ~~Silver-108 metastable~~, Uranium-238}
DWS 4/1/03

Personnel not available to relinquish samples from the 3728 Ref # 3B on 4/3/03

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	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

DATE: 4.4.03

Purchase Order/Project:

SAF# / SOW# / Release #: B01-054

Laboratory SDG #: 0304L120

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 #
2. Outside of coolers or shipping containers are free from damage?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
3. Airbill # recorded?	☒ 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 #
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 #
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 will be 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 (°C) and Comments:

ERC 99-071 / 0.3°C

ERC 02-403 / 0.8°C

Laboratory Sample Custodian: D. Gomez

Laboratory Project Manager:

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B01-054 H2136

DATE RECEIVED: 04/03/03 LVL LOT # :0304L105

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00KV3	001	S	03LE0398	04/01/03	04/04/03	04/09/03
J00KV3	001 MS	S	03LE0398	04/01/03	04/04/03	04/09/03
J00KV3	001 MSD	S	03LE0398	04/01/03	04/04/03	04/09/03
J00KV4	002	S	03LE0398	04/01/03	04/04/03	04/10/03
J00KV5	003	S	03LE0398	04/01/03	04/04/03	04/10/03
J00KV6	004	S	03LE0398	04/01/03	04/04/03	04/10/03
J00KV7	005	S	03LE0398	04/01/03	04/04/03	04/09/03
J00KV8	006	S	03LE0398	04/01/03	04/04/03	04/09/03

LAB QC:

PBLKQA	MB1	S	03LE0398	N/A	04/04/03	04/09/03
PBLKQA	MB1 BS	S	03LE0398	N/A	04/04/03	04/09/03

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD B01-054
LVL #: 0304L105
SDG/SAF #: H2136/B01-054

W.O. #: 11343-606-001-9999-00
Date Received: 04-03-03

PCB

The set of samples consisted of six (6) soil samples collected on 04-01-03.

The samples and their associated QC samples were extracted on 04-04-03 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 04-09,10-03. The extraction procedure was based on method 3550 and the extracts were analyzed based on method 8082.

The following is a summary of the QC results accompanying the 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. All required holding times for extraction and analysis have been met.

3. The samples and their associated QC samples received a Sulfuric Acid cleanup.

4. The method blank was below the reporting limits for all target compounds.

5. All surrogate recoveries were within acceptance criteria.

6. All blank spike recoveries were within acceptance criteria.

7. All matrix spike recoveries were within acceptance criteria.

8. All initial calibrations associated with this data set were within acceptance criteria .

9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

9. Patterns for Aroclors 1254 and 1260 were identified in these samples. The reported Aroclors were chosen based on the best pattern match and fit. Quantitation was performed using congeners common to both Aroclors to give the best overall total PCB concentration.

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 10 pages.

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

10 I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy 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

4/14/03
Date

pef\r:\group\data\pest\tnu hanford\14L-105.pcb

LIONVILLE LABORATORY INC.

GLOSSARY OF PESTICIDE/PCB 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.

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.

SP = Indicates Spiked Compound.

GLOSSARY OF PESTICIDE/PCB DATA

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.

R:/SHARE/HPLC/PESTICIDE/PCBGLOS

Lionville Laboratory, Inc.

PCBs by GC

Report Date: 04/10/03 13:06

RFW Batch Number: **0304L105** Client: **TNUHANFORD B01-054 H2136** Work Order: 11343606001 Page: 1

9

	Cust ID:	J00KV3	J00KV3	J00KV3	J00KV4	J00KV5	J00KV6
Sample Information	RFW#:	001	001 MS	001 MSD	002	003	004
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	95 %	90 %	95 %	100 %	90 %	90 %
	Decachlorobiphenyl	100 %	100 %	105 %	110 %	105 %	110 %
Aroclor-1016		35 U	97 %	104 %	35 U	35 U	35 U
Aroclor-1221		70 U	70 U	70 U	70 U	71 U	70 U
Aroclor-1232		35 U	35 U	35 U	35 U	35 U	35 U
Aroclor-1242		35 U	35 U	35 U	35 U	35 U	35 U
Aroclor-1248		35 U	35 U	35 U	35 U	35 U	35 U
Aroclor-1254		35 U	35 U	35 U	35	34 J	57
Aroclor-1260		35 U	108 %	113 %	35 U	35 U	35 U

	Cust ID:	J00KV7	J00KV8	PBLKQA	PBLKQA BS
Sample Information	RFW#:	005	006	03LE0398-MB1	03LE0398-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	90 %	95 %	90 %	95 %
	Decachlorobiphenyl	100 %	105 %	100 %	110 %
Aroclor-1016		35 U	33 U	33 U	103 %
Aroclor-1221		70 U	67 U	67 U	67 U
Aroclor-1232		35 U	33 U	33 U	33 U
Aroclor-1242		35 U	33 U	33 U	33 U
Aroclor-1248		35 U	33 U	33 U	33 U
Aroclor-1254		35 U	33 U	33 U	33 U
Aroclor-1260		35 U	33 U	33 U	114 %

JBz 4/11/03

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

Lionville Laboratory Use Only

0304L105

Custody Transfer Record/Lab Work Request

Page ___ of ___

VLI LIONVILLE LABORATORY INC.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU-Hanford B01-054

Est. Final Proj. Sampling Date:

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

Project Contact/Phone #:

Lionville Laboratory Project Manager: Arlette Johnson

QC: SPEC Del: STD TAT: 7 days

Date Rec'd: 4-3-03 Date Due: 4-10-03

		A	B		C			D		E
Refrigerator #		6	6		6			6		6
#/Type Container	Liquid									
	Solid	1qg	1qg		1qg			1qg		1qg
Volume	Liquid									
	Solid	250	120		60			120ml		60ml
Preservatives		—	—		—			—		—

ANALYSES REQUESTED →

ORGANIC							INORG		
VOA	BNA	Pest/PCB	Herb	PCB			Metal	CN	Hex Chrome

Lionville Laboratory Use Only

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		0625H	0608H		OPCB			MRCRATO		ICRG					
001	J00KV3			S	4-1-03	1020		X	X		X			X		X					
002	J00KV4					1040		X	X		X			X		X					
003	J00KV5					1040		X	X		X			X		X					
004	J00KV6					1134		X	X		X			X		X					
005	J00KV7					1157		X	X		X			X		X					
006	J00KV8					1003		X	X		X			X		X					

Special Instructions: SAF # B01-054

Run Matrix QC

DATE/REVISIONS:

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

Lionville Laboratory Use Only

Samples were: ✓
1) Shipped ___ or
Hand Delivered ___
Airbill # 7913 4164 7956
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. 0.9 °C

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

Relinquished by	Received by	Date	Time
[illegible]	D. Smith	4-3-03	0955

Relinquished by	Received by	Date	Time
COMPOSITE WASTE		ORIGINAL REWRITTEN	

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B01-054-022	Page 1 of 2

Collector: D.Shea	Company Contact: D.Shea; Telephone No.: 521-6014	Project Coordinator: KESSNER, JH	Price Code: 8L; Data Turnaround: ~~21~~ 7 days Days; Air Quality: ☐
Project Designation: 100 B/C Area Effluent Pipeline & Proximity Site Remediatio	Sampling Location: 100 BC, 1607-B-10 Septic system	SAF No.: B01-054	
Ice Chest No.: ERC 96 050	Field Logbook No.: EL-1573; COA: R607BA2F00	Method of Shipment: FED EX	
Shipped To: TMA/RECRA	Offsite Property No.: A030176	Bill of Lading/Air Bill No.: SFE 05 P C	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation			Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None		
Type of Container			G/P	G/P	G/P	aG	aG	aG	G/P	G/P		
No. of Container(s)			1	~~10~~ 9 DWS	1	1	1	1	1	1		
Volume			120mL	120mL	60mL	250g	120g	60mL	500mL	60mL		
SAMPLE ANALYSIS			See item (1) in Special Instructions.	ICP Metals - 6010A (Add-on) {Chromium, Lead}; Mercury - 7471 - (CV)	Chromium Hex - 7196	Semi-VOA - 8270A (TCL)	Pesticides - 8081	PCBs - 8082	See item (2) in Special Instructions.	Gross Alpha; Gross Beta		
Sample No.	Matrix *	Sample Date	Sample Time									
J00KV3	SOIL	4/1/03	1020	✓	✓	✓	✓	✓	✓	✓	✓	
J00KV4	SOIL	↓	1040	✓	✓	✓	✓	✓	✓	✓	✓	
J00KV5	SOIL		1040	✓	✓	✓	✓	✓	✓	✓	✓	
J00KV6	SOIL		1134	✓	✓	✓	✓	✓	✓	✓	✓	
J00KV7	SOIL		1157	✓	✓	✓	✓	✓	✓	✓	✓	

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
DWSher DWSher	1732 4/1/03	Fridge 3A	4/1/03 1732
REF 3A	4203 0700	SJGALE	4203 0700
SJGALE	4203 0700	FED EX	
FED EX	4.3.03 / 0955		4.3.03/0955

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Selenium, Silver}
(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241, ~~Silver-108 metastable~~, Uranium-238}

DWSher 3/31/03

Personnel not available to relinquish samples from the 3728 Ref # 3A on 4/2/03

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

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

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B01-054-022	Page 2 of 2

Collector: D.Shea	Company Contact: D.Shea; Telephone No.: 521-6014	Project Coordinator: KESSNER, JH	Price Code: 8L; Data Turnaround: ~~21~~ Days 7days
Project Designation: 100 B/C Area Effluent Pipeline & Proximity Site Remediatio	Sampling Location: 100 BC, 1607-B-10 Septic system	SAF No.: B01-054	Air Quality: ☐
Ice Chest No.: ERC 96 050	Field Logbook No.: EL-1573; COA: R607BA2F00	Method of Shipment: FED EX	
Shipped To: TMA/RECRA	Offsite Property No.: A030176	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	None	None		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G/P	G/P		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	120mL	120mL	60mL	250g	120g	60mL	500mL	60mL		
SAMPLE ANALYSIS	See item (1) in Special Instructions.	ICP Metals - 6010A (Add-on) {Chromium, Lead}; Mercury - 7471 - (CV)	Chromium Hex - 7196	Semi-VOA - 8270A (TCL)	Pesticides - 8081	PCBs - 8082	See item (2) in Special Instructions.	Gross Alpha; Gross Beta		

Sample No.	Matrix *	Sample Date	Sample Time										
J00KV8	SOIL	4/1/03	1005 J00KV8	✓	✓	✓	✓	✓	✓	✓	✓		

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: DWSchen DWSchen	4/1/03 1732	Fridge 3A	4/1/03 1732
Relinquished By/Removed From: REF 3A	4203 0700	Received By/Stored In: S.J.GALE	4203 0700
Relinquished By/Removed From: S.J.GALE	4203 0700	Received By/Stored In: FED EX	
Relinquished By/Removed From: Fed Ex	4-3-03 / 0955	Received By/Stored In: [illegible]	4-3-03 / 0955
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Arsenic, Barium, Cadmium, Selenium, Silver}
(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241, ~~Silver-108 metastable~~, Uranium-238}

DWSchen 3/31/03

Personnel not available to relinquish samples from the 3728 Ref # 3A on 4/2/03

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	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

DATE: 4-3-03

Purchase Order/Project:

SAF# / SOW# / Release #: B01-054

Laboratory SDG #: 030-4L105

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 #
2. Outside of coolers or shipping containers are free from damage?	☒ Yes	☐ No	☐ N/A	☐ see Comment #
3. Airbill # recorded?	☒ 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 #
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 #
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 will be 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 (°C) and Comments:

ERC 96-050 / 0.9°C

Laboratory Sample Custodian: D. Johnson

Laboratory Project Manager: