0077922

SAF-RC-088
618-7 Burial Ground – Other Liquids
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Rick Kerkow	L6-06	KW 6/10/08 Initials/Date
Kathy Wendt	H4-21	KW 6/10/08 Initials/Date

COMMENTS:

SDG K1196 SAF-RC-088

Rad only Chem only X Rad & Chem

X Complete Partial

WASTE SITE: 618-7 Burial Ground (drums)

RECEIVED
JUN 12 2008
EDMC

EBERLINE SERVICES

EBERLINE ANALYTICAL CORPORATION
2030 Wright Avenue
Richmond, California 94804-3848
Phone (510) 235-2633 Fax (510) 235-0438
Toll Free (800) 841-5487
www.eberlineservices.com

May 15, 2008

Ms. Joan Kessner
Washington Closure Hanford
2620 Fermi Avenue
MSIN H4-21
Richland, WA 99352

RECEIVED
MAY 2008

Reference: **P.O. #S00W235A00**
Eberline Services R8-05-017-7808, SDG K1196

Dear Ms. Kessner:

Enclosed is the data report for one liquid (other liquid) sample designated under SAF No. RC-088 received at Eberline Services on May 1, 2008. The sample was analyzed according to the accompanying chain-of-custody document.

Please call if you have any questions concerning this report.

Sincerely,

Melissa Mannion

Melissa C. Mannion
Senior Program Manager

MCM/njv

Enclosure: Data Package

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1196 was composed of one liquid (other liquid) sample designated under SAF No. RC-088 with a Project Designation of: 618-7 Burial Grounds-Other Liquids.

Note: the sample was a mixture of oil and dirt. The oil was decanted and analyzed; results for those analyses are reported herein, results for the solid fraction of the sample are reported in Eberline Services report R805018-7809.

The sample was received as stated on the Chain-of-Custody document. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to WCH via e-mail on May 15, 2008.

2.0 ANALYSIS NOTES

2.1 Gross Alpha and Gross Beta Analysis

No problems were encountered during the course of the analysis.

2.2 Total Strontium Analysis

No problems were encountered during the course of the analyses.

2.3 Isotopic Thorium Analysis

No problems were encountered during the course of the analyses.

2.4 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.5 Isotopic Plutonium Analysis

No problems were encountered during the course of the analyses.

2.6 Americium-241 Analysis

No problems were encountered during the course of the analyses.

2.7 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

3.0 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 Mannion — 05/15/08

Melissa C. Mannion — **Date**
Senior Program Manager

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP K1196

SDG	7808
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. S00W235A00
Case no	SDG K1196

SUMMARY DATA SECTION

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Prepared by

Reviewed by

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	05/15/08

SDG 7808
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

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.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 05/15/08

SDG 7808
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

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.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 05/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

SDG 7808
Contact Melissa C. Mannion

LAB SAMPLE SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R805017-01	J16M67-A	618-7 BurialGrnd (drums)	LIQUID		RC-088	RC-088-015	04/28/08 14:40
R805017-02	Lab Control Sample		LIQUID		RC-088		
R805017-03	Method Blank		LIQUID		RC-088		
R805017-04	Duplicate (R805017-01)	618-7 BurialGrnd (drums)	LIQUID		RC-088		04/28/08 14:40

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LS
Version 1.06
Report date 05/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

SDG 7808
Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

C BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	DAYS SINCE COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
308	RC-088-015	J16M67-A	LIQUID		172 mL		05/01/08	3	R805017-01	7808-001
		Method Blank	LIQUID						R805017-03	7808-003
		Lab Control Sample	LIQUID						R805017-02	7808-002
		Duplicate (R805017-01)	LIQUID		172 mL		05/01/08	3	R805017-04	7808-004

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 05/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

SDG 7808
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Alpha Spectroscopy												
AM	LIQUID	Americium 241 in Liquid	6148-107	8.0	1			1	1	1/1		
PU	LIQUID	Plutonium-238,239/240, Liquid	6148-107	8.0	1			1	1	1/1		
TH	LIQUID	Thorium, Isotopic in Liquid	6148-107	8.0	1			1	1	1/1		
U	LIQUID	Uranium in Liquid	6148-107	8.0	1			1	1	1/1		
Beta Counting												
SR	LIQUID	Total Strontium in Liquids	6148-107	10.4	1			1	1	1/1		
Gas Proportional Counting												
93A	LIQUID	Gross Alpha in Liquid	6148-107	20.6	1			1	1	1/1		
93B	LIQUID	Gross Beta in Liquid	6148-107	11.0	1			1	1	1/1		
Gamma Spectroscopy												
GAM	LIQUID	Gamma Scan in Liquid	6148-107	7.0	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 05/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

SDG 7808
Contact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

AB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
305017-01	J16M67-A			7808-001	93A/93		05/08/08	05/14/08	BW	Gross Alpha in Liquid
04/28/08	618-7 BurialGrnd (drums)		LIQUID	7808-001	93B/93		05/08/08	05/14/08	BW	Gross Beta in Liquid
05/01/08	RC-088-015	RC-088		7808-001	AM		05/08/08	05/14/08	BW	Americium 241 in Liquid
				7808-001	GAM		05/06/08	05/09/08	CSS	Gamma Scan in Liquid
				7808-001	PU		05/13/08	05/14/08	BW	Plutonium-238,239/240, Liquid
				7808-001	SR		05/08/08	05/12/08	BW	Total Strontium in Liquids
				7808-001	TH		05/09/08	05/09/08	BW	Thorium, Isotopic in Liquid
				7808-001	U		05/09/08	05/12/08	BW	Uranium in Liquid
305017-02	Lab Control Sample			7808-002	93A/93		05/08/08	05/14/08	BW	Gross Alpha in Liquid
			LIQUID	7808-002	93B/93		05/08/08	05/14/08	BW	Gross Beta in Liquid
		RC-088		7808-002	AM		05/08/08	05/14/08	BW	Americium 241 in Liquid
				7808-002	GAM		05/08/08	05/09/08	CSS	Gamma Scan in Liquid
				7808-002	PU		05/13/08	05/14/08	BW	Plutonium-238,239/240, Liquid
				7808-002	SR		05/08/08	05/12/08	BW	Total Strontium in Liquids
				7808-002	TH		05/09/08	05/09/08	BW	Thorium, Isotopic in Liquid
				7808-002	U		05/09/08	05/12/08	BW	Uranium in Liquid
305017-03	Method Blank			7808-003	93A/93		05/08/08	05/14/08	BW	Gross Alpha in Liquid
			LIQUID	7808-003	93B/93		05/08/08	05/14/08	BW	Gross Beta in Liquid
		RC-088		7808-003	AM		05/08/08	05/14/08	BW	Americium 241 in Liquid
				7808-003	GAM		05/06/08	05/09/08	CSS	Gamma Scan in Liquid
				7808-003	PU		05/13/08	05/14/08	BW	Plutonium-238,239/240, Liquid
				7808-003	SR		05/08/08	05/12/08	BW	Total Strontium in Liquids
				7808-003	TH		05/09/08	05/09/08	BW	Thorium, Isotopic in Liquid
				7808-003	U		05/09/08	05/12/08	BW	Uranium in Liquid
305017-04	Duplicate (R805017-01)			7808-004	93A/93		05/08/08	05/14/08	BW	Gross Alpha in Liquid
04/28/08	618-7 BurialGrnd (drums)		LIQUID	7808-004	93B/93		05/08/08	05/14/08	BW	Gross Beta in Liquid
05/01/08		RC-088		7808-004	AM		05/08/08	05/14/08	BW	Americium 241 in Liquid
				7808-004	GAM		05/06/08	05/09/08	CSS	Gamma Scan in Liquid
				7808-004	PU		05/13/08	05/14/08	BW	Plutonium-238,239/240, Liquid
				7808-004	SR		05/08/08	05/12/08	BW	Total Strontium in Liquids
				7808-004	TH		05/09/08	05/09/08	BW	Thorium, Isotopic in Liquid
				7808-004	U		05/09/08	05/12/08	BW	Uranium in Liquid

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 05/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

SDG 7808
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
93A/93	RC-088	Gross Alpha in Liquid	900.0_ALPHABETA_GPC	1			1	1	1	4
93B/93	RC-088	Gross Beta in Liquid	900.0_ALPHABETA_GPC	1			1	1	1	4
AM	RC-088	Americium 241 in Liquid	AMOMISO_IE_PLATE_AEA	1			1	1	1	4
GAM	RC-088	Gamma Scan in Liquid	GAMMA_GS	1			1	1	1	4
PU	RC-088	Plutonium-238,239/240, Liquid	PUISO_PLATE_AEA	1			1	1	1	4
SR	RC-088	Total Strontium in Liquids	SRTOT_SEP_PRECIP_GPC	1			1	1	1	4
TH	RC-088	Thorium, Isotopic in Liquid	THISO_IE_PLATE_AEA	1			1	1	1	4
U	RC-088	Uranium in Liquid	UISO_PLATE_AEA	1			1	1	1	4
TOTALS				8			8	8	8	32

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 05/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

7808-003 Method Blank

METHOD BLANK

SDG	7808	Client/Case no	Han ford SDG K1196
Contact	Melissa C. Mannion	Contract	No. S00W235A00
Lab sample id	R805017-03	Client sample id	Method Blank
Dept sample id	7808-003	Material/Matrix	LIQUID
		SAF No	RC-088

ANALYTE	CAS NO	RESULT pCi/mL	2σ ERR (COUNT)	MDA pCi/mL	RDL pCi/mL	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	-0.199	3.1	6.70	10.0	U	93A
Gross Beta	12587-47-2	0.414	3.7	6.37	15.0	U	93B
Total Strontium	SR-RAD	-0.049	0.15	0.306	1.00	U	SR
Americium 241	14596-10-2	0	0.11	0.256	1.00	U	AM
Thorium 228	14274-82-9	0.088	0.18	0.281		U	TH
Thorium 230	14269-63-7	-0.088	0.12	0.281	1.00	U	TH
Thorium 232	TH-232	-0.029	0.059	0.225	1.00	U	TH
Uranium 233/234	U-233/234	0.018	0.036	0.137	1.00	U	U
Uranium 235	15117-96-1	0	0.043	0.166	1.00	U	U
Uranium 238	U-238	0	0.036	0.137	1.00	U	U
Plutonium 238	13981-16-3	-0.031	0.062	0.236	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.062	0.236	1.00	U	PU
Potassium 40	13966-00-2	U		3.25		U	GAM
Cobalt 60	10198-40-0	U		0.111	0.050	U	GAM
Cesium 137	10045-97-3	U		0.110	0.050	U	GAM
Radium 226	13982-63-3	U		0.256	0.100	U	GAM
Radium 228	15262-20-1	U		0.498	0.200	U	GAM
Europium 152	14683-23-9	U		0.306	0.100	U	GAM
Europium 154	15585-10-1	U		0.349	0.100	U	GAM
Europium 155	14391-16-3	U		0.240	0.100	U	GAM
Thorium 228	14274-82-9	U		0.187		U	GAM
Thorium 232	TH-232	U		0.498		U	GAM
Uranium 235	15117-96-1	U		0.444		U	GAM
Uranium 238	U-238	U		13.8		U	GAM
Americium 241	14596-10-2	U		0.100		U	GAM

618-7 Burial Grounds-Other Liquids

QC-BLANK #65584

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

7808-002

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7808

Contact Melissa C. Mannion

Client/Case no Hanford SDG K1196

Contract No. S00W235A00

Lab sample id R805017-02

Dept sample id 7808-002

Client sample id Lab Control Sample

Material/Matrix LIQUID

SAF No RC-088

ANALYTE	RESULT pCi/mL	2σ ERR (COUNT)	MDA pCi/mL	RDL pCi/mL	QUALI-FIERS	TEST	ADDED pCi/mL	2σ ERR pCi/mL	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Gross Alpha	120	18	4.75	10.0		93A	102	4.1	118	55-145	70-130
Gross Beta	98.6	7.6	5.34	15.0		93B	93.4	3.7	106	78-122	70-130
Total Strontium	9.94	0.58	0.249	1.00		SR	9.34	0.37	106	80-120	80-120
Americium 241	3.96	0.84	0.268	1.00		AM	4.23	0.17	94	68-132	80-120
Thorium 230	13.9	1.6	0.187	1.00		TH	15.2	0.61	91	80-120	80-120
Uranium 233/234	8.12	0.97	0.521	1.00		U	7.73	0.31	105	77-123	80-120
Uranium 235	6.92	0.90	0.152	1.00		U	6.28	0.25	110	74-126	80-120
Uranium 238	8.33	0.98	0.502	1.00		U	8.40	0.34	99	78-122	80-120
Plutonium 238	4.22	0.73	0.207	1.00		PU	4.88	0.20	86	75-125	80-120
Plutonium 239/240	5.41	0.87	0.207	1.00		PU	5.50	0.22	98	73-127	80-120
Cobalt 60	2.72	0.16	0.066	0.050		GAM	2.42	0.097	112	83-117	80-120
Cesium 137	2.85	0.13	0.095	0.050		GAM	2.61	0.10	109	85-115	80-120

618-7 Burial Grounds-Other Liquids

QC-LCS #65583

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-LCS

Version 3.06

Report date 05/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

7808-004 J16M67-A

DUPLICATE

SDG 7808
Contact Melissa C. Mannion

Client/Case no Hanford SDG K1196
Contract No. S00W235A00

DUPLICATE
Lab sample id R805017-04
Dept sample id 7808-004

ORIGINAL
Lab sample id R805017-01
Dept sample id 7808-001
Received 05/01/08

Client sample id J16M67-A
Location/Matrix 618-7 BurialGrnd (drums) LIQUID
Collected/Volume 04/28/08 14:40 172 mL
Custody/SAF No RC-088-015 RC-088

ANALYTE	DUPLICATE pCi/mL	2σ ERR (COUNT)	MDA pCi/mL	RDL pCi/mL	QUALI-FIERS	TEST	ORIGINAL pCi/mL	2σ ERR (COUNT)	MDA pCi/mL	QUALI-FIERS	RPD %	3σ TOT	DER σ
Gross Alpha	-0.292	0.62	1.61	10.0	U	93A	-0.027	0.63	1.46	U	-		0.6
Gross Beta	-0.414	2.1	3.72	15.0	U	93B	-0.349	3.8	6.29	U	-		0
Total Strontium	-0.066	0.094	0.215	1.00	U	SR	0.029	0.093	0.184	U	-		1.4
Americium 241	-0.027	0.054	0.206	1.00	U	AM	0.062	0.12	0.237	U	-		1.4
Thorium 228	0.031	0.13	0.300		U	TH	0.231	0.28	0.353	U	-		1.3
Thorium 230	-0.063	0.13	0.240	1.00	U	TH	-0.092	0.18	0.442	U	-		0.3
Thorium 232	0.031	0.063	0.240	1.00	U	TH	0.046	0.18	0.353	U	-		0.2
Uranium 233/234	0.031	0.031	0.119	1.00	U	U	0.015	0.030	0.116	U	-		0.7
Uranium 235	0.019	0.038	0.144	1.00	U	U	0	0.037	0.140	U	-		0.7
Uranium 238	0.031	0.031	0.119	1.00	U	U	0	0.030	0.116	U	-		1.4
Plutonium 238	0.022	0.087	0.166	1.00	U	PU	0.025	0.099	0.189	U	-		0
Plutonium 239/240	0	0.043	0.166	1.00	U	PU	0	0.049	0.189	U	-		0
Potassium 40	U		1.37		U	GAM	U		2.07	U	-		0.6
Cobalt 60	U		0.051	0.050	U	GAM	U		0.079	U	-		0.6
Cesium 137	U		0.053	0.050	U	GAM	U		0.078	U	-		0.5
Radium 226	U		0.118	0.100	U	GAM	U		0.172	U	-		0.5
Radium 228	U		0.235	0.200	U	GAM	U		0.355	U	-		0.6
Europium 152	U		0.133	0.100	U	GAM	U		0.204	U	-		0.6
Europium 154	U		0.150	0.100	U	GAM	U		0.220	U	-		0.5
Europium 155	U		0.119	0.100	U	GAM	U		0.164	U	-		0.4
Thorium 228	U		0.083		U	GAM	U		0.118	U	-		0.5
Thorium 232	U		0.235		U	GAM	U		0.355	U	-		0.6
Uranium 235	U		0.202		U	GAM	U		0.293	U	-		0.5
Uranium 238	U		5.89		U	GAM	U		9.19	U	-		0.6
Americium 241	U		0.105		U	GAM	U		0.150	U	-		0.5

618-7 Burial Grounds-Other Liquids

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-DUP
Version 3.06
Report date 05/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

7808-004 J16M67-A

DUPLICATE, cont.

SDG	7808	Client/Case no	Hanford SDG K1196
Contact	Melissa C. Mannion	Contract	No. S00W235A00
DUPLICATE		ORIGINAL	
Lab sample id	R805017-04	Lab sample id	R805017-01
Dept sample id	7808-004	Dept sample id	7808-001
		Received	05/01/08
		Client sample id	J16M67-A
		Location/Matrix	618-7 BurialGrnd (drums) LIQUID
		Collected/Volume	04/28/08 14:40 172 mL
		Custody/SAF No	RC-088-015 RC-088

QC-DUP#1 65585

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	05/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

7808-001 J16M67-A

DATA SHEET

SDG	7808	Client/Case no	Hanford SDG K1196
Contact	Melissa C. Mannion	Contract	No. S00W235A00
Lab sample id	R805017-01	Client sample id	J16M67-A
Dept sample id	7808-001	Location/Matrix	618-7 BurialGrnd (drums) LIQUID
Received	05/01/08	Collected/Volume	04/28/08 14:40 172 mL
		Custody/SAF No	RC-088-015 RC-088

ANALYTE	CAS NO	RESULT pCi/mL	2σ ERR (COUNT)	MDA pCi/mL	RDL pCi/mL	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	-0.027	0.63	1.46	10.0	U	93A
Gross Beta	12587-47-2	-0.349	3.8	6.29	15.0	U	93B
Total Strontium	SR-RAD	0.029	0.093	0.184	1.00	U	SR
Americium 241	14596-10-2	0.062	0.12	0.237	1.00	U	AM
Thorium 228	14274-82-9	0.231	0.28	0.353		U	TH
Thorium 230	14269-63-7	-0.092	0.18	0.442	1.00	U	TH
Thorium 232	TH-232	0.046	0.18	0.353	1.00	U	TH
Uranium 233/234	U-233/234	0.015	0.030	0.116	1.00	U	U
Uranium 235	15117-96-1	0	0.037	0.140	1.00	U	U
Uranium 238	U-238	0	0.030	0.116	1.00	U	U
Plutonium 238	13981-16-3	0.025	0.099	0.189	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.049	0.189	1.00	U	PU
Potassium 40	13966-00-2	U		2.07		U	GAM
Cobalt 60	10198-40-0	U		0.079	0.050	U	GAM
Cesium 137	10045-97-3	U		0.078	0.050	U	GAM
Radium 226	13982-63-3	U		0.172	0.100	U	GAM
Radium 228	15262-20-1	U		0.355	0.200	U	GAM
Europium 152	14683-23-9	U		0.204	0.100	U	GAM
Europium 154	15585-10-1	U		0.220	0.100	U	GAM
Europium 155	14391-16-3	U		0.164	0.100	U	GAM
Thorium 228	14274-82-9	U		0.118		U	GAM
Thorium 232	TH-232	U		0.355		U	GAM
Uranium 235	15117-96-1	U		0.293		U	GAM
Uranium 238	U-238	U		9.19		U	GAM
Americium 241	14596-10-2	U		0.150		U	GAM

618-7 Burial Grounds-Other Liquids

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

Test AM Matrix LIQUID
SDG 7808
Contact Melissa C. Mannion

LAB METHOD SUMMARY

AMERICIUM 241 IN LIQUID

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1196

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Americium 241	
Preparation batch 6148-107						
B05017-01			7808-001	J16M67-A	U	
B05017-02			7808-002	Lab Control Sample	ok	
B05017-03			7808-003	Method Blank	U	
B05017-04			7808-004	Duplicate (R805017-01)	-	U

Nominal values and limits from method RDLs (pCi/mL) 1.00
18-7 Burial Grounds-Other Liquids

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/mL	ALIQ mL	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6148-107			2σ prep error 8.0 % Reference Lab Notebook #6148, pg. 107													
B05017-01			J16M67-A	0.237	0.679			51		129			10	05/08/08	05/08	SS-031
B05017-02			Lab Control Sample	0.268	0.600			49		129				05/08/08	05/08	SS-032
B05017-03			Method Blank	0.256	0.600			57		129				05/08/08	05/08	SS-033
B05017-04			Duplicate (R805017-01)	0.206	0.679			60		130			10	05/08/08	05/08	SS-034
Nominal values and limits from method				1.00	0.600			20-105		50	100		180			

PROCEDURES	REFERENCE	AMCMISO_IE_PLATE_AEA
	CP-040	Environmental Water Dissolution, rev 9
	CP-963	Americium and Curium in Water and Dissolved Samples by Extraction Chromatography, rev 6
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 0.242 ± 0.054
YIELD 54 ± 10

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

Test PU Matrix LIQUID
SDG 7808
Contact Melissa C. Mannion

LAB METHOD SUMMARY

PLUTONIUM-238,239/240, LIQUID
ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1196

RESULTS

LAB SAMPLE ID	RAW TEST	SUP-FIX	PLANCHET	CLIENT SAMPLE ID	Plutonium 238		Plutonium 239/240	
Preparation batch 6148-107								
R805017-01			7808-001	J16M67-A	U		U	
R805017-02			7808-002	Lab Control Sample	ok		ok	
R805017-03			7808-003	Method Blank	U		U	
R805017-04			7808-004	Duplicate (R805017-01)	-	U	-	U
Nominal values and limits from method				RDLs (pCi/mL)	1.00		1.00	
148-7 Burial Grounds-Other Liquids								

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUP-FIX	CLIENT SAMPLE ID	MAX MDA pCi/mL	ALIQ mL	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6148-107			2σ prep error 8.0 %	Reference Lab Notebook #6148, pg. 107												
R805017-01			J16M67-A	0.189	0.679			66		102			15	05/12/08	05/13	SS-064
R805017-02			Lab Control Sample	0.207	0.600			78		102				05/12/08	05/13	SS-065
R805017-03			Method Blank	0.236	0.600			64		124				05/12/08	05/13	SS-063
R805017-04			Duplicate (R805017-01)	0.166	0.679			62		125			15	05/12/08	05/13	SS-064
Nominal values and limits from method				1.00	0.600			20-105		50			180			

PROCEDURES	REFERENCE	PUISO_PLATE_AEA
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-941	Plutonium in Water and Dissolved Samples by Extraction Chromatography, rev 3
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 0.200 ± 0.059
YIELD 68 ± 14

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

Test TH Matrix LIQUID
SDG 7808
Contact Melissa C. Mannion

LAB METHOD SUMMARY

THORIUM, ISOTOPIC IN LIQUID

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1196

:ESULTS

AB AMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Thorium 230
reparation batch 6148-107					
305017-01			7808-001	J16M67-A	U
305017-02			7808-002	Lab Control Sample	ok
305017-03			7808-003	Method Blank	U
305017-04			7808-004	Duplicate (R805017-01)	- U

minal values and limits from method RDLs (pCi/mL) 1.00
18-7 Burial Grounds-Other Liquids

:ETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MAX MDA pCi/mL	ALIQ mL	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
:eparation batch 6148-107			2σ prep error 8.0 % Reference Lab Notebook #6148, pg. 107													
105017-01			J16M67-A	0.442	0.339			82		160			11	05/09/08	05/09	SS-059
105017-02			Lab Control Sample	0.187	0.300			102		160				05/09/08	05/09	SS-061
105017-03			Method Blank	0.281	0.300			96		160				05/09/08	05/09	SS-062
105017-04			Duplicate (R805017-01)	0.240	0.339			79		160			11	05/09/08	05/09	SS-032
minal values and limits from method				1.00	0.300			20-110		100	100		180			

PROCEDURES	REFERENCE	THISO_IE_PLATE_AEA
	SPP-070	Soil Dissolution, < 1.0g Aliquot, rev 7
	CP-900	Thorium in Water and Dissolved Solid Samples by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 0.288 ± 0.220
YIELD 90 ± 22

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

Test U Matrix LIQUID
SDG 7808
Contact Melissa C. Mannion

LAB METHOD SUMMARY

URANIUM IN LIQUID

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1196

:ESULTS

AB AMPLE ID	RAW TEST	SUP-FIX	PLANCHET	CLIENT SAMPLE ID	1: Uranium 233/234	2: Uranium 235	3: Uranium 238	RESULT RATIOS (%) 1÷3	2σ	2÷3	2σ
reparation batch 6148-107											
305017-01			7808-001	J16M67-A	U	U	U				
305017-02			7808-002	Lab Control Sample	ok	ok	ok				
305017-03			7808-003	Method Blank	U	U	U				
305017-04			7808-004	Duplicate (R805017-01)	- U	- U	- U				
minal values and limits from method				RDLs (pCi/mL)	1.00	1.00	1.00				
18-7 Burial Grounds-Other Liquids								Averages			

:ETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUP-FIX	CLIENT SAMPLE ID	MAX MDA pCi/mL	ALIQ mL	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
reparation batch 6148-107			2σ prep error 8.0 %	Reference Lab Notebook #6148, pg. 107												
105017-01			J16M67-A	0.140	0.679			79		137			11	05/09/08	05/09	SS-055
105017-02			Lab Control Sample	0.521	0.600			90		137				05/09/08	05/09	SS-056
105017-03			Method Blank	0.166	0.600			80		137				05/09/08	05/09	SS-057
105017-04			Duplicate (R805017-01)	0.144	0.679			77		137			11	05/09/08	05/09	SS-058
minal values and limits from method				1.00	0.600					100			180			

PROCEDURES	REFERENCE	UISO_PLATE_AEA
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-921	Uranium in Water and Dissolved Samples by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 0.243 ± 0.372
YIELD 82 ± 12

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

Test SR Matrix LIQUID
SDG 7808
Contact Melissa C. Mannion

LAB METHOD SUMMARY

TOTAL STRONTIUM IN LIQUIDS
BETA COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1196

:ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Total Strontium
reparation batch 6148-107					
305017-01			7808-001	J16M67-A	U
305017-02			7808-002	Lab Control Sample	ok
305017-03			7808-003	Method Blank	U
305017-04			7808-004	Duplicate (R805017-01)	- U

minal values and limits from method RDLs (pCi/mL) 1.00
18-7 Burial Grounds-Other Liquids

ETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/mL	ALIQ mL	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
eparation batch 6148-107			2σ prep error 10.4 % Reference Lab Notebook #6148, pg. 107													
05017-01			J16M67-A	0.184	1.36			93		100			10	05/08/08	05/08	GRB-223
05017-02			Lab Control Sample	0.249	1.00			93		100				05/08/08	05/08	GRB-224
05017-03			Method Blank	0.306	1.00			95		100				05/08/08	05/08	GRB-227
05017-04			Duplicate (R805017-01)	0.215	1.36			94		100			10	05/08/08	05/08	GRB-228
minal values and limits from method				1.00	1.00					100			180			

PROCEDURES	REFERENCE	SRTOT_SEP_PRECIP_GPC
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-383	Strontium in Dissolved Solid of < 5.0g Aliquot, rev 1

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 0.238 ± 0.104
YIELD 94 ± 2

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

Test 93A Matrix LIQUID
SDG 7808
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS ALPHA IN LIQUID
GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1196

:ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha	
ceparation batch 6148-107						
305017-01	93		7808-001	J16M67-A	U	
305017-02	93		7808-002	Lab Control Sample	ok	
305017-03	93		7808-003	Method Blank	U	
305017-04	93		7808-004	Duplicate (R805017-01)	-	U

ominal values and limits from method RDLs (pCi/mL) 10.0
18-7 Burial Grounds-Other Liquids

:ETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/mL	ALIQ mL	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
:eparation batch 6148-107 2σ prep error 20.6 % Reference Lab Notebook #6148, pg. 107																
305017-01	93		J16M67-A	1.46	0.136			0		100			10	05/07/08	05/08	GRB-107
305017-02	93		Lab Control Sample	4.75	0.100			61		100				05/07/08	05/08	GRB-109
305017-03	93		Method Blank	6.70	0.100			60		100				05/07/08	05/08	GRB-110
305017-04	93		Duplicate (R805017-01)	1.61	0.136			0		100			10	05/07/08	05/08	GRB-111
ominal values and limits from method				10.0	0.100			5-250		100			180			

PROCEDURES	REFERENCE	900.0_ALPHABETA_GPC
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	SPP-120	Gross Alpha and Gross Beta in Water, rev 0

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 3.63 ± 5.09
RESIDUE 30 ± 70

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

Test 93B Matrix LIQUID
SDG 7808
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS BETA IN LIQUID
GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1196

:ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta
reparation batch 6148-107					
305017-01	93		7808-001	J16M67-A	U
305017-02	93		7808-002	Lab Control Sample	ok
305017-03	93		7808-003	Method Blank	U
305017-04	93		7808-004	Duplicate (R805017-01)	- U

ominal values and limits from method RDLs (pCi/mL) 15.0
18-7 Burial Grounds-Other Liquids

:ETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/mL	ALIQ mL	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
reparation batch 6148-107			2σ prep error 11.0 % Reference Lab Notebook #6148, pg. 107													
105017-01	93		J16M67-A	6.29	0.136			0		100			10	05/07/08	05/08	GRB-107
105017-02	93		Lab Control Sample	5.34	0.100			61		100				05/07/08	05/08	GRB-109
105017-03	93		Method Blank	6.37	0.100			60		100				05/07/08	05/08	GRB-110
105017-04	93		Duplicate (R805017-01)	3.72	0.136			0		100			10	05/07/08	05/08	GRB-111
ominal values and limits from method				15.0	0.100			5-250		100			180			

PROCEDURES	REFERENCE	900.0_ALPHABETA_GPC
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	SPP-120	Gross Alpha and Gross Beta in Water, rev 0

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 5.43 ± 2.46
RESIDUE 30 ± 70

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

Test GAM Matrix LIQUID
SDG 7808
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GAMMA SCAN IN LIQUID

GAMMA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1196

RESULTS

AB AMPLE ID	RAW TEST	SUP-FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60		Cesium 137	
reparation batch 6148-107								
805017-01			7808-001	J16M67-A	U		U	
805017-02			7808-002	Lab Control Sample	ok		ok	
805017-03			7808-003	Method Blank	U		U	
805017-04			7808-004	Duplicate (R805017-01)	-	U	-	U
minal values and limits from method				RDLs (pCi/mL)	0.050		0.050	
18-7 Burial Grounds-Other Liquids								

ETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUP-FIX	CLIENT SAMPLE ID	MAX MDA pCi/mL	ALIQ mL	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
reparation batch 6148-107			2σ prep error 7.0 % Reference Lab Notebook #6148, pg. 107													
805017-01			J16M67-A	0.079	100					416			8	05/05/08	05/06	JR,04,00
805017-02			Lab Control Sample	0.095	90.0					407				05/05/08	05/08	JR,07,00
805017-03			Method Blank	0.111	90.0					416				05/05/08	05/06	JR,06,00
805017-04			Duplicate (R805017-01)	0.053	100					944			8	05/05/08	05/06	JR,04,00
minal values and limits from method				0.050	90.0					100			180			

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

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 0.084 ± 0.049
YIELD ____ ± ____

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/15/08

SDG 7808
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

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.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 05/15/08

SDG 7808
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

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.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 05/15/08

SDG 7808
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

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 05/15/08

SDG 7808
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

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).

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Protocol Hanford
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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.

SDG 7808
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
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Case no SDG K1196

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.

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REPORT GUIDE

Client Hanford
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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.

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REPORT GUIDE

Client Hanford
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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.

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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.

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

SDG 7808
Contact Melissa C. Mannion

REPORT GUIDE

Client ~~Hanford~~
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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

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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.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
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SDG 7808
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

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'

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Version 3.06
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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.

* Prepareation 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.

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

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.

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-015	Page 1 of 1

Collector B. Lawrence / E. Harries	**Company Contact** Joan Kessner	**Telephone No.** 509-375-4688 K1196	**Project Coordinator** KESSNER, JH	**Price Code** 9G	**Data Turnaround** 15 Days
Project Designation 618-7 Burial Ground - Other Liquids	**Sampling Location** 618-7 Burial Ground (drums) ~~K1208~~ (7808)		**SAF No.** RC-088		
Ice Chest No. AFS-04-037	**Field Logbook No.** EL-1395-12	**COA** RG61878500	**Method of Shipment** FedEx		
Shipped To EBERLINE SERVICES / LIONVILLE	**Offsite Property No.** A080227		**Bill of Lading/Air Bill No.** See ospc		

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive contamination, potential beryllium contamination

Special Handling and/or Storage

None

Preservation	Cool 4C	Cool 4C	None	None	None					
Type of Container	aG	aG	aG	aG	P					
No. of Container(s)	1	0	0	0	1					
Volume	250mL	125mL	125mL	60mL	500mL					
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions.					B12
	AK 4-28-08	AK 4-28-08	AK 4-28-08	AK 4-28-08						

other solid MUM 5/7/8

Sample No.	Matrix *	Sample Date	Sample Time											
J16M67 -A	~~OTHER LIQUID~~	4-28-08	1440					X					#0222	4
~~J16M68~~	~~OTHER LIQUID~~	~~4-28-08~~	~~1450~~					~~X~~					~~#0223~~	~~5~~

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From E. Harries / E. Harries 4-28-08	Date/Time 1520	Received By/Stored In RB Kerkow / RB Kerk 4-28-08	Date/Time 1520
Relinquished By/Removed From RB Kerkow / RB Kerk 4-28-08	Date/Time 1620	Received By/Stored In REF 1B (1010) 4-28-08	Date/Time 1620
Relinquished By/Removed From 1010/1B 4/30/08	Date/Time 1000	Received By/Stored In MS Stankovich 4/30/08	Date/Time 1000
Relinquished By/Removed From WCH MS Stankovich 4/30/08	Date/Time 1000	Received By/Stored In FedEx	Date/Time
Relinquished By/Removed From FED EX	Date/Time	Received By/Stored In 05/01/08	Date/Time 09:30
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc, Zirconium}; ICP Metals - 6010A (Add-on) {Arsenic, Beryllium, Lead, Selenium, Thallium, Tin}; Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

JM KW

Matrix *

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

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

WCH-EE-011

EBERLINE

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

JK 5/1/08

Client: W.C. HANFORD City RICHLAND State WA

Date/Time received 05/01/08 09:30 CoC No. RC-085-015

Container I.D. No AFS-04-037 Requested TAT (Days) 15 P.O. Received Yes [ ] No [ ]

INSPECTION

1. Custody seals on shipping container intact? Yes [X] No [ ] N/A [ ]
2. Custody seals on shipping container dated & signed? Yes [X] No [ ] N/A [ ]
3. Custody seals on sample containers intact? Yes [X] No [ ] N/A [ ]
4. Custody seals on sample containers dated & signed? Yes [X] No [ ] N/A [ ]
5. Packing material is: Wet [ ] Dry [X]
6. Number of samples in shipping container: 2 Sample Matrix X SOLID, LIQUID
7. Number of containers per sample: 1 (Or see CoC _____)
8. Samples are in correct container Yes [X] No [ ]
9. Paperwork agrees with samples? Yes [ ] No [X]
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 _____ Preservative _____
13. Describe any anomalies:
    J16M67 - SOLID AND LIQUID
    J16M68 - SOLID
    } ACTUAL MATRIX
14. Was P.M. notified of any anomalies? Yes [X] No [ ] Date 05/01/08
15. Inspected by [signature] Date: 05/01/08 Time: 10:30

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
ALL SAMPLES	<60						

Ion Chamber Ser. No. _____ Calibration date _____

Alpha Meter Ser. No. _____ Calibration date _____

Beta/Gamma Meter Ser. No. 100482 Calibration date 09MAY07

"over 55 years of quality nuclear services"

EBERLINE SERVICES

EBERLINE ANALYTICAL CORPORATION
2030 Wright Avenue
Richmond, California 94804-3840
Phone (510) 235-2633 Fax (510) 235-0438
Toll Free (800) 841-5487
www.eberlineservices.com

May 14, 2008

RECEIVED
MAY 2008

Ms. Joan Kessner
Washington Closure Hanford
2620 Fermi Avenue
MSIN H4-21
Richland, WA 99352

Reference: **P.O. #S00W235A00**
Eberline Services R8-05-018-7809, SDG K1196

Dear Ms. Kessner:

Enclosed is the data report for two solid (other solid) samples designated under SAF No. RC-088 received at Eberline Services on May 1, 2008. The samples were analyzed according to the accompanying chain-of-custody document.

Please call if you have any questions concerning this report.

Sincerely,

Melissa Mannion

Melissa C. Mannion
Senior Program Manager

MCM/njv

Enclosure: Data Package

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1196 was composed of two solid (other solid) samples designated under SAF No. RC-088 with a Project Designation of: 618-7 Burial Grounds-Other Liquids.

Note: the samples were a mixture of oil and dirt, and were therefore treated as solids (other solids). Results are reported in pCi/g.

The samples were received as stated on the Chain-of-Custody document. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to WCH via e-mail on May 14, 2008.

2.0 ANALYSIS NOTES

2.1 Gross Alpha and Gross Beta Analysis

No problems were encountered during the course of the analysis.

2.2 Total Strontium Analysis

No problems were encountered during the course of the analyses.

2.3 Isotopic Thorium Analysis

No problems were encountered during the course of the analyses.

2.4 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.5 Isotopic Plutonium Analysis

No problems were encountered during the course of the analyses.

2.6 Americium-241 Analysis

No problems were encountered during the course of the analyses.

2.7 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

3.0 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 Mannion 05/14/08

Melissa C. Mannion **Date**
Senior Program Manager

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP K1196

SDG	7809
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. S00W235A00
Case no	SDG_K1196

SUMMARY DATA SECTION

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Prepared by

Reviewed by

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	05/14/08

SDG 7809
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

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.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 05/14/08

SDG 7809
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

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.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

LAB SAMPLE SUMMARY

SDG 7809
Contact Melissa C. Mannion

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R805018-01	J16M67-B	618-7 BurialGrnd (drums)	SOLID		RC-088	RC-088-015	04/28/08 14:40
R805018-02	J16M68	618-7 BurialGrnd (drums)	SOLID		RC-088	RC-088-015	04/28/08 14:50
R805018-03	Lab Control Sample		SOLID		RC-088		
R805018-04	Method Blank		SOLID		RC-088		
R805018-05	Duplicate (R805018-01)	618-7 BurialGrnd (drums)	SOLID		RC-088		04/28/08 14:40

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

SDG 7809
Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	DAYS SINCE COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
7809	RC-088-015	J16M67-B	SOLID	100.0	783 g		05/01/08	3	R805018-01	7809-001
		J16M68	SOLID	100.0	964 g		05/01/08	3	R805018-02	7809-002
		Method Blank	SOLID						R805018-04	7809-004
		Lab Control Sample	SOLID						R805018-03	7809-003
		Duplicate (R805018-01)	SOLID	100.0	783 g		05/01/08	3	R805018-05	7809-005

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

PREP BATCH SUMMARY

SDG 7809
Contact Melissa C. Mannion

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Alpha Spectroscopy												
AM	SOLID	Americium 241 in Solids	6148-110	8.0	2			1	1	1/1		
PU	SOLID	Plutonium, Isotopic in Solids	6148-110	8.0	2			1	1	1/1		
TH	SOLID	Thorium, Isotopic in Solids	6148-110	8.0	2			1	1	1/1		
U	SOLID	Uranium, Isotopic in Solids	6148-110	8.0	2			1	1	1/1		
Beta Counting												
SR	SOLID	Total Strontium in Solids	6148-110	10.4	2			1	1	1/1		
Gas Proportional Counting												
93A	SOLID	Gross Alpha in Solids	6148-110	20.6	2			1	1	1/1		
93B	SOLID	Gross Beta in Solids	6148-110	11.0	2			1	1	1/1		
Gamma Spectroscopy												
GAM	SOLID	Gamma Scan	6148-110	7.0	2			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 05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

SDG 7809
Contact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
R805018-01	J16M67-B			7809-001	93A/93		05/08/08	05/08/08	BW	Gross Alpha in Solids
04/28/08	618-7 BurialGrnd (drums)		SOLID	7809-001	93B/93		05/08/08	05/08/08	BW	Gross Beta in Solids
05/01/08	RC-088-015	RC-088		7809-001	AM		05/10/08	05/12/08	BW	Americium 241 in Solids
				7809-001	GAM		05/06/08	05/08/08	CSS	Gamma Scan
				7809-001	PU		05/13/08	05/13/08	BW	Plutonium, Isotopic in Solids
				7809-001	SR		05/08/08	05/12/08	BW	Total Strontium in Solids
				7809-001	TH		05/10/08	05/12/08	BW	Thorium, Isotopic in Solids
				7809-001	U		05/10/08	05/12/08	BW	Uranium, Isotopic in Solids
R805018-02	J16M68			7809-002	93A/93		05/08/08	05/08/08	BW	Gross Alpha in Solids
04/28/08	618-7 BurialGrnd (drums)		SOLID	7809-002	93B/93		05/08/08	05/08/08	BW	Gross Beta in Solids
05/01/08	RC-088-015	RC-088		7809-002	AM		05/10/08	05/12/08	BW	Americium 241 in Solids
				7809-002	GAM		05/06/08	05/08/08	CSS	Gamma Scan
				7809-002	PU		05/13/08	05/13/08	BW	Plutonium, Isotopic in Solids
				7809-002	SR		05/08/08	05/12/08	BW	Total Strontium in Solids
				7809-002	TH		05/10/08	05/12/08	BW	Thorium, Isotopic in Solids
				7809-002	U		05/10/08	05/12/08	BW	Uranium, Isotopic in Solids
R805018-03	Lab Control Sample			7809-003	93A/93		05/08/08	05/08/08	BW	Gross Alpha in Solids
			SOLID	7809-003	93B/93		05/08/08	05/08/08	BW	Gross Beta in Solids
		RC-088		7809-003	AM		05/10/08	05/12/08	BW	Americium 241 in Solids
				7809-003	GAM		05/06/08	05/08/08	CSS	Gamma Scan
				7809-003	PU		05/13/08	05/13/08	BW	Plutonium, Isotopic in Solids
				7809-003	SR		05/08/08	05/12/08	BW	Total Strontium in Solids
				7809-003	TH		05/10/08	05/12/08	BW	Thorium, Isotopic in Solids
				7809-003	U		05/10/08	05/12/08	BW	Uranium, Isotopic in Solids
R805018-04	Method Blank			7809-004	93A/93		05/08/08	05/08/08	BW	Gross Alpha in Solids
			SOLID	7809-004	93B/93		05/08/08	05/08/08	BW	Gross Beta in Solids
		RC-088		7809-004	AM		05/10/08	05/12/08	BW	Americium 241 in Solids
				7809-004	GAM		05/06/08	05/08/08	CSS	Gamma Scan
				7809-004	PU		05/13/08	05/13/08	BW	Plutonium, Isotopic in Solids
				7809-004	SR		05/08/08	05/12/08	BW	Total Strontium in Solids
				7809-004	TH		05/10/08	05/12/08	BW	Thorium, Isotopic in Solids
				7809-004	U		05/10/08	05/12/08	BW	Uranium, Isotopic in Solids

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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

SDG 7809
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
R805018-05	Duplicate (R805018-01)			7809-005	93A/93		05/08/08	05/08/08	BW	Gross Alpha in Solids
04/28/08	618-7 BurialGrnd (drums)		SOLID	7809-005	93B/93		05/08/08	05/08/08	BW	Gross Beta in Solids
05/01/08		RC-088		7809-005	AM		05/10/08	05/12/08	BW	Americium 241 in Solids
				7809-005	GAM		05/07/08	05/08/08	CSS	Gamma Scan
				7809-005	PU		05/13/08	05/13/08	BW	Plutonium, Isotopic in Solids
				7809-005	SR		05/08/08	05/12/08	BW	Total Strontium in Solids
				7809-005	TH		05/13/08	05/12/08	BW	Thorium, Isotopic in Solids
				7809-005	U		05/10/08	05/12/08	BW	Uranium, Isotopic in Solids

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
93A/93	RC-088	Gross Alpha in Solids	900.0_ALPHABETA_GPC	2			1	1	1	5
93B/93	RC-088	Gross Beta in Solids	900.0_ALPHABETA_GPC	2			1	1	1	5
AM	RC-088	Americium 241 in Solids	AMCMISO_IE_PLATE_AEA	2			1	1	1	5
GAM	RC-088	Gamma Scan	GAMMA_GS	2			1	1	1	5
PU	RC-088	Plutonium, Isotopic in Solids	PUISO_PLATE_AEA	2			1	1	1	5
SR	RC-088	Total Strontium in Solids	SRTOT_SEP_PRECIP_GPC	2			1	1	1	5
TH	RC-088	Thorium, Isotopic in Solids	THISO_IE_PLATE_AEA	2			1	1	1	5
U	RC-088	Uranium, Isotopic in Solids	UISO_PLATE_AEA	2			1	1	1	5
TOTALS				16			8	8	8	40

Lab id EBRLNE
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EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

7809-004 Method Blank

METHOD BLANK

SDG	7809	Client/Case no	Hanford	SDG K1196	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R805018-04	Client sample id	Method Blank		
Dept sample id	7809-004	Material/Matrix		SOLID	
		SAF No	RC-088		

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	-0.996	3.0	6.86	10.0	U	93A
Gross Beta	12587-47-2	0.915	3.3	5.79	15.0	U	93B
Total Strontium	SR-RAD	0.041	0.16	0.313	1.00	U	SR
Americium 241	14596-10-2	-0.050	0.10	0.382	1.00	U	AM
Thorium 228	14274-82-9	-0.041	0.083	0.316	1.00	U	TH
Thorium 230	14269-63-7	-0.083	0.17	0.316	1.00	U	TH
Thorium 232	TH-232	-0.041	0.083	0.316	1.00	U	TH
Uranium 233/234	U-233/234	0	0.052	0.199	1.00	U	U
Uranium 235	15117-96-1	0	0.063	0.241	1.00	U	U
Uranium 238	U-238	0	0.052	0.199	1.00	U	U
Plutonium 238	13981-16-3	0	0.054	0.205	1.00	U	PU
Plutonium 239/240	PU-239/240	0.107	0.11	0.205	1.00	U	PU
Potassium 40	13966-00-2	U		0.264		U	GAM
Cobalt 60	10198-40-0	U		0.015	0.050	U	GAM
Cesium 137	10045-97-3	U		0.018	0.100	U	GAM
Radium 226	13982-63-3	U		0.027	0.100	U	GAM
Radium 228	15262-20-1	U		0.058	0.200	U	GAM
Europium 152	14683-23-9	U		0.036	0.100	U	GAM
Europium 154	15585-10-1	U		0.043	0.100	U	GAM
Europium 155	14391-16-3	U		0.032	0.100	U	GAM
Thorium 228	14274-82-9	U		0.022		U	GAM
Thorium 232	TH-232	U		0.058		U	GAM
Uranium 235	15117-96-1	U		0.054		U	GAM
Uranium 238	U-238	U		1.59		U	GAM
Americium 241	14596-10-2	U		0.057		U	GAM

618-7 Burial Grounds-Other Liquids

QC-BLANK #65587

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

7809-003

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7809

Contact Melissa C. Mannion

Client/Case no Hanford SDG K1196

Contract No. S00W235A00

Lab sample id R805018-03

Dept sample id 7809-003

Client sample id Lab Control Sample

Material/Matrix SOLID

SAF No RC-088

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Gross Alpha	131	19	9.16	10.0		93A	112	4.5	117	55-145	70-130
Gross Beta	110	8.2	6.14	15.0		93B	112	4.5	98	80-120	80-120
Total Strontium	10.6	0.55	0.253	1.00		SR	10.3	0.41	103	81-119	80-120
Americium 241	5.90	1.1	0.355	1.00		AM	6.10	0.24	97	70-130	80-120
Thorium 230	19.6	2.1	0.235	1.00		TH	21.9	0.88	90	81-119	80-120
Uranium 233/234	9.37	1.1	0.574	1.00		U	9.66	0.39	97	78-122	80-120
Uranium 235	7.95	0.95	0.160	1.00		U	7.84	0.31	101	77-123	80-120
Uranium 238	9.51	1.1	0.549	1.00		U	10.5	0.42	91	80-120	80-120
Plutonium 238	6.42	0.95	0.266	1.00		PU	7.50	0.30	86	78-122	80-120
Plutonium 239/240	7.76	1.1	0.212	1.00		PU	7.92	0.32	98	75-125	80-120
Cobalt 60	1.05	0.031	0.014	0.050		GAM	1.02	0.041	103	87-113	80-120
Cesium 137	1.17	0.029	0.019	0.100		GAM	1.13	0.045	104	87-113	80-120

618-7 Burial Grounds-Other Liquids

QC-LCS #65586

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-LCS

Version 3.06

Report date 05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

7809-005 J16M67-B

DUPLICATE

SDG	7809			Client/Case no	Hanford SDG K1196
Contact	Melissa C. Mannion			Contract	No. S00W235A00
	DUPLICATE		ORIGINAL		
Lab sample id	R805018-05	Lab sample id	R805018-01	Client sample id	J16M67-B
Dept sample id	7809-005	Dept sample id	7809-001	Location/Matrix	618-7 BurialGrnd (drums) SOLID
		Received	05/01/08	Collected/Weight	04/28/08 14:40 783 g
% solids	100.0	% solids	100.0	Custody/SAF No	RC-088-015 RC-088

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	3σ TOT	DER σ
Gross Alpha	6.82	4.0	4.56	10.0		93A	8.23	4.2	3.52		19	124	0.5
Gross Beta	9.86	3.7	5.56	15.0		93B	8.91	3.8	5.46		10	88	0.3
Total Strontium	-0.032	0.16	0.328	1.00	U	SR	0.001	0.12	0.257	U	-		0.3
Americium 241	0.093	0.19	0.381	1.00	U	AM	-0.062	0.12	0.472	U	-		1.4
Thorium 228	0.146	0.22	0.350	1.00	U	TH	0.072	0.22	0.346	U	-		0.5
Thorium 230	-0.109	0.15	0.348	1.00	U	TH	0.253	0.29	0.276	U	-		2.2
Thorium 232	0.146	0.15	0.278	1.00	U	TH	0.108	0.14	0.276	U	-		0.4
Uranium 233/234	1.85	0.42	0.171	1.00		U	1.84	0.38	0.136		1	49	0
Uranium 235	0.216	0.16	0.206	1.00		U	0.173	0.13	0.165		22	160	0.4
Uranium 238	1.45	0.37	0.171	1.00		U	1.21	0.30	0.136		18	56	1.0
Plutonium 238	0.081	0.16	0.297	1.00	U	PU	0	0.065	0.248	U	-		0.9
Plutonium 239/240	0.027	0.054	0.205	1.00	U	PU	0	0.065	0.248	U	-		0.6
Potassium 40	6.31	2.3	0.252			GAM	7.40	1.7	0.366		16	64	0.7
Cobalt 60	U		0.024	0.050	U	GAM	U		0.027	U	-		0.2
Cesium 137	U		0.024	0.100	U	GAM	U		0.033	U	-		0.4
Radium 226	0.264	0.065	0.045	0.100		GAM	0.378	0.081	0.065		36	51	2.1
Radium 228	0.342	0.13	0.094	0.200		GAM	0.395	0.15	0.128		14	82	0.5
Europium 152	U		0.057	0.100	U	GAM	U		0.087	U	-		0.6
Europium 154	U		0.073	0.100	U	GAM	U		0.095	U	-		0.4
Europium 155	U		0.052	0.100	U	GAM	U		0.082	U	-		0.6
Thorium 228	0.325	0.047	0.031			GAM	0.371	0.068	0.061		13	39	1.0
Thorium 232	0.342	0.13	0.094			GAM	0.395	0.15	0.128		14	82	0.5
Uranium 235	U		0.089		U	GAM	U		0.155	U	-		0.7
Uranium 238	U		2.77		U	GAM	U		3.66	U	-		0.4
Americium 241	U		0.049		U	GAM	U		0.141	U	-		1.2

618-7 Burial Grounds-Other Liquids

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

7809-005 J16M67-B

DUPLICATE, cont.

SDG	7809			Client/Case no	Hanford SDG K1196
Contact	Melissa C. Mannion			Contract	No. S00W235A00
	DUPLICATE		ORIGINAL		
Lab sample id	R805018-05	Lab sample id	R805018-01	Client sample id	J16M67-B
Dept sample id	7809-005	Dept sample id	7809-001	Location/Matrix	618-7 BurialGrnd (drums) SOLID
		Received	05/01/08	Collected/Weight	04/28/08 14:40 783 g
% solids	100.0	% solids	100.0	Custody/SAF No	RC-088-015 RC-088

QC-DUP#1 65588

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

7809-001 J16M67-B

DATA SHEET

SDG	7809	Client/Case no	Hanford	SDG K1196	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R805018-01	Client sample id	J16M67-B		
Dept sample id	7809-001	Location/Matrix	618-7 BurialGrnd (drums)	SOLID	
Received	05/01/08	Collected/Weight	04/28/08 14:40	783 g	
% solids	100.0	Custody/SAF No	RC-088-015	RC-088	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	8.23	4.2	3.52	10.0		93A
Gross Beta	12587-47-2	8.91	3.8	5.46	15.0		93B
Total Strontium	SR-RAD	0.001	0.12	0.257	1.00	U	SR
Americium 241	14596-10-2	-0.062	0.12	0.472	1.00	U	AM
Thorium 228	14274-82-9	0.072	0.22	0.346	1.00	U	TH
Thorium 230	14269-63-7	0.253	0.29	0.276	1.00	U	TH
Thorium 232	TH-232	0.108	0.14	0.276	1.00	U	TH
Uranium 233/234	U-233/234	1.84	0.38	0.136	1.00		U
Uranium 235	15117-96-1	0.173	0.13	0.165	1.00		U
Uranium 238	U-238	1.21	0.30	0.136	1.00		U
Plutonium 238	13981-16-3	0	0.065	0.248	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.065	0.248	1.00	U	PU
Potassium 40	13966-00-2	7.40	1.7	0.366			GAM
Cobalt 60	10198-40-0	U		0.027	0.050	U	GAM
Cesium 137	10045-97-3	U		0.033	0.100	U	GAM
Radium 226	13982-63-3	0.378	0.081	0.065	0.100		GAM
Radium 228	15262-20-1	0.395	0.15	0.128	0.200		GAM
Europium 152	14683-23-9	U		0.087	0.100	U	GAM
Europium 154	15585-10-1	U		0.095	0.100	U	GAM
Europium 155	14391-16-3	U		0.082	0.100	U	GAM
Thorium 228	14274-82-9	0.371	0.068	0.061			GAM
Thorium 232	TH-232	0.395	0.15	0.128			GAM
Uranium 235	15117-96-1	U		0.155		U	GAM
Uranium 238	U-238	U		3.66		U	GAM
Americium 241	14596-10-2	U		0.141		U	GAM

618-7 Burial Grounds-Other Liquids

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

7809-002 J16M68

DATA SHEET

SDG	7809	Client/Case no	Hanford	SDG K1196	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R805018-02	Client sample id	J16M68		
Dept sample id	7809-002	Location/Matrix	618-7 BurialGrnd (drums)	SOLID	
Received	05/01/08	Collected/Weight	04/28/08 14:50	964 g	
% solids	100.0	Custody/SAF No	RC-088-015	RC-088	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	-1.19	3.2	6.59	10.0	U	93A
Gross Beta	12587-47-2	11.1	4.8	7.33	15.0		93B
Total Strontium	SR-RAD	0.208	0.22	0.403	1.00	U	SR
Americium 241	14596-10-2	0	0.25	0.470	1.00	U	AM
Thorium 228	14274-82-9	0.283	0.21	0.271	1.00		TH
Thorium 230	14269-63-7	0.106	0.21	0.270	1.00	U	TH
Thorium 232	TH-232	0.106	0.14	0.270	1.00	U	TH
Uranium 233/234	U-233/234	0.774	0.26	0.138	1.00		U
Uranium 235	15117-96-1	0.065	0.087	0.167	1.00	U	U
Uranium 238	U-238	0.684	0.22	0.138	1.00		U
Plutonium 238	13981-16-3	0	0.071	0.273	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.071	0.273	1.00	U	PU
Potassium 40	13966-00-2	8.18	0.45	0.215			GAM
Cobalt 60	10198-40-0	U		0.021	0.050	U	GAM
Cesium 137	10045-97-3	U		0.021	0.100	U	GAM
Radium 226	13982-63-3	0.246	0.039	0.042	0.100		GAM
Radium 228	15262-20-1	0.381	0.082	0.080	0.200		GAM
Europium 152	14683-23-9	U		0.070	0.100	U	GAM
Europium 154	15585-10-1	U		0.067	0.100	U	GAM
Europium 155	14391-16-3	U		0.075	0.100	U	GAM
Thorium 228	14274-82-9	0.346	0.034	0.034			GAM
Thorium 232	TH-232	0.381	0.082	0.080			GAM
Uranium 235	15117-96-1	0.128	0.11	0.140		U	GAM
Uranium 238	U-238	4.04	2.1	2.43			GAM
Americium 241	14596-10-2	U		0.071		U	GAM

618-7 Burial Grounds-Other Liquids

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

Test AM Matrix SOLID
SDG 7809
Contact Melissa C. Mannion

LAB METHOD SUMMARY

AMERICIUM 241 IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1196

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Americium 241	
Preparation batch 6148-110						
R805018-01			7809-001	J16M67-B	U	
R805018-02			7809-002	J16M68	U	
R805018-03			7809-003	Lab Control Sample	ok	
R805018-04			7809-004	Method Blank	U	
R805018-05			7809-005	Duplicate (R805018-01)	-	U

Nominal values and limits from method RDLs (pCi/g) 1.00
618-7 Burial Grounds-Other Liquids

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6148-110 2σ prep error 8.0 % Reference Lab Notebook #6148, pg. 103																
R805018-01			J16M67-B	0.472	0.500			35		129			12	05/10/08	05/10	SS-031
R805018-02			J16M68	0.470	0.500			34		129			12	05/10/08	05/10	SS-032
R805018-03			Lab Control Sample	0.355	0.500			49		129				05/10/08	05/10	SS-033
R805018-04			Method Blank	0.382	0.500			44		130				05/10/08	05/10	SS-034
R805018-05			Duplicate (R805018-01)	0.381	0.500			61		129			12	05/10/08	05/10	SS-035
Nominal values and limits from method				1.00	0.500			20-105		100	100		180			

PROCEDURES	REFERENCE	AMCMISO_IE_PLATE_AEA
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-963	Americium and Curium in Water and Dissolved Samples by Extraction Chromatography, rev 6
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.412 ± 0.110
YIELD 45 ± 22

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

Test PU Matrix SOLID
SDG 7809
Contact Melissa C. Mannion

LAB METHOD SUMMARY

PLUTONIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1196

RESULTS

LAB SAMPLE ID	RAW TEST	SUP-FIX	PLANCHET	CLIENT SAMPLE ID	Plutonium 238	Plutonium 239/240
Preparation batch 6148-110						
R805018-01			7809-001	J16M67-B	U	U
R805018-02			7809-002	J16M68	U	U
R805018-03			7809-003	Lab Control Sample	ok	ok
R805018-04			7809-004	Method Blank	U	U
R805018-05			7809-005	Duplicate (R805018-01)	- U	- U
Nominal values and limits from method 618-7 Burial Grounds-Other Liquids				RDLs (pCi/g)	1.00	1.00

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUP-FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6148-1I0 2σ prep error 8.0 % Reference Lab Notebook #6148, pg. 103																
R805018-01			J16M67-B	0.248	0.500			64		125			15	05/12/08	05/13	SS-065
R805018-02			J16M68	0.273	0.500			62		125			15	05/12/08	05/13	SS-066
R805018-03			Lab Control Sample	0.266	0.500			66		152				05/12/08	05/13	SS-031
R805018-04			Method Blank	0.205	0.500			64		152				05/12/08	05/13	SS-032
R805018-05			Duplicate (R805018-01)	0.297	0.500			56		152			15	05/12/08	05/13	SS-033
Nominal values and limits from method				1.00	0.500			20-105		100	100		180			

PROCEDURES	REFERENCE	
	PUISO_PLATE_AEA	
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-941	Plutonium in Water and Dissolved Samples by Extraction Chromatography, rev 3
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.258 ± 0.069
YIELD 62 ± 8

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

Test TH Matrix SOLID
SDG 7809
Contact Melissa C. Mannion

LAB METHOD SUMMARY

THORIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1196

RESULTS

LAB SAMPLE ID	RAW TEST	SUP-FIX	PLANCHET	CLIENT SAMPLE ID	Thorium 230	
Preparation batch 6148-110						
R805018-01			7809-001	J16M67-B	U	
R805018-02			7809-002	J16M68	U	
R805018-03			7809-003	Lab Control Sample	ok	
R805018-04			7809-004	Method Blank	U	
R805018-05			7809-005	Duplicate (R805018-01)	-	U

Nominal values and limits from method RDLs (pCi/g) 1.00
618-7 Burial Grounds-Other Liquids

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUP-FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6148-110 2σ prep error 8.0 % Reference Lab Notebook #6148, pg. 103																
R805018-01			J16M67-B	0.346	0.250			100		153			12	05/10/08	05/10	SS-031
R805018-02			J16M68	0.271	0.250			99		153			12	05/10/08	05/10	SS-032
R805018-03			Lab Control Sample	0.235	0.250			101		153				05/10/08	05/10	SS-033
R805018-04			Method Blank	0.316	0.250			90		153				05/10/08	05/10	SS-034
R805018-05			Duplicate (R805018-01)	0.350	0.250			101		152			15	05/10/08	05/13	SS-034
Nominal values and limits from method				1.00	0.250			20-105		150			180			

PROCEDURES	REFERENCE	THISO_IE_PLATE_AEA
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-900	Thorium in Water and Dissolved Solid Samples by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD FOR 5 SAMPLES				
	MDA	0.304	±	0.099
	YIELD	98	±	9

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

Test	U
Matrix	SOLID
SDG	7809
Contact	Melissa C. Mannion

LAB METHOD SUMMARY

URANIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client	Hanford
Contract	No. S00W235A00
Contract	SDG K1196

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	1: Uranium 233/234	2: Uranium 235	3: Uranium 238	RESULT RATIOS (%) 1+3	2σ	2+3	2σ
Preparation batch 6148-110											
R805018-01			7809-001	J16M67-B	1.84	0.173	1.21	152	49	14	11
R805018-02			7809-002	J16M68	0.774	U	0.684	113	53	10	13
R805018-03			7809-003	Lab Control Sample	ok	ok	ok				
R805018-04			7809-004	Method Blank	U	U	U				
R805018-05			7809-005	Duplicate (R805018-01)	ok	ok	ok	128	44	15	12
Nominal values and limits from method				RDLs (pCi/g)	1.00	1.00	1.00	100		4	
618-7 Burial Grounds-Other Liquids							Averages	131		13	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6148-110			2σ prep error 8.0 %	Reference Lab Notebook #6148, pg. 103												
R805018-01			J16M67-B	0.165	0.500			84		153			12	05/10/08	05/10	SS-036
R805018-02			J16M68	0.167	0.500			83		154			12	05/10/08	05/10	SS-037
R805018-03			Lab Control Sample	0.574	0.500			92		154				05/10/08	05/10	SS-038
R805018-04			Method Blank	0.241	0.500			79		153				05/10/08	05/10	SS-040
R805018-05			Duplicate (R805018-01)	0.206	0.500			80		153			12	05/10/08	05/10	SS-042
Nominal values and limits from method				1.00	0.500			20-105		100	100		180			

PROCEDURES	REFERENCE	UISO_PLATE_AEA
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-921	Uranium in Water and Dissolved Samples by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD FOR 5 SAMPLES	MDA	0.271	± 0.345
	YIELD	84	± 10

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

Test SR Matrix SOLID
SDG 7809
Contact Melissa C. Mannion

LAB METHOD SUMMARY

TOTAL STRONTIUM IN SOLIDS

BETA COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1196

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Total Strontium	
Preparation batch 6148-110						
R805018-01			7809-001	J16M67-B	U	
R805018-02			7809-002	J16M68	U	
R805018-03			7809-003	Lab Control Sample	ok	
R805018-04			7809-004	Method Blank	U	
R805018-05			7809-005	Duplicate (R805018-01)	-	U

Nominal values and limits from method RDLs (pCi/g) 1.00
618-7 Burial Grounds-Other Liquids

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6148-110			2σ prep error 10.4 % Reference Lab Notebook #6148, pg. 103													
R805018-01			J16M67-B	0.257	1.00			92		100			10	05/08/08	05/08	GRB-222
R805018-02			J16M68	0.403	1.00			88		100			10	05/08/08	05/08	GRB-222
R805018-03			Lab Control Sample	0.253	1.00			95		120				05/08/08	05/08	GRB-225
R805018-04			Method Blank	0.313	1.00			95		100				05/08/08	05/08	GRB-230
R805018-05			Duplicate (R805018-01)	0.328	1.00			98		100			10	05/08/08	05/08	GRB-231
Nominal values and limits from method				1.00	1.00			30-105		100			180			

PROCEDURES	REFERENCE	SRTOT_SEP_PRECIP_GPC
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-383	Strontium in Dissolved Solid of < 5.0g Aliquot, rev 1

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.311 ± 0.123
YIELD 94 ± 8

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

Test 93A Matrix SOLID
SDG 7809
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS ALPHA IN SOLIDS

GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1196

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha
Preparation batch 6148-110					
R805018-01	93		7809-001	J16M67-B	8.23
R805018-02	93		7809-002	J16M68	U
R805018-03	93		7809-003	Lab Control Sample	ok
R805018-04	93		7809-004	Method Blank	U
R805018-05	93		7809-005	Duplicate (R805018-01)	ok

Nominal values and limits from method RDLs (pCi/g) 10.0
618-7 Burial Grounds-Other Liquids

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6148-110 2σ prep error 20.6 % Reference Lab Notebook #6148, pg. 103																
R805018-01	93		J16M67-B	3.52	0.100			30		100			10	05/07/08	05/08	GRB-112
R805018-02	93		J16M68	6.59	0.100			28		100			10	05/07/08	05/08	GRB-114
R805018-03	93		Lab Control Sample	9.16	0.100			61		100				05/07/08	05/08	GRB-115
R805018-04	93		Method Blank	6.86	0.100			61		100				05/07/08	05/08	GRB-209
R805018-05	93		Duplicate (R805018-01)	4.56	0.100			30		100			10	05/07/08	05/08	GRB-210
Nominal values and limits from method				10.0	0.100			5-250		100			180			

PROCEDURES	REFERENCE	900.0_ALPHABETA_GPC
	SPP-070	Soil Dissolution, < 1.0g Aliquot, rev 7
	SPP-125	Gross Alpha and Gross Beta in Dissolved Solids, rev 0

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 6.14 ± 4.38
RESIDUE 42 ± 35

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

Test 93B Matrix SOLID
SDG 7809
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS BETA IN SOLIDS
GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1196

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta
Preparation batch 6148-110					
R805018-01	93		7809-001	J16M67-B	8.91
R805018-02	93		7809-002	J16M68	11.1
R805018-03	93		7809-003	Lab Control Sample	ok
R805018-04	93		7809-004	Method Blank	U
R805018-05	93		7809-005	Duplicate (R805018-01)	ok

Nominal values and limits from method RDLs (pCi/g) 15.0
618-7 Burial Grounds-Other Liquids

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6148-110			2σ prep error 11.0 % Reference Lab Notebook #6148, pg. 103													
R805018-01	93		J16M67-B	5.46	0.100			30		100			10	05/07/08	05/08	GRB-112
R805018-02	93		J16M68	7.33	0.100			28		100			10	05/07/08	05/08	GRB-114
R805018-03	93		Lab Control Sample	6.14	0.100			61		100				05/07/08	05/08	GRB-115
R805018-04	93		Method Blank	5.79	0.100			61		100				05/07/08	05/08	GRB-209
R805018-05	93		Duplicate (R805018-01)	5.56	0.100			30		100			10	05/07/08	05/08	GRB-210
Nominal values and limits from method				15.0	0.100			5-250		100			180			

PROCEDURES	REFERENCE	900.0_ALPHABETA_GPC
	SPP-070	Soil Dissolution, < 1.0g Aliquot, rev 7
	SPP-125	Gross Alpha and Gross Beta in Dissolved Solids, rev 0

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 6.06 ± 1.52
RESIDUE 42 ± 35

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

Test GAM	Matrix SOLID
SDG 7809	
Contact Melissa C. Mannion	

LAB METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford	
Contract No. S00W235A00	
Contract SDG K1196	

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60		Cesium 137	
Preparation batch 6148-110								
R805018-01			7809-001	J16M67-B	U		U	
R805018-02			7809-002	J16M68	U		U	
R805018-03			7809-003	Lab Control Sample	ok		ok	
R805018-04			7809-004	Method Blank	U		U	
R805018-05			7809-005	Duplicate (R805018-01)	-	U	-	U
Nominal values and limits from method 618-7 Burial Grounds-Other Liquids				RDLs (pCi/g)	0.050		0.100	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6148-110			2σ prep error 7.0 %	Reference Lab Notebook #6148, pg. 103												
R805018-01			J16M67-B	7.76	290					416			8	05/05/08	05/06	JR,08,00
R805018-02			J16M68	4.46	252					405			8	05/05/08	05/06	JR,02,00
R805018-03			Lab Control Sample	0.014	250					944				05/05/08	05/06	JR,02,00
R805018-04			Method Blank	3.52	250					944				05/05/08	05/06	JR,05,00
R805018-05			Duplicate (R805018-01)	5.70	290					750			9	05/05/08	05/07	JR,04,00
Nominal values and limits from method				0.050	250					100			180			

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

AVERAGES ± 2 SD	MDA 4.29	± 5.74
FOR 5 SAMPLES	YIELD	±

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	05/14/08

SDG 7809
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

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.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 05/14/08

SDG 7809
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

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.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
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Report date 05/14/08

SDG 7809
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

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 05/14/08

SDG 7809
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

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).

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Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 05/14/08

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.

SDG 7809
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

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.

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SDG 7809
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1196

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.

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REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

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.

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Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

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.

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Protocol Hanford
Version Ver 1.0
Form DVD-RG
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SDG 7809
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
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Case no SDG K1196

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 05/14/08

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.

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'

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.

* Prepareation 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.

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

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.

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-015	Page 1 of 1

Collector B. Lawrence / E. Harries	Company Contact Joan Kessner	Telephone No. 509-375-4688 K1196	Project Coordinator KESSNER, JH
Project Designation 618-7 Burial Ground - Other Liquids	Sampling Location 618-7 Burial Ground (drums) ~~K1208~~ (7809)		SAF No. RC-088
Ice Chest No. AFS-04-037	Field Logbook No. EL-1395-12	COA RG61878500	Method of Shipment Fed Ex
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080227		Bill of Lading/Air Bill No. See ospc

Price Code: 9G

Data Turnaround: 15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive contamination, potential beryllium contamination

Special Handling and/or Storage

None

Preservation	Cool 4C	Cool 4C	None	None	None						
Type of Container	aG	aG	aG	aG	P						
No. of Container(s)	1	0	0	0	1						
Volume	250mL	125mL	125mL	60mL	500mL						
SAMPLE ANALYSIS → other solid MLM 5/14/08	Semi-VOA - 8270A (TCL) AL 4-28-08	PCBs - 8082 AL 4-28-08	See item (1) in Special Instructions. AL 4-28-08	Ignitability - 1010 AL 4-28-08	See item (2) in Special Instructions.						B12
Sample No.	Matrix *	Sample Date	Sample Time								
J16M67 - B	~~OTHER LIQUID~~	4-28-08	1440					X			#0222 4
J16M68	~~OTHER LIQUID~~	4-28-08	1450					X			#0223 5

CHAIN OF POSSESSION	Sign/Print Names
Relinquished By/Removed From: E Harries / E. Harries 4/28/08 — Date/Time 1520	Received By/Stored In: RB Kerkow / RB Kerkow 4-28-08 — Date/Time 1520
Relinquished By/Removed From: RB Kerkow / RB Kerkow 4-28-08 — Date/Time 1620	Received By/Stored In: REF 18 (10th) 4-28-08 — Date/Time 1620
Relinquished By/Removed From: 1060/18 4/30/08 — Date/Time 1000	Received By/Stored In: MLM MStankovich 4/30/08 — Date/Time 1000
Relinquished By/Removed From: WCH MLM MStankovich 4/30/08 — Date/Time 1000	Received By/Stored In: Fed Ex — Date/Time
Relinquished By/Removed From: Fed Ex — Date/Time	Received By/Stored In: TMM — Date/Time 05/01/08 09:30
Relinquished By/Removed From: — Date/Time	Received By/Stored In: — Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc, Zirconium}; ICP Metals - 6010A (Add-on) {Arsenic, Beryllium, Lead, Selenium, Thallium, Tin}; Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

TM KW

Matrix *

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

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

WCH-EE-011

EBERLINE SERVICES

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

JK 5/1/08

Client: W.C. HANFORD City RICHLAND State WA

Date/Time received 05/01/08 09:30 CoC No. RC-088-015

Container I.D. No AFS-04-037 Requested TAT (Days) 15 P.O. Received Yes [ ] No [ ]

INSPECTION

1. Custody seals on shipping container intact? Yes [X] No [ ] N/A [ ]
2. Custody seals on shipping container dated & signed? Yes [X] No [ ] N/A [ ]
3. Custody seals on sample containers intact? Yes [X] No [ ] N/A [ ]
4. Custody seals on sample containers dated & signed? Yes [X] No [ ] N/A [ ]
5. Packing material is: Wet [ ] Dry [X]
6. Number of samples in shipping container: 2 Sample Matrix X SOLID, LIQUID
7. Number of containers per sample: 1 (Or see CoC _____)
8. Samples are in correct container Yes [X] No [ ]
9. Paperwork agrees with samples? Yes [ ] No [X]
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 _____ Preservative _____
13. Describe any anomalies:
    J16M67 - SOLID AND LIQUID
    J16M68 - SOLID
    } ACTUAL MATRIX
14. Was P.M. notified of any anomalies? Yes [X] No [ ] Date 05/01/08
15. Inspected by [signature] Date: 05/01/08 Time: 10:30

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
ALL SAMPLES	<60						

Ion Chamber Ser. No. _____ Calibration date _____

Alpha Meter Ser. No. _____ Calibration date _____

Beta/Gamma Meter Ser. No. 100482 Calibration date 09MAY07

EBERLINE SERVICES

EBERLINE ANALYTICAL CORPORATION
2030 Wright Avenue
Richmond, California 94804-3849
Phone (510) 235-2633 Fax (510) 235-0438
Toll Free (800) 841-5487
www.eberlineservices.com

May 14, 2008

Ms. Joan Kessner
Washington Closure Hanford
2620 Fermi Avenue
MSIN H4-21
Richland, WA 99352

RECEIVED
MAY 2008

Reference: **P.O. #S00W235A00**
Eberline Services R8-04-185-7807, SDG K1196

Dear Ms. Kessner:

Enclosed is the data report for two solid (other solid) samples designated under SAF No. RC-088 received at Eberline Services on April 30, 2008. The samples were analyzed according to the accompanying chain-of-custody document.

Please call if you have any questions concerning this report.

Sincerely,

Melissa Mannion

Melissa C. Mannion
Senior Program Manager

MCM/njv

Enclosure: Data Package

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1196 was composed of two solid (other solid) samples designated under SAF No. RC-088 with a Project Designation of: 618-7 Burial Grounds-Other Liquids.

Note: the samples were a mixture of oil and dirt, and were therefore treated as solids (other solids). Results are reported in pCi/g.

The samples were received as stated on the Chain-of-Custody document. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to WCH via e-mail on May 14, 2008.

2.0 ANALYSIS NOTES

2.1 Gross Alpha and Gross Beta Analysis

No problems were encountered during the course of the analysis.

2.2 Total Strontium Analysis

No problems were encountered during the course of the analyses.

2.3 Isotopic Thorium Analysis

No problems were encountered during the course of the analyses.

2.4 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.5 Isotopic Plutonium Analysis

No problems were encountered during the course of the analyses.

2.6 Americium-241 Analysis

No problems were encountered during the course of the analyses.

2.7 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

3.0 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 Mannion 05/14/08

Melissa C. Mannion Date
Senior Program Manager

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP K1196

SDG	7807
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. S00W235A00
Case no	SDG_K1196

SUMMARY DATA SECTION

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Prepared by

Melissa Mannion

Reviewed by

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	05/14/08

SDG 7807
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1196

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.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 05/14/08

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.

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

LAB SAMPLE SUMMARY

SDG 7807
Contact Melissa C. Mannion

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R804185-01	J16M65	618-7 BurialGrnd (drums)	SOLID		RC-088	RC-088-014	04/28/08 07:50
R804185-02	J16M66	618-7 BurialGrnd (drums)	SOLID		RC-088	RC-088-014	04/28/08 08:10
R804185-03	Lab Control Sample		SOLID		RC-088		
R804185-04	Method Blank		SOLID		RC-088		
R804185-05	Duplicate (R804185-01)	618-7 BurialGrnd (drums)	SOLID		RC-088		04/28/08 07:50

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

SDG 7807
Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

: BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	DAYS SINCE COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
307	RC-088-014	J16M65	SOLID	100.0	762 g		04/30/08	2	R804185-01	7807-001
		J16M66	SOLID	100.0	712 g		04/30/08	2	R804185-02	7807-002
		Method Blank	SOLID						R804185-04	7807-004
		Lab Control Sample	SOLID						R804185-03	7807-003
		Duplicate (R804185-01)	SOLID	100.0	762 g		04/30/08	2	R804185-05	7807-005

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

SDG 7807
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Alpha Spectroscopy												
AM	SOLID	Americium 241 in Solids	6148-103	8.0	2			1	1	1/1		
PU	SOLID	Plutonium, Isotopic in Solids	6148-103	8.0	2			1	1	1/1		
TH	SOLID	Thorium, Isotopic in Solids	6148-103	8.0	2			1	1	1/1		
U	SOLID	Uranium, Isotopic in Solids	6148-103	8.0	2			1	1	1/1		
Beta Counting												
SR	SOLID	Total Strontium in Solids	6148-103	10.4	2			1	1	1/1		
Gas Proportional Counting												
93A	SOLID	Gross Alpha in Solids	6148-103	20.6	2			1	1	1/1		
93B	SOLID	Gross Beta in Solids	6148-103	11.0	2			1	1	1/1		
Gamma Spectroscopy												
GAM	SOLID	Gamma Scan	6148-103	7.0	2			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 05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

SDG 7807
Contact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

AB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
304185-01	J16M65			7807-001	93A/93		05/06/08	05/06/08	BW	Gross Alpha in Solids
04/28/08	618-7 BurialGrnd (drums)		SOLID	7807-001	93B/93		05/06/08	05/06/08	BW	Gross Beta in Solids
04/30/08	RC-088-014	RC-088		7807-001	AM		05/10/08	05/12/08	BW	Americium 241 in Solids
				7807-001	GAM		05/07/08	05/08/08	CSS	Gamma Scan
				7807-001	PU		05/10/08	05/12/08	BW	Plutonium, Isotopic in Solids
				7807-001	SR		05/07/08	05/09/08	BW	Total Strontium in Solids
				7807-001	TH		05/07/08	05/08/08	BW	Thorium, Isotopic in Solids
				7807-001	U		05/06/08	05/06/08	BW	Uranium, Isotopic in Solids
304185-02	J16M66			7807-002	93A/93		05/06/08	05/06/08	BW	Gross Alpha in Solids
04/28/08	618-7 BurialGrnd (drums)		SOLID	7807-002	93B/93		05/06/08	05/06/08	BW	Gross Beta in Solids
04/30/08	RC-088-014	RC-088		7807-002	AM		05/10/08	05/12/08	BW	Americium 241 in Solids
				7807-002	GAM		05/05/08	05/08/08	CSS	Gamma Scan
				7807-002	PU		05/10/08	05/12/08	BW	Plutonium, Isotopic in Solids
				7807-002	SR		05/07/08	05/09/08	BW	Total Strontium in Solids
				7807-002	TH		05/07/08	05/08/08	BW	Thorium, Isotopic in Solids
				7807-002	U		05/06/08	05/06/08	BW	Uranium, Isotopic in Solids
304185-03	Lab Control Sample			7807-003	93A/93		05/06/08	05/06/08	BW	Gross Alpha in Solids
			SOLID	7807-003	93B/93		05/06/08	05/06/08	BW	Gross Beta in Solids
		RC-088		7807-003	AM		05/10/08	05/12/08	BW	Americium 241 in Solids
				7807-003	GAM		05/05/08	05/08/08	CSS	Gamma Scan
				7807-003	PU		05/10/08	05/12/08	BW	Plutonium, Isotopic in Solids
				7807-003	SR		05/07/08	05/09/08	BW	Total Strontium in Solids
				7807-003	TH		05/07/08	05/08/08	BW	Thorium, Isotopic in Solids
				7807-003	U		05/06/08	05/06/08	BW	Uranium, Isotopic in Solids
304185-04	Method Blank			7807-004	93A/93		05/06/08	05/06/08	BW	Gross Alpha in Solids
			SOLID	7807-004	93B/93		05/06/08	05/06/08	BW	Gross Beta in Solids
		RC-088		7807-004	AM		05/10/08	05/12/08	BW	Americium 241 in Solids
				7807-004	GAM		05/05/08	05/08/08	CSS	Gamma Scan
				7807-004	PU		05/10/08	05/12/08	BW	Plutonium, Isotopic in Solids
				7807-004	SR		05/07/08	05/09/08	BW	Total Strontium in Solids
				7807-004	TH		05/08/08	05/08/08	BW	Thorium, Isotopic in Solids
				7807-004	U		05/06/08	05/06/08	BW	Uranium, Isotopic in Solids

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

SDG 7807
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

AB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
304185-05	Duplicate (R804185-01)			7807-005	93A/93		05/06/08	05/06/08	BW	Gross Alpha in Solids
04/28/08	618-7 BurialGrnd (drums)		SOLID	7807-005	93B/93		05/06/08	05/06/08	BW	Gross Beta in Solids
04/30/08		RC-088		7807-005	AM		05/10/08	05/12/08	BW	Americium 241 in Solids
				7807-005	GAM		05/06/08	05/08/08	CSS	Gamma Scan
				7807-005	PU		05/10/08	05/12/08	BW	Plutonium, Isotopic in Solids
				7807-005	SR		05/07/08	05/09/08	BW	Total Strontium in Solids
				7807-005	TH		05/07/08	05/08/08	BW	Thorium, Isotopic in Solids
				7807-005	U		05/06/08	05/06/08	BW	Uranium, Isotopic in Solids

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
93A/93	RC-088	Gross Alpha in Solids	900.0_ALPHABETA_GPC	2			1	1	1	5
93B/93	RC-088	Gross Beta in Solids	900.0_ALPHABETA_GPC	2			1	1	1	5
AM	RC-088	Americium 241 in Solids	AMCMISO_IE_PLATE_AEA	2			1	1	1	5
GAM	RC-088	Gamma Scan	GAMMA_GS	2			1	1	1	5
PU	RC-088	Plutonium, Isotopic in Solids	PUISO_PLATE_AEA	2			1	1	1	5
SR	RC-088	Total Strontium in Solids	SRTOT_SEP_PRECIP_GPC	2			1	1	1	5
TH	RC-088	Thorium, Isotopic in Solids	THISO_IE_PLATE_AEA	2			1	1	1	5
U	RC-088	Uranium, Isotopic in Solids	UISO_PLATE_AEA	2			1	1	1	5
TOTALS				16			8	8	8	40

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

7807-004 Method Blank

METHOD BLANK

SDG	7807	Client/Case no	Hanford	SDG K1196	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R804185-04	Client sample id	Method Blank		
Dept sample id	7807-004	Material/Matrix		SOLID	
		SAF No	RC-088		

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	0.244	3.3	6.85	10.0	U	93A
Gross Beta	12587-47-2	1.76	5.1	8.83	15.0	U	93B
Total Strontium	SR-RAD	-0.079	0.13	0.290	1.00	U	SR
Americium 241	14596-10-2	0.041	0.16	0.313	1.00	U	AM
Thorium 228	14274-82-9	0.079	0.20	0.320	1.00	U	TH
Thorium 230	14269-63-7	-0.079	0.12	0.265	1.00	U	TH
Thorium 232	TH-232	-0.020	0.040	0.151	1.00	U	TH
Uranium 233/234	U-233/234	0.020	0.039	0.150	1.00	U	U
Uranium 235	15117-96-1	0.024	0.048	0.182	1.00	U	U
Uranium 238	U-238	0	0.039	0.150	1.00	U	U
Plutonium 238	13981-16-3	0	0.13	0.352	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.064	0.243	1.00	U	PU
Potassium 40	13966-00-2	U		0.542		U	GAM
Cobalt 60	10198-40-0	U		0.018	0.050	U	GAM
Cesium 137	10045-97-3	U		0.035	0.100	U	GAM
Radium 226	13982-63-3	U		0.043	0.100	U	GAM
Radium 228	15262-20-1	U		0.091	0.200	U	GAM
Europium 152	14683-23-9	U		0.053	0.100	U	GAM
Europium 154	15585-10-1	U		0.055	0.100	U	GAM
Europium 155	14391-16-3	U		0.043	0.100	U	GAM
Thorium 228	14274-82-9	U		0.029		U	GAM
Thorium 232	TH-232	U		0.091		U	GAM
Uranium 235	15117-96-1	U		0.084		U	GAM
Uranium 238	U-238	U		2.11		U	GAM
Americium 241	14596-10-2	U		0.073		U	GAM

618-7 Burial Grounds-Other Liquids

QC-BLANK #65567

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

7807-003

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7807
Contact Melissa C. Mannion

Client/Case no Hanford SDG K1196
Contract No. S00W235A00

Lab sample id R804185-03
Dept sample id 7807-003

Client sample id Lab Control Sample
Material/Matrix SOLID
SAF No RC-088

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Gross Alpha	119	17	6.22	10.0		93A	102	4.1	117	56-144	70-130
Gross Beta	97.7	7.4	5.75	15.0		93B	93.4	3.7	105	78-122	80-120
Total Strontium	9.92	0.57	0.246	1.00		SR	9.34	0.37	106	80-120	80-120
Americium 241	6.11	1.3	0.445	1.00		AM	5.08	0.20	120	59-141	80-120
Thorium 230	16.5	1.8	0.214	1.00		TH	18.2	0.73	91	81-119	80-120
Uranium 233/234	5.37	0.70	0.399	1.00		U	5.58	0.22	96	77-123	80-120
Uranium 235	3.87	0.60	0.149	1.00		U	4.52	0.18	86	77-123	80-120
Uranium 238	5.27	0.70	0.382	1.00		U	6.04	0.24	87	79-121	80-120
Plutonium 238	5.26	1.1	0.305	1.00		PU	5.86	0.23	90	69-131	80-120
Plutonium 239/240	6.98	1.2	0.305	1.00		PU	6.60	0.26	106	69-131	80-120
Cobalt 60	0.916	0.037	0.023	0.050		GAM	0.908	0.036	101	86-114	80-120
Cesium 137	1.01	0.033	0.024	0.100		GAM	0.979	0.039	103	87-113	80-120

618-7 Burial Grounds-Other Liquids

QC-LCS #65566

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

7807-005 J16M65

DUPLICATE

SDG	7807			Client/Case no	Hanford SDG K1196
Contact	Melissa C. Mannion			Contract	No. S00W235A00
	DUPLICATE		ORIGINAL		
Lab sample id	R804185-05	Lab sample id	R804185-01	Client sample id	J16M65
Dept sample id	7807-005	Dept sample id	7807-001	Location/Matrix	618-7 BurialGrnd (drums) SOLID
		Received	04/30/08	Collected/Weight	04/28/08 07:50 762 g
% solids	100.0	% solids	100.0	Custody/SAF No	RC-088-014 RC-088

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	3σ TOT	DER σ
Gross Alpha	4.31	4.3	6.02	10.0	U	93A	7.63	5.2	6.05		56	176	1.0
Gross Beta	14.9	5.4	8.47	15.0		93B	9.32	3.8	5.71		46	85	1.6
Total Strontium	-0.021	0.14	0.302	1.00	U	SR	0.120	0.13	0.248	U	-		1.5
Americium 241	0.250	0.34	0.638	1.00	U	AM	-0.119	0.24	0.660	U	-		1.8
Thorium 228	0.432	0.27	0.318	1.00		TH	0.410	0.26	0.369		5	135	0.1
Thorium 230	-0.033	0.20	0.318	1.00	U	TH	0.205	0.26	0.343	U	-		1.4
Thorium 232	0.332	0.20	0.254	1.00		TH	0.358	0.21	0.196		8	127	0.2
Uranium 233/234	0.373	0.18	0.168	1.00		U	0.371	0.18	0.135		1	104	0
Uranium 235	0	0.053	0.203	1.00	U	U	0	0.043	0.164	U	-		0
Uranium 238	0.285	0.18	0.168	1.00		U	0.336	0.14	0.135		16	111	0.4
Plutonium 238	0.464	0.31	0.370	1.00		PU	-0.031	0.12	0.293	U	200	203	3.0
Plutonium 239/240	0.039	0.15	0.296	1.00	U	PU	0.184	0.12	0.234	U	-		1.5
Potassium 40	8.60	0.52	0.218			GAM	7.99	0.34	0.161		7	19	1.2
Cobalt 60	U		0.027	0.050	U	GAM	U		0.015	U	-		0.8
Cesium 137	U		0.025	0.100	U	GAM	U		0.018	U	-		0.5
Radium 226	U		0.074	0.100	U	GAM	0.247	0.034	0.034		108	78	4.1
Radium 228	0.370	0.10	0.106	0.200		GAM	0.352	0.068	0.069		5	52	0.3
Europium 152	U		0.067	0.100	U	GAM	U		0.050	U	-		0.4
Europium 154	U		0.087	0.100	U	GAM	U		0.049	U	-		0.8
Europium 155	U		0.060	0.100	U	GAM	U		0.044	U	-		0.4
Thorium 228	0.364	0.034	0.034			GAM	0.315	0.026	0.025		14	24	1.8
Thorium 232	0.370	0.10	0.106			GAM	0.352	0.068	0.069		5	52	0.3
Uranium 235	U		0.093		U	GAM	U		0.077	U	-		0.3
Uranium 238	U		3.22		U	GAM	U		1.86	U	-		0.7
Americium 241	U		0.036		U	GAM	U		0.047	U	-		0.4

618-7 Burial Grounds-Other Liquids

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

7807-005 J16M65

DUPLICATE, cont.

SDG	7807			Client/Case no	Hanford SDG K1196
Contact	Melissa C. Mannion			Contract	No. S00W235A00
	DUPLICATE		ORIGINAL		
Lab sample id	R804185-05	Lab sample id	R804185-01	Client sample id	J16M65
Dept sample id	7807-005	Dept sample id	7807-001	Location/Matrix	618-7 BurialGrnd (drums) SOLID
		Received	04/30/08	Collected/Weight	04/28/08 07:50 762 g
% solids	100.0	% solids	100.0	Custody/SAP No	RC-088-014 RC-088

QC-DUP#1 65568

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

7807-001 J16M65

DATA SHEET

SDG	7807	Client/Case no	Hanford	SDG_K1196	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R804185-01	Client sample id	J16M65		
Dept sample id	7807-001	Location/Matrix	618-7 BurialGrnd (drums)	SOLID	
Received	04/30/08	Collected/Weight	04/28/08 07:50	762 g	
% solids	100.0	Custody/SAF No	RC-088-014	RC-088	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	7.63	5.2	6.05	10.0		93A
Gross Beta	12587-47-2	9.32	3.8	5.71	15.0		93B
Total Strontium	SR-RAD	0.120	0.13	0.248	1.00	U	SR
Americium 241	14596-10-2	-0.119	0.24	0.660	1.00	U	AM
Thorium 228	14274-82-9	0.410	0.26	0.369	1.00		TH
Thorium 230	14269-63-7	0.205	0.26	0.343	1.00	U	TH
Thorium 232	TH-232	0.358	0.21	0.196	1.00		TH
Uranium 233/234	U-233/234	0.371	0.18	0.135	1.00		U
Uranium 235	15117-96-1	0	0.043	0.164	1.00	U	U
Uranium 238	U-238	0.336	0.14	0.135	1.00		U
Plutonium 238	13981-16-3	-0.031	0.12	0.293	1.00	U	PU
Plutonium 239/240	PU-239/240	0.184	0.12	0.234	1.00	U	PU
Potassium 40	13966-00-2	7.99	0.34	0.161			GAM
Cobalt 60	10198-40-0	U		0.015	0.050	U	GAM
Cesium 137	10045-97-3	U		0.018	0.100	U	GAM
Radium 226	13982-63-3	0.247	0.034	0.034	0.100		GAM
Radium 228	15262-20-1	0.352	0.068	0.069	0.200		GAM
Europium 152	14683-23-9	U		0.050	0.100	U	GAM
Europium 154	15585-10-1	U		0.049	0.100	U	GAM
Europium 155	14391-16-3	U		0.044	0.100	U	GAM
Thorium 228	14274-82-9	0.315	0.026	0.025			GAM
Thorium 232	TH-232	0.352	0.068	0.069			GAM
Uranium 235	15117-96-1	U		0.077		U	GAM
Uranium 238	U-238	U		1.86		U	GAM
Americium 241	14596-10-2	U		0.047		U	GAM

618-7 Burial Grounds-Other Liquids

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

7807-002 J16M66

DATA SHEET

SDG	7807	Client/Case no	Hanford	SDG K1196	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R804185-02	Client sample id	J16M66		
Dept sample id	7807-002	Location/Matrix	618-7 BurialGrnd (drums)	SOLID	
Received	04/30/08	Collected/Weight	04/28/08 08:10	712 g	
% solids	100.0	Custody/SAF No	RC-088-014	RC-088	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	13.2	6.2	6.41	10.0		93A
Gross Beta	12587-47-2	13.2	4.0	5.62	15.0		93B
Total Strontium	SR-RAD	-0.080	0.21	0.384	1.00	U	SR
Americium 241	14596-10-2	0.067	0.20	0.322	1.00	U	AM
Thorium 228	14274-82-9	0.342	0.34	0.545	1.00	U	TH
Thorium 230	14269-63-7	-0.057	0.23	0.545	1.00	U	TH
Thorium 232	TH-232	0.341	0.34	0.435	1.00	U	TH
Uranium 233/234	U-233/234	2.22	0.42	0.138	1.00		U
Uranium 235	15117-96-1	0.175	0.13	0.167	1.00		U
Uranium 238	U-238	1.44	0.34	0.138	1.00		U
Plutonium 238	13981-16-3	-0.032	0.13	0.302	1.00	U	PU
Plutonium 239/240	PU-239/240	0.032	0.063	0.241	1.00	U	PU
Potassium 40	13966-00-2	8.01	0.29	0.142			GAM
Cobalt 60	10198-40-0	U		0.013	0.050	U	GAM
Cesium 137	10045-97-3	U		0.013	0.100	U	GAM
Radium 226	13982-63-3	0.268	0.029	0.029	0.100		GAM
Radium 228	15262-20-1	0.402	0.064	0.057	0.200		GAM
Europium 152	14683-23-9	U		0.042	0.100	U	GAM
Europium 154	15585-10-1	U		0.038	0.100	U	GAM
Europium 155	14391-16-3	U		0.046	0.100	U	GAM
Thorium 228	14274-82-9	0.340	0.023	0.021			GAM
Thorium 232	TH-232	0.402	0.064	0.057			GAM
Uranium 235	15117-96-1	U		0.160		U	GAM
Uranium 238	U-238	U		4.07		U	GAM
Americium 241	14596-10-2	U		0.043		U	GAM

618-7 Burial Grounds-Other Liquids

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

Test AM Matrix SOLID
SDG 7807
Contact Melissa C. Mannion

LAB METHOD SUMMARY

AMERICIUM 241 IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1196

.ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Americium 241
reparation batch 6148-103					
304185-01			7807-001	J16M65	U
304185-02			7807-002	J16M66	U
304185-03			7807-003	Lab Control Sample	ok
304185-04			7807-004	Method Blank	U
304185-05			7807-005	Duplicate (R804185-01)	- U

ominal values and limits from method RDLs (pCi/g) 1.00
18-7 Burial Grounds-Other Liquids

IETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
reparation batch 6148-103			2σ prep error 8.0 % Reference Lab Notebook #6148, pg. 103													
804185-01			J16M65	0.660	0.500			29		129			12	05/09/08	05/10	SS-055
804185-02			J16M66	0.322	0.500			56		129			12	05/09/08	05/10	SS-056
804185-03			Lab Control Sample	0.445	0.500			40		128				05/09/08	05/10	SS-063
804185-04			Method Blank	0.313	0.500			45		128				05/09/08	05/10	SS-064
804185-05			Duplicate (R804185-01)	0.638	0.500			25		129			12	05/09/08	05/10	SS-065
ominal values and limits from method				1.00	0.500			20-105		100	100		180			

PROCEDURES	REFERENCE	AMCMISO_IE_PLATE_AEA
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-963	Americium and Curium in Water and Dissolved Samples by Extraction Chromatography, rev 6
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.476 ± 0.334
YIELD 39 ± 25

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

Test PU Matrix SOLID
SDG 7807
Contact Melissa C. Mannion

LAB METHOD SUMMARY

PLUTONIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1196

ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Plutonium 238	Plutonium 239/240	
:eparation batch 6148-103							
304185-01			7807-001	J16M65	U	U	
304185-02			7807-002	J16M66	U	U	
304185-03			7807-003	Lab Control Sample	ok	ok	
304185-04			7807-004	Method Blank	U	U	
304185-05			7807-005	Duplicate (R804185-01)	ok	-	U
ominal values and limits from method				RDLs (pCi/g)	1.00	1.00	
18-7 Burial Grounds-Other Liquids							

IETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
reparation batch 6148-103			2σ prep error 8.0 % Reference Lab Notebook #6148, pg. 103													
804185-01			J16M65	0.293	0.500			60		130			12	05/09/08	05/10	SS-061
804185-02			J16M66	0.302	0.500			66		130			12	05/09/08	05/10	SS-062
804185-03			Lab Control Sample	0.305	0.500			54		129				05/09/08	05/10	SS-066
804185-04			Method Blank	0.352	0.500			55		128				05/09/08	05/10	SS-027
804185-05			Duplicate (R804185-01)	0.370	0.500			52		128			12	05/09/08	05/10	SS-028
ominal values and limits from method				1.00	0.500			20-105		100	100		180			

PROCEDURES	REFERENCE	PUISO_PLATE_AEA
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-941	Plutonium in Water and Dissolved Samples by Extraction Chromatography, rev 3
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.324 ± 0.069
YIELD 57 ± 11

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

Test TH Matrix SOLID
SDG 7807
Contact Melissa C. Mannion

LAB METHOD SUMMARY

THORIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1196

.ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Thorium 230
reparation batch 6148-103					
304185-01			7807-001	J16M65	U
304185-02			7807-002	J16M66	U
304185-03			7807-003	Lab Control Sample	ok
304185-04			7807-004	Method Blank	U
304185-05			7807-005	Duplicate (R804185-01)	- U

ominal values and limits from method RDLs (pCi/g) 1.00
18-7 Burial Grounds-Other Liquids

IETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
reparation batch 6148-103			2σ prep error 8.0 % Reference Lab Notebook #6148, pg. 103													
804185-01			J16M65	0.369	0.250			96		181			9	05/07/08	05/07	SS-055
804185-02			J16M66	0.545	0.250			80		181			9	05/07/08	05/07	SS-059
804185-03			Lab Control Sample	0.214	0.250			94		181				05/07/08	05/07	SS-061
804185-04			Method Blank	0.320	0.250			91		247				05/07/08	05/08	SS-055
804185-05			Duplicate (R804185-01)	0.318	0.250			100		182			9	05/07/08	05/07	SS-063
ominal values and limits from method				1.00	0.250			20-105		150			180			

PROCEDURES	REFERENCE	THISO_IE_PLATE_AEA
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-900	Thorium in Water and Dissolved Solid Samples by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.353 ± 0.242
YIELD 92 ± 15

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

Test U Matrix SOLID
SDG 7807
Contact Melissa C. Mannion

LAB METHOD SUMMARY

URANIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1196

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	1: Uranium 233/234	2: Uranium 235	3: Uranium 238	RESULT RATIOS (%) 1+3	2σ	2+3	2σ
Preparation batch 6148-103											
R804185-01			7807-001	J16M65	0.371	U	0.336	110	71	0	13
R804185-02			7807-002	J16M66	2.22	0.175	1.44	154	47	12	9
R804185-03			7807-003	Lab Control Sample	ok	ok	ok				
R804185-04			7807-004	Method Blank	U	U	U				
R804185-05			7807-005	Duplicate (R804185-01)	ok	- U	ok	131	104	0	19
Nominal values and limits from method				RDLs (pCi/g)	1.00	1.00	1.00	100		4	
118-7 Burial Grounds-Other Liquids							Averages	132		4	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6148-103			2σ prep error 8.0 % Reference Lab Notebook #6148, pg. 103													
R804185-01			J16M65	0.164	0.500			91		151			8	05/06/08	05/06	SS-056
R804185-02			J16M66	0.167	0.500			86		152			8	05/06/08	05/06	SS-057
R804185-03			Lab Control Sample	0.399	0.500			91		152				05/06/08	05/06	SS-058
R804185-04			Method Blank	0.182	0.500			80		152				05/06/08	05/06	SS-061
R804185-05			Duplicate (R804185-01)	0.203	0.500			81		152			8	05/06/08	05/06	SS-062
Nominal values and limits from method				1.00	0.500			20-105		100	100		180			

PROCEDURES	REFERENCE	UISO_PLATE_AEA
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-921	Uranium in Water and Dissolved Samples by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.223 ± 0.199
YIELD 86 ± 11

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

Test SR Matrix SOLID
SDG 7807
Contact Melissa C. Mannion

LAB METHOD SUMMARY

TOTAL STRONTIUM IN SOLIDS

BETA COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1196

:ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Total Strontium
reparation batch 6148-103					
304185-01			7807-001	J16M65	U
304185-02			7807-002	J16M66	U
304185-03			7807-003	Lab Control Sample	ok
304185-04			7807-004	Method Blank	U
304185-05			7807-005	Duplicate (R804185-01)	- U

ominal values and limits from method RDLs (pCi/g) 1.00
18-7 Burial Grounds-Other Liquids

IETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
reparation batch 6148-103			2σ prep error 10.4 % Reference Lab Notebook #6148, pg. 103													
304185-01			J16M65	0.248	1.00			94		100			9	05/07/08	05/07	GRB-222
304185-02			J16M66	0.384	1.00			95		100			9	05/07/08	05/07	GRB-226
304185-03			Lab Control Sample	0.246	1.00			94		100				05/07/08	05/07	GRB-224
304185-04			Method Blank	0.290	1.00			95		100				05/07/08	05/07	GRB-228
304185-05			Duplicate (R804185-01)	0.302	1.00			94		100			9	05/07/08	05/07	GRB-221
ominal values and limits from method				1.00	1.00			30-105		100			180			

PROCEDURES	REFERENCE	SRTOT_SEP_PRECIP_GPC
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-383	Strontium in Dissolved Solid of < 5.0g Aliquot, rev 1

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.294 ± 0.112
YIELD 94 ± 1

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

Test 93A Matrix SOLID
SDG 7807
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS ALPHA IN SOLIDS
GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1196

:ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha	
reparation batch 6148-103						
304185-01	93		7807-001	J16M65	7.63	
304185-02	93		7807-002	J16M66	13.2	
304185-03	93		7807-003	Lab Control Sample	ok	
304185-04	93		7807-004	Method Blank	U	
304185-05	93		7807-005	Duplicate (R804185-01)	ok	U
ominal values and limits from method				RDLs (pCi/g)	10.0	
18-7 Burial Grounds-Other Liquids						

[ETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
reparation batch 6148-103			2σ prep error 20.6 % Reference Lab Notebook #6148, pg. 103													
304185-01	93		J16M65	6.05	0.100			43		100			8	05/06/08	05/06	GRB-209
304185-02	93		J16M66	6.41	0.100			44		100			8	05/06/08	05/06	GRB-210
304185-03	93		Lab Control Sample	6.22	0.100			60		100				05/06/08	05/06	GRB-211
304185-04	93		Method Blank	6.85	0.100			60		100				05/06/08	05/06	GRB-213
304185-05	93		Duplicate (R804185-01)	6.02	0.100			42		100			8	05/06/08	05/06	GRB-214
ominal values and limits from method				10.0	0.100			5-250		100			180			

PROCEDURES	REFERENCE	900.0_ALPHABETA_GPC
	SPP-070	Soil Dissolution, < 1.0g Aliquot, rev 7
	SPP-125	Gross Alpha and Gross Beta in Dissolved Solids, rev 0

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 6.31 ± 0.679
RESIDUE 50 ± 19

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

Test 93B Matrix SOLID
SDG 7807
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS BETA IN SOLIDS

GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1196

:ESULTS

AB AMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta
reparation batch 6148-103					
304185-01	93		7807-001	J16M65	9.32
304185-02	93		7807-002	J16M66	13.2
304185-03	93		7807-003	Lab Control Sample	ok
304185-04	93		7807-004	Method Blank	U
304185-05	93		7807-005	Duplicate (R804185-01)	ok

ominal values and limits from method RDLs (pCi/g) 15.0
18-7 Burial Grounds-Other Liquids

:ETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU- TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
reparation batch 6148-103			2σ prep error 11.0 % Reference Lab Notebook #6148, pg. 103													
104185-01	93		J16M65	5.71	0.100			43		100			8	05/06/08	05/06	GRB-209
104185-02	93		J16M66	5.62	0.100			44		100			8	05/06/08	05/06	GRB-210
104185-03	93		Lab Control Sample	5.75	0.100			60		100				05/06/08	05/06	GRB-211
104185-04	93		Method Blank	8.83	0.100			60		100				05/06/08	05/06	GRB-213
104185-05	93		Duplicate (R804185-01)	8.47	0.100			42		100			8	05/06/08	05/06	GRB-214
ominal values and limits from method				15.0	0.100			5-250		100			180			

PROCEDURES	REFERENCE	900.0_ALPHABETA_GPC
	SPP-070	Soil Dissolution, < 1.0g Aliquot, rev 7
	SPP-125	Gross Alpha and Gross Beta in Dissolved Solids, rev 0

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 6.88 ± 3.25
RESIDUE 50 ± 19

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/14/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1196

Test GAM Matrix SOLID
SDG 7807
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1196

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60		Cesium 137	
Preparation batch 6148-103								
304185-01			7807-001	J16M65	U		U	
304185-02			7807-002	J16M66	U		U	
304185-03			7807-003	Lab Control Sample	ok		ok	
304185-04			7807-004	Method Blank	U		U	
304185-05			7807-005	Duplicate (R804185-01)	-	U	-	U
Nominal values and limits from method				RDLs (pCi/g)	0.050		0.100	

10-7 Burial Grounds-Other Liquids

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6148-103			2σ prep error 7.0 %	Reference Lab Notebook #6148, pg. 103												
304185-01			J16M65	3.35	249					750			9	04/30/08	05/07	JR,02,00
304185-02			J16M66	2.62	240					1188			7	04/30/08	05/05	JR,02,00
304185-03			Lab Control Sample	0.023	240					1188				04/30/08	05/05	JR,04,00
304185-04			Method Blank	4.79	240					1188				04/30/08	05/05	JR,08,00
304185-05			Duplicate (R804185-01)	6.68	249					404			8	04/30/08	05/06	JR,07,00
Nominal values and limits from method				0.050	250					100			180			

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

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 3.49 ± 4.97
YIELD ____ ± ____

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/14/08

SDG 7807
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

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.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 05/14/08

SDG 7807
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

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.

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Protocol Hanford
Version Ver 1.0
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Report date 05/14/08

SDG 7807
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

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
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SDG 7807
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1196

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
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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.

SDG 7807
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

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.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 05/14/08

SDG 7807
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1196

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.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 05/14/08

SDG 7807
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

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 05/14/08

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.

SDG 7807
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 05/14/08

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.

SDG 7807
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1196

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 05/14/08

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.

* Prepareation 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.

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

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.

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-014	Page 1 of 1

Collector B. Lawrence / E. Harries	**Company Contact** Joan Kessner	**Telephone No.** 509-375-4688	**Project Coordinator** KESSNER, JH
Price Code	**Data Turnaround** 15 Days		
Project Designation 618-7 Burial Ground - Other Liquids	**Sampling Location** 618-7 Burial Ground (drums) K1196 (7807)		**SAF No.** RC-088
Ice Chest No. RCC-08-002	**Field Logbook No.** EL-1395-12	**COA** RG61878500	**Method of Shipment** Fed Ex
Shipped To EBERLINE SERVICES, LIONVILLE	**Offsite Property No.** A080226		**Bill of Lading/Air Bill No.** See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive contamination, potential beryllium contamination

Special Handling and/or Storage

None

Preservation	Cool 4C	Cool 4C	None	None	None					
Type of Container	aG	aG	aG	aG	P					
No. of Container(s)	1	0	0	0	1					
Volume	250mL	125mL	125mL	60mL	500mL					
SAMPLE ANALYSIS → other solid mcm 5/14/8	Semi-VOA - 8270A (TCL) RK 4-28-08	PCBs - 8082 RK 4-28-08	See item (1) in Special Instructions. RK 4-28-08	Ignitability - 1010 4-28-08 RK	See item (2) in Special Instructions.			TIE TO RCF		B12 PIN #
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**							
J16M65	~~OTHER LIQUID~~	4-28-08	0750				X	Jr 4/30	J16M55	0081 2
J16M66	~~OTHER LIQUID~~	4-28-08	0810				X	Jr 4/30	J16M56	0220 3

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: B Lawrence	0900 4-28-08	Received By/Stored In: RB Kerkow / RB Kerkow	0900 4-28-08
Relinquished By/Removed From: RB Kerkow / RB Kerkow	1015 4-28-08	Received By/Stored In: REFIB (1060)	1015 4-28-08
Relinquished By/Removed From: 1060 RB IB	4/29/08 0945	Received By/Stored In: M Stankovich	4/29/08 0945
Relinquished By/Removed From: M Stankovich	0945 4/29/08	Received By/Stored In: Fed Ex	
Relinquished By/Removed From: Fed Ex		Received By/Stored In:	04/30/08 09:30
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc, Zirconium}; ICP Metals - 6010A (Add-on) {Arsenic, Beryllium, Lead, Selenium, Thallium, Tin}; Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

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

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

WCH-EE-011

EBERLINE SERVICE

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

HK 4/30/08

Client: W.C. HANFORD City RICHLAND State WA

Date/Time received 04/30/08 09:20 COC No. RC-088-014

Container I.D. No. RCC-08-002 Requested TAT (Days) 15 P.O. Received Yes [ ] No [ ]

INSPECTION

1. Custody seals on shipping container intact? Yes [X] No [ ] N/A [ ]
2. Custody seals on shipping container dated & signed? Yes [X] No [ ] N/A [ ]
3. Custody seals on sample containers intact? Yes [X] No [ ] N/A [ ]
4. Custody seals on sample containers dated & signed? Yes [X] No [ ] N/A [ ]
5. Packing material is: Wet [ ] Dry [X]
6. Number of samples in shipping container: 2 Sample Matrix X OTHER SOLID
7. Number of containers per sample: 1 (Or see CoC ____)
8. Samples are in correct container Yes [X] No [ ]
9. Paperwork agrees with samples? Yes [ ] No [X]
10. Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [X]
11. Samples are: In good condition [X] Leaking [ ] Broken Container [ ] Missing [ ]
12. Samples are: Preserved [ ] Not preserved [ ] pH ____ Preservative ____
13. Describe any anomalies:
    ACTUAL MATRIX IS SOLID
14. Was P.M. notified of any anomalies? Yes [X] No [ ] Date 04/30/08
15. Inspected by [signature] Date: 04/30/08 Time: 11:30

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
ALL SAMPLES	<60						

Ion Chamber Ser. No. ____ Calibration date ____

Alpha Meter Ser. No. ____ Calibration date ____

Beta/Gamma Meter Ser. No. 100482 Calibration date 09MAY07

LvLI
LIONVILLE LABORATORY INC.

RECEIVED
JUN 2008

2 June 2008

Joan Kessner
WC-Hanford
2620 Fermi Avenue
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 #	0805L032
SDG #	K1196
SAF #	RC-088
Date Received	5/1/08
# Samples	4
Matrix	OTHER SOLIDL
Volatiles	
Semivolatiles	X
Pest/PCB	X
Glycols	
DRO/KRO/GRO	
GC Organics	
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

208 Welsh Pool Road • Exton, PA 19341- 1313 • (610) 280-3000 • Fax (610) 280-3041

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-088 K1196

RECEIVED
JUN 2008

DATE RECEIVED: 05/01/08 LVL LOT # [illegible]

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16M65	001	SO	08LE0219	04/28/08	05/05/08	05/16/08
J16M65	001 01	SO	08LE0219	04/28/08	05/05/08	05/21/08
J16M66	002	SO	08LE0219	04/28/08	05/05/08	05/16/08
J16M66	002 01	SO	08LE0219	04/28/08	05/05/08	05/21/08
J16M66	002 MS	SO	08LE0219	04/28/08	05/05/08	05/16/08
J16M66	002 MS 01	SO	08LE0219	04/28/08	05/05/08	05/21/08
J16M66	002 MSD	SO	08LE0219	04/28/08	05/05/08	05/17/08
J16M66	002 MSD 01	SO	08LE0219	04/28/08	05/05/08	05/21/08
J16M67	003	SO	08LE0219	04/28/08	05/05/08	05/11/08
J16M68	004	SO	08LE0219	04/28/08	05/05/08	05/21/08

LAB QC:

SBLKUO	MB1	S	08LE0219	N/A	05/05/08	05/08/08
SBLKUO	MB1 BS	S	08LE0219	N/A	05/05/08	05/08/08
SBLKUO	MB1 BSD	S	08LE0219	N/A	05/05/08	05/08/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-088
LVL #: 0805L032
SDG/SAF # K1196 / RC-088

W.O. #: 11343-606-001-9999-00
Date Received: 05-01-2008

SEMIVOLATILE

Four (4) solid samples were collected on 04-28-2008.

The samples and their associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3540C on 02-07-2008 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 02-29-2008.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise. The following is a summary of QC results accompanying the sample results. Lionville Laboratory Inc (LvLI) certifies that all test results meet the requirements of NELAC except as noted below:

1. The results for solid samples were reported on a wet weight basis, due to the nature of the matrix (oily solids).

2. The samples were extracted and analyzed within holding time.

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

4. Due to the nature of the sample matrix (oily solids) the samples were extracted with a reduced initial volume and had elevated final volumes. Samples J16M65 and J16M67 had an initial volume of 0.5 grams and final volume of 4.0 mls. Samples J16M66, J16M66MS, J16M66MSD, and J16M68 had an initial volume of 15.0 grams. Samples J16M66, J16M66MS, J16M66MSD had a final volume of 4.0 mls. Reporting limits have been adjusted to reflect these changes.

5. Due to the presence of hydrocarbon contamination and masking of non-target compounds, samples J16M65, J16M66, J16M66MS, and J16M66MSD required an additional 25-fold dilution. TICS have been reported for both the original and diluted runs. In addition the chromatograms for both the initial and diluted runs have been included in the package.

r:\group\data\2008\bna\tnu\0805-032ksol2.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 46 pages.

LIONVILLE LABORATORY INC.

6. All surrogate recoveries were within acceptance criteria.

7. Eleven (11) of two hundred and fifty-six (256) obtainable matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

8. Four (4) of one hundred and twenty-eight (128) blank spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.

9. The method blank was below the reporting limit for all target compounds.

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

11. All continuing calibration standard analyzed prior to sample extracts were within acceptance criteria.

12. Internal standard area criteria were not met for samples J16M65, J16M66, J16M66 MS, and J16M66 MSD due to matrix interferences. Samples were re-analyzed with a dilution and all internal standard area criteria were met. The GC/MS instrument was inspected for possible malfunction and was judged to be functioning properly and all surrogate recoveries were within QC limits.

13. 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").

14. LvLI is NELAP accredited by the State of Pennsylvania. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

15. 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

5/23/08
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 08MS112

Initiator: Sharon Saylor
Date: 5-22-08
Client: Thru Hanford RC 0880 K1196

Batch: 080SL032
Samples: ms, msd, BS, BSD
Method: SW846/MCAWW/CLP/

Parameter: 8270
Matrix: Solid
Prep Batch: 08MS0219

1. Reason for SDR

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

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

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

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

① low recovery of several spike analytes in the BS, BSD

② low or no recovery of several spike analytes in the ms, msd

2. Known or Probable Causes(s) possible matrix effect for MS/MSD - samples required 2x & 25x dilution due to the presence of hydrocarbon contamination. BS/BSD - acid phenols are subject to erratic chromatic behavior especially if the GC system contained many high boiling components.

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
oil-matrix

4. Project Manager Instructions...signature/date: 5/28/08
✓ 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: 5-23-08 Other Explanation:
__ Verified re-[log][leach][extract][digest][analysis] (circle)
✓ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

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

Route	Distribution of Completed SDR	Route	Distribution of Completed SDR
__	X Initiator	__	__ Metals: Beegle
	X Lab General Manager: M. Taylor	__	__ Inorganic: Perrone
①	X Project Mgr: Stone/Johnson		__ GC/LC: Kiger
__	__ Data Management: Stilwell	②	X MS: Rychlak/Daley
__	__ Sample Prep: Beegle/Kiger	__	__ Log-in: Perry
		__	__ Admin: _____
		__	__ Other: _____

QA-105-A-0805

GLOSSARY

DATA QUALIFIERS

U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.

J = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.

E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.

D = Identifies all compounds identified in an analysis at a secondary dilution factor.

I = Interference.

NQ = Result qualitatively confirmed but not able to quantify.

A = Indicates that a TIC is a suspected aldol-condensation product.

N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.

X = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).

Y = Additional qualifiers used as required are explained in the case narrative.

GLOSSARY

ABBREVIATIONS

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

TECHNICAL FLAGS FOR MANUAL INTEGRATION

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

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

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

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

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

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

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

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

Report Date: 05/23/08 13:38

RFW Batch Number: 0805L032 Client: TNUHANFORD RC-088 K1196 Work Order: 11343606001 Page: 1a

	Cust ID:	J16M65	J16M65	J16M66	J16M66	J16M66	J16M66
Sample Information	RFW#:	001	001 DL	002	002 DL	002 MS	002 MS
	Matrix:	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
	D.F.:	4.00	100	8.00	100	8.00	100
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Nitrobenzene-d5	108 %	0 D %	95 %	0 D %	84 %	0 D %
	2-Fluorobiphenyl	89 %	0 D %	81 %	0 D %	80 %	0 D %
	Terphenyl-d14	96 %	0 D %	60 %	103 %	52 %	121 %
	Phenol-d5	106 %	0 D %	96 %	0 D %	92 %	0 D %
	2-Fluorophenol	105 %	77 %	97 %	0 D %	90 %	0 D %
	2,4,6-Tribromophenol	51 %	0 D %	72 %	80 %	75 %	0 D %
		fl	fl	fl	fl	fl	fl
Phenol		80000 U	2000000 U	5300 U	67000 U	99 %	0 D %
bis(2-Chloroethyl)ether		80000 U	2000000 U	5300 U	67000 U	88 %	0 D %
2-Chlorophenol		80000 U	2000000 U	5300 U	67000 U	89 %	0 D %
1,3-Dichlorobenzene		80000 U	2000000 U	5300 U	67000 U	69 %	0 D %
1,4-Dichlorobenzene		80000 U	2000000 U	5300 U	67000 U	66 %	0 D %
1,2-Dichlorobenzene		80000 U	2000000 U	5300 U	67000 U	72 %	0 D %
2-Methylphenol		80000 U	2000000 U	5300 U	67000 U	109 %	0 D %
2,2'-oxybis(1-Chloropropane)		80000 U	2000000 U	5300 U	67000 U	92 %	0 D %
3/4 Methylphenol		80000 U	2000000 U	10000	67000 U	57 * %	133 * %
N-Nitroso-di-n-propylamine		80000 U	2000000 U	5300 U	67000 U	119 %	0 D %
Hexachloroethane		80000 U	2000000 U	5300 U	67000 U	66 %	0 D %
Nitrobenzene		80000 U	2000000 U	5300 U	67000 U	87 %	0 D %
Isophorone		80000 U	2000000 U	5300 U	67000 U	106 %	0 D %
2-Nitrophenol		80000 U	2000000 U	5300 U	67000 U	33 * %	0 D %
2,4-Dimethylphenol		80000 U	2000000 U	1300 J	67000 U	77 %	0 D %
bis(2-Chloroethoxy)methane		80000 U	2000000 U	5300 U	67000 U	98 %	0 D %
2,4-Dichlorophenol		80000 U	2000000 U	5300 U	67000 U	85 %	0 D %
1,2,4-Trichlorobenzene		80000 U	2000000 U	5300 U	67000 U	69 %	0 D %
Naphthalene		8300 J	2000000 U	5300 U	67000 U	82 %	0 D %
4-Chloroaniline		80000 U	2000000 U	5300 U	67000 U	36 %	0 D %
Hexachlorobutadiene		80000 U	2000000 U	5300 U	67000 U	65 %	0 D %
4-Chloro-3-methylphenol		80000 U	2000000 U	5300 U	67000 U	88 %	0 D %
2-Methylnaphthalene		80000 U	2000000 U	5300 U	67000 U	81 %	0 D %
Hexachlorocyclopentadiene		80000 U	2000000 U	5300 U	67000 U	0 D %	0 D %
2,4,6-Trichlorophenol		80000 U	2000000 U	5300 U	67000 U	88 %	0 D %
2,4,5-Trichlorophenol		200000 U	5000000 U	13000 U	170000 U	88 %	0 D %

*= Outside of EPA CLP QC limits.

000000008

Cust ID:	J16M65		J16M65		J16M66		J16M66		J16M66		J16M66	
RFW#:	001		001 DL		002		002 DL		002 MS		002 MS	
2-Chloronaphthalene	80000	U	2000000	U	5300	U	67000	U	77	%	0 D	%
2-Nitroaniline	200000	U	5000000	U	13000	U	170000	U	110	%	0 D	%
Dimethylphthalate	80000	U	2000000	U	5300	U	67000	U	89	%	0 D	%
Acenaphthylene	80000	U	2000000	U	5300	U	67000	U	82	%	0 D	%
2,6-Dinitrotoluene	80000	U	2000000	U	5300	U	67000	U	78	%	0 D	%
3-Nitroaniline	200000	U	5000000	U	13000	U	170000	U	75	%	0 D	%
Acenaphthene	80000	U	2000000	U	5300	U	67000	U	79	%	0 D	%
2,4-Dinitrophenol	200000	U	5000000	U	13000	U	170000	U	0 D	%	0 D	%
4-Nitrophenol	200000	U	5000000	U	13000	U	170000	U	146 *	%	0 D	%
Dibenzofuran	80000	U	2000000	U	5300	U	67000	U	80	%	0 D	%
2,4-Dinitrotoluene	80000	U	2000000	U	5300	U	67000	U	71	%	0 D	%
Diethylphthalate	80000	U	2000000	U	5300	U	67000	U	80	%	0 D	%
4-Chlorophenyl-phenylether	80000	U	2000000	U	5300	U	67000	U	77	%	0 D	%
Fluorene	80000	U	2000000	U	5300	U	67000	U	75	%	0 D	%
4-Nitroaniline	200000	U	5000000	U	13000	U	170000	U	89	%	0 D	%
4,6-Dinitro-2-methylphenol	200000	U	5000000	U	13000	U	170000	U	0 D	%	0 D	%
N-Nitrosodiphenylamine (1)	80000	U	2000000	U	5300	U	67000	U	65	%	0 D	%
4-Bromophenyl-phenylether	80000	U	2000000	U	5300	U	67000	U	62	%	0 D	%
Hexachlorobenzene	80000	U	2000000	U	5300	U	67000	U	61	%	0 D	%
Pentachlorophenol	200000	U	5000000	U	13000	U	170000	U	80	%	0 D	%
Phenanthrene	4400	J	2000000	U	610	J	67000	U	86	%	0 D	%
Anthracene	80000	U	2000000	U	5300	U	67000	U	80	%	0 D	%
Carbazole	80000	U	2000000	U	5300	U	67000	U	79	%	0 D	%
Di-n-butylphthalate	10000	J	2000000	U	570	J	67000	U	69	%	121	%
Fluoranthene	80000	U	2000000	U	340	J	67000	U	85	%	84	%
Pyrene	80000	U	2000000	U	5300	U	67000	U	61	%	0 D	%
Butylbenzylphthalate	80000	U	2000000	U	5300	U	67000	U	86	%	216 *	%
3,3'-Dichlorobenzidine	80000	U	2000000	U	5300	U	67000	U	62	%	0 D	%
Benzo(a)anthracene	80000	U	2000000	U	5300	U	67000	U	86	%	0 D	%
Chrysene	80000	U	2000000	U	680	J	67000	U	81	%	93	%
bis(2-Ethylhexyl)phthalate	80000	U	2000000	U	5300	U	67000	U	90	%	96	%
Di-n-octyl phthalate	80000	U	2000000	U	2000	J	67000	U	15 *	%	137	%
Benzo(b)fluoranthene	80000	U	2000000	U	5300	U	67000	U	64	%	0 D	%
Benzo(k)fluoranthene	80000	U	2000000	U	5300	U	67000	U	64	%	0 D	%
Benzo(a)pyrene	80000	U	2000000	U	5300	U	67000	U	74	%	0 D	%
Indeno(1,2,3-cd)pyrene	80000	U	2000000	U	5300	U	67000	U	86	%	0 D	%
Dibenz(a,h)anthracene	80000	U	2000000	U	5300	U	67000	U	89	%	0 D	%
Benzo(g,h,i)perylene	80000	U	2000000	U	5300	U	67000	U	87	%	0 D	%

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

0000000

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

Report Date: 05/23/08 13:38

RFW Batch Number: 0805L032 Client: TNUHANFORD RC-088 K1196 Work Order: 11343606001 Page: 2a

000000010

	Cust ID:	J16M66	J16M66	J16M67	J16M68	SBLKUO	SBLKUO BS
Sample Information	RFW#:	002 MSD	002 MSD	003	004	08LE0219-MB1	08LE0219-MB1
	Matrix:	SOLID	SOLID	SOLID	SOLID	SOIL	SOIL
	D.F.:	8.00	100	4.00	1.00	1.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Nitrobenzene-d5	88 %	0 D %	75 %	67 %	67 %	68 %
	2-Fluorobiphenyl	81 %	0 D %	88 %	66 %	73 %	73 %
	Terphenyl-d14	63 %	0 D %	77 %	101 %	89 %	71 %
	Phenol-d5	96 %	0 D %	95 %	75 %	75 %	66 %
	2-Fluorophenol	89 %	0 D %	87 %	52 %	70 %	61 %
	2,4,6-Tribromophenol	78 %	0 D %	85 %	49 %	47 %	65 %
Phenol		109 %	0 D %	80000 U	670 U	330 U	61 %
bis(2-Chloroethyl)ether		93 %	0 D %	80000 U	670 U	330 U	56 %
2-Chlorophenol		94 %	0 D %	80000 U	670 U	330 U	61 %
1,3-Dichlorobenzene		77 %	0 D %	80000 U	670 U	330 U	67 %
1,4-Dichlorobenzene		74 %	0 D %	80000 U	670 U	330 U	64 %
1,2-Dichlorobenzene		79 %	0 D %	80000 U	670 U	330 U	66 %
2-Methylphenol		111 %	0 D %	80000 U	670 U	330 U	60 %
2,2'-oxybis(1-Chloropropane)		98 %	0 D %	80000 U	670 U	330 U	59 %
3/4 Methylphenol		157 * %	117 %	80000 U	81 J	330 U	59 * %
N-Nitroso-di-n-propylamine		117 %	0 D %	80000 U	670 U	330 U	80 %
Hexachloroethane		70 %	0 D %	80000 U	670 U	330 U	65 %
Nitrobenzene		90 %	0 D %	80000 U	670 U	330 U	61 %
Isophorone		111 %	104 %	80000 U	670 U	330 U	72 %
2-Nitrophenol		35 * %	0 D %	80000 U	670 U	330 U	67 %
2,4-Dimethylphenol		86 %	0 D %	80000 U	670 U	330 U	56 %
bis(2-Chloroethoxy)methane		96 %	0 D %	80000 U	670 U	330 U	66 %
2,4-Dichlorophenol		84 %	0 D %	80000 U	670 U	330 U	69 %
1,2,4-Trichlorobenzene		77 %	0 D %	80000 U	670 U	330 U	66 %
Naphthalene		87 %	0 D %	80000 U	670 U	330 U	65 %
4-Chloroaniline		44 %	0 D %	80000 U	670 U	330 U	42 %
Hexachlorobutadiene		74 %	0 D %	80000 U	670 U	330 U	79 %
4-Chloro-3-methylphenol		96 %	0 D %	80000 U	670 U	330 U	70 %
2-Methylnaphthalene		90 %	0 D %	80000 U	670 U	330 U	68 %
Hexachlorocyclopentadiene		11 * %	0 D %	80000 U	670 U	330 U	70 %
2,4,6-Trichlorophenol		91 %	0 D %	80000 U	670 U	330 U	76 %
2,4,5-Trichlorophenol		93 %	0 D %	200000 U	1700 U	830 U	76 %

*= Outside of EPA CLP QC limits.

RFW Batch Number: 0805L032 Client: TNUHANFORD RC-088 K1196 Work Order: 11343606001 Page: 2b

Cust ID:	J16M66	J16M66	J16M67	J16M68	SBLKUO	SBLKUO BS
RFW#:	002 MSD	002 MSD	003	004	08LE0219-MB1	08LE0219-MB1
2-Chloronaphthalene	82 %	0 D %	80000 U	670 U	330 U	73 %
2-Nitroaniline	114 %	0 D %	200000 U	1700 U	830 U	77 %
Dimethylphthalate	82 %	0 D %	80000 U	670 U	330 U	74 %
Acenaphthylene	90 %	0 D %	80000 U	670 U	330 U	72 %
2,6-Dinitrotoluene	72 %	0 D %	80000 U	670 U	330 U	61 %
3-Nitroaniline	90 %	0 D %	200000 U	1700 U	830 U	68 %
Acenaphthene	85 %	0 D %	80000 U	670 U	330 U	70 %
2,4-Dinitrophenol	0 D %	0 D %	200000 U	1700 U	830 U	15 * %
4-Nitrophenol	137 %	0 D %	200000 U	1700 U	830 U	84 %
Dibenzofuran	85 %	0 D %	80000 U	670 U	330 U	72 %
2,4-Dinitrotoluene	67 %	0 D %	80000 U	670 U	330 U	96 %
Diethylphthalate	77 %	0 D %	80000 U	670 U	330 U	73 %
4-Chlorophenyl-phenylether	79 %	88 %	80000 U	670 U	330 U	70 %
Fluorene	88 %	101 %	80000 U	670 U	330 U	72 %
4-Nitroaniline	91 %	0 D %	200000 U	1700 U	830 U	90 %
4,6-Dinitro-2-methylphenol	0 D %	0 D %	200000 U	1700 U	830 U	23 * %
N-Nitrosodiphenylamine (1)	67 %	84 %	80000 U	670 U	330 U	56 %
4-Bromophenyl-phenylether	65 %	0 D %	80000 U	670 U	330 U	61 %
Hexachlorobenzene	81 %	104 %	80000 U	670 U	330 U	71 %
Pentachlorophenol	86 %	0 D %	200000 U	1700 U	830 U	40 %
Phenanthrene	98 %	88 %	80000 U	670 U	330 U	71 %
Anthracene	89 %	0 D %	80000 U	670 U	330 U	75 %
Carbazole	93 %	0 D %	80000 U	670 U	330 U	74 %
Di-n-butylphthalate	79 %	92 %	5800 J	100 J	330 U	71 %
Fluoranthene	102 %	0 D %	80000 U	670 U	330 U	78 %
Pyrene	83 %	105 %	80000 U	670 U	330 U	67 %
Butylbenzylphthalate	77 %	146 %	80000 U	670 U	330 U	68 %
3,3'-Dichlorobenzidine	82 %	0 D %	80000 U	670 U	330 U	55 %
Benzo(a)anthracene	87 %	0 D %	80000 U	670 U	330 U	68 %
Chrysene	85 %	86 %	80000 U	670 U	330 U	70 %
bis(2-Ethylhexyl)phthalate	86 %	0 D %	14000 JB	190 JB	34 J	68 %
Di-n-octyl phthalate	20 * %	0 D %	53000 J	670 U	330 U	69 %
Benzo(b)fluoranthene	45 * %	0 D %	80000 U	670 U	330 U	73 %
Benzo(k)fluoranthene	58 %	88 %	80000 U	670 U	330 U	67 %
Benzo(a)pyrene	75 %	111 %	80000 U	670 U	330 U	69 %
Indeno(1,2,3-cd)pyrene	88 %	0 D %	80000 U	670 U	330 U	69 %
Dibenz(a,h)anthracene	91 %	0 D %	80000 U	670 U	330 U	66 %
Benzo(g,h,i)perylene	95 %	86 %	80000 U	670 U	330 U	66 %

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

000000011

000000012

Cust ID: SBLKUO BSD

Sample Information

RFW#: 08LE0219-MB1
Matrix: SOIL
D.F.: 1.00
Units: ug/Kg

Surrogate Recovery	Nitrobenzene-d5	75	%
	2-Fluorobiphenyl	80	%
	Terphenyl-d14	88	%
	Phenol-d5	71	%
	2-Fluorophenol	70	%
	2,4,6-Tribromophenol	78	%

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Phenol	71	%
bis(2-Chloroethyl)ether	67	%
2-Chlorophenol	73	%
1,3-Dichlorobenzene	78	%
1,4-Dichlorobenzene	75	%
1,2-Dichlorobenzene	80	%
2-Methylphenol	72	%
2,2'-oxybis(1-Chloropropane)	67	%
3/4 Methylphenol	68	%
N-Nitroso-di-n-propylamine	79	%
Hexachloroethane	70	%
Nitrobenzene	80	%
Isophorone	87	%
2-Nitrophenol	79	%
2,4-Dimethylphenol	62	%
bis(2-Chloroethoxy)methane	76	%
2,4-Dichlorophenol	84	%
1,2,4-Trichlorobenzene	80	%
Naphthalene	80	%
4-Chloroaniline	45	%
Hexachlorobutadiene	93	%
4-Chloro-3-methylphenol	83	%
2-Methylnaphthalene	82	%
Hexachlorocyclopentadiene	81	%
2,4,6-Trichlorophenol	88	%
2,4,5-Trichlorophenol	89	%

*= Outside of EPA CLP QC limits.

Cust ID: SBLKUO BSD

RFW#: 08LE0219-MB1

2-Chloronaphthalene	80	%
2-Nitroaniline	90	%
Dimethylphthalate	86	%
Acenaphthylene	83	%
2,6-Dinitrotoluene	76	%
3-Nitroaniline	81	%
Acenaphthene	81	%
2,4-Dinitrophenol	20	%
4-Nitrophenol	92	%
Dibenzofuran	86	%
2,4-Dinitrotoluene	113	%
Diethylphthalate	88	%
4-Chlorophenyl-phenylether	84	%
Fluorene	83	%
4-Nitroaniline	98	%
4,6-Dinitro-2-methylphenol	32 *	%
N-Nitrosodiphenylamine (1)	69	%
4-Bromophenyl-phenylether	73	%
Hexachlorobenzene	86	%
Pentachlorophenol	63	%
Phenanthrene	88	%
Anthracene	92	%
Carbazole	92	%
Di-n-butylphthalate	90	%
Fluoranthene	96	%
Pyrene	88	%
Butylbenzylphthalate	92	%
3,3'-Dichlorobenzidine	69	%
Benzo(a)anthracene	89	%
Chrysene	92	%
bis(2-Ethylhexyl)phthalate	93	%
Di-n-octyl phthalate	95	%
Benzo(b)fluoranthene	87	%
Benzo(k)fluoranthene	84	%
Benzo(a)pyrene	82	%
Indeno(1,2,3-cd)pyrene	80	%
Dibenz(a,h)anthracene	81	%
Benzo(g,h,i)perylene	79	%

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

000000013

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16M65

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

Client: TNUHANFORD RC-088 K1196

Matrix: (soil/water) SOLID

Lab Sample ID: 0805L032-001

Sample wt/vol: 0.500 (g/mL) G

Lab File ID: C051611

Level: (low/med) LOW

Date Received: 05/01/08

% Moisture: 100 decanted: (Y/N)__

Date Extracted: 05/05/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/16/08

Injection Volume: 2.0(uL)

Dilution Factor: 4.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	5.836	300000	JA
2.	UNKNOWN	6.431	9000000	J
3.	UNKNOWN	8.859	400000	J
4.	ALKANE	9.789	500000	J
5.	ALKANE	11.098	300000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16M65DL

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

Client: TNUHANFORD RC-088 K1196

Matrix: (soil/water) SOLID

Lab Sample ID: 0805L032-001 DL

Sample wt/vol: 0.500 (g/mL) G

Lab File ID: N052108

Level: (low/med) LOW

Date Received: 05/01/08

% Moisture: 100 decanted: (Y/N)__

Date Extracted: 05/05/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/21/08

Injection Volume: 2.0(uL)

Dilution Factor: 100

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.596	10000000	J
2.	ALKANE	23.554	2000000	J
3.	ALKANE	24.949	2000000	J
4.	UNKNOWN	28.505	2000000	J
5.	UNKNOWN	31.460	2000000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16M66

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

Client: TNUHANFORD RC-088 K1196

Matrix: (soil/water) SOLID

Lab Sample ID: 0805L032-002

Sample wt/vol: 15.0 (g/mL) G

Lab File ID: C051613

Level: (low/med) LOW

Date Received: 05/01/08

% Moisture: 100 decanted: (Y/N)__

Date Extracted: 05/05/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/16/08

Injection Volume: 2.0(uL)

Dilution Factor: 8.00

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	6.380	300000	J
2.	TRICHLOROBIPHENYL	21.063	50000	J
3.	ALKANE	21.984	60000	J
4.	UNKNOWN	35.178	60000	J
5.	UNKNOWN	36.513	100000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16M66DL

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

Client: TNUHANFORD RC-088 K1196

Matrix: (soil/water) SOLID

Lab Sample ID: 0805L032-002 DL

Sample wt/vol: 15.0 (g/mL) G

Lab File ID: N052109

Level: (low/med) LOW

Date Received: 05/01/08

% Moisture: 100 decanted: (Y/N)__

Date Extracted: 05/05/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/21/08

Injection Volume: 2.0(uL)

Dilution Factor: 100

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.587	400000	J
2.	TRISMETHYLPHENYLPHOSPHORICAC	28.008	200000	J
3.	TRISMETHYLPHRNYLPHOSPHORICAC	28.436	200000	J
4.	TRISMETHYLPHENYLPHOSPHORICAC	28.880	100000	J
5.	UNKNOWN	29.560	100000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16M67

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

Client: TNUHANFORD RC-088 K1196

Matrix: (soil/water) SOLID

Lab Sample ID: 0805L032-003

Sample wt/vol: 0.500 (g/mL) G

Lab File ID: N051009

Level: (low/med) LOW

Date Received: 05/01/08

% Moisture: 100 decanted: (Y/N)__

Date Extracted: 05/05/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/11/08

Injection Volume: 2.0(uL)

Dilution Factor: 4.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.711	7000000	J
2.	UNKNOWN	30.668	3000000	J
3.	UNKNOWN	31.305	3000000	J
4.	UNKNOWN	32.255	1000000	J
5.	UNKNOWN	35.132	1000000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J16M68

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

Client: TNUHANFORD RC-088 K1196

Matrix: (soil/water) SOLID

Lab Sample ID: 0805L032-004

Sample wt/vol: 15.0 (g/mL) G

Lab File ID: N052107

Level: (low/med) LOW

Date Received: 05/01/08

% Moisture: 100 decanted: (Y/N)__

Date Extracted: 05/05/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/21/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	7.851	200000	J
2.	ADIPATE	21.500	10000	J
3.	ADIPATE	25.021	10000	J
4.	ADIPATE	25.361	9000	J
5.	UNKNOWN	29.338	10000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKUO

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

Client: TNUHANFORD RC-088 K1196

Matrix: (soil/water) SOIL

Lab Sample ID: 08LE0219-MB1

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

Lab File ID: N050805

Level: (low/med) LOW

Date Received: 05/05/08

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

Date Extracted: 05/05/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 05/08/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	6.811	200	J
2.	ALDOL CONDENSATE	9.096	800	JA
3.	UNKNOWN	21.712	300	J
4.	UNKNOWN	40.798	100	J
5.	UNKNOWN	41.479	100	J

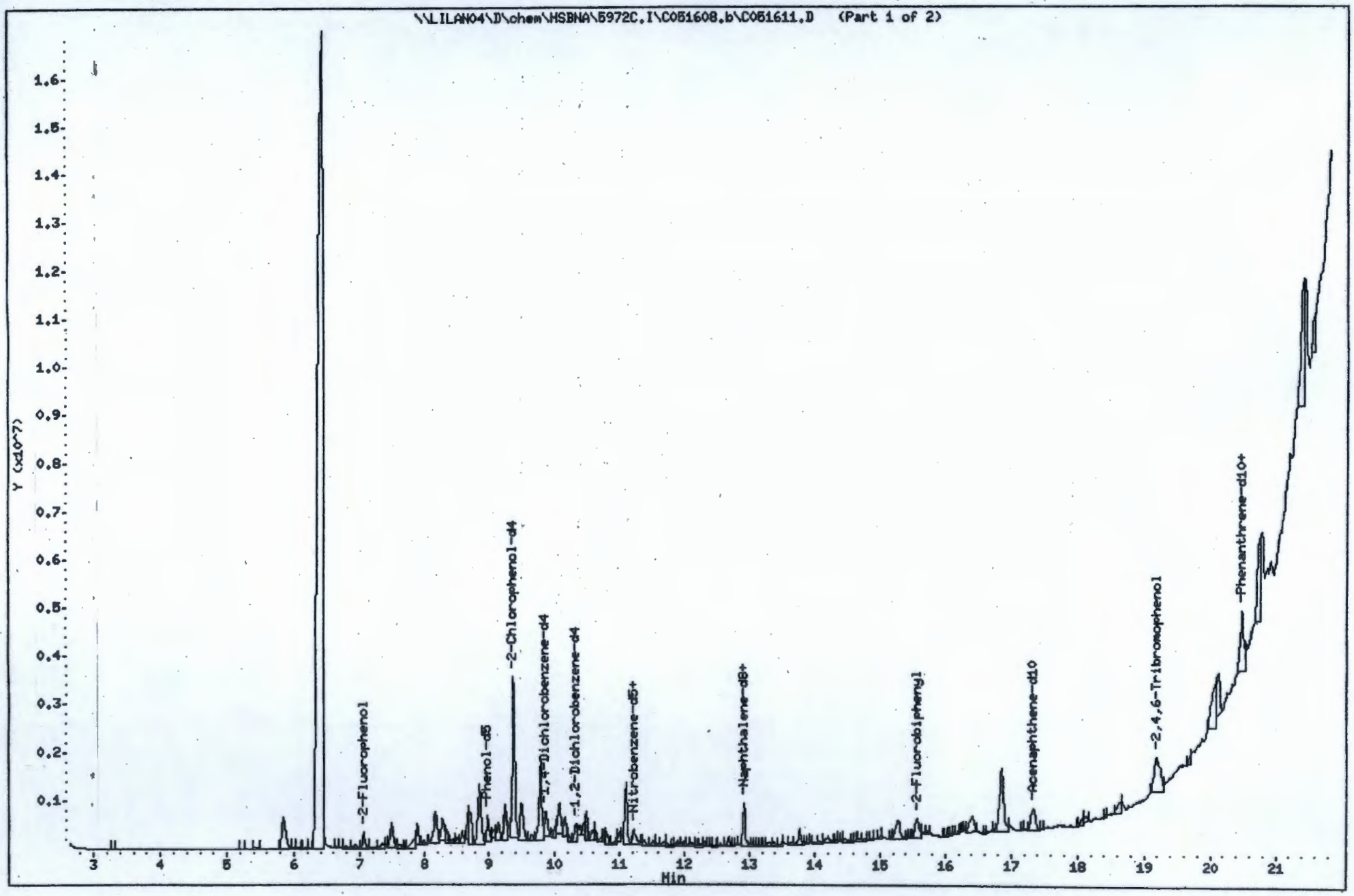
Data File: \\LILAN04\D\chem\HSBNA\5972C.I\C051608.b\C051611.D
Date : 16-MAY-2008 21:23
Client ID:
Sample Info: 0805L032-001 C051601 IX

Instrument: 5972C.i

Operator:
Column diameter: 0.25

Column phase: rtx-5

000000021

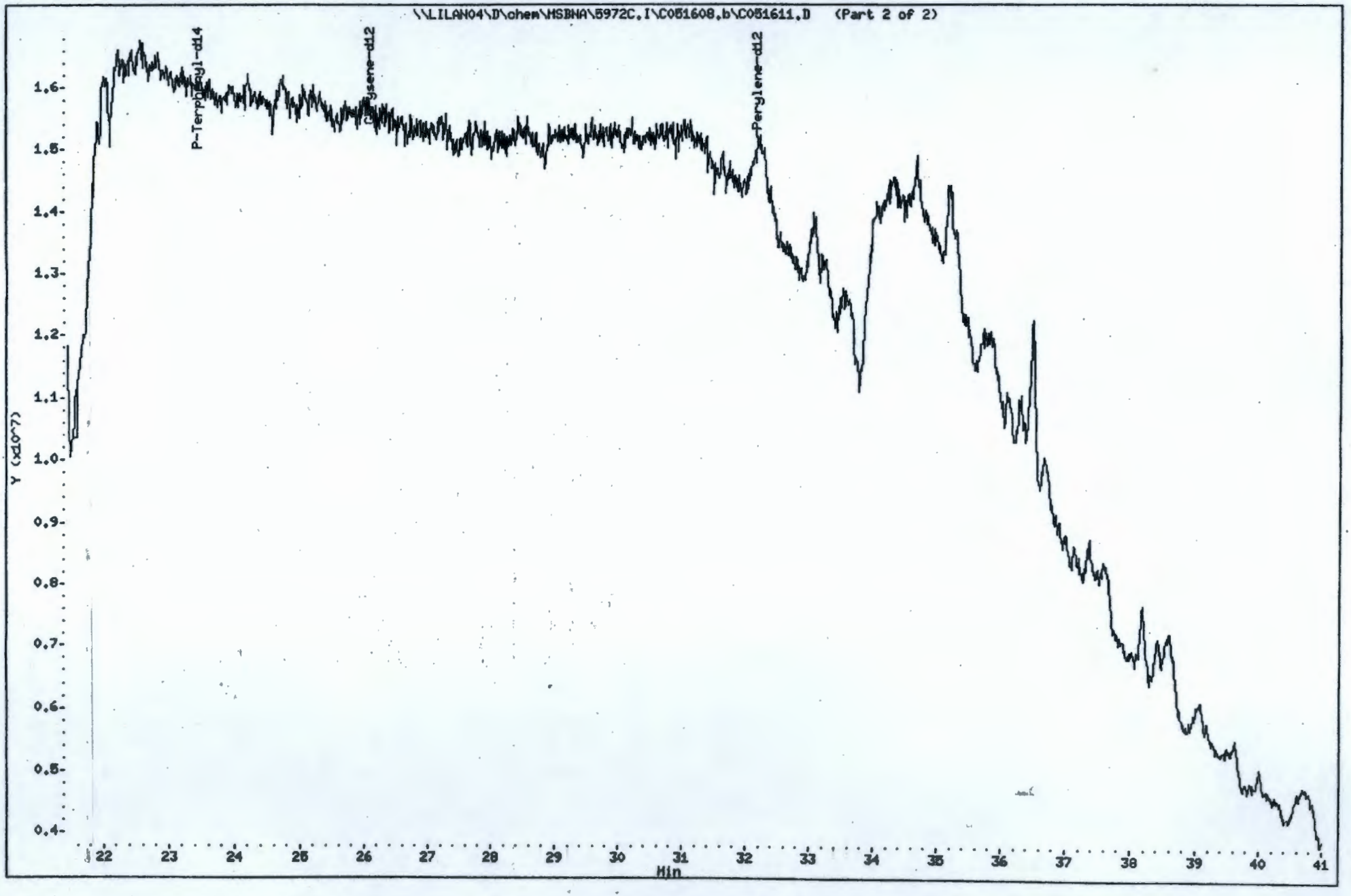


Data File: \\LILAN04\D\chem\MSBNA\5972C.I\C051608.b\C051611.D
Date : 16-MAY-2008 21:23
Client ID:
Sample Info: 0805L032-001 C051601 IX

Instrument: 5972C.i

Operator:
Column diameter: 0.25

Column phase: rtx-5



000000022

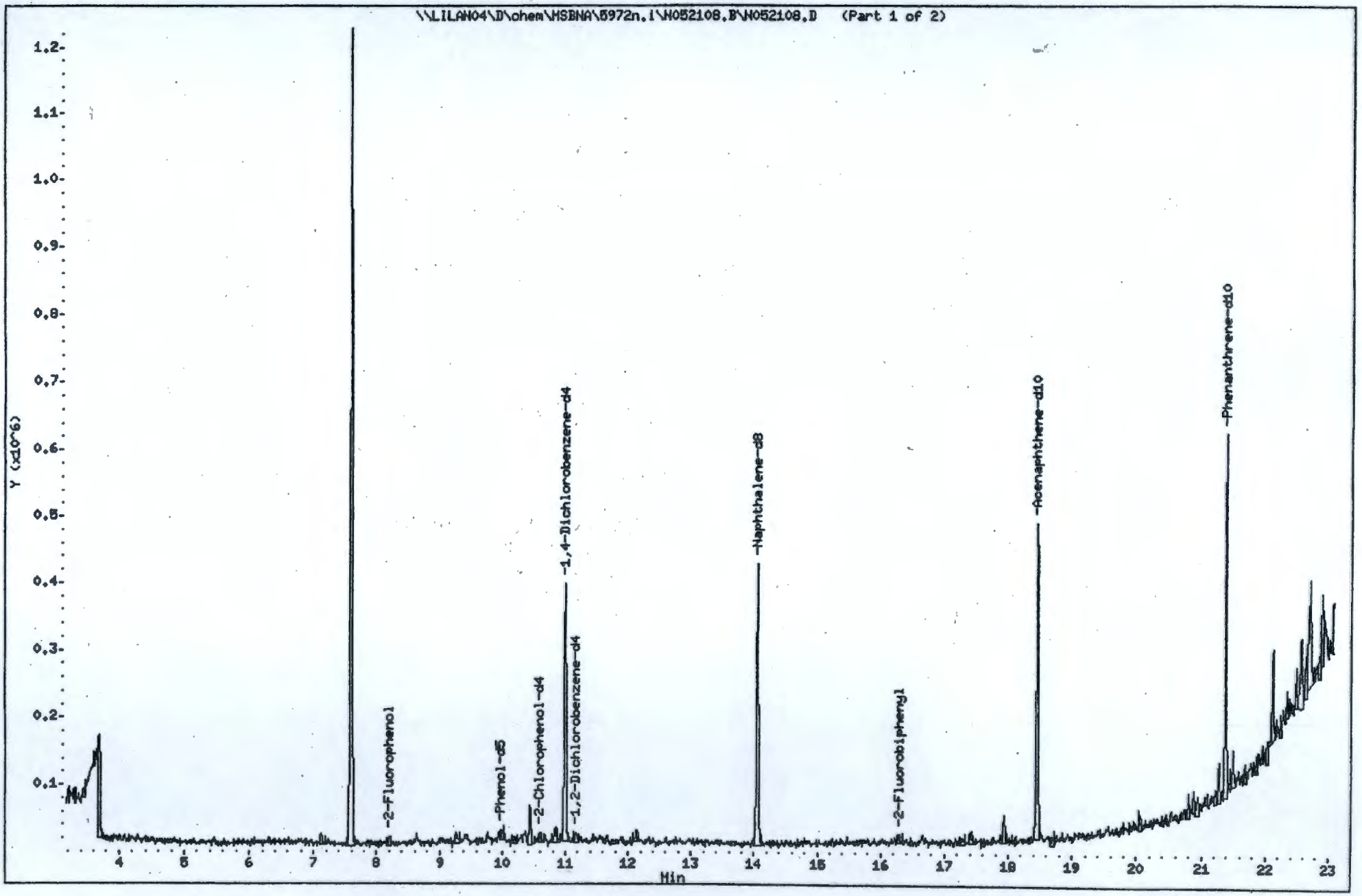
Data File: \\LILAN04\D\chem\MSBNA\5972n.i\N052108.B\N052108.D
Date : 21-MAY-2008 20:57
Client ID:
Sample Info: 0805L032-001 N052101 25X

Instrument: 5972n.i

Operator:

Column phase: rtx-5

Column diameter: 0.25

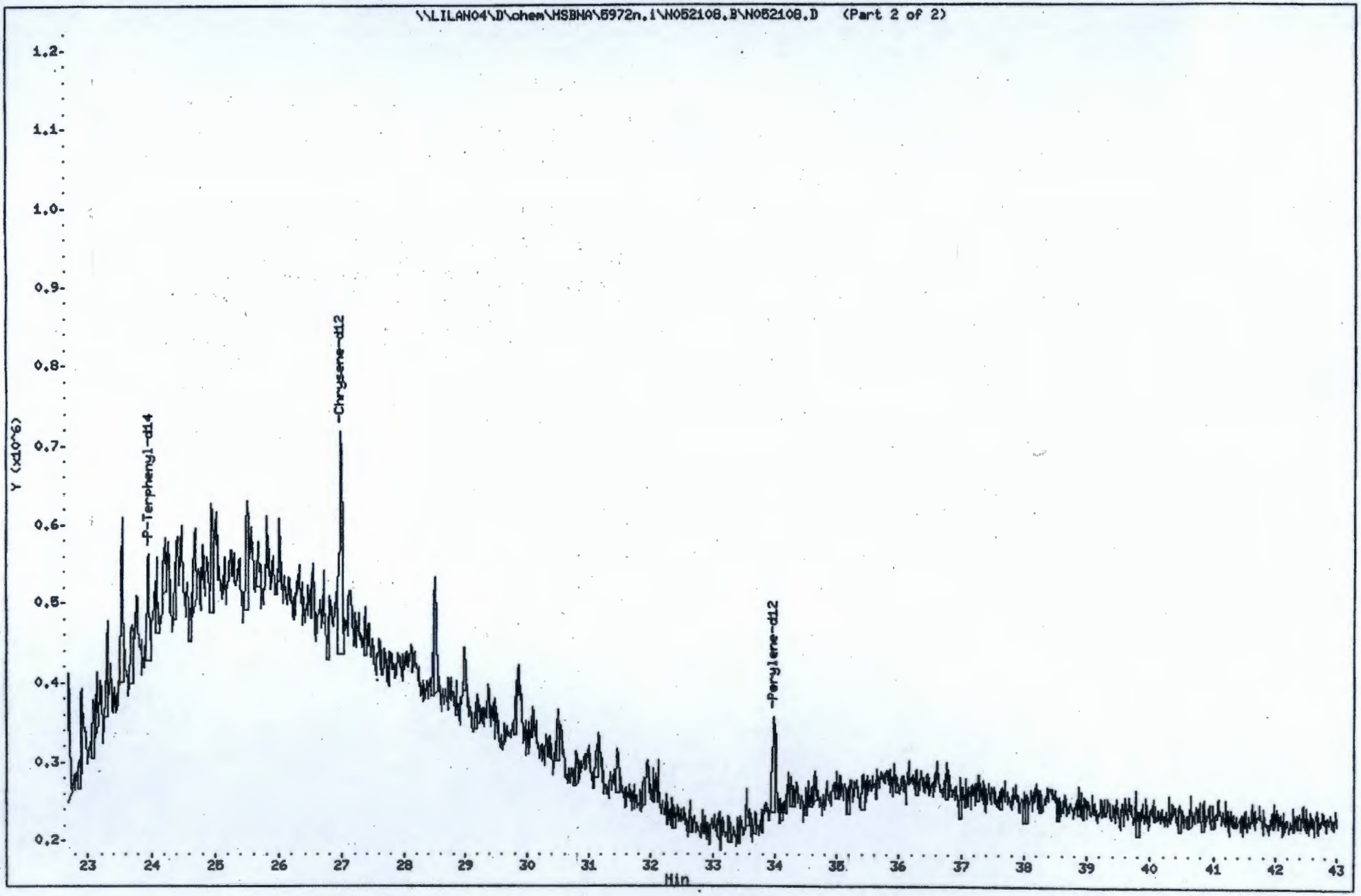


000000023

Data File: \\LILAN04\D\chem\HSBNA\5972n.i\N052108.B\N052108.D
Date : 21-MAY-2008 20:57
Client ID:
Sample Info: 0805L032-001 N052101 25X

Instrument: 5972n.i

Operator:
Column phase: rtx-5
Column diameter: 0.25



000000024

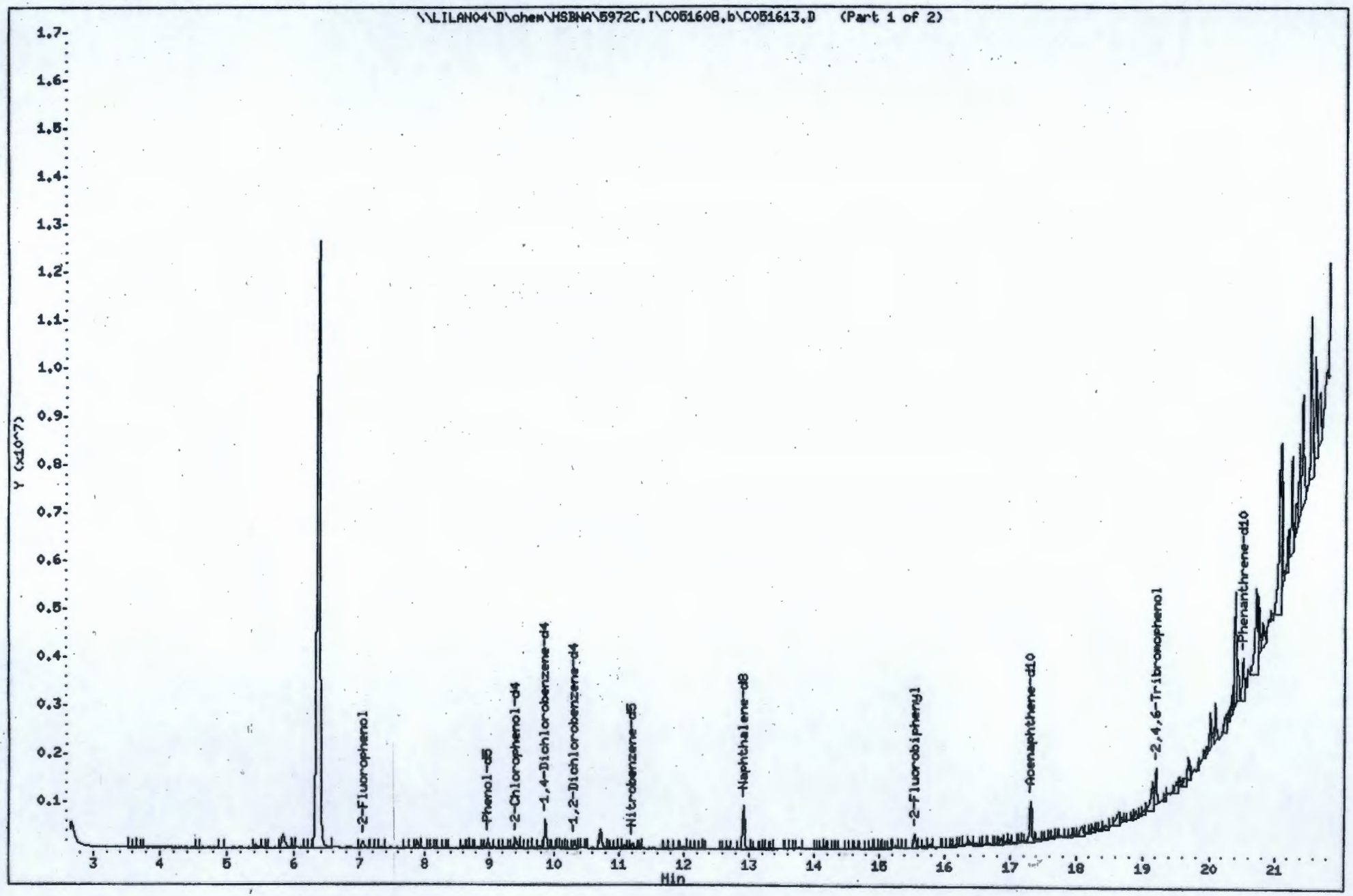
Data File: \\LILAN04\D\chem\HSBNA\5972C.I\C051608.b\C051613.D
Date : 16-MAY-2008 22:59
Client ID:
Sample Info: 0805L032-002 C051601 2X

Instrument: 5972C.i

Operator:

Column phase: rtx-5

Column diameter: 0.25

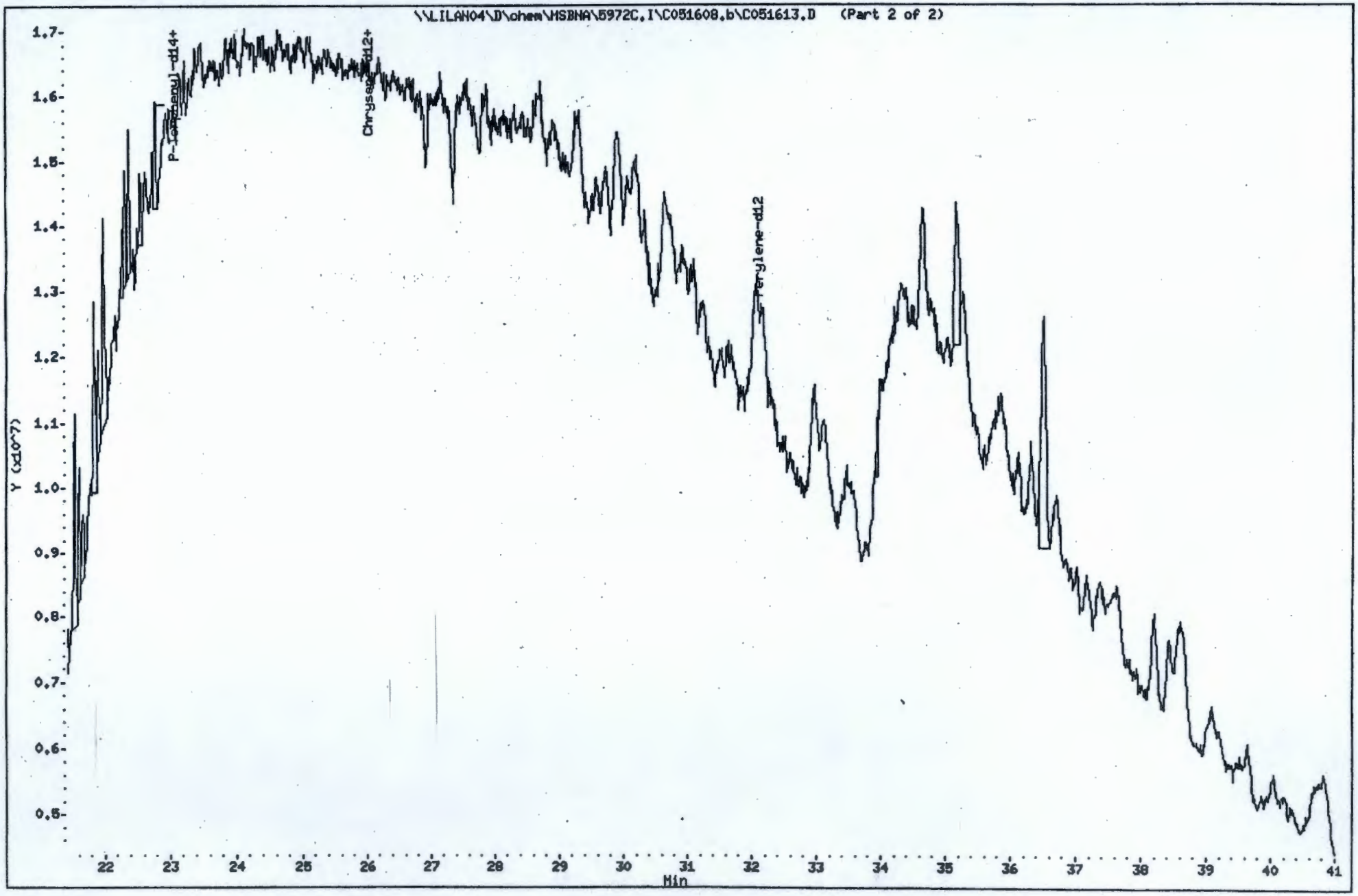


000000025

Data File: \\LILAN04\D\chem\MSBNA\5972C.I\C051608.b\C051613.D
Date : 16-MAY-2008 22:59
Client ID:
Sample Info: 0805L032-002 C051601 2X

Instrument: 5972C.i

Operator:
Column phase: rtx-5
Column diameter: 0.25



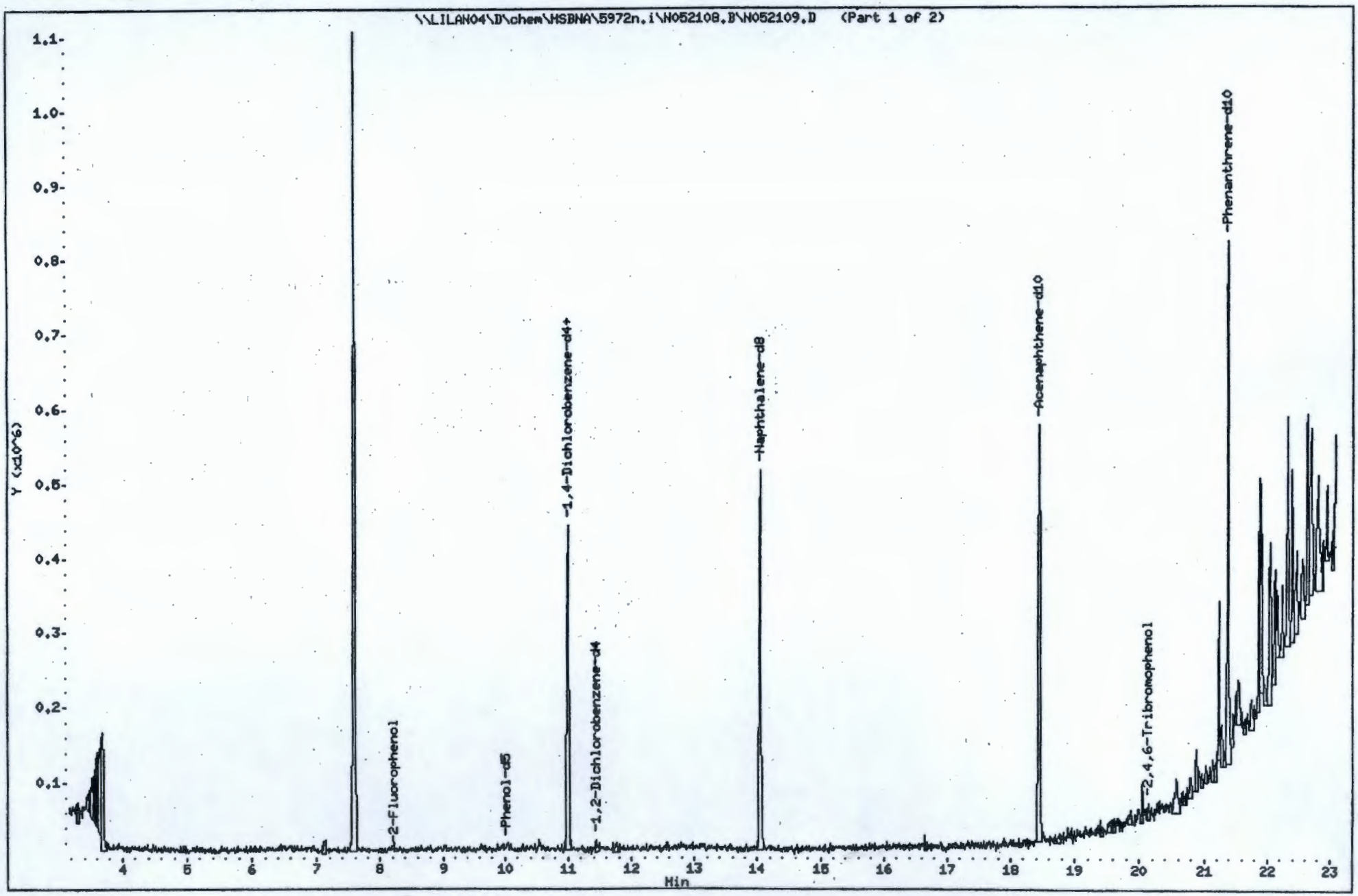
000000026

Data File: \\LILAN04\D\chem\MSBNA\5972n.i\N052108.B\N052109.D
Date : 21-MAY-2008 21:48
Client ID:
Sample Info: 0805L032-002 N052101 25X

Instrument: 5972n.i

Operator:
Column diameter: 0.25

Column phase: rtx-5



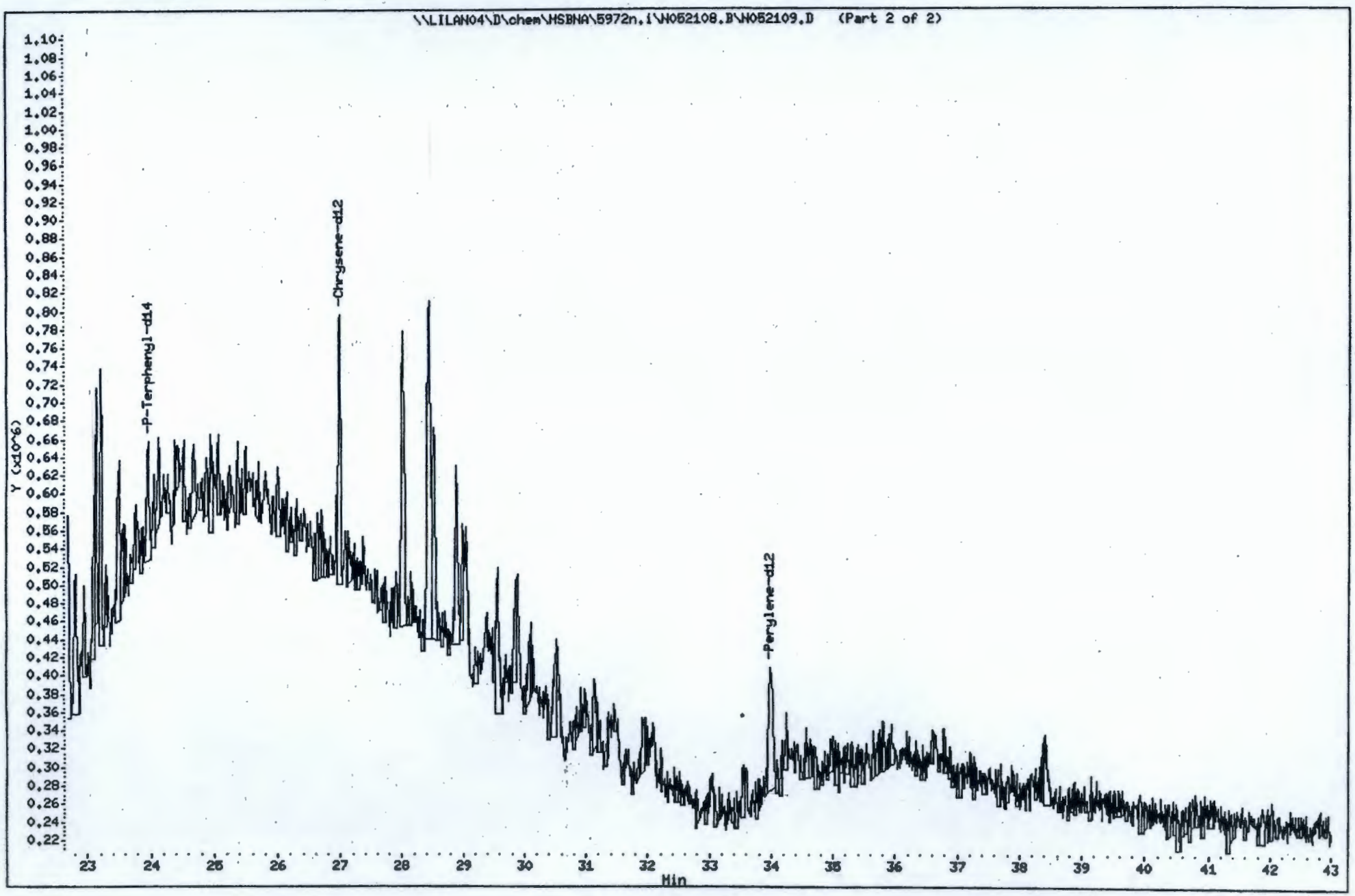
000000027

Data File: \\LILAN04\D\chem\HSBNA\5972n.i\N052108.B\N052109.D
Date : 21-MAY-2008 21:48
Client ID:
Sample Info: 0805L032-002 N052101 25X

Instrument: 5972n.i

Operator:
Column diameter: 0.25

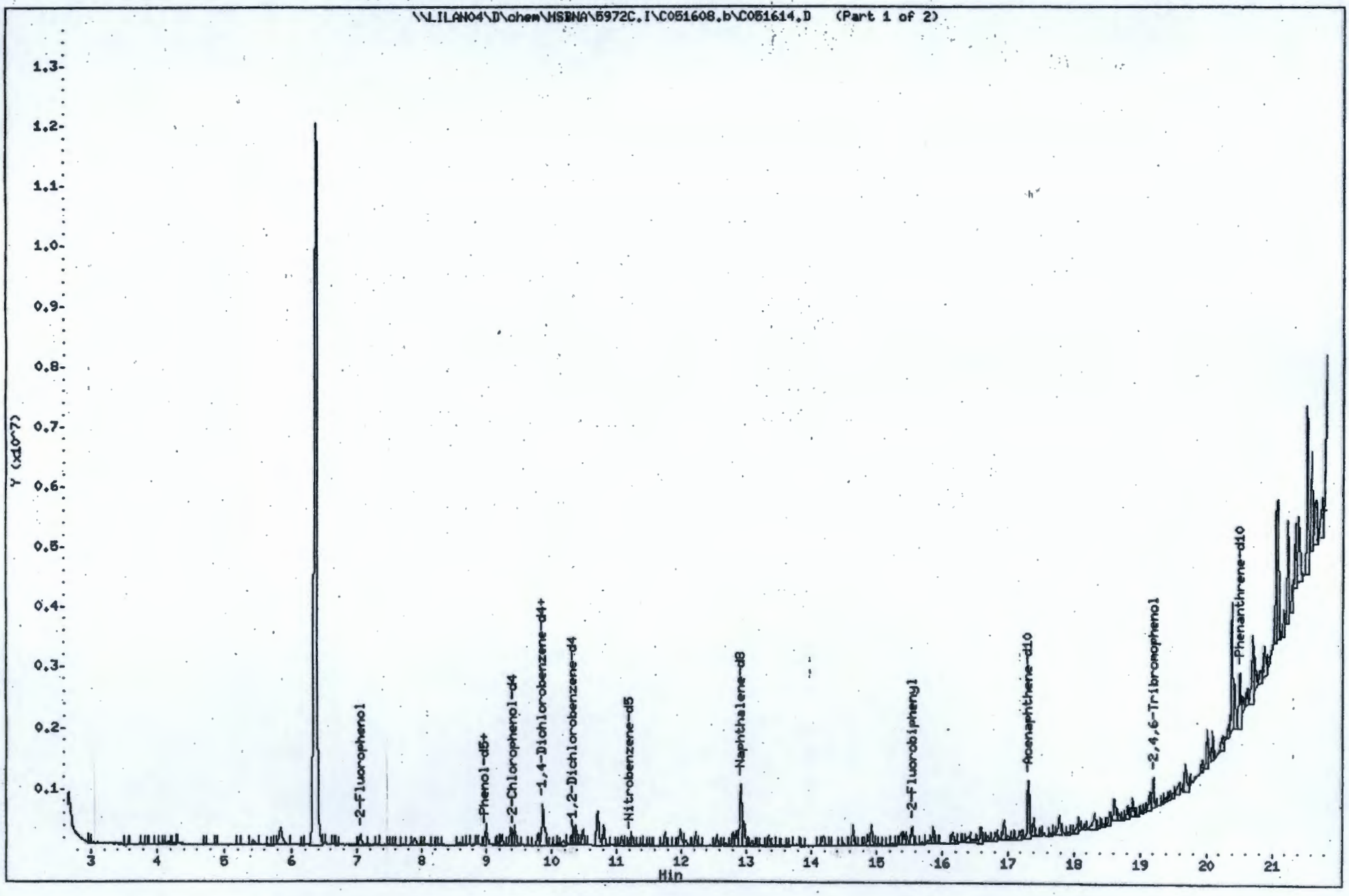
Column phase: rtx-5



000000028

Data File: \\LILAN04\D\chem\MSBNA\5972C.I\C051608.b\C051614.D
Date : 16-MAY-2008 23:47
Client ID:
Sample Info: 0805L032-002S C051601 2X

Instrument: 5972C.i
Operator:
Column phase: rtx-5
Column diameter: 0.25



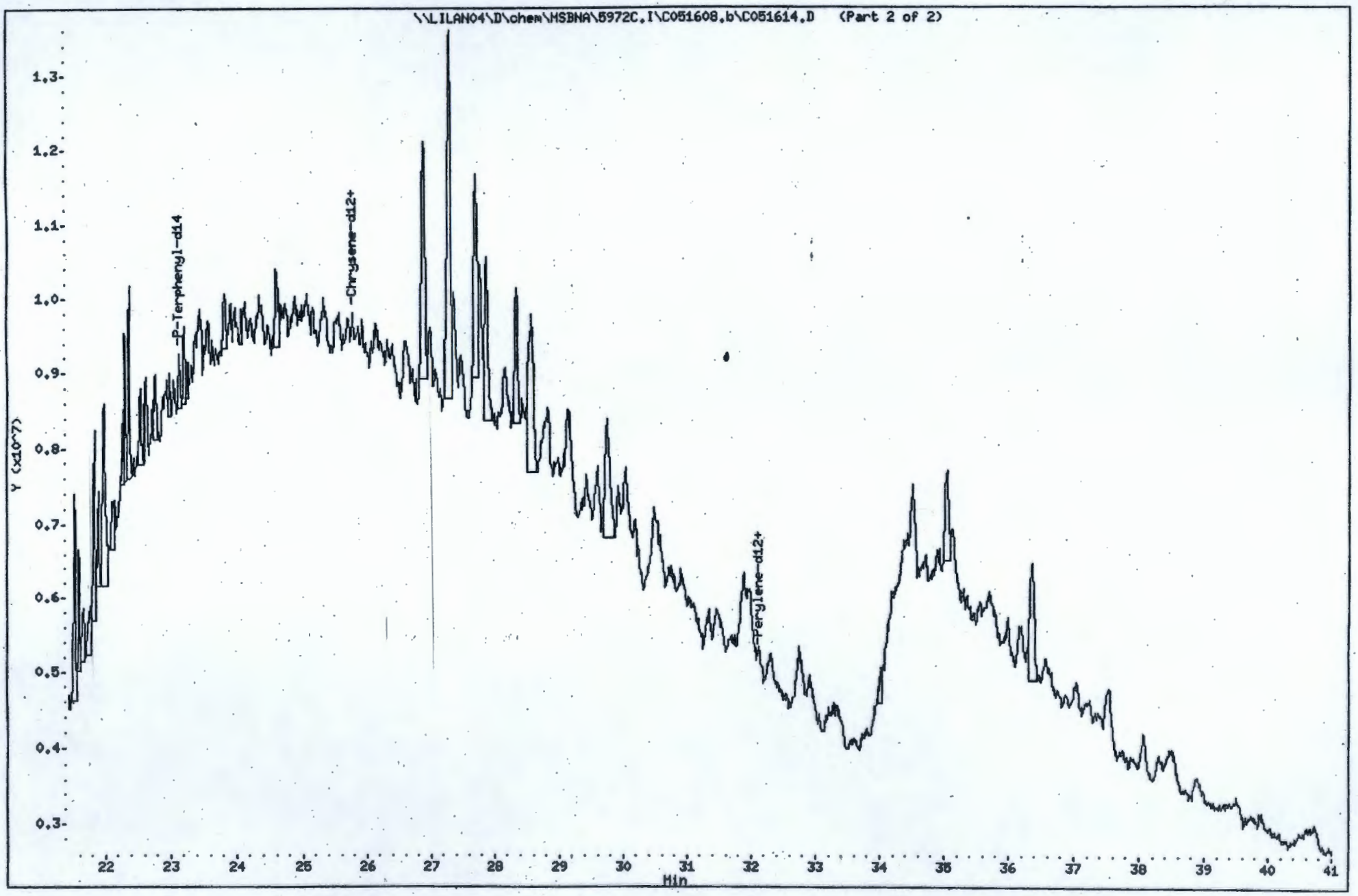
0000000029

Data File: \\LILAN04\D\chem\MSBNA\5972C.I\C051608.b\C051614.D
Date : 16-MAY-2008 23:47
Client ID:
Sample Info: 0805L032-002S C051601 2X

Column phase: rtx-5

Instrument: 5972C.i

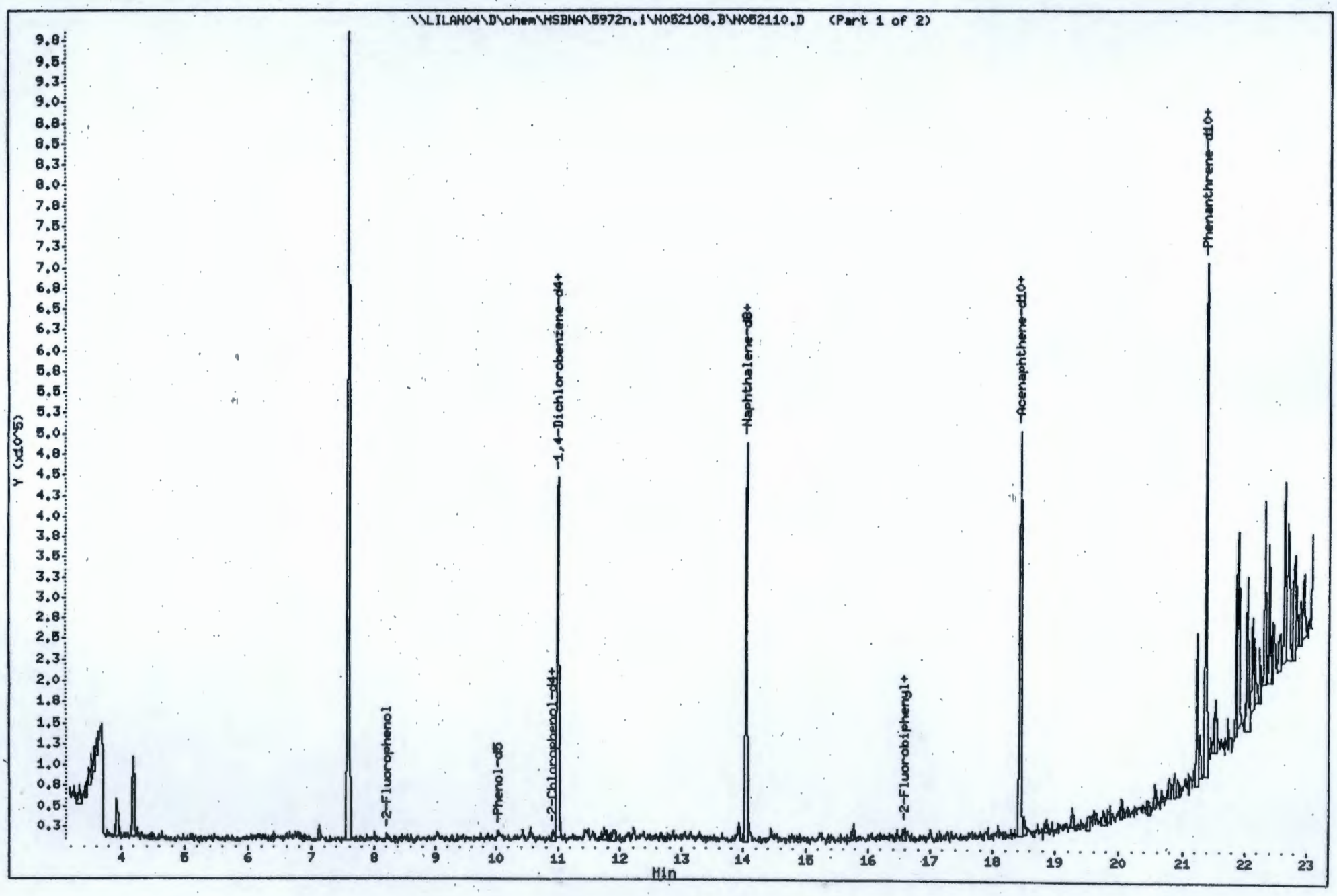
Operator:
Column diameter: 0.25



000000030

Data File: \\LILAN04\D\chem\HSBNA\5972n.i\N052108.B\N052110.D
Date : 21-MAY-2008 22:39
Client ID:
Sample Info: 0805L032-002S N052101 25X

Instrument: 5972n.i
Operator:
Column phase: rtx-5
Column diameter: 0.25



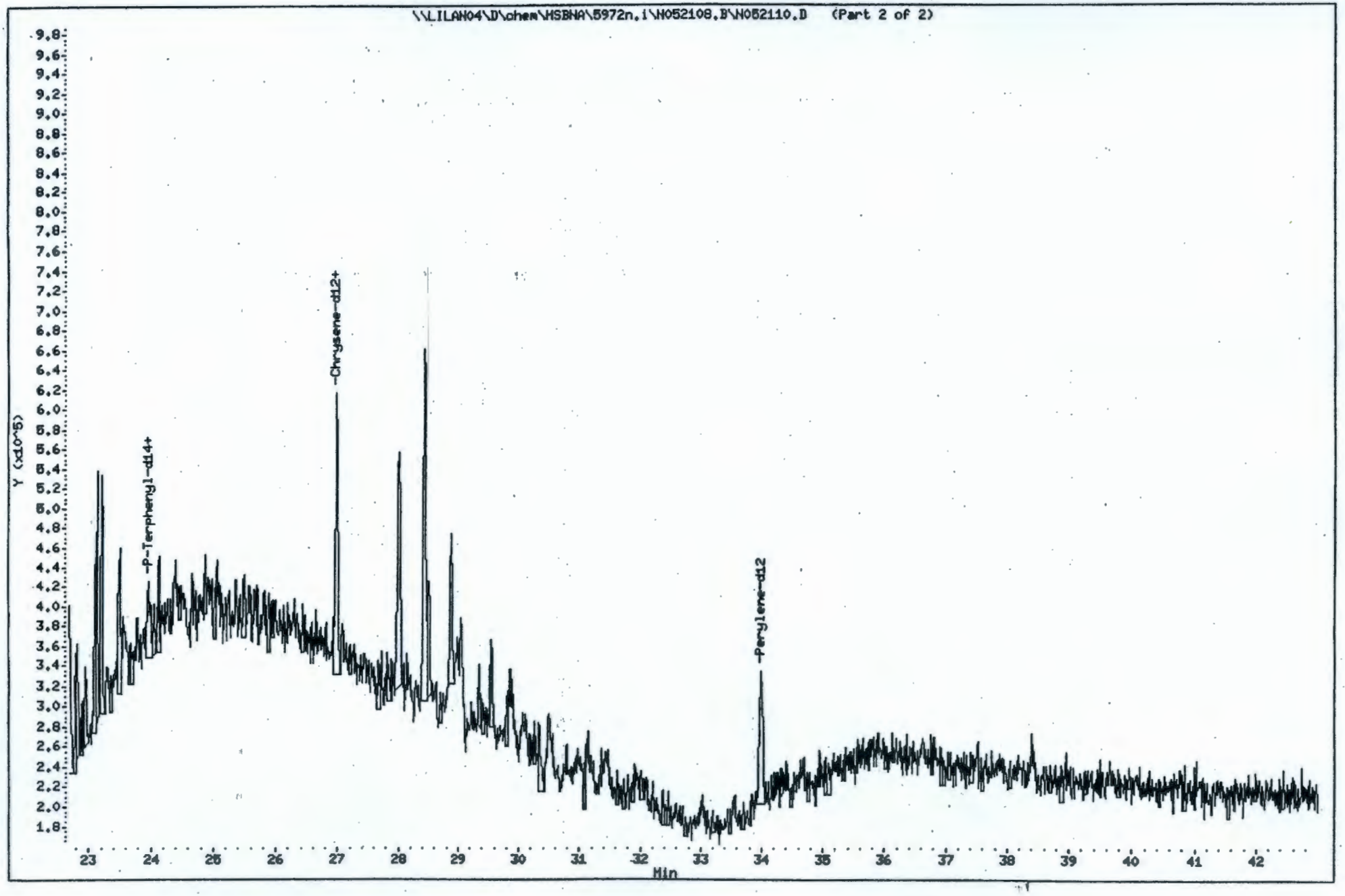
0000000031

Data File: \\LILAN04\D\chem\MSBNA\5972n.i\N052108.B\N052110.D
Date : 21-MAY-2008 22:39
Client ID:
Sample Info: 0805L032-002S N052101 25X

Column phase: rtx-5

Instrument: 5972n.i

Operator:
Column diameter: 0.25

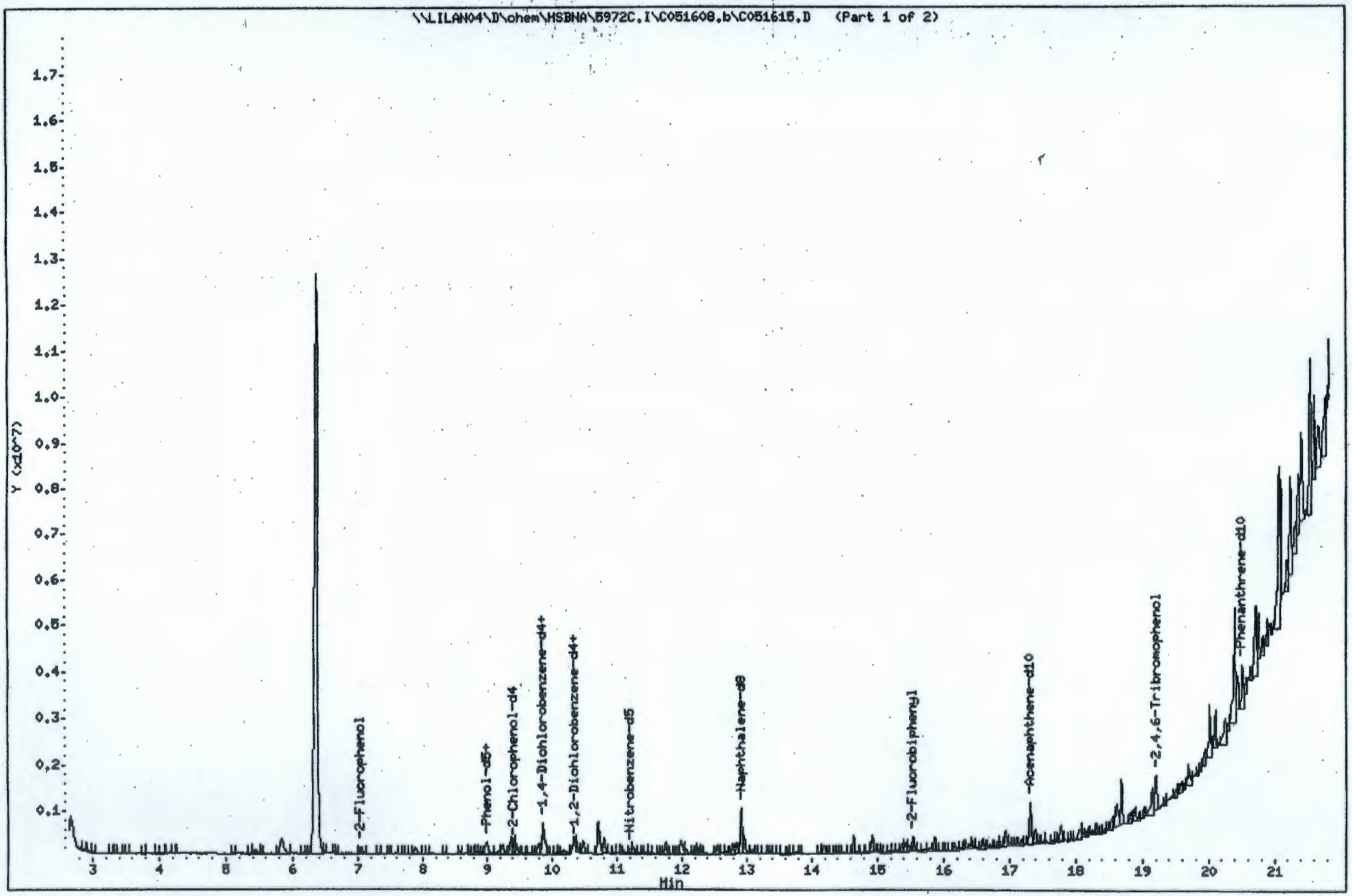


000000032

Data File: \\LILAN04\D\chem\MSBNA\5972C.I\C051608.b\C051615.D
Date : 17-MAY-2008 00:35
Client ID:
Sample Info: 0805L032-002T C051601 2X

Instrument: 5972C.i

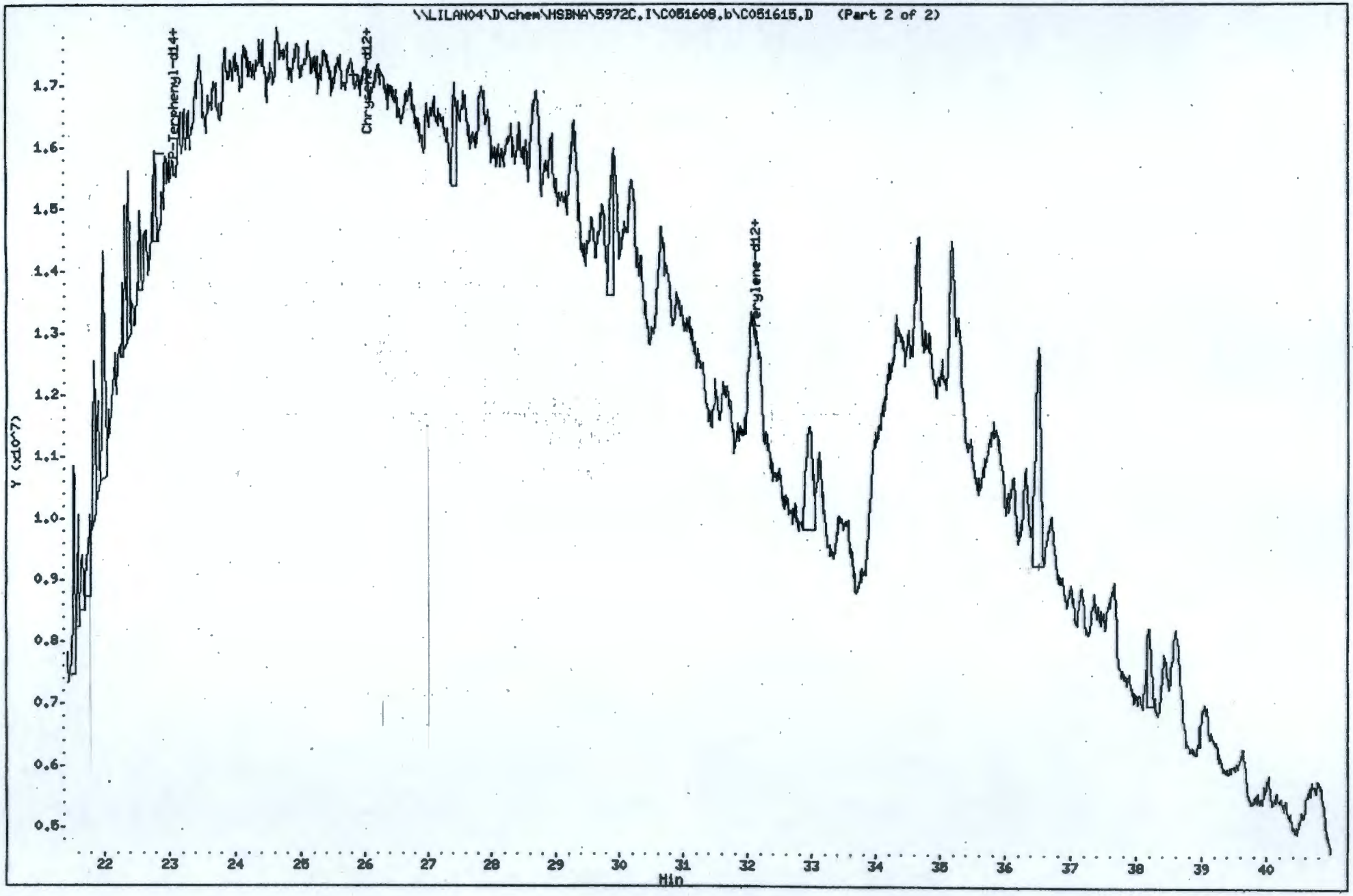
Operator:
Column phase: rtx-5
Column diameter: 0.25



0000000033

Data File: \\LILAN04\D\chem\HSBNA\5972C.I\C051608.b\C051615.D
Date : 17-MAY-2008 00:35
Client ID:
Sample Info: 0805L032-002T C051601 2X

Instrument: 5972C.I
Operator:
Column phase: rtx-5
Column diameter: 0.25

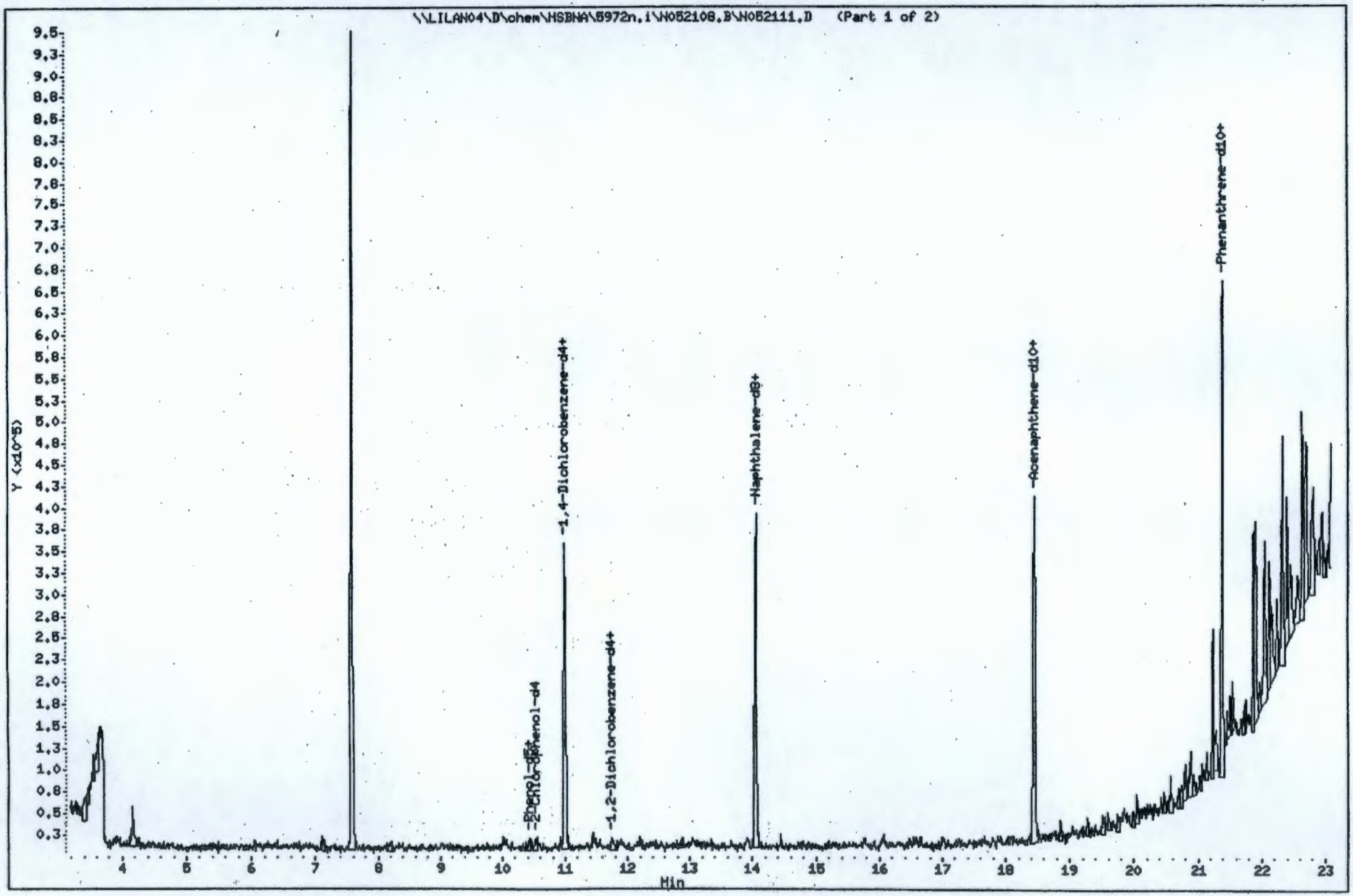


0000000034

Data File: \\LILAN04\D\chem\HSBNA\5972n.i\N052108.B\N052111.D
Date : 21-MAY-2008 23:31
Client ID:
Sample Info: 0805L032-002T N052101 25X

Instrument: 5972n.i
Operator:
Column diameter: 0.25

Column phase: rtx-5

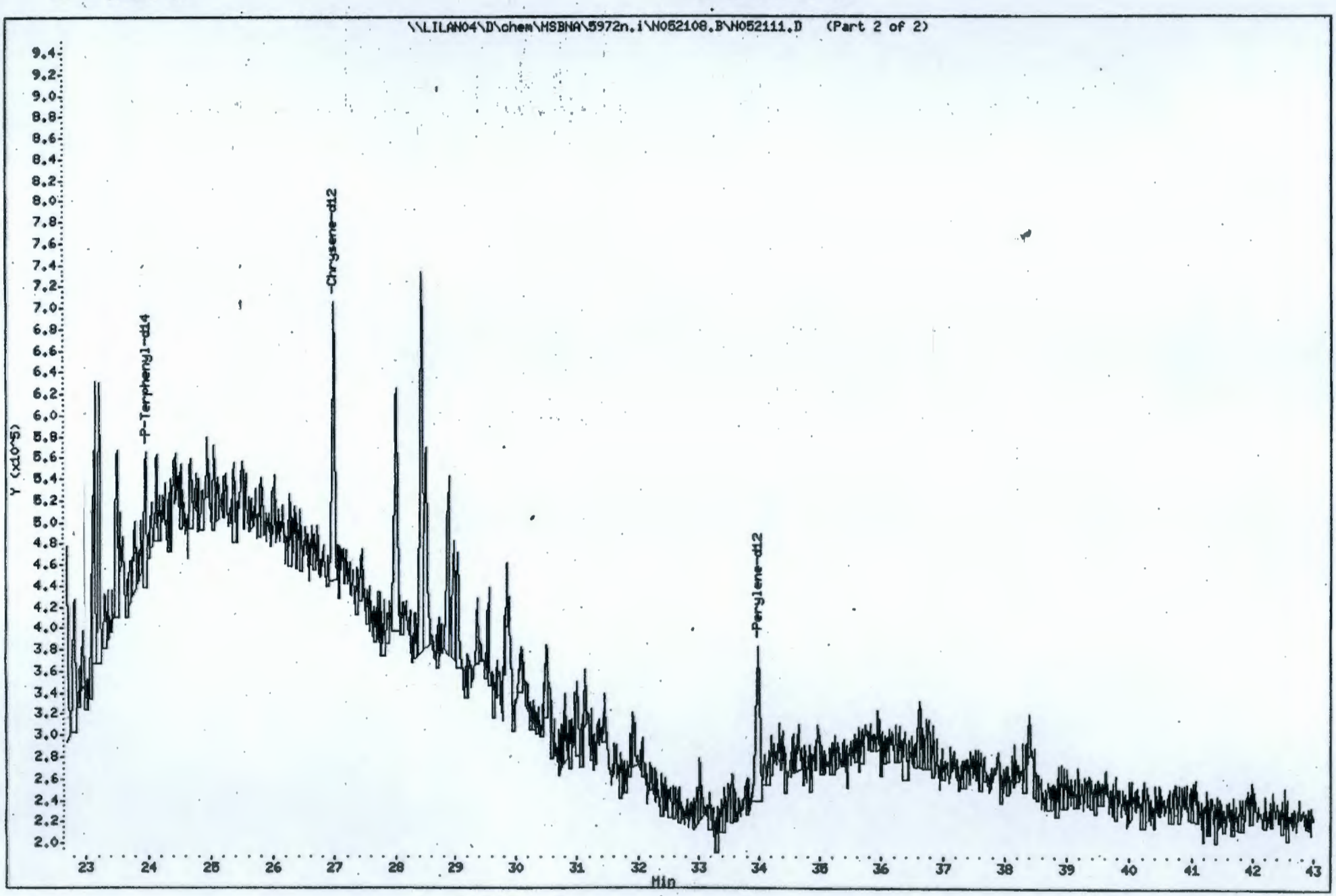


0000000035

Data File: \\LILAN04\D\chem\MSBNA\5972n.i\N052108.B\N052111.D
Date : 21-MAY-2008 23:31
Client ID:
Sample Info: 0805L032-002T N052101 25X

Instrument: 5972n.i

Operator:
Column phase: rtx-5
Column diameter: 0.25



0000000036

ville Laboratory Use Only

3051032

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI

000000037

TNU HANFORD SAF# RC-088

Final Proj. Sampling Date

ct# 11343-606-001-9999-00

ct Contact/Phone#

ville Laboratory Project Manager O. JOHNSON

SW846 Del STD TAT 15 days

Rec'd 5-1-08 Date Due 5-16-08

Refrigerator #			A 3														
#/Type Container	Liquid / Solid		1G														
Volume			250														
Preservatives																	
ANALYSES REQUESTED			ORGANIC: VOA	BNA	Reed/PCB	Herb				INORG: ZLP Metal Hg	CN	Ignitability					
			Lionville Laboratory Use Only	062514	OPC-B					metO		ITGN					

Matrix: Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP Leachate, Wipe, Other, Ash	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA	Reed/PCB	Herb				ZLP Metal Hg	CN	Ignitability				
	001	J16M65			SOLID	4-28-08	0750		X	X					X		X				
	002	J16M66					0810		X	X					X		X				
	003	J16M67					1440		X	X					X		X				
	004	J16M68					1450		X	X					X		X				

Special Instructions: Run matrix QC

metO = HSL + Zr, Sn

Special Instructions:

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

Relinquished by	Received by	Date	Time
		5/1/08	0940

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		"COMPOSITE WASTE"	

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-088-014

llector B. Lawrence / B. Harries	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH
Price Code 9G	Data Turnaround 15 Days		
olect Designation 618-7 Burial Ground - Other Liquids	Sampling Location 618-7 Burial Ground (drums)		SAF No. RC-088
e Chest No. AFS-04-124	Field Logbook No. EL-1395-12	COA RG61878500	Method of Shipment FedEx
ipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. A080244		Bill of Lading/Air Bill No. See OSPC

OSSIBLE SAMPLE HAZARDS/REMARKS

otential Radioactive contamination, potential beryllium ontamination

pecial Handling and/or Storage

one Cool 4°C

Preservation	Cool 4C	Cool 4C	None	None	None					
Type of Container	aG	aG	aG	aG	P					
No. of Container(s)	1	0	0	0	1					
Volume	250mL	~~125mL~~ BL 4-28-08	~~125mL~~ BL 4-28-08	~~60mL~~ BL 4-28-08	500mL					
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions. BL 4-28-08			TIE TO RCF		B12 PINT

Sample No.	Matrix *	Sample Date	Sample Time											
6M65	OTHER LIQUID	4-28-08	0750	X	X	X	X				J16M55		0081	2
8M66	OTHER LIQUID	4-28-08	0810	X	X	X	X				J16M56		0220	3

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Lawrence	0900 4-28-08	RB Kerkow / RB Kirk	0900 4-28-08
RB Kerkow / RB Kirk	1015 4-28-08	REF 1B (1060)	1015 4-28-08
1060/1B	4/30-08 0945	MStankovich	4/30/08 0945
MStankovich	4/30/08 0945	FedEx	
FedEx	5-1-08 0940	[illegible]	5-1-08 0940
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc, Zirconium}; ICP Metals - 6010A (Add-on) {Arsenic, Beryllium, Lead, Selenium, Thallium, Tin}; Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 – Total Sr

NOTE: SAMPLE MATERIAL IS IN ONE 250 mL aG BOTTLE RK. 4-28-08

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to tab.

Matrix *

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

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

H-EE-011

00000038

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-015	Page 1 of 1

Collector: B. Lawrence / E. Harries	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code: 9G	Data Turnaround: 15 Days		
Project Designation: 618-7 Burial Ground - Other Liquids	Sampling Location: 618-7 Burial Ground (drums)		SAF No.: RC-088
Ice Chest No.: AFS-04-124	Field Logbook No.: EL-1395-12	COA: RG61878500	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES, LIONVILLE	Offsite Property No.: A080244		Bill of Lading/Air Bill No.: see ospc

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive contamination, potential beryllium contamination

Special Handling and/or Storage

None Cool 4°C

Preservation	Cool 4C	Cool 4C	None	None	None						
Type of Container	aG	aG	aG	aG	P						
No. of Container(s)	1	0	0	0	1						
Volume	250mL	125mL	125mL	60mL	500mL						
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions. RK 4-28-08						B12
Sample No. / Matrix * / Sample Date / Sample Time											
3M67 / OTHER LIQUID / 4-28-08 / 1440	X	X	X	X							#0222 4
3M68 / OTHER LIQUID / 4-28-08 / 1450	X	X	X	X							#0223 5

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Harries / E. Harries 4/28/08	1520	RB Kerkow / RB Kerkow 4-28-08	1520
B Kerkow / RB Kerkow 4-28-08	1620	REF 1B (1060) 4-28-08	1620
60/1B 4/30/08	1000	MStankovich 4/30/08	1000
well MStankovich 4/30/08	1000	Fed Ex	
Fed Ex	5-1-08 0940	[signature] 5-1-08	0940

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc, Zirconium}; ICP Metals - 6010A (Add-on) {Arsenic, Beryllium, Lead, Selenium, Thallium, Tin}; Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

NOTE: THE ENTIRE SAMPLE IS IN ONE 250 mL aG BOTTLE. RK 4-28-08

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

JM

Matrix *

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

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

H-EE-011

0000000639

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD
Project/SAF/SOW/Release #: RC-088

Date: 5-1-08

LvLI Batch #: 0805L032

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7993 1661 9305
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2-3	°C	Cooler #
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes 5-1-08	☑ No	Client COC indicates OTHER LIQUID Sample is SOLID
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☑ Yes	☐ No	☐ N/A
Person Contacted O-JOHNSON		Date 5-1-08	

LVLI LIONVILLE LABORATORY INC

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-088 K1196

RECEIVED
JUN 2008

DATE RECEIVED: 05/01/08 LVL LOT #

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16M65	001	SO	08LE0228	04/28/08	05/09/08	05/16/08
J16M66	002	SO	08LE0228	04/28/08	05/09/08	05/19/08
J16M67	003	SO	08LE0228	04/28/08	05/09/08	05/16/08
J16M68	004	SO	08LE0228	04/28/08	05/09/08	05/19/08
J16M68	004 MS	SO	08LE0228	04/28/08	05/09/08	05/19/08
J16M68	004 MSD	SO	08LE0228	04/28/08	05/09/08	05/19/08
LAB QC:						
PBLKQH	MB1	S	08LE0228	N/A	05/09/08	05/16/08
PBLKQH	MB1 BS	S	08LE0228	N/A	05/09/08	05/16/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-088
LVL #: 0805L032
SDG/SAF # K1196 / RC-088

W.O. #: 11343-606-001-9999-00
Date Received: 05-01-2008

PCB

Four (4) solid samples were collected on 05-01-2008.

The samples and their associated QC samples were extracted on 05-09-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 05-16,19-2008. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8082.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise. The following is a summary of the QC results accompanying the sample results. Lionville Laboratory Inc (LvLI) certifies that all test results meet the requirements of NELAC except as noted below:

1. Samples were extracted and analyzed within required holding time
2. The samples and their associated QC samples received Copper-Sulfur and Sulfuric Acid cleanups according to Lionville Laboratory SOPs based on SW846 methods 3660A and 3665A respectively.
3. The method blank was below the reporting limits for all target compounds.
4. All surrogate recoveries were within acceptance criteria.
5. All blank spike recoveries were within acceptance criteria.
6. All matrix spike recoveries were within acceptance criteria for Aroclor 1016. Matrix spike recoveries were unobtainable for Aroclor 1016 due to matrix interferences.
7. The following samples required instrument dilution due to high concentrations of target and non-target analytes; samples J16M68, J16M68 MS, and J16M68 MSD required a 20-fold instrument dilution; Sample J16M66 required a 1000-fold instrument dilution.
8. The initial calibrations associated with this data set were within acceptance criteria.

l:\group\data\post\tnu\0805-032\sol2.pcb.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 10 pages.

LIONVILLE LABORATORY INC.

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

10. LvLI is NELAP accredited by the State of Pennsylvania. 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

5/23/08
Date

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.

PCBs by GC

Report Date: 05/19/08 14:03

RFW Batch Number: 0805L032 Client: TNUHANFORD RC-088 K1196 Work Order: 11343606001 Page: 1

	Cust ID:	J16M65		J16M66		J16M67		J16M68		J16M68		J16M68	
Sample Information	RFW#:	001		002		003		004		004 MS		004 MSD	
	Matrix:	SOLID		SOLID		SOLID		SOLID		SOLID		SOLID	
	D.F.:	1.00		1000		1.00		20.0		20.0		20.0	
	Units:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
Surrogate:	Tetrachloro-m-xylene	100	%	D	%	116	%	D	%	D	%	D	%
	Decachlorobiphenyl	82	%	D	%	79	%	D	%	D	%	D	%
			fl		fl		fl		fl		fl		fl
Aroclor-1016		400	U	80000	U	400	U	1600	U	I	%	I	%
Aroclor-1221		400	U	80000	U	400	U	1600	U	1600	U	1600	U
Aroclor-1232		400	U	80000	U	400	U	1600	U	1600	U	1600	U
Aroclor-1242		400	U	80000	U	400	U	1600	U	1600	U	1600	U
Aroclor-1248		4900		1100000		1600		18000		NR		NR	
Aroclor-1254		400	U	80000	U	400	U	1600	U	1600	U	1600	U
Aroclor-1260		400	U	80000	U	400	U	1600	U	97	%	87	%

	Cust ID:	PBLKQH		PBLKQH BS	
Sample Information	RFW#:	08LE0228-MB1		08LE0228-MB1	
	Matrix:	SOIL		SOIL	
	D.F.:	1.00		1.00	
	Units:	UG/KG		UG/KG	
Surrogate:	Tetrachloro-m-xylene	115	%	106	%
	Decachlorobiphenyl	115	%	112	%
			fl		fl
Aroclor-1016		13	U	99	%
Aroclor-1221		13	U	13	U
Aroclor-1232		13	U	13	U
Aroclor-1242		13	U	13	U
Aroclor-1248		13	U	13	U
Aroclor-1254		13	U	13	U
Aroclor-1260		13	U	114	%

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, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 05/09/08 Extraction Batch No: 08LE0228 Analyst: MF Method: **** 5043540

Test: OPCB Cleanup Date: 05/15/08 Analyst: MF Client: TNUHANFORD RC-088 K1196

LIMS Report Date: 05/16/08 Solvent: DCM/ACETONE,HEXANE Adsorbent: H2SO4

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0805L032-	TNUHANFORD RC-088 K1196										
001	J16M65		1.0	1.0		10		1.0	N	0.00	10000
002	J16M66		5.0	1.0		10		1.0	N	0.00	2000.0
003	J16M67		1.0	1.0		10		1.0	N	0.00	10000
004	J16M68		5.0	1.0		10		1.0	N	0.00	2000.0
004 -S	J16M68		5.0	1.0	1.0	10		1.0	N	0.00	2000.0
004 -T	J16M68		5.0	1.0	1.0	10		1.0	N	0.00	2000.0
0805L095-	VISTA ENGINEERING										
001	B114		30.0	1.0		10		1.0	N	95.46	349.2
001 -S	B114		30.0	1.0	1.0	10		1.0	N	95.46	349.2
001 -T	B114		30.0	1.0	1.0	10		1.0	N	95.46	349.2
002	B115		30.0	1.0		10		1.0	N	93.82	355.3
003	B116		30.0	1.0		10		1.0	N	93.38	357.0
005	B118		30.0	1.0		10		1.0	N	94.39	353.1
006	B119		30.0	1.0		10		1.0	N	96.38	345.9
08LE0228-MB1	PBLKQH		30.0	1.0		10		1.0	N	100.00	333.3
08LE0228-MB1 -S	PBLKQH		30.0	1.0	1.0	10		1.0	N	100.00	333.3

Comments:
Surrogate: 250 UL OLM PSURR 89916406
Spike: 250 UL AR1660 89916602

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
[illegible]	[illegible]	5/16/08 1205	SZ	5/16/08 12:05	GC

000000006

Lionville Laboratory Use Only

05L032

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

TNU HANFORD SAF# RC-088

Final Proj. Sampling Date

Lot# 11343-606-001-9999-00

Lot Contact/Phone#

Lionville Laboratory Project Manager O. JOHNSON

SW846 Del STD TAT 15 days

Rec'd 5-1-08 Date Due 5-16-08

Refrigerator #			A 3														
#/Type Container	Liquid																
	Solid		1G														
Volume			250														
Preservatives																	
ANALYSES REQUESTED			ORGANIC							INORG							
			VOA	BNA	Pest/PCB	Herb				Total Metal Hg	CN	Radioactivity					
			Lionville Laboratory Use Only														
				06254	OPL3					MCTO		ITEN					

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA	Pest/PCB	Herb				Total Metal Hg	CN	Radioactivity				
001	J16M65			Solid	4-28-08	0750		X	X					X		X				
002	J16M66					0810		X	X					X		X				
003	J16M67					1440		X	X					X		X				
004	J16M68					1450		X	X					X		X				

Special Instructions: Run matrix QC

1 cA ① = HSL + Zr, Sn

Special Instructions:

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

Relinquished by	Received by	Date	Time
		5/1/08	0945

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		"COMPOSITE WASTE"	

000000007

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-088-014

llector B. Lawrence / E. Harries	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH
Price Code 9G	Data Turnaround 15 Days		
oject Designation 618-7 Burial Ground - Other Liquids	Sampling Location 618-7 Burial Ground (drums)		SAF No. RC-088
Chest No. AFS-04-124	Field Logbook No. EL-1395-12	COA RG61878500	Method of Shipment FedEx
ipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. A080244		Bill of Lading/Air Bill No. See OSPC

OSSIBLE SAMPLE HAZARDS/REMARKS

otential Radioactive contamination, potential beryllium ontamination

pecial Handling and/or Storage

one Cool 4°C

Preservation	Cool 4C	Cool 4C	None	None	None					
Type of Container	aG	aG	aG	aG	P					
No. of Container(s)	1	0	0	0	1					
Volume	250mL	~~125mL~~ 4-28-08	~~125mL~~ 4-28-08	~~60mL~~ 4-28-08	500mL					
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions. 4-28-08			TIE TO RCF		B12 PIN #

Sample No.	Matrix *	Sample Date	Sample Time										
3M65	OTHER LIQUID	4-28-08	0750	X	X	X	X				J16M55		0081 2
3M66	OTHER LIQUID	4-28-08	0810	X	X	X	X				J16M56		0220 3

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Lawrence	4-28-08 0900	RB Kerkow / RB Kerk	4-28-08 0900
RB Kerkow / RB Kerk	4-28-08 1015	REF IB (1060)	4-28-08 1015
1060/IB	4/30-08 0945	MStankovich	4/30/08 0945
MStankovich	4/30/08 0945	FedEx	
FedEx	5-1-08 0940	[illegible]	5-1-08 0940

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc, Zirconium}; ICP Metals - 6010A (Add-on) {Arsenic, Beryllium, Lead, Selenium, Thallium, Tin}; Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

NOTE: SAMPLE MATERIAL IS IN ONE 250 mL aG BOTTLE RK. 4-28-08

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wi=Wipe
Lq=Liquid
V=Vegetation
X=Other

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

H-EE-011

0000000008

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-015	Page 1 of 1

ollector B. Lawrence / E. Harries	Company Contact Joan Kessner Telephone No. 509-375-4688	Project Coordinator KESSNER, JH	Price Code 9G Data Turnaround 15 Days
oject Designation 618-7 Burial Ground - Other Liquids	Sampling Location 618-7 Burial Ground (drums)	SAF No. RC-088	
Chest No. AFS-04-124	Field Logbook No. EL-1395-12 COA RG61878500	Method of Shipment FedEx	
ipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. A080244	Bill of Lading/Air Bill No. see ospc	

OSSIBLE SAMPLE HAZARDS/REMARKS

otential Radioactive contamination, potential beryllium ontamination

pecial Handling and/or Storage

one Cool 4°C

Preservation	Cool 4C	Cool 4C	None	None	None						
Type of Container	aG	aG	aG	aG	P						
No. of Container(s)	1	0	0	0	1						
Volume	250mL	125mL	125mL	60mL	500mL						
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions. RK 4-28-08						B12
Sample No. / Matrix * / Sample Date / Sample Time											
3M67 / OTHER LIQUID / 4-28-08 / 1440	X	X	X	X							#0222 4
3M68 / OTHER LIQUID / 4-28-08 / 1450	X	X	X	X							#0223 5

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Harries / E. Harries	1520 4/28/08	RB Kerkow / RB Kerkow	1520 4-28-08
B Kerkow / RB Kerkow	1620 4-28-08	REF IB (1062)	1620 4-28-08
60/IB	4/30/08 1000	MStankovich	4/30/08 1000
well / MStankovich	1000 4/30/08	FedEx	
FedEx	5-1-08 0940	[signature]	5-1-08 0940

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc, Zirconium}; ICP Metals - 6010A (Add-on) {Arsenic, Beryllium, Lead, Selenium, Thallium, Tin}; Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

NOTE: THE ENTIRE SAMPLE IS IN ONE 250 mL aG BOTTLE. RK 4-28-08

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

JM KW

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

BORATORY SECTION	Received By	Title	Date/Time
IAL SAMPLE SPOSITION	Disposal Method	Disposed By	Date/Time

H-EE-011

0000000009

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Project/SAF/SOW/Release #: RC-088

Date: 5-1-08

LvLI Batch #: 0805L032

Sample Custodian: Victor Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7993 1661 9305
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	Comments:
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2-3	°C	Cooler #
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes 5-1-08	☑ No	Client COC Indicates OTHER LIQUID Sample is SOLID
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☑ Yes	☐ No	☐ N/A
Person Contacted O-JOHNSON		Date 5-1-08	

LvLI LIONVILLE LABORATORY INC.

RECEIVED
JUN 2008

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-088 K1196

DATE RECEIVED: 05/01/08 LVL LOT # :0805L032

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16M65						
SILVER, TOTAL	001	SO	08L0194	04/28/08	05/12/08	05/13/08
ALUMINUM, TOTAL	001	SO	08L0194	04/28/08	05/12/08	05/13/08
ARSENIC, TOTAL	001	SO	08L0194	04/28/08	05/12/08	05/13/08
BARIUM, TOTAL	001	SO	08L0194	04/28/08	05/12/08	05/13/08
BERYLLIUM, TOTAL	001	SO	08L0194	04/28/08	05/12/08	05/13/08
CALCIUM, TOTAL	001	SO	08L0194	04/28/08	05/12/08	05/13/08
CADMIUM, TOTAL	001	SO	08L0194	04/28/08	05/12/08	05/13/08
COBALT, TOTAL	001	SO	08L0194	04/28/08	05/12/08	05/13/08
CHROMIUM, TOTAL	001	SO	08L0194	04/28/08	05/12/08	05/13/08
COPPER, TOTAL	001	SO	08L0194	04/28/08	05/12/08	05/13/08
IRON, TOTAL	001	SO	08L0194	04/28/08	05/12/08	05/13/08
MERCURY, TOTAL	001	SO	08C0078	04/28/08	05/05/08	05/07/08
MERCURY, TOTAL	001 REP	SO	08C0078	04/28/08	05/05/08	05/07/08
MERCURY, TOTAL	001 MS	SO	08C0078	04/28/08	05/05/08	05/07/08
POTASSIUM, TOTAL	001	SO	08L0194	04/28/08	05/12/08	05/14/08
MAGNESIUM, TOTAL	001	SO	08L0194	04/28/08	05/12/08	05/13/08
MANGANESE, TOTAL	001	SO	08L0194	04/28/08	05/12/08	05/13/08
SODIUM, TOTAL	001	SO	08L0194	04/28/08	05/12/08	05/14/08
NICKEL, TOTAL	001	SO	08L0194	04/28/08	05/12/08	05/13/08
LEAD, TOTAL	001	SO	08L0194	04/28/08	05/12/08	05/13/08
ANTIMONY, TOTAL	001	SO	08L0194	04/28/08	05/12/08	05/13/08
SELENIUM, TOTAL	001	SO	08L0194	04/28/08	05/12/08	05/13/08
TIN, TOTAL	001	SO	08L0194	04/28/08	05/12/08	05/13/08
THALLIUM, TOTAL	001	SO	08L0194	04/28/08	05/12/08	05/13/08
VANADIUM, TOTAL	001	SO	08L0194	04/28/08	05/12/08	05/13/08
ZINC, TOTAL	001	SO	08L0194	04/28/08	05/12/08	05/13/08
ZIRCONIUM, TOTAL	001	SO	08L0194	04/28/08	05/12/08	05/13/08
J16M66						
SILVER, TOTAL	002	SO	08L0194	04/28/08	05/12/08	05/13/08
SILVER, TOTAL	002 REP	SO	08L0194	04/28/08	05/12/08	05/13/08
SILVER, TOTAL	002 MS	SO	08L0194	04/28/08	05/12/08	05/13/08
ALUMINUM, TOTAL	002	SO	08L0194	04/28/08	05/12/08	05/13/08
ALUMINUM, TOTAL	002 REP	SO	08L0194	04/28/08	05/12/08	05/13/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-088 K1196

DATE RECEIVED: 05/01/08 LVL LOT # :0805L032

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ALUMINUM, TOTAL	002 MS	SO	08L0194	04/28/08	05/12/08	05/13/08
ARSENIC, TOTAL	002	SO	08L0194	04/28/08	05/12/08	05/13/08
ARSENIC, TOTAL	002 REP	SO	08L0194	04/28/08	05/12/08	05/13/08
ARSENIC, TOTAL	002 MS	SO	08L0194	04/28/08	05/12/08	05/13/08
BARIUM, TOTAL	002	SO	08L0194	04/28/08	05/12/08	05/13/08
BARIUM, TOTAL	002 REP	SO	08L0194	04/28/08	05/12/08	05/13/08
BARIUM, TOTAL	002 MS	SO	08L0194	04/28/08	05/12/08	05/13/08
BERYLLIUM, TOTAL	002	SO	08L0194	04/28/08	05/12/08	05/13/08
BERYLLIUM, TOTAL	002 REP	SO	08L0194	04/28/08	05/12/08	05/13/08
BERYLLIUM, TOTAL	002 MS	SO	08L0194	04/28/08	05/12/08	05/13/08
CALCIUM, TOTAL	002	SO	08L0194	04/28/08	05/12/08	05/13/08
CALCIUM, TOTAL	002 REP	SO	08L0194	04/28/08	05/12/08	05/13/08
CALCIUM, TOTAL	002 MS	SO	08L0194	04/28/08	05/12/08	05/13/08
CADMIUM, TOTAL	002	SO	08L0194	04/28/08	05/12/08	05/13/08
CADMIUM, TOTAL	002 REP	SO	08L0194	04/28/08	05/12/08	05/13/08
CADMIUM, TOTAL	002 MS	SO	08L0194	04/28/08	05/12/08	05/13/08
COBALT, TOTAL	002	SO	08L0194	04/28/08	05/12/08	05/13/08
COBALT, TOTAL	002 REP	SO	08L0194	04/28/08	05/12/08	05/13/08
COBALT, TOTAL	002 MS	SO	08L0194	04/28/08	05/12/08	05/13/08
CHROMIUM, TOTAL	002	SO	08L0194	04/28/08	05/12/08	05/13/08
CHROMIUM, TOTAL	002 REP	SO	08L0194	04/28/08	05/12/08	05/13/08
CHROMIUM, TOTAL	002 MS	SO	08L0194	04/28/08	05/12/08	05/13/08
COPPER, TOTAL	002	SO	08L0194	04/28/08	05/12/08	05/13/08
COPPER, TOTAL	002 REP	SO	08L0194	04/28/08	05/12/08	05/13/08
COPPER, TOTAL	002 MS	SO	08L0194	04/28/08	05/12/08	05/13/08
IRON, TOTAL	002	SO	08L0194	04/28/08	05/12/08	05/13/08
IRON, TOTAL	002 REP	SO	08L0194	04/28/08	05/12/08	05/13/08
IRON, TOTAL	002 MS	SO	08L0194	04/28/08	05/12/08	05/13/08
MERCURY, TOTAL	002	SO	08C0078	04/28/08	05/05/08	05/07/08
POTASSIUM, TOTAL	002	SO	08L0194	04/28/08	05/12/08	05/14/08
POTASSIUM, TOTAL	002 REP	SO	08L0194	04/28/08	05/12/08	05/14/08
POTASSIUM, TOTAL	002 MS	SO	08L0194	04/28/08	05/12/08	05/14/08
MAGNESIUM, TOTAL	002	SO	08L0194	04/28/08	05/12/08	05/13/08
MAGNESIUM, TOTAL	002 REP	SO	08L0194	04/28/08	05/12/08	05/13/08
MAGNESIUM, TOTAL	002 MS	SO	08L0194	04/28/08	05/12/08	05/13/08
MANGANESE, TOTAL	002	SO	08L0194	04/28/08	05/12/08	05/13/08
MANGANESE, TOTAL	002 REP	SO	08L0194	04/28/08	05/12/08	05/13/08
MANGANESE, TOTAL	002 MS	SO	08L0194	04/28/08	05/12/08	05/13/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-088 K1196

DATE RECEIVED: 05/01/08 LVL LOT # :0805L032

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SODIUM, TOTAL	002	SO	08L0194	04/28/08	05/12/08	05/14/08
SODIUM, TOTAL	002 REP	SO	08L0194	04/28/08	05/12/08	05/14/08
SODIUM, TOTAL	002 MS	SO	08L0194	04/28/08	05/12/08	05/14/08
NICKEL, TOTAL	002	SO	08L0194	04/28/08	05/12/08	05/13/08
NICKEL, TOTAL	002 REP	SO	08L0194	04/28/08	05/12/08	05/13/08
NICKEL, TOTAL	002 MS	SO	08L0194	04/28/08	05/12/08	05/13/08
LEAD, TOTAL	002	SO	08L0194	04/28/08	05/12/08	05/13/08
LEAD, TOTAL	002 REP	SO	08L0194	04/28/08	05/12/08	05/13/08
LEAD, TOTAL	002 MS	SO	08L0194	04/28/08	05/12/08	05/13/08
ANTIMONY, TOTAL	002	SO	08L0194	04/28/08	05/12/08	05/13/08
ANTIMONY, TOTAL	002 REP	SO	08L0194	04/28/08	05/12/08	05/13/08
ANTIMONY, TOTAL	002 MS	SO	08L0194	04/28/08	05/12/08	05/13/08
SELENIUM, TOTAL	002	SO	08L0194	04/28/08	05/12/08	05/13/08
SELENIUM, TOTAL	002 REP	SO	08L0194	04/28/08	05/12/08	05/13/08
SELENIUM, TOTAL	002 MS	SO	08L0194	04/28/08	05/12/08	05/13/08
TIN, TOTAL	002	SO	08L0194	04/28/08	05/12/08	05/13/08
TIN, TOTAL	002 REP	SO	08L0194	04/28/08	05/12/08	05/13/08
TIN, TOTAL	002 MS	SO	08L0194	04/28/08	05/12/08	05/13/08
THALLIUM, TOTAL	002	SO	08L0194	04/28/08	05/12/08	05/13/08
THALLIUM, TOTAL	002 REP	SO	08L0194	04/28/08	05/12/08	05/13/08
THALLIUM, TOTAL	002 MS	SO	08L0194	04/28/08	05/12/08	05/13/08
VANADIUM, TOTAL	002	SO	08L0194	04/28/08	05/12/08	05/13/08
VANADIUM, TOTAL	002 REP	SO	08L0194	04/28/08	05/12/08	05/13/08
VANADIUM, TOTAL	002 MS	SO	08L0194	04/28/08	05/12/08	05/13/08
ZINC, TOTAL	002	SO	08L0194	04/28/08	05/12/08	05/13/08
ZINC, TOTAL	002 REP	SO	08L0194	04/28/08	05/12/08	05/13/08
ZINC, TOTAL	002 MS	SO	08L0194	04/28/08	05/12/08	05/13/08
ZIRCONIUM, TOTAL	002	SO	08L0194	04/28/08	05/12/08	05/13/08
ZIRCONIUM, TOTAL	002 REP	SO	08L0194	04/28/08	05/12/08	05/13/08
ZIRCONIUM, TOTAL	002 MS	SO	08L0194	04/28/08	05/12/08	05/13/08
J16M67*						
SILVER, TOTAL	003	SO	08L0194	04/28/08	05/12/08	05/13/08
ALUMINUM, TOTAL	003	SO	08L0194	04/28/08	05/12/08	05/13/08
ARSENIC, TOTAL	003	SO	08L0194	04/28/08	05/12/08	05/13/08
BARIUM, TOTAL	003	SO	08L0194	04/28/08	05/12/08	05/13/08
BERYLLIUM, TOTAL	003	SO	08L0194	04/28/08	05/12/08	05/13/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-088 K1196

DATE RECEIVED: 05/01/08 LVL LOT # :0805L032

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CALCIUM, TOTAL	003	SO	08L0194	04/28/08	05/12/08	05/13/08
CADMIUM, TOTAL	003	SO	08L0194	04/28/08	05/12/08	05/13/08
COBALT, TOTAL	003	SO	08L0194	04/28/08	05/12/08	05/13/08
CHROMIUM, TOTAL	003	SO	08L0194	04/28/08	05/12/08	05/13/08
COPPER, TOTAL	003	SO	08L0194	04/28/08	05/12/08	05/13/08
IRON, TOTAL	003	SO	08L0194	04/28/08	05/12/08	05/13/08
MERCURY, TOTAL	003	SO	08C0078	04/28/08	05/05/08	05/07/08
POTASSIUM, TOTAL	003	SO	08L0194	04/28/08	05/12/08	05/14/08
MAGNESIUM, TOTAL	003	SO	08L0194	04/28/08	05/12/08	05/13/08
MANGANESE, TOTAL	003	SO	08L0194	04/28/08	05/12/08	05/13/08
SODIUM, TOTAL	003	SO	08L0194	04/28/08	05/12/08	05/14/08
NICKEL, TOTAL	003	SO	08L0194	04/28/08	05/12/08	05/13/08
LEAD, TOTAL	003	SO	08L0194	04/28/08	05/12/08	05/13/08
ANTIMONY, TOTAL	003	SO	08L0194	04/28/08	05/12/08	05/13/08
SELENIUM, TOTAL	003	SO	08L0194	04/28/08	05/12/08	05/13/08
TIN, TOTAL	003	SO	08L0194	04/28/08	05/12/08	05/13/08
THALLIUM, TOTAL	003	SO	08L0194	04/28/08	05/12/08	05/13/08
VANADIUM, TOTAL	003	SO	08L0194	04/28/08	05/12/08	05/13/08
ZINC, TOTAL	003	SO	08L0194	04/28/08	05/12/08	05/13/08
ZIRCONIUM, TOTAL	003	SO	08L0194	04/28/08	05/12/08	05/13/08
J16M68						
SILVER, TOTAL	004	SO	08L0194	04/28/08	05/12/08	05/13/08
ALUMINUM, TOTAL	004	SO	08L0194	04/28/08	05/12/08	05/13/08
ARSENIC, TOTAL	004	SO	08L0194	04/28/08	05/12/08	05/13/08
BARIUM, TOTAL	004	SO	08L0194	04/28/08	05/12/08	05/13/08
BERYLLIUM, TOTAL	004	SO	08L0194	04/28/08	05/12/08	05/13/08
CALCIUM, TOTAL	004	SO	08L0194	04/28/08	05/12/08	05/13/08
CADMIUM, TOTAL	004	SO	08L0194	04/28/08	05/12/08	05/13/08
COBALT, TOTAL	004	SO	08L0194	04/28/08	05/12/08	05/13/08
CHROMIUM, TOTAL	004	SO	08L0194	04/28/08	05/12/08	05/13/08
COPPER, TOTAL	004	SO	08L0194	04/28/08	05/12/08	05/13/08
IRON, TOTAL	004	SO	08L0194	04/28/08	05/12/08	05/13/08
MERCURY, TOTAL	004	SO	08C0078	04/28/08	05/05/08	05/07/08
POTASSIUM, TOTAL	004	SO	08L0194	04/28/08	05/12/08	05/14/08
MAGNESIUM, TOTAL	004	SO	08L0194	04/28/08	05/12/08	05/13/08
MANGANESE, TOTAL	004	SO	08L0194	04/28/08	05/12/08	05/13/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-088 K1196

DATE RECEIVED: 05/01/08 LVL LOT # :0805L032

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SODIUM, TOTAL	004	SO	08L0194	04/28/08	05/12/08	05/14/08
NICKEL, TOTAL	004	SO	08L0194	04/28/08	05/12/08	05/13/08
LEAD, TOTAL	004	SO	08L0194	04/28/08	05/12/08	05/13/08
ANTIMONY, TOTAL	004	SO	08L0194	04/28/08	05/12/08	05/13/08
SELENIUM, TOTAL	004	SO	08L0194	04/28/08	05/12/08	05/13/08
TIN, TOTAL	004	SO	08L0194	04/28/08	05/12/08	05/13/08
THALLIUM, TOTAL	004	SO	08L0194	04/28/08	05/12/08	05/13/08
VANADIUM, TOTAL	004	SO	08L0194	04/28/08	05/12/08	05/13/08
ZINC, TOTAL	004	SO	08L0194	04/28/08	05/12/08	05/13/08
ZIRCONIUM, TOTAL	004	SO	08L0194	04/28/08	05/12/08	05/13/08

LAB QC:

SILVER LABORATORY	LC1 BS	S	08L0194	N/A	05/12/08	05/13/08
SILVER, TOTAL	MB1	S	08L0194	N/A	05/12/08	05/13/08
ALUMINUM LABORTORY	LC1 BS	S	08L0194	N/A	05/12/08	05/13/08
ALUMINUM, TOTAL	MB1	S	08L0194	N/A	05/12/08	05/13/08
ARSENIC LABORATORY	LC1 BS	S	08L0194	N/A	05/12/08	05/13/08
ARSENIC, TOTAL	MB1	S	08L0194	N/A	05/12/08	05/13/08
BARIUM LABORATORY	LC1 BS	S	08L0194	N/A	05/12/08	05/13/08
BARIUM, TOTAL	MB1	S	08L0194	N/A	05/12/08	05/13/08
BERYLLIUM LABORATORY	LC1 BS	S	08L0194	N/A	05/12/08	05/13/08
BERYLLIUM, TOTAL	MB1	S	08L0194	N/A	05/12/08	05/13/08
CALCIUM LABORATORY	LC1 BS	S	08L0194	N/A	05/12/08	05/13/08
CALCIUM, TOTAL	MB1	S	08L0194	N/A	05/12/08	05/13/08
CADMIUM LABORATORY	LC1 BS	S	08L0194	N/A	05/12/08	05/13/08
CADMIUM, TOTAL	MB1	S	08L0194	N/A	05/12/08	05/13/08
COBALT LABORATORY	LC1 BS	S	08L0194	N/A	05/12/08	05/13/08
COBALT, TOTAL	MB1	S	08L0194	N/A	05/12/08	05/13/08
CHROMIUM LABORATORY	LC1 BS	S	08L0194	N/A	05/12/08	05/13/08
CHROMIUM, TOTAL	MB1	S	08L0194	N/A	05/12/08	05/13/08
COPPER LABORATORY	LC1 BS	S	08L0194	N/A	05/12/08	05/13/08
COPPER, TOTAL	MB1	S	08L0194	N/A	05/12/08	05/13/08
IRON LABORATORY	LC1 BS	S	08L0194	N/A	05/12/08	05/13/08
IRON, TOTAL	MB1	S	08L0194	N/A	05/12/08	05/13/08
MERCURY LABORATORY	LC1 BS	S	08C0078	N/A	05/05/08	05/07/08
MERCURY, TOTAL	MB1	S	08C0078	N/A	05/05/08	05/07/08
POTASSIUM LABORATORY	LC1 BS	S	08L0194	N/A	05/12/08	05/14/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-088 K1196

DATE RECEIVED: 05/01/08 LVL LOT # :0805L032

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
POTASSIUM, TOTAL	MB1	S	08L0194	N/A	05/12/08	05/14/08
MAGNESIUM LABORATORY	LC1 BS	S	08L0194	N/A	05/12/08	05/13/08
MAGNESIUM, TOTAL	MB1	S	08L0194	N/A	05/12/08	05/13/08
MANGANESE LABORATORY	LC1 BS	S	08L0194	N/A	05/12/08	05/13/08
MANGANESE, TOTAL	MB1	S	08L0194	N/A	05/12/08	05/13/08
SODIUM LABORATORY	LC1 BS	S	08L0194	N/A	05/12/08	05/14/08
SODIUM, TOTAL	MB1	S	08L0194	N/A	05/12/08	05/14/08
NICKEL LABORATORY	LC1 BS	S	08L0194	N/A	05/12/08	05/13/08
NICKEL, TOTAL	MB1	S	08L0194	N/A	05/12/08	05/13/08
LEAD LABORATORY	LC1 BS	S	08L0194	N/A	05/12/08	05/13/08
LEAD, TOTAL	MB1	S	08L0194	N/A	05/12/08	05/13/08
ANTIMONY LABORATORY	LC1 BS	S	08L0194	N/A	05/12/08	05/13/08
ANTIMONY, TOTAL	MB1	S	08L0194	N/A	05/12/08	05/13/08
SELENIUM LABORATORY	LC1 BS	S	08L0194	N/A	05/12/08	05/13/08
SELENIUM, TOTAL	MB1	S	08L0194	N/A	05/12/08	05/13/08
TIN LABORATORY	LC1 BS	S	08L0194	N/A	05/12/08	05/13/08
TIN, TOTAL	MB1	S	08L0194	N/A	05/12/08	05/13/08
THALLIUM LABORATORY	LC1 BS	S	08L0194	N/A	05/12/08	05/13/08
THALLIUM, TOTAL	MB1	S	08L0194	N/A	05/12/08	05/13/08
VANADIUM LABORATORY	LC1 BS	S	08L0194	N/A	05/12/08	05/13/08
VANADIUM, TOTAL	MB1	S	08L0194	N/A	05/12/08	05/13/08
ZINC LABORATORY	LC1 BS	S	08L0194	N/A	05/12/08	05/13/08
ZINC, TOTAL	MB1	S	08L0194	N/A	05/12/08	05/13/08
ZIRCONIUM LABORATORY	LC1 BS	S	08L0194	N/A	05/12/08	05/13/08
ZIRCONIUM, TOTAL	MB1	S	08L0194	N/A	05/12/08	05/13/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-088
LVL#: 0805L032
SDG/SAF#: K1196/RC-088

W.O.#: 11343-606-001-9999-00
Date Received: 05-01-08

METALS CASE NARRATIVE

The following is a summary of the QC results accompanying the sample results. Lionville Laboratory (LvLI) certifies that all test results meet the requirements of NELAC except as noted below.

All soil samples are reported on a dry weight basis unless requested by the client, required by the method, or noted otherwise.

1. This narrative covers the analyses of 4 solid samples.

2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary. The solid samples were reported on a wet weight "as received" basis.

   Samples J16M65, J16M66, and J16M67 were run and reported with 5-fold dilutions for Mercury due to sample matrix.

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

4. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury) with the exception of Sodium and Potassium in files TA0513A and TA0513B. All samples were rerun for Sodium and Potassium in files PS0514A and PS0514B.

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

6. The preparation/method blank for 1 analyte was outside method criteria. {less than the Limit of Quantitation (3-10X the LOD), or samples read greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.

   a). The MB result for Sodium was greater than the Limit of Quantitation (LOQ) {3-10x the (LOD) Limit of Detection} and samples J16M65 and J16M68 read less than 20 times the MB concentration. However, no corrective action criteria for MBs were provided in SW846 method 6010B. The sample results were reported herein "uncorrected" for the levels found in the MB.

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 27 pages.

LIONVILLE LABORATORY INC.

7. All ICP Interference Check Standards were within control limits.

8. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to the Inorganics Laboratory Control Standards Report.

9. The matrix spike (MS) recoveries for 4 analytes were outside the 75-125% control limits in the solid sample. Refer to the Inorganics Accuracy Report.

10. For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial dilution are performed. A PDS was prepared at meaningful concentration level for the following analytes:

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J16M66	Aluminum	20,000	98.9
	Iron	20,000	82.9
	Antimony	100	103.6
	Calcium	20,000	84.9

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

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

13. LvLI is NELAP accredited by the state of Pennsylvania. 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

5/19/08
Date

alm/m05-032

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within t

Lot#: 0804L032

Leaching Procedure: __1310 __1311 __1312 __Other:_____

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

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

Metals Analysis Methods

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

Other:_____ Method:_____

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

ANALYTICAL METAL METHODS

1. Not included in the method element list.

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

3. Flame AA.

4. Graphite Furnace AA.

L-WI-033/N-04/98

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/15/08

CLIENT: TNUHANFORD RC-088 K1196 LVL LOT #: 0805L032

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J16M65	Silver, Total	0.1 u	MG/KG	0.1	1.0
		Aluminum, Total	4450	MG/KG	3.8	1.0
		Arsenic, Total	1.1	MG/KG	0.48	1.0
		Barium, Total	92.4	MG/KG	0.1	1.0
		Beryllium, Total	0.38	MG/KG	0.05	1.0
		Calcium, Total	4710	MG/KG	3.8	1.0
		Cadmium, Total	0.08	MG/KG	0.05	1.0
		Cobalt, Total	5.6	MG/KG	0.19	1.0
		Chromium, Total	11.1	MG/KG	0.19	1.0
		Copper, Total	13.2	MG/KG	0.19	1.0
		Iron, Total	17600	MG/KG	4.3	1.0
		Mercury, Total	0.04 u	MG/KG	0.04	5.0
		Potassium, Total	627	MG/KG	46.9	1.0
		Magnesium, Total	3130	MG/KG	2.4	1.0
		Manganese, Total	228	MG/KG	0.04	1.0
		Sodium, Total	199	MG/KG	1.9	1.0
		Nickel, Total	8.7	MG/KG	0.19	1.0
		Lead, Total	2.2	MG/KG	0.29	1.0
		Antimony, Total	0.29 u	MG/KG	0.29	1.0
		Selenium, Total	0.57 u	MG/KG	0.57	1.0
		Tin, Total	0.57 u	MG/KG	0.57	1.0
		Thallium, Total	0.57 u	MG/KG	0.57	1.0
		Vanadium, Total	49.1	MG/KG	0.13	1.0
		Zinc, Total	33.5	MG/KG	0.57	1.0
		Zirconium, Total	17.2	MG/KG	4.8	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/15/08

CLIENT: TNUHANFORD RC-088 K1196 LVL LOT #: 0805L032

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	J16M66	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Aluminum, Total	5550	MG/KG	3.3	1.0
		Arsenic, Total	1.8	MG/KG	0.41	1.0
		Barium, Total	63.5	MG/KG	0.08	1.0
		Beryllium, Total	0.45	MG/KG	0.04	1.0
		Calcium, Total	7340	MG/KG	3.3	1.0
		Cadmium, Total	0.07	MG/KG	0.04	1.0
		Cobalt, Total	7.6	MG/KG	0.17	1.0
		Chromium, Total	11.0	MG/KG	0.17	1.0
		Copper, Total	16.8	MG/KG	0.17	1.0
		Iron, Total	25000	MG/KG	3.7	1.0
		Mercury, Total	0.04 u	MG/KG	0.04	5.0
		Potassium, Total	856	MG/KG	40.7	1.0
		Magnesium, Total	3880	MG/KG	2.1	1.0
		Manganese, Total	305	MG/KG	0.03	1.0
		Sodium, Total	244	MG/KG	1.7	1.0
		Nickel, Total	12.9	MG/KG	0.17	1.0
		Lead, Total	5.3	MG/KG	0.25	1.0
		Antimony, Total	0.25 u	MG/KG	0.25	1.0
		Selenium, Total	0.50 u	MG/KG	0.50	1.0
		Tin, Total	0.50 u	MG/KG	0.50	1.0
		Thallium, Total	0.50 u	MG/KG	0.50	1.0
		Vanadium, Total	60.5	MG/KG	0.12	1.0
		Zinc, Total	41.5	MG/KG	0.50	1.0
		Zirconium, Total	22.8	MG/KG	4.1	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/15/08

CLIENT: TNUHANFORD RC-088 K1196 LVL LOT #: 0805L032

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	J16M67	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Aluminum, Total	4480	MG/KG	3.2	1.0
		Arsenic, Total	1.3	MG/KG	0.40	1.0
		Barium, Total	90.5	MG/KG	0.08	1.0
		Beryllium, Total	0.43	MG/KG	0.04	1.0
		Calcium, Total	7900	MG/KG	3.2	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Cobalt, Total	7.1	MG/KG	0.16	1.0
		Chromium, Total	7.6	MG/KG	0.16	1.0
		Copper, Total	11.6	MG/KG	0.16	1.0
		Iron, Total	20800	MG/KG	3.6	1.0
		Mercury, Total	0.04 u	MG/KG	0.04	5.0
		Potassium, Total	664	MG/KG	39.1	1.0
		Magnesium, Total	3620	MG/KG	2.0	1.0
		Manganese, Total	295	MG/KG	0.03	1.0
		Sodium, Total	222	MG/KG	1.6	1.0
		Nickel, Total	9.9	MG/KG	0.16	1.0
		Lead, Total	3.1	MG/KG	0.24	1.0
		Antimony, Total	0.24 u	MG/KG	0.24	1.0
		Selenium, Total	0.48 u	MG/KG	0.48	1.0
		Tin, Total	0.50	MG/KG	0.48	1.0
		Thallium, Total	0.48 u	MG/KG	0.48	1.0
		Vanadium, Total	56.2	MG/KG	0.11	1.0
		Zinc, Total	37.1	MG/KG	0.48	1.0
		Zirconium, Total	20.2	MG/KG	4.0	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/15/08

CLIENT: TNUHANFORD RC-088 K1196 LVL LOT #: 0805L032

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	J16M68	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Aluminum, Total	4860	MG/KG	3.3	1.0
		Arsenic, Total	2.0	MG/KG	0.41	1.0
		Barium, Total	73.9	MG/KG	0.08	1.0
		Beryllium, Total	0.50	MG/KG	0.04	1.0
		Calcium, Total	6450	MG/KG	3.3	1.0
		Cadmium, Total	0.59	MG/KG	0.04	1.0
		Cobalt, Total	8.0	MG/KG	0.16	1.0
		Chromium, Total	7.4	MG/KG	0.16	1.0
		Copper, Total	13.2	MG/KG	0.16	1.0
		Iron, Total	23900	MG/KG	3.7	1.0
		Mercury, Total	0.008u	MG/KG	0.008	1.0
		Potassium, Total	731	MG/KG	40.4	1.0
		Magnesium, Total	3920	MG/KG	2.0	1.0
		Manganese, Total	299	MG/KG	0.03	1.0
		Sodium, Total	168	MG/KG	1.6	1.0
		Nickel, Total	9.8	MG/KG	0.16	1.0
		Lead, Total	6.1	MG/KG	0.25	1.0
		Antimony, Total	0.25 u	MG/KG	0.25	1.0
		Selenium, Total	0.49 u	MG/KG	0.49	1.0
		Tin, Total	0.49 u	MG/KG	0.49	1.0
		Thallium, Total	0.49 u	MG/KG	0.49	1.0
		Vanadium, Total	62.4	MG/KG	0.11	1.0
		Zinc, Total	48.1	MG/KG	0.49	1.0
		Zirconium, Total	22.9	MG/KG	4.1	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 05/15/08

CLIENT: TNUHANFORD RC-088 K1196 LVL LOT #: 0805L032

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	08L0194-MB1	Silver, Total	0.10 u	MG/KG	0.10	1.0
		Aluminum, Total	4.0 u	MG/KG	4.0	1.0
		Arsenic, Total	0.50 u	MG/KG	0.50	1.0
		Barium, Total	0.10 u	MG/KG	0.10	1.0
		Beryllium, Total	0.05 u	MG/KG	0.05	1.0
		Calcium, Total	6.0	MG/KG	4.0	1.0
		Cadmium, Total	0.05 u	MG/KG	0.05	1.0
		Cobalt, Total	0.20 u	MG/KG	0.20	1.0
		Chromium, Total	0.20 u	MG/KG	0.20	1.0
		Copper, Total	0.20 u	MG/KG	0.20	1.0
		Iron, Total	4.5 u	MG/KG	4.5	1.0
		Potassium, Total	49.3 u	MG/KG	49.3	1.0
		Magnesium, Total	3.1	MG/KG	2.5	1.0
		Manganese, Total	0.04 u	MG/KG	0.04	1.0
		Sodium, Total	12.0	MG/KG	2.0	1.0
		Nickel, Total	0.20 u	MG/KG	0.20	1.0
		Lead, Total	0.30 u	MG/KG	0.30	1.0
		Antimony, Total	0.30 u	MG/KG	0.30	1.0
		Selenium, Total	0.60 u	MG/KG	0.60	1.0
		Tin, Total	0.60 u	MG/KG	0.60	1.0
		Thallium, Total	0.60 u	MG/KG	0.60	1.0
		Vanadium, Total	0.14 u	MG/KG	0.14	1.0
		Zinc, Total	0.60 u	MG/KG	0.60	1.0
		Zirconium, Total	5.0 u	MG/KG	5.0	1.0
BLANK1	08C0078-MB1	Mercury, Total	0.01 u	MG/KG	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 05/15/08

CLIENT: TNUHANFORD RC-088 K1196 LVL LOT #: 0805L032

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J16M65	Mercury, Total	1.3	0.04u	1.2	100.9	5.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 05/15/08

CLIENT: TNUHANFORD RC-088 K1196 LVL LOT #: 0805L032

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-002	J16M66	Silver, Total	3.4	0.08u	3.9	87.2	1.0
		Aluminum, Total	6430	5550	156	559.7*	1.0
		Arsenic, Total	142	1.8	156	89.4	1.0
		Barium, Total	202	63.5	156	88.7	1.0
		Beryllium, Total	4.1	0.45	3.9	93.6	1.0
		Calcium, Total	9810	7340	1950	126.1	1.0
		Cadmium, Total	3.6	0.07	3.9	90.5	1.0
		Cobalt, Total	43.3	7.6	39.1	91.3	1.0
		Chromium, Total	22.7	11.0	15.6	75.0	1.0
		Copper, Total	32.8	16.8	19.5	82.1	1.0
		Iron, Total	23500	25000	78.1	-1900. *	1.0
		Potassium, Total	2470	856	1950	82.8	1.0
		Magnesium, Total	5990	3880	1950	107.8	1.0
		Manganese, Total	345	305	39.1	101.8*	1.0
		Sodium, Total	1970	244	1950	88.2	1.0
		Nickel, Total	44.9	12.9	39.1	81.8	1.0
		Lead, Total	44.7	5.3	39.1	100.8	1.0
		Antimony, Total	18.9	0.25u	39.1	48.3	1.0
		Selenium, Total	121	0.50u	156	77.5	1.0
		Tin, Total	71.1	0.50u	78.1	91.0	1.0
		Thallium, Total	139	0.50u	156	89.1	1.0
		Vanadium, Total	97.3	60.5	39.1	94.1	1.0
		Zinc, Total	78.6	41.5	39.1	94.9	1.0
		Zirconium, Total	352	22.8	390	84.2	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 05/15/08

CLIENT: TNUHANFORD RC-088 K1196 LVL LOT #: 0805L032

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J16M65	Mercury, Total	0.04u	0.04u	NC	5.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 05/15/08

CLIENT: TNUHANFORD RC-088 K1196 LVL LOT #: 0805L032

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-002REP	J16M66	Silver, Total	0.08u	0.08u	NC	1.0
		Aluminum, Total	5550	5780	3.9	1.0
		Arsenic, Total	1.8	1.4	25.0	1.0
		Barium, Total	63.5	99.9	44.6	1.0
		Beryllium, Total	0.45	0.48	6.5	1.0
		Calcium, Total	7340	7460	1.6	1.0
		Cadmium, Total	0.07	0.04	47.7	1.0
		Cobalt, Total	7.6	7.4	2.7	1.0
		Chromium, Total	11.0	8.8	22.2	1.0
		Copper, Total	16.8	14.5	14.7	1.0
		Iron, Total	25000	23200	7.3	1.0
		Potassium, Total	856	843	1.4	1.0
		Magnesium, Total	3880	4060	4.3	1.0
		Manganese, Total	305	298	2.4	1.0
		Sodium, Total	244	245	0.45	1.0
		Nickel, Total	12.9	11.0	15.9	1.0
		Lead, Total	5.3	5.5	3.7	1.0
		Antimony, Total	0.25u	0.23u	NC	1.0
		Selenium, Total	0.50u	0.46u	NC	1.0
		Tin, Total	0.50u	0.46u	NC	1.0
		Thallium, Total	0.50u	0.46u	NC	1.0
		Vanadium, Total	60.5	61.2	1.2	1.0
		Zinc, Total	41.5	42.3	1.9	1.0
		Zirconium, Total	22.8	24.5	7.2	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 05/15/08

CLIENT: TNUHANFORD RC-088 K1196 LVL LOT #: 0805L032

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	08L0194-LC1	Silver, LCS	47.9	50.0	MG/KG	95.8
		Aluminum, LCS	492	500	MG/KG	98.5
		Arsenic, LCS	940	1000	MG/KG	94.0
		Barium, LCS	478	500	MG/KG	95.6
		Beryllium, LCS	24.4	25.0	MG/KG	97.6
		Calcium, LCS	2470	2500	MG/KG	98.8
		Cadmium, LCS	24.2	25.0	MG/KG	96.8
		Cobalt, LCS	242	250	MG/KG	96.9
		Chromium, LCS	49.0	50.0	MG/KG	98.0
		Copper, LCS	122	125	MG/KG	97.4
		Iron, LCS	486	500	MG/KG	97.3
		Potassium, LCS	2330	2500	MG/KG	93.1
		Magnesium, LCS	2410	2500	MG/KG	96.4
		Manganese, LCS	73.3	75.0	MG/KG	97.7
		Sodium, LCS	2410	2500	MG/KG	96.3
		Nickel, LCS	194	200	MG/KG	97.0
		Lead, LCS	243	250	MG/KG	97.1
		Antimony, LCS	282	300	MG/KG	94.1
		Selenium, LCS	913	1000	MG/KG	91.3
		Tin, LCS	484	500	MG/KG	96.7
		Thallium, LCS	950	1000	MG/KG	95.0
		Vanadium, LCS	237	250	MG/KG	94.9
		Zinc, LCS	96.2	100	MG/KG	96.2
		Zirconium, LCS	473	500	MG/KG	94.7
LCS1	08C0078-LC1	Mercury, LCS	4.6	4.7	MG/KG	98.5

Lionville Laboratory Incorporated

Logbook #: 130

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 08L0194
Date/Time Initiated: 5/12/08 1630
Date/Time Completed: 5/12/08 2030
Analyst(s): MW
Matrix: (Soil) Water Other:
Instr. Type: AA (ICP)
Parameters: See Backlog

(Digested) / Undigested (circle one)
Balance #: 620
Balance Cal Verif: (Y) NA
Hot Plate Temp: 92°

Method: SW (circle) 3005A, 3010A, 3015, 3020A, 7060A (As/Se), 7760A (Ag), (3050B), 3051
DW 200.7 (1994), 200.9, 3113B
MCAWW 200.7 (1982), 200 (AA), 206.2 (As/Se)
SM 3030C (NC)
CLP ILMO3.0, ILMO4.0
Other

MW

COC Batch #	Spike Vol(s) (mL)	Initial Wt/Vol (g/mL)	Final Vol (mL)	pH <2	Type: To/So/TC	Texture	Color/Appearance	Artifact	Turb
0805L053-001		1.07gm	100ml	<2	TO	coarse	tan + brown vermiculite		RAD
001R		1.11gm							
001S	1.0ml *	1.07gm							
0805L096-001		1.12gm					brown solid w/	flakes +	black
001R		1.17gm							RAD
001S	1.0ml *	1.15gm							
002		1.15gm					gray scale		
0805L032-001		1.09gm					brity soil	rocks	
002		1.21gm					brown soil	rocks	RAD
002R		1.29gm							
002S	1.0ml *	1.28gm							
003		1.26gm					only soil		
004		1.22gm					brown soil	rocks	RAD
08L0194-MB1		1.0gm					brittly chips		
LCS	1.0ml *	1.0gm							

PMP 5/12/08

Spiking IDs:
MS #: 8100-04-01
02
03
6072-78-07
LCS #: 08
09
10
11

Reagent IDs:
HNO_3 E46025
HCL G05039
H_2O_2 E44A06
1:1 HNO_3 9787-077-04
1:1 HCL

File ID#: IC019401, IC0190 IC019403

LIMS Transfer: (Y) N updated

Data Review By/Date: PMP, 05/13/08

* also 0.5ml 6072-076-06 (Ba)
0.5ml 6072-076-07 (Pb)
0.5ml 6072-078-01 (U)
0.5ml 6072-076-05 (Zr)

Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 422

Analyst: TEO
Date 5/5/08
Start Time/Temp: 1225 | 93°
End Time/Temp: 1255 | 99°

Instrument ID HG3.2
Balance #: B29 / NA
Pipette Calibration (Daily) Y ✓

Prep Batch: 08C0078
Worksheet: HG050702
SOP No. ME-HgCVAA, Rev. 02

pH < 2 for Liquids? __ Yes NA No (If no: designate affected samples in Comments column, and initiate an SDR)

NOTE: The Inital/Final Volume for water samples = 33mL, unless otherwise noted.
The Final volume for soil samples = 50mL, unless otherwise noted.

LvLI Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
Blank	40			10mL	50mL	
0.2 µg/L	GTR	0.100				
1.0	205	0.500				
2.0	DX	1.000				
5.0	8/G	2.500				
10.0	K35	5.000				
ICV	GR	0.125	2.5			
CCV	E	0.250	5.0			
ICB/CCB	183/QLN					90.502
MB1	3P			0.30		PBS178 100.00
LCS1	818	*	*	0.31		LCSS178
0804L001-001	H			0.38		92.54
001R	C40			0.36		
001S	DF	0.500	1.0	0.38		
0804L009-004	X8			0.32		100.00
0804L010-001	C15			0.35		97.38
001R	A4			0.33		
001S	C48	0.500	1.0	0.35		
002	3H			0.32		96.40
003	C9			0.37		R 97.86
004	3			0.32		97.25
0804L026-001	NB			0.34		93.81
002	411			0.35		96.56
0804L032-001	290			0.34		100.00
001R	LT			0.35		
001S	LV	0.050	10.0	0.40		
002	886			0.40		

W.E. MJ 5/7/08

Standard:	ID	Prep Date/Time
ICAL/MS	R16072-78-14B	5/5/08 1040
ICV/CCV/LCS	US6072-78-15A	

Reviewed By/Date: [signature] 5/8/08

see book # 9368 for std traceability information

Soil LCS =US Metals in soil No.3; True Value = 4.70 mg/Kg
Catalogue #1RM-021, Lot # E021

Water Matrix Spiking Solution Concentration = 0.1 µg/ml
Water LCS Spiking Concentration: 1.0 µg/ml

ME-HgCVAA-Prep1007

Page #:

000000022

ionville Laboratory
ncorporated

MERCURY PREPARATION

Logbook # 422

Analyst: EA
Date 5/5/08
Start Time/Temp: See page 092
End Time/Temp:

Instrument ID HG3.2
Balance #: B29 /NA
Pipette Calibration (Daily) Y ✓

Prep Batch: 08C0078
Worksheet: HG050702
SOP No. ME-HgCVAA, Rev. 02

pH < 2 for Liquids? __ Yes NA No (If no: designate affected samples in Comments column, and initiate an SDR)

NOTE: The Inital/Final Volume for water samples = 33mL, unless otherwise noted.
The Final volume for soil samples = 50mL, unless otherwise noted.

LvLI Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
0804L032-003	871			0.34	50mL	100.0
004	P18			0.39		
0804L020-001	A9			0.38		
001R	111E			0.34		
001S	1C	0.500	1.0	0.38		
001T	700	0.500	1.0	0.33		
TE 005/PK 0083	D4			0.30		
008	WN			0.34		
010	SE			0.31		
012	B2			0.35		
014	997			0.34		

EA 5/5/08

Standard:	ID	Prep Date/Time
ICAL/MS		
ICV/CCV/LCS	See page	092

Reviewed By/Date: [signature] 5/5/08

see book # 9368 for std traceability information

Soil LCS =US Metals in soil No.3; True Value = 4.70 mg/Kg
Catalogue #1RM-021, Lot # E021

Water Matrix Spiking Solution Concentration = 0.1 µg/ml
Water LCS Spiking Concentration: 1.0 µg/ml

ME-HgCVAA-Prep1007

Page #:

000000023

ville Laboratory Use Only

3051032

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

TNU HANFORD SAF# RC-088

Final Proj. Sampling Date

ct# 11343-606-001-9999-00

ct Contact/Phone#

lle Laboratory Project Manager O. JOHNSON

SW846 Del STD TAT 15 days

Rec'd 5-1-08 Date Due 5-16-08

Refrigerator #		A 3												
#/Type Container	Liquid / Solid	1G												
Volume		250												
Preservatives														
ANALYSES REQUESTED		ORGANIC: VOA	BNA	Pest/PCB	Herb				INORG: TCP Metal Hg	CN	Ignitability			
Lionville Laboratory Use Only			0625H	OPL-B					MetO		IIGN			

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	BNA	Pest/PCB	TCP Metal Hg	Ignitability
001	J16M65			SOLID	4-28-08	0750	X	X	X	X
002	J16M66					0810	X	X	X	X
003	J16M67					1440	X	X	X	X
004	J16M68					1450	X	X	X	X

ial Instructions: Run matrix QC

metO = HSL + Zr, Sn

Special Instructions:

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

Relinquished by	Received by	Date	Time
		5/1/08	0945

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		"COMPOSITE WASTE"	

000000024

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-088-014 | Page 1 of 1

llector B. Lawrence / E. Harries	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH
Price Code 9G	Data Turnaround 15 Days		
ɔject Designation 518-7 Burial Ground - Other Liquids	Sampling Location 618-7 Burial Ground (drums)		SAF No. RC-088
: Chest No. AFS-04-124	Field Logbook No. EL-1395-12	COA RG61878500	Method of Shipment FedEx
ipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. A080244		Bill of Lading/Air Bill No. See OSPC

OSSIBLE SAMPLE HAZARDS/REMARKS

otential Radioactive contamination, potential beryllium ontamination

pecial Handling and/or Storage

one Cool 4°C

Preservation	Cool 4C	Cool 4C	None	None	None					
Type of Container	aG	aG	aG	aG	P					
No. of Container(s)	1	0	0	0	1					
Volume	250mL	~~125mL~~ RL 4-28-08	~~125mL~~ RL 4-28-08	~~60mL~~ RL 4-28-08	500mL					
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions. RL 4-28-08			TIE TO RCF		B12 PINT

Sample No.	Matrix *	Sample Date	Sample Time										
3M65	OTHER LIQUID	4-28-08	0750	X	X	X	X				J16M55		0081 2
3M66	OTHER LIQUID	4-28-08	0810	X	X	X	X				J16M56		0220 3

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Lawrence	4-28-08 0900	RB Kerkow / RB Kirk	4-28-08 0900
RB Kerkow / RB Kirk	4-28-08 1015	REF 1B (1060)	4-28-08 1015
1060/1B	4/30-08 0945	MStankovich	4/30/08 0945
MStankovich	4/30/08 0945	FedEx	
FedEx	5-1-08 0940	[illegible]	5-1-08 0940
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc, Zirconium}; ICP Metals - 6010A (Add-on) {Arsenic, Beryllium, Lead, Selenium, Thallium, Tin}; Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

NOTE: SAMPLE MATERIAL IS IN ONE 250 mL aG BOTTLE RK. 4-28-08

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

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

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

SH-EE-011

000000025

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-015	Page 1 of 1

llector B. Lawrence / E. Harries	Company Contact Joan Kessner Telephone No. 509-375-4688	Project Coordinator KESSNER, JH	Price Code 9G Data Turnaround 15 Days
oject Designation 618-7 Burial Ground - Other Liquids	Sampling Location 618-7 Burial Ground (drums)	SAF No. RC-088	
Chest No. AFS-04-124	Field Logbook No. EL-1395-12 COA RG61878500	Method of Shipment FedEx	
dpped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A080244	Bill of Lading/Air Bill No. see ospc	

OSSIBLE SAMPLE HAZARDS/REMARKS

otential Radioactive contamination, potential beryllium ontamination

pecial Handling and/or Storage

one Cool 4°C

Preservation	Cool 4C	Cool 4C	None	None	None						
Type of Container	aG	aG	aG	aG	P						
No. of Container(s)	1	0	0	0	1						
Volume	250mL	125mL	125mL	60mL	500mL						
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions. RK 4-28-08						B12

Sample No.	Matrix *	Sample Date	Sample Time										
6M67	OTHER LIQUID	4-28-08	1440	X	X	X	X						#0222 4
6M68	OTHER LIQUID	4-28-08	1450	X	X	X	X						#0223 5

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Harries / E. Harries	1520 4/28/08	RB KERKOW / RB Kerkow	1520 4-28-08
B Kerkow / RB Kerkow	1620 4-28-08	REF 1B (1060)	1620 4-28-08
60/1B	4/30/08 1000	MStankovich	4/30/08 1000
well MStankovich	1000 4/30/08	FedEx	
FedEx	5-1-08 0940	[signature]	5-1-08 0940
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc, Zirconium}; ICP Metals - 6010A (Add-on) {Arsenic, Beryllium, Lead, Selenium, Thallium, Tin}; Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

NOTE: THE ENTIRE SAMPLE IS IN ONE 250 mL aG BOTTLE. RK 4-28-08

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

JM KW

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

ABORATORY SECTION	Received By	Title	Date/Time
NAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

000000026

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD
Project/SAF/SOW/Release #: RC-088

Date: 5-1-08

LvLI Batch #: 08056032

Sample Custodian: Victor Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7993 1661 9305
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	Comments:
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2-3	°C	Cooler #
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes 5-1-08	☑ No	Client COC Indicates OTHER LIQUID Sample is Solid
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☑ Yes	☐ No	☐ N/A
Person Contacted O-JOHNSON		Date 5-1-08	

LvLI LIONVILLE LABORATORY INC

RECEIVED
JUN 2008

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-088 K1196

DATE RECEIVED: 05/01/08 LVL LOT # :0805L012

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16M65						
IGNITABILITY	001	SO	08LFPA10	04/28/08	05/08/08	05/08/08
J16M66						
IGNITABILITY	002	SO	08LFPA10	04/28/08	05/08/08	05/08/08
J16M67						
IGNITABILITY	003	SO	08LFPA10	04/28/08	05/08/08	05/08/08
J16M68						
IGNITABILITY	004	SO	08LFPA10	04/28/08	05/08/08	05/08/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-088 K1196
LVL#: 0805L032

W.O.#: 11343-606-001-9999-00
Date Received: 05-01-08

INORGANIC NARRATIVE

1. This narrative covers the analysis of 4 solid samples.

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

   LvLI is NELAP accredited by the State of Pennsylvania. For a complete list of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager. LvLI certifies that all test results meet the requirements of NELAC with any exception noted in the following statements.

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

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

5. The Laboratory Control Samples (LCS) were within the method criteria.

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

Judy Stern
Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

5/21/08
Date

njp\i05-032

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 9 pages.

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

	ASTM	SW846	OTHER
% Ash	___ D2216-80		
% Moisture	___ D2216-80		___ ILMO4.0 (e)
% Solids	___ D2216-80		___ ILMO4.0 (e)
% Volatile Solids	___ D2216-80		
ASTM Extraction in Water	___ D3987-81/85		
BTU	___ D240-87		
CEC		___ 9081	___ c
Chromium VI		___ 3060A/7196A	
Corrosivity ___ by coupon ___ by pH		___ 1110(mod) ___ 9045C	
Cyanide, Total		___ 9010B	___ ILMO4.0 (e)
Cyanide, Reactive		___ Section 7.3/9014	
Halides, Extractable Organic		___ 9020B	___ EPA 600/4/84-008
Halides, Total		___ 9020B	___ EPA 600/4/84-008
EP Toxicity		___ 1310A	
Flash Point		___ 1010	
Ignitability		✓ 1010	
Oil & Grease		___ 9071A	
Carbon, Total Organic		___ 9060	___ Lloyd Kahn (mod)
Oxygen Bomb Prep for Anions	___ D240-87(mod)	___ 5050	
Petroleum Hydrocarbons, Total Recoverable		___ 9071	___ EPA 418.1
pH, Soil		___ 9045C	
Sulfide, Reactive		___ Section 7.3/9030B	
Sulfide		___ 9030B(mod)	
Specific Gravity	___ D1429-76C/	___ D5057-90	
Sulfur, Total		___ 9056	
Synthetic Preparation Leach		___ 1312	
Paint Filter		___ 9095A	
Other:	**Method:**		
Other:	**Method**		

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.

Inorganic Data Summary Report
Physical Testing Observation

Client: TNU-HANFORD RC-088 K1196
LVL#: 0805L032

W.O.#: 11343-606-001-9999-00
Date Received: 05-01-08

Analyte:	**Observation:**
Ignitability	Samples J16M65, J16M66, J16M67 and J16M68 did not ignite. The samples were heated to approximately 220°F. p-Xylene was used to determined the accuracy of the ignitability apparatus. The p-Xylene will ignite at 81°F +/- 1°F. For this test, the p-Xylene ignited at 82°F.

njp\i05-032.pt2

LIONVILLE LABORATORY INC.

ville Laboratory Use Only

05L032

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

TNU HANFORD SAF# RC-088

inal Proj. Sampling Date

ct# 11343-606-001-9999-00

ct Contact/Phone#

ille Laboratory Project Manager O. JOHNSON

SW846 Del STD TAT 15 days

Rec'd 5-1-08 Date Due 5-16-08

Refrigerator #			A	3												
#/Type Container	Liquid			1G												
	Solid															
Volume				250												
Preservatives																
ANALYSES REQUESTED →			ORGANIC							INORG						
			VOA	BNA	Resd/PCB	Herb				Total Metal Hg	CN	Reactivity				
			Lionville Laboratory Use Only													
				062514	OPL-3					metO		IFGN				

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected												
001	J16M65			Solid	4-28-08	0750		X	X					X		X		
002	J16M66					0810		X	X					X		X		
003	J16M67					1440		X	X					X		X		
004	J16M68					1450		X	X					X		X		

ial Instructions: Run matrix QC

metO = HSL + Zr, Sn

Special Instructions:

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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	5/1/08	0945

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		"COMPOSITE WASTE"	

000000006

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-088-014

lector B. Lawrence / B. Harries	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH
Price Code 9G	Data Turnaround 15 Days		
lect Designation 618-7 Burial Ground - Other Liquids	Sampling Location 618-7 Burial Ground (drums)		SAF No. RC-088
Chest No. AFS-04-124	Field Logbook No. EL-1395-12	COA RG61878500	Method of Shipment FedEx
ipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A080244		Bill of Lading/Air Bill No. See OSPC

OSSIBLE SAMPLE HAZARDS/REMARKS

otential Radioactive contamination, potential beryllium ontamination

pecial Handling and/or Storage

one Cool 4°C

Preservation	Cool 4C	Cool 4C	None	None	None	HI					
Type of Container	aG	aG	aG	aG	P						
No. of Container(s)	1	0	0	0	1						
Volume	250mL	~~125mL~~ BL 4-28-08	~~125mL~~ BL 4-28-08	~~60mL~~ BL 4-28-08	500mL						
SAMPLE ANALYSIS		Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions. BL 4-28-08			TIE TO RCF		B12 PIN #
Sample No.	Matrix *	Sample Date	Sample Time								
3M65	OTHER LIQUID	4-28-08	0750	X	X	X	X			J16M55	0081 2
3M66	OTHER LIQUID	4-28-08	0810	X	X	X	X			J16M56	0220 3

CHAIN OF POSSESSION	Sign/Print Names		
quished By/Removed From	Date/Time 0900	Received By/Stored In	Date/Time 0900
Lawrence	4-28-08	FB Kerkow / RB Kerk	4-28-08
quished By/Removed From	Date/Time 1015	Received By/Stored In	Date/Time 1015
FB Kerkow / RB Kerk	4-28-08	REF 1B (1060)	4-28-08
quished By/Removed From	Date/Time	Received By/Stored In	Date/Time 0945
60/1B	4/30-08 0945	MStankovich	4/30/08
quished By/Removed From	Date/Time	Received By/Stored In	Date/Time
MStankovich	4/30/08 0945	FedEx	
quished By/Removed From	Date/Time	Received By/Stored In	Date/Time
FedEx	5-1-08 0940	[illegible]	5-1-08 0940
quished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc, Zirconium}; ICP Metals - 6010A (Add-on) {Arsenic, Beryllium, Lead, Selenium, Thallium, Tin}; Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cobalt-60, Europium-152, Europium-154, Europium-155}; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

NOTE: SAMPLE MATERIAL IS IN ONE 250 mL aG BOTTLE RK. 4-28-08

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

Matrix *

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

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

CH-EE-011

000000007

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-015	Page 1 of 1

llector 3. Lawrence / E. Harries	Company Contact Joan Kessner	Telephone No. 509-375-4688	Project Coordinator KESSNER, JH
Price Code 9G	Data Turnaround 15 Days		
ɔject Designation 518-7 Burial Ground - Other Liquids	Sampling Location 618-7 Burial Ground (drums)		SAF No. RC-088
Chest No. AFS-04-124	Field Logbook No. EL-1395-12	COA RG61878500	Method of Shipment FedEx
ipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. A080244		Bill of Lading/Air Bill No. see ospc

OSSIBLE SAMPLE HAZARDS/REMARKS

otential Radioactive contamination, potential beryllium ontamination

pecial Handling and/or Storage

one Cool 4°C

Preservation	Cool 4C	Cool 4C	None	None	None						
Type of Container	aG	aG	aG	aG	P						
No. of Container(s)	1	0	0	0	1						
Volume	250mL	125mL	125mL	60mL	500mL						
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions. RK 4-28-08						B12

Sample No.	Matrix *	Sample Date	Sample Time											
6M67	OTHER LIQUID	4-28-08	1440	X	X	X	X							#0222 4
6M68	OTHER LIQUID	4-28-08	1450	X	X	X	X							#0223 5

CHAIN OF POSSESSION — **Sign/Print Names**

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Harries / E. Harries	1520 4/28/08	RB KERKOW / RB Kerkow	1520 4-28-08
B Kerkow / RB Kerkow	1620 4-28-08	REF 1B (10b)	1620 4-28-08
60/1B	4/30/08 1000	M Stankovich	4/30/08 1000
well M Stankovich	1000 4/30/08	FedEx	
FedEx	5-1-08 0940	[illegible]	5-1-08 0940
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) [Aluminum, Antimony, Barium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc, Zirconium]; ICP Metals - 6010A (Add-on) [Arsenic, Beryllium, Lead, Selenium, Thallium, Tin]; Mercury - 7471 - (CV)

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) [Cobalt-60, Europium-152, Europium-154, Europium-155]; Isotopic Uranium; Isotopic Thorium; Americium-241; Isotopic Plutonium; Strontium-89,90 -- Total Sr

NOTE: THE ENTIRE SAMPLE IS IN ONE 250 mL aG BOTTLE. RK 4-28-08

Sampler unavailable to remove samples from controlled storage. Shipper removed samples from storage location taking custody of samples for shipment to lab.

JM

Matrix *

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

ABORATORY SECTION	Received By	Title	Date/Time
NAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD
Project/SAF/SOW/Release #: RC-088

Date: 5-1-08

LvLI Batch #: 0805L032

Sample Custodian: Victor Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 7993 1661 9305
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	Comments:
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2-3 °C		Cooler #
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes 5-1-08	☑ No	Client COC indicates OTHER LIQUID Sample is SOLID
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☑ Yes	☐ No	☐ N/A
Person Contacted O-JOHNSON		Date 5-1-08	

LvLI LIONVILLE LABORATORY INC.