



EBERLINE
SERVICES



March 22, 2006

Ms. Joan Kessner
Washington Closure Hanford
3190 George Washington Way
MSIN H9-02
Richland, WA 99352

Reference: **P.O. #630**
Eberline Services R6-02-011-7373, SDG K0206

Dear Ms. Kessner:

Enclosed is the data report for one water sample designated under SAF No. RC-048. The sample was received at Eberline Services on January 31, 2006. The sample was analyzed according to the accompanying chain-of-custody document.

Please call if you have any questions concerning this report.

Sincerely,

Melissa C. Mannion
Senior Program Manager

MCM/njv

Enclosure: Data Package

Analytical Services
2030 Wright Avenue
P.O. Box 4040
Richmond, California 94804-0040
(510) 235-2633 Fax (510) 235-0438
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1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K0206 was composed of one water sample designated under SAF No. RC-048 with a Project Designation of: 100 Area and 300 Area Component of the RCBRA Water Sa.

The sample was received as stated on the Chain-of-Custody document. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. All results were transmitted to WCH via e-mail on March 22, 2006.

2.0 ANALYSIS NOTES

2.1 Tritium Analysis

No problems were encountered during the course of the analyses.

2.3 Total Strontium Analysis

No problems were encountered during the course of the analyses.

2.4 Radium-226 Analysis

No problems were encountered during the course of the analyses.

2.5 Radium-228 Analysis

The sample contained a long-lived beta activity; this activity was not removed by the applied chemistry procedures. In order to produce Ra-228 results the raw counts were reduced by a Sr90-Y90 analysis program using a linear regression equation.

No problems were encountered during the course of the analyses.

2.6 Isotopic Thorium Analysis

No problems were encountered during the course of the analyses.

2.7 Isotopic Uranium Analysis

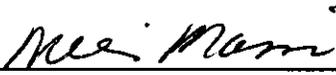
No problems were encountered during the course of the analyses.

2.8 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

Case Narrative Certification Statement

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



Melissa C. Mannion
Senior Program Manager

3/22/16

Date

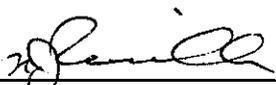
EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP K0206

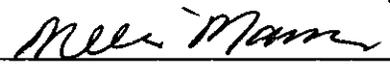
SDG 7373
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Case no SDG_K0206

S U M M A R Y D A T A S E C T I O N

T A B L E O F C O N T E N T S	
About this section	1
Sample Summaries	3
Prep Batch Summary	5
Work Summary	6
Method Blanks	8
Lab Control Samples	10
Duplicates	11
Matrix Spikes	13
Data Sheets	14
Method Summaries	15
Report Guides	22
End of Section	36


Prepared by


Reviewed by

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-TOC
Version 3.06
Report date 03/22/06

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP K0206

SDG 7373
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_K0206

ABOUT THE DATA SUMMARY SECTION

The Data Summary Section of a Data Package has all data, in several useful orders, necessary for first level, routine review of the data package for a Sample Delivery Group (SDG). This section follows the Data Package Narrative, which has an overview of the data package and a discussion of special problems. It is followed by the Raw Data Section, which has full details.

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

The Sample and QC Summary Reports show all samples, including QC samples, reported in one SDG. These reports cross-reference client and lab sample identifiers.

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches (lab groupings reflecting how work was organized) relevant to the reported SDG with information necessary to check the completeness and consistency of the SDG.

WORK SUMMARY

The Work Summary Report shows all samples and work done on them relevant to the reported SDG.

METHOD BLANKS

The Method Blank Reports, one for each Method Blank relevant to the SDG, show all results and primary supporting information for the blanks.

LAB CONTROL SAMPLES

The Lab Control Sample Reports, one for each Lab Control Sample relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

REPORT GUIDES

Page 1

SUMMARY DATA SECTION

Page 1

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 03/22/06

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP K0206

SDG 7373

Contact Melissa C. Mannion

Client Hanford

Contract No. 630

Case no SDG K0206

GUIDE, cont.

ABOUT THE DATA SUMMARY SECTION

DUPLICATES

The Duplicate Reports, one for each Duplicate and Original sample pair relevant to the SDG, show all results, differences and primary supporting information for these QC samples.

MATRIX SPIKES

The Matrix Spike Reports, one for each Spiked and Original sample pair relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DATA SHEETS

The Data Sheet Reports, one for each client sample in the SDG, show all results and primary supporting information for these samples.

METHOD SUMMARIES

The Method Summary Reports, one for each test used in the SDG, show all results, QC and method performance data for one analyte on one or two pages. (A test is a short code for the method used to do certain work to the client's specification.)

REPORT GUIDES

The Report Guides, one for each of the above groups of reports, have documentation on how to read the associated reports.

REPORT GUIDES

Page 2

SUMMARY DATA SECTION

Page 2

Lab id EBRINE

Protocol Hanford

Version Ver 1.0

Form DVD-RG

Version 3.06

Report date 03/22/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0206

SDG 7373
 Contact Melissa C. Mannion

SAMPLE SUMMARY

Client Hanford
 Contract No. 630
 Case no SDG K0206

CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	LAB SAMPLE ID	SAF NO	CHAIN OF CUSTODY	COLLECTED
J10VH6	399-3-11	WATER		R602011-01	RC-048	RC-048-83	01/30/06 10:30
Method Blank		WATER		R602011-03	RC-048		
Lab Control Sample		WATER		R602011-02	RC-048		
Duplicate (R602011-01)	399-3-11	WATER		R602011-04	RC-048		01/30/06 10:30
Spike (R602011-01)	399-3-11	WATER		R602011-05	RC-048		01/30/06 10:30

SAMPLE SUMMARY

Page 1

SUMMARY DATA SECTION

Page 3

Lab id EBRLNE
 Protocol Hanford
 Version Ver 1.0
 Form DVD-CS
 Version 3.06
 Report date 03/22/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0206

SDG 7373
 Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
 Contract No. 630
 Case no SDG K0206

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	SAMPLE SOLIDS AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	LAB COLL. SAMPLE ID	DEPARTMENT SAMPLE ID
7373	RC-048-83	J10VH6	WATER	7 L		01/31/06 1	R602011-01	7373-001
		Method Blank	WATER				R602011-03	7373-003
		Lab Control Sample	WATER				R602011-02	7373-002
		Duplicate (R602011-01)	WATER	7 L		01/31/06 1	R602011-04	7373-004
		Spike (R602011-01)	WATER	7 L		01/31/06 1	R602011-05	7373-005

QC SUMMARY

Page 1

SUMMARY DATA SECTION

Page 4

Lab id EBRLNE
 Protocol Hanford
 Version Ver 1.0
 Form DVD-QS
 Version 3.06
 Report date 03/22/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0206

SDG 7373
 Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
 Contract No. 630
 Case no SDG K0206

TEST	MATRIX	METHOD	PREPARATION ERROR		PLANCHETS ANALYZED				QUALI- FIERS
			BATCH	2σ %	CLIENT	MORE	RE BLANK	LCS	
Alpha Spectroscopy									
TH	WATER	Thorium, Isotopic in Water	7131-068	5.0	1		1	1	1/1
U	WATER	Uranium, Isotopic in Water	7131-068	5.0	1		1	1	1/1
Beta Counting									
AC	WATER	Radium 228 in Water	7131-068	5.0	1		1	1	1/1
SR	WATER	Total Strontium in Water	7131-068	10.0	1		1	1	1/1
Gamma Scan									
GAM	WATER	Gamma Emitters	7131-068	15.0	1		1	1	1/1
Liquid Scintillation Counting									
H	WATER	Tritium in Water	7131-068	10.0	1		1	1	1/1 1/1 X
Radon Counting									
RA	WATER	Radium 226 in Water	7131-068	5.0	1		1	1	1/1

Duplicates and Matrix Spikes are those with original (Client) sample in this Sample Delivery Group.
 Blank and LCS planchets are those in the same preparation batch as some Client, Duplicate or Spike sample.

Lab id EBRLNE
 Protocol Hanford
 Version Ver 1.0
 Form DVD-PBS
 Version 3.06
 Report date 03/22/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0206

SDG 7373
 Contact Melissa C. Mannion

Client Hanford
 Contract No. 630
 Case no SDG K0206

WORK SUMMARY

CLIENT SAMPLE ID	LAB SAMPLE ID									
LOCATION	MATRIX	COLLECTED	SUF-							
CUSTODY	SAF No	RECEIVED	PLANCHET	TEST	FIX	ANALYZED	REVIEWED	BY	METHOD	
J10VH6		R602011-01	7373-001	AC		03/06/06	03/10/06	MWT	Radium 228 in Water	
399-3-11		01/30/06	7373-001	GAM		03/03/06	03/06/06	CSS	Gamma Emitters	
RC-048-83	RC-048	01/31/06	7373-001	H		03/14/06	03/17/06	MWT	Tritium in Water	
			7373-001	RA		03/15/06	03/16/06	MWT	Radium 226 in Water	
			7373-001	SR		03/07/06	03/10/06	MWT	Total Strontium in Water	
			7373-001	TH		03/10/06	03/13/06	MWT	Thorium, Isotopic in Water	
			7373-001	U		03/08/06	03/09/06	MWT	Uranium, Isotopic in Water	
Method Blank		R602011-03	7373-003	AC		03/06/06	03/10/06	MWT	Radium 228 in Water	
			7373-003	GAM		02/28/06	03/06/06	CSS	Gamma Emitters	
	RC-048		7373-003	H		03/14/06	03/17/06	MWT	Tritium in Water	
			7373-003	RA		03/15/06	03/16/06	MWT	Radium 226 in Water	
			7373-003	SR		03/07/06	03/10/06	MWT	Total Strontium in Water	
			7373-003	TH		03/11/06	03/13/06	MWT	Thorium, Isotopic in Water	
			7373-003	U		03/08/06	03/09/06	MWT	Uranium, Isotopic in Water	
Lab Control Sample		R602011-02	7373-002	AC		03/06/06	03/10/06	MWT	Radium 228 in Water	
			7373-002	GAM		03/03/06	03/06/06	CSS	Gamma Emitters	
	RC-048		7373-002	H		03/14/06	03/17/06	MWT	Tritium in Water	
			7373-002	RA		03/15/06	03/16/06	MWT	Radium 226 in Water	
			7373-002	SR		03/07/06	03/10/06	MWT	Total Strontium in Water	
			7373-002	TH		03/10/06	03/13/06	MWT	Thorium, Isotopic in Water	
			7373-002	U		03/08/06	03/09/06	MWT	Uranium, Isotopic in Water	
Duplicate (R602011-01)		R602011-04	7373-004	AC		03/06/06	03/10/06	MWT	Radium 228 in Water	
399-3-11		01/30/06	7373-004	GAM		02/28/06	03/06/06	CSS	Gamma Emitters	
	RC-048	01/31/06	7373-004	H		03/14/06	03/17/06	MWT	Tritium in Water	
			7373-004	RA		03/15/06	03/16/06	MWT	Radium 226 in Water	
			7373-004	SR		03/07/06	03/10/06	MWT	Total Strontium in Water	
			7373-004	TH		03/11/06	03/13/06	MWT	Thorium, Isotopic in Water	
			7373-004	U		03/08/06	03/09/06	MWT	Uranium, Isotopic in Water	
Spike (R602011-01)		R602011-05	7373-005	H		03/14/06	03/17/06	MWT	Tritium in Water	
399-3-11		01/30/06								
	RC-048	01/31/06								

WORK SUMMARY

Page 1

SUMMARY DATA SECTION

Page 6

Lab id EBRLNE
 Protocol Hanford
 Version Ver 1.0
 Form DVD-CWS
 Version 3.06
 Report date 03/22/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0206

SDG 7373
 Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
 Contract No. 630
 Case no SDG K0206

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
AC	RC-048	Radium 228 in Water	RAISO_SEP_GPC	1			1	1	1	4
GAM	RC-048	Gamma Emitters	GAMMA_GS	1			1	1	1	4
H	RC-048	Tritium in Water	906.0_H3_LSC	1			1	1	1	5
RA	RC-048	Radium 226 in Water	903.1_RA226_LUC	1			1	1	1	4
SR	RC-048	Total Strontium in Water	SRTOT_SEP_PRECIP_GPC	1			1	1	1	4
TH	RC-048	Thorium, Isotopic in Water	THISO_IB_PLATE_AEA	1			1	1	1	4
U	RC-048	Uranium, Isotopic in Water	UIISO_PLATE_AEA	1			1	1	1	4
TOTALS				7			7	7	7	29

WORK SUMMARY

Page 2

SUMMARY DATA SECTION

Page 7

Lab id EBRLNE
 Protocol Hanford
 Version Ver 1.0
 Form DVD-CWS
 Version 3.06
 Report date 03/22/06

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP K0206

R602011-03

Method Blank

METHOD BLANK

SDG <u>7373</u>	Client/Case no <u>Hanford</u>	SDG <u>K0206</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R602011-03</u>	Client sample id <u>Method Blank</u>	
Dept sample id <u>7373-003</u>	Material/Matrix <u>WATER</u>	
	SAF No <u>RC-048</u>	

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Tritium	10028-17-8	-304	890	1500	400	U	H
Total Strontium	SR-RAD	-0.007	0.34	0.70	2.0	U	SR
Radium 228	15262-20-1	-0.171	0.64	1.7	3.0	U	AC
Thorium 228	14274-82-9	0.070	0.093	0.18		U	TH
Thorium 230	14269-63-7	-0.046	0.093	0.18	1.0	U	TH
Thorium 232	TH-232	0	0.046	0.18	1.0	U	TH
Uranium 233/234	U-233/234	0.084	0.084	0.32	1.0	U	U
Uranium 235	15117-96-1	0	0.10	0.39	1.0	U	U
Uranium 238	U-238	0	0.084	0.32	1.0	U	U
Radium 226	13982-63-3	0.123	0.41	0.77	2.0	U	RA
Potassium 40	13966-00-2	U		350		U	GAM
Cobalt 60	10198-40-0	U		16	25	U	GAM
Cesium 137	10045-97-3	U		15	15	U	GAM
Radium 226	13982-63-3	U		27		U	GAM
Radium 228	15262-20-1	U		61		U	GAM
Europium 152	14683-23-9	U		33	50	U	GAM
Europium 154	15585-10-1	U		41	50	U	GAM
Europium 155	14391-16-3	U		33	50	U	GAM
Thorium 228	14274-82-9	U		17		U	GAM
Thorium 232	TH-232	U		61		U	GAM
Uranium 235	15117-96-1	U		47		U	GAM
Uranium 238	U-238	U		1600		U	GAM
Americium 241	14596-10-2	U		63		U	GAM
Ruthenium 106	13967-48-1	U		110		U	GAM
Antimony 125	14234-35-6	U		30		U	GAM
Beryllium 7	13966-02-4	U		83		U	GAM
Cesium 134	13967-70-9	U		17		U	GAM

100&300Area Component RCBRA Water Sa

METHOD BLANKS
Page 1
SUMMARY DATA SECTION
Page 8

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>03/22/06</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0206

R602011-02

Lab Control Sample

LAB CONTROL SAMPLE

SDG <u>7373</u> Contact <u>Melissa C. Mannion</u>	Client/Case no <u>Hanford</u> <u>SDG K0206</u> Contract No. <u>630</u>
Lab sample id <u>R602011-02</u> Dept sample id <u>7373-002</u>	Client sample id <u>Lab Control Sample</u> Material/Matrix <u>WATER</u> SAF No <u>RC-048</u>

ANALYTE	RESULT	2σ ERR	MDA	RDL	QUALI-	ADDED	2σ ERR	REC	3σ	LMTS	PROTOCOL
	pCi/L	(COUNT)	pCi/L	pCi/L	FIERS TEST		pCi/L	pCi/L	†	(TOTAL)	LIMITS
Tritium	24000	1400	<u>1500</u>	400	H	24500	980	98	82-118	80-120	
Total Strontium	22.9	1.3	0.55	2.0	SR	21.6	0.86	106	81-119	80-120	
Radium 228	21.2	1.3	1.7	3.0	AC	18.3	0.73	<u>116</u>	85-115	80-120	
Thorium 230	19.3	2.5	0.21	1.0	TH	20.2	0.81	96	79-121	80-120	
Uranium 233/234	18.9	2.1	0.95	1.0	U	19.3	0.77	98	81-119	80-120	
Uranium 235	14.6	1.8	0.24	1.0	U	15.7	0.63	93	80-120	80-120	
Uranium 238	19.8	2.2	0.91	1.0	U	21.0	0.84	94	82-118	80-120	
Radium 226	55.3	2.1	0.71	2.0	RA	55.9	2.2	99	89-111	80-120	
Cobalt 60	462	42	<u>28</u>	25	GAM	484	19	95	74-126	80-120	
Cesium 137	504	36	<u>27</u>	15	GAM	494	20	102	74-126	80-120	

100&300Area Component RCBRA Water Sa

QC-LCS #56027

LAB CONTROL SAMPLES

Page 1

SUMMARY DATA SECTION

Page 10

Lab id <u>EBERLINE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-LCS</u>
Version <u>3.06</u>
Report date <u>03/22/06</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0206

R602011-04

J10VH6

DUPLICATE

SDG <u>7373</u> Contact <u>Melissa C. Mannion</u> Duplicates Lab sample id <u>R602011-04</u> Dept sample id <u>7373-004</u>	ORIGINAL Lab sample id <u>R602011-01</u> Dept sample id <u>7373-001</u> Received <u>01/31/06</u>	Client/Case no <u>Hanford</u> SDG <u>K0206</u> Contract No. <u>630</u> Client sample id <u>J10VH6</u> Location/Matrix <u>399-3-11</u> <u>WATER</u> Collected/Volume <u>01/30/06 10:30</u> <u>7 L</u> Custody/SAF No <u>RC-048-83</u> <u>RC-048</u>
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ANALYTE	DUPLICATE		MDA		RDL		QUALI- FIERS	TEST	ORIGINAL		MDA		QUALI- FIERS	RPD %	3σ TOT	DER σ
	pCi/L	2σ ERR (COUNT)	pCi/L		pCi/L				pCi/L	2σ ERR (COUNT)	pCi/L					
Tritium	373	100	150		400		H		472	100	150		23	55	1.3	
Total Strontium	2.81	0.51	0.53		2.0		SR		2.96	0.56	0.62		5	45	0.3	
Radium 228	0.547	<u>4.2</u>	1.6		3.0	U	AC		-0.371	1.8	1.7	U	-		0.4	
Thorium 228	0.063	0.19	0.42			U	TH		-0.044	0.26	0.54	U	-		0.7	
Thorium 230	-0.094	0.13	0.30		1.0	U	TH		0	0.087	0.33	U	-		1.2	
Thorium 232	0.031	0.063	0.24		1.0	U	TH		0	0.087	0.33	U	-		0.6	
Uranium 233/234	17.1	1.9	0.34		1.0	U			16.8	1.5	0.21		2	24	0.2	
Uranium 235	1.26	0.41	0.25		1.0	U			0.718	0.26	0.16		55	74	2.2	
Uranium 238	16.9	1.9	0.34		1.0	U			17.4	1.6	0.19		3	24	0.4	
Radium 226	0.305	0.43	0.72		2.0	U	RA		-0.071	0.36	0.75	U	-		1.3	
Potassium 40	U		680			U	GAM		U		350	U	-		0.9	
Cobalt 60	U		25		25	U	GAM		U		17	U	-		0.5	
Cesium 137	U		<u>23</u>		15	U	GAM		U		12	U	-		0.8	
Radium 226	U		55			U	GAM		U		25	U	-		1.0	
Radium 228	U		110			U	GAM		U		57	U	-		0.8	
Europium 152	U		<u>68</u>		50	U	GAM		U		36	U	-		0.8	
Europium 154	U		<u>73</u>		50	U	GAM		U		41	U	-		0.8	
Europium 155	U		<u>83</u>		50	U	GAM		U		47	U	-		0.7	
Thorium 228	U		39			U	GAM		U		20	U	-		0.9	
Thorium 232	U		110			U	GAM		U		57	U	-		0.8	
Uranium 235	U		98			U	GAM		U		61	U	-		0.6	
Uranium 238	U		2800			U	GAM		U		1600	U	-		0.7	
Americium 241	U		190			U	GAM		U		100	U	-		0.8	
Ruthenium 106	U		210			U	GAM		U		130	U	-		0.6	
Antimony 125	U		55			U	GAM		U		33	U	-		0.7	
Beryllium 7	U		240			U	GAM		U		130	U	-		0.8	
Cesium 134	U		28			U	GAM		U		16	U	-		0.7	

100&300Area Component RCBRA Water Sa

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DUP</u>
Version <u>3.06</u>
Report date <u>03/22/06</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0206

R602011-04

J10VH6

DUPLICATE, cont.

SDG <u>7373</u>		Client/Case no <u>Hanford</u>	<u>SDG K0206</u>
Contact <u>Melissa C. Mannion</u>		Contract No. <u>630</u>	
<u>DUPLICATE</u>	<u>ORIGINAL</u>		
Lab sample id <u>R602011-04</u>	Lab sample id <u>R602011-01</u>	Client sample id <u>J10VH6</u>	
Dept sample id <u>7373-004</u>	Dept sample id <u>7373-001</u>	Location/Matrix <u>399-3-11</u>	<u>WATER</u>
	Received <u>01/31/06</u>	Collected/Volume <u>01/30/06 10:30</u>	<u>7 L</u>
		Custody/SAF No <u>RC-048-83</u>	<u>RC-048</u>

QC-DUP#1 56029

DUPLICATES

Page 2

SUMMARY DATA SECTION

Page 12

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DUP</u>
Version <u>3.06</u>
Report date <u>03/22/06</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0206

R602011-05

J10VH6

MATRIX SPIKE

SDG <u>7373</u>	Client/Case no <u>Hanford</u>	<u>SDG K0206</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
MATRIX SPIKE	ORIGINAL	
Lab sample id <u>R602011-05</u>	Lab sample id <u>R602011-01</u>	Client sample id <u>J10VH6</u>
Dept sample id <u>7373-005</u>	Dept sample id <u>7373-001</u>	Location/Matrix <u>399-3-11</u> <u>WATER</u>
	Received <u>01/31/06</u>	Collected/Volume <u>01/30/06 10:30</u> <u>7 L</u>
		Custody/SAF No <u>RC-048-83</u> <u>RC-048</u>

ANALYTE	SPIKE pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS TEST	ADDED pCi/L	2σ ERR pCi/L	ORIGINAL pCi/L	2σ ERR (COUNT)	REC 3σ % (TOTAL)	LMTS (TOTAL)	PROTOCOL LIMITS
Tritium	25600	370	160	400	X H	25600	1000	472	100	98	84-116	60-140

100&300Area Component RCBRA Water Sa

QC-MS#1 56030

MATRIX SPIKES

Page 1

SUMMARY DATA SECTION

Page 13

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-MS</u>
Version <u>3.06</u>
Report date <u>03/22/06</u>

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP K0206

R602011-01

J10VH6

DATA SHEET

SDG <u>7373</u>	Client/Case no <u>Hanford</u>	SDG <u>K0206</u>
Contact <u>Melissa C. Mannion</u>	Contract No. <u>630</u>	
Lab sample id <u>R602011-01</u>	Client sample id <u>J10VH6</u>	
Dept sample id <u>7373-001</u>	Location/Matrix <u>399-3-11</u>	<u>WATER</u>
Received <u>01/31/06</u>	Collected/Volume <u>01/30/06 10:30</u>	<u>7 L</u>
	Custody/SAF No <u>RC-048-83</u>	<u>RC-048</u>

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI- FIERS	TEST
Tritium	10028-17-8	472	100	150	400		H
Total Strontium	SR-RAD	2.96	0.56	0.62	2.0		SR
Radium 228	15262-20-1	-0.371	1.8	1.7	3.0	U	AC
Thorium 228	14274-82-9	-0.044	0.26	0.54		U	TH
Thorium 230	14269-63-7	0	0.087	0.33	1.0	U	TH
Thorium 232	TH-232	0	0.087	0.33	1.0	U	TH
Uranium 233/234	U-233/234	16.8	1.5	0.21	1.0		U
Uranium 235	15117-96-1	0.718	0.26	0.16	1.0		U
Uranium 238	U-238	17.4	1.6	0.19	1.0		U
Radium 226	13982-63-3	-0.071	0.36	0.75	2.0	U	RA
Potassium 40	13966-00-2	U		350		U	GAM
Cobalt 60	10198-40-0	U		17	25	U	GAM
Cesium 137	10045-97-3	U		12	15	U	GAM
Radium 226	13982-63-3	U		25		U	GAM
Radium 228	15262-20-1	U		57		U	GAM
Europium 152	14683-23-9	U		36	50	U	GAM
Europium 154	15585-10-1	U		41	50	U	GAM
Europium 155	14391-16-3	U		47	50	U	GAM
Thorium 228	14274-82-9	U		20		U	GAM
Thorium 232	TH-232	U		57		U	GAM
Uranium 235	15117-96-1	U		61		U	GAM
Uranium 238	U-238	U		1600		U	GAM
Americium 241	14596-10-2	U		100		U	GAM
Ruthenium 106	13967-48-1	U		130		U	GAM
Antimony 125	14234-35-6	U		33		U	GAM
Beryllium 7	13966-02-4	U		130		U	GAM
Cesium 134	13967-70-9	U		16		U	GAM

100&300Area Component RCBRA Water Sa

DATA SHEETS

Page 1

SUMMARY DATA SECTION

Page 14

Lab id <u>EBRLNE</u>
Protocol <u>Hanford</u>
Version <u>Ver 1.0</u>
Form <u>DVD-DS</u>
Version <u>3.06</u>
Report date <u>03/22/06</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0206

Test TH Matrix WATER
 SDG 7373
 Contact Melissa C. Mannion

METHOD SUMMARY

THORIUM, ISOTOPIC IN WATER

ALPHA SPECTROSCOPY

Client Hanford
 Contract No. 630
 Contract SDG K0206

RESULTS

	LAB	RAW	SUF-	
CLIENT SAMPLE ID	SAMPLE ID	TEST FIX	PLANCHET	Thorium 230

Preparation batch 7131-068

J10VH6	R602011-01	7373-001	U
Method Blank	R602011-03	7373-003	U
Lab Control Sample	R602011-02	7373-002	ok
Duplicate (R602011-01)	R602011-04	7373-004	- U

Nominal values and limits from method RDLs (pCi/L) 1.0
 100&300Area Component RCBRA Water Sa

METHOD PERFORMANCE

	LAB	RAW	SUF-	MAX MDA	ALIQ	PREP	DILU-	YIELD	EFF	COUNT	FWHM	DRIFT	DAYS		ANAL-	
CLIENT SAMPLE ID	SAMPLE ID	TEST FIX		pCi/L	L	FAC	TION	%	%	min	keV	KeV	HELD	PREPARED	YZED	DETECTOR

Preparation batch 7131-068 2σ prep error 5.0 % Reference Lab Notebook 7131 pg. 68

J10VH6	R602011-01	0.33	0.500	28	181	39	03/09/06	03/10	SS-036
Method Blank	R602011-03	0.18	0.500	55	195		03/09/06	03/11	SS-028
Lab Control Sample	R602011-02	0.21	0.500	53	182		03/09/06	03/10	SS-056
Duplicate (R602011-01)	R602011-04	0.30	0.500	36	196	40	03/09/06	03/11	SS-036

Nominal values and limits from method 1.0 0.500 20-110 150 100 180

PROCEDURES	REFERENCE	THISO_IE_PLATE_AEA
	SPP-062	Sample Aliquoting, rev 0
	CP-900	Thorium in Water and Dissolved Solid Samples by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD	MDA	<u>0.26</u> ± <u>0.14</u>
FOR 4 SAMPLES	YIELD	<u>43</u> ± <u>26</u>

METHOD SUMMARIES

Page 1

SUMMARY DATA SECTION

Page 15

Lab id	<u>EBRLNE</u>
Protocol	<u>Hanford</u>
Version	<u>Ver 1.0</u>
Form	<u>DVD-CMS</u>
Version	<u>3.06</u>
Report date	<u>03/22/06</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0206

Test U Matrix WATER
 SDG 7373
 Contact Melissa C. Mannion

METHOD SUMMARY

URANIUM, ISOTOPIC IN WATER

ALPHA SPECTROSCOPY

Client Hanford
 Contract No. 630
 Contract SDG K0206

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	1: Uranium			2: Uranium			3: Uranium			RESULT RATIOS (%)				
				PLANCHET	233/234	235	238	1+3	2σ	2+3	2σ						
Preparation batch 7131-068																	
J10VH6	R602011-01		7373-001	16.8	0.718	17.4	97	12	4	2							
Method Blank	R602011-03		7373-003	U	U	U											
Lab Control Sample	R602011-02		7373-002	ok	ok	ok											
Duplicate (R602011-01)	R602011-04		7373-004	ok	ok	ok	101	16	7	3							
Nominal values and limits from method				RDLs (pCi/L)	1.0	1.0	1.0	100	4								
100&300Area Component RCBRA Water Sa							Averages	99	6								

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	MAX MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	ANAL-	
														PREPARED	YZED
Preparation batch 7131-068 2σ prep error 5.0 % Reference Lab Notebook 7131 pg. 68															
J10VH6	R602011-01			0.21	0.500			89	168	37	03/02/06	03/08	SS-042		
Method Blank	R602011-03			0.39	0.500			60	104		03/02/06	03/08	SS-029		
Lab Control Sample	R602011-02			0.95	0.500			90	104		03/02/06	03/08	SS-028		
Duplicate (R602011-01)	R602011-04			0.34	0.500			90	104	37	03/02/06	03/08	SS-032		
Nominal values and limits from method				1.0	0.500			30-105	100	100	180				

PROCEDURES	REFERENCE	UIISO_PLATE_AEA
SPP-062		Sample Aliquoting, rev 0
CP-040		Environmental Water Dissolution, rev 9
CP-921		Uranium in Water and Dissolved Samples by Extraction Chromatography, rev 1
CP-008		Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD	MDA	<u>0.47</u> ± <u>0.65</u>
FOR 4 SAMPLES	YIELD	<u>82</u> ± <u>30</u>

METHOD SUMMARIES

Page 2

SUMMARY DATA SECTION

Page 16

Lab id EBRLNE
 Protocol Hanford
 Version Ver 1.0
 Form DVD-CMS
 Version 3.06
 Report date 03/22/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0206

METHOD SUMMARY

RADIUM 228 IN WATER

BETA COUNTING

Test AC Matrix WATER
SDG 7373
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Contract SDG K0206

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST FIX	SUF- PLANCHET	Radium 228
------------------	---------------	--------------	---------------	------------

Preparation batch 7131-068

J10VH6	R602011-01	7373-001		U
Method Blank	R602011-03	7373-003		U
Lab Control Sample	R602011-02	7373-002		<u>HIGH</u>
Duplicate (R602011-01)	R602011-04	7373-004		- U

Nominal values and limits from method RDLs (pCi/L) 3.0
100&300Area Component RCBRA Water Sa

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST FIX	SUF- pCi/L	MDA	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	ANAL- YZED	DETECTOR
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Preparation batch 7131-068 2σ prep error 5.0 % Reference Lab Notebook 7131 pg. 68

J10VH6	R602011-01		1.7	0.500				70		150			35	03/06/06	03/06 GRB-217
Method Blank	R602011-03		1.7	0.500				69		150				03/06/06	03/06 GRB-219
Lab Control Sample	R602011-02		1.7	0.500				66		150				03/06/06	03/06 GRB-218
Duplicate (R602011-01)	R602011-04		1.6	0.500				76		150			35	03/06/06	03/06 GRB-220

Nominal values and limits from method 3.0 0.500 100 180

PROCEDURES	REFERENCE	RAISO_SEP_GPC
SPP-062	Sample Aliquoting, rev 0	
CP-702	Radium-228 in Water, rev 9	

AVERAGES ± 2 SD	MDA	1.7 ± 0.10
FOR 4 SAMPLES	YIELD	70 ± 8

METHOD SUMMARIES

Page 3

SUMMARY DATA SECTION

Page 17

Lab id	<u>EBRLNE</u>
Protocol	<u>Hanford</u>
Version	<u>Ver 1.0</u>
Form	<u>DVD-CMS</u>
Version	<u>3.06</u>
Report date	<u>03/22/06</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0206

Test SR Matrix WATER
 SDG 7373
 Contact Melissa C. Mannion

Client Hanford
 Contract No. 630
 Contract SDG K0206

METHOD SUMMARY

TOTAL STRONTIUM IN WATER

BETA COUNTING

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	Total Strontium
Preparation batch 7131-068					
J10VH6	R602011-01			7373-001	2.96
Method Blank	R602011-03			7373-003	U
Lab Control Sample	R602011-02			7373-002	ok
Duplicate (R602011-01)	R602011-04			7373-004	ok

Nominal values and limits from method RDLs (pCi/L) 2.0
 100&300Area Component RCBRA Water Sa

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF-FIX	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	ANAL- YZED	DETECTOR
Preparation batch 7131-068 2σ prep error 10.0 % Reference Lab Notebook 7131 pg. 68															
J10VH6	R602011-01			0.62	0.500			79	100				36	03/07/06	GRB-225
Method Blank	R602011-03			0.70	0.500			78	100					03/07/06	GRB-220
Lab Control Sample	R602011-02			0.55	0.500			84	100					03/07/06	GRB-227
Duplicate (R602011-01)	R602011-04			0.53	0.500			81	100				36	03/07/06	GRB-228

Nominal values and limits from method 2.0 0.500 35-105 100 180

PROCEDURES	REFERENCE	SRTOT_SEP_PRECIP_GPC
	SPP-062	Sample Aliquoting, rev 0
	CP-380	Strontium in Water Samples, rev 2

AVERAGES ± 2 SD	MDA	0.60 ± 0.15
FOR 4 SAMPLES	YIELD	80 ± 5

Lab id	<u>EBRLNE</u>
Protocol	<u>Hanford</u>
Version	<u>Ver 1.0</u>
Form	<u>DVD-CMS</u>
Version	<u>3.06</u>
Report date	<u>03/22/06</u>

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0206

Test GAM Matrix WATER
 SDG 7373
 Contact Melissa C. Mannion

Client Hanford
 Contract No. 630
 Contract SDG K0206

METHOD SUMMARY

GAMMA EMITTERS
 GAMMA SCAN

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST FIX	SUF- PLANCHET	Cobalt 60	Cesium 137
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Preparation batch 7131-068

J10VH6	R602011-01		7373-001	U	U
Method Blank	R602011-03		7373-003	U	U
Lab Control Sample	R602011-02		7373-002	ok	ok
Duplicate (R602011-01)	R602011-04		7373-004	- U	- U

Nominal values and limits from method RDLs (pCi/L) 25 15
 100&300Area Component RCBRA Water Sa

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST FIX	SUF- pCi/L	MDA L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	ANAL- YZED	DETECTOR
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Preparation batch 7131-068 2σ prep error 15.0 % Reference Lab Notebook 7131 pg. 68

J10VH6	R602011-01		<u>82</u>	0.500						312		32	02/22/06	03/03	MB,05,00
Method Blank	R602011-03		<u>58</u>	0.500						316			02/22/06	02/28	MB,08,00
Lab Control Sample	R602011-02		<u>27</u>	0.500						352			02/22/06	03/03	01,03,00
Duplicate (R602011-01)	R602011-04		<u>140</u>	0.500						315		29	02/22/06	02/28	01,02,00

Nominal values and limits from method 15 0.500 100 180

PROCEDURES REFERENCE GAMMA_GS
 CP-100 Ge(Li) Preparation for Commercial Samples, rev 7

AVERAGES ± 2 SD MDA 77 ± 96
 FOR 4 SAMPLES YIELD _____ ± _____

METHOD SUMMARIES

Page 5

SUMMARY DATA SECTION

Page 19

Lab id EBRLNE
 Protocol Hanford
 Version Ver 1.0
 Form DVD-CMS
 Version 3.06
 Report date 03/22/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0206

Test H Matrix WATER
 SDG 7373
 Contact Melissa C. Mannion

METHOD SUMMARY

TRITIUM IN WATER
 LIQUID SCINTILLATION COUNTING

Client Hanford
 Contract No. 630
 Contract SDG K0206

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	Tritium
Preparation batch 7131-068					
J10VH6	R602011-01			7373-001	472
Method Blank	R602011-03			7373-003	U
Lab Control Sample	R602011-02			7373-002	ok
Duplicate (R602011-01)	R602011-04			7373-004	ok
Spike (R602011-01)	R602011-05			7373-005	ok X

Nominal values and limits from method RDLs (pCi/L) 400
 100&300Area Component RCBRA Water Sa

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
Preparation batch 7131-068 2σ prep error 10.0 % Reference Lab Notebook 7131 pg. 68																
J10VH6	R602011-01			150	0.0100			100		150		43	03/11/06	03/14	LSC-004	
Method Blank	R602011-03			<u>1500</u>	0.0100			10		150			03/11/06	03/14	LSC-004	
Lab Control Sample	R602011-02			<u>1500</u>	0.0100			10		150			03/11/06	03/14	LSC-004	
Duplicate (R602011-01)	R602011-04			150	0.0100			100		150		43	03/11/06	03/14	LSC-004	
Spike (R602011-01)	R602011-05			160	0.0350			28		150		43	03/11/06	03/14	LSC-004	

Nominal values and limits from method 400 0.0100 25 180

PROCEDURES REFERENCE 906.0_H3_LSC
 CP-210 Tritium in Water Samples by Distillation, rev 8

AVERAGES ± 2 SD MDA 690 ± 1500
 FOR 5 SAMPLES YIELD 50 ± 93

METHOD SUMMARIES

Page 6

SUMMARY DATA SECTION

Page 20

Lab id EBRLNE
 Protocol Hanford
 Version Ver 1.0
 Form DVD-CMS
 Version 3.06
 Report date 03/22/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0206

Test RA Matrix WATER
 SDG 7373
 Contact Melissa C. Mannion

Client Hanford
 Contract No. 630
 Contract SDG K0206

METHOD SUMMARY

RADIUM 226 IN WATER
 RADON COUNTING

RESULTS

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	Radium 226
Preparation batch 7131-068					
J10VH6	R602011-01			7373-001	U
Method Blank	R602011-03			7373-003	U
Lab Control Sample	R602011-02			7373-002	ok
Duplicate (R602011-01)	R602011-04			7373-004	- U
Nominal values and limits from method		RDLs (pCi/L)		2.0	
100&300Area Component RCBRA Water Sa					

METHOD PERFORMANCE

CLIENT SAMPLE ID	LAB SAMPLE ID	RAW TEST	SUF- FIX	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	ANAL- PREPARED	YZED	DETECTOR
Preparation batch 7131-068 2σ prep error 5.0 % Reference Lab Notebook 7131 pg. 68																
J10VH6	R602011-01			0.75	0.100			100		<u>55</u>		44	03/15/06	03/15		RN-011
Method Blank	R602011-03			0.77	0.100			100		<u>55</u>			03/15/06	03/15		RN-012
Lab Control Sample	R602011-02			0.71	0.100			100		113			03/15/06	03/15		RN-009
Duplicate (R602011-01)	R602011-04			0.72	0.100			100		<u>55</u>		44	03/15/06	03/15		RN-013
Nominal values and limits from method				2.0	0.100			20-105		70			180			

PROCEDURES REFERENCE 903.1 RA226_LUC
 SPP-062 Sample Aliquoting, rev 0
 CP-881 Radium-226 in Water and Dissolved Samples, rev 1

AVERAGES ± 2 SD MDA 0.74 ± 0.055
 FOR 4 SAMPLES YIELD 100 ± 0

Lab id EBRLINE
 Protocol Hanford
 Version Ver 1.0
 Form DVD-CMS
 Version 3.06
 Report date 03/22/06

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP K0206

SDG 7373
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_K0206

SAMPLE SUMMARY

The Sample and QC Summary Reports show all samples, including QC samples, reported in one Sample Delivery Group (SDG).

The Sample Summary Report fully identifies client samples and gives the corresponding lab sample identification. The QC Summary Report shows at the sample level how the lab organized the samples into batches and generated QC samples. The Preparation Batch and Method Summary Reports show this at the analysis level.

The following notes apply to these reports:

- * LAB SAMPLE ID is the lab's primary identification for a sample.
- * DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.
- * CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.
- * QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.

QC BATCH is not necessarily the same as SDG, which reflects samples received and reported together.

- * All Lab Control Samples, Method Blanks, Duplicates and Matrix Spikes are shown that QC any of the samples. Due to possible reanalyses, not all results for all these QC samples may be relevant to the SDG. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

REPORT GUIDES

Page 1

SUMMARY DATA SECTION

Page 22

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 03/22/06

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP K0206

SDG 7373
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0206

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches in one Sample Delivery Group (SDG) with information necessary to check the completeness and consistency of the SDG.

The following notes apply to this report:

- * The preparation batches are shown in the same order as the Method Summary Reports are printed.
- * Only analyses of planchets relevant to the SDG are included.
- * Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.
- * The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.

These qualifiers should be reviewed as follows:

- X Some data has been manually entered or modified. Transcription errors are possible.
- P One or more results are 'preliminary'. The data is not ready for final reporting.
- 2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets.

Other lab defined qualifiers may occur. In general, these should be addressed in the SDG narrative.

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP K0206

SDG 7373
 Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
 Contract No. 630
 Case no SDG_K0206

WORK SUMMARY

The Work Summary Report shows all samples, including QC samples, and all relevant analyses in one Sample Delivery Group (SDG). This report is often useful as supporting documentation for an invoice.

The following notes apply to this report:

- * TEST is a code for the method used to measure associated analytes. Results and related information for each analyte are on the Data Sheet Report. In special cases, a test code used in the summary data section is not the same as in associated raw data. In this case, both codes are shown on the Work Summary.
- * SUFFIX is the lab's code to distinguish multiple analyses (recounts, reworks, reanalyses) of a fraction of the sample. The suffix indicates which result is being reported. An empty suffix normally identifies the first attempt to analyze the sample.
- * The LAB SAMPLE ID, TEST and SUFFIX uniquely identify all supporting data for a result. The Method Summary Report for each TEST has method performance data, such as yield, for each lab sample id and suffix and procedures used in the method.
- * PLANCHET is an alternate lab identifier for work done for one test. It, combined with the TEST and SUFFIX, may be the best link to raw data.
- * For QC samples, only analyses that directly QC some regular sample are shown. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.
- * The SAS (Special Analytical Services) Number is a client or lab assigned code that reflects special processing for samples, such as rapid turn around. Counts of tests done are lists by SAS number since it is likely to affect prices.

Lab id EBRLNE
 Protocol Hanford
 Version Ver 1.0
 Form DVD-RG
 Version 3.06
 Report date 03/22/06

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP K0206

SDG 7373
 Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
 Contract No. 630
 Case no SDG_K0206

DATA SHEET

The Data Sheet Report shows all results and primary supporting information for one client sample or Method Blank. This report corresponds to both the CLP Inorganics and Organics Data Sheet.

The following notes apply to this report:

- * TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.
- * The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method.

- * ERRORS can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.
- * A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.
- * When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

U The RESULT is less than the MDA (Minimum Detectable Activity).

Lab id EBRLNE
 Protocol Hanford
 Version Ver 1.0
 Form DVD-RG
 Version 3.06
 Report date 03/22/06

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP K0206

SDG 7373
 Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
 Contract No. 630
 Case no SDG_K0206

DATA SHEET

If the MDA is blank, the ERROR is used as the limit.

- J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
- B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.

Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.

For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.

- L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.
- H Similar to 'L' except the recovery was high.
- P The RESULT is 'preliminary'.
- X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.
- 2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

Other qualifiers are lab defined. Definitions should be in the SDG narrative.

The following values are underlined to indicate possible problems:

- * An MDA is underlined if it is bigger than its RDL.

REPORT GUIDES

Page 5

SUMMARY DATA SECTION

Page 26

Lab id EBRLNE
 Protocol Hanford
 Version Ver 1.0
 Form DVD-RG
 Version 3.06
 Report date 03/22/06

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP K0206

SDG 7373

Contact Melissa C. Mannion

Client Hanford

Contract No. 630

Case no SDG K0206

GUIDE, cont.

DATA SHEET

- * An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA may not be a good estimate of the 'real' minimum detectable activity.
- * A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.
- * When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

REPORT GUIDES

Page 6

SUMMARY DATA SECTION

Page 27

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-RG

Version 3.06

Report date 03/22/06

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP K0206

SDG 7373

Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford

Contract No. 630

Case no SDG_K0206

LAB CONTROL SAMPLE

The Lab Control Sample Report shows all results, recoveries and primary supporting information for one Lab Control Sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.
- * An amount ADDED is the lab's value for the actual amount spiked into this sample with its ERROR an estimate of the error of this amount.

An amount added is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- * REC (Recovery) is RESULT divided by ADDED expressed as a percent.
- * The first, computed limits for the recovery reflect:
 1. The error of RESULT, including that introduced by rounding the result prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.
 2. The error of ADDED.
 3. A lab specified, per analyte bias. The bias changes the center of the computed limits.
- * The second limits are protocol defined upper and lower QC limits for the recovery.
- * The recovery is underlined if it is outside either of these ranges.

REPORT GUIDES

Page 7

SUMMARY DATA SECTION

Page 28

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-RG

Version 3.06

Report date 03/22/06

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP K0206

SDG 7373
 Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
 Contract No. 630
 Case no SDG_K0206

DUPLICATE

The Duplicate Report shows all results, differences and primary supporting information for one Duplicate and associated Original sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. This applies both to the Duplicate and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Duplicate has data for a TEST and the lab did not do this test to the Original, the Original's RESULTS are underlined.

- * The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTS divided by their average expressed as a percent.

If both RESULTS are less than their MDAs, no RPD is computed and a '-' is printed.

For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD.

- * The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTS prior to printing.

If this limit is labeled TOT, it includes the preparation error in the RESULTS. If labeled CNT, it does not.

This value reported for this limit is at most 999.

- * The second limit for the RPD is the larger of:

1. A fixed percentage specified in the protocol.

Lab id EBRLNE
 Protocol Hanford
 Version Ver 1.0
 Form DVD-RG
 Version 3.06
 Report date 03/22/06

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP K0206

SDG 7373

Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford

Contract No. 630

Case no SDG_K0206

DUPLICATE

2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.

- * The RPD is underlined if it is greater than either limit.
- * If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

Except for differences due to rounding, the DER is the same as the RPD divided by the first RPD limit with the limit scaled to 1 sigma.

- * The DER is underlined if it is greater than the sigma factor, typically 2 or 3, shown in the header for the first RPD limit.

REPORT GUIDES

Page 9

SUMMARY DATA SECTION

Page 30

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-RG

Version 3.06

Report date 03/22/06

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP K0206

SDG 7373

Contact Melissa C. Mannion

Client Hanford

Contract No. 630

Case no SDG_K0206

REPORT GUIDE

MATRIX SPIKE

The Matrix Spike Report shows all results, recoveries and primary supporting information for one Matrix Spike and associated Original sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. This applies both to the Spiked and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Spike has data for a TEST and the lab did not do this test to the Original, the Original's RESULTS are underlined.

- * An amount ADDED is the lab's value for the actual amount spiked into the Spike sample with its ERROR an estimate of the error of this amount.

An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- * REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent.

- * The first, computed limits for the recovery reflect:

1. The errors of the two RESULTS, including those introduced by rounding them prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

2. The error of ADDED.

3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

- * The second limits are protocol defined upper and lower QC limits

REPORT GUIDES

Page 10

SUMMARY DATA SECTION

Page 31

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-RG

Version 3.06

Report date 03/22/06

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP K0206

SDG 7373

Contact Melissa C. Mannion

Client Hanford

Contract No. 630

Case no SDG K0206

GUIDE, cont.

MATRIX SPIKE

for the recovery.

These limits are left blank if the Original RESULT is more than a protocol defined factor (typically 4) times ADDED. This is a way of accounting for that when the spike is small compared to the amount in the original sample, the recovery is unreliable.

- * The recovery is underlined (out of spec) if it is outside either of these ranges.

REPORT GUIDES

Page 11

SUMMARY DATA SECTION

Page 32

Lab id EBRLINE

Protocol Hanford

Version Ver 1.0

Form DVD-RG

Version 3.06

Report date 03/22/06

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP K0206

SDG 7373
 Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
 Contract No. 630
 Case no SDG K0206

METHOD SUMMARY

The Method Summary Report has two tables. One shows up to five results measured using one method. The other has performance data for the method. There is one report for each TEST, as used on the Data Sheet Report.

The following notes apply to this report:

- * Each table is subdivided into sections, one for each preparation batch. A preparation batch is a group of aliquots prepared at roughly the same time in one work area of the lab using the same method.

There should be Lab Control Sample and Method Blank results in each preparation batch since this close correspondence makes the QC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

- * The RAW TEST column shows the test code used in the raw data to identify a particular analysis if it is different than the test code in the header of the report. This occurs in special cases due to method specific details about how the lab labels work.

The Lab Sample or Planchet ID combined with the (Raw) Test Code and Suffix uniquely identify the raw data for each analysis.

- * If a result is less than both its MDA and RDL, it is replaced by just 'U' on this report. If it is greater than or equal to the RDL but less than the MDA, the result is shown with a 'U' flag.

The J and X flags are as on the data sheet.

- * Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.

- * Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data'

Lab id EBRLNE
 Protocol Hanford
 Version Ver 1.0
 Form DVD-RG
 Version 3.06
 Report date 03/22/06

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP K0206

SDG 7373
 Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
 Contract No. 630
 Case no SDG_K0206

METHOD SUMMARY

means no amount ADDED was specified. 'LOW' and 'HIGH' correspond to when the recovery is underlined on the Lab Control Sample or Matrix Spike Report. See these reports for supporting data.

- * Duplicate sample results are shown as: ok, No data, or OUT, with the last two underlined. 'No data' means there was no original sample data found for this duplicate. 'OUT' corresponds to when the RPD is underlined on the Duplicate Report. See this report for supporting data.
 - * If the MDA column is labeled 'MAX MDA', there was more than one result measured by the reported method and the MDA shown is the largest MDA. If not all these results have the same RDL, the MAX MDA reflects only those results with RDL equal to the smallest one.
- MDAs are underlined if greater than the printed RDL.
- * Aliquots are underlined if less than the nominal value specified for the method.
 - * Preparation factors are underlined if greater than the nominal value specified for the method.
 - * Dilution factors are underlined if greater than the nominal value specified for the method.
 - * Residues are underlined if outside the range specified for the method. Residues are not printed if yields are.
 - * Yields, which may be gravimetric, radiometric or some type of recovery depending on the method, are underlined if outside the range specified for the method.
 - * Efficiencies are underlined if outside the range specified for the method. Efficiencies are detector and geometry dependent so this test is only approximate.

Lab id EBRLNE
 Protocol Hanford
 Version Ver 1.0
 Form DVD-RG
 Version 3.06
 Report date 03/22/06

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP K0206

SDG 7373
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG K0206

METHOD SUMMARY

- * Count times are underlined if less than the nominal value specified for the method.
- * Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit.
- * Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are.
- * Days Held are underlined if greater than the holding time specified in the protocol.
- * Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it.

For some methods, ratios as percentages and error estimates for them are computed for pairs of results. A ratio column header like '1÷3' means the ratio of the first result column and the third result column.

Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'.

The error estimate for a ratio of results from one planchet reflects only counting errors since other errors should be correlated. For a ratio involving different planchets, if QC limits are computed based on total errors, the error for the ratio allows for the preparation errors for the planchets.

The ratio is underlined (out of spec) if the absolute value of its difference from the nominal value is greater than its error estimate. If no nominal value is specified, this test is not done.

For Gross Alpha or Gross Beta results, there may be a column showing the sum of other Alpha or Beta emitters. This sum includes all relevant

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 03/22/06

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP K0206

SDG 7373
 Contact Melissa C. Mannion

GUIDE , c o n t .

Client Hanford
 Contract No. 630
 Case no SDG K0206

METHOD SUMMARY

results in the DVD database, whether reported or not. Results in the sum are weighted by a particles/decay value specified by the lab for each relevant analyte. Results less than their MDA are not included. No sums are computed for Lab Control, Method Blank or Matrix Spike samples since their various planchets may not be physically related.

If a ratio of total isotopic to Gross Alpha or Beta is shown, the error for the ratio reflects both the error in the Gross result and the sum, as square root of sum of squares, of the errors in the isotopic results.

For total elemental uranium or thorium results, there may be a column showing the total weight computed from associated isotopic results. Ignoring results less than their MDAs, this is a weighted sum of the isotopic results. The weights depend on the molecular weight and half-life of each isotope so as to convert activities (decays) to weight (atoms).

If a ratio of total computed to measured elemental uranium or thorium is shown, the error for the ratio reflects the errors in all the measurements.

REPORT GUIDES

Page 15

SUMMARY DATA SECTION

Page 36

Lab id EBRLNE
 Protocol Hanford
 Version Ver 1.0
 Form DVD-RG
 Version 3.06
 Report date 03/22/06

Washington Closure Hanford			CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						RC-048-83		Page 1 of 2			
Collector DURATEK F. M. HALL			Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 7N		Data Turnaround 45 Days			
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa			Sampling Location 399-3-11 K0206 (7373)			SAF No. RC-048		Air Quality <input type="checkbox"/>						
Ice Chest No. AFS-04-037			Field Logbook No. EL-1592		COA BESRAS6520		Method of Shipment FED EX							
Shipped To EBERLINE SERVICES LIONVILLE			Offsite Property No. A060239			Bill of Lading/Air Bill No. SEE OSCP								
POSSIBLE SAMPLE HAZARDS/REMARKS <i>POTENTIAL RADIOACTIVE < DOT LIMITS</i>				Preservation	None	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C
Special Handling and/or Storage <i>None</i>				Type of Container	P	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG
				No. of Container(s)	1	1	2	1	2	1	1	3	2	3
				Volume	125mL	1000mL	1000mL	1000mL	1000mL	1000mL	500mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS				Tritium - H3	See item (1) in Special Instructions	Strontium-89,90 -- Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium -226, Ra-228	See item (2) in Special Instructions	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081	
Sample No.	Matrix *	Sample Date	Sample Time											
J10VH6	WATER	1-30-06	1030	X	X	X	X	X	X					
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS						Matrix *
Relinquished By/Removed From DURATEK F. M. HALL		Date/Time 1-30-06	Received By/Stored In R. J. Steffler		Date/Time 1-30-06		(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238} (2) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}; Mercury - 7470 - (CV)						S=Soil SE=Sediment SO=Solid SL=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue Wl=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From R. J. Steffler		Date/Time 1-30-06	Received By/Stored In Fed Ex		Date/Time 1-30-06									
Relinquished By/Removed From FEDER		Date/Time 1/31/06	Received By/Stored In Alex K...		Date/Time 10:00									
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time									
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time									
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time									
LABORATORY SECTION	Received By		Title				Date/Time							
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By				Date/Time							



RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: WIS HANFORD City RICHLAND State WA

Date/Time received 1/31/06 10:00 CoC No. RC-048-23

Container I.D. No. AFS 04-037 Requested TAT (Days) 45 P.O. Received Yes [] No []

INSPECTION

1. Custody seals on shipping container intact? Yes [] No [] N/A []
2. Custody seals on shipping container dated & signed? Yes [] No [] N/A []
3. Custody seals on sample containers intact? Yes [] No [] N/A []
4. Custody seals on sample containers dated & signed? Yes [] No [] N/A []
5. Packing material is: Wet [] Dry []
6. Number of samples in shipping container: 1 Sample Matrix WATER
7. Number of containers per sample: 8 (Or see CoC _____)
8. Samples are in correct container Yes [] No []
9. Paperwork agrees with samples? Yes [] No []
10. Samples have: Tape [] Hazard labels [] Rad labels [] Appropriate sample labels []
11. Samples are: In good condition [] Leaking [] Broken Container [] Missing []
12. Samples are: Preserved [] Not preserved [] pH 2 Preservative HNO3
13. Describe any anomalies:

14. Was P.M. notified of any anomalies? Yes [] No [] Date _____

15. Inspected by AK Date: 1/31/06 Time: 10:00

Customer Sample No.	cpm	mR/hr	Wipe	Customer Sample No.	cpm	mR/hr	wipe

Ion Chamber Ser. No. _____

Calibration date _____

Alpha Meter Ser. No. _____

Calibration date _____

Beta/Gamma Meter Ser. No. _____

Calibration date _____



27 February 2006



Joan Kessner
WC-Hanford
3190 Washington Way
MSIN H9-03
Richland, WA 99354

Subject: 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 #	0601L183
SDG #	K0206
SAF #	RC-048
Date Received	1-31-06
# Samples	1
Matrix	Water
Volatiles	
Semivolatiles	X
Pest/PCB	X
PAH	
DRO/KRO/GRO	
GC Alcohols	
Herbicides	
Metals	X
Inorganics	X

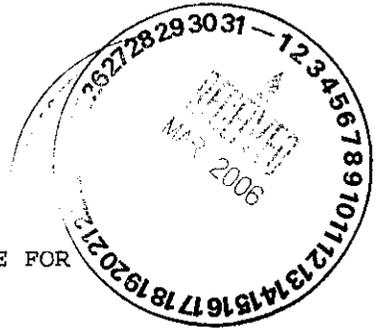
The electronic data deliverable (EDD) will be emailed shortly. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely,
Lionville Laboratory Incorporated

Orlette S. Johnson
Project Manager

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

Lionville Laboratory, Inc.
 BNA ANALYTICAL DATA PACKAGE FOR
 TNUHANFORD RCG-048 K0206



DATE RECEIVED: 01/31/06

LVL LOT # :0601L183

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J10VH6	001	W	06LE0085	01/30/06	02/03/06	02/06/06
J10VH6	001 MS	W	06LE0085	01/30/06	02/03/06	02/07/06
J10VH6	001 MSD	W	06LE0085	01/30/06	02/03/06	02/08/06

LAB QC:

SBLKTJ	MB1	W	06LE0085	N/A	02/03/06	02/06/06
SBLKTJ	MB1 BS	W	06LE0085	N/A	02/03/06	02/06/06
SBLKTJ	MB1 BSD	W	06LE0085	N/A	02/03/06	02/06/06



Case Narrative

Client: TNU-HANFORD RCG-048
LVL #: 0601L183
SDG/SAF # K0206/RCG-048

W.O. #: 11343-606-001-9999-00
Date Received: 01-31-2006

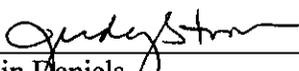
SEMIVOLATILE

One (1) water sample was collected on 01-30-2006.

The sample and its associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3520C on 02-03-2006 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 02-06,07,08-2006.

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 a sample that met LvLI's sample acceptance policy.
2. The sample was extracted and analyzed within required holding time.
3. Non-target compounds were not detected in the sample.
4. All surrogate recoveries were within acceptance criteria.
5. Three (3) of one hundred twenty-eight (128) matrix spike recoveries were outside acceptance criteria.
Four (4) of one hundred twenty-eight (128) blank spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
6. The method blank contained the common laboratory contaminants Bis (2-Ethylhexyl) phthalate and Di-n-butylphthalate at levels less than the CRQL.
7. Internal standard area and retention time criteria were met.
8. Manual integrations are performed according to SOP QA-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").
9. LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.
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

2/17/06
Date

som\group\data\bna\tnu-hanford\0601-183.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 13 pages.

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 06M6054

Initiator: Robert Carden
 Date: 4/13/06
 Client: PAH Hazard RC6049

Batch: 06011/93
 Samples: B5, B50
 Method: SW846/MCAWW/CLP1

Parameter: 065H
 Matrix: WATER
 Prep Batch: 06052095

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)

B5 - 24 din. triphenyl spike recovery low 36% (50-110%) OK in B50
 B50 - 4-chloroaniline spike recovery low 6% (20-100%) OK in B5

2. Known or Probable Causes(s)

These empts exhibit erratic chromatographic behavior especially if the GC system is contaminated with high boiling material

3. Discussion and Proposed Action

Other Description:

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

Narrate

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

- Concur with Proposed Action
 Disagree with Proposed Action; See Instruction
 Include in Case Narrative
 Client Contacted:
 Date/Person _____
 Add
 Cancel

[Signature] 4/13/06

NOTE lower QC Limits Set too low per our internal control charts and QSM data guidance we are re-submitting to 15% in duplicate

5. Final Action...signature/date:

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

Other Explanation: *Plan of 4. also aniline exhibits erratic behavior as described above*

CHARTER Nelson

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

- Route Distribution of Completed SDR
 Initiator
 Lab General Manager: M. Taylor
 Project Mgr. Stone/Johnson
 Data Management: Stowell
 Sample Prep: Beegle/Kiger

- Route Distribution of Completed SDR
 Metals: Beegle
 Inorganic: Perrone
 GC/LC: Kiger
 MS: Rychlak/Daley
 Log-in: Perry
 Admin: _____
 Other: _____

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.
- 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.

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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.

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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 resolve 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** - **Co-elution/ Background:** Peak was manually integrated to eliminate contribution from co-eluting compounds, background signal, or other interference.
- PI** - **Proper Integration:** A peak with poor or inconsistent integration (i.e., excessive tail) was properly integrated manually.

LVL-21-21-035/A-08/93



000000006

Lionville Laboratory, Inc.
Semivolatiles by GC/MS, HSL List

Report Date: 02/13/06 10:34

RFW Batch Number: 0601L183

Client: TNUHANFORD RCG-048 K0206

Work Order: 11343606001

Page: 1a

Sample Information	Cust ID:	J10VH6	J10VH6	J10VH6	SBLKTJ	SBLKTJ BS	SBLKTJ BSD
	RFW#:	001	001 MS	001 MSD	06LE0085-MB1	06LE0085-MB1	06LE0085-MB1
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	Nitrobenzene-d5	60 %	69 %	52 %	63 %	57 %	71 %
Surrogate	2-Fluorobiphenyl	59 %	69 %	69 %	57 %	76 %	69 %
Recovery	Terphenyl-d14	90 %	80 %	79 %	97 %	88 %	85 %
	Phenol-d5	61 %	67 %	78 %	65 %	87 %	67 %
	2-Fluorophenol	60 %	63 %	68 %	64 %	74 %	68 %
	2,4,6-Tribromophenol	69 %	72 %	83 %	74 %	90 %	80 %
=====fl=====fl=====fl=====fl=====fl=====fl=====fl=====							
Phenol		10 U	83 %	97 %	10 U	99 %	86 %
bis(2-Chloroethyl) ether		10 U	82 %	92 %	10 U	94 %	84 %
2-Chlorophenol		10 U	80 %	92 %	10 U	95 %	84 %
1,3-Dichlorobenzene		10 U	67 %	75 %	10 U	70 %	63 %
1,4-Dichlorobenzene		10 U	69 %	75 %	10 U	71 %	63 %
1,2-Dichlorobenzene		10 U	72 %	81 %	10 U	77 %	69 %
2-Methylphenol		10 U	80 %	84 %	10 U	90 %	80 %
2,2'-oxybis(1-Chloropropane)		10 U	85 %	93 %	10 U	94 %	85 %
4-Methylphenol		10 U	81 %	97 %	10 U	102 %	89 %
N-Nitroso-di-n-propylamine		10 U	77 %	92 %	10 U	101 %	91 %
Hexachloroethane		10 U	62 %	71 %	10 U	66 %	59 %
Nitrobenzene		10 U	76 %	62 %	10 U	63 %	81 %
Isophorone		10 U	83 %	68 %	10 U	69 %	89 %
2-Nitrophenol		10 U	78 %	62 %	10 U	62 %	76 %
2,4-Dimethylphenol		10 U	78 %	63 %	10 U	57 %	80 %
bis(2-Chloroethoxy)methane		10 U	62 %	67 %	10 U	68 %	53 %
2,4-Dichlorophenol		10 U	69 %	66 %	10 U	65 %	84 %
1,2,4-Trichlorobenzene		10 U	68 %	58 %	10 U	54 %	69 %
Naphthalene		10 U	72 %	59 %	10 U	58 %	73 %
4-Chloroaniline		10 U	46 %	85 %	10 U	91 %	6 *
Hexachlorobutadiene		10 U	68 %	61 %	10 U	55 %	71 %
4-Chloro-3-methylphenol		10 U	79 %	69 %	10 U	67 %	84 %
2-Methylnaphthalene		10 U	78 %	65 %	10 U	61 %	81 %
Hexachlorocyclopentadiene		10 U	59 %	67 %	10 U	66 %	53 %
2,4,6-Trichlorophenol		10 U	81 %	110 %	10 U	106 %	96 %
2,4,5-Trichlorophenol		25 U	76 %	82 %	25 U	90 %	83 %

*= Outside of EPA CLP QC limits.

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	Cust ID:	J10VH6	J10VH6	J10VH6	SBLKTJ	SBLKTJ BS	SBLKTJ BSD
RFW#:	001	001 MS	001 MSD	06LE0085-MB1	06LE0085-MB1	06LE0085-MB1	
2-Chloronaphthalene	10 U	77 %	91 %	10 U	93 %	86 %	
2-Nitroaniline	25 U	82 %	99 %	25 U	92 %	84 %	
Dimethylphthalate	10 U	81 %	100 %	10 U	91 %	94 %	
Acenaphthylene	10 U	74 %	92 %	10 U	89 %	80 %	
2,6-Dinitrotoluene	10 U	80 %	100 %	10 U	91 %	92 %	
3-Nitroaniline	25 U	80 %	124 *	25 U	112 %	15 %	
Acenaphthene	10 U	78 %	92 %	10 U	89 %	86 %	
2,4-Dinitrophenol	25 U	84 %	80 %	25 U	36 *	91 %	
4-Nitrophenol	25 U	107 %	109 %	25 U	85 %	80 %	
Dibenzofuran	10 U	78 %	96 %	10 U	91 %	90 %	
2,4-Dinitrotoluene	10 U	86 %	108 %	10 U	88 %	95 %	
Diethylphthalate	10 U	81 %	100 %	10 U	88 %	90 %	
4-Chlorophenyl-phenylether	10 U	79 %	97 %	10 U	89 %	92 %	
Fluorene	10 U	88 %	95 %	10 U	85 %	89 %	
4-Nitroaniline	25 U	93 %	112 *	25 U	86 %	25 %	
4,6-Dinitro-2-methylphenol	25 U	83 %	100 %	25 U	84 %	84 %	
N-Nitrosodiphenylamine (1)	10 U	41 %	72 %	10 U	81 %	24 %	
4-Bromophenyl-phenylether	10 U	71 %	82 %	10 U	89 %	81 %	
Hexachlorobenzene	10 U	73 %	92 %	10 U	100 %	92 %	
Pentachlorophenol	25 U	87 %	106 *	25 U	99 %	106 *	
Phenanthrene	10 U	82 %	95 %	10 U	95 %	93 %	
Anthracene	10 U	83 %	96 %	10 U	91 %	85 %	
Carbazole	10 U	76 %	102 %	10 U	92 %	61 %	
Di-n-butylphthalate	0.6 J	82 %	96 %	10 U	87 %	87 %	
Fluoranthene	10 U	84 %	103 %	10 U	83 %	81 %	
Pyrene	10 U	83 %	86 %	10 U	86 %	88 %	
Butylbenzylphthalate	10 U	84 %	95 %	10 U	92 %	95 %	
3,3'-Dichlorobenzidine	10 U	14 %	80 %	10 U	86 %	0 %	
Benzo(a)anthracene	10 U	84 %	96 %	10 U	92 %	97 %	
Chrysene	10 U	86 %	97 %	10 U	95 %	93 %	
bis(2-Ethylhexyl)phthalate	11 B	87 %	113 %	2 J	109 %	147 *	
Di-n-octyl phthalate	10 U	86 %	95 %	10 U	94 %	124 %	
Benzo(b)fluoranthene	10 U	86 %	94 %	10 U	98 %	123 %	
Benzo(k)fluoranthene	10 U	84 %	95 %	10 U	95 %	118 %	
Benzo(a)pyrene	10 U	85 %	91 %	10 U	94 %	107 %	
Indeno(1,2,3-cd)pyrene	10 U	96 %	102 %	10 U	103 %	115 %	
Dibenz(a,h)anthracene	10 U	97 %	106 %	10 U	105 %	120 %	
Benzo(g,h,i)perylene	10 U	97 %	98 %	10 U	101 %	109 %	

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

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						RC-048-83		Page 1 of 2				
Collector <i>F.M. Hall</i>	Company Contact JOAN KESSNER	Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 7N		Data Turnaround 45 Days						
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location 399-3-11		SAF No. RC-048		Air Quality <input type="checkbox"/>								
Ice Chest No. <i>EFS-04-019</i>		Field Logbook No. EL-1592		COA BESRAS6520		Method of Shipment FED EX								
Shipped To EBERLINE SERVICES <u>LIONVILLE</u>		Offsite Property No. <i>A060275</i>			Bill of Lading/Air Bill No. SEE OSPC									
POSSIBLE SAMPLE HAZARDS/REMARKS <i>POTENTIAL RADIOACTIVE < DOT LIMITS</i> Special Handling and/or Storage <i>Cool 4°C</i>				Preservation	None	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	HNO3 to pH <	Cool 4C	Cool 4C	Cool 4C
				Type of Container	P	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG
				No. of Container(s)	1	1	2	1	2	1	1	3	2	3
				Volume	125mL	1000mL	1000mL	1000mL	1000mL	1000mL	500mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS				Tritium - H3	See item (1) in Special Instructions.	Strontium-89,90 - Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226, Ra-226	See item (2) in Special Instructions.	Semi-VOA - E270A (TCL)	PCBs - 8062	Pesticides - 8081	
				Sample No.	Matrix *	Sample Date	Sample Time							
J10VH6	WATER	1-30-06	1030							X	X	X	X	
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *		
Relinquished By/Removed From <i>F.M. Hall</i>		Date/Time <i>1-30-06 1115</i>		Received By/Stored In <i>R. J. Steffler</i>		Date/Time <i>1-30-06 1115</i>		(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)				S=Soil SE=Sediment SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Dry Solids DL=Dry Liquids T=Time W=Wipe L=Liquid V=Vegetation X=Other		
Relinquished By/Removed From <i>R. J. Steffler</i>		Date/Time <i>1-30-06 1500</i>		Received By/Stored In <i>Fed Ex</i>		Date/Time <i>1-30-06 1500</i>								
Relinquished By/Removed From <i>Fed Ex</i>		Date/Time <i>1-31-06 0900</i>		Received By/Stored In <i>[Signature]</i>		Date/Time <i>1-31-06 0900</i>								
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time								
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time								
LABORATORY SECTION		Received By		Title				Date/Time						
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time						

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Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-83		Page 2 of 2	
Collector <i>F.M. Hall</i>		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 7N Data Turnaround 45 Days	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sample Location 399-3-11		SAF No. RC-048		Air Quality <input type="checkbox"/>			
Ice Chest No. <i>EFS-04-019</i>		Field Logbook No. EL-1592		COA BESRAS6520		Method of Shipment FED EX			
Shipped To EBERLINE SERVICES <u>LIONVILLE</u>		Offsite Property No. <i>A060275</i>		Bill of Lading/Air Bill No. SEE OSPC					
POSSIBLE SAMPLE HAZARDS/REMARKS <i>POTENTIAL RADIOACTIVE < DOT LIMITS</i>				Preservation		Cool 4C		H2SO4 to pH <2 Cool 4C	
Special Handling and/or Storage <i>Cool 4°C</i>				Type of Container		P		G/P	
				No. of Container(s)		1		1	
				Volume		500mL		500mL	
						<i>3 HAZARDOUS</i>			
SAMPLE ANALYSIS				See item(s) in Special Instructions		NO2/NO3 - 353.2			
Sample No.		Matrix *	Sample Date	Sample Time					
J10VH6		WATER	1-30-06	1030	X				
CHAIN OF POSSESSION					SPECIAL INSTRUCTIONS				
Relinquished By/Removed From <i>F.M. Hall</i>		Date/Time <i>1-30-06 1115</i>		Received By/Stored In <i>RZ Steffler R.Z. Steffler</i>		Date/Time <i>1-30-06 1115</i>		Matrix *	
Relinquished By/Removed From <i>RZ Steffler R.Z. Steffler</i>		Date/Time <i>1-30-06 1500</i>		Received By/Stored In <i>Fed Ex</i>		Date/Time <i>1-30-06</i>		S-Soil SE-Sediment SO-Solid SI-Sludge W-Water O-Oil A-Air DS-Drum Solids DL-Drum Liquids T-Tissue Wj-Wipe L-Liquid V-Vegetation X-Other	
Relinquished By/Removed From <i>Fed Ex</i>		Date/Time <i>1-31-06 0910</i>		Received By/Stored In <i>[Signature]</i>		Date/Time <i>1-31-06 0910</i>			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
LABORATORY SECTION		Received By			Title			Date/Time	
FINAL SAMPLE DISPOSITION		Disposal Method			Disposed By			Date/Time	

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-83		Page 2 of 2			
Collector F.M. Hall		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 7N Data Turnaround 45 Days			
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location 399-3-11		SAF No. RC-048		Air Quality <input type="checkbox"/>					
Icc Chest No. AFS-04-019		Field Logbook No. EL-1592		COA BESRAS6520		Method of Shipment FED EX					
Shipped To EBERLINE SERVICES LIONVILLE		Offsite Property No. A060275		Bill of Lading/Air Bill No. SEE OSPC							
POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS Special Handling and/or Storage Cool 4°C				Preservation		Cool 4C	H2SO4 to pH < Cool 4C				
				Type of Container		P	G/P				
				No. of Container(s)		1	1				
				Volume		500mL	500mL				
SAMPLE ANALYSIS				See item (1) in Special Instructions.		NO2/NO3 - 353.2					
Sample No.	Matrix *	Sample Date	Sample Time								
J10VH6	WATER	1-30-06	1030		X						
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS			
Relinquished By/Removed From F.M. HALL		Date/Time 1-30-06	Received By/Stored In R. J. Steffler		Date/Time 1-30-06	(1) IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate) Matrix * S=Soil SE=Soil Sediment SO=Solid SI=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other					
Relinquished By/Removed From R. J. Steffler		Date/Time 1-30-06	Received By/Stored In Fed Ex		Date/Time 1-30-06						
Relinquished By/Removed From Fed Ex		Date/Time 1-31-06	Received By/Stored In R. J. Steffler		Date/Time 1-31-06						
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time						
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time						
LABORATORY SECTION		Received By		Title		Date/Time					
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time					

**Lionville Laboratory Incorporated
SAMPLE RECEIPT CHECKLIST (SRC)**

CLIENT: *TWU - HANFORD*

Date: *1-31-06*

Purchase Order / Project# /
SAP# / SOW# / Release #: *RC-048*

LvLI Batch #: *06012183*

Sample Custodian: *[Signature]*

NOTE: EXPLAIN ALL DISCREPANCIES

- | | | | | |
|---|---|-----------------------------|--|-----------------------|
| 1. Samples Hand Delivered or <u>Shipped</u> | Carrier | <i>Fed Ex</i> | Airbill# | <i>7920 0245 0649</i> |
| 2. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No Seals | Comments |
| 3. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 5. Samples received cooled or ambient? | Temp | <i>1.8</i> °C | Cooler # | <i>AFS-04-019</i> |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No Seals | |
| 7. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 8. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 9. All samples on coc received? All samples received on coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 10. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 11. Samples properly preserved? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 12. Samples received within hold times? Short holds taken to wet lab? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 13. VOA, TOC, TOX free of headspace? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | |
| 14. QC stickers placed on bottles designated by client? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | |
| 15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> No Discrepancies | |

SR-002-B





Lionville Laboratory, Inc.
PEST/PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RCG-048 K0206

DATE RECEIVED: 01/31/06

LVL LOT # :0601111

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J10VH6	001	W	06LE0086	01/30/06	02/05/06	02/06/06
J10VH6	001 MS	W	06LE0086	01/30/06	02/05/06	02/06/06
J10VH6	001 MSD	W	06LE0086	01/30/06	02/05/06	02/06/06

LAB QC:

PBLKAZ	MB1	W	06LE0086	N/A	02/05/06	02/06/06
PBLKAZ	MB1 BS	W	06LE0086	N/A	02/05/06	02/06/06
PBLKAZ	MB1 BSD	W	06LE0086	N/A	02/05/06	02/06/06

Handwritten signature



Case Narrative

Client: TNU-HANFORD RCG-048
LVL #: 0601L183
SDG/SAF # K0206/RCG-048

W.O. #: 11343-606-001-9999-00
Date Received: 01-31-2006

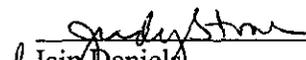
CHLORINATED PESTICIDES

One (1) water sample was collected on 01-30-2006.

The sample and its associated QC samples were extracted on 02-05-2006 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 02-06-2006. The extraction procedure was based on method 3520C 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 a sample that met LvLI's sample acceptance policy.
2. The sample was extracted and analyzed within required holding time.
3. The sample and its associated QC samples received a Copper-Sulfur cleanup according to Lionville Laboratory SOPs based on SW846 method 3660A.
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. The initial calibrations associated with this data set were within acceptance criteria.
9. The continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
10. LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.
11. 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

2/10/06
Date

som\group\data\pest\tnu hanford\0601-183.pst
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 9 pages.

00000002



GLOSSARY OF 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.
- .I** = Indicates an interference on one analytical column only. Result is reported from remaining analytical column.

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.
- NS** = Not Spiked.
- SP** = Indicates Spiked Compound.
- 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.
- NPM** = No pattern match for multi-component target analytes.

Lionville Laboratory, Inc.
Pesticide/PCBs by GC, CLP List

Report Date: 02/09/06 12:37

RFW Batch Number: 0601L183

Client: TNUHANFORD RCG-048 K0206 Work Order: 11343606001 Page: 1

0000000004

Sample Information	Cust ID:	J10VH6	J10VH6	J10VH6	PBLKAZ	PBLKAZ BS	PBLKAZ BSD
	RFW#:	001	001 MS.	001 MSD	06LE0086-MB1	06LE0086-MB1	06LE0086-MB1
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Surrogate: Tetrachloro-m-xylene		73 %	69 %	70 %	72 %	65 %	62 %
Decachlorobiphenyl		78 %	77 %	80 %	70 %	76 %	73 %
-----fl-----fl-----fl-----fl-----fl-----fl-----fl-----							
Alpha-BHC		0.050 U	97 %	101 %	0.050 U	103 %	97 %
gamma-BHC (Lindane)		0.050 U	95 %	100 %	0.050 U	103 %	96 %
Beta-BHC		0.050 U	86 %	89 %	0.050 U	97 %	86 %
Heptachlor		0.050 U	87 %	91 %	0.050 U	94 %	87 %
Delta-BHC		0.050 U	94 %	99 %	0.050 U	104 %	95 %
Aldrin		0.050 U	92 %	98 %	0.050 U	103 %	94 %
Heptachlor epoxide		0.050 U	93 %	98 %	0.050 U	102 %	93 %
gamma-Chlordane		0.050 U	92 %	96 %	0.050 U	103 %	93 %
Endosulfan I		0.050 U	92 %	97 %	0.050 U	104 %	88 %
alpha-Chlordane		0.050 U	91 %	96 %	0.050 U	102 %	92 %
4,4'-DDE		0.050 U	98 %	103 %	0.050 U	111 %	100 %
Dieldrin		0.050 U	97 %	102 %	0.050 U	108 %	98 %
Endrin		0.050 U	104 %	110 %	0.050 U	114 %	99 %
4,4'-DDD		0.050 U	100 %	106 %	0.050 U	112 %	101 %
Endosulfan II		0.050 U	93 %	98 %	0.050 U	106 %	88 %
4,4'-DDT		0.050 U	95 %	101 %	0.050 U	107 %	97 %
Endrin aldehyde		0.050 U	87 %	92 %	0.050 U	97 %	91 %
Endosulfan sulfate		0.050 U	95 %	101 %	0.050 U	108 %	96 %
Methoxychlor		0.050 U	86 %	91 %	0.050 U	66 %	85 %
Endrin ketone		0.050 U	95 %	100 %	0.050 U	104 %	98 %
Toxaphene		0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 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

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-83	Page 2 of 2
Collector <i>F.M. Hall</i>	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH		Price Code 7N	Data Turnaround 45 Days	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location 399-3-11	SAF No. RC-048	Air Quality <input type="checkbox"/>			
Ice Chest No. <i>EFS-04-019</i>	Field Logbook No. EL-1592	COA BESRAS6520	Method of Shipment FED EX				
Shipped To EBERLINE SERVICES (LIONVILLE)		Offsite Property No. <i>A060275</i>	Bill of Lading/Air Bill No. SEE OSPC				
POSSIBLE SAMPLE HAZARDS/REMARKS <i>POTENTIAL RADIOACTIVE < DOT LIMITS</i>			Preservation	Cool 4C	H2SO4 to pH <2 Cool 4C		
Special Handling and/or Storage <i>Cool 4°C</i>			Type of Container	P	G/P		
			No. of Container(s)	1	1		
			Volume	500mL	500mL		
				<i>3 Manual</i>			
SAMPLE ANALYSIS			See item (A) in Special Instructions.	NO2/NO3 - 353.2			
Sample No.	Matrix *	Sample Date	Sample Time				
J10VH6	WATER	1-30-06	1030	X			
CHAIN OF POSSESSION			Sign/Print Names		SPECIAL INSTRUCTIONS		
Relinquished By/Removed From <i>F.M. HALL</i>	Date/Time <i>1-30-06 1115</i>	Received By/Stored In <i>R2 Steffler R. J. Steffler</i>	Date/Time <i>1-30-06 1115</i>	<i>3 Apr 12 05</i> IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)			
Relinquished By/Removed From <i>R2 Steffler R. J. Steffler</i>	Date/Time <i>1-30-06 1500</i>	Received By/Stored In <i>Fed Ex</i>	Date/Time <i>1-30-06</i>				
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time				
Relinquished By/Removed From <i>Fed Ex</i>	Date/Time <i>1-31-06 0910</i>	Received By/Stored In <i>W. H. H. H.</i>	Date/Time <i>1-31-06 0910</i>				
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time				
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time				
LABORATORY SECTION	Received By	Title			Date/Time		
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By			Date/Time		

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-83	Page 2 of 2
Collector <i>F.M. Hall</i>	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH		Price Code 7N	Data Turnaround 45 Days	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa	Sampling Location 399-3-11	SAF No. RC-048	Air Quality <input type="checkbox"/>				
Ice Chest No. <i>AFS-04-019</i>	Field Logbook No. EL-1592	COA BESRAS6520	Method of Shipment FED EX				
Shipped To EBERLINE SERVICES <u>LIONVILLE</u>	Offsite Property No. <i>A060275</i>	Bill of Lading/Air Bill No. SEE OSPC					
POSSIBLE SAMPLE HAZARDS/REMARKS <i>POTENTIAL RADIOACTIVE < DOT LIMITS</i>				Preservation	Cool 4C	H2SO4 to pH <2 Cool 4C	
Special Handling and/or Storage <i>Cool 4°C</i>				Type of Container	P	G/P	
				No. of Container(s)	1	1	
				Volume	500mL	500mL	
SAMPLE ANALYSIS				See item (1) in Special Instructions.	NO2/NO3 - 353.2		
Sample No.	Matrix *	Sample Date	Sample Time				
J10VH6	WATER	1-30-06	1030		X		
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS			Matrix *
Relinquished By/Removed From <i>F.M. Hall</i>		Date/Time <i>1-30-06 1115</i>	Received By/Stored In <i>R. J. Stoff</i>		Date/Time <i>1-30-06 1115</i>	(1) IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)	
Relinquished By/Removed From <i>R. J. Stoff</i>		Date/Time <i>1-30-06 1500</i>	Received By/Stored In <i>Fed Ex</i>		Date/Time <i>1-30-06 1500</i>		
Relinquished By/Removed From <i>Fred</i>		Date/Time <i>1-31-06 0910</i>	Received By/Stored In <i>...</i>		Date/Time <i>1-31-06 1200</i>		
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time		
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time		
Relinquished By/Removed From		Date/Time	Received By/Stored In		Date/Time		
LABORATORY SECTION	Received By	Title				Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By				Date/Time	

Lionville Laboratory Incorporated
SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: *TUV HANFORD*

Date: *1-31-06*

Purchase Order / Project# /

SAP# / SOW# / Release #: *RC-048*

LvLI Batch # :

0601183

Sample Custodian:

[Signature]

NOTE: EXPLAIN ALL DISCREPANCIES

- | | | | | |
|---|---|-----------------------------|--|-----------------------|
| 1. Samples Hand Delivered or <u>Shipped</u> | Carrier | <i>Fed Ex</i> | Airbill# | <i>7920 0245 0641</i> |
| 2. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No Seals | Comments |
| 3. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 5. Samples received cooled or ambient? | Temp | <i>1.8</i> °C | Cooler # | <i>AFS-04-019</i> |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No Seals | |
| 7. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 8. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 9. All samples on coc received? All samples received on coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 10. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 11. Samples properly preserved? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 12. Samples received within hold times? Short holds taken to wet lab? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 13. VOA, TOC, TOX free of headspace? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | |
| 14. QC stickers placed on bottles designated by client? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | |
| 15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> No Discrepancies | |

SR-002-B



000000009

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RCG-048

K0206

DATE RECEIVED: 01/31/06

LVL LOT # :0601L183

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J10VH6	001	W	06LE0086	01/30/06	02/03/06	02/06/06
J10VH6	001 MS	W	06LE0086	01/30/06	02/03/06	02/06/06
J10VH6	001 MSD	W	06LE0086	01/30/06	02/03/06	02/06/06

LAB QC:

PBLKAZ	MB1	W	06LE0086	N/A	02/03/06	02/06/06
PBLKAZ	MB1 BS	W	06LE0086	N/A	02/03/06	02/06/06
PBLKAZ	MB1 BSD	W	06LE0086	N/A	02/03/06	02/06/06

gts/k



Case Narrative

Client: TNU-HANFORD RCG-048
LVL #: 0601L183
SDG/SAF # K0206/RCG-048

W.O. #: 11343-606-001-9999-00
Date Received: 01-31-2006

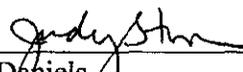
PCB

One (1) water sample was collected on 01-30-2006.

The sample and its associated QC samples were extracted on 02-03-2006 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 02-06-2006. The extraction procedure was based on method 3520C 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 a sample that met LvLI's sample acceptance policy.
2. The sample was extracted and analyzed within required holding time.
3. The sample and its associated QC samples received Copper-Sulfur and Sulfuric Acid cleanups according to Lionville Laboratory SOPs based on SW846 methods 3660A and 3665A respectively.
4. The method blank was below the reporting limits for all target compounds.
5. All surrogate recoveries were within acceptance criteria.
6. Two (2) of four (4) blank spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
7. All matrix spike recoveries were within acceptance criteria.
8. The initial calibrations associated with this data set were within acceptance criteria.
9. The continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
10. LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.
11. 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

2/10/06
Date

Lionville Laboratory Incorporated

som\rs\group\data\pest\tnu_hanford\0601-183.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 10 pages.

0000002

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 06GC039

Initiator: DR
 Date: 2/9/06
 Client: TWJ

Batch: 0601483
 Samples: BSD
 Method: SW846/MCAWW/CLP/

Parameter: OPC3
 Matrix: WATER
 Prep Batch: 06E086

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) low recoveries in BSD - both 10/6/1200 out low, surrogates acceptable but low. Rest of batch surrogates + spikes acceptable. Problem appears to have occurred during extraction procedure and is isolated to BSD. Ammate?

2. Known or Probable Causes(s)

3. Discussion and Proposed Action

Other Description: _____

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

Handwritten notes and signatures:
 nana
 [Signature]

4. Project Manager Instructions...signature/date: _____

- 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: _____

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
<input type="checkbox"/>	<input checked="" type="checkbox"/> Initiator	<input type="checkbox"/>	<input type="checkbox"/> Metals: Beegle
<input type="checkbox"/>	<input checked="" type="checkbox"/> Lab General Manager: M. Taylor	<input type="checkbox"/>	<input type="checkbox"/> Inorganic: Perrone
<input type="checkbox"/>	<input checked="" type="checkbox"/> Project Mgr: Stone/Johnson	<input type="checkbox"/>	<input type="checkbox"/> GC/LC: Kiger
<input type="checkbox"/>	<input type="checkbox"/> Data Management: Stilwell	<input type="checkbox"/>	<input type="checkbox"/> MS: Rychlak/Daley
<input type="checkbox"/>	<input type="checkbox"/> Sample Prep: Beegle/Kiger	<input type="checkbox"/>	<input type="checkbox"/> Log-in: Perry
		<input type="checkbox"/>	<input type="checkbox"/> Admin: _____
		<input type="checkbox"/>	<input type="checkbox"/> Other: _____



GLOSSARY OF DATA

DATA QUALIFIERS

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- E** = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I** = Interference.
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- 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.
- NS** = Not Spiked.
- SP** = Indicates Spiked Compound.
- 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.
- NPM** = No pattern match for multi-component target analytes.

Lionville Laboratory, Inc.

PCBs by GC

Report Date: 02/07/06 14:56

RFW Batch Number: 0601L183

Client: TNU-HANFORD RCG-048

Work Order: 11343606001 Page: 1

	Cust ID:	J10VH6	J10VH6	J10VH6	PBLKAZ	PBLKAZ BS	PBLKAZ BSD
Sample Information	RFW#:	001	001 MS	001 MSD	06LE0086-MB1	06LE0086-MB1	06LE0086-MB1
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/L	UG/L	UG/L	UG/L	UG/L	UG/L
Surrogate:	Tetrachloro-m-xylene	89 %	92 %	87 %	83 %	88 %	34 %
	Decachlorobiphenyl	94 %	93 %	90 %	79 %	84 %	34 %
		-----fl-----	-----fl-----	-----fl-----	-----fl-----	-----fl-----	-----fl-----
Aroclor-1016		0.40 U	95 %	94 %	0.40 U	97 %	38 * %
Aroclor-1221		0.40 U					
Aroclor-1232		0.40 U					
Aroclor-1242		0.40 U					
Aroclor-1248		0.40 U					
Aroclor-1254		0.40 U					
Aroclor-1260		0.40 U	104 %	100 %	0.40 U	105 %	40 * %

Handwritten signature

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

000000005

Lionville Laboratory Use Only
06016183

Custody Transfer Record/Lab Work Request Page 1 of 1

See SRC 

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client <u>TULL-HANFORD SAF # RC8-048</u>	Refrigerator #	A-C-D-F	G-H	I	J	K		
Est. Final Proj. Sampling Date _____	#/Type Container	Liquid	Liquid	Liquid	Liquid	Liquid		
Project # <u>11343-1666-001-9999-00</u>	Solid							
Project Contact/Phone # _____	Liquid	L	L	L	500	500	500	
Lionville Laboratory Project Manager <u>DJ</u>	Solid							
QC <u>SPIC</u> Del <u>Std</u> TAT <u>30 Days</u>	Preservatives				H ₂ O ₂	H ₂ O ₂		
Date Rec'd <u>1/31/06</u> Date Due <u>3/2/06</u>	ANALYSES REQUESTED →	ORGANIC			INORG			
	YOA	BNA	Pest/ PAB	Herb	Metal	CN	PCB's	

MATRIX CODES: S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum DL - Drum L - EP/TCLP Leachate WI - Wipe X - Other F - Fish	Lab ID	Client ID/Description	Matrix QC Chosen		Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only													
			MS	MSD				0605H	0608H	0606	METALS	INORG	PCB	TC	ANAL	ANAL					
	001	TIOYHG	/	/	W	1-30-06	1030	3	3	2	1	1	1								

Special Instructions: 1. METALS = HSL + Bi, B, Li, Mo, P, Si, Sr, Sn, U
2. TC = TC Bi, Cl, F, Hg, Ni, Pb, Se, PCP

DATE/REVISIONS:
1. 0608H V
2. 0606 R
3. _____
4. _____
5. _____
6. _____

Relinquished by <u>EQE</u>	Received by <u>Almond</u>	Date <u>1/31/06</u>	Time <u>1000</u>	Relinquished by	Received by	Date	Time	Relinquished by <u>COMPOSITE WASTE</u>	Received by <u>ORIGINAL REWRITTEN</u>	Date	Time
			<u>0910</u>								

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-83	Page 1 of 2
Collector <i>F.M. Hall</i>	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH		Price Code 7N	Data Turnaround 45 Days	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa	Sampling Location 399-3-11	SAF No. RC-048	Air Quality <input type="checkbox"/>				
Ice Chest No. <i>EFS-04-019</i>	Field Logbook No. EL-1592	COA BESRAS6520	Method of Shipment FED EX				
Shipped To EBERLINE SERVICES <u>LIONVILLE</u>		Offsite Property No. <i>A060275</i>	Bill of Lading/Air Bill No. SEE OSPC				

POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS Special Handling and/or Storage <i>Cool 4° C</i>	Preservation	None	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C					
	Type of Container	P	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG
	No. of Container(s)	1	1	2	1	2	1	1	3	2	3
	Volume	125mL	1000mL	1000mL	1000mL	1000mL	1000mL	500mL	1000mL	1000mL	1000mL

SAMPLE ANALYSIS	Tritium - H3	See item (1) in Special Instructions.	Strontium-89,90 - Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226; Ra-228	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081
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Sample No.	Matrix *	Sample Date	Sample Time								
J10VH6	WATER	1-30-06	1030					X	X	X	X

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS				Matrix * S=Soil SE=Soil/Ext SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Dram Solids DL=Dram Liquid T=Trace Wl=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <i>F.M. Hall</i>	Date/Time <i>1-30-06 1115</i>	Received By/Stored In <i>R. J. Steffler</i>	Date/Time <i>1-30-06 1115</i>	(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)				
Relinquished By/Removed From <i>R. J. Steffler</i>	Date/Time <i>1-30-06 1500</i>	Received By/Stored In <i>Fed Ex</i>	Date/Time					
Relinquished By/Removed From <i>Fed Ex</i>	Date/Time <i>1-31-06 0910</i>	Received By/Stored In <i>J. Hall</i>	Date/Time <i>1-31-06 0910</i>					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time					

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

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-83	Page 2 of 2
Collector <i>F. M. Hall</i>	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH		Price Code 7N	Data Turnaround 45 Days	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location 399-3-11	SAF No. RC-048	Air Quality <input type="checkbox"/>			
Ice Chest No. <i>EFS-04-019</i>	Field Logbook No. EL-1592	COA BESRAS6520	Method of Shipment FED EX				
Shipped To EBERLINE SERVICES <u>LIONVILLE</u>		Offsite Property No. <i>A060275</i>	Bill of Lading/Air Bill No. SEE OSPC				
POSSIBLE SAMPLE HAZARDS/REMARKS <i>POTENTIAL RADIOACTIVE < DOT LIMITS</i>							
Special Handling and/or Storage <i>Cool 4°C</i>							
Preservation		Cool 4C	H2SO4 to pH <2 Cool 4C				
Type of Container		P	G/P				
No. of Container(s)		1	1				
Volume		500mL	500mL				
		<i>3 MA 12/05</i>					
SAMPLE ANALYSIS		See item #1 in Special Instructions.	NO2/NO3 - 353.2				
Sample No.	Matrix *	Sample Date	Sample Time				
J10VH6	WATER	1-30-06	1030	X			
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS			Matrix *
Relinquished By/Removed From <i>F.M. HALL</i>	Date/Time <i>1-30-06 1115</i>	Received By/Stored In <i>RZ Steffler R.P. Steffler</i>	Date/Time <i>1-30-06 1115</i>	3 MA 12/05 TC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)			S=Soil SE=Soil/sem SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Trace WI=Wipe L=Liquid Y=Vegetation X=Xenon
Relinquished By/Removed From <i>RZ Steffler R.P. Steffler</i>	Date/Time <i>1-30-06 1500</i>	Received By/Stored In <i>Fed Ex</i>	Date/Time				
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time				
Relinquished By/Removed From <i>Fed Ex</i>	Date/Time <i>1-31-06 0910</i>	Received By/Stored In <i>W. Hall</i>	Date/Time <i>1-31-06 0910</i>				
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time				
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time				
LABORATORY SECTION	Received By	Title		Date/Time			
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By		Date/Time			

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-83	Page 2 of 2
Collector <i>F.M. Hall</i>	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH		Price Code 7N	Data Turnaround 45 Days	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location 399-3-11		SAF No. RC-048	Air Quality <input type="checkbox"/>		
Ice Chest No. <i>AFS-04-019</i>	Field Logbook No. EL-1592	COA BESRAS6520	Method of Shipment FED EX				
Shipped To EBERLINE SERVICES <u>CLONVILLE</u>		Offsite Property No. <i>A060275</i>		Bill of Lading/Air Bill No. SEE OSPC			
POSSIBLE SAMPLE HAZARDS/REMARKS <i>POTENTIAL RADIOACTIVE < DOT LIMITS</i>				Preservation	Cool 4C	H2SO4 to pH < 2 Cool 4C	
Special Handling and/or Storage <i>Cool 4°C</i>				Type of Container	P	G/P	
				No. of Container(s)	1	1	
				Volume	500mL	500mL	
SAMPLE ANALYSIS				See Item (1) in Special Instructions.	NO2/NO3 - 333.2		
Sample No.	Matrix *	Sample Date	Sample Time				
J10VH6	WATER	1-30-06	1030		X		
CHAIN OF POSSESSION				Sign/Print Names		SPECIAL INSTRUCTIONS	
Relinquished By/Removed From <i>F.M. Hall</i>	Date/Time <i>1-30-06 1115</i>	Received By/Stored In <i>R. J. Still</i>	Date/Time <i>1-30-06 1115</i>	(1) IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)		Matrix *	
Relinquished By/Removed From <i>R. J. Still</i>	Date/Time <i>1-30-06 1500</i>	Received By/Stored In <i>Fed Ex</i>	Date/Time <i>1-30-06</i>			S=Soil SE=Setiment SO=Solid Sl=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Time Wt=Wipe L=Liquid V=Vegetation X=Dimer	
Relinquished By/Removed From <i>F.M. Hall</i>	Date/Time <i>1-31-06 1000</i>	Received By/Stored In <i>R. J. Still</i>	Date/Time <i>1-31-06 0910</i>				
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time				
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time				
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time				
LABORATORY SECTION	Received By	Title				Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By				Date/Time	

Lionville Laboratory Incorporated
SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: *TNU- HANFORD*

Date: *1-31-06*

Purchase Order / Project# /

SAP# / SOW# / Release #: *RC-048*

LvLI Batch # :

06012183

Sample Custodian:

[Signature]

NOTE: EXPLAIN ALL DISCREPANCIES

- | | | | |
|---|---|-----------------------------|--|
| 1. Samples Hand Delivered or <u>Shipped</u> | Carrier | <i>Fed Ex</i> | Airbill# <i>7920 0245 064</i> |
| 2. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No Seals Comments |
| 3. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 5. Samples received cooled or ambient? | Temp | <i>1-8</i> °C | Cooler # <i>AFS-04-019</i> |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No Seals |
| 7. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 8. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 9. All samples on coc received? All samples received on coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 10. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 11. Samples properly preserved? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 12. Samples received within hold times? Short holds taken to wet lab? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 13. VOA, TOC, TOX free of headspace? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A |
| 14. QC stickers placed on bottles designated by client? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A |
| 15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> No Discrepancies |

SR-002-B





Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RCG-048 K0206

DATE RECEIVED: 01/31/06

LVL LOT # :0601L183

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J10VH6						
SILVER, TOTAL	001	W	06L0098	01/30/06	02/13/06	02/16/06
SILVER, TOTAL	001 REP	W	06L0098	01/30/06	02/13/06	02/16/06
SILVER, TOTAL	001 MS	W	06L0098	01/30/06	02/13/06	02/16/06
ALUMINUM, TOTAL	001	W	06L0098	01/30/06	02/13/06	02/14/06
ALUMINUM, TOTAL	001 REP	W	06L0098	01/30/06	02/13/06	02/14/06
ALUMINUM, TOTAL	001 MS	W	06L0098	01/30/06	02/13/06	02/14/06
ARSENIC, TOTAL	001	W	06L0098	01/30/06	02/13/06	02/16/06
ARSENIC, TOTAL	001 REP	W	06L0098	01/30/06	02/13/06	02/16/06
ARSENIC, TOTAL	001 MS	W	06L0098	01/30/06	02/13/06	02/16/06
BORON, TOTAL	001	W	06L0098	01/30/06	02/13/06	02/16/06
BORON, TOTAL	001 REP	W	06L0098	01/30/06	02/13/06	02/16/06
BORON, TOTAL	001 MS	W	06L0098	01/30/06	02/13/06	02/16/06
BARIUM, TOTAL	001	W	06L0098	01/30/06	02/13/06	02/16/06
BARIUM, TOTAL	001 REP	W	06L0098	01/30/06	02/13/06	02/16/06
BARIUM, TOTAL	001 MS	W	06L0098	01/30/06	02/13/06	02/16/06
BERYLLIUM, TOTAL	001	W	06L0098	01/30/06	02/13/06	02/14/06
BERYLLIUM, TOTAL	001 REP	W	06L0098	01/30/06	02/13/06	02/14/06
BERYLLIUM, TOTAL	001 MS	W	06L0098	01/30/06	02/13/06	02/14/06
BISMUTH, TOTAL	001	W	06L0098	01/30/06	02/13/06	02/16/06
BISMUTH, TOTAL REP	001 REP	W	06L0098	01/30/06	02/13/06	02/16/06
BISMUTH, TOTAL SPIKE	001 MS	W	06L0098	01/30/06	02/13/06	02/16/06
CALCIUM, TOTAL	001	W	06L0098	01/30/06	02/13/06	02/16/06
CALCIUM, TOTAL	001 REP	W	06L0098	01/30/06	02/13/06	02/16/06
CALCIUM, TOTAL	001 MS	W	06L0098	01/30/06	02/13/06	02/16/06
CADMIUM, TOTAL	001	W	06L0098	01/30/06	02/13/06	02/16/06
CADMIUM, TOTAL	001 REP	W	06L0098	01/30/06	02/13/06	02/16/06
CADMIUM, TOTAL	001 MS	W	06L0098	01/30/06	02/13/06	02/16/06
COBALT, TOTAL	001	W	06L0098	01/30/06	02/13/06	02/16/06
COBALT, TOTAL	001 REP	W	06L0098	01/30/06	02/13/06	02/16/06
COBALT, TOTAL	001 MS	W	06L0098	01/30/06	02/13/06	02/16/06
CHROMIUM, TOTAL	001	W	06L0098	01/30/06	02/13/06	02/16/06
CHROMIUM, TOTAL	001 REP	W	06L0098	01/30/06	02/13/06	02/16/06
CHROMIUM, TOTAL	001 MS	W	06L0098	01/30/06	02/13/06	02/16/06
COPPER, TOTAL	001	W	06L0098	01/30/06	02/13/06	02/16/06
COPPER, TOTAL	001 REP	W	06L0098	01/30/06	02/13/06	02/16/06

000000001

Lionville Laboratory, Inc.
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNUHANFORD RCG-048 K0206

DATE RECEIVED: 01/31/06

LVL LOT # :0601L183

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
COPPER, TOTAL	001 MS	W	06L0098	01/30/06	02/13/06	02/16/06
IRON, TOTAL	001	W	06L0098	01/30/06	02/13/06	02/16/06
IRON, TOTAL	001 REP	W	06L0098	01/30/06	02/13/06	02/16/06
IRON, TOTAL	001 MS	W	06L0098	01/30/06	02/13/06	02/16/06
MERCURY, TOTAL	001	W	06C0023	01/30/06	02/07/06	02/07/06
MERCURY, TOTAL	001 REP	W	06C0023	01/30/06	02/07/06	02/07/06
MERCURY, TOTAL	001 MS	W	06C0023	01/30/06	02/07/06	02/07/06
POTASSIUM, TOTAL	001	W	06L0098	01/30/06	02/13/06	02/14/06
POTASSIUM, TOTAL	001 REP	W	06L0098	01/30/06	02/13/06	02/14/06
POTASSIUM, TOTAL	001 MS	W	06L0098	01/30/06	02/13/06	02/14/06
LITHIUM, TOTAL	001	W	06L0098	01/30/06	02/13/06	02/16/06
LITHIUM, TOTAL	001 REP	W	06L0098	01/30/06	02/13/06	02/16/06
LITHIUM, TOTAL	001 MS	W	06L0098	01/30/06	02/13/06	02/16/06
MAGNESIUM, TOTAL	001	W	06L0098	01/30/06	02/13/06	02/16/06
MAGNESIUM, TOTAL	001 REP	W	06L0098	01/30/06	02/13/06	02/16/06
MAGNESIUM, TOTAL	001 MS	W	06L0098	01/30/06	02/13/06	02/16/06
MANGANESE, TOTAL	001	W	06L0098	01/30/06	02/13/06	02/16/06
MANGANESE, TOTAL	001 REP	W	06L0098	01/30/06	02/13/06	02/16/06
MANGANESE, TOTAL	001 MS	W	06L0098	01/30/06	02/13/06	02/16/06
MOLYBDENUM, TOTAL	001	W	06L0098	01/30/06	02/13/06	02/16/06
MOLYBDENUM, TOTAL	001 REP	W	06L0098	01/30/06	02/13/06	02/16/06
MOLYBDENUM, TOTAL	001 MS	W	06L0098	01/30/06	02/13/06	02/16/06
SODIUM, TOTAL	001	W	06L0098	01/30/06	02/13/06	02/14/06
SODIUM, TOTAL	001 REP	W	06L0098	01/30/06	02/13/06	02/14/06
SODIUM, TOTAL	001 MS	W	06L0098	01/30/06	02/13/06	02/14/06
NICKEL, TOTAL	001	W	06L0098	01/30/06	02/13/06	02/16/06
NICKEL, TOTAL	001 REP	W	06L0098	01/30/06	02/13/06	02/16/06
NICKEL, TOTAL	001 MS	W	06L0098	01/30/06	02/13/06	02/16/06
PHOSPHORUS, TOTAL	001	W	06L0098	01/30/06	02/13/06	02/14/06
PHOSPHORUS, TOTAL	001 REP	W	06L0098	01/30/06	02/13/06	02/14/06
PHOSPHORUS, TOTAL	001 MS	W	06L0098	01/30/06	02/13/06	02/14/06
LEAD, TOTAL	001	W	06L0098	01/30/06	02/13/06	02/16/06
LEAD, TOTAL	001 REP	W	06L0098	01/30/06	02/13/06	02/16/06
LEAD, TOTAL	001 MS	W	06L0098	01/30/06	02/13/06	02/16/06
ANTIMONY, TOTAL	001	W	06L0098	01/30/06	02/13/06	02/16/06
ANTIMONY, TOTAL	001 REP	W	06L0098	01/30/06	02/13/06	02/16/06
ANTIMONY, TOTAL	001 MS	W	06L0098	01/30/06	02/13/06	02/16/06
SELENIUM, TOTAL	001	W	06L0098	01/30/06	02/13/06	02/16/06

Lionville Laboratory, Inc.
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNUHANFORD RCG-048 K0206

DATE RECEIVED: 01/31/06

LVL LOT # :0601L183

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SELENIUM, TOTAL	001 REP	W	06L0098	01/30/06	02/13/06	02/16/06
SELENIUM, TOTAL	001 MS	W	06L0098	01/30/06	02/13/06	02/16/06
SILICON, TOTAL	001	W	06L0098	01/30/06	02/13/06	02/16/06
SILICON, TOTAL	001 REP	W	06L0098	01/30/06	02/13/06	02/16/06
SILICON, TOTAL	001 MS	W	06L0098	01/30/06	02/13/06	02/16/06
TIN, TOTAL	001	W	06L0098	01/30/06	02/13/06	02/16/06
TIN, TOTAL	001 REP	W	06L0098	01/30/06	02/13/06	02/16/06
TIN, TOTAL	001 MS	W	06L0098	01/30/06	02/13/06	02/16/06
STRONTIUM, TOTAL	001	W	06L0098	01/30/06	02/13/06	02/16/06
STRONTIUM, TOTAL	001 REP	W	06L0098	01/30/06	02/13/06	02/16/06
STRONTIUM, TOTAL	001 MS	W	06L0098	01/30/06	02/13/06	02/16/06
THALLIUM, TOTAL	001	W	06L0098	01/30/06	02/13/06	02/16/06
THALLIUM, TOTAL	001 REP	W	06L0098	01/30/06	02/13/06	02/16/06
THALLIUM, TOTAL	001 MS	W	06L0098	01/30/06	02/13/06	02/16/06
URANIUM, TOTAL	001	W	06L0098	01/30/06	02/13/06	02/16/06
URANIUM, TOTAL	001 REP	W	06L0098	01/30/06	02/13/06	02/16/06
URANIUM, TOTAL	001 MS	W	06L0098	01/30/06	02/13/06	02/16/06
VANADIUM, TOTAL	001	W	06L0098	01/30/06	02/13/06	02/16/06
VANADIUM, TOTAL	001 REP	W	06L0098	01/30/06	02/13/06	02/16/06
VANADIUM, TOTAL	001 MS	W	06L0098	01/30/06	02/13/06	02/16/06
ZINC, TOTAL	001	W	06L0098	01/30/06	02/13/06	02/16/06
ZINC, TOTAL	001 REP	W	06L0098	01/30/06	02/13/06	02/16/06
ZINC, TOTAL	001 MS	W	06L0098	01/30/06	02/13/06	02/16/06

LAB QC:

SILVER LABORATORY	LC1 BS	W	06L0098	N/A	02/13/06	02/16/06
SILVER, TOTAL	MB1	W	06L0098	N/A	02/13/06	02/16/06
ALUMINUM LABORTORY	LC1 BS	W	06L0098	N/A	02/13/06	02/14/06
ALUMINUM, TOTAL	MB1	W	06L0098	N/A	02/13/06	02/14/06
ARSENIC LABORATORY	LC1 BS	W	06L0098	N/A	02/13/06	02/16/06
ARSENIC, TOTAL	MB1	W	06L0098	N/A	02/13/06	02/16/06
BORON LABORATORY	LC1 BS	W	06L0098	N/A	02/13/06	02/16/06
BORON, TOTAL	MB1	W	06L0098	N/A	02/13/06	02/16/06
BARIUM LABORATORY	LC1 BS	W	06L0098	N/A	02/13/06	02/16/06
BARIUM, TOTAL	MB1	W	06L0098	N/A	02/13/06	02/16/06
BERYLLIUM LABORATORY	LC1 BS	W	06L0098	N/A	02/13/06	02/14/06
BERYLLIUM, TOTAL	MB1	W	06L0098	N/A	02/13/06	02/14/06

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Lionville Laboratory, Inc.
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNUHANFORD RCG-048 K0206

DATE RECEIVED: 01/31/06

LVL LOT # :0601L183

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BISMUTH, LCS	LC1 BS	W	06L0098	N/A	02/13/06	02/16/06
BISMUTH, TOTAL	MB1	W	06L0098	N/A	02/13/06	02/16/06
CALCIUM LABORATORY	LC1 BS	W	06L0098	N/A	02/13/06	02/16/06
CALCIUM, TOTAL	MB1	W	06L0098	N/A	02/13/06	02/16/06
CADMIUM LABORATORY	LC1 BS	W	06L0098	N/A	02/13/06	02/16/06
CADMIUM, TOTAL	MB1	W	06L0098	N/A	02/13/06	02/16/06
COBALT LABORATORY	LC1 BS	W	06L0098	N/A	02/13/06	02/16/06
COBALT, TOTAL	MB1	W	06L0098	N/A	02/13/06	02/16/06
CHROMIUM LABORATORY	LC1 BS	W	06L0098	N/A	02/13/06	02/16/06
CHROMIUM, TOTAL	MB1	W	06L0098	N/A	02/13/06	02/16/06
COPPER LABORATORY	LC1 BS	W	06L0098	N/A	02/13/06	02/16/06
COPPER, TOTAL	MB1	W	06L0098	N/A	02/13/06	02/16/06
IRON LABORATORY	LC1 BS	W	06L0098	N/A	02/13/06	02/16/06
IRON, TOTAL	MB1	W	06L0098	N/A	02/13/06	02/16/06
MERCURY LABORATORY	LC1 BS	W	06C0023	N/A	02/07/06	02/07/06
MERCURY, TOTAL	MB1	W	06C0023	N/A	02/07/06	02/07/06
MERCURY, TCLP LEACHA	MB2	W	06C0023	N/A	02/07/06	02/07/06
POTASSIUM LABORATORY	LC1 BS	W	06L0098	N/A	02/13/06	02/14/06
POTASSIUM, TOTAL	MB1	W	06L0098	N/A	02/13/06	02/14/06
LITHIUM LABORATORY	LC1 BS	W	06L0098	N/A	02/13/06	02/16/06
LITHIUM, TOTAL	MB1	W	06L0098	N/A	02/13/06	02/16/06
MAGNESIUM LABORATORY	LC1 BS	W	06L0098	N/A	02/13/06	02/16/06
MAGNESIUM, TOTAL	MB1	W	06L0098	N/A	02/13/06	02/16/06
MANGANESE LABORATORY	LC1 BS	W	06L0098	N/A	02/13/06	02/16/06
MANGANESE, TOTAL	MB1	W	06L0098	N/A	02/13/06	02/16/06
MOLYBDENUM LABORATOR	LC1 BS	W	06L0098	N/A	02/13/06	02/16/06
MOLYBDENUM, TOTAL	MB1	W	06L0098	N/A	02/13/06	02/16/06
SODIUM LABORATORY	LC1 BS	W	06L0098	N/A	02/13/06	02/14/06
SODIUM, TOTAL	MB1	W	06L0098	N/A	02/13/06	02/14/06
NICKEL LABORATORY	LC1 BS	W	06L0098	N/A	02/13/06	02/16/06
NICKEL, TOTAL	MB1	W	06L0098	N/A	02/13/06	02/16/06
PHOSPHORUS LCS	LC1 BS	W	06L0098	N/A	02/13/06	02/14/06
PHOSPHORUS, TOTAL	MB1	W	06L0098	N/A	02/13/06	02/14/06
LEAD LABORATORY	LC1 BS	W	06L0098	N/A	02/13/06	02/16/06
LEAD, TOTAL	MB1	W	06L0098	N/A	02/13/06	02/16/06
ANTIMONY LABORATORY	LC1 BS	W	06L0098	N/A	02/13/06	02/16/06
ANTIMONY, TOTAL	MB1	W	06L0098	N/A	02/13/06	02/16/06
SELENIUM LABORATORY	LC1 BS	W	06L0098	N/A	02/13/06	02/16/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RCG-048 K0206

DATE RECEIVED: 01/31/06

LVL LOT # :0601L183

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SELENIUM, TOTAL	MB1	W	06L0098	N/A	02/13/06	02/16/06
SILICON LABORATORY	LC1 BS	W	06L0098	N/A	02/13/06	02/16/06
SILICON, TOTAL	MB1	W	06L0098	N/A	02/13/06	02/16/06
TIN LABORATORY	LC1 BS	W	06L0098	N/A	02/13/06	02/16/06
TIN, TOTAL	MB1	W	06L0098	N/A	02/13/06	02/16/06
STRONTIUM LCS STANDA	LC1 BS	W	06L0098	N/A	02/13/06	02/16/06
STRONTIUM, TOTAL	MB1	W	06L0098	N/A	02/13/06	02/16/06
THALLIUM LABORATORY	LC1 BS	W	06L0098	N/A	02/13/06	02/16/06
THALLIUM, TOTAL	MB1	W	06L0098	N/A	02/13/06	02/16/06
URANIUM LABORATORY	LC1 BS	W	06L0098	N/A	02/13/06	02/16/06
URANIUM, TOTAL	MB1	W	06L0098	N/A	02/13/06	02/16/06
VANADIUM LABORATORY	LC1 BS	W	06L0098	N/A	02/13/06	02/16/06
VANADIUM, TOTAL	MB1	W	06L0098	N/A	02/13/06	02/16/06
ZINC LABORATORY	LC1 BS	W	06L0098	N/A	02/13/06	02/16/06
ZINC, TOTAL	MB1	W	06L0098	N/A	02/13/06	02/16/06

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Analytical Report

Client: TNU-HANFORD RCG-048
LVL#: 0601L183
SDG/SAF#: K0206/RCG-048

W.O.#: 11343-606-001-9999-00
Date Received: 01-31-06

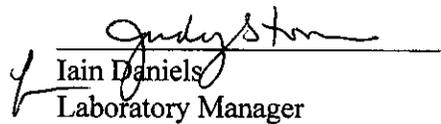
METALS CASE NARRATIVE

1. This narrative covers the analysis of 1 water sample.
2. The sample was prepared and analyzed in accordance with methods checked on the attached glossary. The sample was reported from a different instrument for Aluminum, Beryllium, Potassium, Sodium, and Phosphorous due to high concentrations and sample matrix.
3. All analyses were performed within the required holding times.
4. All results presented in this report are derived from samples that met LVL's sample acceptance policy.
5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury).
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), 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 6 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.
12. For the purposes of this report, the data has been reported to the Instrument Detection Limit

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 19 pages.

(IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.

13. LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.
14. 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

2/24/06
Date

ijw/m01-183



00000007

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this Lot#: 0601483

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	X6010B	200.7			99
Antimony	X6010B 7041 ^s	200.7	204.2		99
Arsenic	X6010B 7060A ^s	200.7	206.2	3113B	99
Barium	X6010B	200.7			99
Beryllium	X6010B	200.7			99
Bismuth	X6010B ⁱ	200.7 ⁱ		1620	99
Boron	X6010B	200.7			99
Cadmium	X6010B 7131A ⁱ	200.7	213.2		99
Calcium	X6010B	200.7			99
Chromium	X6010B 7191 ^s	200.7	218.2		SS17
Cobalt	X6010B	200.7			99
Copper	X6010B 7211 ^s	200.7	220.2		99
Iron	X6010B	200.7			99
Lead	X6010B 7421 ^s	200.7	239.2	3113B	99
Lithium	X6010B 7430 ^s	200.7		1620	99
Magnesium	X6010B	200.7			99
Manganese	X6010B	200.7			99
Mercury	X7470A ^s 7471A ^s	245.1 ^s	245.5 ^s		99
Molybdenum	X6010B	200.7			99
Nickel	X6010B	200.7			99
Potassium	X6010B 7610 ^s	200.7	258.1 ^s		99
Rare Earths	6010B ⁱ	200.7 ⁱ		1620	99
Selenium	X6010B 7740 ^s	200.7	270.2	3113B	99
Silicon	X6010B ⁱ	200.7		1620	99
Silica	6010B	200.7		1620	99
Silver	X6010B 7761 ^s	200.7	272.2		99
Sodium	X6010B 7770 ^s	200.7	273.1 ^s		99
Strontium	X6010B	200.7			99
Thallium	X6010B 7841 ^s	200.7	279.2	200.9	99
Tin	X6010B	200.7			99
Titanium	6010B	200.7			99
Uranium	X6010B ⁱ	200.7 ⁱ		1620	99
Vanadium	X6010B	200.7			99
Zinc	X6010B	200.7			99
Zirconium	6010B ⁱ	200.7 ⁱ		1620	99

Other: Phosphorus

Method: 6010B

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 02/23/06

CLIENT: TNUHANFORD RCG-048 K0206
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0601L183

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J10VH6	Silver, Total	1.4	u UG/L	1.4	1.0
		Aluminum, Total	30.5	u UG/L	30.5	1.0
		Arsenic, Total	4.5	UG/L	3.4	1.0
		Boron, Total	40.0	UG/L	2.7	1.0
		Barium, Total	44.1	UG/L	0.20	1.0
		Beryllium, Total	0.20	u UG/L	0.20	1.0
		Bismuth, Total	6.1	u UG/L	6.1	1.0
		Calcium, Total	44800	UG/L	11.9	1.0
		Cadmium, Total	0.70	u UG/L	0.70	1.0
		Cobalt, Total	1.2	u UG/L	1.2	1.0
		Chromium, Total	1.8	UG/L	1.6	1.0
		Copper, Total	1.2	u UG/L	1.2	1.0
		Iron, Total	32.1	u UG/L	32.1	1.0
		Mercury, Total	0.10	u UG/L	0.10	1.0
		Potassium, Total	5710	UG/L	540	1.0
		Lithium, Total	6.5	UG/L	0.30	1.0
		Magnesium, Total	9450	UG/L	13.5	1.0
		Manganese, Total	0.20	u UG/L	0.20	1.0
		Molybdenum, Total	5.7	UG/L	1.3	1.0
		Sodium, Total	19900	UG/L	28.2	1.0
		Nickel, Total	1.3	u UG/L	1.3	1.0
		Phosphorus, Total	43.3	UG/L	8.3	1.0
		Lead, Total	3.1	u UG/L	3.1	1.0
		Antimony, Total	4.0	u UG/L	4.0	1.0
		Selenium, Total	4.9	UG/L	3.6	1.0
		Silicon, Total	15300	UG/L	8.2	1.0
		Tin, Total	10.2	UG/L	5.2	1.0
		Strontium, Total	186	UG/L	0.10	1.0
		Thallium, Total	6.6	UG/L	6.4	1.0
		Uranium, Total	47.0	UG/L	20.6	1.0
		Vanadium, Total	8.6	UG/L	0.90	1.0
		Zinc, Total	1.0	UG/L	0.50	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 02/23/06

CLIENT: TNUHANFORD RCG-048 K0206
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0601L183

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	06L0098-MB1	Silver, Total	1.4	u UG/L	1.4	1.0
		Aluminum, Total	30.5	u UG/L	30.5	1.0
		Arsenic, Total	3.4	u UG/L	3.4	1.0
		Boron, Total	2.7	u UG/L	2.7	1.0
		Barium, Total	0.49	UG/L	0.20	1.0
		Beryllium, Total	0.20	u UG/L	0.20	1.0
		Bismuth, Total	6.1	u UG/L	6.1	1.0
		Calcium, Total	14.3	UG/L	11.9	1.0
		Cadmium, Total	0.70	u UG/L	0.70	1.0
		Cobalt, Total	1.2	u UG/L	1.2	1.0
		Chromium, Total	1.6	u UG/L	1.6	1.0
		Copper, Total	1.2	u UG/L	1.2	1.0
		Iron, Total	32.1	u UG/L	32.1	1.0
		Potassium, Total	540	u UG/L	540	1.0
		Lithium, Total	0.30	u UG/L	0.30	1.0
		Magnesium, Total	13.5	u UG/L	13.5	1.0
		Manganese, Total	0.20	u UG/L	0.20	1.0
		Molybdenum, Total	1.3	u UG/L	1.3	1.0
		Sodium, Total	28.2	u UG/L	28.2	1.0
		Nickel, Total	1.3	u UG/L	1.3	1.0
		Phosphorus, Total	8.3	u UG/L	8.3	1.0
		Lead, Total	3.6	UG/L	3.1	1.0
		Antimony, Total	4.0	u UG/L	4.0	1.0
		Selenium, Total	3.6	u UG/L	3.6	1.0
		Silicon, Total	18.7	UG/L	8.2	1.0
		Tin, Total	13.4	UG/L	5.2	1.0
		Strontium, Total	0.14	UG/L	0.10	1.0
		Thallium, Total	6.4	u UG/L	6.4	1.0
		Uranium, Total	20.6	u UG/L	20.6	1.0
		Vanadium, Total	0.90	u UG/L	0.90	1.0
		Zinc, Total	0.76	UG/L	0.50	1.0
BLANK1	06C0023-MB1	Mercury, Total	0.10	u UG/L	0.10	1.0
BLANK2	06C0023-MB2	Mercury, TCLP Leachate	0.10	u UG/L	0.10	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 02/23/06

CLIENT: TNUHANFORD RCG-048 K0206
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0601L183

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-001	J10VH6	Silver, Total	47.9	1.4 u	50.0	95.8	1.0
		Aluminum, Total	2040	30.5 u	2000	101.8	1.0
		Arsenic, Total	1950	4.5	2000	97.2	1.0
		Boron, Total	1020	40.0	1000	98.3	1.0
		Barium, Total	2010	44.1	2000	98.5	1.0
		Beryllium, Total	51.0	0.20u	50.0	102.0	1.0
		Bismuth, Total	5100	6.1 u	5000	102.0	1.0
		Calcium, Total	69200	44800	25000	97.7	1.0
		Cadmium, Total	47.8	0.70u	50.0	95.6	1.0
		Cobalt, Total	489	1.2 u	500	97.8	1.0
		Chromium, Total	199	1.8	200	98.4	1.0
		Copper, Total	251	1.2 u	250	100.2	1.0
		Iron, Total	1000	32.1 u	1000	100	1.0
		Mercury, Total	0.99	0.10u	1.0	98.9	1.0
		Potassium, Total	31500	5710	25000	103.2	1.0
		Lithium, Total	1120	6.5	1000	111.8	1.0
		Magnesium, Total	34500	9450	25000	100.2	1.0
		Manganese, Total	501	0.20u	500	100.1	1.0
		Molybdenum, Total	979	5.7	1000	97.3	1.0
		Sodium, Total	44700	19900	25000	99.0	1.0
		Nickel, Total	487	1.3 u	500	97.4	1.0
		Phosphorus, Total	4970	43.3	5000	98.6	1.0
		Lead, Total	486	3.1 u	500	97.2	1.0
		Antimony, Total	493	4.0 u	500	98.6	1.0
		Selenium, Total	2000	4.9	2000	99.8	1.0
		Silicon, Total	16500	15300	1000	115.4*	1.0
		Tin, Total	997	10.2	1000	98.6	1.0
		Strontium, Total	1160	186	1000	97.2	1.0
		Thallium, Total	2020	6.6	2000	100.5	1.0
		Uranium, Total	2430	47.0	5000	47.0	1.0
		Vanadium, Total	505	8.6	500	99.2	1.0
		Zinc, Total	496	1.0	500	98.9	1.0

95.3
 correct entry
 MW-2/23/06

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 02/23/06

CLIENT: TNUHANFORD RCG-048 K0206

LVL LOT #: 0601L183

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR (REP)
-001REP	J10VH6	Silver, Total	1.4 u	1.4 u	NC	1.0
		Aluminum, Total	30.5 u	30.5 u	NC	1.0
		Arsenic, Total	4.5	3.4 u	NC	1.0
		Boron, Total	40.0	37.4	6.7	1.0
		Barium, Total	44.1	45.1	2.2	1.0
		Beryllium, Total	0.20u	0.20u	NC	1.0
		Bismuth, Total	6.1 u	6.1 u	NC	1.0
		Calcium, Total	44800	45600	1.8	1.0
		Cadmium, Total	0.70u	0.70u	NC	1.0
		Cobalt, Total	1.2 u	1.2 u	NC	1.0
		Chromium, Total	1.8	2.4	28.6	1.0
		Copper, Total	1.2 u	1.3	NC	1.0
		Iron, Total	32.1 u	32.1 u	NC	1.0
		Mercury, Total	0.10u	0.10u	NC	1.0
		Potassium, Total	5710	5450	4.6	1.0
		Lithium, Total	6.5	6.1	6.3	1.0
		Magnesium, Total	9450	9650	2.1	1.0
		Manganese, Total	0.20u	0.20u	NC	1.0
		Molybdenum, Total	5.7	6.5	13.1	1.0
		Sodium, Total	19900	19600	1.9	1.0
		Nickel, Total	1.3 u	1.3 u	NC	1.0
		Phosphorus, Total	43.3	46.1	6.3	1.0
		Lead, Total	3.1 u	3.1 u	NC	1.0
		Antimony, Total	4.0 u	4.0 u	NC	1.0
		Selenium, Total	4.9	3.6 u	NC	1.0
		Silicon, Total	15300	15700	2.1	1.0
		Tin, Total	10.2	11.9	15.4	1.0
		Strontium, Total	186	190	2.0	1.0
		Thallium, Total	6.6	6.4 u	NC	1.0
		Uranium, Total	47.0	49.1	4.4	1.0
		Vanadium, Total	8.6	8.9	3.4	1.0
		Zinc, Total	1.0	2.9	97.4	1.0

*200
NW 2/23/06*

*200
NW 2/23/06*

*200
NW 2/23/06*

*200
NW 2/23/06*

*corrected values
(2x)*

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 02/23/06

CLIENT: TNUHANFORD RCG-04B K0206
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0601L183

SAMPLE	SITE ID	ANALYTE	SPIKED	SPIKED	UNITS	%RBCOV
			SAMPLE	AMOUNT		
LCS1	06L0098-LC1	Silver, LCS	494	500	UG/L	98.8
		Aluminum, LCS	5050	5000	UG/L	101.0
		Arsenic, LCS	9730	10000	UG/L	97.3
		Boron, LCS	4950	5000	UG/L	99.0
		Barium, LCS	4900	5000	UG/L	98.0
		Beryllium, LCS	249	250	UG/L	99.6
		Bismuth, LCS	5140	5000	UG/L	102.7
		Calcium, LCS	24700	25000	UG/L	98.7
		Cadmium, LCS	242	250	UG/L	97.0
		Cobalt, LCS	2440	2500	UG/L	97.4
		Chromium, LCS	487	500	UG/L	97.4
		Copper, LCS	1240	1250	UG/L	99.2
		Iron, LCS	4910	5000	UG/L	98.1
		Potassium, LCS	25000	25000	UG/L	99.8
		Lithium, LCS	5290	5000	UG/L	105.7
		Magnesium, LCS	24900	25000	UG/L	99.6
		Manganese, LCS	754	750	UG/L	100.5
		Molybdenum, LCS	4980	5000	UG/L	99.5
		Sodium, LCS	24800	25000	UG/L	99.4
		Nickel, LCS	1940	2000	UG/L	97.2
		Phosphorus, LCS	4840	5000	UG/L	96.8
		Lead, LCS	2460	2500	UG/L	98.4
		Antimony, LCS	3040	3000	UG/L	101.4
		Selenium, LCS	9980	10000	UG/L	99.8
		Silicon, LCS	4860	5000	UG/L	97.3
		Tin, LCS	5010	5000	UG/L	100.2
		Strontium, LCS	4860	5000	UG/L	97.2
		Thallium, LCS	10100	10000	UG/L	100.6
		Uranium, LCS	2390	2500 2500	UG/L	92.8 95.6
		Vanadium, LCS	2470	2500	UG/L	98.8
		Zinc, LCS	979	1000	UG/L	97.9
LCS1	06C0023-LC1	Mercury, LCS	5.2	5.0	UG/L	103.5

** correct entry
 pnd 2/23/06*



510000015

06016183

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client <u>TULL-HANFORD</u>	SAF # <u>ROB-048</u>	Refrigerator #	<u>A-C-D-F</u>	<u>GH</u>	<u>I</u>	<u>J</u>	<u>K</u>	
Est. Final Proj. Sampling Date		#/Type Container	Liquid	Liquid	Liquid	Liquid	Liquid	
Project # <u>113413-606-001-9999-00</u>			Solid	Solid	Solid	Solid	Solid	
Project Contact/Phone #		Volume	Liquid	Liquid	Liquid	Liquid	Liquid	
Lionville Laboratory Project Manager <u>DJ</u>			Solid	Solid	Solid	Solid	Solid	
QC <u>SPIC</u> Del <u>SLD</u> TAT <u>30 Days</u>		Preservatives						
Date Rec'd <u>1/31/06</u>	Date Due <u>3/2/06</u>	ANALYSES REQUESTED	ORGANIC				INORG	
			VOA	BNA	Pest/PEB	Herb	Metal	CN

MATRIX CODES: S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum Solids DL - Drum Liquids L - EPYCLP Leachate WI - Wipe X - Other F - Fish	Lab ID	Client ID/Description	Matrix OC Chosen		Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only														
			MS	MSD				CGSH	CGSH	OCFB	METALS	INSTR-	IC									
	<u>001</u>	<u>TIOYH6</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>W</u>	<u>1-30-06</u>	<u>1030</u>	<u>3</u>	<u>3</u>	<u>2</u>	<u>1</u>	<u>1</u>	<u>1</u>									

Special Instructions: MULTI (S) = (MSL + Bi, B, Li, Mo, P, Si, Sr, Sn, U)

IC = IC Bi, Cl, F, Ni, NO₂, NO₃, SO₄, PO₄

DATE/REVISIONS:

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

Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time
<u>EQE</u>	<u>[Signature]</u>	<u>1/31/06</u>	<u>1000</u>					<u>COMPOSITE WASTE</u>	<u>ORIGINAL</u>		
			<u>0910</u>						<u>REWRITTEN</u>		

Washington Closure Hanford			CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST					RC-048-83		Page 1 of 2			
Collector <i>F.M. Hall</i>			Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 7N		Data Turnaround 45 Days		
Project Designation 100 Area and 300 Area Component of the RCRA Water Sa			Sampling Location 399-3-11		SAF No. RC-048		Air Quality <input type="checkbox"/>						
Ice Chest No. <i>EFS-04-019</i>			Field Logbook No. EL-1592		COA BESRAS6520		Method of Shipment FED EX						
Shipped To EBERLINE SERVICES <u>LIONVILLE</u>			Offsite Property No. <i>A060275</i>		Bill of Lading/Air Bill No. SEE OSPC								
POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS Special Handling and/or Storage <i>Cool 4°C</i>			Preservation	None	HNO3 to pH < 2	HNO3 to pH < 2	HNO3 to pH < 2	HNO3 to pH < 2	HNO3 to pH < 2	HNO3 to pH < 2	Cool 4C	Cool 4C	Cool 4C
			Type of Container	P	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG
			No. of Container(s)	1	1	2	1	2	1	1	3	2	3
			Volume	125mL	1000mL	1000mL	1000mL	1000mL	1000mL	500mL	1000mL	1000mL	1000mL
SAMPLE ANALYSIS			Tritium - H3	See item (1) in Special Instructions.	Strontium-89,90 -- Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226, Ra-228	See item (2) in Special Instructions	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081	
			Sample No.	Matrix *	Sample Date	Sample Time							
J10VH8	WATER	1-30-06	1030						X	X	X	X	
CHAIN OF POSSESSION			Sign/Print Names				SPECIAL INSTRUCTIONS					Matrix *	
Relinquished By/Removed From <i>F.M. Hall</i>			Date/Time <i>1-30-06 1115</i>	Received By/Stored In <i>RZ Steffler R.Z. Steffler</i>		Date/Time <i>1-30-06 1115</i>	(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)					S=Soil SE=Soil/soil SO=Solid SL=Sediment W=Water O=Oil A=Air DS=Dry Solids DL=Dry Liquid T=Trace WL=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From <i>RZ Steffler R.Z. Steffler</i>			Date/Time <i>1-30-06 1500</i>	Received By/Stored In <i>FED EX</i>		Date/Time <i>1-30-06</i>							
Relinquished By/Removed From <i>FED EX</i>			Date/Time <i>1-30-06 0900</i>	Received By/Stored In <i>[Signature]</i>		Date/Time <i>1-31-06 0900</i>							
Relinquished By/Removed From			Date/Time	Received By/Stored In		Date/Time							
Relinquished By/Removed From			Date/Time	Received By/Stored In		Date/Time							
LABORATORY SECTION	Received By		Title				Date/Time						
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By				Date/Time						

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-83	Page 2 of 2
Collector <i>F. M. Hall</i>	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 7N	Data Turnaround 45 Days		17 00000001
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa	Sampling Location 399-3-11	SAF No. RC-048	Air Quality <input type="checkbox"/>				
Ice Chest No. <i>EFS-04-019</i>	Field Logbook No. EL-1592	COA BESRAS6520	Method of Shipment FED EX				
Shipped To EBERLINE SERVICES <u>LIONVILLE</u>	Offsite Property No. <i>A060275</i>	Bill of Lading/Air Bill No. SEE OSPC					
POSSIBLE SAMPLE HAZARDS/REMARKS <i>POTENTIAL RADIOACTIVE < DOT LIMITS</i>		Preservation	Cool 4C	H2SO4 to pH <2 Cool 4C			
Special Handling and/or Storage <i>Cool 4°C</i>		Type of Container	P	G/P			
		No. of Container(s)	1	1			
		Volume	500mL	500mL			
			<i>3 26/2007</i>				
SAMPLE ANALYSIS		See item # in Special Instructions	NO2/NO3 - 353.2				
Sample No.	Matrix *	Sample Date	Sample Time				
J10VH6	WATER	1-30-06	1030	X			
CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS			Matrix *
Relinquished By/Removed From <i>F. M. Hall</i>	Date/Time <i>1-30-06 1115</i>	Received By/Stored In <i>RZ Steffler R.Z. Steffler</i>	Date/Time <i>1-30-06 1115</i>	<i>3 26/2007</i> IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)			S=Soil SE=Soil/soil SO=Solid SI=Sludge W=Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From <i>RZ Steffler R.Z. Steffler</i>	Date/Time <i>1-30-06 1500</i>	Received By/Stored In <i>Fed Ex</i>	Date/Time <i>1-30-06</i>				
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time				
Relinquished By/Removed From <i>Fed Ex</i>	Date/Time <i>1-31-06 0910</i>	Received By/Stored In <i>[Signature]</i>	Date/Time <i>1-31-06 0910</i>				
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time				
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time				
LABORATORY SECTION	Received By	Title		Date/Time			
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By		Date/Time			

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-83	Page 2 of 2
Collector <i>F.M. Hall</i>	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH		Price Code 7N	Data Turnaround 45 Days	
Project Designation 100 Arca and 300 Area Component of the RCBRA Water Sa		Sampling Location 399-3-11		SAF No. RC-048	Air Quality <input type="checkbox"/>		0000001
Ice Chest No. <i>AFS-04-019</i>	Field Logbook No. EL-1592	COA BESRAS6520	Method of Shipment FED EX				
Shipped To EBERLINE SERVICES <u>CLONVILLE</u>		Offsite Property No. <i>A060275</i>		Bill of Lading/Air Bill No. SEE OSPC			
POSSIBLE SAMPLE HAZARDS/REMARKS <i>POTENTIAL RADIOACTIVE < DOT LIMITS</i>				Preservation	Cool 4C	H2SO4 to pH <2 Cool 4C	
Special Handling and/or Storage <i>Cool 4°C</i>				Type of Container	P	G/P	
				No. of Container(s)	1	1	
				Volume	500mL	500mL	
				See item (1) in Special Instructions		NO2/NO3 - 353.2	
SAMPLE ANALYSIS							
Sample No.	Matrix *	Sample Date	Sample Time				
J10VH6	WATER	1-30-06	1030		X		
CHAIN OF POSSESSION				Sign/Print Names		SPECIAL INSTRUCTIONS	
Relinquished By/Removed From <i>F.M. Hall</i>	Date/Time <i>1-30-06 1115</i>	Received By/Stored In <i>R. J. Still</i>	Date/Time <i>1-30-06 1115</i>	(1) IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)		Matrix * S=Soil SE=Sediment SD=Solid SL=Sludge W=Water U=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WT=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From <i>R. J. Still</i>	Date/Time <i>1-30-06 1500</i>	Received By/Stored In <i>Fed Ex</i>	Date/Time <i>1-30-06 1500</i>				
Relinquished By/Removed From <i>R. J. Still</i>	Date/Time <i>1-31-06 0910</i>	Received By/Stored In <i>R. J. Still</i>	Date/Time <i>1-31-06 0910</i>				
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time				
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time				
LABORATORY SECTION	Received By	Title				Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By				Date/Time	

**Lionville Laboratory Incorporated
SAMPLE RECEIPT CHECKLIST (SRC)**

CLIENT: *TNU - HANFORD*

Date: *1-31-06*

Purchase Order / Project# /

SAP# / SOW# / Release #: *RC-048*

LvLI Batch # :

0601L183

Sample Custodian:

[Signature]

NOTE: EXPLAIN ALL DISCREPANCIES

- | | | | | |
|---|---|-----------------------------|--|----------------------|
| 1. Samples Hand Delivered or <u>Shipped</u> | Carrier | <i>Fed Ex</i> | Airbill# | <i>7920 0245 064</i> |
| 2. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No Seals | Comments |
| 3. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 5. Samples received cooled or ambient? | Temp | <i>1-8</i> °C | Cooler # | <i>AFS-04-019</i> |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> No Seals | |
| 7. coc signed and dated? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 8. Sample containers are intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 9. All samples on coc received? All samples received on coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 10. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 11. Samples properly preserved? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 12. Samples received within hold times? Short holds taken to wet lab? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 13. VOA, TOC, TOX free of headspace? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | |
| 14. QC stickers placed on bottles designated by client? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A | |
| 15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| 16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> No Discrepancies | |

SR-002-B





Lionville Laboratory, Inc.
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNUHANFORD RCG-048 K0206

DATE RECEIVED: 01/31/06

LVL LOT # :0601L183

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS	ANALYSIS TIME
J10VH6							
BROMIDE BY IC	001	W	06LIC014	01/30/06	01/31/06	01/31/06	
BROMIDE BY IC	001 REP	W	06LIC014	01/30/06	01/31/06	01/31/06	
BROMIDE BY IC	001 MS	W	06LIC014	01/30/06	01/31/06	01/31/06	
CHLORIDE BY IC	001	W	06LIC014	01/30/06	01/31/06	01/31/06	
CHLORIDE BY IC	001 REP	W	06LIC014	01/30/06	01/31/06	01/31/06	
CHLORIDE BY IC	001 MS	W	06LIC014	01/30/06	01/31/06	01/31/06	
FLUORIDE BY IC	001	W	06LIC014	01/30/06	01/31/06	01/31/06	
FLUORIDE BY IC	001 REP	W	06LIC014	01/30/06	01/31/06	01/31/06	
FLUORIDE BY IC	001 MS	W	06LIC014	01/30/06	01/31/06	01/31/06	
NITRITE BY IC	001	W	06LIC014	01/30/06	01/31/06	01/31/06	1555
NITRITE BY IC	001 REP	W	06LIC014	01/30/06	01/31/06	01/31/06	1627
NITRITE BY IC	001 MS	W	06LIC014	01/30/06	01/31/06	01/31/06	1641
NITRATE BY IC	001	W	06LIC014	01/30/06	01/31/06	01/31/06	1506
NITRATE BY IC	001 REP	W	06LIC014	01/30/06	01/31/06	01/31/06	1529
NITRATE BY IC	001 MS	W	06LIC014	01/30/06	01/31/06	01/31/06	1542
PHOSPHATE BY IC	001	W	06LIC014	01/30/06	01/31/06	01/31/06	1555
PHOSPHATE BY IC	001 REP	W	06LIC014	01/30/06	01/31/06	01/31/06	1627
PHOSPHATE BY IC	001 MS	W	06LIC014	01/30/06	01/31/06	01/31/06	1641
SULFATE BY IC	001	W	06LIC014	01/30/06	01/31/06	01/31/06	
SULFATE BY IC	001 REP	W	06LIC014	01/30/06	01/31/06	01/31/06	
SULFATE BY IC	001 MS	W	06LIC014	01/30/06	01/31/06	01/31/06	
NITRATE NITRITE	001	W	06LN3005	01/30/06	02/07/06	02/07/06	
NITRATE NITRITE	001 REP	W	06LN3005	01/30/06	02/07/06	02/07/06	
NITRATE NITRITE	001 MS	W	06LN3005	01/30/06	02/07/06	02/07/06	

LAB QC:

BROMIDE BY IC	MB1	W	06LIC014	N/A	01/31/06	01/31/06	
BROMIDE BY IC	MB1 BS	W	06LIC014	N/A	01/31/06	01/31/06	
CHLORIDE BY IC	MB1	W	06LIC014	N/A	01/31/06	01/31/06	
CHLORIDE BY IC	MB1 BS	W	06LIC014	N/A	01/31/06	01/31/06	
FLUORIDE BY IC	MB1	W	06LIC014	N/A	01/31/06	01/31/06	
FLUORIDE BY IC	MB1 BS	W	06LIC014	N/A	01/31/06	01/31/06	
NITRITE BY IC	MB1	W	06LIC014	N/A	01/31/06	01/31/06	
NITRITE BY IC	MB1 BS	W	06LIC014	N/A	01/31/06	01/31/06	

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RCG-048 K0206

DATE RECEIVED: 01/31/06

LVL LOT # :0601L183

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
NITRATE BY IC	MB1	W	06LIC014	N/A	01/31/06	01/31/06
NITRATE BY IC	MB1 BS	W	06LIC014	N/A	01/31/06	01/31/06
PHOSPHATE BY IC	MB1	W	06LIC014	N/A	01/31/06	01/31/06
PHOSPHATE BY IC	MB1 BS	W	06LIC014	N/A	01/31/06	01/31/06
SULFATE BY IC	MB1	W	06LIC014	N/A	01/31/06	01/31/06
SULFATE BY IC	MB1 BS	W	06LIC014	N/A	01/31/06	01/31/06
NITRATE NITRITE	MB1	W	06LN3005	N/A	02/07/06	02/07/06
NITRATE NITRITE	MB1 BS	W	06LN3005	N/A	02/07/06	02/07/06



Analytical Report

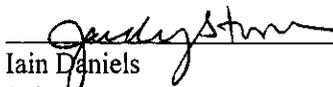
Client: TNU-HANFORD RCG-048 K0206
LVL#: 0601L183

W.O.#: 11343-606-001-9999-00
Date Received: 01-31-06

INORGANIC NARRATIVE

1. This narrative covers the analyses of 1 water sample.
2. The sample was prepared and analyzed in accordance with the methods checked on the attached glossary.

LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete list of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.
3. Sample holding times as required by the method and/or contract were met (see the sample chronology summary for analyses times for short hold samples).
4. The results presented in this report are derived from samples that met LvLI's sample acceptance policy.
5. The method blanks were within the method criteria.
6. The Laboratory Control Samples (LCS) were within the laboratory control limits.
7. The matrix spike recoveries for Bromide, Chloride, Fluoride, Nitrite, Nitrate, Phosphate, Sulfate and Nitrate Nitrite were within the 75-125% control limits.
8. The replicate analyses for Bromide, Chloride, Nitrite, Nitrate, Phosphate, Sulfate and Nitrate Nitrite were within the 20% RPD control limit.
9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.


Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

2/24/06
Date

njp01-183

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 14 pages.

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR WATER SAMPLE ANALYSIS

	<u>EPA /600</u>	<u>SW846</u>	<u>OTHER</u>
Acidity	305.1		
___ Alkalinity ___ Bicarbonate ___ Carbonate	310.1		
BOD	405.1		5210B (b)
Ion Chromatography:			
✓ Bromide ✓ Chloride ✓ Fluoride	✓ 300.0	9056	
✓ Nitrate ✓ Nitrite ✓ Phosphate	✓ 300.0	9056	
✓ Sulfate ___ Formate ___ Acetate ___ Oxalate	✓ 300.0	9056	
Chloride	325.2	9251	
Chlorine, Residual	330.5 (mod)		
Cyanide, Amenable to Chlorination	335.2	9010B	
Cyanide, Total	335.2	9010B	9014 ILMO4.0 (e)
Cyanide, Weak Acid Dissociable			412 (a) 4500CN-1 (b)
COD	410.4(mod)		5220C (b)
Color	110.2		
Corrosivity by Coupon		1110(mod)	
Chromium VI		7196A	3500Cr-D (b)
Fluoride	340.2		4500-FC
Hardness, Calcium	215.2		
Hardness, Total	130.2		
Iodide			ASTM D19P202 (1)
Surfactant	425.1		
✓ Nitrate-Nitrite ___ Nitrate ___ Nitrite	✓ 353.2		
Ammonia	350.3		
Total ___ Kjeldahl ___ Organic Nitrogen	351.3		
Total ___ Organic ___ Inorganic Carbon	415.1	9060	
Oil & Grease	413.1	9070	
___ pH ___ pH; paper	150.1	9040B 9041A	
Petroleum Hydrocarbons, Total Recoverable	418.1		
Phenol	420.1	420.2 9065 9066	
___ Ortho ___ Total Phosphate	365.2		4500-P B C
Salinity			210A (a) 2520 (b)
Settleable Solids	160.5		
Sulfide	376.1		9030B/9034 (acid soluble)
Reactive ___ Cyanide ___ Sulfide		Section 7.3 (9014 9030B)	
Silica	370.1		
Sulfite	377.1		
Sulfate	375.4	9038	
Specific Conductance	120.1	9050A	
Specific Gravity			D5057-90 213E (a)
Synthetic Precipitation Leach		1312	
Total ___ Dissolved ___ Suspended ___ Solids	160 ___ .1 ___ .2 ___ .3		
Total Organic Halides	450.1	9020B	
Turbidity	180.1		
Volatile Solids:			
___ Total ___ Dissolved ___ Suspended	160.4		
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 02/15/06

CLIENT: TNUHANFORD RCG-048 K0206
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0601L183

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-----	-----	-----	-----	-----	-----	-----
-001	J10VH6	Bromide by IC	0.25 u	MG/L	0.25	1.0
		Chloride by IC	15.7	MG/L	2.5	10.0
		Fluoride by IC	0.25 u	MG/L	0.25	1.0
		Nitrite by IC	0.25 u	MG/L	0.25	1.0
		Nitrate by IC	22.8	MG/L	2.50	10.0
		Phosphate by IC	0.25 u	MG/L	0.25	1.0
		Sulfate by IC	36.2	MG/L	2.5	10.0
		Nitrate Nitrite	5.6	MG/L	0.20	10.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 02/15/06

CLIENT: TNUHANFORD RCG-048 K0206
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 06011183

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-----	-----	-----	-----	-----	-----	-----
BLANK10	06LIC014-MB1	Bromide by IC	0.25 u	MG/L	0.25	1.0
		Chloride by IC	0.25 u	MG/L	0.25	1.0
		Fluoride by IC	0.25 u	MG/L	0.25	1.0
		Nitrite by IC	0.25 u	MG/L	0.25	1.0
		Nitrate by IC	0.25 u	MG/L	0.25	1.0
		Phosphate by IC	0.25 u	MG/L	0.25	1.0
		Sulfate by IC	0.25 u	MG/L	0.25	1.0
BLANK10	06LN3005-MB1	Nitrate Nitrite	0.020u	MG/L	0.020	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 02/15/06

CLIENT: TNUHANFORD RCG-048 K0206
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0601L183

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-001	J10VH6	Bromide by IC	4.9	0.00	5.0	97.0	1.0
		Chloride by IC	62.7	15.7	50.0	94.0	10.0
		Fluoride by IC	5.2	0.25	5.0	99.5	1.0
		Nitrite by IC	5.13	0.25u	5.00	102.6	1.0
		Nitrate by IC	72.0	22.8	50.0	98.4	10.0
		Phosphate by IC	4.7	0.25u	5.0	93.3	1.0
		Sulfate by IC	86.3	36.2	50.0	100.3	10.0
		Nitrate Nitrite	15.8	5.6	10.0	101.7	20.0
BLANK10	06LIC014-MB1	Bromide by IC	4.9	0.25u	5.0	97.2	1.0
		Chloride by IC	4.7	0.25u	5.0	93.7	1.0
		Fluoride by IC	4.9	0.25u	5.0	98.2	1.0
		Nitrite by IC	5.03	0.25u	5.00	100.6	1.0
		Nitrate by IC	4.94	0.25u	5.00	98.9	1.0
		Phosphate by IC	5.6	0.25u	5.0	111.5	1.0
		Sulfate by IC	5.0	0.25u	5.0	100.2	1.0
BLANK10	06LN3005-MB1	Nitrate Nitrite	0.50	0.02u	0.50	100.6	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 02/15/06

CLIENT: TNUHANFORD RCG-048 K0206
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0601L183

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE RPD		DILUTION FACTOR (REP)
-001REP	J10VH6	Bromide by IC	0.25u	0.25u	NC	1.0
		Chloride by IC	15.7	13.8	12.7	10.0
		Fluoride by IC	0.25u	0.25u	NC	1.0
		Nitrite by IC	0.25u	0.25u	NC	1.0
		Nitrate by IC	22.8	21.5	5.9	10.0
		Phosphate by IC	0.25u	0.25u	NC	1.0
		Sulfate by IC	36.2	35.0	3.3	10.0
		Nitrate Nitrite	5.6	6.7	17.7	10.0



06016183

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client <u>TALLMANFORD SAF # 708-048</u>	Refrigerator #	A	C	D	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	
Est. Final Proj. Sampling Date	#/Type Container	Liquid	Liquid																							
Project # <u>11313-1006-001-9999-00</u>	Volume	Solid																								
Project Contact/Phone #	Preservatives	Preservatives	Preservatives	Preservatives	Preservatives	Preservatives	Preservatives	Preservatives	Preservatives	Preservatives	Preservatives	Preservatives	Preservatives	Preservatives	Preservatives	Preservatives	Preservatives	Preservatives	Preservatives	Preservatives	Preservatives	Preservatives	Preservatives	Preservatives	Preservatives	
Lionville Laboratory Project Manager <u>DJ</u>	ANALYSES REQUESTED	ORGANIC																								
QC <u>SPIC</u> Del <u>STD</u> TAT <u>30 Days</u>	VOA	BNA	Pest/pest	Herb	Pest/pest																					
Date Rec'd <u>1/31/06</u> Date Due <u>3/2/06</u>	Metal	CN	INORG																							

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		Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only																	
			MS	MSD				VOA	BNA	Pest/pest	Herb	Metal	CN	INORG	INORG	INORG	INORG	INORG	INORG						
	001	TIOYH6	✓	✓	W	1-30-06	1030	3	3			2													

Special Instructions: MULTI(D) = HSL + Bi, B, Li, Mn, P, Si, Sr, Sn, U

ICD = IC Bi, Cl, F, Hg, NO₂, NO₃, SO₄, PO₄

DATE/REVISIONS:

- _____
- _____
- _____
- _____
- _____
- _____

Relinquished by <u>[Signature]</u>	Received by <u>[Signature]</u>	Date <u>1/31/06</u>	Time <u>1000</u>	Relinquished by	Received by	Date	Time	Relinquished by <u>"COMPOSITE WASTE"</u>	Received by <u>ORIGINAL REWRITTEN</u>	Date	Time
------------------------------------	--------------------------------	---------------------	------------------	-----------------	-------------	------	------	--	---------------------------------------	------	------

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						RC-048-83		Page 1 of 2					
Collector <i>F.M. Hall</i>		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 7N		Data Turnaround 45 Days					
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location 399-3-11		SAF No. RC-048		Air Quality <input type="checkbox"/>									
Ice Chest No. <i>EFS-04-019</i>		Field Logbook No. EL-1592		COA BESRAS6520		Method of Shipment FED EX									
Shipped To EBERLINE SERVICES <u>LIONVILLE</u>		Offsite Property No. <i>A060275</i>				Bill of Lading/Air Bill No. SEE OSPC									
POSSIBLE SAMPLE HAZARDS/REMARKS POTENTIAL RADIOACTIVE < DOT LIMITS Special Handling and/or Storage <i>Cool 4° C</i>		Preservation		None	HNO3 to pH < 2	HNO3 to pH < 2	HNO3 to pH < 2	HNO3 to pH < 2	HNO3 to pH < 2	HNO3 to pH < 2	Cool 4C	Cool 4C	Cool 4C		
		Type of Container		P	G/P	G/P	G/P	G/P	G/P	G/P	G/P	aG	aG	aG	
		No. of Container(s)		1	1	2	1	2	1	1	3	2	3		
		Volume		125mL	1000mL	1000mL	1000mL	1000mL	1000mL	500mL	1000mL	1000mL	1000mL	1000mL	
SAMPLE ANALYSIS				Tritium - H3	See item (1) in Special Instructions.	Strontium-89,90 - Total Sr	Isotopic Thorium (Thorium-232)	Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238)	Radium-226, Ra-228	See item (2) in Special Instructions.	Semi-VOA - 6270A (TCL)	PCBs - 8082	Pesticides - 8081		
Sample No.	Matrix *	Sample Date	Sample Time												
J10VH6	WATER	1-30-06	1030							X	X	X	X		
CHAIN OF POSSESSION				Sign/Print Names				SPECIAL INSTRUCTIONS				Matrix *			
Relinquished By/Removed From <i>E.M. Hall</i>		Date/Time <i>1-30-06 1115</i>		Received By/Stored In <i>Rz Steffler R. J. Steffler</i>		Date/Time <i>1-30-06 1115</i>		(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Thorium-234, Uranium-235, Uranium-238) (2) ICP Metals - 6010 (Full List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc); Mercury - 7470 - (CV)				S=Soil SE=Soil/soil SO=Solid SL=Sludge W = Water O=Oil A=Air US=Urban Solids DL=Drum Liquids T=Tissue WL=Wipe L=Liquid V=Vegetation X=Other			
Relinquished By/Removed From <i>Rz Steffler R. J. Steffler</i>		Date/Time <i>1-30-06 1500</i>		Received By/Stored In <i>Fed Ex</i>		Date/Time									
Relinquished By/Removed From <i>Fed Ex</i>		Date/Time <i>1-31-06 090</i>		Received By/Stored In <i>[Signature]</i>		Date/Time <i>1-31-06 090</i>									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time									
LABORATORY SECTION		Received By		Title				Date/Time							
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By				Date/Time							

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-83	Page 2 of 2
Collector <i>F.M. Hall</i>	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH		Price Code 7N	Data Turnaround 45 Days	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sampling Location 399-3-11	SAF No. RC-048		Air Quality <input type="checkbox"/>		
Ice Chest No. <i>EFS-04-019</i>	Field Logbook No. EL-1592	COA BESRAS6520	Method of Shipment FED EX				
Shipped To EBERLINE SERVICES <u>LIONVILLE</u>		Offsite Property No. <i>A060275</i>	Bill of Lading/Air Bill No. SEE OSPC				
POSSIBLE SAMPLE HAZARDS/REMARKS <i>POTENTIAL RADIOACTIVE < DOT LIMITS</i>				Preservation	Cool 4C	H2SO4 to pH <2 Cool 4C	
Special Handling and/or Storage <i>Cool 4°C</i>				Type of Container	P	G/P	
				No. of Container(s)	1	1	
				Volume	500mL	500mL	
					<i>3 Hazard</i>		
SAMPLE ANALYSIS				See item (A) in Special Instructions.	NO2/NO3 - 353.2		
Sample No.	Matrix *	Sample Date	Sample Time				
J10VH6	WATER	1-30-06	1030	X			
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS		Matrix *	
Relinquished By/Removed From <i>F.M. Hall</i>	Date/Time <i>1-30-06 1115</i>	Received By/Stored In <i>RZ Steffler R.Z. Steffler</i>	Date/Time <i>1-30-06 1115</i>	<i>3 Hazard</i> IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)		S=Soil SE=Soil SO=Solid SL=Sludge W=Water O=Oil A=Air DS=Dry Solids DL=Dry Liquids T=Time W=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From <i>RZ Steffler R.Z. Steffler</i>	Date/Time <i>1-30-06 1500</i>	Received By/Stored In <i>Fed Ex</i>	Date/Time <i>1-30-06</i>				
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time				
Relinquished By/Removed From <i>Fed Ex</i>	Date/Time <i>1-31-06 0910</i>	Received By/Stored In <i>[Signature]</i>	Date/Time <i>1-31-06 0910</i>				
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time				
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time				
LABORATORY SECTION	Received By	Title				Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By				Date/Time	

Washington Closure Hanford		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				RC-048-83		Page 2 of 2	
Collector <i>F.M. Hall</i>		Company Contact JOAN KESSNER		Telephone No. 375-4688		Project Coordinator KESSNER, JH		Price Code 7N	
Project Designation 100 Area and 300 Area Component of the RCBRA Water Sa		Sample Location 399-3-11		SAF No. RC-048		Air Quality <input type="checkbox"/>		Data Turnaround 45 Days	
Ice Chest No. <i>AFS-04-019</i>		Field Logbook No. EL-1592		COA BESRAS6520		Method of Shipment FED EX			
Shipped To EBERLINE SERVICES <u>LIONVILLE</u>		Offsite Property No. <i>A060275</i>		Bill of Lading/Air Bill No. SEE OSPC					
POSSIBLE SAMPLE HAZARDS/REMARKS <i>POTENTIAL RADIOACTIVE < DOT LIMITS</i>				Preservation	Cool 4C	H2SO4 to pH <2 Cool 4C			
Special Handling and/or Storage <i>Cool 4°C</i>				Type of Container	P	G/P			
				No. of Container(s)	1	1			
				Volume	500mL	500mL			
SAMPLE ANALYSIS				See Item (1) in Special Instructions.	NO2/NO3 - 353.2				
Sample No.	Matrix *	Sample Date	Sample Time						
J10VH6	WATER	1-30-06	1030		X				
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From <i>F.M. Hall</i>		Date/Time <i>1-30-06 1115</i>		Received By/Stored In <i>R. J. Steffler</i>		Date/Time <i>1-30-06 1115</i>		(1) IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate)	
Relinquished By/Removed From <i>R. J. Steffler</i>		Date/Time <i>1-30-06 1500</i>		Received By/Stored In <i>Fed Ex</i>		Date/Time <i>1-31-06 0910</i>			
Relinquished By/Removed From <i>Fed Ex</i>		Date/Time <i>1-31-06 1000</i>		Received By/Stored In <i>[Signature]</i>		Date/Time <i>1-31-06 1000</i>			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
LABORATORY SECTION	Received By			Title			Date/Time		
FINAL SAMPLE DISPOSITION	Disposal Method			Disposed By			Date/Time		

Lionville Laboratory Incorporated
SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: *TNU HANFORD*

Date: *1-31-06*

Purchase Order / Project# /

SAP# / SOW# / Release #: *RC-048*

LvLI Batch # :

0601L183

Sample Custodian:

[Signature]

NOTE: EXPLAIN ALL DISCREPANCIES

- | | | | |
|---|---|--|----------|
| 1. Samples Hand Delivered or <u>Shipped</u> | Carrier <i>Fed Ex</i> | Airbill# <i>7920 0245 0641</i> | |
| 2. Custody seals on coolers or shipping container intact, signed and dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals | Comments |
| 3. Outside of coolers or shipping containers are free from damage? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 5. Samples received cooled or ambient? | Temp <i>1.8</i> °C | Cooler # <i>AFS-04-019</i> | |
| 6. Custody seals on sample containers intact, signed and dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals | |
| 7. coc signed and dated? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 8. Sample containers are intact? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 9. All samples on coc received? All samples received on coc? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 10. All sample label information matches coc? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 11. Samples properly preserved? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 12. Samples received within hold times? Short holds taken to wet lab? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 13. VOA, TOC, TOX free of headspace? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A | |
| 14. QC stickers placed on bottles designated by client? | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> N/A | |
| 15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy) | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | |
| 16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria) | <input type="checkbox"/> Yes <input type="checkbox"/> No | <input checked="" type="checkbox"/> No Discrepancies | |

SR-002-B

