0059578

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 BL
INITIAL/DATE

Dean Strom X3-40 BL 4/28
INITIAL/DATE

Jeanette Duncan BT
INITIAL/DATE

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

SDG _H2136___ SAF-B01-054

Rad only Chem only X Rad & Chem

X Complete Partial

Waste Site/Sample Location: 1607-B-10 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 #	0304L105
SDG #	H2136
SAF #	B01-054
Date Received	4-03-03
# 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\tau-hanford\data\b ltrs.doc

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RECEIVED
APR 2003

Lionville Laboratory, Inc.
BNA 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	03LE0397	04/01/03	04/04/03	04/09/03
J00KV3	001 MS	S	03LE0397	04/01/03	04/04/03	04/09/03
J00KV3	001 MSD	S	03LE0397	04/01/03	04/04/03	04/09/03
J00KV4	002	S	03LE0397	04/01/03	04/04/03	04/09/03
J00KV5	003	S	03LE0397	04/01/03	04/04/03	04/09/03
J00KV6	004	S	03LE0397	04/01/03	04/04/03	04/09/03
J00KV7	005	S	03LE0397	04/01/03	04/04/03	04/10/03
J00KV8	006	S	03LE0397	04/01/03	04/04/03	04/10/03

LAB QC:

SBLKQS	MB1	S	03LE0397	N/A	04/04/03	04/09/03
SBLKQS	MB1 BS	S	03LE0397	N/A	04/04/03	04/09/03

LIONVILLE LABORATORY INC.

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

W.O. #: 11343-606-001-9999-00
Date Received: 04-03-2003

SEMIVOLATILE

Six (6) soil samples were collected on 04-01-2003.

The samples and their associated QC samples were extracted according to Lionville Laboratory OPs based on method 3550 on 04-04-2003 and analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 04-09,10-2003.

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. All surrogate recoveries were within EPA QC limits.

5. Three (3) of twenty-two (22) matrix spike recoveries were outside EPA QC limits.

6. Two (2) of eleven (11) blank spike recoveries were outside EPA QC limits.

7. The method blank contained the common laboratory contaminant Bis (2-Ethylhexyl) phthalate at a level less than 2x the CRQL.

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

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.

J. Michael Taylor
President
Lionville Laboratory Incorporated

04-11-03
Date

som\gorup\data\bna\tnu-hanford-0304-105.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 1 9 pages.

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

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: **0304L105** Client: **TNUHANFORD B01-054 H2136** Work Order: 11343606001 Report Date: 04/10/03 15:34 Page: 1a

	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 Recovery	Nitrobenzene-d5	65	%	56	%	67	%	68	%	62	%	69	%
	2-Fluorobiphenyl	78	%	73	%	83	%	81	%	76	%	80	%
	Terphenyl-d14	118	%	111	%	118	%	126	%	106	%	112	%
	Phenol-d5	75	%	69	%	79	%	79	%	73	%	78	%
	2-Fluorophenol	76	%	65	%	80	%	84	%	72	%	83	%
	2,4,6-Tribromophenol	102	%	101	%	105	%	109	%	92	%	103	%
			fl		fl		fl		fl		fl		fl
Phenol		350	U	65	%	75	%	350	U	350	U	350	U
bis(2-Chloroethyl)ether		350	U	350	U	350	U	350	U	350	U	350	U
2-Chlorophenol		350	U	73	%	89	%	350	U	350	U	350	U
1,3-Dichlorobenzene		350	U	350	U	350	U	350	U	350	U	350	U
1,4-Dichlorobenzene		350	U	57	%	74	%	350	U	350	U	350	U
1,2-Dichlorobenzene		350	U	350	U	350	U	350	U	350	U	350	U
2-Methylphenol		350	U	350	U	350	U	350	U	350	U	350	U
2,2'-oxybis(1-Chloropropane)		350	U	350	U	350	U	350	U	350	U	350	U
3- and/or 4-Methylphenol		350	U	350	U	350	U	350	U	350	U	350	U
N-Nitroso-di-n-propylamine		350	U	65	%	71	%	350	U	350	U	350	U
Hexachloroethane		350	U	350	U	350	U	350	U	350	U	350	U
Nitrobenzene		350	U	350	U	350	U	350	U	350	U	350	U
Isophorone		350	U	350	U	350	U	350	U	350	U	350	U
2-Nitrophenol		350	U	350	U	350	U	350	U	350	U	350	U
2,4-Dimethylphenol		350	U	350	U	350	U	350	U	350	U	350	U
bis(2-Chloroethoxy)methane		350	U	350	U	350	U	350	U	350	U	350	U
2,4-Dichlorophenol		350	U	350	U	350	U	350	U	350	U	350	U
1,2,4-Trichlorobenzene		350	U	55	%	69	%	350	U	350	U	350	U
Naphthalene		350	U	350	U	350	U	350	U	350	U	350	U
4-Chloroaniline		350	U	350	U	350	U	350	U	350	U	350	U
Hexachlorobutadiene		350	U	350	U	350	U	350	U	350	U	350	U
4-Chloro-3-methylphenol		350	U	88	%	93	%	350	U	350	U	350	U
2-Methylnaphthalene		350	U	350	U	350	U	350	U	350	U	350	U
Hexachlorocyclopentadiene		350	U	350	U	350	U	350	U	350	U	350	U
2,4,6-Trichlorophenol		350	U	350	U	350	U	350	U	350	U	350	U
2,4,5-Trichlorophenol		870	U	870	U	870	U	880	U	880	U	870	U

*= Outside of EPA CLP QC limits.

Cust ID:	J00KV3		J00KV3		J00KV3		J00KV4		J00KV5		J00KV6	
RFW#:	001		001 MS		001 MSD		002		003		004	
2-Chloronaphthalene	350	U	350	U	350	U	350	U	350	U	350	U
2-Nitroaniline	870	U	870	U	870	U	880	U	880	U	870	U
Dimethylphthalate	350	U	350	U	350	U	350	U	350	U	350	U
Acenaphthylene	350	U	350	U	350	U	350	U	350	U	350	U
2,6-Dinitrotoluene	350	U	350	U	350	U	350	U	350	U	350	U
3-Nitroaniline	870	U	870	U	870	U	880	U	880	U	870	U
Acenaphthene	350	U	78	%	88	%	350	U	350	U	350	U
2,4-Dinitrophenol	870	U	870	U	870	U	880	U	880	U	870	U
4-Nitrophenol	870	U	127 *	%	137 *	%	880	U	880	U	870	U
Dibenzofuran	350	U	350	U	350	U	350	U	350	U	350	U
2,4-Dinitrotoluene	350	U	87	%	98 *	%	350	U	350	U	350	U
Diethylphthalate	350	U	350	U	350	U	350	U	350	U	350	U
4-Chlorophenyl-phenylether	350	U	350	U	350	U	350	U	350	U	350	U
Fluorene	350	U	350	U	350	U	350	U	350	U	350	U
4-Nitroaniline	870	U	870	U	870	U	880	U	880	U	870	U
4,6-Dinitro-2-methylphenol	870	U	870	U	870	U	880	U	880	U	870	U
N-Nitrosodiphenylamine (1)	350	U	350	U	350	U	350	U	350	U	350	U
4-Bromophenyl-phenylether	350	U	350	U	350	U	350	U	350	U	350	U
Hexachlorobenzene	350	U	350	U	350	U	350	U	350	U	350	U
Pentachlorophenol	870	U	87	%	85	%	880	U	880	U	870	U
Phenanthrene	350	U	350	U	350	U	24	J	350	U	350	U
Anthracene	350	U	350	U	350	U	350	U	350	U	350	U
Carbazole	350	U	350	U	350	U	350	U	350	U	350	U
Di-n-butylphthalate	350	U	350	U	350	U	350	U	350	U	350	U
Fluoranthene	350	U	350	U	350	U	30	J	350	U	350	U
Pyrene	350	U	105	%	108	%	27	J	350	U	350	U
Butylbenzylphthalate	350	U	350	U	350	U	350	U	350	U	350	U
3,3'-Dichlorobenzidine	350	U	350	U	350	U	350	U	350	U	350	U
Benzo(a)anthracene	350	U	350	U	350	U	350	U	350	U	350	U
Chrysene	350	U	350	U	350	U	350	U	350	U	350	U
bis(2-Ethylhexyl)phthalate	350	U	24	JB	22	JB	18	JB	350	U	22	JB
Di-n-octyl phthalate	350	U	350	U	350	U	350	U	350	U	350	U
Benzo(b)fluoranthene	350	U	350	U	350	U	350	U	350	U	350	U
Benzo(k)fluoranthene	350	U	350	U	350	U	350	U	350	U	350	U
Benzo(a)pyrene	350	U	350	U	350	U	350	U	350	U	350	U
Indeno(1,2,3-cd)pyrene	350	U	350	U	350	U	350	U	350	U	350	U
Dibenz(a,h)anthracene	350	U	350	U	350	U	350	U	350	U	350	U
Benzo(g,h,i)perylene	350	U	350	U	350	U	350	U	350	U	350	U

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

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

Report Date: 04/10/03 15:34

RFW Batch Number: **0304L105** Client: **TNUHANFORD B01-054 H2136** Work Order: 11343606001 Page: 2a

	Cust ID:	J00KV7		J00KV8		SBLKQS		SBLKQS BS	
Sample Information	RFW#:	005		006		03LE0397-MB1		03LE0397-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	49	%	50	%	64	%	73	%
	2-Fluorobiphenyl	54	%	59	%	73	%	82	%
	Terphenyl-d14	70	%	87	%	110	%	120	%
	Phenol-d5	49	%	52	%	74	%	81	%
	2-Fluorophenol	48	%	48	%	78	%	83	%
	2,4,6-Tribromophenol	53	%	64	%	83	%	94	%
Phenol		350	U	330	U	330	U	75	%
bis(2-Chloroethyl)ether		350	U	330	U	330	U	330	U
2-Chlorophenol		350	U	330	U	330	U	92	%
1,3-Dichlorobenzene		350	U	330	U	330	U	330	U
1,4-Dichlorobenzene		350	U	330	U	330	U	80	%
1,2-Dichlorobenzene		350	U	330	U	330	U	330	U
2-Methylphenol		350	U	330	U	330	U	330	U
2,2'-oxybis(1-Chloropropane)		350	U	330	U	330	U	330	U
3- and/or 4-Methylphenol		350	U	330	U	330	U	330	U
N-Nitroso-di-n-propylamine		350	U	330	U	330	U	71	%
Hexachloroethane		350	U	330	U	330	U	330	U
Nitrobenzene		350	U	330	U	330	U	330	U
Isophorone		350	U	330	U	330	U	330	U
2-Nitrophenol		350	U	330	U	330	U	330	U
2,4-Dimethylphenol		350	U	330	U	330	U	330	U
bis(2-Chloroethoxy)methane		350	U	330	U	330	U	330	U
2,4-Dichlorophenol		350	U	330	U	330	U	330	U
1,2,4-Trichlorobenzene		350	U	330	U	330	U	73	%
Naphthalene		350	U	330	U	330	U	330	U
4-Chloroaniline		350	U	330	U	330	U	330	U
Hexachlorobutadiene		350	U	330	U	330	U	330	U
4-Chloro-3-methylphenol		350	U	330	U	330	U	89	%
2-Methylnaphthalene		350	U	330	U	330	U	330	U
Hexachlorocyclopentadiene		350	U	330	U	330	U	330	U
2,4,6-Trichlorophenol		350	U	330	U	330	U	330	U
2,4,5-Trichlorophenol		880	U	840	U	840	U	840	U

*= Outside of EPA CLP QC limits.

Cust ID:	J00KV7		J00KV8		SBLKQS		SBLKQS BS	
RFW#:	005		006		03LE0397-MB1		03LE0397-MB1	
2-Chloronaphthalene	350	U	330	U	330	U	330	U
2-Nitroaniline	880	U	840	U	840	U	840	U
Dimethylphthalate	350	U	330	U	330	U	330	U
Acenaphthylene	350	U	330	U	330	U	330	U
2,6-Dinitrotoluene	350	U	330	U	330	U	330	U
3-Nitroaniline	880	U	840	U	840	U	840	U
Acenaphthene	350	U	330	U	330	U	83	%
2,4-Dinitrophenol	880	U	840	U	840	U	840	U
4-Nitrophenol	880	U	840	U	840	U	129 *	%
Dibenzofuran	350	U	330	U	330	U	330	U
2,4-Dinitrotoluene	350	U	330	U	330	U	95 *	%
Diethylphthalate	350	U	330	U	330	U	330	U
4-Chlorophenyl-phenylether	350	U	330	U	330	U	330	U
Fluorene	350	U	330	U	330	U	330	U
4-Nitroaniline	880	U	840	U	840	U	840	U
4,6-Dinitro-2-methylphenol	880	U	840	U	840	U	840	U
N-Nitrosodiphenylamine (1)	350	U	330	U	330	U	330	U
4-Bromophenyl-phenylether	350	U	330	U	330	U	330	U
Hexachlorobenzene	350	U	330	U	330	U	330	U
Pentachlorophenol	880	U	840	U	840	U	94	%
Phenanthrene	350	U	330	U	330	U	330	U
Anthracene	350	U	330	U	330	U	330	U
Carbazole	350	U	330	U	330	U	330	U
Di-n-butylphthalate	350	U	330	U	330	U	330	U
Fluoranthene	350	U	330	U	330	U	330	U
Pyrene	350	U	330	U	330	U	106	%
Butylbenzylphthalate	350	U	330	U	330	U	330	U
3,3'-Dichlorobenzidine	350	U	330	U	330	U	330	U
Benzo(a)anthracene	350	U	330	U	330	U	330	U
Chrysene	350	U	330	U	330	U	330	U
bis(2-Ethylhexyl)phthalate	350	U	320	JB	650		1600	B
Di-n-octyl phthalate	350	U	330	U	330	U	330	U
Benzo(b)fluoranthene	350	U	330	U	330	U	330	U
Benzo(k)fluoranthene	350	U	330	U	330	U	330	U
Benzo(a)pyrene	350	U	330	U	330	U	330	U
Indeno(1,2,3-cd)pyrene	350	U	330	U	330	U	330	U
Dibenz(a,h)anthracene	350	U	330	U	330	U	330	U
Benzo(g,h,i)perylene	350	U	330	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.

J00KV3

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

Client: TNUHANFORD B01-054 H2136

Matrix: (soil/water) SOIL

Lab Sample ID: 0304L105-001

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

Lab File ID: A040911

Level: (low/med) LOW

Date Received: 04/03/03

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

Date Extracted: 04/04/03

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: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	6.231	20000	JAB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J00KV4

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

Client: TNUHANFORD B01-054 H2136

Matrix: (soil/water) SOIL

Lab Sample ID: 0304L105-002

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

Lab File ID: A040914

Level: (low/med) LOW

Date Received: 04/03/03

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

Date Extracted: 04/04/03

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	5.637	100	JAB
2.	ALDOL CONDENSATE	6.253	20000	JAB
3.	ALKANE	27.831	200	J
4.	ALKANE	30.968	200	J
5.	ALKANE	30.988	300	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J00KV5

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

Client: TNUHANFORD B01-054 H2136

Matrix: (soil/water) SOIL

Lab Sample ID: 0304L105-003

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

Lab File ID: A040915

Level: (low/med) LOW

Date Received: 04/03/03

% Moisture: 6 decanted: (Y/N)__

Date Extracted: 04/04/03

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	6.229	20000	JAB
2.	UNKNOWN	17.923	500	J
3.	UNKNOWN	26.720	100	J
4.	ALKANE	27.839	200	J
5.	ALKANE	30.989	600	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J00KV6

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

Client: TNUHANFORD B01-054 H2136

Matrix: (soil/water) SOIL

Lab Sample ID: 0304L105-004

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

Lab File ID: A040916

Level: (low/med) LOW

Date Received: 04/03/03

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

Date Extracted: 04/04/03

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.	ALDOL CONDENSATE	5.638	100	JAB
2.	ALDOL CONDENSATE	6.242	20000	JAB
3.	ALDOL CONDENSATE	7.646	90	JA
4.	ALKANE	27.822	100	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J00KV7

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

Client: TNUHANFORD B01-054 H2136

Matrix: (soil/water) SOIL

Lab Sample ID: 0304L105-005

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

Lab File ID: C041004

Level: (low/med) LOW

Date Received: 04/03/03

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

Date Extracted: 04/04/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 04/10/03

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	7.404	100	J
2.	UNKNOWN	7.594	100	J
3.	ALDOL CONDENSATE	7.819	900	JAB
4.	ALDOL CONDENSATE	8.322	9000	JAB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J00KV8

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

Client: TNUHANFORD B01-054 H2136

Matrix: (soil/water) SOIL

Lab Sample ID: 0304L105-006

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

Lab File ID: C041005

Level: (low/med) LOW

Date Received: 04/03/03

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

Date Extracted: 04/04/03

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 04/10/03

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.	UNKNOWN	7.603	100	J
2.	ALDOL CONDENSATE	7.819	900	JAB
3.	ALDOL CONDENSATE	8.330	9000	JAB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKQS

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

Client: TNUHANFORD B01-054 H2136

Matrix: (soil/water) SOIL

Lab Sample ID: 03LE0397-MB1

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

Lab File ID: A040909

Level: (low/med) LOW

Date Received: 04/04/03

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

Date Extracted: 04/04/03

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: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	5.633	900	JA
2.	ALDOL CONDENSATE	6.231	20000	JA

Lionville Laboratory Use Only

0304L105

Custody Transfer Record/Lab Work Request

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: Delotte 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: VOA	BNA	Pest/PCB	Herb	PCB
		INORG: Metal	CN	Hex Chrome		
Lionville Laboratory Use Only			0625H	0608H	OPCB	MRCRATS / 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	OPCB	MRCRATS	ICR6
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. Johnson	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~~ Days	Air Quality: ☐ 7 days	
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	1 (2 pints)	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	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	DWSher DWSher	1732 4/1/03	Fritcher 3A	4/1/03 1732
Relinquished By/Removed From	REF 3A	4203 0700	SJGALE	4203 0700
Relinquished By/Removed From	SJGALE	4203 0700	FED EX	
Relinquished By/Removed From	Fed Ex	4.3.03 / 0955		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}

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 1 of 1
Collector: D.Shea	Company Contact: D.Shea; Telephone No.: 521-6014	Project Coordinator: KESSNER, JH	Price Code: 8L; Data Turnaround: ~~21~~ 7 days
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: DWSlen DWSlen	4/1/03 1732	Received By/Stored In: 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}

DWSlen 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

Purchase Order/Project:

DATE: 4.3.03

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

Laboratory SDG #: 0304L105

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 96-050 / 0.9°C

Laboratory Sample Custodian: D. Johnson

Laboratory Project Manager:

RECEIVED
APR 2003

Lionville Laboratory, Inc.
PEST/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	04/08/03
J00KV3	001 MS	S	03LE0398	04/01/03	04/04/03	04/08/03
J00KV3	001 MSD	S	03LE0398	04/01/03	04/04/03	04/08/03
J00KV4	002	S	03LE0398	04/01/03	04/04/03	04/08/03
J00KV5	003	S	03LE0398	04/01/03	04/04/03	04/08/03
J00KV6	004	S	03LE0398	04/01/03	04/04/03	04/08/03
J00KV7	005	S	03LE0398	04/01/03	04/04/03	04/08/03
J00KV8	006	S	03LE0398	04/01/03	04/04/03	04/08/03

LAB QC:

PBLKQA	MB1	S	03LE0398	N/A	04/04/03	04/08/03
PBLKQA	MB1 BS	S	03LE0398	N/A	04/04/03	04/08/03

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

PESTICIDE

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 04-08-03. 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. All samples and their associated QC samples received 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. 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, with the exception of the target compounds analyzed on 04-07,08-03 and 04-08-03 on the RTX-CLP2 column. The data reflected an increase in instrument response, so the ability to identify these compounds was not impaired. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

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-105.pes

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 030C104

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

Batch: 0304L105
Samples: all
Method: SW846/MCAWW/CLP/

Parameter: 060814
Matrix: Soil
Prep Batch: 03LE0398

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)

CCV's prior to samples and ac increased on RTX-CLP2 column, ok on RTX-35. Results taken from RTX-35.

2. Known or Probable Causes(s)

3. Discussion and Proposed Action Other Description: Manual

__ 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: _____

CALIBRATION VERIFICATION SUMMARY

b Name: Lionville Laboratory Incorporated

Contract:

ient:

GC Sample ID: 040703gc20 .17

W Lot ID:

Millennium Result ID: 9552

ıstrument ID: GC 2O

Initial Calibration Start Date: 3/31/03

Date of Analysis: 4/7/03 2

:ocessing Method: 03310320B_SPA_CCVB

Time of Analysis: 11:30:43 PM

Standard ID: INDA 4102 B

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	INITIAL RESPONSE	RT	CONT. RESPONSE	%D	FL
						MEAN %D	132.9	FL !
TCX	6.84	6.77	6.91	7584	6.84	15972	110.6 ✓	!
ALPHA-BHC	9.01	8.94	9.08	5382	9.01	14218	164.2	!
GAMMA-BHC	10.29	10.22	10.36	5119	10.29	13021	154.4	!
HEPTACHLOR	11.81	11.73	11.88	4848	11.81	12826	164.6	!
ENDOSULFAN I	16.25	16.18	16.32	4333	16.25	10156	134.4	!
DIELDRIN	17.20	17.12	17.27	8175	17.20	19327	136.4	!
ENDRIN	18.21	18.14	18.28	5880	18.21	14813	151.9	!
4,4'-DDD	18.80	18.73	18.87	4128	18.80	9013	118.3	!
4,4'-DDT	19.83	19.76	19.90	4292	19.83	8983	109.3	!
METHOXYCHLOR	22.26	22.19	22.33	9198	22.26	17047	85.3	!

BT 4/18/03

RTX-CLP2

CALIBRATION VERIFICATION SUMMARY

ab Name: Lionville Laboratory Incorporated

Contract:

lient:

GC Sample ID: 040703gc20 .18

.FW Lot ID:

Millennium Result ID: 9553

Instrument ID: GC 20

Initial Calibration Start Date: 3/31/03

Date of Analysis: 4/8/03 2

Processing Method: 03310320B_SPB_CCVB

Time of Analysis: 12:19:23 AM

Standard ID: INDB 4202 B

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	INITIAL RESPONSE	RT	CONT. RESPONSE	%D	FL
						MEAN %D	111.2	FL !
BETA-BHC	10.66	10.59	10.73	2622	10.66	5134	95.8	!
DELTA-BHC	11.68	11.61	11.75	4815	11.68	10456	117.2	!
ALDRIN	12.92	12.84	12.99	5651	12.92	13925	146.4	!
HEPT. EPOXIDE	14.95	14.88	15.02	5174	14.95	11820	128.4	!
G CHLORDANE	15.61	15.53	15.68	5210	15.61	11772	126.0	!
A CHLORDANE	16.12	16.04	16.19	5252	16.12	11677	122.3	!
4,4'-DDE	16.84	16.77	16.91	5996	16.84	13753	129.4	!
ENDOSULFAN II	18.96	18.89	19.03	7855	18.96	16880	114.9	!
ENDRIN ALDEHYDE	20.13	20.06	20.20	6145	20.13	13205	114.9	!
ENDO SULFATE	21.06	20.99	21.13	6985	21.06	13775	97.2	!
ENDRIN KETONE	22.80	22.73	22.87	7719	22.80	14473	87.5	!
DCB	27.22	27.15	27.29	15997	27.22	24766	54.8	!

BS 4/8/03

RTX-CLP2

6

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

	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	105 %	100 %	115 %	95 %	85 %	95 %
	Decachlorobiphenyl	110 %	115 %	125 * %	115 %	100 %	115 %
		fl	fl	fl	fl	fl	fl
Alpha-BHC		1.7 U	1.7 U	1.7 U	1.8 U	1.8 U	1.7 U
Beta-BHC		1.7 U	1.7 U	1.7 U	1.8 U	1.8 U	1.7 U
Delta-BHC		1.7 U	1.7 U	1.7 U	1.8 U	1.8 U	1.7 U
gamma-BHC (Lindane)		1.7 U	80 %	94 %	1.8 U	1.8 U	1.7 U
Heptachlor		1.7 U	94 %	106 %	1.8 U	1.8 U	1.7 U
Aldrin		1.7 U	82 %	94 %	1.8 U	1.8 U	1.7 U
Heptachlor epoxide		1.7 U	1.7 U	1.7 U	1.8 U	1.8 U	1.7 U
Endosulfan I		1.7 U	1.7 U	1.7 U	1.8 U	1.8 U	1.7 U
Dieldrin		3.5 U	98 %	110 %	3.5 U	3.5 U	3.5 U
4,4'-DDE		3.5 U	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U
Endrin		3.5 U	115 %	130 %	3.5 U	3.5 U	3.5 U
Endosulfan II		3.5 U	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U
4,4'-DDD		3.5 U	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U
Endosulfan sulfate		3.5 U	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U
4,4'-DDT		3.5 U	98 %	116 %	3.9	3.5	4.5
Methoxychlor		17 U	17 U	17 U	18 U	18 U	17 U
Endrin ketone		3.5 U	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U
Endrin aldehyde		3.5 U	3.5 U	3.5 U	3.5 U	3.5 U	3.5 U
alpha-Chlordane		1.7 U	1.7 U	1.7 U	1.8 U	1.8 U	1.7 U
gamma-Chlordane		1.7 U	1.7 U	1.7 U	1.8 U	1.8 U	1.7 U
Toxaphene		170 U	170 U	170 U	180 U	180 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

JGL 4/10/03

Lionville Laboratory, Inc.

Pesticide/PCBs by GC, CLP List

Report Date: 04/09/03 12:26

RFW Batch Number: **0304L105** Client: **TNUHANFORD B01-054 H2136** Work Order: 11343606001 Page: 2

	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	%	100	%	100	%	90	%
	Decachlorobiphenyl	110	%	110	%	110	%	100	%
Alpha-BHC		1.8	U	1.7	U	1.7	U	1.7	U
Beta-BHC		1.8	U	1.7	U	1.7	U	1.7	U
Delta-BHC		1.8	U	1.7	U	1.7	U	1.7	U
gamma-BHC (Lindane)		1.8	U	1.7	U	1.7	U	78	%
Heptachlor		1.8	U	1.7	U	1.7	U	90	%
Aldrin		1.8	U	1.7	U	1.7	U	80	%
Heptachlor epoxide		1.8	U	1.7	U	1.7	U	1.7	U
Endosulfan I		1.8	U	1.7	U	1.7	U	1.7	U
Dieldrin		3.5	U	3.3	U	3.3	U	93	%
4,4'-DDE		3.5	U	3.3	U	3.3	U	3.3	U
Endrin		3.5	U	3.3	U	3.3	U	109	%
Endosulfan II		3.5	U	3.3	U	3.3	U	3.3	U
4,4'-DDD		3.5	U	3.3	U	3.3	U	3.3	U
Endosulfan sulfate		3.5	U	3.3	U	3.3	U	3.3	U
4,4'-DDT		3.5	U	3.3	U	3.3	U	94	%
Methoxychlor		18	U	17	U	17	U	17	U
Endrin ketone		3.5	U	3.3	U	3.3	U	3.3	U
Endrin aldehyde		3.5	U	3.3	U	3.3	U	3.3	U
alpha-Chlordane		1.8	U	1.7	U	1.7	U	1.7	U
gamma-Chlordane		1.8	U	1.7	U	1.7	U	1.7	U
Toxaphene		180	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

0304L105

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LIONVILLE LABORATORY INC.

Client: TNU-Hanford B01-054

Est. Final Proj. Sampling Date:

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

Project Contact/Phone #:

Lionville Laboratory Project Manager: Arlotta 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				
			8625H	8080H		OPCB		MRCRA10		7CR6

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	7CR6
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 4104 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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	4.3.03	0855

Relinquished by	Received by	Date	Time
COMPOSITE WASTE		ORIGINAL REWRITTEN	

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

Bechtel Hanford Inc. | **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST**

Collector: D.Shea	Company Contact: D.Shea	Telephone No.: 521-6014	Project Coordinator: KESSNER, JH
Price Code: 8L	Data Turnaround: 7 days 21 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 DW3	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
DWSheu DWSheu	1732 4/1/03	Fritcher 3A	4/1/03 1732
RCF 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}

DWSheu 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 1 of 1

Collector: D.Shea	Company Contact: D.Shea	Telephone No.: 521-6014	Project Coordinator: KESSNER, JH
Price Code: 8L	Data Turnaround: ~~21~~ Days 7days	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.: 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: DWSher DWSher	4/1/03 1732	Fridge 3A	4/1/03 1732
Relinquished By/Removed From: REF 3A 4203	0700	S.J.GALE	4203 0700
Relinquished By/Removed From: S.J.GALE	4203 0700	FED EX	
Relinquished By/Removed From: Fed Ex	4-3-03 / 0955	[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}

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)

LIONVILLE LABORATORY INCORPORATED
SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hanford

Purchase Order/Project:

DATE: 4-3-03

SAF# / SOW# / Release #: 801-054

Laboratory SDG #: 0304L105

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 96-050 / 0.9°C

Laboratory Sample Custodian: D. Johnson

Laboratory Project Manager:

RECEIVED
APR 2003

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

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

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00KV3						
SILVER, TOTAL	001	S	03L0185	04/01/03	04/08/03	04/09/03
SILVER, TOTAL	001 REP	S	03L0185	04/01/03	04/08/03	04/09/03
SILVER, TOTAL	001 MS	S	03L0185	04/01/03	04/08/03	04/09/03
ARSENIC, TOTAL	001	S	03L0185	04/01/03	04/08/03	04/09/03
ARSENIC, TOTAL	001 REP	S	03L0185	04/01/03	04/08/03	04/09/03
ARSENIC, TOTAL	001 MS	S	03L0185	04/01/03	04/08/03	04/09/03
BARIUM, TOTAL	001	S	03L0185	04/01/03	04/08/03	04/09/03
BARIUM, TOTAL	001 REP	S	03L0185	04/01/03	04/08/03	04/09/03
BARIUM, TOTAL	001 MS	S	03L0185	04/01/03	04/08/03	04/09/03
CADMIUM, TOTAL	001	S	03L0185	04/01/03	04/08/03	04/09/03
CADMIUM, TOTAL	001 REP	S	03L0185	04/01/03	04/08/03	04/09/03
CADMIUM, TOTAL	001 MS	S	03L0185	04/01/03	04/08/03	04/09/03
CHROMIUM, TOTAL	001	S	03L0185	04/01/03	04/08/03	04/09/03
CHROMIUM, TOTAL	001 REP	S	03L0185	04/01/03	04/08/03	04/09/03
CHROMIUM, TOTAL	001 MS	S	03L0185	04/01/03	04/08/03	04/09/03
MERCURY, TOTAL	001	S	03C0074	04/01/03	04/07/03	04/08/03
MERCURY, TOTAL	001 REP	S	03C0074	04/01/03	04/07/03	04/08/03
MERCURY, TOTAL	001 MS	S	03C0074	04/01/03	04/07/03	04/08/03
LEAD, TOTAL	001	S	03L0185	04/01/03	04/08/03	04/09/03
LEAD, TOTAL	001 REP	S	03L0185	04/01/03	04/08/03	04/09/03
LEAD, TOTAL	001 MS	S	03L0185	04/01/03	04/08/03	04/09/03
SELENIUM, TOTAL	001	S	03L0185	04/01/03	04/08/03	04/09/03
SELENIUM, TOTAL	001 REP	S	03L0185	04/01/03	04/08/03	04/09/03
SELENIUM, TOTAL	001 MS	S	03L0185	04/01/03	04/08/03	04/09/03
J00KV4						
SILVER, TOTAL	002	S	03L0185	04/01/03	04/08/03	04/09/03
ARSENIC, TOTAL	002	S	03L0185	04/01/03	04/08/03	04/09/03
BARIUM, TOTAL	002	S	03L0185	04/01/03	04/08/03	04/09/03
CADMIUM, TOTAL	002	S	03L0185	04/01/03	04/08/03	04/09/03
CHROMIUM, TOTAL	002	S	03L0185	04/01/03	04/08/03	04/09/03
MERCURY, TOTAL	002	S	03C0074	04/01/03	04/07/03	04/08/03
LEAD, TOTAL	002	S	03L0185	04/01/03	04/08/03	04/09/03
SELENIUM, TOTAL	002	S	03L0185	04/01/03	04/08/03	04/09/03

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

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

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00KV5						
SILVER, TOTAL	003	S	03L0185	04/01/03	04/08/03	04/09/03
ARSENIC, TOTAL	003	S	03L0185	04/01/03	04/08/03	04/09/03
BARIUM, TOTAL	003	S	03L0185	04/01/03	04/08/03	04/09/03
CADMIUM, TOTAL	003	S	03L0185	04/01/03	04/08/03	04/09/03
CHROMIUM, TOTAL	003	S	03L0185	04/01/03	04/08/03	04/09/03
MERCURY, TOTAL	003	S	03C0074	04/01/03	04/07/03	04/08/03
LEAD, TOTAL	003	S	03L0185	04/01/03	04/08/03	04/09/03
SELENIUM, TOTAL	003	S	03L0185	04/01/03	04/08/03	04/09/03
J00KV6						
SILVER, TOTAL	004	S	03L0185	04/01/03	04/08/03	04/09/03
ARSENIC, TOTAL	004	S	03L0185	04/01/03	04/08/03	04/09/03
BARIUM, TOTAL	004	S	03L0185	04/01/03	04/08/03	04/09/03
CADMIUM, TOTAL	004	S	03L0185	04/01/03	04/08/03	04/09/03
CHROMIUM, TOTAL	004	S	03L0185	04/01/03	04/08/03	04/09/03
MERCURY, TOTAL	004	S	03C0074	04/01/03	04/07/03	04/08/03
LEAD, TOTAL	004	S	03L0185	04/01/03	04/08/03	04/09/03
SELENIUM, TOTAL	004	S	03L0185	04/01/03	04/08/03	04/09/03
J00KV7						
SILVER, TOTAL	005	S	03L0185	04/01/03	04/08/03	04/09/03
ARSENIC, TOTAL	005	S	03L0185	04/01/03	04/08/03	04/09/03
BARIUM, TOTAL	005	S	03L0185	04/01/03	04/08/03	04/09/03
CADMIUM, TOTAL	005	S	03L0185	04/01/03	04/08/03	04/09/03
CHROMIUM, TOTAL	005	S	03L0185	04/01/03	04/08/03	04/09/03
MERCURY, TOTAL	005	S	03C0074	04/01/03	04/07/03	04/08/03
LEAD, TOTAL	005	S	03L0185	04/01/03	04/08/03	04/09/03
SELENIUM, TOTAL	005	S	03L0185	04/01/03	04/08/03	04/09/03
J00KV8						
SILVER, TOTAL	006	S	03L0185	04/01/03	04/08/03	04/09/03
ARSENIC, TOTAL	006	S	03L0185	04/01/03	04/08/03	04/09/03

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

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

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BARIUM, TOTAL	006	S	03L0185	04/01/03	04/08/03	04/09/03
CADMIUM, TOTAL	006	S	03L0185	04/01/03	04/08/03	04/09/03
CHROMIUM, TOTAL	006	S	03L0185	04/01/03	04/08/03	04/09/03
MERCURY, TOTAL	006	S	03C0074	04/01/03	04/07/03	04/08/03
LEAD, TOTAL	006	S	03L0185	04/01/03	04/08/03	04/09/03
SELENIUM, TOTAL	006	S	03L0185	04/01/03	04/08/03	04/09/03

LAB QC:

SILVER LABORATORY	LC1 BS	S	03L0185	N/A	04/08/03	04/09/03
SILVER, TOTAL	MB1	S	03L0185	N/A	04/08/03	04/09/03
ARSENIC LABORATORY	LC1 BS	S	03L0185	N/A	04/08/03	04/09/03
ARSENIC, TOTAL	MB1	S	03L0185	N/A	04/08/03	04/09/03
BARIUM LABORATORY	LC1 BS	S	03L0185	N/A	04/08/03	04/09/03
BARIUM, TOTAL	MB1	S	03L0185	N/A	04/08/03	04/09/03
CADMIUM LABORATORY	LC1 BS	S	03L0185	N/A	04/08/03	04/09/03
CADMIUM, TOTAL	MB1	S	03L0185	N/A	04/08/03	04/09/03
CHROMIUM LABORATORY	LC1 BS	S	03L0185	N/A	04/08/03	04/09/03
CHROMIUM, TOTAL	MB1	S	03L0185	N/A	04/08/03	04/09/03
MERCURY LABORATORY	LC1 BS	S	03C0074	N/A	04/07/03	04/08/03
MERCURY, TOTAL	MB1	S	03C0074	N/A	04/07/03	04/08/03
LEAD LABORATORY	LC1 BS	S	03L0185	N/A	04/08/03	04/09/03
LEAD, TOTAL	MB1	S	03L0185	N/A	04/08/03	04/09/03
SELENIUM LABORATORY	LC1 BS	S	03L0185	N/A	04/08/03	04/09/03
SELENIUM, TOTAL	MB1	S	03L0185	N/A	04/08/03	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

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. The matrix spike (MS) recovery for 1 analyte was outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.

11. All duplicate analyses were within 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.

Pat G

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

04-13-03
Date

gmb/m04-105

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this Lot#: 03041105

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:**_____

L-WI-033/M-03/01

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 04/10/03

CLIENT: TNUHANFORD B01-054 H2136 LVL LOT #: 0304L105

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J00KV3	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	3.2	MG/KG	0.36	1.0
		Barium, Total	56.9	MG/KG	0.01	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	0.20	MG/KG	0.01	1.0
		Lead, Total	17.8	MG/KG	0.27	1.0
		Selenium, Total	0.37 u	MG/KG	0.37	1.0
-002	J00KV4	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	3.7	MG/KG	0.35	1.0
		Barium, Total	82.4	MG/KG	0.01	1.0
		Cadmium, Total	0.16	MG/KG	0.04	1.0
		Chromium, Total	25.2	MG/KG	0.06	1.0
		Mercury, Total	0.38	MG/KG	0.02	1.0
		Lead, Total	10.7	MG/KG	0.26	1.0
		Selenium, Total	0.36 u	MG/KG	0.36	1.0
-003	J00KV5	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	3.9	MG/KG	0.37	1.0
		Barium, Total	81.5	MG/KG	0.01	1.0
		Cadmium, Total	0.13	MG/KG	0.04	1.0
		Chromium, Total	24.7	MG/KG	0.06	1.0
		Mercury, Total	0.27	MG/KG	0.02	1.0
		Lead, Total	10.9	MG/KG	0.27	1.0
		Selenium, Total	0.38 u	MG/KG	0.38	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 04/10/03

CLIENT: TNUHANFORD B01-054 H2136 LVL LOT #: 0304L105

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	J00KV6	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	3.4	MG/KG	0.36	1.0
		Barium, Total	68.6	MG/KG	0.01	1.0
		Cadmium, Total	0.08	MG/KG	0.04	1.0
		Chromium, Total	12.0	MG/KG	0.06	1.0
		Mercury, Total	0.14	MG/KG	0.02	1.0
		Lead, Total	17.9	MG/KG	0.27	1.0
		Selenium, Total	0.37 u	MG/KG	0.37	1.0
-005	J00KV7	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	4.5	MG/KG	0.36	1.0
		Barium, Total	62.0	MG/KG	0.01	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	10.4	MG/KG	0.06	1.0
		Mercury, Total	0.23	MG/KG	0.02	1.0
		Lead, Total	13.3	MG/KG	0.27	1.0
		Selenium, Total	0.37 u	MG/KG	0.37	1.0
-006	J00KV8	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	0.35 u	MG/KG	0.35	1.0
		Barium, Total	1.3	MG/KG	0.01	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	0.16	MG/KG	0.06	1.0
		Mercury, Total	0.01 u	MG/KG	0.01	1.0
		Lead, Total	0.58	MG/KG	0.26	1.0
		Selenium, Total	0.36 u	MG/KG	0.36	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 04/10/03

CLIENT: TNUHANFORD B01-054 H2136 LVL LOT #: 0304L105

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	03L0185-MB1	Silver, Total	0.09	MG/KG	0.08	1.0
		Arsenic, Total	0.35 u	MG/KG	0.35	1.0
		Barium, Total	0.06	MG/KG	0.01	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	0.12	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	03C0074-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 04/10/03

CLIENT: TNUHANFORD B01-054 H2136

LVL LOT #: 0304L105

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J00KV3	Silver, Total	5.0	0.08u	5.1	98.0	1.0
		Arsenic, Total	194	3.2	205	92.8	1.0
		Barium, Total	253	56.9	205	95.5	1.0
		Cadmium, Total	4.7	0.04u	5.1	92.2	1.0
		Chromium, Total	29.5	9.7	20.5	96.6	1.0
		Mercury, Total	0.81	0.20	0.14	437.7	1.0
		Lead, Total	62.5	17.8	51.3	87.1	1.0
		Selenium, Total	187	0.37u	205	91.2	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 04/10/03

CLIENT: TNUHANFORD B01-054 H2136 LVL LOT #: 0304L105

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J00KV3	Silver, Total	0.08u	0.08u	NC	1.0
		Arsenic, Total	3.2	3.3	3.1	1.0
		Barium, Total	56.9	63.9	11.6	1.0
		Cadmium, Total	0.04u	0.04u	NC	1.0
		Chromium, Total	9.7	11.5	17.0	1.0
		Mercury, Total	0.20	0.18	14.8	1.0
		Lead, Total	17.8	18.3	2.8	1.0
		Selenium, Total	0.37u	0.37u	NC	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 04/10/03

CLIENT: TNUHANFORD B01-054 H2136

LVL LOT #: 0304L105

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	03L0185-LC1	Silver, LCS	49.8	50.0	MG/KG	99.6
		Arsenic, LCS	975	1000	MG/KG	97.5
		Barium, LCS	499	500	MG/KG	99.8
		Cadmium, LCS	24.7	25.0	MG/KG	98.8
		Chromium, LCS	50.2	50.0	MG/KG	100.4
		Lead, LCS	247	250	MG/KG	98.8
		Selenium, LCS	956	1000	MG/KG	95.6
LCS1	03C0074-LC1	Mercury, LCS	5.9	6.2	MG/KG	94.8

Lionville Laboratory Use Only

0304L105

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 #: 11343-606-001-9999-03

Project Contact/Phone #:

Lionville Laboratory Project Manager: Arlotta 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	1aq	1aq	1aq	1aq	1aq
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:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA 0625H	Pest/PCB 0608H	Herb	PCB 8PCB			Metal Mercury	CN	Hex Chrome ICP6				
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	001	J00KV3			S	4.1.03	1020		X	X		X			X		X				
	002	J00KV4					1010		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

from Matrix QC

DATE/REVISIONS:

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

Lionville Laboratory Use Only

Samples were: 1) Shipped ✓ or Hand Delivered ___ Airbill # 7913 4104 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]	[illegible]	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: Air Quality ☐ 7 days ~~21~~ Days
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.: SGE 05PC	

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	~~2~~ 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								
J00KV3	SOIL	4/1/03	1020	✓	✓	✓	✓	✓	✓	✓	✓
J00KV4	SOIL	↓	1040	✓	✓	✓	✓	✓	✓	✓	✓
J00KV5	SOIL		1040	✓	✓	✓	✓	✓	✓	✓	✓
J00KV6	SOIL		1134	✓	✓	✓	✓	✓	✓	✓	✓
J00KV7	SOIL		1157	✓	✓	✓	✓	✓	✓	✓	✓

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: DWSher DWSher	1732 4/1/03	Received By/Stored In: Fridge 3A	4/1/03 1732
Relinquished By/Removed From: REF 3A	4203 0700	Received By/Stored In: SJGALE	4203 0700
Relinquished By/Removed From: SJGALE	4203 0700	Received By/Stored In: FED EX	
Relinquished By/Removed From: Fed Ex	4-3-03 / 0955	Received By/Stored In:	4-3-03/0955
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) 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

RHI-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~~ 7 Days
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: DWSkeen DWSkeen	4/1/03 1732	Received By/Stored In: Fridge 3A	4/1/03 1732
Relinquished By/Removed From: REF 3A	4203 0700	Received By/Stored In: SJGALE	4203 0700
Relinquished By/Removed From: SJGALE	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}

DWSkeen 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)

16

LIONVILLE LABORATORY INCORPORATED
SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hanford

Purchase Order/Project:

DATE: 4-3-03

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

Laboratory SDG #: 0304L105

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°

Laboratory Sample Custodian: D. Johnson

Laboratory Project Manager:

RECEIVED
APR 2003

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

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

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J00KV3						
% SOLIDS	001	S	03L%S047	04/01/03	04/07/03	04/08/03
% SOLIDS	001 REP	S	03L%S047	04/01/03	04/07/03	04/08/03
CHROMIUM VI	001	S	03LVI020	04/01/03	04/08/03	04/08/03
CHROMIUM VI	001 REP	S	03LVI020	04/01/03	04/08/03	04/08/03
CHROMIUM VI	001 MS	S	03LVI020	04/01/03	04/08/03	04/08/03
CHROMIUM VI	001 MSD	S	03LVI020	04/01/03	04/08/03	04/08/03
J00KV4						
% SOLIDS	002	S	03L%S047	04/01/03	04/07/03	04/08/03
CHROMIUM VI	002	S	03LVI020	04/01/03	04/08/03	04/08/03
J00KV5						
% SOLIDS	003	S	03L%S047	04/01/03	04/07/03	04/08/03
CHROMIUM VI	003	S	03LVI020	04/01/03	04/08/03	04/08/03
J00KV6						
% SOLIDS	004	S	03L%S047	04/01/03	04/07/03	04/08/03
CHROMIUM VI	004	S	03LVI020	04/01/03	04/08/03	04/08/03
J00KV7						
% SOLIDS	005	S	03L%S047	04/01/03	04/07/03	04/08/03
CHROMIUM VI	005	S	03LVI020	04/01/03	04/08/03	04/08/03
J00KV8						
% SOLIDS	006	S	03L%S047	04/01/03	04/07/03	04/08/03
CHROMIUM VI	006	S	03LVI020	04/01/03	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 H2136

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

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 H2136
LVL#: 0304L105

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

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.

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

04-09-03
Date

njp\i04- 105

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.

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**		

L-WI-034/B-01/01

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 H2136 LVL LOT #: 0304L105

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J00KV3	% Solids	95.6	%	0.01	1.0
		Chromium VI	0.42 u	MG/KG	0.42	1.0
-002	J00KV4	% Solids	94.9	%	0.01	1.0
		Chromium VI	0.42 u	MG/KG	0.42	1.0
-003	J00KV5	% Solids	94.0	%	0.01	1.0
		Chromium VI	0.42 u	MG/KG	0.42	1.0
-004	J00KV6	% Solids	95.8	%	0.01	1.0
		Chromium VI	0.42 u	MG/KG	0.42	1.0
-005	J00KV7	% Solids	95.1	%	0.01	1.0
		Chromium VI	0.42 u	MG/KG	0.42	1.0
-006	J00KV8	% Solids	99.9	%	0.01	1.0
		Chromium VI	0.40 u	MG/KG	0.40	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 04/08/03

CLIENT: TNUHANFORD B01-OS4 H2136 LVL LOT #: 0304L105

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

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

07

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 04/08/03

CLIENT: TNUHANFORD B01-054 H2136

LVL LOT #: 0304L105

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J00KV3	Soluble Chromium VI	4.6	0.42u	4.2	104.9	1.0
		Insoluble Chromium VI	1290	0.42u	1140	113.8	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 H2136 LVL LOT #: 0304L105

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J00KV3	% Solids	95.6	96.1	0.49	1.0
		Chromium VI	0.42u	0.42u	NC	1.0

0304L105

Custody Transfer Record/Lab

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: Delotte 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: VOA	BNA	Pest/PCB	Herb	PCB
		INORG: Metal	CN	Hex Chrome		
Lionville Laboratory Use Only			0625H	0608H		8PCB
						MERCURY
						ICP6

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	8PCB	MERCURY	ICP6
001	J00KV3			S	4.1.03	1020	X	X	X	X	X
002	J00KV4					1010	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 4104 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: Air Quality ☐ 7 days 21 Days		
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.: SGE 05PC

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

DWSher 3/31/03

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

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SI=Sludge
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DL=Drum Liquids
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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~~ 7 days
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	Received By/Stored In: Friday 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
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wt=Wipe
L=Liquid
V=Vegetation
X=Other

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

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

LIONVILLE LABORATORY INCORPORATED
SAMPLE RECEIPT CHECKLIST

CLIENT: TNU Hanford

Purchase Order/Project:

DATE: 4-3-03

SAF# SOW# / Release #: B01-054

Laboratory SDG #: C3D4L105

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 96-050 / 0.9°C

Laboratory Sample Custodian: D. Johnson

Laboratory Project Manager: