PINNACLE LABORATORIES

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

PL I.D. **111054**

JAN 2002
RECEIVED

January 11, 2002

NMED HWB
2905 Rodeo Park Drive E.
Bldg. 1
Santa Fe, NM 87505-6303

Project Name/Number: SFAC 10.30.01-258 (HBW SFAC)

Attention: John Young

On **11/12/01**, Pinnacle Laboratories Inc., (ADHS License No. AZ0592 pending), received a request to analyze **aqueous** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

PCB analysis was performed by: General Engineering Laboratory, 2040 Savage Road, Charleston, SC 29414.

All other analyses were performed by: EnviroTest Laboratories, LLC, Casper, WY.

If you have any questions or comments, please do not hesitate to contact us at (505) 344-3777.

H. Mitchell Rubenstein, Ph.D.
General Manager

MR:jt

Enclosure

7590

PINNACLE LABORATORIES

2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

CLIENT	: NMED HWB	DATE RECEIVED	: 11/12/01
PROJECT #	: 10.30.01-258 (HBW SFAC)		
PROJECT NAME	: SFAC	REPORT DATE	: 01/11/02

PL ID: 111054

	PINNACLE ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	111054-01	PU-10258	NON-AQ	10/30/01
		PU-10258	NON-AQ	11/09/01
02	111054-02	PU-10273	NON-AQ	10/30/01
		PU-10273	NON-AQ	11/09/01
03	111054-03	PU-10283	NON-AQ	10/30/01
04	111054-04	PU-10334	NON-AQ	11/09/01
	111054-05	PU-10331	NON-AQ	11/09/01
06	111054-06	PU-10326	NON-AQ	11/09/01
07	111054-07	PU-10333	NON-AQ	11/09/01
08	111054-08	PU-10332	NON-AQ	11/09/01
09	111054-09	PU-102AB	NON-AQ	10/30/01
		PU-102AB	NON-AQ	11/09/01

---TOTALS---

MATRIX	#SAMPLES
NON-AQ	9

Pinnacle Laboratories Inc.

CHAIN OF CUSTODY

DATE: 11-12-01 PAGE: 1 OF 2

PLI Accession #: 11054

SHADED AREAS ARE FOR LAB USE ONLY

PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT MANAGER: JOHN YOUNG

COMPANY: NMED HWB Bldg 1
ADDRESS: 2905 Rodeo Park Drive E.
Santa Fe, NM 87505-6303
PHONE: 505 428-2538
FAX: 505 428-2567

BILL TO: NMED HWB Bldg 1
COMPANY: HAZARDOUS WASTE BUREAU
ADDRESS: 2905 Rodeo Park Drive E.
Santa Fe, NM 87505-6303

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Petroleum Hydrocarbons (418.1) TRPH	(MOD.8015) Diesel/Direct Inject	Isotopic Plutonium Line#103A	(M8015) Gas/Purge & Trap	8021 (BTEX)/8015 (Gasoline) MTBE	8021 (BTEX) ☐ MTBE ☐ TMB ☐ PCE	Isotopic Americium Line#101A	8021 (EDX)	8021 (HALO)	8021 (CUST)	504.1 EDB ☐ / DBCP ☐	Isotopic Uranium Line#105A	8260 (TCL) Volatile Organics	8260 (Full) Volatile Organics	8260 (CUST) Volatile Organics	8260 (Landfill) Volatile Organics	Pesticides /PCB (608/8081/8082)	Herbicides (615/8151)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Polynuclear Aromatics (610/8310/8270-SIMS)	Sr-90 Line#130B	Gamma Spec Line#121	Priority Pollutant Metals (13)	Target Analyte List Metals (23) Line#44	RCRA Metals (8)	RCRA Metals by TCLP (Method 1311)	Metals:	PCB: ochlors Line#2	NUMBER OF CONTAINERS
Pu-10258	10/30/01	1415	soil				X				X					X									X	X		X					1
Pu-10258	11/9/01	1415	soil																													X	1
Pu-10273	10/30/01	1530	soil				X				X					X									X	X		X					1
Pu-10273	11/9/01	1405	soil																													X	1
Pu-10283	11/9/01	1400	soil				X				X					X									X	X		X				X	2
Pu-10334	11/9/01	1410	soil				X				X					X									X	X		X				X	2
Pu-10331	11/9/01	1440	soil				X				X					X									X	X		X				X	2
Pu-10326	11/9/01	1510	soil				X				X					X									X	X		X				X	2
Pu-10333	11/9/01	1555	soil				X				X					X									X	X		X				X	2
Pu-10332	11/9/01	1610	soil				X				X					X									X	X		X					2

PROJECT INFORMATION

PROJ. NO.: 10.30.01-258 (HWB SFAC)
PROJ. NAME: SFAC
P.O. NO.:
SHIPPED VIA:

SAMPLE RECEIPT

NO. CONTAINERS: 6
CUSTODY SEALS: N/A
RECEIVED INTACT: Y
BLUE ICE: 3°

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒

CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER

METHANOL PRESERVATION ☐

COMMENTS: FIXED FEE ☐

MAKE SURE THAT HWB (JOHN YOUNG) GETS BILLED FOR THIS PROJECT

RELINQUISHED BY: 1.
Signature: Stephen Yanicek Time: 18:20 ~~1530~~
Printed Name: Steve Yanicek Date: 11-12-01
Company: NMED OB
See reverse side (Force Majeure)

RELINQUISHED BY: 2.
Signature: Time:
Printed Name: Date:
Company:

RECEIVED BY: 1.
Signature: Time:
Printed Name: Date:
Company:

RECEIVED BY: (LAB) 2.
Signature: Time: 18:20
Printed Name: Date: 11-12-01
Pinnacle Laboratories Inc.

Pinnacle Laboratories Inc.

CHAIN OF CUSTODY

DATE: 11-12-01 PAGE: 2 OF 2

PLI Accession #: 111054

SHADED AREAS ARE FOR LAB USE ONLY

PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT MANAGER: John Young

COMPANY: NMED HWB BLDG 1
ADDRESS: 2905 Rodeo Park Drive E.
Santa Fe, NM 87505-6303
PHONE: 505-428-2538
FAX: 505-428-2567

BILL TO: NMED HWB
COMPANY: HAZARDOUS WASTE BUREAU
ADDRESS: 2905 Rodeo Park Drive E.
Santa Fe, NM 87505 6303

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Petroleum Hydrocarbons (418.1) TRPH	(MOD.8015) Diesel/Direct Inject	Isotopic Pu Line # 103A	(M8015) Gas/Purge & Trap	8021 (BTEX)/8015 (Gasoline) MTBE	8021 (BTEX) ☐ MTBE ☐ TMB ☐ PCE	Isotopic Am Line # 101A	8021 (EDX)	8021 (HALO)	8021 (CUST)	504.1 EDB ☐ / DBCP ☐	Isotopic U Line # 105A	8260 (TCL) Volatile Organics	8260 (Full) Volatile Organics	8260 (CUST) Volatile Organics	8260 (Landfill) Volatile Organics	Pesticides /PCB (608/8081/8082)	Herbicides (615/8151)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Polynuclear Aromatics (610/8310/8270-SIMS)	Sr-90 Line # 130B	Gamma Spec Line # 121	Priority Pollutant Metals (13)	Target Analyte List Metals (23) Line # 44	RCRA Metals (8)	RCRA Metals by TCLP (Method 1311)	Metals: PCE Trichlors Line # 2	NUMBER OF CONTAINERS
PU-102AB	10/30/01	1530	soil	-07			X				X					X									X	X		X				1
PU-102AB	11/9/01	1405	soil	-09																											X	1

PROJECT INFORMATION

PROJ. NO.: 10.30.01-258 (HWB SFAC)
PROJ. NAME: SFAC
P.O. NO.:
SHIPPED VIA:

SAMPLE RECEIPT

NO. CONTAINERS: 2
CUSTODY SEALS: N/A
RECEIVED INTACT: ✓
BLUE ICE/ICE: 3

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK (NORMAL) ☒

CERTIFICATION REQUIRED: ☐ NM ☐ SDWA ☐ OTHER

METHANOL PRESERVATION ☐

COMMENTS: FIXED FEE ☐

MAKE SURE THAT HWB (JOHN YOUNG) GETS BILLED FOR THIS PROJECT

RELINQUISHED BY: 1.
Signature: Stephen Yanicoz Time: 18:20 1530
Printed Name: Steve Yanicoz Date: 11-12-01
Company: NMED OB
See reverse side (Force Majeure)

RELINQUISHED BY: 2.
Signature: Time:
Printed Name: Date:
Company:

RECEIVED BY: 1.
Signature: Time:
Printed Name: Date:
Company:

RECEIVED BY: (LAB) 2.
Signature: Time: 1520
Printed Name: Date: 11-12-01
Pinnacle Laboratories Inc.

Enviro-Test Laboratories LLC.

Chemical Analysis Report

PINNACLE LABORATORIES, INC

Attn: PROJECT MANAGER

2709D PAN AMERICAN FREEWAY NE

ALBUQUERQUE NM 87107

Date: 09 JAN 2002

Lab Work Order #: L4094

Project P.O. #: 111054

Project Reference: NMHWB

Date Received: 14 NOV 2001

Comments:

APPROVED BY: Michelle Burden

Dave Demorest

Project Manager

Enviro • Test
LABORATORIES LLC.
420 West 1st Street Casper, Wyoming 82601
Phone: (307) 235-5741 Fax:(307) 266-167
Toll Free 1(800)666-030

Results are only applicable to samples submitted for analysis.
Limit of Liability: Although care and due diligence is taken in the performance of our services, our liability in all cases is limited to re-analysis at our expense or refunding the analytical costs charged for the work performed.

ACCREDITED IN ACCORDANCE WITH nela

Sample Delivery Group Narrative

January 9, 2002

Customer: Pinnacle Laboratories

ETL LLC Job Number: L4094

The following information is pertinent to the interpretation of the data.

The samples are digested with trace metal acid and depending on the batch of acid, different metals will be present to some extent above the detection limit of the ICP/MS. This should be taken into consideration when interpreting the data. The %RPD for the antimony duplicate is outside the acceptance criteria due to low concentrations of antimony in the sample. This is normal and to be expected. The MS %recovery for aluminum, and iron are outside the acceptance criteria due to sample concentrations greater than 5 times the amount of spike added.

Due to the presence of Pu242 in some of the samples, the isotopic plutonium analysis was reanalyzed both with and without tracer. The original sample on the untraced set that was used as the duplicate had a small amount of tracer added accidentally and with the traced set having recoveries that are reasonable for that matrix and the duplicate sample having Pu242 results that were at or below the MDA, the original was reported as the duplicate and the duplicate as the original results.

If you have any questions regarding the analysis of these samples, please call us at (307) 235-5741 or (800) 666-0306.

Debra Phillabaum
Quality Assurance Manager

ETL Enviro • Test LABORATORIES LLC.

Results are only applicable to samples submitted for analysis.
Limit of Liability: Although care and due diligence is taken in the performance of our services, our liability in all cases is limited to re-analysis at our expense or refunding the analytical costs charged for the work performed.

ACCREDITED IN ACCORDANCE WITH nelac

Pinnacle Laboratories, Inc. — Interlab Chain of Custody

Date: 11.13 Page: 1 of 1

Network Project Manager: Jacinta A. Tenorio

Pinnacle Laboratories, Inc.
2709-D Pan American Freeway, NE
Albuquerque, New Mexico 87107
(505) 344-3777 Fax (505) 344-4413

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Metals (8) RCRA	RCRA TCLP METALS	Metals-13 PP List	Metals-TAL (23 METALS)	Line 103A - Ist. Platinum	TOX Line 101A - 1st. Amer	TOC Line 105A - 1st. K	Gen Chemistry: S 90 Line 130B	Oil and Grease Y-SAC Line 121	Volatile Organics GC/MS (8260)	BOD	COD	PESTICIDES/PCB (8081/8082)	Herbicides (615/8151)	PNA (8310)/8270 SIMS	8240 (TCLP 1311) ZHE		Base/Neutral Acid Compounds GC/MS (625/270)	URANIUM (ICP-MS)	RADIUM 226+228	Gross Alpha/Beta	TO-14	NUMBER OF CONTAINERS
111054-01 / Pu-10258	10.30 11.09	1415 1415	NAQ					X	X	X	X	X	X		X		X										
-02 / Pu-10273	10.30 11.09	1530 1405						X	X	X	X	X	X				X										
-03 / Pu-10283	11.09	1400						X	X	X	X	X	X				X										
-04 / Pu-10334		1400						X	X	X	X	X	X				X										
-05 / Pu-10331		1440						X	X	X	X	X	X				X										
-06 / Pu-10326		1500						X	X	X	X	X	X				X										
-07 / Pu-10333		1555						X	X	X	X	X	X				X										
-08 / Pu-10332		1610						X	X	X	X	X	X				X										
-09 / Pu-10285	10.30 11.09	1530 1405						X	X	X	X	X	X				X										

PROJECT INFORMATION	SAMPLE RECEIPT	SAMPLES SENT TO:	RELINQUISED BY: 1	RELINQUISED BY: 2
PROJECT #: 111054	Total Number of Containers	PENSACOLA - STL-FL	Signature: Time: 21:10	Signature: Time:
PROJ. NAME: SFAC	Chain of Custody Seals	ESL - OR	Printed Name: Date: 11.13.01	Printed Name: Date:
QC LEVEL: STD. IV	Received Intact?	STL - CT	Pinnacle Laboratories, Inc.	Company
QC REQUIRED: MS MSD BLANK	Received Good Cond./Cold	ATEL - AZ	RECEIVED BY: 1	RECEIVED BY: 2
TAT: STANDARD RUSH!!	LAB NUMBER:	ATEL - MARION	Signature: Time: 0940	Signature: Time:
DUE DATE: 3 WEEKS	COMMENTS:	ATEL - MELMORE	Printed Name: Date: 11-14-01	Printed Name: Date:
RUSH SURCHARGE:		BARRINGER	Company ETL	Company
CLIENT DISCOUNT:		ENVIRO TEST LABS X		
SPECIAL CERTIFICATION REQUIRED: YES NO		WCAS		
		WOHL		

03

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ETL Enviro • Test LABORATORIES LLC.

Sample Receipt Checklist

Client	Pinnacle	Job Number	L4094

Samples Shipped	✓ UPS	Federal Express	Airborn:
Samples Hand Delivered	Client	ETL Lab Courier	Other:

*Air Bill #: 1Z 878 168 01 4396 9273 -4.0°C	# of Packages Received: 2

1Z 878 168 01 4387 7205 -4.2°C

	Yes	No	N\A	Comments
1. Chain - of - Custody present?	✓			If no, please fill one out.
2. Are the COC and sample labels legible?	✓			
3. Custody Seal on shipping container?	✓			
If yes, intact on shipping container?	✓			
4. Custody seals on sample containers?	✓			
If yes, intact on sample container?	✓			
5. Samples chilled?	✓			
Is temperature of cooler: 4 ± 2°C ?	✓			*Record temp: 4.2°C / 4.0°C
6. Samples received intact (good condition)?	✓			
If volatiles required, any with headspace?				
7. Adequate sample volume provided?	✓			
8. Samples preserved correctly?	✓			$Na_2S_2O_3$, ZnAc, HNO_3, HCl
Circle preservative types in shipment				H_2SO_4, NaOH, (Plain), Other
9. Correct containers used?	✓			
10. Samples received within holding time?	✓			
11. Agreement between COC and sample labels?	✓			
12. Gamma Screen µR/Hr @ surface within Bkg?	✓			FOR INTERNAL USE ONLY
13. Samples OK to release to Lab/Screening?	✓			

Additional Comments:

Sample Container (size/material): 9-P1000, 9-~~8~~ 4oz Glass jars

Received and inspected by: MWP 11-14-01 Date/Time: 11-14-01, 0940

* = for multiple packages, see attached page(s) for shipping numbers and temperatures.

Form SR Checklist.doc Rev 1 Effective Date 5/21/01

ENVIROTEST LABORATORIES

Login Chain of Custody Report (ln01)

Nov. 15, 2001

11:28 AM

Login Number: L4094 **Quote Number:**

Account: 10185 PINNACLE LABORATORIES, INC

Project: SFAC

Contact: PROJECT MANAGER

Report Address: 2709D PAN AMERICAN FREEWAY NE, ALBUQUERQUE, NM, 87107

Phone: 505-344-3777 **Fax#:** 505-344-4413 **Fax Flag:** N

Email: **Email Flag:** N

Report Type: **Export Type:**

Lab SMP#	Client Sample Number	Collect Date	Receive Date	PR	Due Date	Comments
L4094-1	111054-01/PU-10258	09-NOV-01 14:15	14-NOV-01		05-DEC-01	
Soil	S AM241-CA	Hold: 08-MAY-02				
Soil	S CN-TOT-CA	Hold: 23-NOV-01				
Soil	S GAMMA-ALL-CA	Hold: 08-MAY-02				
Soil	S ISO-PU-ALPHA-CA	Hold: 08-MAY-02				
Soil	S ISO-U-CA	Hold: 08-MAY-02				
Soil	S METAL-TAL-CA	Hold: 08-MAY-02				
Soil	S PCB-CA	Hold: 23-NOV-01				
Soil	S SR89/90-CA	Hold: 08-MAY-02				
L4094-2	111054-02/PU-10273	09-NOV-01 14:05	14-NOV-01		05-DEC-01	
Soil	S AM241-CA	Hold: 08-MAY-02				
Soil	S CN-TOT-CA	Hold: 23-NOV-01				
Soil	S GAMMA-ALL-CA	Hold: 08-MAY-02				
Soil	S ISO-PU-ALPHA-CA	Hold: 08-MAY-02				
Soil	S ISO-U-CA	Hold: 08-MAY-02				
Soil	S METAL-TAL-CA	Hold: 08-MAY-02				
Soil	S PCB-CA	Hold: 23-NOV-01				
Soil	S SR89/90-CA	Hold: 08-MAY-02				
L4094-3	111054-03/PU-10283	09-NOV-01 14:00	14-NOV-01		05-DEC-01	
Soil	S AM241-CA	Hold: 08-MAY-02				
Soil	S CN-TOT-CA	Hold: 23-NOV-01				
Soil	S GAMMA-ALL-CA	Hold: 08-MAY-02				
Soil	S ISO-PU-ALPHA-CA	Hold: 08-MAY-02				
Soil	S ISO-U-CA	Hold: 08-MAY-02				
Soil	S METAL-TAL-CA	Hold: 08-MAY-02				
Soil	S PCB-CA	Hold: 23-NOV-01				
Soil	S SR89/90-CA	Hold: 08-MAY-02				

Signature : Michelle Bersh

Date : 11-15-01

ENVIROTEST LABORATORIES

Login Chain of Custody Report (ln01)

Nov. 15, 2001

11:28 AM

Login Number: L4094 **Quote Number:**

Account: 10185 PINNACLE LABORATORIES, INC

Project: SFAC

Contact:

Report Address:

Phone:

Email:

Report Type:

Lab SMP#	Client Sample Number	Collect Date	Receive Date	PR	Due Date	Comments
L4094-4	111054-04/PU-10334	09-NOV-01 14:10	14-NOV-01		05-DEC-01	
Soil	S AM241-CA	Hold: 08-MAY-02				
Soil	S CN-TOT-CA	Hold: 23-NOV-01				
Soil	S GAMMA-ALL-CA	Hold: 08-MAY-02				
Soil	S ISO-PU-ALPHA-CA	Hold: 08-MAY-02				
Soil	S ISO-U-CA	Hold: 08-MAY-02				
Soil	S METAL-TAL-CA	Hold: 08-MAY-02				
Soil	S PCB-CA	Hold: 23-NOV-01				
Soil	S SR89/90-CA	Hold: 08-MAY-02				
L4[illegible]	111054-05/PU-10331	09-NOV-01 14:40	14-NOV-01		05-DEC-01	
Soil	S AM241-CA	Hold: 08-MAY-02				
Soil	S CN-TOT-CA	Hold: 23-NOV-01				
Soil	S GAMMA-ALL-CA	Hold: 08-MAY-02				
Soil	S ISO-PU-ALPHA-CA	Hold: 08-MAY-02				
Soil	S ISO-U-CA	Hold: 08-MAY-02				
Soil	S METAL-TAL-CA	Hold: 08-MAY-02				
Soil	S PCB-CA	Hold: 23-NOV-01				
Soil	S SR89/90-CA	Hold: 08-MAY-02				
L4094-6	111054-06/PU-10326	09-NOV-01 15:10	14-NOV-01		05-DEC-01	
Soil	S AM241-CA	Hold: 08-MAY-02				
Soil	S CN-TOT-CA	Hold: 23-NOV-01				
Soil	S GAMMA-ALL-CA	Hold: 08-MAY-02				
Soil	S ISO-PU-ALPHA-CA	Hold: 08-MAY-02				
Soil	S ISO-U-CA	Hold: 08-MAY-02				
Soil	S METAL-TAL-CA	Hold: 08-MAY-02				
Soil	S PCB-CA	Hold: 23-NOV-01				
Soil	S SR89/90-CA	Hold: 08-MAY-02				

Signature : Michelle Perch

Date : 11-15-01

0

ENVIROTEST LABORATORIES

Login Chain of Custody Report (In01)

Nov. 15, 2001

11:28 AM

Login Number: L4094 **Quote Number:**

Account: 10185 PINNACLE LABORATORIES, INC

Project: SFAC

Contact:

Report Address:

Phone:

Email:

Report Type:

Lab SMP#	Client Sample Number	Collect Date	Receive Date	PR	Due Date	Comments
L4094-7	111054-07/PU-10333	09-NOV-01 15:55	14-NOV-01		05-DEC-01	
Soil	S AM241-CA	Hold: 08-MAY-02				
Soil	S CN-TOT-CA	Hold: 23-NOV-01				
Soil	S GAMMA-ALL-CA	Hold: 08-MAY-02				
Soil	S ISO-PU-ALPHA-CA	Hold: 08-MAY-02				
Soil	S ISO-U-CA	Hold: 08-MAY-02				
Soil	S METAL-TAL-CA	Hold: 08-MAY-02				
Soil	S PCB-CA	Hold: 23-NOV-01				
Soil	S SR89/90-CA	Hold: 08-MAY-02				
L4094-8	111054-08/PU-10332	09-NOV-01 16:10	14-NOV-01		05-DEC-01	
Soil	S AM241-CA	Hold: 08-MAY-02				
Soil	S CN-TOT-CA	Hold: 23-NOV-01				
Soil	S GAMMA-ALL-CA	Hold: 08-MAY-02				
Soil	S ISO-PU-ALPHA-CA	Hold: 08-MAY-02				
Soil	S ISO-U-CA	Hold: 08-MAY-02				
Soil	S METAL-TAL-CA	Hold: 08-MAY-02				
Soil	S PCB-CA	Hold: 23-NOV-01				
Soil	S SR89/90-CA	Hold: 08-MAY-02				
L4094-9	111054-09/PU-102AB	09-NOV-01 14:05	14-NOV-01		05-DEC-01	
Soil	S AM241-CA	Hold: 08-MAY-02				
Soil	S CN-TOT-CA	Hold: 23-NOV-01				
Soil	S GAMMA-ALL-CA	Hold: 08-MAY-02				
Soil	S ISO-PU-ALPHA-CA	Hold: 08-MAY-02				
Soil	S ISO-U-CA	Hold: 08-MAY-02				
Soil	S METAL-TAL-CA	Hold: 08-MAY-02				
Soil	S PCB-CA	Hold: 23-NOV-01				
Soil	S SR89/90-CA	Hold: 08-MAY-02				

Signature : Michelle Burden

Date : 11-15-01

08

Chemical Analysis Report

'NACLE LABORATORIES, INC
.9D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

ATTN: PROJECT MANAGER

Project: NMHWB
Purchase Order: 111054

Report Date: 09-JAN-02
Work Order: L4094
Lab Sample ID: L4094-1
Client Sample ID: 111054-01/PU-10258
Date Collected: 09-NOV-01
Sampled By: CLIENT
Date Received: 14-NOV-01
Matrix: SOIL

Parameter		Result	Qualifier	MDL	PQL	Units	DF	Run ID	Analyzed	By
Misc										
	Americium-241	6.9 +/- 0.8		0.1		pCi/g		R14674	14-DEC-01 11:19	PJ
	Mercury (Hg)	0.69		0.02		mg/kg	2	R14581	11-DEC-01 10:02	ML
	Plutonium-242	2.1 +/- 1.1		0.8		pCi/g		R14901	12-DEC-01 14:37	JC
	Cyanide, Total	<286		286	858	ug/kg		R14476	20-NOV-01 00:00	GEL
Target Analyte List of Metals										
	Aluminum (Al)-Total	2970		5		mg/kg	10	R14280	27-NOV-01 08:04	GC
	Antimony (Sb)-Total	0.0792		0.01		mg/kg	10	R14280	27-NOV-01 08:04	GC
	Arsenic (As)-Total	1.68		0.06		mg/kg	10	R14280	27-NOV-01 08:04	GC
	Barium (Ba)-Total	54.5		0.1		mg/kg	10	R14280	27-NOV-01 08:04	GC
	Beryllium (Be)-Total	0.564		0.2		mg/kg	10	R14280	27-NOV-01 08:04	GC
	Cadmium (Cd)-Total	0.848		0.2		mg/kg	10	R14280	27-NOV-01 08:04	GC
	Calcium (Ca)-Total	1190		20		mg/kg	10	R14280	27-NOV-01 08:04	GC
	Chromium (Cr)-Total	8.45		0.1		mg/kg	10	R14280	27-NOV-01 08:04	GC
	Cobalt (Co)-Total	1.92		0.06		mg/kg	10	R14280	27-NOV-01 08:04	GC
	Copper (Cu)-Total	11.8		0.1		mg/kg	10	R14280	27-NOV-01 08:04	GC
	Iron (Fe)-Total	7120		10		mg/kg	10	R14280	27-NOV-01 08:04	GC
	Lead (Pb)-Total	36.1		0.09		mg/kg	10	R14280	27-NOV-01 08:04	GC
	Magnesium (Mg)-Total	500		1		mg/kg	10	R14280	27-NOV-01 08:04	GC
	Manganese (Mn)-Total	209		0.2		mg/kg	10	R14280	27-NOV-01 08:04	GC
	Nickel (Ni)-Total	4.53		0.1		mg/kg	10	R14280	27-NOV-01 08:04	GC
	Potassium (K)-Total	477		5		mg/kg	10	R14280	27-NOV-01 08:04	GC
	Selenium (Se)-Total	0.353		0.3		mg/kg	10	R14280	27-NOV-01 08:04	GC
	Silver (Ag)-Total	0.278		0.1		mg/kg	10	R14280	27-NOV-01 08:04	GC
	Sodium (Na)-Total	140		0.7		mg/kg	10	R14280	27-NOV-01 08:04	GC
	Thallium (Tl)-Total	<0.100		0.1		mg/kg	10	R14280	27-NOV-01 08:04	GC
	Vanadium (V)-Total	6.87		0.06		mg/kg	10	R14280	27-NOV-01 08:04	GC
	Zinc (Zn)-Total	38.7		0.4		mg/kg	10	R14280	27-NOV-01 08:04	GC
Strontium-89/90										
	Strontium-90	<2.5 +/- 1.0		2.5		pCi/g		R14520	06-DEC-01 19:23	ST
	Strontium-89	<2.5 +/- 1.0		2.5		pCi/g		R14520	06-DEC-01 19:23	ST
PCBs										
	Aroclor 1016	<38.1		38.1	114	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1221	<38.1		38.1	114	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1232	<38.1		38.1	114	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1242	<38.1		38.1	114	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1248	<38.1		38.1	114	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1254	144		38.1	114	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1260	84.8		38.1	114	ug/kg	10	R14472	20-NOV-01 00:00	GEL
Surrogate:	Decachlorobiphenyl	77		44-127		%		R14472	20-NOV-01 00:00	GEL
Surrogate:	Tetrachloro-m-xylene	80		41-132		%		R14472	20-NOV-01 00:00	GEL

Chemical Analysis Report

NACLE LABORATORIES, INC
9D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

ATTN: PROJECT MANAGER

Project: NMHWB
Purchase Order: 111054

Report Date: 09-JAN-02
Work Order: L4094
Lab Sample ID: L4094-1
Client Sample ID: 111054-01/PU-10258
Date Collected: 09-NOV-01
Sampled By: CLIENT
Date Received: 14-NOV-01
Matrix: SOIL

Parameter	Result	Qualifier	MDL	PQL	Units	DF	Run ID	Analyzed	By
Misc									
Isotopic Uranium 233/4/5/6/8									
Uranium-233/4	2.5 +/- 0.6		0.1		pCi/g		R14645	12-DEC-01 08:20	JC
Uranium-235/6	0.2 +/- 0.2		0.2		pCi/g		R14645	12-DEC-01 08:20	JC
Uranium-238	1.5 +/- 0.4		0.1		pCi/g		R14645	12-DEC-01 08:20	JC
Isotopic Plutonium 238/9/40									
Plutonium-238	<0.4 +/- 2.7		0.4		pCi/g		R14900	12-DEC-01 14:51	JC
Plutonium-239/40	243 +/- 21.8		0.7		pCi/g		R14900	12-DEC-01 14:51	JC
Gamma Spectroscopy									
Beryllium-7	0.46 +/- 0.54		0.93		pCi/g		R14434	09-NOV-01 14:15	ST
Sodium-22	0.06 +/- 0.07		0.13		pCi/g		R14434	09-NOV-01 14:15	ST
Potassium-40	34.6 +/- 2.56		0.82		pCi/g		R14434	09-NOV-01 14:15	ST
Scandium-46	0.13 +/- 0.16		0.18		pCi/g		R14434	09-NOV-01 14:15	ST
Chromium-51	-0.06 +/- 0.67		1.12		pCi/g		R14434	09-NOV-01 14:15	ST
Manganese-54	0.00 +/- 0.06		0.1		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-56	-0.01 +/- 0.06		0.1		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-57	0.00 +/- 0.04		0.07		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-58	0.00 +/- 0.06		0.1		pCi/g		R14434	09-NOV-01 14:15	ST
Iron-59	-0.09 +/- 0.16		0.24		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-60	-0.01 +/- 0.05		0.09		pCi/g		R14434	09-NOV-01 14:15	ST
Zinc-65	-0.03 +/- 0.15		0.2		pCi/g		R14434	09-NOV-01 14:15	ST
Strontium-85	0.19 +/- 0.06		0.12		pCi/g		R14434	09-NOV-01 14:15	ST
Niobium-94	-0.02 +/- 0.05		0.08		pCi/g		R14434	09-NOV-01 14:15	ST
Niobium-95	0.01 +/- 0.09		0.15		pCi/g		R14434	09-NOV-01 14:15	ST
Ruthenium-106	-0.05 +/- 0.50		0.8		pCi/g		R14434	09-NOV-01 14:15	ST
Silver-110m	0.79 +/- 1.25		2.12		pCi/g		R14434	09-NOV-01 14:15	ST
Antimony-124	-0.02 +/- 0.08		0.11		pCi/g		R14434	09-NOV-01 14:15	ST
Antimony-125	-0.01 +/- 0.15		0.24		pCi/g		R14434	09-NOV-01 14:15	ST
Iodine-131	0.29 +/- 0.29		0.51		pCi/g		R14434	09-NOV-01 14:15	ST
Cesium-134	-0.01 +/- 0.06		0.09		pCi/g		R14434	09-NOV-01 14:15	ST
Cesium-137	0.72 +/- 0.10		0.1		pCi/g		R14434	09-NOV-01 14:15	ST
Cerium-139	0.00 +/- 0.05		0.08		pCi/g		R14434	09-NOV-01 14:15	ST
Cerium-144	0.30 +/- 0.32		0.52		pCi/g		R14434	09-NOV-01 14:15	ST
Europium-152	0.17 +/- 0.26		0.47		pCi/g		R14434	09-NOV-01 14:15	ST
Europium-154	0.01 +/- 0.08		0.13		pCi/g		R14434	09-NOV-01 14:15	ST
Europium-155	0.37 +/- 0.14		0.22		pCi/g		R14434	09-NOV-01 14:15	ST
Thallium-208	0.44 +/- 0.10		0.09		pCi/g		R14434	09-NOV-01 14:15	ST
Bismuth-212	2.41 +/- 1.32		1.2		pCi/g		R14434	09-NOV-01 14:15	ST
Lead-212	1.78 +/- 0.14		0.14		pCi/g		R14434	09-NOV-01 14:15	ST
Bismuth-214	1.21 +/- 0.21		0.18		pCi/g		R14434	09-NOV-01 14:15	ST
Lead-214	1.19 +/- 0.18		0.18		pCi/g		R14434	09-NOV-01 14:15	ST
Thorium-227	-0.01 +/- 0.41		0.57		pCi/g		R14434	09-NOV-01 14:15	ST

Chemical Analysis Report

'NACLE LABORATORIES, INC
J9D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

ATTN: PROJECT MANAGER

Project: NMHWB
Purchase Order: 111054

Report Date: 09-JAN-02
Work Order: L4094
Lab Sample ID: L4094-1
Client Sample ID: 111054-01/PU-10258
Date Collected: 09-NOV-01
Sampled By: CLIENT
Date Received: 14-NOV-01
Matrix: SOIL

Parameter	Result	Qualifier	MDL	PQL	Units	DF	Run ID	Analyzed	By
Misc									
Gamma Spectroscopy									
Actinium-228	1.62 +/- 0.26		0.35		pCi/g		R14434	09-NOV-01 14:15	ST
Protactinium-234m	-1.45 +/- 9.75		15.5		pCi/g		R14434	09-NOV-01 14:15	ST
Thorium-234	0.00 +/- 2.12		1.18		pCi/g		R14434	09-NOV-01 14:15	ST
Uranium-235	0.23 +/- 0.13		0.57		pCi/g		R14434	09-NOV-01 14:15	ST
Americium-241	7.08 +/- 0.46		0.35		pCi/g		R14434	09-NOV-01 14:15	ST

Chemical Analysis Report

NACLE LABORATORIES, INC
9D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

ATTN: PROJECT MANAGER

Project: NMHWB
Purchase Order: 111054

Report Date: 09-JAN-02
Work Order: L4094
Lab Sample ID: L4094-2
Client Sample ID: 111054-02/PU-10273
Date Collected: 09-NOV-01
Sampled By: CLIENT
Date Received: 14-NOV-01
Matrix: SOIL

Parameter		Result	Qualifier	MDL	PQL	Units	DF	Run ID	Analyzed	By
Misc										
	Americium-241	4.7 +/- 0.6		0.1		pCi/g		R14674	14-DEC-01 11:19	PJ
	Mercury (Hg)	1.25		0.02		mg/kg	5	R14581	11-DEC-01 10:02	ML
	Plutonium-242	6.3 +/- 1.8		0.6		pCi/g		R14901	12-DEC-01 14:37	JC
	Cyanide, Total	<258		258	774	ug/kg		R14476	20-NOV-01 00:00	GEL
Target Analyte List of Metals										
	Aluminum (Al)-Total	2410		5		mg/kg	10	R14280	27-NOV-01 08:10	GC
	Antimony (Sb)-Total	0.0458		0.01		mg/kg	10	R14280	27-NOV-01 08:10	GC
	Arsenic (As)-Total	1.66		0.06		mg/kg	10	R14280	27-NOV-01 08:10	GC
	Barium (Ba)-Total	36.5		0.1		mg/kg	10	R14280	27-NOV-01 08:10	GC
	Beryllium (Be)-Total	0.499		0.2		mg/kg	10	R14280	27-NOV-01 08:10	GC
	Cadmium (Cd)-Total	1.79		0.2		mg/kg	10	R14280	27-NOV-01 08:10	GC
	Calcium (Ca)-Total	1310		20		mg/kg	10	R14280	27-NOV-01 08:10	GC
	Chromium (Cr)-Total	19.0		0.1		mg/kg	10	R14280	27-NOV-01 08:10	GC
	Cobalt (Co)-Total	2.18		0.06		mg/kg	10	R14280	27-NOV-01 08:10	GC
	Copper (Cu)-Total	38.7		0.1		mg/kg	10	R14280	27-NOV-01 08:10	GC
	Iron (Fe)-Total	8960		10		mg/kg	10	R14280	27-NOV-01 08:10	GC
	Lead (Pb)-Total	31.7		0.09		mg/kg	10	R14280	27-NOV-01 08:10	GC
	Magnesium (Mg)-Total	469		1		mg/kg	10	R14280	27-NOV-01 08:10	GC
	Manganese (Mn)-Total	266		0.2		mg/kg	10	R14280	27-NOV-01 08:10	GC
	Nickel (Ni)-Total	11.1		0.1		mg/kg	10	R14280	27-NOV-01 08:10	GC
	Potassium (K)-Total	488		5		mg/kg	10	R14280	27-NOV-01 08:10	GC
	Selenium (Se)-Total	0.522		0.3		mg/kg	10	R14280	27-NOV-01 08:10	GC
	Silver (Ag)-Total	0.302		0.1		mg/kg	10	R14280	27-NOV-01 08:10	GC
	Sodium (Na)-Total	245		0.7		mg/kg	10	R14280	27-NOV-01 08:10	GC
	Thallium (Tl)-Total	0.141		0.1		mg/kg	10	R14280	27-NOV-01 08:10	GC
	Vanadium (V)-Total	5.80		0.06		mg/kg	10	R14280	27-NOV-01 08:10	GC
	Zinc (Zn)-Total	38.2		0.4		mg/kg	10	R14280	27-NOV-01 08:10	GC
Strontium-89/90										
	Strontium-90	<2.5 +/- 1.0		2.5		pCi/g		R14520	06-DEC-01 19:23	ST
	Strontium-89	<2.5 +/- 1.0		2.5		pCi/g		R14520	06-DEC-01 19:23	ST
PCBs										
	Aroclor 1016	<34.4		34.4	103	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1221	<34.4		34.4	103	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1232	<34.4		34.4	103	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1242	<34.4		34.4	103	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1248	<34.4		34.4	103	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1254	173		34.4	103	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1260	63.2		34.4	103	ug/kg	10	R14472	20-NOV-01 00:00	GEL
Surrogate:	Decachlorobiphenyl	72		44-127		%		R14472	20-NOV-01 00:00	GEL
Surrogate:	Tetrachloro-m-xylene	82		41-132		%		R14472	20-NOV-01 00:00	GEL

Chemical Analysis Report

'NACLE LABORATORIES, INC
J9D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

ATTN: PROJECT MANAGER

Project: NMHWB
Purchase Order: 111054

Report Date: 09-JAN-02
Work Order: L4094
Lab Sample ID: L4094-2
Client Sample ID: 111054-02/PU-10273
Date Collected: 09-NOV-01
Sampled By: CLIENT
Date Received: 14-NOV-01
Matrix: SOIL

Parameter	Result	Qualifier	MDL	PQL	Units	DF	Run ID	Analyzed	By
Misc									
Isotopic Uranium 233/4/5/6/8									
Uranium-233/4	5.7 +/- 1.0		0.2		pCi/g		R14645	12-DEC-01 08:20	JC
Uranium-235/6	0.3 +/- 0.2		0.1		pCi/g		R14645	12-DEC-01 08:20	JC
Uranium-238	2.0 +/- 0.6		0.2		pCi/g		R14645	12-DEC-01 08:20	JC
Isotopic Plutonium 238/9/40									
Plutonium-238	<0.7 +/- 2.3		0.7		pCi/g		R14900	12-DEC-01 14:51	JC
Plutonium-239/40	82.5 +/- 8.3		0.7		pCi/g		R14900	12-DEC-01 14:51	JC
Gamma Spectroscopy									
Beryllium-7	-0.09 +/- 0.62		1		pCi/g		R14434	09-NOV-01 14:15	ST
Sodium-22	-0.02 +/- 0.07		0.11		pCi/g		R14434	09-NOV-01 14:15	ST
Potassium-40	34.7 +/- 2.52		0.84		pCi/g		R14434	09-NOV-01 14:15	ST
Scandium-46	0.20 +/- 0.17		0.21		pCi/g		R14434	09-NOV-01 14:15	ST
Chromium-51	-0.11 +/- 0.69		1.15		pCi/g		R14434	09-NOV-01 14:15	ST
Manganese-54	0.02 +/- 0.06		0.1		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-56	0.05 +/- 0.07		0.12		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-57	0.00 +/- 0.04		0.07		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-58	-0.02 +/- 0.06		0.1		pCi/g		R14434	09-NOV-01 14:15	ST
Iron-59	0.00 +/- 0.16		0.26		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-60	0.04 +/- 0.06		0.11		pCi/g		R14434	09-NOV-01 14:15	ST
Zinc-65	-0.05 +/- 0.17		0.23		pCi/g		R14434	09-NOV-01 14:15	ST
Strontium-85	0.11 +/- 0.07		0.11		pCi/g		R14434	09-NOV-01 14:15	ST
Niobium-94	-0.01 +/- 0.06		0.09		pCi/g		R14434	09-NOV-01 14:15	ST
Niobium-95	-0.02 +/- 0.09		0.15		pCi/g		R14434	09-NOV-01 14:15	ST
Ruthenium-106	0.52 +/- 0.54		0.93		pCi/g		R14434	09-NOV-01 14:15	ST
Silver-110m	-0.11 +/- 1.30		2.12		pCi/g		R14434	09-NOV-01 14:15	ST
Antimony-124	0.01 +/- 0.08		0.11		pCi/g		R14434	09-NOV-01 14:15	ST
Antimony-125	-0.03 +/- 0.15		0.25		pCi/g		R14434	09-NOV-01 14:15	ST
Iodine-131	-0.16 +/- 0.32		0.51		pCi/g		R14434	09-NOV-01 14:15	ST
Cesium-134	0.06 +/- 0.06		0.1		pCi/g		R14434	09-NOV-01 14:15	ST
Cesium-137	1.09 +/- 0.12		0.1		pCi/g		R14434	09-NOV-01 14:15	ST
Cerium-139	-0.02 +/- 0.05		0.08		pCi/g		R14434	09-NOV-01 14:15	ST
Cerium-144	-0.17 +/- 0.35		0.54		pCi/g		R14434	09-NOV-01 14:15	ST
Europium-152	0.24 +/- 0.31		0.56		pCi/g		R14434	09-NOV-01 14:15	ST
Europium-154	-0.06 +/- 0.09		0.14		pCi/g		R14434	09-NOV-01 14:15	ST
Europium-155	0.30 +/- 0.17		0.23		pCi/g		R14434	09-NOV-01 14:15	ST
Thallium-208	0.48 +/- 0.11		0.1		pCi/g		R14434	09-NOV-01 14:15	ST
Bismuth-212	3.02 +/- 1.53		1.38		pCi/g		R14434	09-NOV-01 14:15	ST
Lead-212	1.85 +/- 0.15		0.16		pCi/g		R14434	09-NOV-01 14:15	ST
Bismuth-214	1.38 +/- 0.22		0.2		pCi/g		R14434	09-NOV-01 14:15	ST
Lead-214	1.68 +/- 0.20		0.2		pCi/g		R14434	09-NOV-01 14:15	ST
Thorium-227	0.47 +/- 0.45		0.67		pCi/g		R14434	09-NOV-01 14:15	ST

Chemical Analysis Report

NNACLE LABORATORIES, INC
J9D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

ATTN: PROJECT MANAGER

Project: NMHWB
Purchase Order: 111054

Report Date: 09-JAN-02
Work Order: L4094
Lab Sample ID: L4094-2
Client Sample ID: 111054-02/PU-10273
Date Collected: 09-NOV-01
Sampled By: CLIENT
Date Received: 14-NOV-01
Matrix: SOIL

Parameter	Result	Qualifier	MDL	PQL	Units	DF	Run ID	Analyzed	By
Misc									
Gamma Spectroscopy									
Actinium-228	1.78 +/- 0.27		0.32		pCi/g		R14434	09-NOV-01 14:15	ST
Protactinium-234m	4.48 +/- 10.78		17.9		pCi/g		R14434	09-NOV-01 14:15	ST
Thorium-234	0.00 +/- 2.23		1.22		pCi/g		R14434	09-NOV-01 14:15	ST
Uranium-235	0.42 +/- 0.15		0.59		pCi/g		R14434	09-NOV-01 14:15	ST
Americium-241	4.33 +/- 0.40		0.35		pCi/g		R14434	09-NOV-01 14:15	ST

Chemical Analysis Report

'NACLE LABORATORIES, INC
J9D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

ATTN: PROJECT MANAGER

Project: NMHWB
Purchase Order: 111054

Report Date: 09-JAN-02
Work Order: L4094
Lab Sample ID: L4094-3
Client Sample ID: 111054-03/PU-10283
Date Collected: 09-NOV-01
Sampled By: CLIENT
Date Received: 14-NOV-01
Matrix: SOIL

Parameter		Result	Qualifier	MDL	PQL	Units	DF	Run ID	Analyzed	By
Misc										
	Americium-241	1.9 +/- 0.4		0.1		pCi/g		R14583	10-DEC-01 11:35	BC
	Mercury (Hg)	0.14		0.02		mg/kg		R14581	11-DEC-01 10:02	ML
	Plutonium-242	0.6 +/- 0.6		0.4		pCi/g		R14901	12-DEC-01 14:37	JC
	Cyanide, Total	<273		273	819	ug/kg		R14476	20-NOV-01 00:00	GEL
Target Analyte List of Metals										
	Aluminum (Al)-Total	1450		5		mg/kg	10	R14280	27-NOV-01 08:12	GC
	Antimony (Sb)-Total	0.0334		0.01		mg/kg	10	R14280	27-NOV-01 08:12	GC
	Arsenic (As)-Total	1.19		0.06		mg/kg	10	R14280	27-NOV-01 08:12	GC
	Barium (Ba)-Total	29.8		0.1		mg/kg	10	R14280	27-NOV-01 08:12	GC
	Beryllium (Be)-Total	0.261		0.2		mg/kg	10	R14280	27-NOV-01 08:12	GC
	Cadmium (Cd)-Total	0.332		0.2		mg/kg	10	R14280	27-NOV-01 08:12	GC
	Calcium (Ca)-Total	1390		20		mg/kg	10	R14280	27-NOV-01 08:12	GC
	Chromium (Cr)-Total	9.56		0.1		mg/kg	10	R14280	27-NOV-01 08:12	GC
	Cobalt (Co)-Total	1.68		0.06		mg/kg	10	R14280	27-NOV-01 08:12	GC
	Copper (Cu)-Total	22.8		0.1		mg/kg	10	R14280	27-NOV-01 08:12	GC
	Iron (Fe)-Total	10000		10		mg/kg	10	R14280	27-NOV-01 08:12	GC
	Lead (Pb)-Total	39.0		0.09		mg/kg	10	R14280	27-NOV-01 08:12	GC
	Magnesium (Mg)-Total	645		1		mg/kg	10	R14280	27-NOV-01 08:12	GC
	Manganese (Mn)-Total	210		0.2		mg/kg	10	R14280	27-NOV-01 08:12	GC
	Nickel (Ni)-Total	5.79		0.1		mg/kg	10	R14280	27-NOV-01 08:12	GC
	Potassium (K)-Total	374		5		mg/kg	10	R14280	27-NOV-01 08:12	GC
	Selenium (Se)-Total	<0.300		0.3		mg/kg	10	R14280	27-NOV-01 08:12	GC
	Silver (Ag)-Total	<0.100		0.1		mg/kg	10	R14280	27-NOV-01 08:12	GC
	Sodium (Na)-Total	128		0.7		mg/kg	10	R14280	27-NOV-01 08:12	GC
	Thallium (Tl)-Total	<0.100		0.1		mg/kg	10	R14280	27-NOV-01 08:12	GC
	Vanadium (V)-Total	6.64		0.06		mg/kg	10	R14280	27-NOV-01 08:12	GC
	Zinc (Zn)-Total	36.6		0.4		mg/kg	10	R14280	27-NOV-01 08:12	GC
Strontium-89/90										
	Strontium-90	<2.5 +/- 1.0		2.5		pCi/g		R14520	06-DEC-01 19:23	ST
	Strontium-89	<2.5 +/- 1.0		2.5		pCi/g		R14520	06-DEC-01 19:23	ST
PCBs										
	Aroclor 1016	<36.4		36.4	109	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1221	<36.4		36.4	109	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1232	<36.4		36.4	109	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1242	<36.4		36.4	109	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1248	<36.4		36.4	109	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1254	73.7		36.4	109	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1260	<36.4		36.4	109	ug/kg	10	R14472	20-NOV-01 00:00	GEL
Surrogate:	Decachlorobiphenyl	70		44-127		%		R14472	20-NOV-01 00:00	GEL
Surrogate:	Tetrachloro-m-xylene	77		41-132		%		R14472	20-NOV-01 00:00	GEL

Chemical Analysis Report

NACLE LABORATORIES, INC
9D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

ATTN: PROJECT MANAGER

Project: NMHWB
Purchase Order: 111054

Report Date: 09-JAN-02
Work Order: L4094
Lab Sample ID: L4094-3
Client Sample ID: 111054-03/PU-10283
Date Collected: 09-NOV-01
Sampled By: CLIENT
Date Received: 14-NOV-01
Matrix: SOIL

Parameter	Result	Qualifier	MDL	PQL	Units	DF	Run ID	Analyzed	By
Misc									
Isotopic Uranium 233/4/5/6/8									
Uranium-233/4	1.5 +/- 0.6		0.1		pCi/g		R14645	12-DEC-01 08:20	JC
Uranium-235/6	<0.2 +/- 0.1		0.2		pCi/g		R14645	12-DEC-01 08:20	JC
Uranium-238	0.8 +/- 0.4		0.3		pCi/g		R14645	12-DEC-01 08:20	JC
Isotopic Plutonium 238/9/40									
Plutonium-238	<0.6 +/- 2.6		0.6		pCi/g		R14900	12-DEC-01 14:51	JC
Plutonium-239/40	32.4 +/- 5.2		0.8		pCi/g		R14900	12-DEC-01 14:51	JC
Gamma Spectroscopy									
Beryllium-7	0.08 +/- 0.67		1.12		pCi/g		R14434	09-NOV-01 14:15	ST
Sodium-22	0.02 +/- 0.08		0.13		pCi/g		R14434	09-NOV-01 14:15	ST
Potassium-40	24.22 +/- 2.49		1.04		pCi/g		R14434	09-NOV-01 14:15	ST
Scandium-46	0.16 +/- 0.11		0.2		pCi/g		R14434	09-NOV-01 14:15	ST
Chromium-51	-0.36 +/- 0.79		1.3		pCi/g		R14434	09-NOV-01 14:15	ST
Manganese-54	0.01 +/- 0.07		0.12		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-56	-0.02 +/- 0.08		0.14		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-57	0.00 +/- 0.04		0.06		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-58	-0.03 +/- 0.08		0.12		pCi/g		R14434	09-NOV-01 14:15	ST
Iron-59	0.07 +/- 0.19		0.32		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-60	-0.03 +/- 0.07		0.11		pCi/g		R14434	09-NOV-01 14:15	ST
Zinc-65	-0.08 +/- 0.19		0.31		pCi/g		R14434	09-NOV-01 14:15	ST
Strontium-85	-0.10 +/- 0.09		0.14		pCi/g		R14434	09-NOV-01 14:15	ST
Niobium-94	0.01 +/- 0.07		0.11		pCi/g		R14434	09-NOV-01 14:15	ST
Niobium-95	0.11 +/- 0.11		0.18		pCi/g		R14434	09-NOV-01 14:15	ST
Ruthenium-106	-0.38 +/- 0.62		0.98		pCi/g		R14434	09-NOV-01 14:15	ST
Silver-110m	-0.43 +/- 1.45		2.38		pCi/g		R14434	09-NOV-01 14:15	ST
Antimony-124	-0.04 +/- 0.10		0.13		pCi/g		R14434	09-NOV-01 14:15	ST
Antimony-125	0.09 +/- 0.18		0.3		pCi/g		R14434	09-NOV-01 14:15	ST
Iodine-131	-0.23 +/- 0.35		0.57		pCi/g		R14434	09-NOV-01 14:15	ST
Cesium-134	0.00 +/- 0.08		0.11		pCi/g		R14434	09-NOV-01 14:15	ST
Cesium-137	0.64 +/- 0.13		0.11		pCi/g		R14434	09-NOV-01 14:15	ST
Cerium-139	0.01 +/- 0.05		0.08		pCi/g		R14434	09-NOV-01 14:15	ST
Cerium-144	-0.09 +/- 0.32		0.52		pCi/g		R14434	09-NOV-01 14:15	ST
Europium-152	0.02 +/- 0.36		0.59		pCi/g		R14434	09-NOV-01 14:15	ST
Europium-154	0.00 +/- 0.08		0.13		pCi/g		R14434	09-NOV-01 14:15	ST
Europium-155	0.12 +/- 0.13		0.17		pCi/g		R14434	09-NOV-01 14:15	ST
Thallium-208	0.35 +/- 0.15		0.11		pCi/g		R14434	09-NOV-01 14:15	ST
Bismuth-212	1.06 +/- 1.04		1.81		pCi/g		R14434	09-NOV-01 14:15	ST
Lead-212	1.19 +/- 0.23		0.16		pCi/g		R14434	09-NOV-01 14:15	ST
Bismuth-214	0.76 +/- 0.22		0.22		pCi/g		R14434	09-NOV-01 14:15	ST
Lead-214	0.66 +/- 0.20		0.2		pCi/g		R14434	09-NOV-01 14:15	ST
Thorium-227	2.27 +/- 0.52		0.86		pCi/g		R14434	09-NOV-01 14:15	ST

Chemical Analysis Report

PINNACLE LABORATORIES, INC
109D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

ATTN: PROJECT MANAGER

Project: NMHWB
Purchase Order: 111054

Report Date: 09-JAN-02
Work Order: L4094
Lab Sample ID: L4094-3
Client Sample ID: 111054-03/PU-10283
Date Collected: 09-NOV-01
Sampled By: CLIENT
Date Received: 14-NOV-01
Matrix: SOIL

Parameter	Result	Qualifier	MDL	PQL	Units	DF	Run ID	Analyzed	By
Misc									
Gamma Spectroscopy									
Actinium-228	0.87 +/- 0.43		0.6		pCi/g		R14434	09-NOV-01 14:15	ST
Protactinium-234m	9.24 +/- 10.89		19.4		pCi/g		R14434	09-NOV-01 14:15	ST
Thorium-234	0.89 +/- 1.01		1.07		pCi/g		R14434	09-NOV-01 14:15	ST
Uranium-235	0.12 +/- 0.10		0.53		pCi/g		R14434	09-NOV-01 14:15	ST
Americium-241	1.73 +/- 0.16		0.14		pCi/g		R14434	09-NOV-01 14:15	ST

Chemical Analysis Report

'NNACLE LABORATORIES, INC
09D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

ATTN: PROJECT MANAGER

Project: NMHWB
Purchase Order: 111054

Report Date: 09-JAN-02
Work Order: L4094
Lab Sample ID: L4094-4
Client Sample ID: 111054-04/PU-10334
Date Collected: 09-NOV-01
Sampled By: CLIENT
Date Received: 14-NOV-01
Matrix: SOIL

Parameter		Result	Qualifier	MDL	PQL	Units	DF	Run ID	Analyzed	By
Misc										
	Americium-241	2.5 +/- 0.4		0.1		pCi/g		R14583	10-DEC-01 11:35	BC
	Mercury (Hg)	0.37		0.02		mg/kg		R14581	11-DEC-01 10:02	ML
	Plutonium-242	<0.8 +/- 0.6		0.8		pCi/g		R14901	12-DEC-01 14:37	JC
	Cyanide, Total	<288		288	864	ug/kg		R14476	20-NOV-01 00:00	GEL
Target Analyte List of Metals										
	Aluminum (Al)-Total	2730		5		mg/kg	10	R14280	27-NOV-01 08:14	GC
	Antimony (Sb)-Total	0.0377		0.01		mg/kg	10	R14280	27-NOV-01 08:14	GC
	Arsenic (As)-Total	1.83		0.06		mg/kg	10	R14280	27-NOV-01 08:14	GC
	Barium (Ba)-Total	36.1		0.1		mg/kg	10	R14280	27-NOV-01 08:14	GC
	Beryllium (Be)-Total	0.387		0.2		mg/kg	10	R14280	27-NOV-01 08:14	GC
	Cadmium (Cd)-Total	0.767		0.2		mg/kg	10	R14280	27-NOV-01 08:14	GC
	Calcium (Ca)-Total	1530		20		mg/kg	10	R14280	27-NOV-01 08:14	GC
	Chromium (Cr)-Total	11.4		0.1		mg/kg	10	R14280	27-NOV-01 08:14	GC
	Cobalt (Co)-Total	1.77		0.06		mg/kg	10	R14280	27-NOV-01 08:14	GC
	Copper (Cu)-Total	14.9		0.1		mg/kg	10	R14280	27-NOV-01 08:14	GC
	Iron (Fe)-Total	6150		10		mg/kg	10	R14280	27-NOV-01 08:14	GC
	Lead (Pb)-Total	133		0.09		mg/kg	10	R14280	27-NOV-01 08:14	GC
	Magnesium (Mg)-Total	592		1		mg/kg	10	R14280	27-NOV-01 08:14	GC
	Manganese (Mn)-Total	179		0.2		mg/kg	10	R14280	27-NOV-01 08:14	GC
	Nickel (Ni)-Total	4.85		0.1		mg/kg	10	R14280	27-NOV-01 08:14	GC
	Potassium (K)-Total	475		5		mg/kg	10	R14280	27-NOV-01 08:14	GC
	Selenium (Se)-Total	0.430		0.3		mg/kg	10	R14280	27-NOV-01 08:14	GC
	Silver (Ag)-Total	0.274		0.1		mg/kg	10	R14280	27-NOV-01 08:14	GC
	Sodium (Na)-Total	141		0.7		mg/kg	10	R14280	27-NOV-01 08:14	GC
	Thallium (Tl)-Total	<0.100		0.1		mg/kg	10	R14280	27-NOV-01 08:14	GC
	Vanadium (V)-Total	8.74		0.06		mg/kg	10	R14280	27-NOV-01 08:14	GC
	Zinc (Zn)-Total	65.0		0.4		mg/kg	10	R14280	27-NOV-01 08:14	GC
Strontium-89/90										
	Strontium-90	<2.5 +/- 1.0		2.5		pCi/g		R14520	06-DEC-01 19:23	ST
	Strontium-89	<2.5 +/- 1.0		2.5		pCi/g		R14520	06-DEC-01 19:23	ST
PCBs										
	Aroclor 1016	<38.4		38.4	115	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1221	<38.4		38.4	115	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1232	<38.4		38.4	115	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1242	<38.4		38.4	115	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1248	<38.4		38.4	115	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1254	122		38.4	115	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1260	69.2		38.4	115	ug/kg	10	R14472	20-NOV-01 00:00	GEL
Surrogate:	Decachlorobiphenyl	58		44-127		%		R14472	20-NOV-01 00:00	GEL
Surrogate:	Tetrachloro-m-xylene	69		41-132		%		R14472	20-NOV-01 00:00	GEL

Chemical Analysis Report

'NACLE LABORATORIES, INC
J9D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

ATTN: PROJECT MANAGER

Project: NMHWB
Purchase Order: 111054

Report Date: 09-JAN-02
Work Order: L4094
Lab Sample ID: L4094-4
Client Sample ID: 111054-04/PU-10334
Date Collected: 09-NOV-01
Sampled By: CLIENT
Date Received: 14-NOV-01
Matrix: SOIL

Parameter	Result	Qualifier	MDL	PQL	Units	DF	Run ID	Analyzed	By
Misc									
Isotopic Uranium 233/4/5/6/8									
Uranium-233/4	2.4 +/- 0.6		0.3		pCi/g		R14645	12-DEC-01 08:20	JC
Uranium-235/6	0.1 +/- 0.1		0.1		pCi/g		R14645	12-DEC-01 08:20	JC
Uranium-238	1.4 +/- 0.4		0.2		pCi/g		R14645	12-DEC-01 08:20	JC
Isotopic Plutonium 238/9/40									
Plutonium-238	<0.4 +/- 2.8		0.4		pCi/g		R14900	12-DEC-01 14:51	JC
Plutonium-239/40	68.0 +/- 8.8		1		pCi/g		R14900	12-DEC-01 14:51	JC
Gamma Spectroscopy									
Beryllium-7	-0.01 +/- 1.19		1.95		pCi/g		R14434	09-NOV-01 14:15	ST
Sodium-22	-0.02 +/- 0.15		0.23		pCi/g		R14434	09-NOV-01 14:15	ST
Potassium-40	31.59 +/- 5.28		1.57		pCi/g		R14434	09-NOV-01 14:15	ST
Scandium-46	0.12 +/- 0.22		0.41		pCi/g		R14434	09-NOV-01 14:15	ST
Chromium-51	0.02 +/- 1.49		2.5		pCi/g		R14434	09-NOV-01 14:15	ST
Manganese-54	-0.04 +/- 0.12		0.18		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-56	-0.05 +/- 0.17		0.27		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-57	-0.01 +/- 0.09		0.15		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-58	-0.02 +/- 0.13		0.21		pCi/g		R14434	09-NOV-01 14:15	ST
Iron-59	-0.18 +/- 0.37		0.54		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-60	-0.11 +/- 0.15		0.2		pCi/g		R14434	09-NOV-01 14:15	ST
Zinc-65	-0.26 +/- 0.40		0.58		pCi/g		R14434	09-NOV-01 14:15	ST
Strontium-85	0.08 +/- 0.15		0.24		pCi/g		R14434	09-NOV-01 14:15	ST
Niobium-94	0.02 +/- 0.12		0.2		pCi/g		R14434	09-NOV-01 14:15	ST
Niobium-95	-0.05 +/- 0.15		0.24		pCi/g		R14434	09-NOV-01 14:15	ST
Ruthenium-106	-0.01 +/- 1.17		1.87		pCi/g		R14434	09-NOV-01 14:15	ST
Silver-110m	1.16 +/- 2.76		4.8		pCi/g		R14434	09-NOV-01 14:15	ST
Antimony-124	0.03 +/- 0.15		0.24		pCi/g		R14434	09-NOV-01 14:15	ST
Antimony-125	0.14 +/- 0.34		0.58		pCi/g		R14434	09-NOV-01 14:15	ST
Iodine-131	-0.12 +/- 0.67		1.09		pCi/g		R14434	09-NOV-01 14:15	ST
Cesium-134	0.03 +/- 0.14		0.2		pCi/g		R14434	09-NOV-01 14:15	ST
Cesium-137	1.08 +/- 0.27		0.27		pCi/g		R14434	09-NOV-01 14:15	ST
Cerium-139	-0.04 +/- 0.10		0.16		pCi/g		R14434	09-NOV-01 14:15	ST
Cerium-144	-0.05 +/- 0.76		1.24		pCi/g		R14434	09-NOV-01 14:15	ST
Europium-152	0.15 +/- 0.52		0.94		pCi/g		R14434	09-NOV-01 14:15	ST
Europium-154	-0.07 +/- 0.18		0.29		pCi/g		R14434	09-NOV-01 14:15	ST
Europium-155	0.04 +/- 0.28		0.47		pCi/g		R14434	09-NOV-01 14:15	ST
Thallium-208	0.00 +/- 0.25		0.25		pCi/g		R14434	09-NOV-01 14:15	ST
Bismuth-212	2.74 +/- 1.98		3.92		pCi/g		R14434	09-NOV-01 14:15	ST
Lead-212	1.32 +/- 0.34		0.36		pCi/g		R14434	09-NOV-01 14:15	ST
Bismuth-214	0.81 +/- 0.53		0.44		pCi/g		R14434	09-NOV-01 14:15	ST
Lead-214	1.12 +/- 0.38		0.4		pCi/g		R14434	09-NOV-01 14:15	ST
Thorium-227	-0.46 +/- 0.95		1.26		pCi/g		R14434	09-NOV-01 14:15	ST

Chemical Analysis Report

INACLE LABORATORIES, INC
9D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

ATTN: PROJECT MANAGER

Project: NMHWB
Purchase Order: 111054

Report Date: 09-JAN-02
Work Order: L4094
Lab Sample ID: L4094-4
Client Sample ID: 111054-04/PU-10334
Date Collected: 09-NOV-01
Sampled By: CLIENT
Date Received: 14-NOV-01
Matrix: SOIL

Parameter	Result	Qualifier	MDL	PQL	Units	DF	Run ID	Analyzed	By
Misc									
Gamma Spectroscopy									
Actinium-228	1.31 +/- 0.57		0.58		pCi/g		R14434	09-NOV-01 14:15	ST
Protactinium-234m	19.26 +/- 21.90		42.5		pCi/g		R14434	09-NOV-01 14:15	ST
Thorium-234	0.00 +/- 2.64		2.82		pCi/g		R14434	09-NOV-01 14:15	ST
Uranium-235	0.15 +/- 0.30		1.38		pCi/g		R14434	09-NOV-01 14:15	ST
Americium-241	3.84 +/- 0.84		0.69		pCi/g		R14434	09-NOV-01 14:15	ST

Chemical Analysis Report

NNACLE LABORATORIES, INC
J9D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

ATTN: PROJECT MANAGER

Project: NMHWB
Purchase Order: 111054

Report Date: 09-JAN-02
Work Order: L4094
Lab Sample ID: L4094-5
Client Sample ID: 111054-05/PU-10331
Date Collected: 09-NOV-01
Sampled By: CLIENT
Date Received: 14-NOV-01
Matrix: SOIL

Parameter		Result	Qualifier	MDL	PQL	Units	DF	Run ID	Analyzed	By
Misc										
	Americium-241	4.1 +/- 0.6		0.1		pCi/g		R14583	10-DEC-01 11:35	BC
	Mercury (Hg)	0.95		0.02		mg/kg	5	R14581	11-DEC-01 10:02	ML
	Plutonium-242	0.7 +/- 0.6		0.6		pCi/g		R14901	12-DEC-01 14:37	JC
	Cyanide, Total	<258		258	774	ug/kg		R14476	20-NOV-01 00:00	GEL
Target Analyte List of Metals										
	Aluminum (Al)-Total	1990		5		mg/kg	10	R14280	27-NOV-01 08:16	GC
	Antimony (Sb)-Total	0.0282		0.01		mg/kg	10	R14280	27-NOV-01 08:16	GC
	Arsenic (As)-Total	1.13		0.06		mg/kg	10	R14280	27-NOV-01 08:16	GC
	Barium (Ba)-Total	44.3		0.1		mg/kg	10	R14280	27-NOV-01 08:16	GC
	Beryllium (Be)-Total	0.346		0.2		mg/kg	10	R14280	27-NOV-01 08:16	GC
	Cadmium (Cd)-Total	0.975		0.2		mg/kg	10	R14280	27-NOV-01 08:16	GC
	Calcium (Ca)-Total	1370		20		mg/kg	10	R14280	27-NOV-01 08:16	GC
	Chromium (Cr)-Total	14.3		0.1		mg/kg	10	R14280	27-NOV-01 08:16	GC
	Cobalt (Co)-Total	1.52		0.06		mg/kg	10	R14280	27-NOV-01 08:16	GC
	Copper (Cu)-Total	17.8		0.1		mg/kg	10	R14280	27-NOV-01 08:16	GC
	Iron (Fe)-Total	6760		10		mg/kg	10	R14280	27-NOV-01 08:16	GC
	Lead (Pb)-Total	37.1		0.09		mg/kg	10	R14280	27-NOV-01 08:16	GC
	Magnesium (Mg)-Total	394		1		mg/kg	10	R14280	27-NOV-01 08:16	GC
	Manganese (Mn)-Total	199		0.2		mg/kg	10	R14280	27-NOV-01 08:16	GC
	Nickel (Ni)-Total	7.22		0.1		mg/kg	10	R14280	27-NOV-01 08:16	GC
	Potassium (K)-Total	308		5		mg/kg	10	R14280	27-NOV-01 08:16	GC
	Selenium (Se)-Total	0.308		0.3		mg/kg	10	R14280	27-NOV-01 08:16	GC
	Silver (Ag)-Total	0.231		0.1		mg/kg	10	R14280	27-NOV-01 08:16	GC
	Sodium (Na)-Total	122		0.7		mg/kg	10	R14280	27-NOV-01 08:16	GC
	Thallium (Tl)-Total	0.151		0.1		mg/kg	10	R14280	27-NOV-01 08:16	GC
	Vanadium (V)-Total	5.92		0.06		mg/kg	10	R14280	27-NOV-01 08:16	GC
	Zinc (Zn)-Total	36.7		0.4		mg/kg	10	R14280	27-NOV-01 08:16	GC
Strontium-89/90										
	Strontium-90	<1.9 +/- 0.9		1.9		pCi/g		R14665	14-DEC-01 16:18	TRM
	Strontium-89	<1.9 +/- 0.9		1.9		pCi/g		R14665	14-DEC-01 16:18	TRM
PCBs										
	Aroclor 1016	<34.3		34.3	103	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1221	<34.3		34.3	103	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1232	<34.3		34.3	103	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1242	<34.3		34.3	103	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1248	<34.3		34.3	103	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1254	125		34.3	103	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1260	43.0		34.3	103	ug/kg	10	R14472	20-NOV-01 00:00	GEL
Surrogate:	Decachlorobiphenyl	66		44-127		%		R14472	20-NOV-01 00:00	GEL
Surrogate:	Tetrachloro-m-xylene	77		41-132		%		R14472	20-NOV-01 00:00	GEL

Chemical Analysis Report

'NACLE LABORATORIES, INC
J9D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

ATTN: PROJECT MANAGER

Project: NMHWB
Purchase Order: 111054

Report Date: 09-JAN-02
Work Order: L4094
Lab Sample ID: L4094-5
Client Sample ID: 111054-05/PU-10331
Date Collected: 09-NOV-01
Sampled By: CLIENT
Date Received: 14-NOV-01
Matrix: SOIL

Parameter	Result	Qualifier	MDL	PQL	Units	DF	Run ID	Analyzed	By
Misc									
Isotopic Uranium 233/4/5/6/8									
Uranium-233/4	1.7 +/- 0.5		0.1		pCi/g		R14645	12-DEC-01 08:20	JC
Uranium-235/6	<0.1 +/- 0.1		0.1		pCi/g		R14645	12-DEC-01 08:20	JC
Uranium-238	0.8 +/- 0.3		0.2		pCi/g		R14645	12-DEC-01 08:20	JC
Isotopic Plutonium 238/9/40									
Plutonium-238	<0.7 +/- 3.1		0.7		pCi/g		R14900	12-DEC-01 14:51	JC
Plutonium-239/40	117 +/- 12.7		0.9		pCi/g		R14900	12-DEC-01 14:51	JC
Gamma Spectroscopy									
Beryllium-7	0.28 +/- 0.78		1.32		pCi/g		R14434	09-NOV-01 14:15	ST
Sodium-22	0.05 +/- 0.09		0.16		pCi/g		R14434	09-NOV-01 14:15	ST
Potassium-40	30.91 +/- 2.86		1.05		pCi/g		R14434	09-NOV-01 14:15	ST
Scandium-46	0.13 +/- 0.13		0.23		pCi/g		R14434	09-NOV-01 14:15	ST
Chromium-51	-0.06 +/- 0.96		1.43		pCi/g		R14434	09-NOV-01 14:15	ST
Manganese-54	0.05 +/- 0.08		0.14		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-56	-0.03 +/- 0.10		0.16		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-57	0.00 +/- 0.04		0.07		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-58	-0.07 +/- 0.09		0.14		pCi/g		R14434	09-NOV-01 14:15	ST
Iron-59	-0.07 +/- 0.23		0.38		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-60	0.00 +/- 0.08		0.14		pCi/g		R14434	09-NOV-01 14:15	ST
Zinc-65	-0.27 +/- 0.22		0.33		pCi/g		R14434	09-NOV-01 14:15	ST
Strontium-85	0.15 +/- 0.10		0.15		pCi/g		R14434	09-NOV-01 14:15	ST
Niobium-94	0.01 +/- 0.08		0.13		pCi/g		R14434	09-NOV-01 14:15	ST
Niobium-95	0.04 +/- 0.12		0.2		pCi/g		R14434	09-NOV-01 14:15	ST
Ruthenium-106	0.40 +/- 0.71		1.21		pCi/g		R14434	09-NOV-01 14:15	ST
Silver-110m	-0.33 +/- 1.70		2.79		pCi/g		R14434	09-NOV-01 14:15	ST
Antimony-124	-0.06 +/- 0.11		0.15		pCi/g		R14434	09-NOV-01 14:15	ST
Antimony-125	0.05 +/- 0.19		0.32		pCi/g		R14434	09-NOV-01 14:15	ST
Iodine-131	-0.32 +/- 0.41		0.66		pCi/g		R14434	09-NOV-01 14:15	ST
Cesium-134	0.00 +/- 0.09		0.12		pCi/g		R14434	09-NOV-01 14:15	ST
Cesium-137	1.05 +/- 0.18		0.14		pCi/g		R14434	09-NOV-01 14:15	ST
Cerium-139	-0.02 +/- 0.06		0.09		pCi/g		R14434	09-NOV-01 14:15	ST
Cerium-144	-0.30 +/- 0.38		0.6		pCi/g		R14434	09-NOV-01 14:15	ST
Europium-152	0.08 +/- 0.38		0.63		pCi/g		R14434	09-NOV-01 14:15	ST
Europium-154	-0.08 +/- 0.09		0.14		pCi/g		R14434	09-NOV-01 14:15	ST
Europium-155	0.18 +/- 0.12		0.2		pCi/g		R14434	09-NOV-01 14:15	ST
Thallium-208	0.53 +/- 0.13		0.12		pCi/g		R14434	09-NOV-01 14:15	ST
Bismuth-212	1.51 +/- 1.20		2.1		pCi/g		R14434	09-NOV-01 14:15	ST
Lead-212	0.00 +/- 0.18		0.18		pCi/g		R14434	09-NOV-01 14:15	ST
Bismuth-214	0.91 +/- 0.26		0.25		pCi/g		R14434	09-NOV-01 14:15	ST
Lead-214	1.06 +/- 0.21		0.24		pCi/g		R14434	09-NOV-01 14:15	ST
Thorium-227	2.87 +/- 0.59		0.98		pCi/g		R14434	09-NOV-01 14:15	ST

Chemical Analysis Report

PINNACLE LABORATORIES, INC
709D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

ATTN: PROJECT MANAGER

Project: NMHWB
Purchase Order: 111054

Report Date: 09-JAN-02
Work Order: L4094
Lab Sample ID: L4094-5
Client Sample ID: 111054-05/PU-10331
Date Collected: 09-NOV-01
Sampled By: CLIENT
Date Received: 14-NOV-01
Matrix: SOIL

Parameter	Result	Qualifier	MDL	PQL	Units	DF	Run ID	Analyzed	By
Misc									
Gamma Spectroscopy									
Actinium-228	1.49 +/- 0.37		0.41		pCi/g		R14434	09-NOV-01 14:15	ST
Protactinium-234m	9.30 +/- 13.16		23.13		pCi/g		R14434	09-NOV-01 14:15	ST
Thorium-234	0.00 +/- 1.04		1.26		pCi/g		R14434	09-NOV-01 14:15	ST
Uranium-235	0.21 +/- 0.12		0.61		pCi/g		R14434	09-NOV-01 14:15	ST
Americium-241	7.21 +/- 0.30		0.23		pCi/g		R14434	09-NOV-01 14:15	ST

Chemical Analysis Report

PINNACLE LABORATORIES, INC
[illegible]9D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

ATTN: PROJECT MANAGER

Project: NMHWB
Purchase Order: 111054

Report Date: 09-JAN-02
Work Order: L4094
Lab Sample ID: L4094-6
Client Sample ID: 111054-06/PU-10326
Date Collected: 09-NOV-01
Sampled By: CLIENT
Date Received: 14-NOV-01
Matrix: SOIL

Parameter		Result	Qualifier	MDL	PQL	Units	DF	Run ID	Analyzed	By
Misc										
	Americium-241	6.6 +/- 1.3		0.1		pCi/g		R14583	10-DEC-01 11:35	BC
	Mercury (Hg)	0.97		0.02		mg/kg	5	R14581	11-DEC-01 10:02	ML
	Plutonium-242	<0.6 +/- 0.5		0.6		pCi/g		R14901	12-DEC-01 14:37	JC
	Cyanide, Total	<259		259	777	ug/kg		R14476	20-NOV-01 00:00	GEL
Target Analyte List of Metals										
	Aluminum (Al)-Total	2840		5		mg/kg	10	R14280	27-NOV-01 08:18	GC
	Antimony (Sb)-Total	0.0352		0.01		mg/kg	10	R14280	27-NOV-01 08:18	GC
	Arsenic (As)-Total	1.55		0.06		mg/kg	10	R14280	27-NOV-01 08:18	GC
	Barium (Ba)-Total	42.3		0.1		mg/kg	10	R14280	27-NOV-01 08:18	GC
	Beryllium (Be)-Total	0.415		0.2		mg/kg	10	R14280	27-NOV-01 08:18	GC
	Cadmium (Cd)-Total	1.64		0.2		mg/kg	10	R14280	27-NOV-01 08:18	GC
	Calcium (Ca)-Total	1730		20		mg/kg	10	R14280	27-NOV-01 08:18	GC
	Chromium (Cr)-Total	12.0		0.1		mg/kg	10	R14280	27-NOV-01 08:18	GC
	Cobalt (Co)-Total	1.75		0.06		mg/kg	10	R14280	27-NOV-01 08:18	GC
	Copper (Cu)-Total	23.3		0.1		mg/kg	10	R14280	27-NOV-01 08:18	GC
	Iron (Fe)-Total	8500		10		mg/kg	10	R14280	27-NOV-01 08:18	GC
	Lead (Pb)-Total	111		0.09		mg/kg	10	R14280	27-NOV-01 08:18	GC
	Magnesium (Mg)-Total	653		1		mg/kg	10	R14280	27-NOV-01 08:18	GC
	Manganese (Mn)-Total	204		0.2		mg/kg	10	R14280	27-NOV-01 08:18	GC
	Nickel (Ni)-Total	7.21		0.1		mg/kg	10	R14280	27-NOV-01 08:18	GC
	Potassium (K)-Total	522		5		mg/kg	10	R14280	27-NOV-01 08:18	GC
	Selenium (Se)-Total	0.422		0.3		mg/kg	10	R14280	27-NOV-01 08:18	GC
	Silver (Ag)-Total	0.477		0.1		mg/kg	10	R14280	27-NOV-01 08:18	GC
	Sodium (Na)-Total	228		0.7		mg/kg	10	R14280	27-NOV-01 08:18	GC
	Thallium (Tl)-Total	0.111		0.1		mg/kg	10	R14280	27-NOV-01 08:18	GC
	Vanadium (V)-Total	9.09		0.06		mg/kg	10	R14280	27-NOV-01 08:18	GC
	Zinc (Zn)-Total	60.0		0.4		mg/kg	10	R14280	27-NOV-01 08:18	GC
Strontium-89/90										
	Strontium-90	<1.9 +/- 0.9		1.9		pCi/g		R14665	14-DEC-01 16:18	TRM
	Strontium-89	<1.9 +/- 0.9		1.9		pCi/g		R14665	14-DEC-01 16:18	TRM
PCBs										
	Aroclor 1016	<34.5		34.5	104	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1221	<34.5		34.5	104	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1232	<34.5		34.5	104	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1242	<34.5		34.5	104	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1248	<34.5		34.5	104	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1254	845		34.5	104	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1260	183		34.5	104	ug/kg	10	R14472	20-NOV-01 00:00	GEL
Surrogate:	Decachlorobiphenyl	62		44-127		%		R14472	20-NOV-01 00:00	GEL
Surrogate:	Tetrachloro-m-xylene	70		41-132		%		R14472	20-NOV-01 00:00	GEL

Results are only applicable to samples submitted for analysis.
Limit of Liability: Although care and due diligence is taken in the performance of our services, our liability in all cases is limited to re-analysis at our expense or refunding the analytical costs charged for the work performed.

ACCREDITED IN ACCORDANCE WITH nelac

Chemical Analysis Report

PINNACLE LABORATORIES, INC
09D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

ATTN: PROJECT MANAGER

Project: NMHWB
Purchase Order: 111054

Report Date: 09-JAN-02
Work Order: L4094
Lab Sample ID: L4094-6
Client Sample ID: 111054-06/PU-10326
Date Collected: 09-NOV-01
Sampled By: CLIENT
Date Received: 14-NOV-01
Matrix: SOIL

Parameter	Result	Qualifier	MDL	PQL	Units	DF	Run ID	Analyzed	By
Misc									
Isotopic Uranium 233/4/5/6/8									
Uranium-233/4	4.1 +/- 0.8		0.2		pCi/g		R14645	12-DEC-01 08:20	JC
Uranium-235/6	0.2 +/- 0.2		0.1		pCi/g		R14645	12-DEC-01 08:20	JC
Uranium-238	1.2 +/- 0.4		0.2		pCi/g		R14645	12-DEC-01 08:20	JC
Isotopic Plutonium 238/9/40									
Plutonium-238	<0.8 +/- 2.8		0.8		pCi/g		R14900	12-DEC-01 14:51	JC
Plutonium-239/40	63.5 +/- 8.1		0.8		pCi/g		R14900	12-DEC-01 14:51	JC
Gamma Spectroscopy									
Beryllium-7	-0.15 +/- 0.65		1.05		pCi/g		R14434	09-NOV-01 14:15	ST
Sodium-22	-0.03 +/- 0.06		0.1		pCi/g		R14434	09-NOV-01 14:15	ST
Potassium-40	32.55 +/- 2.36		0.89		pCi/g		R14434	09-NOV-01 14:15	ST
Scandium-46	0.12 +/- 0.12		0.17		pCi/g		R14434	09-NOV-01 14:15	ST
Chromium-51	-0.42 +/- 0.69		1.14		pCi/g		R14434	09-NOV-01 14:15	ST
Manganese-54	-0.03 +/- 0.06		0.09		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-56	-0.03 +/- 0.06		0.1		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-57	-0.03 +/- 0.04		0.06		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-58	-0.04 +/- 0.06		0.09		pCi/g		R14434	09-NOV-01 14:15	ST
Iron-59	0.09 +/- 0.15		0.26		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-60	-0.01 +/- 0.06		0.09		pCi/g		R14434	09-NOV-01 14:15	ST
Zinc-65	-0.16 +/- 0.16		0.19		pCi/g		R14434	09-NOV-01 14:15	ST
Strontium-85	-0.23 +/- 0.08		0.12		pCi/g		R14434	09-NOV-01 14:15	ST
Niobium-94	0.04 +/- 0.05		0.09		pCi/g		R14434	09-NOV-01 14:15	ST
Niobium-95	0.01 +/- 0.08		0.13		pCi/g		R14434	09-NOV-01 14:15	ST
Ruthenium-106	-0.27 +/- 0.53		0.82		pCi/g		R14434	09-NOV-01 14:15	ST
Silver-110m	-0.07 +/- 1.36		2.22		pCi/g		R14434	09-NOV-01 14:15	ST
Antimony-124	-0.08 +/- 0.07		0.1		pCi/g		R14434	09-NOV-01 14:15	ST
Antimony-125	0.22 +/- 0.17		0.29		pCi/g		R14434	09-NOV-01 14:15	ST
Iodine-131	0.15 +/- 0.34		0.58		pCi/g		R14434	09-NOV-01 14:15	ST
Cesium-134	0.03 +/- 0.06		0.09		pCi/g		R14434	09-NOV-01 14:15	ST
Cesium-137	4.90 +/- 0.20		0.1		pCi/g		R14434	09-NOV-01 14:15	ST
Cerium-139	-0.05 +/- 0.05		0.08		pCi/g		R14434	09-NOV-01 14:15	ST
Cerium-144	0.04 +/- 0.32		0.52		pCi/g		R14434	09-NOV-01 14:15	ST
Europium-152	0.14 +/- 0.26		0.45		pCi/g		R14434	09-NOV-01 14:15	ST
Europium-154	-0.08 +/- 0.08		0.13		pCi/g		R14434	09-NOV-01 14:15	ST
Europium-155	0.26 +/- 0.15		0.21		pCi/g		R14434	09-NOV-01 14:15	ST
Thallium-208	0.41 +/- 0.10		0.08		pCi/g		R14434	09-NOV-01 14:15	ST
Bismuth-212	2.11 +/- 1.24		1.11		pCi/g		R14434	09-NOV-01 14:15	ST
Lead-212	1.61 +/- 0.16		0.15		pCi/g		R14434	09-NOV-01 14:15	ST
Bismuth-214	0.97 +/- 0.19		0.19		pCi/g		R14434	09-NOV-01 14:15	ST
Lead-214	1.20 +/- 0.19		0.18		pCi/g		R14434	09-NOV-01 14:15	ST
Thorium-227	0.11 +/- 0.41		0.58		pCi/g		R14434	09-NOV-01 14:15	ST

Chemical Analysis Report

'NNACLE LABORATORIES, INC
09D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

ATTN: PROJECT MANAGER

Project: NMHWB
Purchase Order: 111054

Report Date: 09-JAN-02
Work Order: L4094
Lab Sample ID: L4094-6
Client Sample ID: 111054-06/PU-10326
Date Collected: 09-NOV-01
Sampled By: CLIENT
Date Received: 14-NOV-01
Matrix: SOIL

Parameter	Result	Qualifier	MDL	PQL	Units	DF	Run ID	Analyzed	By
Misc									
Gamma Spectroscopy									
Actinium-228	1.53 +/- 0.24		0.29		pCi/g		R14434	09-NOV-01 14:15	ST
Protactinium-234m	7.12 +/- 9.58		16.28		pCi/g		R14434	09-NOV-01 14:15	ST
Thorium-234	0.00 +/- 2.10		1.25		pCi/g		R14434	09-NOV-01 14:15	ST
Uranium-235	0.22 +/- 0.12		0.54		pCi/g		R14434	09-NOV-01 14:15	ST
Americium-241	8.74 +/- 0.43		0.36		pCi/g		R14434	09-NOV-01 14:15	ST

Results are only applicable to samples submitted for analysis.
Limit of Liability: Although care and due diligence is taken in the performance of our services, our liability in all cases is limited to re-analysis at our expense or refunding the analytical costs charged for the work performed.

ACCREDITED IN ACCORDANCE WITH nelac

Chemical Analysis Report

NNACLE LABORATORIES, INC
J9D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

ATTN: PROJECT MANAGER

Project: NMHWB
Purchase Order: 111054

Report Date: 09-JAN-02
Work Order: L4094
Lab Sample ID: L4094-7
Client Sample ID: 111054-07/PU-10333
Date Collected: 09-NOV-01
Sampled By: CLIENT
Date Received: 14-NOV-01
Matrix: SOIL

Parameter		Result	Qualifier	MDL	PQL	Units	DF	Run ID	Analyzed	By
Misc										
	Americium-241	30.5 +/- 4		1.1		pCi/g		R14675	14-DEC-01 11:21	PJ
	Mercury (Hg)	1.15		0.02		mg/kg	5	R14581	11-DEC-01 10:02	ML
	Plutonium-242	3.1 +/- 1.4		0.6		pCi/g		R14901	12-DEC-01 14:37	JC
	Cyanide, Total	<262		262	786	ug/kg		R14476	20-NOV-01 00:00	GEL
Target Analyte List of Metals										
	Aluminum (Al)-Total	3170		5		mg/kg	10	R14280	27-NOV-01 08:20	GC
	Antimony (Sb)-Total	0.0440		0.01		mg/kg	10	R14280	27-NOV-01 08:20	GC
	Arsenic (As)-Total	1.70		0.06		mg/kg	10	R14280	27-NOV-01 08:20	GC
	Barium (Ba)-Total	56.5		0.1		mg/kg	10	R14280	27-NOV-01 08:20	GC
	Beryllium (Be)-Total	0.561		0.2		mg/kg	10	R14280	27-NOV-01 08:20	GC
	Cadmium (Cd)-Total	3.55		0.2		mg/kg	10	R14280	27-NOV-01 08:20	GC
	Calcium (Ca)-Total	5750		20		mg/kg	10	R14280	27-NOV-01 08:20	GC
	Chromium (Cr)-Total	14.7		0.1		mg/kg	10	R14280	27-NOV-01 08:20	GC
	Cobalt (Co)-Total	2.51		0.06		mg/kg	10	R14280	27-NOV-01 08:20	GC
	Copper (Cu)-Total	34.9		0.1		mg/kg	10	R14280	27-NOV-01 08:20	GC
	Iron (Fe)-Total	8640		10		mg/kg	10	R14280	27-NOV-01 08:20	GC
	Lead (Pb)-Total	184		0.09		mg/kg	10	R14280	27-NOV-01 08:20	GC
	Magnesium (Mg)-Total	618		1		mg/kg	10	R14280	27-NOV-01 08:20	GC
	Manganese (Mn)-Total	267		0.2		mg/kg	10	R14280	27-NOV-01 08:20	GC
	Nickel (Ni)-Total	10.2		0.1		mg/kg	10	R14280	27-NOV-01 08:20	GC
	Potassium (K)-Total	512		5		mg/kg	10	R14280	27-NOV-01 08:20	GC
	Selenium (Se)-Total	0.518		0.3		mg/kg	10	R14280	27-NOV-01 08:20	GC
	Silver (Ag)-Total	0.609		0.1		mg/kg	10	R14280	27-NOV-01 08:20	GC
	Sodium (Na)-Total	272		0.7		mg/kg	10	R14280	27-NOV-01 08:20	GC
	Thallium (Tl)-Total	0.163		0.1		mg/kg	10	R14280	27-NOV-01 08:20	GC
	Vanadium (V)-Total	7.50		0.06		mg/kg	10	R14280	27-NOV-01 08:20	GC
	Zinc (Zn)-Total	77.3		0.4		mg/kg	10	R14280	27-NOV-01 08:20	GC
Strontium-89/90										
	Strontium-90	8.4 +/- 1.2		1.9		pCi/g		R14665	14-DEC-01 16:18	TRM
	Strontium-89	<1.9 +/- 1.2		1.9		pCi/g		R14665	14-DEC-01 16:18	TRM
PCBs										
	Aroclor 1016	<70.0		70	210	ug/kg	20	R14472	20-NOV-01 00:00	GEL
	Aroclor 1221	<70.0		70	210	ug/kg	20	R14472	20-NOV-01 00:00	GEL
	Aroclor 1232	<70.0		70	210	ug/kg	20	R14472	20-NOV-01 00:00	GEL
	Aroclor 1242	<70.0		70	210	ug/kg	20	R14472	20-NOV-01 00:00	GEL
	Aroclor 1248	<70.0		70	210	ug/kg	20	R14472	20-NOV-01 00:00	GEL
	Aroclor 1254	1810		70	210	ug/kg	20	R14472	20-NOV-01 00:00	GEL
	Aroclor 1260	348		70	210	ug/kg	20	R14472	20-NOV-01 00:00	GEL
Surrogate:	Decachlorobiphenyl	85		44-127		%		R14472	20-NOV-01 00:00	GEL
Surrogate:	Tetrachloro-m-xylene	90		41-132		%		R14472	20-NOV-01 00:00	GEL

Chemical Analysis Report

NNACLE LABORATORIES, INC
J9D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

ATTN: PROJECT MANAGER

Project: NMHWB
Purchase Order: 111054

Report Date: 09-JAN-02
Work Order: L4094
Lab Sample ID: L4094-7
Client Sample ID: 111054-07/PU-10333
Date Collected: 09-NOV-01
Sampled By: CLIENT
Date Received: 14-NOV-01
Matrix: SOIL

Parameter	Result	Qualifier	MDL	PQL	Units	DF	Run ID	Analyzed	By
Misc									
Isotopic Uranium 233/4/5/6/8									
Uranium-233/4	3.6 +/- 0.7		0.2		pCi/g		R14645	12-DEC-01 08:20	JC
Uranium-235/6	0.2 +/- 0.2		0.1		pCi/g		R14645	12-DEC-01 08:20	JC
Uranium-238	1.6+/- 0.5		0.2		pCi/g		R14645	12-DEC-01 08:20	JC
Isotopic Plutonium 238/9/40									
Plutonium-238	<0.8 +/- 3.3		0.8		pCi/g		R14900	12-DEC-01 14:51	JC
Plutonium-239/40	194 +/- 18.1		0.8		pCi/g		R14900	12-DEC-01 14:51	JC
Gamma Spectroscopy									
Beryllium-7	0.16 +/- 1.32		2.19		pCi/g		R14434	09-NOV-01 14:15	ST
Sodium-22	-0.01 +/- 0.11		0.18		pCi/g		R14434	09-NOV-01 14:15	ST
Potassium-40	33.37 +/- 3.12		1.16		pCi/g		R14434	09-NOV-01 14:15	ST
Scandium-46	0.28 +/- 0.15		0.27		pCi/g		R14434	09-NOV-01 14:15	ST
Chromium-51	0.18 +/- 1.26		2.13		pCi/g		R14434	09-NOV-01 14:15	ST
Manganese-54	0.02 +/- 0.09		0.15		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-56	-0.10 +/- 0.10		0.16		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-57	-0.03 +/- 0.06		0.1		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-58	0.08 +/- 0.10		0.16		pCi/g		R14434	09-NOV-01 14:15	ST
Iron-59	0.21 +/- 0.25		0.43		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-60	-0.01 +/- 0.09		0.15		pCi/g		R14434	09-NOV-01 14:15	ST
Zinc-65	-0.23 +/- 0.24		0.38		pCi/g		R14434	09-NOV-01 14:15	ST
Strontium-85	0.30 +/- 0.14		0.22		pCi/g		R14434	09-NOV-01 14:15	ST
Niobium-94	-0.03 +/- 0.09		0.14		pCi/g		R14434	09-NOV-01 14:15	ST
Niobium-95	0.14 +/- 0.13		0.23		pCi/g		R14434	09-NOV-01 14:15	ST
Ruthenium-106	-0.39 +/- 0.89		1.43		pCi/g		R14434	09-NOV-01 14:15	ST
Silver-110m	1.10 +/- 2.95		4.96		pCi/g		R14434	09-NOV-01 14:15	ST
Antimony-124	-0.05 +/- 0.13		0.18		pCi/g		R14434	09-NOV-01 14:15	ST
Antimony-125	0.24 +/- 0.33		0.57		pCi/g		R14434	09-NOV-01 14:15	ST
Iodine-131	-0.27 +/- 0.64		1.05		pCi/g		R14434	09-NOV-01 14:15	ST
Cesium-134	-0.01 +/- 0.11		0.15		pCi/g		R14434	09-NOV-01 14:15	ST
Cesium-137	16.54 +/- 0.46		0.17		pCi/g		R14434	09-NOV-01 14:15	ST
Cerium-139	-0.08 +/- 0.08		0.12		pCi/g		R14434	09-NOV-01 14:15	ST
Cerium-144	-0.70 +/- 0.48		0.76		pCi/g		R14434	09-NOV-01 14:15	ST
Europium-152	-0.16 +/- 0.39		0.61		pCi/g		R14434	09-NOV-01 14:15	ST
Europium-154	-0.07 +/- 0.12		0.19		pCi/g		R14434	09-NOV-01 14:15	ST
Europium-155	0.06 +/- 0.18		0.24		pCi/g		R14434	09-NOV-01 14:15	ST
Thallium-208	0.49 +/- 0.17		0.17		pCi/g		R14434	09-NOV-01 14:15	ST
Bismuth-212	2.22 +/- 2.38		1.87		pCi/g		R14434	09-NOV-01 14:15	ST
Lead-212	1.95 +/- 0.25		0.24		pCi/g		R14434	09-NOV-01 14:15	ST
Bismuth-214	1.25 +/- 0.35		0.31		pCi/g		R14434	09-NOV-01 14:15	ST
Lead-214	1.35 +/- 0.31		0.35		pCi/g		R14434	09-NOV-01 14:15	ST
Thorium-227	4.48 +/- 0.76		1.27		pCi/g		R14434	09-NOV-01 14:15	ST

Chemical Analysis Report

PINNACLE LABORATORIES, INC
09D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

ATTN: PROJECT MANAGER

Project: NMHWB
Purchase Order: 111054

Report Date: 09-JAN-02
Work Order: L4094
Lab Sample ID: L4094-7
Client Sample ID: 111054-07/PU-10333
Date Collected: 09-NOV-01
Sampled By: CLIENT
Date Received: 14-NOV-01
Matrix: SOIL

Parameter	Result	Qualifier	MDL	PQL	Units	DF	Run ID	Analyzed	By
Misc									
Gamma Spectroscopy									
Actinium-228	1.46 +/- 0.41		0.54		pCi/g		R14434	09-NOV-01 14:15	ST
Protactinium-234m	0.59 +/- 14.27		23.96		pCi/g		R14434	09-NOV-01 14:15	ST
Thorium-234	0.00 +/- 1.38		1.35		pCi/g		R14434	09-NOV-01 14:15	ST
Uranium-235	0.50 +/- 0.22		0.82		pCi/g		R14434	09-NOV-01 14:15	ST
Americium-241	33.18 +/- 0.57		0.34		pCi/g		R14434	09-NOV-01 14:15	ST

Chemical Analysis Report

PINNACLE LABORATORIES, INC
109D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

ATTN: PROJECT MANAGER

Project: NMHWB
Purchase Order: 111054

Report Date: 09-JAN-02
Work Order: L4094
Lab Sample ID: L4094-8
Client Sample ID: 111054-08/PU-10332
Date Collected: 09-NOV-01
Sampled By: CLIENT
Date Received: 14-NOV-01
Matrix: SOIL

Parameter		Result	Qualifier	MDL	PQL	Units	DF	Run ID	Analyzed	By
Misc										
	Americium-241	2.8 +/- 0.4		0.1		pCi/g		R14583	10-DEC-01 11:35	BC
	Mercury (Hg)	0.89		0.02		mg/kg	5	R14581	11-DEC-01 10:02	ML
	Plutonium-242	0.8 +/- 0.7		0.8		pCi/g		R14901	12-DEC-01 14:37	JC
	Cyanide, Total	<276		276	828	ug/kg		R14476	20-NOV-01 00:00	GEL
Target Analyte List of Metals										
	Aluminum (Al)-Total	4710		5		mg/kg	10	R14280	27-NOV-01 08:22	GC
	Antimony (Sb)-Total	0.0391		0.01		mg/kg	10	R14280	27-NOV-01 08:22	GC
	Arsenic (As)-Total	2.11		0.06		mg/kg	10	R14280	27-NOV-01 08:22	GC
	Barium (Ba)-Total	57.5		0.1		mg/kg	10	R14280	27-NOV-01 08:22	GC
	Beryllium (Be)-Total	0.659		0.2		mg/kg	10	R14280	27-NOV-01 08:22	GC
	Cadmium (Cd)-Total	1.29		0.2		mg/kg	10	R14280	27-NOV-01 08:22	GC
	Calcium (Ca)-Total	2300		20		mg/kg	10	R14280	27-NOV-01 08:22	GC
	Chromium (Cr)-Total	23.6		0.1		mg/kg	10	R14280	27-NOV-01 08:22	GC
	Cobalt (Co)-Total	2.14		0.06		mg/kg	10	R14280	27-NOV-01 08:22	GC
	Copper (Cu)-Total	19.8		0.1		mg/kg	10	R14280	27-NOV-01 08:22	GC
	Iron (Fe)-Total	8030		10		mg/kg	10	R14280	27-NOV-01 08:22	GC
	Lead (Pb)-Total	31.2		0.09		mg/kg	10	R14280	27-NOV-01 08:22	GC
	Magnesium (Mg)-Total	781		1		mg/kg	10	R14280	27-NOV-01 08:22	GC
	Manganese (Mn)-Total	124		0.2		mg/kg	10	R14280	27-NOV-01 08:22	GC
	Nickel (Ni)-Total	6.48		0.1		mg/kg	10	R14280	27-NOV-01 08:22	GC
	Potassium (K)-Total	800		5		mg/kg	10	R14280	27-NOV-01 08:22	GC
	Selenium (Se)-Total	0.644		0.3		mg/kg	10	R14280	27-NOV-01 08:22	GC
	Silver (Ag)-Total	0.263		0.1		mg/kg	10	R14280	27-NOV-01 08:22	GC
	Sodium (Na)-Total	159		0.7		mg/kg	10	R14280	27-NOV-01 08:22	GC
	Thallium (Tl)-Total	0.179		0.1		mg/kg	10	R14280	27-NOV-01 08:22	GC
	Vanadium (V)-Total	9.70		0.06		mg/kg	10	R14280	27-NOV-01 08:22	GC
	Zinc (Zn)-Total	66.6		0.4		mg/kg	10	R14280	27-NOV-01 08:22	GC
Strontium-89/90										
	Strontium-90	<1.9 +/- 0.9		1.9		pCi/g		R14665	14-DEC-01 16:18	TRM
	Strontium-89	1.9 +/- 0.9		1.9		pCi/g		R14665	14-DEC-01 16:18	TRM
PCBs										
	Aroclor 1016	<36.8		36.8	110	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1221	<36.8		36.8	110	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1232	<36.8		36.8	110	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1242	<36.8		36.8	110	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1248	<36.8		36.8	110	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1254	130		36.8	110	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1260	64.1		36.8	110	ug/kg	10	R14472	20-NOV-01 00:00	GEL
Surrogate:	Decachlorobiphenyl	90		44-127		%		R14472	20-NOV-01 00:00	GEL
Surrogate:	Tetrachloro-m-xylene	77		41-132		%		R14472	20-NOV-01 00:00	GEL

Chemical Analysis Report

PINNACLE LABORATORIES, INC
9D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

ATTN: PROJECT MANAGER

Project: NMHWB
Purchase Order: 111054

Report Date: 09-JAN-02
Work Order: L4094
Lab Sample ID: L4094-8
Client Sample ID: 111054-08/PU-10332
Date Collected: 09-NOV-01
Sampled By: CLIENT
Date Received: 14-NOV-01
Matrix: SOIL

Parameter	Result	Qualifier	MDL	PQL	Units	DF	Run ID	Analyzed	By
Misc									
Isotopic Uranium 233/4/5/6/8									
Uranium-233/4	9.8 +/- 1.4		0.2		pCi/g		R14645	12-DEC-01 08:20	JC
Uranium-235/6	0.2 +/- 0.2		0.2		pCi/g		R14645	12-DEC-01 08:20	JC
Uranium-238	6.8 +/- 1.1		0.2		pCi/g		R14645	12-DEC-01 08:20	JC
Isotopic Plutonium 238/9/40									
Plutonium-238	<0.7 +/- 3.1		0.7		pCi/g		R14900	12-DEC-01 14:51	JC
Plutonium-239/40	188 +/- 18.6		0.8		pCi/g		R14900	12-DEC-01 14:51	JC
Gamma Spectroscopy									
Beryllium-7	-0.21 +/- 0.62		0.99		pCi/g		R14434	09-NOV-01 14:15	ST
Sodium-22	0.00 +/- 0.07		0.12		pCi/g		R14434	09-NOV-01 14:15	ST
Potassium-40	31.90 +/- 2.53		0.86		pCi/g		R14434	09-NOV-01 14:15	ST
Scandium-46	0.28 +/- 0.13		0.21		pCi/g		R14434	09-NOV-01 14:15	ST
Chromium-51	0.20 +/- 0.76		1.3		pCi/g		R14434	09-NOV-01 14:15	ST
Manganese-54	0.03 +/- 0.06		0.1		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-56	0.00 +/- 0.07		0.11		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-57	-0.01 +/- 0.04		0.07		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-58	-0.04 +/- 0.07		0.12		pCi/g		R14434	09-NOV-01 14:15	ST
Iron-59	-0.08 +/- 0.17		0.27		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-60	-0.02 +/- 0.06		0.1		pCi/g		R14434	09-NOV-01 14:15	ST
Zinc-65	-0.06 +/- 0.17		0.23		pCi/g		R14434	09-NOV-01 14:15	ST
Strontium-85	0.10 +/- 0.07		0.12		pCi/g		R14434	09-NOV-01 14:15	ST
Niobium-94	0.03 +/- 0.06		0.1		pCi/g		R14434	09-NOV-01 14:15	ST
Niobium-95	0.01 +/- 0.09		0.15		pCi/g		R14434	09-NOV-01 14:15	ST
Ruthenium-106	0.17 +/- 0.59		0.97		pCi/g		R14434	09-NOV-01 14:15	ST
Silver-110m	0.62 +/- 1.32		2.23		pCi/g		R14434	09-NOV-01 14:15	ST
Antimony-124	-0.03 +/- 0.08		0.12		pCi/g		R14434	09-NOV-01 14:15	ST
Antimony-125	0.04 +/- 0.16		0.27		pCi/g		R14434	09-NOV-01 14:15	ST
Iodine-131	0.39 +/- 0.42		0.73		pCi/g		R14434	09-NOV-01 14:15	ST
Cesium-134	0.00 +/- 0.07		0.1		pCi/g		R14434	09-NOV-01 14:15	ST
Cesium-137	0.84 +/- 0.12		0.1		pCi/g		R14434	09-NOV-01 14:15	ST
Cerium-139	-0.02 +/- 0.06		0.09		pCi/g		R14434	09-NOV-01 14:15	ST
Cerium-144	0.34 +/- 0.39		0.59		pCi/g		R14434	09-NOV-01 14:15	ST
Europium-152	0.21 +/- 0.30		0.54		pCi/g		R14434	09-NOV-01 14:15	ST
Europium-154	-0.05 +/- 0.09		0.14		pCi/g		R14434	09-NOV-01 14:15	ST
Europium-155	0.53 +/- 0.17		0.25		pCi/g		R14434	09-NOV-01 14:15	ST
Thallium-208	0.58 +/- 0.13		0.09		pCi/g		R14434	09-NOV-01 14:15	ST
Bismuth-212	2.75 +/- 1.29		1.32		pCi/g		R14434	09-NOV-01 14:15	ST
Lead-212	1.95 +/- 0.15		0.15		pCi/g		R14434	09-NOV-01 14:15	ST
Bismuth-214	1.58 +/- 0.22		0.2		pCi/g		R14434	09-NOV-01 14:15	ST
Lead-214	1.55 +/- 0.21		0.19		pCi/g		R14434	09-NOV-01 14:15	ST
Thorium-227	0.11 +/- 0.43		0.62		pCi/g		R14434	09-NOV-01 14:15	ST

Chemical Analysis Report

PINNACLE LABORATORIES, INC
09D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

ATTN: PROJECT MANAGER

Project: NMHWB
Purchase Order: 111054

Report Date: 09-JAN-02
Work Order: L4094
Lab Sample ID: L4094-8
Client Sample ID: 111054-08/PU-10332
Date Collected: 09-NOV-01
Sampled By: CLIENT
Date Received: 14-NOV-01
Matrix: SOIL

Parameter	Result	Qualifier	MDL	PQL	Units	DF	Run ID	Analyzed	By
Misc									
Gamma Spectroscopy									
Actinium-228	1.88 +/- 0.26		0.34		pCi/g		R14434	09-NOV-01 14:15	ST
Protactinium-234m	0.00 +/- 17.09		15.14		pCi/g		R14434	09-NOV-01 14:15	ST
Thorium-234	8.46 +/- 1.87		1.29		pCi/g		R14434	09-NOV-01 14:15	ST
Uranium-235	0.67 +/- 0.14		0.56		pCi/g		R14434	09-NOV-01 14:15	ST
Americium-241	4.10 +/- 0.31		0.35		pCi/g		R14434	09-NOV-01 14:15	ST

Chemical Analysis Report

PINNACLE LABORATORIES, INC
109D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

ATTN: PROJECT MANAGER

Project: NMHWB
Purchase Order: 111054

Report Date: 09-JAN-02
Work Order: L4094
Lab Sample ID: L4094-9
Client Sample ID: 111054-09/PU-102AB
Date Collected: 09-NOV-01
Sampled By: CLIENT
Date Received: 14-NOV-01
Matrix: SOIL

Parameter		Result	Qualifier	MDL	PQL	Units	DF	Run ID	Analyzed	By
Misc										
	Americium-241	4.4 +/- 1.0		0.1		pCi/g		R14583	10-DEC-01 11:35	BC
	Mercury (Hg)	1.22		0.02		mg/kg	5	R14581	11-DEC-01 10:02	ML
	Plutonium-242	<0.6 +/- 0.5		0.6		pCi/g		R14901	12-DEC-01 14:37	JC
	Cyanide, Total	<254		254	762	ug/kg		R14476	20-NOV-01 00:00	GEL
Target Analyte List of Metals										
	Aluminum (Al)-Total	2880		5		mg/kg	10	R14280	27-NOV-01 08:24	GC
	Antimony (Sb)-Total	0.0519		0.01		mg/kg	10	R14280	27-NOV-01 08:24	GC
	Arsenic (As)-Total	1.80		0.06		mg/kg	10	R14280	27-NOV-01 08:24	GC
	Barium (Ba)-Total	41.2		0.1		mg/kg	10	R14280	27-NOV-01 08:24	GC
	Beryllium (Be)-Total	0.538		0.2		mg/kg	10	R14280	27-NOV-01 08:24	GC
	Cadmium (Cd)-Total	2.44		0.2		mg/kg	10	R14280	27-NOV-01 08:24	GC
	Calcium (Ca)-Total	1520		20		mg/kg	10	R14280	27-NOV-01 08:24	GC
	Chromium (Cr)-Total	21.9		0.1		mg/kg	10	R14280	27-NOV-01 08:24	GC
	Cobalt (Co)-Total	2.72		0.06		mg/kg	10	R14280	27-NOV-01 08:24	GC
	Copper (Cu)-Total	47.1		0.1		mg/kg	10	R14280	27-NOV-01 08:24	GC
	Iron (Fe)-Total	8420		10		mg/kg	10	R14280	27-NOV-01 08:24	GC
	Lead (Pb)-Total	29.1		0.09		mg/kg	10	R14280	27-NOV-01 08:24	GC
	Magnesium (Mg)-Total	480		1		mg/kg	10	R14280	27-NOV-01 08:24	GC
	Manganese (Mn)-Total	283		0.2		mg/kg	10	R14280	27-NOV-01 08:24	GC
	Nickel (Ni)-Total	13.4		0.1		mg/kg	10	R14280	27-NOV-01 08:24	GC
	Potassium (K)-Total	544		5		mg/kg	10	R14280	27-NOV-01 08:24	GC
	Selenium (Se)-Total	0.591		0.3		mg/kg	10	R14280	27-NOV-01 08:24	GC
	Silver (Ag)-Total	0.371		0.1		mg/kg	10	R14280	27-NOV-01 08:24	GC
	Sodium (Na)-Total	281		0.7		mg/kg	10	R14280	27-NOV-01 08:24	GC
	Thallium (Tl)-Total	0.178		0.1		mg/kg	10	R14280	27-NOV-01 08:24	GC
	Vanadium (V)-Total	6.31		0.06		mg/kg	10	R14280	27-NOV-01 08:24	GC
	Zinc (Zn)-Total	46.5		0.4		mg/kg	10	R14280	27-NOV-01 08:24	GC
Strontium-89/90										
	Strontium-90	<1.9 +/- 0.8		1.9		pCi/g		R14665	14-DEC-01 16:18	TRM
	Strontium-89	<1.9 +/- 0.8		1.9		pCi/g		R14665	14-DEC-01 16:18	TRM
PCBs										
	Aroclor 1016	<33.8		33.8	101	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1221	<33.8		33.8	101	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1232	<33.8		33.8	101	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1242	<33.8		33.8	101	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1248	<33.8		33.8	101	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1254	218		33.8	101	ug/kg	10	R14472	20-NOV-01 00:00	GEL
	Aroclor 1260	64.4		33.8	101	ug/kg	10	R14472	20-NOV-01 00:00	GEL
Surrogate:	Decachlorobiphenyl	72		44-127		%		R14472	20-NOV-01 00:00	GEL
Surrogate:	Tetrachloro-m-xylene	81		41-132		%		R14472	20-NOV-01 00:00	GEL

Chemical Analysis Report

PINNACLE LABORATORIES, INC
09D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

ATTN: PROJECT MANAGER

Project: NMHWB
Purchase Order: 111054

Report Date: 09-JAN-02
Work Order: L4094
Lab Sample ID: L4094-9
Client Sample ID: 111054-09/PU-102AB
Date Collected: 09-NOV-01
Sampled By: CLIENT
Date Received: 14-NOV-01
Matrix: SOIL

Parameter	Result	Qualifier	MDL	PQL	Units	DF	Run ID	Analyzed	By
Misc									
Isotopic Uranium 233/4/5/6/8									
Uranium-233/4	5.4 +/- 1.0		0.2		pCi/g		R14645	12-DEC-01 08:20	JC
Uranium-235/6	<0.1 +/- 0.1		0.1		pCi/g		R14645	12-DEC-01 08:20	JC
Uranium-238	2.6 +/- 0.6		0.2		pCi/g		R14645	12-DEC-01 08:20	JC
Isotopic Plutonium 238/9/40									
Plutonium-238	<0.9 +/- 2.8		0.9		pCi/g		R14900	12-DEC-01 14:51	JC
Plutonium-239/40	94.7 +/- 10.9		0.9		pCi/g		R14900	12-DEC-01 14:51	JC
Gamma Spectroscopy									
Beryllium-7	0.28 +/- 0.99		1.66		pCi/g		R14434	09-NOV-01 14:15	ST
Sodium-22	-0.19 +/- 0.11		0.16		pCi/g		R14434	09-NOV-01 14:15	ST
Potassium-40	36.32 +/- 3.61		1.43		pCi/g		R14434	09-NOV-01 14:15	ST
Scandium-46	0.00 +/- 0.26		0.21		pCi/g		R14434	09-NOV-01 14:15	ST
Chromium-51	-0.38 +/- 1.18		1.91		pCi/g		R14434	09-NOV-01 14:15	ST
Manganese-54	0.03 +/- 0.11		0.18		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-56	0.01 +/- 0.12		0.2		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-57	0.01 +/- 0.06		0.09		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-58	-0.02 +/- 0.11		0.17		pCi/g		R14434	09-NOV-01 14:15	ST
Iron-59	0.18 +/- 0.27		0.48		pCi/g		R14434	09-NOV-01 14:15	ST
Cobalt-60	0.08 +/- 0.11		0.19		pCi/g		R14434	09-NOV-01 14:15	ST
Zinc-65	0.15 +/- 0.28		0.42		pCi/g		R14434	09-NOV-01 14:15	ST
Strontium-85	0.30 +/- 0.12		0.2		pCi/g		R14434	09-NOV-01 14:15	ST
Niobium-94	0.04 +/- 0.09		0.16		pCi/g		R14434	09-NOV-01 14:15	ST
Niobium-95	0.10 +/- 0.15		0.26		pCi/g		R14434	09-NOV-01 14:15	ST
Ruthenium-106	0.04 +/- 0.89		1.46		pCi/g		R14434	09-NOV-01 14:15	ST
Silver-110m	0.78 +/- 2.10		3.55		pCi/g		R14434	09-NOV-01 14:15	ST
Antimony-124	-0.05 +/- 0.14		0.19		pCi/g		R14434	09-NOV-01 14:15	ST
Antimony-125	0.08 +/- 0.24		0.4		pCi/g		R14434	09-NOV-01 14:15	ST
Iodine-131	-0.05 +/- 0.67		1.12		pCi/g		R14434	09-NOV-01 14:15	ST
Cesium-134	0.03 +/- 0.11		0.16		pCi/g		R14434	09-NOV-01 14:15	ST
Cesium-137	1.48 +/- 0.20		0.17		pCi/g		R14434	09-NOV-01 14:15	ST
Cerium-139	0.02 +/- 0.07		0.12		pCi/g		R14434	09-NOV-01 14:15	ST
Cerium-144	-0.28 +/- 0.46		0.74		pCi/g		R14434	09-NOV-01 14:15	ST
Europium-152	-0.01 +/- 0.43		0.71		pCi/g		R14434	09-NOV-01 14:15	ST
Europium-154	0.06 +/- 0.11		0.18		pCi/g		R14434	09-NOV-01 14:15	ST
Europium-155	0.31 +/- 0.14		0.25		pCi/g		R14434	09-NOV-01 14:15	ST
Thallium-208	0.58 +/- 0.17		0.15		pCi/g		R14434	09-NOV-01 14:15	ST
Bismuth-212	2.77 +/- 2.15		2.07		pCi/g		R14434	09-NOV-01 14:15	ST
Lead-212	2.05 +/- 0.23		0.23		pCi/g		R14434	09-NOV-01 14:15	ST
Bismuth-214	1.50 +/- 0.33		0.3		pCi/g		R14434	09-NOV-01 14:15	ST
Lead-214	1.59 +/- 0.27		0.29		pCi/g		R14434	09-NOV-01 14:15	ST
Thorium-227	4.51 +/- 0.74		1.27		pCi/g		R14434	09-NOV-01 14:15	ST

Chemical Analysis Report

...NNACLE LABORATORIES, INC	Page: 28 of 29
...09D PAN AMERICAN FREEWAY NE	Report Date: 09-JAN-02
ALBUQUERQUE NM 87107	Work Order: L4094
ATTN: PROJECT MANAGER	Lab Sample ID: L4094-9
	Client Sample ID: 111054-09/PU-102AB
Project: NMHWB	Date Collected: 09-NOV-01
Purchase Order: 111054	Sampled By: CLIENT
	Date Received: 14-NOV-01
	Matrix: SOIL

Parameter	Result	Qualifier	MDL	PQL	Units	DF	Run ID	Analyzed	By
Misc									
Gamma Spectroscopy									
Actinium-228	2.02 +/- 0.38		0.56		pCi/g		R14434	09-NOV-01 14:15	ST
Protactinium-234m	16.60 +/- 16.14		28.92		pCi/g		R14434	09-NOV-01 14:15	ST
Thorium-234	3.40 +/- 1.48		1.56		pCi/g		R14434	09-NOV-01 14:15	ST
Uranium-235	0.50 +/- 0.18		0.81		pCi/g		R14434	09-NOV-01 14:15	ST
Americium-241	4.82 +/- 0.24		0.23		pCi/g		R14434	09-NOV-01 14:15	ST

Reference Information

Report Date: 09-JAN-02
Work Order: L4094

The following is the Description of sample Qualifiers where applicable:

The following Preparation/Extraction Methods were performed:

ETL Test Code and Matrix		Test Description	Methodology Reference (Based On)
AM241-CA	Soil	Americium -241	ETL-RSOP-0003
ISO-PU-ALPHA-CA	Soil	Isotopic Plutonium 238/9/40	ETL-RSOP-0003
ISO-U-CA	Soil	Isotopic Uranium 233/4/5/6/8	ETL-RSOP-0003
PU242-CA	Soil	Plutonium-242	ETL-RSOP-0003
SR89/90-CA	Soil	Strontium-89/90	ETL-RSOP-0003
SR89/90-CA	Soil	Strontium-89/90	LB4100
PCB-CA	Soil	PCBs	SW-846 3550B
CN-TOT-CA	Soil	Total Cyanide in solid	SW-846 9010B
METAL-TAL-CA	Soil	Target Analyte List of Metals	SW846 3050B
GAMMA-ALL-CA	Soil	Gamma Spectroscopy	
HG-HYD-CA	Soil	Mercury (Hg)	
METAL-TAL-CA	Soil	Target Analyte List of Metals	

The following Analytical Methods were performed:

ETL Test Code and Matrix		Test Description	Methodology Reference (Based On)
AM241-CA	Soil	Americium -241	Mod.HASL 300
CN-TOT-CA	Soil	Total Cyanide in solid	SW-846 9010B
G[illegible]-ALL-CA	Soil	Gamma Spectroscopy	Mod.EPA.901.1
HG-HYD-CA	Soil	Mercury (Hg)	SM 3112 B-AAS Cold Vapor
ISO-PU-ALPHA-CA	Soil	Isotopic Plutonium 238/9/40	Mod.HASL 300
ISO-U-CA	Soil	Isotopic Uranium 233/4/5/6/8	Mod.HASL 300
METAL-TAL-CA	Soil	Target Analyte List of Metals	SW846 3050/6020/7471A
PCB-CA	Soil	PCBs	SW846 8082-GC-ECD
PU242-CA	Soil	Plutonium-242	mod. HASL 300
SR89/90-CA	Soil	Strontium-89/90	Mod.EPA.905.0

ETL Enviro • Test LABORATORIES LLC.

Results are only applicable to samples submitted for analysis.
Limit of Liability: Although care and due diligence is taken in the performance of our services, our liability in all cases is limited to re-analysis at our expense or refunding the analytical costs charged for the work performed.

ACCREDITED IN ACCORDANCE WITH nelac

ENVIRO-TEST QC REPORT

Client: PINNACLE LABORATORIES, INC
2709D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

Contact: PROJECT MANAGER

Report Date: Jan. 09, 2002
Workorder: L4094

Test	Matrix	Reference	Result	Qualifier	Units		Limit	Analyzed
AM241-CA	Soil							
Batch R14583								
WG11739-2 BLANK								
Americium-241			<0.1 +/- 0.1		pCi/L			10-DEC-01
WG11739-3 LCS						Amount		
Americium-241			110		%	1	70-130	10-DEC-01
WG11739-1 RER		L4094-5				RER		
Americium-241		N/A	3.9 +/- 0.6		pCi/g	0.2	3	10-DEC-01
Batch R14674								
WG11836-2 BLANK								
Americium-241			<0.1 +/- 0.1		pCi/L			14-DEC-01
WG11836-3 LCS						Amount		
Americium-241			114		%	1	70-130	14-DEC-01
WG11836-1 RER		L4094-1				RER		
Americium-241		N/A	6.4 +/- 0.8		pCi/g	0.4	3	14-DEC-01
Batch R14675								
WG11837-2 BLANK								
Americium-241			0.7 +/- 0.5		pCi/L			14-DEC-01
1837-3 LCS						Amount		
Americium-241			104		%	10.4	70-130	14-DEC-01
WG11837-1 RER		L4094-7				RER		
Americium-241		N/A	28.6 +/- 3.7		pCi/g	0.3	3	14-DEC-01
CN-TOT-CA	Soil							
Batch R14476								
WG11674-1 BLANK								
Cyanide, Total			<276		ug/kg			20-NOV-01
WG11674-4 DUP		L4094-1				RPD		
Cyanide, Total		<286	<286	RPD-NA	%	N/A	30	20-NOV-01
WG11674-2 LCS						Amount		
Cyanide, Total			92		%	5000	60-125	20-NOV-01
WG11674-3 MS		L4094-1				Amount		
Cyanide, Total			91		%	5720	70-130	20-NOV-01
GAMMA-ALL-CA	Soil							
Batch R14434								
WG11638-1 RER		L4094-1				RER		
Actinium-228		1.62 +/- 0.26	1.56 +/- 0.24		pCi/g	0.06	3	09-NOV-01
Antimony-124		-0.02 +/- 0.08	-0.01 +/- 0.07		pCi/g	0.0	3	09-NOV-01
Antimony-125		-0.01 +/- 0.15	-0.09 +/- 0.15		pCi/g	0.0	3	09-NOV-01
Beryllium-7		0.46 +/- 0.54	0.56 +/- 0.52		pCi/g	0.7	3	09-NOV-01
Bismuth-212		2.41 +/- 1.32	2.04 +/- 1.04		pCi/g	0.2	3	09-NOV-01

ENVIRO-TEST QC REPORT

Client: PINNACLE LABORATORIES, INC
2709D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

Contact: PROJECT MANAGER

Report Date: Jan. 09, 2002
Workorder: L4094

est	Matrix	Reference	Result	Qualifier	Units		Limit	Analyzed
GAMMA-ALL-CA	Soil							
Batch R14434								
WG11638-1	RER	L4094-1				RER		
Bismuth-214		1.21 +/- 0.21	1.45 +/- 0.21		pCi/g	1.0	3	09-NOV-01
Cerium-139		0.00 +/- 0.05	-0.02 +/- 0.05		pCi/g	0.0	3	09-NOV-01
Cerium-144		0.30 +/- 0.32	-0.16 +/- 0.34		pCi/g	0.0	3	09-NOV-01
Cesium-134		-0.01 +/- 0.06	-0.02 +/- 0.06		pCi/g	0.0	3	09-NOV-01
Cesium-137		0.72 +/- 0.10	0.71 +/- 0.11		pCi/g	0.1	3	09-NOV-01
Chromium-51		-0.06 +/- 0.67	.07 +/- 0.65		pCi/g	0.0	3	09-NOV-01
Cobalt-56		-0.01 +/- 0.06	-0.03 +/- 0.06		pCi/g	0.0	3	09-NOV-01
Cobalt-57		0.00 +/- 0.04	-0.01 +/- 0.04		pCi/g	0.0	3	09-NOV-01
Cobalt-58		0.00 +/- 0.06	0.02 +/- 0.06		pCi/g	0.0	3	09-NOV-01
Cobalt-60		-0.01 +/- 0.05	0.02 +/- 0.05		pCi/g	0.0	3	09-NOV-01
Europium-152		0.17 +/- 0.26	0.15 +/- 0.23		pCi/g	0.0	3	09-NOV-01
Europium-154		0.01 +/- 0.08	-0.02 +/- 0.08		pCi/g	0.0	3	09-NOV-01
Europium-155		0.37 +/- 0.14	0.00 +/- 0.15		pCi/g	0.0	3	09-NOV-01
[illegible]ne-131		0.29 +/- 0.29	-0.11 +/- 0.29		pCi/g	0.0	3	09-NOV-01
Lead-212		1.78 +/- 0.14	1.77 +/- 0.14		pCi/g	0.1	3	09-NOV-01
Lead-214		1.19 +/- 0.18	1.45 +/- 0.17		pCi/g	4.4	3	09-NOV-01
Niobium-94		-0.02 +/- 0.05	-0.04 +/- 0.05		pCi/g	0.0	3	09-NOV-01
Niobium-95		0.01 +/- 0.09	0.03 +/- 0.09		pCi/g	0.0	3	09-NOV-01
Potassium-40		34.6 +/- 2.56	35.27 +/- 2.40		pCi/g	0.2	3	09-NOV-01
Protactinium-234m		-1.45 +/- 9.75	-0.11 +/- 10.05		pCi/g	0.0	3	09-NOV-01
Ruthenium-106		-0.05 +/- 0.50	-0.07 +/- 0.49		pCi/g	0.0	3	09-NOV-01
Scandium-46		0.13 +/- 0.16	0.27 +/- 0.16		pCi/g	1.2	3	09-NOV-01
Silver-110m		0.79 +/- 1.25	-0.51 +/- 1.18		pCi/g	0.0	3	09-NOV-01
Sodium-22		0.06 +/- 0.07	0.01 +/- 0.07		pCi/g	0.08	3	09-NOV-01
Strontium-85		0.19 +/- 0.06	0.08 +/- 0.07		pCi/g	0.0	3	09-NOV-01
Thallium-208		0.44 +/- 0.10	0.48 +/- 0.11		pCi/g	0.4	3	09-NOV-01
Thorium-227		-0.01 +/- 0.41	0.12 +/- 0.39		pCi/g	0.0	3	09-NOV-01
Thorium-234		0.00 +/- 2.12	0.00 +/- 2.02		pCi/g	0.0	3	09-NOV-01
Uranium-235		0.23 +/- 0.13	0.39 +/- 0.14		pCi/g	1.4	3	09-NOV-01
Zinc-65		-0.03 +/- 0.15	-0.03 +/- 0.17		pCi/g	0.0	3	09-NOV-01
Americium-241		N/A	7.61 +/- 0.44		pCi/g	0.9	3	09-NOV-01
Iron-59		-0.09 +/- 0.16	0.02 +/- 0.15		pCi/g	0.0	3	09-NOV-01
Manganese-54		0.00 +/- 0.06	-0.02 +/- 0.06		pCi/g	0.0	3	09-NOV-01
HG-HYD-CA	Soil							

ENVIRO-TEST QC REPORT

Client: PINNACLE LABORATORIES, INC
2709D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

Contact: PROJECT MANAGER

Report Date: Jan. 09, 2002
Workorder: L4094

Test	Matrix	Reference	Result	Qualifier	Units		Limit	Analyzed
HG-HYD-CA	Soil							
Batch R14581								
WG11737-1 BLANK								
Mercury (Hg)			<0.02		mg/kg			11-DEC-01
WG11737-2 LCS						Amount		
Mercury (Hg)			107		%	3.04	80-120	11-DEC-01
WG11737-3 MS		L4094-9				Amount		
Mercury (Hg)			114		%	2	70-130	11-DEC-01
WG11737-4 MSD		WG11737-3				RPD		
Mercury (Hg)			116		mg/kg	1.7	20	11-DEC-01
ISO-PU-ALPHA-CA	Soil							
Batch R14900								
WG11908-2 BLANK								
Plutonium-238			<0.4 +/- 2.8		pCi/L			12-DEC-01
Plutonium-239/40			<0.7 +/- 1.1		pCi/L			12-DEC-01
WG11908-3 LCS						Amount		
Plutonium-239/40			75		%	9.8	70-130	12-DEC-01
WG11908-1 RER		L4094-5				RER		
Plutonium-238		<0.7 +/- 3.1	<0.9 +/- 3.1		pCi/g	0.0		12-DEC-01
Plutonium-239/40		117 +/- 12.7	108 +/- 11.9		pCi/g	0.5		12-DEC-01
ISO-U-CA	Soil							
Batch R14645								
WG11809-2 BLANK								
Uranium-233/4			<0.3 +/- 0.1		pCi/L			12-DEC-01
Uranium-235/6			<0.3 +/- 0.1		pCi/L			12-DEC-01
Uranium-238			<0.3 +/- 0.1		pCi/L			12-DEC-01
WG11809-3 LCS						Amount		
Uranium-238			100		%	10	70-130	12-DEC-01
WG11809-1 RER		L4094-3				RER		
Uranium-235/6		<0.2 +/- 0.1	0.2 +/- 0.2		pCi/g	0.9	3	12-DEC-01
Uranium-238		0.8 +/- 0.4	0.6 +/- 0.3		pCi/g	0.4	3	12-DEC-01
Uranium-233/4		1.5 +/- 0.6	1.0 +/- 0.4		pCi/g	0.7	3	12-DEC-01
METAL-TAL-CA	Soil							
Batch R14280								
WG11556-1 BLANK								
Aluminum (Al)-Total			<5.00		mg/kg			27-NOV-01
Antimony (Sb)-Total			0.103		mg/kg			27-NOV-01
Arsenic (As)-Total			<0.0600		mg/kg			27-NOV-01
Barium (Ba)-Total			<0.100		mg/kg			27-NOV-01

Results are only applicable to samples submitted for analysis.
Limit of Liability: Although care and due diligence is taken in the performance of our services, our liability in all cases is limited to re-analysis at our expense or refunding the analytical costs charged for the work performed.

ACCREDITED IN ACCORDANCE WITH nelac

ENVIRO-TEST QC REPORT

Client: PINNACLE LABORATORIES, INC
2709D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

Contact: PROJECT MANAGER

Report Date: Jan. 09, 2002
Workorder: L4094

est	Matrix	Reference	Result	Qualifier	Units		Limit	Analyzed
METAL-TAL-CA	Soil							
Batch	R14280							
WG11556-1	BLANK							
Beryllium (Be)-Total			<0.200		mg/kg			27-NOV-01
Cadmium (Cd)-Total			<0.200		mg/kg			27-NOV-01
Calcium (Ca)-Total			24.6		mg/kg			27-NOV-01
Chromium (Cr)-Total			<0.100		mg/kg			27-NOV-01
Cobalt (Co)-Total			<0.0600		mg/kg			27-NOV-01
Copper (Cu)-Total			<0.100		mg/kg			27-NOV-01
Iron (Fe)-Total			<10.0		mg/kg			27-NOV-01
Lead (Pb)-Total			0.146		mg/kg			27-NOV-01
Magnesium (Mg)-Total			1.40		mg/kg			27-NOV-01
Manganese (Mn)-Total			<0.200		mg/kg			27-NOV-01
Nickel (Ni)-Total			<0.100		mg/kg			27-NOV-01
Potassium (K)-Total			<5.00		mg/kg			27-NOV-01
Selenium (Se)-Total			<0.300		mg/kg			27-NOV-01
er (Ag)-Total			0.100		mg/kg			27-NOV-01
dium (Na)-Total			23.6		mg/kg			27-NOV-01
Thallium (Tl)-Total			<0.100		mg/kg			27-NOV-01
Vanadium (V)-Total			<0.0600		mg/kg			27-NOV-01
Zinc (Zn)-Total			8.32		mg/kg			27-NOV-01
WG11556-3	DUP	L4094-1				RPD		
Aluminum (Al)-Total		2970	3270	RPD	mg/kg	9.4	20	27-NOV-01
Antimony (Sb)-Total		0.0792	0.0637	RPD	mg/kg	22	20	27-NOV-01
Arsenic (As)-Total		1.68	1.72	RPD	mg/kg	2.3	20	27-NOV-01
Barium (Ba)-Total		54.5	50.4	RPD	mg/kg	7.8	20	27-NOV-01
Beryllium (Be)-Total		0.564	0.571	RPD-NA	mg/kg	1.3	20	27-NOV-01
Cadmium (Cd)-Total		0.848	0.917	RPD-NA	mg/kg	7.9	20	27-NOV-01
Calcium (Ca)-Total		1190	1220	RPD	mg/kg	3.2	20	27-NOV-01
Chromium (Cr)-Total		8.45	9.09	RPD	mg/kg	7.3	20	27-NOV-01
Cobalt (Co)-Total		1.92	1.97	RPD	mg/kg	2.9	20	27-NOV-01
Copper (Cu)-Total		11.8	12.2	RPD	mg/kg	3.1	20	27-NOV-01
Iron (Fe)-Total		7120	7640	RPD	mg/kg	7.0	20	27-NOV-01
Lead (Pb)-Total		36.1	36.7	RPD	mg/kg	1.6	20	27-NOV-01
Magnesium (Mg)-Total		500	537	RPD	mg/kg	7.1	20	27-NOV-01
Manganese (Mn)-Total		209	228	RPD	mg/kg	8.8	20	27-NOV-01
Nickel (Ni)-Total		4.53	4.75	RPD	mg/kg	4.6	20	27-NOV-01

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ACCREDITED IN ACCORDANCE WITH nelac

ENVIRO-TEST QC REPORT

Client: PINNACLE LABORATORIES, INC
2709D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

Contact: PROJECT MANAGER

Report Date: Jan. 09, 2002
Workorder: L4094

est	Matrix	Reference	Result	Qualifier	Units		Limit	Analyzed
METAL-TAL-CA	Soil							
Batch R14280								
WG11556-3 DUP		L4094-1				RPD		
Potassium (K)-Total		477	516	RPD	mg/kg	8.0	20	27-NOV-01
Selenium (Se)-Total		0.353	0.430	RPD-NA	mg/kg	19	20	27-NOV-01
Silver (Ag)-Total		0.278	0.312	RPD-NA	mg/kg	12	20	27-NOV-01
Sodium (Na)-Total		140	150	RPD	mg/kg	7.1	20	27-NOV-01
Thallium (Tl)-Total		<0.100	<0.100	RPD-NA	mg/kg	8.1	20	27-NOV-01
Vanadium (V)-Total		6.87	7.14	RPD	mg/kg	3.9	20	27-NOV-01
Zinc (Zn)-Total		38.7	41.9	RPD	mg/kg	7.9	20	27-NOV-01
WG11556-2 LCS						Amount		
Aluminum (Al)-Total			81		%	6040	21-169	27-NOV-01
Antimony (Sb)-Total			7		%	243	0-100	27-NOV-01
Arsenic (As)-Total			91		%	184	56-132	27-NOV-01
Barium (Ba)-Total			93		%	148	70-134	27-NOV-01
Beryllium (Be)-Total			95		%	69.5	60-119	27-NOV-01
[illegible]dmium (Cd)-Total			84		%	219	58-113	27-NOV-01
[illegible]cium (Ca)-Total			87		%	3310	60-134	27-NOV-01
Chromium (Cr)-Total			89		%	117	60-128	27-NOV-01
Cobalt (Co)-Total			67		%	70.6	49-100	27-NOV-01
Copper (Cu)-Total			95		%	87.6	69-129	27-NOV-01
Iron (Fe)-Total			87		%	11800	3-181	27-NOV-01
Lead (Pb)-Total			104		%	110	59-136	27-NOV-01
Magnesium (Mg)-Total			88		%	1960	45-150	27-NOV-01
Manganese (Mn)-Total			83		%	382	60-130	27-NOV-01
Nickel (Ni)-Total			87		%	142	60-118	27-NOV-01
Potassium (K)-Total			91		%	1820	34-170	27-NOV-01
Selenium (Se)-Total			99		%	95.9	54-129	27-NOV-01
Silver (Ag)-Total			76		%	207	0-245	27-NOV-01
Sodium (Na)-Total			103		%	218	0-263	27-NOV-01
Thallium (Tl)-Total			95		%	166	52-130	27-NOV-01
Vanadium (V)-Total			84		%	84.2	47-134	27-NOV-01
Zinc (Zn)-Total			94		%	414	63-119	27-NOV-01
WG11556-4 MS		L4094-1				Amount		
Aluminum (Al)-Total			15015		%	20	75-125	27-NOV-01
Antimony (Sb)-Total			102		%	20	75-125	27-NOV-01
Arsenic (As)-Total			92		%	20	75-125	27-NOV-01

ENVIRO-TEST QC REPORT

Client: PINNACLE LABORATORIES, INC
2709D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

Contact: PROJECT MANAGER

Report Date: Jan. 09, 2002
Workorder: L4094

Test	Matrix	Reference	Result	Qualifier	Units	Limit	Analyzed
METAL-TAL-CA	Soil						
Batch R14280							
WG11556-4 MS		L4094-1				Amount	
Barium (Ba)-Total			83		%	20 75-125	27-NOV-01
Beryllium (Be)-Total			93		%	20 75-125	27-NOV-01
Cadmium (Cd)-Total			95		%	20 75-125	27-NOV-01
Calcium (Ca)-Total			88		%	1000 75-125	27-NOV-01
Chromium (Cr)-Total			105		%	20 75-125	27-NOV-01
Cobalt (Co)-Total			96		%	20 75-125	27-NOV-01
Copper (Cu)-Total			95		%	20 75-125	27-NOV-01
Iron (Fe)-Total			216		%	1000 75-125	27-NOV-01
Lead (Pb)-Total			94		%	20 75-125	27-NOV-01
Magnesium (Mg)-Total			110		%	1000 75-125	27-NOV-01
Manganese (Mn)-Total			122		%	20 75-125	27-NOV-01
Nickel (Ni)-Total			97		%	20 75-125	27-NOV-01
Potassium (K)-Total			92		%	1000 75-125	27-NOV-01
Selenium (Se)-Total			92		%	20 75-125	27-NOV-01
Silver (Ag)-Total			104		%	20 75-125	27-NOV-01
Sodium (Na)-Total			86		%	1000 75-125	27-NOV-01
Thallium (Tl)-Total			92		%	20 75-125	27-NOV-01
Vanadium (V)-Total			109		%	20 75-125	27-NOV-01
Zinc (Zn)-Total			119		%	20 75-125	27-NOV-01
PCB-CA	Soil						
Batch R14472							
WG11669-1 BLANK							
Aroclor 1016			<38.4		ug/kg		20-NOV-01
Aroclor 1221			<38.4		ug/kg		20-NOV-01
Aroclor 1232			<38.4		ug/kg		20-NOV-01
Aroclor 1242			<38.4		ug/kg		20-NOV-01
Aroclor 1248			<38.4		ug/kg		20-NOV-01
Aroclor 1254			<38.4		ug/kg		20-NOV-01
Aroclor 1260			<38.4		ug/kg		20-NOV-01
WG11669-2 LCS						Amount	
Aroclor 1260			77		%	33.3 53-116	20-NOV-01
WG11669-3 MS		L4094-1				Amount	
Aroclor 1260			25		%	38.1 48-130	20-NOV-01
WG11669-4 MSD		WG11669-3				RPD	
Aroclor 1260			<30		%	213 27	20-NOV-01

ENVIRO-TEST QC REPORT

Client: PINNACLE LABORATORIES, INC
2709D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

Contact: PROJECT MANAGER

Report Date: Jan. 09, 2002
Workorder: L4094

Test	Matrix	Reference	Result	Qualifier	Units		Limit	Analyzed
PU242-CA	Soil							
Batch R14901								
WG11907-2 BLANK								
Plutonium-242			<0.8 +/- 0.6		pCi/L			12-DEC-01
WG11907-3 LCS						Amount		
Plutonium-242			87		%	9.8	70-130	12-DEC-01
WG11907-1 RER		L4094-5				RER		
Plutonium-242		0.7 +/- 0.6	20.5 +/- 3.4		pCi/g	5.7	3	12-DEC-01
SR89/90-CA	Soil							
Batch R14520								
WG11696-2 BLANK								
Strontium-89			<1.2 +/- 1.1		pCi/g			06-DEC-01
Strontium-90			<1.2 +/- 1.1		pCi/g			06-DEC-01
WG11696-4 LCS						Amount		
Strontium-90			116		%	24.5	75-130	06-DEC-01
WG11696-3 MS		L4094-3				Amount		
Strontium-90			117		%	49	75-130	06-DEC-01
WG11696-1 RER		L4070-1				RER		
ntium-89		<3.0 +/- 1.4	<3.0 +/- 1.3		pCi/g	1.3	3	06-DEC-01
Strontium-90		<3.0 +/- 1.4	<3.0 +/- 1.3		pCi/g	1.3	3	06-DEC-01
Batch R14665								
WG11827-2 BLANK								
Strontium-89			<1.9 +/- 0.8		pCi/L			14-DEC-01
Strontium-90			<1.9 +/- 0.8		pCi/L			14-DEC-01
WG11827-4 LCS						Amount		
Strontium-90			100		%	24.5	70-130	14-DEC-01
WG11827-3 MS		L4094-7				Amount		
Strontium-90			81		%	49	70-130	14-DEC-01
WG11827-1 RER		L4094-5				RER		
Strontium-89		<1.9 +/- 0.9	<1.9 +/- 0.9		pCi/g	0.7	3	14-DEC-01
Strontium-90		<1.9 +/- 0.9	<1.9 +/- 0.9		pCi/g	0.2	3	14-DEC-01

Product - Batch and Sample Number Relations:

AM241-CA	2								
R14583		L4094-3	L4094-4	L4094-5	L4094-6	L4094-8	L4094-9		
AM241-CA	2								
R14674		L4094-1	L4094-2						
AM241-CA	2								
R14675		L4094-7							
CN-TOT-CA	2								
R14476		L4094-1	L4094-2	L4094-3	L4094-4	L4094-5	L4094-6	L4094-7	L4094-8
		L4094-9							
GAMMA-ALL-CA	2								
R14434		L4094-1	L4094-2	L4094-3	L4094-4	L4094-5	L4094-6	L4094-7	L4094-8
		L4094-9							

ETL Enviro • Test LABORATORIES LLC.
420 West 1st Street Casper, Wyoming 82601
Phone: (307) 235-5741 Fax:(307) 266-1676
Toll Free 1(800)666-0306

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ACCREDITED IN ACCORDANCE WITH nelac

ENVIRO-TEST QC REPORT

Client: PINNACLE LABORATORIES, INC
2709D PAN AMERICAN FREEWAY NE
ALBUQUERQUE NM 87107

Contact: PROJECT MANAGER

Report Date: Jan. 09, 2002
Workorder: L4094

Test	Matrix	Reference	Result	Qualifier	Units	Limit	Analyzed

Product - Batch and Sample Number Relations:

HG-HYD-CA		2							
	R14581	L4094-1	L4094-2	L4094-3	L4094-4	L4094-5	L4094-6	L4094-7	L4094-8
		L4094-9							
ISO-PU-ALPHA-CA		2							
	R14900	L4094-1	L4094-2	L4094-3	L4094-4	L4094-5	L4094-6	L4094-7	L4094-8
		L4094-9							
ISO-U-CA		2							
	R14645	L4094-1	L4094-2	L4094-3	L4094-4	L4094-5	L4094-6	L4094-7	L4094-8
		L4094-9							
METAL-TAL-CA		2							
	R14280	L4094-1	L4094-2	L4094-3	L4094-4	L4094-5	L4094-6	L4094-7	L4094-8
		L4094-9							
PCB-CA		2							
	R14472	L4094-1	L4094-2	L4094-3	L4094-4	L4094-5	L4094-6	L4094-7	L4094-8
		L4094-9							
PU242-CA		2							
	R14901	L4094-1	L4094-2	L4094-3	L4094-4	L4094-5	L4094-6	L4094-7	L4094-8
		L4094-9							
SR89/90-CA		2							
	R14520	L4094-1	L4094-2	L4094-3	L4094-4				
SR89/90-CA		2							
	R14665	L4094-5	L4094-6	L4094-7	L4094-8	L4094-9			

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Reference Information

Report Date: Jan. 09, 2002
Work Order L4094

The following is a description of Sample types that where applicable:

BLANK	Laboratory Blank
DUP	Duplicate
LCS	Laboratory Control Spike
MS	Matrix Spike
MSD	Matrix Spike Duplicate
RER	Relative Error Ratio

The following is a description of sample Qualifiers that where applicable:

RPD-NA	Relative Percent Difference Not Available due to DL

ETL Enviro • Test LABORATORIES LLC.

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ACCREDITED IN ACCORDANCE WITH nelac

Raw Data for Am-241

QA-CHECKB		AM241	10-Dec-2001 11:35	pCi/g		
	Standard Known Value	LCS Sample Value			LCS Recovery	
LCAAM1201	1.0	1.100			110%	(3)
	1.0				0%	
					#DIV/0!	
					#DIV/0!	
					#DIV/0!	

L4094-005

Sample Activity	Duplicate Activity	Sample ERROR	Duplicate ERROR	Duplicate RER	
4.10	3.90	0.60	0.60	0.2	(1)
				#DIV/0!	
				#DIV/0!	

MBAAM1201 = 0.0 MDA 0.03 (2)

WORK GROUP # WG11739

RUN ID# R14583

NOTE: L 4094-1, 2 & 7 ARE RERUNS

ETL Enviro·Test LABORATORIES

Sample Digestion Logbook

SOP ETL - RSOP- 0003

ysis AM Analyst Brandy Date 12/01/01 Reviewed By [illegible]

Sample ID	Analyzed Volume g	Sample Volume Digested	Dilution Volume ml/l	Digestate Volume Used (ml)	Sample Matrix	Comments
4094 - 1	2.0 g	2.0 g	100 ml	100 ml	Soil	Digestion
- 2						
- 3						
- 4						
- 5						
- 5MD						
- 6						
- 7						
- 8						
- 9						
PEM-1	0.1 g	1.0 g		10 ml		
MBA AM 1201		NA	NA	NA	DI H_2O	
LCA AM 1201	1.0 L					
						Brandy 12/1/01

Spike	Trace	Nuclide	Isotope Number	Expiration Date	Activity pCi/ml	Vol Ml	Standard Control	Spiked By	Witness
X		AM 241	101-04	8-8-02	1.0	1ml	LCA AM 1201	BC	[illegible]
	X	AM 243	009-07	8-8-02	1.0	1ml	All Samples	"	"
								Brandy	12/01/01

FORM DIGESTLG-1, REV. 0 Effective 09-25-00 **Book Number** 01134 **Page Number** 48

000076

'ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
11-DEC-2001 08:00:04

****

Spectral File: ND_AMS_ARCHIVE_S:S_L4094AM$L4094-1_AM.CNF

****

BATCH ID:	L4094AM	SAMPLE ID:	L4094-1
SAMPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	2.000E+00 gram
SAMPLE TITLE:		DETECTOR NUMBER:	031
ACQ DATE:	10-DEC-2001 11:35	AVERAGE EFFICIENCY:	26.39%
ELAPSED LIVE TIME:	30004.	RECOVERY:	71.96%
TRACER ID:	RAD009-07	TRACER FWHM (kev):	103.40
LAMBDA VALUE:	1000.	ROI TYPE:	MANUAL
TRACER DPM AT SAMPLE DATE:	2.220	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-AUG-2001 15:41	EFF CAL DATE:	30-AUG-2001 15:41
BKG FILENAME:	B_031_26NOV01	BKG ELAPSED TIME:	60002.

****

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
AM-241	5479.1	1207.00	1.00	99.9	2.865E+00	4.310E-01	1.747E-02
CM-242	6091.3	10.50	0.50	99.0	2.588E-02	1.692E-02	1.437E-02
AM243	5270.0	210.00	2.00	99.6	5.000E-01	6.950E-02	2.211E-02
CM-244	5795.0	-3.50	4.50	100.0	-8.308E-03	8.636E-03	2.983E-02
CM-247	4869.0	4.50	0.50	71.0	1.503E-02	1.545E-02	2.004E-02
CM	5070.6	23.00	1.00	91.6	5.953E-02	2.693E-02	1.905E-02

****

*** Tracer FWHM > 80.0 Kev ***

Analyst _____ Date _____

Reviewer _____ Date _____

'ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 11-DEC-2001 07:59:59.93

De[illegible]or ID: 31 Acquisition Start: 10-DEC-2001 11:35:33.01
Li[illegible]ime: 0 08:20:04.00 Real Time: 0 08:20:05.00
Batch Id: L4094AM Sample Id: L4094-1
Sample Type: AM

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4873.06	5	0	3.14	465.80	458	18	1.67E-04	44.7	
2	0	5058.09	24	0	0.00	528.21	512	31	8.00E-04	20.4	
3	0	5231.48	212	0	103.40	587.11	561	45	7.07E-03	6.9	
4	0	5458.49	1208	0	114.97	664.87	643	65	4.03E-02	2.9	
5	0	5807.93	1	0	3.14	786.00	755	38	3.33E-05	100.0	
6	0	6071.69	11	0	3.14	878.64	850	54	3.67E-04	30.2	

Background Counts Within Peak Regions Generated: 11-DEC-2001 08:00:02.15

Acquisition Start: 26-NOV-2001 15:37:54.01
Live Time: 0 16:40:02.00 Real Time: 0 16:40:02.00

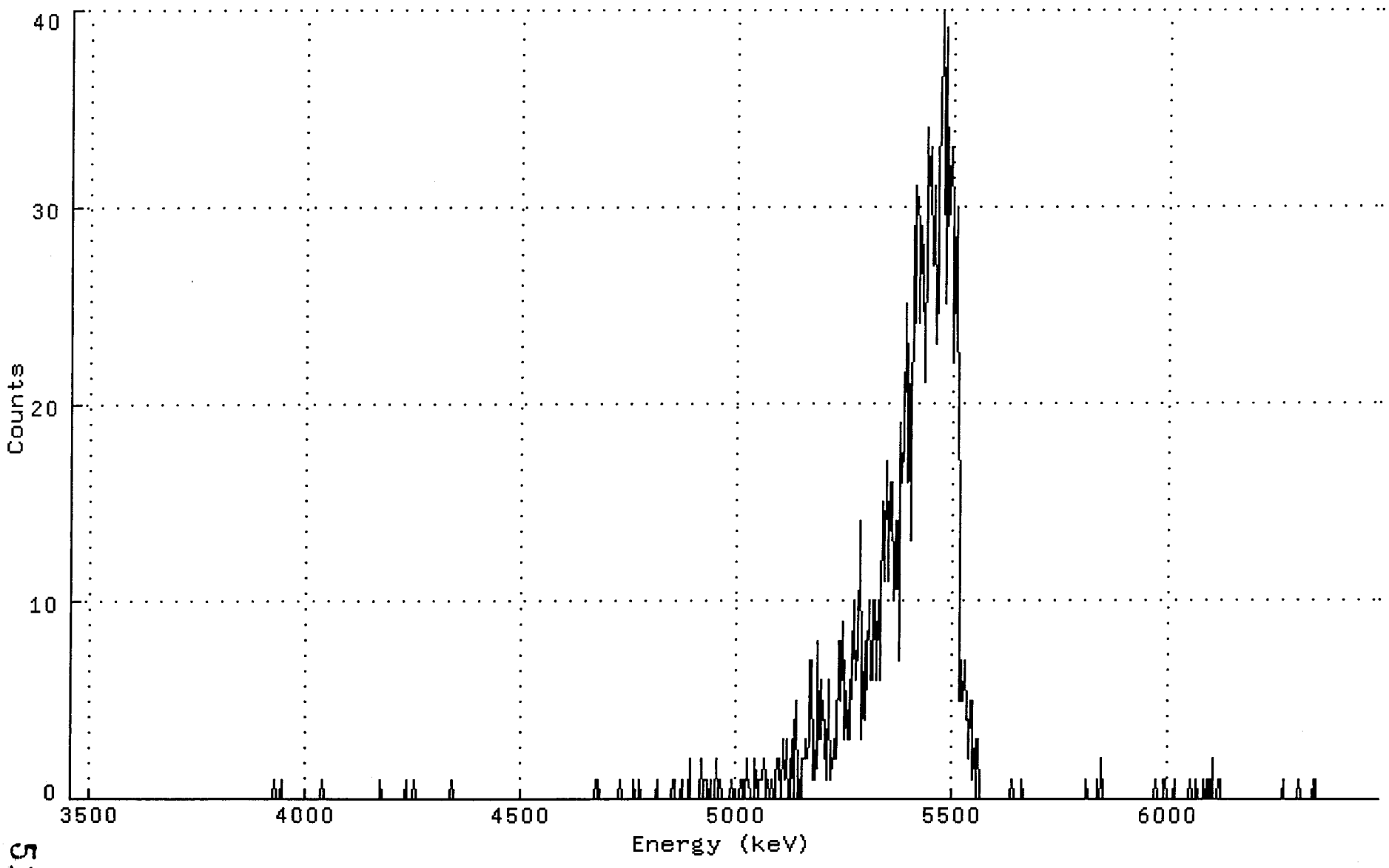
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4875.15	1	0	3.14	466.50	458	18	1.67E-05	100.0	
2	0	5054.52	2	0	0.00	527.00	512	31	3.33E-05	70.7	
3	0	5219.41	4	0	46.69	583.00	561	45	6.67E-05	50.0	
4	0	5487.92	2	0	31.39	675.00	643	65	3.33E-05	70.7	
5	0	5772.10	9	0	3.14	773.50	755	38	1.50E-04	33.3	
6	0	6065.64	1	0	3.14	876.50	850	54	1.67E-05	100.0	

Net Sample Counts Within Peak Regions Generated: 11-DEC-2001 08:00:02.56

Pk		Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4873.06*	4	0	3.14	465.80	458	18	1.50E-04	50.9	
2	0	5058.09*	23	0	0.00	528.21	512	31	7.67E-04	21.5	
3	0	5231.48*	210	0	103.40	587.11	561	45	7.00E-03	6.9	
4	0	5458.49*	1207	0	114.97	664.87	643	65	4.02E-02	2.9	
5	0	5807.93*	-4	0	3.14	786.00	755	38	-1.17E-04	51.5	
6	0	6071.69*	10	0	3.14	878.64	850	54	3.50E-04	31.9	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHI S]S_L4094AM$L4094-1_AM.CNF;1
Title : 031
Sample Title:
Start Time: 10-DEC-2001 11:35 Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.44894E+03
Real Time : 0 08:20:05.00 Sample ID : L4094-1 Energy Slope : 3.13901E+00
Live Time : 0 08:20:04.00 Sample Type: AM Energy Quad : -1.75261E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
11-DEC-2001 08:05:34

Spectral File: ND_AMS_ARCHIVE_S:S_L4094AM$L4094-2_AM.CNF

BATCH ID:	L4094AM	SAMPLE ID:	L4094-2
SAMPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	2.000E+00 gram
SAMPLE TITLE:		DETECTOR NUMBER:	032
ACQ DATE:	10-DEC-2001 11:35	AVERAGE EFFICIENCY:	24.45%
ELAPSED LIVE TIME:	30000.	RECOVERY:	70.83%
TRACER ID:	RAD009-07	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	1000.	ROI TYPE:	MANUAL
TRACER DPM AT SAMPLE DATE:	2.220	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	31-AUG-2001 11:09	EFF CAL DATE:	31-AUG-2001 11:09
BKG FILENAME:	B_032_26NOV01	BKG ELAPSED TIME:	60007.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
AM-241	5479.1	566.00	0.00	99.9	1.473E+00	2.474E-01	7.053E-03
CM-242	6091.3	0.00	4.00	99.0	1.262E-06	1.324E-02	3.155E-02
AM243	5270.0	191.50	1.50	99.6	5.000E-01	7.269E-02	2.194E-02
CM-244	5795.0	-1.00	6.00	100.0	-2.601E-03	1.473E-02	3.667E-02
CM-247	4869.0	2.50	0.50	71.0	9.159E-03	1.328E-02	2.197E-02
CM	5070.6	18.50	0.50	91.6	5.251E-02	2.605E-02	1.702E-02

*** Tracer FWHM < 10.0 Kev ***

Analyst _____ Date _____

Reviewer _____ Date _____

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 11-DEC-2001 08:05:28.75

De[illegible]or ID: 32 Acquisition Start: 10-DEC-2001 11:35:43.01
Li[illegible]ime: 0 08:20:00.00 Real Time: 0 08:20:01.00
Batch Id: L4094AM Sample Id: L4094-2
Sample Type: AM

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4864.70	3	0	4.53	463.67	459	18	1.00E-04	57.7	
2	0	5064.96	19	0	84.02	532.11	513	32	6.33E-04	22.9	
3	0	5246.05	193	0	0.00	594.43	563	52	6.43E-03	7.2	
4	0	5466.19	566	0	0.00	670.77	656	55	1.89E-02	4.2	
5	0	5792.15	5	0	0.00	785.00	760	37	1.67E-04	44.7	
6	0	6077.64	4	0	61.66	886.25	855	55	1.33E-04	50.0	

Background Counts Within Peak Regions Generated: 11-DEC-2001 08:05:32.04

Acquisition Start: 26-NOV-2001 15:37:58.01
Live Time: 0 16:40:07.00 Real Time: 0 16:40:07.00

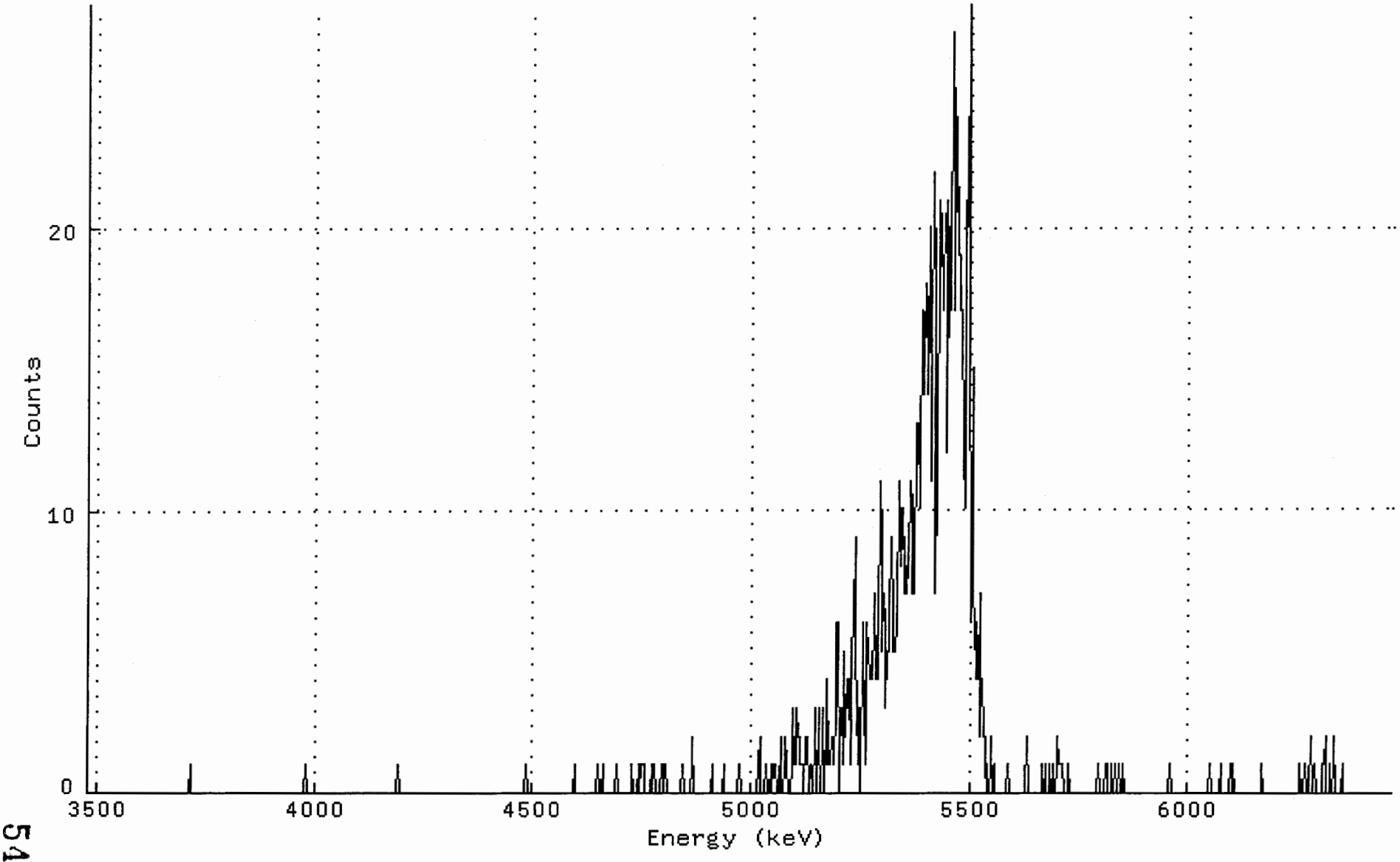
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4875.96	1	0	3.08	467.50	459	18	1.67E-05	100.0	
2	0	5054.45	1	0	3.08	528.50	513	32	1.67E-05	100.0	
3	0	5228.87	3	0	126.41	588.50	563	52	5.00E-05	57.7	
4	0	5501.28	0	0	0.00	683.00	656	55	0.00E+00	0.0	
5	0	5772.29	12	0	0.00	778.00	760	37	2.00E-04	28.9	
6	0	6065.72	8	0	0.00	882.00	855	55	1.33E-04	35.4	

Net Sample Counts Within Peak Regions Generated: 11-DEC-2001 08:05:32.44

Pk		Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4864.70*	3	0	4.53	463.67	459	18	8.33E-05	72.1	
2	0	5064.96*	19	0	84.02	532.11	513	32	6.17E-04	23.7	
3	0	5246.05*	192	0	0.00	594.43	563	52	6.38E-03	7.3	
4	0	5466.19*	566	0	0.00	670.77	656	55	1.89E-02	4.2	
5	0	5792.15*	-1	0	0.00	785.00	760	37	-3.33E-05	283.0	
6	0	6077.64*	0	0	61.66	886.25	855	55	1.56E-08	*****	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHI\ S]S_L4094AM$L4094-2_AM.CNF;1
Title : 032
Sample Title:
Start Time: 10-DEC-2001 11:35 Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.46905E+03
Real Time : 0 08:20:01.00 Sample ID : L4094-2 Energy Slope : 3.08313E+00
Live Time : 0 08:20:00.00 Sample Type: AM Energy Quad : -1.57675E-04



'ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
11-DEC-2001 08:06:52

****
Spectral File: ND_AMS_ARCHIVE_S:S_L4094AM$L4094-3_AM.CNF
****

BATCH ID:	L4094AM	SAMPLE ID:	L4094-3
SAMPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	2.000E+00 gram
SAMPLE TITLE:		DETECTOR NUMBER:	033
ACQ DATE:	10-DEC-2001 11:35	AVERAGE EFFICIENCY:	26.22%
ELAPSED LIVE TIME:	30002.	RECOVERY:	36.73%
TRACER ID:	RAD009-07	TRACER FWHM (kev):	76.58
LAMBDA VALUE:	1000.	ROI TYPE:	MANUAL
TRACER DPM AT SAMPLE DATE:	2.220	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	31-AUG-2001 18:22	EFF CAL DATE:	31-AUG-2001 18:22
BKG FILENAME:	B_033_26NOV01	BKG ELAPSED TIME:	60003.

****

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
AM-241	5479.1	395.50	4.50	99.9	1.851E+00	4.082E-01	5.884E-02
CM-242	6091.3	1.00	3.00	99.0	4.860E-03	2.281E-02	5.085E-02
AM243	5270.0	106.50	1.50	99.6	5.000E-01	9.792E-02	3.946E-02
CM-244	5795.0	-3.00	6.00	100.0	-1.404E-02	2.309E-02	6.595E-02
CM-247	4869.0	-0.50	0.50	71.0	-3.294E-03	6.619E-03	3.951E-02
CM	5070.6	1.50	1.50	91.6	7.655E-03	1.982E-02	4.290E-02

****

Analyst _____ Date _____

Reviewer _____ Date _____

'ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 11-DEC-2001 08:06:46.21

Det ID: 33 Acquisition Start: 10-DEC-2001 11:35:52.01
Live Time: 0 08:20:02.00 Real Time: 0 08:20:02.00
Batch Id: L4094AM Sample Id: L4094-3
Sample Type: AM

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4875.23	0	0	0.00	476.50	468	18	0.00E+00	0.0	
2	0	5072.46	3	0	3.07	544.33	523	32	1.00E-04	57.7	
3	0	5259.68	108	0	76.58	609.19	581	49	3.60E-03	9.6	
4	0	5468.97	400	0	55.77	682.23	655	49	1.33E-02	5.0	
5	0	5810.36	3	0	24.55	802.67	771	38	1.00E-04	57.7	
6	0	6066.92	4	0	110.45	894.25	867	55	1.33E-04	50.0	

Background Counts Within Peak Regions Generated: 11-DEC-2001 08:06:49.75

Acquisition Start: 26-NOV-2001 15:38:01.01
Live Time: 0 16:40:03.00 Real Time: 0 16:40:04.00

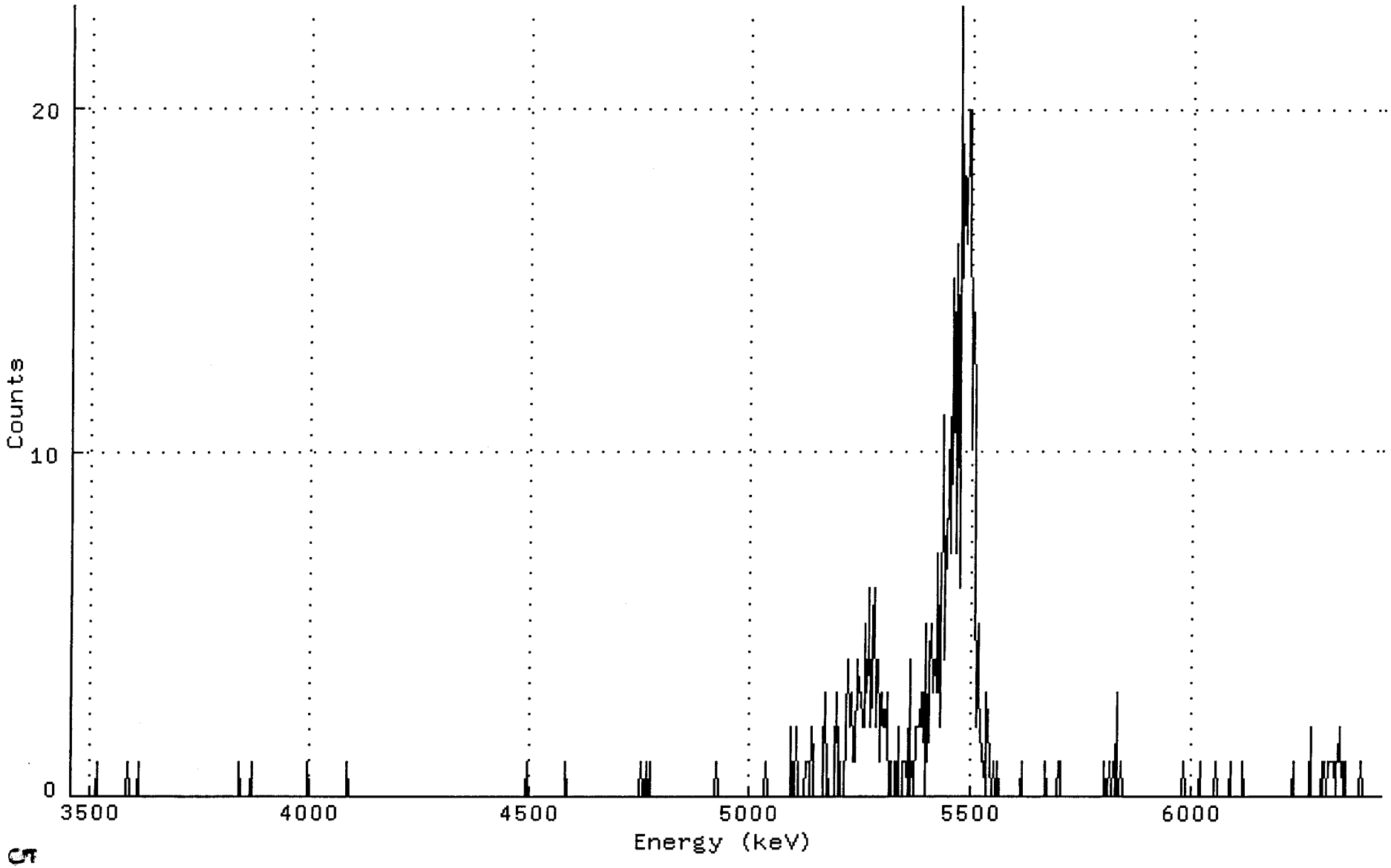
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4875.23	1	0	3.07	476.50	468	18	1.67E-05	100.0	
2	0	5055.56	3	0	21.48	538.50	523	32	5.00E-05	57.7	
3	0	5247.64	3	0	0.00	605.00	581	49	5.00E-05	57.7	
4	0	5459.74	9	0	122.73	679.00	655	49	1.50E-04	33.3	
5	0	5773.26	12	0	8.82	789.50	771	38	2.00E-04	28.9	
6	0	6066.22	6	0	0.00	894.00	867	55	1.00E-04	40.8	

Net Sample Counts Within Peak Regions Generated: 11-DEC-2001 08:06:50.16

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4875.23*	-1	0	0.00	476.50	468	18	-1.67E-05	100.0	
2	0	5072.46*	1	0	3.07	544.33	523	32	5.00E-05	129.1	
3	0	5259.68*	106	0	76.58	609.19	581	49	3.55E-03	9.8	
4	0	5468.97*	395	0	55.77	682.23	655	49	1.32E-02	5.1	
5	0	5810.36*	-3	0	24.55	802.67	771	38	-1.00E-04	81.6	
6	0	6066.92*	1	0	110.45	894.25	867	55	3.33E-05	234.5	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV S]S_L4094AM$L4094-3_AM.CNF;1
Title : 033
Sample Title:
Start Time: 10-DEC-2001 11:35 Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.44894E+03
Real Time : 0 08:20:02.00 Sample ID : L4094-3 Energy Slope : 3.06818E+00
Live Time : 0 08:20:02.00 Sample Type: AM Energy Quad : -1.57249E-04



57

ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
11-DEC-2001 08:08:35

****
Spectral File: ND_AMS_ARCHIVE_S:S_L4094AM$L4094-4_AM.CNF
****

BATCH ID:	L4094AM	SAMPLE ID:	L4094-4
SAMPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	2.000E+00 gram
SAMPLE TITLE:		DETECTOR NUMBER:	034
ACQ DATE:	10-DEC-2001 11:36	AVERAGE EFFICIENCY:	25.09%
ELAPSED LIVE TIME:	30001.	RECOVERY:	62.54%
TRACER ID:	RAD009-07	TRACER FWHM (kev):	113.60
LAMBDA VALUE:	1000.	ROI TYPE:	MANUAL
TRACER DPM AT SAMPLE DATE:	2.220	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	4-SEP-2001 08:57	EFF CAL DATE:	4-SEP-2001 08:57
BKG FILENAME:	B_034_26NOV01	BKG ELAPSED TIME:	60000.

****

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
AM-241	5479.1	883.00	6.00	99.9	2.537E+00	4.254E-01	4.050E-02
CM-242	6091.3	2.00	3.00	99.0	5.966E-03	1.524E-02	3.121E-02
AM243	5270.0	173.50	2.50	99.6	5.000E-01	7.673E-02	2.900E-02
CM-244	5795.0	2.00	3.00	100.0	5.745E-03	1.468E-02	3.090E-02
CM-247	4869.0	3.00	0.00	71.0	1.213E-02	1.413E-02	1.096E-02
CM	5070.6	5.00	1.00	91.6	1.566E-02	1.615E-02	2.306E-02

****

*** Tracer FWHM > 80.0 Kev ***

Analyst _____ Date _____

Reviewer _____ Date _____

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 11-DEC-2001 08:08:29.10

Detector ID: 34 Acquisition Start: 10-DEC-2001 11:36:03.01
Live Time: 0 08:20:01.00 Real Time: 0 08:20:01.00
Batch Id: L4094AM Sample Id: L4094-4
Sample Type: AM

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4889.02	3	0	0.00	468.33	455	18	1.00E-04	57.7	
2	0	5065.24	6	0	3.10	528.33	509	32	2.00E-04	40.8	
3	0	5257.25	176	0	113.60	594.18	567	51	5.87E-03	7.5	
4	0	5461.06	889	0	90.39	664.63	639	55	2.96E-02	3.4	
5	0	5790.14	5	0	96.21	779.60	755	38	1.67E-04	44.7	
6	0	6093.00	5	0	65.17	886.80	851	54	1.67E-04	44.7	

Background Counts Within Peak Regions Generated: 11-DEC-2001 08:08:33.38

Acquisition Start: 26-NOV-2001 15:38:04.01
Live Time: 0 16:40:00.00 Real Time: 0 16:40:00.00

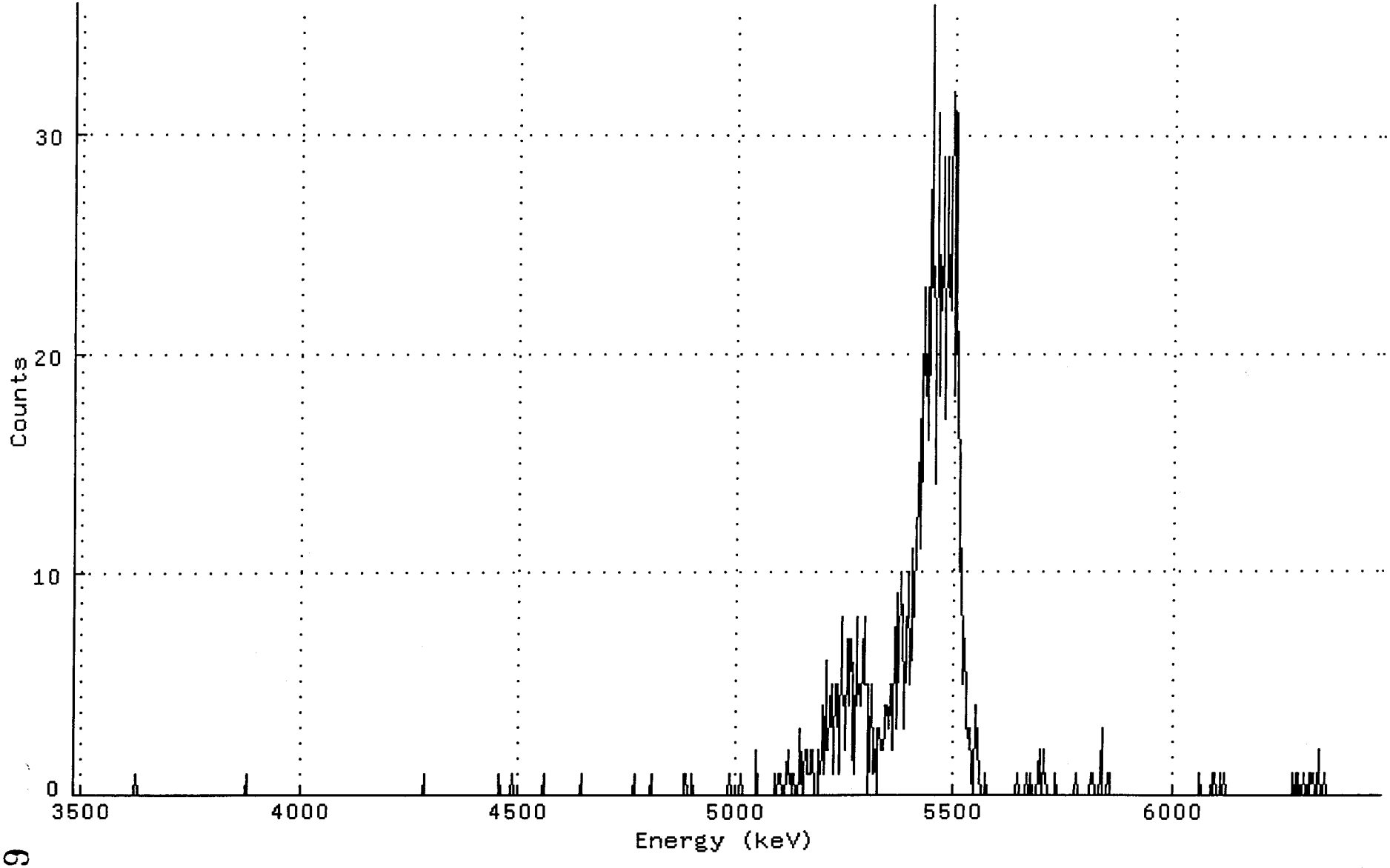
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4874.77	0	0	0.00	463.50	455	18	0.00E+00	0.0	
2	0	5054.02	2	0	34.14	524.50	509	32	3.33E-05	70.7	
3	0	5250.91	5	0	145.86	592.00	567	51	8.33E-05	44.7	
4	0	5465.02	12	0	27.93	666.00	639	55	2.00E-04	28.9	
5	0	5772.79	6	0	0.00	773.50	755	38	1.00E-04	40.8	
6	0	6066.88	6	0	121.03	877.50	851	54	1.00E-04	40.8	

Net Sample Counts Within Peak Regions Generated: 11-DEC-2001 08:08:33.78

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4889.02*	3	0	0.00	468.33	455	18	1.00E-04	57.7	
2	0	5065.24*	5	0	3.10	528.33	509	32	1.67E-04	51.0	
3	0	5257.25*	173	0	113.60	594.18	567	51	5.78E-03	7.7	
4	0	5461.06*	883	0	90.39	664.63	639	55	2.94E-02	3.4	
5	0	5790.14*	2	0	96.21	779.60	755	38	6.67E-05	127.5	
6	0	6093.00*	2	0	65.17	886.80	851	54	6.67E-05	127.5	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIVE S]S_L4094AM$L4094-4_AM.CNF;1
Title : 034
Sample Title:
Start Time: 10-DEC-2001 11:36 Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.47221E+03
Real Time : 0 08:20:01.00 Sample ID : L4094-4 Energy Slope : 3.10342E+00
Live Time : 0 08:20:01.00 Sample Type: AM Energy Quad : -1.66996E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
11-DEC-2001 08:12:09

Spectral File: ND_AMS_ARCHIVE_S:S_L4094AM$L4094-5_AM.CNF

BATCH ID:	L4094AM	SAMPLE ID:	L4094-5
SAMPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	2.000E+00 gram
SAMPLE TITLE:		DETECTOR NUMBER:	035
ACQ DATE:	10-DEC-2001 11:36	AVERAGE EFFICIENCY:	25.77%
ELAPSED LIVE TIME:	30001.	RECOVERY:	67.20%
TRACER ID:	RAD009-07	TRACER FWHM (kev):	52.36
LAMBDA VALUE:	1000.	ROI TYPE:	MANUAL
TRACER DPM AT SAMPLE DATE:	2.220	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	14-SEP-2001 17:13	EFF CAL DATE:	14-SEP-2001 17:13
BKG FILENAME:	B_035_26NOV01	BKG ELAPSED TIME:	60003.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
AM-241	5479.1	1574.50	3.50	99.9	4.098E+00	6.284E-01	2.969E-02
CM-242	6091.3	4.00	4.00	99.0	1.081E-02	1.717E-02	3.155E-02
AM243	5270.0	191.50	0.50	99.6	5.000E-01	7.240E-02	1.566E-02
CM-244	5795.0	1.50	4.50	100.0	3.904E-03	1.496E-02	3.271E-02
CM-247	4869.0	-0.50	0.50	71.0	-1.832E-03	3.673E-03	2.197E-02
CM-	5070.6	7.00	1.00	91.6	1.987E-02	1.680E-02	2.089E-02

Analyst _____ Date _____

Reviewer _____ Date _____

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 11-DEC-2001 08:12:04.11

Det r ID: 35 Acquisition Start: 10-DEC-2001 11:36:13.01
Live Time: 0 08:20:01.00 Real Time: 0 08:20:02.00
Batch Id: L4094AM Sample Id: L4094-5
Sample Type: AM

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4873.79	0	0	0.00	474.50	466	18	0.00E+00	0.0	
2	0	5066.78	8	0	65.51	540.13	521	31	2.67E-04	35.4	
3	0	5252.19	192	0	52.36	603.67	573	50	6.40E-03	7.2	
4	0	5462.11	1578	0	88.01	676.20	645	73	5.26E-02	2.5	
5	0	5792.93	6	0	3.12	791.83	766	38	2.00E-04	40.8	
6	0	6088.67	8	0	3.12	896.63	862	54	2.67E-04	35.4	

Background Counts Within Peak Regions Generated: 11-DEC-2001 08:12:07.52

Acquisition Start: 26-NOV-2001 15:38:08.01
Live Time: 0 16:40:03.00 Real Time: 0 16:40:03.00

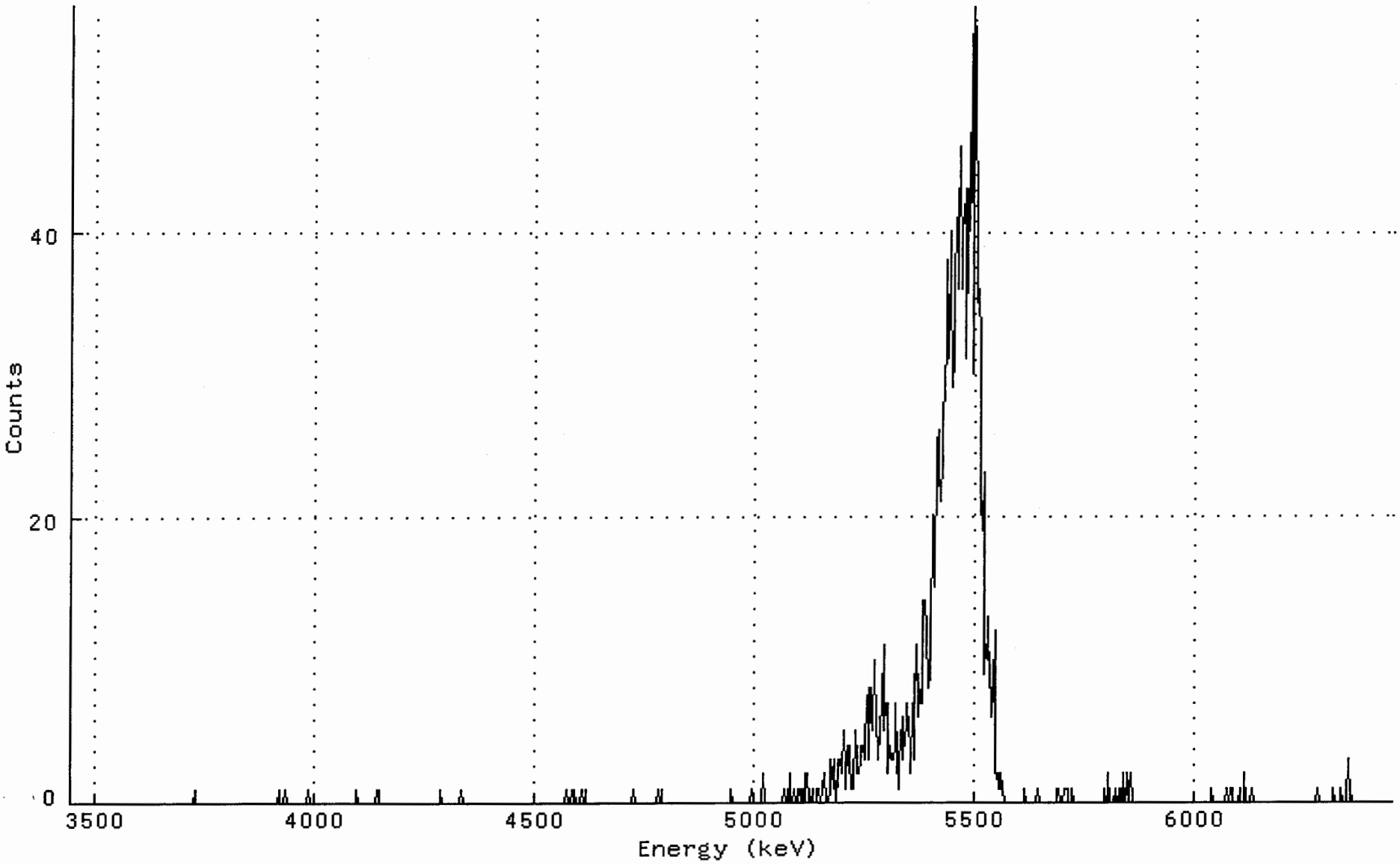
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4873.79	1	0	3.12	474.50	466	18	1.67E-05	100.0	
2	0	5054.69	2	0	18.72	536.00	521	31	3.33E-05	70.7	
3	0	5234.26	1	0	3.12	597.50	573	50	1.67E-05	100.0	
4	0	5475.94	7	0	46.40	681.00	645	73	1.17E-04	37.8	
5	0	5772.09	9	0	65.51	784.50	766	38	1.50E-04	33.3	
6	0	6065.87	8	0	0.00	888.50	862	54	1.33E-04	35.4	

Net Sample Counts Within Peak Regions Generated: 11-DEC-2001 08:12:07.89

Pk		Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4873.79*	0	0	0.00	474.50	466	18	-1.67E-05	100.0	
2	0	5066.78*	7	0	65.51	540.13	521	31	2.33E-04	41.6	
3	0	5252.19*	192	0	52.36	603.67	573	50	6.38E-03	7.2	
4	0	5462.11*	1575	0	88.01	676.20	645	73	5.25E-02	2.5	
5	0	5792.93*	2	0	3.12	791.83	766	38	5.00E-05	191.5	
6	0	6088.67*	4	0	3.12	896.63	862	54	1.33E-04	79.1	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV S]S_L4094AM$L4094-5_AM.CNF;1
Title : 035
Sample Title:
Start Time: 10-DEC-2001 11:36 Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.43326E+03
Real Time : 0 08:20:02.00 Sample ID : L4094-5 Energy Slope : 3.11944E+00
Live Time : 0 08:20:01.00 Sample Type: AM Energy Quad : -1.76087E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
11-DEC-2001 08:10:55

Spectral File: ND_AMS_ARCHIVE_S:S_L4094AM$L4094-5MD_AM.CNF

BATCH ID:	L4094AM	SAMPLE ID:	L4094-5MD
SAMPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	2.000E+00 gram
SAMPLE TITLE:		DETECTOR NUMBER:	036
ACQ DATE:	10-DEC-2001 11:36	AVERAGE EFFICIENCY:	25.74%
ELAPSED LIVE TIME:	30000.	RECOVERY:	60.26%
TRACER ID:	RAD009-07	TRACER FWHM (kev):	91.41
LAMBDA VALUE:	1000.	ROI TYPE:	MANUAL
TRACER DPM AT SAMPLE DATE:	2.220	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	5-SEP-2001 13:46	EFF CAL DATE:	5-SEP-2001 13:46
BKG FILENAME:	B_036_26NOV01	BKG ELAPSED TIME:	60005.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
AM-241	5479.1	1342.50	2.50	99.9	3.902E+00	6.390E-01	2.924E-02
CM-242	6091.3	4.50	3.50	99.0	1.358E-02	1.896E-02	3.347E-02
AM243	5270.0	171.50	2.50	99.6	5.000E-01	7.719E-02	2.934E-02
CM-244	5795.0	3.50	4.50	100.0	1.017E-02	1.868E-02	3.652E-02
CM-247	4869.0	3.50	0.50	71.0	1.432E-02	1.701E-02	2.454E-02
CM	5070.6	5.00	1.00	91.6	1.585E-02	1.634E-02	2.333E-02

*** Tracer FWHM > 80.0 Kev ***

Analyst _____ Date _____

Reviewer _____ Date _____

'ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 11-DEC-2001 08:10:50.26

De[illegible]r ID: 36 Acquisition Start: 10-DEC-2001 11:36:24.01
Liv[illegible]me: 0 08:20:00.00 Real Time: 0 08:20:01.00
Batch Id: L4094AM Sample Id: L4094-5MD
Sample Type: AM

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4876.01	4	0	3.16	470.75	462	18	1.33E-04	50.0	
2	0	5059.39	6	0	0.00	532.00	515	32	2.00E-04	40.8	
3	0	5263.30	174	0	91.41	600.61	573	49	5.80E-03	7.6	
4	0	5467.69	1345	0	76.80	669.92	644	65	4.48E-02	2.7	
5	0	5782.84	8	0	94.85	777.88	756	37	2.67E-04	35.4	
6	0	6092.06	8	0	60.07	885.13	850	53	2.67E-04	35.4	

Background Counts Within Peak Regions Generated: 11-DEC-2001 08:10:53.35

Acquisition Start: 26-NOV-2001 15:38:11.01
Live Time: 0 16:40:05.00 Real Time: 0 16:40:06.00

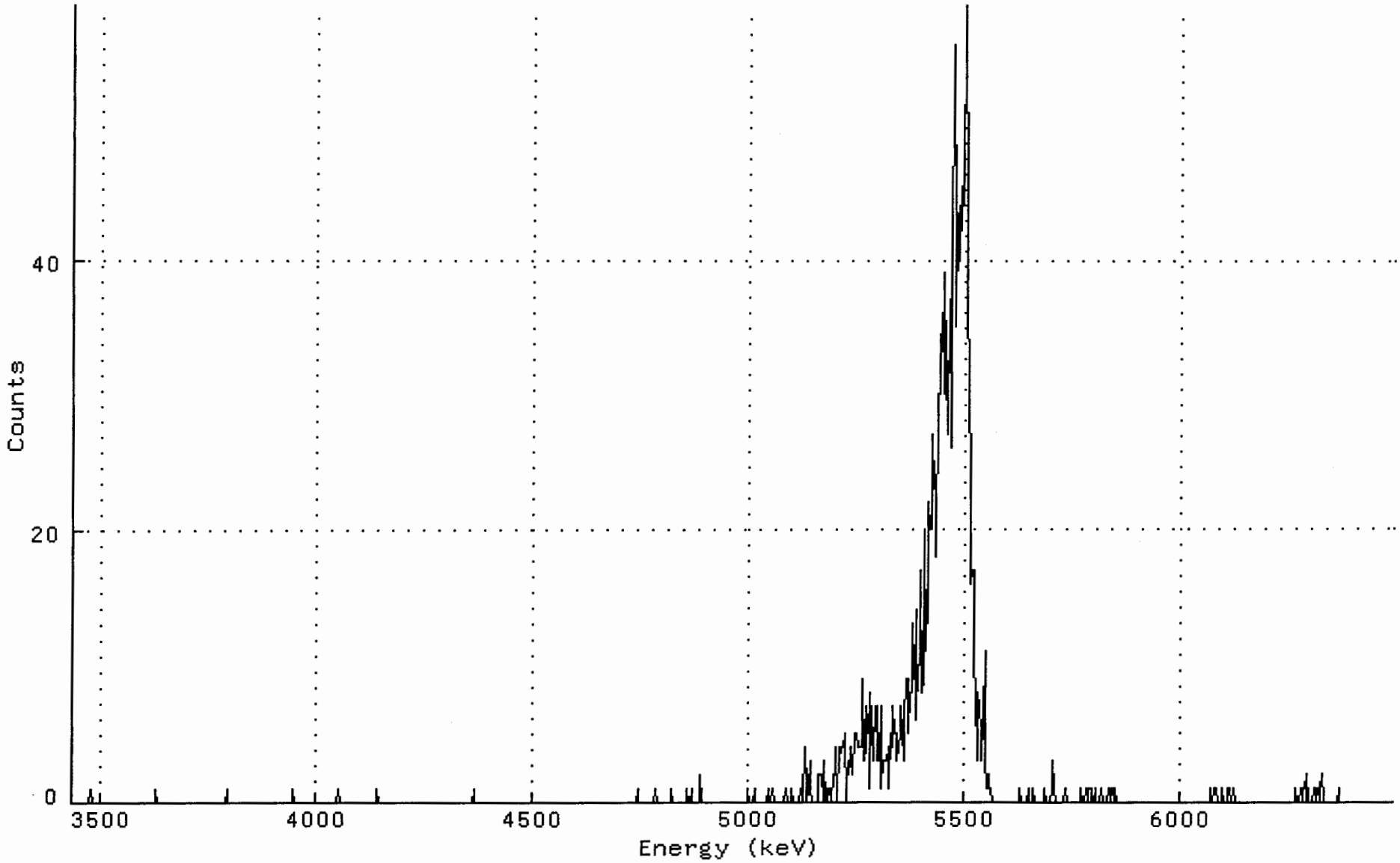
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4875.26	1	0	3.16	470.50	462	18	1.67E-05	100.0	
2	0	5054.91	2	0	5.93	530.50	515	32	3.33E-05	70.7	
3	0	5252.61	5	0	0.00	597.00	573	49	8.33E-05	44.7	
4	0	5485.54	5	0	94.85	676.00	644	65	8.33E-05	44.7	
5	0	5771.59	9	0	94.85	774.00	756	37	1.50E-04	33.3	
6	0	6065.90	7	0	3.16	876.00	850	53	1.17E-04	37.8	

Net Sample Counts Within Peak Regions Generated: 11-DEC-2001 08:10:53.76

Pk	[illegible]	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4876.01*	4	0	3.16	470.75	462	18	1.17E-04	58.9	
2	0	5059.39*	5	0	0.00	532.00	515	32	1.67E-04	51.0	
3	0	5263.30*	172	0	91.41	600.61	573	49	5.72E-03	7.7	
4	0	5467.69*	1343	0	76.80	669.92	644	65	4.48E-02	2.7	
5	0	5782.84*	4	0	94.85	777.88	756	37	1.17E-04	91.5	
6	0	6092.06*	5	0	60.07	885.13	850	53	1.50E-04	69.4	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV S]S_L4094AM$L4094-5MD_AM.CNF;1
Title : 036
Sample Title:
Start Time: 10-DEC-2001 11:36 Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.42472E+03
Real Time : 0 08:20:01.00 Sample ID : L4094-5MD Energy Slope : 3.16182E+00
Live Time : 0 08:20:00.00 Sample Type: AM Energy Quad : -1.67540E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
11-DEC-2001 08:13:30

****

Spectral File: ND_AMS_ARCHIVE_S:S_L4094AM$L4094-6_AM.CNF

****

BATCH ID:	L4094AM	SAMPLE ID:	L4094-6
SAMPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	2.000E+00 gram
SAMPLE TITLE:		DETECTOR NUMBER:	037
ACQ DATE:	10-DEC-2001 11:36	AVERAGE EFFICIENCY:	25.42%
ELAPSED LIVE TIME:	30002.	RECOVERY:	43.40%
TRACER ID:	RAD009-07	TRACER FWHM (kev):	65.52
LAMBDA VALUE:	1000.	ROI TYPE:	MANUAL
TRACER DPM AT SAMPLE DATE:	2.220	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	6-SEP-2001 09:08	EFF CAL DATE:	6-SEP-2001 09:08
BKG FILENAME:	B_037_26NOV01	BKG ELAPSED TIME:	60003.

****

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
AM-241	5479.1	1618.00	3.00	99.9	6.610E+00	1.255E+00	4.397E-02
CM-242	6091.3	-7.00	8.00	99.0	-2.970E-02	1.974E-02	6.542E-02
AM243	5270.0	122.00	2.00	99.6	5.000E-01	9.164E-02	3.806E-02
CM-244	5795.0	2.50	5.50	100.0	1.021E-02	2.686E-02	5.559E-02
CM-247	4869.0	0.50	0.50	71.0	2.875E-03	1.287E-02	3.449E-02
CM	5070.6	4.50	0.50	91.6	2.005E-02	2.074E-02	2.672E-02

****

Analyst _____ Date _____

Reviewer _____ Date _____

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 11-DEC-2001 08:13:24.37

Det r ID: 37 Acquisition Start: 10-DEC-2001 11:36:33.01
Live me: 0 08:20:02.00 Real Time: 0 08:20:02.00
Batch Id: L4094AM Sample Id: L4094-6
Sample Type: AM

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4874.01	1	0	0.00	474.00	465	19	3.33E-05	100.0	
2	0	5085.47	5	0	2.89	551.20	524	34	1.67E-04	44.7	
3	0	5270.28	124	0	65.52	619.20	593	47	4.13E-03	9.0	
4	0	5471.72	1621	0	74.78	693.90	661	74	5.40E-02	2.5	
5	0	5751.99	8	0	77.70	798.88	787	40	2.67E-04	35.4	
6	0	6102.73	1	0	2.89	932.00	889	59	3.33E-05	100.0	

Background Counts Within Peak Regions Generated: 11-DEC-2001 08:13:27.40

Acquisition Start: 26-NOV-2001 15:38:14.01
Live Time: 0 16:40:03.00 Real Time: 0 16:40:03.00

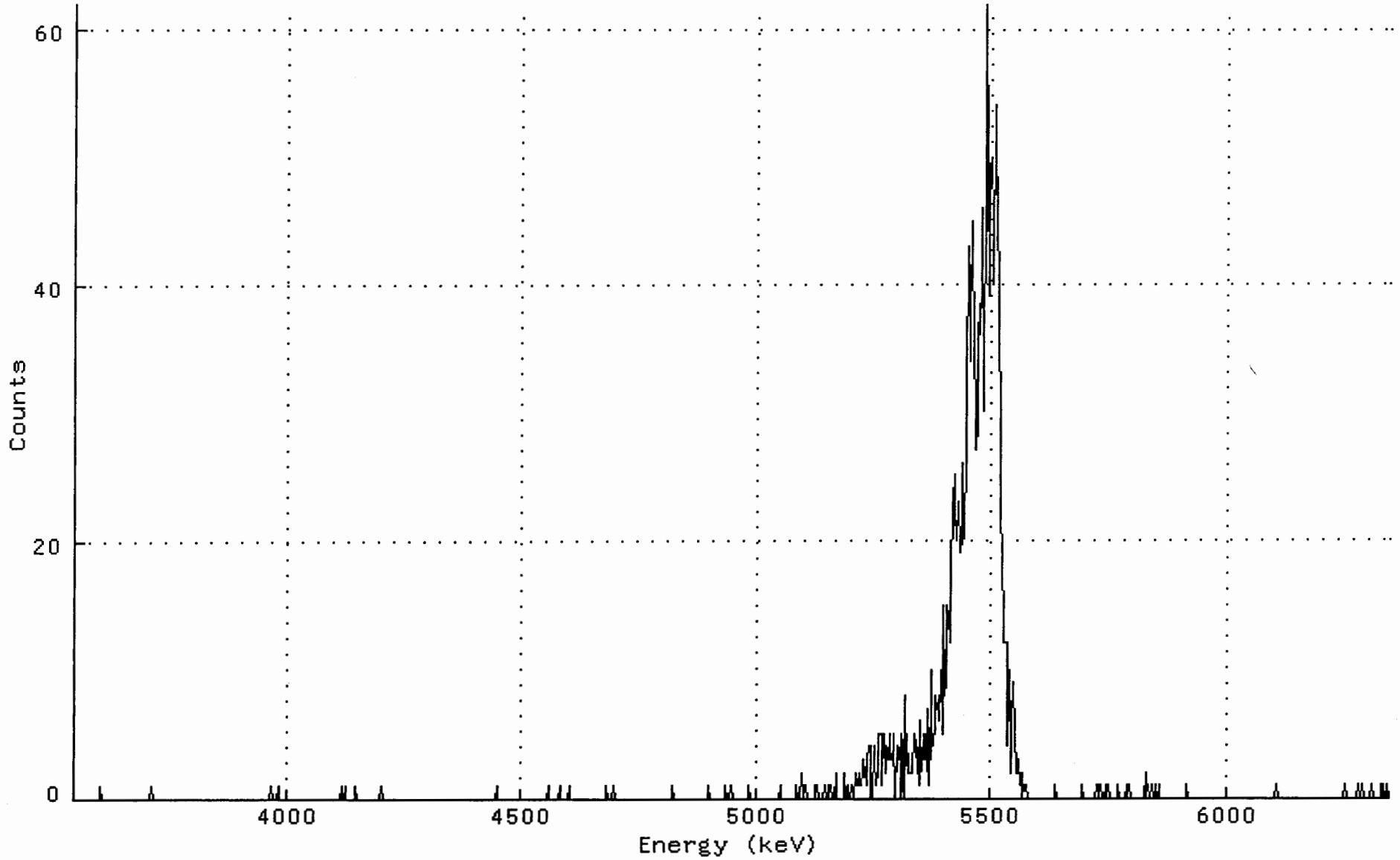
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4874.01	1	0	2.89	474.00	465	19	1.67E-05	100.0	
2	0	5056.27	1	0	2.89	540.50	524	34	1.67E-05	100.0	
3	0	5261.61	4	0	98.30	616.00	593	47	6.67E-05	50.0	
4	0	5481.38	6	0	130.10	697.50	661	74	1.00E-04	40.8	
5	0	5772.22	11	0	0.00	806.50	787	40	1.83E-04	30.2	
6	0	6066.09	16	0	2.89	918.00	889	59	2.67E-04	25.0	

Net Sample Counts Within Peak Regions Generated: 11-DEC-2001 08:13:28.02

Pk		Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4874.01*	0	0	0.00	474.00	465	19	1.67E-05	223.6	
2	0	5085.47*	4	0	2.89	551.20	524	34	1.50E-04	50.9	
3	0	5270.28*	122	0	65.52	619.20	593	47	4.07E-03	9.2	
4	0	5471.72*	1618	0	74.78	693.90	661	74	5.39E-02	2.5	
5	0	5751.99*	2	0	77.70	798.88	787	40	8.33E-05	131.2	
6	0	6102.73*	-7	0	2.89	932.00	889	59	-2.33E-04	31.9	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV S]S_L4094AM$L4094-6_AM.CNF;1
Title : 037
Sample Title:
Start Time: 10-DEC-2001 11:36 Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.53691E+03
Real Time : 0 08:20:02.00 Sample ID : L4094-6 Energy Slope : 2.89109E+00
Live Time : 0 08:20:02.00 Sample Type: AM Energy Quad : -1.48137E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
11-DEC-2001 08:17:07

Spectral File: ND_AMS_ARCHIVE_S:S_L4094AM$L4094-7_AM.CNF

BATCH ID:	L4094AM	SAMPLE ID:	L4094-7
SAMPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	2.000E+00 gram
SAMPLE TITLE:		DETECTOR NUMBER:	038
ACQ DATE:	10-DEC-2001 11:36	AVERAGE EFFICIENCY:	25.61%
ELAPSED LIVE TIME:	5468.	RECOVERY:	125.59%
TRACER ID:	RAD009-07	TRACER FWHM (kev):	91.32
LAMBDA VALUE:	1000.	ROI TYPE:	MANUAL
TRACER DPM AT SAMPLE DATE:	2.220	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	6-SEP-2001 16:29	EFF CAL DATE:	6-SEP-2001 16:29
BKG FILENAME:	B_038_26NOV01	BKG ELAPSED TIME:	60005.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
AM-241	5479.1	1372.73	0.27	99.9	1.056E+01	2.687E+00	3.953E-02
CM-242	6091.3	-1.46	1.46	99.0	-1.164E-02	6.498E-03	6.462E-02
AM243	5270.0	64.82	0.18	99.6	5.000E-01	1.244E-01	3.622E-02
CM-244	5795.0	-0.18	1.18	100.0	-1.420E-03	1.619E-02	5.972E-02
CM-247	4869.0	2.00	0.00	71.0	2.165E-02	3.108E-02	2.933E-02
CM	5070.6	3.00	0.00	91.6	2.516E-02	2.972E-02	2.272E-02

*** Tracer FWHM > 80.0 Kev ***
*** Chemical Recovery > 115.0% ***

Analyst _____ Date _____

Reviewer _____ Date _____

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 11-DEC-2001 08:17:01.92

De[illegible]r ID: 38 Acquisition Start: 10-DEC-2001 11:36:41.01
Liv[illegible]ime: 0 01:31:08.00 Real Time: 0 01:31:08.00
Batch Id: L4094AM Sample Id: L4094-7
Sample Type: AM

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4865.81	2	0	18.55	464.50	459	18	3.66E-04	70.7	
2	0	5082.19	3	0	3.09	538.33	514	31	5.49E-04	57.7	
3	0	5271.11	65	0	91.32	603.29	581	40	1.19E-02	12.4	
4	0	5459.91	1373	0	97.21	668.68	636	76	2.51E-01	2.7	
5	0	5809.43	1	0	3.09	791.00	760	37	1.83E-04	100.0	
6	0	6066.34	0	0	0.00	882.00	855	55	0.00E+00	0.0	

Background Counts Within Peak Regions Generated: 11-DEC-2001 08:17:04.70

Acquisition Start: 26-NOV-2001 15:38:17.01
Live Time: 0 16:40:05.00 Real Time: 0 16:40:06.00

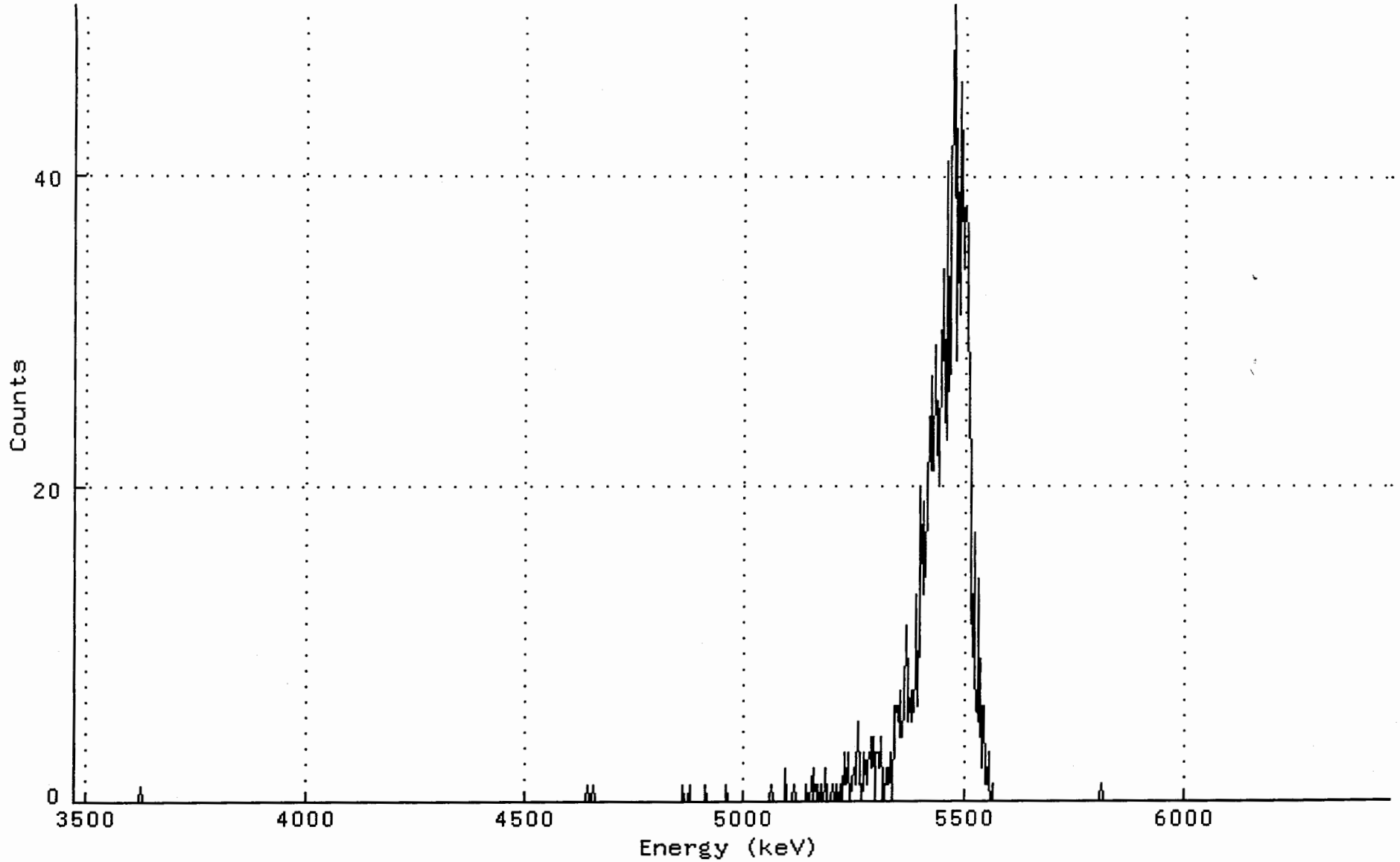
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4874.64	0	0	0.00	467.50	459	18	0.00E+00	0.0	
2	0	5054.93	0	0	0.00	529.00	514	31	0.00E+00	0.0	
3	0	5263.02	2	0	27.82	600.50	581	40	3.33E-05	70.7	
4	0	5473.78	3	0	18.55	673.50	636	76	5.00E-05	57.7	
5	0	5772.52	13	0	17.78	778.00	760	37	2.17E-04	27.7	
6	0	6066.34	16	0	3.09	882.00	855	55	2.67E-04	25.0	

Net Sample Counts Within Peak Regions Generated: 11-DEC-2001 08:17:05.13

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4865.81*	2	0	18.55	464.50	459	18	3.66E-04	70.7	
2	0	5082.19*	3	0	3.09	538.33	514	31	5.49E-04	57.7	
3	0	5271.11*	65	0	91.32	603.29	581	40	1.19E-02	12.4	
4	0	5459.91*	1373	0	97.21	668.68	636	76	2.51E-01	2.7	
5	0	5809.43*	0	0	3.09	791.00	760	37	-3.38E-05	570.1	
6	0	6066.34*	-1	0	0.00	882.00	855	55	-2.67E-04	25.0	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV S]S_L4094AM$L4094-7_AM.CNF;2
Title : 038
Sample Title:
Start Time: 10-DEC-2001 11:36 Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.46446E+03
Real Time : 0 01:31:08.00 Sample ID : L4094-7 Energy Slope : 3.09137E+00
Live Time : 0 01:31:08.00 Sample Type: AM Energy Quad : -1.60303E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
11-DEC-2001 08:18:07

Spectral File: ND_AMS_ARCHIVE_S:S_L4094AM$L4094-8_AM.CNF

BATCH ID:	L4094AM	SAMPLE ID:	L4094-8
SAMPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	2.000E+00 gram
SAMPLE TITLE:		DETECTOR NUMBER:	039
ACQ DATE:	10-DEC-2001 11:36	AVERAGE EFFICIENCY:	25.29%
ELAPSED LIVE TIME:	30002.	RECOVERY:	66.68%
TRACER ID:	RAD009-07	TRACER FWHM (kev):	130.02
LAMBDA VALUE:	1000.	ROI TYPE:	MANUAL
TRACER DPM AT SAMPLE DATE:	2.220	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	7-SEP-2001 08:28	EFF CAL DATE:	7-SEP-2001 08:28
BKG FILENAME:	B_039_26NOV01	BKG ELAPSED TIME:	60002.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
AM-241	5479.1	1047.50	2.50	99.9	2.799E+00	4.474E-01	2.689E-02
CM-242	6091.3	-8.50	9.50	99.0	-2.359E-02	1.376E-02	4.598E-02
AM243	5270.0	186.50	1.50	99.6	5.000E-01	7.367E-02	2.253E-02
CM-244	5795.0	186.50	186.50	100.0	0.000E+00	0.000E+00	1.768E-01
CM-247	4869.0	0.00	0.00	71.0	0.000E+00	0.000E+00	1.019E-02
CM	5070.6	8.00	1.00	91.6	2.332E-02	1.829E-02	2.145E-02

*** Tracer FWHM > 80.0 Kev ***

Analyst _____ Date _____

Reviewer _____ Date _____

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 11-DEC-2001 08:18:01.69

Det r ID: 39 Acquisition Start: 10-DEC-2001 11:36:50.01
Live Time: 0 08:20:02.00 Real Time: 0 08:20:03.00
Batch Id: L4094AM Sample Id: L4094-8
Sample Type: AM

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4864.47	0	0	0.00	473.00	461	25	0.00E+00	0.0	
2	0	5064.70	9	0	84.34	540.56	522	32	3.00E-04	33.3	
3	0	5248.15	188	0	130.02	602.88	572	54	6.27E-03	7.3	
4	0	5459.58	1050	0	86.57	675.23	648	70	3.50E-02	3.1	
5	0	5467.93	930	0	86.57	678.10	658	60	3.10E-02	3.3	
6	0	6159.78	1	0	3.12	919.00	842	84	3.33E-05	100.0	

Background Counts Within Peak Regions Generated: 11-DEC-2001 08:18:04.51

Acquisition Start: 26-NOV-2001 15:38:21.01
Live Time: 0 16:40:02.00 Real Time: 0 16:40:02.00

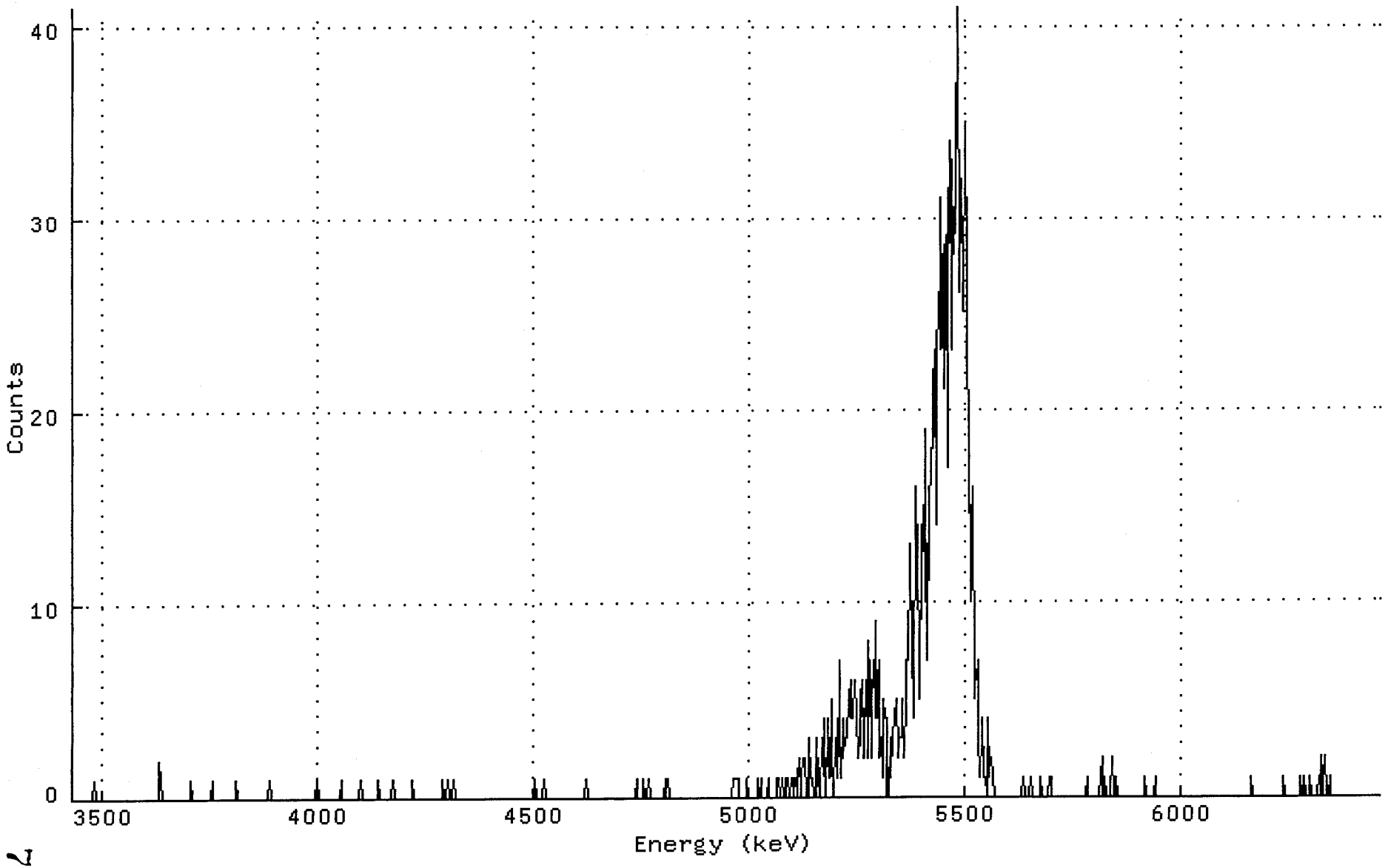
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4864.47	0	0	0.00	473.00	461	25	0.00E+00	0.0	
2	0	5055.68	2	0	46.86	537.50	522	32	3.33E-05	70.7	
3	0	5235.30	3	0	53.10	598.50	572	54	5.00E-05	57.7	
4	0	5480.73	5	0	3.12	682.50	648	70	8.33E-05	44.7	
5	0	5495.27	4	0	3.12	687.50	658	60	6.67E-05	50.0	
6	0	6058.98	19	0	209.29	883.50	842	84	3.17E-04	22.9	

Net Sample Counts Within Peak Regions Generated: 11-DEC-2001 08:18:05.01

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4864.47*	0	0	0.00	473.00	461	25	0.00E+00	0.0	
2	0	5064.70*	8	0	84.34	540.56	522	32	2.67E-04	38.5	
3	0	5248.15*	186	0	130.02	602.88	572	54	6.22E-03	7.4	
4	0	5459.58*	1047	0	86.57	675.23	648	70	3.49E-02	3.1	
5	0	5467.93*	928	0	86.57	678.10	658	60	3.09E-02	3.3	
6	0	6159.78*	-9	0	3.12	919.00	842	84	-2.83E-04	28.2	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV S]S_L4094AM$L4094-8_AM.CNF;1
Title : 039
Sample Title:
Start Time: 10-DEC-2001 11:36 Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.42222E+03
Real Time : 0 08:20:03.00 Sample ID : L4094-8 Energy Slope : 3.12372E+00
Live Time : 0 08:20:02.00 Sample Type: AM Energy Quad : -1.57638E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
11-DEC-2001 08:19:22

Spectral File: ND_AMS_ARCHIVE_S:S_L4094AM$L4094-9_AM.CNF

BATCH ID:	L4094AM	SAMPLE ID:	L4094-9
SAMPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	2.000E+00 gram
SAMPLE TITLE:		DETECTOR NUMBER:	040
ACQ DATE:	10-DEC-2001 11:36	AVERAGE EFFICIENCY:	24.28%
ELAPSED LIVE TIME:	30002.	RECOVERY:	30.73%
TRACER ID:	RAD009-07	TRACER FWHM (kev):	54.98
LAMBDA VALUE:	1000.	ROI TYPE:	MANUAL
TRACER DPM AT SAMPLE DATE:	2.220	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	7-SEP-2001 15:32	EFF CAL DATE:	7-SEP-2001 15:32
BKG FILENAME:	B_040_26NOV01	BKG ELAPSED TIME:	60003.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
AM-241	5479.1	730.00	1.00	99.9	4.410E+00	1.029E+00	4.446E-02
CM-242	6091.3	-5.00	5.00	99.0	-3.137E-02	2.102E-02	7.994E-02
AM243	5270.0	82.50	0.50	99.6	5.000E-01	1.106E-01	3.635E-02
CM-244	5795.0	5.00	4.00	100.0	3.021E-02	4.063E-02	7.251E-02
CM-247	4869.0	-0.50	0.50	71.0	-4.252E-03	8.556E-03	5.101E-02
CM-	5070.6	3.00	1.00	91.6	1.976E-02	2.829E-02	4.849E-02

Analyst _____ Date _____

Reviewer _____ Date _____

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 11-DEC-2001 08:19:17.48

Det ID: 40 Acquisition Start: 10-DEC-2001 11:36:59.01
Live Time: 0 08:20:02.00 Real Time: 0 08:20:02.00
Batch Id: L4094AM Sample Id: L4094-9
Sample Type: AM

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4875.34	0	0	0.00	462.50	454	18	0.00E+00	0.0	
2	0	5056.17	4	0	0.00	524.25	508	32	1.33E-04	50.0	
3	0	5267.65	83	0	54.98	596.99	573	41	2.77E-03	11.0	
4	0	5465.67	731	0	79.44	665.62	638	68	2.44E-02	3.7	
5	0	5813.85	9	0	0.00	787.56	755	37	3.00E-04	33.3	
6	0	6066.30	0	0	0.00	877.00	850	55	0.00E+00	0.0	

Background Counts Within Peak Regions Generated: 11-DEC-2001 08:19:20.15

Acquisition Start: 26-NOV-2001 15:38:24.01
Live Time: 0 16:40:03.00 Real Time: 0 16:40:03.00

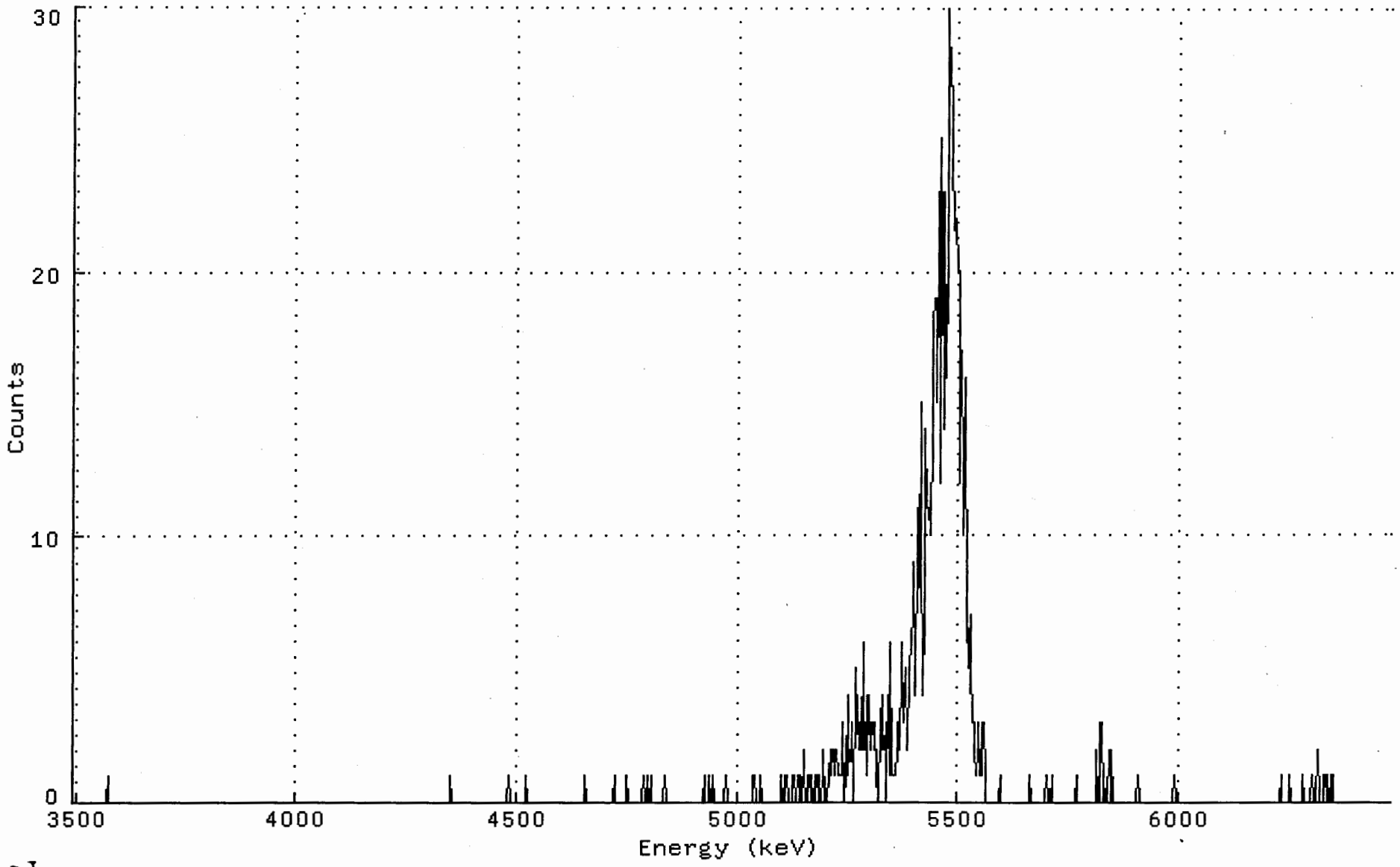
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4875.34	1	0	3.08	462.50	454	18	1.67E-05	100.0	
2	0	5053.98	2	0	12.33	523.50	508	32	3.33E-05	70.7	
3	0	5256.10	1	0	3.08	593.00	573	41	1.67E-05	100.0	
4	0	5482.57	2	0	73.99	671.50	638	68	3.33E-05	70.7	
5	0	5772.53	8	0	92.48	773.00	755	37	1.33E-04	35.4	
6	0	6066.30	10	0	4.53	877.00	850	55	1.67E-04	31.6	

Net Sample Counts Within Peak Regions Generated: 11-DEC-2001 08:19:20.58

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4875.34*	-1	0	0.00	462.50	454	18	-1.67E-05	100.0	
2	0	5056.17*	3	0	0.00	524.25	508	32	1.00E-04	70.7	
3	0	5267.65*	82	0	54.98	596.99	573	41	2.75E-03	11.1	
4	0	5465.67*	730	0	79.44	665.62	638	68	2.43E-02	3.7	
5	0	5813.85*	5	0	0.00	787.56	755	37	1.67E-04	66.3	
6	0	6066.30*	-5	0	0.00	877.00	850	55	-1.67E-04	31.6	

Flag: "*" = Peak area was modified by background subtraction

Spectr : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCH] [.S]S_L4094AM$L4094-9_AM.CNF;1
Title : 040
Sample Title:
Start Time: 10-DEC-2001 11:36 Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.48302E+03
Real Time : 0 08:20:02.00 Sample ID : L4094-9 Energy Slope : 3.08277E+00
Live Time : 0 08:20:02.00 Sample Type: AM Energy Quad : -1.56421E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
11-DEC-2001 08:20:56

Spectral File: ND_AMS_ARCHIVE_S:S_L4094AM$L4094-MBAAM1201_AM.CNF

BATCH ID:	L4094AM	SAMPLE ID:	L4094-MBAAM1201
SAMPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	2.000E+00 gram
SAMPLE TITLE:		DETECTOR NUMBER:	042
ACQ DATE:	10-DEC-2001 11:37	AVERAGE EFFICIENCY:	24.74%
ELAPSED LIVE TIME:	30004.	RECOVERY:	47.33%
TRACER ID:	RAD009-07	TRACER FWHM (kev):	49.36
LAMBDA VALUE:	1000.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	2.220	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	8-SEP-2001 20:43	EFF CAL DATE:	8-SEP-2001 20:43
BKG FILENAME:	B_042_26NOV01	BKG ELAPSED TIME:	60002.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
AM-241	5479.1	3.00	1.00	99.9	1.155E-02	1.646E-02	2.833E-02
CM-242	6091.3	-0.50	7.50	99.0	-2.001E-03	2.621E-02	6.001E-02
AM243	5270.0	129.50	2.50	99.6	5.000E-01	8.914E-02	3.885E-02
CM-244	5795.0	0.00	9.00	100.0	-3.461E-06	2.829E-02	6.408E-02
CM-247	4869.0	-0.50	0.50	71.0	-2.709E-03	5.439E-03	3.249E-02
CM	5070.6	1.50	0.50	91.6	6.296E-03	1.264E-02	2.518E-02

Analyst _____ Date _____

Reviewer _____ Date _____

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 11-DEC-2001 08:20:36.52

Detector ID: 42 Acquisition Start: 10-DEC-2001 11:37:24.01
Live Time: 0 08:20:04.00 Real Time: 0 08:20:04.00
Batch Id: L4094AM Sample Id: L4094-MBAAM1201
Sample Type: AM

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4875.05	0	0	0.00	488.50	480	18	0.00E+00	0.0	
2	0	5092.44	2	0	15.49	563.00	535	32	6.67E-05	70.7	
3	0	5273.65	132	0	49.36	625.61	585	69	4.40E-03	8.7	
4	0	5465.78	4	0	61.97	692.50	672	62	1.33E-04	50.0	
5	0	5781.04	9	0	105.35	803.44	782	38	3.00E-04	33.3	
6	0	6111.28	7	0	52.68	921.29	878	55	2.33E-04	37.8	

Background Counts Within Peak Regions Generated: 11-DEC-2001 08:20:54.64

Acquisition Start: 26-NOV-2001 15:38:31.01
Live Time: 0 16:40:02.00 Real Time: 0 16:40:02.00

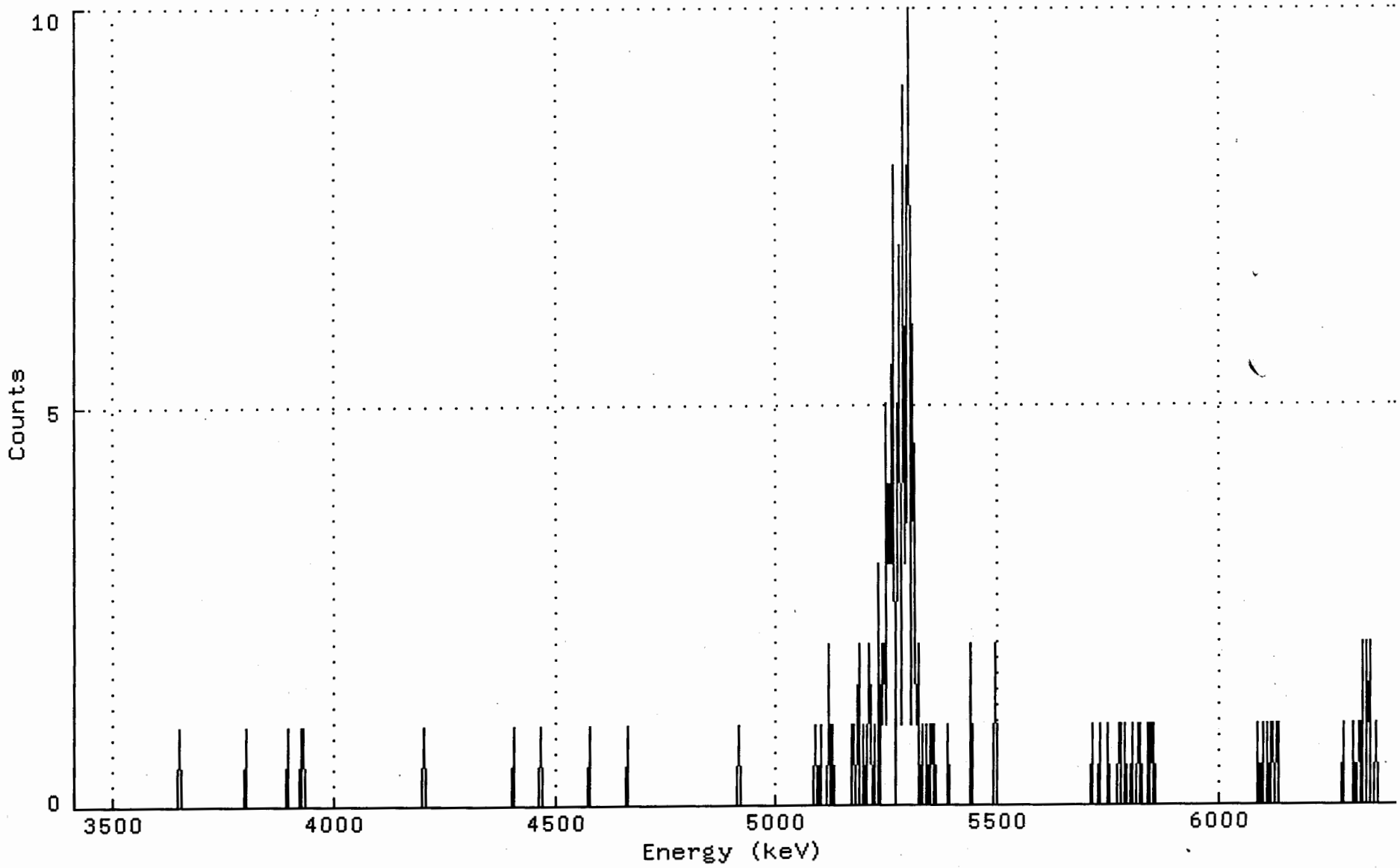
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4875.05	1	0	3.10	488.50	480	18	1.67E-05	100.0	
2	0	5056.09	1	0	3.10	550.50	535	32	1.67E-05	100.0	
3	0	5254.59	5	0	0.00	619.00	585	69	8.33E-05	44.7	
4	0	5494.37	2	0	43.38	702.50	672	62	3.33E-05	70.7	
5	0	5772.73	18	0	45.61	800.50	782	38	3.00E-04	23.6	
6	0	6065.92	15	0	3.10	905.00	878	55	2.50E-04	25.8	

Net Sample Counts Within Peak Regions Generated: 11-DEC-2001 08:20:55.03

Pk		Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4875.05*	-1	0	0.00	488.50	480	18	-1.67E-05	100.0	
2	0	5092.44*	1	0	15.49	563.00	535	32	5.00E-05	100.0	
3	0	5273.65*	129	0	49.36	625.61	585	69	4.32E-03	8.9	
4	0	5465.78*	3	0	61.97	692.50	672	62	1.00E-04	70.7	
5	0	5781.04*	0	0	105.35	803.44	782	38	-3.00E-08	*****	
6	0	6111.28*	-1	0	52.68	921.29	878	55	-1.67E-05	654.8	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV S]S_L4094AM$L4094-MBAAM1201_AM.CNF;1
Title : 042
Sample Title:
Start Time: 10-DEC-2001 11:37 Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.40236E+03
Real Time : 0 08:20:04.00 Sample ID : L4094-MBAAM1201 Energy Slope : 3.09862E+00
Live Time : 0 08:20:04.00 Sample Type: AM Energy Quad : -1.71778E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
11-DEC-2001 07:52:51

Spectral File: ND_AMS_ARCHIVE_C:C_L4094AM$L4094-LCAAM1201_AM.CNF

BATCH ID:	L4094AM	SAMPLE ID:	L4094-LCAAM1201
SAMPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	1.000E+00 gram
SAMPLE TITLE:		DETECTOR NUMBER:	043
ACQ DATE:	10-DEC-2001 11:37	AVERAGE EFFICIENCY:	23.93%
ELAPSED LIVE TIME:	30002.	RECOVERY:	54.98%
TRACER ID:	RAD009-07	TRACER FWHM (kev):	29.81
LAMBDA VALUE:	1000.	ROI TYPE:	MANUAL
TRACER DPM AT SAMPLE DATE:	2.220	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	9-SEP-2001 11:41	EFF CAL DATE:	9-SEP-2001 11:41
BKG FILENAME:	B_043_26NOV01	BKG ELAPSED TIME:	60003.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
AM-241	5479.1	163.00	2.00	99.9	1.117E+00	2.569E-01	6.362E-02
CM-242	6091.3	-4.50	5.50	99.0	-3.202E-02	2.807E-02	9.416E-02
AM243	5270.0	145.50	1.50	99.6	1.000E+00	1.671E-01	5.777E-02
CM-244	5795.0	2.50	3.50	100.0	1.713E-02	3.825E-02	7.812E-02
CM-247	4869.0	0.00	0.00	71.0	0.000E+00	0.000E+00	2.613E-02
CM-[illegible]	5070.6	1.50	0.50	91.6	1.121E-02	2.249E-02	4.481E-02

Analyst _____ Date _____

Reviewer _____ Date _____

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 11-DEC-2001 07:52:41.30

Detector ID: 43 Acquisition Start: 10-DEC-2001 11:37:38.01
Live Time: 0 08:20:02.00 Real Time: 0 08:20:02.00
Batch Id: L4094AM Sample Id: L4094-LCAAM1201
Sample Type: AM

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4875.74	0	0	0.00	477.50	469	18	0.00E+00	0.0	
2	0	5019.82	2	0	0.00	526.00	523	31	6.67E-05	70.7	
3	0	5296.98	147	0	29.81	620.03	597	43	4.90E-03	8.2	
4	0	5506.04	165	0	74.03	691.61	658	60	5.50E-03	7.8	
5	0	5778.71	6	0	0.00	785.83	765	38	2.00E-04	40.8	
6	0	6105.26	1	0	3.13	900.00	860	54	3.33E-05	100.0	

Background Counts Within Peak Regions Generated: 11-DEC-2001 07:52:48.42

Acquisition Start: 26-NOV-2001 15:38:34.01
Live Time: 0 16:40:03.00 Real Time: 0 16:40:03.00

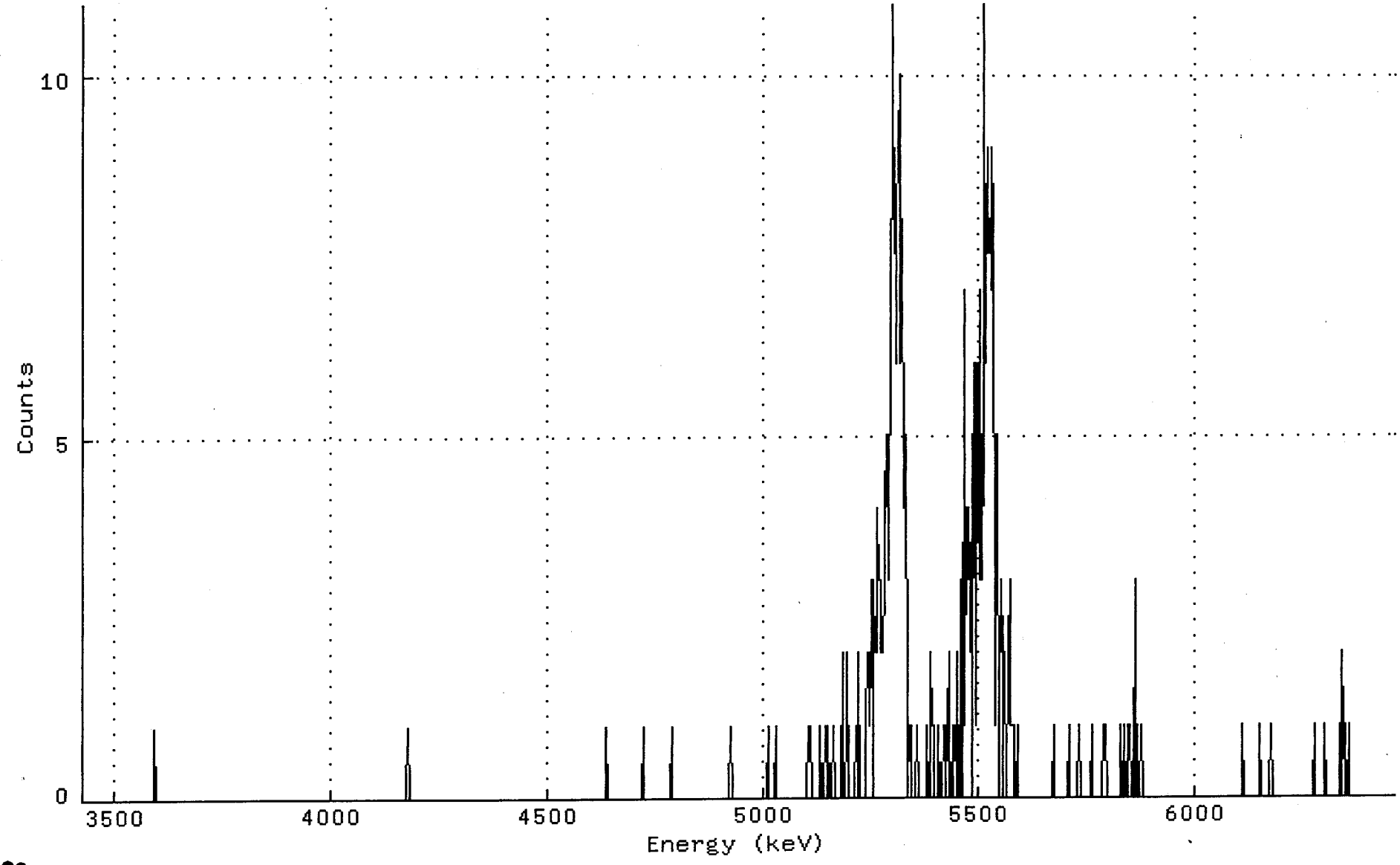
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4875.74	0	0	0.00	477.50	469	18	0.00E+00	0.0	
2	0	5055.34	1	0	3.13	538.00	523	31	1.67E-05	100.0	
3	0	5291.02	3	0	25.06	618.00	597	43	5.00E-05	57.7	
4	0	5494.08	4	0	72.05	687.50	658	60	6.67E-05	50.0	
5	0	5772.00	7	0	3.13	783.50	765	38	1.17E-04	37.8	
6	0	6066.87	11	0	40.73	886.50	860	54	1.83E-04	30.2	

Net Sample Counts Within Peak Regions Generated: 11-DEC-2001 07:52:48.93

Pk		Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4875.74*	0	0	0.00	477.50	469	18	0.00E+00	0.0	
2	0	5019.82*	1	0	0.00	526.00	523	31	5.00E-05	100.0	
3	0	5296.98*	145	0	29.81	620.03	597	43	4.85E-03	8.4	
4	0	5506.04*	163	0	74.03	691.61	658	60	5.43E-03	7.9	
5	0	5778.71*	2	0	0.00	785.83	765	38	8.33E-05	111.4	
6	0	6105.26*	-5	0	3.13	900.00	860	54	-1.50E-04	43.0	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV C]C_L4094AM$L4094-LCAAM1201_AM.CNF;1
Title : 043
Sample Title:
Start Time: 10-DEC-2001 11:37 Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.41670E+03
Real Time : 0 08:20:02.00 Sample ID : L4094-LCAAM1201 Energy Slope : 3.13278E+00
Live Time : 0 08:20:02.00 Sample Type: AM Energy Quad : -1.61659E-04



QA-CHECKB		AM241	14-Dec-2001 11:19	pCi/g	

	Standard Known Value	LCS Sample Value	LCS Recovery
LCAAM1211	1.0	1.139	114% 3
	1.0		0%
			#DIV/0!
			#DIV/0!
			#DIV/0!

Sample Activity	Spiked Sample Activity	Standard Value	Sample Volume	Spike Value	SPIKE RECOVERY
0.0		1.000	0.0000	#DIV/0!	#DIV/0!
0.0		1.000	0.0000	#DIV/0!	#DIV/0!
					#DIV/0!

L4094-001

Sample Activity	Duplicate Activity	Sample ERROR	Duplicate ERROR	Duplicate RER
6.89	6.43	0.83	0.77	0.4 1
				#DIV/0!
				#DIV/0!
				#DIV/0!

2 MBAAM1211 = 0.0 MDA 0.1 WORK GROUP # WG11836

RUN ID# R14674

Reviewed by LPM

Date 12-17-01

ETL Enviro-Test LABORATORIES

Sample Digestion Logbook

SOP ETL - RSOP- 0003

Analysis Im Rerun Analyst PJ Date 12-11-01 Reviewed By

Sample ID	Analyzed Volume g	Sample Volume Digested	Dilution Volume ml/l	Digestate Volume Used (ml)	Sample Matrix	Comments
L4094-1	0.5g	1.0g	100ml	50ml	Solid	Rerun
1 MD 1	1	1	1	1	1	1
1 2						
MBAAm1211	0.5g	NA	NA	NA	QC	
LCAAm1211	1.0L	1	1	1	1	

12-11-01
PJ

Spike	Trace	Nuclide	Isotope Number	Expiration Date	Activity pCi/ml	Vol Ml	Standard Control	Spiked By	Witness
✓		Am241	101.04	8-8-02	1.0	1ml	LCAAm1211	PJ	✓
	✓	Am243	009-07	8-8-02	1.0	1ml	all samples	1	1

12-11-01 PJ

FORM DIGESTLG-1, REV. 0 Effective 09-25-00 Book Number 01134 Page Number 86

000099

ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
17-DEC-2001 08:55:07

****

Spectral File: ND_AMS_ARCHIVE_S:S_L4094AMR$L4094-1_AM.CNF

****

BATCH ID:	L4094AMR	SAMPLE ID:	L4094-1
SAMPLE DATE:	12-DEC-2001 00:00	ALIQUOT:	5.000E-01 gram
SAMPLE TITLE:		DETECTOR NUMBER:	029
ACQ DATE:	14-DEC-2001 11:19	AVERAGE EFFICIENCY:	25.68%
ELAPSED LIVE TIME:	60001.	RECOVERY:	64.79%
TRACER ID:	RAD009-07	TRACER FWHM (kev):	65.19
LAMBDA VALUE:	1000.	ROI TYPE:	MANUAL
TRACER DPM AT SAMPLE DATE:	2.220	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	29-AUG-2001 15:49	EFF CAL DATE:	29-AUG-2001 15:49
BKG FILENAME:	B_029_26NOV01	BKG ELAPSED TIME:	60002.

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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
AM-241	5479.1	1272.00	8.00	99.9	6.891E+00	8.305E-01	8.593E-02
CM-242	6091.3	1.00	6.00	99.0	5.535E-03	3.992E-02	7.711E-02
AM243	5270.0	368.00	8.00	99.6	2.000E+00	2.130E-01	8.621E-02
CM-244	5795.0	-7.00	18.00	100.0	-3.791E-02	5.847E-02	1.215E-01
CM-247	4869.0	1.00	1.00	71.0	7.626E-03	2.643E-02	5.612E-02
CM-	5070.6	17.00	0.00	91.6	1.004E-01	4.988E-02	1.601E-02

****

Analyst _____ Date 12-17-01

Reviewer _____ Date _____

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 17-DEC-2001 08:55:02.40

De[illegible]or ID: 29 Acquisition Start: 14-DEC-2001 11:19:51.01
Li[illegible]ime: 0 16:40:01.00 Real Time: 0 16:40:01.00
Batch Id: L4094AMR Sample Id: L4094-1
Sample Type: AM

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4871.05	2	0	20.36	483.00	475	20	3.33E-05	70.7	
2	0	5080.28	17	0	0.00	559.41	534	34	2.83E-04	24.3	
3	0	5269.38	376	0	65.19	629.08	604	51	6.27E-03	5.2	
4	0	5473.38	1280	0	60.38	704.90	672	74	2.13E-02	2.8	
5	0	5800.06	11	0	23.24	827.82	798	40	1.83E-04	30.2	
6	0	6071.23	7	0	2.91	931.29	901	58	1.17E-04	37.8	

Background Counts Within Peak Regions Generated: 17-DEC-2001 08:55:04.85

Acquisition Start: 26-NOV-2001 15:37:48.01
Live Time: 0 16:40:02.00 Real Time: 0 16:40:02.00

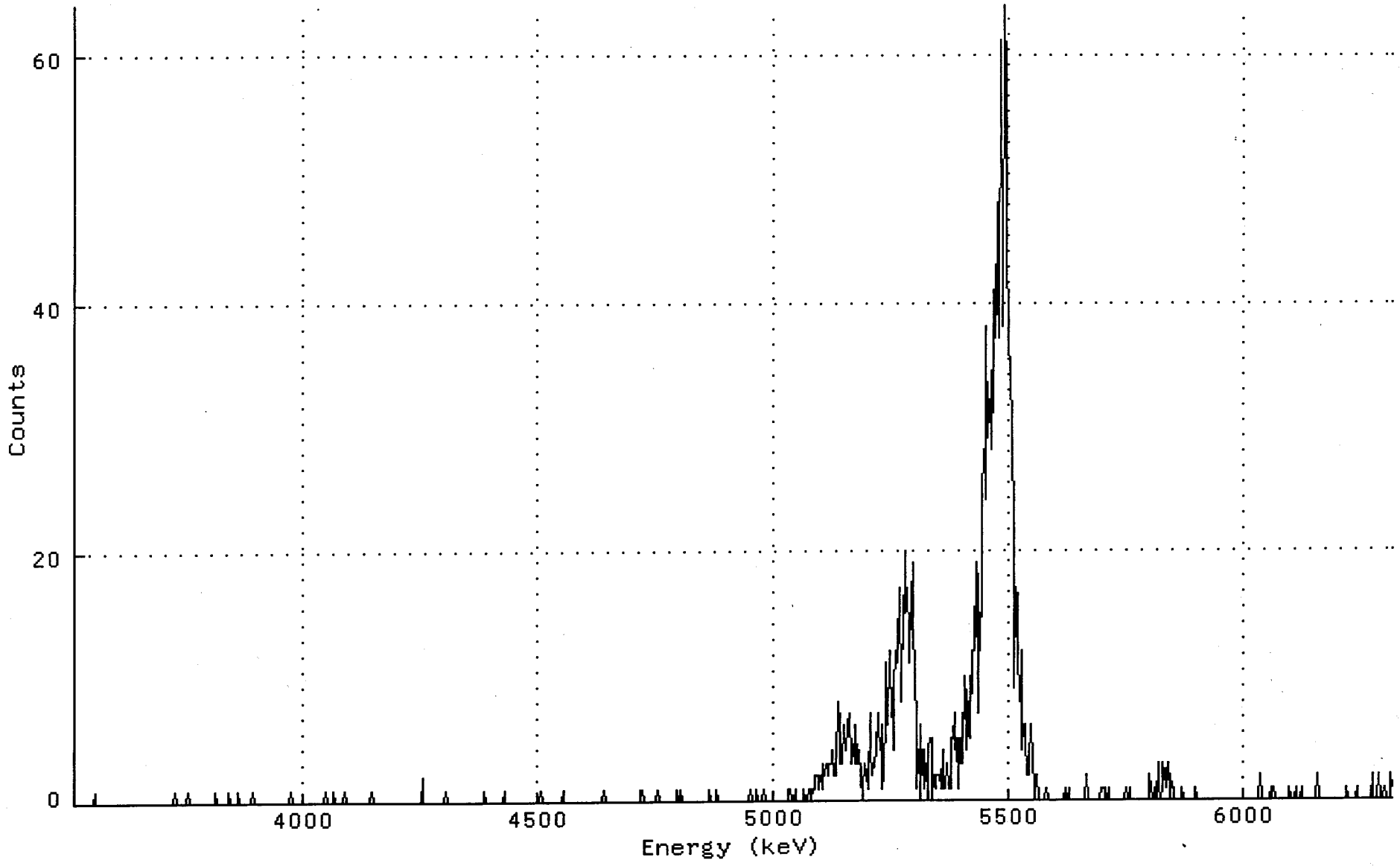
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4875.18	1	0	2.91	484.50	475	20	1.67E-05	100.0	
2	0	5055.98	0	0	0.00	550.50	534	34	0.00E+00	0.0	
3	0	5269.16	8	0	136.72	629.00	604	51	1.33E-04	35.4	
4	0	5483.00	8	0	4.27	708.50	672	74	1.33E-04	35.4	
5	0	5772.83	18	0	0.00	817.50	798	40	3.00E-04	23.6	
6	0	6066.57	6	0	122.18	929.50	901	58	1.00E-04	40.8	

Net Sample Counts Within Peak Regions Generated: 17-DEC-2001 08:55:05.46

Pk		Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4871.05*	1	0	20.36	483.00	475	20	1.67E-05	173.2	
2	0	5080.28*	17	0	0.00	559.41	534	34	2.83E-04	24.3	
3	0	5269.38*	368	0	65.19	629.08	604	51	6.13E-03	5.3	
4	0	5473.38*	1272	0	60.38	704.90	672	74	2.12E-02	2.8	
5	0	5800.06*	-7	0	23.24	827.82	798	40	-1.17E-04	76.9	
6	0	6071.23*	1	0	2.91	931.29	901	58	1.67E-05	360.5	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV S]S_L4094AMR$L4094-1_AM.CNF;1
Title : 029
Sample Title:
Start Time: 14-DEC-2001 11:19 Sample Time: 12-DEC-2001 00:00 Energy Offset: 3.50422E+03
Real Time : 0 16:40:01.00 Sample ID : L4094-1 Energy Slope : 2.90903E+00
Live Time : 0 16:40:01.00 Sample Type: AM Energy Quad : -1.63879E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
17-DEC-2001 08:52:53

Spectral File: ND_AMS_ARCHIVE_S:S_L4094AMR$L4094-1MDRR_AM.CNF

BATCH ID:	L4094AMR	SAMPLE ID:	L4094-1MDRR
SAMPLE DATE:	12-DEC-2001 00:00	ALIQUOT:	5.000E-01 gram
SAMPLE TITLE:		DETECTOR NUMBER:	030
ACQ DATE:	14-DEC-2001 11:20	AVERAGE EFFICIENCY:	26.52%
ELAPSED LIVE TIME:	60004.	RECOVERY:	63.26%
TRACER ID:	RAD009-07	TRACER FWHM (kev):	53.80
LAMBDA VALUE:	1000.	ROI TYPE:	MANUAL
TRACER DPM AT SAMPLE DATE:	2.220	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-AUG-2001 08:26	EFF CAL DATE:	30-AUG-2001 08:26
BKG FILENAME:	B_030_26NOV01	BKG ELAPSED TIME:	60005.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
AM-241	5479.1	1196.00	4.00	99.9	6.427E+00	7.692E-01	6.454E-02
CM-242	6091.3	-8.00	14.00	99.0	-4.392E-02	4.932E-02	1.091E-01
AM243	5270.0	371.00	3.00	99.6	2.000E+00	2.093E-01	5.803E-02
CM-244	5795.0	0.00	15.00	100.0	1.342E-06	5.885E-02	1.113E-01
CM-247	4869.0	5.00	0.00	71.0	3.782E-02	3.406E-02	2.050E-02
CM-	5070.6	16.00	1.00	91.6	9.376E-02	5.068E-02	4.313E-02

Analyst _____ Date 12-17-01

Reviewer _____ Date _____

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 17-DEC-2001 08:52:50.58

De* or ID: 30 Acquisition Start: 14-DEC-2001 11:20:07.01
Li ime: 0 16:40:04.00 Real Time: 0 16:40:04.00
Batch Id: L4094AMR Sample Id: L4094-1MDRR
Sample Type: AM

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4879.19	5	0	0.00	461.00	451	18	8.33E-05	44.7	
2	0	5075.32	17	0	0.00	530.35	507	33	2.83E-04	24.3	
3	0	5260.97	374	0	53.80	596.53	570	52	6.23E-03	5.2	
4	0	5471.34	1200	0	54.68	672.17	643	62	2.00E-02	2.9	
5	0	5784.13	15	0	0.00	785.93	762	40	2.50E-04	25.8	
6	0	6070.47	6	0	110.83	891.50	862	57	1.00E-04	40.8	

Background Counts Within Peak Regions Generated: 17-DEC-2001 08:52:51.74

Acquisition Start: 26-NOV-2001 15:37:51.01
Live Time: 0 16:40:05.00 Real Time: 0 16:40:05.00

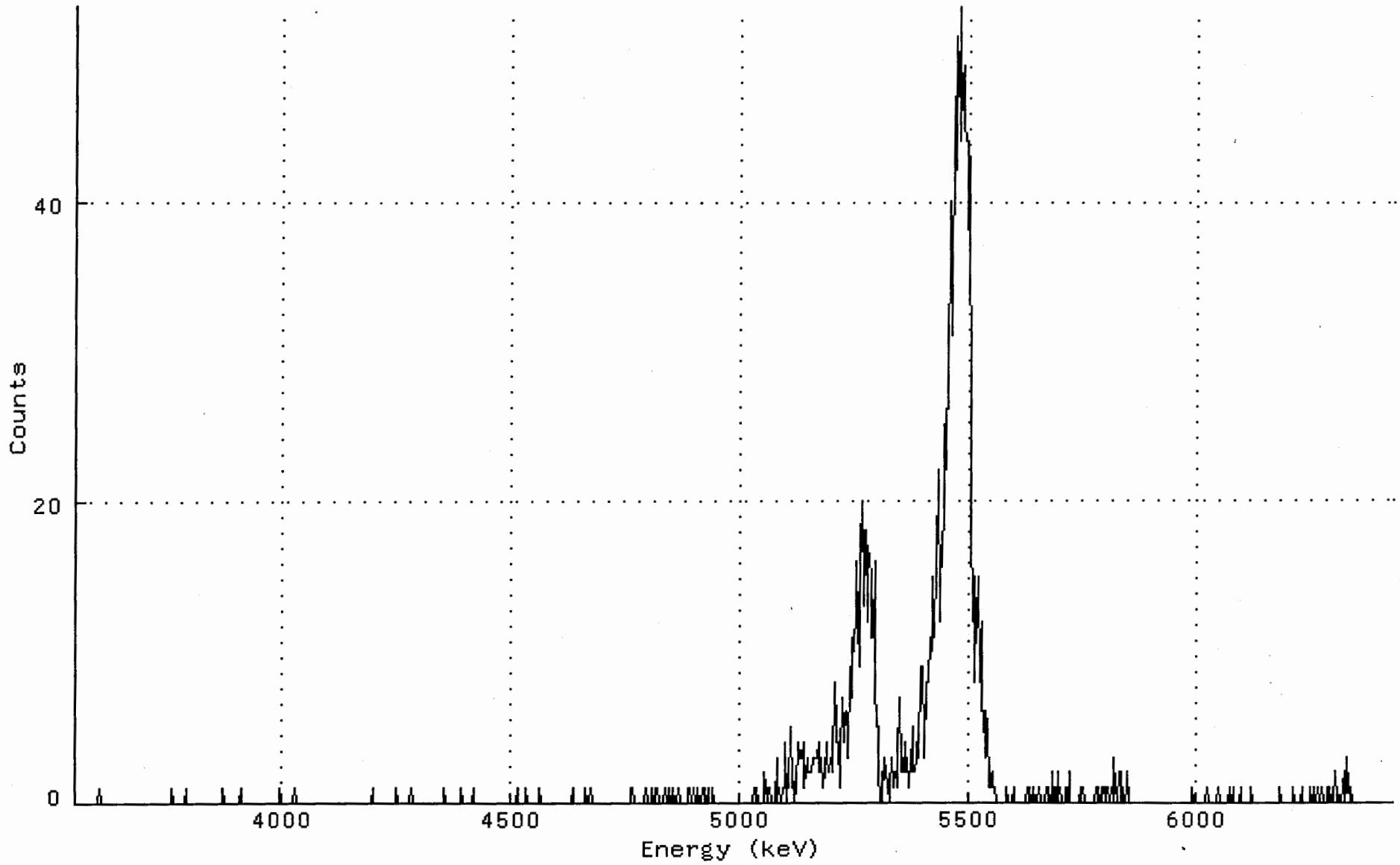
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4874.92	0	0	0.00	459.50	451	18	0.00E+00	0.0	
2	0	5054.60	1	0	3.00	523.00	507	33	1.67E-05	100.0	
3	0	5258.09	3	0	71.89	595.50	570	52	5.00E-05	57.7	
4	0	5475.03	4	0	77.88	673.50	643	62	6.67E-05	50.0	
5	0	5772.02	15	0	14.98	781.50	762	40	2.50E-04	25.8	
6	0	6066.43	14	0	119.81	890.00	862	57	2.33E-04	26.7	

Net Sample Counts Within Peak Regions Generated: 17-DEC-2001 08:52:52.17

Pk		Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4879.19*	5	0	0.00	461.00	451	18	8.33E-05	44.7	
2	0	5075.32*	16	0	0.00	530.35	507	33	2.67E-04	26.5	
3	0	5260.97*	371	0	53.80	596.53	570	52	6.18E-03	5.2	
4	0	5471.34*	1196	0	54.68	672.17	643	62	1.99E-02	2.9	
5	0	5784.13*	0	0	0.00	785.93	762	40	4.16E-09	*****	
6	0	6070.47*	-8	0	110.83	891.50	862	57	-1.33E-04	55.9	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV~ S]S_L4094AMR$L4094-1MDRR_AM.CNF;1
Title : 030
Sample Title:
Start Time: 14-DEC-2001 11:20 Sample Time: 12-DEC-2001 00:00 Energy Offset: 3.53419E+03
Real Time : 0 16:40:04.00 Sample ID : L4094-1MDRR Energy Slope : 2.99530E+00
Live Time : 0 16:40:04.00 Sample Type: AM Energy Quad : -1.68642E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
17-DEC-2001 08:55:35

Spectral File: ND_AMS_ARCHIVE_S:S_L4094AMR$L4094-2RR_AM.CNF

BATCH ID:	L4094AMR	SAMPLE ID:	L4094-2RR
SAMPLE DATE:	12-DEC-2001 00:00	ALIQUOT:	5.000E-01 gram
SAMPLE TITLE:		DETECTOR NUMBER:	031
ACQ DATE:	14-DEC-2001 11:20	AVERAGE EFFICIENCY:	26.39%
ELAPSED LIVE TIME:	60001.	RECOVERY:	68.71%
TRACER ID:	RAD009-07	TRACER FWHM (kev):	62.73
LAMBDA VALUE:	1000.	ROI TYPE:	MANUAL
TRACER DPM AT SAMPLE DATE:	2.220	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-AUG-2001 15:41	EFF CAL DATE:	30-AUG-2001 15:41
BKG FILENAME:	B_031_26NOV01	BKG ELAPSED TIME:	60002.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
AM-241	5479.1	950.00	2.00	99.9	4.723E+00	5.639E-01	4.617E-02
CM-242	6091.3	3.00	1.00	99.0	1.524E-02	2.277E-02	3.694E-02
AM243	5270.0	401.00	1.00	99.6	2.000E+00	2.002E-01	3.671E-02
CM-244	5795.0	-1.00	9.00	100.0	-4.969E-03	4.099E-02	8.278E-02
CM-247	4869.0	-1.00	1.00	71.0	-6.998E-03	1.401E-02	5.150E-02
CM	5070.6	6.00	2.00	91.6	3.253E-02	3.444E-02	5.035E-02

Analyst _____ Date 12-17-01

Reviewer _____ Date _____

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 17-DEC-2001 08:55:31.96

Det r ID: 31 Acquisition Start: 14-DEC-2001 11:20:20.01
Live Time: 0 16:40:01.00 Real Time: 0 16:40:01.00
Batch Id: L4094AMR Sample Id: L4094-2RR
Sample Type: AM

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4875.15	0	0	0.00	466.50	458	18	0.00E+00	0.0	
2	0	5056.37	8	0	0.00	527.63	512	31	1.33E-04	35.4	
3	0	5270.38	402	0	62.73	600.39	572	57	6.70E-03	5.0	
4	0	5476.90	952	0	68.69	671.20	641	67	1.59E-02	3.2	
5	0	5778.56	8	0	3.14	775.75	755	38	1.33E-04	35.4	
6	0	6084.74	4	0	53.36	883.25	850	54	6.67E-05	50.0	

Background Counts Within Peak Regions Generated: 17-DEC-2001 08:55:33.46

Acquisition Start: 26-NOV-2001 15:37:54.01
Live Time: 0 16:40:02.00 Real Time: 0 16:40:02.00

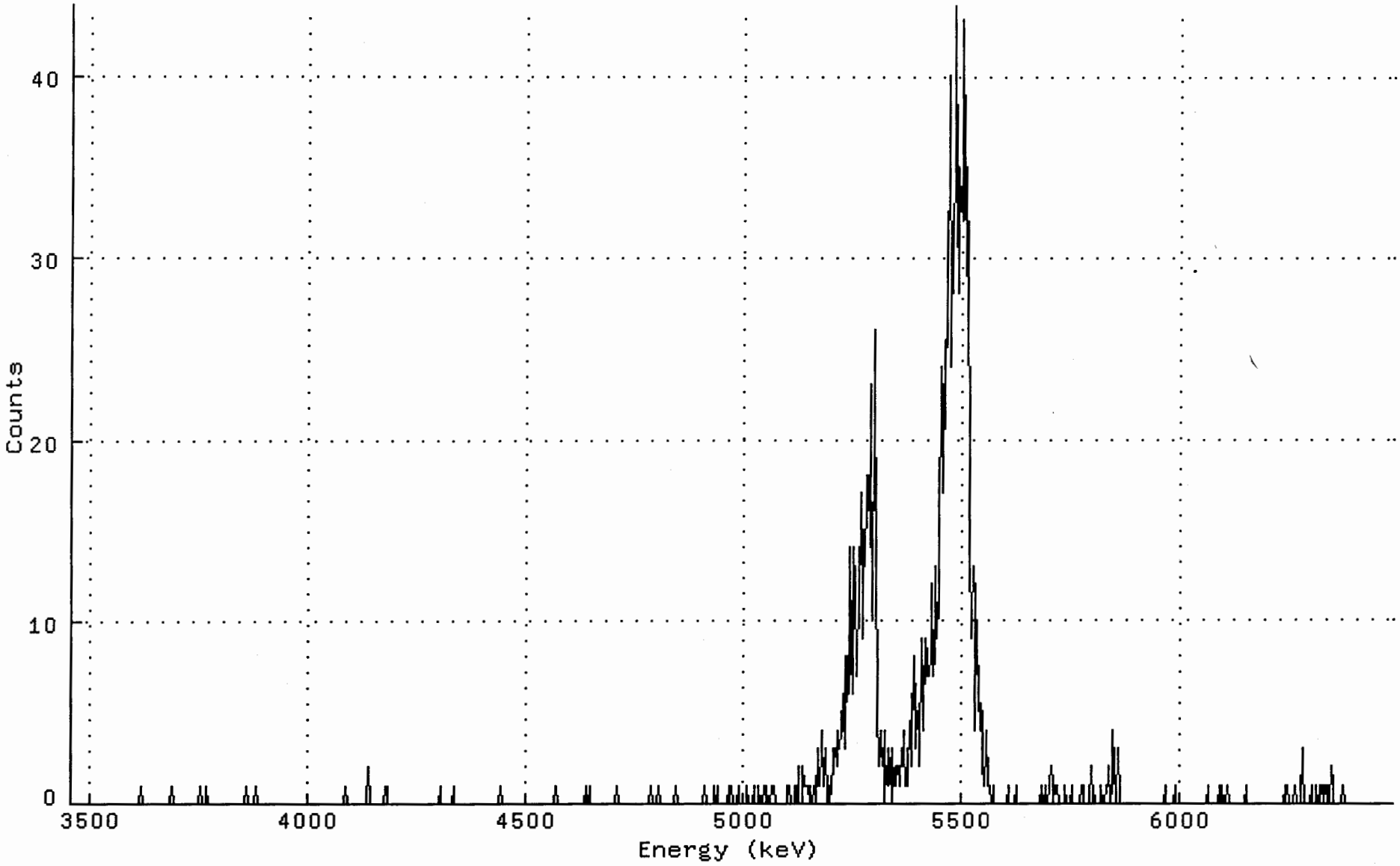
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4875.15	1	0	3.14	466.50	458	18	1.67E-05	100.0	
2	0	5054.52	2	0	0.00	527.00	512	31	3.33E-05	70.7	
3	0	5269.25	1	0	3.14	600.00	572	57	1.67E-05	100.0	
4	0	5485.02	2	0	31.39	674.00	641	67	3.33E-05	70.7	
5	0	5772.10	9	0	3.14	773.50	755	38	1.50E-04	33.3	
6	0	6065.64	1	0	3.14	876.50	850	54	1.67E-05	100.0	

Net Sample Counts Within Peak Regions Generated: 17-DEC-2001 08:55:33.82

Pk		Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4875.15*	-1	0	0.00	466.50	458	18	-1.67E-05	100.0	
2	0	5056.37*	6	0	0.00	527.63	512	31	1.00E-04	52.7	
3	0	5270.38*	401	0	62.73	600.39	572	57	6.68E-03	5.0	
4	0	5476.90*	950	0	68.69	671.20	641	67	1.58E-02	3.3	
5	0	5778.56*	-1	0	3.14	775.75	755	38	-1.67E-05	412.4	
6	0	6084.74*	3	0	53.36	883.25	850	54	5.00E-05	74.5	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV S]S_L4094AMR$L4094-2RR_AM.CNF;1
Title : 031
Sample Title:
Start Time: 14-DEC-2001 11:20 Sample Time: 12-DEC-2001 00:00 Energy Offset: 3.44894E+03
Real Time : 0 16:40:01.00 Sample ID : L4094-2RR Energy Slope : 3.13901E+00
Live Time : 0 16:40:01.00 Sample Type: AM Energy Quad : -1.75261E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
17-DEC-2001 08:56:57

Spectral File: ND_AMS_ARCHIVE_S:S_L4094AMR$L4094-MBAAM1211_AM.CNF

BATCH ID:	L4094AMR	SAMPLE ID:	L4094-MBAAM1211
SAMPLE DATE:	12-DEC-2001 00:00	ALIQUOT:	5.000E-01 gram
SAMPLE TITLE:		DETECTOR NUMBER:	032
ACQ DATE:	14-DEC-2001 11:20	AVERAGE EFFICIENCY:	24.45%
ELAPSED LIVE TIME:	60004.	RECOVERY:	64.72%
TRACER ID:	RAD009-07	TRACER FWHM (kev):	33.91
LAMBDA VALUE:	1000.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	2.220	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	31-AUG-2001 11:09	EFF CAL DATE:	31-AUG-2001 11:09
BKG FILENAME:	B_032_26NOV01	BKG ELAPSED TIME:	60007.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
AM-241	5479.1	5.00	0.00	99.9	2.848E-02	2.566E-02	1.544E-02
CM-242	6091.3	-2.00	8.00	99.0	-1.164E-02	4.357E-02	9.121E-02
AM243	5270.0	350.00	4.00	99.6	2.000E+00	2.162E-01	6.863E-02
CM-244	5795.0	4.00	12.00	100.0	2.278E-02	6.031E-02	1.071E-01
CM-247	4869.0	0.00	1.00	71.0	4.014E-07	2.268E-02	5.901E-02
CM-	5070.6	2.00	1.00	91.6	1.242E-02	2.488E-02	4.572E-02

D7 _____ 12-17-01
Analyst Date

_____ _____
Reviewer Date

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 17-DEC-2001 08:56:49.93

De[illegible]or ID: 32 Acquisition Start: 14-DEC-2001 11:20:37.01
Li[illegible] Time: 0 16:40:04.00 Real Time: 0 16:40:04.00
Batch Id: L4094AMR Sample Id: L4094-MBAAM1211
Sample Type: AM

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4892.10	1	0	3.08	473.00	459	18	1.67E-05	100.0	
2	0	5060.77	3	0	52.41	530.67	513	32	5.00E-05	57.7	
3	0	5267.12	354	0	33.91	601.71	563	69	5.90E-03	5.3	
4	0	5498.99	5	0	110.99	682.20	651	60	8.33E-05	44.7	
5	0	5783.46	16	0	0.00	781.94	760	37	2.67E-04	25.0	
6	0	6092.35	6	0	3.08	891.50	855	55	1.00E-04	40.8	

Background Counts Within Peak Regions Generated: 17-DEC-2001 08:56:55.16

Acquisition Start: 26-NOV-2001 15:37:58.01
Live Time: 0 16:40:07.00 Real Time: 0 16:40:07.00

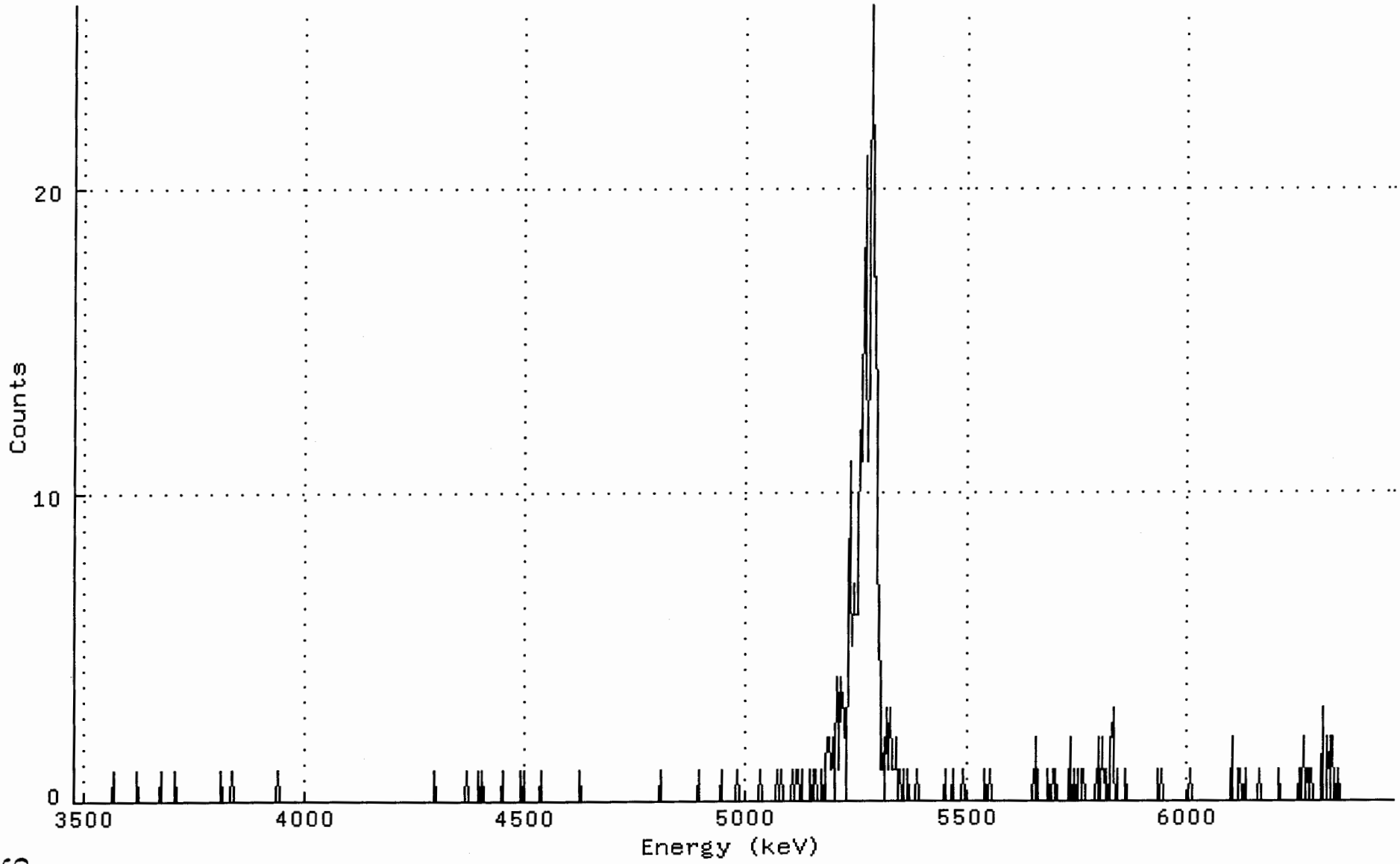
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4875.96	1	0	3.08	467.50	459	18	1.67E-05	100.0	
2	0	5054.45	1	0	3.08	528.50	513	32	1.67E-05	100.0	
3	0	5253.49	4	0	172.66	597.00	563	69	6.67E-05	50.0	
4	0	5494.11	0	0	0.00	680.50	651	60	0.00E+00	0.0	
5	0	5772.29	12	0	0.00	778.00	760	37	2.00E-04	28.9	
6	0	6065.72	8	0	0.00	882.00	855	55	1.33E-04	35.4	

Net Sample Counts Within Peak Regions Generated: 17-DEC-2001 08:56:55.63

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4892.10*	0	0	3.08	473.00	459	18	8.34E-10	*****	
2	0	5060.77*	2	0	52.41	530.67	513	32	3.33E-05	100.0	
3	0	5267.12*	350	0	33.91	601.71	563	69	5.83E-03	5.4	
4	0	5498.99*	5	0	110.99	682.20	651	60	8.33E-05	44.7	
5	0	5783.46*	4	0	0.00	781.94	760	37	6.67E-05	132.3	
6	0	6092.35*	-2	0	3.08	891.50	855	55	-3.33E-05	187.1	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHI S]S_L4094AMR$L4094-MBAAM1211_AM.CNF;1
Title : 032
Sample Title:
Start Time: 14-DEC-2001 11:20 Sample Time: 12-DEC-2001 00:00 Energy Offset: 3.46905E+03
Real Time : 0 16:40:04.00 Sample ID : L4094-MBAAM1211 Energy Slope : 3.08313E+00
Live Time : 0 16:40:04.00 Sample Type: AM Energy Quad : -1.57675E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
17-DEC-2001 08:50:28

Spectral File: ND_AMS_ARCHIVE_C:C_L4094AMR$L4094-LCAAM1211_AM.CNF

BATCH ID:	L4094AMR	SAMPLE ID:	L4094-LCAAM1211
SAMPLE DATE:	12-DEC-2001 00:00	ALIQUOT:	1.000E+00 gram
SAMPLE TITLE:		DETECTOR NUMBER:	033
ACQ DATE:	14-DEC-2001 11:20	AVERAGE EFFICIENCY:	26.22%
ELAPSED LIVE TIME:	60002.	RECOVERY:	58.12%
TRACER ID:	RAD009-07	TRACER FWHM (kev):	43.34
LAMBDA VALUE:	1000.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	2.220	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	31-AUG-2001 18:22	EFF CAL DATE:	31-AUG-2001 18:22
BKG FILENAME:	B_033_26NOV01	BKG ELAPSED TIME:	60003.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
AM-241	5479.1	385.00	8.00	99.9	1.139E+00	1.731E-01	4.692E-02
CM-242	6091.3	-3.00	6.00	99.0	-9.066E-03	1.816E-02	4.210E-02
AM243	5270.0	337.00	6.00	99.6	1.000E+00	1.109E-01	4.184E-02
CM-244	5795.0	3.00	12.00	100.0	8.871E-03	3.074E-02	5.563E-02
CM-247	4869.0	0.00	1.00	71.0	6.924E-08	1.178E-02	3.064E-02
CM	5070.6	0.00	3.00	91.6	1.607E-07	1.580E-02	3.472E-02

Analyst _____ Date 12-17-01

Reviewer _____ Date _____

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 17-DEC-2001 08:50:12.88

Detector ID: 33 Acquisition Start: 14-DEC-2001 11:20:51.01
Live Time: 0 16:40:02.00 Real Time: 0 16:40:02.00
Batch Id: L4094AMR Sample Id: L4094-LCAAM1211
Sample Type: AM

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4888.36	1	0	3.07	481.00	468	18	1.67E-05	100.0	
2	0	5051.21	3	0	0.00	537.00	523	32	5.00E-05	57.7	
3	0	5275.65	343	0	43.34	614.74	573	69	5.72E-03	5.4	
4	0	5485.52	393	0	44.73	688.04	661	61	6.55E-03	5.0	
5	0	5799.66	15	0	4.04	798.87	771	38	2.50E-04	25.8	
6	0	6044.84	3	0	101.25	886.33	867	55	5.00E-05	57.7	

Background Counts Within Peak Regions Generated: 17-DEC-2001 08:50:25.84

Acquisition Start: 26-NOV-2001 15:38:01.01
Live Time: 0 16:40:03.00 Real Time: 0 16:40:04.00

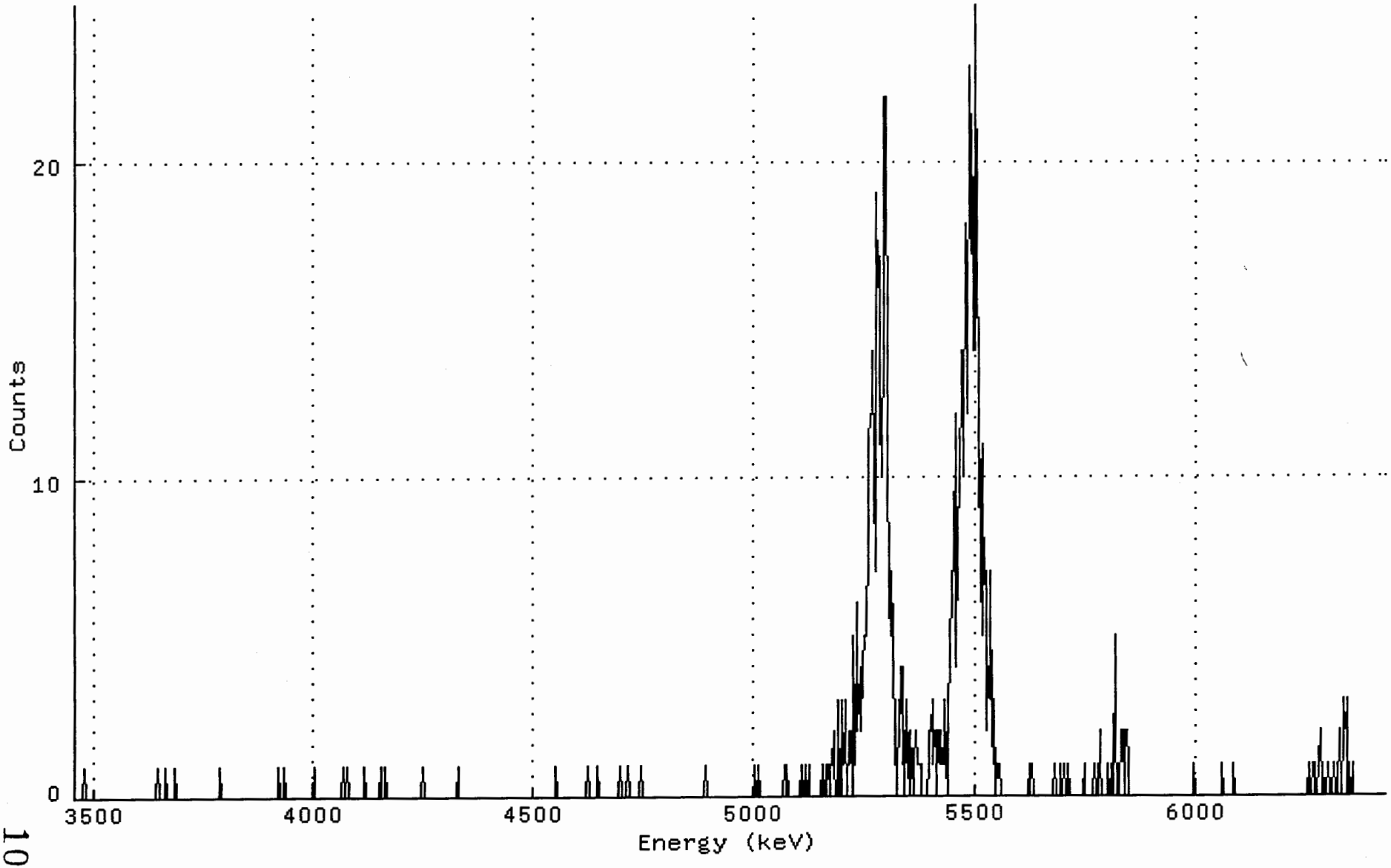
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4875.23	1	0	3.07	476.50	468	18	1.67E-05	100.0	
2	0	5055.56	3	0	21.48	538.50	523	32	5.00E-05	57.7	
3	0	5253.39	6	0	184.09	607.00	573	69	1.00E-04	40.8	
4	0	5493.97	8	0	0.00	691.00	661	61	1.33E-04	35.4	
5	0	5773.26	12	0	8.82	789.50	771	38	2.00E-04	28.9	
6	0	6066.22	6	0	0.00	894.00	867	55	1.00E-04	40.8	

Net Sample Counts Within Peak Regions Generated: 17-DEC-2001 08:50:26.35

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4888.36*	0	0	3.07	481.00	468	18	2.77E-10	*****	
2	0	5051.21*	0	0	0.00	537.00	523	32	8.30E-10	*****	
3	0	5275.65*	337	0	43.34	614.74	573	69	5.62E-03	5.5	
4	0	5485.52*	385	0	44.73	688.04	661	61	6.42E-03	5.2	
5	0	5799.66*	3	0	4.04	798.87	771	38	5.00E-05	173.2	
6	0	6044.84*	-3	0	101.25	886.33	867	55	-5.00E-05	100.0	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV C]C_L4094AMR$L4094-LCAAM1211_AM.CNF;1
Title : 033
Sample Title:
Start Time: 14-DEC-2001 11:20 Sample Time: 12-DEC-2001 00:00 Energy Offset: 3.44894E+03
Real Time : 0 16:40:02.00 Sample ID : L4094-LCAAM1211 Energy Slope : 3.06818E+00
Live Time : 0 16:40:02.00 Sample Type: AM Energy Quad : -1.57249E-04



QA-CHECKB		AM241	14-Dec-2001 11:21	pCi/g	

	Standard Known Value	LCS Sample Value	LCS Recovery
LCBAM1211	10.4	10.790	104%
	10.4		0%
			#DIV/0!
			#DIV/0!
			#DIV/0!

Sample Activity	Spiked Sample Activity	Standard Value	Sample Volume	Spike Value	SPIKE RECOVERY
0.0		10.400	0.0000	#DIV/0!	#DIV/0!
0.0		10.400	0.0000	#DIV/0!	#DIV/0!
					#DIV/0!

L4094-007

Sample Activity	Duplicate Activity	Sample ERROR	Duplicate ERROR	Duplicate RER
30.46	28.55	4.00	3.75	0.3
				#DIV/0!
				#DIV/0!
				#DIV/0!

MBBAM1211 = 0.7 MDA 0.7 WORK GROUP # WG11837

RUN ID# R14675

Reviewed by JPM

Date 12-17-01

ETL Enviro-Test LABORATORIES

Sample Digestion Logbook

SOP ETL - RSOP- 0003

alysis Am Berum Analyst PJ Date 12-11-01 Reviewed By B.Bird

High Activity Sample

Sample ID	Analyzed Volume g	Sample Volume Digested	Dilution Volume ml/l	Digestate Volume Used (ml)	Sample Matrix	Comments
L4094-7	0.1g	1.0g	100ml	10ml	Solid	
⊥ MD 7	⊥	⊥	⊥	⊥	⊥	
MBBAm1211	⊥	NA	NA	NA	QC	
LCBAm1211	1.0L	⊥	⊥	⊥	⊥	
		12-11-01	PJ			

Spike	Trace	Nuclide	Isotope Number	Expiration Date	Activity pCi/ml	Vol Ml	Standard Control	Spiked By	Witness
✓		Am241	101.02	5-14-02	2.6	4ml	LCBAm1211	PJ	B.H
	✓	Am243	009-06	7-24-02	5.1	2ml	all sample	⊥	⊥
								12-11-01 PJ	

FORM DIGESTLG-1, REV. 0 Effective 09-25-00 **Book Number** 01149 **Page Number** 193

Enviro • Test LABORATORIES LLC.

Bush / 12-11-01 PJ Need in Count Rm 12/15

RADIOCHEMISTRY
OUT OF CONTROL EVENT REPORT

DEPARTMENT Rad Env PARAMETER Am 241
METHOD Std
COMPLETED BY [illegible] DATE 12/11/01

OUT OF CONTROL EVENT

SAMPLE ANALYSIS

- [X] Sample Activity too high
- [ ] Calculation error
- [ ] Reporting error
- [ ] Tracer % rec. not within QC limits

QUALITY CONTROL ANALYSIS

- [ ] Blank out / % rec. not acceptable
- [ ] LCS % rec. not acceptable
- [ ] Duplicate RER not acceptable
- [ ] MS % rec. not acceptable

SAMPLE ID	VOLUME	SAMPLE ID	VOLUME	SAMPLE ID	VOLUME
L4094-1	~~1g~~ 0.5g	as per Debby 12-11-01			
2	~~1g~~ 1	Low level Tracer			
7	0.1g	Reg Tracer			

CORRECTIVE ACTION

- [ ] Recalculate/report results
- [X] Reanalyze sample(s)
- [ ] Redigest/re-extract sample(s)
- [ ] Perform standard additions
- [ ] Repeat QC analysis
- [ ] Repeat calibration
- [ ] Prepare new standards
- [ ] Perform instrument service

OTHER (Explain) Use low-(low) tracer. use reg tracer
L4094-1, 2 had Pa interference, L4094-7 was warm, had activity. DO NOT RUN PEM + TRM

Run in 2 sets please

RESOLUTION

APPROVED BY:
Laboratory Supervisor/Manager _____ Date _____
QA/QC _____ Date _____
Case Narrative Required: Yes _____ No _____

AUTHORIZATION REQUIRED FOR WORK RELEASE

ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
17-DEC-2001 08:56:31

Spectral File: ND_AMS_ARCHIVE_S:S_L4094AMR$L4094-7RR_AM.CNF

BATCH ID:	L4094AMR	SAMPLE ID:	L4094-7RR
SAMPLE DATE:	12-DEC-2001 00:00	ALIQUOT:	1.000E-01 gram
SAMPLE TITLE:		DETECTOR NUMBER:	034
ACQ DATE:	14-DEC-2001 11:21	AVERAGE EFFICIENCY:	25.09%
ELAPSED LIVE TIME:	15251.	RECOVERY:	70.76%
TRACER ID:	RAD009-06	TRACER FWHM (kev):	40.41
LAMBDA VALUE:	2000.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	22.643	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	4-SEP-2001 08:57	EFF CAL DATE:	4-SEP-2001 08:57
BKG FILENAME:	B_034_26NOV01	BKG ELAPSED TIME:	60000.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
AM-241	5479.1	304.95	3.05	99.9	3.046E+01	3.997E+00	1.082E+00
CM-242	6091.3	1.47	1.53	99.0	1.504E-01	3.754E-01	8.524E-01
AM243	5270.0	1017.73	1.27	99.6	1.020E+02	6.399E+00	7.970E-01
CM-244	5795.0	-0.53	1.53	100.0	-5.244E-02	2.353E-01	8.439E-01
CM-247	4869.0	0.00	0.00	71.0	0.000E+00	0.000E+00	3.811E-01
CM[illegible]	5070.6	1.49	0.51	91.6	1.625E-01	3.181E-01	6.564E-01

Analyst _____ Date 12-17-01

Reviewer _____ Date _____

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 17-DEC-2001 08:56:24.29

De or ID: 34 Acquisition Start: 14-DEC-2001 11:21:17.01
Li ime: 0 04:14:11.00 Real Time: 0 04:14:11.00
Batch Id: L4094AMR Sample Id: L4094-7RR
Sample Type: AM

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4874.77	0	0	0.00	463.50	455	18	0.00E+00	0.0	
2	0	5040.83	2	0	52.76	520.00	509	32	1.31E-04	70.7	
3	0	5274.71	1019	0	40.41	600.20	559	69	6.68E-02	3.1	
4	0	5487.17	308	0	47.09	673.69	646	61	2.02E-02	5.7	
5	0	5794.12	1	0	3.10	781.00	755	38	6.56E-05	100.0	
6	0	6100.11	3	0	3.10	889.33	851	54	1.97E-04	57.7	

Background Counts Within Peak Regions Generated: 17-DEC-2001 08:56:28.96

Acquisition Start: 26-NOV-2001 15:38:04.01
Live Time: 0 16:40:00.00 Real Time: 0 16:40:00.00

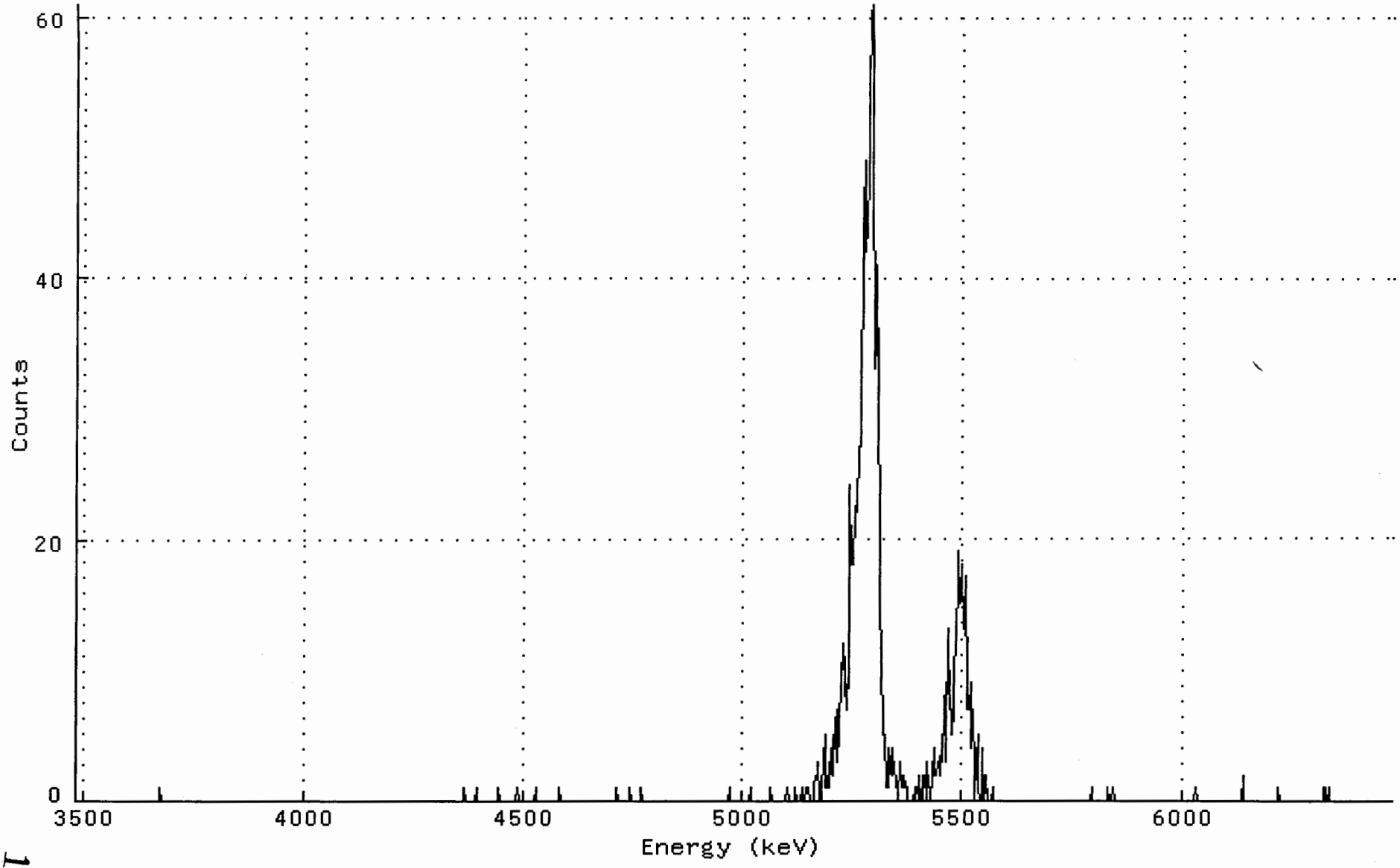
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4874.77	0	0	0.00	463.50	455	18	0.00E+00	0.0	
2	0	5054.02	2	0	34.14	524.50	509	32	3.33E-05	70.7	
3	0	5253.82	5	0	145.86	593.00	559	69	8.33E-05	44.7	
4	0	5493.81	12	0	27.93	676.00	646	61	2.00E-04	28.9	
5	0	5772.79	6	0	0.00	773.50	755	38	1.00E-04	40.8	
6	0	6066.88	6	0	121.03	877.50	851	54	1.00E-04	40.8	

Net Sample Counts Within Peak Regions Generated: 17-DEC-2001 08:56:29.33

Pk		Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4874.77*	0	0	0.00	463.50	455	18	0.00E+00	0.0	
2	0	5040.83*	1	0	52.76	520.00	509	32	9.78E-05	97.8	
3	0	5274.71*	1018	0	40.41	600.20	559	69	6.67E-02	3.1	
4	0	5487.17*	305	0	47.09	673.69	646	61	2.00E-02	5.8	
5	0	5794.12*	-1	0	3.10	781.00	755	38	-3.44E-05	224.3	
6	0	6100.11*	1	0	3.10	889.33	851	54	9.67E-05	124.8	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV S]S_L4094AMR$L4094-7RR_AM.CNF;1
Title : 034
Sample Title:
Start Time: 14-DEC-2001 11:21 Sample Time: 12-DEC-2001 00:00 Energy Offset: 3.47221E+03
Real Time : 0 04:14:11.00 Sample ID : L4094-7RR Energy Slope : 3.10342E+00
Live Time : 0 04:14:11.00 Sample Type: AM Energy Quad : -1.66996E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
17-DEC-2001 08:56:05

****
Spectral File: ND_AMS_ARCHIVE_S:S_L4094AMR$L4094-7MDRR_AM.CNF
****

BATCH ID:	L4094AMR	SAMPLE ID:	L4094-7MDRR
SAMPLE DATE:	12-DEC-2001 00:00	ALIQUOT:	1.000E-01 gram
SAMPLE TITLE:		DETECTOR NUMBER:	035
ACQ DATE:	14-DEC-2001 11:21	AVERAGE EFFICIENCY:	25.77%
ELAPSED LIVE TIME:	15234.	RECOVERY:	72.19%
TRACER ID:	RAD009-06	TRACER FWHM (kev):	44.51
LAMBDA VALUE:	2000.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	22.643	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	14-SEP-2001 17:13	EFF CAL DATE:	14-SEP-2001 17:13
BKG FILENAME:	B_035_26NOV01	BKG ELAPSED TIME:	60003.

****

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
AM-241	5479.1	299.22	1.78	99.9	2.855E+01	3.747E+00	8.501E-01
CM-242	6091.3	-0.03	2.03	99.0	-3.028E-03	3.089E-01	8.994E-01
AM243	5270.0	1065.49	0.51	99.6	1.020E+02	6.251E+00	5.766E-01
CM-244	5795.0	-2.28	2.28	100.0	-2.180E-01	1.459E-01	9.287E-01
CM-247	4869.0	2.75	0.25	71.0	3.688E-01	4.708E-01	6.787E-01
CM	5070.6	6.49	0.51	91.6	6.756E-01	5.572E-01	6.268E-01

****

Analyst _____ Date 12-17-01

Reviewer _____ Date _____

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 17-DEC-2001 08:55:56.31

De' or ID: 35 Acquisition Start: 14-DEC-2001 11:21:34.01
Liv ime: 0 04:13:54.00 Real Time: 0 04:13:54.00
Batch Id: L4094AMR Sample Id: L4094-7MDRR
Sample Type: AM

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4882.15	3	0	0.00	477.33	466	18	1.97E-04	57.7	
2	0	5071.01	7	0	3.12	541.57	521	31	4.59E-04	37.8	
3	0	5277.52	1066	0	44.51	612.38	571	68	7.00E-02	3.1	
4	0	5490.82	301	0	40.10	686.17	657	61	1.98E-02	5.8	
5	0	5772.09	0	0	0.00	784.50	766	38	0.00E+00	0.0	
6	0	6120.54	2	0	15.60	908.00	862	54	1.31E-04	70.7	

Background Counts Within Peak Regions Generated: 17-DEC-2001 08:56:03.33

Acquisition Start: 26-NOV-2001 15:38:08.01
Live Time: 0 16:40:03.00 Real Time: 0 16:40:03.00

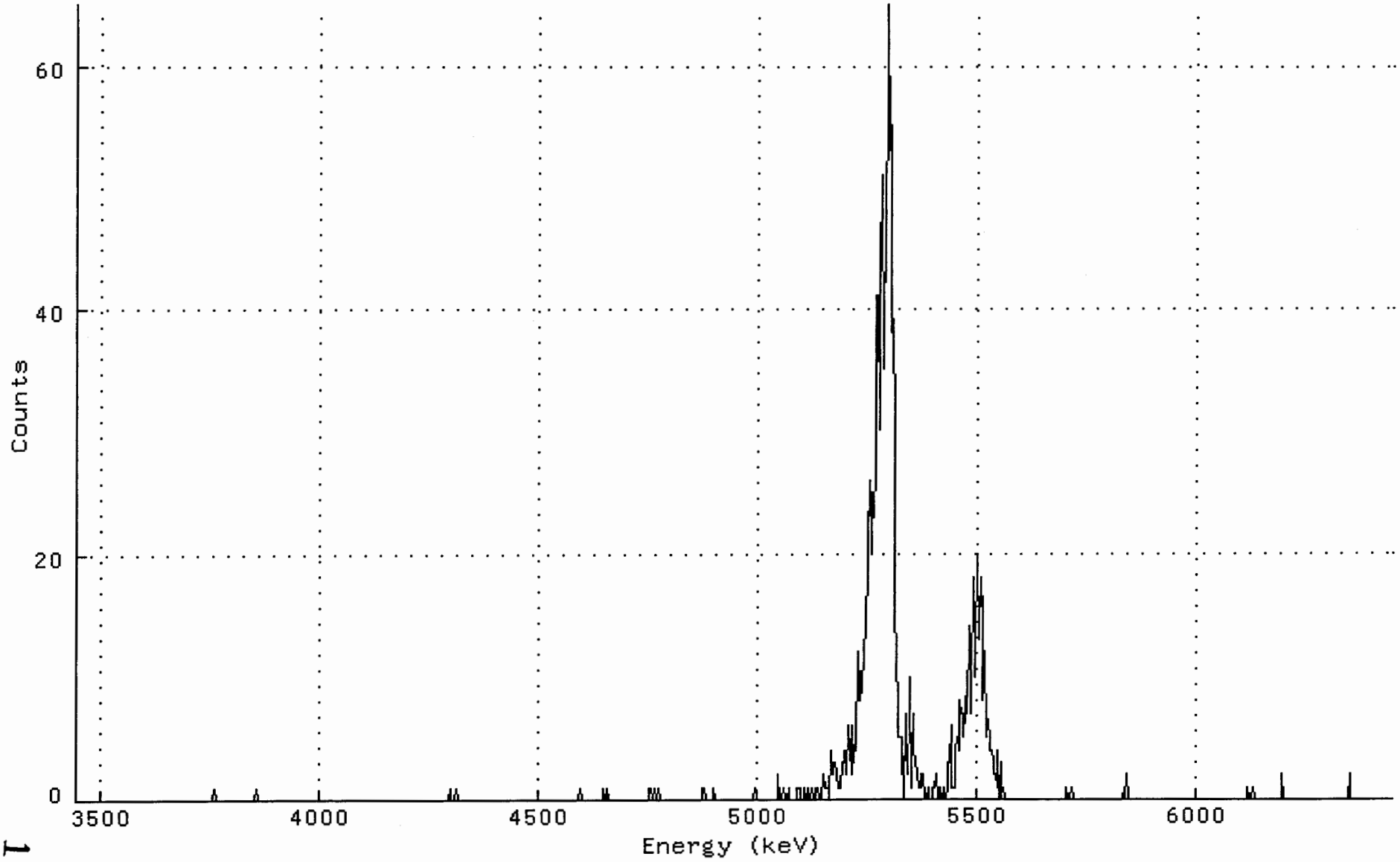
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4873.79	1	0	3.12	474.50	466	18	1.67E-05	100.0	
2	0	5054.69	2	0	18.72	536.00	521	31	3.33E-05	70.7	
3	0	5254.62	2	0	177.81	604.50	571	68	3.33E-05	70.7	
4	0	5493.21	7	0	46.40	687.00	657	61	1.17E-04	37.8	
5	0	5772.09	9	0	65.51	784.50	766	38	1.50E-04	33.3	
6	0	6065.87	8	0	0.00	888.50	862	54	1.33E-04	35.4	

Net Sample Counts Within Peak Regions Generated: 17-DEC-2001 08:56:03.70

Pk	.	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4882.15*	3	0	0.00	477.33	466	18	1.80E-04	63.7	
2	0	5071.01*	6	0	3.12	541.57	521	31	4.26E-04	41.1	
3	0	5277.52*	1065	0	44.51	612.38	571	68	6.99E-02	3.1	
4	0	5490.82*	299	0	40.10	686.17	657	61	1.96E-02	5.8	
5	0	5772.09*	-2	0	0.00	784.50	766	38	-1.50E-04	33.3	
6	0	6120.54*	0	0	15.60	908.00	862	54	-2.04E-06	*****	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHI' S]S_L4094AMR$L4094-7MDRR_AM.CNF;1
Title : 035
Sample Title:
Start Time: 14-DEC-2001 11:21 Sample Time: 12-DEC-2001 00:00 Energy Offset: 3.43326E+03
Real Time : 0 04:13:54.00 Sample ID : L4094-7MDRR Energy Slope : 3.11944E+00
Live Time : 0 04:13:54.00 Sample Type: AM Energy Quad : -1.76087E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
17-DEC-2001 08:57:44

Spectral File: ND_AMS_ARCHIVE_S:S_L4094AMR$L4094-MBBAM1211_AM.CNF

BATCH ID:	L4094AMR	SAMPLE ID:	L4094-MBBAM1211
SAMPLE DATE:	12-DEC-2001 00:00	ALIQUOT:	1.000E-01 gram
SAMPLE TITLE:		DETECTOR NUMBER:	036
ACQ DATE:	14-DEC-2001 11:21	AVERAGE EFFICIENCY:	25.74%
ELAPSED LIVE TIME:	15210.	RECOVERY:	73.28%
TRACER ID:	RAD009-06	TRACER FWHM (kev):	61.09
LAMBDA VALUE:	2000.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	22.643	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	5-SEP-2001 13:46	EFF CAL DATE:	5-SEP-2001 13:46
BKG FILENAME:	B_036_26NOV01	BKG ELAPSED TIME:	60005.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
AM-241	5479.1	6.99	1.01	99.9	6.586E-01	5.433E-01	6.969E-01
CM-242	6091.3	-0.77	1.77	99.0	-7.450E-02	2.317E-01	8.474E-01
AM243	5270.0	1078.48	1.52	99.6	1.020E+02	6.217E+00	7.986E-01
CM-244	5795.0	-1.28	2.28	100.0	-1.208E-01	2.369E-01	9.170E-01
CM-247	4869.0	7.75	0.25	71.0	1.028E+00	7.563E-01	6.703E-01
CM	5070.6	2.49	0.51	91.6	2.563E-01	3.640E-01	6.190E-01

Analyst _____ Date 12-17-01

Reviewer _____ Date _____

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 17-DEC-2001 08:57:40.92

De[illegible]r ID: 36 Acquisition Start: 14-DEC-2001 11:21:57.01
Liv[illegible]ime: 0 04:13:30.00 Real Time: 0 04:13:30.00
Batch Id: L4094AMR Sample Id: L4094-MBBAM1211
Sample Type: AM

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4883.90	8	0	30.04	473.38	462	18	5.26E-04	35.4	
2	0	5061.38	3	0	0.00	532.67	515	32	1.97E-04	57.7	
3	0	5275.13	1080	0	61.09	604.61	564	68	7.10E-02	3.0	
4	0	5481.51	8	0	0.00	674.63	650	59	5.26E-04	35.4	
5	0	5728.02	1	0	3.16	759.00	756	37	6.57E-05	100.0	
6	0	6057.30	1	0	3.16	873.00	850	53	6.57E-05	100.0	

Background Counts Within Peak Regions Generated: 17-DEC-2001 08:57:42.58

Acquisition Start: 26-NOV-2001 15:38:11.01
Live Time: 0 16:40:05.00 Real Time: 0 16:40:06.00

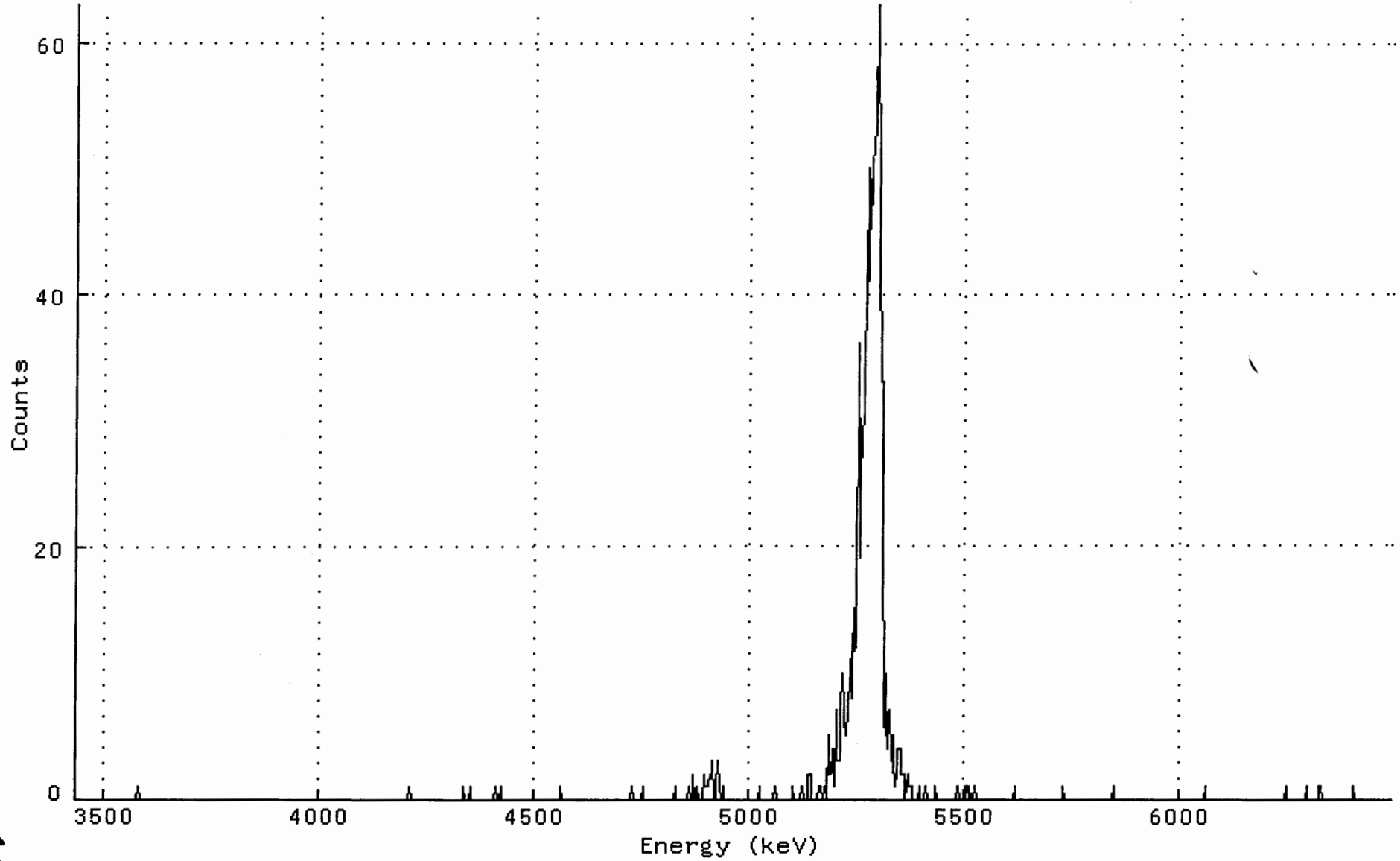
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4875.26	1	0	3.16	470.50	462	18	1.67E-05	100.0	
2	0	5054.91	2	0	5.93	530.50	515	32	3.33E-05	70.7	
3	0	5254.09	6	0	3.16	597.50	564	68	1.00E-04	40.8	
4	0	5494.35	4	0	50.59	679.00	650	59	6.67E-05	50.0	
5	0	5771.59	9	0	94.85	774.00	756	37	1.50E-04	33.3	
6	0	6065.90	7	0	3.16	876.00	850	53	1.17E-04	37.8	

Net Sample Counts Within Peak Regions Generated: 17-DEC-2001 08:57:43.03

Pk	[illegible]	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4883.90*	8	0	30.04	473.38	462	18	5.09E-04	36.7	
2	0	5061.38*	2	0	0.00	532.67	515	32	1.64E-04	70.9	
3	0	5275.13*	1078	0	61.09	604.61	564	68	7.09E-02	3.0	
4	0	5481.51*	7	0	0.00	674.63	650	59	4.59E-04	41.1	
5	0	5728.02*	-1	0	3.16	759.00	756	37	-8.42E-05	98.0	
6	0	6057.30*	-1	0	3.16	873.00	850	53	-5.09E-05	155.5	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV S]S_L4094AMR$L4094-MBBAM1211_AM.CNF;1
Title : 036
Sample Title:
Start Time: 14-DEC-2001 11:21 Sample Time: 12-DEC-2001 00:00 Energy Offset: 3.42472E+03
Real Time : 0 04:13:30.00 Sample ID : L4094-MBBAM1211 Energy Slope : 3.16182E+00
Live Time : 0 04:13:30.00 Sample Type: AM Energy Quad : -1.67540E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
17-DEC-2001 08:51:37

****
Spectral File: ND_AMS_ARCHIVE_C:C_L4094AMR$L4094-LCBAM1211_AM.CNF
****

BATCH ID:	L4094AMR	SAMPLE ID:	L4094-LCBAM1211
SAMPLE DATE:	12-DEC-2001 00:00	ALIQUOT:	1.000E+00 gram
SAMPLE TITLE:		DETECTOR NUMBER:	037
ACQ DATE:	14-DEC-2001 11:22	AVERAGE EFFICIENCY:	25.42%
ELAPSED LIVE TIME:	15191.	RECOVERY:	69.55%
TRACER ID:	RAD009-06	TRACER FWHM (kev):	42.65
LAMBDA VALUE:	2000.	ROI TYPE:	MANUAL
TRACER DPM AT SAMPLE DATE:	22.643	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	6-SEP-2001 09:08	EFF CAL DATE:	6-SEP-2001 09:08
BKG FILENAME:	B_037_26NOV01	BKG ELAPSED TIME:	60003.

****

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
AM-241	5479.1	1071.48	1.52	99.9	1.079E+01	9.472E-01	8.499E-02
CM-242	6091.3	-3.05	4.05	99.0	-3.135E-02	2.932E-02	1.227E-01
AM243	5270.0	1009.73	1.27	99.6	1.020E+01	6.425E-01	8.022E-02
CM-244	5795.0	-0.78	2.78	100.0	-7.900E-03	3.311E-02	1.054E-01
CM-247	4869.0	-0.25	0.25	71.0	-3.588E-03	7.180E-03	7.157E-02
CM	5070.6	5.75	0.25	91.6	6.311E-02	5.423E-02	5.545E-02

****

DJ 12-17-01
Analyst Date

Reviewer Date

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 17-DEC-2001 08:51:33.37

De[illegible]or ID: 37 Acquisition Start: 14-DEC-2001 11:22:16.01
Li[illegible]ime: 0 04:13:11.00 Real Time: 0 04:13:12.00
Batch Id: L4094AMR Sample Id: L4094-LCBAM1211
Sample Type: AM

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4874.01	0	0	0.00	474.00	465	19	0.00E+00	0.0	
2	0	5058.09	6	0	2.89	541.17	524	34	3.95E-04	40.8	
3	0	5286.62	1011	0	42.65	625.24	593	62	6.66E-02	3.1	
4	0	5492.69	1073	0	49.91	701.71	670	65	7.06E-02	3.1	
5	0	5766.92	2	0	28.91	804.50	787	40	1.32E-04	70.7	
6	0	6018.90	1	0	2.89	900.00	889	59	6.58E-05	100.0	

Background Counts Within Peak Regions Generated: 17-DEC-2001 08:51:34.72

Acquisition Start: 26-NOV-2001 15:38:14.01
Live Time: 0 16:40:03.00 Real Time: 0 16:40:03.00

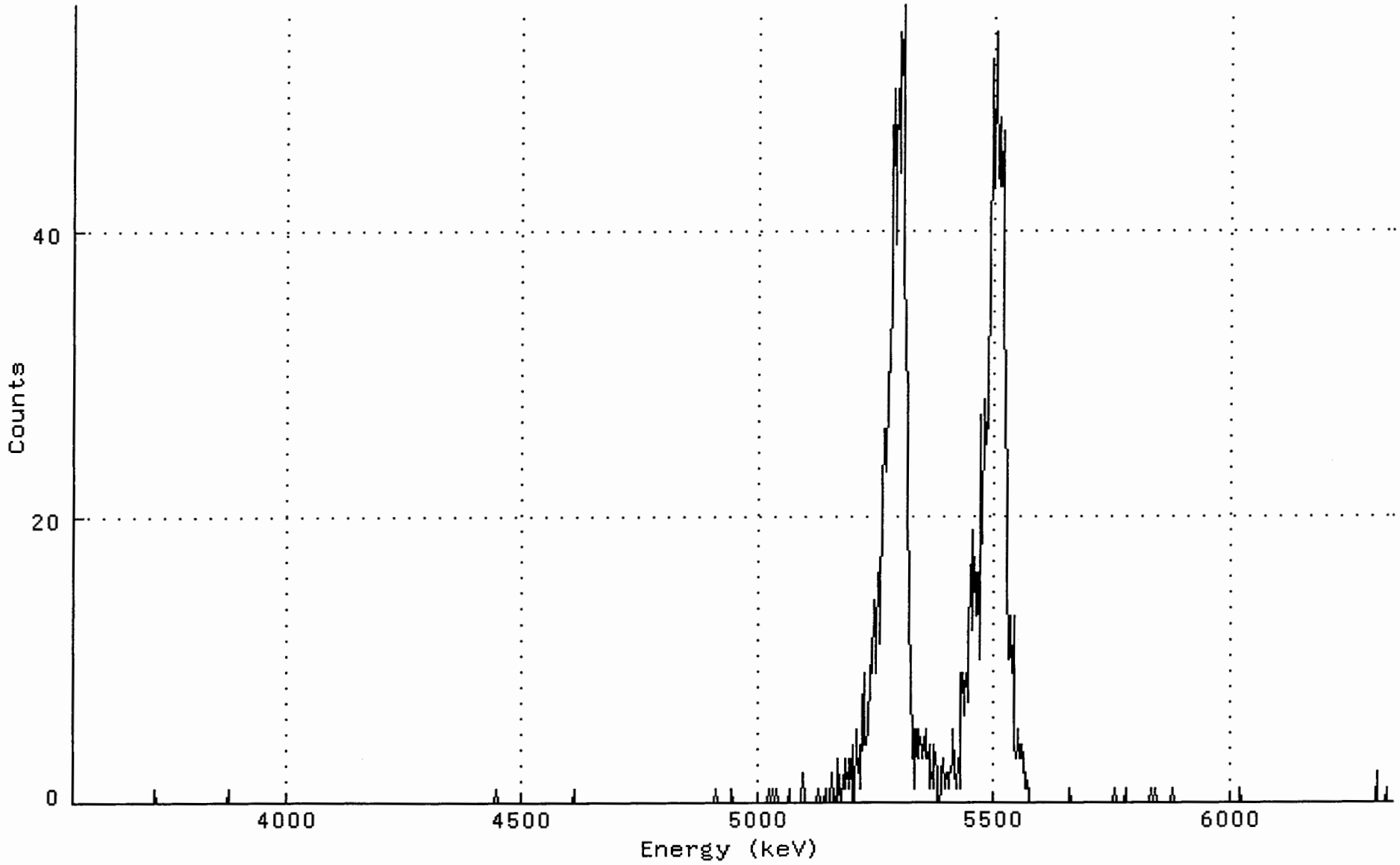
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4874.01	1	0	2.89	474.00	465	19	1.67E-05	100.0	
2	0	5056.27	1	0	2.89	540.50	524	34	1.67E-05	100.0	
3	0	5281.92	5	0	153.23	623.50	593	62	8.33E-05	44.7	
4	0	5493.45	6	0	130.10	702.00	670	65	1.00E-04	40.8	
5	0	5772.22	11	0	0.00	806.50	787	40	1.83E-04	30.2	
6	0	6066.09	16	0	2.89	918.00	889	59	2.67E-04	25.0	

Net Sample Counts Within Peak Regions Generated: 17-DEC-2001 08:51:35.30

Pk	[illegible]	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4874.01*	0	0	0.00	474.00	465	19	-1.67E-05	100.0	
2	0	5058.09*	6	0	2.89	541.17	524	34	3.78E-04	42.9	
3	0	5286.62*	1010	0	42.65	625.24	593	62	6.65E-02	3.1	
4	0	5492.69*	1071	0	49.91	701.71	670	65	7.05E-02	3.1	
5	0	5766.92*	-1	0	28.91	804.50	787	40	-5.17E-05	209.5	
6	0	6018.90*	-3	0	2.89	900.00	889	59	-2.01E-04	46.7	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHI\ C]C_L4094AMR$L4094-LCBAM1211_AM.CNF;1
Title : 037
Sample Title:
Start Time: 14-DEC-2001 11:22 Sample Time: 12-DEC-2001 00:00 Energy Offset: 3.53691E+03
Real Time : 0 04:13:12.00 Sample ID : L4094-LCBAM1211 Energy Slope : 2.89109E+00
Live Time : 0 04:13:11.00 Sample Type: AM Energy Quad : -1.48137E-04



Review of QA results (Backgrounds) 14-DEC-2001 11:45:21

Detector	Parameter	Flag	Filename
25	ALL	Passed	B_025_28nov01
26	ALL	Passed	B_026_28nov01
27	ALL	Passed	B_027_29nov01
28	ALL	Passed	B_028_29nov01
29	ALL	Passed	B_029_26nov01
30	ALL	Passed	B_030_26nov01
31	ALL	Passed	B_031_26nov01
32	ALL	Passed	B_032_26nov01
33	ALL	Passed	B_033_26nov01
34	ALL	Passed	B_034_26nov01
35	ALL	Passed	B_035_26nov01
36	ALL	Passed	B_036_26nov01
37	ALL	Passed	B_037_26nov01
38	ALL	Passed	B_038_26nov01
39	ALL	Passed	B_039_26nov01
40	ALL	Passed	B_040_26nov01
41	ALL	Passed	B_041_26nov01
42	ALL	Passed	B_042_26nov01
43	ALL	Passed	B_043_26nov01
44	ALL	Passed	B_044_26nov01
45	ALL	Passed	B_045_26nov01
46	ALL	Passed	B_046_26nov01
47	ALL	Passed	B_047_26nov01
48	ALL	Passed	B_048_26nov01

APPROVAL DATE: 12-14-01 APPROVAL TIME: _____

APPROVED BY: _____ PROCEDURE # _____

Report completed at 14-DEC-2001 11:45:37

Review of QA results (Backgrounds AM) 14-DEC-2001 11:45:38

Detector	Parameter	Flag	Filename
25	ALL	Passed	B_025_28nov01
26	ALL	Passed	B_026_28nov01
27	ALL	Passed	B_027_29nov01
28	ALL	Passed	B_028_29nov01
29	ALL	Passed	B_029_26nov01
30	ALL	Passed	B_030_26nov01
31	ALL	Passed	B_031_26nov01
32	ALL	Passed	B_032_26nov01
33	ALL	Passed	B_033_26nov01
34	ALL	Passed	B_034_26nov01
35	ALL	Passed	B_035_26nov01
36	ALL	Passed	B_036_26nov01
37	ALL	Passed	B_037_26nov01
38	ALL	Passed	B_038_26nov01
39	ALL	Passed	B_039_26nov01
40	ALL	Passed	B_040_26nov01
41	ALL	Passed	B_041_26nov01
42	ALL	Passed	B_042_26nov01
43	ALL	Passed	B_043_26nov01
44	ALL	Passed	B_044_26nov01
45	ALL	Passed	B_045_26nov01
46	ALL	Passed	B_046_26nov01
47	ALL	Passed	B_047_26nov01
48	ALL	Passed	B_048_26nov01

APPROVAL DATE: 12-14-01 APPROVAL TIME: _____

APPROVED BY: [illegible] PROCEDURE # _____

Report completed at 14-DEC-2001 11:45:52

Review of QA results (Backgrounds PU) 14-DEC-2001 11:46:21

Detector	Parameter	Flag	Filename
25	ALL	Passed	B_025_28nov01
26	ALL	Passed	B_026_28nov01
27	ALL	Passed	B_027_29nov01
28	ALL	Passed	B_028_29nov01
29	ALL	Passed	B_029_26nov01
30	ALL	Passed	B_030_26nov01
31	ALL	Passed	B_031_26nov01
32	ALL	Passed	B_032_26nov01
33	ALL	Passed	B_033_26nov01
34	ALL	Passed	B_034_26nov01
35	ALL	Passed	B_035_26nov01
36	ALL	Passed	B_036_26nov01
37	ALL	Passed	B_037_26nov01
38	PSAREA-PU236	Above	B_038_26nov01
39	ALL	Passed	B_039_26nov01
40	ALL	Passed	B_040_26nov01
41	ALL	Passed	B_041_26nov01
42	PSAREA-PU236	Above	B_042_26nov01
43	ALL	Passed	B_043_26nov01
44	ALL	Passed	B_044_26nov01
45	ALL	Passed	B_045_26nov01
46	ALL	Passed	B_046_26nov01
47	ALL	Passed	B_047_26nov01
48	ALL	Passed	B_048_26nov01

APPROVAL DATE: 12-14-01 APPROVAL TIME: _____

APPROVED BY: _____ PROCEDURE # _____

Report completed at 14-DEC-2001 11:46:36

Review of QA results (Backgrounds UU) 14-DEC-2001 11:46:51

Detector	Parameter	Flag	Filename
25	ALL	Passed	B_025_28nov01
26	ALL	Passed	B_026_28nov01
27	ALL	Passed	B_027_29nov01
28	ALL	Passed	B_028_29nov01
29	ALL	Passed	B_029_26nov01
30	ALL	Passed	B_030_26nov01
31	ALL	Passed	B_031_26nov01
32	ALL	Passed	B_032_26nov01
33	ALL	Passed	B_033_26nov01
34	ALL	Passed	B_034_26nov01
35	ALL	Passed	B_035_26nov01
36	ALL	Passed	B_036_26nov01
37	ALL	Passed	B_037_26nov01
38	ALL	Passed	B_038_26nov01
39	ALL	Passed	B_039_26nov01
40	ALL	Passed	B_040_26nov01
41	ALL	Passed	B_041_26nov01
42	ALL	Passed	B_042_26nov01
43	ALL	Passed	B_043_26nov01
44	ALL	Passed	B_044_26nov01
45	ALL	Passed	B_045_26nov01
46	ALL	Passed	B_046_26nov01
47	ALL	Passed	B_047_26nov01
48	ALL	Passed	B_048_26nov01

APPROVAL DATE: 12-14-01 APPROVAL TIME: _____

APPROVED BY: DJ PROCEDURE # _____

Report completed at 14-DEC-2001 11:47:05

Review of QA results (Daily Pulser Check) 14-DEC-2001 08:26:49

Detector	Parameter	Flag	Filename
25	ALL	Passed	D_025_NONE
26	ALL	Passed	D_026_NONE
27	ALL	Passed	D_027_NONE
28	ALL	Passed	D_028_NONE
29	ALL	Passed	D_029_NONE
30	ALL	Passed	D_030_NONE
31	ALL	Passed	D_031_NONE
32	ALL	Passed	D_032_NONE
33	ALL	Passed	D_033_NONE
34	ALL	Passed	D_034_NONE
35	ALL	Passed	D_035_NONE
36	ALL	Passed	D_036_NONE
37	ALL	Passed	D_037_NONE
38	ALL	Passed	D_038_NONE
39	ALL	Passed	D_039_NONE
40	ALL	Passed	D_040_NONE
41	ALL	Passed	D_041_NONE
42	ALL	Passed	D_042_NONE
43	ALL	Passed	D_043_NONE
44	ALL	Passed	D_044_NONE
45	ALL	Passed	D_045_NONE
46	ALL	Passed	D_046_NONE
47	ALL	Passed	D_047_NONE
48	ALL	Passed	D_048_NONE

APPROVAL DATE: 12-14-01 APPROVAL TIME: _____

APPROVED BY: DT PROCEDURE # _____

Report completed at 14-DEC-2001 08:27:02

Review of QA results (Daily Pulser Check) 12-DEC-2001 08:02:44

Detector	Parameter	Flag	Filename
25	ALL	Passed	D_025_NONE
26	ALL	Passed	D_026_NONE
27	ALL	Passed	D_027_NONE
28	ALL	Passed	D_028_NONE
29	ALL	Passed	D_029_NONE
30	ALL	Passed	D_030_NONE
31	ALL	Passed	D_031_NONE
32	ALL	Passed	D_032_NONE
33	ALL	Passed	D_033_NONE
34	ALL	Passed	D_034_NONE
35	ALL	Passed	D_035_NONE
36	ALL	Passed	D_036_NONE
37	ALL	Passed	D_037_NONE
38	ALL	Passed	D_038_NONE
39	ALL	Passed	D_039_NONE
40	ALL	Passed	D_040_NONE
41	ALL	Passed	D_041_NONE
42	ALL	Passed	D_042_NONE
43	ALL	Passed	D_043_NONE
44	ALL	Passed	D_044_NONE
45	ALL	Passed	D_045_NONE
46	ALL	Passed	D_046_NONE
47	ALL	Passed	D_047_NONE
48	ALL	Passed	D_048_NONE

APPROVAL DATE: 12/12/01 APPROVAL TIME: _____

APPROVED BY: DDB PROCEDURE # _____

Report completed at 12-DEC-2001 08:02:56

RAD# 101

Rec'd 5-10-00

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 · U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

59732-277

Am-241 5 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared gravimetrically from a calibrated master liquid radionuclide solution source. The master source was calibrated by liquid scintillation counting.

Radionuclide purity and calibration were checked by germanium gamma-ray spectrometry and liquid scintillation counting. The nuclear decay rate and assay date for this source are given below.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

ISOTOPE:	Am-241
ACTIVITY (dps):	3882
HALF-LIFE:	432.2 years
CALIBRATION DATE:	May 8, 2000 12:00 EST
TOTAL UNCERTAINTY*:	3.3%
SYSTEMATIC:	3.0%
RANDOM:	0.3%

*99% confidence level.

Impurities: γ-impurities <0.1%

5.26037 grams 1M HCl solution.

P O NUMBER 000414-02, Item 1

SOURCE PREPARED BY: MTaskaeva
M. Taskaeva, Radiochemist

Q A APPROVED: W.M. Mutz 5-9-00

RADIOACTIVE MATERIAL INFORMATION

Source/Stock Standard

RAD#: 101

Date Received: 05/10/00
Received by: DF

NIST Traceable: Yes
Certificate Filed: Yes

Nuclide:	Am-241
Manufacturer:	Analytics
Serial Number:	59732-277
Date of Calibration:	05/08/00
Matrix:	1M HCl
Mass/Volume:	5.26037
Activity:	3882 dps

Half-Life: 1.58E+05 days
Activity at DOC: 1.05E+05 pCi

Today's Date: 9/21/01
Activity Today: 1.05E+05 pCi

Stock/Primary Solution

RAD#	Prep Date	Final Volume	Activity at DOP (date of prep)	Decay Correction to Date	Disposal Date
100-01	05/12/00	1000 mL	104.9 pCi/mL	104.7 pCi/mL	

Working Solutions

RAD#	Prep Date	User Soln ID	Volume of User Soln Used	Activity of User Soln	Final Volume	**Activity**	**Decay Correction to Date**	Disposal Date
101-01	05/17/00	101-00	25 mL	104.9 pCi/mL	1000 mL	2.6 pCi/mL	2.61673 pCi/mL	5/15/01 disposed
101-02	05/14/01	101-00	25 mL	104.9 pCi/mL	1000 mL	2.6 pCi/mL	2.61673 pCi/mL	
101-03	07/30/01	101-02	25 mL	2.6 pCi/mL	500 mL	0.1 pCi/mL	0.12971 pCi/mL	
101-04	08/08/01	101-00	10 mL	104.9 pCi/mL	1000 mL	1.0 pCi/mL	1.04669 pCi/mL	
101-05	09/21/01	101-00	25 mL	104.9 pCi/mL	1000 mL	2.6 pCi/mL	2.61673 pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	

EnviroTest LABORATORIES

RADIOACTIVE STANDARD PREPARATION FORM

Date: 5-14-01
Prepared by: DT
Analysis ID:

RAD#(standard ID): 101.02
Nuclide: Am-241

Stock Solution ☐

Witness:

Serial #:
Original Activity:

Gross weight of ampoule:
Empty weight of ampoule:
Net weight of standard:
Standard activity:

Dilution volume:
Dilutent:
Calculated activity:

DT 5-14-01

Final activity:
(Decay corrected to):
Expiration:

Secondary Stock ☐
Tertiary Stock ☐
Working Solution ☒

Witness: DT

Stock RAD#: 101.00
Stock activity: 104.9 pCi/ml

Volume of stock used: 25.0 mls
Dilution volume: 1000 mls
Dilutent: 1N HNO3
Calculated activity: 2.6 pCi/ml

Final activity: 2.6 pCi/ml
(Decay corrected to): 5-30-01
Expiration: 5-14-02

Form RadStdPrep, Revision 0, Effective Date 3/10/00

ETL EnviroTest LABORATORIES

RADIOACTIVE STANDARD PREPARATION FORM

Date: 5-12-00
Prepared by: DT
Analysis ID: L1454

RAD#(standard ID): RAD# 101

Nuclide: Am-241

Stock Solution ☒

Witness: MRY

Serial #: 59732-277
Original Activity: 0.105 µCi

Gross weight of ampoule: 9.1585 g
Empty weight of ampoule: 3.9027 g
Net weight of standard: 5.2558 g
Standard activity: 1.05 E+05

Dilution volume: 1.0 L
Dilutent: 1N HNO3
Calculated activity: 104.9 pCi/gml

Final activity: 104.9 pCi/ml
(Decay corrected to): 5-12-00
Expiration: 5-12-05

Secondary Stock ☐
Tertiary Stock ☐
Working Solution ☐

Witness:

Stock RAD#:
Stock activity:

Volume of stock used:
Dilution volume:
Dilutent:
Calculated activity:

Final activity:
(Decay corrected to):
Expiration:

ISOTOPE 335

RAD # 009

CERTIFICATE OF CALIBRATION
ALPHA STANDARD SOLUTION

Radionuclide	Am-243	Customer:	CORE LABORATORIES
Half Life:	7365 ± 22 years	P.O.No.:	57210-62697
Catalog No.:	7243-1U	Reference Date:	1 August 1997 12:00 PST.
Source No.:	561-99-4	Contained Radioactivity:	Am-243: 1.011 μCi (37.41 kBq)

Description of Solution

a. Mass of solution: 5.12333 g in 5 ml flame sealed ampoule

b. Chemical form: Americium nitrate in 1 M nitric acid

c. Carrier content: 10 μg Eu/ml

d. Density: 1.032 gram/ml @ 20°C.

Radioimpurities

None detected.

Radioactive Daughters

Np-239 (beta active) daughter in equilibrium

Radionuclide Concentration

Am-243: 0.1974 μCi/g

Method of Calibration

This source was prepared from a weighed aliquot of solution whose concentration in μCi/g was determined by gamma spectrometry, by integrating under the 106.1, 228.2, 277.6 keV peaks and using branching ratios of 0.272, 0.1127, 0.1438 gammas per decay.

Uncertainty of Measurement

a. Systematic uncertainty in instrument calibration:	±3.0%
b. Random uncertainty in assay:	±0.3%
c. Random uncertainty in weighing(s):	±0.1%
d. Total uncertainty at the 99% confidence level:	±3.0%

NIST Traceability

This calibration is implicitly traceable to the National Institute of Standards and Technology.

Leak Test(s)

See reverse side for Leak Test(s) applied to this source.

Notes

1. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay(and later NIST certification) of Standard Reference Materials. (As in NRC Regulatory Guide 4.15)

QUALITY CONTROL

6 AUG 97

Date Signed

ISOTOPE PRODUCTS LABORATORIES
1800 N. KEYSTONE STREET
BURBANK, CALIFORNIA 91504
818·843·7000 FAX 818·843·6168

RADIOACTIVE MATERIAL INFORMATION

Source/Stock Standard

RAD#: 009 Iso#(cross ref.) 335

Date Received: 08/15/97
Received by: MCP

NIST Traceable: Yes
Certificate Filed: Yes

Nuclide: Am-243
Manufacturer: Isotope Prod
Serial Number: 561-99-4
Date of Calibration: 08/01/97
Matrix: 1M HNO3
Mass/Volume: 5.1278
Activity: 0.1974 uCi/g

Half-Life: 2.69E+06 days
Activity at DOC: 1.01E+06 pCi

Today's Date: 12/17/01
Activity Today: 1.01E+06 pCi

Stock/Primary Solution

RAD#	Prep Date	Final Volume	Activity at DOC	Decay Correction to Date	Disposal Date
009-00	08/20/97	1000 mL	1012.2 pCi/mL	1011.8 pCi/mL	

Working Solutions

RAD#	Prep Date	User Soln ID	Volume of User Soln Used	Activity of User Soln	Final Volume	**Activity**	**Decay Correction to Date**	Disposal Date
009-01	08/28/97	009-00	200 mL	1012.0 pCi/mL	1000 mL	202.4 pCi/mL	202.317 pCi/mL	
009-02	04/03/00	009-01	25 mL	202.4 pCi/mL	1000 mL	5.1 pCi/mL	5.05791 pCi/mL	
009-03	05/11/00	009-02	25 mL	5.1 pCi/mL	1000 mL	0.1 pCi/mL	0.12745 pCi/mL	
009-04	11/03/00	009-02	50 mL	5.1 pCi/mL	2000 mL	0.1 pCi/mL	0.12745 pCi/mL	
009-05	04/12/01	009-01	25 mL	202.4 pCi/mL	1000 mL	5.1 pCi/mL	5.05791 pCi/mL	
009-06	07/24/01	009-01	25 mL	202.4 pCi/mL	1000 mL	5.1 pCi/mL	5.05791 pCi/mL	
009-07	08/08/01	009-01	5 mL	202.4 pCi/mL	1000 mL	1.0 pCi/mL	1.01158 pCi/mL	
009-08	12/17/01	009-01	5 mL	202.4 pCi/mL	2000 mL	0.5 pCi/mL	0.50579 pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	

ETL Enviro-Test LABORATORIES

RADIOACTIVE STANDARD PREPARATION FORM

Date: 7-24-01

RAD# (Standard ID): 009-06

Prepared by: DT

Analysis ID:

Nuclide: Am-243

Stock Solution ☐

Serial # :

Witness:

Original Activity:

Gross Weight of syringe:

Empty Weight of syringe:

Net weight of standard:

Standard activity:

Dilution volume:

Dilutent:

Calculated activity:

Final activity:

(Decay corrected to):

Expiration:

DT 7-24-01

Secondary Stock ☐ **Tertiary Stock** ☐ **Working Solution** ☒

Stock RAD#: 009-01

Witness: SJ

Stock activity: 202.4 pCi/ml

Volume of stock used: 25 mls

Dilution volume: 1000 mls

Dilutent: 1N HNO_3

Calculated activity: 5.1 pCi/ml

Final Activity: 5.1 pCi/ml

(Decay corrected to): 8-3-01

Expiration: 7-24-02

RAD # 009-00

STANDARD PREPARATION WORKSHEET

Isotope Number: 335.00

Radionuclide: Am 243

Date of Preparation: 8/20/97

Prepared by: MG

Isotope Number of Stock Solution: N/A

PREPARATION NOTES:

1) Amount of Stock Solution measured in volumetric flask.

GROSS AMPULE WT: 9.2979 g

EMPTY AMPULE WT: 4.1701 g

NET STANDARD WT: 5.1278 g

ACTIVITY CONC: 0.1974 µCi/g NET ACTIVITY: 1.012 µCi MG 8/20/97

(1012227 pCi)

2) Amount and type of dilution measured in volumetric flask.

5.1278 g of 335.00 DILUTED TO 1000 mL IN 4N HNO_3

3) Final Concentration.

1012 MG 8/20/97

~~10122~~ pCi/mL ✓ DM 8/20/97

4) Notes, Comments, and Calculations.

WITNESSED BY DT 8-20-97

QC26 EFF 07-15-94:REV 2

RADH 009-01

STANDARD PREPARATION WORKSHEET

Isotope Number: 335.01

Radionuclide: Am 243

Date of Preparation: 8/28/97

Prepared by: MC

Isotope Number of Stock Solution: 335.00

PREPARATION NOTES:

1) Amount of Stock Solution measured in volumetric flask.

200 mL of 335.00 @ 1012 pCi/mL

2) Amount and type of dilution measured in volumetric flask.

200 mL of 335.00 DILUTED TO 1000 mL IN 4N HNO_3

3) Final Concentration.

202.4 pCi/mL ✓ 9/9/97

4) Notes, Comments, and Calculations.

WITNESSED BY 8-28-97

RAD# 101

Rec'd 5-10-00

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 · U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

59732-277

Am-241 5 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared gravimetrically from a calibrated master liquid radionuclide solution source. The master source was calibrated by liquid scintillation counting.

Radionuclide purity and calibration were checked by germanium gamma-ray spectrometry and liquid scintillation counting. The nuclear decay rate and assay date for this source are given below.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

ISOTOPE:	Am-241
ACTIVITY (dps):	3882
HALF-LIFE:	432.2 years
CALIBRATION DATE:	May 8, 2000 12:00 EST
TOTAL UNCERTAINTY*:	3.3%
SYSTEMATIC:	3.0%
RANDOM:	0.3%

*99% confidence level.

Impurities: γ-impurities <0.1%

5.26037 grams 1M HCl solution.

P O NUMBER 000414-02, Item 1

SOURCE PREPARED BY: M Taskaeva
M. Taskaeva, Radiochemist

Q A APPROVED: D M. Mc 5-9-00

RADIOACTIVE MATERIAL INFORMATION

Source/Stock Standard

RAD#: 101

Nuclide:	Am-241
Manufacturer:	Analytics
Serial Number:	59732-277
Date of Calibration:	05/08/00
Matrix:	1M HCl
Mass/Volume:	5.26037
Activity:	3882 dps

Date Received: 05/10/00
Received by: DF

NIST Traceable: Yes
Certificate Filed: Yes

Half-Life: 1.58E+05 days
Activity at DOC: 1.05E+05 pCi

Today's Date: 9/21/01
Activity Today: 1.05E+05 pCi

Stock/Primary Solution

RAD#	Prep Date	Final Volume	Activity at DOP (date of prep)	Decay Correction to Date	Disposal Date
100-01	05/12/00	1000 mL	104.9 pCi/mL	104.7 pCi/mL	

Working Solutions

RAD#	Prep Date	User Soln ID	Volume of User Soln Used	Activity of User Soln	Final Volume	**Activity**	**Decay Correction to Date**	Disposal Date
101-01	05/17/00	101-00	25 mL	104.9 pCi/mL	1000 mL	2.6 pCi/mL	2.61673 pCi/mL	5/15/01 disposed
101-02	05/14/01	101-00	25 mL	104.9 pCi/mL	1000 mL	2.6 pCi/mL	2.61673 pCi/mL	
101-03	07/30/01	101-02	25 mL	2.6 pCi/mL	500 mL	0.1 pCi/mL	0.12971 pCi/mL	
101-04	08/08/01	101-00	10 mL	104.9 pCi/mL	1000 mL	1.0 pCi/mL	1.04669 pCi/mL	
101-05	09/21/01	101-00	25 mL	104.9 pCi/mL	1000 mL	2.6 pCi/mL	2.61673 pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	

ETL EnviroTest LABORATORIES

RADIOACTIVE STANDARD PREPARATION FORM

Date: 8-8-01

RAD# (Standard ID): 101-04

Prepared by: DT

Analysis ID:

Nuclide: Am-241

Stock Solution ☐

Serial # :

Witness:

Original Activity:

Gross Weight of syringe:

Empty Weight of syringe:

Net weight of standard:

Standard activity:

Dilution volume:

Dilutent:

Calculated activity:

Final activity:

(Decay corrected to):

Expiration:

DT 8-8-01

Secondary Stock ☐ **Tertiary Stock** ☐ **Working Solution** ☒

Stock RAD#: 101-00

Witness: RG

Stock activity: 104.9

Volume of stock used: 10 mls

Dilution volume: 1000 mls

Dilutent: 1N HNO_3

Calculated activity: 1.0 pCi/ml

Final Activity: 1.0 pCi/ml

(Decay corrected to): 8-8-01

Expiration: 8-8-02

EtL EnviroTest LABORATORIES

RADIOACTIVE STANDARD PREPARATION FORM

Date: 5-12-00
Prepared by: DT
Analysis ID: L1454

RAD#(standard ID): RAD# 101

Nuclide: Am-241

Stock Solution ☒

Witness: MRY

Serial #: 59732-277
Original Activity: 0.105 µCi

Gross weight of ampoule: 9.1585 g
Empty weight of ampoule: 3.9027 g
Net weight of standard: 5.2558 g
Standard activity: 1.05 E+05

Dilution volume: 1.0 L
Dilutent: 1N HNO3
Calculated activity: 104.9 pCi/g ml 5-12-00

Final activity: 104.9 pCi/ml
(Decay corrected to): 5-12-00
Expiration: 5-12-05

Secondary Stock ☐
Tertiary Stock ☐
Working Solution ☐

Witness: _____

Stock RAD#: _____
Stock activity: _____

Volume of stock used: _____
Dilution volume: _____
Dilutent: _____
Calculated activity: _____

Final activity: _____
(Decay corrected to): _____
Expiration: _____

ISOTOPE 335
BAD # 009

CERTIFICATE OF CALIBRATION
ALPHA STANDARD SOLUTION

Radionuclide	Am-243	Customer:	CORE LABORATORIES
Half Life:	7365 ± 22 years	P.O.No.:	57210-62697
Catalog No.:	7243-1U	Reference Date:	1 August 1997 12:00 PST.
Source No.:	561-99-4	Contained Radioactivity:	Am-243: 1.011 μCi (37.41 kBq)

Description of Solution

a. Mass of solution: 5.12333 g in 5 ml flame sealed ampoule

b. Chemical form: Americium nitrate in 1 M nitric acid

c. Carrier content: 10 μg Eu/ml

d. Density: 1.032 gram/ml @ 20°C.

Radioimpurities

None detected.

Radioactive Daughters

Np-239 (beta active) daughter in equilibrium

Radionuclide Concentration

Am-243: 0.1974 μCi/g

Method of Calibration

This source was prepared from a weighed aliquot of solution whose concentration in μCi/g was determined by gamma spectrometry, by integrating under the 106.1, 228.2, 277.6 keV peaks and using branching ratios of 0.272, 0.1127, 0.1438 gammas per decay.

Uncertainty of Measurement

a. Systematic uncertainty in instrument calibration:	±3.0%
b. Random uncertainty in assay:	±0.3%
c. Random uncertainty in weighing(s):	±0.1%
d. Total uncertainty at the 99% confidence level:	±3.0%

NIST Traceability

This calibration is implicitly traceable to the National Institute of Standards and Technology.

Leak Test(s)

See reverse side for Leak Test(s) applied to this source.

Notes

1. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay(and later NIST certification) of Standard Reference Materials. (As in NRC Regulatory Guide 4.15)

QUALITY CONTROL

6 AUG 97

Date Signed

ISOTOPE PRODUCTS LABORATORIES
1800 N. KEYSTONE STREET
BURBANK, CALIFORNIA 91504
818·843·7000 FAX 818·843·6168

RADIOACTIVE MATERIAL INFORMATION

Source/Stock Standard

RAD#: 009 Iso#(cross ref.) 335

Date Received: 08/15/97
Received by: MCP

NIST Traceable: Yes
Certificate Filed: Yes

Nuclide: Am-243
Manufacturer: Isotope Prod
Serial Number: 561-99-4
Date of Calibration: 08/01/97
Matrix: 1M HNO3
Mass/Volume: 5.1278
Activity: 0.1974 uCi/g

Half-Life: 2.69E+06 days
Activity at DOC: 1.01E+06 pCi

Today's Date: 12/17/01
Activity Today: 1.01E+06 pCi

Stock/Primary Solution

RAD#	Prep Date	Final Volume	Activity at DOC	Decay Correction to Date	Disposal Date
009-00	08/20/97	1000 mL	1012.2 pCi/mL	1011.8 pCi/mL	

Working Solutions

RAD#	Prep Date	User Soln ID	Volume of User Soln Used	Activity of User Soln	Final Volume	**Activity**	**Decay Correction to Date**	Disposal Date
009-01	08/28/97	009-00	200 mL	1012.0 pCi/mL	1000 mL	202.4 pCi/mL	202.317 pCi/mL	
009-02	04/03/00	009-01	25 mL	202.4 pCi/mL	1000 mL	5.1 pCi/mL	5.05791 pCi/mL	
009-03	05/11/00	009-02	25 mL	5.1 pCi/mL	1000 mL	0.1 pCi/mL	0.12745 pCi/mL	
009-04	11/03/00	009-02	50 mL	5.1 pCi/mL	2000 mL	0.1 pCi/mL	0.12745 pCi/mL	
009-05	04/12/01	009-01	25 mL	202.4 pCi/mL	1000 mL	5.1 pCi/mL	5.05791 pCi/mL	
009-06	07/24/01	009-01	25 mL	202.4 pCi/mL	1000 mL	5.1 pCi/mL	5.05791 pCi/mL	
009-07	08/08/01	009-01	5 mL	202.4 pCi/mL	1000 mL	1.0 pCi/mL	1.01158 pCi/mL	
009-08	12/17/01	009-01	5 mL	202.4 pCi/mL	2000 mL	0.5 pCi/mL	0.50579 pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	

ETL Enviro-Test LABORATORIES

RADIOACTIVE STANDARD PREPARATION FORM

Date: 8-8-01

RAD# (Standard ID): 009-07

Prepared by: DT

Analysis ID: L3522-10

Nuclide: Am-243

Stock Solution ☐

Serial # :

Witness:

Original Activity:

Gross Weight of syringe:

Empty Weight of syringe:

Net weight of standard:

Standard activity:

Dilution volume:

Dilutent:

Calculated activity:

Final activity:

(Decay corrected to):

Expiration:

DT 8-8-01

Secondary Stock ☐ **Tertiary Stock** ☐ **Working Solution** ☒

Stock RAD#: 009-01

Witness: RG

Stock activity: 202.4 pC/ml

Volume of stock used: 5.0 mls

Dilution volume: 1000 mls

Dilutent: 1N HNO3

Calculated activity: 1.0 pCi/ml

Final Activity: 1.0 pCi/ml

(Decay corrected to): 8-8-01

Expiration: 8-8-02

RAD # 009-00

STANDARD PREPARATION WORKSHEET

Isotope Number: 335.00

Radionuclide: Am 243

Date of Preparation: 8/20/97

Prepared by: MS

Isotope Number of Stock Solution: N/A

PREPARATION NOTES:

1) Amount of Stock Solution measured in volumetric flask.

GROSS AMPULE WT: 9.2979 g

EMPTY AMPULE WT: 4.1701 g

NET STANDARD WT: 5.1278 g

ACTIVITY CONC: 0.1974 µCi/g NET ACTIVITY: 1.012 µCi MS 8/20/97

(1012 ~~2272~~ pCi)

2) Amount and type of dilution measured in volumetric flask.

5.1278 g OF 335.00 DILUTED TO 1000 mL IN 4N HNO_3

3) Final Concentration.

1012 MS 8/20/97

~~1012~~ pCi/mL ✓ MS 8/20/97

4) Notes, Comments, and Calculations.

WITNESSED BY DT 8-20-97

RAD#009-01

STANDARD PREPARATION WORKSHEET

Isotope Number: 335.01

Radionuclide: Am 243

Date of Preparation: 8/28/97

Prepared by: MC

Isotope Number of Stock Solution: 335.00

PREPARATION NOTES:

1) Amount of Stock Solution measured in volumetric flask.

200 ml of 335.00 @ 1012 pCi/ml

2) Amount and type of dilution measured in volumetric flask.

200 ml of 335.00 DILUTED TO 1000 ml IN 4N HNO_3

3) Final Concentration.

202.4 pCi/ml ✓ OW 9/9/97

4) Notes, Comments, and Calculations.

WITNESSED BY [illegible] 8-28-97

QC26 EFF 07-15-94:REV 2

Raw Data for Cyanide

General Chemistry Narrative
ETLL
SDG 52055

Method/Analysis Information

Procedure:	**Total Cyanide**
Analytical Method:	SW846 9012A
Prep Method:	SW846 9010B Prep
Analytical Batch Number:	121040
Prep Batch Number:	121039

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 9012A:

Sample ID	Client ID
52055001	L4094-1
52055002	L4094-2
52055003	L4094-3
52055004	L4094-4
52055005	L4094-5
52055006	L4094-6
52055007	L4094-7
52055008	L4094-8
52055009	L4094-9
1200110410	MB for batch 121039
1200110412	DUP of 52055001
1200110414	MS of 52055001
1200110415	LCS for batch 121039

SOP Reference

Procedures for preparation, analysis and reporting of analytical data are controlled by General Engineering Laboratories, Inc. as Standard Operating Procedures (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-095.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by General Engineering Laboratories, Inc. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information:

The instrument used in this analysis was the following: Lachat QuickChem FIA+

Initial Calibration
The instrument was properly calibrated.

Calibration Verification Information
All calibration verification standards were within the required limits.

Quality Control (QC) Information:

Blank Acceptance
The method and calibration blanks associated with this data were within the required acceptance limits.

Laboratory Control Sample Recovery
The recovery for the laboratory control sample was within the required acceptance limits.

Quality Control
The following sample was designated for Quality Control for this sample group:
52055001

Sample Spike Recovery
The spike recovery for this sample set was within the required acceptance limits.

Sample Duplicate Acceptance
The Relative Percent Difference between the sample and duplicate for this SDG was within the required acceptance limits.

Technical Information:

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times
All samples from this sample group were analyzed within the required holding time for this method.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
No samples in this sample group required dilutions.

Miscellaneous Information:

Nonconformance Reports
No Nonconformance Reports (NCR) were required for any of the samples in this sample group for this analysis.

Review Validation:

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

The following data validator verified the information presented in this case narrative:

Reviewer:_____ **Date:** 12/17/01

Certificate of Analysis

Company : Enviro Test Laboratories, LLC.
Address : 420 West First Street
Casper, Wyoming 82601

Report Date: December 15, 2001

Contact: Ronni Mull
Project: Routine Analytical

Client Sample ID:	L4094-1	Project:	ETLL00101
Sample ID:	52055001	Client ID:	ETLL001
Matrix:	Soil		
Collect Date:	09-NOV-01		
Receive Date:	15-NOV-01		
Collector:	Client		
Moisture:	12.6%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rapid Flow Analysis (Alpkem)											
SW9012A Cyanide, Total											
Cyanide, Total	U	28.2	79.0	286	ug/kg	1	ADF	11/20/01	1546	121040	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550B	3550B PCB Prep Soil	GRB2	11/16/01	2346	121121
'846 9010B Prep	SW846 9010B Prep	JM1	11/20/01	1437	121039

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9012A	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.
This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Cheryl Jones.

Reviewed by

Certificate of Analysis

Company : Enviro Test Laboratories, LLC.
Address : 420 West First Street
Casper, Wyoming 82601

Report Date: December 15, 2001

Contact: Ronni Mull
Project: Routine Analytical

Client Sample ID:	L4094-2	Project:	ETLL00101
Sample ID:	52055002	Client ID:	ETLL001
Matrix:	Soil		
Collect Date:	09-NOV-01		
Receive Date:	15-NOV-01		
Collector:	Client		
Moisture:	3.13%		

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rapid Flow Analysis (Alpkem)										
SW9012A Cyanide, Total										
Cyanide, Total	J	197	71.3	258	ug/kg	1	ADF 11/20/01	1549	121040	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550B	3550B PCB Prep Soil	GRB2	11/16/01	2346	121121
SW846 9010B Prep	SW846 9010B Prep	JM1	11/20/01	1437	121039

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9012A	

Notes:
The Qualifiers in this report are defined as follows :

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> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

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Reviewed by

Certificate of Analysis

Company : Enviro Test Laboratories, LLC.
Address : 420 West First Street
Casper, Wyoming 82601

Report Date: December 15, 2001

Contact: Ronni Mull
Project: Routine Analytical

Client Sample ID:	L4094-3	Project:	ETLL00101
Sample ID:	52055003	Client ID:	ETLL001
Matrix:	Soil		
Collect Date:	09-NOV-01		
Receive Date:	15-NOV-01		
Collector:	Client		
Moisture:	8.38%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rapid Flow Analysis (Alpkem)											
SW9012A Cyanide, Total											
Cyanide, Total	U	-54.6	75.4	273	ug/kg	1	ADF	11/20/01	1549	121040	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550B	3550B PCB Prep Soil	GRB2	11/16/01	2346	121121
SW846 9010B Prep	SW846 9010B Prep	JM1	11/20/01	1437	121039

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9012A	

Notes:
The Qualifiers in this report are defined as follows :

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> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

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Reviewed by

Certificate of Analysis

Company : Enviro Test Laboratories, LLC.
Address : 420 West First Street
Casper, Wyoming 82601

Report Date: December 15, 2001

Contact: Ronni Mull
Project: Routine Analytical

Client Sample ID:	L4094-4	Project:	ETLL00101
Sample ID:	52055004	Client ID:	ETLL001
Matrix:	Soil		
Collect Date:	09-NOV-01		
Receive Date:	15-NOV-01		
Collector:	Client		
Moisture:	13.1%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rapid Flow Analysis (Alpkem)											
SW9012A Cyanide, Total											
Cyanide, Total	U	29.3	79.5	288	ug/kg	1	ADF	11/20/01	1550	121040	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550B	3550B PCB Prep Soil	GRB2	11/16/01	2346	121121
V846 9010B Prep	SW846 9010B Prep	JM1	11/20/01	1437	121039

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9012A	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

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This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Cheryl Jones.

Reviewed by

Certificate of Analysis

Company : Enviro Test Laboratories, LLC.
Address : 420 West First Street
Casper, Wyoming 82601

Report Date: December 15, 2001

Contact: Ronni Mull
Project: Routine Analytical

Client Sample ID:	L4094-5	Project:	ETLL00101
Sample ID:	52055005	Client ID:	ETLL001
Matrix:	Soil		
Collect Date:	09-NOV-01		
Receive Date:	15-NOV-01		
Collector:	Client		
Moisture:	2.95%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rapid Flow Analysis (Alpkem)											
SW9012A Cyanide, Total											
Cyanide, Total	U	16.8	71.1	258	ug/kg	1	ADF	11/20/01	1551	121040	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550B	3550B PCB Prep Soil	GRB2	11/16/01	2346	121121
SW846 9010B Prep	SW846 9010B Prep	JM1	11/20/01	1437	121039

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9012A	

Notes:
The Qualifiers in this report are defined as follows :

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< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.
This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Cheryl Jones.

Reviewed by

Certificate of Analysis

Company : Enviro Test Laboratories, LLC.
Address : 420 West First Street
Casper, Wyoming 82601

Report Date: December 15, 2001

Contact: Ronni Mull
Project: Routine Analytical

Client Sample ID:	L4094-6	Project:	ETLL00101
Sample ID:	52055006	Client ID:	ETLL001
Matrix:	Soil		
Collect Date:	09-NOV-01		
Receive Date:	15-NOV-01		
Collector:	Client		
Moisture:	3.47%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rapid Flow Analysis (Alpkem)											
SW9012A Cyanide, Total											
Cyanide, Total	U	-0.893	71.5	259	ug/kg	1	ADF	11/20/01	1551	121040	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550B	3550B PCB Prep Soil	GRB2	11/16/01	2346	121121
SW846 9010B Prep	SW846 9010B Prep	JM1	11/20/01	1437	121039

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9012A	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.
This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Cheryl Jones.

Reviewed by

Certificate of Analysis

Company : Enviro Test Laboratories, LLC.
Address : 420 West First Street
Casper, Wyoming 82601

Report Date: December 15, 2001

Contact: Ronni Mull
Project: Routine Analytical

Client Sample ID:	L4094-7	Project:	ETLL00101
Sample ID:	52055007	Client ID:	ETLL001
Matrix:	Soil		
Collect Date:	09-NOV-01		
Receive Date:	15-NOV-01		
Collector:	Client		
Moisture:	4.75%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rapid Flow Analysis (Alpkem)											
SW9012A Cyanide, Total											
Cyanide, Total	U	35.1	72.5	262	ug/kg	1	ADF	11/20/01	1552	121040	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550B	3550B PCB Prep Soil	GRB2	11/16/01	2346	121121
SW846 9010B Prep	SW846 9010B Prep	JM1	11/20/01	1437	121039

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9012A	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.
This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Cheryl Jones.

Reviewed by

Certificate of Analysis

Company : Enviro Test Laboratories, LLC.
Address : 420 West First Street
Casper, Wyoming 82601

Report Date: December 15, 2001

Contact: Ronni Mull
Project: Routine Analytical

Client Sample ID:	L4094-8	Project:	ETLL00101
Sample ID:	52055008	Client ID:	ETLL001
Matrix:	Soil		
Collect Date:	09-NOV-01		
Receive Date:	15-NOV-01		
Collector:	Client		
Moisture:	9.37%		

Parameter	Qualifier	Result	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Rapid Flow Analysis (Alpkem)										
SW9012A Cyanide, Total										
Cyanide, Total	U	58.0	76.2	276	ug/kg	1	ADF 11/20/01	1553	121040	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550B	3550B PCB Prep Soil	GRB2	11/16/01	2346	121121
SW846 9010B Prep	SW846 9010B Prep	JM1	11/20/01	1437	121039

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9012A	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
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B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.
This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Cheryl Jones.

Reviewed by

Certificate of Analysis

Company : Enviro Test Laboratories, LLC.
Address : 420 West First Street
Casper, Wyoming 82601

Report Date: December 15, 2001

Contact: Ronni Mull
Project: Routine Analytical

Client Sample ID:	L4094-9	Project:	ETLL00101
Sample ID:	52055009	Client ID:	ETLL001
Matrix:	Soil		
Collect Date:	09-NOV-01		
Receive Date:	15-NOV-01		
Collector:	Client		
Moisture:	1.45%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rapid Flow Analysis (Alpkem)											
SW9012A Cyanide, Total											
Cyanide, Total	U	35.8	70.1	254	ug/kg	1	ADF	11/20/01	1557	121040	1

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550B	3550B PCB Prep Soil	GRB2	11/16/01	2346	121121
'W846 9010B Prep	SW846 9010B Prep	JM1	11/20/01	1437	121039

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 9012A	

Notes:
The Qualifiers in this report are defined as follows :

** Indicates the analyte is a surrogate compound.
< Actual result is less than amount reported
> Actual result is greater than amount reported
B Analyte found in the sample as well as the associated blank.
E Concentration exceeds instrument calibration range
J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
U Indicates the compound was analyzed for but not detected above the detection limit
UI Uncertain identification for gamma spectroscopy.
X Lab-specific qualifier - must be fully described in case narrative and data summary package

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.
This data report has been prepared and reviewed in accordance with General Engineering Laboratories, Inc. standard operating procedures. Please direct any questions to your Project Manager, Cheryl Jones.

Reviewed by

QC Summary

Report Date: December 15, 2001

Client : Enviro Test Laboratories, LLC.
420 West First Street
Casper, Wyoming

Contact: Ronni Mull

Workorder: 52055

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rapid Flow Analysis (Alpkem)											
Batch 121040											
QC1200110412 52055001 DUP											
Cyanide, Total		U	28.2	U	31.1	ug/kg	N/A ^		(+/-286)	ADF	11/20/01 15:47
QC1200110415 LCS											
Cyanide, Total	5000				4600	ug/kg		92	(60%-125%)		11/20/01 15:38
QC1200110410 MB											
Cyanide, Total				U	-8.76	ug/kg					
QC1200110414 52055001 MS											
Cyanide, Total	5720	U	28.2		5210	ug/kg		91	(70%-130%)		11/20/01 15:48

Notes:
The Qualifiers in this report are defined as follows:

- ** Indicates the analyte is a surrogate compound.
- < Actual result is less than amount reported
- > Actual result is greater than amount reported
- B Analyte found in the sample as well as the associated blank.
- E Concentration exceeds instrument calibration range
- J Indicates an estimated value. The result was greater than the detection limit, but less than the reporting limit.
- U Indicates the compound was analyzed for but not detected above the detection limit
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier - must be fully described in case narrative and data summary package

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptence criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Prep LogBook

Analyst:	JM1	Type	Sample Id	Lot. Id	Spike Amount	Spike Units
Batch:	121039 / 121040	LCS	1200110415	URF010925-01	.05	mL
Prep Date:	20-NOV-2001 14:37	MS	1200110413	URF010925-01	.05	mL
Lab SOP:	GL-GC-E-067 REV.3	MS	1200110414	URF010925-01	.05	mL

Type	Sample id	Parent Sample	Method	Initial Wt.	Final Volume	Prep Factor	Comments	Matrix
MB	1200110410		SW846 9010B Prep	1g	50mL	50		Soil
LCS	1200110415		SW846 9010B Prep	1g	50mL	50		Soil
SAMPLE	52048010		SW846 9010B Prep	1g	50mL	50		Soil
DUP	1200110411	52048010	SW846 9010B Prep	1g	50mL	50		Soil
MS	1200110413	52048010	SW846 9010B Prep	1g	50mL	50		Soil
SAMPLE	52048011		SW846 9010B Prep	1g	50mL	50		Soil
SAMPLE	52048012		SW846 9010B Prep	1g	50mL	50		Soil
SAMPLE	52048013		SW846 9010B Prep	1g	50mL	50		Soil
SAMPLE	52055001		SW846 9010B Prep	1g	50mL	50		Soil
DUP	1200110412	52055001	SW846 9010B Prep	1g	50mL	50		Soil
MS	1200110414	52055001	SW846 9010B Prep	1g	50mL	50		Soil
SAMPLE	52055002		SW846 9010B Prep	1g	50mL	50		Soil
SAMPLE	52055003		SW846 9010B Prep	1g	50mL	50		Soil
SAMPLE	52055004		SW846 9010B Prep	1g	50mL	50		Soil
SAMPLE	52055005		SW846 9010B Prep	1g	50mL	50		Soil
SAMPLE	52055006		SW846 9010B Prep	1g	50mL	50		Soil
SAMPLE	52055007		SW846 9010B Prep	1g	50mL	50		Soil
SAMPLE	52055008		SW846 9010B Prep	1g	50mL	50		Soil
SAMPLE	52055009		SW846 9010B Prep	1g	50mL	50		Soil

Note: All treatment condition for each sample and QC were met for the above SOP number. See case narrative for any exceptions.

12/17/01

Creator: adf
Creation Date: Nov 20, 2001 15:08:07
Last Modified: Nov 20, 2001 15:08:07
Description: Data File CN1120B 121044 T-CN, 121040 T-CN

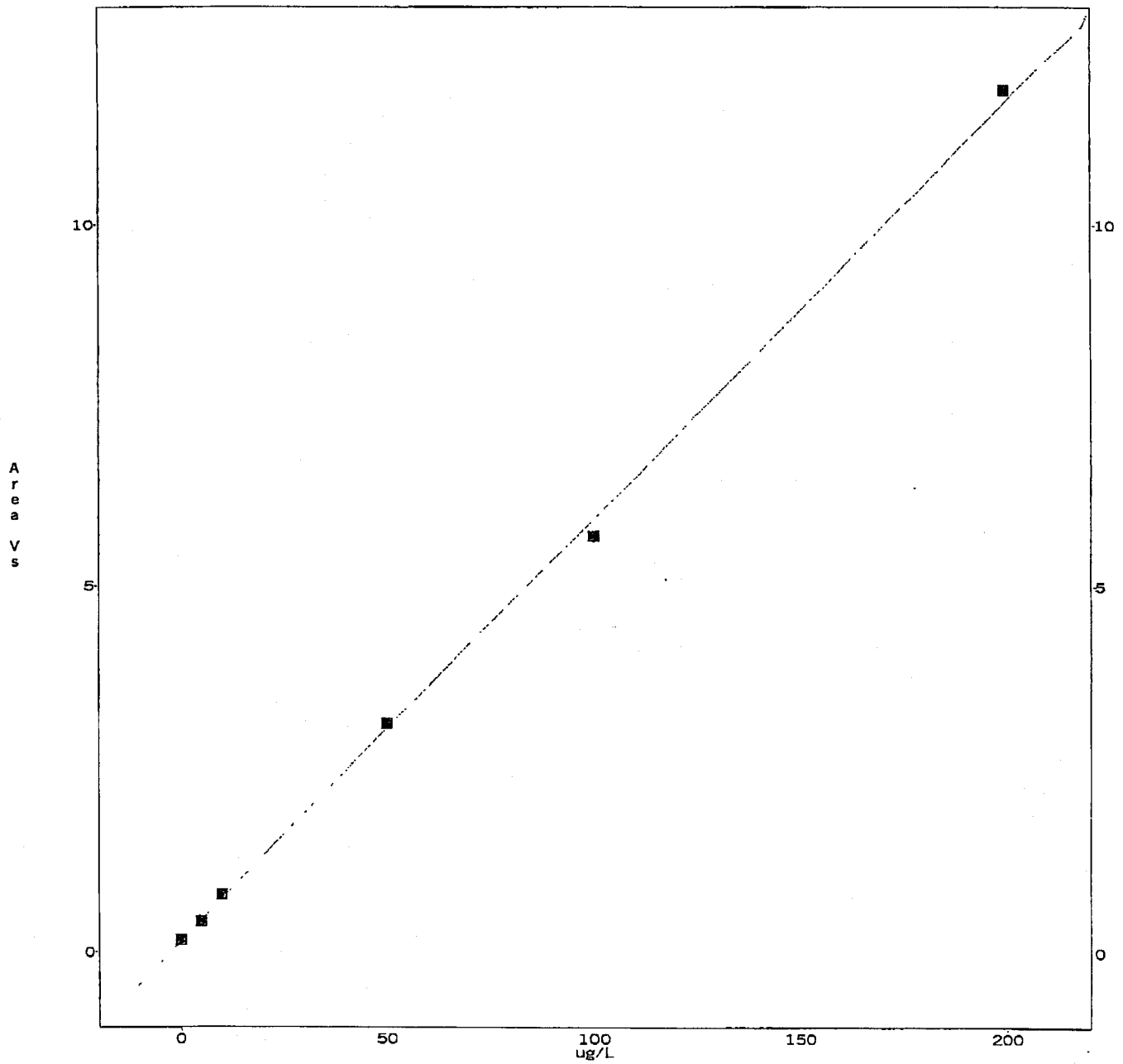
Cup #	Sample ID	Manual Dilution	Sample Type	
1	200 ug/L	1.0000	CalStd	
2	100 ug/L	1.0000	CalStd	
3	50 ug/L	1.0000	CalStd	
4	10 ug/L	1.0000	CalStd	
5	5 ug/L	1.0000	CalStd	
6	0 ug/L	1.0000	CalStd	
1	ICV	1.0000	Unknown	
2	ICB	1.0000	Unknown	
3	CRDL 5 ppb	1.0000	Unknown	
4	1200110420|121044|MB	1.0000	Unknown	
5	1200110426||LCS	1.0000	Unknown	
6	52017001	1.0000	Unknown	
7	1200110422||DUP	1.0000	Unknown	
8	1200110423||MS	1.0000	Unknown	
9	52027001	1.0000	Unknown	
10	1200110421||DUP	1.0000	Unknown	
11	1200110424||MS	1.0000	Unknown	
12	1200110425||MSD	1.0000	Unknown	
13	1200110410|121040|MB	1.0000	Unknown	
14	1200110415||LCS	1.0000	Unknown	
15	52048010	1.0000	Unknown	
16	1200110411||DUP	1.0000	Unknown	
17	1200110413||MS	1.0000	Unknown	
18	52048011	1.0000	Unknown	
19	52048012	1.0000	Unknown	
20	52048013	1.0000	Unknown	
21	52055001	1.0000	Unknown	
22	1200110412||DUP	1.0000	Unknown	
23	1200110414||MS	1.0000	Unknown	
24	52055002	1.0000	Unknown	
25	52055003	1.0000	Unknown	
26	52055004	1.0000	Unknown	
27	52055005	1.0000	Unknown	
28	52055006	1.0000	Unknown	
29	52055007	1.0000	Unknown	
30	52055008	1.0000	Unknown	
31	52055009	1.0000	Unknown	

TCYANIDE

l	Area	ug/L	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Replic STD	Replic % RSD	Residual 1st Poly
1	11846215	200	11846215					0.0	0.0	-1.4
2	5681684	100	5681684					0.0	0.0	4.0
3	3085453	50	3085453					0.0	0.0	-2.0
4	764918	10	764918					0.0	0.0	-7.7
5	397878	5	397878					0.0	0.0	11.8
6	148899	0	148899					0.0	0.0	

1st Order Poly
Conc = 1.733e-005 Area - 2.485e+000
r = 0.9996

Scaling: None - Weighting: 1/X



Printed: Tuesday, November 20, 2001 - 03:35 PM

General Engineering Laboratories

OPERATOR: adf ADF 11-20-01
DATA FILENAME: C:\OMNION\DATA\CN1120B.FDT
TRAY FILENAME: C:\OMNION\TRAYS\CN1120B.TRA

TRAY DESCRIPTION:
Created: Nov 20, 2001 15:08:07
Modified: Nov 20, 2001 15:08:07
Data File CN1120B 121044 T-CN, 121040 T-CN
DATA DESCRIPTION:
Created: Nov 20, 2001 15:20:11
Modified: Nov 20, 2001 15:20:11

Multi-Channel Table
Type: Unknowns
Channel Range: 1 to 8 -- Cup Range: 1 to 32

Cup	Sample ID	Sampling Date	Sampling Time	# of Reps	TCYANIDE (ug/L)	Man Dil Factor	Auto Dil Factor
1	ICV	20 Nov 2001	15:26:18	1	99.88	1.0	1.00
2	ICB	20 Nov 2001	15:27:02	1	0.15	1.0	1.00
3	CRDL 5 ppb	20 Nov 2001	15:27:45	1	5.27	1.0	1.00
4	1200110420|121044|MB	20 Nov 2001	15:28:28	1	-0.11	1.0	1.00
5	1200110426||LCS	20 Nov 2001	15:29:11	1	92.58	1.0	1.00
6	52017001	20 Nov 2001	15:29:54	1	-1.40	1.0	1.00
7	1200110422||DUP	20 Nov 2001	15:30:36	1	-1.25	1.0	1.00
8	1200110423||MS	20 Nov 2001	15:31:19	1	94.08	1.0	1.00
9	52027001	20 Nov 2001	15:32:02	1	4.60	1.0	1.00
10	1200110421||DUP	20 Nov 2001	15:32:45	1	4.38	1.0	1.00
11	1200110424||MS	20 Nov 2001	15:36:39	1	89.54	1.0	1.00
12	1200110425||MSD	20 Nov 2001	15:37:21	1	89.78	1.0	1.00
13	1200110410|121040|MB	20 Nov 2001	15:38:02	1	-0.18	1.0	1.00
14	1200110415||LCS	20 Nov 2001	15:38:44	1	92.02	1.0	1.00
15	52048010	20 Nov 2001	15:39:26	1	82.21	1.0	1.00
16	1200110411||DUP	20 Nov 2001	15:40:10	1	81.27	1.0	1.00
17	1200110413||MS	20 Nov 2001	15:40:53	1	137.40	1.0	1.00
18	52048011	20 Nov 2001	15:41:37	1	92.20	1.0	1.00
19	52048012	20 Nov 2001	15:42:21	1	19.08	1.0	1.00
20	52048013	20 Nov 2001	15:43:04	1	401.76	1.0	1.00
20	52048013	20 Nov 2001	16:01:28	1	377.49	1.0	10.00
21	52055001	20 Nov 2001	15:46:59	1	0.49	1.0	1.00
22	1200110412||DUP	20 Nov 2001	15:47:42	1	0.54	1.0	1.00
23	1200110414||MS	20 Nov 2001	15:48:24	1	91.05	1.0	1.00
24	52055002	20 Nov 2001	15:49:07	1	3.82	1.0	1.00
25	52055003	20 Nov 2001	15:49:50	1	-1.00	1.0	1.00
26	52055004	20 Nov 2001	15:50:33	1	0.51	1.0	1.00
27	52055005	20 Nov 2001	15:51:15	1	0.33	1.0	1.00
28	52055006	20 Nov 2001	15:51:57	1	-0.02	1.0	1.00
29	52055007	20 Nov 2001	15:52:39	1	0.67	1.0	1.00
30	52055008	20 Nov 2001	15:53:21	1	1.05	1.0	1.00
31	52055009	20 Nov 2001	15:57:17	1	0.71	1.0	1.00

General Engineering Laboratories

OPERATOR: adf
DATA FILENAME: C:\OMNION\DATA\CN1120B.FDT
TRAY FILENAME: C:\OMNION\TRAYS\CN1120B.TRA

TRAY DESCRIPTION:
Created: Nov 20, 2001 15:08:07
Modified: Nov 20, 2001 15:08:07
Data File CN1120B 121044 T-CN, 121040 T-CN
DATA DESCRIPTION:
Created: Nov 20, 2001 15:20:11
Modified: Nov 20, 2001 15:20:11

Multi-Channel Table
Type: DQM
Channel Range: 1 to 1 -- Cup Range: 1 to 50

Cup	Sample ID	Sample Type	Sampling Date	Sampling Time	# of Reps	TCYANIDE (ug/L)
2	100 PPB CHK	RelChkStd	20 Nov 2001	15:33:27	1	95.54
				Known Concentration:		100.00
				% Difference:		-4.46
2	100 PPB CHK	RelChkStd	20 Nov 2001	15:43:46	1	96.25
				Known Concentration:		100.00
				% Difference:		-3.75
2	100 PPB CHK	RelChkStd	20 Nov 2001	15:54:03	1	95.71
				Known Concentration:		100.00
				% Difference:		-4.29
2	100 PPB CHK	RelChkStd	20 Nov 2001	16:03:58	1	95.94
				Known Concentration:		100.00
				% Difference:		-4.06
6	blank	Blank	20 Nov 2001	15:34:10	1	0.01
6	blank	Blank	20 Nov 2001	15:44:30	1	0.50
6	blank	Blank	20 Nov 2001	15:54:46	1	0.22
6	blank	Blank	20 Nov 2001	16:04:41	1	0.10

Raw Data for Gamma

Enviro-Test Laboratory

VMS Gamma Spectroscopy Report Generated 30-NOV-2001 11:05:28

Cc guration Name :
S YSDEVICE:[GAMMA.SCUSR.ARCHIVE]SMP_L40941_DET1_60MLCAN_2285.CNF;1

---- Sample Information ----

Sample Title	: L4094-1		
Sample ID	: L4094-1	Sample Quantity	: 9.48600E+01 g
Sample Type	: SOIL	Sample Geometry	:
Sample Number	: 2285	Spctrm Collector	: Analyst
Sample Collector	:	Sample Analyst	: Analyst

---- Sample Deposition Information ----

Dep. Correction?	: No	Dep. Duration	:
Deposition Start	:	Deposition End	: 9-NOV-2001 14:15:00.

---- Sample Decay/Count Information ----

Sample Date	: 9-NOV-2001 14:15:00.	Acquisition date	: 30-NOV-2001 09:05:03
Decay time	: 20 18:50:03.96	% dead time	: 0.1%
Elapsed live time	: 0 02:00:00.00	Elapsed real time	: 0 02:00:04.24

---- Detector Parameters ----

Energy cal. time	: 3-AUG-2001 14:03:25.	Energy cal. oper.	: Analyst
Detector name	: DET1	Counting geometry	: 60mL Can
Effic. cal. time	: 3-AUG-2001 14:14:25.	Effic. cal. oper.	: Analyst

---- Processing Parameters ----

S channel	: 1	End channel	: 4096
Se tivity	: 5.00000	Gaussian Sens.	: 10.00000
Critical level?	: No	Propagate Errors?	: No
Efficiency Type	: EMPIRICA	Library-based eff	: No
Energy tolerance	: 2.00000	Half life ratio	: 20.00000
Abundance limit	: 50.00000	WTM error limit	: 3.00000
MDA Width (FWHM)	: 3.00000	MDA Confid Level	: 5.00000 %

---- Additional Information ----

Library Used: SYS$SYSDEVICE:[GAMMA.SCUSR.LIB]PINN.NLB;
Background Used: DKA0:[GAMMA.SCUSR.ARCHIVE]BKG__DET1__2156.CNF;1

Br' ' Report

Nuclide	Activity pCi/g	2-Sigma Error
K-40	34.6	2.56
CS-137	0.715	0.110
TL-208	0.440	9.654E-02
BI-212	2.41	1.32
PB-212	1.78	0.145
BI-214	1.21	0.214
PB-214	1.19	0.178
AC-228	1.62	0.256
TH-234	2.02	2.12
U-235	0.232	0.128
AM-241	7.08	0.460

Total Activity :	53.3	

Approved by: _____ Approval Date: __ / __ / ____

Sample ID : L4094-1 Acquisition date : 30-NOV-2001 09:05:03

-- Identified Nuclides ----

Nuclide	Activity (pCi/g)	Act error	MDA (pCi/g)	MDA error	Act/MDA
K-40	3.460E+01	2.559E+00	8.255E-01	0.000E+00	41.910
CS-137	7.155E-01	1.098E-01	1.016E-01	0.000E+00	7.041
TL-208	4.404E-01	9.654E-02	8.957E-02	0.000E+00	4.917
BI-212	2.414E+00	1.320E+00	1.200E+00	0.000E+00	2.011
PB-212	1.782E+00	1.448E-01	1.435E-01	0.000E+00	12.418
BI-214	1.209E+00	2.139E-01	1.775E-01	0.000E+00	6.814
PB-214	1.191E+00	1.779E-01	1.780E-01	0.000E+00	6.689
AC-228	1.618E+00	2.558E-01	3.488E-01	0.000E+00	4.638
TH-234	~~2.018E+00~~ 0.00	2.123E+00	1.182E+00	0.000E+00	1.707
U-235	2.325E-01	1.278E-01	5.721E-01	0.000E+00	0.406
AM-241	7.077E+00	4.601E-01	3.477E-01	0.000E+00	20.353

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/g)	K.L. Ided	Act error	MDA (pCi/g)	MDA error	Act/MDA
BE-7	4.580E-01		5.428E-01	9.318E-01	0.000E+00	0.492
NA-22	6.304E-02		7.261E-02	1.256E-01	0.000E+00	0.502
SC[illegible]	1.343E-01	+	1.611E-01	1.816E-01	0.000E+00	0.740
CR[illegible]	-6.460E-02		6.693E-01	1.120E+00	0.000E+00	-0.058
MN-54	3.468E-03		6.006E-02	1.004E-01	0.000E+00	0.035
CO-56	-1.654E-02		6.382E-02	1.041E-01	0.000E+00	-0.159
CO-57	2.048E-03		4.016E-02	6.626E-02	0.000E+00	0.031
CO-58	5.453E-04		6.197E-02	1.035E-01	0.000E+00	0.005
FE-59	-8.721E-02		1.577E-01	2.449E-01	0.000E+00	-0.356
CO-60	-5.504E-03		5.476E-02	9.097E-02	0.000E+00	-0.060
ZN-65	-2.576E-02		1.481E-01	2.037E-01	0.000E+00	-0.126
SR-85	1.890E-01		6.288E-02	1.179E-01	0.000E+00	1.602
NB-94	-2.300E-02		5.101E-02	8.162E-02	0.000E+00	-0.282
NB-95	8.524E-03		8.820E-02	1.486E-01	0.000E+00	0.057
RU-106	-5.196E-02		4.998E-01	7.980E-01	0.000E+00	-0.065
AG-110M	7.882E-01		1.246E+00	2.118E+00	0.000E+00	0.372
SB-124	-2.470E-02		7.604E-02	1.105E-01	0.000E+00	-0.224
SB-125	-9.049E-03		1.454E-01	2.392E-01	0.000E+00	-0.038
I-129	-6.796E-01		8.920E-01	1.356E+00	0.000E+00	-0.501
I-131	2.905E-01		2.946E-01	5.135E-01	0.000E+00	0.566
CS-134	-1.164E-02		6.176E-02	8.548E-02	0.000E+00	-0.136
CE-139	-4.720E-03		4.916E-02	7.950E-02	0.000E+00	-0.059
CE-144	3.000E-01		3.206E-01	5.195E-01	0.000E+00	0.577
EU-152	1.744E-01		2.630E-01	4.704E-01	0.000E+00	0.371
EU-154	7.134E-03		8.167E-02	1.348E-01	0.000E+00	0.053
EU-155	3.734E-01	+	1.350E-01	2.166E-01	0.000E+00	1.724
TH-227	-9.299E-02		4.111E-01	5.742E-01	0.000E+00	-0.162
PA-234M	-1.451E+00		9.746E+00	1.551E+01	0.000E+00	-0.094

Sample ID : L4094-1 Acquisition date : 30-NOV-2001 09:05:03

N de Type: natural

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
K-40	1460.83	10.67*	1.202E+00	3.460E+01	3.460E+01	7.40	OK
Final Mean for 1 Valid Peaks = 3.460E+01+/- 2.559E+00 (7.40%)							
TL-208	277.28	6.80	4.863E+00	----- Line Not Found		-----	Absent
	510.61	21.60	3.059E+00	1.588E+00	1.588E+00	37.39	<<WM N-Sigma
	583.02	86.00*	2.740E+00	4.350E-01	4.350E-01	22.49	OK
	860.30	12.00	1.932E+00	6.361E-01	6.361E-01	93.00	OK
Final Mean for 2 Valid Peaks = 4.404E-01+/- 9.654E-02 (21.92%)							
BI-212	39.85	1.10	9.275E-01	----- Line Not Found		-----	Absent
	727.25	6.65*	2.255E+00	2.235E+00	2.235E+00	62.82	OK
	785.51	1.11	2.103E+00	----- Line Not Found		-----	Absent
	1620.66	1.51	1.114E+00	3.781E+00	3.781E+00	102.51	OK
Final Mean for 2 Valid Peaks = 2.414E+00+/- 1.320E+00 (54.68%)							
PB-212	74.81	10.50	5.937E+00	2.667E+00	2.667E+00	18.80	<<WM Interf
	77.10	17.70	6.144E+00	2.533E+00	2.533E+00	13.80	<<WM Interf
	87.19	6.27	6.807E+00	2.009E+00	2.009E+00	36.15	<<WM Interf
	90.12	1.86	6.927E+00	5.269E+00	5.269E+00	44.17	<<WM Interf
	238.58	43.60*	5.381E+00	1.782E+00	1.782E+00	8.13	OK
	300.03	3.34	4.601E+00	----- Line Not Found		-----	Absent
Final Mean for 1 Valid Peaks = 1.782E+00+/- 1.448E-01 (8.13%)							
BI-214	609.31	46.10*	2.639E+00	1.252E+00	1.252E+00	18.67	OK
	665.44	1.56	2.442E+00	----- Line Not Found		-----	Absent
	768.35	4.88	2.146E+00	----- Line Not Found		-----	Absent
	806.16	1.23	2.053E+00	----- Line Not Found		-----	Absent
	934.04	3.16	1.790E+00	----- Line Not Found		-----	Absent
	1120.27	15.00	1.511E+00	7.536E-01	7.536E-01	119.96	OK
	1155.18	1.69	1.470E+00	----- Line Not Found		-----	Absent
	1238.11	5.92	1.381E+00	----- Line Not Found		-----	Absent
	1280.95	1.47	1.341E+00	----- Line Not Found		-----	Absent
	1377.66	4.02	1.260E+00	2.160E+00	2.160E+00	80.80	OK
	1401.48	1.39	1.243E+00	----- Line Not Found		-----	Absent
	1407.97	2.48	1.238E+00	----- Line Not Found		-----	Absent
	1509.22	2.19	1.173E+00	----- Line Not Found		-----	Absent
	1661.26	1.15	1.096E+00	----- Line Not Found		-----	Absent
	1729.58	3.05	1.069E+00	----- Line Not Found		-----	Absent
	1764.49	15.90	1.056E+00	9.410E-01	9.410E-01	75.15	OK
	1847.41	2.12	1.031E+00	----- Line Not Found		-----	Absent
	2118.53	1.21	9.804E-01	----- Line Out Of Range		----	Absent
	2204.09	4.99	9.735E-01	----- Line Out Of Range		----	Absent
Final Mean for 4 Valid Peaks = 1.209E+00+/- 2.139E-01 (17.69%)							

Sample ID : L4094-1 Acquisition date : 30-NOV-2001 09:05:03

Nuclide Type: natural

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
PB-214	53.17	1.10	3.004E+00	----- Line Not Found		-----	Absent
	74.81	6.52	5.937E+00	4.294E+00	4.294E+00	18.80	<<WM Interf
	77.11	11.00	6.144E+00	4.077E+00	4.077E+00	13.80	<<WM Interf
	87.20	3.88	6.807E+00	3.246E+00	3.246E+00	36.15	<<WM Interf
	90.13	1.15	6.927E+00	8.522E+00	8.523E+00	44.17	<<WM Interf
	241.92	7.46	5.331E+00	1.440E+00	1.440E+00	43.84	OK
	295.10	19.20	4.655E+00	1.278E+00	1.278E+00	29.98	OK
	351.87	37.10*	4.098E+00	1.136E+00	1.136E+00	18.66	OK
	785.83	1.09	2.102E+00	----- Line Not Found		-----	Absent
Final Mean for 3 Valid Peaks = 1.191E+00+/- 1.779E-01 (14.94%)							
AC-228	89.96	3.40	6.927E+00	2.883E+00	2.883E+00	44.17	<<WM Interf
	93.35	5.60	7.035E+00	2.928E+00	2.928E+00	30.75	<<WM Interf
	129.03	2.90	7.243E+00	3.209E+00	3.209E+00	44.19	OK
	209.39	4.10	5.844E+00	1.454E+00	1.454E+00	81.10	OK
	270.26	3.80	4.949E+00	----- Line Not Found		-----	Absent
	328.07	3.50	4.314E+00	----- Line Not Found		-----	Absent
	338.42	12.40	4.221E+00	1.794E+00	1.794E+00	29.54	OK
	409.62	2.20	3.652E+00	----- Line Not Found		-----	Absent
	463.10	4.60	3.315E+00	----- Line Not Found		-----	Absent
	794.79	4.60	2.080E+00	----- Line Not Found		-----	Absent
	911.16	29.00*	1.832E+00	1.523E+00	1.523E+00	25.70	OK
	964.64	5.80	1.737E+00	2.271E+00	2.271E+00	54.94	OK
	968.97	17.40	1.730E+00	1.290E+00	1.290E+00	42.43	OK
	1588.23	3.60	1.130E+00	----- Line Not Found		-----	Absent
Final Mean for 6 Valid Peaks = 1.618E+00+/- 2.558E-01 (15.81%)							
TH-234	63.29	3.80	4.607E+00	2.018E+00	2.018E+00	105.17	OK
	92.57	5.41*	7.035E+00	3.031E+00	3.031E+00	30.75	<<WM Interf
Final Mean for 1 Valid Peaks = 2.018E+00+/- 2.123E+00 (105.17%)							
U-235	89.96	3.36	6.927E+00	2.917E+00	2.917E+00	44.17	<<WM Interf
	93.35	5.50	7.035E+00	2.981E+00	2.981E+00	30.75	<<WM Interf
	105.36	1.98	7.306E+00	----- Line Not Found		-----	Absent
	109.18	1.50	7.334E+00	----- Line Not Found		-----	Absent
	143.79	10.50*	7.032E+00	----- Line Not Found		-----	Absent
	163.38	4.70	6.680E+00	----- Line Not Found		-----	Absent
	185.74	53.00	6.261E+00	2.325E-01	2.325E-01	54.96	OK
	202.14	1.00	5.967E+00	----- Line Not Found		-----	Absent
	205.33	4.70	5.911E+00	----- Line Not Found		-----	Absent
Final Mean for 1 Valid Peaks = 2.325E-01+/- 1.278E-01 (54.96%)							

Sample ID : L4094-1 Acquisition date : 30-NOV-2001 09:05:03

N de Type: fission

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
CS-137	661.66	85.21*	2.456E+00	7.145E-01	7.155E-01	15.35	OK

Final Mean for 1 Valid Peaks = 7.155E-01+/- 1.098E-01 (15.35%)

Nuclide Type: man-made

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
AM-241	17.61	20.20	1.220E-04	----- Line Not Found		-----	Absent
	59.54	35.70*	4.035E+00	7.077E+00	7.077E+00	6.50	OK

Final Mean for 1 Valid Peaks = 7.077E+00+/- 4.601E-01 (6.50%)

Flag: "*" = Keyline

Enviro-Test Laboratory

VMS Gamma Spectroscopy Report Generated 30-NOV-2001 13:37:15

Cc guration Name :
S\ YSDEVICE:[GAMMA.SCUSR.ARCHIVE]SMP_L40942_DET1_60MLCAN_2287.CNF;1

---- Sample Information ----

Sample Title	: L4094-2		
Sample ID	: L4094-2	Sample Quantity	: 9.08200E+01 g
Sample Type	: SOIL	Sample Geometry	:
Sample Number	: 2287	Spctrm Collector	: Analyst
Sample Collector	:	Sample Analyst	: Analyst

---- Sample Deposition Information ----

Dep. Correction?	: No	Dep. Duration	:
Deposition Start	:	Deposition End	: 9-NOV-2001 14:05:00.

---- Sample Decay/Count Information ----

Sample Date	: 9-NOV-2001 14:05:00.	Acquisition date	: 30-NOV-2001 11:36:56
Decay time	: 20 21:31:56.96	% dead time	: 0.0%
Elapsed live time	: 0 02:00:00.00	Elapsed real time	: 0 02:00:01.66

---- Detector Parameters ----

Energy cal. time	: 3-AUG-2001 14:03:25.	Energy cal. oper.	: Analyst
Detector name	: DET1	Counting geometry	: 60mL Can
Effic. cal. time	: 3-AUG-2001 14:14:25.	Effic. cal. oper.	: Analyst

---- Processing Parameters ----

S channel	: 1	End channel	: 4096
Se tivity	: 5.00000	Gaussian Sens.	: 10.00000
Critical level?	: No	Propagate Errors?	: No
Efficiency Type	: EMPIRICA	Library-based eff	: No
Energy tolerance	: 2.00000	Half life ratio	: 20.00000
Abundance limit	: 50.00000	WTM error limit	: 3.00000
MDA Width (FWHM)	: 3.00000	MDA Confid Level	: 5.00000 %

---- Additional Information ----

Library Used: SYS$SYSDEVICE:[GAMMA.SCUSR.LIB]PINN.NLB;
Background Used: DKA0:[GAMMA.SCUSR.ARCHIVE]BKG__DET1__2156.CNF;1

Br Report

Nuclide	Activity pCi/g	2-Sigma Error
K-40	34.7	2.52
CS-137	1.08	0.118
TL-208	0.485	0.114
BI-212	3.02	1.53
PB-212	1.85	0.155
BI-214	1.38	0.220
PB-214	1.68	0.202
AC-228	1.78	0.269
TH-234	5.22	2.23
U-235	0.416	0.151
AM-241	4.33	0.401

Total Activity :	55.9	

Approved by: _____ Approval Date: __ / __ / ____

Sample ID : L4094-2 Acquisition date : 30-NOV-2001 11:36:56

-- Identified Nuclides ----

Nuclide	Activity (pCi/g)	Act error	MDA (pCi/g)	MDA error	Act/MDA
K-40	3.467E+01	2.516E+00	8.372E-01	0.000E+00	41.407
CS-137	1.085E+00	1.182E-01	1.044E-01	0.000E+00	10.395
TL-208	4.845E-01	1.141E-01	9.581E-02	0.000E+00	5.058
BI-212	3.015E+00	1.530E+00	1.384E+00	0.000E+00	2.178
PB-212	1.848E+00	1.548E-01	1.583E-01	0.000E+00	11.674
BI-214	1.376E+00	2.196E-01	1.953E-01	0.000E+00	7.046
PB-214	1.675E+00	2.017E-01	1.895E-01	0.000E+00	8.840
AC-228	1.784E+00	2.690E-01	3.216E-01	0.000E+00	5.549
TH-234	~~5.222E+00~~ 0.0	2.227E+00	1.220E+00	0.000E+00	4.281
U-235	4.161E-01	1.514E-01	5.876E-01	0.000E+00	0.708
AM-241	4.328E+00	4.013E-01	3.513E-01	0.000E+00	12.320

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/g)	K.L. Ided	Act error	MDA (pCi/g)	MDA error	Act/MDA
BE-7	-8.686E-02		6.177E-01	1.005E+00	0.000E+00	-0.086
NA-22	-2.289E-02		7.006E-02	1.092E-01	0.000E+00	-0.210
S[illegible]	1.966E-01	+	1.701E-01	2.063E-01	0.000E+00	0.953
C[illegible]	-1.138E-01		6.910E-01	1.153E+00	0.000E+00	-0.099
MN-54	2.036E-02		5.597E-02	9.566E-02	0.000E+00	0.213
CO-56	4.978E-02		6.961E-02	1.214E-01	0.000E+00	0.410
CO-57	-4.077E-03		4.253E-02	6.983E-02	0.000E+00	-0.058
CO-58	-2.110E-02		6.418E-02	1.045E-01	0.000E+00	-0.202
FE-59	2.859E-03		1.579E-01	2.578E-01	0.000E+00	0.011
CO-60	3.903E-02		5.963E-02	1.064E-01	0.000E+00	0.367
ZN-65	-5.304E-02		1.718E-01	2.328E-01	0.000E+00	-0.228
SR-85	1.102E-01		7.005E-02	1.120E-01	0.000E+00	0.984
NB-94	-1.111E-02		5.718E-02	9.354E-02	0.000E+00	-0.119
NB-95	-1.512E-02		8.912E-02	1.478E-01	0.000E+00	-0.102
RU-106	5.151E-01		5.412E-01	9.252E-01	0.000E+00	0.557
AG-110M	-1.055E-01		1.296E+00	2.125E+00	0.000E+00	-0.050
SB-124	1.281E-02		7.525E-02	1.135E-01	0.000E+00	0.113
SB-125	-3.243E-02		1.523E-01	2.486E-01	0.000E+00	-0.130
I-129	-7.704E-02		9.335E-01	1.456E+00	0.000E+00	-0.053
I-131	-1.602E-01		3.151E-01	5.128E-01	0.000E+00	-0.312
CS-134	5.881E-02		6.344E-02	9.634E-02	0.000E+00	0.610
CE-139	-1.914E-02		5.247E-02	8.404E-02	0.000E+00	-0.228
CE-144	-1.695E-01		3.535E-01	5.426E-01	0.000E+00	-0.312
EU-152	2.384E-01		3.128E-01	5.598E-01	0.000E+00	0.426
EU-154	-5.537E-02		8.688E-02	1.401E-01	0.000E+00	-0.395
EU-155	2.983E-01	+	1.696E-01	2.302E-01	0.000E+00	1.296
TH-227	4.662E-01		4.469E-01	6.653E-01	0.000E+00	0.701
PA [illegible]34M	4.483E+00		1.078E+01	1.792E+01	0.000E+00	0.250

Sample ID : L4094-2 Acquisition date : 30-NOV-2001 11:36:56

N de Type: natural

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
K-40	1460.83	10.67*	1.202E+00	3.467E+01	3.467E+01	7.26	OK
Final Mean for 1 Valid Peaks = 3.467E+01+/- 2.516E+00 (7.26%)							
TL-208	277.28	6.80	4.863E+00	----- Line Not Found		-----	Absent
	510.61	21.60	3.062E+00	5.917E-01	5.917E-01	93.08	OK
	583.02	86.00*	2.739E+00	4.797E-01	4.797E-01	24.31	OK
	860.30	12.00	1.933E+00	----- Line Not Found		-----	Absent
Final Mean for 2 Valid Peaks = 4.845E-01+/- 1.141E-01 (23.55%)							
BI-212	39.85	1.10	9.275E-01	----- Line Not Found		-----	Absent
	727.25	6.65*	2.256E+00	3.015E+00	3.015E+00	50.75	OK
	785.51	1.11	2.103E+00	----- Line Not Found		-----	Absent
	1620.66	1.51	1.114E+00	----- Line Not Found		-----	Absent
Final Mean for 1 Valid Peaks = 3.015E+00+/- 1.530E+00 (50.75%)							
PB-212	74.81	10.50	5.941E+00	3.420E+00	3.420E+00	15.59	<<WM Interf
	77.10	17.70	6.142E+00	2.634E+00	2.634E+00	13.71	<<WM Interf
	87.19	6.27	6.782E+00	1.605E+00	1.605E+00	56.85	<<WM Interf
	90.12	1.86	6.935E+00	----- Line Not Found		-----	Absent
	238.58	43.60*	5.381E+00	1.848E+00	1.848E+00	8.38	OK
	300.03	3.34	4.601E+00	----- Line Not Found		-----	Absent
Final Mean for 1 Valid Peaks = 1.848E+00+/- 1.548E-01 (8.38%)							
BI-214	609.31	46.10*	2.638E+00	1.343E+00	1.343E+00	17.78	OK
	665.44	1.56	2.442E+00	----- Line Not Found		-----	Absent
	768.35	4.88	2.146E+00	----- Line Not Found		-----	Absent
	806.16	1.23	2.053E+00	----- Line Not Found		-----	Absent
	934.04	3.16	1.790E+00	----- Line Not Found		-----	Absent
	1120.27	15.00	1.512E+00	1.102E+00	1.102E+00	86.51	OK
	1155.18	1.69	1.470E+00	----- Line Not Found		-----	Absent
	1238.11	5.92	1.381E+00	----- Line Not Found		-----	Absent
	1280.95	1.47	1.341E+00	----- Line Not Found		-----	Absent
	1377.66	4.02	1.260E+00	2.343E+00	2.344E+00	67.52	OK
	1401.48	1.39	1.243E+00	----- Line Not Found		-----	Absent
	1407.97	2.48	1.238E+00	----- Line Not Found		-----	Absent
	1509.22	2.19	1.173E+00	----- Line Not Found		-----	Absent
	1661.26	1.15	1.096E+00	----- Line Not Found		-----	Absent
	1729.58	3.05	1.069E+00	----- Line Not Found		-----	Absent
	1764.49	15.90	1.056E+00	1.662E+00	1.662E+00	46.08	OK
	1847.41	2.12	1.031E+00	----- Line Not Found		-----	Absent
	2118.53	1.21	9.804E-01	----- Line Out Of Range		----	Absent
	2204.09	4.99	9.735E-01	----- Line Out Of Range		----	Absent
Final Mean for 4 Valid Peaks = 1.376E+00+/- 2.196E-01 (15.96%)							

Sample ID : L4094-2 Acquisition date : 30-NOV-2001 11:36:56

N de Type: natural

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
PB-214	53.17	1.10	3.004E+00	----- Line Not Found		-----	Absent
	74.81	6.52	5.941E+00	5.507E+00	5.507E+00	15.59	<<WM Interf
	77.11	11.00	6.142E+00	4.239E+00	4.239E+00	13.71	<<WM Interf
	87.20	3.88	6.782E+00	2.593E+00	2.593E+00	56.85	<<WM Interf
	90.13	1.15	6.935E+00	----- Line Not Found		-----	Absent
	241.92	7.46	5.336E+00	3.061E+00	3.061E+00	33.39	OK
	295.10	19.20	4.655E+00	1.744E+00	1.744E+00	24.35	OK
	351.87	37.10*	4.098E+00	1.581E+00	1.581E+00	14.87	OK
	785.83	1.09	2.102E+00	----- Line Not Found		-----	Absent
Final Mean for 3 Valid Peaks = 1.675E+00+/- 2.017E-01 (12.04%)							
AC-228	89.96	3.40	6.928E+00	----- Line Not Found		-----	Absent
	93.35	5.60	7.042E+00	3.820E+00	3.820E+00	32.40	<<WM Interf
	129.03	2.90	7.244E+00	2.161E+00	2.161E+00	72.81	OK
	209.39	4.10	5.847E+00	1.896E+00	1.896E+00	76.18	OK
	270.26	3.80	4.957E+00	2.700E+00	2.700E+00	69.85	OK
	328.07	3.50	4.316E+00	2.959E+00	2.959E+00	72.58	OK
	338.42	12.40	4.219E+00	1.654E+00	1.654E+00	32.73	OK
	409.62	2.20	3.652E+00	----- Line Not Found		-----	Absent
	463.10	4.60	3.315E+00	----- Line Not Found		-----	Absent
	794.79	4.60	2.080E+00	1.817E+00	1.817E+00	107.28	OK
	911.16	29.00*	1.832E+00	1.668E+00	1.668E+00	25.00	OK
	964.64	5.80	1.737E+00	1.257E+00	1.257E+00	135.00	OK
	968.97	17.40	1.730E+00	1.997E+00	1.997E+00	30.65	OK
	1588.23	3.60	1.130E+00	----- Line Not Found		-----	Absent
Final Mean for 9 Valid Peaks = 1.784E+00+/- 2.690E-01 (15.07%)							
TH-234	63.29	3.80	4.587E+00	5.222E+00	5.222E+00	42.65	OK
	92.57	5.41*	7.042E+00	3.955E+00	3.955E+00	32.40	<<WM Interf
Final Mean for 1 Valid Peaks = 5.222E+00+/- 2.227E+00 (42.65%)							
U-235	89.96	3.36	6.928E+00	----- Line Not Found		-----	Absent
	93.35	5.50	7.042E+00	3.890E+00	3.890E+00	32.40	<<WM Interf
	105.36	1.98	7.306E+00	----- Line Not Found		-----	Absent
	109.18	1.50	7.334E+00	----- Line Not Found		-----	Absent
	143.79	10.50*	7.032E+00	----- Line Not Found		-----	Absent
	163.38	4.70	6.680E+00	----- Line Not Found		-----	Absent
	185.74	53.00	6.263E+00	4.161E-01	4.161E-01	36.38	OK
	202.14	1.00	5.967E+00	----- Line Not Found		-----	Absent
	205.33	4.70	5.911E+00	----- Line Not Found		-----	Absent
Final Mean for 1 Valid Peaks = 4.161E-01+/- 1.514E-01 (36.38%)							

Sample ID : L4094-2 Acquisition date : 30-NOV-2001 11:36:56

N de Type: fission

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
CS-137	661.66	85.21*	2.455E+00	1.083E+00	1.085E+00	10.89	OK

Final Mean for 1 Valid Peaks = 1.085E+00+/- 1.182E-01 (10.89%)

Nuclide Type: man-made

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
AM-241	17.61	20.20	1.220E-04	-----	Line Not Found	-----	Absent
	59.54	35.70*	4.045E+00	4.328E+00	4.328E+00	9.27	OK

Final Mean for 1 Valid Peaks = 4.328E+00+/- 4.013E-01 (9.27%)

Flag: "*" = Keyline

Enviro-Test Laboratory

VMS Gamma Spectroscopy Report Generated 30-NOV-2001 15:46:48

Configuration Name :
SYSDEVICE:[GAMMA.SCUSR.ARCHIVE]SMP_L40943_DET2_60MLCAN_2290.CNF;1

---- Sample Information ----

Sample Title	: L4094-3		
Sample ID	: L4094-3	Sample Quantity	: 1.13230E+02 g
Sample Type	: SOIL	Sample Geometry	:
Sample Number	: 2290	Spctrm Collector	: Analyst
Sample Collector	:	Sample Analyst	: Analyst

---- Sample Deposition Information ----

Dep. Correction?	: No	Dep. Duration	:
Deposition Start	:	Deposition End	: 9-NOV-2001 14:00:00.

---- Sample Decay/Count Information ----

Sample Date	: 9-NOV-2001 14:00:00.	Acquisition date	: 30-NOV-2001 13:46:30
Decay time	: 20 23:46:30.37	% dead time	: 0.0%
Elapsed live time	: 0 02:00:00.00	Elapsed real time	: 0 02:00:01.04

---- Detector Parameters ----

Energy cal. time	: 3-AUG-2001 20:18:21.	Energy cal. oper.	: Analyst
Detector name	: DET2	Counting geometry	: 60mL Can
Effic. cal. time	: 3-AUG-2001 20:19:46.	Effic. cal. oper.	: Analyst

---- Processing Parameters ----

Start channel	: 1	End channel	: 4096
Sensitivity	: 5.00000	Gaussian Sens.	: 10.00000
Critical level?	: No	Propagate Errors?	: No
Efficiency Type	: EMPIRICA	Library-based eff	: No
Energy tolerance	: 2.00000	Half life ratio	: 20.00000
Abundance limit	: 50.00000	WTM error limit	: 3.00000
MDA Width (FWHM)	: 3.00000	MDA Confid Level	: 5.00000 %

---- Additional Information ----

Library Used: SYS$SYSDEVICE:[GAMMA.SCUSR.LIB]PINN.NLB;
Background Used: DKA0:[GAMMA.SCUSR.ARCHIVE]BKG__DET2__2170.CNF;1

Sample ID : L4094-3 Acquisition date : 30-NOV-2001 13:46:30

Br' f Report

Nuclide	Activity pCi/g	2-Sigma Error
K-40	24.2	2.49
CS-137	0.643	0.128
TL-208	0.349	0.146
PB-212	1.19	0.230
BI-214	0.759	0.219
PB-214	0.660	0.200
TH-234	0.887	1.01
U-235	0.121	0.100
AM-241	1.73	0.161

Total Activity :	30.6	

Sample ID : L4094-3 Acquisition date : 30-NOV-2001 13:46:30

-- Identified Nuclides ----

Nuclide	Activity (pCi/g)	Act error	MDA (pCi/g)	MDA error	Act/MDA
K-40	2.422E+01	2.493E+00	1.044E+00	0.000E+00	23.201
CS-137	6.434E-01	1.285E-01	1.143E-01	0.000E+00	5.628
TL-208	3.494E-01	1.457E-01	1.106E-01	0.000E+00	3.159
PB-212	1.193E+00	2.300E-01	1.643E-01	0.000E+00	7.262
BI-214	7.594E-01	2.194E-01	2.180E-01	0.000E+00	3.483
PB-214	6.598E-01	1.995E-01	2.010E-01	0.000E+00	3.282
TH-234	8.873E-01	1.010E+00	1.066E+00	0.000E+00	0.833
U-235	1.215E-01	1.002E-01	5.285E-01	0.000E+00	0.230
AM-241	1.726E+00	1.611E-01	1.399E-01	0.000E+00	12.343

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/g)	K.L. Ided	Act error	MDA (pCi/g)	MDA error	Act/MDA
BE-7	7.766E-02		6.708E-01	1.119E+00	0.000E+00	0.069
NA-22	1.987E-02		7.588E-02	1.289E-01	0.000E+00	0.154
SC-46	1.587E-01		1.111E-01	2.005E-01	0.000E+00	0.792
CR-51	-3.644E-01		7.878E-01	1.298E+00	0.000E+00	-0.281
MN	1.401E-02		7.289E-02	1.200E-01	0.000E+00	0.117
CO	-1.829E-02		8.474E-02	1.352E-01	0.000E+00	-0.135
CO-57	-1.175E-03		3.887E-02	6.375E-02	0.000E+00	-0.018
CO-58	-3.482E-02		7.837E-02	1.228E-01	0.000E+00	-0.284
FE-59	7.432E-02		1.873E-01	3.222E-01	0.000E+00	0.231
CO-60	-3.376E-02		7.154E-02	1.121E-01	0.000E+00	-0.301
ZN-65	-8.353E-02		1.916E-01	3.096E-01	0.000E+00	-0.270
SR-85	-1.013E-01		9.000E-02	1.416E-01	0.000E+00	-0.715
NB-94	1.244E-02		6.557E-02	1.079E-01	0.000E+00	0.115
NB-95	1.064E-01		1.052E-01	1.830E-01	0.000E+00	0.581
RU-106	-3.781E-01		6.235E-01	9.837E-01	0.000E+00	-0.384
AG-110M	-4.310E-01		1.455E+00	2.381E+00	0.000E+00	-0.181
SB-124	-3.850E-02		9.806E-02	1.339E-01	0.000E+00	-0.288
SB-125	9.341E-02		1.759E-01	3.000E-01	0.000E+00	0.311
I-129	-3.605E-01		9.285E-01	1.444E+00	0.000E+00	-0.250
I-131	-2.298E-01		3.518E-01	5.711E-01	0.000E+00	-0.402
CS-134	2.101E-03		7.581E-02	1.073E-01	0.000E+00	0.020
CE-139	-6.202E-03		5.130E-02	8.398E-02	0.000E+00	0.074
CE-144	-9.189E-02		3.208E-01	5.213E-01	0.000E+00	-0.176
EU-152	1.927E-02		3.579E-01	5.935E-01	0.000E+00	0.032
EU-154	2.460E-03		7.845E-02	1.289E-01	0.000E+00	0.019
EU-155	1.232E-01	+	1.300E-01	1.667E-01	0.000E+00	0.739
BI-212	1.058E+00		1.040E+00	1.807E+00	0.000E+00	0.586
TH-227	2.271E+00		5.229E-01	8.577E-01	0.000E+00	2.648
AC-228	8.732E-01	+	4.345E-01	5.984E-01	0.000E+00	1.459
PA-234M	9.235E+00		1.089E+01	1.941E+01	0.000E+00	0.476

Sample ID : L4094-3 Acquisition date : 30-NOV-2001 13:46:30

Nuclide Type: natural

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
K-40	1460.83	10.67*	7.816E-01	2.422E+01	2.422E+01	10.29	OK
Final Mean for 1 Valid Peaks = 2.422E+01+/- 2.493E+00 (10.29%)							
TL-208	277.28	6.80	3.947E+00	-----	Line Not Found	-----	Absent
	510.61	21.60	2.171E+00	-----	Line Not Found	-----	Absent
	583.02	86.00*	1.899E+00	3.494E-01	3.494E-01	41.70	OK
	860.30	12.00	1.285E+00	-----	Line Not Found	-----	Absent
Final Mean for 1 Valid Peaks = 3.494E-01+/- 1.457E-01 (41.70%)							
PB-212	74.81	10.50	8.457E+00	1.773E+00	1.773E+00	28.39	<<WM Interf
	77.10	17.70	8.450E+00	1.614E+00	1.614E+00	16.75	<<WM Interf
	87.19	6.27	8.322E+00	6.630E-01	6.630E-01	105.44	<<WM Interf
	90.12	1.86	8.263E+00	-----	Line Not Found	-----	Absent
	238.58	43.60*	4.514E+00	1.193E+00	1.193E+00	19.28	OK
	300.03	3.34	3.666E+00	-----	Line Not Found	-----	Absent
Final Mean for 1 Valid Peaks = 1.193E+00+/- 2.300E-01 (19.28%)							
BI-214	609.31	46.10*	1.816E+00	7.338E-01	7.338E-01	31.83	OK
	665.44	1.56	1.661E+00	-----	Line Not Found	-----	Absent
	768.35	4.88	1.438E+00	-----	Line Not Found	-----	Absent
	806.16	1.23	1.371E+00	-----	Line Not Found	-----	Absent
	934.04	3.16	1.185E+00	-----	Line Not Found	-----	Absent
	1120.27	15.00	9.955E-01	-----	Line Not Found	-----	Absent
	1155.18	1.69	9.671E-01	-----	Line Not Found	-----	Absent
	1238.11	5.92	9.067E-01	-----	Line Not Found	-----	Absent
	1280.95	1.47	8.789E-01	-----	Line Not Found	-----	Absent
	1377.66	4.02	8.230E-01	2.325E+00	2.325E+00	99.32	OK
	1401.48	1.39	8.104E-01	-----	Line Not Found	-----	Absent
	1407.97	2.48	8.071E-01	-----	Line Not Found	-----	Absent
	1509.22	2.19	7.594E-01	-----	Line Not Found	-----	Absent
	1661.26	1.15	6.998E-01	-----	Line Not Found	-----	Absent
	1729.58	3.05	6.768E-01	-----	Line Not Found	-----	Absent
	1764.49	15.90	6.661E-01	8.369E-01	8.369E-01	79.49	OK
	1847.41	2.12	6.418E-01	-----	Line Not Found	-----	Absent
	2118.53	1.21	5.779E-01	-----	Line Out Of Range	----	Absent
	2204.09	4.99	5.616E-01	-----	Line Out Of Range	----	Absent
Final Mean for 3 Valid Peaks = 7.594E-01+/- 2.194E-01 (28.89%)							
PB-214	53.17	1.10	7.784E+00	-----	Line Not Found	-----	Absent
	74.81	6.52	8.457E+00	2.856E+00	2.856E+00	28.39	<<WM Interf
	77.11	11.00	8.450E+00	2.597E+00	2.597E+00	16.75	<<WM Interf
	87.20	3.88	8.322E+00	1.071E+00	1.071E+00	105.44	<<WM Interf
	90.13	1.15	8.263E+00	-----	Line Not Found	-----	Absent
	241.92	7.46	4.466E+00	-----	Line Not Found	-----	Absent
	295.10	19.20	3.723E+00	6.500E-01	6.500E-01	64.00	OK

Sample ID : L4094-3 Acquisition date : 30-NOV-2001 13:46:30

N de Type: natural

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
	351.87	37.10*	3.146E+00	6.627E-01	6.627E-01	34.30	OK
	785.83	1.09	1.406E+00	-----	Line Not Found	-----	Absent
	Final Mean for 2 Valid Peaks = 6.598E-01+/- 1.995E-01 (30.24%)						
TH-234	63.29	3.80	8.311E+00	8.873E-01	8.873E-01	113.77	OK
	92.57	5.41*	8.194E+00	1.569E+00	1.569E+00	51.05	<<WM Interf
	Final Mean for 1 Valid Peaks = 8.873E-01+/- 1.010E+00 (113.77%)						
U-235	89.96	3.36	8.266E+00	-----	Line Not Found	-----	Absent
	93.35	5.50	8.194E+00	1.543E+00	1.543E+00	51.05	<<WM Interf
	105.36	1.98	7.866E+00	-----	Line Not Found	-----	Absent
	109.18	1.50	7.752E+00	-----	Line Not Found	-----	Absent
	143.79	10.50*	6.687E+00	-----	Line Not Found	-----	Absent
	163.38	4.70	6.133E+00	-----	Line Not Found	-----	Absent
	185.74	53.00	5.567E+00	1.215E-01	1.215E-01	82.51	OK
	202.14	1.00	5.207E+00	-----	Line Not Found	-----	Absent
	205.33	4.70	5.140E+00	-----	Line Not Found	-----	Absent
	Final Mean for 1 Valid Peaks = 1.215E-01+/- 1.002E-01 (82.51%)						

Nuclide Type: fission

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
CS-137	661.66	85.21*	1.672E+00	6.426E-01	6.434E-01	19.97	OK
	Final Mean for 1 Valid Peaks = 6.434E-01+/- 1.285E-01 (19.97%)						

Nuclide Type: man-made

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
AM-241	17.61	20.20	9.342E-01	-----	Line Not Found	-----	Absent
	59.54	35.70*	8.160E+00	1.726E+00	1.726E+00	9.33	OK
	Final Mean for 1 Valid Peaks = 1.726E+00+/- 1.611E-01 (9.33%)						

Flag: "*" = Keyline

Approved by: _____ Approval Date: __ / __ / ____

Enviro-Test Laboratory

VMS Gamma Spectroscopy Report Generated 30-NOV-2001 17:19:36

Configuration Name :
S YSDEVICE:[GAMMA.SCUSR.ARCHIVE]SMP_L40944_DET1_60MLCAN_2291.CNF;1

---- Sample Information ----

Sample Title	: L4094-4		
Sample ID	: L4094-4	Sample Quantity	: 1.01020E+02 g
Sample Type	: SOIL	Sample Geometry	:
Sample Number	: 2291	Spctrm Collector	: Analyst
Sample Collector	:	Sample Analyst	: Analyst

---- Sample Deposition Information ----

Dep. Correction?	: No	Dep. Duration	:
Deposition Start	:	Deposition End	: 9-NOV-2001 14:10:00.

---- Sample Decay/Count Information ----

Sample Date	: 9-NOV-2001 14:10:00.	Acquisition date	: 30-NOV-2001 16:59:23
Decay time	: 21 02:49:23.63	% dead time	: 0.0%
Elapsed live time	: 0 00:20:00.00	Elapsed real time	: 0 00:20:00.26

---- Detector Parameters ----

Energy cal. time	: 3-AUG-2001 14:03:25.	Energy cal. oper.	: Analyst
Detector name	: DET1	Counting geometry	: 60mL Can
Effic. cal. time	: 3-AUG-2001 14:14:25.	Effic. cal. oper.	: Analyst

---- Processing Parameters ----

St channel	: 1	End channel	: 4096
S tivity	: 5.00000	Gaussian Sens.	: 10.00000
Critical level?	: No	Propagate Errors?	: No
Efficiency Type	: EMPIRICA	Library-based eff	: No
Energy tolerance	: 2.00000	Half life ratio	: 20.00000
Abundance limit	: 50.00000	WTM error limit	: 3.00000
MDA Width (FWHM)	: 3.00000	MDA Confid Level	: 5.00000 %

---- Additional Information ----

Library Used: SYS$SYSDEVICE:[GAMMA.SCUSR.LIB]PINN.NLB;
Background Used: DKA0:[GAMMA.SCUSR.ARCHIVE]BKG__DET1__2156.CNF;1

Sample ID : L4094-4 Acquisition date : 30-NOV-2001 16:59:23

Br Report

Nuclide	Activity pCi/g	2-Sigma Error
K-40	31.6	5.27
CS-137	1.08	0.271
TL-208	0.480	0.251
PB-212	1.32	0.338
BI-214	0.807	0.526
PB-214	1.12	0.379
AC-228	1.31	0.573
TH-234	4.91	2.64
U-235	0.150	0.298
AM-241	3.84	0.838

Total Activity :	46.6	

Sample ID : L4094-4 Acquisition date : 30-NOV-2001 16:59:23

-- Identified Nuclides ----

Nuclide	Activity (pCi/g)	Act error	MDA (pCi/g)	MDA error	Act/MDA
K-40	3.159E+01	5.275E+00	1.572E+00	0.000E+00	20.091
CS-137	1.078E+00	2.715E-01	2.665E-01	0.000E+00	4.045
TL-208	~~4.805E-01~~ 0.0	2.509E-01	2.492E-01	0.000E+00	1.928
PB-212	1.318E+00	3.384E-01	3.559E-01	0.000E+00	3.702
BI-214	8.074E-01	5.264E-01	4.436E-01	0.000E+00	1.820
PB-214	1.120E+00	3.791E-01	3.959E-01	0.000E+00	2.829
AC-228	1.306E+00	5.730E-01	5.782E-01	0.000E+00	2.258
TH-234	~~4.905E+00~~ 0.0	2.636E+00	2.818E+00	0.000E+00	1.741
U-235	1.502E-01	2.980E-01	1.378E+00	0.000E+00	0.109
AM-241	3.837E+00	8.384E-01	6.861E-01	0.000E+00	5.593

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/g)	K.L. Ided	Act error	MDA (pCi/g)	MDA error	Act/MDA
BE-7	-1.169E-02		1.194E+00	1.954E+00	0.000E+00	-0.006
NA-22	-2.258E-02		1.468E-01	2.271E-01	0.000E+00	-0.099
SC-46	1.218E-01		2.206E-01	4.124E-01	0.000E+00	0.295
CF	2.387E-02		1.487E+00	2.503E+00	0.000E+00	0.010
MI	-3.754E-02		1.166E-01	1.818E-01	0.000E+00	-0.207
CO-56	-5.372E-02		1.715E-01	2.713E-01	0.000E+00	-0.198
CO-57	-1.445E-02		9.111E-02	1.481E-01	0.000E+00	-0.098
CO-58	-2.384E-02		1.317E-01	2.119E-01	0.000E+00	-0.112
FE-59	-1.815E-01		3.669E-01	5.353E-01	0.000E+00	-0.339
CO-60	-1.125E-01		1.477E-01	2.033E-01	0.000E+00	-0.553
ZN-65	-2.592E-01		4.005E-01	5.808E-01	0.000E+00	-0.446
SR-85	7.800E-02		1.495E-01	2.351E-01	0.000E+00	0.332
NB-94	2.067E-02		1.155E-01	1.982E-01	0.000E+00	0.104
NB-95	-5.350E-02		1.525E-01	2.377E-01	0.000E+00	-0.225
RU-106	-1.056E-02		1.167E+00	1.874E+00	0.000E+00	-0.006
AG-110M	1.164E+00		2.764E+00	4.798E+00	0.000E+00	0.243
SB-124	3.421E-02		1.525E-01	2.373E-01	0.000E+00	0.144
SB-125	1.414E-01		3.355E-01	5.828E-01	0.000E+00	0.243
I-129	-1.314E-01		1.941E+00	3.150E+00	0.000E+00	-0.042
I-131	-1.227E-01		6.660E-01	1.086E+00	0.000E+00	-0.113
CS-134	3.253E-02		1.363E-01	2.017E-01	0.000E+00	0.161
CE-139	-3.527E-02		1.016E-01	1.592E-01	0.000E+00	-0.222
CE-144	-4.675E-02		7.598E-01	1.240E+00	0.000E+00	-0.038
EU-152	1.472E-01		5.189E-01	9.412E-01	0.000E+00	0.156
EU-154	-6.933E-02		1.839E-01	2.933E-01	0.000E+00	-0.236
EU-155	4.388E-02		2.798E-01	4.725E-01	0.000E+00	0.093
BI-212	2.735E+00		1.984E+00	3.915E+00	0.000E+00	0.699
TH-227	-4.570E-01		9.497E-01	1.255E+00	0.000E+00	-0.364
PA-234M	1.926E+01		2.190E+01	4.250E+01	0.000E+00	0.453

Sample ID : L4094-4 Acquisition date : 30-NOV-2001 16:59:23

Nuclide Type: natural

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
K-40	1460.83	10.67*	1.202E+00	3.159E+01	3.159E+01	16.70	OK
Final Mean for 1 Valid Peaks = 3.159E+01+/- 5.275E+00 (16.70%)							
TL-208	277.28	6.80	4.863E+00	----- Line Not Found		-----	Absent
	510.61	21.60	3.060E+00	4.785E-01	4.785E-01	229.71	OK
	583.02	86.00*	2.736E+00	4.806E-01	4.806E-01	53.62	OK
	860.30	12.00	1.933E+00	----- Line Not Found		-----	Absent
Final Mean for 2 Valid Peaks = 4.805E-01+/- 2.509E-01 (52.22%)							
PB-212	74.81	10.50	5.944E+00	2.715E+00	2.715E+00	42.94	<<WM Interf
	77.10	17.70	6.146E+00	1.948E+00	1.948E+00	39.54	<<WM Interf
	87.19	6.27	6.802E+00	----- Line Not Found		-----	Absent
	90.12	1.86	6.935E+00	----- Line Not Found		-----	Absent
	238.58	43.60*	5.379E+00	1.318E+00	1.318E+00	25.68	OK
	300.03	3.34	4.601E+00	----- Line Not Found		-----	Absent
Final Mean for 1 Valid Peaks = 1.318E+00+/- 3.384E-01 (25.68%)							
BI-214	609.31	46.10*	2.635E+00	6.870E-01	6.871E-01	89.78	OK
	665.44	1.56	2.442E+00	----- Line Not Found		-----	Absent
	768.35	4.88	2.146E+00	----- Line Not Found		-----	Absent
	806.16	1.23	2.053E+00	----- Line Not Found		-----	Absent
	934.04	3.16	1.790E+00	----- Line Not Found		-----	Absent
	1120.27	15.00	1.512E+00	----- Line Not Found		-----	Absent
	1155.18	1.69	1.470E+00	----- Line Not Found		-----	Absent
	1238.11	5.92	1.381E+00	----- Line Not Found		-----	Absent
	1280.95	1.47	1.341E+00	----- Line Not Found		-----	Absent
	1377.66	4.02	1.260E+00	----- Line Not Found		-----	Absent
	1401.48	1.39	1.243E+00	----- Line Not Found		-----	Absent
	1407.97	2.48	1.238E+00	----- Line Not Found		-----	Absent
	1509.22	2.19	1.173E+00	----- Line Not Found		-----	Absent
	1661.26	1.15	1.096E+00	----- Line Not Found		-----	Absent
	1729.58	3.05	1.069E+00	----- Line Not Found		-----	Absent
	1764.49	15.90	1.056E+00	1.130E+00	1.130E+00	89.36	OK
	1847.41	2.12	1.031E+00	----- Line Not Found		-----	Absent
	2118.53	1.21	9.804E-01	----- Line Out Of Range		----	Absent
	2204.09	4.99	9.735E-01	----- Line Out Of Range		----	Absent
Final Mean for 2 Valid Peaks = 8.074E-01+/- 5.264E-01 (65.19%)							
PB-214	53.17	1.10	3.004E+00	----- Line Not Found		-----	Absent
	74.81	6.52	5.944E+00	4.373E+00	4.373E+00	42.94	<<WM Interf
	77.11	11.00	6.146E+00	3.134E+00	3.134E+00	39.54	<<WM Interf
	87.20	3.88	6.802E+00	----- Line Not Found		-----	Absent
	90.13	1.15	6.935E+00	----- Line Not Found		-----	Absent
	241.92	7.46	5.332E+00	----- Line Not Found		-----	Absent
	295.10	19.20	4.653E+00	1.359E+00	1.359E+00	56.09	OK

Sample ID : L4094-4 Acquisition date : 30-NOV-2001 16:59:23

Nuclide Type: natural

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
	351.87	37.10*	4.097E+00	1.041E+00	1.041E+00	41.97	OK
	785.83	1.09	2.102E+00	----- Line Not Found		-----	Absent
Final Mean for 2 Valid Peaks = 1.120E+00+/- 3.791E-01 (33.85%)							
AC-228	89.96	3.40	6.928E+00	----- Line Not Found		-----	Absent
	93.35	5.60	7.037E+00	4.739E+00	4.739E+00	53.74	<<WM Interf
	129.03	2.90	7.245E+00	----- Line Not Found		-----	Absent
	209.39	4.10	5.842E+00	----- Line Not Found		-----	Absent
	270.26	3.80	4.949E+00	----- Line Not Found		-----	Absent
	328.07	3.50	4.314E+00	----- Line Not Found		-----	Absent
	338.42	12.40	4.220E+00	1.619E+00	1.619E+00	53.21	OK
	409.62	2.20	3.652E+00	----- Line Not Found		-----	Absent
	463.10	4.60	3.315E+00	----- Line Not Found		-----	Absent
	794.79	4.60	2.080E+00	----- Line Not Found		-----	Absent
	911.16	29.00*	1.832E+00	1.066E+00	1.066E+00	78.97	OK
	964.64	5.80	1.737E+00	----- Line Not Found		-----	Absent
	968.97	17.40	1.729E+00	1.009E+00	1.009E+00	184.30	OK
	1588.23	3.60	1.130E+00	----- Line Not Found		-----	Absent
Final Mean for 3 Valid Peaks = 1.306E+00+/- 5.730E-01 (43.89%)							
TH 4	63.29	3.80	4.588E+00	----- Line Not Found		-----	Absent
	92.57	5.41*	7.037E+00	4.905E+00	4.905E+00	53.74	OK
Final Mean for 1 Valid Peaks = 4.905E+00+/- 2.636E+00 (53.74%)							
U-235	89.96	3.36	6.928E+00	----- Line Not Found		-----	Absent
	93.35	5.50	7.037E+00	4.825E+00	4.825E+00	53.74	<<WM Interf
	105.36	1.98	7.306E+00	----- Line Not Found		-----	Absent
	109.18	1.50	7.334E+00	----- Line Not Found		-----	Absent
	143.79	10.50*	7.032E+00	----- Line Not Found		-----	Absent
	163.38	4.70	6.680E+00	----- Line Not Found		-----	Absent
	185.74	53.00	6.258E+00	1.502E-01	1.502E-01	198.38	OK
	202.14	1.00	5.967E+00	----- Line Not Found		-----	Absent
	205.33	4.70	5.911E+00	----- Line Not Found		-----	Absent
Final Mean for 1 Valid Peaks = 1.502E-01+/- 2.980E-01 (198.38%)							

Nuclide Type: fission

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
CS-137	661.66	85.21*	2.455E+00	1.077E+00	1.078E+00	25.19	OK
Final Mean for 1 Valid Peaks = 1.078E+00+/- 2.715E-01 (25.19%)							

Sample ID : L4094-4 Acquisition date : 30-NOV-2001 16:59:23

Nuclide Type: man-made

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
AM-241	17.61	20.20	1.220E-04	----- Line Not Found		-----	Absent
	59.54	35.70*	4.026E+00	3.837E+00	3.837E+00	21.85	OK

Final Mean for 1 Valid Peaks = 3.837E+00+/- 8.384E-01 (21.85%)

Flag: "*" = Keyline

Approved by: _____ Approval Date: __ / __ / ____

Enviro-Test Laboratory

VMS Gamma Spectroscopy Report Generated 30-NOV-2001 19:00:16

Configuration Name :
SYSDEVICE:[GAMMA.SCUSR.ARCHIVE]SMP_L40945_DET2_60MLCAN_2292.CNF;1

---- Sample Information ----

Sample Title	: L4094-5		
Sample ID	: L4094-5	Sample Quantity	: 1.01720E+02 g
Sample Type	: SOIL	Sample Geometry	:
Sample Number	: 2292	Spctrm Collector	: Analyst
Sample Collector	:	Sample Analyst	: Analyst

---- Sample Deposition Information ----

Dep. Correction?	: No	Dep. Duration	:
Deposition Start	:	Deposition End	: 9-NOV-2001 14:40:00.

---- Sample Decay/Count Information ----

Sample Date	: 9-NOV-2001 14:40:00.	Acquisition date	: 30-NOV-2001 17:00:00
Decay time	: 21 02:20:00.54	% dead time	: 0.0%
Elapsed live time	: 0 02:00:00.00	Elapsed real time	: 0 02:00:01.10

---- Detector Parameters ----

Energy cal. time	: 3-AUG-2001 20:18:21.	Energy cal. oper.	: Analyst
Detector name	: DET2	Counting geometry	: 60mL Can
Effic. cal. time	: 3-AUG-2001 20:19:46.	Effic. cal. oper.	: Analyst

---- Processing Parameters ----

Start channel	: 1	End channel	: 4096
Sensitivity	: 5.00000	Gaussian Sens.	: 10.00000
Critical level?	: No	Propagate Errors?	: No
Efficiency Type	: EMPIRICA	Library-based eff	: No
Energy tolerance	: 2.00000	Half life ratio	: 20.00000
Abundance limit	: 50.00000	WTM error limit	: 3.00000
MDA Width (FWHM)	: 3.00000	MDA Confid Level	: 5.00000 %

---- Additional Information ----

Library Used: SYS$SYSDEVICE:[GAMMA.SCUSR.LIB]PINN.NLB;
Background Used: DKA0:[GAMMA.SCUSR.ARCHIVE]BKG__DET2__2170.CNF;1

Br' ' Report

Nuclide	Activity pCi/g	2-Sigma Error
K-40	30.9	2.86
CS-137	1.05	0.179
TL-208	0.527	0.129
PB-212	1.41	0.182
BI-214	0.910	0.262
PB-214	1.06	0.210
AC-228	1.49	0.371
TH-234	1.56	1.04
U-235	0.209	0.117
AM-241	7.21	0.300

Total Activity :	46.3	

Sample ID : L4094-5 Acquisition date : 30-NOV-2001 17:00:00

-- Identified Nuclides ----

Nuclide	Activity (pCi/g)	Act error	MDA (pCi/g)	MDA error	Act/MDA
K-40	3.091E+01	2.863E+00	1.048E+00	0.000E+00	29.508
CS-137	1.053E+00	1.792E-01	1.401E-01	0.000E+00	7.513
TL-208	5.272E-01	1.294E-01	1.200E-01	0.000E+00	4.395
PB-212	~~1.412E+00~~ 0.0	1.823E-01	1.793E-01	0.000E+00	7.876
BI-214	9.102E-01	2.625E-01	2.519E-01	0.000E+00	3.613
PB-214	1.062E+00	2.103E-01	2.421E-01	0.000E+00	4.387
AC-228	1.486E+00	3.708E-01	4.113E-01	0.000E+00	3.612
TH-234	~~1.555E+00~~ 00	1.044E+00	1.263E+00	0.000E+00	1.232
U-235	2.088E-01	1.172E-01	6.130E-01	0.000E+00	0.341
AM-241	7.213E+00	3.004E-01	2.276E-01	0.000E+00	31.696

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/g)	K.L. Ided	Act error	MDA (pCi/g)	MDA error	Act/MDA
BE-7	2.847E-01		7.804E-01	1.317E+00	0.000E+00	0.216
NA-22	4.791E-02		9.014E-02	1.564E-01	0.000E+00	0.306
SC-46	1.299E-01		1.284E-01	2.259E-01	0.000E+00	0.575
CI	-5.827E-02		8.566E-01	1.434E+00	0.000E+00	-0.041
MI	4.898E-02		7.992E-02	1.357E-01	0.000E+00	0.361
CO-56	-3.159E-02		1.024E-01	1.624E-01	0.000E+00	-0.194
CO-57	-4.487E-04		4.391E-02	7.206E-02	0.000E+00	-0.006
CO-58	-6.710E-02		9.058E-02	1.386E-01	0.000E+00	-0.484
FE-59	-7.233E-02		2.311E-01	3.763E-01	0.000E+00	-0.192
CO-60	3.655E-03		8.136E-02	1.351E-01	0.000E+00	0.027
ZN-65	-2.686E-01		2.191E-01	3.339E-01	0.000E+00	-0.804
SR-85	1.506E-01		9.789E-02	1.542E-01	0.000E+00	0.977
NB-94	1.133E-02		7.721E-02	1.266E-01	0.000E+00	0.090
NB-95	4.158E-02		1.209E-01	2.015E-01	0.000E+00	0.206
RU-106	3.973E-01		7.121E-01	1.210E+00	0.000E+00	0.328
AG-110M	-3.293E-01		1.696E+00	2.791E+00	0.000E+00	-0.118
SB-124	-6.380E-02		1.123E-01	1.512E-01	0.000E+00	-0.422
SB-125	4.813E-02		1.930E-01	3.249E-01	0.000E+00	0.148
I-129	3.270E-01		1.047E+00	1.668E+00	0.000E+00	0.196
I-131	-3.243E-01		4.113E-01	6.645E-01	0.000E+00	-0.488
CS-134	-2.399E-03		8.846E-02	1.246E-01	0.000E+00	-0.019
CE-139	-2.036E-02		5.816E-02	9.386E-02	0.000E+00	-0.217
CE-144	-3.023E-01		3.759E-01	6.025E-01	0.000E+00	-0.502
EU-152	7.674E-02		3.750E-01	6.328E-01	0.000E+00	0.121
EU-154	-8.060E-02		8.933E-02	1.429E-01	0.000E+00	-0.564
EU-155	1.832E-01	+	1.164E-01	2.006E-01	0.000E+00	0.913
BI-212	1.507E+00		1.197E+00	2.103E+00	0.000E+00	0.716
TH-227	2.866E+00		5.877E-01	9.789E-01	0.000E+00	2.928
PA 234M	9.298E+00		1.316E+01	2.313E+01	0.000E+00	0.402

Sample ID : L4094-5 Acquisition date : 30-NOV-2001 17:00:00

Nuclide Type: natural

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
K-40	1460.83	10.67*	7.816E-01	3.091E+01	3.091E+01	9.26	OK
Final Mean for 1 Valid Peaks = 3.091E+01+/- 2.863E+00 (9.26%)							
TL-208	277.28	6.80	3.947E+00	----- Line Not Found		-----	Absent
	510.61	21.60	2.170E+00	4.944E-01	4.944E-01	127.02	OK
	583.02	86.00*	1.898E+00	5.287E-01	5.287E-01	25.02	OK
	860.30	12.00	1.285E+00	----- Line Not Found		-----	Absent
Final Mean for 2 Valid Peaks = 5.272E-01+/- 1.294E-01 (24.55%)							
PB-212	74.81	10.50	8.457E+00	1.568E+00	1.568E+00	30.78	<<WM Interf
	77.10	17.70	8.450E+00	1.866E+00	1.866E+00	17.26	<<WM Interf
	87.19	6.27	8.322E+00	9.853E-01	9.853E-01	63.55	<<WM Interf
	90.12	1.86	8.263E+00	----- Line Not Found		-----	Absent
	238.58	43.60*	4.521E+00	1.412E+00	1.412E+00	12.91	OK
	300.03	3.34	3.666E+00	----- Line Not Found		-----	Absent
Final Mean for 1 Valid Peaks = 1.412E+00+/- 1.823E-01 (12.91%)							
BI-214	609.31	46.10*	1.816E+00	8.424E-01	8.424E-01	33.64	OK
	665.44	1.56	1.661E+00	----- Line Not Found		-----	Absent
	768.35	4.88	1.438E+00	----- Line Not Found		-----	Absent
	806.16	1.23	1.371E+00	----- Line Not Found		-----	Absent
	934.04	3.16	1.185E+00	----- Line Not Found		-----	Absent
	1120.27	15.00	9.955E-01	----- Line Not Found		-----	Absent
	1155.18	1.69	9.671E-01	----- Line Not Found		-----	Absent
	1238.11	5.92	9.067E-01	----- Line Not Found		-----	Absent
	1280.95	1.47	8.789E-01	----- Line Not Found		-----	Absent
	1377.66	4.02	8.229E-01	----- Line Not Found		-----	Absent
	1401.48	1.39	8.104E-01	----- Line Not Found		-----	Absent
	1407.97	2.48	8.071E-01	----- Line Not Found		-----	Absent
	1509.22	2.19	7.594E-01	----- Line Not Found		-----	Absent
	1661.26	1.15	6.998E-01	----- Line Not Found		-----	Absent
	1729.58	3.05	6.768E-01	----- Line Not Found		-----	Absent
	1764.49	15.90	6.663E-01	1.320E+00	1.320E+00	52.78	OK
	1847.41	2.12	6.418E-01	----- Line Not Found		-----	Absent
	2118.53	1.21	5.779E-01	----- Line Out Of Range		----	Absent
	2204.09	4.99	5.616E-01	----- Line Out Of Range		----	Absent
Final Mean for 2 Valid Peaks = 9.102E-01+/- 2.625E-01 (28.84%)							
PB-214	53.17	1.10	7.784E+00	----- Line Not Found		-----	Absent
	74.81	6.52	8.457E+00	2.526E+00	2.526E+00	30.78	<<WM Interf
	77.11	11.00	8.450E+00	3.003E+00	3.003E+00	17.26	<<WM Interf
	87.20	3.88	8.322E+00	1.592E+00	1.592E+00	63.55	<<WM Interf
	90.13	1.15	8.263E+00	----- Line Not Found		-----	Absent
	241.92	7.46	4.469E+00	1.769E+00	1.769E+00	52.46	OK
	295.10	19.20	3.719E+00	9.503E-01	9.503E-01	49.30	OK

Nuclide Type: natural

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
	351.87	37.10*	3.146E+00	1.044E+00	1.044E+00	23.31	OK
	785.83	1.09	1.406E+00	----- Line Not Found		-----	Absent
Final Mean for 3 Valid Peaks = 1.062E+00+/- 2.103E-01 (19.80%)							
AC-228	89.96	3.40	8.266E+00	----- Line Not Found		-----	Absent
	93.35	5.60	8.188E+00	1.825E+00	1.825E+00	64.00	<<WM Interf
	129.03	2.90	7.136E+00	----- Line Not Found		-----	Absent
	209.39	4.10	5.057E+00	----- Line Not Found		-----	Absent
	270.26	3.80	4.041E+00	----- Line Not Found		-----	Absent
	328.07	3.50	3.366E+00	----- Line Not Found		-----	Absent
	338.42	12.40	3.269E+00	1.635E+00	1.635E+00	43.38	OK
	409.62	2.20	2.708E+00	----- Line Not Found		-----	Absent
	463.10	4.60	2.395E+00	----- Line Not Found		-----	Absent
	794.79	4.60	1.390E+00	----- Line Not Found		-----	Absent
	911.16	29.00*	1.215E+00	1.213E+00	1.213E+00	40.67	OK
	964.64	5.80	1.149E+00	----- Line Not Found		-----	Absent
	968.97	17.40	1.145E+00	2.184E+00	2.184E+00	42.17	OK
	1588.23	3.60	7.268E-01	----- Line Not Found		-----	Absent
Final Mean for 3 Valid Peaks = 1.486E+00+/- 3.708E-01 (24.95%)							
Ti 4	63.29	3.80	8.316E+00	1.555E+00	1.555E+00	67.15	OK
	92.57	5.41*	8.188E+00	1.889E+00	1.889E+00	64.00	<<WM Interf
Final Mean for 1 Valid Peaks = 1.555E+00+/- 1.044E+00 (67.15%)							
U-235	89.96	3.36	8.266E+00	----- Line Not Found		-----	Absent
	93.35	5.50	8.188E+00	1.858E+00	1.858E+00	64.00	<<WM Interf
	105.36	1.98	7.866E+00	----- Line Not Found		-----	Absent
	109.18	1.50	7.752E+00	----- Line Not Found		-----	Absent
	143.79	10.50*	6.687E+00	----- Line Not Found		-----	Absent
	163.38	4.70	6.133E+00	----- Line Not Found		-----	Absent
	185.74	53.00	5.569E+00	2.088E-01	2.088E-01	56.14	OK
	202.14	1.00	5.207E+00	----- Line Not Found		-----	Absent
	205.33	4.70	5.140E+00	----- Line Not Found		-----	Absent
Final Mean for 1 Valid Peaks = 2.088E-01+/- 1.172E-01 (56.14%)							

Nuclide Type: fission

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
CS-137	661.66	85.21*	1.672E+00	1.051E+00	1.053E+00	17.03	OK
Final Mean for 1 Valid Peaks = 1.053E+00+/- 1.792E-01 (17.03%)							

Sample ID : L4094-5 Acquisition date : 30-NOV-2001 17:00:00

N de Type: man-made

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
AM-241	17.61	20.20	8.184E-01	1.584E+01	1.584E+01	20.08	<<WM N-Sigma
	59.54	35.70*	8.165E+00	7.213E+00	7.213E+00	4.16	OK

Final Mean for 1 Valid Peaks = 7.213E+00+/- 3.004E-01 (4.16%)

Flag: "*" = Keyline

Approved by: _____ Approval Date: __ / __ / ____

Enviro-Test Laboratory

VMS Gamma Spectroscopy Report Generated 1-DEC-2001 13:54:39

Configuration Name :
SYSDEVICE:[GAMMA.SCUSR.ARCHIVE]SMP_L40946_DET1_60MLCAN_2293.CNF;1

---- Sample Information ----

Sample Title	: L4094-6		
Sample ID	: L4094-6	Sample Quantity	: 9.87600E+01 g
Sample Type	: SOIL	Sample Geometry	:
Sample Number	: 2293	Spctrm Collector	: Analyst
Sample Collector	:	Sample Analyst	: Analyst

---- Sample Deposition Information ----

Dep. Correction?	: No	Dep. Duration	:
Deposition Start	:	Deposition End	: 9-NOV-2001 15:10:00.

---- Sample Decay/Count Information ----

Sample Date	: 9-NOV-2001 15:10:00.	Acquisition date	: 1-DEC-2001 11:54:21.
Decay time	: 21 20:44:21.38	% dead time	: 0.0%
Elapsed live time	: 0 02:00:00.00	Elapsed real time	: 0 02:00:03.41

---- Detector Parameters ----

Energy cal. time	: 3-AUG-2001 14:03:25.	Energy cal. oper.	: Analyst
Detector name	: DET1	Counting geometry	: 60mL Can
Effic. cal. time	: 3-AUG-2001 14:14:25.	Effic. cal. oper.	: Analyst

---- Processing Parameters ----

Start channel	: 1	End channel	: 4096
Sensitivity	: 5.00000	Gaussian Sens.	: 10.00000
Critical level?	: No	Propagate Errors?	: No
Efficiency Type	: EMPIRICA	Library-based eff	: No
Energy tolerance	: 2.00000	Half life ratio	: 20.00000
Abundance limit	: 50.00000	WTM error limit	: 3.00000
MDA Width (FWHM)	: 3.00000	MDA Confid Level	: 5.00000 %

---- Additional Information ----

Library Used: SYS$SYSDEVICE:[GAMMA.SCUSR.LIB]PINN.NLB;
Background Used: DKA0:[GAMMA.SCUSR.ARCHIVE]BKG__DET1__2156.CNF;1

Sample ID : L4094-6 Acquisition date : 1-DEC-2001 11:54:21

Br Report

Nuclide	Activity pCi/g	2-Sigma Error
K-40	32.6	2.36
CS-137	4.90	0.204
TL-208	0.410	9.947E-02
BI-212	2.11	1.24
PB-212	1.61	0.160
BI-214	0.973	0.192
PB-214	1.20	0.195
AC-228	1.53	0.241
TH-234	2.55	2.10
U-235	0.217	0.116
AM-241	8.74	0.435

Total Activity :	56.8	

Sample ID : L4094-6 Acquisition date : 1-DEC-2001 11:54:21

-- Identified Nuclides ----

Nuclide	Activity (pCi/g)	Act error	MDA (pCi/g)	MDA error	Act/MDA
K-40	3.255E+01	2.363E+00	8.890E-01	0.000E+00	36.619
CS-137	4.896E+00	2.036E-01	9.679E-02	0.000E+00	50.577
TL-208	4.102E-01	9.947E-02	8.441E-02	0.000E+00	4.860
BI-212	2.114E+00	1.236E+00	1.114E+00	0.000E+00	1.898
PB-212	1.606E+00	1.601E-01	1.473E-01	0.000E+00	10.903
BI-214	9.726E-01	1.917E-01	1.871E-01	0.000E+00	5.199
PB-214	1.205E+00	1.949E-01	1.824E-01	0.000E+00	6.605
AC-228	1.528E+00	2.407E-01	2.902E-01	0.000E+00	5.266
TH-234	~~2.549E+00~~ 0.0	2.097E+00	1.252E+00	0.000E+00	2.036
U-235	2.169E-01	1.164E-01	5.436E-01	0.000E+00	0.399
AM-241	8.742E+00	4.345E-01	3.565E-01	0.000E+00	24.520

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/g)	K.L. Ided	Act error	MDA (pCi/g)	MDA error	Act/MDA
BE-7	-1.488E-01		6.487E-01	1.052E+00	0.000E+00	-0.142
NA-22	-3.041E-02		6.246E-02	9.555E-02	0.000E+00	-0.318
S[illegible]	1.222E-01	+	1.205E-01	1.743E-01	0.000E+00	0.701
C[illegible]	-4.161E-01		6.926E-01	1.135E+00	0.000E+00	-0.367
MN-54	-3.012E-02		5.704E-02	9.156E-02	0.000E+00	-0.329
CO-56	-2.795E-02		5.960E-02	9.555E-02	0.000E+00	-0.292
CO-57	-3.233E-02		4.038E-02	6.481E-02	0.000E+00	-0.499
CO-58	-3.910E-02		5.971E-02	9.473E-02	0.000E+00	-0.413
FE-59	9.497E-02		1.518E-01	2.601E-01	0.000E+00	0.365
CO-60	-1.230E-02		5.637E-02	9.263E-02	0.000E+00	-0.133
ZN-65	-1.584E-01		1.561E-01	1.917E-01	0.000E+00	-0.826
SR-85	-2.290E-01		8.139E-02	1.167E-01	0.000E+00	-1.963
NB-94	3.800E-02		5.138E-02	8.985E-02	0.000E+00	0.423
NB-95	1.132E-02		7.801E-02	1.319E-01	0.000E+00	0.086
RU-106	-2.749E-01		5.264E-01	8.177E-01	0.000E+00	-0.336
AG-110M	-7.473E-02		1.355E+00	2.224E+00	0.000E+00	-0.034
SB-124	-8.372E-02		6.989E-02	1.045E-01	0.000E+00	-0.801
SB-125	2.168E-01		1.665E-01	2.902E-01	0.000E+00	0.747
I-129	-5.437E-01		9.027E-01	1.386E+00	0.000E+00	-0.392
I-131	1.490E-01		3.397E-01	5.770E-01	0.000E+00	0.258
CS-134	3.308E-02		6.192E-02	9.094E-02	0.000E+00	0.364
CE-139	-4.799E-02		5.009E-02	7.861E-02	0.000E+00	-0.610
CE-144	3.637E-02		3.154E-01	5.192E-01	0.000E+00	0.070
EU-152	1.417E-01		2.559E-01	4.526E-01	0.000E+00	0.313
EU-154	-8.370E-02		8.173E-02	1.302E-01	0.000E+00	-0.643
EU-155	2.621E-01	+	1.497E-01	2.082E-01	0.000E+00	1.259
TH-227	1.053E-01		4.063E-01	5.824E-01	0.000E+00	0.181
PA [illegible]34M	7.119E+00		9.575E+00	1.628E+01	0.000E+00	0.437

Sample ID : L4094-6 Acquisition date : 1-DEC-2001 11:54:21

N .de Type: natural

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
K-40	1460.83	10.67*	1.202E+00	3.255E+01	3.255E+01	7.26	OK
	Final Mean for 1 Valid Peaks = 3.255E+01+/- 2.363E+00 (7.26%)						
TL-208	277.28	6.80	4.865E+00	7.717E-01	7.717E-01	91.15	OK
	510.61	21.60	3.063E+00	----- Line Not Found		-----	Absent
	583.02	86.00*	2.739E+00	4.029E-01	4.029E-01	24.94	OK
	860.30	12.00	1.933E+00	----- Line Not Found		-----	Absent
	Final Mean for 2 Valid Peaks = 4.102E-01+/- 9.947E-02 (24.25%)						
BI-212	39.85	1.10	9.275E-01	----- Line Not Found		-----	Absent
	727.25	6.65*	2.258E+00	2.114E+00	2.114E+00	58.47	OK
	785.51	1.11	2.103E+00	----- Line Not Found		-----	Absent
	1620.66	1.51	1.114E+00	----- Line Not Found		-----	Absent
	Final Mean for 1 Valid Peaks = 2.114E+00+/- 1.236E+00 (58.47%)						
PB-212	74.81	10.50	5.941E+00	2.151E+00	2.151E+00	22.68	<<WM Interf
	77.10	17.70	6.142E+00	1.842E+00	1.842E+00	16.16	<<WM Interf
	87.19	6.27	6.794E+00	1.410E+00	1.410E+00	57.11	<<WM Interf
	90.12	1.86	6.935E+00	----- Line Not Found		-----	Absent
	238.58	43.60*	5.382E+00	1.606E+00	1.606E+00	9.97	OK
	300.03	3.34	4.601E+00	----- Line Not Found		-----	Absent
	Final Mean for 1 Valid Peaks = 1.606E+00+/- 1.601E-01 (9.97%)						
BI-214	609.31	46.10*	2.639E+00	9.548E-01	9.548E-01	22.07	OK
	665.44	1.56	2.442E+00	----- Line Not Found		-----	Absent
	768.35	4.88	2.146E+00	----- Line Not Found		-----	Absent
	806.16	1.23	2.053E+00	----- Line Not Found		-----	Absent
	934.04	3.16	1.790E+00	----- Line Not Found		-----	Absent
	1120.27	15.00	1.512E+00	6.795E-01	6.795E-01	98.60	OK
	1155.18	1.69	1.470E+00	----- Line Not Found		-----	Absent
	1238.11	5.92	1.381E+00	----- Line Not Found		-----	Absent
	1280.95	1.47	1.341E+00	----- Line Not Found		-----	Absent
	1377.66	4.02	1.260E+00	----- Line Not Found		-----	Absent
	1401.48	1.39	1.243E+00	----- Line Not Found		-----	Absent
	1407.97	2.48	1.238E+00	----- Line Not Found		-----	Absent
	1509.22	2.19	1.173E+00	----- Line Not Found		-----	Absent
	1661.26	1.15	1.096E+00	----- Line Not Found		-----	Absent
	1729.58	3.05	1.068E+00	1.844E+00	1.844E+00	132.41	OK
	1764.49	15.90	1.056E+00	1.368E+00	1.368E+00	48.25	OK
	1847.41	2.12	1.031E+00	----- Line Not Found		-----	Absent
	2118.53	1.21	9.804E-01	----- Line Out Of Range		----	Absent
	2204.09	4.99	9.735E-01	----- Line Out Of Range		----	Absent
	Final Mean for 4 Valid Peaks = 9.726E-01+/- 1.917E-01 (19.71%)						

Sample ID : L4094-6 Acquisition date : 1-DEC-2001 11:54:21

N de Type: natural

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
PB-214	53.17	1.10	3.004E+00	----- Line Not Found		-----	Absent
	74.81	6.52	5.941E+00	3.465E+00	3.465E+00	22.68	<<WM Interf
	77.11	11.00	6.142E+00	2.963E+00	2.963E+00	16.16	<<WM Interf
	87.20	3.88	6.794E+00	2.278E+00	2.278E+00	57.11	<<WM Interf
	90.13	1.15	6.935E+00	----- Line Not Found		-----	Absent
	241.92	7.46	5.335E+00	1.661E+00	1.661E+00	42.23	OK
	295.10	19.20	4.656E+00	1.197E+00	1.197E+00	27.46	OK
	351.87	37.10*	4.097E+00	1.148E+00	1.148E+00	22.47	OK
	785.83	1.09	2.102E+00	----- Line Not Found		-----	Absent
Final Mean for 3 Valid Peaks = 1.205E+00+/- 1.949E-01 (16.18%)							
AC-228	89.96	3.40	6.928E+00	----- Line Not Found		-----	Absent
	93.35	5.60	7.039E+00	3.208E+00	3.208E+00	35.57	<<WM Interf
	129.03	2.90	7.248E+00	1.298E+00	1.298E+00	99.79	OK
	209.39	4.10	5.839E+00	2.664E+00	2.664E+00	60.25	OK
	270.26	3.80	4.950E+00	2.694E+00	2.694E+00	55.11	OK
	328.07	3.50	4.316E+00	2.663E+00	2.663E+00	65.90	OK
	338.42	12.40	4.218E+00	1.320E+00	1.320E+00	41.60	OK
	409.62	2.20	3.652E+00	----- Line Not Found		-----	Absent
	463.10	4.60	3.315E+00	----- Line Not Found		-----	Absent
	794.79	4.60	2.080E+00	----- Line Not Found		-----	Absent
	911.16	29.00*	1.832E+00	1.430E+00	1.430E+00	25.34	OK
	964.64	5.80	1.737E+00	1.918E+00	1.918E+00	71.06	OK
	968.97	17.40	1.730E+00	1.536E+00	1.536E+00	32.47	OK
	1588.23	3.60	1.130E+00	----- Line Not Found		-----	Absent
Final Mean for 8 Valid Peaks = 1.528E+00+/- 2.407E-01 (15.75%)							
TH-234	63.29	3.80	4.589E+00	2.549E+00	2.549E+00	82.24	OK
	92.57	5.41*	7.039E+00	3.321E+00	3.321E+00	35.57	<<WM Interf
Final Mean for 1 Valid Peaks = 2.549E+00+/- 2.097E+00 (82.24%)							
U-235	89.96	3.36	6.928E+00	----- Line Not Found		-----	Absent
	93.35	5.50	7.039E+00	3.266E+00	3.266E+00	35.57	<<WM Interf
	105.36	1.98	7.306E+00	----- Line Not Found		-----	Absent
	109.18	1.50	7.334E+00	----- Line Not Found		-----	Absent
	143.79	10.50*	7.032E+00	----- Line Not Found		-----	Absent
	163.38	4.70	6.680E+00	----- Line Not Found		-----	Absent
	185.74	53.00	6.264E+00	2.169E-01	2.169E-01	53.65	OK
	202.14	1.00	5.967E+00	----- Line Not Found		-----	Absent
	205.33	4.70	5.911E+00	----- Line Not Found		-----	Absent
Final Mean for 1 Valid Peaks = 2.169E-01+/- 1.164E-01 (53.65%)							

Sample ID : L4094-6 Acquisition date : 1-DEC-2001 11:54:21

ide Type: fission

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
CS-137	661.66	85.21*	2.455E+00	4.889E+00	4.896E+00	4.16	OK

Final Mean for 1 Valid Peaks = 4.896E+00+/- 2.036E-01 (4.16%)

Nuclide Type: man-made

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
AM-241	17.61	20.20	1.220E-04	----- Line Not Found		-----	Absent
	59.54	35.70*	4.046E+00	8.741E+00	8.742E+00	4.97	OK

Final Mean for 1 Valid Peaks = 8.742E+00+/- 4.345E-01 (4.97%)

Flag: "*" = Keyline

Approved by: _____ Approval Date: __ / __ / ____

Enviro-Test Laboratory

VMS Gamma Spectroscopy Report Generated 1-DEC-2001 13:55:18

Configuration Name :
SYSDEVICE:[GAMMA.SCUSR.ARCHIVE]SMP_L40947_DET2_60MLCAN_2294.CNF;1

---- Sample Information ----

Sample Title	: L4094-7		
Sample ID	: L4094-7	Sample Quantity	: 9.50600E+01 g
Sample Type	: SOIL	Sample Geometry	:
Sample Number	: 2294	Spctrm Collector	: Analyst
Sample Collector	:	Sample Analyst	: Analyst

---- Sample Deposition Information ----

Dep. Correction?	: No	Dep. Duration	:
Deposition Start	:	Deposition End	: 9-NOV-2001 15:55:00.

---- Sample Decay/Count Information ----

Sample Date	: 9-NOV-2001 15:55:00.	Acquisition date	: 1-DEC-2001 11:54:59.
Decay time	: 21 19:59:59.00	% dead time	: 0.0%
Elapsed live time	: 0 02:00:00.00	Elapsed real time	: 0 02:00:01.56

---- Detector Parameters ----

Energy cal. time	: 3-AUG-2001 20:18:21.	Energy cal. oper.	: Analyst
Detector name	: DET2	Counting geometry	: 60mL Can
Effic. cal. time	: 3-AUG-2001 20:19:46.	Effic. cal. oper.	: Analyst

---- Processing Parameters ----

Start channel	: 1	End channel	: 4096
Sensitivity	: 5.00000	Gaussian Sens.	: 10.00000
Critical level?	: No	Propagate Errors?	: No
Efficiency Type	: EMPIRICA	Library-based eff	: No
Energy tolerance	: 2.00000	Half life ratio	: 20.00000
Abundance limit	: 50.00000	WTM error limit	: 3.00000
MDA Width (FWHM)	: 3.00000	MDA Confid Level	: 5.00000 %

---- Additional Information ----

Library Used: SYS$SYSDEVICE:[GAMMA.SCUSR.LIB]PINN.NLB;
Background Used: DKA0:[GAMMA.SCUSR.ARCHIVE]BKG__DET2__2170.CNF;1

Sample ID : L4094-7 Acquisition date : 1-DEC-2001 11:54:59

Brief Report

Nuclide	Activity pCi/g	2-Sigma Error
K-40	33.4	3.12
CS-137	16.5	0.464
TL-208	0.486	0.174
BI-212	2.22	2.38
PB-212	1.95	0.245
BI-214	1.25	0.348
PB-214	1.35	0.310
AC-228	1.46	0.410
TH-234	3.34	1.38
U-235	0.499	0.218
AM-241	33.2	0.571

Total Activity :	95.7	

Sample ID : L4094-7 Acquisition date : 1-DEC-2001 11:54:59

-- Identified Nuclides ----

Nuclide	Activity (pCi/g)	Act error	MDA (pCi/g)	MDA error	Act/MDA
K-40	3.337E+01	3.120E+00	1.163E+00	0.000E+00	28.691
CS-137	1.654E+01	4.644E-01	1.675E-01	0.000E+00	98.765
TL-208	4.858E-01	1.739E-01	1.719E-01	0.000E+00	2.826
BI-212	2.222E+00	2.377E+00	1.870E+00	0.000E+00	1.188
PB-212	1.951E+00	2.453E-01	2.413E-01	0.000E+00	8.084
BI-214	1.252E+00	3.483E-01	3.057E-01	0.000E+00	4.097
PB-214	1.346E+00	3.103E-01	3.467E-01	0.000E+00	3.882
AC-228	1.463E+00	4.100E-01	5.356E-01	0.000E+00	2.731
TH-234	~~3.342E+00~~ 0.0	1.376E+00	1.351E+00	0.000E+00	2.474
U-235	4.991E-01	2.182E-01	8.164E-01	0.000E+00	0.611
AM-241	3.318E+01	5.714E-01	3.421E-01	0.000E+00	97.005

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/g)	K.L. Ided	Act error	MDA (pCi/g)	MDA error	Act/MDA
BE-7	1.570E-01		1.317E+00	2.192E+00	0.000E+00	0.072
NA-22	-9.604E-03		1.088E-01	1.790E-01	0.000E+00	-0.054
SC	2.775E-01		1.469E-01	2.698E-01	0.000E+00	1.028
CR	1.765E-01		1.263E+00	2.129E+00	0.000E+00	0.083
MN-54	2.033E-02		9.378E-02	1.546E-01	0.000E+00	0.132
CO-56	-9.524E-02		1.044E-01	1.575E-01	0.000E+00	-0.605
CO-57	-2.840E-02		5.941E-02	9.647E-02	0.000E+00	-0.294
CO-58	-8.270E-02		1.035E-01	1.582E-01	0.000E+00	-0.523
FE-59	2.057E-01		2.459E-01	4.348E-01	0.000E+00	0.473
CO-60	-1.318E-02		9.289E-02	1.514E-01	0.000E+00	-0.087
ZN-65	-2.328E-01		2.420E-01	3.773E-01	0.000E+00	-0.617
SR-85	2.989E-01		1.401E-01	2.216E-01	0.000E+00	1.349
NB-94	-2.996E-02		8.700E-02	1.373E-01	0.000E+00	-0.218
NB-95	1.430E-01		1.313E-01	2.289E-01	0.000E+00	0.625
RU-106	-3.893E-01		8.900E-01	1.427E+00	0.000E+00	-0.273
AG-110M	1.099E+00		2.951E+00	4.955E+00	0.000E+00	0.222
SB-124	-5.109E-02		1.342E-01	1.842E-01	0.000E+00	-0.277
SB-125	2.389E-01		3.336E-01	5.668E-01	0.000E+00	0.422
I-129	-1.437E-01		1.410E+00	2.242E+00	0.000E+00	-0.064
I-131	-2.747E-01		6.357E-01	1.048E+00	0.000E+00	-0.262
CS-134	-1.405E-02		1.056E-01	1.475E-01	0.000E+00	-0.095
CE-139	-7.515E-02		7.590E-02	1.207E-01	0.000E+00	-0.622
CE-144	-7.016E-01		4.782E-01	7.570E-01	0.000E+00	-0.927
EU-152	-1.589E-01		3.892E-01	6.094E-01	0.000E+00	-0.261
EU-154	-7.328E-02		1.194E-01	1.933E-01	0.000E+00	-0.379
EU-155	6.284E-02	+	1.784E-01	2.417E-01	0.000E+00	0.260
TH-227	4.477E+00		7.628E-01	1.269E+00	0.000E+00	3.528
PA-234M	5.891E-01		1.427E+01	2.396E+01	0.000E+00	0.025

Sample ID : L4094-7 Acquisition date : 1-DEC-2001 11:54:59

Nuclide Type: natural

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
K-40	1460.83	10.67*	7.817E-01	3.337E+01	3.337E+01	9.35	OK
Final Mean for 1 Valid Peaks = 3.337E+01+/- 3.120E+00 (9.35%)							
TL-208	277.28	6.80	3.947E+00	----- Line Not Found		-----	Absent
	510.61	21.60	2.170E+00	5.798E-01	5.798E-01	134.40	OK
	583.02	86.00*	1.900E+00	4.809E-01	4.809E-01	37.09	OK
	860.30	12.00	1.285E+00	----- Line Not Found		-----	Absent
Final Mean for 2 Valid Peaks = 4.858E-01+/- 1.739E-01 (35.79%)							
BI-212	39.85	1.10	6.165E+00	----- Line Not Found		-----	Absent
	727.25	6.65*	1.517E+00	2.222E+00	2.222E+00	106.94	OK
	785.51	1.11	1.406E+00	----- Line Not Found		-----	Absent
	1620.66	1.51	7.145E-01	----- Line Not Found		-----	Absent
Final Mean for 1 Valid Peaks = 2.222E+00+/- 2.377E+00 (106.94%)							
PB-212	74.81	10.50	8.457E+00	3.088E+00	3.088E+00	21.92	<<WM Interf
	77.10	17.70	8.449E+00	2.605E+00	2.605E+00	14.68	<<WM Interf
	87.19	6.27	8.304E+00	3.379E-01	3.379E-01	283.95	<<WM Interf
	90.12	1.86	8.304E+00	1.139E+00	1.139E+00	283.95	<<WM Interf
	238.58	43.60*	4.522E+00	1.951E+00	1.951E+00	12.57	OK
	300.03	3.34	3.666E+00	----- Line Not Found		-----	Absent
Final Mean for 1 Valid Peaks = 1.951E+00+/- 2.453E-01 (12.57%)							
BI-214	609.31	46.10*	1.816E+00	1.323E+00	1.323E+00	28.76	OK
	665.44	1.56	1.661E+00	----- Line Not Found		-----	Absent
	768.35	4.88	1.438E+00	----- Line Not Found		-----	Absent
	806.16	1.23	1.371E+00	----- Line Not Found		-----	Absent
	934.04	3.16	1.185E+00	----- Line Not Found		-----	Absent
	1120.27	15.00	9.955E-01	----- Line Not Found		-----	Absent
	1155.18	1.69	9.671E-01	----- Line Not Found		-----	Absent
	1238.11	5.92	9.067E-01	----- Line Not Found		-----	Absent
	1280.95	1.47	8.789E-01	----- Line Not Found		-----	Absent
	1377.66	4.02	8.229E-01	----- Line Not Found		-----	Absent
	1401.48	1.39	8.104E-01	----- Line Not Found		-----	Absent
	1407.97	2.48	8.071E-01	----- Line Not Found		-----	Absent
	1509.22	2.19	7.594E-01	----- Line Not Found		-----	Absent
	1661.26	1.15	6.998E-01	----- Line Not Found		-----	Absent
	1729.58	3.05	6.768E-01	----- Line Not Found		-----	Absent
	1764.49	15.90	6.661E-01	8.863E-01	8.864E-01	97.73	OK
	1847.41	2.12	6.418E-01	----- Line Not Found		-----	Absent
	2118.53	1.21	5.779E-01	----- Line Out Of Range		----	Absent
	2204.09	4.99	5.616E-01	----- Line Out Of Range		----	Absent
Final Mean for 2 Valid Peaks = 1.252E+00+/- 3.483E-01 (27.81%)							

Sample ID : L4094-7 Acquisition date : 1-DEC-2001 11:54:59

N de Type: natural

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
PB-214	53.17	1.10	7.784E+00	-----	Line Not Found	-----	Absent
	74.81	6.52	8.457E+00	4.973E+00	4.973E+00	21.92	<<WM Interf
	77.11	11.00	8.449E+00	4.192E+00	4.192E+00	14.68	<<WM Interf
	87.20	3.88	8.304E+00	5.460E-01	5.461E-01	283.95	<<WM Interf
	90.13	1.15	8.263E+00	-----	Line Not Found	-----	Absent
	241.92	7.46	4.470E+00	2.317E+00	2.317E+00	57.93	OK
	295.10	19.20	3.730E+00	1.401E+00	1.401E+00	49.03	OK
	351.87	37.10*	3.145E+00	1.261E+00	1.261E+00	28.56	OK
	785.83	1.09	1.406E+00	-----	Line Not Found	-----	Absent

Final Mean for 3 Valid Peaks = 1.346E+00+/- 3.103E-01 (23.06%)

AC-228	89.96	3.40	8.304E+00	6.231E-01	6.231E-01	283.95	<<WM Interf
	93.35	5.60	8.198E+00	3.228E+00	3.228E+00	41.19	<<WM Interf
	129.03	2.90	7.136E+00	-----	Line Not Found	-----	Absent
	209.39	4.10	5.057E+00	-----	Line Not Found	-----	Absent
	270.26	3.80	4.041E+00	-----	Line Not Found	-----	Absent
	328.07	3.50	3.366E+00	-----	Line Not Found	-----	Absent
	338.42	12.40	3.268E+00	2.114E+00	2.114E+00	52.10	OK
	409.62	2.20	2.708E+00	-----	Line Not Found	-----	Absent
	463.10	4.60	2.395E+00	-----	Line Not Found	-----	Absent
	794.79	4.60	1.390E+00	-----	Line Not Found	-----	Absent
	911.16	29.00*	1.215E+00	1.199E+00	1.199E+00	47.24	OK
	964.64	5.80	1.149E+00	-----	Line Not Found	-----	Absent
	968.97	17.40	1.144E+00	1.606E+00	1.606E+00	43.98	OK
	1588.23	3.60	7.268E-01	-----	Line Not Found	-----	Absent

Final Mean for 3 Valid Peaks = 1.463E+00+/- 4.100E-01 (28.03%)

TH-234	63.29	3.80	8.306E+00	-----	Line Not Found	-----	Absent
	92.57	5.41*	8.198E+00	3.342E+00	3.342E+00	41.19	OK

Final Mean for 1 Valid Peaks = 3.342E+00+/- 1.376E+00 (41.19%)

U-235	89.96	3.36	8.304E+00	6.305E-01	6.305E-01	283.95	<<WM Interf
	93.35	5.50	8.198E+00	3.287E+00	3.287E+00	41.19	<<WM Interf
	105.36	1.98	7.866E+00	-----	Line Not Found	-----	Absent
	109.18	1.50	7.752E+00	-----	Line Not Found	-----	Absent
	143.79	10.50*	6.687E+00	-----	Line Not Found	-----	Absent
	163.38	4.70	6.133E+00	-----	Line Not Found	-----	Absent
	185.74	53.00	5.574E+00	4.991E-01	4.991E-01	43.72	OK
	202.14	1.00	5.207E+00	-----	Line Not Found	-----	Absent
	205.33	4.70	5.140E+00	-----	Line Not Found	-----	Absent

Final Mean for 1 Valid Peaks = 4.991E-01+/- 2.182E-01 (43.72%)

Sample ID : L4094-7 Acquisition date : 1-DEC-2001 11:54:59

N de Type: fission

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
CS-137	661.66	85.21*	1.672E+00	1.652E+01	1.654E+01	2.81	OK

Final Mean for 1 Valid Peaks = 1.654E+01+/- 4.644E-01 (2.81%)

Nuclide Type: man-made

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
AM-241	17.61	20.20	8.541E-01	3.210E+01	3.211E+01	13.51	OK
	59.54	35.70*	8.163E+00	3.320E+01	3.320E+01	1.74	OK

Final Mean for 2 Valid Peaks = 3.318E+01+/- 5.714E-01 (1.72%)

Flag: "*" = Keyline

Approved by: _____ Approval Date: __ / __ / ____

Enviro-Test Laboratory

VMS Gamma Spectroscopy Report Generated 3-DEC-2001 10:44:18

Cc guration Name :
S\ YSDEVICE:[GAMMA.SCUSR.ARCHIVE]SMP_L40948_DET1_60MLCAN_2295.CNF;1

---- Sample Information ----

Sample Title	: L4094-8		
Sample ID	: L4094-8	Sample Quantity	: 8.86500E+01 g
Sample Type	: SOIL	Sample Geometry	:
Sample Number	: 2295	Spctrm Collector	: Analyst
Sample Collector	:	Sample Analyst	: Analyst

---- Sample Deposition Information ----

Dep. Correction?	: No	Dep. Duration	:
Deposition Start	:	Deposition End	: 9-NOV-2001 16:10:00.

---- Sample Decay/Count Information ----

Sample Date	: 9-NOV-2001 16:10:00.	Acquisition date	: 3-DEC-2001 08:43:55.
Decay time	: 23 16:33:55.74	% dead time	: 0.1%
Elapsed live time	: 0 02:00:00.00	Elapsed real time	: 0 02:00:04.03

---- Detector Parameters ----

Energy cal. time	: 3-AUG-2001 14:03:25.	Energy cal. oper.	: Analyst
Detector name	: DET1	Counting geometry	: 60mL Can
Effic. cal. time	: 3-AUG-2001 14:14:25.	Effic. cal. oper.	: Analyst

---- Processing Parameters ----

S' channel	: 1	End channel	: 4096
Se tivity	: 5.00000	Gaussian Sens.	: 10.00000
Critical level?	: No	Propagate Errors?	: No
Efficiency Type	: EMPIRICA	Library-based eff	: No
Energy tolerance	: 2.00000	Half life ratio	: 20.00000
Abundance limit	: 50.00000	WTM error limit	: 3.00000
MDA Width (FWHM)	: 3.00000	MDA Confid Level	: 5.00000 %

---- Additional Information ----

Library Used: SYS$SYSDEVICE:[GAMMA.SCUSR.LIB]PINN.NLB;
Background Used: DKA0:[GAMMA.SCUSR.ARCHIVE]BKG__DET1__2156.CNF;1

B Report

Nuclide	Activity pCi/g	2-Sigma Error
K-40	31.9	2.53
CS-137	0.841	0.120
TL-208	0.575	0.129
BI-212	2.75	1.29
PB-212	1.95	0.154
BI-214	1.57	0.218
PB-214	1.55	0.211
AC-228	1.88	0.264
PA-234M	18.2	17.1
TH-234	8.46	1.87
U-235	0.670	0.141
AM-241	4.10	0.306
Total Activity :	74.5	

Sample ID : L4094-8 Acquisition date : 3-DEC-2001 08:43:55

-- Identified Nuclides ----

Nuclide	Activity (pCi/g)	Act error	MDA (pCi/g)	MDA error	Act/MDA
K-40	3.190E+01	2.534E+00	8.577E-01	0.000E+00	37.196
CS-137	8.410E-01	1.195E-01	1.012E-01	0.000E+00	8.307
TL-208	5.754E-01	1.291E-01	9.466E-02	0.000E+00	6.078
BI-212	2.747E+00	1.287E+00	1.315E+00	0.000E+00	2.090
PB-212	1.946E+00	1.541E-01	1.520E-01	0.000E+00	12.809
BI-214	1.575E+00	2.185E-01	1.972E-01	0.000E+00	7.986
PB-214	1.549E+00	2.107E-01	1.863E-01	0.000E+00	8.317
AC-228	1.880E+00	2.637E-01	3.375E-01	0.000E+00	5.570
PA-234M	~~1.823E+01~~ 2.0	1.709E+01	1.514E+01	0.000E+00	1.205
TH-234	8.456E+00	1.869E+00	1.293E+00	0.000E+00	6.538
U-235	6.701E-01	1.410E-01	5.618E-01	0.000E+00	1.193
AM-241	4.102E+00	3.063E-01	3.537E-01	0.000E+00	11.598

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/g)	K.L. Ided	Act error	MDA (pCi/g)	MDA error	Act/MDA
BE-7	-2.113E-01		6.158E-01	9.894E-01	0.000E+00	-0.214
N[illegible]	-2.409E-03		7.315E-02	1.174E-01	0.000E+00	-0.021
S[illegible]	2.820E-01	+	1.281E-01	2.119E-01	0.000E+00	1.331
CR-51	2.018E-01		7.643E-01	1.299E+00	0.000E+00	0.155
MN-54	3.356E-02		5.738E-02	9.960E-02	0.000E+00	0.337
CO-56	9.006E-04		6.848E-02	1.140E-01	0.000E+00	0.008
CO-57	-1.435E-02		4.476E-02	7.296E-02	0.000E+00	-0.197
CO-58	-4.346E-02		7.212E-02	1.152E-01	0.000E+00	-0.377
FE-59	-7.847E-02		1.745E-01	2.735E-01	0.000E+00	-0.287
CO-60	-2.314E-02		6.246E-02	1.010E-01	0.000E+00	-0.229
ZN-65	-5.619E-02		1.716E-01	2.318E-01	0.000E+00	-0.242
SR-85	9.962E-02		6.664E-02	1.174E-01	0.000E+00	0.849
NB-94	3.138E-02		5.736E-02	9.900E-02	0.000E+00	0.317
NB-95	6.484E-03		9.044E-02	1.522E-01	0.000E+00	0.043
RU-106	1.731E-01		5.910E-01	9.683E-01	0.000E+00	0.179
AG-110M	6.184E-01		1.321E+00	2.228E+00	0.000E+00	0.278
SB-124	-2.891E-02		8.062E-02	1.224E-01	0.000E+00	-0.236
SB-125	3.905E-02		1.605E-01	2.682E-01	0.000E+00	0.146
I-129	-6.141E-01		9.766E-01	1.495E+00	0.000E+00	-0.411
I-131	3.942E-01		4.210E-01	7.312E-01	0.000E+00	0.539
CS-134	-4.577E-03		6.975E-02	9.763E-02	0.000E+00	-0.047
CE-139	-2.305E-02		5.637E-02	9.020E-02	0.000E+00	-0.256
CE-144	3.352E-01		3.917E-01	5.953E-01	0.000E+00	0.563
EU-152	2.072E-01		3.040E-01	5.422E-01	0.000E+00	0.382
EU-154	-4.853E-02		8.803E-02	1.423E-01	0.000E+00	-0.341
EU-155	5.263E-01	+	1.732E-01	2.455E-01	0.000E+00	2.144
TH-227	1.066E-01		4.342E-01	6.221E-01	0.000E+00	0.171

Sample ID : L4094-8 Acquisition date : 3-DEC-2001 08:43:55

Nuclide Type: natural

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
K-40	1460.83	10.67*	1.202E+00	3.190E+01	3.190E+01	7.94	OK
Final Mean for 1 Valid Peaks = 3.190E+01+/- 2.534E+00 (7.94%)							
TL-208	277.28	6.80	4.863E+00	----- Line Not Found		-----	Absent
	510.61	21.60	3.062E+00	7.397E-01	7.397E-01	87.51	OK
	583.02	86.00*	2.740E+00	5.515E-01	5.515E-01	24.22	OK
	860.30	12.00	1.931E+00	1.195E+00	1.195E+00	67.66	OK
Final Mean for 3 Valid Peaks = 5.754E-01+/- 1.291E-01 (22.44%)							
BI-212	39.85	1.10	9.275E-01	----- Line Not Found		-----	Absent
	727.25	6.65*	2.256E+00	2.747E+00	2.747E+00	46.85	OK
	785.51	1.11	2.103E+00	----- Line Not Found		-----	Absent
	1620.66	1.51	1.114E+00	----- Line Not Found		-----	Absent
Final Mean for 1 Valid Peaks = 2.747E+00+/- 1.287E+00 (46.85%)							
PB-212	74.81	10.50	5.938E+00	3.550E+00	3.550E+00	19.01	<<WM Interf
	77.10	17.70	6.141E+00	2.677E+00	2.677E+00	14.05	<<WM Interf
	87.19	6.27	6.804E+00	2.828E+00	2.828E+00	32.91	<<WM Interf
	90.12	1.86	6.935E+00	----- Line Not Found		-----	Absent
	238.58	43.60*	5.381E+00	1.946E+00	1.946E+00	7.95	OK
	300.03	3.34	4.601E+00	2.027E+00	2.027E+00	87.61	OK
Final Mean for 2 Valid Peaks = 1.946E+00+/- 1.541E-01 (7.92%)							
BI-214	609.31	46.10*	2.639E+00	1.511E+00	1.511E+00	16.37	OK
	665.44	1.56	2.442E+00	----- Line Not Found		-----	Absent
	768.35	4.88	2.146E+00	----- Line Not Found		-----	Absent
	806.16	1.23	2.053E+00	----- Line Not Found		-----	Absent
	934.04	3.16	1.790E+00	----- Line Not Found		-----	Absent
	1120.27	15.00	1.512E+00	1.545E+00	1.545E+00	45.44	OK
	1155.18	1.69	1.470E+00	----- Line Not Found		-----	Absent
	1238.11	5.92	1.381E+00	----- Line Not Found		-----	Absent
	1280.95	1.47	1.341E+00	----- Line Not Found		-----	Absent
	1377.66	4.02	1.260E+00	----- Line Not Found		-----	Absent
	1401.48	1.39	1.243E+00	----- Line Not Found		-----	Absent
	1407.97	2.48	1.238E+00	----- Line Not Found		-----	Absent
	1509.22	2.19	1.173E+00	----- Line Not Found		-----	Absent
	1661.26	1.15	1.096E+00	----- Line Not Found		-----	Absent
	1729.58	3.05	1.069E+00	3.529E+00	3.529E+00	72.46	OK
	1764.49	15.90	1.056E+00	1.699E+00	1.699E+00	38.81	OK
	1847.41	2.12	1.031E+00	5.579E+00	5.579E+00	50.09	OK
	2118.53	1.21	9.804E-01	----- Line Out Of Range ----			Absent
	2204.09	4.99	9.735E-01	----- Line Out Of Range ----			Absent
Final Mean for 5 Valid Peaks = 1.575E+00+/- 2.185E-01 (13.87%)							

Sample ID : L4094-8 Acquisition date : 3-DEC-2001 08:43:55

Nu de Type: natural

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
PB-214	53.17	1.10	3.004E+00	----- Line Not Found		-----	Absent
	74.81	6.52	5.938E+00	5.717E+00	5.717E+00	19.01	<<WM Interf
	77.11	11.00	6.141E+00	4.307E+00	4.307E+00	14.05	<<WM Interf
	87.20	3.88	6.804E+00	4.571E+00	4.571E+00	32.91	<<WM Interf
	90.13	1.15	6.935E+00	----- Line Not Found		-----	Absent
	241.92	7.46	5.336E+00	2.085E+00	2.085E+00	47.13	OK
	295.10	19.20	4.654E+00	1.567E+00	1.567E+00	27.16	OK
	351.87	37.10*	4.098E+00	1.508E+00	1.508E+00	16.59	OK
	785.83	1.09	2.102E+00	----- Line Not Found		-----	Absent
Final Mean for 3 Valid Peaks = 1.549E+00+/- 2.107E-01 (13.60%)							
AC-228	89.96	3.40	6.928E+00	----- Line Not Found		-----	Absent
	93.35	5.60	7.039E+00	9.178E+00	9.178E+00	16.35	<<WM Interf
	129.03	2.90	7.240E+00	2.551E+00	2.551E+00	63.60	OK
	209.39	4.10	5.838E+00	1.642E+00	1.642E+00	80.70	OK
	270.26	3.80	4.949E+00	----- Line Not Found		-----	Absent
	328.07	3.50	4.314E+00	----- Line Not Found		-----	Absent
	338.42	12.40	4.218E+00	1.522E+00	1.522E+00	36.22	OK
	409.62	2.20	3.652E+00	----- Line Not Found		-----	Absent
	463.10	4.60	3.317E+00	1.340E+00	1.340E+00	97.89	OK
	794.79	4.60	2.080E+00	----- Line Not Found		-----	Absent
	911.16	29.00*	1.832E+00	2.030E+00	2.030E+00	20.23	OK
	964.64	5.80	1.737E+00	1.868E+00	1.868E+00	89.12	OK
	968.97	17.40	1.730E+00	2.029E+00	2.029E+00	27.28	OK
	1588.23	3.60	1.130E+00	----- Line Not Found		-----	Absent
Final Mean for 7 Valid Peaks = 1.880E+00+/- 2.637E-01 (14.03%)							
PA-234M	98.43	0.19	7.195E+00	----- Line Not Found		-----	Absent
	1001.00	0.65*	1.678E+00	1.823E+01	1.823E+01	93.71	OK
Final Mean for 1 Valid Peaks = 1.823E+01+/- 1.709E+01 (93.71%)							
TH-234	63.29	3.80	4.600E+00	8.456E+00	8.456E+00	22.10	OK
	92.57	5.41*	7.039E+00	9.500E+00	9.500E+00	16.35	<<WM Interf
Final Mean for 1 Valid Peaks = 8.456E+00+/- 1.869E+00 (22.10%)							
U-235	89.96	3.36	6.928E+00	----- Line Not Found		-----	Absent
	93.35	5.50	7.039E+00	9.345E+00	9.345E+00	16.35	<<WM Interf
	105.36	1.98	7.306E+00	----- Line Not Found		-----	Absent
	109.18	1.50	7.334E+00	----- Line Not Found		-----	Absent
	143.79	10.50*	7.031E+00	9.030E-01	9.030E-01	49.17	OK
	163.38	4.70	6.680E+00	----- Line Not Found		-----	Absent
	185.74	53.00	6.262E+00	6.440E-01	6.440E-01	23.09	OK
	202.14	1.00	5.967E+00	----- Line Not Found		-----	Absent
	205.33	4.70	5.911E+00	----- Line Not Found		-----	Absent
Final Mean for 2 Valid Peaks = 6.701E-01+/- 1.410E-01 (21.04%)							

Sample ID : L4094-8 Acquisition date : 3-DEC-2001 08:43:55

Nuclide Type: fission

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
CS-137	661.66	85.21*	2.455E+00	8.398E-01	8.410E-01	14.21	OK

Final Mean for 1 Valid Peaks = 8.410E-01+/- 1.195E-01 (14.21%)

Nuclide Type: man-made

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
AM-241	17.61	20.20	1.220E-04	----- Line Not Found		-----	Absent
	59.54	35.70*	4.049E+00	4.102E+00	4.102E+00	7.47	OK

Final Mean for 1 Valid Peaks = 4.102E+00+/- 3.063E-01 (7.47%)

Flag: "*" = Keyline

Approved by: _____ Approval Date: __ / __ / ____

Enviro-Test Laboratory

VMS Gamma Spectroscopy Report Generated 3-DEC-2001 10:44:46

Co guration Name :
SY /SDEVICE:[GAMMA.SCUSR.ARCHIVE]SMP_L40949_DET2_60MLCAN_2296.CNF;1

---- Sample Information ----

Sample Title	: L4094-9		
Sample ID	: L4094-9	Sample Quantity	: 8.51500E+01 g
Sample Type	: SOIL	Sample Geometry	:
Sample Number	: 2296	Spctrm Collector	: Analyst
Sample Collector	:	Sample Analyst	: Analyst

---- Sample Deposition Information ----

Dep. Correction?	: No	Dep. Duration	:
Deposition Start	:	Deposition End	: 9-NOV-2001 14:05:00.

---- Sample Decay/Count Information ----

Sample Date	: 9-NOV-2001 14:05:00.	Acquisition date	: 3-DEC-2001 08:44:31.
Decay time	: 23 18:39:31.39	% dead time	: 0.0%
Elapsed live time	: 0 02:00:00.00	Elapsed real time	: 0 02:00:01.12

---- Detector Parameters ----

Energy cal. time	: 3-AUG-2001 20:18:21.	Energy cal. oper.	: Analyst
Detector name	: DET2	Counting geometry	: 60mL Can
Effic. cal. time	: 3-AUG-2001 20:19:46.	Effic. cal. oper.	: Analyst

---- Processing Parameters ----

St channel	: 1	End channel	: 4096
Se tivity	: 5.00000	Gaussian Sens.	: 10.00000
Critical level?	: No	Propagate Errors?	: No
Efficiency Type	: EMPIRICA	Library-based eff	: No
Energy tolerance	: 2.00000	Half life ratio	: 20.00000
Abundance limit	: 50.00000	WTM error limit	: 3.00000
MDA Width (FWHM)	: 3.00000	MDA Confid Level	: 5.00000 %

---- Additional Information ----

Library Used: SYS$SYSDEVICE:[GAMMA.SCUSR.LIB]PINN.NLB;
Background Used: DKA0:[GAMMA.SCUSR.ARCHIVE]BKG__DET2__2170.CNF;1

Sample ID : L4094-9 Acquisition date : 3-DEC-2001 08:44:31

Br Report

Nuclide	Activity pCi/g	2-Sigma Error
K-40	36.3	3.61
SC-46	0.407	0.260
CS-137	1.48	0.203
TL-208	0.579	0.175
BI-212	2.76	2.15
PB-212	2.05	0.227
BI-214	1.50	0.329
PB-214	1.59	0.274
AC-228	2.02	0.383
TH-234	3.40	1.48
U-235	0.495	0.183
AM-241	4.82	0.237

Total Activity :	57.4	

Sample ID : L4094-9 Acquisition date : 3-DEC-2001 08:44:31

-- Identified Nuclides ----

Nuclide	Activity (pCi/g)	Act error	MDA (pCi/g)	MDA error	Act/MDA
K-40	3.632E+01	3.611E+00	1.431E+00	0.000E+00	25.382
~~SC-46~~	4.069E-01	2.596E-01	2.143E-01	0.000E+00	1.899
CS-137	1.483E+00	2.034E-01	1.718E-01	0.000E+00	8.632
TL-208	5.794E-01	1.746E-01	1.502E-01	0.000E+00	3.857
BI-212	2.763E+00	2.151E+00	2.069E+00	0.000E+00	1.336
PB-212	2.053E+00	2.273E-01	2.273E-01	0.000E+00	9.033
BI-214	1.496E+00	3.285E-01	2.950E-01	0.000E+00	5.070
PB-214	1.586E+00	2.743E-01	2.870E-01	0.000E+00	5.527
AC-228	2.021E+00	3.834E-01	5.564E-01	0.000E+00	3.633
TH-234	3.396E+00	1.476E+00	1.564E+00	0.000E+00	2.171
U-235	4.951E-01	1.828E-01	8.147E-01	0.000E+00	0.608
AM-241	4.823E+00	2.367E-01	2.285E-01	0.000E+00	21.107

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/g)	K.L. Ided	Act error	MDA (pCi/g)	MDA error	Act/MDA
BE-7	2.776E-01		9.881E-01	1.660E+00	0.000E+00	0.167
N[illegible]	-1.868E-01		1.140E-01	1.599E-01	0.000E+00	-1.168
C[illegible]	-3.817E-01		1.177E+00	1.907E+00	0.000E+00	-0.200
MN-54	3.047E-02		1.106E-01	1.828E-01	0.000E+00	0.167
CO-56	1.099E-02		1.249E-01	2.040E-01	0.000E+00	0.054
CO-57	5.236E-03		5.505E-02	9.060E-02	0.000E+00	0.058
CO-58	-1.854E-02		1.080E-01	1.731E-01	0.000E+00	-0.107
FE-59	1.776E-01		2.732E-01	4.779E-01	0.000E+00	0.372
CO-60	7.603E-02		1.097E-01	1.927E-01	0.000E+00	0.395
ZN-65	1.507E-01		2.778E-01	4.194E-01	0.000E+00	0.359
SR-85	3.036E-01		1.219E-01	2.024E-01	0.000E+00	1.500
NB-94	3.613E-02		9.448E-02	1.576E-01	0.000E+00	0.229
NB-95	9.616E-02		1.545E-01	2.618E-01	0.000E+00	0.367
RU-106	4.410E-02		8.868E-01	1.461E+00	0.000E+00	0.030
AG-110M	7.849E-01		2.099E+00	3.546E+00	0.000E+00	0.221
SB-124	-4.665E-02		1.357E-01	1.861E-01	0.000E+00	-0.251
SB-125	8.327E-02		2.388E-01	4.038E-01	0.000E+00	0.206
I-129	6.670E-01		1.295E+00	2.078E+00	0.000E+00	0.321
I-131	-5.136E-02		6.695E-01	1.116E+00	0.000E+00	-0.046
CS-134	3.073E-02		1.075E-01	1.552E-01	0.000E+00	0.198
CE-139	1.553E-02		7.140E-02	1.172E-01	0.000E+00	0.132
CE-144	-2.798E-01		4.565E-01	7.357E-01	0.000E+00	-0.380
EU-152	-9.897E-03		4.297E-01	7.065E-01	0.000E+00	-0.014
EU-154	6.020E-02		1.102E-01	1.835E-01	0.000E+00	0.328
EU-155	3.130E-01	+	1.440E-01	2.498E-01	0.000E+00	1.253
TH-227	4.508E+00		7.413E-01	1.268E+00	0.000E+00	3.556
PA [illegible]34M	1.660E+01		1.614E+01	2.892E+01	0.000E+00	0.574

Sample ID : L4094-9 Acquisition date : 3-DEC-2001 08:44:31

N de Type: natural

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
K-40	1460.83	10.67*	7.816E-01	3.632E+01	3.632E+01	9.94	OK
Final Mean for 1 Valid Peaks = 3.632E+01+/- 3.611E+00 (9.94%)							
TL-208	277.28	6.80	3.947E+00	----- Line Not Found		-----	Absent
	510.61	21.60	2.172E+00	6.347E-01	6.347E-01	119.88	OK
	583.02	86.00*	1.898E+00	5.764E-01	5.764E-01	31.13	OK
	860.30	12.00	1.285E+00	----- Line Not Found		-----	Absent
Final Mean for 2 Valid Peaks = 5.794E-01+/- 1.746E-01 (30.14%)							
BI-212	39.85	1.10	6.165E+00	----- Line Not Found		-----	Absent
	727.25	6.65*	1.518E+00	2.763E+00	2.763E+00	77.84	OK
	785.51	1.11	1.406E+00	----- Line Not Found		-----	Absent
	1620.66	1.51	7.145E-01	----- Line Not Found		-----	Absent
Final Mean for 1 Valid Peaks = 2.763E+00+/- 2.151E+00 (77.84%)							
PB-212	74.81	10.50	8.457E+00	2.990E+00	2.990E+00	20.21	<<WM Interf
	77.10	17.70	8.450E+00	2.898E+00	2.898E+00	13.96	<<WM Interf
	87.19	6.27	8.325E+00	1.682E+00	1.682E+00	46.00	<<WM Interf
	90.12	1.86	8.263E+00	----- Line Not Found		-----	Absent
	238.58	43.60*	4.522E+00	2.053E+00	2.053E+00	11.07	OK
	300.03	3.34	3.666E+00	----- Line Not Found		-----	Absent
Final Mean for 1 Valid Peaks = 2.053E+00+/- 2.273E-01 (11.07%)							
BI-214	609.31	46.10*	1.816E+00	1.418E+00	1.418E+00	24.53	OK
	665.44	1.56	1.661E+00	----- Line Not Found		-----	Absent
	768.35	4.88	1.438E+00	----- Line Not Found		-----	Absent
	806.16	1.23	1.371E+00	----- Line Not Found		-----	Absent
	934.04	3.16	1.185E+00	----- Line Not Found		-----	Absent
	1120.27	15.00	9.958E-01	2.227E+00	2.227E+00	63.79	<<WM Interf
	1155.18	1.69	9.671E-01	----- Line Not Found		-----	Absent
	1238.11	5.92	9.067E-01	----- Line Not Found		-----	Absent
	1280.95	1.47	8.789E-01	----- Line Not Found		-----	Absent
	1377.66	4.02	8.229E-01	----- Line Not Found		-----	Absent
	1401.48	1.39	8.104E-01	----- Line Not Found		-----	Absent
	1407.97	2.48	8.071E-01	----- Line Not Found		-----	Absent
	1509.22	2.19	7.594E-01	----- Line Not Found		-----	Absent
	1661.26	1.15	6.998E-01	----- Line Not Found		-----	Absent
	1729.58	3.05	6.768E-01	----- Line Not Found		-----	Absent
	1764.49	15.90	6.661E-01	2.137E+00	2.137E+00	46.76	OK
	1847.41	2.12	6.418E-01	----- Line Not Found		-----	Absent
	2118.53	1.21	5.779E-01	----- Line Out Of Range		----	Absent
	2204.09	4.99	5.616E-01	----- Line Out Of Range		----	Absent
Final Mean for 2 Valid Peaks = 1.496E+00+/- 3.285E-01 (21.96%)							

Sample ID : L4094-9 Acquisition date : 3-DEC-2001 08:44:31

Nuclide Type: natural

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
PB-214	53.17	1.10	7.784E+00	----- Line Not Found		-----	Absent
	74.81	6.52	8.457E+00	4.815E+00	4.815E+00	20.21	<<WM Interf
	77.11	11.00	8.450E+00	4.663E+00	4.663E+00	13.96	<<WM Interf
	87.20	3.88	8.325E+00	2.718E+00	2.718E+00	46.00	<<WM Interf
	90.13	1.15	8.263E+00	----- Line Not Found		-----	Absent
	241.92	7.46	4.472E+00	2.380E+00	2.380E+00	53.96	OK
	295.10	19.20	3.724E+00	1.579E+00	1.579E+00	36.35	OK
	351.87	37.10*	3.146E+00	1.538E+00	1.538E+00	20.92	OK
	785.83	1.09	1.406E+00	----- Line Not Found		-----	Absent
Final Mean for 3 Valid Peaks = 1.586E+00+/- 2.743E-01 (17.29%)							
AC-228	89.96	3.40	8.266E+00	----- Line Not Found		-----	Absent
	93.35	5.60	8.194E+00	3.866E+00	3.866E+00	32.91	<<WM Interf
	129.03	2.90	7.136E+00	----- Line Not Found		-----	Absent
	209.39	4.10	5.057E+00	----- Line Not Found		-----	Absent
	270.26	3.80	4.041E+00	----- Line Not Found		-----	Absent
	328.07	3.50	3.370E+00	1.018E+00	1.018E+00	218.02	OK
	338.42	12.40	3.266E+00	1.621E+00	1.621E+00	49.06	OK
	409.62	2.20	2.708E+00	----- Line Not Found		-----	Absent
	463.10	4.60	2.395E+00	----- Line Not Found		-----	Absent
	794.79	4.60	1.390E+00	----- Line Not Found		-----	Absent
	911.16	29.00*	1.215E+00	2.186E+00	2.186E+00	24.40	OK
	964.64	5.80	1.149E+00	----- Line Not Found		-----	Absent
	968.97	17.40	1.144E+00	2.192E+00	2.192E+00	37.20	OK
	1588.23	3.60	7.268E-01	----- Line Not Found		-----	Absent
Final Mean for 4 Valid Peaks = 2.021E+00+/- 3.834E-01 (18.97%)							
TH-234	63.29	3.80	8.306E+00	3.396E+00	3.396E+00	43.46	OK
	92.57	5.41*	8.194E+00	4.002E+00	4.002E+00	32.91	<<WM Interf
Final Mean for 1 Valid Peaks = 3.396E+00+/- 1.476E+00 (43.46%)							
U-235	89.96	3.36	8.266E+00	----- Line Not Found		-----	Absent
	93.35	5.50	8.194E+00	3.937E+00	3.937E+00	32.91	<<WM Interf
	105.36	1.98	7.866E+00	----- Line Not Found		-----	Absent
	109.18	1.50	7.752E+00	----- Line Not Found		-----	Absent
	143.79	10.50*	6.687E+00	----- Line Not Found		-----	Absent
	163.38	4.70	6.133E+00	----- Line Not Found		-----	Absent
	185.74	53.00	5.577E+00	4.951E-01	4.951E-01	36.92	OK
	202.14	1.00	5.207E+00	----- Line Not Found		-----	Absent
	205.33	4.70	5.140E+00	----- Line Not Found		-----	Absent
Final Mean for 1 Valid Peaks = 4.951E-01+/- 1.828E-01 (36.92%)							

Sample ID : L4094-9 Acquisition date : 3-DEC-2001 08:44:31

N de Type: activation

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
SC-46	889.25	99.98	1.244E+00	-----	Line Not Found	-----	Absent
	1120.51	99.99*	9.958E-01	3.341E-01	4.069E-01	63.79	OK

Final Mean for 1 Valid Peaks = 4.069E-01+/- 2.596E-01 (63.79%)

Nuclide Type: fission

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
CS-137	661.66	85.21*	1.671E+00	1.480E+00	1.483E+00	13.72	OK

Final Mean for 1 Valid Peaks = 1.483E+00+/- 2.034E-01 (13.72%)

Nuclide Type: man-made

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
AM-241	17.61	20.20	7.815E-01	1.646E+01	1.646E+01	22.54	<<WM N-Sigma
	59.54	35.70*	8.165E+00	4.822E+00	4.823E+00	4.91	OK

Final Mean for 1 Valid Peaks = 4.823E+00+/- 2.367E-01 (4.91%)

Flag: "*" = Keyline

Approved by: _____ Approval Date: __ / __ / ____

Enviro-Test Laboratory

VMS Gamma Spectroscopy Report Generated 30-NOV-2001 15:46:04

Configuration Name :
SYSDEVICE:[GAMMA.SCUSR.ARCHIVE]SMP_L40941MD_DET1_60MLCAN_2289.CNF;1

---- Sample Information ----

Sample Title	: L4094-1MD		
Sample ID	: L4094-1MD	Sample Quantity	: 1.01210E+02 g
Sample Type	: SOIL	Sample Geometry	:
Sample Number	: 2289	Spctrm Collector	: Analyst
Sample Collector	:	Sample Analyst	: Analyst

---- Sample Deposition Information ----

Dep. Correction?	: No	Dep. Duration	:
Deposition Start	:	Deposition End	: 9-NOV-2001 14:15:00.

---- Sample Decay/Count Information ----

Sample Date	: 9-NOV-2001 14:15:00.	Acquisition date	: 30-NOV-2001 13:45:46
Decay time	: 20 23:30:46.72	% dead time	: 0.0%
Elapsed live time	: 0 02:00:00.00	Elapsed real time	: 0 02:00:02.59

---- Detector Parameters ----

Energy cal. time	: 3-AUG-2001 14:03:25.	Energy cal. oper.	: Analyst
Detector name	: DET1	Counting geometry	: 60mL Can
Effic. cal. time	: 3-AUG-2001 14:14:25.	Effic. cal. oper.	: Analyst

---- Processing Parameters ----

St[illegible] channel	: 1	End channel	: 4096
S[illegible]tivity	: 5.00000	Gaussian Sens.	: 10.00000
Critical level?	: No	Propagate Errors?	: No
Efficiency Type	: EMPIRICA	Library-based eff	: No
Energy tolerance	: 2.00000	Half life ratio	: 20.00000
Abundance limit	: 50.00000	WTM error limit	: 3.00000
MDA Width (FWHM)	: 3.00000	MDA Confid Level	: 5.00000 %

---- Additional Information ----

Library Used: SYS$SYSDEVICE:[GAMMA.SCUSR.LIB]PINN.NLB;
Background Used: DKA0:[GAMMA.SCUSR.ARCHIVE]BKG__DET1__2156.CNF;1

Sample ID : L4094-1MD Acquisition date : 30-NOV-2001 13:45:46

Br ᶜ Report

Nuclide	Activity pCi/g	2-Sigma Error
K-40	35.3	2.40
CS-137	0.712	0.111
EU-155	0.517	0.145
TL-208	0.481	0.109
BI-212	2.04	1.04
PB-212	1.77	0.139
BI-214	1.45	0.207
PB-214	1.45	0.169
AC-228	1.56	0.241
TH-234	3.03	2.02
U-235	0.385	0.136
AM-241	7.61	0.444

Total Activity :	56.3	

Sample ID : L4094-1MD Acquisition date : 30-NOV-2001 13:45:46

-- Identified Nuclides ----

Nuclide	Activity (pCi/g)	Act error	MDA (pCi/g)	MDA error	Act/MDA
K-40	3.527E+01	2.401E+00	7.042E-01	0.000E+00	50.083
CS-137	7.122E-01	1.109E-01	8.651E-02	0.000E+00	8.233
EU-155	~~5.167E-01~~ 0.0	1.454E-01	1.769E-01	0.000E+00	2.921
TL-208	4.806E-01	1.088E-01	7.531E-02	0.000E+00	6.381
BI-212	2.041E+00	1.038E+00	1.186E+00	0.000E+00	1.721
PB-212	1.767E+00	1.395E-01	1.374E-01	0.000E+00	12.856
BI-214	1.452E+00	2.073E-01	1.630E-01	0.000E+00	8.905
PB-214	1.451E+00	1.686E-01	1.800E-01	0.000E+00	8.063
AC-228	1.558E+00	2.405E-01	3.152E-01	0.000E+00	4.942
TH-234	~~3.026E+00~~ 0.0	2.021E+00	1.068E+00	0.000E+00	2.833
U-235	3.854E-01	1.359E-01	5.088E-01	0.000E+00	0.757
AM-241	7.610E+00	4.443E-01	3.348E-01	0.000E+00	22.730

---- Non-Identified Nuclides ----

Nuclide	Key-Line Activity (pCi/g)	K.L. Ided	Act error	MDA (pCi/g)	MDA error	Act/MDA
BE-7	5.609E-01		5.158E-01	8.960E-01	0.000E+00	0.626
N[illegible]	1.167E-02		6.781E-02	1.108E-01	0.000E+00	0.105
S[illegible]	2.667E-01	+	1.587E-01	1.816E-01	0.000E+00	1.469
CR-51	6.727E-02		6.489E-01	1.095E+00	0.000E+00	0.061
MN-54	-0.02 -1.618E-02		5.893E-02	9.640E-02	0.000E+00	-0.168
CO-56	-3.034E-02		5.778E-02	9.221E-02	0.000E+00	-0.329
CO-57	-3.227E-03		3.798E-02	6.239E-02	0.000E+00	-0.052
CO-58	2.484E-02		6.034E-02	1.035E-01	0.000E+00	0.240
FE-59	+0.02 1.536E-02		1.490E-01	2.449E-01	0.000E+00	0.063
CO-60	2.396E-02		5.450E-02	9.532E-02	0.000E+00	0.251
ZN-65	-3.138E-02		1.675E-01	2.309E-01	0.000E+00	-0.136
SR-85	8.106E-02		6.685E-02	1.038E-01	0.000E+00	0.781
NB-94	-4.028E-02		4.838E-02	7.494E-02	0.000E+00	-0.537
NB-95	2.803E-02		8.851E-02	1.327E-01	0.000E+00	0.211
RU-106	-6.772E-02		4.893E-01	7.796E-01	0.000E+00	-0.087
AG-110M	-5.099E-01		1.177E+00	1.893E+00	0.000E+00	-0.269
SB-124	-5.133E-04		7.129E-02	1.061E-01	0.000E+00	-0.005
SB-125	-9.089E-02		1.473E-01	2.357E-01	0.000E+00	-0.386
I-129	-7.149E-01		8.660E-01	1.317E+00	0.000E+00	-0.543
I-131	-1.082E-01		2.921E-01	4.789E-01	0.000E+00	-0.226
CS-134	-2.148E-02		5.806E-02	7.904E-02	0.000E+00	-0.272
CE-139	-2.000E-02		4.712E-02	7.532E-02	0.000E+00	-0.266
CE-144	-1.592E-01		3.396E-01	4.877E-01	0.000E+00	-0.326
EU-152	1.490E-01		2.321E-01	4.160E-01	0.000E+00	0.358
EU-154	-1.789E-02		7.672E-02	1.254E-01	0.000E+00	-0.143
TH-227	1.228E-01		3.919E-01	5.633E-01	0.000E+00	0.218
P[illegible]34M	-1.132E-01		1.005E+01	1.623E+01	0.000E+00	-0.007

Sample ID : L4094-1MD Acquisition date : 30-NOV-2001 13:45:46

Nu de Type: natural

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
K-40	1460.83	10.67*	1.202E+00	3.527E+01	3.527E+01	6.81	OK
Final Mean for 1 Valid Peaks = 3.527E+01+/- 2.401E+00 (6.81%)							
TL-208	277.28	6.80	4.863E+00	----- Line Not Found		-----	Absent
	510.61	21.60	3.061E+00	5.180E-01	5.180E-01	97.52	OK
	583.02	86.00*	2.739E+00	4.591E-01	4.591E-01	24.49	OK
	860.30	12.00	1.931E+00	1.584E+00	1.584E+00	53.18	OK
Final Mean for 3 Valid Peaks = 4.806E-01+/- 1.088E-01 (22.64%)							
BI-212	39.85	1.10	9.275E-01	----- Line Not Found		-----	Absent
	727.25	6.65*	2.256E+00	2.041E+00	2.041E+00	50.89	OK
	785.51	1.11	2.103E+00	----- Line Not Found		-----	Absent
	1620.66	1.51	1.114E+00	----- Line Not Found		-----	Absent
Final Mean for 1 Valid Peaks = 2.041E+00+/- 1.038E+00 (50.89%)							
PB-212	74.81	10.50	5.940E+00	2.784E+00	2.784E+00	17.28	<<WM Interf
	77.10	17.70	6.140E+00	2.258E+00	2.258E+00	13.24	<<WM Interf
	87.19	6.27	6.804E+00	2.780E+00	2.780E+00	28.14	<<WM Interf
	90.12	1.86	6.926E+00	5.485E+00	5.485E+00	36.36	<<WM Interf
	238.58	43.60*	5.380E+00	1.767E+00	1.767E+00	7.89	OK
	300.03	3.34	4.601E+00	----- Line Not Found		-----	Absent
Final Mean for 1 Valid Peaks = 1.767E+00+/- 1.395E-01 (7.89%)							
BI-214	609.31	46.10*	2.638E+00	1.379E+00	1.379E+00	17.41	OK
	665.44	1.56	2.442E+00	----- Line Not Found		-----	Absent
	768.35	4.88	2.145E+00	2.089E+00	2.089E+00	60.79	OK
	806.16	1.23	2.053E+00	----- Line Not Found		-----	Absent
	934.04	3.16	1.790E+00	----- Line Not Found		-----	Absent
	1120.27	15.00	1.512E+00	1.494E+00	1.494E+00	59.48	OK
	1155.18	1.69	1.470E+00	----- Line Not Found		-----	Absent
	1238.11	5.92	1.382E+00	3.191E+00	3.191E+00	60.67	OK
	1280.95	1.47	1.341E+00	----- Line Not Found		-----	Absent
	1377.66	4.02	1.260E+00	----- Line Not Found		-----	Absent
	1401.48	1.39	1.243E+00	----- Line Not Found		-----	Absent
	1407.97	2.48	1.238E+00	----- Line Not Found		-----	Absent
	1509.22	2.19	1.173E+00	5.380E+00	5.380E+00	44.44	<<WM N-Sigma
	1661.26	1.15	1.096E+00	----- Line Not Found		-----	Absent
	1729.58	3.05	1.069E+00	3.186E+00	3.186E+00	86.90	OK
	1764.49	15.90	1.056E+00	1.484E+00	1.484E+00	35.31	OK
	1847.41	2.12	1.031E+00	----- Line Not Found		-----	Absent
	2118.53	1.21	9.804E-01	----- Line Out Of Range		----	Absent
	2204.09	4.99	9.735E-01	----- Line Out Of Range		----	Absent
Final Mean for 6 Valid Peaks = 1.452E+00+/- 2.073E-01 (14.28%)							

Nuclide Type: natural

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
PB-214	53.17	1.10	3.004E+00	-----	Line Not Found	-----	Absent
	74.81	6.52	5.940E+00	4.484E+00	4.484E+00	17.28	<<WM Interf
	77.11	11.00	6.140E+00	3.634E+00	3.634E+00	13.24	<<WM Interf
	87.20	3.88	6.804E+00	4.492E+00	4.492E+00	28.14	<<WM Interf
	90.13	1.15	6.926E+00	8.871E+00	8.871E+00	36.36	<<WM Interf
	241.92	7.46	5.334E+00	2.426E+00	2.426E+00	39.72	OK
	295.10	19.20	4.655E+00	1.667E+00	1.667E+00	22.85	OK
	351.87	37.10*	4.098E+00	1.358E+00	1.358E+00	14.11	OK
	785.83	1.09	2.102E+00	-----	Line Not Found	-----	Absent
Final Mean for 3 Valid Peaks = 1.451E+00+/- 1.686E-01 (11.61%)							
AC-228	89.96	3.40	6.926E+00	3.000E+00	3.000E+00	36.36	<<WM Interf
	93.35	5.60	7.034E+00	3.618E+00	3.618E+00	28.33	<<WM Interf
	129.03	2.90	7.241E+00	2.040E+00	2.040E+00	76.50	OK
	209.39	4.10	5.846E+00	1.368E+00	1.368E+00	96.03	OK
	270.26	3.80	4.954E+00	2.192E+00	2.192E+00	56.31	OK
	328.07	3.50	4.314E+00	2.092E+00	2.092E+00	69.22	OK
	338.42	12.40	4.220E+00	1.485E+00	1.485E+00	31.90	OK
	409.62	2.20	3.652E+00	-----	Line Not Found	-----	Absent
	463.10	4.60	3.316E+00	1.878E+00	1.878E+00	62.83	OK
	794.79	4.60	2.080E+00	-----	Line Not Found	-----	Absent
	911.16	29.00*	1.832E+00	1.575E+00	1.575E+00	23.02	OK
	964.64	5.80	1.737E+00	-----	Line Not Found	-----	Absent
	968.97	17.40	1.729E+00	1.224E+00	1.224E+00	52.91	OK
	1588.23	3.60	1.130E+00	-----	Line Not Found	-----	Absent
Final Mean for 8 Valid Peaks = 1.558E+00+/- 2.405E-01 (15.44%)							
TH-234	63.29	3.80	4.595E+00	3.026E+00	3.026E+00	66.77	OK
	92.57	5.41*	7.034E+00	3.745E+00	3.745E+00	28.33	<<WM Interf
Final Mean for 1 Valid Peaks = 3.026E+00+/- 2.021E+00 (66.77%)							
U-235	89.96	3.36	6.926E+00	3.036E+00	3.036E+00	36.36	<<WM Interf
	93.35	5.50	7.034E+00	3.684E+00	3.684E+00	28.33	<<WM Interf
	105.36	1.98	7.306E+00	-----	Line Not Found	-----	Absent
	109.18	1.50	7.334E+00	-----	Line Not Found	-----	Absent
	143.79	10.50*	7.032E+00	5.601E-01	5.601E-01	69.19	OK
	163.38	4.70	6.680E+00	-----	Line Not Found	-----	Absent
	185.74	53.00	6.258E+00	3.609E-01	3.609E-01	40.21	OK
	202.14	1.00	5.967E+00	-----	Line Not Found	-----	Absent
	205.33	4.70	5.911E+00	-----	Line Not Found	-----	Absent
Final Mean for 2 Valid Peaks = 3.854E-01+/- 1.359E-01 (35.26%)							

Sample ID : L4094-1MD Acquisition date : 30-NOV-2001 13:45:46

Nuclide Type: fission

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
CS-137	661.66	85.21*	2.455E+00	7.112E-01	7.122E-01	15.58	OK
Final Mean for 1 Valid Peaks = 7.122E-01+/- 1.109E-01 (15.58%)							
EU-155	86.54	34.00*	6.804E+00	5.126E-01	5.167E-01	28.14	OK
	105.31	20.60	7.305E+00	----- Line Not Found		-----	Absent
Final Mean for 1 Valid Peaks = 5.167E-01+/- 1.454E-01 (28.14%)							

Nuclide Type: man-made

Nuclide	Energy	%Abn	%Eff	Uncorrected pCi/g	Decay Corr pCi/g	2-Sigma %Error	Status
AM-241	17.61	20.20	1.220E-04	----- Line Not Found		-----	Absent
	59.54	35.70*	4.044E+00	7.610E+00	7.610E+00	5.84	OK
Final Mean for 1 Valid Peaks = 7.610E+00+/- 4.443E-01 (5.84%)							

Flag: "*" = Keyline

Approved by: _____ Approval Date: __ / __ / ____

ETL Enviro-Test LABORATORIES

Sample Digestion Logbook

SOP ETL - RSOP- 0003

Analysis Gamma Analyst DMB Date 11·29·01 Reviewed By Jeni

Sample ID	Analyzed Volume g	Sample Volume Digested	Dilution Volume ml/l	Digestate Volume Used (ml)	Sample Matrix	Comments
4094 - 1	99.36g	NA	NA	NA	SOIL	
1mo	101.21g					
2	90.82					
3	113.23					
4	101.02					
5	101.72					
6	93.76					
7	95.06					
8	88.65					
9	65.15					
						DMB 11·29·01

Spike	Trace	Nuclide	Isotope Number	Expiration Date	Activity pCi/ml	Vol Ml	Standard Control	Spiked By	Witness
								DMB	11·29·01

FORM DIGESTLG-1, REV. 0 Effective 09-25-00 Book Number 01134 Page Number 230

000066

MS Calibration Report V1.6 Generated 3-AUG-2001 14:14:26

onfiguration : MCA0:[NDSCOUNT]DET1$1
nalyses by : SCRCAL V1.2
tor Name : DET1 Energy Calib Time: 3-AUG-2001 14:03:25
v type : Empirical Effncy Calib Time: 3-AUG-2001 14:14:25
et eometry: 60mL Can Shelf :

fficiency Calibration Report

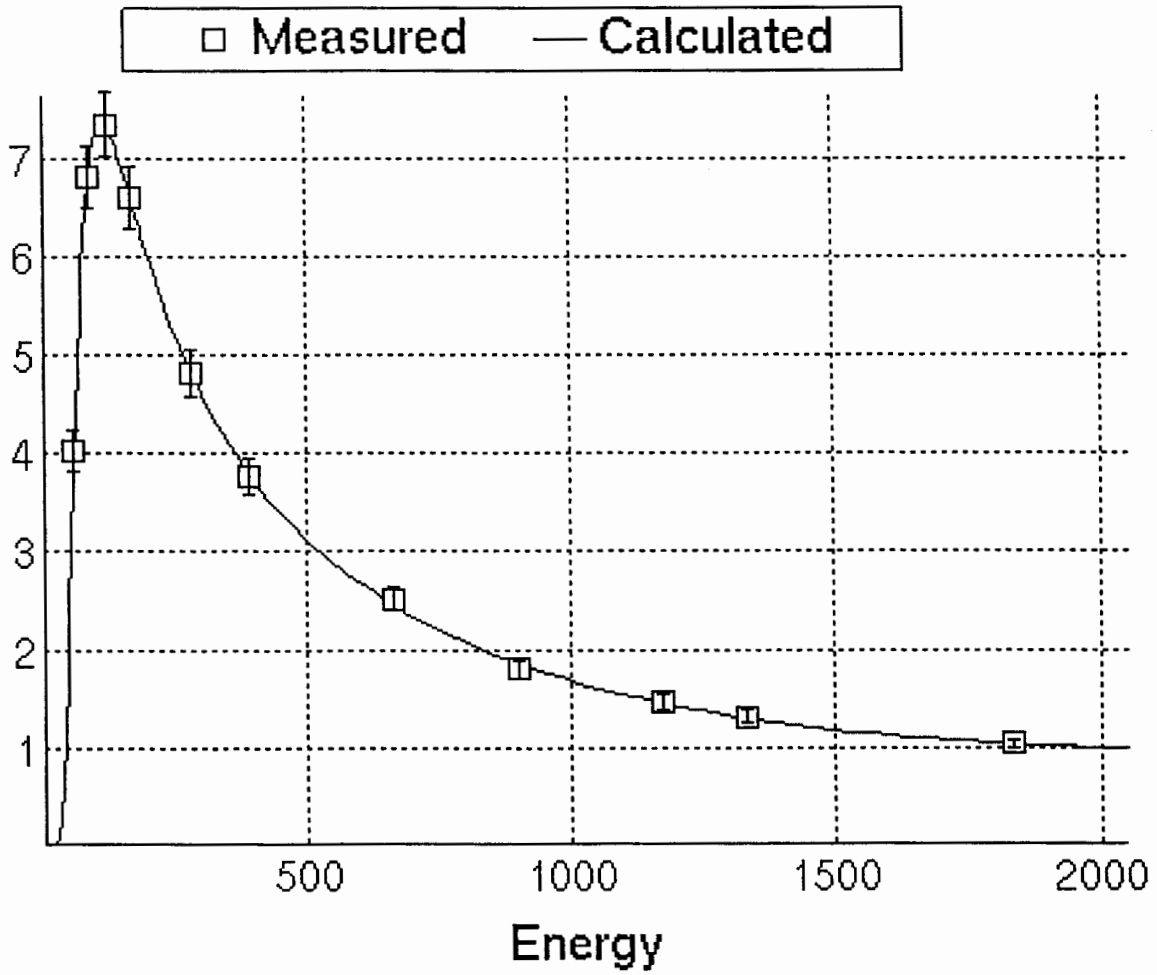
ff = exp(a2 + a3*x + a4*x**2 + a5*x**3 + a6*x**4 + a7*x**5), x=ln(a1/energy)

a1	a2	a3	a	a5	a6	a7
947.8	-4.036	0.9348	-1.5079E-03	-0.1844	0.1349	-3.5446E-02

Average Deviation = 0.924 % Reduced Chi-Square = 0.212

Nbr	Energy (keV)	Measured Efficiency	Efficiency Error	Computed Efficiency	Diff/ /Error	% Diff
1	59.54	4.04E-02	2.03E-03	4.04E-02	0.00	0.01
2	88.03	6.83E-02	3.15E-03	6.84E-02	-0.04	-0.20
3	122.06	7.35E-02	3.26E-03	7.31E-02	0.11	0.49
4	165.85	6.61E-02	3.13E-03	6.63E-02	-0.06	-0.30
5	279.19	4.82E-02	2.36E-03	4.84E-02	-0.10	-0.47
6	391.69	3.78E-02	1.76E-03	3.78E-02	-0.01	-0.03
7	661.66	2.52E-02	1.16E-03	2.45E-02	0.53	2.46
8	898.07	1.79E-02	8.32E-04	1.86E-02	-0.79	-3.69
9	1173.24	1.46E-02	7.31E-04	1.45E-02	0.09	0.48
10	1332.50	1.32E-02	6.35E-04	1.30E-02	0.34	1.62
11	1836.08	1.03E-02	4.79E-04	1.03E-02	-0.09	-0.43

pproved by: SS Approval Date: 8 / 3 / 01



Datasource:

ln(Eff) = -4.036e+00 + 9.349e-01X + -1.509e-03X^2 + -1.845e-01X^3
+ 1.349e-01X^4

where: X = ln(9.478e+02/E [keV]); [CHISQ = 2.107e-01]

MS Calibration Report V1.6 Generated 3-AUG-2001 14:03:25

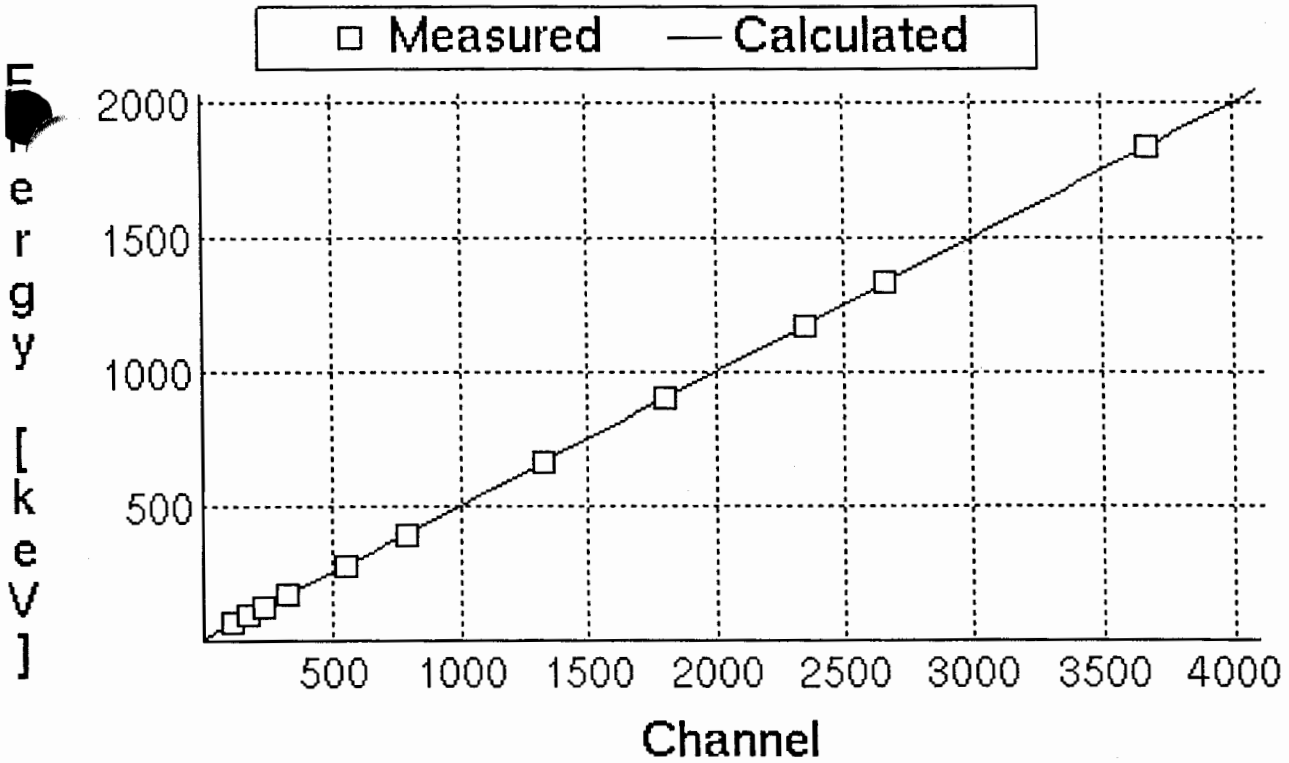
onfiguration : MCA0:[NDSCOUNT]DET1$1
nalyses by : SCRCAL V1.2
tor Name : DET1 Energy Calib Time: 3-AUG-2001 14:03:25
v type : Empirical Effncy Calib Time: 1-MAY-2000 14:35:53
ete eometry: Shelf :

nergy Calibration Report

Energy = -0.1418 + 0.5006*Channel + -2.1144E-07*(Channel**2)

Nbr	Centroid Channel	True Energy	Computed Energy	Difference
1	119.30	59.54	59.57	-0.030
2	176.28	88.03	88.09	-0.056
3	244.23	122.06	122.09	-0.032
4	331.65	165.85	165.84	0.006
5	558.04	279.19	279.12	0.070
6	783.00	391.69	391.66	0.028
7	1322.70	661.66	661.57	0.093
8	1795.66	898.07	898.00	0.073
9	2346.73	1173.24	1173.35	-0.108
10	2665.59	1332.50	1332.62	-0.117
11	3673.96	1836.08	1836.01	0.074

pproved by: SS Approval Date: 8 / 3 / 01



Datasource:
Energy = -1.418e-01 keV + 5.006e-01 *Ch + -2.114e-07 *Ch^2 [CHISQ = 4.117e-02]
FWHM = 6.274e-01 keV + 3.316e-02 *E^1/2 [CHISQ = 1.104e-02]
Lo Tail = 0.000e+00 keV + 0.000e+00 *E [CHISQ = 0.000e+00]

MS Calibration Report V1.6 Generated 3-AUG-2001 20:19:47

onfiguration : MCAO:[NDSCOUNT]DET2$1
nalyses by : SCRCAL V1.2
ctor Name : DET2 Energy Calib Time: 3-AUG-2001 20:18:21
v type : Empirical Effncy Calib Time: 3-AUG-2001 20:19:46
et eometry: 60mL Can Shelf :

fficiency Calibration Report

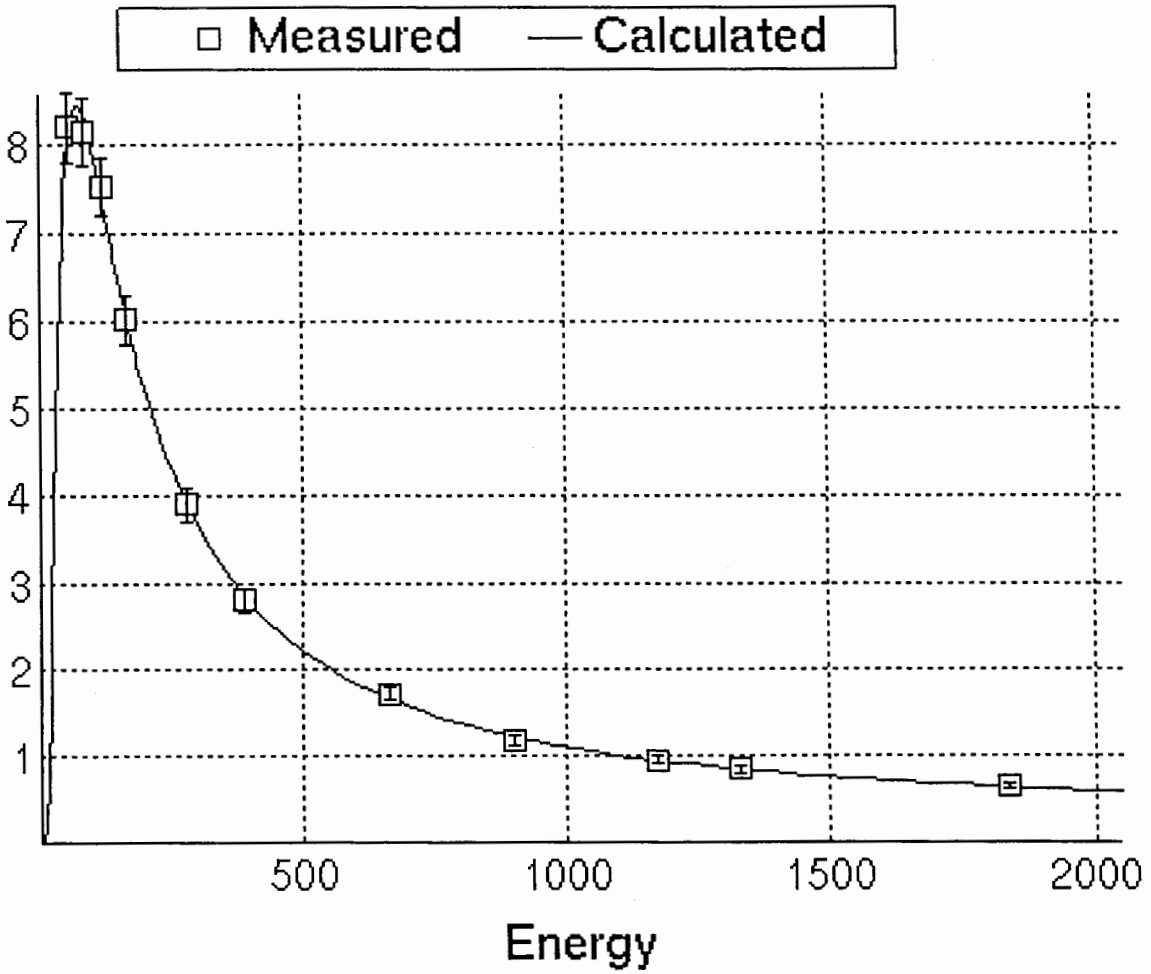
ff = exp(a2 + a3*x + a4*x**2 + a5*x**3 + a6*x**4 + a7*x**5), x=ln(a1/energy)

a1	a2	a3	a4	a5	a6	a7
947.8	-4.449	0.9736	7.5099E-02	-5.1838E-02	5.4920E-03	-3.3817E-03

Average Deviation = 1.34 % Reduced Chi-Square = 0.307

Nbr	Energy (keV)	Measured Efficiency	Efficiency Error	Computed Efficiency	Diff/ /Error	% Diff
1	59.54	8.20E-02	4.11E-03	8.17E-02	0.09	0.43
2	88.03	8.15E-02	3.76E-03	8.31E-02	-0.40	-1.85
3	122.06	7.53E-02	3.34E-03	7.35E-02	0.53	2.37
4	165.85	6.02E-02	2.86E-03	6.07E-02	-0.17	-0.82
5	279.19	3.89E-02	2.00E-03	3.92E-02	-0.14	-0.70
6	391.69	2.81E-02	1.32E-03	2.83E-02	-0.18	-0.82
7	661.66	1.73E-02	8.01E-04	1.67E-02	0.68	3.17
8	898.07	1.19E-02	5.59E-04	1.23E-02	-0.71	-3.32
9	1173.24	9.61E-03	4.84E-04	9.53E-03	0.16	0.83
10	1332.50	8.51E-03	4.12E-04	8.48E-03	0.08	0.39
11	1836.08	6.44E-03	3.02E-04	6.45E-03	-0.02	-0.08

Approved by: SJ Approval Date: 8 / 3 / 01



)atasource:
.n(Eff) = -4.449e+00 + 9.736e-01X + 7.510e-02X^2 + -5.181e-02X^3
+ 5.472e-03X^4
/here: X = ln(9.478e+02/E [keV]); [CHISQ = 3.057e-01]

'MS Calibration Report V1.6 Generated 3-AUG-2001 20:18:21

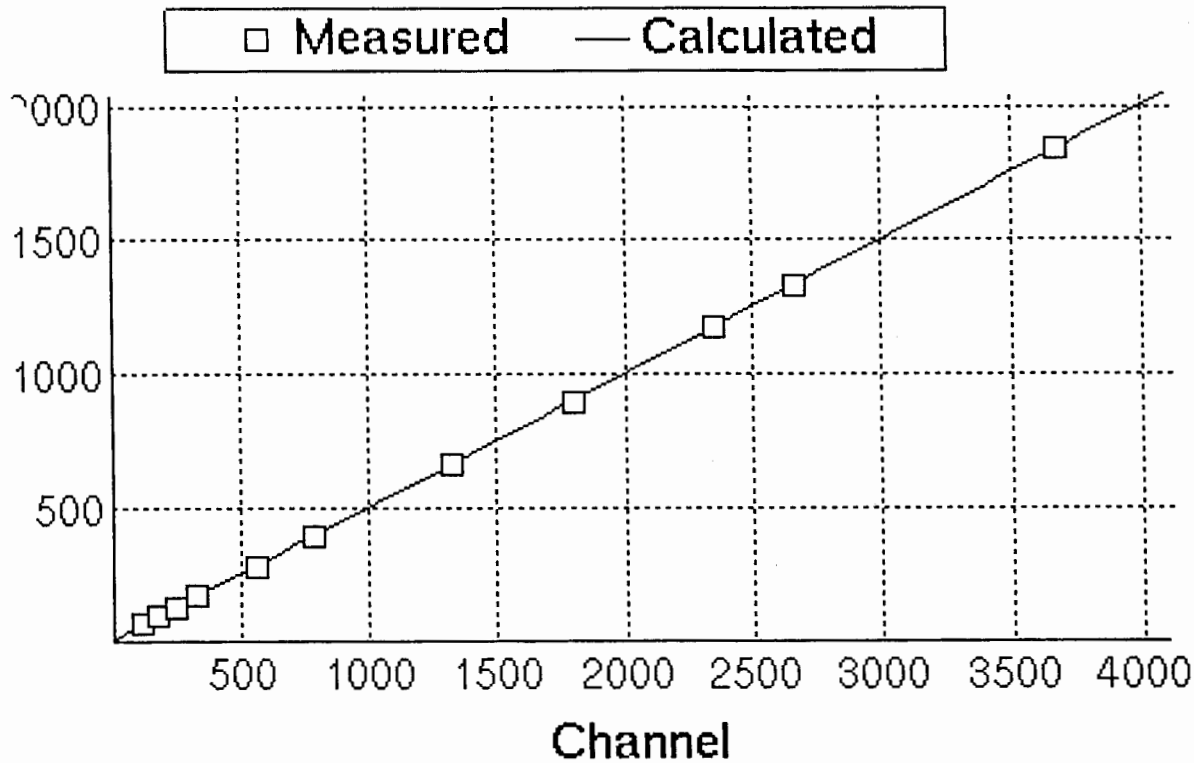
onfiguration : MCA0:[NDSCOUNT]DET2$1
nalyses by : SCRCAL V1.2
tor Name : DET2 Energy Calib Time: 3-AUG-2001 20:18:21
y type : Empirical Effncy Calib Time: 3-AUG-2001 16:53:18
eometry: Shelf :

nergy Calibration Report

Energy = -0.3808 + 0.5005*Channel + -7.5902E-08*(Channel**2)

Nbr	Centroid Channel	True Energy	Computed Energy	Difference
1	119.53	59.54	59.45	0.095
2	176.68	88.03	88.05	-0.015
3	244.65	122.06	122.06	0.003
4	332.15	165.85	165.85	0.000
5	558.78	279.19	279.27	-0.077
6	783.66	391.69	391.80	-0.108
7	1322.93	661.66	661.61	0.046
8	1795.33	898.07	897.94	0.126
9	2345.77	1173.24	1173.27	-0.026
10	2664.27	1332.50	1332.55	-0.053
11	3671.26	1836.08	1836.07	0.009

Approved by: SS Approval Date: 8 / 3 / 01



atasource:
nergy = -3.808e-01 keV + 5.005e-01 *Ch + -7.590e-08 *Ch^2 [CHISQ = 7.031e-02]
WHM = 1.414e+00 keV + 2.387e-02 *E^1/2 [CHISQ = 0.000e+00]
o Tail = 0.000e+00 keV + 0.000e+00 *E [CHISQ = 0.000e+00]

)A filename : SYS$SYSDEVICE:[GAMMA.SCUSR.QA]QCC_DET1_QCC.QAF;10

Sample ID : Calib Check Sample quantity : 1.00 EACH
Sample date : 1-JAN-2000 10:00:00 Acquisition date : 3-DEC-2001 08:20:19
Cl d live time: 0 00:10:00.00 Elapsed real time: 0 00:10:03.72

)ut-of-range Test: N-SIGMA

Parameter Description [Mean+/-Stdev]	Value	Deviation	Flag
*Am241 Peak FWHM [0.968+/-0.079]	1.009	0.52	
*Cs137 Peak FWHM [1.374+/-0.029]	1.404	1.04	
*Co60 Peak FWHM [1.778+/-0.044]	1.835	1.31	

)ut-of-range Test: USER

Parameter Description [Mean+/-Stdev]	Value	Deviation	Flag
*Am241 Peak Energy [60+/-1]	60	0.04	
*Am241 Decay Corrected Activity [683+/-34]	691	0.23	
*Cs137 Peak Energy [662+/-1]	662	-0.10	
*Cs137 Decay Corrected Activity 75+/-32]	709	1.06	
*C Peak Energy [1333+/-1]	1333	0.14	
*Co60 Decay Corrected Activity [1140+/-49]	1171	0.64	

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: SJ Approval Date: 12 / 3 / 01

A filename : SYS$SYSDEVICE:[GAMMA.SCUSR.QA]QCC_DET1_QCC.QAF;10

ample ID : Calib Check Sample quantity : 1.00 EACH
a date : 1-JAN-2000 10:00:00 Acquisition date : 1-DEC-2001 09:58:39
la d live time: 0 00:10:00.00 Elapsed real time: 0 00:10:03.24

ut-of-range Test: N-SIGMA

Parameter Description [Mean+/-Stdev]	Value	Deviation	Flag
Am241 Peak FWHM [0.968+/-0.079]	1.002	0.44	
Cs137 Peak FWHM [1.374+/-0.029]	1.427	1.87	
Co60 Peak FWHM [1.778+/-0.043]	1.785	0.16	

ut-of-range Test: USER

Parameter Description [Mean+/-Stdev]	Value	Deviation	Flag
Am241 Peak Energy [60+/-1]	60	0.05	
Am241 Decay Corrected Activity [683+/-34]	680	-0.08	
*Cs137 Peak Energy [662+/-1]	662	-0.11	
*Cs137 Decay Corrected Activity [5+/-32]	688	0.41	
*Co Peak Energy [1333+/-1]	1333	0.11	
*Co60 Decay Corrected Activity [1140+/-49]	1156	0.34	

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: _____ Approval Date: 12 / 1 / 01

QA filename : SYS$SYSDEVICE:[GAMMA.SCUSR.QA]QCC_DET1_QCC.QAF;10

Sample ID : Calib Check Sample quantity : 1.00 EACH
Sample date : 1-JAN-2000 10:00:00 Acquisition date : 30-NOV-2001 08:38:20
Elapsed live time: 0 00:10:00.00 Elapsed real time: 0 00:10:03.30

Out-of-range Test: N-SIGMA

Parameter Description [Mean+/-Stdev]	Value	Deviation	Flag
*Am241 Peak FWHM [0.967+/-0.079]	1.011	0.55	
*Cs137 Peak FWHM [1.373+/-0.028]	1.366	-0.27	
*Co60 Peak FWHM [1.778+/-0.044]	1.749	-0.66	

Out-of-range Test: USER

Parameter Description [Mean+/-Stdev]	Value	Deviation	Flag
*Am241 Peak Energy [60+/-1]	60	0.03	
*Am241 Decay Corrected Activity [683+/-34]	692	0.27	
*Cs137 Peak Energy [662+/-1]	662	-0.10	
*Cs137 Decay Corrected Activity [675+/-32]	701	0.80	
*Co60 Peak Energy [1333+/-1]	1333	0.11	
*Co60 Decay Corrected Activity [1140+/-49]	1140	-0.01	

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: SJ Approval Date: 11 / 30 / 01

A filename : SYS$SYSDEVICE:[GAMMA.SCUSR.QA]QCC_DET2_QCC.QAF;1

ample ID : Calib Check Sample quantity : 1.00 EACH
a[illegible] date : 1-JAN-2000 10:00:00 Acquisition date : 3-DEC-2001 08:20:32
la[illegible]d live time: 0 00:10:00.00 Elapsed real time: 0 00:10:01.83

ut-of-range Test: N-SIGMA

Parameter Description [Mean+/-Stdev]	Value	Deviation	Flag
Am241 Peak FWHM [1.77+/-0.11]	1.76	-0.07	
Cs137 Peak FWHM [1.903+/-0.043]	1.822	-1.90	
Co60 Peak FWHM [2.193+/-0.075]	2.235	0.56	

ut-of-range Test: USER

Parameter Description [Mean+/-Stdev]	Value	Deviation	Flag
*Am241 Peak Energy [60+/-1]	60	-0.02	
*Am241 Decay Corrected Activity [674+/-34]	694	0.60	
*Cs137 Peak Energy [662+/-1]	661	-0.40	
*Cs137 Decay Corrected Activity [6[illegible]6+/-32]	694	0.89	
*C[illegible] Peak Energy [1333+/-1]	1332	-0.68	
*Co60 Decay Corrected Activity [1124+/-48]	1151	0.55	

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: SS Approval Date: 12 / 3 / 01

A filename : SYS$SYSDEVICE:[GAMMA.SCUSR.QA]QCC_DET2_QCC.QAF;1

ample ID : Calib Check Sample quantity : 1.00 EACH
a date : 1-JAN-2000 10:00:00 Acquisition date : 1-DEC-2001 09:58:47
la d live time: 0 00:10:00.00 Elapsed real time: 0 00:10:01.82

ut-of-range Test: N-SIGMA

Parameter Description [Mean+/-Stdev]	Value	Deviation	Flag
Am241 Peak FWHM [1.77+/-0.11]	1.96	1.72	
Cs137 Peak FWHM [1.904+/-0.042]	1.812	-2.18	Investigate
Co60 Peak FWHM [2.192+/-0.075]	2.097	-1.27	

ut-of-range Test: USER

Parameter Description [Mean+/-Stdev]	Value	Deviation	Flag
Am241 Peak Energy [60+/-1]	59	-0.05	
Am241 Decay Corrected Activity [674+/-34]	740	1.98	
*Cs137 Peak Energy [662+/-1]	661	-0.45	
*Cs137 Decay Corrected Activity 6+/-32]	697	0.99	
*C Peak Energy [1333+/-1]	1332	-0.80	
*Co60 Decay Corrected Activity [1124+/-48]	1150	0.53	

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: SS Approval Date: 12 / 1 / 01

filename : SYS$SYSDEVICE:[GAMMA.SCUSR.QA]QCC_DET2_QCC.QAF;1

ple ID : Calib Check Sample quantity : 1.00 EACH
date : 1-JAN-2000 10:00:00 Acquisition date : 30-NOV-2001 08:38:28
ap . live time: 0 00:10:00.00 Elapsed real time: 0 00:10:01.81

it-of-range Test: N-SIGMA

rameter Description [Mean+/-Stdev]	Value	Deviation	Flag
m241 Peak FWHM [1.76+/-0.11]	1.60	-1.52	
s137 Peak FWHM [1.905+/-0.041]	1.909	0.11	
o60 Peak FWHM [2.193+/-0.075]	2.225	0.42	

it-of-range Test: USER

arameter Description [Mean+/-Stdev]	Value	Deviation	Flag
Am241 Peak Energy [60+/-1]	59	-0.08	
Am241 Decay Corrected Activity [674+/-34]	656	-0.54	
Cs137 Peak Energy [662+/-1]	661	-0.50	
Cs137 Decay Corrected Activity [5+/-32]	686	0.63	
Co Peak Energy [1333+/-1]	1332	-0.88	
Co60 Decay Corrected Activity [1124+/-48]	1121	-0.05	

lags: "*" means the out-of-range test is parameter-dependent

pproved by: SS Approval Date: 11 / 30 / 01

'A filename : SYS$SYSDEVICE:[GAMMA.SCUSR.QA]QCB_DET1.QAF;1

ample ID : Bkgrnd Check Sample quantity : 1.00 EACH
a[illegible] date : 3-DEC-2001 08:32:03 Acquisition date : 3-DEC-2001 08:32:03
:la[illegible]d live time: 0 00:10:00.00 Elapsed real time: 0 00:10:00.49

ut-of-range Test: N-SIGMA

'arameter Description [Mean+/-Stdev]	Value	Deviation	Flag
Spectrum Background Rate [7.53+/-0.86]	7.61	0.09	

'lags: "*" means the out-of-range test is parameter-dependent

ıpproved by: SJ Approval Date: 12 / 3 / 01

A filename : SYS$SYSDEVICE:[GAMMA.SCUSR.QA]QCB_DET1.QAF;1

ample ID : Bkgrnd Check Sample quantity : 1.00 EACH
a date : 1-DEC-2001 10:12:06 Acquisition date : 1-DEC-2001 10:12:06
la d live time: 0 00:10:00.00 Elapsed real time: 0 00:10:00.08

ut-of-range Test: N-SIGMA

arameter Description [Mean+/-Stdev]	Value	Deviation	Flag
Spectrum Background Rate [7.53+/-0.86]	7.36	-0.20	

lags: "*" means the out-of-range test is parameter-dependent

pproved by: GS Approval Date: 12 / 1 / 01

QA filename : SYS$SYSDEVICE:[GAMMA.SCUSR.QA]QCB_DET1.QAF;1

Sample ID : Bkgrnd Check Sample quantity : 1.00 EACH
Acq. date : 30-NOV-2001 08:52:30 Acquisition date : 30-NOV-2001 08:52:30
Elapsed live time: 0 00:10:00.00 Elapsed real time: 0 00:10:00.40

Out-of-range Test: N-SIGMA

Parameter Description [Mean+/-Stdev]	Value	Deviation	Flag
Spectrum Background Rate [7.53+/-0.86]	7.68	0.18	

Flags: "*" means the out-of-range test is parameter-dependent

Approved by: SS Approval Date: 11 / 30 / 01

)A filename : SYS$SYSDEVICE:[GAMMA.SCUSR.QA]QCB_DET2.QAF;1

:ample ID : Bkgrnd Check Sample quantity : 1.00 EACH
:a date : 3-DEC-2001 08:32:08 Acquisition date : 3-DEC-2001 08:32:08
:la d live time: 0 00:10:00.00 Elapsed real time: 0 00:10:00.07

)ut-of-range Test: N-SIGMA

'arameter Description [Mean+/-Stdev]	Value	Deviation	Flag
Spectrum Background Rate [8.73+/-0.74]	9.01	0.38	

'lags: "*" means the out-of-range test is parameter-dependent

'pproved by: ST Approval Date: 12 / 3 / 01

A filename : SYS$SYSDEVICE:[GAMMA.SCUSR.QA]QCB_DET2.QAF;1

ample ID : Bkgrnd Check Sample quantity : 1.00 EACH
a date : 1-DEC-2001 10:12:10 Acquisition date : 1-DEC-2001 10:12:10
la d live time: 0 00:10:00.00 Elapsed real time: 0 00:10:00.06

ut-of-range Test: N-SIGMA

arameter Description [Mean+/-Stdev]	Value	Deviation	Flag
Spectrum Background Rate [8.73+/-0.74]	9.00	0.37	

lags: "*" means the out-of-range test is parameter-dependent

pproved by: SR Approval Date: 12 / 1 / 01

\ filename : SYS$SYSDEVICE:[GAMMA.SCUSR.QA]QCB_DET2.QAF;1

ample ID : Bkgrnd Check Sample quantity : 1.00 EACH
date : 30-NOV-2001 08:52:34 Acquisition date : 30-NOV-2001 08:52:34
la d live time: 0 00:10:00.00 Elapsed real time: 0 00:10:00.07

ut-of-range Test: N-SIGMA

arameter Description [Mean+/-Stdev]	Value	Deviation	Flag
Spectrum Background Rate [8.73+/-0.74]	8.89	0.21	

lags: "*" means the out-of-range test is parameter-dependent

pproved by: SJ Approval Date: 11 / 30 / 01

RAD # 111

3.25"

DET 1

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 · U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

61222-277

500 mL Solid in 533N GA-MA Beaker

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 was calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Rev. 1, February, 1979.

US Patent 4,430,258; UK Patent GB2,149,194B; CA Patent 1,196,776.
Density of solid matrix 1.15 g/cc.

Calibration date: January 1, 2001 12:00 EST

ISOTOPE	GAMMA-RAY ENERGY	HALF-LIFE		GAMMA-RAYS PER SECOND	TOTAL UNCERTAINTY %
Am-241	59.5	432	y	652.6	5.0
Cd-109	88	461.4	d	913.8	4.6
Co-57	122	271.74	d	494.6	4.4
Ce-139	166	137.64	d	681.8	4.7
Hg-203	279	46.595	d	1577	4.6
Sn-113	392	115.09	d	960.0	4.6
Cs-137	662	30.0	y	679.5	4.6
Y-88	898	106.63	d	2383	4.6
Co-60	1173	5.2714	y	1191	5.0
Co-60	1332	5.2714	y	1200	4.8
Y-88	1836	106.63	d	2497	4.6

P O NUMBER 010226RAD, Item 1

SOURCE PREPARED BY: MTaskaeva
M. Taskaeva Radiochemist

Q A APPROVED: DM. Mt 4-4-01

This standard will expire one year after the calibration date.

37 DET 2

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 · U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

61223-277

500 mL Solid in 500 mL Marinelli Beaker

This standard radionuclide source was prepared using aliquots measured gravimetrically from master radionuclide solution sources. The Am-241 was calibrated by 4 pi alpha liquid scintillation counting. All other radionuclides were calibrated using a germanium gamma spectrometer system. Calibration and purity were checked using a germanium gamma spectrometer system. At the time of calibration no interfering gamma-ray emitting impurities were detected. The gamma-ray emission rates for the most intense gamma-ray lines are given. Analytics maintains traceability to the National Institute of Standards and Technology through a Measurements Assurance Program as described in USNRC Regulatory Guide 4.15, Rev. 1, February, 1979.

US Patent 4,430,258; UK Patent GB2,149,194B; CA Patent 1,196,776.
Density of solid matrix 1.15 g/cc.

Calibration date: January 1, 2001 12:00 EST

ISOTOPE	GAMMA-RAY ENERGY	HALF-LIFE		GAMMA-RAYS PER SECOND	TOTAL UNCERTAINTY %
Am-241	59.5	432	y	667.6	5.0
Cd-109	88	461.4	d	934.8	4.6
Co-57	122	271.74	d	506.0	4.4
Ce-139	166	137.64	d	697.5	4.7
Hg-203	279	46.595	d	1613	4.6
Sn-113	392	115.09	d	982.0	4.6
Cs-137	662	30.0	y	695.0	4.6
Y-88	898	106.63	d	2438	4.6
Co-60	1173	5.2714	y	1219	5.0
Co-60	1332	5.2714	y	1227	4.8
Y-88	1836	106.63	d	2554	4.6

P O NUMBER 010226RAD, Item 2

SOURCE PREPARED BY: M Taskaeva
M. Taskaeva Radiochemist

Q A APPROVED: 4-4-01

This standard will expire one year after the calibration date.

Raw Data for Mercury

Protocol: hgppb

POST-RUN REPORT

```
Line   Conc.  Units     SD/RSD      1        2        3        4        5
-----------------------------------------------------------------------------

*** Sample ID: L4094-1                Seq:  37     12:08:00 11 Dec 01   HG
                            0.6579 X2
Hg    5.19    ppb       .000  %   5.19
                                                                          =
==============================================================================
*** Sample ID: L4094-2                Seq:  38     12:09:56 11 Dec 01   HG
                            0.6534 X5
Hg    3.91    ppb       .000  %   3.91
                                                                          =
==============================================================================
*** Sample ID: L4094-3                Seq:  41     12:16:20 11 Dec 01   HG
                            0.6428
Hg    2.04    ppb       .000  %   2.04
                                                                          =
==============================================================================
*** Sample ID: L4094-4                Seq:  42     12:18:17 11 Dec 01   HG
                            0.6211
Hg    5.01    ppb       .000  %   5.01
                                                                          =
==============================================================================
*** Sample ID: L4094-5                Seq:  43     12:20:30 11 Dec 01   HG
                            0.6180 X5
Hg    2.82    ppb       .000  %   2.82
                                                                          =
==============================================================================
*** Sample ID: L4094-6                Seq:  44     12:22:24 11 Dec 01   HG
                            0.6028 X5
Hg    2.79    ppb       .000  %   2.79
                                                                          =
==============================================================================
*** Sample ID: L4094-7                Seq:  45     12:24:37 11 Dec 01   HG
                            0.6290 X5
Hg    3.43    ppb       .000  %   3.43
                                                                          =
==============================================================================
*** Sample ID: L4094-8                Seq:  47     12:31:46 11 Dec 01   HG
                            0.6318 X2
Hg    2.59    ppb       .000  %   2.59
                                                                          =
==============================================================================
*** Sample ID: L4094-9                Seq:  32     12:01:50 11 Dec 01   HG
 UNSPIKED                   0.6009 X5
Hg    3.53    ppb       .000  %   3.53
                                                                          =
==============================================================================
*** Sample ID: L4094-9MS              Seq:  33     12:03:46 11 Dec 01   HG
 SPIKED                     0.6018 X5
Hg    5.80    ppb       .000  %   5.80
                                                                          =
==============================================================================
```

POST-RUN REPORT

```
Line   Conc.  Units     SD/RSD      1        2        3        4        5
-----------------------------------------------------------------------------

*** Sample ID: L4094-9MSD            Seq:  36     12:05:53 11 Dec 01   HG
 DUP                          0.6024 X5
Hg    5.84    ppb       .000  %   5.84
                                                                          =
==========================================================================
*** Sample ID: L4169-1               Seq:  49     12:38:22 11 Dec 01   HG
                              0.6613 X500
Hg    2.17    ppb       .000  %   2.17
                                                                          =
==========================================================================
*** Sample ID: L4169-2               Seq:  52     12:45:33 11 Dec 01   HG
                              0.6386 X5
Hg    3.51    ppb       .000  %   3.51
                                                                          =
==========================================================================
*** Sample ID: L4169-3               Seq:  53     12:47:28 11 Dec 01   HG
                              0.6176 X25
Hg    4.52    ppb       .000  %   4.52
                                                                          =
==========================================================================
*** Sample ID: L4203-1               Seq:  23     11:43:39 11 Dec 01   HG
 UNSPIKED
Hg    .083    ppb       .000  %   .083
                                                                          =
==========================================================================
*** Sample ID: L4203-1MS             Seq:  24     11:45:47 11 Dec 01   HG
 SPIKED
Hg    2.04    ppb       .000  %   2.04
                                                                          =
==========================================================================
*** Sample ID: L4203-1MSD            Seq:  27     11:47:46 11 Dec 01   HG
 DUP
Hg    2.00    ppb       .000  %   2.00
                                                                          =
==========================================================================
*** Sample ID: LCS                   Seq:  30     11:57:41 11 Dec 01   HG
                              0.0183
Hg    1.61    ppb       .000  %   1.61
                                                                          =
*** Sample ID: LCS                   Seq:  31     11:59:36 11 Dec 01   HG
                              0.0268
Hg    2.18    ppb       .000  %   2.18
                                                                          =
*** Check Standard: 1  Ck1           Seq:  21     11:39:39 11 Dec 01   HG
Line  Flag  Found Range(+/-) Units      SD/RSD
Hg          -.009     .150     ppb        .000  %
                                                                          =
```

MBlk

POST-RUN REPORT

```
Line   Conc.  Units     SD/RSD      1       2       3       4       5
-----------------------------------------------------------------------------

CCB  *** Check Standard: 1  Ck1          Seq:  40      12:13:52 11 Dec 01   HG
     Line  Flag  Found Range(+/-) Units      SD/RSD
     Hg          .013     .150     ppb        .000  %
                                                                            =
CCB  *** Check Standard: 1  Ck1          Seq:  55      12:52:20 11 Dec 01   HG
     Line  Flag  Found Range(+/-) Units      SD/RSD
     Hg         -.004     .150     ppb        .000  %
                                                                            =
     *** Check Standard: 2  Ck2          Seq:  20      11:37:46 11 Dec 01   HG
LCS  Line  Flag  %Rcv.   Found    True  Units      SD/RSD
Water Hg         97.5     .975    1.00   ppb        .000  %
                                                                            =
     *** Check Standard: 3  Ck3          Seq:  22      11:41:36 11 Dec 01   HG
     Line  Flag  %Rcv.   Found    True  Units      SD/RSD
     Hg      H   148.     .296    .200   ppb        .000  %
                                                                            =
     *** Check Standard: 4  Ck4          Seq:  39      12:11:55 11 Dec 01   HG
CCV  Line  Flag  %Rcv.   Found    True  Units      SD/RSD
     Hg          104.     2.08    2.00   ppb        .000  %
                                                                            =
     *** Check Standard: 4  Ck4          Seq:  54      12:50:25 11 Dec 01   HG
CCV  Line  Flag  %Rcv.   Found    True  Units      SD/RSD
     Hg          104.     2.08    2.00   ppb        .000  %
                                                                            =
     *** DUP  ID: L4203-1MSD             Seq:  26      11:47:46 11 Dec 01   HG
          RPD                  Orig.     Dup.
     Hg   2.22    %            2.04     2.00
                                                                            =
     *** DUP  ID: L4094-9MSD             Seq:  35      12:05:53 11 Dec 01   HG
          RPD                  Orig.     Dup.
     Hg   .716    %            5.80     5.84
                                                                            =
     *** %Rec.  ID: L4203-1MS            Seq:  25      11:45:47 11 Dec 01   HG
                             Spikes =1  Unspiked =1
          Spike                %Rcv.    Avg(U)   SD(U)    Avg(S)   SD(S)
     Hg   2.00    ppb          98.0     .083    .000      2.04    .000      =

     *** %Rec.  ID: L4094-9MS            Seq:  34      12:03:46 11 Dec 01   HG
                             Spikes =1  Unspiked =1
          Spike                %Rcv.    Avg(U)   SD(U)    Avg(S)   SD(S)
     Hg   2.00    ppb          114.     3.53    .000      5.80    .000      =
```

Line	Conc.	Units	SD/RSD	1	2	3	4	5
*** Standard: 1 Rep: 1				Seq: 1	10:52:24 11 Dec 01	HG		
Hg	.000	ppb	-3795					
*** Standard: 1 Rep: 2				Seq: 2	10:54:20 11 Dec 01	HG		
Hg	.000	ppb	4292					
*** Standard: 1 Rep: 3				Seq: 3	10:56:37 11 Dec 01	HG		
Hg	.000	ppb	1987					
*** Standard: 1 Rep: 1				Seq: 4	10:59:03 11 Dec 01	HG		
Hg	.000	ppb	3522					
*** Standard: 2 Rep: 1				Seq: 5	11:00:57 11 Dec 01	HG		
Hg	.200	ppb	40997					
*** Standard: 2 Rep: 2				Seq: 6	11:03:06 11 Dec 01	HG		
Hg	.200	ppb	32600					
*** Standard: 2 Rep: 3				Seq: 7	11:05:09 11 Dec 01	HG		
Hg	.200	ppb	32237					
*** Standard: 3 Rep: 1				Seq: 8	11:07:14 11 Dec 01	HG		
Hg	.500	ppb	87929					
*** Standard: 3 Rep: 2				Seq: 9	11:09:13 11 Dec 01	HG		
Hg	.500	ppb	91354					
*** Standard: 3 Rep: 3				Seq: 10	11:11:31 11 Dec 01	HG		
Hg	.500	ppb	97245					
*** Standard: 4 Rep: 1				Seq: 11	11:13:50 11 Dec 01	HG		
Hg	1.00	ppb	185137					
*** Standard: 4 Rep: 2				Seq: 12	11:16:27 11 Dec 01	HG		
Hg	1.00	ppb	183903					

```
Line   Conc.  Units     SD/RSD      1       2       3       4       5
-----------------------------------------------------------------------------

*** Standard: 4 Rep: 3              Seq:  13      11:18:22 11 Dec 01   HG

Hg    1.00    ppb      195239

*** Standard: 5 Rep: 1              Seq:  14      11:21:06 11 Dec 01   HG

Hg    2.00    ppb      382613

*** Standard: 5 Rep: 2              Seq:  15      11:23:11 11 Dec 01   HG

Hg    2.00    ppb      380748

*** Standard: 5 Rep: 3              Seq:  16      11:25:41 11 Dec 01   HG

Hg    2.00    ppb      382551

*** Standard: 6 Rep: 1              Seq:  17      11:27:35 11 Dec 01   HG

Hg    5.00    ppb      972037

*** Standard: 6 Rep: 2              Seq:  18      11:30:01 11 Dec 01   HG

Hg    5.00    ppb      993591

*** Standard: 6 Rep: 3              Seq:  19      11:32:00 11 Dec 01   HG

Hg    5.00    ppb      964495

*** Check Standard: 2  Ck2          Seq:  20      11:37:46 11 Dec 01   HG
Line  Flag  %Rcv.   Found    True  Units      SD/RSD
Hg          97.5    .975    1.00   ppb        .000  %

*** Check Standard: 1  Ck1          Seq:  21      11:39:39 11 Dec 01   HG
Line  Flag  Found Range(+/-) Units      SD/RSD
Hg         -.009     .150     ppb        .000  %

*** Check Standard: 3  Ck3          Seq:  22      11:41:36 11 Dec 01   HG
Line  Flag  %Rcv.   Found    True  Units      SD/RSD
Hg      H   148.    .296    .200   ppb        .000  %

*** Sample ID: L4203-1              Seq:  23      11:43:39 11 Dec 01   HG
 UNSPIKED
Hg    .083    ppb       .000  %   .083

*** Sample ID: L4203-1MS            Seq:  24      11:45:47 11 Dec 01   HG
 SPIKED
Hg    2.04    ppb       .000  %   2.04
```

```
Line   Conc.  Units     SD/RSD      1       2       3       4       5
-----------------------------------------------------------------------------

*** %Rec.   ID: L4203-1MS              Seq:  25     11:45:47 11 Dec 01   HG
                          Spikes =1  Unspiked =1
      Spike               %Rcv.    Avg(U)   SD(U)    Avg(S)    SD(S)
Hg    2.00     ppb        98.0     .083    .000      2.04     .000

*** DUP  ID: L4203-1MSD L4203-1MS    Seq:  26     11:47:46 11 Dec 01   HG
      RPD                 Orig.     Dup.
Hg    2.22     %          2.04     2.00

*** Sample ID: L4203-1MSD             Seq:  27     11:47:46 11 Dec 01   HG
 DUP
Hg    2.00     ppb       .000  %   2.00

*** Sample ID: LCS                    Seq:  28     11:50:00 11 Dec 01   HG
                             0.0183
Hg    1.93     ppb       .000  %   1.93

*** Sample ID: LCS                    Seq:  29     11:51:56 11 Dec 01   HG
                             0.0268
Hg    2.58     ppb       .000  %   2.58

*** Sample ID: LCS                    Seq:  30     11:57:41 11 Dec 01   HG
                             0.0183
Hg    1.61     ppb       .000  %   1.61

*** Sample ID: LCS                    Seq:  31     11:59:36 11 Dec 01   HG
                             0.0268
Hg    2.18     ppb       .000  %   2.18

*** Sample ID: L4094-9                Seq:  32     12:01:50 11 Dec 01   HG
 UNSPIKED                    0.6009 X5
Hg    3.53     ppb       .000  %   3.53

*** Sample ID: L4094-9MS              Seq:  33     12:03:46 11 Dec 01   HG
 SPIKED                      0.6018 X5
Hg    5.80     ppb       .000  %   5.80

*** %Rec.   ID: L4094-9MS             Seq:  34     12:03:46 11 Dec 01   HG
                          Spikes =1  Unspiked =1
      Spike               %Rcv.    Avg(U)   SD(U)    Avg(S)    SD(S)
Hg    2.00     ppb        114.     3.53    .000      5.80     .000

*** DUP  ID: L4094-9MSD L4094-9MS    Seq:  35     12:05:53 11 Dec 01   HG
      RPD                 Orig.     Dup.
Hg    .716     %          5.80     5.84
```

```
Line   Conc.  Units     SD/RSD      1       2       3       4       5
-----------------------------------------------------------------------------

*** Sample ID: L4094-9MSD            Seq:  36     12:05:53 11 Dec 01   HG
 DUP                        0.6024 X5
Hg    5.84    ppb       .000  %   5.84

*** Sample ID: L4094-1               Seq:  37     12:08:00 11 Dec 01   HG
                            0.6579 X2
Hg    5.19    ppb       .000  %   5.19

*** Sample ID: L4094-2               Seq:  38     12:09:56 11 Dec 01   HG
                            0.6534 X5
Hg    3.91    ppb       .000  %   3.91

*** Check Standard: 4  Ck4           Seq:  39     12:11:55 11 Dec 01   HG
Line  Flag  %Rcv.   Found    True  Units      SD/RSD
Hg          104.     2.08    2.00   ppb        .000  %

*** Check Standard: 1  Ck1           Seq:  40     12:13:52 11 Dec 01   HG
Line  Flag  Found Range(+/-) Units      SD/RSD
Hg          .013     .150     ppb        .000  %

*** Sample ID: L4094-3               Seq:  41     12:16:20 11 Dec 01   HG
                            0.6428
Hg    2.04    ppb       .000  %   2.04

*** Sample ID: L4094-4               Seq:  42     12:18:17 11 Dec 01   HG
                            0.6211
Hg    5.01    ppb       .000  %   5.01

*** Sample ID: L4094-5               Seq:  43     12:20:30 11 Dec 01   HG
                            0.6180 X5
Hg    2.82    ppb       .000  %   2.82

*** Sample ID: L4094-6               Seq:  44     12:22:24 11 Dec 01   HG
                            0.6028 X5
Hg    2.79    ppb       .000  %   2.79

*** Sample ID: L4094-7               Seq:  45     12:24:37 11 Dec 01   HG
                            0.6290 X5
Hg    3.43    ppb       .000  %   3.43

*** Sample ID: L4094-8               Seq:  46     12:27:02 11 Dec 01   HG
                            0.6318 X2
Hg    6.26    ppb       .000  %   6.26

*** Sample ID: L4094-8               Seq:  47     12:31:46 11 Dec 01   HG
                            0.6318 X2
Hg    2.59    ppb       .000  %   2.59
```

WinHg Database 1.3

Utility Help

RN RN

otocol hgppb

Dataset/Proto 121101 /hgppb

Protocol | Line info | Cal Curve | Report | Ctrl Chart | Viewer

Reset

Calib Coeffs

New Cal

Update Coeffs

Spike Coeffs

A

B 5.11300e-6

C 2.04975e-2

Rho 999924

Type Linear

Calibrated

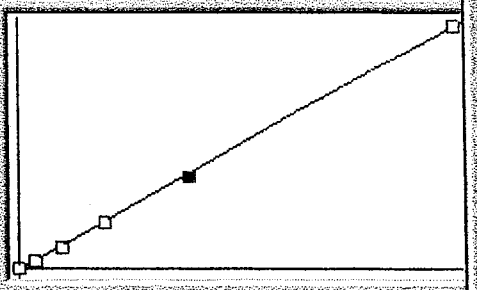
Accepted

Accept

Rel. Abs.
976707

Accepted

New



Include S5 Rep 1 2 3 4 5

Conc. 5.01

S	Conc.	Calc.	Dev.	Mean	SD or %RSD	Rep 1	Rep 2	Rep 3
01	.00000	.037	.037	3267	1174	3522	4292	1987
02	.20000	.201	.001	35279	14.05%	40997	32600	32237
03	.50000	.492	-.008	92177	5.11%	87929	91354	97245
04	1.0000	.982	-.018	188093	3.31%	185138	183903	195239
05	2.0000	1.97	-.026	381971	0.28%	382514	380748	382551
06	5.0000	5.01	.014	976708	1.55%	972037	993591	964495

eady CAP NUM

	ETL Sample ID	Aliquot to Tube in g	Tube Total Volume ml	Initial Dilution Aliquot	Initial Dilution Volume	Volume used for analysis	Result ug/L	Result in mg/kg	
S	ICV	0.0183	40	1	1	1	1.610	3.519	116%
Soil	ICV	0.0268	40	1	1	1	2.180	3.254	107%
Soil	L4094-1	0.6001	40	1	2	1	5.190	0.692	
Soil	L4094-2	0.6279	40	1	5	1	3.910	1.245	
Soil	L4094-3	0.5956	40	1	1	1	2.040	0.137	
Soil	L4094-4	0.5354	40	1	1	1	5.010	0.374	
Soil	L4094-5	0.5966	40	1	5	1	2.820	0.945	
Soil	L4094-6	0.5738	40	1	5	1	2.790	0.972	
Soil	L4094-7	0.5949	40	1	5	1	3.430	1.153	
Soil	L4094-8	0.5809	40	1	5	1	2.590	0.892	
Soil	L4094-9	0.5798	40	1	5	1	3.530	1.218	
Soil	L4094-9 MS	0.5807	40	1	5	1	5.800	1.998	114%
Soil	L4094-9 MSD	0.5813	40	1	5	1	5.840	2.009	116%
Soil	L4169-1	0.6532	40	1	5000	1	2.170	664.421	
Soil	L4169-2	0.6293	40	1	10	1	3.510	2.231	
Soil	L4169-3	0.6092	40	1	50	1	4.520	14.839	

WG 11737
R 14581

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MAB 12-11-01

ML 12-11-01

	ETL Sample ID	Aliquot to Tube in ml	Tube Total Volume ml	Initial Dilution Aliquot	Initial Dilution Volume	Volume used for analysis	Result ug/L	Result mg/L	
Water	MBLK	1.00	1	1	1	1	-0.009	-0.000009	
Water	LCS	1.00	1	1	1	1	0.975	0.000975	97.50%
Water	L4203-1	20.00	30	1	1	1	0.083	0.000125	
Water	L4203-1 MS	20.00	30	1	1	1	2.040	0.003060	97.90%
Water	L4203-1MSD	20.00	30	1	1	1	2.000	0.003000	95.90%

WG 11736
R 14580

ML 12-11-01 263

cup	sample ID	extended ID	weight	volume	? A D F P S U SC UI US C1..7
1	L4203-1		1.0000	1.0000	U C2 C1 C3 CP
2	L4203-1MS		1.0000	1.0000	S P
3	L4203-1MSD		1.0000	1.0000	D F
4	LCS	0.0183	1.0000	1.0000	
5	LCS	0.0268	1.0000	1.0000	
6	L4094-9	0.6009 X5	1.0000	1.0000	U
7	L4094-9MS	0.6018 X5	1.0000	1.0000	S P
8	L4094-9MSD	0.6024 X5	1.0000	1.0000	D F
9	L4094-1	0.6579 X2	1.0000	1.0000	
10	L4094-2	0.6534 X5	1.0000	1.0000	C4 C1
11	L4094-3	0.6428	1.0000	1.0000	
12	L4094-4	0.6211	1.0000	1.0000	
13	L4094-5	0.6180 X5	1.0000	1.0000	
14	L4094-6	0.6028 X5	1.0000	1.0000	
15	L4094-7	0.6290 X5	1.0000	1.0000	
16	L4094-8	0.6318 X5	1.0000	1.0000	
17	L4169-1	0.6613 X5000	1.0000	1.0000	
18	L4169-2	0.6386 X10	1.0000	1.0000	
19	L4169-3	0.6176 X50	1.0000	1.0000	C4 C1
20			1.0000	1.0000	
21			1.0000	1.0000	
22			1.0000	1.0000	
23			1.0000	1.0000	
24			1.0000	1.0000	
25			1.0000	1.0000	
26			1.0000	1.0000	
27			1.0000	1.0000	
28			1.0000	1.0000	
29			1.0000	1.0000	
30			1.0000	1.0000	
31			1.0000	1.0000	
32			1.0000	1.0000	
33			1.0000	1.0000	
34			1.0000	1.0000	
35			1.0000	1.0000	
36			1.0000	1.0000	
37			1.0000	1.0000	
38			1.0000	1.0000	
39			1.0000	1.0000	
40			1.0000	1.0000	
41			1.0000	1.0000	
42			1.0000	1.0000	

Curve - Std. MET - FO
LCS (water) MET - FN
LCS (soil) 00096-44-13

MA 12-11-01
MAB 12-11-01

00096-45-18

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CERTIFICATE OF ANALYSIS

P/N 4400-1000331
P/N S4400-1000331

Single Element Mercury Standard
Hg in 2% HNO_3
1000 ± 3 µg/mL

Lot # 0DJ059

Material Source: Mercury metal
Source Purity: 99.998%
Specific Gravity: 1.009 @ 21 °C

This standard solution was prepared using high-purity metal, sub-boiled distilled nitric acid and 18-megaohm deionized water. The starting material was weighed to five significant figures and diluted in volumetric glassware calibrated to five significant figures.

The standard solution concentration was certified by ICP against the National Institute of Standards and Technology's SRM 3133. Trace impurities of the 1000 µg/mL standard were analyzed by ICP-MS.

	ppb	DL		ppb	DL		ppb	DL		ppb	DL		ppb	DL
Al	1.2	0.1	Cu	0.19	0.1	Pb	ND	0.1	K	ND	70	Tl	0.9	0.1
Sb	ND	0.1	Dy	ND	0.1	Li	ND	0.4	Pr	ND	0.1	Th	ND	0.1
As	ND	6	Er	ND	0.1	Lu	ND	1	Re	ND	0.1	Tm	ND	0.1
Ba	ND	0.1	Eu	ND	0.1	Mg	0.89	0.2	Rh	ND	0.1	Sn	ND	0.1
Be	ND	0.1	Gd	ND	0.1	Mn	ND	1	Rb	ND	0.1	Ti	ND	0.1
Bi	0.12	0.1	Ga	ND	0.1	Hg	X	0.2	Ru	ND	0.1	W	0.31	0.1
B	ND	4	Ge	ND	0.1	Mo	ND	0.1	Sm	ND	0.1	U	ND	0.1
Br	ND	10	Au	0.7	0.1	Nd	ND	0.1	Se	ND	6	V	ND	1
Cd	ND	0.1	Hf	ND	0.1	Ni	0.18	0.1	Si	206	8	Yb	ND	0.1
Ca	34	7	Ho	ND	0.1	Nb	ND	0.1	Ag	5.1	0.1	Y	ND	0.1
Ce	ND	0.1	I	1	0.2	Os	ND	0.1	Na	4.2	1	Zn	ND	2
Cs	0.25	0.1	Ir	ND	0.1	Pd	ND	0.1	Sr	ND	0.1	Zr	ND	0.1
Cr	ND	1	Fe	ND	30	P	ND	10	Ta	4	0.1			
Co	0.22	0.1	La	ND	0.1	Pt	ND	0.1	Te	ND	0.1			

X=Majojr Element INT=Interference from Major Element DL=Detection Limit ND=None Detected

Accuracy and stability are guaranteed to within plus or minus 0.3 % of the certified value for 18 months after the date of shipment. The solution should be kept tightly capped and stored under normal laboratory conditions. See attached MSDS for proper handling information.

For questions or comments please call 1-800-878-7654 in the United States or +31 20 638 05 97 in Europe.

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00096-46-1

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CERTIFICATE OF ANALYSIS

P/N 4400-1000331
P/N S4400-1000331

Single Element Mercury Standard
Hg in 2% HNO_3
1000 ± 3 µg/mL

Lot # 1AS010

Material Source: Mercury metal
Source Purity: 99.998%
Specific Gravity: 1.007 @ 21 °C

This standard solution was prepared using high-purity metal, sub-boiled distilled nitric acid and 18-megaohm deionized water. The starting material was weighed to five significant figures and diluted in volumetric glassware calibrated to five significant figures.

The standard solution concentration was certified by ICP against the National Institute of Standards and Technology's SRM 3133. Trace impurities of the 1000 µg/mL standard were analyzed by ICP-MS.

	ppb	DL		ppb	DL		ppb	DL		ppb	DL		ppb	DL
Al	1.2	0.1	Cu	0.19	0.1	Pb	ND	0.1	K	ND	70	Tl	0.9	0.1
Sb	ND	0.1	Dy	ND	0.1	Li	ND	0.4	Pr	ND	0.1	Th	ND	0.1
As	ND	6	Er	ND	0.1	Lu	ND	1	Re	ND	0.1	Tm	ND	0.1
Ba	ND	0.1	Eu	ND	0.1	Mg	0.89	0.2	Rh	ND	0.1	Sn	ND	0.1
Be	ND	0.1	Gd	ND	0.1	Mn	ND	1	Rb	ND	0.1	Ti	ND	0.1
Bi	0.12	0.1	Ga	ND	0.1	Hg	X	0.2	Ru	ND	0.1	W	0.31	0.1
B	ND	4	Ge	ND	0.1	Mo	ND	0.1	Sm	ND	0.1	U	ND	0.1
Br	ND	10	Au	0.7	0.1	Nd	ND	0.1	Se	ND	6	V	ND	1
Cd	ND	0.1	Hf	ND	0.1	Ni	0.18	0.1	Si	206	8	Yb	ND	0.1
Ca	34	7	Ho	ND	0.1	Nb	ND	0.1	Ag	5.1	0.1	Y	ND	0.1
Ce	ND	0.1	I	1	0.2	Os	ND	0.1	Na	4.2	1	Zn	ND	2
Cs	0.25	0.1	Ir	ND	0.1	Pd	ND	0.1	Sr	ND	0.1	Zr	ND	0.1
Cr	ND	1	Fe	ND	30	P	ND	10	Ta	4	0.1			
Co	0.22	0.1	La	ND	0.1	Pt	ND	0.1	Te	ND	0.1			

X=Majojr Element INT=Interference from Major Element DL=Detection Limit ND=None Detected

Accuracy and stability are guaranteed to within plus or minus 0.3 % of the certified value for 18 months after the date of shipment. The solution should be kept tightly capped and stored under normal laboratory conditions. See attached MSDS for proper handling information.

For questions or comments please call 1-800-878-7654 in the United States or +31 20 638 05 97 in Europe.

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Raw Data for Metals

ENVIRO-TEST LABORATORIES
DATA BUNDLE COVER PAGE FOR METALS

Date of Analysis: Nov. 27, 2001	Instrument: Elan 6000, ICPMS
ETL-ISOP #: 0017.00	File Name: 112701

Work Group #: WG11557	Run #: R14280

File Numbers Associated With This Bundle:		Spike Details
L4094-1 → 9		20 µl of 00096
L4146-1 → 10		-59-6, 00096
L4106-2		-45-12, 00096
L4140-1	Soil	-62-1, 00096
L4143-3		-103-13 into
L4150-1		10 ml of sample
L4151-1		

GC Nov. 27, 2001

Comments related to data bundle: Dup WG11556-3 Sb failed due to low conc. Spike WG11556-4 Al/Fe failed due to high conc. in sample.

Analyst: GC	Date: Nov. 27, 2001
Bundle checked by:	Date:
Data entered into LIMS by: GC	Date: Nov. 28, 2001

Analyze : GC

Final-F lts

File Name: 112701

Analysis date: Tuesday, November 27, 2001 15:47:22

Sample_ID	Standard 2	Standard 3	ICV	%recovery	ICB	ICS A SPK X5	true value	%recovery	RINSE
Smpl_Wt	1.0000	1.0000	1.0000		1.0000	1.0000			1.0000
Smpl_Vol	1	1	1		1	1			1
mL used.	10.000	10.000	10.000		10.000	2.000			10.000
Ag 107	0.009858	0.020118	0.020699	103.495000	0.000063	0.080315	0.100000	80.315000	0.001313
Al 27	0.009776	0.019583	0.021409	107.045000	0.000342	*428.748001*	*500.000000*	*85.749600*	~~*0.001227*~~
As 75	0.009852	0.019784	0.019370	96.850000	-0.000005	0.098790	0.100000	98.790000	0.000037
B 11	0.049775	0.098402	0.102997	102.997000	0.002763	*0.414894*	*0.500000*	*82.978723*	*-0.000362*
Ba 138	0.010186	0.019699	0.020027	100.135000	0.000012	0.103585	0.100000	103.585000	0.000032
Be 9	0.009809	0.019632	0.019228	96.140000	0.000003	*0.084649*	*0.100000*	*84.648924*	*0.000001*
Ca 43	**0.503339**	**1.015236**	**1.025643**	**102.564300**	**0.000055**	**473.244480**	**500.000000**	**94.648896**	**0.006565**
Cd 114	0.009875	0.019621	0.019596	97.980000	-0.000001	0.093785	0.100000	93.785000	0.000000
Co 59	0.009939	0.019293	0.019254	96.270000	-0.000002	0.118545	0.100000	118.545000	-0.000001
Cr 52	0.010044	0.019333	0.019628	98.140000	0.000000	0.113785	0.100000	113.785000	0.000010
Cu 63	0.009977	0.019371	0.019157	95.785000	0.000000	0.103620	0.100000	103.620000	0.000022
Fe 57	0.490679	0.989380	0.983373	98.337300	-0.002699	518.221755	500.000000	103.644351	0.002575
Hg 202	0.000983	0.001959	0.001959	97.950000	0.000093	0.008785	0.010000	87.850000	0.000108
K 39	0.514913	1.025662	1.018465	101.846500	-0.000393	##############	500.000000		-0.011394
Li 7	0.009930	0.018887	0.019734	98.670000	0.000025	0.090780	0.100000	90.780000	-0.000042
Mg 24	0.426413	0.961048	1.005850	100.585000	0.000001	441.206120	500.000000	88.241224	0.001243
Mn 55	0.009867	0.019680	0.019472	97.360000	0.000017	0.104715	0.100000	104.715000	0.000008
Mo 95	0.009838	0.019658	0.019457	97.285000	0.000019	9.254000	10.000000	92.540000	~~0.001281~~
Na 23	0.418149	0.949210	0.998297	99.829700	0.010636	##############	500.000000		~~0.013250~~
Ni 60	0.010016	0.019545	0.019014	95.070000	0.000001	0.111535	0.100000	111.535000	0.000006
P 31	0.049601	0.100106	0.101139	101.139000	-0.001883	*429.520262*	*500.000000*	*85.904052*	*-0.004684*
Pb 208	0.009820	0.020121	0.019857	99.285000	0.000004	0.099765	0.100000	99.765000	0.000020
Sb 121	0.010416	0.020477	0.019152	95.760000	0.000053	0.110525	0.100000	110.525000	0.000183
Se 82	0.009976	0.019828	0.019396	96.980000	-0.000028	0.109905	0.100000	109.905000	0.000109
Si 28	0.049862	0.099004	0.099411	99.411000	0.021468	0.853100	0.500000	170.620000	0.021300
Sn 120	0.010148	0.019919	0.019903	99.515000	0.000036	0.103725	0.100000	103.725000	0.000037
Sr 88	0.010017	0.019635	0.020148	100.740000	0.000002	0.114435	0.100000	114.435000	0.000006
Te 125	0.010964	0.020802	0.018551	92.755000	0.000046	0.078710	0.100000	78.710000	0.000150
Th 232	0.009767	0.020085	0.019738	98.690000	0.000008	0.100645	0.100000	100.645000	0.000004
Ti 47	0.009512	0.019516	0.019736	98.680000	0.000010	10.349935	10.000000	103.499350	~~0.000073~~
Tl 205	0.009907	0.019939	0.019633	98.165000	-0.000002	0.102430	0.100000	102.430000	0.000014
U 238	0.009695	0.020109	0.019486	97.430000	-0.000004	0.102180	0.100000	102.180000	-0.000003
V 51	0.009946	0.019898	0.019471	97.355000	-0.000080	0.106145	0.100000	106.145000	0.000079
W 184	0.010125	0.019982	0.020258	101.290000	0.000051	0.104590	0.100000	104.590000	0.000061
Zn 68	0.010125	0.019333	0.019413	97.065000	0.000036	0.098315	0.100000	98.315000	0.000189
Zr 90	0.010052	0.019506	0.019951	99.755000	0.000001	0.100560	0.100000	100.560000	0.000008

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UNDERLINED NUMBERS ARE NOT RELIABLE

Analysis date: T

Sample_ID	LDR #2	%recovery	LDR #1	%recovery	LDR #3	%recovery	RINSE	RINSE	K WG11556-1X
Smpl_Wt	1.0000		1.0000		1.0000		1.0000	1.0000	0.5000
Smpl_Vol	1		1		1		1	1	50
mL used.	10.000		10.000		10.000		10.000	10.000	1.000
Ag 107	0.401318	80.263600	0.098307	98.307000	*0.000851*		*0.000185*	*0.000077*	*0.100353*
Al 27	*0.436882*	*87.376390*	*0.103425*	*103.424688*	*23.804994*	*95.219975*	~~*0.001435*~~	*0.000607*	*1.615186*
As 75	0.434424	86.884800	0.092857	92.857000	0.000076		0.000024	0.000014	0.009000
B 11	*1.103118*	*44.124711*	*0.483190*	*96.638003*	*0.006018*		*0.005836*	*0.003253*	*-1.440961*
Ba 138	0.447167	89.433400	0.091735	91.735000	0.989570	98.957000	0.000077	0.000038	0.093000
Be 9	*0.193804*	*38.760815*	*0.081323*	*81.322763*	*0.000014*		*0.000005*	*0.000006*	*0.002265*
Ca 43	**22.460137**	**89.840548**	**4.842779**	**96.855580**	**0.035246**		**0.005902**	**0.006537**	**24.565000**
Cd 114	0.408265	81.653000	0.094148	94.148000	0.000013		0.000002	0.000001	0.011000
Co 59	0.419160	83.832000	0.090910	90.910000	0.000014		0.000003	0.000002	-0.002000
Cr 52	0.415208	83.041600	0.093158	93.158000	-0.000064		-0.000028	-0.000034	0.003000
Cu 63	0.399157	79.831400	0.090026	90.026000	0.964648	96.464800	0.000066	0.000023	0.077000
Fe 57	21.843034	87.372136	4.710132	94.202640	0.001699		0.008983	0.007984	9.364000
Hg 202	**0.000375**		**0.000061**		-0.000006		0.000124	0.000120	0.012000
K 39	24.100786	96.403144	5.130602	102.612040	-0.011899		-0.016700	-0.019212	-19.945000
Li 7	0.187568	37.513600	0.075197	75.197000	0.000138		0.000058	-0.000003	0.025000
Mg 24	23.155741	92.622964	5.005543	100.110860	0.000435		0.000476	0.000442	1.403000
Mn 55	0.426503	85.300600	0.093592	93.592000	0.992992	99.299200	0.000060	0.000023	0.088000
Mo 95	0.436658	87.331600	0.095534	95.534000	0.000537		0.000202	0.000127	0.083000
Na 23	23.546602	94.186408	5.066243	101.324860	0.018474		0.012376	0.012096	23.634000
Ni 60	0.436595	87.319000	0.089588	89.588000	0.949031	94.903100	0.000043	0.000009	0.062000
P 31	*2.640804*	*105.632149*	*0.583136*	*116.627151*	*-0.004633*		*-0.005696*	*-0.005709*	*-5.745322*
Pb 208	0.428062	85.612400	0.092586	92.586000	1.028134	102.813400	~~0.000069~~	0.000023	0.146000
Sb 121	0.452903	90.580600	0.100270	100.270000	0.001017		0.000308	0.000155	0.103000
Se 82	0.422059	84.411800	0.093413	93.413000	0.000091		-0.000049	-0.000059	-0.122000
Si 28	1.694791	67.791640	0.466542	93.308400	0.002060		0.023335	0.022573	6.286000
Sn 120	0.445345	89.069000	0.098347	98.347000	0.000105		0.000048	0.000034	0.831000
Sr 88	0.460149	92.029800	0.094296	94.296000	0.000016		0.000009	0.000007	0.039000
Te 125	0.417595	83.519000	0.093479	93.479000	0.000756		0.000220	0.000118	0.068000
Th 232	0.449109	89.821800	0.090546	90.546000	0.000023		0.000007	0.000004	0.003000
Ti 47	0.466903	93.380600	0.096531	96.531000	0.000023		0.000012	-0.000003	0.032000
Tl 205	0.432534	86.506800	0.092165	92.165000	0.000067		0.000004	0.000004	-0.003000
U 238	0.443785	88.757000	0.090386	90.386000	0.000010		0.000000	-0.000002	0.003000
V 51	0.425339	85.067800	0.093378	93.378000	-0.000097		-0.000131	-0.000158	-0.166000
W 184	0.472845	94.569000	0.099056	99.056000	0.000630		0.000282	0.000164	0.131000
Zn 68	0.429634	85.926800	0.092025	92.025000	1.065193	106.519300	0.000202	0.000197	8.322000
Zr 90	0.456509	91.301800	0.097469	97.469000	0.000009		0.000002	0.000001	0.452000

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UNDERLINED NUMBERS ARE NOT RELIABLE

Analysis date: T

Sample_ID	S WG11556-2X	TRUE	%recovery	RINSE	CCV	%recovery	QC CCB	L4094-1X	P WG11556-3X
Smpl_Wt	0.2593			1.0000	1.0000		1.0000	0.5050	0.5026
Smpl_Vol	50			1	1		1	50	50
mL used.	1.000			10.000	10.000		10.000	1.000	1.000
Ag 107	*156.470560*	*207.000000*	*75.589643*	*0.002646*	*0.010000*	*100.000000*	*0.001100*	*0.278207*	*0.312281*
Al 27	*4885.787728*	*6040.000000*	*80.890525*	*0.000529*	*0.010000*	*100.000000*	*0.000359*	*2974.993411*	*3267.767801*
As 75	167.790204	184.000000	91.190328	0.000012	0.009664	96.640000	0.000004	1.675248	1.715082
B 11	*50.755500*	*133.000000*	*38.162030*	*0.000093*	*0.050000*	*100.000000*	*-0.000780*	*-3.770462*	*-4.268746*
Ba 138	137.348631	148.000000	92.803129	0.000039	0.010286	102.860000	0.000013	54.456436	50.385993
Be 9	*65.796973*	*69.500000*	*94.671904*	*0.000005*	*0.010000*	*100.000000*	*0.000002*	*0.564009*	*0.571209*
Ca 43	**2892.423833**	**3310.000000**	**87.384406**	**0.006198**	**0.494538**	**98.907600**	**0.006302**	**1186.501980**	**1224.657780**
Cd 114	183.077516	219.000000	83.597039	0.000001	0.010081	100.810000	0.000000	0.847525	0.917230
Co 59	47.205939	70.600000	66.863936	-0.000003	0.010596	105.960000	-0.000001	1.916832	1.972742
Cr 52	103.796761	117.000000	88.715180	0.000014	0.010639	106.390000	0.000029	8.449505	9.091723
Cu 63	83.181643	87.600000	94.956213	0.000020	0.010789	107.890000	0.000001	11.805941	12.179666
Fe 57	10272.645584	11800.000000	87.056319	0.003962	0.540427	105.966078	0.004323	7122.284158	7639.517509
Hg 202	21.999614	28.600000	76.921728	0.000147	0.000990	99.000000	0.000115	0.301980	0.308396
K 39	1650.969919	1820.000000	90.712633	-0.016730	0.457356	91.471200	-0.016322	476.767327	516.334063
Li 7	6.380640			-0.000017	0.009428	94.280000	-0.000046	5.758416	6.086351
Mg 24	1732.888546	1960.000000	88.412681	0.000356	0.502120	100.424000	-0.000032	499.910891	536.616594
Mn 55	315.505206	382.000000	82.592986	0.000023	0.010876	108.760000	0.000020	208.985149	228.245125
Mo 95	74.685692	92.800000	80.480272	0.000123	0.010002	100.020000	0.000059	0.823762	0.925189
Na 23	225.551485	218.000000	103.463984	0.010369	0.468538	93.707600	0.009085	140.123762	150.426781
Ni 60	122.857694	142.000000	86.519503	0.000008	0.010589	105.890000	0.000007	4.530693	4.745324
P 31	*397.894543*			*-0.004604*	*0.050000*	*100.000000*	*-0.006609*	*98.996224*	*105.441907*
Pb 208	114.116853	110.000000	103.742594	0.000018	0.010074	100.740000	0.000005	36.080198	36.670314
Sb 121	15.896645	243.000000	6.541829	0.000061	0.010129	101.290000	0.000081	0.079208	0.063669
Se 82	94.757038	95.900000	98.808173	-0.000072	0.009677	96.770000	-0.000044	0.353465	0.429765
Si 28	161.212881			0.021939	0.045074	90.148000	0.020108	103.894059	142.035416
Sn 120	19.070575	167.000000	11.419506	0.000045	0.010006	100.060000	0.000044	0.469307	0.483486
Sr 88	155.962206	182.000000	85.693520	0.000007	0.010156	101.560000	0.000003	9.098020	9.246916
Te 125	0.104126			0.000055	0.009859	98.590000	0.000106	0.080198	0.060684
Th 232	12.851909			0.000013	0.010031	100.310000	0.000009	3.982178	4.227019
Ti 47	223.349402	282.000000	79.201916	0.000011	0.010086	100.860000	0.000007	132.530693	149.217071
Tl 205	157.344774	166.000000	94.786009	0.000002	0.010006	100.060000	0.000001	0.087129	0.094509
U 238	1.974547			-0.000003	0.009960	99.600000	-0.000003	2.857426	3.608237
V 51	71.035480	84.200000	84.365178	-0.000091	0.010438	104.380000	-0.000100	6.867327	7.142857
W 184	0.268029			0.000072	0.009925	99.250000	0.000061	0.380198	0.378034
Zn 68	389.712688	414.000000	94.133500	0.000178	0.010879	108.790000	0.000070	38.696040	41.864306
Zr 90	5.996915			0.000004	0.010167	101.670000	0.000001	9.395050	10.087545

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Sample_ID	%RPD	S WG11556-4X	%recovery	S WG11556-4X	%recovery	S WG11556-4X	%recovery	CCV	%recovery
Smpl_Wt		0.5068		0.5068		0.5068		1.0000	
Smpl_Vol		50		50		50		1	
mL used.		1.000		1.000		1.000		10.000	
Ag 107	*11.540985*	*3.787602*	*17.626044*	*1.836575*	*7.738236*	*20.902229*	*104.362970*	*0.010000*	*100.000000*
Al 27	*9.379644*	*6203.466175*	*15015.365607*	2935.224941	-1548.080966	5533.925612	11622.134034	0.009201	92.010000
As 75	2.349863	19.852013	91.990000	20.574191	95.650000	19.881610	92.140000	0.009771	97.710000
B 11	*12.396355*	*80.284961*	*85.667780*	*94.142619*	*99.713902*	*82.983429*	*88.402947*	*0.050000*	*100.000000*
Ba 138	7.764877	66.356551	83.055000	63.319850	67.665000	82.889700	83.422500	0.010250	102.500000
Be 9	*1.268447*	*18.842273*	*92.621744*	17.739740	87.034105	17.379637	85.209105	0.009227	92.270000
Ca 43	**3.164933**	**2086.392068**	**88.374100**	**2080.533741**	**87.780300**	**2105.662983**	**90.327400**	**0.492071**	**98.414200**
Cd 114	7.899753	19.705012	95.255000	20.635359	99.970000	20.064128	97.075000	0.010194	101.940000
Co 59	2.874868	20.808011	95.540000	21.572612	99.415000	20.956985	96.295000	0.010939	109.390000
Cr 52	7.322385	29.682320	104.735000	28.741121	99.965000	29.992107	106.305000	0.010951	109.510000
Cu 63	3.116245	30.919495	95.485000	31.744278	99.665000	31.167127	96.740000	0.010928	109.280000
Fe 57	7.007727	9709.926006	216.273800	*7750.634140*	*17.679976*	*8698.332566*	*113.738689*	*0.500000*	*98.039216*
Hg 202	2.102355	**0.452841**	**7.450000**	2.130032	92.450000	**0.469613**	**8.300000**	0.001005	100.500000
K 39	7.968318	1812.325375	131.795400	1419.860892	92.015200	1826.258879	133.207700	0.490708	98.141600
Li 7	5.537216	25.184491	97.045000	23.836819	90.215000	25.870166	100.520000	0.009559	95.590000
Mg 24	7.082437	1622.177388	110.483200	1423.551697	90.350500	1628.369179	111.110800	0.504883	100.976600
Mn 55	8.809992	250.362076	121.675000	246.922849	104.245000	249.668508	118.160000	0.010950	109.500000
Mo 95	11.598566	19.235399	92.835000	20.010852	96.765000	19.328137	93.305000	0.010134	101.340000
Na 23	7.092066	1000.678769	86.307900	1028.897001	89.168100	997.036306	85.938700	0.486635	97.327000
Ni 60	4.627659	23.925612	97.405000	24.367601	99.645000	24.400158	99.810000	0.010887	108.870000
P 31	*6.305754*	*201.909314*	*98.665076*	*197.988409*	*94.690846*	*191.459092*	*88.072731*	*0.050000*	*100.000000*
Pb 208	1.622302	69.005525	165.415000	54.950671	94.185000	72.299724	182.110000	0.010186	101.860000
Sb 121	21.751599	13.167916	66.415000	20.271310	102.415000	13.301105	67.090000	0.010254	102.540000
Se 82	19.483375	18.659234	92.405000	19.889503	98.640000	18.678966	92.505000	0.009760	97.600000
Si 28	31.018125	257.465470	118.193000	167.342147	26.844000	258.013023	118.748000	0.048450	96.900000
Sn 120	2.976291	18.140292	89.505000	20.012826	98.995000	18.426401	90.955000	0.009992	99.920000
Sr 88	1.623295	29.858919	104.850000	28.386938	97.390000	29.855959	104.835000	0.010094	100.940000
Te 125	27.701928	19.136740	96.680000	19.857932	100.335000	19.624112	99.150000	0.010027	100.270000
Th 232	5.965048	23.850631	99.630000	23.410616	97.400000	24.985201	105.380000	0.010094	100.940000
Ti 47	11.844905	317.843331	860.865000	165.806038	90.340000	321.001381	876.870000	0.010288	102.880000
Tl 205	8.125912	18.225138	91.890000	19.615233	98.935000	19.037096	96.005000	0.010128	101.280000
U 238	23.224577	21.221389	89.415000	22.333268	95.050000	22.144830	94.095000	0.010009	100.090000
V 51	3.933288	28.559590	108.840000	26.503552	98.420000	28.618785	109.140000	0.010519	105.190000
W 184	0.570748	12.179361	59.825000	19.485004	96.850000	12.550316	61.705000	0.009989	99.890000
Zn 68	7.865572	64.923047	118.620000	*55.833267*	*72.552996*	*59.514941*	*91.211718*	*0.010000*	*100.000000*
Zr 90	7.108861	31.620955	109.555000	29.313339	97.860000	31.775848	110.340000	0.010087	100.870000

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Sample_ID	QC CCB	RINSE	L4094-2X	L4094-3X	L4094-4X	L4094-5X	L4094-6X	CCV	%recovery
Smpl_Wt	1.0000	1.0000	0.4916	0.5087	0.5045	0.5671	0.5116	1.0000	
Smpl_Vol	1	1	50	50	50	50	50	1	
mL used.	10.000	10.000	1.000	1.000	1.000	1.000	1.000	10.000	
Ag 107	*0.001786*	*0.001364*	*0.302043*	*0.043919*	*0.273569*	*0.231130*	*0.477289*	*0.010000*	*100.000000*
Al 27	0.000337	0.000429	2413.574044	1450.274228	*2729.231353*	*1992.908319*	*2839.647714*	*0.010000*	*100.000000*
As 75	-0.000002	-0.000004	1.661920	1.193238	1.825570	1.132075	1.551994	0.009641	96.410000
B 11	*0.001133*	*0.000783*	*-2.931083*	*-4.485764*	*-3.240741*	*-3.868907*	*-3.974009*	*0.050000*	*100.000000*
Ba 138	0.000014	0.000035	36.455452	29.824061	36.114965	44.298184	42.272283	0.010364	103.640000
Be 9	0.000008	0.000004	0.499390	0.261451	0.386521	0.345618	0.415364	0.009241	92.410000
Ca 43	**0.008167**	**0.007443**	**1312.759357**	**1394.069196**	**1528.460852**	**1374.301710**	**1732.014269**	**0.477673**	**95.534600**
Cd 114	0.000000	0.000000	1.786005	0.332219	0.767096	0.975137	1.644840	0.010059	100.590000
Co 59	-0.000004	-0.000004	2.184703	1.680755	1.774034	1.518251	1.750391	0.010852	108.520000
Cr 52	0.000042	0.000040	18.993084	9.558679	11.359762	14.284959	12.007428	0.010804	108.040000
Cu 63	-0.000001	0.000020	38.728641	22.790446	14.863231	17.785223	23.251564	0.010908	109.080000
Fe 57	*0.006217*	*0.006665*	*8962.982044*	*10036.641516*	*6151.134196*	*6760.352660*	*8495.526549*	*0.500000*	*98.039216*
Hg 202	0.000112	0.000124	0.658055	0.057991	0.126858	0.209840	0.291243	0.001001	100.100000
K 39	-0.001307	-0.002741	488.450976	373.705524	475.227948	307.944807	522.054339	0.489867	97.973400
Li 7	-0.000045	-0.000035	5.903173	5.478671	5.426165	5.424969	5.878616	0.009634	96.340000
Mg 24	-0.000013	0.000297	469.138527	644.875172	591.927651	394.296420	653.382525	0.482429	96.485800
Mn 55	0.000021	0.000021	266.145240	209.576371	178.770069	198.851173	203.835027	0.010862	108.620000
Mo 95	0.000045	0.000052	1.035395	0.945547	0.775025	0.998942	1.034011	0.010060	100.600000
Na 23	0.008866	0.010068	245.473963	128.398860	140.501487	121.904426	227.979867	0.460568	92.113600
Ni 60	0.000004	0.000008	11.104557	5.790250	4.847374	7.216540	7.212666	0.010933	109.330000
P 31	*-0.004259*	*-0.004836*	*82.486311*	*190.195241*	*196.317534*	*103.216988*	*187.858511*	*0.050000*	*100.000000*
Pb 208	0.000003	0.000014	31.678194	39.040692	133.201189	37.119556	110.941165	0.010084	100.840000
Sb 121	0.000061	0.000049	0.045769	0.033419	0.037661	0.028214	0.035184	0.010383	103.830000
Se 82	-0.000058	-0.000040	0.521766	0.242776	0.430129	0.307706	0.422205	0.009611	96.110000
Si 28	0.020990	0.021692	84.064280	93.070572	*91.772570*	*117.529710*	*151.814397*	*0.050000*	*100.000000*
Sn 120	0.000054	0.000037	0.471928	0.506192	0.533201	0.981308	0.596169	0.010043	100.430000
Sr 88	0.000003	0.000007	9.575875	7.868095	12.916749	6.220243	11.627248	0.009920	99.200000
Te 125	0.000150	0.000106	0.039666	0.035384	0.045590	0.027332	0.024433	0.010077	100.770000
Th 232	0.000010	0.000005	4.410090	3.560055	3.275520	2.722624	3.479281	0.010019	100.190000
Ti 47	0.000001	-0.000022	135.216640	140.970120	135.407334	215.463763	166.387803	0.010242	102.420000
Tl 205	0.000001	-0.000002	0.141375	0.068803	0.065411	0.150767	0.111415	0.009953	99.530000
U 238	-0.000003	-0.000003	4.610456	1.223707	2.519326	1.255510	3.976740	0.009792	97.920000
V 51	-0.000170	-0.000185	5.802482	6.644388	8.743310	5.921354	9.094996	0.010470	104.700000
W 184	0.000082	0.000051	0.811635	0.454099	0.278494	0.429378	0.348905	0.009738	97.380000
Zn 68	*0.000053*	*0.000161*	*38.201138*	*36.625506*	65.002973	36.699877	59.980453	0.010969	109.690000
Zr 90	0.000001	0.000002	8.228234	5.369569	7.638256	6.657556	8.365911	0.010043	100.430000

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Sample_ID	QC CCB	L4094-7X	L4094-8X	L4094-9X	L4146-1X	L4146-2X	L4146-3X	L4146-4X	L4146-5X
Smpl_Wt	1.0000	0.5110	0.4991	0.5106	0.6348	0.5912	0.6126	0.5930	0.5893
Smpl_Vol	1	50	50	50	50	50	50	50	50
mL used.	10.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Ag 107	*0.001292*	*0.608899*	*0.262621*	*0.371064*	*0.027016*	*0.060780*	*0.093645*	*0.036369*	*0.016103*
Al 27	*0.000336*	*3167.306203*	*4708.694844*	*2880.749797*	*4723.197280*	*8392.106565*	5787.583252	7549.786678	7785.793314
As 75	-0.000005	1.695695	2.114807	1.797885	1.503623	1.659337	2.646099	1.736931	2.326489
B 11	*0.000489*	*-2.793999*	*-2.284837*	*-2.424809*	*0.225835*	*0.534579*	1.209598	0.812816	0.761921
Ba 138	0.000014	56.519569	57.494490	41.201528	190.399338	179.336096	75.074274	193.881113	50.844222
Be 9	0.000009	0.560665	0.659187	0.537603	0.440296	0.678281	0.638263	0.654300	0.752588
Ca 43	**0.005943**	**5751.631115**	**2295.964737**	**1517.159224**	**17400.588374**	**21017.685217**	**10512.475514**	**28666.175379**	**6320.782284**
Cd 114	0.000000	3.553816	1.286315	2.439287	0.046471	0.056664	0.013059	0.086003	0.013575
Co 59	-0.000007	2.514677	2.139852	2.719350	2.620510	4.451116	3.415769	4.476391	4.789581
Cr 52	0.000091	14.725049	23.637548	21.862515	6.654852	7.933018	5.341985	8.337268	8.507551
Cu 63	0.000001	34.852250	19.819675	47.128868	3.464083	4.413058	2.929318	4.455312	3.711183
Fe 57	*0.010508*	*8644.626857*	*8030.505977*	*8423.253609*	*5233.146405*	*8197.943427*	7109.043421	9040.346543	10236.737655
Hg 202	0.000109	0.559687	0.489882	0.860752	0.001575	-0.002537	-0.009794	-0.006745	0.002545
K 39	0.005383	511.734834	800.358646	543.971798	1220.063800	1989.765731	1407.642834	1985.229342	2502.973019
Li 7	-0.000047	6.669276	8.221799	6.216216	8.848456	17.136333	15.117532	17.484823	20.649075
Mg 24	-0.000048	618.048924	780.613104	480.440658	2137.785129	4276.525710	3294.502122	4268.666948	4576.702019
Mn 55	0.000021	267.213307	123.926067	283.219741	111.586326	218.015054	173.931603	203.342327	173.973358
Mo 95	0.000035	0.920744	0.524945	0.901880	0.104757	0.064276	0.157525	0.096121	0.085695
Na 23	0.008176	271.618395	159.069325	280.742264	118.859483	106.014039	374.801665	138.796796	347.773630
Ni 60	0.000006	10.175147	6.475656	13.405797	4.667612	6.803112	4.878387	6.939292	7.194977
P 31	*-0.004828*	*257.624518*	*237.014877*	*89.373638*	*248.770427*	*338.891873*	*169.690382*	*301.017356*	*205.202964*
Pb 208	0.000005	183.502935	31.179122	29.086369	4.141462	7.186231	4.850637	6.949410	11.944680
Sb 121	0.000045	0.044031	0.039070	0.051900	0.015753	0.014378	0.012243	0.014334	0.008485
Se 82	-0.000019	0.517613	0.644159	0.591461	0.355230	0.471076	0.309337	0.465430	0.404717
Si 28	*0.022088*	*128.394736*	*121.542502*	*129.649570*	*160.604224*	*218.154903*	114.952661	288.191400	69.722552
Sn 120	0.000043	0.579256	0.602084	0.491579	0.174858	0.142084	0.191805	0.134064	0.079756
Sr 88	0.000003	13.102740	18.013424	11.951626	25.565532	45.533660	78.815704	48.731029	87.409639
Te 125	0.000115	0.051859	0.027049	0.030356	0.033081	0.021143	0.020405	0.020236	0.012727
Th 232	0.000014	4.575342	4.559207	4.242068	6.071991	8.079330	5.030199	8.223440	10.951977
Ti 47	0.000023	126.741683	145.885594	149.387975	109.530561	171.701624	111.081456	159.655987	78.306465
Tl 205	0.000000	0.163405	0.179323	0.178222	0.089792	0.190291	0.062847	0.187184	0.203631
U 238	-0.000003	4.804305	17.107794	4.582844	0.543478	0.748478	0.746001	0.692243	1.404208
V 51	-0.000156	7.502935	9.698457	6.309244	15.870353	22.222598	25.688051	21.736931	28.924996
W 184	0.000062	0.409980	0.743338	0.772620	0.104757	0.072733	0.045707	0.073356	0.059392
Zn 68	0.000087	77.255382	66.613905	46.513905	20.234720	29.647327	19.603330	28.988196	27.650602
Zr 90	0.000001	9.730920	11.493689	8.374461	8.662571	13.488667	10.022037	12.490725	10.038181

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UNDERLINED NUMBERS ARE NOT RELIABLE

Analysis date: T

Sample_ID	L4146-6X	L4146-7X	CCV	%recovery	QC CCB	L4146-8X	L4146-9X	L4146-10X	4146-10X50 SD
Smpl_Wt	0.6251	0.6044	1.0000		1.0000	0.6123	0.5601	0.5780	0.5780
Smpl_Vol	50	50	1		1	50	50	50	50
mL used.	1.000	1.000	10.000		10.000	1.000	1.000	1.000	0.200
Ag 107	*0.057272*	*-0.019982*	*0.010000*	*100.000000*	*0.001047*	*0.000000*	*-0.052367*	*-0.032835*	*-0.182831*
Al 27	7006.052632	5621.939113	0.010025	100.250000	0.000671	7824.879961	4297.291555	6101.039792	6592.889273
As 75	2.171653	1.752151	0.009623	96.230000	-0.000018	1.739343	2.162114	2.209343	2.058824
B 11	2.247640	1.700860	0.046061	92.122000	0.001141	0.327454	-1.770220	-0.617647	-11.401384
Ba 138	83.605023	215.723858	0.010408	104.080000	0.000016	176.305732	48.881450	59.898789	64.368512
Be 9	0.643097	0.514560	0.009562	95.620000	0.000003	0.721868	0.499911	0.621972	0.540657
Ca 43	**28737.480403**	**32994.205824**	**0.493926**	**98.785200**	**0.002988**	**33314.545974**	**14918.827888**	**13527.130623**	**14640.735294**
Cd 114	0.059990	0.078590	0.009979	99.790000	-0.000001	0.105341	0.021425	0.018166	0.021626
Co 59	3.476244	2.918597	0.010252	102.520000	-0.000006	3.853503	3.028031	3.256055	3.555363
Cr 52	8.188290	6.815850	0.010601	106.010000	0.000101	8.150416	4.802714	6.011246	6.643599
Cu 63	3.326668	4.207478	0.010352	103.520000	0.000000	4.826882	2.205856	2.674740	2.923875
Fe 57	8395.934251	6894.108206	0.511747	100.342549	-0.000874	8602.448146	5686.921086	7099.706747	7998.719723
Hg 202	-0.009598	-0.003309	0.001000	100.000000	0.000105	-0.009799	0.001785	-0.016436	-0.090830
K 39	1912.796353	1734.979318	0.521276	104.255200	0.000781	1995.286624	1242.562935	1632.897924	1725.047578
Li 7	16.930091	12.064030	0.009940	99.400000	-0.000067	17.420382	10.075879	13.752595	14.312284
Mg 24	3906.720525	3295.759431	0.509965	101.993000	0.000067	4484.254450	2773.940368	3795.166955	4094.952422
Mn 55	165.419133	136.810887	0.010335	103.350000	0.000017	164.171158	142.396001	159.781142	182.521626
Mo 95	0.128779	0.089345	0.009832	98.320000	0.000024	0.084109	0.113373	0.103806	0.121107
Na 23	119.243321	200.345797	0.518995	103.799000	0.009319	143.396211	206.407784	288.743945	339.593426
Ni 60	5.615102	4.972700	0.010346	103.460000	0.000004	6.469051	3.778790	4.897059	5.480104
P 31	*206.717815*	*272.234283*	*0.050000*	*100.000000*	*-0.004893*	*302.889552*	*211.013838*	*186.647009*	*192.850965*
Pb 208	6.202208	6.338518	0.010014	100.140000	0.000002	6.474767	9.199250	5.003460	4.653979
Sb 121	0.009598	0.009100	0.010479	104.790000	0.000026	0.013882	0.009820	0.009516	0.034602
Se 82	0.400736	0.377234	0.009490	94.900000	-0.000077	0.414013	0.316015	0.339965	-0.229239
Si 28	233.198688	225.939775	0.048920	97.840000	0.021720	108.397028	98.667202	166.502595	123.918685
Sn 120	0.113582	0.095136	0.010119	101.190000	0.000044	0.145354	0.099089	0.138408	0.194637
Sr 88	73.933771	69.763402	0.009883	98.830000	0.000003	49.578638	63.562757	83.543253	84.822664
Te 125	0.021597	0.014064	0.010227	102.270000	0.000123	0.037563	0.024103	0.022491	0.099481
Th 232	6.318989	7.295665	0.009887	98.870000	0.000031	6.849584	9.577754	6.400519	6.076990
Ti 47	121.538154	75.214262	0.010378	103.780000	-0.000024	149.491262	86.771112	109.647924	116.570069
Tl 205	0.089586	0.148081	0.009816	98.160000	0.000001	0.163319	0.108016	0.074394	0.047578
U 238	0.772676	0.877730	0.009583	95.830000	-0.000003	0.670423	1.220318	0.748270	0.692042
V 51	27.434810	18.173395	0.010253	102.530000	-0.000244	21.667483	16.464024	23.123702	24.009516
W 184	0.043993	0.066181	0.009944	99.440000	0.000040	0.068594	0.099089	0.031142	0.047578
Zn 68	23.028315	24.519358	0.010483	104.830000	0.000059	28.023845	16.218532	19.447232	20.683391
Zr 90	13.157095	8.641628	0.010362	103.620000	0.000015	13.120203	6.689877	9.694637	11.405709

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Sample_ID	%RPD	RINSE	K WG11554-1X	S WG11554-2X	TRUE	%recovery	RINSE	CCV	%recovery
Smpl_Wt		1.0000	0.5000	0.2593			1.0000	1.0000	
Smpl_Vol		1	50	50			1	1	
mL used.		10.000	1.000	1.000			10.000	10.000	
Ag 107	*139.100346*	*0.000659*	*0.168833*	*124.493307*	*207.000000*	*60.141694*	*0.005588*	*0.010000*	*100.000000*
Al 27	7.749366	0.000890	0.899000	4743.779406	6040.000000	78.539394	0.000668	0.009529	95.290000
As 75	7.053101	-0.000021	-0.022000	155.809873	184.000000	84.679279	-0.000010	0.009560	95.600000
B 11	179.444364	-0.001196	*-4.978165*	*48.857088*	*133.000000*	*36.734652*	*-0.001741*	*0.050000*	*100.000000*
Ba 138	7.193724	0.000041	0.060000	145.744312	148.000000	98.475886	0.000038	0.010507	105.070000
Be 9	13.988095	0.000004	0.002000	57.096028	69.500000	82.152558	0.000005	0.009282	92.820000
Ca 43	**7.906915**	**0.003951**	**7.086000**	**3090.138835**	**3310.000000**	**93.357669**	**0.004631**	**0.486670**	**97.334000**
Cd 114	17.391304	-0.000001	-0.001000	187.070960	219.000000	85.420530	0.000001	0.010036	100.360000
Co 59	8.788418	-0.000004	-0.002000	47.400694	70.600000	67.139793	-0.000004	0.010339	103.390000
Cr 52	9.993848	0.000090	0.136000	102.279213	117.000000	87.418131	0.000045	0.010579	105.790000
Cu 63	8.899876	0.000017	0.045000	81.777863	87.600000	93.353725	0.000017	0.010518	105.180000
Fe 57	11.908698	-0.001671	-1.931000	9329.949865	11800.000000	79.067372	-0.000084	0.518729	101.711569
Hg 202	138.709677	0.000104	-0.012000	18.962592	28.600000	66.302768	0.000152	0.001012	101.200000
K 39	5.488454	-0.002895	-3.575000	1766.025839	1820.000000	97.034387	-0.007282	0.500914	100.182800
Li 7	3.988534	-0.000091	-0.082000	6.766294			-0.000076	0.009654	96.540000
Mg 24	7.599010	0.000485	0.741000	1803.846895	1960.000000	92.033005	0.000372	0.531090	106.218000
Mn 55	13.286766	0.000024	0.025000	324.911300	382.000000	85.055314	0.000026	0.010675	106.750000
Mo 95	15.384615	0.000031	0.003000	75.007713	92.800000	80.827277	0.000095	0.009970	99.700000
Na 23	16.185407	0.010450	7.462000	225.391438	218.000000	103.390568	0.010379	0.512972	102.594400
Ni 60	11.237079	0.000008	0.040000	121.920555	142.000000	85.859546	0.000013	0.010401	104.010000
P 31	*3.269560*	*-0.004394*	*-8.882746*	*417.973612*			*-0.004824*	*0.050000*	*100.000000*
Pb 208	7.237549	0.000014	2.277000	98.224065	110.000000	89.294604	0.000013	0.010189	101.890000
Sb 121	113.725490	0.000027	0.009000	20.507135	243.000000	8.439150	0.000029	0.010531	105.310000
Se 82	1028.125000	-0.000106	-0.098000	84.639414	95.900000	88.257991	-0.000083	0.009601	96.010000
Si 28	29.325613	0.023808	6.501000	208.468955			0.022905	0.048203	96.406000
Sn 120	33.766234	0.000028	0.638000	26.575395	167.000000	15.913410	0.000053	0.010091	100.910000
Sr 88	1.519799	0.000009	0.014000	165.572696	182.000000	90.974009	0.000008	0.009944	99.440000
Te 125	126.241135	0.000036	0.013000	0.052063			0.000023	0.010016	100.160000
Th 232	5.185801	0.000040	0.015000	6.276514			0.000033	0.010015	100.150000
Ti 47	6.119889	0.000008	0.047000	267.192441	282.000000	94.749093	-0.000002	0.010281	102.810000
Tl 205	43.971631	-0.000005	-0.006000	138.787119	166.000000	83.606698	0.000000	0.010057	100.570000
U 238	7.807808	-0.000003	0.002000	1.382568			-0.000003	0.009808	98.080000
V 51	3.758764	-0.000294	-0.283000	68.123795	84.200000	80.907120	-0.000323	0.010152	101.520000
W 184	41.758242	0.000007	0.006000	0.470497			0.000007	0.009936	99.360000
Zn 68	6.160678	0.000174	8.083000	379.600848	414.000000	91.691026	0.000166	0.010524	105.240000
Zr 90	16.218432	0.000033	0.150000	6.203239			0.000008	0.010230	102.300000

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Analysis date: T

Sample_ID	QC CCB	L4106-2X	P WG11554-3X	%RPD	S WG11554-4X	%recovery	S WG11554-4X	%recovery	RINSE
Smpl_Wt	1.0000	0.6507	0.6432		0.6507		0.6507		1.0000
Smpl_Vol	1	50	50		50		50		1
mL used.	10.000	1.000	1.000		1.000		1.000		10.000
Ag 107	*0.001599*	*0.080365*	*0.005872*	*172.761612*	*-0.014925*	*-0.134469*	*2.859842*	*18.571642*	*0.004496*
Al 27	0.000334	3734.406024	3815.772907	2.155363	3988.145843	1680.010000	3872.825419	929.620000	0.001010
As 75	-0.000020	2.298294	2.500525	8.428340	17.319041	96.790000	17.216075	96.120000	-0.000016
B 11	*-0.002251*	*-2.827920*	*-3.257359*	*14.114024*	*-3.642459*	*-0.596502*	*80.086295*	*108.368099*	*-0.000581*
Ba 138	0.000014	103.878131	119.601479	14.071394	123.135854	40.500000	135.753804	122.605000	0.000049
Be 9	0.000007	0.161365	0.148569	8.256805	14.863224	95.770000	13.920393	89.635000	0.000003
Ca 43	**0.002410**	**32763.623790**	**28808.873163**	**12.845835**	**35540.725373**	**960.397900**	**28891.462271**	**95.062800**	**0.005318**
Cd 114	0.000000	0.048409	0.043234	11.293576	15.556324	100.950000	15.353465	99.630000	0.000003
Co 59	-0.000005	2.816198	3.816425	30.160819	17.086983	86.910000	18.096665	93.480000	-0.000001
Cr 52	0.000062	12.998310	12.002675	7.964763	29.137083	113.250000	26.404641	95.470000	0.000116
Cu 63	0.000000	4.364531	4.315586	1.127734	18.426310	92.450000	18.426310	92.450000	0.000019
Fe 57	-0.001852	5467.521131	5388.811142	1.450029	6155.508683	115.549400	6026.104964	98.708800	-0.001083
Hg 202	0.000112	0.000000	-0.005503	200.000000	-0.001537	0.250000	1.466113	95.750000	0.000123
K 39	-0.008123	466.289381	469.308598	0.645409	1242.251422	101.964300	1259.227755	104.173600	0.000257
Li 7	-0.000048	7.111572	6.809036	4.346594	7.650991	6.475000	20.566313	90.515000	-0.000105
Mg 24	0.000013	3152.699401	3184.228925	0.995104	4351.307822	161.202900	4007.760105	116.493600	0.000760
Mn 55	0.000022	97.076994	125.464073	25.511767	126.442293	24.725000	136.499155	90.165000	0.000036
Mo 95	0.000033	0.175196	0.176082	0.504593	12.755494	81.880000	15.159059	97.520000	0.000133
Na 23	0.009079	270.147533	320.617396	17.086276	1105.315814	103.059000	1148.238820	108.645000	0.011729
Ni 60	0.000003	7.561088	7.279113	3.800157	21.824958	95.715000	21.025050	90.510000	0.000017
P 31	*-0.004686*	*323.119677*	*340.088347*	*5.117148*	*362.272664*	*38.824004*	*417.197300*	*110.302926*	*-0.004206*
Pb 208	0.000001	6.876441	5.651138	19.561681	30.439527	162.125000	20.894421	100.015000	0.000015
Sb 121	0.000018	0.024589	0.014936	48.847539	1.398494	9.005000	16.449209	106.940000	0.000036
Se 82	-0.000105	0.188259	0.216172	13.803858	15.554787	99.840000	15.451053	99.165000	-0.000092
Si 28	0.020923	165.441832	152.200270	8.337410	144.493622	-5.575000	203.433226	71.129000	0.025698
Sn 120	0.000048	0.368834	0.326224	12.260813	0.236668	-0.535000	15.843707	101.020000	0.000080
Sr 88	0.000005	88.927309	88.445934	0.542782	100.179806	89.295000	102.938374	107.245000	0.000015
Te 125	0.000138	0.044567	0.022010	67.761804	0.026894	0.035000	15.626249	101.540000	0.000397
Th 232	0.000033	3.941140	6.122001	43.343536	27.441217	139.620000	21.502997	100.980000	0.000032
Ti 47	-0.000028	228.747503	239.757932	4.700235	181.341632	-345.030000	247.514215	85.555000	0.000036
Tl 205	0.000004	0.063009	0.053454	16.409631	22.074689	143.300000	15.717689	101.935000	0.000000
U 238	-0.000003	0.867527	1.017189	15.881634	22.995236	143.160000	16.414630	100.340000	-0.000001
V 51	-0.000322	20.431074	21.188035	3.637561	33.902720	85.835000	35.146765	93.930000	-0.000351
W 184	0.000035	0.240510	0.253904	5.418139	0.155986	-0.600000	15.985093	102.400000	0.000120
Zn 68	0.000071	15.794529	16.070645	1.733030	31.620562	103.535000	29.923160	92.490000	0.000184
Zr 90	0.000003	6.950976	7.479563	7.325955	6.672814	-4.155000	22.582603	99.370000	0.000008

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Sample_ID	L4140-1X	L4140-1X50 SD	%RPD	L4148-3X	L4150-1X	L4151-1X	CCV	%recovery	QC CCB
Smpl_Wt	0.3106	0.3106		0.6358	0.5995	0.6738	1.0000		1.0000
Smpl_Vol	50	50		50	50	50	1		1
mL used.	1.000	0.200		1.000	1.000	1.000	10.000		10.000
Ag 107	*0.160839*	*2.944051*	*179.279279*	*0.168761*	*0.040578*	*-0.030301*	*0.010000*	*100.000000*	*0.001343*
Al 27	2965.404057	3086.614617	4.005624	2638.651305	2578.809008	2210.890472	0.010011	100.110000	0.000380
As 75	10.948165	10.672891	2.546348	1.797735	1.420350	0.643366	0.009389	93.890000	-0.000029
B 11	*13.425042*	*-26.521357*	*610.040285*	*-4.896977*	*-4.526958*	*-5.105334*	*0.050000*	*100.000000*	*-0.003650*
Ba 138	3806.427882	3892.079845	2.225158	89.232463	53.263553	92.408727	0.010408	104.080000	0.000031
Be 9	0.160979	0.177077	9.523810	0.109311	0.136781	0.126150	0.009174	91.740000	0.000002
Ca 43	**7355.642305**	**7699.935608**	**4.573631**	**11205.530827**	**25309.169308**	**12304.215643**	**0.493569**	**98.713800**	**0.001984**
Cd 114	1.073728	1.118802	4.111601	0.033816	0.049208	0.039329	0.009929	99.290000	0.000000
Co 59	4.958146	5.038635	1.610306	3.528625	2.454545	2.466607	0.010369	103.690000	-0.000005
Cr 52	53.010303	55.223760	4.090132	57.377320	10.719766	11.146483	0.010583	105.830000	0.000077
Cu 63	532.310045	576.472956	7.966015	11.785153	3.773978	6.074503	0.010286	102.860000	0.000001
Fe 57	24967.527366	27001.996137	7.829469	9877.426864	5561.071726	6050.049718	0.519531	101.868824	-0.002852
Hg 202	21.497102	22.915325	6.386603	0.062913	0.006672	0.008905	0.000998	99.800000	0.000111
K 39	2117.593368	2159.489697	1.959108	462.893205	513.261051	386.874443	0.526776	105.355200	-0.002850
Li 7	6.160657	5.610109	9.354486	2.611670	2.830692	2.634313	0.009969	99.690000	-0.000115
Mg 24	*2626.757684*	*2802.634337*	*6.478687*	*2046.049162*	*3915.534080*	*2356.994507*	*0.500000*	*100.000000*	*0.000082*
Mn 55	207.860592	216.339343	3.997526	114.944951	135.130942	108.036509	0.010553	105.530000	0.000023
Mo 95	33.552801	34.191887	1.886748	7.824788	0.181818	0.846690	0.009892	98.920000	0.000033
Na 23	1655.170637	1806.841597	8.762012	450.220195	414.422018	320.131345	0.545958	109.191600	0.009737
Ni 60	22.419511	23.341919	4.031379	18.132274	7.561301	7.960819	0.010124	101.240000	0.000003
P 31	*366.944200*	*353.033343*	*3.864247*	*604.521626*	*546.778079*	*461.196746*	*0.050000*	*100.000000*	*-0.004296*
Pb 208	316.297489	321.184804	1.533318	11.138723	3.780651	5.661175	0.010047	100.470000	0.000004
Sb 121	0.301030	0.354153	16.216216	0.040107	0.011676	0.010389	0.010464	104.640000	0.000015
Se 82	0.218931	-0.539279	473.366834	0.316924	0.263553	0.140991	0.009416	94.160000	-0.000144
Si 28	225.959433	266.709594	16.542611	97.890060	107.833194	81.522707	0.049411	98.822000	0.021616
Sn 120	1.036703	1.142949	9.748892	0.624410	0.311927	0.347284	0.010172	101.720000	0.000046
Sr 88	336.651642	344.228912	2.225727	41.122208	37.314429	26.679282	0.009817	98.170000	0.000005
Te 125	0.167418	0.434643	88.770053	0.023592	0.025855	0.014841	0.009864	98.640000	0.000113
Th 232	2.261751	2.390534	5.536332	4.171909	4.819850	5.512021	0.010000	100.000000	0.000027
Ti 47	90.009659	94.269156	4.622884	202.821642	166.886572	149.948056	0.010263	102.630000	-0.000019
Tl 205	0.489375	0.458789	6.451613	0.036961	0.034195	0.065301	0.009836	98.360000	0.000007
U 238	0.482936	0.482936	0.000000	0.651935	0.650542	1.012912	0.009868	98.680000	-0.000003
V 51	9.273986	7.574050	20.179629	14.947310	14.066722	9.197833	0.010088	100.880000	-0.000375
W 184	6.653252	7.179652	7.610846	0.224127	0.026689	0.120214	0.009834	98.340000	0.000037
Zn 68	482.293947	492.989375	2.193297	17.032872	15.492911	22.876966	0.010534	105.340000	0.000070
Zr 90	7.823567	7.920155	1.226994	4.062598	4.743119	3.178985	0.009967	99.670000	0.000002

UNDERLINED NUMBERS ARE NOT RELIABLE

Chen C
Nov. 27, 2001

Sample/Batch Report

L Name: Elan
Computer Name: FGX5K
Sample File: C:\elandata\Sample\112701.sam
Report Date/Time: Tuesday, November 27, 2001 14:52:30

A/S Loc.	Batch ID	Sample ID	Description	Sample Type	Init. Quant.	Prep. Vol.	Aliquot Vol.	Diluted Vol.	Solids Ratio
9		BLANK							
10		ICPMS CAL. STD#1	00096-103-15						
11		ICPMS CAL. STD#2	00096-104-1						
12		ICPMS CAL. STD#3	00096-104-6						
13		ICV	00096-104-11						
2		ICB							
14		ICS A SPK X5							
1		RINSE							
15		LDR #2							
16		LDR #1							
17		LDR #3							
1		RINSE							
1		RINSE							
18		MBLK WG11556-1X							
19		LCS WG11556-2X							
1		RINSE							
3		CCV							
2		QC CCB							
20		L4094-1X							
21		DUP WG11556-3X							
22		MS WG11556-4X							
23		PDS WG11556-4X							
1		RINSE							
24		L4094-2X							
25		L4094-3X							
26		L4094-4X							
27		L4094-5X							
28		L4094-6X							
3		CCV							
2		QC CCB							
29		L4094-7X							
30		L4094-8X							
31		L4094-9X							
32		L4146-1X							
33		L4146-2X							
34		L4146-3X							
35		L4146-4X							
36		L4146-5X							
37		L4146-6X							
38		L4146-7X							
3		CCV							
2		QC CCB							
39		L4146-8X							
40		L4146-9X							
41		L4146-10X							
42		L4146-10X50 SD							
1		RINSE							
43		MBLK WG11554-1X							
44		LCS WG11554-2X							

(A) GL 11/27/01 — MBLK WG11556-1X, LCS WG11556-2X: X ~~100~~ 10

(A) GL 11/27/01 — L4094-1X, DUP WG11556-3X, MS WG11556-4X, PDS WG11556-4X: X ~~100~~ 10

L4094-2X, L4094-3X, L4094-4X, L4094-5X, L4094-6X: X10

L4094-7X, L4094-8X, L4094-9X, L4146-1X, L4146-2X, L4146-3X, L4146-4X, L4146-5X, L4146-6X, L4146-7X: X10

L4146-8X, L4146-9X, L4146-10X: X10

MBLK WG11554-1X, LCS WG11554-2X: X10

1	RINSE	
3	CCV	
2	QC CCB	
45	L4106-2X	X 10
46	DUP WG11554-3X	
47	MS WG11554-4X	
48	PDS WG11554-4X	
1	RINSE	
49	L4140-1X X 10	
50	L4140-1X50 SD	
51	L4148-3X	X 10
52	L4150-1X	
53	L4151-1X	
3	CCV	
2	QC CCB	

Quantitative Method Report

File Name: ISQuant2000b.mth
File Path: C:\elandata\Method\ISQuant2000b.mth

Timing Parameters

Sweeps/Reading: 40
Readings/Replicate: 1
Number of Replicates: 3
Tuning File: liquid.tun
Optimization File: liquid.dac
QC Enabled: No
Settling Time: Normal

	Analyte	Mass	Scan Mode	MCA Channels	Dwell Time	Integration Time
	Li	7.016	Peak Hopping	1	20.0 ms	800 ms
>	Li	6.015	Peak Hopping	1	20.0 ms	800 ms
	Be	9.012	Peak Hopping	1	20.0 ms	800 ms
	B	10.013	Peak Hopping	1	20.0 ms	800 ms
	B	11.009	Peak Hopping	1	20.0 ms	800 ms
	Si	27.977	Peak Hopping	1	10.0 ms	400 ms
	Al	26.982	Peak Hopping	1	10.0 ms	400 ms
	P	30.994	Peak Hopping	1	10.0 ms	400 ms
>	Sc	44.956	Peak Hopping	1	20.0 ms	800 ms
	Ti	46.952	Peak Hopping	1	20.0 ms	800 ms
	Ti	48.948	Peak Hopping	1	20.0 ms	800 ms
	V**	50.994	Peak Hopping	1	20.0 ms	800 ms
	V*	50.994	Peak Hopping	1	20.0 ms	800 ms
	V	50.944	Peak Hopping	1	20.0 ms	800 ms
	Cr*	51.941	Peak Hopping	1	20.0 ms	800 ms
	Cr	51.941	Peak Hopping	1	20.0 ms	800 ms
	Cr	52.941	Peak Hopping	1	20.0 ms	800 ms
	Mn	54.938	Peak Hopping	1	10.0 ms	400 ms
	Co	58.933	Peak Hopping	1	20.0 ms	800 ms
	Ni	59.933	Peak Hopping	1	20.0 ms	800 ms
	Ni	61.928	Peak Hopping	1	20.0 ms	800 ms
	Cu	62.930	Peak Hopping	1	20.0 ms	800 ms
	Cu	64.928	Peak Hopping	1	10.0 ms	400 ms
	Zn	65.926	Peak Hopping	1	10.0 ms	400 ms
	Zn	67.925	Peak Hopping	1	20.0 ms	800 ms
	Y	88.905	Peak Hopping	1	20.0 ms	800 ms
	As*	74.922	Peak Hopping	1	100.0 ms	4000 ms
	As	74.922	Peak Hopping	1	20.0 ms	800 ms
	Se	76.920	Peak Hopping	1	150.0 ms	6000 ms
	Se	81.917	Peak Hopping	1	150.0 ms	6000 ms
	Sr	85.909	Peak Hopping	1	20.0 ms	800 ms

	Sr	87.906	Peak Hopping	1	10.0 ms	400 ms
	Zr	89.904	Peak Hopping	1	10.0 ms	400 ms
	Zr	90.905	Peak Hopping	1	20.0 ms	800 ms
	Mo	94.906	Peak Hopping	1	20.0 ms	800 ms
	Mo	96.906	Peak Hopping	1	10.0 ms	400 ms
	Ag	106.905	Peak Hopping	1	10.0 ms	400 ms
	Ag	108.905	Peak Hopping	1	20.0 ms	800 ms
	Cd	110.904	Peak Hopping	1	20.0 ms	800 ms
	Cd	113.904	Peak Hopping	1	10.0 ms	400 ms
>	In	114.904	Peak Hopping	1	10.0 ms	400 ms
	Sn	117.902	Peak Hopping	1	20.0 ms	800 ms
	Sn	119.902	Peak Hopping	1	10.0 ms	400 ms
	Sb	120.904	Peak Hopping	1	20.0 ms	800 ms
	Te	124.904	Peak Hopping	1	20.0 ms	800 ms
	Ba	136.905	Peak Hopping	1	10.0 ms	400 ms
	Ba	137.905	Peak Hopping	1	20.0 ms	800 ms
	W	183.951	Peak Hopping	1	10.0 ms	400 ms
	Hg	200.970	Peak Hopping	1	20.0 ms	800 ms
	Hg*	201.971	Peak Hopping	1	100.0 ms	4000 ms
	Hg	201.971	Peak Hopping	1	100.0 ms	4000 ms
	Tb	158.925	Peak Hopping	1	20.0 ms	800 ms
	Ho	164.930	Peak Hopping	1	20.0 ms	800 ms
	Tl	204.975	Peak Hopping	1	10.0 ms	400 ms
	Pb	203.973	Peak Hopping	1	20.0 ms	800 ms
	Pb	207.977	Peak Hopping	1	10.0 ms	400 ms
>	Bi	208.980	Peak Hopping	1	10.0 ms	400 ms
	Th	232.038	Peak Hopping	1	20.0 ms	800 ms
	U	238.050	Peak Hopping	1	10.0 ms	400 ms
	Na	22.990	Peak Hopping	1	10.0 ms	400 ms
	Mg	23.985	Peak Hopping	1	20.0 ms	800 ms
	Mg	24.986	Peak Hopping	1	10.0 ms	400 ms
	K	38.964	Peak Hopping	1	10.0 ms	400 ms
	Ca	42.959	Peak Hopping	1	20.0 ms	800 ms
	Ca	43.956	Peak Hopping	1	20.0 ms	800 ms
>	Sc	44.956	Peak Hopping	1	20.0 ms	800 ms
	Fe*	56.935	Peak Hopping	1	20.0 ms	800 ms
	Fe	56.935	Peak Hopping	1	20.0 ms	800 ms
	Fe	53.940	Peak Hopping	1	10.0 ms	400 ms
	Kr	82.914	Peak Hopping	1	10.0 ms	400 ms
	Br	80.916	Peak Hopping	1	10.0 ms	400 ms
	Cl	34.969	Peak Hopping	1	10.0 ms	400 ms
	C	13.003	Peak Hopping	1	20.0 ms	800 ms

Signal Processing

Detector Mode: Dual
Measurement Units: Cps
AutoLens: On

Spectral Peak Processing:	Maximum
Signal Profile Processing:	Maximum
Blank Subtraction:	After Internal Standard
Baseline Readings:	0
Smoothing:	Yes, Factor 5

Equations

Analyte	Mass	Corrections
Ti	46.952	-0.0060*P31
V**	50.994	-3.127*(Cr53-0.1134*Cr52)
V*	50.994	-0.00216*Cl35
Cr*	51.941	-0.1696*C13
Cr	52.941	-0.000768*Cl35
Mn	54.938	-0.0039*Cl35
Co	58.933	-0.000764*Ca43
Ni	59.933	-0.00373*Ca43
Cu	62.930	-0.000042*P31-0.0135*Ti47
Cu	64.928	-0.0045*Ti49
Zn	65.926	-0.007*Ti47
Zn	67.925	-0.004*Ti49
As*	74.922	-3.0866*(Se77-0.8248*(Se82-1.00866*Kr83))
Se	81.917	- 0.40 * Kr 83
Sr	85.909	- 1.504348 * Kr 83
Cd	110.904	-0.00170 * Mo 95
Cd	113.904	- 0.026826 * Sn 118-0.00400 * Mo 97
In	114.904	- 0.014032 * Sn 118
Sn	119.902	- 0.013447 * Te 125
Ba	137.905	- 0.000903 * La 139 - 0.002825 * Ce 140
W	183.951	- 0.001242 * Os 189
Hg*	201.971	- 0.0079 * W 184
Pb	203.973	- 0.230074 * Hg 202
Pb	207.977	+1 * Pb206 + 1 * Pb207
Mg	23.985	-0.0150*C13
Mg	24.986	-0.0162*C13
Fe*	56.935	-0.081*Ca43
Fe	53.940	-0.028226 * (Cr 52-0.1696*C13)

Calibration Information

Analyte	Mass	Curve Type	Sample Units	Std Units	Std 1	Std 2	Std 3	Std 4
Li	7.016	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02	
Li	6.015	Linear Thru Zero	mg/L	mg/L				
Be	9.012	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02	
B	10.013	Linear Thru Zero	mg/L	mg/L	0.025	0.05	0.1	
B	11.009	Linear Thru Zero	mg/L	mg/L	0.025	0.05	0.1	
Si	27.977	Linear Thru Zero	mg/L	mg/L	0.025	0.05	0.1	
Al	26.982	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02	

P	30.994	Linear Thru Zero	mg/L	mg/L	0.025	0.05	0.1
Sc	44.956	Linear Thru Zero	mg/L	mg/L			
Ti	46.952	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
Ti	48.948	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
V**	50.994	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
V*	50.994	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
V	50.944	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
Cr*	51.941	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
Cr	51.941	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
Cr	52.941	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
Mn	54.938	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
Co	58.933	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
Ni	59.933	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
Ni	61.928	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
Cu	62.930	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
Cu	64.928	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
Zn	65.926	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
Zn	67.925	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
Y	88.905	Linear Thru Zero	mg/L	mg/L			
As*	74.922	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
As	74.922	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
Se	76.920	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
Se	81.917	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
Sr	85.909	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
Sr	87.906	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
Zr	89.904	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
Zr	90.905	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
Mo	94.906	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
Mo	96.906	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
Ag	106.905	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
Ag	108.905	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
Cd	110.904	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
Cd	113.904	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
In	114.904	Linear Thru Zero	mg/L	mg/L			
Sn	117.902	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
Sn	119.902	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
Sb	120.904	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
Te	124.904	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
Ba	136.905	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
Ba	137.905	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
W	183.951	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
Hg	200.970	Linear Thru Zero	mg/L	mg/L	0.0005	0.001	0.002
Hg*	201.971	Linear Thru Zero	mg/L	mg/L	0.0005	0.001	0.002
Hg	201.971	Linear Thru Zero	mg/L	mg/L	0.0005	0.001	0.002
Tb	158.925	Linear Thru Zero	mg/L	mg/L			
Ho	164.930	Linear Thru Zero	mg/L	mg/L			
Tl	204.975	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02

Pb	203.973	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
Pb	207.977	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
Bi	208.980	Linear Thru Zero	mg/L	mg/L			
Th	232.038	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
U	238.050	Linear Thru Zero	mg/L	mg/L	0.005	0.01	0.02
Na	22.990	Linear Thru Zero	mg/L	mg/L	0.25	0.5	1
Mg	23.985	Linear Thru Zero	mg/L	mg/L	0.25	0.5	1
Mg	24.986	Linear Thru Zero	mg/L	mg/L	0.25	0.5	1
K	38.964	Linear Thru Zero	mg/L	mg/L	0.25	0.5	1
Ca	42.959	Linear Thru Zero	mg/L	mg/L	0.25	0.5	1
Ca	43.956	Linear Thru Zero	mg/L	mg/L	0.25	0.5	1
Sc	44.956	Linear Thru Zero	mg/L	mg/L			
Fe*	56.935	Linear Thru Zero	mg/L	mg/L	0.25	0.5	1
Fe	56.935	Linear Thru Zero	mg/L	mg/L	0.25	0.5	1
Fe	53.940	Linear Thru Zero	mg/L	mg/L	0.25	0.5	1
Kr	82.914	Linear Thru Zero	mg/L	mg/L			
Br	80.916	Linear Thru Zero	mg/L	mg/L			
Cl	34.969	Linear Thru Zero	mg/L	mg/L			
C	13.003	Linear Thru Zero	mg/L	mg/L			

Analyte	Mass	Std 5	Std 6	Std 7	Std 8	Std 9	Std 10	Std 11	Std 12
Li	7.016								
Li	6.015								
Be	9.012								
B	10.013								
B	11.009								
Si	27.977								
Al	26.982								
P	30.994								
Sc	44.956								
Ti	46.952								
Ti	48.948								
V**	50.994								
V*	50.994								
V	50.944								
Cr*	51.941								
Cr	51.941								
Cr	52.941								
Mn	54.938								
Co	58.933								
Ni	59.933								
Ni	61.928								
Cu	62.930								
Cu	64.928								
Zn	65.926								
Zn	67.925								
Y	88.905								

As*	74.922
As	74.922
[illegible]	76.920
Se	81.917
Sr	85.909
Sr	87.906
Zr	89.904
Zr	90.905
Mo	94.906
Mo	96.906
Ag	106.905
Ag	108.905
Cd	110.904
Cd	113.904
In	114.904
Sn	117.902
Sn	119.902
Sb	120.904
Te	124.904
Ba	136.905
Ba	137.905
W	183.951
Hg	200.970
Hg*	201.971
Hg	201.971
Tb	158.925
Ho	164.930
Tl	204.975
Pb	203.973
Pb	207.977
Bi	208.980
Th	232.038
U	238.050
Na	22.990
Mg	23.985
Mg	24.986
K	38.964
Ca	42.959
Ca	43.956
Sc	44.956
Fe*	56.935
Fe	56.935
Fe	53.940
Kr	82.914
Br	80.916
Cl	34.969
C	13.003

	AS Pos	Sample Flush	Sample Flush	Read Delay	Read Delay	Wash	Wash
ank	9	30 s	-48 rpm	30 s	-24 rpm	60 s	-48 rpm
Standard 1	10	30 s	-48 rpm	30 s	-24 rpm	60 s	-48 rpm
Standard 2	11	30 s	-48 rpm	30 s	-24 rpm	60 s	-48 rpm
Standard 3	12	30 s	-48 rpm	30 s	-24 rpm	180 s	-48 rpm
Standard 4		30 s	-48 rpm	30 s	-24 rpm	60 s	-48 rpm
Standard 5		30 s	-48 rpm	30 s	-24 rpm	45 s	-48 rpm
Standard 6		30 s	-48 rpm	30 s	-24 rpm	45 s	-48 rpm
Standard 7		30 s	-48 rpm	30 s	-24 rpm	45 s	-48 rpm
Standard 8		30 s	-48 rpm	30 s	-24 rpm	45 s	-48 rpm
Standard 9		30 s	-48 rpm	30 s	-24 rpm	45 s	-48 rpm
Standard 10		30 s	-48 rpm	30 s	-24 rpm	45 s	-48 rpm
Standard 11		30 s	-48 rpm	30 s	-24 rpm	45 s	-48 rpm
Standard 12		30 s	-48 rpm	30 s	-24 rpm	45 s	-48 rpm
Standard 13		30 s	-48 rpm	30 s	-24 rpm	45 s	-48 rpm
Standard 14		30 s	-48 rpm	30 s	-24 rpm	45 s	-48 rpm
Standard 15		30 s	-48 rpm	30 s	-24 rpm	45 s	-48 rpm
Standard 16		30 s	-48 rpm	30 s	-24 rpm	45 s	-48 rpm
Standard 17		30 s	-48 rpm	30 s	-24 rpm	45 s	-48 rpm
Standard 18		30 s	-48 rpm	30 s	-24 rpm	45 s	-48 rpm
Standard 19		30 s	-48 rpm	30 s	-24 rpm	45 s	-48 rpm
Standard 20		30 s	-48 rpm	30 s	-24 rpm	45 s	-48 rpm
tandard 21		30 s	-48 rpm	30 s	-24 rpm	45 s	-48 rpm
Standard 22		30 s	-48 rpm	30 s	-24 rpm	45 s	-48 rpm
Standard 23		30 s	-48 rpm	30 s	-24 rpm	45 s	-48 rpm
Standard 24		30 s	-48 rpm	30 s	-24 rpm	45 s	-48 rpm
Standard 25		30 s	-48 rpm	30 s	-24 rpm	45 s	-48 rpm
Standard 26		30 s	-48 rpm	30 s	-24 rpm	45 s	-48 rpm
Standard 27		30 s	-48 rpm	30 s	-24 rpm	45 s	-48 rpm
Standard 28		30 s	-48 rpm	30 s	-24 rpm	45 s	-48 rpm
Standard 29		30 s	-48 rpm	30 s	-24 rpm	45 s	-48 rpm
Standard 30		30 s	-48 rpm	30 s	-24 rpm	45 s	-48 rpm

Reporting Options

Report Template for Printing:	isop2000.rop
Send to Printer:	Yes
Report Template for File:	isop2000.rop
Send to File:	Yes
Report Filename:	112701
Create NetCDF File:	No
Send to Serial Port:	No
Port:	COM1

Sampling Devices

Peristaltic Pump Control: Yes

Autosampler: AS-90/91
Autosampler Tray File: c:\elandata\Autosampler\as-90\as91f.try
Sampling Device Type: None
Dil. Factor: 10
Dil. to Vol. (mL): 10
1st Dil. Pos.: 1
Probe Purge Pos.: 10

FIAS Program

Step	Read	Time	Pump 1	Pump 2	Valve	A/S Loc.	Sw 2	Sw 3	Sw 4

Repeat Statement

HGA Program

Description:
Sample Volume: uL
Injection Temperature: C
Injection Speed:
Read delay: s
Closure delay: s
Modifier #1:
Modifier #2:

Step	Cell Temp	Ramp	Hold	Int. Flow	Gas Norm.	Gas Alt.	To Vent	To ICP	Read

Pipet Seq.	Mod#1	Mod#2	Sample	Start Step	Wash	Rep. From	End S Wash	Rep. To	# R

Daily Performance Report

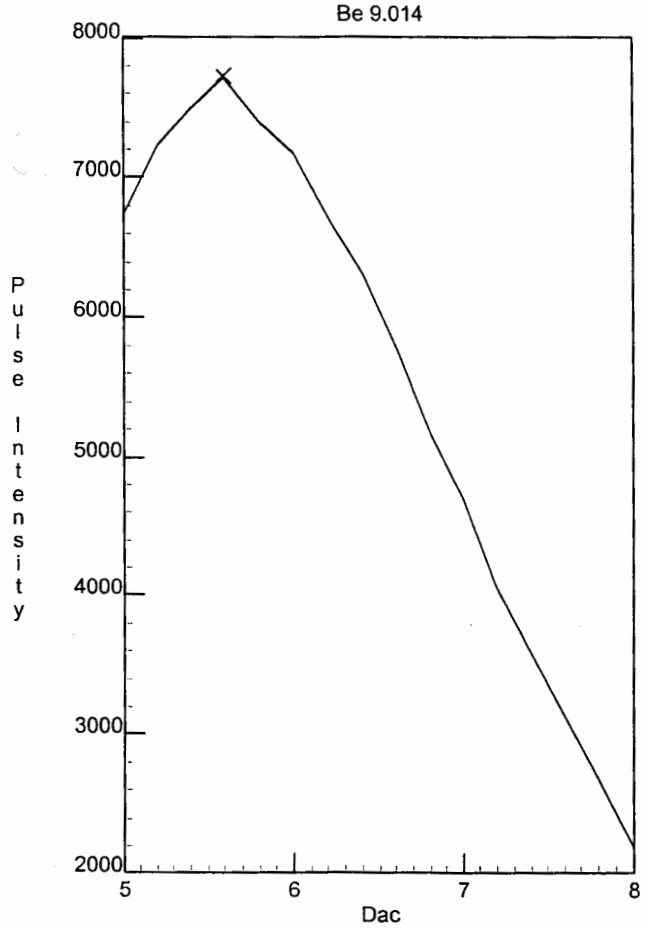
Sample ID: 0.82
ample Date/Time: Tuesday, November 27, 2001 15:23:36
Method File: c:\elandata\Method\liquid daily.mth
Dataset File: c:\elandata\Dataset\daily performance\0.82.357
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac
Number of Replicates: 6
Dual Detector Mode: Dual

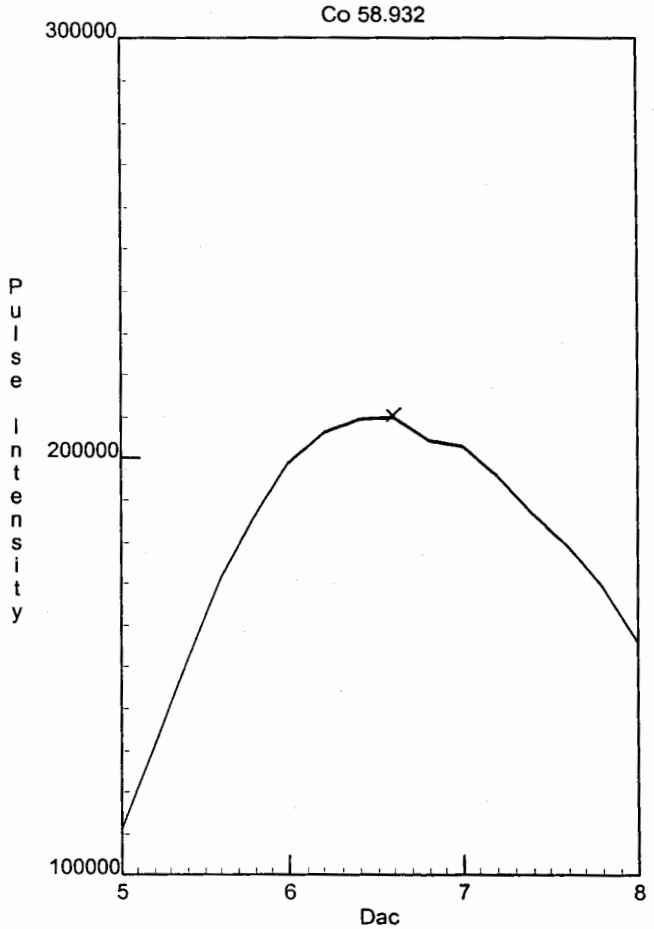
Summary

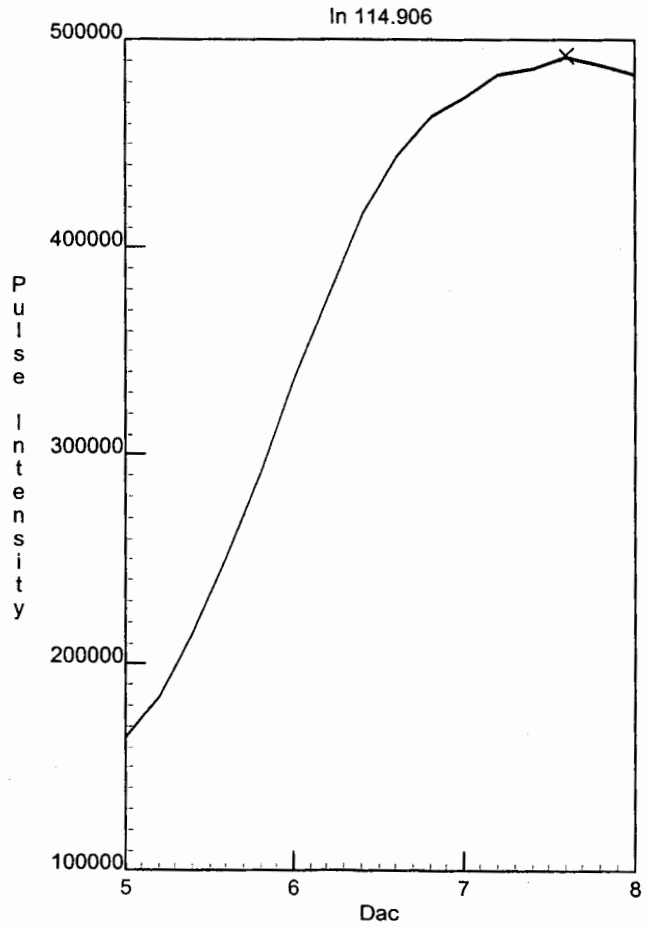
	Analyte	Mass	Net Intens. Mean	Net Intens. SD	Net Intens. RSD
	Mg	24	47166.038	553.368	1.173
	Rh	103	310156.051	2626.096	0.847
	Pb	208	189608.003	2831.741	1.493
⌈>	Ba	138	327741.750	2810.564	0.858
⌊	Ba++	69	0.015	0.000	0.589
⌈>	Ce	140	397576.027	3212.295	0.808
⌊	CeO	156	0.021	0.000	2.072
	Bkgd	220	4.500	1.206	26.810

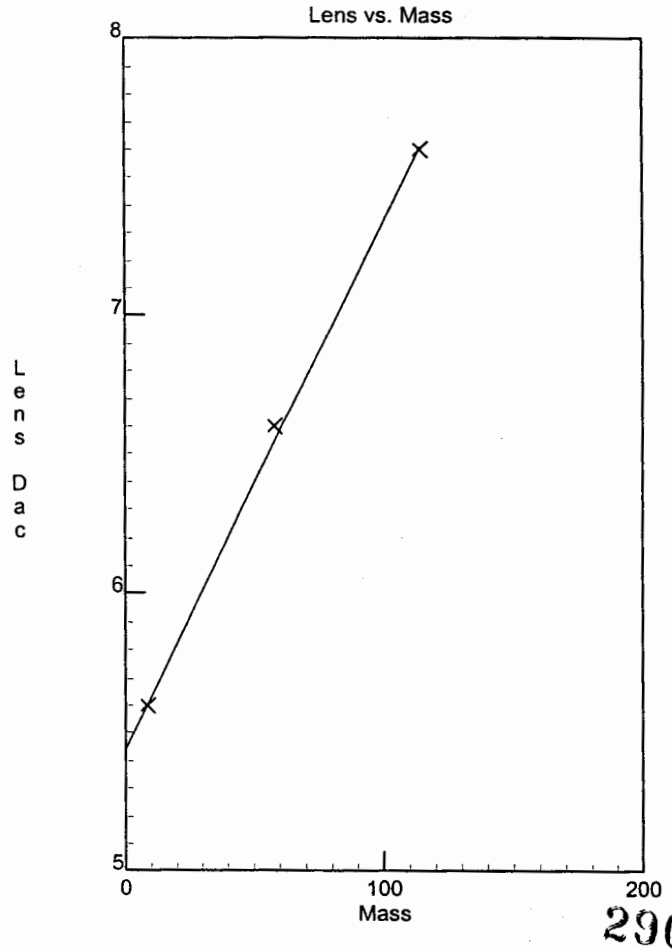
Dual Detector Gains

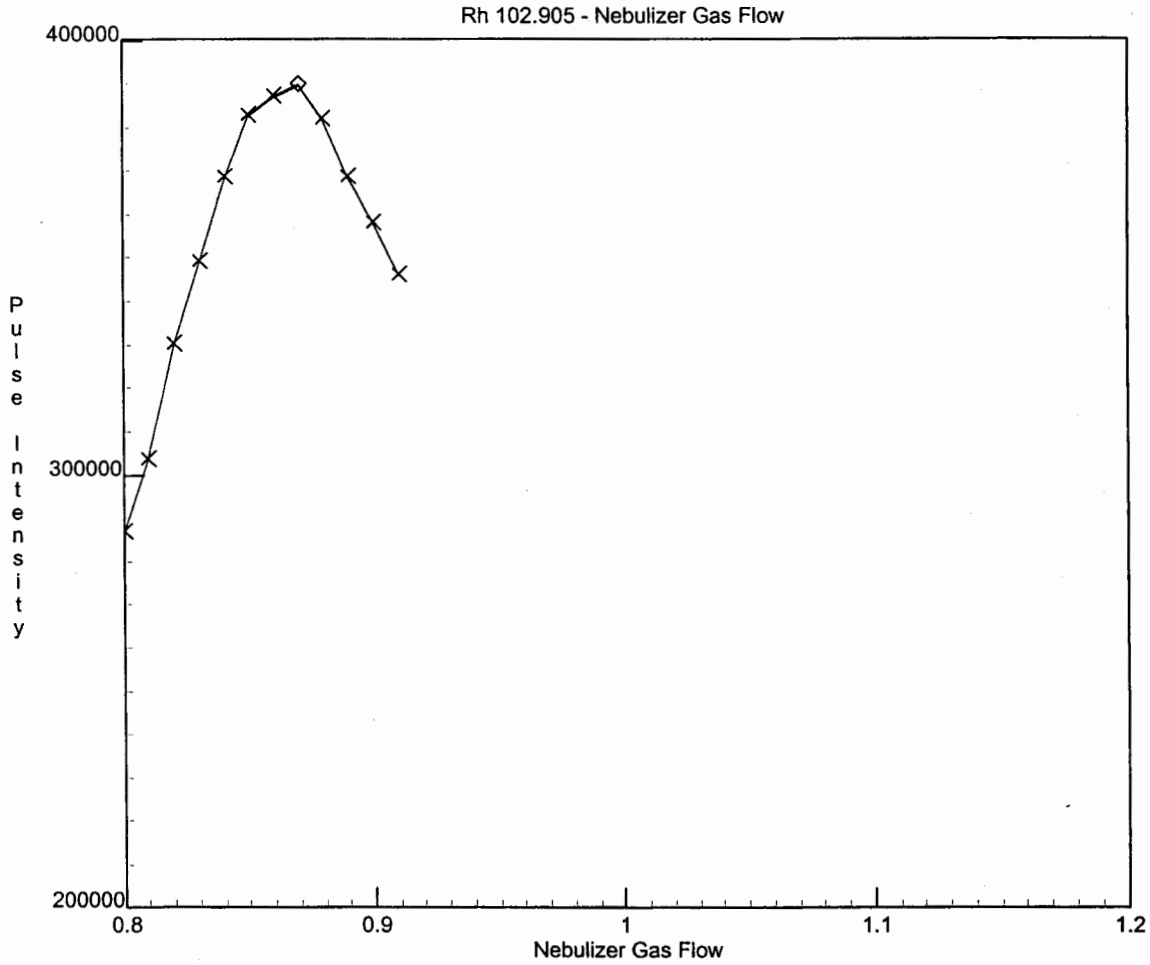
Mass	Gain
7	14445
9	14274
23	14264
24	13472
27	12869
28	14505
39	12135
44	12132
45	12043
48	11786
51	11390
52	11157
55	10660
57	10438
59	10009
60	9774
62	9649
65	9394
66	9541
75	9906
88	9776
89	10157
98	10123
114	9086
115	8789
121	9240
123	9174
137	9268
159	8721
205	7849
208	7942
209	7987
238	8012


Be 9.014
8000
7000
6000
5000
4000
3000
2000
Pulse Intensity
5
6
7
8
Dac


Co 58.932
300000
200000
100000
Pulse Intensity
5
6
7
8
Dac


In 114.906
500000
400000
300000
200000
100000
Pulse Intensity
5
6
7
8
Dac


Lens vs. Mass
8
7
6
5
Lens Dac
0
100
200
Mass


Rh 102.905 - Nebulizer Gas Flow
400000
300000
200000
Pulse Intensity
0.8
0.9
1
1.1
1.2
Nebulizer Gas Flow

ELAN 6000 ICP-MS ANALYSIS REPORT

ample ID: Blank
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 16:07:55
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\Blank.003
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7		1652	2.040			mg/L	
Li	6		18730	0.837			mg/L	
Be	9		2	86.603			mg/L	
B	10		1866	2.243			mg/L	
B	11		8409	0.677			mg/L	
Si	28		17772	1.515			mg/L	
Al	27		907	5.392			mg/L	
P	31		7189	1.534			mg/L	
Sc	45		262577	0.643			mg/L	
Ti	47		148	5.154			mg/L	
Ti	49		52	25.642			mg/L	
V**	51		1637	10.903			mg/L	
V*	51		6447	4.546			mg/L	
V	51		6936	3.255			mg/L	
Cr*	52		6349	1.631			mg/L	
Cr	52		7057	1.435			mg/L	
Cr	53		2327	1.779			mg/L	
Mn	55		184	20.987			mg/L	
Co	59		188	3.283			mg/L	
Ni	60		32	8.164			mg/L	
Ni	62		65	21.842			mg/L	
Cu	63		178	7.287			mg/L	
Cu	65		156	14.589			mg/L	
Zn	66		285	7.960			mg/L	
Zn	68		299	12.660			mg/L	
Y	89		655666	1.075			mg/L	
As*	75		-414	8.117			mg/L	
As	75		165	3.099			mg/L	
Se	77		185	3.319			mg/L	
Se	82		78	10.177			mg/L	
Sr	86		20	59.914			mg/L	
Sr	88		132	7.905			mg/L	
Zr	90		39	7.370			mg/L	
Zr	91		17	22.913			mg/L	
Mo	95		34	23.130			mg/L	
Mo	97		22	13.323			mg/L	
Ag	107		1821	3.364			mg/L	
Ag	109		1766	2.766			mg/L	

Cd	111	9	0.153	mg/L
Cd	114	17	30.387	mg/L
In	115	747751	0.816	mg/L
Sn	118	104	7.715	mg/L
Sn	120	94	31.731	mg/L
Sb	121	43	23.529	mg/L
Te	125	5	50.000	mg/L
Ba	137	55	4.545	mg/L
Ba	138	265	1.650	mg/L
W	184	247	7.071	mg/L
Hg	201	80	12.402	mg/L
Hg*	202	186	10.266	mg/L
Hg	202	188	10.097	mg/L
Tb	159	823967	1.068	mg/L
Ho	165	17	15.232	mg/L
Tl	205	256	3.949	mg/L
Pb	204	11	74.916	mg/L
Pb	208	505	7.621	mg/L
Bi	209	613899	0.950	mg/L
Th	232	165	3.472	mg/L
U	238	250	8.544	mg/L
Na	23	25091	1.748	mg/L
Mg	24	1548	1.109	mg/L
Mg	25	157	12.913	mg/L
K	39	915234	0.529	mg/L
Ca	43	255	2.704	mg/L
Ca	44	32958	1.464	mg/L
Sc	45	262577	0.643	mg/L
Fe*	57	10623	1.544	mg/L
Fe	57	10643	1.546	mg/L
Fe	54	27959	1.548	mg/L
Kr	83	132	5.709	mg/L
Br	81	20252	0.653	mg/L
Cl	35	156167	1.273	mg/L
C	13	4180	1.321	mg/L

ELAN 6000 ICP-MS ANALYSIS REPORT

ample ID: Standard 1
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 16:13:52
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\Standard 1.004
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	8446	2.391	0.360		mg/L	
Li	6	18730	18862	2.096	18862.361		mg/L	
Be	9	2	2691	2.731	0.143		mg/L	
B	10	1866	4973	1.477	0.164		mg/L	
B	11	8409	23080	1.515	0.775		mg/L	
Si	28	17772	108576	0.946	0.334		mg/L	
Al	27	907	38206	1.005	0.138		mg/L	
P	31	7189	18487	0.368	0.041		mg/L	
Sc	45	262577	270148	0.697	270147.978		mg/L	
Ti	47	148	4581	10.813	0.016		mg/L	
Ti	49	52	3380	1.473	0.012		mg/L	
V**	51	1637	57335	1.522	0.206		mg/L	
V*	51	6447	63330	0.545	0.210		mg/L	
V	51	6936	64235	0.453	0.211		mg/L	
Cr*	52	6349	55433	0.968	0.181		mg/L	
Cr	52	7057	56307	0.958	0.182		mg/L	
Cr	53	2327	8291	1.673	0.022		mg/L	
Mn	55	184	81609	0.682	0.301		mg/L	
Co	59	188	69418	0.696	0.256		mg/L	
Ni	60	32	14969	1.070	0.055		mg/L	
Ni	62	65	2367	2.753	0.009		mg/L	
Cu	63	178	36978	0.990	0.136		mg/L	
Cu	65	156	18780	1.297	0.069		mg/L	
Zn	66	285	12673	1.050	0.046		mg/L	
Zn	68	299	9461	0.977	0.034		mg/L	
Y	89	655666	682385	0.330	26719.111		mg/L	
As*	75	-414	14126	0.596	0.019		mg/L	
As	75	165	14529	0.599	0.018		mg/L	
Se	77	185	1399	1.088	0.002		mg/L	
Se	82	78	1613	0.747	0.002		mg/L	
Sr	86	20	17084	0.691	0.022		mg/L	
Sr	88	132	149403	0.522	0.192		mg/L	
Zr	90	39	80872	0.544	0.104		mg/L	
Zr	91	17	18053	1.307	0.023		mg/L	
Mo	95	34	23033	0.948	0.030		mg/L	
Mo	97	22	14730	2.545	0.019		mg/L	
Ag	107	1821	69751	3.080	0.087		mg/L	
Ag	109	1766	67232	2.084	0.084		mg/L	

Cd	111	9	17735	0.251	0.023	mg/L
Cd	114	17	41802	0.139	0.054	mg/L
In	115	747751	777886	0.089	777885.746	mg/L
Sn	118	104	47899	0.274	0.061	mg/L
Sn	120	94	66036	1.213	0.085	mg/L
Sb	121	43	54385	4.347	0.070	mg/L
Te	125	5	2965	9.221	0.004	mg/L
Ba	137	55	25573	2.201	0.033	mg/L
Ba	138	265	162568	1.294	0.209	mg/L
W	184	247	45946	2.123	0.074	mg/L
Hg	201	80	900	2.569	0.001	mg/L
Hg*	202	186	2052	4.517	0.003	mg/L
Hg	202	188	2415	3.996	0.004	mg/L
Tb	159	823967	847788	0.599	0.034	mg/L
Ho	165	17	25	10.585	0.000	mg/L
Tl	205	256	142693	1.398	0.231	mg/L
Pb	204	11	2461	1.942	0.004	mg/L
Pb	208	505	198135	1.073	0.321	mg/L
Bi	209	613899	617270	5.266	617269.554	mg/L
Th	232	165	228593	1.259	0.371	mg/L
U	238	250	248813	0.815	0.403	mg/L
Na	23	25091	1868888	0.501	6.823	mg/L
Mg	24	1548	1244264	1.919	4.600	mg/L
Mg	25	157	171866	1.254	0.636	mg/L
K	39	915234	3204549	0.308	8.377	mg/L
Ca	43	255	5444	1.431	0.019	mg/L
Ca	44	32958	116799	0.241	0.307	mg/L
Sc	45	262577	270148	0.697	270147.978	mg/L
Fe*	57	10623	94836	0.655	0.311	mg/L
Fe	57	10643	95277	0.648	0.312	mg/L
Fe	54	27959	222344	0.621	0.717	mg/L
Kr	83	132	123	9.391	-9.250	mg/L
Br	81	20252	21054	3.359	801.669	mg/L
Cl	35	156167	148782	0.645	-7384.333	mg/L
C	13	4180	5154	0.529	974.204	mg/L

ELAN 6000 ICP-MS ANALYSIS REPORT

ımple ID: Standard 2
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 16:19:49
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\Standard 2.005
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	15272	1.168	0.714	**0.009930**	mg/L	1.117
Li	6	18730	19038	1.667	19038.109		mg/L	
Be	9	2	5329	2.338	0.280	**0.009809**	mg/L	3.052
B	10	1866	8207	0.586	0.332	**0.050499**	mg/L	2.788
B	11	8409	37918	1.002	1.543	**0.049775**	mg/L	1.263
Si	28	17772	202881	2.039	0.667	**0.049862**	mg/L	1.656
Al	27	907	75484	0.678	0.270	**0.009776**	mg/L	1.392
P	31	7189	30071	2.554	0.081	**0.049601**	mg/L	2.889
Sc	45	262577	276284	0.760	276284.372		mg/L	
Ti	47	148	8769	0.375	0.031	**0.009512**	mg/L	0.817
Ti	49	52	6923	3.557	0.025	**0.010092**	mg/L	3.144
V**	51	1637	115667	0.853	0.412	**0.010010**	mg/L	0.746
V*	51	6447	121709	0.666	0.416	**0.009910**	mg/L	1.227
V	51	6936	123454	0.459	0.420	**0.009946**	mg/L	1.276
Cr*	52	6349	107271	0.643	0.364	**0.010057**	mg/L	0.221
Cr	52	7057	108186	0.644	0.365	**0.010044**	mg/L	0.225
Cr	53	2327	14189	1.334	0.043	**0.009734**	mg/L	2.540
Mn	55	184	164510	0.696	0.595	**0.009867**	mg/L	1.445
Co	59	188	140926	0.366	0.509	**0.009939**	mg/L	0.665
Ni	60	32	30634	1.186	0.111	**0.010016**	mg/L	0.780
Ni	62	65	4942	1.774	0.018	**0.010361**	mg/L	1.142
Cu	63	178	75272	0.179	0.272	**0.009977**	mg/L	0.587
Cu	65	156	38058	0.770	0.137	**0.009949**	mg/L	0.250
Zn	66	285	25744	1.392	0.092	**0.010049**	mg/L	2.044
Zn	68	299	19272	0.485	0.069	**0.010125**	mg/L	0.481
Y	89	655666	701777	0.488	46110.608		mg/L	
As*	75	-414	29521	0.545	0.037	**0.009885**	mg/L	0.148
As	75	165	29637	0.832	0.036	**0.009852**	mg/L	0.391
Se	77	185	2708	0.395	0.003	**0.009976**	mg/L	1.137
Se	82	78	3315	1.482	0.004	**0.010123**	mg/L	2.057
Sr	86	20	36241	0.960	0.045	**0.010192**	mg/L	1.355
Sr	88	132	311539	0.879	0.384	**0.010017**	mg/L	0.646
Zr	90	39	169260	0.485	0.209	**0.010052**	mg/L	0.272
Zr	91	17	37693	1.047	0.047	**0.010029**	mg/L	0.360
Mo	95	34	47156	0.441	0.058	**0.009838**	mg/L	0.357
Mo	97	22	29934	1.816	0.037	**0.009764**	mg/L	1.121
Ag	107	1821	141302	2.284	0.172	**0.009858**	mg/L	1.778
Ag	109	1766	137084	1.360	0.167	**0.009924**	mg/L	1.040

Cd	111	9	36628	0.722	0.045	**0.009919**	mg/L	0.722
Cd	114	17	85960	1.346	0.106	**0.009875**	mg/L	0.960
In	115	747751	810059	0.695	810059.461		mg/L	
Sn	118	104	101464	1.023	0.125	**0.010182**	mg/L	0.503
Sn	120	94	139464	0.364	0.172	**0.010148**	mg/L	0.348
Sb	121	43	117939	3.177	0.146	**0.010416**	mg/L	2.886
Te	125	5	6766	4.484	0.008	**0.010964**	mg/L	4.075
Ba	137	55	53382	0.532	0.066	**0.010034**	mg/L	0.817
Ba	138	265	344562	0.095	0.425	**0.010186**	mg/L	0.767
W	184	247	96145	1.162	0.150	**0.010125**	mg/L	2.073
Hg	201	80	1677	0.708	0.002	**0.000937**	mg/L	3.924
Hg*	202	186	3972	2.070	0.006	**0.000978**	mg/L	1.194
Hg	202	188	4731	1.923	0.007	**0.000983**	mg/L	1.340
Tb	159	823967	876498	0.639	0.030		mg/L	
Ho	165	17	19	16.413	0.000		mg/L	
Tl	205	256	292713	0.904	0.458	**0.009907**	mg/L	2.717
Pb	204	11	4961	3.273	0.008	**0.009744**	mg/L	3.882
Pb	208	505	402771	0.743	0.630	**0.009820**	mg/L	2.502
Bi	209	613899	639092	3.194	639092.215		mg/L	
Th	232	165	462515	0.152	0.724	**0.009767**	mg/L	3.148
U	238	250	499933	0.661	0.782	**0.009695**	mg/L	2.583
Na	23	25091	3179253	1.417	11.412	**0.418149**	mg/L	1.072
Mg	24	1548	2169276	0.156	7.846	**0.426413**	mg/L	0.672
Mg	25	157	344806	1.170	1.247	**0.490640**	mg/L	0.431
K	39	915234	5729955	1.728	17.253	**0.514913**	mg/L	1.631
Ca	43	255	10940	1.487	0.039	**0.503339**	mg/L	1.294
Ca	44	32958	204622	0.812	0.615	**0.501153**	mg/L	0.790
Sc	45	262577	276284	0.760	276284.372		mg/L	
Fe*	57	10623	179580	0.321	0.610	**0.490615**	mg/L	0.527
Fe	57	10643	180466	0.320	0.613	**0.490679**	mg/L	0.522
Fe	54	27959	420401	0.755	1.415	**0.493745**	mg/L	1.458
Kr	83	132	128	3.248	-4.250		mg/L	
Br	81	20252	22001	2.331	1748.697		mg/L	
Cl	35	156167	144488	0.996	-11679.085		mg/L	
C	13	4180	5399	0.837	1219.751		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

.mple ID: Standard 3
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 16:25:47
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\Standard 3.006
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	26851	1.383	1.351	**0.019723**	mg/L	0.838
Li	6	18730	18664	1.849	18663.654		mg/L	
Be	9	2	10296	1.556	0.552	**0.019911**	mg/L	1.565
B	10	1866	14147	0.628	0.659	**0.099883**	mg/L	2.714
B	11	8409	65088	1.124	3.039	**0.099615**	mg/L	2.385
Si	28	17772	394910	0.976	1.321	**0.099761**	mg/L	0.104
Al	27	907	151941	0.716	0.531	**0.019899**	mg/L	0.671
P	31	7189	54248	1.610	0.163	**0.100025**	mg/L	2.265
Sc	45	262577	284445	0.954	284444.782		mg/L	
Ti	47	148	17643	1.678	0.061	**0.019883**	mg/L	2.670
Ti	49	52	14171	2.240	0.050	**0.020000**	mg/L	3.075
V**	51	1637	235529	1.875	0.822	**0.019984**	mg/L	2.693
V*	51	6447	243927	1.503	0.833	**0.019998**	mg/L	2.273
V	51	6936	245723	0.801	0.838	**0.019976**	mg/L	1.209
Cr*	52	6349	207058	1.843	0.704	**0.019843**	mg/L	2.907
Cr	52	7057	207987	1.830	0.704	**0.019837**	mg/L	2.903
Cr	53	2327	26260	0.308	0.083	**0.019886**	mg/L	1.341
Mn	55	184	334028	0.340	1.174	**0.019923**	mg/L	1.292
Co	59	188	280079	0.818	0.984	**0.019827**	mg/L	0.753
Ni	60	32	61588	1.155	0.216	**0.019890**	mg/L	0.933
Ni	62	65	9731	1.695	0.034	**0.019852**	mg/L	1.855
Cu	63	178	149995	0.483	0.527	**0.019847**	mg/L	1.422
Cu	65	156	74595	0.855	0.262	**0.019767**	mg/L	0.347
Zn	66	285	50065	2.087	0.175	**0.019755**	mg/L	2.067
Zn	68	299	37961	0.905	0.132	**0.019837**	mg/L	1.494
Y	89	655666	709171	0.516	53504.684		mg/L	
As*	75	-414	59934	0.332	0.073	**0.019949**	mg/L	0.836
As	75	165	59569	0.489	0.072	**0.019948**	mg/L	0.643
Se	77	185	5257	0.690	0.006	**0.019959**	mg/L	0.550
Se	82	78	6599	0.853	0.008	**0.019974**	mg/L	1.433
Sr	86	20	72691	1.302	0.088	**0.019957**	mg/L	0.368
Sr	88	132	621142	1.083	0.755	**0.019912**	mg/L	0.739
Zr	90	39	335023	0.528	0.407	**0.019880**	mg/L	1.555
Zr	91	17	74921	0.646	0.091	**0.019899**	mg/L	1.617
Mo	95	34	94452	0.234	0.115	**0.019918**	mg/L	1.364
Mo	97	22	60027	0.921	0.073	**0.019916**	mg/L	0.349
Ag	107	1821	287576	0.546	0.347	**0.020028**	mg/L	1.275
Ag	109	1766	277059	0.704	0.334	**0.020001**	mg/L	0.560

Cd	111	9	73367	1.293	0.089	**0.019924**	mg/L	0.554
Cd	114	17	171778	1.282	0.209	**0.019909**	mg/L	0.375
In	115	747751	823025	1.124	823025.389		mg/L	
Sn	118	104	203229	0.364	0.247	**0.019951**	mg/L	0.887
Sn	120	94	281312	0.698	0.342	**0.019981**	mg/L	0.484
Sb	121	43	243360	2.119	0.296	**0.020111**	mg/L	1.094
Te	125	5	14044	4.640	0.017	**0.020185**	mg/L	3.574
Ba	137	55	107101	0.916	0.130	**0.019945**	mg/L	0.679
Ba	138	265	686830	0.628	0.834	**0.019928**	mg/L	0.504
W	184	247	188676	1.300	0.299	**0.019996**	mg/L	3.544
Hg	201	80	3188	2.144	0.005	**0.001988**	mg/L	2.934
Hg*	202	186	7491	0.406	0.012	**0.001988**	mg/L	3.734
Hg	202	188	8982	0.177	0.014	**0.001990**	mg/L	3.649
Tb	159	823967	886201	0.723	0.065		mg/L	
Ho	165	17	23	24.216	0.000		mg/L	
Tl	205	256	576305	0.538	0.915	**0.019985**	mg/L	2.866
Pb	204	11	9973	1.894	0.016	**0.020071**	mg/L	1.642
Pb	208	505	801432	0.242	1.272	**0.020029**	mg/L	3.228
Bi	209	613899	630223	3.345	630222.528		mg/L	
Th	232	165	920103	0.674	1.461	**0.020020**	mg/L	3.812
U	238	250	997140	0.302	1.583	**0.020026**	mg/L	3.392
Na	23	25091	6430953	1.908	22.512	**0.987420**	mg/L	1.037
Mg	24	1548	4439534	1.917	15.601	**0.990442**	mg/L	1.268
Mg	25	157	698953	0.838	2.457	**0.995406**	mg/L	0.165
K	39	915234	11000865	2.029	35.187	**1.005993**	mg/L	1.408
Ca	43	255	22555	0.296	0.078	**1.003586**	mg/L	0.697
Ca	44	32958	393835	1.504	1.259	**1.005598**	mg/L	1.649
Sc	45	262577	284445	0.954	284444.782		mg/L	
Fe*	57	10623	355820	0.811	1.211	**0.997419**	mg/L	1.660
Fe	57	10643	357647	0.806	1.217	**0.997451**	mg/L	1.655
Fe	54	27959	822178	1.123	2.784	**0.995446**	mg/L	1.509
Kr	83	132	136	2.792	3.167		mg/L	
Br	81	20252	23070	0.789	2817.761		mg/L	
Cl	35	156167	144684	1.837	-11482.781		mg/L	
C	13	4180	5480	1.380	1300.211		mg/L	

Calibration

Analyte	Mass	Curve Type	Report Unit	Slope	Intercept	Correlation Coefficient
Li	7	Linear Thru Zero	mg/L	68.477	0.000	0.999693
Li	6	Linear Thru Zero	mg/L			
Be	9	Linear Thru Zero	mg/L	27.705	0.000	0.999961
B	10	Linear Thru Zero	mg/L	6.593	0.000	0.999996
B	11	Linear Thru Zero	mg/L	30.510	0.000	0.999976
Si	28	Linear Thru Zero	mg/L	13.238	0.000	0.999991
Al	27	Linear Thru Zero	mg/L	26.671	0.000	0.999949
P	31	Linear Thru Zero	mg/L	1.633	0.000	0.999999
Sc	45	Linear Thru Zero	mg/L			
Ti	47	Linear Thru Zero	mg/L	3.092	0.000	0.999894
Ti	49	Linear Thru Zero	mg/L	2.482	0.000	0.999998
V**	51	Linear Thru Zero	mg/L	41.129	0.000	0.999999
V*	51	Linear Thru Zero	mg/L	41.660	0.000	0.999998
V	51	Linear Thru Zero	mg/L	41.926	0.000	0.999997
Cr*	52	Linear Thru Zero	mg/L	35.474	0.000	0.999900
Cr	52	Linear Thru Zero	mg/L	35.512	0.000	0.999893
Cr	53	Linear Thru Zero	mg/L	4.197	0.000	0.999934
Mn	55	Linear Thru Zero	mg/L	58.912	0.000	0.999973

Co	59	Linear Thru Zero	mg/L	49.627	0.000	0.999880
Ni	60	Linear Thru Zero	mg/L	10.880	0.000	0.999951
Ni	62	Linear Thru Zero	mg/L	1.711	0.000	0.999887
Cu	63	Linear Thru Zero	mg/L	26.538	0.000	0.999906
Cu	65	Linear Thru Zero	mg/L	13.237	0.000	0.999783
Zn	66	Linear Thru Zero	mg/L	8.855	0.000	0.999760
Zn	68	Linear Thru Zero	mg/L	6.671	0.000	0.999891
Y	89	Linear Thru Zero	mg/L			
As*	75	Linear Thru Zero	mg/L	3.678	0.000	0.999987
As	75	Linear Thru Zero	mg/L	3.617	0.000	0.999985
Se	77	Linear Thru Zero	mg/L	0.308	0.000	0.999993
Se	82	Linear Thru Zero	mg/L	0.396	0.000	0.999995
Sr	86	Linear Thru Zero	mg/L	4.424	0.000	0.999986
Sr	88	Linear Thru Zero	mg/L	37.894	0.000	0.999969
Zr	90	Linear Thru Zero	mg/L	20.476	0.000	0.999942
Zr	91	Linear Thru Zero	mg/L	4.574	0.000	0.999959
Mo	95	Linear Thru Zero	mg/L	5.760	0.000	0.999968
Mo	97	Linear Thru Zero	mg/L	3.661	0.000	0.999960
Ag	107	Linear Thru Zero	mg/L	17.326	0.000	0.999993
Ag	109	Linear Thru Zero	mg/L	16.714	0.000	0.999999
Cd	111	Linear Thru Zero	mg/L	4.474	0.000	0.999976
Cd	114	Linear Thru Zero	mg/L	10.483	0.000	0.999963
In	115	Linear Thru Zero	mg/L			
Sn	118	Linear Thru Zero	mg/L	12.370	0.000	0.999984
Sn	120	Linear Thru Zero	mg/L	17.101	0.000	0.999994
Sb	121	Linear Thru Zero	mg/L	14.699	0.000	0.999920
Te	125	Linear Thru Zero	mg/L	0.845	0.000	0.999719
Ba	137	Linear Thru Zero	mg/L	6.521	0.000	0.999988
Ba	138	Linear Thru Zero	mg/L	41.861	0.000	0.999972
W	184	Linear Thru Zero	mg/L	14.963	0.000	0.999997
Hg	201	Linear Thru Zero	mg/L	2.480	0.000	0.999853
Hg*	202	Linear Thru Zero	mg/L	5.831	0.000	0.999935
Hg	202	Linear Thru Zero	mg/L	7.013	0.000	0.999956
Tb	159	Linear Thru Zero	mg/L			
Ho	165	Linear Thru Zero	mg/L			
Tl	205	Linear Thru Zero	mg/L	45.764	0.000	0.999997
Pb	204	Linear Thru Zero	mg/L	0.788	0.000	0.999967
Pb	208	Linear Thru Zero	mg/L	63.497	0.000	0.999990
Bi	209	Linear Thru Zero	mg/L			
Th	232	Linear Thru Zero	mg/L	72.973	0.000	0.999988
U	238	Linear Thru Zero	mg/L	79.047	0.000	0.999979
Na	23	Linear Thru Zero	mg/L	22.799	0.000	0.999017
Mg	24	Linear Thru Zero	mg/L	15.752	0.000	0.999292
Mg	25	Linear Thru Zero	mg/L	2.468	0.000	0.999959
K	39	Linear Thru Zero	mg/L	34.978	0.000	0.999927
Ca	43	Linear Thru Zero	mg/L	0.078	0.000	0.999979
Ca	44	Linear Thru Zero	mg/L	1.252	0.000	0.999950
Sc	45	Linear Thru Zero	mg/L			
Fe*	57	Linear Thru Zero	mg/L	1.214	0.000	0.999982
Fe	57	Linear Thru Zero	mg/L	1.220	0.000	0.999983
Fe	54	Linear Thru Zero	mg/L	2.797	0.000	0.999964
Kr	83	Linear Thru Zero	mg/L			
Br	81	Linear Thru Zero	mg/L			
Cl	35	Linear Thru Zero	mg/L			
C	13	Linear Thru Zero	mg/L			

ELAN 6000 ICP-MS ANALYSIS REPORT

ımple ID: ICV
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 16:33:45
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\ICV.007
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	26518	0.764	1.351	**0.019734**	mg/L	1.887
Li	6	18730	18426	2.365	18426.133		mg/L	
Be	9	2	9816	1.200	0.533	**0.019228**	mg/L	1.151
B	10	1866	14165	0.223	0.669	**0.101529**	mg/L	2.865
B	11	8409	66156	1.058	3.142	**0.102997**	mg/L	2.285
Si	28	17772	399281	0.870	1.316	**0.099411**	mg/L	1.398
Al	27	907	165766	1.257	0.571	**0.021409**	mg/L	1.280
P	31	7189	55560	2.185	0.165	**0.101139**	mg/L	2.858
Sc	45	262577	288598	1.808	288598.159		mg/L	
Ti	47	148	17771	1.768	0.061	**0.019736**	mg/L	1.551
Ti	49	52	14128	0.713	0.049	**0.019652**	mg/L	1.535
V**	51	1637	231072	1.529	0.794	**0.019317**	mg/L	0.827
V*	51	6447	238773	1.277	0.803	**0.019272**	mg/L	1.122
V	51	6936	243232	2.275	0.816	**0.019471**	mg/L	0.992
Cr*	52	6349	207963	0.562	0.697	**0.019635**	mg/L	1.389
Cr	52	7057	208884	0.552	0.697	**0.019628**	mg/L	1.396
Cr	53	2327	26139	0.615	0.082	**0.019474**	mg/L	2.521
Mn	55	184	331246	1.582	1.147	**0.019472**	mg/L	1.331
Co	59	188	275944	1.206	0.956	**0.019254**	mg/L	0.951
Ni	60	32	59740	2.494	0.207	**0.019014**	mg/L	1.279
Ni	62	65	9363	1.647	0.032	**0.018819**	mg/L	2.145
Cu	63	178	146893	1.706	0.508	**0.019157**	mg/L	2.094
Cu	65	156	74314	1.505	0.257	**0.019410**	mg/L	1.048
Zn	66	285	49803	1.198	0.172	**0.019371**	mg/L	2.171
Zn	68	299	37695	0.671	0.129	**0.019413**	mg/L	1.498
Y	89	655666	724631	0.181	68964.981		mg/L	
As*	75	-414	59602	0.823	0.071	**0.019348**	mg/L	1.350
As	75	165	59329	0.672	0.070	**0.019370**	mg/L	1.249
Se	77	185	5245	0.943	0.006	**0.019396**	mg/L	1.530
Se	82	78	6551	1.584	0.008	**0.019323**	mg/L	2.032
Sr	86	20	74663	0.478	0.088	**0.019988**	mg/L	1.106
Sr	88	132	644584	0.524	0.763	**0.020148**	mg/L	0.905
Zr	90	39	344839	0.803	0.409	**0.019951**	mg/L	1.281
Zr	91	17	76505	0.627	0.091	**0.019811**	mg/L	1.244
Mo	95	34	94635	0.987	0.112	**0.019457**	mg/L	1.615
Mo	97	22	60130	1.891	0.071	**0.019453**	mg/L	2.295
Ag	107	1821	304753	1.388	0.359	**0.020699**	mg/L	1.883
Ag	109	1766	294870	0.986	0.347	**0.020761**	mg/L	1.406

Cd	111	9	73676	0.816	0.087	**0.019510**	mg/L	1.409
Cd	114	17	173409	0.890	0.205	**0.019596**	mg/L	0.677
In	115	747751	844083	0.624	844082.670		mg/L	
Sn	118	104	208786	1.391	0.247	**0.019986**	mg/L	1.829
Sn	120	94	287380	1.451	0.340	**0.019903**	mg/L	2.051
Sb	121	43	237629	4.572	0.282	**0.019152**	mg/L	5.028
Te	125	5	13233	2.983	0.016	**0.018551**	mg/L	3.424
Ba	137	55	111000	1.934	0.131	**0.020155**	mg/L	1.900
Ba	138	265	707912	0.613	0.838	**0.020027**	mg/L	1.056
W	184	247	192696	1.203	0.303	**0.020258**	mg/L	3.392
Hg	201	80	3107	1.605	0.005	**0.001920**	mg/L	3.012
Hg*	202	186	7401	3.369	0.011	**0.001946**	mg/L	1.202
Hg	202	188	8923	2.997	0.014	**0.001959**	mg/L	1.579
Tb	159	823967	910860	0.531	0.093		mg/L	
Ho	165	17	21	35.294	0.000		mg/L	
Tl	205	256	570619	0.848	0.898	**0.019633**	mg/L	3.707
Pb	204	11	9616	0.524	0.015	**0.019208**	mg/L	4.536
Pb	208	505	800800	0.416	1.261	**0.019857**	mg/L	4.147
Bi	209	613899	635507	4.462	635506.810		mg/L	
Th	232	165	914458	0.789	1.440	**0.019738**	mg/L	3.805
U	238	250	978134	1.103	1.540	**0.019486**	mg/L	3.554
Na	23	25091	6596978	3.622	22.760	**0.998297**	mg/L	2.411
Mg	24	1548	4573996	2.003	15.844	**1.005850**	mg/L	1.496
Mg	25	157	720616	2.248	2.496	**1.011460**	mg/L	1.047
K	39	915234	11286497	2.106	35.624	**1.018465**	mg/L	1.553
Ca	43	255	23384	2.733	0.080	**1.025643**	mg/L	1.575
Ca	44	32958	406881	1.986	1.284	**1.025734**	mg/L	0.489
Sc	45	262577	288598	1.808	288598.159		mg/L	
Fe*	57	10623	356047	1.734	1.193	**0.983153**	mg/L	0.488
Fe	57	10643	357941	1.739	1.200	**0.983373**	mg/L	0.493
Fe	54	27959	819590	1.297	2.734	**0.977379**	mg/L	0.787
Kr	83	132	139	6.854	6.250		mg/L	
Br	81	20252	24210	1.107	3957.953		mg/L	
Cl	35	156167	139460	1.423	-16706.312		mg/L	
C	13	4180	5429	2.697	1249.351		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

ample ID: ICB
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 16:50:43
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\ICB.008
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	1548	2.627	0.002	**0.000025**	mg/L	85.506
Li	6	18730	17225	1.552	17225.242		mg/L	
Be	9	2	3	65.465	0.000	**0.000003**	mg/L	135.808
B	10	1866	1940	3.185	0.013	**0.001974**	mg/L	26.829
B	11	8409	9185	1.541	0.084	**0.002763**	mg/L	4.008
Si	28	17772	97573	1.245	0.284	**0.021468**	mg/L	1.240
Al	27	907	3482	41.018	0.009	**0.000342**	mg/L	57.101
P	31	7189	6740	2.656	-0.003	**-0.001883**	mg/L	17.630
Sc	45	262577	277286	0.559	277286.479		mg/L	
Ti	47	148	165	13.056	0.000	**0.000010**	mg/L	241.654
Ti	49	52	56	3.849	0.000	**0.000002**	mg/L	109.917
V**	51	1637	1903	5.106	0.001	**0.000015**	mg/L	58.268
V*	51	6447	6066	4.765	-0.003	**-0.000064**	mg/L	38.087
V	51	6936	6389	3.652	-0.003	**-0.000080**	mg/L	24.151
Cr*	52	6349	6543	0.802	-0.001	**-0.000016**	mg/L	48.530
Cr	52	7057	7455	0.488	0.000	**0.000000**	mg/L	3178.283
Cr	53	2327	2167	3.324	-0.001	**-0.000249**	mg/L	23.307
Mn	55	184	479	16.212	0.001	**0.000017**	mg/L	28.124
Co	59	188	176	3.925	-0.000	**-0.000002**	mg/L	31.338
Ni	60	32	36	42.238	0.000	**0.000001**	mg/L	565.529
Ni	62	65	73	2.619	0.000	**0.000009**	mg/L	36.472
Cu	63	178	192	4.186	0.000	**0.000000**	mg/L	274.700
Cu	65	156	147	7.407	-0.000	**-0.000005**	mg/L	68.503
Zn	66	285	416	3.031	0.000	**0.000047**	mg/L	12.881
Zn	68	299	381	1.149	0.000	**0.000036**	mg/L	3.672
Y	89	655666	706940	0.434	51274.226		mg/L	
As*	75	-414	-432	6.560	0.000	**0.000008**	mg/L	135.097
As	75	165	166	6.046	-0.000	**-0.000005**	mg/L	68.518
Se	77	185	197	3.459	-0.000	**-0.000028**	mg/L	115.641
Se	82	78	76	7.932	-0.000	**-0.000028**	mg/L	59.090
Sr	86	20	27	44.390	0.000	**0.000001**	mg/L	233.869
Sr	88	132	223	7.785	0.000	**0.000002**	mg/L	20.079
Zr	90	39	58	10.786	0.000	**0.000001**	mg/L	38.732
Zr	91	17	16	31.906	-0.000	**-0.000001**	mg/L	203.861
Mo	95	34	128	9.206	0.000	**0.000019**	mg/L	12.426
Mo	97	22	87	19.207	0.000	**0.000021**	mg/L	26.296
Ag	107	1821	2893	5.420	0.001	**0.000063**	mg/L	15.679
Ag	109	1766	2882	0.254	0.001	**0.000069**	mg/L	3.081

Cd	111	9	13	36.057	0.000	**0.000001**	mg/L	134.443
Cd	114	17	11	40.428	-0.000	**-0.000001**	mg/L	59.079
In	115	747751	821893	0.756	821892.571		mg/L	
Sn	118	104	443	13.655	0.000	**0.000032**	mg/L	18.676
Sn	120	94	615	6.652	0.001	**0.000036**	mg/L	7.064
Sb	121	43	691	1.657	0.001	**0.000053**	mg/L	0.983
Te	125	5	38	34.641	0.000	**0.000046**	mg/L	39.627
Ba	137	55	106	17.730	0.000	**0.000008**	mg/L	39.682
Ba	138	265	698	11.688	0.000	**0.000012**	mg/L	21.094
W	184	247	697	4.544	0.001	**0.000051**	mg/L	18.744
Hg	201	80	242	6.384	0.000	**0.000109**	mg/L	13.372
Hg*	202	186	570	3.967	0.001	**0.000110**	mg/L	5.196
Hg	202	188	575	3.887	0.001	**0.000093**	mg/L	5.318
Tb	159	823967	879663	1.418	0.120		mg/L	
Ho	165	17	20	37.401	0.000		mg/L	
Tl	205	256	192	6.164	-0.000	**-0.000002**	mg/L	15.702
Pb	204	11	3	151.225	-0.000	**-0.000015**	mg/L	80.346
Pb	208	505	635	6.481	0.000	**0.000004**	mg/L	54.173
Bi	209	613899	603391	7.345	603390.857		mg/L	
Th	232	165	494	6.549	0.001	**0.000008**	mg/L	19.648
U	238	250	75	15.275	-0.000	**-0.000004**	mg/L	10.218
Na	23	25091	93731	0.594	0.242	**0.010636**	mg/L	1.014
Mg	24	1548	1637	2.819	0.000	**0.000001**	mg/L	1795.132
Mg	25	157	144	16.165	-0.000	**-0.000033**	mg/L	100.283
K	39	915234	962703	0.788	-0.014	**-0.000393**	mg/L	60.503
Ca	43	255	270	5.782	0.000	**0.000055**	mg/L	1382.411
Ca	44	32958	34255	1.522	-0.002	**-0.001580**	mg/L	88.424
Sc	45	262577	277286	0.559	277286.479		mg/L	
Fe*	57	10623	10304	1.410	-0.003	**-0.002714**	mg/L	15.473
Fe	57	10643	10326	1.415	-0.003	**-0.002699**	mg/L	15.599
Fe	54	27959	28766	1.066	-0.003	**-0.000978**	mg/L	28.577
Kr	83	132	119	4.432	-13.500		mg/L	
Br	81	20252	22651	4.300	2399.336		mg/L	
Cl	35	156167	118145	3.785	-38021.445		mg/L	
C	13	4180	5378	2.122	1198.490		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

ample ID: ICS A SPK X5
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 16:56:42
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\ICS A SPK X5.009
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	28185	1.071	1.243	**0.018156**	mg/L	0.963
Li	6	18730	21169	0.870	21168.633		mg/L	
Be	9	2	8768	1.088	0.414	**0.014949**	mg/L	1.944
B	10	1866	12173	0.994	0.475	**0.072105**	mg/L	0.782
B	11	8409	53123	1.715	2.061	**0.067548**	mg/L	3.006
Si	28	17772	487285	4.054	2.259	**0.170620**	mg/L	2.675
Al	27	907	426470657	4.010	2036.137	**76.342869**	mg/L	2.736
P	31	7189	23400965	2.633	111.711	**68.405397**	mg/L	1.371
Sc	45	262577	209435	2.486	209435.475		mg/L	
Ti	47	148	1340290	1.761	6.400	**2.069987**	mg/L	1.538
Ti	49	52	1108762	1.989	5.295	**2.133593**	mg/L	1.360
V**	51	1637	185400	1.214	0.879	**0.021377**	mg/L	1.658
V*	51	6447	190323	1.750	0.884	**0.021229**	mg/L	2.129
V	51	6936	221883	1.589	1.033	**0.024643**	mg/L	0.941
Cr*	52	6349	173977	1.267	0.807	**0.022742**	mg/L	1.819
Cr	52	7057	174839	1.266	0.808	**0.022757**	mg/L	1.830
Cr	53	2327	20324	3.291	0.088	**0.021015**	mg/L	3.813
Mn	55	184	258511	1.708	1.234	**0.020943**	mg/L	0.927
Co	59	188	246514	1.793	1.177	**0.023709**	mg/L	2.122
Ni	60	32	50847	2.633	0.243	**0.022307**	mg/L	2.510
Ni	62	65	13739	1.695	0.065	**0.038208**	mg/L	2.660
Cu	63	178	115284	1.213	0.550	**0.020724**	mg/L	2.613
Cu	65	156	66610	1.692	0.318	**0.023986**	mg/L	1.148
Zn	66	285	39381	2.916	0.187	**0.021124**	mg/L	4.295
Zn	68	299	27698	1.138	0.131	**0.019663**	mg/L	2.803
Y	89	655666	634996	0.934	-20670.379		mg/L	
As*	75	-414	49823	0.236	0.067	**0.018244**	mg/L	1.337
As	75	165	53672	0.181	0.071	**0.019758**	mg/L	1.259
Se	77	185	5248	0.698	0.007	**0.021981**	mg/L	1.025
Se	82	78	5173	0.408	0.007	**0.017176**	mg/L	1.211
Sr	86	20	75341	0.685	0.101	**0.022740**	mg/L	1.128
Sr	88	132	649456	0.721	0.867	**0.022887**	mg/L	0.528
Zr	90	39	308361	1.248	0.412	**0.020112**	mg/L	0.717
Zr	91	17	68108	0.902	0.091	**0.019883**	mg/L	0.247
Mo	95	34	7980797	0.702	10.661	**1.850800**	mg/L	1.825
Mo	97	22	5074718	0.790	6.779	**1.851799**	mg/L	1.912
Ag	107	1821	210079	6.303	0.278	**0.016063**	mg/L	7.368
Ag	109	1766	202682	6.072	0.268	**0.016064**	mg/L	7.093

Cd	111	9	61798	2.306	0.083	**0.018446**	mg/L	1.248
Cd	114	17	147222	1.763	0.197	**0.018757**	mg/L	1.550
In	115	747751	748702	1.133	748701.859		mg/L	
Sn	118	104	193312	1.289	0.258	**0.020861**	mg/L	0.169
Sn	120	94	265697	1.113	0.355	**0.020745**	mg/L	0.210
Sb	121	43	243253	1.794	0.325	**0.022105**	mg/L	2.808
Te	125	5	9960	2.543	0.013	**0.015742**	mg/L	3.509
Ba	137	55	101769	0.869	0.136	**0.020835**	mg/L	1.138
Ba	138	265	649530	0.656	0.867	**0.020717**	mg/L	0.818
W	184	247	184309	1.081	0.313	**0.020918**	mg/L	1.739
Hg	201	80	2635	1.673	0.004	**0.001754**	mg/L	2.479
Hg*	202	186	5971	1.469	0.010	**0.001689**	mg/L	1.973
Hg	202	188	7427	1.102	0.012	**0.001757**	mg/L	1.713
Tb	159	823967	800651	0.376	0.019		mg/L	
Ho	165	17	85	82.737	0.000		mg/L	
Tl	205	256	551615	0.810	0.938	**0.020486**	mg/L	1.431
Pb	204	11	9184	2.339	0.016	**0.019798**	mg/L	2.536
Pb	208	505	745608	0.201	1.267	**0.019953**	mg/L	0.938
Bi	209	613899	588156	0.810	588156.300		mg/L	
Th	232	165	864036	0.282	1.469	**0.020129**	mg/L	0.546
U	238	250	950324	0.442	1.615	**0.020436**	mg/L	1.034
Na	23	25091	S	S	S	**S**	mg/L	S
Mg	24	1548	291115563	3.572	1389.956	**88.241224**	mg/L	2.355
Mg	25	157	39635185	3.787	189.234	**76.674640**	mg/L	2.413
K	39	915234	S	S	S	**S**	mg/L	S
Ca	43	255	1547257	2.138	7.387	**94.648896**	mg/L	0.443
Ca	44	32958	23670810	0.305	112.940	**90.201274**	mg/L	2.361
Sc	45	262577	209435	2.486	209435.475		mg/L	
Fe*	57	10623	26353289	0.562	125.852	**103.691206**	mg/L	3.015
Fe	57	10643	26478617	0.549	126.451	**103.644351**	mg/L	3.002
Fe	54	27959	58226597	0.758	278.027	**99.405436**	mg/L	2.624
Kr	83	132	530	2.306	397.346		mg/L	
Br	81	20252	33279	2.298	13026.480		mg/L	
Cl	35	156167	13951131	0.489	13794964.285		mg/L	
C	13	4180	5078	1.500	898.332		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

ımple ID: RINSE
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 17:04:41
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\RINSE.010
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	1720	0.759	-0.003	**-0.000042**	mg/L	9.146
Li	6	18730	20168	0.993	20168.235		mg/L	
Be	9	2	3	50.000	0.000	**0.000001**	mg/L	175.960
B	10	1866	1947	1.436	-0.003	**-0.000469**	mg/L	50.586
B	11	8409	8874	2.340	-0.009	**-0.000295**	mg/L	66.615
Si	28	17772	80994	0.941	0.282	**0.021300**	mg/L	4.150
Al	27	907	7568	14.962	0.029	**0.001092**	mg/L	14.338
P	31	7189	4936	7.406	-0.006	**-0.003730**	mg/L	20.700
Sc	45	262577	231763	2.395	231762.588		mg/L	
Ti	47	148	182	7.856	0.000	**0.000073**	mg/L	28.792
Ti	49	52	85	12.185	0.000	**0.000069**	mg/L	28.779
V**	51	1637	1220	12.710	-0.001	**-0.000024**	mg/L	55.877
V*	51	6447	6233	5.577	0.002	**0.000056**	mg/L	49.709
V	51	6936	6894	5.903	0.003	**0.000079**	mg/L	36.693
Cr*	52	6349	5440	2.078	-0.001	**-0.000019**	mg/L	151.550
Cr	52	7057	6304	1.736	0.000	**0.000010**	mg/L	328.961
Cr	53	2327	2299	3.921	0.001	**0.000253**	mg/L	39.489
Mn	55	184	269	31.592	0.000	**0.000008**	mg/L	81.521
Co	59	188	159	11.488	-0.000	**-0.000001**	mg/L	221.348
Ni	60	32	44	28.899	0.000	**0.000006**	mg/L	86.634
Ni	62	65	60	4.167	0.000	**0.000007**	mg/L	138.104
Cu	63	178	292	6.437	0.001	**0.000022**	mg/L	10.346
Cu	65	156	286	12.858	0.001	**0.000049**	mg/L	27.186
Zn	66	285	657	8.220	0.002	**0.000197**	mg/L	10.349
Zn	68	299	556	3.335	0.001	**0.000189**	mg/L	4.850
Y	89	655666	676478	0.287	20812.307		mg/L	
As*	75	-414	-356	10.845	0.000	**0.000024**	mg/L	56.947
As	75	165	274	7.443	0.000	**0.000037**	mg/L	17.776
Se	77	185	216	3.994	0.000	**0.000109**	mg/L	29.830
Se	82	78	85	6.278	0.000	**0.000018**	mg/L	97.669
Sr	86	20	62	17.653	0.000	**0.000012**	mg/L	25.144
Sr	88	132	323	2.685	0.000	**0.000006**	mg/L	5.613
Zr	90	39	164	52.804	0.000	**0.000008**	mg/L	69.622
Zr	91	17	44	83.495	0.000	**0.000008**	mg/L	135.681
Mo	95	34	5716	33.893	0.007	**0.001281**	mg/L	33.451
Mo	97	22	3546	32.364	0.005	**0.001251**	mg/L	31.918
Ag	107	1821	19358	11.291	0.023	**0.001313**	mg/L	11.884
Ag	109	1766	18271	10.533	0.021	**0.001281**	mg/L	11.132

Cd	111	9	10	14.878	0.000	**0.000000**	mg/L	118.675
Cd	114	17	15	77.064	-0.000	**-0.000000**	mg/L	480.153
In	115	747751	768503	0.738	768502.875		mg/L	
Sn	118	104	337	4.090	0.000	**0.000024**	mg/L	5.809
Sn	120	94	589	14.798	0.001	**0.000037**	mg/L	17.313
Sb	121	43	2113	14.617	0.003	**0.000183**	mg/L	14.215
Te	125	5	103	17.073	0.000	**0.000150**	mg/L	17.285
Ba	137	55	212	4.472	0.000	**0.000031**	mg/L	5.492
Ba	138	265	1301	2.948	0.001	**0.000032**	mg/L	2.995
W	184	247	804	4.531	0.001	**0.000061**	mg/L	13.288
Hg	201	80	276	6.847	0.000	**0.000130**	mg/L	15.902
Hg*	202	186	641	1.258	0.001	**0.000128**	mg/L	7.299
Hg	202	188	647	1.252	0.001	**0.000108**	mg/L	7.351
Tb	159	823967	882963	1.249	0.106		mg/L	
Ho	165	17	24	20.904	0.000		mg/L	
Tl	205	256	651	19.289	0.001	**0.000014**	mg/L	39.248
Pb	204	11	26	16.386	0.000	**0.000032**	mg/L	21.059
Pb	208	505	1257	7.102	0.001	**0.000020**	mg/L	19.302
Bi	209	613899	610577	4.597	610577.014		mg/L	
Th	232	165	340	5.105	0.000	**0.000004**	mg/L	18.380
U	238	250	104	7.332	-0.000	**-0.000003**	mg/L	4.402
Na	23	25091	92152	3.875	0.302	**0.013250**	mg/L	4.266
Mg	24	1548	5915	15.100	0.020	**0.001243**	mg/L	17.088
Mg	25	157	725	13.978	0.003	**0.001023**	mg/L	14.661
K	39	915234	715305	1.760	-0.399	**-0.011394**	mg/L	15.264
Ca	43	255	343	10.466	0.001	**0.006565**	mg/L	30.534
Ca	44	32958	34738	1.413	0.024	**0.019488**	mg/L	9.015
Sc	45	262577	231763	2.395	231762.588		mg/L	
Fe*	57	10623	10089	3.803	0.003	**0.002554**	mg/L	69.741
Fe	57	10643	10117	3.764	0.003	**0.002575**	mg/L	68.579
Fe	54	27959	24897	1.382	0.001	**0.000345**	mg/L	114.012
Kr	83	132	116	3.999	-16.250		mg/L	
Br	81	20252	20709	1.949	456.772		mg/L	
Cl	35	156167	245108	15.370	88941.379		mg/L	
C	13	4180	5091	0.608	911.672		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: LDR #2
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 17:10:39
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\LDR #2.011
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	620811	3.719	12.844	**0.187568**	mg/L	0.746
Li	6	18730	48016	4.464	48015.567		mg/L	
Be	9	2	227496	2.195	4.741	**0.171129**	mg/L	2.410
B	10	1866	288099	1.158	5.907	**0.895833**	mg/L	3.509
B	11	8409	1335359	0.247	27.397	**0.897982**	mg/L	4.336
Si	28	17772	6236296	6.150	22.436	**1.694791**	mg/L	3.229
Al	27	907	2876043	6.643	10.374	**0.388956**	mg/L	3.713
P	31	7189	959063	5.166	3.434	**2.102872**	mg/L	2.264
Sc	45	262577	276946	2.956	276945.540		mg/L	
Ti	47	148	399978	3.244	1.444	**0.466903**	mg/L	0.386
Ti	49	52	322694	1.826	1.165	**0.469581**	mg/L	1.406
V**	51	1637	4721888	4.410	17.039	**0.414289**	mg/L	1.819
V*	51	6447	4945493	3.676	17.831	**0.428004**	mg/L	1.108
V	51	6936	4946824	3.825	17.833	**0.425339**	mg/L	1.234
Cr*	52	6349	4090495	3.703	14.744	**0.415633**	mg/L	1.201
Cr	52	7057	4091497	3.703	14.745	**0.415208**	mg/L	1.201
Cr	53	2327	535469	1.686	1.925	**0.458663**	mg/L	1.282
Mn	55	184	6958367	2.680	25.126	**0.426503**	mg/L	0.624
Co	59	188	5761627	3.394	20.802	**0.419160**	mg/L	0.594
Ni	60	32	1315113	1.206	4.750	**0.436595**	mg/L	1.767
Ni	62	65	207736	1.308	0.750	**0.438403**	mg/L	1.790
Cu	63	178	2933639	2.593	10.593	**0.399157**	mg/L	0.504
Cu	65	156	1594839	0.450	5.761	**0.435220**	mg/L	2.524
Zn	66	285	1036429	0.845	3.743	**0.422768**	mg/L	3.058
Zn	68	299	793667	0.672	2.866	**0.429634**	mg/L	2.359
Y	89	655666	757329	0.705	101662.367		mg/L	
As*	75	-414	1384020	0.767	1.605	**0.436306**	mg/L	0.951
As	75	165	1355874	0.598	1.571	**0.434424**	mg/L	0.955
Se	77	185	112220	0.458	0.130	**0.422059**	mg/L	0.941
Se	82	78	147334	1.097	0.171	**0.430695**	mg/L	0.993
Sr	86	20	1857622	1.188	2.153	**0.486678**	mg/L	0.385
Sr	88	132	15045042	2.743	17.437	**0.460149**	mg/L	1.809
Zr	90	39	8064481	2.877	9.347	**0.456509**	mg/L	2.442
Zr	91	17	1908371	0.844	2.212	**0.483649**	mg/L	1.683
Mo	95	34	2170020	2.406	2.515	**0.436658**	mg/L	2.045
Mo	97	22	1499854	1.665	1.739	**0.474904**	mg/L	1.413
Ag	107	1821	6000987	2.470	6.953	**0.401318**	mg/L	2.067
Ag	109	1766	5849329	3.413	6.777	**0.405491**	mg/L	2.904

Cd	111	9	1722462	1.622	1.997	**0.446309**	mg/L	1.544
Cd	114	17	3692234	3.332	4.280	**0.408265**	mg/L	3.076
In	115	747751	862726	1.139	862726.393		mg/L	
Sn	118	104	4833774	4.080	5.602	**0.452874**	mg/L	3.542
Sn	120	94	6570916	3.437	7.616	**0.445345**	mg/L	2.949
Sb	121	43	5743785	3.566	6.657	**0.452903**	mg/L	3.006
Te	125	5	304355	1.678	0.353	**0.417595**	mg/L	1.673
Ba	137	55	2518306	2.964	2.919	**0.447610**	mg/L	2.586
Ba	138	265	16151560	3.683	18.719	**0.447167**	mg/L	2.989
W	184	247	4860499	1.148	7.075	**0.472845**	mg/L	1.701
Hg	201	80	729	2.663	0.001	**0.000375**	mg/L	2.705
Hg*	202	186	1149	39.726	0.001	**0.000235**	mg/L	49.314
Hg	202	188	39547	1.977	0.057	**0.008166**	mg/L	2.652
Tb	159	823967	979325	0.780	0.083		mg/L	
Ho	165	17	44	7.559	0.000		mg/L	
Tl	205	256	13597395	1.795	19.795	**0.432534**	mg/L	2.459
Pb	204	11	244962	0.541	0.357	**0.452572**	mg/L	0.626
Pb	208	505	18671582	1.394	27.181	**0.428062**	mg/L	2.016
Bi	209	613899	686986	0.678	686986.181		mg/L	
Th	232	165	22512659	1.366	32.773	**0.449109**	mg/L	1.998
U	238	250	24096847	1.973	35.080	**0.443785**	mg/L	2.640
Na	23	25091	148833361	7.534	536.833	**23.546602**	mg/L	4.691
Mg	24	1548	101112027	7.756	364.744	**23.155741**	mg/L	4.842
Mg	25	157	13759576	7.889	49.634	**20.111025**	mg/L	4.986
K	39	915234	234619072	7.087	842.989	**24.100786**	mg/L	4.171
Ca	43	255	485918	4.752	1.753	**22.460137**	mg/L	1.860
Ca	44	32958	7171595	6.264	25.753	**20.568209**	mg/L	3.472
Sc	45	262577	276946	2.956	276945.540		mg/L	
Fe*	57	10623	7352367	2.974	26.508	**21.839820**	mg/L	0.026
Fe	57	10643	7391726	2.984	26.649	**21.843034**	mg/L	0.031
Fe	54	27959	16293557	4.022	58.715	**20.993061**	mg/L	1.390
Kr	83	132	363	1.114	230.506		mg/L	
Br	81	20252	21820	2.281	1567.466		mg/L	
Cl	35	156167	187158	2.827	30990.987		mg/L	
C	13	4180	5907	5.440	1727.541		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

ımple ID: LDR #1
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 17:16:38
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\LDR #1.012
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	119637	1.429	5.149	**0.075197**	mg/L	0.866
Li	6	18730	22845	1.980	22844.821		mg/L	
Be	9	2	45441	1.078	1.989	**0.071808**	mg/L	1.969
B	10	1866	60789	1.525	2.562	**0.388508**	mg/L	1.182
B	11	8409	284404	2.032	12.001	**0.393336**	mg/L	0.901
Si	28	17772	1782843	1.187	6.176	**0.466542**	mg/L	0.859
Al	27	907	702218	1.786	2.456	**0.092079**	mg/L	1.446
P	31	7189	224339	2.000	0.758	**0.464351**	mg/L	1.988
Sc	45	262577	285527	0.341	285527.279		mg/L	
Ti	47	148	85381	0.997	0.298	**0.096531**	mg/L	0.714
Ti	49	52	68058	0.846	0.238	**0.095973**	mg/L	0.540
V**	51	1637	1096626	1.373	3.834	**0.093229**	mg/L	1.169
V*	51	6447	1118247	1.117	3.892	**0.093420**	mg/L	0.915
V	51	6936	1125388	0.421	3.915	**0.093378**	mg/L	0.265
Cr*	52	6349	951446	0.355	3.308	**0.093254**	mg/L	0.264
Cr	52	7057	952269	0.356	3.308	**0.093158**	mg/L	0.265
Cr	53	2327	114891	0.841	0.394	**0.093759**	mg/L	0.996
Mn	55	184	1574550	1.475	5.514	**0.093592**	mg/L	1.196
Co	59	188	1288410	0.923	4.512	**0.090910**	mg/L	0.608
Ni	60	32	278345	1.236	0.975	**0.089588**	mg/L	1.070
Ni	62	65	43511	2.126	0.152	**0.088918**	mg/L	2.008
Cu	63	178	682366	1.002	2.389	**0.090026**	mg/L	0.662
Cu	65	156	343633	1.018	1.203	**0.090875**	mg/L	0.913
Zn	66	285	231917	0.552	0.811	**0.091610**	mg/L	0.892
Zn	68	299	175600	0.583	0.614	**0.092025**	mg/L	0.863
Y	89	655666	755579	0.953	99912.870		mg/L	
As*	75	-414	296031	0.763	0.343	**0.093205**	mg/L	0.915
As	75	165	290700	0.591	0.336	**0.092857**	mg/L	0.740
Se	77	185	25067	0.621	0.029	**0.093413**	mg/L	0.604
Se	82	78	32592	1.157	0.038	**0.094834**	mg/L	1.246
Sr	86	20	381995	0.652	0.442	**0.099826**	mg/L	0.544
Sr	88	132	3090551	0.512	3.573	**0.094296**	mg/L	0.646
Zr	90	39	1726068	0.100	1.996	**0.097469**	mg/L	0.435
Zr	91	17	386268	0.202	0.447	**0.097637**	mg/L	0.332
Mo	95	34	475964	0.304	0.550	**0.095534**	mg/L	0.493
Mo	97	22	303482	1.149	0.351	**0.095850**	mg/L	1.491
Ag	107	1821	1475189	0.574	1.703	**0.098307**	mg/L	0.920
Ag	109	1766	1412288	0.593	1.631	**0.097562**	mg/L	0.904

Cd	111	9	365524	0.583	0.423	**0.094472**	mg/L	0.716
Cd	114	17	853568	0.837	0.987	**0.094148**	mg/L	0.760
In	115	747751	864870	0.347	864869.511		mg/L	
Sn	118	104	1051622	0.556	1.216	**0.098283**	mg/L	0.376
Sn	120	94	1454683	0.522	1.682	**0.098347**	mg/L	0.182
Sb	121	43	1274730	0.698	1.474	**0.100270**	mg/L	0.457
Te	125	5	68306	0.322	0.079	**0.093479**	mg/L	0.501
Ba	137	55	566256	0.561	0.655	**0.100393**	mg/L	0.656
Ba	138	265	3321521	0.773	3.840	**0.091735**	mg/L	0.669
W	184	247	979063	0.992	1.482	**0.099056**	mg/L	1.721
Hg	201	80	186	5.734	0.000	**0.000061**	mg/L	13.954
Hg*	202	186	69	90.979	-0.000	**-0.000034**	mg/L	47.184
Hg	202	188	7803	0.562	0.012	**0.001641**	mg/L	1.736
Tb	159	823967	949857	0.486	0.096		mg/L	
Ho	165	17	25	13.229	0.000		mg/L	
Tl	205	256	2785421	0.380	4.218	**0.092165**	mg/L	2.146
Pb	204	11	48732	0.751	0.074	**0.093660**	mg/L	3.004
Pb	208	505	3882254	1.141	5.879	**0.092586**	mg/L	2.819
Bi	209	613899	660532	2.228	660531.714		mg/L	
Th	232	165	4363101	0.310	6.607	**0.090546**	mg/L	2.274
U	238	250	4717734	0.621	7.145	**0.090386**	mg/L	2.681
Na	23	25091	33007605	1.348	115.504	**5.066243**	mg/L	1.009
Mg	24	1548	22514977	1.575	78.846	**5.005543**	mg/L	1.276
Mg	25	157	3116129	2.381	10.913	**4.421612**	mg/L	2.105
K	39	915234	52235435	1.702	179.456	**5.130602**	mg/L	1.611
Ca	43	255	108198	0.664	0.378	**4.842779**	mg/L	0.661
Ca	44	32958	1760002	1.548	6.038	**4.822642**	mg/L	1.304
Sc	45	262577	285527	0.341	285527.279		mg/L	
Fe*	57	10623	1643630	0.918	5.716	**4.709441**	mg/L	0.648
Fe	57	10643	1652395	0.912	5.747	**4.710132**	mg/L	0.642
Fe	54	27959	3459933	0.794	12.011	**4.294437**	mg/L	0.461
Kr	83	132	175	3.551	42.917		mg/L	
Br	81	20252	22063	1.185	1811.328		mg/L	
Cl	35	156167	141721	1.814	-14446.029		mg/L	
C	13	4180	4853	1.229	673.637		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

ample ID: LDR #3
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 17:22:39
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\LDR #3.013
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	1894	1.721	0.009	**0.000138**	mg/L	19.993
Li	6	18730	19402	3.098	19401.732		mg/L	
Be	9	2	8	8.660	0.000	**0.000012**	mg/L	8.272
B	10	1866	2467	4.057	0.028	**0.004203**	mg/L	32.687
B	11	8409	11594	3.751	0.149	**0.004899**	mg/L	27.205
Si	28	17772	26396	7.608	0.027	**0.002060**	mg/L	21.965
Al	27	907	157053569	2.367	565.253	**21.193586**	mg/L	1.222
P	31	7189	5934	3.112	-0.006	**-0.003689**	mg/L	5.109
Sc	45	262577	277833	1.685	277833.218		mg/L	
Ti	47	148	176	12.904	0.000	**0.000023**	mg/L	100.941
Ti	49	52	70	17.035	0.000	**0.000022**	mg/L	71.343
V**	51	1637	1822	6.754	0.000	**0.000008**	mg/L	115.513
V*	51	6447	5827	3.463	-0.004	**-0.000086**	mg/L	11.334
V	51	6936	6205	3.763	-0.004	**-0.000097**	mg/L	12.636
Cr*	52	6349	5984	2.666	-0.003	**-0.000074**	mg/L	17.914
Cr	52	7057	6839	2.303	-0.002	**-0.000064**	mg/L	20.856
Cr	53	2327	2047	2.439	-0.001	**-0.000356**	mg/L	6.042
Mn	55	184	16249715	1.959	58.499	**0.992992**	mg/L	2.748
Co	59	188	398	7.108	0.001	**0.000014**	mg/L	13.213
Ni	60	32	2867996	1.109	10.325	**0.949031**	mg/L	2.610
Ni	62	65	474852	1.015	1.709	**0.998969**	mg/L	2.111
Cu	63	178	7110676	1.621	25.600	**0.964648**	mg/L	2.927
Cu	65	156	3600552	1.335	12.961	**0.979173**	mg/L	2.105
Zn	66	285	2423731	2.049	8.725	**0.985410**	mg/L	3.337
Zn	68	299	1974037	1.490	7.106	**1.065193**	mg/L	2.501
Y	89	655666	752894	1.511	97227.733		mg/L	
As*	75	-414	-158	21.952	0.000	**0.000101**	mg/L	10.817
As	75	165	435	7.292	0.000	**0.000076**	mg/L	12.598
Se	77	185	241	6.330	0.000	**0.000091**	mg/L	60.390
Se	82	78	143	7.864	0.000	**0.000152**	mg/L	20.208
Sr	86	20	56	33.908	0.000	**0.000009**	mg/L	56.862
Sr	88	132	677	5.307	0.001	**0.000016**	mg/L	6.919
Zr	90	39	203	27.495	0.000	**0.000009**	mg/L	34.962
Zr	91	17	68	14.672	0.000	**0.000012**	mg/L	20.691
Mo	95	34	2745	31.823	0.003	**0.000537**	mg/L	32.164
Mo	97	22	1645	30.288	0.002	**0.000506**	mg/L	30.624
Ag	107	1821	18188	20.137	0.018	**0.001060**	mg/L	22.592
Ag	109	1766	17740	18.738	0.018	**0.001073**	mg/L	20.976

Cd	111	9	55	28.808	0.000	**0.000012**	mg/L	35.468
Cd	114	17	137	10.532	0.000	**0.000013**	mg/L	11.932
In	115	747751	873854	0.468	873854.485		mg/L	
Sn	118	104	1128	12.723	0.001	**0.000093**	mg/L	14.243
Sn	120	94	1674	14.626	0.002	**0.000105**	mg/L	15.564
Sb	121	43	13112	27.433	0.015	**0.001017**	mg/L	27.387
Te	125	5	564	17.849	0.001	**0.000756**	mg/L	17.948
Ba	137	55	5616950	0.582	6.428	**0.985720**	mg/L	0.870
Ba	138	265	36198599	0.329	41.425	**0.989570**	mg/L	0.792
W	184	247	6487	18.734	0.009	**0.000630**	mg/L	24.902
Hg	201	80	57	1.264	-0.000	**-0.000018**	mg/L	7.225
Hg*	202	186	125	9.059	-0.000	**-0.000020**	mg/L	7.203
Hg	202	188	176	1.660	-0.000	**-0.000006**	mg/L	28.487
Tb	159	823967	950333	0.639	0.088		mg/L	
Ho	165	17	19	30.123	0.000		mg/L	
Tl	205	256	2307	7.185	0.003	**0.000067**	mg/L	13.478
Pb	204	11	581478	0.813	0.875	**1.110462**	mg/L	4.146
Pb	208	505	43394809	1.256	65.283	**1.028134**	mg/L	3.726
Bi	209	613899	665512	4.875	665512.322		mg/L	
Th	232	165	1283	18.350	0.002	**0.000023**	mg/L	27.125
U	238	250	766	18.788	0.001	**0.000010**	mg/L	36.928
Na	23	25091	143633	5.735	0.421	**0.018474**	mg/L	5.117
Mg	24	1548	3547	21.529	0.007	**0.000435**	mg/L	38.268
Mg	25	157	413	15.219	0.001	**0.000359**	mg/L	23.678
K	39	915234	852921	3.338	-0.416	**-0.011899**	mg/L	13.071
Ca	43	255	1033	3.792	0.003	**0.035246**	mg/L	5.946
Ca	44	32958	36885	1.035	0.007	**0.005793**	mg/L	14.255
Sc	45	262577	277833	1.685	277833.218		mg/L	
Fe*	57	10623	11744	9.524	0.002	**0.001524**	mg/L	242.249
Fe	57	10643	11828	9.480	0.002	**0.001699**	mg/L	216.839
Fe	54	27959	26951	2.318	-0.009	**-0.003373**	mg/L	39.559
Kr	83	132	138	2.805	5.750		mg/L	
Br	81	20252	21157	1.440	904.372		mg/L	
Cl	35	156167	120830	1.503	-35336.866		mg/L	
C	13	4180	5047	0.314	867.066		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

ample ID: RINSE
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 17:28:37
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\RINSE.014
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	1813	1.926	0.004	**0.000058**	mg/L	59.971
Li	6	18730	19679	0.666	19679.345		mg/L	
Be	9	2	4	34.641	0.000	**0.000004**	mg/L	60.368
B	10	1866	2574	1.101	0.031	**0.004732**	mg/L	5.573
B	11	8409	11688	1.446	0.145	**0.004751**	mg/L	3.497
Si	28	17772	97691	1.657	0.309	**0.023335**	mg/L	2.339
Al	27	907	9751	13.156	0.034	**0.001278**	mg/L	13.017
P	31	7189	5181	2.062	-0.007	**-0.004536**	mg/L	7.698
Sc	45	262577	259430	1.318	259429.550		mg/L	
Ti	47	148	155	8.291	0.000	**0.000012**	mg/L	143.217
Ti	49	52	52	22.684	0.000	**0.000002**	mg/L	1137.448
V**	51	1637	1547	10.073	-0.000	**-0.000007**	mg/L	214.096
V*	51	6447	5034	2.513	-0.005	**-0.000124**	mg/L	5.042
V	51	6936	5433	1.910	-0.005	**-0.000131**	mg/L	2.966
Cr*	52	6349	5748	1.418	-0.002	**-0.000057**	mg/L	19.448
Cr	52	7057	6719	1.119	-0.001	**-0.000028**	mg/L	46.362
Cr	53	2327	1869	1.732	-0.002	**-0.000395**	mg/L	5.997
Mn	55	184	1102	23.271	0.004	**0.000060**	mg/L	26.248
Co	59	188	221	5.961	0.000	**0.000003**	mg/L	41.839
Ni	60	32	154	16.555	0.000	**0.000043**	mg/L	19.115
Ni	62	65	82	8.430	0.000	**0.000039**	mg/L	44.972
Cu	63	178	630	15.812	0.002	**0.000066**	mg/L	20.206
Cu	65	156	437	14.793	0.001	**0.000082**	mg/L	20.972
Zn	66	285	772	3.563	0.002	**0.000213**	mg/L	6.239
Zn	68	299	644	5.297	0.001	**0.000202**	mg/L	7.329
Y	89	655666	733454	0.276	77787.643		mg/L	
As*	75	-414	-283	19.615	0.000	**0.000056**	mg/L	34.882
As	75	165	249	6.543	0.000	**0.000024**	mg/L	20.478
Se	77	185	189	2.082	-0.000	**-0.000049**	mg/L	40.529
Se	82	78	96	11.670	0.000	**0.000035**	mg/L	91.436
Sr	86	20	48	60.830	0.000	**0.000008**	mg/L	108.879
Sr	88	132	419	8.378	0.000	**0.000009**	mg/L	12.529
Zr	90	39	69	15.048	0.000	**0.000002**	mg/L	38.366
Zr	91	17	22	22.876	0.000	**0.000001**	mg/L	122.767
Mo	95	34	983	13.689	0.001	**0.000202**	mg/L	13.282
Mo	97	22	603	12.585	0.001	**0.000195**	mg/L	12.088
Ag	107	1821	5210	0.839	0.004	**0.000230**	mg/L	2.848
Ag	109	1766	5035	4.485	0.004	**0.000230**	mg/L	7.173

	Cd	111	9	17	10.128	0.000	**0.000002**	mg/L	21.651
	Cd	114	17	36	25.175	0.000	**0.000002**	mg/L	52.895
>	In	115	747751	812240	0.940	812239.564		mg/L	
	Sn	118	104	562	10.318	0.001	**0.000045**	mg/L	12.719
	Sn	120	94	770	10.036	0.001	**0.000048**	mg/L	10.725
	Sb	121	43	3724	6.212	0.005	**0.000308**	mg/L	5.403
	Te	125	5	157	10.134	0.000	**0.000220**	mg/L	9.492
	Ba	137	55	453	16.694	0.000	**0.000074**	mg/L	18.302
	Ba	138	265	2897	19.088	0.003	**0.000077**	mg/L	20.117
	W	184	247	2830	4.978	0.004	**0.000282**	mg/L	8.968
	Hg	201	80	310	5.940	0.000	**0.000152**	mg/L	4.684
	Hg*	202	186	698	2.467	0.001	**0.000144**	mg/L	2.057
	Hg	202	188	720	2.295	0.001	**0.000124**	mg/L	2.296
	Tb	159	823967	905887	0.877	0.139		mg/L	
	Ho	165	17	25	15.809	0.000		mg/L	
	Tl	205	256	363	14.827	0.000	**0.000004**	mg/L	61.572
	Pb	204	11	35	78.678	0.000	**0.000052**	mg/L	117.176
	Pb	208	505	3154	20.983	0.004	**0.000069**	mg/L	29.648
>	Bi	209	613899	612310	3.942	612309.523		mg/L	
	Th	232	165	473	9.681	0.001	**0.000007**	mg/L	20.533
	U	238	250	238	11.090	-0.000	**-0.000000**	mg/L	328.112
	Na	23	25091	97992	1.553	0.282	**0.012376**	mg/L	0.707
	Mg	24	1548	3476	2.759	0.008	**0.000476**	mg/L	2.800
	Mg	25	157	390	5.880	0.001	**0.000366**	mg/L	7.696
	K	39	915234	752749	1.774	-0.584	**-0.016700**	mg/L	2.259
	Ca	43	255	371	6.539	0.000	**0.005902**	mg/L	23.585
	Ca	44	32958	35402	1.364	0.011	**0.008746**	mg/L	15.603
>	Sc	45	262577	259430	1.318	259429.550		mg/L	
	Fe*	57	10623	13327	0.275	0.011	**0.008999**	mg/L	7.468
	Fe	57	10643	13357	0.286	0.011	**0.008983**	mg/L	7.508
	Fe	54	27959	25328	1.661	-0.009	**-0.003160**	mg/L	23.394
	Kr	83	132	125	6.218	-7.750		mg/L	
	Br	81	20252	19842	2.681	-409.978		mg/L	
	Cl	35	156167	108785	0.757	-47381.973		mg/L	
	C	13	4180	5720	1.692	1540.346		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

ample ID: RINSE
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 17:34:35
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\RINSE.015
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	1833	2.541	-0.000	**-0.000003**	mg/L	1317.959
Li	6	18730	20825	0.280	20824.577		mg/L	
Be	9	2	5	25.000	0.000	**0.000005**	mg/L	40.142
B	10	1866	2387	1.833	0.015	**0.002277**	mg/L	13.205
B	11	8409	11032	0.955	0.081	**0.002648**	mg/L	4.436
Si	28	17772	91644	0.654	0.299	**0.022573**	mg/L	1.025
Al	27	907	4465	3.389	0.014	**0.000540**	mg/L	4.120
P	31	7189	4990	9.013	-0.007	**-0.004546**	mg/L	23.630
Sc	45	262577	250047	0.247	250046.746		mg/L	
Ti	47	148	138	14.813	-0.000	**-0.000003**	mg/L	900.790
Ti	49	52	53	12.372	0.000	**0.000005**	mg/L	193.452
V**	51	1637	1492	14.819	-0.000	**-0.000006**	mg/L	338.759
V*	51	6447	4599	1.868	-0.006	**-0.000148**	mg/L	5.772
V	51	6936	4952	3.332	-0.007	**-0.000158**	mg/L	10.543
Cr*	52	6349	5457	0.188	-0.002	**-0.000066**	mg/L	4.017
Cr	52	7057	6421	0.328	-0.001	**-0.000034**	mg/L	3.478
Cr	53	2327	1714	4.326	-0.002	**-0.000478**	mg/L	13.986
Mn	55	184	510	10.722	0.001	**0.000023**	mg/L	15.994
Co	59	188	208	8.418	0.000	**0.000002**	mg/L	60.866
Ni	60	32	56	16.535	0.000	**0.000009**	mg/L	36.674
Ni	62	65	60	10.206	-0.000	**-0.000003**	mg/L	420.636
Cu	63	178	320	3.979	0.001	**0.000023**	mg/L	8.327
Cu	65	156	260	5.861	0.000	**0.000034**	mg/L	14.105
Zn	66	285	691	9.764	0.002	**0.000189**	mg/L	15.776
Zn	68	299	614	3.647	0.001	**0.000197**	mg/L	7.220
Y	89	655666	719171	0.409	63504.704		mg/L	
As*	75	-414	-310	8.725	0.000	**0.000045**	mg/L	19.569
As	75	165	217	4.234	0.000	**0.000014**	mg/L	22.304
Se	77	185	184	3.497	-0.000	**-0.000059**	mg/L	42.378
Se	82	78	89	6.800	0.000	**0.000020**	mg/L	99.373
Sr	86	20	40	68.920	0.000	**0.000005**	mg/L	144.677
Sr	88	132	366	6.980	0.000	**0.000007**	mg/L	11.635
Zr	90	39	53	33.256	0.000	**0.000001**	mg/L	156.261
Zr	91	17	21	51.281	0.000	**0.000001**	mg/L	320.175
Mo	95	34	624	2.321	0.001	**0.000127**	mg/L	2.774
Mo	97	22	418	13.260	0.000	**0.000135**	mg/L	14.295
Ag	107	1821	3286	7.120	0.002	**0.000096**	mg/L	16.777
Ag	109	1766	3128	6.522	0.002	**0.000092**	mg/L	15.868

Cd	111	9	18	17.348	0.000	**0.000002**	mg/L	35.883
Cd	114	17	24	27.147	0.000	**0.000001**	mg/L	122.462
In	115	747751	800853	0.296	800853.292		mg/L	
Sn	118	104	425	10.783	0.000	**0.000032**	mg/L	14.340
Sn	120	94	564	1.578	0.001	**0.000034**	mg/L	2.258
Sb	121	43	1871	5.576	0.002	**0.000155**	mg/L	5.961
Te	125	5	85	14.706	0.000	**0.000118**	mg/L	15.964
Ba	137	55	244	5.639	0.000	**0.000035**	mg/L	7.641
Ba	138	265	1565	4.796	0.002	**0.000038**	mg/L	6.162
W	184	247	1759	6.870	0.002	**0.000164**	mg/L	12.363
Hg	201	80	307	12.135	0.000	**0.000148**	mg/L	10.953
Hg*	202	186	694	1.998	0.001	**0.000141**	mg/L	3.276
Hg	202	188	708	1.877	0.001	**0.000120**	mg/L	3.473
Tb	159	823967	888955	0.593	0.102		mg/L	
Ho	165	17	27	11.615	0.000		mg/L	
Tl	205	256	360	11.432	0.000	**0.000004**	mg/L	55.422
Pb	204	11	12	105.977	0.000	**0.000003**	mg/L	899.931
Pb	208	505	1403	7.463	0.001	**0.000023**	mg/L	10.572
Bi	209	613899	616379	4.286	616379.499		mg/L	
Th	232	165	334	7.678	0.000	**0.000004**	mg/L	15.523
U	238	250	173	18.769	-0.000	**-0.000002**	mg/L	42.432
Na	23	25091	92853	1.514	0.276	**0.012096**	mg/L	1.874
Mg	24	1548	3213	3.782	0.007	**0.000442**	mg/L	6.543
Mg	25	157	355	1.424	0.001	**0.000332**	mg/L	2.381
K	39	915234	703515	1.425	-0.672	**-0.019212**	mg/L	6.776
Ca	43	255	370	0.338	0.001	**0.006537**	mg/L	1.034
Ca	44	32958	33552	0.624	0.009	**0.006924**	mg/L	11.442
Sc	45	262577	250047	0.247	250046.746		mg/L	
Fe*	57	10623	12540	2.039	0.010	**0.007991**	mg/L	11.744
Fe	57	10643	12570	2.034	0.010	**0.007984**	mg/L	11.695
Fe	54	27959	24749	2.289	-0.007	**-0.002680**	mg/L	32.288
Kr	83	132	121	3.809	-11.917		mg/L	
Br	81	20252	19581	0.962	-671.334		mg/L	
Cl	35	156167	103305	0.804	-52862.127		mg/L	
C	13	4180	5685	3.119	1504.910		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: MBLK WG11556-1X
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 17:40:34
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\MBLK WG11556-1X.016
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

	Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
	Li	7	1652	1929	3.290	0.002	**0.000025**	mg/L	175.088
>	Li	6	18730	21454	1.027	21454.241		mg/L	
	Be	9	2	3	114.564	0.000	**0.000002**	mg/L	269.052
	B	10	1866	1931	1.053	-0.010	**-0.001462**	mg/L	8.829
	B	11	8409	8862	4.078	-0.036	**-0.001173**	mg/L	55.790
	Si	28	17772	37657	1.551	0.083	**0.006286**	mg/L	2.509
	Al	27	907	10434	3.232	0.038	**0.001438**	mg/L	3.823
	P	31	7189	4969	5.883	-0.007	**-0.004575**	mg/L	14.922
>	Sc	45	262577	249547	0.292	249547.424		mg/L	
	Ti	47	148	165	9.105	0.000	**0.000032**	mg/L	63.189
	Ti	49	52	89	11.179	0.000	**0.000064**	mg/L	25.327
	V**	51	1637	1650	14.205	0.000	**0.000009**	mg/L	244.244
	V*	51	6447	4421	2.213	-0.007	**-0.000164**	mg/L	4.985
	V	51	6936	4855	3.807	-0.007	**-0.000166**	mg/L	11.466
	Cr*	52	6349	5440	1.469	-0.002	**-0.000067**	mg/L	15.922
	Cr	52	7057	6738	0.985	0.000	**0.000003**	mg/L	263.408
	Cr	53	2327	1640	3.355	-0.002	**-0.000545**	mg/L	10.320
	Mn	55	184	1468	4.474	0.005	**0.000088**	mg/L	5.219
	Co	59	188	154	9.006	-0.000	**-0.000002**	mg/L	56.526
	Ni	60	32	198	4.237	0.001	**0.000062**	mg/L	5.354
	Ni	62	65	80	12.500	0.000	**0.000043**	mg/L	54.533
	Cu	63	178	682	4.010	0.002	**0.000077**	mg/L	5.283
	Cu	65	156	415	5.728	0.001	**0.000081**	mg/L	8.472
	Zn	66	285	19027	1.586	0.075	**0.008488**	mg/L	1.321
	Zn	68	299	14138	0.470	0.056	**0.008322**	mg/L	0.718
	Y	89	655666	721054	0.883	65388.041		mg/L	
	As*	75	-414	-311	9.572	0.000	**0.000045**	mg/L	23.487
	As	75	165	203	3.918	0.000	**0.000009**	mg/L	35.683
	Se	77	185	169	5.968	-0.000	**-0.000122**	mg/L	37.396
	Se	82	78	84	2.148	0.000	**0.000003**	mg/L	252.506
	Sr	86	20	157	17.430	0.000	**0.000038**	mg/L	19.544
	Sr	88	132	1334	4.356	0.001	**0.000039**	mg/L	5.474
	Zr	90	39	7470	3.433	0.009	**0.000452**	mg/L	2.793
	Zr	91	17	1632	0.290	0.002	**0.000440**	mg/L	0.645
	Mo	95	34	419	1.791	0.000	**0.000083**	mg/L	1.292
	Mo	97	22	285	9.488	0.000	**0.000089**	mg/L	11.096
	Ag	107	1821	3698	9.551	0.002	**0.000125**	mg/L	19.183
	Ag	109	1766	3589	8.644	0.002	**0.000126**	mg/L	16.885

Cd	111	9	65	8.720	0.000	**0.000015**	mg/L	10.925
Cd	114	17	109	28.138	0.000	**0.000011**	mg/L	33.652
In	115	747751	802793	0.776	802793.316		mg/L	
Sn	118	104	8082	0.429	0.010	**0.000803**	mg/L	0.810
Sn	120	94	11513	3.511	0.014	**0.000831**	mg/L	3.545
Sb	121	43	1265	5.893	0.002	**0.000103**	mg/L	5.461
Te	125	5	52	32.218	0.000	**0.000068**	mg/L	35.061
Ba	137	55	549	4.230	0.001	**0.000094**	mg/L	4.485
Ba	138	265	3401	1.300	0.004	**0.000093**	mg/L	2.026
W	184	247	1443	3.081	0.002	**0.000131**	mg/L	12.655
Hg	201	80	92	11.860	0.000	**0.000008**	mg/L	46.568
Hg*	202	186	226	6.397	0.000	**0.000011**	mg/L	25.562
Hg	202	188	237	5.942	0.000	**0.000012**	mg/L	21.883
Tb	159	823967	901707	0.498	0.136		mg/L	
Ho	165	17	25	17.272	0.000		mg/L	
Tl	205	256	168	12.976	-0.000	**-0.000003**	mg/L	42.277
Pb	204	11	74	11.230	0.000	**0.000132**	mg/L	20.892
Pb	208	505	6142	1.509	0.009	**0.000146**	mg/L	6.928
Bi	209	613899	612348	7.578	612347.996		mg/L	
Th	232	165	320	8.974	0.000	**0.000003**	mg/L	12.645
U	238	250	398	5.832	0.000	**0.000003**	mg/L	36.538
Na	23	25091	158305	0.604	0.539	**0.023634**	mg/L	1.039
Mg	24	1548	6986	1.229	0.022	**0.001403**	mg/L	1.231
Mg	25	157	885	9.000	0.003	**0.001195**	mg/L	11.055
K	39	915234	695718	0.291	-0.698	**-0.019945**	mg/L	2.184
Ca	43	255	720	2.778	0.002	**0.024565**	mg/L	3.764
Ca	44	32958	38329	0.459	0.028	**0.022427**	mg/L	4.108
Sc	45	262577	249547	0.292	249547.424		mg/L	
Fe*	57	10623	12908	1.375	0.011	**0.009285**	mg/L	5.078
Fe	57	10643	12966	1.382	0.011	**0.009364**	mg/L	5.060
Fe	54	27959	21406	1.255	-0.021	**-0.007401**	mg/L	5.753
Kr	83	132	134	5.072	1.583		mg/L	
Br	81	20252	18268	2.567	-1983.809		mg/L	
Cl	35	156167	131324	2.448	-24842.653		mg/L	
C	13	4180	7657	2.117	3477.058		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

ımple ID: LCS WG11556-2X
ınitial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 17:46:37
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\LCS WG11556-2X.017
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	6541	3.694	0.227	**0.003309**	mg/L	2.036
Li	6	18730	20777	3.111	20777.410		mg/L	
Be	9	2	17340	1.490	0.835	**0.030130**	mg/L	1.642
B	10	1866	5151	2.202	0.148	**0.022504**	mg/L	3.518
B	11	8409	22899	1.786	0.654	**0.021427**	mg/L	5.046
Si	28	17772	310774	7.640	1.107	**0.083605**	mg/L	8.124
Al	27	907	15921585	0.857	60.165	**2.255815**	mg/L	0.746
P	31	7189	78245	0.477	0.268	**0.164315**	mg/L	1.842
Sc	45	262577	264631	1.287	264631.129		mg/L	
Ti	47	148	94924	2.156	0.358	**0.115829**	mg/L	1.432
Ti	49	52	76864	2.097	0.290	**0.116974**	mg/L	2.037
V**	51	1637	400242	0.983	1.506	**0.036623**	mg/L	0.482
V*	51	6447	413524	1.493	1.538	**0.036920**	mg/L	0.226
V	51	6936	415697	0.730	1.545	**0.036839**	mg/L	0.594
Cr*	52	6349	511624	0.514	1.909	**0.053824**	mg/L	1.038
Cr	52	7057	512938	0.513	1.912	**0.053829**	mg/L	1.041
Cr	53	2327	62405	1.573	0.227	**0.054072**	mg/L	0.318
Mn	55	184	2551078	1.564	9.639	**0.163621**	mg/L	0.613
Co	59	188	321652	0.985	1.215	**0.024481**	mg/L	1.963
Ni	60	32	183460	0.246	0.693	**0.063714**	mg/L	1.064
Ni	62	65	28587	0.467	0.108	**0.062996**	mg/L	1.034
Cu	63	178	303122	0.872	1.145	**0.043138**	mg/L	0.447
Cu	65	156	153675	1.736	0.580	**0.043825**	mg/L	0.579
Zn	66	285	475686	1.453	1.797	**0.202894**	mg/L	1.413
Zn	68	299	357063	0.903	1.348	**0.202105**	mg/L	0.389
Y	89	655666	931720	1.591	276054.102		mg/L	
As*	75	-414	267770	0.689	0.319	**0.086603**	mg/L	0.458
As	75	165	265235	0.464	0.315	**0.087016**	mg/L	0.313
Se	77	185	12937	0.670	0.015	**0.049141**	mg/L	1.000
Se	82	78	16780	1.759	0.020	**0.050025**	mg/L	1.639
Sr	86	20	327706	2.147	0.389	**0.087959**	mg/L	2.030
Sr	88	132	2580931	1.486	3.065	**0.080882**	mg/L	1.461
Zr	90	39	53674	1.307	0.064	**0.003110**	mg/L	0.836
Zr	91	17	12449	1.041	0.015	**0.003227**	mg/L	1.238
Mo	95	34	187899	0.861	0.223	**0.038732**	mg/L	0.748
Mo	97	22	118680	0.751	0.141	**0.038493**	mg/L	0.299
Ag	107	1821	1476673	2.204	1.751	**0.101075**	mg/L	2.084
Ag	109	1766	1433438	1.484	1.700	**0.101712**	mg/L	1.384

Cd	111	9	351951	0.786	0.418	**0.093429**	mg/L	0.346
Cd	114	17	838046	0.785	0.995	**0.094944**	mg/L	0.917
In	115	747751	842037	0.481	842036.587		mg/L	
Sn	118	104	103165	1.160	0.122	**0.009893**	mg/L	0.902
Sn	120	94	142515	0.199	0.169	**0.009890**	mg/L	0.644
Sb	121	43	102083	1.929	0.121	**0.008244**	mg/L	2.211
Te	125	5	44	34.586	0.000	**0.000054**	mg/L	39.842
Ba	137	55	441876	2.117	0.525	**0.080461**	mg/L	1.881
Ba	138	265	2511036	0.948	2.982	**0.071229**	mg/L	0.821
W	184	247	1468	3.499	0.002	**0.000139**	mg/L	13.190
Hg	201	80	20752	1.358	0.035	**0.014142**	mg/L	13.678
Hg*	202	186	47296	2.120	0.080	**0.013720**	mg/L	14.494
Hg	202	188	47307	2.119	0.080	**0.011409**	mg/L	14.494
Tb	159	823967	938415	1.093	0.249		mg/L	
Ho	165	17	9236	2.048	0.016		mg/L	
Tl	205	256	2205485	1.274	3.734	**0.081599**	mg/L	11.154
Pb	204	11	30851	0.385	0.052	**0.066362**	mg/L	12.609
Pb	208	505	2216846	0.589	3.758	**0.059181**	mg/L	12.696
Bi	209	613899	595627	11.547	595626.855		mg/L	
Th	232	165	287621	2.292	0.486	**0.006665**	mg/L	9.956
U	238	250	48006	0.668	0.081	**0.001024**	mg/L	12.162
Na	23	25091	731013	1.525	2.667	**0.116971**	mg/L	0.453
Mg	24	1548	3747273	0.585	14.156	**0.898676**	mg/L	1.179
Mg	25	157	567058	1.309	2.142	**0.867996**	mg/L	0.054
K	39	915234	8846464	0.054	29.948	**0.856193**	mg/L	1.468
Ca	43	255	31237	1.791	0.117	**1.500011**	mg/L	1.702
Ca	44	32958	534881	0.963	1.896	**1.514119**	mg/L	0.934
Sc	45	262577	264631	1.287	264631.129		mg/L	
Fe*	57	10623	1728110	1.730	6.490	**5.347330**	mg/L	1.751
Fe	57	10643	1730640	1.730	6.500	**5.327394**	mg/L	1.751
Fe	54	27959	3495281	1.370	13.103	**4.684685**	mg/L	1.536
Kr	83	132	163	1.160	30.334		mg/L	
Br	81	20252	20245	1.865	-6.676		mg/L	
Cl	35	156167	124917	1.443	-31249.605		mg/L	
C	13	4180	7749	0.474	3569.211		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

ımple ID: RINSE
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 17:57:37
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\RINSE.018
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	1740	3.011	-0.001	**-0.000017**	mg/L	234.241
Li	6	18730	20002	1.245	20002.487		mg/L	
Be	9	2	4	62.450	0.000	**0.000004**	mg/L	109.814
B	10	1866	1996	0.706	0.000	**0.000029**	mg/L	645.559
B	11	8409	9025	2.873	0.002	**0.000076**	mg/L	653.308
Si	28	17772	87015	1.266	0.290	**0.021939**	mg/L	2.508
Al	27	907	3892	2.575	0.013	**0.000471**	mg/L	1.725
P	31	7189	5196	7.266	-0.006	**-0.003666**	mg/L	29.742
Sc	45	262577	243018	1.309	243018.184		mg/L	
Ti	47	148	145	17.976	0.000	**0.000011**	mg/L	294.490
Ti	49	52	55	12.613	0.000	**0.000011**	mg/L	99.263
V**	51	1637	1803	8.771	0.001	**0.000029**	mg/L	62.520
V*	51	6447	5239	5.433	-0.003	**-0.000072**	mg/L	45.429
V	51	6936	5496	3.178	-0.004	**-0.000091**	mg/L	22.547
Cr*	52	6349	5745	1.687	-0.001	**-0.000015**	mg/L	132.179
Cr	52	7057	6647	1.160	0.000	**0.000014**	mg/L	139.724
Cr	53	2327	1846	4.128	-0.001	**-0.000301**	mg/L	27.062
Mn	55	184	500	13.945	0.001	**0.000023**	mg/L	20.013
Co	59	188	133	14.285	-0.000	**-0.000003**	mg/L	42.746
Ni	60	32	52	8.375	0.000	**0.000008**	mg/L	21.140
Ni	62	65	59	15.997	-0.000	**-0.000002**	mg/L	1014.595
Cu	63	178	293	8.481	0.001	**0.000020**	mg/L	16.405
Cu	65	156	243	10.300	0.000	**0.000031**	mg/L	27.824
Zn	66	285	654	3.902	0.002	**0.000181**	mg/L	8.627
Zn	68	299	566	4.651	0.001	**0.000178**	mg/L	7.781
Y	89	655666	703090	0.623	47423.409		mg/L	
As*	75	-414	-316	7.017	0.000	**0.000043**	mg/L	15.707
As	75	165	211	8.144	0.000	**0.000012**	mg/L	53.187
Se	77	185	181	4.764	-0.000	**-0.000072**	mg/L	56.952
Se	82	78	84	11.354	0.000	**0.000005**	mg/L	702.478
Sr	86	20	38	40.445	0.000	**0.000005**	mg/L	90.546
Sr	88	132	343	10.219	0.000	**0.000007**	mg/L	16.638
Zr	90	39	106	18.947	0.000	**0.000004**	mg/L	30.876
Zr	91	17	30	19.421	0.000	**0.000003**	mg/L	45.702
Mo	95	34	605	7.762	0.001	**0.000123**	mg/L	8.710
Mo	97	22	367	8.525	0.000	**0.000117**	mg/L	9.440
Ag	107	1821	47659	5.236	0.057	**0.003296**	mg/L	5.468
Ag	109	1766	46341	3.630	0.056	**0.003322**	mg/L	3.830

	Cd	111	9	13	34.148	0.000	**0.000001**	mg/L	128.372
	Cd	114	17	25	34.648	0.000	**0.000001**	mg/L	138.363
>	In	115	747751	800550	0.807	800550.258		mg/L	
	Sn	118	104	519	2.822	0.001	**0.000041**	mg/L	3.694
	Sn	120	94	717	9.695	0.001	**0.000045**	mg/L	10.551
	Sb	121	43	768	3.512	0.001	**0.000061**	mg/L	3.003
	Te	125	5	43	36.735	0.000	**0.000055**	mg/L	42.893
	Ba	137	55	231	4.377	0.000	**0.000033**	mg/L	5.036
	Ba	138	265	1590	1.518	0.002	**0.000039**	mg/L	1.828
	W	184	247	898	1.277	0.001	**0.000072**	mg/L	7.992
	Hg	201	80	353	3.152	0.000	**0.000182**	mg/L	9.084
	Hg*	202	186	803	2.160	0.001	**0.000175**	mg/L	9.360
	Hg	202	188	810	2.150	0.001	**0.000147**	mg/L	9.349
	Tb	159	823967	873082	0.143	0.098		mg/L	
	Ho	165	17	21	15.563	0.000		mg/L	
	Tl	205	256	298	11.306	0.000	**0.000002**	mg/L	109.133
	Pb	204	11	16	74.526	0.000	**0.000010**	mg/L	228.555
	Pb	208	505	1197	2.844	0.001	**0.000018**	mg/L	14.212
>	Bi	209	613899	607322	5.250	607321.993		mg/L	
	Th	232	165	750	8.170	0.001	**0.000013**	mg/L	13.537
	U	238	250	125	24.980	-0.000	**-0.000003**	mg/L	27.284
	Na	23	25091	80662	0.517	0.236	**0.010369**	mg/L	2.330
	Mg	24	1548	2796	3.720	0.006	**0.000356**	mg/L	6.063
	Mg	25	157	286	8.990	0.001	**0.000235**	mg/L	20.813
	K	39	915234	704816	0.843	-0.585	**-0.016730**	mg/L	2.607
	Ca	43	255	353	7.382	0.000	**0.006198**	mg/L	25.871
	Ca	44	32958	36587	0.519	0.025	**0.020010**	mg/L	8.761
>	Sc	45	262577	243018	1.309	243018.184		mg/L	
	Fe*	57	10623	10995	1.317	0.005	**0.003950**	mg/L	18.534
	Fe	57	10643	11024	1.309	0.005	**0.003962**	mg/L	18.489
	Fe	54	27959	24163	1.711	-0.007	**-0.002521**	mg/L	11.734
	Kr	83	132	119	7.895	-13.250		mg/L	
	Br	81	20252	19962	6.988	-290.519		mg/L	
	Cl	35	156167	85986	2.572	-70180.994		mg/L	
	C	13	4180	5321	2.198	1141.376		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: CCV
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 18:03:36
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\CCV.019
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	15217	0.822	0.646	**0.009428**	mg/L	1.904
Li	6	18730	20740	1.392	20740.238		mg/L	
Be	9	2	5076	2.802	0.245	**0.008830**	mg/L	1.969
B	10	1866	7767	1.134	0.275	**0.041689**	mg/L	1.424
B	11	8409	35062	0.747	1.242	**0.040702**	mg/L	2.221
Si	28	17772	162136	1.045	0.597	**0.045074**	mg/L	1.141
Al	27	907	58792	0.592	0.237	**0.008903**	mg/L	0.852
P	31	7189	22550	1.989	0.065	**0.039815**	mg/L	2.260
Sc	45	262577	244044	0.616	244043.708		mg/L	
Ti	47	148	7747	0.310	0.031	**0.010086**	mg/L	0.818
Ti	49	52	6253	1.581	0.025	**0.010246**	mg/L	1.460
V**	51	1637	106632	1.681	0.431	**0.010473**	mg/L	2.218
V*	51	6447	111767	1.139	0.433	**0.010405**	mg/L	1.606
V	51	6936	113241	0.189	0.438	**0.010438**	mg/L	0.779
Cr*	52	6349	97865	0.749	0.377	**0.010623**	mg/L	1.332
Cr	52	7057	98757	0.755	0.378	**0.010639**	mg/L	1.341
Cr	53	2327	12835	1.582	0.044	**0.010418**	mg/L	1.197
Mn	55	184	156530	0.481	0.641	**0.010876**	mg/L	1.030
Co	59	188	128505	0.520	0.526	**0.010596**	mg/L	0.536
Ni	60	32	28144	0.788	0.115	**0.010589**	mg/L	1.389
Ni	62	65	4447	2.221	0.018	**0.010505**	mg/L	1.688
Cu	63	178	70037	0.962	0.286	**0.010789**	mg/L	1.136
Cu	65	156	35524	1.230	0.145	**0.010953**	mg/L	1.487
Zn	66	285	23964	1.188	0.097	**0.010967**	mg/L	1.265
Zn	68	299	17988	0.663	0.073	**0.010879**	mg/L	0.418
Y	89	655666	722437	1.177	66771.167		mg/L	
As*	75	-414	28897	0.502	0.036	**0.009709**	mg/L	0.961
As	75	165	28911	0.191	0.035	**0.009664**	mg/L	1.619
Se	77	185	2650	1.022	0.003	**0.009677**	mg/L	2.646
Se	82	78	3285	1.209	0.004	**0.009825**	mg/L	0.285
Sr	86	20	36815	1.111	0.045	**0.010119**	mg/L	1.861
Sr	88	132	316401	1.704	0.385	**0.010156**	mg/L	3.117
Zr	90	39	171117	1.387	0.208	**0.010167**	mg/L	2.858
Zr	91	17	37941	0.537	0.046	**0.010088**	mg/L	1.973
Mo	95	34	47384	1.224	0.058	**0.010002**	mg/L	2.168
Mo	97	22	30073	0.528	0.037	**0.009988**	mg/L	1.880
Ag	107	1821	179381	0.955	0.216	**0.012456**	mg/L	1.244
Ag	109	1766	173755	1.333	0.209	**0.012507**	mg/L	0.889

Cd	111	9	36908	1.452	0.045	**0.010035**	mg/L	0.289
Cd	114	17	86881	1.967	0.106	**0.010081**	mg/L	0.486
In	115	747751	821974	1.481	821973.565		mg/L	
Sn	118	104	101397	1.038	0.123	**0.009962**	mg/L	1.074
Sn	120	94	140737	0.530	0.171	**0.010006**	mg/L	0.967
Sb	121	43	122424	2.251	0.149	**0.010129**	mg/L	1.594
Te	125	5	6855	6.660	0.008	**0.009859**	mg/L	5.523
Ba	137	55	54842	0.095	0.067	**0.010222**	mg/L	1.496
Ba	138	265	354151	0.542	0.431	**0.010286**	mg/L	1.850
W	184	247	94254	0.381	0.149	**0.009925**	mg/L	3.488
Hg	201	80	1797	4.399	0.003	**0.001092**	mg/L	6.989
Hg*	202	186	3843	1.408	0.006	**0.000990**	mg/L	4.311
Hg	202	188	4588	1.141	0.007	**0.000990**	mg/L	4.130
Tb	159	823967	891717	0.589	0.067		mg/L	
Ho	165	17	15	44.096	-0.000		mg/L	
Tl	205	256	290183	1.050	0.458	**0.010006**	mg/L	2.235
Pb	204	11	4881	2.160	0.008	**0.009764**	mg/L	3.578
Pb	208	505	405436	0.793	0.640	**0.010074**	mg/L	3.061
Bi	209	613899	633429	3.238	633429.370		mg/L	
Th	232	165	463552	0.624	0.732	**0.010031**	mg/L	2.829
U	238	250	498630	0.477	0.787	**0.009960**	mg/L	2.889
Na	23	25091	2630219	0.698	10.682	**0.468538**	mg/L	0.294
Mg	24	1548	1931597	0.897	7.909	**0.502120**	mg/L	1.119
Mg	25	157	263948	0.901	1.081	**0.437995**	mg/L	0.946
K	39	915234	4754569	0.668	15.997	**0.457356**	mg/L	0.974
Ca	43	255	9656	1.496	0.039	**0.494538**	mg/L	1.285
Ca	44	32958	185991	0.518	0.637	**0.508447**	mg/L	0.836
Sc	45	262577	244044	0.616	244043.708		mg/L	
Fe*	57	10623	170015	0.475	0.656	**0.540666**	mg/L	0.847
Fe	57	10643	170797	0.478	0.659	**0.540427**	mg/L	0.846
Fe	54	27959	392461	0.920	1.502	**0.536930**	mg/L	1.313
Kr	83	132	129	2.359	-3.917		mg/L	
Br	81	20252	20076	1.541	-176.185		mg/L	
Cl	35	156167	87396	1.838	-68770.589		mg/L	
C	13	4180	5257	2.220	1077.175		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

ample ID: QC CCB
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 18:11:35
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\QC CCB.020
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	1733	2.056	-0.003	**-0.000046**	mg/L	63.987
Li	6	18730	20385	1.012	20385.342		mg/L	
Be	9	2	3	89.214	0.000	**0.000002**	mg/L	238.301
B	10	1866	1893	2.905	-0.007	**-0.001022**	mg/L	54.095
B	11	8409	8756	1.569	-0.019	**-0.000635**	mg/L	47.537
Si	28	17772	77566	1.685	0.266	**0.020108**	mg/L	2.283
Al	27	907	2785	35.871	0.009	**0.000320**	mg/L	49.819
P	31	7189	4364	3.797	-0.009	**-0.005263**	mg/L	7.684
Sc	45	262577	232326	0.369	232325.713		mg/L	
Ti	47	148	135	16.946	0.000	**0.000007**	mg/L	472.577
Ti	49	52	57	9.117	0.000	**0.000020**	mg/L	44.645
V**	51	1637	1534	7.061	0.000	**0.000009**	mg/L	126.167
V*	51	6447	4787	1.438	-0.004	**-0.000095**	mg/L	5.561
V	51	6936	5166	2.514	-0.004	**-0.000100**	mg/L	12.844
Cr*	52	6349	5624	1.333	0.000	**0.000001**	mg/L	1219.999
Cr	52	7057	6486	1.399	0.001	**0.000029**	mg/L	45.086
Cr	53	2327	1769	1.653	-0.001	**-0.000297**	mg/L	9.529
Mn	55	184	433	10.921	0.001	**0.000020**	mg/L	16.979
Co	59	188	150	2.491	-0.000	**-0.000001**	mg/L	22.870
Ni	60	32	47	3.339	0.000	**0.000007**	mg/L	8.935
Ni	62	65	68	5.313	0.000	**0.000026**	mg/L	33.749
Cu	63	178	165	10.410	0.000	**0.000001**	mg/L	227.582
Cu	65	156	177	17.155	0.000	**0.000013**	mg/L	77.705
Zn	66	285	405	0.908	0.001	**0.000074**	mg/L	1.495
Zn	68	299	372	5.399	0.000	**0.000070**	mg/L	18.693
Y	89	655666	689310	0.363	33644.067		mg/L	
As*	75	-414	-362	21.960	0.000	**0.000026**	mg/L	108.411
As	75	165	187	5.886	0.000	**0.000004**	mg/L	85.754
Se	77	185	185	3.806	-0.000	**-0.000044**	mg/L	73.479
Se	82	78	82	18.416	0.000	**0.000002**	mg/L	2778.245
Sr	86	20	22	218.360	0.000	**0.000000**	mg/L	3613.540
Sr	88	132	232	8.382	0.000	**0.000003**	mg/L	19.884
Zr	90	39	53	9.524	0.000	**0.000001**	mg/L	43.828
Zr	91	17	18	52.960	0.000	**0.000000**	mg/L	1279.210
Mo	95	34	303	15.531	0.000	**0.000059**	mg/L	17.117
Mo	97	22	200	19.843	0.000	**0.000061**	mg/L	21.934
Ag	107	1821	20640	4.502	0.024	**0.001370**	mg/L	5.002
Ag	109	1766	19544	4.715	0.022	**0.001341**	mg/L	5.170

Cd	111	9	9	22.927	0.000	**0.000000**	mg/L	691.273
Cd	114	17	16	18.261	-0.000	**-0.000000**	mg/L	177.651
In	115	747751	788806	0.442	788805.654		mg/L	
Sn	118	104	511	10.455	0.001	**0.000041**	mg/L	12.805
Sn	120	94	692	5.291	0.001	**0.000044**	mg/L	5.826
Sb	121	43	984	9.787	0.001	**0.000081**	mg/L	9.799
Te	125	5	76	25.179	0.000	**0.000106**	mg/L	26.915
Ba	137	55	96	29.667	0.000	**0.000007**	mg/L	76.240
Ba	138	265	724	7.834	0.001	**0.000013**	mg/L	12.143
W	184	247	811	10.435	0.001	**0.000061**	mg/L	19.776
Hg	201	80	298	7.090	0.000	**0.000143**	mg/L	5.018
Hg*	202	186	679	1.196	0.001	**0.000137**	mg/L	4.528
Hg	202	188	686	1.186	0.001	**0.000115**	mg/L	4.660
Tb	159	823967	868442	0.882	0.068		mg/L	
Ho	165	17	21	17.647	0.000		mg/L	
Tl	205	256	293	10.363	0.000	**0.000001**	mg/L	110.780
Pb	204	11	27	57.756	0.000	**0.000033**	mg/L	95.936
Pb	208	505	697	4.144	0.000	**0.000005**	mg/L	15.009
Bi	209	613899	616164	3.907	616164.036		mg/L	
Th	232	165	579	9.496	0.001	**0.000009**	mg/L	17.820
U	238	250	87	24.533	-0.000	**-0.000003**	mg/L	11.305
Na	23	25091	70318	0.806	0.207	**0.009085**	mg/L	1.713
Mg	24	1548	1252	4.454	-0.001	**-0.000032**	mg/L	51.328
Mg	25	157	123	17.905	-0.000	**-0.000029**	mg/L	130.017
K	39	915234	677161	1.083	-0.571	**-0.016322**	mg/L	4.172
Ca	43	255	340	10.230	0.000	**0.006302**	mg/L	29.675
Ca	44	32958	34875	2.152	0.025	**0.019644**	mg/L	12.269
Sc	45	262577	232326	0.369	232325.713		mg/L	
Fe*	57	10623	10615	1.183	0.005	**0.004313**	mg/L	9.744
Fe	57	10643	10642	1.169	0.005	**0.004323**	mg/L	9.509
Fe	54	27959	23625	0.200	-0.005	**-0.001711**	mg/L	10.772
Kr	83	132	122	7.201	-10.833		mg/L	
Br	81	20252	19457	2.637	-794.901		mg/L	
Cl	35	156167	84161	3.612	-72005.861		mg/L	
C	13	4180	5081	1.840	901.668		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

ample ID: L4094-1X
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 18:17:35
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\L4094-1X.021
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	10410	1.093	0.398	**0.005816**	mg/L	1.846
Li	6	18730	21402	1.180	21402.047		mg/L	
Be	9	2	300	5.000	0.014	**0.000503**	mg/L	6.073
B	10	1866	1705	1.110	-0.020	**-0.003026**	mg/L	5.381
B	11	8409	7584	1.486	-0.095	**-0.003100**	mg/L	1.163
Si	28	17772	366046	5.766	1.389	**0.104933**	mg/L	6.129
Al	27	907	17928956	1.093	71.348	**2.675123**	mg/L	0.936
P	31	7189	39551	0.751	0.130	**0.079619**	mg/L	1.290
Sc	45	262577	251281	0.923	251281.023		mg/L	
Ti	47	148	104133	0.765	0.414	**0.133856**	mg/L	1.131
Ti	49	52	85020	0.454	0.338	**0.136271**	mg/L	0.543
V**	51	1637	75413	1.347	0.294	**0.007145**	mg/L	0.703
V*	51	6447	79525	1.100	0.292	**0.007007**	mg/L	0.923
V	51	6936	79707	1.290	0.291	**0.006936**	mg/L	1.363
Cr*	52	6349	81149	0.056	0.299	**0.008423**	mg/L	0.965
Cr	52	7057	82903	0.094	0.303	**0.008534**	mg/L	0.921
Cr	53	2327	10710	1.052	0.034	**0.008045**	mg/L	2.403
Mn	55	184	3124835	1.187	12.435	**0.211075**	mg/L	0.744
Co	59	188	24321	1.066	0.096	**0.001936**	mg/L	1.351
Ni	60	32	12540	0.621	0.050	**0.004576**	mg/L	1.239
Ni	62	65	2374	2.421	0.009	**0.005377**	mg/L	2.181
Cu	63	178	79678	1.073	0.316	**0.011924**	mg/L	1.911
Cu	65	156	39990	1.093	0.159	**0.011979**	mg/L	1.558
Zn	66	285	84909	1.013	0.337	**0.038042**	mg/L	1.605
Zn	68	299	65794	0.522	0.261	**0.039083**	mg/L	1.098
Y	89	655666	1143496	0.785	487829.775		mg/L	
As*	75	-414	4544	1.139	0.006	**0.001624**	mg/L	1.846
As	75	165	5317	0.959	0.006	**0.001692**	mg/L	1.919
Se	77	185	300	1.770	0.000	**0.000357**	mg/L	5.945
Se	82	78	164	1.802	0.000	**0.000231**	mg/L	3.129
Sr	86	20	33635	1.633	0.040	**0.009059**	mg/L	1.423
Sr	88	132	292153	0.779	0.348	**0.009189**	mg/L	0.293
Zr	90	39	162999	2.503	0.194	**0.009489**	mg/L	1.617
Zr	91	17	36465	0.558	0.043	**0.009501**	mg/L	0.498
Mo	95	34	4055	0.357	0.005	**0.000832**	mg/L	0.950
Mo	97	22	2686	1.991	0.003	**0.000867**	mg/L	2.894
Ag	107	1821	7125	0.826	0.006	**0.000350**	mg/L	1.081
Ag	109	1766	6978	3.885	0.006	**0.000357**	mg/L	5.840

Cd	111	9	3220	2.862	0.004	**0.000856**	mg/L	1.927
Cd	114	17	7542	2.208	0.009	**0.000856**	mg/L	1.930
In	115	747751	838642	0.937	838641.728		mg/L	
Sn	118	104	4901	5.821	0.006	**0.000461**	mg/L	6.118
Sn	120	94	6905	1.059	0.008	**0.000474**	mg/L	0.716
Sb	121	43	1028	10.207	0.001	**0.000080**	mg/L	11.203
Te	125	5	63	12.689	0.000	**0.000081**	mg/L	12.860
Ba	137	55	344634	1.054	0.411	**0.063010**	mg/L	1.176
Ba	138	265	1931121	0.495	2.302	**0.055001**	mg/L	0.764
W	184	247	4019	2.336	0.006	**0.000384**	mg/L	3.608
Hg	201	80	690	5.267	0.001	**0.000373**	mg/L	2.023
Hg*	202	186	1570	5.500	0.002	**0.000360**	mg/L	2.145
Hg	202	188	1602	5.436	0.002	**0.000305**	mg/L	2.122
Tb	159	823967	931904	0.346	0.085		mg/L	
Ho	165	17	18106	0.316	0.028		mg/L	
Tl	205	256	2913	4.207	0.004	**0.000088**	mg/L	9.414
Pb	204	11	20101	0.859	0.031	**0.039061**	mg/L	6.647
Pb	208	505	1511586	0.138	2.314	**0.036441**	mg/L	5.628
Bi	209	613899	654408	5.590	654407.938		mg/L	
Th	232	165	191989	2.225	0.293	**0.004022**	mg/L	3.610
U	238	250	149219	1.119	0.228	**0.002886**	mg/L	6.374
Na	23	25091	834724	0.549	3.227	**0.141525**	mg/L	1.400
Mg	24	1548	1999958	1.127	7.953	**0.504910**	mg/L	0.844
Mg	25	157	304051	1.293	1.209	**0.490060**	mg/L	1.588
K	39	915234	5108251	1.567	16.843	**0.481535**	mg/L	1.293
Ca	43	255	23745	0.550	0.094	**1.198367**	mg/L	0.830
Ca	44	32958	413745	0.608	1.521	**1.214824**	mg/L	0.628
Sc	45	262577	251281	0.923	251281.023		mg/L	
Fe*	57	10623	2213591	0.934	8.769	**7.224734**	mg/L	0.476
Fe	57	10643	2215514	0.933	8.776	**7.193507**	mg/L	0.476
Fe	54	27959	4959825	1.975	19.630	**7.018652**	mg/L	1.093
Kr	83	132	171	3.431	38.501		mg/L	
Br	81	20252	20796	1.847	543.618		mg/L	
Cl	35	156167	79737	1.016	-76429.254		mg/L	
C	13	4180	10347	2.249	6166.978		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

mple ID: DUP WG11556-3X
ınitial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 18:23:37
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\DUP WG11556-3X.022
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	10820	1.427	0.419	**0.006118**	mg/L	2.256
Li	6	18730	21337	1.429	21336.909		mg/L	
Be	9	2	302	13.053	0.014	**0.000507**	mg/L	11.776
B	10	1866	1641	2.062	-0.023	**-0.003443**	mg/L	10.133
B	11	8409	7304	2.072	-0.107	**-0.003493**	mg/L	8.318
Si	28	17772	493057	5.595	1.890	**0.142774**	mg/L	5.052
Al	27	907	19639448	0.660	77.997	**2.924422**	mg/L	0.342
P	31	7189	41595	0.497	0.138	**0.084400**	mg/L	1.431
Sc	45	262577	251789	0.821	251788.943		mg/L	
Ti	47	148	116910	1.339	0.464	**0.149993**	mg/L	1.180
Ti	49	52	96336	0.457	0.382	**0.154107**	mg/L	0.661
V**	51	1637	78064	1.361	0.304	**0.007388**	mg/L	2.217
V*	51	6447	81960	0.533	0.301	**0.007225**	mg/L	1.448
V	51	6936	82440	0.147	0.301	**0.007180**	mg/L	0.833
Cr*	52	6349	86733	0.547	0.320	**0.009029**	mg/L	1.273
Cr	52	7057	88481	0.548	0.325	**0.009139**	mg/L	1.250
Cr	53	2327	11274	1.847	0.036	**0.008556**	mg/L	1.507
Mn	55	184	3403376	0.510	13.516	**0.229432**	mg/L	0.441
Co	59	188	24965	1.750	0.098	**0.001983**	mg/L	1.193
Ni	60	32	13096	0.700	0.052	**0.004770**	mg/L	1.437
Ni	62	65	2469	1.959	0.010	**0.005587**	mg/L	1.207
Cu	63	178	81969	0.977	0.325	**0.012243**	mg/L	1.688
Cu	65	156	42426	0.300	0.168	**0.012685**	mg/L	0.989
Zn	66	285	92825	0.786	0.368	**0.041514**	mg/L	1.036
Zn	68	299	70966	0.228	0.281	**0.042082**	mg/L	0.713
Y	89	655666	1166523	0.416	510856.410		mg/L	
As*	75	-414	4522	0.849	0.006	**0.001628**	mg/L	0.178
As	75	165	5372	0.838	0.006	**0.001724**	mg/L	0.605
Se	77	185	316	2.061	0.000	**0.000432**	mg/L	7.741
Se	82	78	157	1.660	0.000	**0.000215**	mg/L	5.419
Sr	86	20	33972	0.991	0.041	**0.009225**	mg/L	1.155
Sr	88	132	293158	0.476	0.352	**0.009295**	mg/L	1.055
Zr	90	39	172742	1.498	0.208	**0.010140**	mg/L	2.107
Zr	91	17	38813	1.823	0.047	**0.010195**	mg/L	1.683
Mo	95	34	4493	3.114	0.005	**0.000930**	mg/L	2.357
Mo	97	22	2756	6.312	0.003	**0.000897**	mg/L	5.595
Ag	107	1821	7658	2.264	0.007	**0.000391**	mg/L	3.725
Ag	109	1766	7367	3.158	0.006	**0.000389**	mg/L	4.085

Cd	111	9	3370	1.508	0.004	**0.000903**	mg/L	1.815
Cd	114	17	8062	4.129	0.010	**0.000922**	mg/L	4.250
In	115	747751	831898	0.793	831898.486		mg/L	
Sn	118	104	5250	2.064	0.006	**0.000499**	mg/L	2.408
Sn	120	94	7020	3.368	0.008	**0.000486**	mg/L	2.655
Sb	121	43	833	6.108	0.001	**0.000064**	mg/L	5.715
Te	125	5	48	29.863	0.000	**0.000061**	mg/L	33.268
Ba	137	55	277385	1.469	0.333	**0.051122**	mg/L	1.406
Ba	138	265	1763979	0.264	2.120	**0.050648**	mg/L	1.053
W	184	247	4010	2.433	0.006	**0.000380**	mg/L	7.958
Hg	201	80	729	6.447	0.001	**0.000393**	mg/L	7.024
Hg*	202	186	1606	5.798	0.002	**0.000365**	mg/L	0.884
Hg	202	188	1638	5.674	0.002	**0.000310**	mg/L	0.956
Tb	159	823967	937041	0.058	0.081		mg/L	
Ho	165	17	19193	0.566	0.029		mg/L	
Tl	205	256	3118	6.008	0.004	**0.000095**	mg/L	12.782
Pb	204	11	20508	1.252	0.031	**0.039507**	mg/L	5.571
Pb	208	505	1541757	0.984	2.341	**0.036861**	mg/L	5.671
Bi	209	613899	660057	6.346	660056.720		mg/L	
Th	232	165	204419	1.793	0.310	**0.004249**	mg/L	4.809
U	238	250	188998	0.228	0.287	**0.003627**	mg/L	6.510
Na	23	25091	892040	0.360	3.447	**0.151209**	mg/L	0.738
Mg	24	1548	2140788	0.450	8.497	**0.539407**	mg/L	0.470
Mg	25	157	318864	0.553	1.266	**0.512918**	mg/L	1.344
K	39	915234	5449011	2.136	18.154	**0.519019**	mg/L	1.567
Ca	43	255	24436	0.908	0.096	**1.231026**	mg/L	0.316
Ca	44	32958	423713	0.887	1.557	**1.243827**	mg/L	1.426
Sc	45	262577	251789	0.821	251788.943		mg/L	
Fe*	57	10623	2367224	0.698	9.361	**7.712830**	mg/L	0.258
Fe	57	10643	2369203	0.698	9.369	**7.679243**	mg/L	0.258
Fe	54	27959	5229093	0.557	20.662	**7.387326**	mg/L	0.265
Kr	83	132	176	3.739	44.001		mg/L	
Br	81	20252	21010	0.754	757.394		mg/L	
Cl	35	156167	76790	1.026	-79376.353		mg/L	
C	13	4180	10306	2.468	6126.520		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: MS WG11556-4X
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 18:29:45
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\MS WG11556-4X.023
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

	Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
	Li	7	1652	40855	0.326	1.748	**0.025527**	mg/L	1.428
>	Li	6	18730	22253	1.667	22253.488		mg/L	
	Be	9	2	10396	1.124	0.467	**0.016864**	mg/L	2.765
	B	10	1866	12492	2.151	0.462	**0.070061**	mg/L	4.462
	B	11	8409	54935	4.452	2.021	**0.066244**	mg/L	7.170
	Si	28	17772	908205	2.911	3.455	**0.260967**	mg/L	3.500
	Al	27	907	38497015	2.579	149.305	**5.598058**	mg/L	3.120
	P	31	7189	75683	1.111	0.266	**0.162967**	mg/L	1.799
>	Sc	45	262577	257864	0.558	257864.108		mg/L	
	Ti	47	148	257000	0.250	0.996	**0.322166**	mg/L	0.352
	Ti	49	52	212372	0.410	0.823	**0.331808**	mg/L	0.451
	V**	51	1637	306034	1.602	1.181	**0.028706**	mg/L	2.119
	V*	51	6447	315401	1.200	1.199	**0.028772**	mg/L	1.694
	V	51	6936	319777	0.569	1.214	**0.028948**	mg/L	0.286
	Cr*	52	6349	280701	0.780	1.064	**0.030006**	mg/L	1.325
	Cr	52	7057	282426	0.788	1.068	**0.030086**	mg/L	1.338
	Cr	53	2327	35016	0.881	0.127	**0.030242**	mg/L	0.584
	Mn	55	184	3854866	2.226	14.950	**0.253767**	mg/L	2.769
	Co	59	188	270083	0.897	1.047	**0.021091**	mg/L	0.723
	Ni	60	32	68066	0.804	0.264	**0.024251**	mg/L	1.244
	Ni	62	65	11386	0.396	0.044	**0.025662**	mg/L	0.816
	Cu	63	178	214646	0.505	0.832	**0.031340**	mg/L	0.057
	Cu	65	156	109387	0.463	0.424	**0.032003**	mg/L	0.275
	Zn	66	285	148296	0.394	0.574	**0.064828**	mg/L	0.953
	Zn	68	299	113483	0.995	0.439	**0.065806**	mg/L	1.491
	Y	89	655666	1318515	0.410	662848.376		mg/L	
	As*	75	-414	60713	0.288	0.074	**0.020125**	mg/L	0.925
	As	75	165	60331	0.173	0.073	**0.020122**	mg/L	0.713
	Se	77	185	5012	0.231	0.006	**0.018913**	mg/L	0.934
	Se	82	78	6351	1.064	0.008	**0.019134**	mg/L	1.793
	Sr	86	20	109951	1.067	0.133	**0.030067**	mg/L	0.363
	Sr	88	132	947818	0.564	1.147	**0.030265**	mg/L	1.201
	Zr	90	39	542321	0.905	0.656	**0.032051**	mg/L	1.407
	Zr	91	17	121384	0.505	0.147	**0.032110**	mg/L	0.903
	Mo	95	34	92839	0.270	0.112	**0.019497**	mg/L	0.990
	Mo	97	22	59608	1.252	0.072	**0.019698**	mg/L	2.032
	Ag	107	1821	70406	21.189	0.083	**0.004782**	mg/L	22.575
	Ag	109	1766	69853	20.991	0.082	**0.004922**	mg/L	22.364

	Cd	111	9	73808	0.401	0.089	**0.019963**	mg/L	0.395
	Cd	114	17	173032	0.802	0.209	**0.019973**	mg/L	0.532
>	In	115	747751	826367	0.773	826367.299		mg/L	
	Sn	118	104	191407	0.800	0.231	**0.018713**	mg/L	0.198
	Sn	120	94	259932	0.711	0.314	**0.018387**	mg/L	0.797
	Sb	121	43	162168	0.922	0.196	**0.013347**	mg/L	1.009
	Te	125	5	13548	2.171	0.016	**0.019397**	mg/L	1.464
	Ba	137	55	401086	0.255	0.485	**0.074423**	mg/L	0.951
	Ba	138	265	2326729	1.485	2.816	**0.067259**	mg/L	2.199
	W	184	247	125829	0.958	0.185	**0.012345**	mg/L	2.771
	Hg	201	80	864	3.548	0.001	**0.000459**	mg/L	0.955
	Hg*	202	186	1686	2.286	0.002	**0.000373**	mg/L	2.666
	Hg	202	188	2680	1.792	0.004	**0.000519**	mg/L	2.623
	Tb	159	823967	935272	0.258	0.034		mg/L	
	Ho	165	17	28195	0.083	0.041		mg/L	
	Tl	205	256	574865	0.577	0.845	**0.018473**	mg/L	3.093
	Pb	204	11	39426	1.258	0.058	**0.073633**	mg/L	4.720
	Pb	208	505	3019101	0.779	4.441	**0.069944**	mg/L	3.017
>	Bi	209	613899	680133	3.457	680132.517		mg/L	
	Th	232	165	1199076	0.131	1.764	**0.024175**	mg/L	3.463
	U	238	250	1155662	0.492	1.700	**0.021510**	mg/L	3.935
	Na	23	25091	5987028	2.148	23.125	**1.014288**	mg/L	2.707
	Mg	24	1548	6679435	2.220	25.900	**1.644239**	mg/L	2.772
	Mg	25	157	986483	0.602	3.825	**1.549893**	mg/L	1.128
	K	39	915234	17466226	1.164	64.253	**1.836973**	mg/L	1.813
	Ca	43	255	42810	0.464	0.165	**2.114767**	mg/L	1.013
	Ca	44	32958	724058	0.790	2.682	**2.142337**	mg/L	0.702
>	Sc	45	262577	257864	0.558	257864.108		mg/L	
	Fe*	57	10623	3103220	0.414	11.994	**9.882230**	mg/L	0.965
	Fe	57	10643	3106688	0.414	12.008	**9.841981**	mg/L	0.965
	Fe	54	27959	6833308	1.470	26.395	**9.437305**	mg/L	2.032
	Kr	83	132	204	3.744	71.335		mg/L	
	Br	81	20252	22321	1.482	2068.566		mg/L	
	Cl	35	156167	79181	0.535	-76985.749		mg/L	
	C	13	4180	10171	2.202	5991.799		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: PDS WG11556-4X
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 18:37:49
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\PDS WG11556-4X.024
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

	Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
	Li	7	1652	37444	0.771	1.654	**0.024161**	mg/L	1.039
>	Li	6	18730	21488	1.462	21488.483		mg/L	
	Be	9	2	10705	1.590	0.498	**0.017981**	mg/L	2.433
	B	10	1866	13964	1.220	0.550	**0.083471**	mg/L	2.763
	B	11	8409	61671	0.506	2.422	**0.079369**	mg/L	2.330
	Si	28	17772	582041	3.208	2.245	**0.169618**	mg/L	3.960
	Al	27	907	19967746	2.435	79.350	**2.975144**	mg/L	3.101
	P	31	7189	76764	0.468	0.278	**0.170021**	mg/L	1.199
>	Sc	45	262577	251666	0.710	251666.295		mg/L	
	Ti	47	148	130908	0.959	0.520	**0.168061**	mg/L	1.211
	Ti	49	52	106834	0.242	0.424	**0.170992**	mg/L	0.671
	V**	51	1637	280982	0.381	1.110	**0.026996**	mg/L	0.997
	V*	51	6447	288950	0.458	1.124	**0.026972**	mg/L	0.783
	V	51	6936	290091	0.243	1.126	**0.026864**	mg/L	0.950
	Cr*	52	6349	265178	0.982	1.030	**0.029024**	mg/L	1.662
	Cr	52	7057	267107	0.980	1.035	**0.029132**	mg/L	1.665
	Cr	53	2327	32832	0.133	0.122	**0.028972**	mg/L	0.618
	Mn	55	184	3710822	0.327	14.745	**0.250281**	mg/L	0.539
	Co	59	188	273262	0.653	1.085	**0.021866**	mg/L	1.342
	Ni	60	32	67662	1.024	0.269	**0.024699**	mg/L	0.374
	Ni	62	65	11026	2.231	0.044	**0.025462**	mg/L	2.297
	Cu	63	178	215065	0.812	0.854	**0.032176**	mg/L	0.598
	Cu	65	156	108926	0.406	0.432	**0.032654**	mg/L	0.787
	Zn	66	285	138734	1.785	0.550	**0.062138**	mg/L	2.096
	Zn	68	299	106323	2.103	0.421	**0.063163**	mg/L	2.095
	Y	89	655666	1140861	0.971	485194.788		mg/L	
	As*	75	-414	63582	0.644	0.077	**0.020878**	mg/L	1.067
	As	75	165	63095	0.631	0.075	**0.020854**	mg/L	0.623
	Se	77	185	5379	1.094	0.006	**0.020160**	mg/L	0.458
	Se	82	78	6821	0.833	0.008	**0.020380**	mg/L	1.614
	Sr	86	20	105015	0.134	0.126	**0.028458**	mg/L	0.712
	Sr	88	132	909432	1.125	1.090	**0.028773**	mg/L	0.747
	Zr	90	39	507402	1.248	0.608	**0.029712**	mg/L	0.764
	Zr	91	17	113274	1.509	0.136	**0.029690**	mg/L	1.167
	Mo	95	34	97471	0.579	0.117	**0.020283**	mg/L	0.707
	Mo	97	22	61647	1.593	0.074	**0.020184**	mg/L	0.843
	Ag	107	1821	41162	14.379	0.047	**0.002708**	mg/L	14.867
	Ag	109	1766	38812	14.115	0.044	**0.002643**	mg/L	14.708

Cd	111	9	76836	1.009	0.092	**0.020592**	mg/L	0.261
Cd	114	17	182869	1.250	0.219	**0.020916**	mg/L	0.898
In	115	747751	833954	0.764	833954.038		mg/L	
Sn	118	104	207990	0.575	0.249	**0.020151**	mg/L	1.250
Sn	120	94	289389	0.365	0.347	**0.020285**	mg/L	0.962
Sb	121	43	251900	2.189	0.302	**0.020547**	mg/L	2.400
Te	125	5	14184	7.880	0.017	**0.020128**	mg/L	8.109
Ba	137	55	384395	0.606	0.461	**0.070675**	mg/L	0.759
Ba	138	265	2240859	0.575	2.687	**0.064181**	mg/L	0.354
W	184	247	193607	0.566	0.296	**0.019750**	mg/L	5.851
Hg	201	80	3824	6.539	0.006	**0.002298**	mg/L	1.400
Hg*	202	186	8600	6.845	0.013	**0.002197**	mg/L	1.839
Hg	202	188	10130	5.791	0.015	**0.002159**	mg/L	1.119
Tb	159	823967	920406	0.707	0.064		mg/L	
Ho	165	17	18927	0.444	0.029		mg/L	
Tl	205	256	595631	0.088	0.910	**0.019882**	mg/L	5.509
Pb	204	11	30171	1.178	0.046	**0.058483**	mg/L	4.659
Pb	208	505	2314879	0.951	3.537	**0.055698**	mg/L	5.312
Bi	209	613899	655626	5.411	655625.695		mg/L	
Th	232	165	1132822	1.061	1.732	**0.023729**	mg/L	6.411
U	238	250	1171021	0.234	1.789	**0.022637**	mg/L	5.768
Na	23	25091	6007330	1.009	23.777	**1.042890**	mg/L	1.719
Mg	24	1548	5720962	1.555	22.728	**1.442912**	mg/L	2.129
Mg	25	157	838737	0.125	3.332	**1.350181**	mg/L	0.801
K	39	915234	13545272	1.006	50.339	**1.439171**	mg/L	1.374
Ca	43	255	41666	0.688	0.165	**2.108829**	mg/L	0.486
Ca	44	32958	707307	0.482	2.685	**2.144455**	mg/L	0.760
Sc	45	262577	251666	0.710	251666.295		mg/L	
Fe*	57	10623	2671683	0.806	10.576	**8.713911**	mg/L	1.516
Fe	57	10643	2675058	0.805	10.590	**8.679686**	mg/L	1.514
Fe	54	27959	5985248	0.983	23.678	**8.465739**	mg/L	1.655
Kr	83	132	179	1.468	46.417		mg/L	
Br	81	20252	22031	3.669	1778.776		mg/L	
Cl	35	156167	76538	3.237	-79628.510		mg/L	
C	13	4180	11376	1.304	7196.011		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

'ample ID: PDS WG11556-4X
ınitial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 19:01:18
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\PDS WG11556-4X.025
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	40584	0.775	1.796	**0.026222**	mg/L	0.161
Li	6	18730	21544	0.929	21544.017		mg/L	
Be	9	2	10516	0.897	0.488	**0.017616**	mg/L	1.653
B	10	1866	12514	1.273	0.481	**0.072991**	mg/L	2.131
B	11	8409	55654	0.823	2.135	**0.069961**	mg/L	1.822
Si	28	17772	891595	2.180	3.462	**0.261522**	mg/L	2.508
Al	27	907	37789309	1.672	149.602	**5.609187**	mg/L	1.983
P	31	7189	74736	1.871	0.268	**0.164414**	mg/L	2.479
Sc	45	262577	252604	0.398	252603.585		mg/L	
Ti	47	148	254255	0.421	1.006	**0.325367**	mg/L	0.762
Ti	49	52	208518	0.610	0.825	**0.332572**	mg/L	0.721
V**	51	1637	304675	0.482	1.200	**0.029175**	mg/L	0.839
V*	51	6447	312931	0.331	1.214	**0.029148**	mg/L	0.573
V	51	6936	313890	0.429	1.216	**0.029008**	mg/L	0.121
Cr*	52	6349	277814	0.386	1.076	**0.030322**	mg/L	0.593
Cr	52	7057	279487	0.374	1.080	**0.030400**	mg/L	0.592
Cr	53	2327	34326	0.992	0.127	**0.030265**	mg/L	0.711
Mn	55	184	3766184	2.241	14.909	**0.253064**	mg/L	2.141
Co	59	188	266473	1.300	1.054	**0.021242**	mg/L	1.346
Ni	60	32	68003	1.385	0.269	**0.024732**	mg/L	1.225
Ni	62	65	11443	1.186	0.045	**0.026332**	mg/L	1.321
Cu	63	178	211951	0.992	0.838	**0.031591**	mg/L	0.800
Cu	65	156	108227	2.250	0.428	**0.032321**	mg/L	1.889
Zn	66	285	147402	0.877	0.582	**0.065778**	mg/L	0.490
Zn	68	299	113738	0.248	0.449	**0.067328**	mg/L	0.466
Y	89	655666	1291838	0.380	636171.528		mg/L	
As*	75	-414	59587	0.914	0.074	**0.020052**	mg/L	1.515
As	75	165	59518	1.055	0.073	**0.020152**	mg/L	1.735
Se	77	185	4942	0.762	0.006	**0.018933**	mg/L	1.501
Se	82	78	6144	0.444	0.007	**0.018783**	mg/L	0.320
Sr	86	20	109072	0.420	0.134	**0.030281**	mg/L	1.149
Sr	88	132	933667	1.620	1.147	**0.030262**	mg/L	1.442
Zr	90	39	536882	0.600	0.659	**0.032208**	mg/L	0.301
Zr	91	17	120271	0.814	0.148	**0.032296**	mg/L	0.322
Mo	95	34	91900	0.904	0.113	**0.019591**	mg/L	0.617
Mo	97	22	57820	0.593	0.071	**0.019395**	mg/L	0.339
Ag	107	1821	436731	3.344	0.534	**0.030820**	mg/L	2.686
Ag	109	1766	421839	3.843	0.516	**0.030860**	mg/L	3.270

Cd	111	9	73243	0.547	0.090	**0.020110**	mg/L	0.937
Cd	114	17	173543	1.789	0.213	**0.020337**	mg/L	2.298
In	115	747751	814045	0.749	814044.849		mg/L	
Sn	118	104	186850	1.049	0.229	**0.018545**	mg/L	1.254
Sn	120	94	260099	1.274	0.319	**0.018677**	mg/L	1.060
Sb	121	43	161356	0.843	0.198	**0.013482**	mg/L	1.335
Te	125	5	13686	2.810	0.017	**0.019891**	mg/L	2.236
Ba	137	55	501518	0.352	0.616	**0.094468**	mg/L	0.637
Ba	138	265	2863416	1.303	3.517	**0.084017**	mg/L	0.640
W	184	247	122433	1.658	0.190	**0.012721**	mg/L	3.660
Hg	201	80	841	3.398	0.001	**0.000476**	mg/L	5.311
Hg*	202	186	1738	0.930	0.002	**0.000413**	mg/L	6.260
Hg	202	188	2705	0.741	0.004	**0.000558**	mg/L	5.237
Tb	159	823967	917814	0.516	0.089		mg/L	
Ho	165	17	27713	1.381	0.043		mg/L	
Tl	205	256	566950	0.684	0.883	**0.019296**	mg/L	4.064
Pb	204	11	39547	0.987	0.062	**0.078190**	mg/L	3.762
Pb	208	505	2985404	0.632	4.653	**0.073283**	mg/L	5.410
> Bi	209	613899	642535	4.645	642535.408		mg/L	
Th	232	165	1185754	0.281	1.848	**0.025325**	mg/L	4.995
U	238	250	1138692	0.327	1.774	**0.022446**	mg/L	4.512
Na	23	25091	5844042	1.161	23.040	**1.010596**	mg/L	1.439
Mg	24	1548	6568580	1.852	25.999	**1.650515**	mg/L	2.081
Mg	25	157	986583	1.700	3.905	**1.582282**	mg/L	1.717
K	39	915234	17235509	0.617	64.747	**1.851096**	mg/L	0.890
Ca	43	255	42323	0.764	0.167	**2.134300**	mg/L	0.838
Ca	44	32958	712078	0.166	2.693	**2.151173**	mg/L	0.436
> Sc	45	262577	252604	0.398	252603.585		mg/L	
Fe*	57	10623	3008828	0.865	11.871	**9.780604**	mg/L	0.973
Fe	57	10643	3012257	0.863	11.884	**9.740983**	mg/L	0.971
Fe	54	27959	6679662	1.012	26.336	**9.416280**	mg/L	0.627
Kr	83	132	205	4.860	72.585		mg/L	
Br	81	20252	23098	1.904	2846.165		mg/L	
Cl	35	156167	98390	0.391	-57777.173		mg/L	
C	13	4180	9865	2.041	5685.658		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

ample ID: CCV
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 19:08:33
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\CCV.026
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	14991	0.694	0.655	**0.009559**	mg/L	0.821
Li	6	18730	20182	0.382	20182.430		mg/L	
Be	9	2	5161	2.230	0.256	**0.009227**	mg/L	1.957
B	10	1866	7915	1.209	0.293	**0.044367**	mg/L	1.133
B	11	8409	34669	1.000	1.269	**0.041588**	mg/L	1.106
Si	28	17772	162526	2.996	0.641	**0.048450**	mg/L	3.234
Al	27	907	57040	3.183	0.245	**0.009201**	mg/L	2.852
P	31	7189	22131	0.806	0.069	**0.042361**	mg/L	1.654
Sc	45	262577	229206	0.379	229205.776		mg/L	
Ti	47	148	7420	0.417	0.032	**0.010288**	mg/L	0.809
Ti	49	52	6002	2.474	0.026	**0.010474**	mg/L	2.670
V**	51	1637	103273	0.593	0.444	**0.010803**	mg/L	0.238
V*	51	6447	107295	0.439	0.444	**0.010647**	mg/L	0.200
V	51	6936	107140	1.338	0.441	**0.010519**	mg/L	1.225
Cr*	52	6349	94407	0.926	0.388	**0.010929**	mg/L	0.878
Cr	52	7057	95296	0.903	0.389	**0.010951**	mg/L	0.853
Cr	53	2327	12085	0.177	0.044	**0.010452**	mg/L	0.581
Mn	55	184	148025	0.469	0.645	**0.010950**	mg/L	0.303
Co	59	188	124593	0.740	0.543	**0.010939**	mg/L	0.455
Ni	60	32	27177	0.888	0.118	**0.010887**	mg/L	0.513
Ni	62	65	4351	2.503	0.019	**0.010950**	mg/L	2.443
Cu	63	178	66628	1.068	0.290	**0.010928**	mg/L	0.701
Cu	65	156	34166	1.503	0.148	**0.011216**	mg/L	1.135
Zn	66	285	22654	1.601	0.098	**0.011039**	mg/L	1.337
Zn	68	299	17326	1.786	0.074	**0.011161**	mg/L	2.179
Y	89	655666	684189	0.339	28523.004		mg/L	
As*	75	-414	28083	0.998	0.036	**0.009842**	mg/L	0.821
As	75	165	28016	0.205	0.035	**0.009771**	mg/L	0.046
Se	77	185	2560	2.008	0.003	**0.009760**	mg/L	2.354
Se	82	78	3205	0.838	0.004	**0.010004**	mg/L	0.688
Sr	86	20	34892	0.984	0.044	**0.010006**	mg/L	0.914
Sr	88	132	301440	1.725	0.382	**0.010094**	mg/L	1.784
Zr	90	39	162730	1.648	0.207	**0.010087**	mg/L	1.711
Zr	91	17	36447	0.739	0.046	**0.010110**	mg/L	0.872
Mo	95	34	46019	0.840	0.058	**0.010134**	mg/L	0.724
Mo	97	22	29337	2.264	0.037	**0.010165**	mg/L	2.129
Ag	107	1821	200464	3.781	0.252	**0.014547**	mg/L	3.745
Ag	109	1766	193251	2.847	0.243	**0.014537**	mg/L	2.804

Cd	111	9	35707	0.925	0.045	**0.010130**	mg/L	0.947
Cd	114	17	84197	0.433	0.107	**0.010194**	mg/L	0.332
In	115	747751	787738	0.174	787738.345		mg/L	
Sn	118	104	97660	0.913	0.124	**0.010011**	mg/L	0.862
Sn	120	94	134702	1.495	0.171	**0.009992**	mg/L	1.669
Sb	121	43	118778	1.267	0.151	**0.010254**	mg/L	1.333
Te	125	5	6678	2.520	0.008	**0.010027**	mg/L	2.523
Ba	137	55	52452	0.402	0.067	**0.010200**	mg/L	0.239
Ba	138	265	338289	0.607	0.429	**0.010250**	mg/L	0.656
W	184	247	92968	0.790	0.149	**0.009989**	mg/L	4.185
Hg	201	80	1700	2.544	0.003	**0.001053**	mg/L	7.077
Hg*	202	186	3828	1.162	0.006	**0.001006**	mg/L	3.123
Hg	202	188	4562	0.992	0.007	**0.001005**	mg/L	3.293
Tb	159	823967	864599	0.464	0.052		mg/L	
Ho	165	17	23	28.868	0.000		mg/L	
Tl	205	256	287831	0.821	0.463	**0.010128**	mg/L	3.347
Pb	204	11	4943	1.325	0.008	**0.010089**	mg/L	2.835
Pb	208	505	401740	0.324	0.647	**0.010186**	mg/L	4.059
Bi	209	613899	621004	4.076	621003.578		mg/L	
Th	232	165	456927	1.118	0.737	**0.010094**	mg/L	5.193
U	238	250	491014	0.466	0.791	**0.010009**	mg/L	4.394
Na	23	25091	2564886	0.911	11.095	**0.486635**	mg/L	0.698
Mg	24	1548	1824152	0.303	7.953	**0.504883**	mg/L	0.618
Mg	25	157	249315	0.521	1.087	**0.440491**	mg/L	0.392
K	39	915234	4732868	1.605	17.164	**0.490708**	mg/L	2.100
Ca	43	255	9025	0.536	0.038	**0.492071**	mg/L	0.701
Ca	44	32958	173918	0.725	0.633	**0.505781**	mg/L	1.203
Sc	45	262577	229206	0.379	229205.776		mg/L	
Fe*	57	10623	163037	0.277	0.671	**0.552735**	mg/L	0.634
Fe	57	10643	163768	0.274	0.674	**0.552421**	mg/L	0.632
Fe	54	27959	373725	1.964	1.524	**0.544935**	mg/L	2.437
Kr	83	132	123	2.345	-9.750		mg/L	
Br	81	20252	21463	0.577	1210.855		mg/L	
Cl	35	156167	95312	0.720	-60855.090		mg/L	
C	13	4180	5244	2.521	1064.252		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

`ample ID: QC CCB
ınitial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 19:16:32
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\QC CCB.027
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	1671	5.013	-0.003	**-0.000045**	mg/L	129.141
Li	6	18730	19631	0.536	19630.917		mg/L	
Be	9	2	6	20.000	0.000	**0.000008**	mg/L	27.793
B	10	1866	2078	0.993	0.006	**0.000945**	mg/L	10.600
B	11	8409	9378	2.279	0.029	**0.000942**	mg/L	29.086
Si	28	17772	77602	1.229	0.278	**0.020990**	mg/L	1.481
Al	27	907	2795	21.972	0.009	**0.000337**	mg/L	29.707
P	31	7189	4825	4.134	-0.006	**-0.003608**	mg/L	14.766
Sc	45	262577	224570	0.553	224569.882		mg/L	
Ti	47	148	127	2.887	0.000	**0.000001**	mg/L	308.555
Ti	49	52	70	50.310	0.000	**0.000045**	mg/L	136.731
V**	51	1637	1747	4.330	0.002	**0.000038**	mg/L	19.424
V*	51	6447	4025	3.371	-0.007	**-0.000159**	mg/L	7.646
V	51	6936	4328	2.441	-0.007	**-0.000170**	mg/L	5.102
Cr*	52	6349	5517	2.114	0.000	**0.000011**	mg/L	101.622
Cr	52	7057	6373	1.651	0.002	**0.000042**	mg/L	21.264
Cr	53	2327	1444	2.305	-0.002	**-0.000579**	mg/L	4.638
Mn	55	184	430	15.126	0.001	**0.000021**	mg/L	24.735
Co	59	188	111	8.557	-0.000	**-0.000004**	mg/L	20.047
Ni	60	32	37	15.425	0.000	**0.000004**	mg/L	59.742
Ni	62	65	55	4.695	-0.000	**-0.000000**	mg/L	1268.356
Cu	63	178	149	1.709	-0.000	**-0.000001**	mg/L	49.439
Cu	65	156	163	8.813	0.000	**0.000010**	mg/L	50.009
Zn	66	285	421	5.848	0.001	**0.000089**	mg/L	14.307
Zn	68	299	344	3.890	0.000	**0.000059**	mg/L	16.589
Y	89	655666	668167	0.686	12501.006		mg/L	
As*	75	-414	-352	1.444	0.000	**0.000027**	mg/L	10.802
As	75	165	166	2.931	-0.000	**-0.000002**	mg/L	149.338
Se	77	185	178	3.028	-0.000	**-0.000058**	mg/L	43.026
Se	82	78	82	4.983	0.000	**0.000005**	mg/L	222.547
Sr	86	20	43	40.689	0.000	**0.000007**	mg/L	78.368
Sr	88	132	223	4.660	0.000	**0.000003**	mg/L	7.984
Zr	90	39	53	10.825	0.000	**0.000001**	mg/L	38.585
Zr	91	17	27	30.030	0.000	**0.000003**	mg/L	79.689
Mo	95	34	238	6.595	0.000	**0.000045**	mg/L	7.658
Mo	97	22	154	19.004	0.000	**0.000047**	mg/L	23.256
Ag	107	1821	36725	2.125	0.045	**0.002598**	mg/L	3.813
Ag	109	1766	35363	2.060	0.043	**0.002593**	mg/L	3.741

Cd	111	9	7	46.905	-0.000	**-0.000001**	mg/L	182.048
Cd	114	17	22	58.936	0.000	**0.000000**	mg/L	322.156
In	115	747751	774226	1.549	774226.195		mg/L	
Sn	118	104	569	1.543	0.001	**0.000048**	mg/L	3.740
Sn	120	94	811	7.861	0.001	**0.000054**	mg/L	9.562
Sb	121	43	737	9.454	0.001	**0.000061**	mg/L	9.610
Te	125	5	103	26.095	0.000	**0.000150**	mg/L	27.288
Ba	137	55	119	20.698	0.000	**0.000012**	mg/L	36.571
Ba	138	265	721	5.908	0.001	**0.000014**	mg/L	11.867
W	184	247	970	9.688	0.001	**0.000082**	mg/L	19.372
Hg	201	80	288	2.617	0.000	**0.000142**	mg/L	9.645
Hg*	202	186	642	1.140	0.001	**0.000132**	mg/L	8.451
Hg	202	188	650	1.236	0.001	**0.000112**	mg/L	8.583
Tb	159	823967	848154	0.463	0.078		mg/L	
Ho	165	17	24	13.925	0.000		mg/L	
Tl	205	256	278	12.516	0.000	**0.000001**	mg/L	152.855
Pb	204	11	4	459.476	-0.000	**-0.000015**	mg/L	290.590
Pb	208	505	591	7.806	0.000	**0.000003**	mg/L	62.260
Bi	209	613899	598074	4.790	598073.716		mg/L	
Th	232	165	604	6.999	0.001	**0.000010**	mg/L	15.289
U	238	250	103	20.839	-0.000	**-0.000003**	mg/L	18.164
Na	23	25091	66851	1.966	0.202	**0.008866**	mg/L	2.916
Mg	24	1548	1278	2.919	-0.000	**-0.000013**	mg/L	90.239
Mg	25	157	104	22.208	-0.000	**-0.000055**	mg/L	77.741
K	39	915234	772480	0.397	-0.046	**-0.001307**	mg/L	38.966
Ca	43	255	361	2.506	0.001	**0.008167**	mg/L	7.588
Ca	44	32958	32738	1.543	0.020	**0.016181**	mg/L	7.232
Sc	45	262577	224570	0.553	224569.882		mg/L	
Fe*	57	10623	10955	0.650	0.008	**0.006862**	mg/L	5.535
Fe	57	10643	10984	0.652	0.008	**0.006869**	mg/L	5.546
Fe	54	27959	23830	1.324	-0.000	**-0.000129**	mg/L	466.914
Kr	83	132	115	2.727	-17.917		mg/L	
Br	81	20252	21123	2.148	870.972		mg/L	
Cl	35	156167	87626	1.133	-68540.727		mg/L	
C	13	4180	5051	1.554	871.235		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

ample ID: RINSE
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 19:22:28
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\RINSE.028
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	1712	0.964	-0.002	**-0.000035**	mg/L	44.197
Li	6	18730	19964	0.315	19963.658		mg/L	
Be	9	2	4	33.333	0.000	**0.000004**	mg/L	62.815
B	10	1866	2110	2.729	0.006	**0.000917**	mg/L	42.129
B	11	8409	9359	1.752	0.020	**0.000651**	mg/L	47.900
Si	28	17772	79428	0.344	0.287	**0.021692**	mg/L	0.625
Al	27	907	3332	4.240	0.011	**0.000429**	mg/L	5.551
P	31	7189	4630	3.267	-0.007	**-0.004097**	mg/L	12.028
Sc	45	262577	223847	0.834	223846.921		mg/L	
Ti	47	148	111	12.957	-0.000	**-0.000022**	mg/L	99.175
Ti	49	52	47	10.730	0.000	**0.000005**	mg/L	155.484
V**	51	1637	1613	7.508	0.001	**0.000024**	mg/L	52.091
V*	51	6447	3900	1.337	-0.007	**-0.000171**	mg/L	2.502
V	51	6936	4173	1.357	-0.008	**-0.000185**	mg/L	4.036
Cr*	52	6349	5428	2.494	0.000	**0.000002**	mg/L	1086.532
Cr	52	7057	6336	2.317	0.001	**0.000040**	mg/L	62.458
Cr	53	2327	1443	3.540	-0.002	**-0.000575**	mg/L	10.905
Mn	55	184	434	8.407	0.001	**0.000021**	mg/L	13.970
Co	59	188	115	6.602	-0.000	**-0.000004**	mg/L	16.702
Ni	60	32	47	9.157	0.000	**0.000008**	mg/L	20.507
Ni	62	65	48	14.834	-0.000	**-0.000020**	mg/L	89.542
Cu	63	178	270	5.829	0.001	**0.000020**	mg/L	14.149
Cu	65	156	213	13.193	0.000	**0.000027**	mg/L	36.654
Zn	66	285	601	8.537	0.002	**0.000180**	mg/L	15.099
Zn	68	299	523	5.325	0.001	**0.000180**	mg/L	11.241
Y	89	655666	667270	0.935	11603.670		mg/L	
As*	75	-414	-369	6.201	0.000	**0.000019**	mg/L	42.602
As	75	165	157	1.517	-0.000	**-0.000004**	mg/L	19.263
Se	77	185	180	7.228	-0.000	**-0.000040**	mg/L	138.873
Se	82	78	81	5.833	0.000	**0.000007**	mg/L	219.752
Sr	86	20	38	48.171	0.000	**0.000005**	mg/L	100.749
Sr	88	132	338	11.185	0.000	**0.000007**	mg/L	20.240
Zr	90	39	74	27.037	0.000	**0.000002**	mg/L	60.483
Zr	91	17	17	37.548	0.000	**0.000000**	mg/L	12853.761
Mo	95	34	265	10.777	0.000	**0.000052**	mg/L	13.100
Mo	97	22	177	4.970	0.000	**0.000055**	mg/L	4.506
Ag	107	1821	28123	3.462	0.034	**0.001984**	mg/L	4.840
Ag	109	1766	27238	4.143	0.033	**0.001992**	mg/L	5.570

Cd	111	9	8	60.447	-0.000	**-0.000000**	mg/L	801.750
Cd	114	17	18	64.650	0.000	**0.000000**	mg/L	1320.848
In	115	747751	764068	1.044	764067.877		mg/L	
Sn	118	104	439	4.348	0.000	**0.000035**	mg/L	6.912
Sn	120	94	581	11.777	0.001	**0.000037**	mg/L	12.972
Sb	121	43	596	5.358	0.001	**0.000049**	mg/L	5.824
Te	125	5	73	17.494	0.000	**0.000106**	mg/L	18.867
Ba	137	55	224	4.507	0.000	**0.000034**	mg/L	5.401
Ba	138	265	1403	1.708	0.001	**0.000035**	mg/L	3.422
W	184	247	711	6.878	0.001	**0.000051**	mg/L	5.471
Hg	201	80	313	4.266	0.000	**0.000156**	mg/L	11.971
Hg*	202	186	708	1.725	0.001	**0.000148**	mg/L	4.101
Hg	202	188	713	1.746	0.001	**0.000124**	mg/L	4.048
Tb	159	823967	843505	0.327	0.048		mg/L	
Ho	165	17	19	15.061	0.000		mg/L	
Tl	205	256	186	4.110	-0.000	**-0.000002**	mg/L	18.802
Pb	204	11	6	213.512	-0.000	**-0.000010**	mg/L	279.736
Pb	208	505	1051	2.737	0.001	**0.000014**	mg/L	4.768
Bi	209	613899	607674	4.477	607674.013		mg/L	
Th	232	165	403	5.477	0.000	**0.000005**	mg/L	9.213
U	238	250	103	17.164	-0.000	**-0.000003**	mg/L	15.755
Na	23	25091	72760	1.342	0.230	**0.010068**	mg/L	3.017
Mg	24	1548	2365	4.498	0.005	**0.000297**	mg/L	11.971
Mg	25	157	249	15.110	0.001	**0.000208**	mg/L	33.356
K	39	915234	758741	0.090	-0.096	**-0.002741**	mg/L	27.230
Ca	43	255	347	13.361	0.001	**0.007443**	mg/L	35.289
Ca	44	32958	31934	0.304	0.017	**0.013695**	mg/L	4.433
Sc	45	262577	223847	0.834	223846.921		mg/L	
Fe*	57	10623	11056	0.502	0.009	**0.007363**	mg/L	2.803
Fe	57	10643	11084	0.487	0.009	**0.007364**	mg/L	2.679
Fe	54	27959	23661	0.748	-0.001	**-0.000274**	mg/L	211.651
Kr	83	132	115	3.649	-17.167		mg/L	
Br	81	20252	20904	3.098	651.352		mg/L	
Cl	35	156167	85986	0.802	-70181.141		mg/L	
C	13	4180	5356	1.350	1175.977		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

ample ID: L4094-2X
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 19:28:26
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\L4094-2X.029
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	10191	1.952	0.397	**0.005804**	mg/L	1.574
Li	6	18730	20983	0.864	20982.825		mg/L	
Be	9	2	287	5.195	0.014	**0.000491**	mg/L	4.786
B	10	1866	1818	2.226	-0.013	**-0.001973**	mg/L	9.554
B	11	8409	7885	1.264	-0.073	**-0.002397**	mg/L	9.002
Si	28	17772	281925	6.797	1.094	**0.082652**	mg/L	7.951
Al	27	907	15361989	0.999	63.291	**2.373026**	mg/L	1.850
P	31	7189	33883	1.156	0.112	**0.068710**	mg/L	0.164
Sc	45	262577	242736	1.072	242736.354		mg/L	
Ti	47	148	99911	0.848	0.411	**0.132945**	mg/L	0.226
Ti	49	52	81779	0.490	0.337	**0.135698**	mg/L	1.341
V**	51	1637	58804	2.418	0.236	**0.005740**	mg/L	3.192
V*	51	6447	63650	1.718	0.238	**0.005705**	mg/L	1.942
V	51	6936	64473	0.562	0.239	**0.005705**	mg/L	1.218
Cr*	52	6349	165491	0.917	0.658	**0.018540**	mg/L	2.024
Cr	52	7057	167477	0.926	0.663	**0.018674**	mg/L	2.040
Cr	53	2327	20534	0.851	0.076	**0.018044**	mg/L	0.279
Mn	55	184	3741631	1.858	15.416	**0.261674**	mg/L	2.542
Co	59	188	26046	0.932	0.107	**0.002148**	mg/L	1.935
Ni	60	32	28863	0.540	0.119	**0.010918**	mg/L	1.031
Ni	62	65	4967	1.264	0.020	**0.011816**	mg/L	2.186
Cu	63	178	245439	0.747	1.011	**0.038078**	mg/L	1.163
Cu	65	156	122668	0.244	0.505	**0.038136**	mg/L	1.308
Zn	66	285	88873	1.027	0.365	**0.041232**	mg/L	2.071
Zn	68	299	68147	1.034	0.280	**0.041920**	mg/L	1.648
Y	89	655666	1262128	1.014	606462.121		mg/L	
As*	75	-414	4193	2.319	0.006	**0.001540**	mg/L	1.988
As	75	165	5030	1.335	0.006	**0.001634**	mg/L	1.531
Se	77	185	333	2.262	0.000	**0.000513**	mg/L	6.165
Se	82	78	185	3.524	0.000	**0.000307**	mg/L	5.689
Sr	86	20	34275	0.535	0.042	**0.009439**	mg/L	0.653
Sr	88	132	292765	0.558	0.357	**0.009415**	mg/L	0.990
Zr	90	39	135906	0.573	0.166	**0.008090**	mg/L	0.848
Zr	91	17	30514	0.701	0.037	**0.008128**	mg/L	0.391
Mo	95	34	4849	1.274	0.006	**0.001018**	mg/L	0.823
Mo	97	22	3096	1.821	0.004	**0.001023**	mg/L	1.651
Ag	107	1821	8137	4.437	0.007	**0.000432**	mg/L	6.108
Ag	109	1766	8245	0.632	0.008	**0.000460**	mg/L	1.033

Cd	111	9	6535	1.148	0.008	**0.001778**	mg/L	0.987
Cd	114	17	15120	0.957	0.018	**0.001756**	mg/L	0.502
In	115	747751	820227	0.458	820226.511		mg/L	
Sn	118	104	4616	2.956	0.005	**0.000444**	mg/L	3.319
Sn	120	94	6608	1.655	0.008	**0.000464**	mg/L	1.800
Sb	121	43	591	3.811	0.001	**0.000045**	mg/L	3.841
Te	125	5	33	30.769	0.000	**0.000039**	mg/L	37.519
Ba	137	55	194225	0.482	0.237	**0.036302**	mg/L	0.801
Ba	138	265	1231015	1.081	1.500	**0.035843**	mg/L	0.622
W	184	247	7650	5.091	0.012	**0.000798**	mg/L	14.030
Hg	201	80	1296	9.174	0.002	**0.000785**	mg/L	5.647
Hg*	202	186	2965	10.302	0.004	**0.000762**	mg/L	2.272
Hg	202	188	3026	10.007	0.005	**0.000647**	mg/L	1.941
Tb	159	823967	908789	1.247	0.121		mg/L	
Ho	165	17	23853	1.562	0.038		mg/L	
Tl	205	256	4207	0.803	0.006	**0.000139**	mg/L	9.334
Pb	204	11	16408	2.241	0.026	**0.033500**	mg/L	9.190
Pb	208	505	1229201	0.251	1.978	**0.031146**	mg/L	8.876
Bi	209	613899	624335	8.271	624335.041		mg/L	
Th	232	165	196907	1.248	0.316	**0.004336**	mg/L	7.488
U	238	250	222933	0.423	0.358	**0.004533**	mg/L	8.536
Na	23	25091	1358783	0.478	5.502	**0.241350**	mg/L	0.692
Mg	24	1548	1764829	0.786	7.266	**0.461257**	mg/L	1.850
Mg	25	157	241213	0.457	0.993	**0.402435**	mg/L	1.330
K	39	915234	4922957	0.597	16.798	**0.480245**	mg/L	1.974
Ca	43	255	24686	0.513	0.101	**1.290705**	mg/L	1.384
Ca	44	32958	429092	0.564	1.642	**1.311633**	mg/L	0.675
Sc	45	262577	242736	1.072	242736.354		mg/L	
Fe*	57	10623	2890933	0.444	11.871	**9.780305**	mg/L	1.510
Fe	57	10643	2892932	0.443	11.879	**9.736314**	mg/L	1.510
Fe	54	27959	6401277	1.144	26.266	**9.391101**	mg/L	1.188
Kr	83	132	182	8.642	49.167		mg/L	
Br	81	20252	22273	1.663	2020.961		mg/L	
Cl	35	156167	103045	1.740	-53122.207		mg/L	
C	13	4180	11706	1.741	7526.809		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: L4094-3X
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 19:34:22
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\L4094-3X.030
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	9714	3.052	0.382	**0.005574**	mg/L	1.159
Li	6	18730	20672	2.312	20671.768		mg/L	
Be	9	2	154	11.295	0.007	**0.000266**	mg/L	13.695
B	10	1866	1498	6.405	-0.027	**-0.004119**	mg/L	16.122
B	11	8409	6882	1.721	-0.116	**-0.003796**	mg/L	11.437
Si	28	17772	317187	8.173	1.254	**0.094690**	mg/L	8.483
Al	27	907	9447707	0.683	39.353	**1.475509**	mg/L	0.798
P	31	7189	70843	1.084	0.268	**0.163941**	mg/L	0.715
Sc	45	262577	240056	0.435	240056.381		mg/L	
Ti	47	148	106591	1.777	0.443	**0.143423**	mg/L	1.343
Ti	49	52	87116	1.071	0.363	**0.146158**	mg/L	0.650
V**	51	1637	70995	0.670	0.290	**0.007039**	mg/L	0.554
V*	51	6447	74532	0.322	0.286	**0.006863**	mg/L	0.592
V	51	6936	74382	1.430	0.283	**0.006760**	mg/L	1.325
Cr*	52	6349	87940	1.155	0.342	**0.009645**	mg/L	1.033
Cr	52	7057	89356	1.160	0.345	**0.009725**	mg/L	1.040
Cr	53	2327	11258	0.465	0.038	**0.009063**	mg/L	0.926
Mn	55	184	3015568	0.375	12.561	**0.213223**	mg/L	0.722
Co	59	188	20543	1.639	0.085	**0.001710**	mg/L	2.057
Ni	60	32	15415	0.922	0.064	**0.005891**	mg/L	1.209
Ni	62	65	2862	1.568	0.012	**0.006825**	mg/L	1.608
Cu	63	178	147875	0.999	0.615	**0.023187**	mg/L	1.127
Cu	65	156	74819	1.467	0.311	**0.023502**	mg/L	1.862
Zn	66	285	87559	1.651	0.364	**0.041072**	mg/L	1.957
Zn	68	299	66869	1.779	0.277	**0.041589**	mg/L	2.109
Y	89	655666	1002572	0.671	346906.094		mg/L	
As*	75	-414	3023	0.595	0.004	**0.001162**	mg/L	1.566
As	75	165	3750	0.090	0.004	**0.001214**	mg/L	1.323
Se	77	185	263	1.753	0.000	**0.000247**	mg/L	3.092
Se	82	78	127	1.916	0.000	**0.000132**	mg/L	8.798
Sr	86	20	28528	1.160	0.035	**0.007926**	mg/L	1.459
Sr	88	132	246763	1.858	0.303	**0.008005**	mg/L	0.583
Zr	90	39	90950	5.541	0.112	**0.005463**	mg/L	6.464
Zr	91	17	19965	3.656	0.025	**0.005366**	mg/L	4.947
Mo	95	34	4539	0.891	0.006	**0.000962**	mg/L	0.919
Mo	97	22	2920	0.869	0.004	**0.000974**	mg/L	2.106
Ag	107	1821	2898	3.638	0.001	**0.000065**	mg/L	11.199
Ag	109	1766	2819	3.463	0.001	**0.000066**	mg/L	10.831

Cd	111	9	1281	4.308	0.002	**0.000350**	mg/L	4.456
Cd	114	17	2900	4.961	0.004	**0.000338**	mg/L	4.623
In	115	747751	812993	1.329	812992.860		mg/L	
Sn	118	104	5471	2.023	0.007	**0.000533**	mg/L	3.295
Sn	120	94	7256	1.613	0.009	**0.000515**	mg/L	2.962
Sb	121	43	449	2.367	0.000	**0.000034**	mg/L	3.682
Te	125	5	30	22.048	0.000	**0.000036**	mg/L	27.491
Ba	137	55	162443	0.672	0.200	**0.030634**	mg/L	1.824
Ba	138	265	1032833	0.949	1.270	**0.030343**	mg/L	1.593
W	184	247	3187	2.734	0.007	**0.000462**	mg/L	28.315
Hg	201	80	130	17.991	0.000	**0.000069**	mg/L	58.727
Hg*	202	186	290	3.674	0.000	**0.000062**	mg/L	43.352
Hg	202	188	316	3.233	0.000	**0.000059**	mg/L	41.305
Tb	159	823967	895188	1.198	0.708		mg/L	
Ho	165	17	13398	2.301	0.031		mg/L	
Tl	205	256	1583	4.390	0.003	**0.000070**	mg/L	23.874
Pb	204	11	14841	1.964	0.034	**0.043161**	mg/L	26.093
Pb	208	505	1102306	0.762	2.522	**0.039720**	mg/L	24.875
Bi	209	613899	453576	22.253	453576.429		mg/L	
Th	232	165	116281	3.116	0.264	**0.003622**	mg/L	20.980
U	238	250	43180	1.842	0.098	**0.001245**	mg/L	24.833
Na	23	25091	737883	0.689	2.978	**0.130633**	mg/L	0.797
Mg	24	1548	2482345	0.968	10.335	**0.656096**	mg/L	0.682
Mg	25	157	368810	0.716	1.536	**0.622258**	mg/L	0.314
K	39	915234	4029177	1.316	13.299	**0.380208**	mg/L	1.630
Ca	43	255	26807	1.228	0.111	**1.418326**	mg/L	0.894
Ca	44	32958	464144	1.047	1.808	**1.443929**	mg/L	0.684
Sc	45	262577	240056	0.435	240056.381		mg/L	
Fe*	57	10623	3311751	0.415	13.755	**11.333226**	mg/L	0.533
Fe	57	10643	3313923	0.416	13.764	**11.281850**	mg/L	0.533
Fe	54	27959	7406422	0.722	30.746	**10.992945**	mg/L	0.312
Kr	83	132	153	0.713	20.334		mg/L	
Br	81	20252	21749	2.120	1496.478		mg/L	
Cl	35	156167	74128	0.228	-82038.430		mg/L	
C	13	4180	8346	1.673	4166.776		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: L4094-4X
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 19:40:19
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\L4094-4X.031
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

	Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
	Li	7	1652	9429	2.247	0.375	**0.005475**	mg/L	2.922
>	Li	6	18730	20361	1.412	20360.710		mg/L	
	Be	9	2	222	5.649	0.011	**0.000390**	mg/L	4.292
	B	10	1866	1728	1.445	-0.015	**-0.002240**	mg/L	7.840
	B	11	8409	7582	1.851	-0.077	**-0.002509**	mg/L	2.199
	Si	28	17772	283716	2.720	1.102	**0.083272**	mg/L	3.383
	Al	27	907	15683505	0.658	64.669	**2.424716**	mg/L	0.217
	P	31	7189	69667	2.048	0.260	**0.159141**	mg/L	1.770
>	Sc	45	262577	242506	0.733	242506.170		mg/L	
	Ti	47	148	102577	1.287	0.422	**0.136626**	mg/L	1.267
	Ti	49	52	84644	1.022	0.349	**0.140580**	mg/L	1.209
	V**	51	1637	90902	1.133	0.369	**0.008962**	mg/L	1.018
	V*	51	6447	94756	0.749	0.366	**0.008790**	mg/L	0.554
	V	51	6936	96102	0.720	0.370	**0.008822**	mg/L	0.791
	Cr*	52	6349	102996	1.116	0.401	**0.011291**	mg/L	0.703
	Cr	52	7057	105232	1.094	0.407	**0.011462**	mg/L	0.696
	Cr	53	2327	13160	0.996	0.045	**0.010818**	mg/L	0.589
	Mn	55	184	2577030	1.992	10.627	**0.180379**	mg/L	2.274
	Co	59	188	21720	0.557	0.089	**0.001790**	mg/L	0.288
	Ni	60	32	12934	1.424	0.053	**0.004891**	mg/L	2.157
	Ni	62	65	2472	2.430	0.010	**0.005813**	mg/L	3.240
	Cu	63	178	96676	0.699	0.398	**0.014997**	mg/L	1.210
	Cu	65	156	49249	2.705	0.202	**0.015297**	mg/L	2.416
	Zn	66	285	140035	1.071	0.576	**0.065094**	mg/L	1.332
	Zn	68	299	106374	0.591	0.438	**0.065588**	mg/L	0.780
	Y	89	655666	1073524	0.157	417858.308		mg/L	
	As*	75	-414	4804	0.654	0.006	**0.001767**	mg/L	0.379
	As	75	165	5563	0.769	0.007	**0.001842**	mg/L	0.410
	Se	77	185	308	1.706	0.000	**0.000434**	mg/L	6.379
	Se	82	78	168	3.459	0.000	**0.000262**	mg/L	8.586
	Sr	86	20	46338	0.596	0.057	**0.012957**	mg/L	1.547
	Sr	88	132	399189	1.038	0.494	**0.013033**	mg/L	1.597
	Zr	90	39	127553	0.861	0.158	**0.007707**	mg/L	0.608
	Zr	91	17	28154	1.498	0.035	**0.007612**	mg/L	0.544
	Mo	95	34	3678	0.952	0.005	**0.000782**	mg/L	1.153
	Mo	97	22	2322	3.297	0.003	**0.000777**	mg/L	3.518
	Ag	107	1821	6695	2.938	0.006	**0.000338**	mg/L	2.831
	Ag	109	1766	6775	1.322	0.006	**0.000360**	mg/L	0.676

Cd	111	9	2839	0.940	0.004	**0.000783**	mg/L	1.754
Cd	114	17	6575	2.883	0.008	**0.000774**	mg/L	1.947
In	115	747751	808047	0.978	808047.135		mg/L	
Sn	118	104	5317	1.960	0.006	**0.000521**	mg/L	1.992
Sn	120	94	7530	1.509	0.009	**0.000538**	mg/L	1.782
Sb	121	43	496	3.532	0.001	**0.000038**	mg/L	3.262
Te	125	5	37	49.324	0.000	**0.000046**	mg/L	58.077
Ba	137	55	192409	0.941	0.238	**0.036504**	mg/L	0.256
Ba	138	265	1232929	1.158	1.525	**0.036440**	mg/L	0.378
W	184	247	3109	3.049	0.004	**0.000281**	mg/L	2.900
Hg	201	80	353	2.677	0.000	**0.000158**	mg/L	1.668
Hg*	202	186	788	6.811	0.001	**0.000149**	mg/L	6.539
Hg	202	188	813	6.649	0.001	**0.000128**	mg/L	6.273
Tb	159	823967	897161	0.303	-0.010		mg/L	
Ho	165	17	16650	2.035	0.025		mg/L	
Tl	205	256	2307	0.761	0.003	**0.000066**	mg/L	3.133
Pb	204	11	78986	0.885	0.117	**0.148835**	mg/L	2.888
Pb	208	505	5748492	0.332	8.534	**0.134400**	mg/L	2.337
Bi	209	613899	673750	2.028	673749.541		mg/L	
Th	232	165	162655	0.740	0.241	**0.003305**	mg/L	1.504
U	238	250	135637	1.465	0.201	**0.002542**	mg/L	2.732
Na	23	25091	806952	0.215	3.232	**0.141766**	mg/L	0.631
Mg	24	1548	2282848	0.385	9.408	**0.597255**	mg/L	0.358
Mg	25	157	339771	1.537	1.400	**0.567451**	mg/L	1.275
K	39	915234	4912486	0.745	16.772	**0.479505**	mg/L	0.916
Ca	43	255	29424	0.887	0.120	**1.542217**	mg/L	1.351
Ca	44	32958	501868	0.551	1.944	**1.552659**	mg/L	1.027
Sc	45	262577	242506	0.733	242506.170		mg/L	
Fe*	57	10623	2032932	0.549	8.343	**6.873650**	mg/L	0.563
Fe	57	10643	2035316	0.549	8.352	**6.846024**	mg/L	0.564
Fe	54	27959	4480129	0.506	18.368	**6.567296**	mg/L	0.317
Kr	83	132	152	1.316	20.000		mg/L	
Br	81	20252	23393	3.387	3141.030		mg/L	
Cl	35	156167	81447	0.204	-74719.747		mg/L	
C	13	4180	13183	0.447	9003.227		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: L4094-5X
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 19:46:16
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\L4094-5X.032
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	10292	2.063	0.421	**0.006153**	mg/L	2.667
Li	6	18730	20197	0.230	20197.460		mg/L	
Be	9	2	221	8.148	0.011	**0.000392**	mg/L	8.452
B	10	1866	1595	1.696	-0.021	**-0.003132**	mg/L	6.228
B	11	8409	6993	1.949	-0.103	**-0.003367**	mg/L	5.921
Si	28	17772	386402	11.110	1.587	**0.119876**	mg/L	11.578
Al	27	907	12396533	0.398	53.082	**1.990244**	mg/L	0.469
P	31	7189	42262	0.748	0.154	**0.094053**	mg/L	0.922
Sc	45	262577	233523	0.344	233523.120		mg/L	
Ti	47	148	176576	0.348	0.756	**0.244379**	mg/L	0.681
Ti	49	52	144915	0.497	0.620	**0.249995**	mg/L	0.695
V**	51	1637	66380	0.645	0.278	**0.006760**	mg/L	0.389
V*	51	6447	71161	0.673	0.280	**0.006725**	mg/L	0.358
V	51	6936	71924	0.755	0.282	**0.006716**	mg/L	1.062
Cr*	52	6349	139212	0.755	0.572	**0.016123**	mg/L	0.643
Cr	52	7057	140635	0.736	0.575	**0.016202**	mg/L	0.634
Cr	53	2327	17471	1.124	0.066	**0.015714**	mg/L	1.126
Mn	55	184	3102952	0.536	13.287	**0.225537**	mg/L	0.605
Co	59	188	20119	1.050	0.085	**0.001722**	mg/L	0.936
Ni	60	32	20825	1.643	0.089	**0.008185**	mg/L	1.953
Ni	62	65	3857	1.096	0.016	**0.009508**	mg/L	0.773
Cu	63	178	125167	1.090	0.535	**0.020172**	mg/L	1.409
Cu	65	156	63891	1.348	0.273	**0.020624**	mg/L	1.070
Zn	66	285	83912	1.649	0.358	**0.040459**	mg/L	1.617
Zn	68	299	65107	1.121	0.278	**0.041625**	mg/L	1.118
Y	89	655666	1004971	0.361	349304.792		mg/L	
As*	75	-414	3090	1.422	0.004	**0.001216**	mg/L	0.772
As	75	165	3835	1.296	0.005	**0.001284**	mg/L	1.150
Se	77	185	280	4.067	0.000	**0.000349**	mg/L	14.581
Se	82	78	139	2.295	0.000	**0.000182**	mg/L	6.960
Sr	86	20	24412	0.748	0.031	**0.006994**	mg/L	0.610
Sr	88	132	210881	1.014	0.267	**0.007055**	mg/L	0.672
Zr	90	39	121919	0.962	0.155	**0.007551**	mg/L	1.484
Zr	91	17	27662	2.997	0.035	**0.007667**	mg/L	3.206
Mo	95	34	5181	2.715	0.007	**0.001133**	mg/L	2.940
Mo	97	22	3157	2.493	0.004	**0.001086**	mg/L	2.002
Ag	107	1821	6298	5.581	0.006	**0.000321**	mg/L	8.487
Ag	109	1766	6205	2.964	0.006	**0.000330**	mg/L	4.397

Cd	111	9	3902	2.138	0.005	**0.001104**	mg/L	2.559
Cd	114	17	9158	1.603	0.012	**0.001106**	mg/L	2.060
In	115	747751	788289	0.564	788288.554		mg/L	
Sn	118	104	10752	3.107	0.013	**0.001091**	mg/L	2.653
Sn	120	94	15109	1.053	0.019	**0.001113**	mg/L	1.217
Sb	121	43	420	8.874	0.000	**0.000032**	mg/L	10.162
Te	125	5	26	39.111	0.000	**0.000031**	mg/L	48.435
Ba	137	55	260195	0.372	0.330	**0.050607**	mg/L	0.408
Ba	138	265	1658220	0.488	2.103	**0.050243**	mg/L	0.191
W	184	247	4743	3.255	0.007	**0.000487**	mg/L	4.349
Hg	201	80	500	10.041	0.001	**0.000274**	mg/L	9.784
Hg*	202	186	1183	8.129	0.002	**0.000276**	mg/L	3.474
Hg	202	188	1220	7.963	0.002	**0.000238**	mg/L	3.313
Tb	159	823967	877254	0.251	0.083		mg/L	
Ho	165	17	15022	1.240	0.024		mg/L	
Tl	205	256	5078	2.189	0.008	**0.000171**	mg/L	9.358
Pb	204	11	21769	1.095	0.035	**0.044878**	mg/L	7.183
Pb	208	505	1645931	0.880	2.673	**0.042101**	mg/L	6.585
Bi	209	613899	617429	7.098	617428.603		mg/L	
Th	232	165	138864	1.400	0.225	**0.003088**	mg/L	6.315
U	238	250	69526	0.241	0.113	**0.001424**	mg/L	7.286
Na	23	25091	758404	1.484	3.152	**0.138264**	mg/L	1.878
Mg	24	1548	1646357	0.854	7.044	**0.447211**	mg/L	1.160
Mg	25	157	226466	1.138	0.969	**0.392708**	mg/L	1.406
K	39	915234	3666803	0.089	12.217	**0.349271**	mg/L	0.555
Ca	43	255	28636	0.823	0.122	**1.558733**	mg/L	1.132
Ca	44	32958	492191	1.500	1.982	**1.583036**	mg/L	1.231
Sc	45	262577	233523	0.344	233523.120		mg/L	
Fe*	57	10623	2416783	0.290	10.309	**8.493610**	mg/L	0.577
Fe	57	10643	2419103	0.290	10.319	**8.457676**	mg/L	0.578
Fe	54	27959	5357879	1.449	22.838	**8.165524**	mg/L	1.794
Kr	83	132	151	1.768	18.750		mg/L	
Br	81	20252	22536	3.327	2284.063		mg/L	
Cl	35	156167	77985	1.599	-78181.713		mg/L	
C	13	4180	8390	1.559	4210.145		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: L4094-6X
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 19:52:14
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\L4094-6X.033
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	10118	1.373	0.412	**0.006015**	mg/L	2.236
> Li	6	18730	20235	0.522	20235.453		mg/L	
Be	9	2	240	3.168	0.012	**0.000425**	mg/L	2.967
B	10	1866	1572	2.345	-0.022	**-0.003330**	mg/L	8.082
B	11	8409	7158	2.269	-0.095	**-0.003120**	mg/L	10.240
Si	28	17772	452189	1.098	1.849	**0.139691**	mg/L	1.814
Al	27	907	16096713	0.907	68.233	**2.558317**	mg/L	1.289
P	31	7189	65954	1.417	0.252	**0.154427**	mg/L	0.850
> Sc	45	262577	235907	0.656	235906.908		mg/L	
Ti	47	148	124311	1.003	0.526	**0.170248**	mg/L	0.593
Ti	49	52	101998	0.391	0.432	**0.174157**	mg/L	0.378
V**	51	1637	93668	1.022	0.391	**0.009502**	mg/L	0.897
V*	51	6447	97649	0.842	0.389	**0.009347**	mg/L	0.626
V	51	6936	98278	0.563	0.390	**0.009306**	mg/L	0.510
Cr*	52	6349	107228	0.856	0.430	**0.012132**	mg/L	0.602
Cr	52	7057	109269	0.830	0.436	**0.012286**	mg/L	0.604
Cr	53	2327	13659	0.773	0.049	**0.011683**	mg/L	0.153
Mn	55	184	2898667	0.296	12.287	**0.208564**	mg/L	0.727
Co	59	188	21134	1.780	0.089	**0.001791**	mg/L	2.100
Ni	60	32	18970	0.861	0.080	**0.007380**	mg/L	1.468
Ni	62	65	3492	1.766	0.015	**0.008508**	mg/L	2.110
Cu	63	178	149093	1.618	0.631	**0.023791**	mg/L	2.209
Cu	65	156	75658	1.245	0.320	**0.024186**	mg/L	1.871
Zn	66	285	127442	0.498	0.539	**0.060889**	mg/L	0.867
Zn	68	299	96846	0.742	0.409	**0.061372**	mg/L	0.895
Y	89	655666	1090717	1.307	435050.725		mg/L	
As*	75	-414	4005	0.483	0.006	**0.001511**	mg/L	0.808
As	75	165	4775	0.586	0.006	**0.001588**	mg/L	0.835
Se	77	185	305	1.496	0.000	**0.000432**	mg/L	4.642
Se	82	78	162	6.053	0.000	**0.000248**	mg/L	13.150
Sr	86	20	41649	0.620	0.052	**0.011755**	mg/L	0.321
Sr	88	132	360993	0.266	0.451	**0.011897**	mg/L	0.272
Zr	90	39	140340	0.970	0.175	**0.008560**	mg/L	0.554
Zr	91	17	31362	1.193	0.039	**0.008561**	mg/L	1.028
Mo	95	34	4915	1.335	0.006	**0.001058**	mg/L	1.360
Mo	97	22	3167	3.307	0.004	**0.001073**	mg/L	3.739
Ag	107	1821	10241	2.446	0.010	**0.000598**	mg/L	2.922
Ag	109	1766	10432	1.720	0.011	**0.000639**	mg/L	2.495

Cd	111	9	6025	2.926	0.008	**0.001680**	mg/L	2.508
Cd	114	17	14136	0.597	0.018	**0.001683**	mg/L	0.942
In	115	747751	800418	0.426	800417.800		mg/L	
Sn	118	104	6036	5.192	0.007	**0.000598**	mg/L	5.098
Sn	120	94	8452	0.504	0.010	**0.000610**	mg/L	0.227
Sb	121	43	470	5.067	0.001	**0.000036**	mg/L	5.866
Te	125	5	23	29.397	0.000	**0.000025**	mg/L	38.252
Ba	137	55	227879	0.543	0.285	**0.043649**	mg/L	0.769
Ba	138	265	1449550	0.667	1.811	**0.043253**	mg/L	0.316
W	184	247	3525	2.800	0.005	**0.000357**	mg/L	7.917
Hg	201	80	658	8.844	0.001	**0.000377**	mg/L	2.045
Hg*	202	186	1453	10.817	0.002	**0.000352**	mg/L	4.277
Hg	202	188	1481	10.620	0.002	**0.000298**	mg/L	4.041
Tb	159	823967	884881	0.089	0.099		mg/L	
Ho	165	17	16902	0.615	0.027		mg/L	
Tl	205	256	3456	2.251	0.005	**0.000114**	mg/L	10.508
Pb	204	11	61330	1.107	0.100	**0.126752**	mg/L	8.000
Pb	208	505	4427660	0.295	7.208	**0.113515**	mg/L	7.379
Bi	209	613899	616396	7.214	616396.107		mg/L	
Th	232	165	159767	0.933	0.260	**0.003560**	mg/L	6.843
U	238	250	197550	2.694	0.322	**0.004069**	mg/L	10.118
Na	23	25091	1277122	0.940	5.318	**0.233269**	mg/L	1.118
Mg	24	1548	2485602	0.249	10.531	**0.668541**	mg/L	0.533
Mg	25	157	361461	0.253	1.532	**0.620602**	mg/L	0.520
K	39	915234	5229779	0.654	18.684	**0.534166**	mg/L	1.099
Ca	43	255	32860	1.675	0.138	**1.772197**	mg/L	1.104
Ca	44	32958	561969	1.578	2.257	**1.802226**	mg/L	0.980
Sc	45	262577	235907	0.656	235906.908		mg/L	
Fe*	57	10623	2766394	1.064	11.687	**9.629040**	mg/L	1.676
Fe	57	10643	2769056	1.061	11.698	**9.588328**	mg/L	1.674
Fe	54	27959	6074235	0.878	25.642	**9.168178**	mg/L	0.954
Kr	83	132	156	3.843	23.750		mg/L	
Br	81	20252	23621	0.523	3369.045		mg/L	
Cl	35	156167	73259	1.298	-82907.269		mg/L	
C	13	4180	12033	1.203	7853.446		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: CCV
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 20:00:12
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\CCV.034
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	14462	1.476	0.660	**0.009634**	mg/L	2.704
> Li	6	18730	19340	0.910	19339.517		mg/L	
Be	9	2	4953	0.203	0.256	**0.009241**	mg/L	1.113
B	10	1866	6967	0.760	0.261	**0.039529**	mg/L	2.194
B	11	8409	31318	1.211	1.171	**0.038365**	mg/L	2.114
Si	28	17772	152199	1.233	0.595	**0.044964**	mg/L	1.692
Al	27	907	54708	2.207	0.235	**0.008805**	mg/L	2.377
P	31	7189	21347	0.604	0.066	**0.040170**	mg/L	1.462
> Sc	45	262577	229595	0.610	229594.583		mg/L	
Ti	47	148	7400	1.804	0.032	**0.010242**	mg/L	1.519
Ti	49	52	6015	2.056	0.026	**0.010478**	mg/L	1.691
V**	51	1637	100217	0.847	0.430	**0.010462**	mg/L	1.277
V*	51	6447	104515	0.384	0.431	**0.010338**	mg/L	0.868
V	51	6936	106844	0.260	0.439	**0.010470**	mg/L	0.371
Cr*	52	6349	93379	0.360	0.383	**0.010784**	mg/L	0.305
Cr	52	7057	94263	0.373	0.384	**0.010804**	mg/L	0.292
Cr	53	2327	12058	1.362	0.044	**0.010401**	mg/L	1.181
Mn	55	184	147086	1.006	0.640	**0.010862**	mg/L	0.633
Co	59	188	123818	1.329	0.539	**0.010852**	mg/L	0.736
Ni	60	32	27340	1.700	0.119	**0.010933**	mg/L	1.089
Ni	62	65	4303	1.429	0.018	**0.010808**	mg/L	0.951
Cu	63	178	66616	0.988	0.289	**0.010908**	mg/L	1.368
Cu	65	156	33564	0.600	0.146	**0.010999**	mg/L	0.131
Zn	66	285	22403	1.051	0.096	**0.010897**	mg/L	0.753
Zn	68	299	17062	0.745	0.073	**0.010969**	mg/L	0.480
Y	89	655666	671181	1.187	15514.382		mg/L	
As*	75	-414	27681	0.368	0.036	**0.009736**	mg/L	0.483
As	75	165	27556	0.479	0.035	**0.009641**	mg/L	0.499
Se	77	185	2516	1.193	0.003	**0.009611**	mg/L	1.352
Se	82	78	3170	1.543	0.004	**0.009926**	mg/L	1.713
Sr	86	20	34290	1.835	0.044	**0.009866**	mg/L	1.869
Sr	88	132	295270	0.565	0.376	**0.009920**	mg/L	0.584
Zr	90	39	161489	1.564	0.206	**0.010043**	mg/L	1.565
Zr	91	17	36121	1.845	0.046	**0.010053**	mg/L	1.911
Mo	95	34	45534	1.155	0.058	**0.010060**	mg/L	1.057
Mo	97	22	28954	0.800	0.037	**0.010066**	mg/L	0.774
Ag	107	1821	168482	0.628	0.212	**0.012245**	mg/L	0.508
Ag	109	1766	163696	0.605	0.206	**0.012333**	mg/L	0.665

Cd	111	9	35058	0.525	0.045	**0.009979**	mg/L	0.473
Cd	114	17	82808	0.249	0.105	**0.010059**	mg/L	0.246
In	115	747751	785131	0.126	785131.010		mg/L	
Sn	118	104	97989	0.662	0.125	**0.010078**	mg/L	0.789
Sn	120	94	134940	0.645	0.172	**0.010043**	mg/L	0.558
Sb	121	43	119865	0.703	0.153	**0.010383**	mg/L	0.582
Te	125	5	6690	6.072	0.009	**0.010077**	mg/L	5.983
Ba	137	55	53034	1.873	0.067	**0.010347**	mg/L	1.748
Ba	138	265	340921	0.594	0.434	**0.010364**	mg/L	0.557
W	184	247	89987	1.341	0.146	**0.009738**	mg/L	2.849
Hg	201	80	1634	1.044	0.003	**0.001018**	mg/L	5.256
Hg*	202	186	3800	1.778	0.006	**0.001006**	mg/L	2.576
Hg	202	188	4511	1.709	0.007	**0.001001**	mg/L	2.619
Tb	159	823967	852027	1.200	0.042		mg/L	
Ho	165	17	28	31.916	0.000		mg/L	
Tl	205	256	280775	1.151	0.455	**0.009953**	mg/L	3.139
Pb	204	11	4686	2.126	0.008	**0.009640**	mg/L	5.144
Pb	208	505	394735	0.673	0.640	**0.010084**	mg/L	4.230
Bi	209	613899	616358	4.029	616358.273		mg/L	
Th	232	165	450287	0.453	0.731	**0.010019**	mg/L	4.231
U	238	250	476662	1.351	0.774	**0.009792**	mg/L	5.328
Na	23	25091	2432670	1.059	10.500	**0.460568**	mg/L	1.433
Mg	24	1548	1746041	1.072	7.599	**0.482429**	mg/L	1.137
Mg	25	157	238274	1.344	1.037	**0.420248**	mg/L	0.767
K	39	915234	4734077	0.273	17.134	**0.489867**	mg/L	1.013
Ca	43	255	8781	3.443	0.037	**0.477673**	mg/L	3.938
Ca	44	32958	172056	0.262	0.624	**0.498277**	mg/L	0.545
Sc	45	262577	229595	0.610	229594.583		mg/L	
Fe*	57	10623	163079	0.459	0.670	**0.551905**	mg/L	1.007
Fe	57	10643	163790	0.453	0.673	**0.551521**	mg/L	1.009
Fe	54	27959	370375	0.724	1.507	**0.538711**	mg/L	0.882
Kr	83	132	116	6.226	-16.500		mg/L	
Br	81	20252	22524	0.400	2271.517		mg/L	
Cl	35	156167	79759	1.582	-76407.803		mg/L	
C	13	4180	5211	1.885	1031.734		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: QC CCB
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 20:08:11
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\QC CCB.035
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	1578	1.532	-0.003	**-0.000047**	mg/L	36.486
> Li	6	18730	18580	1.197	18579.746		mg/L	
Be	9	2	6	20.000	0.000	**0.000009**	mg/L	27.014
B	10	1866	1928	0.075	0.004	**0.000630**	mg/L	28.224
B	11	8409	8554	2.458	0.011	**0.000375**	mg/L	87.773
Si	28	17772	75164	0.575	0.263	**0.019863**	mg/L	1.774
Al	27	907	2578	20.018	0.008	**0.000296**	mg/L	28.906
P	31	7189	4784	5.590	-0.006	**-0.003879**	mg/L	20.102
> Sc	45	262577	227355	0.905	227355.189		mg/L	
Ti	47	148	144	14.492	0.000	**0.000023**	mg/L	128.777
Ti	49	52	240	127.694	0.001	**0.000343**	mg/L	156.560
V**	51	1637	1794	9.601	0.002	**0.000040**	mg/L	41.389
V*	51	6447	4269	1.219	-0.006	**-0.000139**	mg/L	1.056
V	51	6936	4514	0.838	-0.007	**-0.000156**	mg/L	4.856
Cr*	52	6349	5984	0.723	0.002	**0.000060**	mg/L	10.255
Cr	52	7057	6847	1.124	0.003	**0.000091**	mg/L	10.464
Cr	53	2327	1562	2.362	-0.002	**-0.000474**	mg/L	11.098
Mn	55	184	439	4.263	0.001	**0.000021**	mg/L	6.013
Co	59	188	83	2.330	-0.000	**-0.000007**	mg/L	1.838
Ni	60	32	42	21.244	0.000	**0.000006**	mg/L	64.295
Ni	62	65	61	10.799	0.000	**0.000013**	mg/L	127.064
Cu	63	178	158	6.555	0.000	**0.000001**	mg/L	322.320
Cu	65	156	215	15.637	0.000	**0.000027**	mg/L	44.120
Zn	66	285	380	6.538	0.001	**0.000066**	mg/L	18.378
Zn	68	299	392	9.674	0.001	**0.000087**	mg/L	28.063
Y	89	655666	668928	0.786	13261.704		mg/L	
As*	75	-414	-403	9.244	0.000	**0.000009**	mg/L	153.742
As	75	165	158	1.823	-0.000	**-0.000005**	mg/L	40.581
Se	77	185	187	1.841	-0.000	**-0.000019**	mg/L	69.838
Se	82	78	76	8.144	-0.000	**-0.000015**	mg/L	134.060
Sr	86	20	25	70.738	0.000	**0.000001**	mg/L	367.885
Sr	88	132	238	3.205	0.000	**0.000003**	mg/L	9.966
Zr	90	39	63	34.033	0.000	**0.000001**	mg/L	95.432
Zr	91	17	23	11.111	0.000	**0.000001**	mg/L	54.991
Mo	95	34	193	7.438	0.000	**0.000035**	mg/L	7.015
Mo	97	22	112	34.708	0.000	**0.000031**	mg/L	41.613
Ag	107	1821	23098	3.181	0.027	**0.001582**	mg/L	5.425
Ag	109	1766	22257	3.772	0.026	**0.001579**	mg/L	5.984

Cd	111	9	5	70.885	-0.000	**-0.000001**	mg/L	75.817
Cd	114	17	15	40.254	-0.000	**-0.000000**	mg/L	180.437
In	115	747751	774610	1.767	774609.779		mg/L	
Sn	118	104	437	5.501	0.000	**0.000034**	mg/L	6.642
Sn	120	94	666	4.376	0.001	**0.000043**	mg/L	6.935
Sb	121	43	555	11.910	0.001	**0.000045**	mg/L	12.710
Te	125	5	81	13.946	0.000	**0.000115**	mg/L	13.821
Ba	137	55	119	6.409	0.000	**0.000012**	mg/L	12.866
Ba	138	265	724	5.895	0.001	**0.000014**	mg/L	12.412
W	184	247	778	2.251	0.001	**0.000062**	mg/L	9.703
Hg	201	80	280	3.654	0.000	**0.000140**	mg/L	11.391
Hg*	202	186	621	1.148	0.001	**0.000129**	mg/L	5.908
Hg	202	188	627	1.118	0.001	**0.000109**	mg/L	5.937
Tb	159	823967	839437	0.804	0.089		mg/L	
Ho	165	17	21	22.716	0.000		mg/L	
Tl	205	256	237	11.636	-0.000	**-0.000000**	mg/L	361.111
Pb	204	11	-2	200.489	-0.000	**-0.000027**	mg/L	35.750
Pb	208	505	681	4.256	0.000	**0.000005**	mg/L	25.655
Bi	209	613899	587625	4.534	587624.899		mg/L	
Th	232	165	738	6.949	0.001	**0.000014**	mg/L	14.426
U	238	250	85	5.882	-0.000	**-0.000003**	mg/L	5.678
Na	23	25091	64101	0.751	0.186	**0.008176**	mg/L	2.368
Mg	24	1548	1169	4.990	-0.001	**-0.000048**	mg/L	29.152
Mg	25	157	101	15.693	-0.000	**-0.000063**	mg/L	46.026
K	39	915234	835228	0.021	0.188	**0.005383**	mg/L	17.329
Ca	43	255	326	7.837	0.000	**0.005943**	mg/L	25.021
Ca	44	32958	35215	1.502	0.029	**0.023475**	mg/L	12.069
Sc	45	262577	227355	0.905	227355.189		mg/L	
Fe*	57	10623	12404	0.615	0.014	**0.011620**	mg/L	2.330
Fe	57	10643	12430	0.600	0.014	**0.011591**	mg/L	2.299
Fe	54	27959	24547	1.771	0.001	**0.000530**	mg/L	63.280
Kr	83	132	113	11.774	-19.250		mg/L	
Br	81	20252	22659	0.986	2406.823		mg/L	
Cl	35	156167	81137	2.501	-75030.036		mg/L	
C	13	4180	5085	3.957	905.837		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

ample ID: L4094-7X
nitial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 20:14:08
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\L4094-7X.036
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	10968	1.140	0.467	**0.006816**	mg/L	2.052
Li	6	18730	19769	1.545	19768.691		mg/L	
Be	9	2	315	2.253	0.016	**0.000573**	mg/L	3.670
B	10	1866	1686	4.290	-0.014	**-0.002173**	mg/L	27.287
B	11	8409	7552	0.266	-0.067	**-0.002191**	mg/L	9.184
Si	28	17772	402639	4.003	1.562	**0.118003**	mg/L	3.628
Al	27	907	18776501	1.492	76.017	**2.850167**	mg/L	2.035
P	31	7189	92085	1.320	0.345	**0.211529**	mg/L	2.036
Sc	45	262577	247013	0.660	247013.226		mg/L	
Ti	47	148	99064	0.231	0.400	**0.129530**	mg/L	0.451
Ti	49	52	82254	0.330	0.333	**0.134115**	mg/L	0.789
V**	51	1637	80797	1.671	0.321	**0.007802**	mg/L	2.363
V*	51	6447	85217	0.452	0.320	**0.007692**	mg/L	1.189
V	51	6936	85941	0.598	0.322	**0.007668**	mg/L	0.828
Cr*	52	6349	136811	0.803	0.530	**0.014932**	mg/L	0.661
Cr	52	7057	138651	0.786	0.534	**0.015049**	mg/L	0.673
Cr	53	2327	17131	2.256	0.060	**0.014411**	mg/L	1.834
Mn	55	184	3974346	1.213	16.089	**0.273092**	mg/L	0.555
Co	59	188	31677	2.092	0.128	**0.002570**	mg/L	1.496
Ni	60	32	27980	1.787	0.113	**0.010399**	mg/L	1.130
Ni	62	65	4769	1.545	0.019	**0.011139**	mg/L	2.008
Cu	63	178	233658	0.255	0.945	**0.035619**	mg/L	0.483
Cu	65	156	116794	0.688	0.472	**0.035677**	mg/L	1.272
Zn	66	285	169662	1.231	0.686	**0.077454**	mg/L	1.885
Zn	68	299	130379	0.429	0.527	**0.078955**	mg/L	0.251
Y	89	655666	1204288	0.805	548622.234		mg/L	
As*	75	-414	4472	0.426	0.006	**0.001629**	mg/L	0.124
As	75	165	5336	0.195	0.006	**0.001733**	mg/L	0.152
Se	77	185	337	0.771	0.000	**0.000529**	mg/L	1.116
Se	82	78	179	1.607	0.000	**0.000287**	mg/L	2.422
Sr	86	20	48325	0.922	0.059	**0.013280**	mg/L	1.266
Sr	88	132	417321	0.917	0.507	**0.013391**	mg/L	1.252
Zr	90	39	167461	1.166	0.204	**0.009945**	mg/L	0.827
Zr	91	17	37328	1.269	0.045	**0.009921**	mg/L	1.114
Mo	95	34	4494	0.878	0.005	**0.000941**	mg/L	1.201
Mo	97	22	2826	3.796	0.003	**0.000931**	mg/L	4.171
Ag	107	1821	12862	1.883	0.013	**0.000762**	mg/L	2.002
Ag	109	1766	12635	2.764	0.013	**0.000778**	mg/L	3.311

Cd	111	9	13138	2.371	0.016	**0.003570**	mg/L	2.709
Cd	114	17	31320	0.987	0.038	**0.003632**	mg/L	0.877
In	115	747751	822136	0.341	822136.242		mg/L	
Sn	118	104	6117	2.209	0.007	**0.000590**	mg/L	2.271
Sn	120	94	8430	1.428	0.010	**0.000592**	mg/L	1.424
Sb	121	43	588	2.790	0.001	**0.000045**	mg/L	2.759
Te	125	5	43	10.189	0.000	**0.000053**	mg/L	11.904
Ba	137	55	341498	0.582	0.415	**0.063689**	mg/L	0.840
Ba	138	265	1988241	0.869	2.418	**0.057763**	mg/L	0.819
W	184	247	3646	5.021	0.006	**0.000419**	mg/L	20.616
Hg	201	80	1028	8.316	0.002	**0.000698**	mg/L	9.813
Hg*	202	186	2368	12.594	0.004	**0.000679**	mg/L	3.928
Hg	202	188	2397	12.400	0.004	**0.000572**	mg/L	4.070
Tb	159	823967	904997	1.103	0.311		mg/L	
Ho	165	17	20965	1.046	0.038		mg/L	
Tl	205	256	4429	1.704	0.008	**0.000167**	mg/L	16.330
Pb	204	11	91298	0.027	0.167	**0.211385**	mg/L	16.281
Pb	208	505	6525968	0.674	11.908	**0.187540**	mg/L	16.531
Bi	209	613899	557249	15.083	557249.410		mg/L	
Th	232	165	187601	2.207	0.341	**0.004676**	mg/L	13.994
U	238	250	212972	0.929	0.388	**0.004910**	mg/L	16.195
Na	23	25091	1586837	0.300	6.329	**0.277594**	mg/L	0.941
Mg	24	1548	2458939	1.384	9.950	**0.631646**	mg/L	1.940
Mg	25	157	360581	0.159	1.459	**0.591250**	mg/L	0.716
K	39	915234	5379362	0.444	18.293	**0.522993**	mg/L	1.291
Ca	43	255	113564	0.382	0.459	**5.878167**	mg/L	0.306
Ca	44	32958	1860015	0.646	7.405	**5.913736**	mg/L	0.360
Sc	45	262577	247013	0.660	247013.226		mg/L	
Fe*	57	10623	2937702	1.403	11.852	**9.765308**	mg/L	1.191
Fe	57	10643	2946900	1.399	11.890	**9.745165**	mg/L	1.187
Fe	54	27959	6497487	0.900	26.198	**9.366751**	mg/L	0.707
Kr	83	132	180	3.266	47.167		mg/L	
Br	81	20252	22839	1.133	2587.234		mg/L	
Cl	35	156167	77572	1.982	-78594.882		mg/L	
C	13	4180	10848	1.812	6668.342		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: L4094-8X
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 20:20:07
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\L4094-8X.037
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	13155	1.191	0.562	**0.008207**	mg/L	1.151
Li	6	18730	20233	0.504	20232.531		mg/L	
Be	9	2	370	0.779	0.018	**0.000658**	mg/L	1.190
B	10	1866	1774	4.017	-0.012	**-0.001808**	mg/L	33.158
B	11	8409	8002	1.108	-0.053	**-0.001750**	mg/L	11.235
Si	28	17772	377422	6.754	1.444	**0.109104**	mg/L	4.836
Al	27	907	27527167	0.902	110.379	**4.138543**	mg/L	2.286
P	31	7189	84243	0.893	0.310	**0.190075**	mg/L	1.919
Sc	45	262577	249470	2.529	249469.699		mg/L	
Ti	47	148	112445	1.737	0.450	**0.145623**	mg/L	1.240
Ti	49	52	92130	0.911	0.369	**0.148786**	mg/L	1.832
V**	51	1637	100862	2.430	0.398	**0.009680**	mg/L	1.770
V*	51	6447	105947	1.806	0.400	**0.009606**	mg/L	0.812
V	51	6936	107828	1.797	0.406	**0.009681**	mg/L	1.018
Cr*	52	6349	213367	1.373	0.831	**0.023437**	mg/L	2.372
Cr	52	7057	215669	1.355	0.838	**0.023595**	mg/L	2.400
Cr	53	2327	26077	1.219	0.096	**0.022802**	mg/L	2.466
Mn	55	184	1817866	1.386	7.288	**0.123703**	mg/L	1.169
Co	59	188	26617	0.127	0.106	**0.002136**	mg/L	2.607
Ni	60	32	17573	1.391	0.070	**0.006464**	mg/L	1.142
Ni	62	65	3220	1.476	0.013	**0.007404**	mg/L	4.060
Cu	63	178	131116	1.221	0.525	**0.019784**	mg/L	1.564
Cu	65	156	66018	0.852	0.264	**0.019953**	mg/L	1.694
Zn	66	285	146432	1.923	0.586	**0.066180**	mg/L	1.791
Zn	68	299	110930	2.053	0.444	**0.066494**	mg/L	0.819
Y	89	655666	1200703	1.178	545036.699		mg/L	
As*	75	-414	5530	1.765	0.007	**0.001992**	mg/L	1.059
As	75	165	6414	1.322	0.008	**0.002111**	mg/L	0.814
Se	77	185	364	0.481	0.000	**0.000643**	mg/L	2.463
Se	82	78	202	1.487	0.000	**0.000362**	mg/L	1.579
Sr	86	20	64208	0.816	0.079	**0.017777**	mg/L	0.640
Sr	88	132	556230	1.074	0.681	**0.017981**	mg/L	0.830
Zr	90	39	191764	2.191	0.235	**0.011473**	mg/L	2.077
Zr	91	17	43135	1.647	0.053	**0.011550**	mg/L	0.987
Mo	95	34	2501	3.697	0.003	**0.000524**	mg/L	4.384
Mo	97	22	1674	6.102	0.002	**0.000552**	mg/L	5.679
Ag	107	1821	6533	3.946	0.006	**0.000321**	mg/L	5.095
Ag	109	1766	6520	3.232	0.006	**0.000337**	mg/L	3.680

Cd	111	9	4720	1.435	0.006	**0.001290**	mg/L	1.227
Cd	114	17	11001	1.052	0.013	**0.001284**	mg/L	0.476
In	115	747751	816118	0.662	816117.802		mg/L	
Sn	118	104	6098	1.789	0.007	**0.000593**	mg/L	2.235
Sn	120	94	8489	1.578	0.010	**0.000601**	mg/L	1.931
Sb	121	43	518	2.379	0.001	**0.000039**	mg/L	3.333
Te	125	5	24	11.945	0.000	**0.000027**	mg/L	15.402
Ba	137	55	311369	0.754	0.381	**0.058496**	mg/L	0.473
Ba	138	265	1960973	0.567	2.402	**0.057391**	mg/L	0.280
W	184	247	7886	2.742	0.011	**0.000742**	mg/L	2.852
Hg	201	80	1123	8.166	0.002	**0.000607**	mg/L	5.790
Hg*	202	186	2504	7.403	0.003	**0.000573**	mg/L	4.357
Hg	202	188	2566	7.280	0.003	**0.000489**	mg/L	4.228
Tb	159	823967	901826	0.165	-0.026		mg/L	
Ho	165	17	21757	0.033	0.032		mg/L	
Tl	205	256	5890	3.951	0.008	**0.000179**	mg/L	5.584
Pb	204	11	18002	1.233	0.026	**0.033314**	mg/L	3.663
Pb	208	505	1354750	0.712	1.976	**0.031123**	mg/L	4.402
Bi	209	613899	685985	3.707	685984.651		mg/L	
Th	232	165	227855	1.040	0.332	**0.004551**	mg/L	2.885
U	238	250	925533	1.462	1.350	**0.017077**	mg/L	3.434
Na	23	25091	926613	0.469	3.620	**0.158783**	mg/L	2.116
Mg	24	1548	3062615	0.942	12.274	**0.779208**	mg/L	1.607
Mg	25	157	446027	1.175	1.788	**0.724352**	mg/L	1.349
K	39	915234	7838006	0.514	27.944	**0.798918**	mg/L	2.402
Ca	43	255	44859	1.615	0.179	**2.291832**	mg/L	0.944
Ca	44	32958	752447	1.942	2.891	**2.308912**	mg/L	0.627
Sc	45	262577	249470	2.529	249469.699		mg/L	
Fe*	57	10623	2696068	1.054	10.773	**8.876159**	mg/L	3.568
Fe	57	10643	2699702	1.051	10.788	**8.842041**	mg/L	3.565
Fe	54	27959	6047161	0.376	24.143	**8.631999**	mg/L	2.278
Kr	83	132	178	4.366	45.084		mg/L	
Br	81	20252	23335	1.312	3082.543		mg/L	
Cl	35	156167	82083	0.890	-74083.729		mg/L	
C	13	4180	13578	2.245	9398.759		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

ample ID: L4094-9X
nitial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 20:26:06
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\L4094-9X.038
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	10601	0.932	0.435	**0.006348**	mg/L	0.828
Li	6	18730	20274	0.591	20273.864		mg/L	
Be	9	2	310	6.208	0.015	**0.000549**	mg/L	5.849
B	10	1866	1788	1.834	-0.011	**-0.001736**	mg/L	16.146
B	11	8409	7927	1.557	-0.058	**-0.001900**	mg/L	6.977
Si	28	17772	399506	3.032	1.576	**0.119063**	mg/L	2.446
Al	27	907	16788377	0.597	69.085	**2.590274**	mg/L	0.569
P	31	7189	35751	0.860	0.120	**0.073325**	mg/L	0.774
Sc	45	262577	243002	0.694	243001.724		mg/L	
Ti	47	148	114750	0.630	0.472	**0.152555**	mg/L	1.171
Ti	49	52	95151	0.903	0.391	**0.157719**	mg/L	1.189
V**	51	1637	65172	2.567	0.262	**0.006369**	mg/L	2.019
V*	51	6447	70952	1.134	0.267	**0.006419**	mg/L	0.737
V	51	6936	72062	1.072	0.270	**0.006443**	mg/L	1.625
Cr*	52	6349	197076	0.645	0.787	**0.022181**	mg/L	0.864
Cr	52	7057	199189	0.632	0.793	**0.022326**	mg/L	0.860
Cr	53	2327	24430	2.357	0.092	**0.021844**	mg/L	2.960
Mn	55	184	4140500	0.739	17.039	**0.289224**	mg/L	1.057
Co	59	188	33667	0.391	0.138	**0.002777**	mg/L	1.081
Ni	60	32	36223	1.745	0.149	**0.013690**	mg/L	1.725
Ni	62	65	6066	0.457	0.025	**0.014446**	mg/L	0.836
Cu	63	178	310530	0.757	1.277	**0.048128**	mg/L	0.979
Cu	65	156	155370	1.367	0.639	**0.048258**	mg/L	1.098
Zn	66	285	101104	1.719	0.415	**0.046865**	mg/L	1.465
Zn	68	299	77273	2.067	0.317	**0.047500**	mg/L	2.143
Y	89	655666	1303779	0.576	648112.524		mg/L	
As*	75	-414	4727	1.234	0.006	**0.001722**	mg/L	1.506
As	75	165	5611	0.512	0.007	**0.001836**	mg/L	1.051
Se	77	185	355	2.192	0.000	**0.000604**	mg/L	4.873
Se	82	78	196	2.019	0.000	**0.000343**	mg/L	4.661
Sr	86	20	44023	0.623	0.054	**0.012161**	mg/L	0.196
Sr	88	132	378377	0.570	0.463	**0.012205**	mg/L	0.954
Zr	90	39	143241	1.097	0.175	**0.008552**	mg/L	1.621
Zr	91	17	31912	1.246	0.039	**0.008526**	mg/L	1.642
Mo	95	34	4375	1.210	0.005	**0.000921**	mg/L	1.242
Mo	97	22	2748	4.735	0.003	**0.000910**	mg/L	4.751
Ag	107	1821	8559	3.301	0.008	**0.000464**	mg/L	5.027
Ag	109	1766	8535	3.662	0.008	**0.000483**	mg/L	4.418

	Cd	111	9	9002	2.099	0.011	**0.002458**	mg/L	1.482
	Cd	114	17	21375	1.522	0.026	**0.002491**	mg/L	1.860
>	In	115	747751	817822	0.625	817821.678		mg/L	
	Sn	118	104	5171	10.094	0.006	**0.000500**	mg/L	10.993
	Sn	120	94	7129	2.584	0.009	**0.000502**	mg/L	2.513
	Sb	121	43	680	51.633	0.001	**0.000053**	mg/L	55.117
	Te	125	5	27	30.136	0.000	**0.000031**	mg/L	38.144
	Ba	137	55	226503	1.729	0.277	**0.042462**	mg/L	1.775
	Ba	138	265	1440704	0.516	1.761	**0.042075**	mg/L	0.502
	W	184	247	7732	0.123	0.012	**0.000789**	mg/L	5.600
	Hg	201	80	1802	1.673	0.003	**0.001095**	mg/L	4.377
	Hg*	202	186	4044	5.342	0.006	**0.001042**	mg/L	0.422
	Hg	202	188	4105	5.263	0.006	**0.000879**	mg/L	0.419
	Tb	159	823967	907401	0.770	0.092		mg/L	
	Ho	165	17	25831	0.918	0.041		mg/L	
	Tl	205	256	5530	3.043	0.008	**0.000182**	mg/L	6.356
	Pb	204	11	16028	1.424	0.025	**0.032134**	mg/L	6.877
	Pb	208	505	1194157	0.844	1.886	**0.029703**	mg/L	5.848
>	Bi	209	613899	634172	5.309	634171.771		mg/L	
	Th	232	165	200378	1.580	0.316	**0.004332**	mg/L	3.879
	U	238	250	234475	0.618	0.370	**0.004680**	mg/L	4.842
	Na	23	25091	1611732	3.522	6.536	**0.286694**	mg/L	2.962
	Mg	24	1548	1879367	0.709	7.728	**0.490626**	mg/L	0.788
	Mg	25	157	257541	0.530	1.059	**0.429193**	mg/L	0.632
	K	39	915234	5568316	0.371	19.430	**0.555504**	mg/L	1.225
	Ca	43	255	29618	0.550	0.121	**1.549323**	mg/L	1.235
	Ca	44	32958	508475	1.325	1.967	**1.570927**	mg/L	1.095
>	Sc	45	262577	243002	0.694	243001.724		mg/L	
	Fe*	57	10623	2820242	1.259	11.566	**9.529528**	mg/L	1.794
	Fe	57	10643	2822641	1.258	11.576	**9.488176**	mg/L	1.794
	Fe	54	27959	6290168	1.712	25.780	**9.217386**	mg/L	1.981
	Kr	83	132	186	2.253	53.668		mg/L	
	Br	81	20252	24009	1.217	3756.635		mg/L	
	Cl	35	156167	82577	1.021	-73590.100		mg/L	
	C	13	4180	12457	0.553	8277.715		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

ımple ID: L4146-1X
ınitial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 20:32:07
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\L4146-1X.039
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	16502	1.571	0.769	**0.011234**	mg/L	1.391
Li	6	18730	19250	2.785	19250.187		mg/L	
Be	9	2	300	10.170	0.015	**0.000559**	mg/L	7.383
B	10	1866	1965	2.561	0.002	**0.000374**	mg/L	39.177
B	11	8409	8765	3.312	0.007	**0.000220**	mg/L	342.742
Si	28	17772	644654	2.608	2.427	**0.183366**	mg/L	1.694
Al	27	907	36388489	3.246	140.822	**5.279981**	mg/L	1.723
P	31	7189	114123	1.544	0.414	**0.253745**	mg/L	1.221
Sc	45	262577	258364	2.048	258363.842		mg/L	
Ti	47	148	111230	2.199	0.430	**0.139060**	mg/L	0.771
Ti	49	52	90287	1.783	0.349	**0.140749**	mg/L	0.408
V**	51	1637	220940	1.268	0.849	**0.020643**	mg/L	0.810
V*	51	6447	223729	1.146	0.841	**0.020199**	mg/L	0.948
V	51	6936	225049	1.010	0.845	**0.020149**	mg/L	1.262
Cr*	52	6349	82824	1.850	0.296	**0.008356**	mg/L	0.238
Cr	52	7057	84462	1.834	0.300	**0.008449**	mg/L	0.278
Cr	53	2327	10461	0.948	0.032	**0.007537**	mg/L	1.408
Mn	55	184	2156233	1.510	8.346	**0.141670**	mg/L	1.395
Co	59	188	42847	2.084	0.165	**0.003327**	mg/L	0.605
Ni	60	32	16685	0.240	0.064	**0.005926**	mg/L	2.135
Ni	62	65	3186	2.010	0.012	**0.007063**	mg/L	0.653
Cu	63	178	30318	0.353	0.117	**0.004398**	mg/L	2.391
Cu	65	156	15816	0.451	0.061	**0.004581**	mg/L	2.428
Zn	66	285	44266	0.603	0.170	**0.019231**	mg/L	1.455
Zn	68	299	44565	1.683	0.171	**0.025690**	mg/L	1.422
Y	89	655666	1072120	0.893	416453.991		mg/L	
As*	75	-414	4978	1.788	0.007	**0.001791**	mg/L	3.827
As	75	165	5880	0.513	0.007	**0.001909**	mg/L	2.976
Se	77	185	319	3.858	0.000	**0.000451**	mg/L	4.107
Se	82	78	142	1.721	0.000	**0.000172**	mg/L	9.302
Sr	86	20	119520	1.416	0.145	**0.032737**	mg/L	2.417
Sr	88	132	1014964	1.197	1.230	**0.032458**	mg/L	2.260
Zr	90	39	185844	1.009	0.225	**0.010998**	mg/L	2.074
Zr	91	17	41631	1.576	0.050	**0.011025**	mg/L	1.578
Mo	95	34	667	2.911	0.001	**0.000133**	mg/L	4.628
Mo	97	22	403	8.552	0.000	**0.000126**	mg/L	11.040
Ag	107	1821	2610	8.215	0.001	**0.000042**	mg/L	43.133
Ag	109	1766	1990	10.545	0.000	**0.000003**	mg/L	561.073

Cd	111	9	271	0.806	0.000	**0.000071**	mg/L	3.000
Cd	114	17	527	8.958	0.001	**0.000059**	mg/L	11.683
In	115	747751	825334	2.484	825333.966		mg/L	
Sn	118	104	2250	22.234	0.003	**0.000208**	mg/L	20.625
Sn	120	94	3257	33.939	0.004	**0.000222**	mg/L	32.269
Sb	121	43	285	5.901	0.000	**0.000020**	mg/L	4.302
Te	125	5	35	12.372	0.000	**0.000042**	mg/L	11.605
Ba	137	55	1395430	1.297	1.691	**0.259349**	mg/L	2.245
Ba	138	265	8350253	1.670	10.119	**0.241731**	mg/L	1.731
W	184	247	1432	6.639	0.002	**0.000133**	mg/L	11.728
Hg	201	80	78	16.609	0.000	**0.000000**	mg/L	2921.936
Hg*	202	186	178	8.919	-0.000	**-0.000001**	mg/L	1175.571
Hg	202	188	190	8.230	0.000	**0.000002**	mg/L	479.244
Tb	159	823967	909211	1.194	0.174		mg/L	
Ho	165	17	16709	0.329	0.028		mg/L	
Tl	205	256	3366	2.463	0.005	**0.000114**	mg/L	11.442
Pb	204	11	2424	4.869	0.004	**0.005119**	mg/L	12.481
Pb	208	505	200664	0.525	0.334	**0.005258**	mg/L	8.462
Bi	209	613899	602315	8.289	602314.946		mg/L	
Th	232	165	337675	1.447	0.563	**0.007709**	mg/L	7.124
U	238	250	32986	2.305	0.055	**0.000690**	mg/L	7.074
Na	23	25091	913723	3.364	3.440	**0.150904**	mg/L	1.536
Mg	24	1548	11049564	3.646	42.752	**2.714132**	mg/L	1.651
Mg	25	157	1587598	3.508	6.143	**2.489049**	mg/L	1.474
K	39	915234	14899883	2.726	54.180	**1.548993**	mg/L	1.055
Ca	43	255	445669	1.037	1.724	**22.091787**	mg/L	1.015
Ca	44	32958	6683283	2.196	25.742	**20.559192**	mg/L	0.657
Sc	45	262577	258364	2.048	258363.842		mg/L	
Fe*	57	10623	2283977	0.634	8.802	**7.251716**	mg/L	1.616
Fe	57	10643	2320077	0.637	8.941	**7.328614**	mg/L	1.606
Fe	54	27959	5112948	2.213	19.685	**7.038236**	mg/L	1.930
Kr	83	132	180	7.413	47.084		mg/L	
Br	81	20252	23249	0.656	2997.342		mg/L	
Cl	35	156167	113251	3.966	-42915.912		mg/L	
C	13	4180	9658	2.363	5478.790		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

ımple ID: L4146-2X
ınitial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 20:38:07
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\L4146-2X.040
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	28603	1.272	1.387	**0.020262**	mg/L	0.824
Li	6	18730	19382	0.659	19382.099		mg/L	
Be	9	2	433	12.014	0.022	**0.000802**	mg/L	11.727
B	10	1866	1983	2.038	0.003	**0.000408**	mg/L	71.029
B	11	8409	8988	1.458	0.015	**0.000485**	mg/L	55.495
Si	28	17772	860089	3.925	3.071	**0.231966**	mg/L	3.489
Al	27	907	63849993	2.820	233.025	**8.737049**	mg/L	2.971
P	31	7189	151552	1.419	0.526	**0.321927**	mg/L	1.725
Sc	45	262577	274017	0.995	274016.670		mg/L	
Ti	47	148	172149	0.193	0.628	**0.203020**	mg/L	0.829
Ti	49	52	138951	0.773	0.507	**0.204272**	mg/L	0.601
V**	51	1637	300506	0.244	1.091	**0.026515**	mg/L	1.230
V*	51	6447	304077	0.159	1.085	**0.026050**	mg/L	1.172
V	51	6936	309088	1.059	1.102	**0.026276**	mg/L	1.456
Cr*	52	6349	97251	0.205	0.331	**0.009324**	mg/L	1.064
Cr	52	7057	98631	0.161	0.333	**0.009380**	mg/L	1.057
Cr	53	2327	12318	0.642	0.036	**0.008599**	mg/L	0.565
Mn	55	184	4161465	1.402	15.187	**0.257781**	mg/L	1.264
Co	59	188	71754	0.460	0.261	**0.005263**	mg/L	1.170
Ni	60	32	24012	0.473	0.088	**0.008044**	mg/L	1.275
Ni	62	65	4587	1.802	0.016	**0.009641**	mg/L	2.703
Cu	63	178	38122	1.710	0.138	**0.005218**	mg/L	2.652
Cu	65	156	20750	0.797	0.075	**0.005676**	mg/L	1.327
Zn	66	285	71876	1.081	0.261	**0.029505**	mg/L	2.055
Zn	68	299	64379	1.466	0.234	**0.035055**	mg/L	2.457
Y	89	655666	1145430	1.755	489763.842		mg/L	
As*	75	-414	5142	0.965	0.007	**0.001818**	mg/L	0.517
As	75	165	6133	0.465	0.007	**0.001962**	mg/L	1.053
Se	77	185	351	2.942	0.000	**0.000557**	mg/L	8.783
Se	82	78	161	3.938	0.000	**0.000223**	mg/L	6.818
Sr	86	20	199363	1.179	0.238	**0.053759**	mg/L	1.951
Sr	88	132	1710242	0.973	2.040	**0.053839**	mg/L	0.887
Zr	90	39	273776	1.712	0.327	**0.015949**	mg/L	1.345
Zr	91	17	60602	1.809	0.072	**0.015802**	mg/L	1.776
Mo	95	34	407	0.639	0.000	**0.000076**	mg/L	0.190
Mo	97	22	278	10.411	0.000	**0.000083**	mg/L	10.593
Ag	107	1821	3318	1.036	0.002	**0.000088**	mg/L	4.557
Ag	109	1766	2270	2.184	0.000	**0.000021**	mg/L	18.487

Cd	111	9	316	3.547	0.000	**0.000082**	mg/L	4.437
Cd	114	17	612	9.355	0.001	**0.000067**	mg/L	10.027
In	115	747751	838213	0.810	838213.434		mg/L	
Sn	118	104	1669	4.642	0.002	**0.000150**	mg/L	5.693
Sn	120	94	2513	12.565	0.003	**0.000168**	mg/L	13.666
Sb	121	43	258	2.116	0.000	**0.000017**	mg/L	3.082
Te	125	5	23	43.301	0.000	**0.000025**	mg/L	57.456
Ba	137	55	1241749	0.717	1.481	**0.227169**	mg/L	0.354
Ba	138	265	7440627	0.490	8.877	**0.212047**	mg/L	0.402
W	184	247	917	4.237	0.001	**0.000086**	mg/L	22.199
Hg	201	80	62	12.136	-0.000	**-0.000006**	mg/L	237.346
Hg*	202	186	147	3.739	-0.000	**-0.000005**	mg/L	184.172
Hg	202	188	155	3.444	-0.000	**-0.000003**	mg/L	284.562
Tb	159	823967	917602	0.504	0.347		mg/L	
Ho	165	17	20764	1.292	0.038		mg/L	
Tl	205	256	5816	0.653	0.010	**0.000225**	mg/L	17.382
Pb	204	11	3662	4.417	0.007	**0.008512**	mg/L	14.401
Pb	208	505	293566	0.960	0.540	**0.008497**	mg/L	16.556
Bi	209	613899	552910	15.823	552909.877		mg/L	
Th	232	165	379335	1.799	0.697	**0.009553**	mg/L	15.374
U	238	250	38256	1.641	0.070	**0.000885**	mg/L	15.608
Na	23	25091	809225	1.848	2.858	**0.125351**	mg/L	2.214
Mg	24	1548	21826663	2.295	79.650	**5.056564**	mg/L	2.192
Mg	25	157	3002136	2.554	10.956	**4.439351**	mg/L	2.852
K	39	915234	23503990	2.232	82.292	**2.352699**	mg/L	2.244
Ca	43	255	531732	0.470	1.940	**24.851311**	mg/L	0.607
Ca	44	32958	8071596	1.033	29.332	**23.426331**	mg/L	0.981
Sc	45	262577	274017	0.995	274016.670		mg/L	
Fe*	57	10623	3542358	0.328	12.888	**10.618308**	mg/L	0.747
Fe	57	10643	3585429	0.329	13.045	**10.692060**	mg/L	0.746
Fe	54	27959	7979005	1.353	29.012	**10.372942**	mg/L	0.828
Kr	83	132	205	5.748	72.251		mg/L	
Br	81	20252	22114	2.459	1861.446		mg/L	
Cl	35	156167	114113	2.402	-42053.692		mg/L	
C	13	4180	8135	2.996	3955.353		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: L4146-3X
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 20:44:08
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\L4146-3X.041
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

	Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
	Li	7	1652	26445	0.417	1.268	**0.018522**	mg/L	0.972
>	Li	6	18730	19496	0.936	19496.488		mg/L	
	Be	9	2	424	0.742	0.022	**0.000782**	mg/L	0.471
	B	10	1866	2087	1.960	0.007	**0.001129**	mg/L	34.960
	B	11	8409	9634	1.517	0.045	**0.001482**	mg/L	19.034
	Si	28	17772	500740	5.817	1.864	**0.140840**	mg/L	5.897
	Al	27	907	49013298	1.221	189.122	**7.090947**	mg/L	0.282
	P	31	7189	82732	1.183	0.292	**0.178719**	mg/L	0.792
>	Sc	45	262577	259159	1.288	259159.327		mg/L	
	Ti	47	148	109193	0.691	0.421	**0.136097**	mg/L	0.630
	Ti	49	52	90092	0.784	0.347	**0.140014**	mg/L	0.588
	V**	51	1637	342021	0.629	1.314	**0.031938**	mg/L	0.691
	V*	51	6447	344842	0.723	1.306	**0.031352**	mg/L	0.607
	V	51	6936	348809	1.034	1.320	**0.031473**	mg/L	0.274
	Cr*	52	6349	65811	1.202	0.230	**0.006477**	mg/L	0.235
	Cr	52	7057	67203	1.190	0.232	**0.006545**	mg/L	0.255
	Cr	53	2327	8514	2.364	0.024	**0.005715**	mg/L	1.501
	Mn	55	184	3253608	0.816	12.554	**0.213101**	mg/L	0.532
	Co	59	188	54000	0.700	0.208	**0.004185**	mg/L	1.942
	Ni	60	32	16883	0.224	0.065	**0.005977**	mg/L	1.484
	Ni	62	65	3245	3.793	0.012	**0.007171**	mg/L	2.559
	Cu	63	178	24859	1.695	0.095	**0.003589**	mg/L	0.672
	Cu	65	156	13206	1.145	0.050	**0.003806**	mg/L	2.452
	Zn	66	285	49965	1.177	0.192	**0.021655**	mg/L	2.355
	Zn	68	299	41811	0.480	0.160	**0.024018**	mg/L	1.736
	Y	89	655666	962433	0.844	306766.519		mg/L	
	As*	75	-414	8980	1.464	0.012	**0.003129**	mg/L	0.820
	As	75	165	9793	1.413	0.012	**0.003242**	mg/L	0.750
	Se	77	185	299	5.392	0.000	**0.000379**	mg/L	16.438
	Se	82	78	146	2.403	0.000	**0.000187**	mg/L	5.005
	Sr	86	20	357000	1.013	0.436	**0.098453**	mg/L	0.431
	Sr	88	132	2999040	0.540	3.659	**0.096565**	mg/L	0.183
	Zr	90	39	206102	1.060	0.251	**0.012279**	mg/L	0.384
	Zr	91	17	45635	0.881	0.056	**0.012169**	mg/L	1.152
	Mo	95	34	948	1.684	0.001	**0.000193**	mg/L	1.878
	Mo	97	22	589	3.559	0.001	**0.000188**	mg/L	3.347
	Ag	107	1821	3888	18.626	0.002	**0.000133**	mg/L	38.475
	Ag	109	1766	2631	11.744	0.001	**0.000051**	mg/L	41.955

Cd	111	9	115	12.552	0.000	**0.000029**	mg/L	13.944
Cd	114	17	158	6.250	0.000	**0.000016**	mg/L	7.325
In	115	747751	819541	0.675	819540.870		mg/L	
Sn	118	104	2545	6.176	0.003	**0.000240**	mg/L	5.853
Sn	120	94	3401	4.416	0.004	**0.000235**	mg/L	4.062
Sb	121	43	230	7.905	0.000	**0.000015**	mg/L	9.251
Te	125	5	23	33.333	0.000	**0.000025**	mg/L	44.762
Ba	137	55	528941	0.631	0.645	**0.098965**	mg/L	0.657
Ba	138	265	3155889	0.759	3.850	**0.091981**	mg/L	0.362
W	184	247	795	5.661	0.001	**0.000056**	mg/L	5.018
Hg	201	80	54	14.836	-0.000	**-0.000019**	mg/L	21.518
Hg*	202	186	135	4.707	-0.000	**-0.000016**	mg/L	18.236
Hg	202	188	142	4.305	-0.000	**-0.000012**	mg/L	19.465
Tb	159	823967	890553	0.690	0.042		mg/L	
Ho	165	17	12993	1.765	0.020		mg/L	
Tl	205	256	2525	1.948	0.004	**0.000077**	mg/L	1.738
Pb	204	11	3065	1.165	0.005	**0.006022**	mg/L	2.302
Pb	208	505	243348	0.441	0.377	**0.005943**	mg/L	3.481
Bi	209	613899	643967	3.203	643967.473		mg/L	
Th	232	165	289572	0.531	0.450	**0.006163**	mg/L	3.201
U	238	250	46770	1.120	0.072	**0.000914**	mg/L	2.323
Na	23	25091	2738076	1.666	10.469	**0.459207**	mg/L	0.431
Mg	24	1548	16478530	0.960	63.581	**4.036424**	mg/L	0.544
Mg	25	157	2265153	1.219	8.740	**3.541260**	mg/L	0.300
K	39	915234	16537016	1.758	60.324	**1.724644**	mg/L	1.107
Ca	43	255	260782	2.151	1.005	**12.879885**	mg/L	1.395
Ca	44	32958	3935112	1.456	15.058	**12.026666**	mg/L	0.437
Sc	45	262577	259159	1.288	259159.327		mg/L	
Fe*	57	10623	2743080	0.127	10.545	**8.688280**	mg/L	1.215
Fe	57	10643	2764203	0.142	10.627	**8.710000**	mg/L	1.203
Fe	54	27959	6163787	1.359	23.678	**8.465804**	mg/L	1.024
Kr	83	132	169	2.746	37.001		mg/L	
Br	81	20252	22795	3.673	2542.987		mg/L	
Cl	35	156167	116358	1.117	-39809.072		mg/L	
C	13	4180	8209	0.866	4029.578		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

`ample ID: L4146-4X
.nitial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 20:50:09
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\L4146-4X.042
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	29904	0.592	1.420	**0.020737**	mg/L	1.731
Li	6	18730	19832	2.010	19831.734		mg/L	
Be	9	2	428	4.973	0.022	**0.000776**	mg/L	4.122
B	10	1866	2159	2.659	0.009	**0.001408**	mg/L	47.306
B	11	8409	9484	2.567	0.029	**0.000964**	mg/L	55.048
Si	28	17772	1263056	4.863	4.525	**0.341795**	mg/L	4.235
Al	27	907	65671140	1.685	238.813	**8.954047**	mg/L	1.058
P	31	7189	145342	1.168	0.501	**0.306890**	mg/L	0.386
Sc	45	262577	274976	0.804	274976.143		mg/L	
Ti	47	148	161138	1.213	0.585	**0.189352**	mg/L	1.082
Ti	49	52	132264	1.507	0.481	**0.193775**	mg/L	2.201
V**	51	1637	298637	0.975	1.080	**0.026256**	mg/L	1.489
V*	51	6447	302752	0.867	1.077	**0.025841**	mg/L	1.359
V	51	6936	304453	0.779	1.081	**0.025780**	mg/L	1.355
Cr*	52	6349	102424	0.410	0.348	**0.009819**	mg/L	1.156
Cr	52	7057	103938	0.381	0.351	**0.009888**	mg/L	1.116
Cr	53	2327	13094	0.847	0.039	**0.009234**	mg/L	0.135
Mn	55	184	3906672	0.674	14.208	**0.241164**	mg/L	1.305
Co	59	188	72639	0.514	0.263	**0.005309**	mg/L	1.295
Ni	60	32	24655	2.001	0.090	**0.008230**	mg/L	2.160
Ni	62	65	4758	1.560	0.017	**0.009969**	mg/L	2.376
Cu	63	178	38742	0.721	0.140	**0.005284**	mg/L	1.536
Cu	65	156	20450	2.068	0.074	**0.005575**	mg/L	2.869
Zn	66	285	71221	0.968	0.258	**0.029128**	mg/L	0.295
Zn	68	299	63369	1.095	0.229	**0.034380**	mg/L	1.916
Y	89	655666	1147967	0.664	492300.950		mg/L	
As*	75	-414	5365	0.832	0.007	**0.001917**	mg/L	1.299
As	75	165	6333	1.323	0.007	**0.002060**	mg/L	1.668
Se	77	185	345	5.361	0.000	**0.000552**	mg/L	13.336
Se	82	78	163	3.381	0.000	**0.000237**	mg/L	8.494
Sr	86	20	211487	0.756	0.256	**0.057901**	mg/L	1.222
Sr	88	132	1808170	0.848	2.190	**0.057795**	mg/L	0.516
Zr	90	39	250431	0.980	0.303	**0.014814**	mg/L	1.509
Zr	91	17	56488	2.051	0.068	**0.014956**	mg/L	2.592
Mo	95	34	580	3.482	0.001	**0.000114**	mg/L	3.477
Mo	97	22	357	11.222	0.000	**0.000110**	mg/L	12.645
Ag	107	1821	2722	7.335	0.001	**0.000050**	mg/L	29.928
Ag	109	1766	1783	6.347	-0.000	**-0.000012**	mg/L	65.080

	Cd	111	9	448	5.597	0.001	**0.000119**	mg/L	5.538
	Cd	114	17	899	5.134	0.001	**0.000102**	mg/L	5.730
>	In	115	747751	825540	0.650	825540.003		mg/L	
	Sn	118	104	1870	11.909	0.002	**0.000172**	mg/L	12.694
	Sn	120	94	2351	5.993	0.003	**0.000159**	mg/L	6.479
	Sb	121	43	256	4.804	0.000	**0.000017**	mg/L	6.509
	Te	125	5	23	22.222	0.000	**0.000024**	mg/L	30.191
	Ba	137	55	1309628	0.384	1.586	**0.243274**	mg/L	1.009
	Ba	138	265	7946170	1.098	9.626	**0.229943**	mg/L	1.668
	W	184	247	959	9.841	0.001	**0.000087**	mg/L	8.363
	Hg	201	80	64	8.985	-0.000	**-0.000006**	mg/L	111.403
	Hg*	202	186	132	1.838	-0.000	**-0.000011**	mg/L	42.971
	Hg	202	188	140	2.267	-0.000	**-0.000008**	mg/L	52.029
	Tb	159	823967	914782	0.085	0.298		mg/L	
	Ho	165	17	21070	0.413	0.038		mg/L	
	Tl	205	256	5880	3.033	0.010	**0.000222**	mg/L	17.362
	Pb	204	11	3630	1.975	0.006	**0.008242**	mg/L	14.520
	Pb	208	505	292367	0.404	0.523	**0.008242**	mg/L	13.696
>	Bi	209	613899	564349	12.735	564348.564		mg/L	
	Th	232	165	397685	1.546	0.712	**0.009753**	mg/L	12.073
	U	238	250	36409	1.261	0.065	**0.000821**	mg/L	14.071
	Na	23	25091	1058339	2.366	3.753	**0.164613**	mg/L	1.652
	Mg	24	1548	21931585	2.370	79.746	**5.062639**	mg/L	1.575
	Mg	25	157	3005089	1.943	10.927	**4.427613**	mg/L	1.266
	K	39	915234	23604146	1.219	82.354	**2.354482**	mg/L	0.752
	Ca	43	255	729915	0.856	2.654	**33.998084**	mg/L	0.468
	Ca	44	32958	10998059	1.366	39.870	**31.842511**	mg/L	0.603
>	Sc	45	262577	274976	0.804	274976.143		mg/L	
	Fe*	57	10623	3549133	1.599	12.866	**10.600611**	mg/L	0.998
	Fe	57	10643	3608257	1.587	13.081	**10.721851**	mg/L	0.987
	Fe	54	27959	7925554	0.359	28.717	**10.267498**	mg/L	0.655
	Kr	83	132	206	1.127	73.668		mg/L	
	Br	81	20252	22813	0.532	2560.504		mg/L	
	Cl	35	156167	113154	3.509	-43012.558		mg/L	
	C	13	4180	8928	2.806	4748.529		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: L4146-5X
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 20:56:10
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\L4146-5X.043
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

	Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
	Li	7	1652	35146	0.422	1.667	**0.024337**	mg/L	1.043
>	Li	6	18730	20030	0.617	20030.041		mg/L	
	Be	9	2	494	3.397	0.025	**0.000887**	mg/L	4.013
	B	10	1866	2120	2.773	0.006	**0.000940**	mg/L	38.559
	B	11	8409	9541	0.963	0.027	**0.000898**	mg/L	26.126
	Si	28	17772	310537	6.106	1.088	**0.082175**	mg/L	6.939
	Al	27	907	65783416	0.705	244.742	**9.176336**	mg/L	1.007
	P	31	7189	98623	1.679	0.340	**0.207901**	mg/L	1.080
>	Sc	45	262577	268793	0.742	268793.039		mg/L	
	Ti	47	148	76850	0.953	0.285	**0.092292**	mg/L	1.176
	Ti	49	52	62842	0.802	0.234	**0.094136**	mg/L	0.861
	V**	51	1637	383195	1.008	1.419	**0.034511**	mg/L	0.732
	V*	51	6447	386337	0.877	1.413	**0.033912**	mg/L	0.605
	V	51	6936	391287	0.873	1.429	**0.034091**	mg/L	0.381
	Cr*	52	6349	101686	2.027	0.354	**0.009982**	mg/L	1.393
	Cr	52	7057	102940	1.995	0.356	**0.010027**	mg/L	1.372
	Cr	53	2327	12670	2.179	0.038	**0.009119**	mg/L	2.220
	Mn	55	184	3246896	0.659	12.080	**0.205045**	mg/L	1.383
	Co	59	188	75495	0.938	0.280	**0.005645**	mg/L	0.855
	Ni	60	32	24831	0.223	0.092	**0.008480**	mg/L	0.520
	Ni	62	65	4281	1.543	0.016	**0.009166**	mg/L	2.316
	Cu	63	178	31385	0.605	0.116	**0.004374**	mg/L	0.144
	Cu	65	156	16005	1.085	0.059	**0.004453**	mg/L	0.571
	Zn	66	285	74858	1.624	0.277	**0.031328**	mg/L	1.049
	Zn	68	299	58741	1.308	0.217	**0.032589**	mg/L	0.603
	Y	89	655666	1105109	0.574	449442.938		mg/L	
	As*	75	-414	7508	0.733	0.010	**0.002605**	mg/L	0.360
	As	75	165	8433	0.737	0.010	**0.002742**	mg/L	0.664
	Se	77	185	328	1.472	0.000	**0.000477**	mg/L	6.763
	Se	82	78	151	7.836	0.000	**0.000196**	mg/L	19.632
	Sr	86	20	390767	1.113	0.470	**0.106225**	mg/L	2.159
	Sr	88	132	3246317	0.523	3.904	**0.103021**	mg/L	0.862
	Zr	90	39	201418	3.785	0.242	**0.011831**	mg/L	4.748
	Zr	91	17	44838	3.699	0.054	**0.011787**	mg/L	4.617
	Mo	95	34	521	3.621	0.001	**0.000101**	mg/L	4.924
	Mo	97	22	318	5.789	0.000	**0.000097**	mg/L	5.914
	Ag	107	1821	2339	4.917	0.000	**0.000022**	mg/L	42.961
	Ag	109	1766	1533	5.120	-0.001	**-0.000031**	mg/L	14.382

Cd	111	9	120	6.041	0.000	**0.000030**	mg/L	5.985
Cd	114	17	156	23.042	0.000	**0.000016**	mg/L	27.210
In	115	747751	831566	1.076	831565.670		mg/L	
Sn	118	104	1088	9.589	0.001	**0.000095**	mg/L	11.778
Sn	120	94	1436	10.279	0.002	**0.000094**	mg/L	10.134
Sb	121	43	170	4.772	0.000	**0.000010**	mg/L	7.784
Te	125	5	16	39.736	0.000	**0.000015**	mg/L	62.363
Ba	137	55	344467	0.957	0.414	**0.063513**	mg/L	0.119
Ba	138	265	2086287	0.937	2.509	**0.059925**	mg/L	0.500
W	184	247	555	6.498	0.001	**0.000070**	mg/L	40.182
Hg	201	80	60	31.111	0.000	**0.000014**	mg/L	250.307
Hg*	202	186	119	1.887	0.000	**0.000002**	mg/L	938.072
Hg	202	188	124	1.996	0.000	**0.000003**	mg/L	550.670
Tb	159	823967	920664	0.429	1.096		mg/L	
Ho	165	17	20167	0.394	0.053		mg/L	
Tl	205	256	4301	1.225	0.011	**0.000240**	mg/L	36.940
Pb	204	11	4260	1.883	0.011	**0.014317**	mg/L	35.841
Pb	208	505	337969	0.262	0.894	**0.014078**	mg/L	34.845
Bi	209	613899	406483	30.855	406482.902		mg/L	
Th	232	165	358872	3.511	0.942	**0.012908**	mg/L	30.814
U	238	250	49567	0.631	0.131	**0.001655**	mg/L	34.952
Na	23	25091	2537418	0.153	9.345	**0.409886**	mg/L	0.863
Mg	24	1548	22840388	1.314	84.967	**5.394101**	mg/L	0.845
Mg	25	157	3148977	1.387	11.714	**4.746446**	mg/L	0.647
K	39	915234	28670836	0.618	103.184	**2.950004**	mg/L	1.112
Ca	43	255	156545	0.425	0.581	**7.449674**	mg/L	0.338
Ca	44	32958	2378678	0.792	8.724	**6.967921**	mg/L	1.373
Sc	45	262577	268793	0.742	268793.039		mg/L	
Fe*	57	10623	3954673	0.343	14.673	**12.089059**	mg/L	0.801
Fe	57	10643	3967353	0.342	14.720	**12.065019**	mg/L	0.799
Fe	54	27959	8850545	0.594	32.821	**11.734890**	mg/L	0.706
Kr	83	132	191	1.258	58.501		mg/L	
Br	81	20252	20766	0.962	513.552		mg/L	
Cl	35	156167	106353	0.880	-49813.748		mg/L	
C	13	4180	7395	2.652	3215.194		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: L4146-6X
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 21:02:11
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\L4146-6X.044
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	28957	1.024	1.449	**0.021166**	mg/L	1.650
Li	6	18730	18834	0.640	18833.970		mg/L	
Be	9	2	421	5.216	0.022	**0.000804**	mg/L	5.354
B	10	1866	2170	3.107	0.016	**0.002368**	mg/L	26.713
B	11	8409	10070	2.504	0.086	**0.002810**	mg/L	13.725
Si	28	17772	1082324	3.842	3.860	**0.291545**	mg/L	4.399
Al	27	907	64386244	1.306	233.610	**8.758967**	mg/L	1.924
P	31	7189	107541	0.986	0.363	**0.222159**	mg/L	1.522
Sc	45	262577	275632	0.631	275632.110		mg/L	
Ti	47	148	129649	1.084	0.470	**0.151947**	mg/L	0.467
Ti	49	52	105552	0.612	0.383	**0.154238**	mg/L	0.084
V**	51	1637	393890	0.737	1.423	**0.034594**	mg/L	0.227
V*	51	6447	397976	0.590	1.419	**0.034069**	mg/L	0.056
V	51	6936	403658	0.853	1.438	**0.034299**	mg/L	0.315
Cr*	52	6349	106110	2.264	0.361	**0.010170**	mg/L	1.825
Cr	52	7057	107616	2.221	0.364	**0.010237**	mg/L	1.792
Cr	53	2327	13501	1.168	0.040	**0.009559**	mg/L	1.046
Mn	55	184	3358186	1.353	12.183	**0.206807**	mg/L	1.701
Co	59	188	59644	0.323	0.216	**0.004346**	mg/L	0.619
Ni	60	32	21086	2.305	0.076	**0.007020**	mg/L	1.757
Ni	62	65	3966	2.065	0.014	**0.008264**	mg/L	1.866
Cu	63	178	30616	2.554	0.110	**0.004159**	mg/L	1.940
Cu	65	156	16482	0.392	0.059	**0.004473**	mg/L	0.274
Zn	66	285	64641	1.562	0.233	**0.026363**	mg/L	1.265
Zn	68	299	53248	0.968	0.192	**0.028790**	mg/L	1.031
Y	89	655666	1145974	0.993	490308.065		mg/L	
As*	75	-414	7374	1.414	0.009	**0.002569**	mg/L	0.109
As	75	165	8325	1.592	0.010	**0.002715**	mg/L	0.557
Se	77	185	333	3.023	0.000	**0.000501**	mg/L	7.246
Se	82	78	158	4.651	0.000	**0.000219**	mg/L	11.555
Sr	86	20	346218	0.789	0.418	**0.094393**	mg/L	0.829
Sr	88	132	2903961	1.660	3.503	**0.092432**	mg/L	0.975
Zr	90	39	279260	1.467	0.337	**0.016449**	mg/L	0.458
Zr	91	17	61753	0.944	0.074	**0.016281**	mg/L	0.697
Mo	95	34	805	2.963	0.001	**0.000161**	mg/L	3.963
Mo	97	22	434	7.493	0.000	**0.000135**	mg/L	6.920
Ag	107	1821	3216	10.854	0.001	**0.000083**	mg/L	25.411
Ag	109	1766	2023	11.425	0.000	**0.000005**	mg/L	322.617

Cd	111	9	387	4.473	0.000	**0.000102**	mg/L	4.136
Cd	114	17	669	4.327	0.001	**0.000075**	mg/L	2.985
> In	115	747751	829048	1.490	829047.507		mg/L	
Sn	118	104	1492	1.964	0.002	**0.000134**	mg/L	2.464
Sn	120	94	2117	2.556	0.002	**0.000142**	mg/L	2.211
Sb	121	43	193	7.714	0.000	**0.000012**	mg/L	8.312
Te	125	5	24	5.973	0.000	**0.000027**	mg/L	8.554
Ba	137	55	596501	0.852	0.720	**0.110344**	mg/L	1.900
Ba	138	265	3627160	0.416	4.375	**0.104523**	mg/L	1.752
W	184	247	733	6.512	0.001	**0.000055**	mg/L	16.141
Hg	201	80	69	6.556	-0.000	**-0.000006**	mg/L	52.634
Hg*	202	186	127	4.114	-0.000	**-0.000016**	mg/L	8.233
Hg	202	188	133	3.677	-0.000	**-0.000012**	mg/L	9.283
Tb	159	823967	895420	0.834	0.153		mg/L	
Ho	165	17	20389	0.917	0.034		mg/L	
Tl	205	256	3307	4.289	0.005	**0.000112**	mg/L	9.447
Pb	204	11	3822	0.485	0.006	**0.008073**	mg/L	5.762
Pb	208	505	295410	0.781	0.492	**0.007754**	mg/L	6.858
> Bi	209	613899	600593	5.844	600593.243		mg/L	
Th	232	165	345655	0.828	0.576	**0.007900**	mg/L	5.545
U	238	250	45970	1.926	0.076	**0.000966**	mg/L	7.953
Na	23	25091	963136	0.116	3.399	**0.149078**	mg/L	0.550
Mg	24	1548	21206924	0.448	76.935	**4.884182**	mg/L	0.513
Mg	25	157	2892034	0.892	10.492	**4.251366**	mg/L	1.494
K	39	915234	24015086	1.241	83.645	**2.391378**	mg/L	1.537
Ca	43	255	773163	0.568	2.804	**35.927598**	mg/L	0.379
Ca	44	32958	11707961	1.215	42.354	**33.826782**	mg/L	1.790
> Sc	45	262577	275632	0.631	275632.110		mg/L	
Fe*	57	10623	3478107	1.506	12.579	**10.364134**	mg/L	2.061
Fe	57	10643	3540733	1.476	12.806	**10.496597**	mg/L	2.030
Fe	54	27959	7874154	1.046	28.461	**10.175879**	mg/L	0.648
Kr	83	132	210	1.884	77.501		mg/L	
Br	81	20252	22209	1.620	1956.651		mg/L	
Cl	35	156167	124489	2.460	-31678.031		mg/L	
C	13	4180	8880	0.981	4700.568		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: L4146-7X
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 21:08:13
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\L4146-7X.045
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	20945	0.917	0.999	**0.014583**	mg/L	0.980
Li	6	18730	19274	1.693	19273.977		mg/L	
Be	9	2	333	9.034	0.017	**0.000622**	mg/L	10.571
B	10	1866	2149	1.979	0.012	**0.001808**	mg/L	29.062
B	11	8409	9859	0.476	0.063	**0.002056**	mg/L	17.400
Si	28	17772	1002522	4.331	3.616	**0.273116**	mg/L	4.420
Al	27	907	49331077	1.541	181.250	**6.795800**	mg/L	2.093
P	31	7189	133194	0.816	0.462	**0.282881**	mg/L	0.356
Sc	45	262577	272191	0.859	272190.658		mg/L	
Ti	47	148	76669	0.957	0.281	**0.090919**	mg/L	0.272
Ti	49	52	62267	0.618	0.229	**0.092110**	mg/L	0.869
V**	51	1637	252967	0.287	0.923	**0.022446**	mg/L	0.593
V*	51	6447	255998	0.195	0.916	**0.021988**	mg/L	0.693
V	51	6936	257886	0.685	0.921	**0.021968**	mg/L	0.356
Cr*	52	6349	85326	0.685	0.289	**0.008156**	mg/L	1.222
Cr	52	7057	86951	0.638	0.293	**0.008239**	mg/L	1.222
Cr	53	2327	10822	1.643	0.031	**0.007362**	mg/L	2.773
Mn	55	184	2652098	1.047	9.743	**0.165377**	mg/L	0.300
Co	59	188	47854	0.445	0.175	**0.003528**	mg/L	0.637
Ni	60	32	17832	0.693	0.065	**0.006011**	mg/L	1.541
Ni	62	65	3243	2.479	0.012	**0.006820**	mg/L	2.910
Cu	63	178	36923	0.380	0.135	**0.005086**	mg/L	0.818
Cu	65	156	19539	1.245	0.071	**0.005378**	mg/L	0.455
Zn	66	285	55255	1.453	0.202	**0.022802**	mg/L	0.601
Zn	68	299	54127	1.035	0.198	**0.029639**	mg/L	0.252
Y	89	655666	1048228	0.243	392561.624		mg/L	
As*	75	-414	5687	1.576	0.007	**0.002008**	mg/L	2.321
As	75	165	6564	1.686	0.008	**0.002118**	mg/L	2.688
Se	77	185	323	2.606	0.000	**0.000456**	mg/L	10.155
Se	82	78	163	2.521	0.000	**0.000232**	mg/L	7.581
Sr	86	20	316274	0.394	0.380	**0.085843**	mg/L	0.717
Sr	88	132	2661128	0.318	3.196	**0.084330**	mg/L	0.921
Zr	90	39	178160	0.620	0.214	**0.010446**	mg/L	0.501
Zr	91	17	39752	0.407	0.048	**0.010432**	mg/L	1.360
Mo	95	34	556	3.608	0.001	**0.000108**	mg/L	4.734
Mo	97	22	366	5.566	0.000	**0.000112**	mg/L	5.047
Ag	107	1821	1629	1.894	-0.000	**-0.000028**	mg/L	11.590
Ag	109	1766	975	4.137	-0.001	**-0.000071**	mg/L	3.984

Cd	111	9	399	3.455	0.000	**0.000104**	mg/L	2.716
Cd	114	17	845	8.088	0.001	**0.000095**	mg/L	9.360
In	115	747751	832746	1.094	832745.675		mg/L	
Sn	118	104	1215	8.381	0.001	**0.000107**	mg/L	9.099
Sn	120	94	1735	5.241	0.002	**0.000115**	mg/L	6.515
Sb	121	43	177	1.078	0.000	**0.000011**	mg/L	2.779
Te	125	5	18	37.796	0.000	**0.000017**	mg/L	56.529
Ba	137	55	1484505	2.090	1.783	**0.273350**	mg/L	1.329
Ba	138	265	9090528	1.034	10.916	**0.260767**	mg/L	0.137
W	184	247	728	6.105	0.001	**0.000080**	mg/L	33.308
Hg	201	80	55	19.418	-0.000	**-0.000003**	mg/L	710.562
Hg*	202	186	121	2.809	-0.000	**-0.000007**	mg/L	153.754
Hg	202	188	126	2.935	-0.000	**-0.000004**	mg/L	212.912
Tb	159	823967	912135	0.228	0.658		mg/L	
Ho	165	17	16171	0.948	0.035		mg/L	
Tl	205	256	3925	0.819	0.008	**0.000179**	mg/L	25.529
Pb	204	11	2737	3.077	0.006	**0.007555**	mg/L	20.563
Pb	208	505	222457	0.699	0.487	**0.007662**	mg/L	23.470
Bi	209	613899	472218	21.359	472218.356		mg/L	
Th	232	165	295388	3.658	0.644	**0.008819**	mg/L	19.946
U	238	250	38476	0.702	0.084	**0.001061**	mg/L	23.185
Na	23	25091	1528817	1.579	5.521	**0.242178**	mg/L	1.718
Mg	24	1548	17080644	2.220	62.754	**3.983914**	mg/L	2.751
Mg	25	157	2346858	1.428	8.622	**3.493619**	mg/L	1.998
K	39	915234	20914119	1.205	73.357	**2.097243**	mg/L	1.820
Ca	43	255	847545	0.704	3.113	**39.883396**	mg/L	0.168
Ca	44	32958	12894153	1.004	47.248	**37.734922**	mg/L	1.056
Sc	45	262577	272191	0.859	272190.658		mg/L	
Fe*	57	10623	2709724	0.102	9.915	**8.169264**	mg/L	0.778
Fe	57	10643	2778375	0.115	10.167	**8.333598**	mg/L	0.763
Fe	54	27959	6087133	0.343	22.258	**7.958075**	mg/L	0.769
Kr	83	132	190	1.723	57.334		mg/L	
Br	81	20252	23480	2.962	3227.895		mg/L	
Cl	35	156167	102413	0.676	-53754.156		mg/L	
C	13	4180	9583	2.383	5403.301		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: CCV
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 21:16:15
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\CCV.046
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	14380	1.328	0.681	**0.009940**	mg/L	0.888
> Li	6	18730	18703	0.888	18703.309		mg/L	
Be	9	2	4956	2.070	0.265	**0.009562**	mg/L	2.868
B	10	1866	7615	3.654	0.307	**0.046636**	mg/L	3.991
B	11	8409	34678	0.823	1.405	**0.046061**	mg/L	1.787
Si	28	17772	172679	3.437	0.648	**0.048920**	mg/L	3.765
Al	27	907	65388	3.307	0.267	**0.010025**	mg/L	2.761
P	31	7189	23555	1.756	0.070	**0.042981**	mg/L	1.874
> Sc	45	262577	241414	0.812	241413.988		mg/L	
Ti	47	148	7883	2.732	0.032	**0.010378**	mg/L	1.996
Ti	49	52	6454	1.954	0.027	**0.010694**	mg/L	1.346
V**	51	1637	105938	1.610	0.433	**0.010518**	mg/L	1.753
V*	51	6447	109106	0.851	0.427	**0.010259**	mg/L	1.039
V	51	6936	110154	1.479	0.430	**0.010253**	mg/L	1.244
Cr*	52	6349	96408	1.874	0.375	**0.010576**	mg/L	1.749
Cr	52	7057	97371	1.842	0.376	**0.010601**	mg/L	1.724
Cr	53	2327	12047	1.308	0.041	**0.009778**	mg/L	0.901
Mn	55	184	147154	1.095	0.609	**0.010335**	mg/L	0.312
Co	59	188	122999	0.306	0.509	**0.010252**	mg/L	0.615
Ni	60	32	27203	0.455	0.113	**0.010346**	mg/L	1.066
Ni	62	65	4292	1.720	0.018	**0.010246**	mg/L	1.120
Cu	63	178	66482	0.247	0.275	**0.010352**	mg/L	1.053
Cu	65	156	33158	1.206	0.137	**0.010331**	mg/L	0.620
Zn	66	285	22057	2.628	0.090	**0.010195**	mg/L	1.997
Zn	68	299	17156	0.580	0.070	**0.010483**	mg/L	1.302
Y	89	655666	672846	0.723	17180.139		mg/L	
As*	75	-414	27842	1.468	0.036	**0.009714**	mg/L	0.422
As	75	165	27725	0.958	0.035	**0.009623**	mg/L	0.694
Se	77	185	2506	1.391	0.003	**0.009490**	mg/L	3.129
Se	82	78	3153	1.128	0.004	**0.009793**	mg/L	1.419
Sr	86	20	34435	1.805	0.043	**0.009829**	mg/L	2.271
Sr	88	132	296517	0.364	0.375	**0.009883**	mg/L	1.312
Zr	90	39	167990	4.657	0.212	**0.010362**	mg/L	3.885
Zr	91	17	37453	3.707	0.047	**0.010340**	mg/L	3.314
Mo	95	34	44853	0.133	0.057	**0.009832**	mg/L	1.631
Mo	97	22	28754	0.780	0.036	**0.009918**	mg/L	2.409
Ag	107	1821	160873	2.414	0.201	**0.011592**	mg/L	2.885
Ag	109	1766	155392	1.941	0.194	**0.011607**	mg/L	2.404

	Cd	111	9	35334	2.946	0.045	**0.009975**	mg/L	1.550
	Cd	114	17	82828	3.215	0.105	**0.009979**	mg/L	1.614
>	In	115	747751	791495	1.622	791495.306		mg/L	
	Sn	118	104	98107	0.947	0.124	**0.010010**	mg/L	1.594
	Sn	120	94	137046	1.059	0.173	**0.010119**	mg/L	1.634
	Sb	121	43	121932	0.216	0.154	**0.010479**	mg/L	1.814
	Te	125	5	6840	4.481	0.009	**0.010227**	mg/L	5.874
	Ba	137	55	54061	0.184	0.068	**0.010465**	mg/L	1.822
	Ba	138	265	345050	0.697	0.436	**0.010408**	mg/L	1.972
	W	184	247	88963	0.804	0.149	**0.009944**	mg/L	1.762
	Hg	201	80	1620	0.267	0.003	**0.001043**	mg/L	2.902
	Hg*	202	186	3661	1.684	0.006	**0.001001**	mg/L	2.271
	Hg	202	188	4364	1.485	0.007	**0.001000**	mg/L	2.122
	Tb	159	823967	853407	0.503	0.089		mg/L	
	Ho	165	17	24	24.119	0.000		mg/L	
	Tl	205	256	268096	0.386	0.449	**0.009816**	mg/L	2.189
	Pb	204	11	4654	4.813	0.008	**0.009877**	mg/L	2.361
	Pb	208	505	379597	0.316	0.636	**0.010014**	mg/L	2.285
>	Bi	209	613899	596461	2.542	596461.003		mg/L	
	Th	232	165	430248	0.793	0.721	**0.009887**	mg/L	3.260
	U	238	250	451844	1.062	0.758	**0.009583**	mg/L	3.236
	Na	23	25091	2879514	1.545	11.832	**0.518995**	mg/L	1.570
	Mg	24	1548	1940719	2.234	8.033	**0.509965**	mg/L	1.873
	Mg	25	157	276422	0.371	1.144	**0.463717**	mg/L	0.779
	K	39	915234	5243252	1.134	18.233	**0.521276**	mg/L	0.503
	Ca	43	255	9540	1.221	0.039	**0.493926**	mg/L	1.765
	Ca	44	32958	180799	0.755	0.623	**0.497898**	mg/L	0.859
>	Sc	45	262577	241414	0.812	241413.988		mg/L	
	Fe*	57	10623	159738	1.005	0.621	**0.511840**	mg/L	0.988
	Fe	57	10643	160511	0.994	0.624	**0.511747**	mg/L	0.980
	Fe	54	27959	375908	2.400	1.451	**0.518615**	mg/L	1.809
	Kr	83	132	114	3.950	-18.250		mg/L	
	Br	81	20252	21308	3.379	1055.540		mg/L	
	Cl	35	156167	103553	1.029	-52613.730		mg/L	
	C	13	4180	5675	1.749	1495.320		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: QC CCB
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 21:24:14
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\QC CCB.047
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

	Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
	Li	7	1652	1586	2.998	-0.005	**-0.000067**	mg/L	50.487
>	Li	6	18730	18960	1.201	18960.460		mg/L	
	Be	9	2	3	57.282	0.000	**0.000003**	mg/L	115.036
	B	10	1866	2009	2.913	0.006	**0.000957**	mg/L	30.558
	B	11	8409	9171	1.027	0.035	**0.001141**	mg/L	24.680
	Si	28	17772	83672	1.761	0.288	**0.021720**	mg/L	0.475
	Al	27	907	5024	15.841	0.018	**0.000671**	mg/L	19.625
	P	31	7189	4831	1.994	-0.007	**-0.004206**	mg/L	2.473
>	Sc	45	262577	235540	1.374	235539.918		mg/L	
	Ti	47	148	115	4.394	-0.000	**-0.000024**	mg/L	20.377
	Ti	49	52	81	6.706	0.000	**0.000060**	mg/L	14.096
	V**	51	1637	1988	12.636	0.002	**0.000054**	mg/L	53.034
	V*	51	6447	3404	1.270	-0.010	**-0.000242**	mg/L	3.337
	V	51	6936	3808	4.122	-0.010	**-0.000244**	mg/L	6.395
	Cr*	52	6349	6225	2.225	0.002	**0.000064**	mg/L	40.859
	Cr	52	7057	7174	1.640	0.004	**0.000101**	mg/L	25.073
	Cr	53	2327	1260	5.277	-0.004	**-0.000837**	mg/L	6.330
	Mn	55	184	404	12.390	0.001	**0.000017**	mg/L	21.011
	Co	59	188	98	7.269	-0.000	**-0.000006**	mg/L	8.525
	Ni	60	32	39	10.476	0.000	**0.000004**	mg/L	45.489
	Ni	62	65	67	15.947	0.000	**0.000021**	mg/L	129.221
	Cu	63	178	160	9.170	-0.000	**-0.000000**	mg/L	4139.307
	Cu	65	156	152	5.940	0.000	**0.000004**	mg/L	85.997
	Zn	66	285	408	4.423	0.001	**0.000073**	mg/L	8.333
	Zn	68	299	361	1.513	0.000	**0.000059**	mg/L	6.185
	Y	89	655666	668947	0.902	13281.123		mg/L	
	As*	75	-414	-378	13.196	0.000	**0.000018**	mg/L	98.586
	As	75	165	122	9.662	-0.000	**-0.000018**	mg/L	25.081
	Se	77	185	174	2.824	-0.000	**-0.000077**	mg/L	29.873
	Se	82	78	80	12.182	-0.000	**-0.000001**	mg/L	3018.852
	Sr	86	20	40	8.809	0.000	**0.000006**	mg/L	18.180
	Sr	88	132	235	7.447	0.000	**0.000003**	mg/L	17.883
	Zr	90	39	273	94.799	0.000	**0.000015**	mg/L	111.408
	Zr	91	17	29	53.427	0.000	**0.000003**	mg/L	133.975
	Mo	95	34	143	10.991	0.000	**0.000024**	mg/L	14.882
	Mo	97	22	95	13.925	0.000	**0.000026**	mg/L	18.803
	Ag	107	1821	18184	5.474	0.021	**0.001214**	mg/L	5.973
	Ag	109	1766	17810	4.889	0.021	**0.001234**	mg/L	5.025

Cd	111	9	12	15.902	0.000	**0.000001**	mg/L	67.130
Cd	114	17	12	16.845	-0.000	**-0.000001**	mg/L	39.119
In	115	747751	774783	0.574	774782.582		mg/L	
Sn	118	104	490	7.653	0.000	**0.000040**	mg/L	10.539
Sn	120	94	679	6.123	0.001	**0.000044**	mg/L	7.801
Sb	121	43	335	3.770	0.000	**0.000026**	mg/L	4.882
Te	125	5	86	17.066	0.000	**0.000123**	mg/L	18.733
Ba	137	55	121	12.642	0.000	**0.000013**	mg/L	24.352
Ba	138	265	786	3.441	0.001	**0.000016**	mg/L	4.407
W	184	247	578	5.266	0.001	**0.000040**	mg/L	15.790
Hg	201	80	274	4.404	0.000	**0.000139**	mg/L	5.766
Hg*	202	186	597	1.181	0.001	**0.000126**	mg/L	7.736
Hg	202	188	602	1.204	0.001	**0.000105**	mg/L	7.785
Tb	159	823967	835501	0.861	0.107		mg/L	
Ho	165	17	21	18.330	0.000		mg/L	
Tl	205	256	274	11.401	0.000	**0.000001**	mg/L	133.552
Pb	204	11	-1	1506.757	-0.000	**-0.000023**	mg/L	83.727
Pb	208	505	564	5.951	0.000	**0.000002**	mg/L	30.203
Bi	209	613899	577423	5.211	577423.321		mg/L	
Th	232	165	1432	17.290	0.002	**0.000031**	mg/L	24.973
U	238	250	79	23.277	-0.000	**-0.000003**	mg/L	10.104
Na	23	25091	72549	1.682	0.212	**0.009319**	mg/L	2.255
Mg	24	1548	1638	1.796	0.001	**0.000067**	mg/L	17.229
Mg	25	157	149	14.513	0.000	**0.000013**	mg/L	302.637
K	39	915234	827305	0.655	0.027	**0.000781**	mg/L	220.435
Ca	43	255	283	3.003	0.000	**0.002988**	mg/L	10.557
Ca	44	32958	30316	0.361	0.003	**0.002565**	mg/L	60.399
Sc	45	262577	235540	1.374	235539.918		mg/L	
Fe*	57	10623	9274	2.897	-0.001	**-0.000894**	mg/L	58.353
Fe	57	10643	9297	2.896	-0.001	**-0.000874**	mg/L	59.549
Fe	54	27959	24107	1.490	-0.004	**-0.001477**	mg/L	5.552
Kr	83	132	108	4.202	-24.167		mg/L	
Br	81	20252	20347	3.369	94.373		mg/L	
Cl	35	156167	89507	1.969	-66659.943		mg/L	
C	13	4180	5593	2.637	1413.191		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: L4146-8X
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 21:30:15
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\L4146-8X.048
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	32576	1.276	1.461	**0.021333**	mg/L	0.451
> Li	6	18730	21030	0.850	21030.008		mg/L	
Be	9	2	517	0.609	0.024	**0.000884**	mg/L	1.089
B	10	1866	2119	1.232	0.001	**0.000172**	mg/L	88.434
B	11	8409	9698	1.965	0.012	**0.000401**	mg/L	95.987
Si	28	17772	496760	4.147	1.757	**0.132743**	mg/L	4.012
Al	27	907	69557848	2.564	255.570	**9.582348**	mg/L	2.907
P	31	7189	149169	1.363	0.521	**0.318849**	mg/L	1.994
> Sc	45	262577	272183	0.530	272182.841		mg/L	
Ti	47	148	154211	0.179	0.566	**0.183067**	mg/L	0.500
Ti	49	52	125586	0.449	0.461	**0.185857**	mg/L	0.392
V**	51	1637	305230	0.132	1.115	**0.027115**	mg/L	0.560
V*	51	6447	307901	0.055	1.107	**0.026565**	mg/L	0.487
V	51	6936	309975	0.853	1.112	**0.026534**	mg/L	1.328
Cr*	52	6349	102320	1.145	0.352	**0.009916**	mg/L	1.358
Cr	52	7057	103793	1.114	0.354	**0.009981**	mg/L	1.343
Cr	53	2327	12617	0.472	0.037	**0.008933**	mg/L	0.095
Mn	55	184	3223848	1.499	11.844	**0.201044**	mg/L	1.618
Co	59	188	63937	1.018	0.234	**0.004719**	mg/L	0.987
Ni	60	32	23493	1.594	0.086	**0.007922**	mg/L	1.109
Ni	62	65	4363	1.863	0.016	**0.009224**	mg/L	1.437
Cu	63	178	42883	0.610	0.157	**0.005911**	mg/L	0.382
Cu	65	156	22704	1.520	0.083	**0.006257**	mg/L	1.053
Zn	66	285	70184	0.414	0.257	**0.028998**	mg/L	0.210
Zn	68	299	62622	1.212	0.229	**0.034318**	mg/L	0.697
Y	89	655666	1177014	1.250	521347.647		mg/L	
As*	75	-414	5565	0.097	0.007	**0.001993**	mg/L	0.365
As	75	165	6506	0.375	0.008	**0.002130**	mg/L	0.757
Se	77	185	331	1.479	0.000	**0.000507**	mg/L	4.393
Se	82	78	157	2.194	0.000	**0.000220**	mg/L	5.234
Sr	86	20	222302	1.111	0.271	**0.061202**	mg/L	0.841
Sr	88	132	1888799	0.283	2.301	**0.060714**	mg/L	0.230
Zr	90	39	270088	1.614	0.329	**0.016067**	mg/L	2.043
Zr	91	17	60053	1.892	0.073	**0.015989**	mg/L	2.322
Mo	95	34	523	2.578	0.001	**0.000103**	mg/L	2.776
Mo	97	22	330	12.654	0.000	**0.000102**	mg/L	13.610
Ag	107	1821	1996	10.624	-0.000	**-0.000000**	mg/L	5500.361
Ag	109	1766	1074	14.844	-0.001	**-0.000063**	mg/L	17.871

	Cd	111	9	579	6.899	0.001	**0.000155**	mg/L	6.564
	Cd	114	17	1131	3.347	0.001	**0.000129**	mg/L	2.957
>	In	115	747751	820904	0.435	820903.796		mg/L	
	Sn	118	104	1849	9.507	0.002	**0.000171**	mg/L	9.869
	Sn	120	94	2602	4.160	0.003	**0.000178**	mg/L	4.207
	Sb	121	43	247	12.240	0.000	**0.000017**	mg/L	14.533
	Te	125	5	38	17.638	0.000	**0.000046**	mg/L	20.863
	Ba	137	55	1232088	0.565	1.501	**0.230153**	mg/L	0.442
	Ba	138	265	7419338	1.180	9.038	**0.215904**	mg/L	1.573
	W	184	247	973	0.927	0.001	**0.000084**	mg/L	14.706
	Hg	201	80	60	23.980	-0.000	**-0.000010**	mg/L	134.016
	Hg*	202	186	124	4.104	-0.000	**-0.000016**	mg/L	16.700
	Hg	202	188	132	3.823	-0.000	**-0.000012**	mg/L	20.450
	Tb	159	823967	910373	0.514	0.215		mg/L	
	Ho	165	17	22514	0.494	0.038		mg/L	
	Tl	205	256	5605	4.376	0.009	**0.000200**	mg/L	11.322
	Pb	204	11	3672	1.644	0.006	**0.007942**	mg/L	9.253
	Pb	208	505	294882	0.839	0.503	**0.007929**	mg/L	10.213
>	Bi	209	613899	588827	10.208	588827.298		mg/L	
	Th	232	165	358457	2.105	0.612	**0.008388**	mg/L	8.701
	U	238	250	38153	1.789	0.065	**0.000821**	mg/L	11.657
	Na	23	25091	1115637	1.752	4.004	**0.175603**	mg/L	2.192
	Mg	24	1548	23543347	3.106	86.500	**5.491418**	mg/L	3.450
	Mg	25	157	3224946	2.920	11.849	**4.800853**	mg/L	3.165
	K	39	915234	24210240	2.651	85.465	**2.443428**	mg/L	2.864
	Ca	43	255	866884	1.205	3.184	**40.796993**	mg/L	1.730
	Ca	44	32958	12788304	1.382	46.861	**37.425945**	mg/L	1.712
>	Sc	45	262577	272183	0.530	272182.841		mg/L	
	Fe*	57	10623	3439122	1.243	12.595	**10.376929**	mg/L	0.942
	Fe	57	10643	3509340	1.206	12.853	**10.534558**	mg/L	0.916
	Fe	54	27959	7766566	1.435	28.428	**10.163952**	mg/L	1.177
	Kr	83	132	205	5.612	72.085		mg/L	
	Br	81	20252	20822	0.727	570.336		mg/L	
	Cl	35	156167	99550	1.384	-56616.967		mg/L	
	C	13	4180	8683	1.499	4503.729		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: L4146-9X
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 21:36:14
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\L4146-9X.049
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	16841	0.918	0.773	**0.011287**	mg/L	1.152
Li	6	18730	19560	1.917	19560.366		mg/L	
Be	9	2	305	3.481	0.016	**0.000560**	mg/L	1.585
B	10	1866	1634	2.059	-0.016	**-0.002438**	mg/L	14.987
B	11	8409	7597	1.245	-0.060	**-0.001983**	mg/L	5.286
Si	28	17772	393951	5.796	1.463	**0.110527**	mg/L	6.711
Al	27	907	33047355	0.192	128.389	**4.813826**	mg/L	1.190
P	31	7189	92462	0.543	0.332	**0.203195**	mg/L	0.669
Sc	45	262577	257414	1.036	257413.720		mg/L	
Ti	47	148	77501	0.349	0.301	**0.097201**	mg/L	1.093
Ti	49	52	62872	0.748	0.244	**0.098348**	mg/L	0.501
V**	51	1637	200540	0.620	0.773	**0.018792**	mg/L	1.397
V*	51	6447	202665	0.451	0.763	**0.018311**	mg/L	1.407
V	51	6936	205831	0.648	0.773	**0.018443**	mg/L	1.110
Cr*	52	6349	54853	1.512	0.189	**0.005326**	mg/L	1.345
Cr	52	7057	56095	1.517	0.191	**0.005380**	mg/L	1.346
Cr	53	2327	7034	1.024	0.018	**0.004399**	mg/L	1.821
Mn	55	184	2419013	0.312	9.397	**0.159512**	mg/L	0.933
Co	59	188	43511	0.337	0.168	**0.003392**	mg/L	1.035
Ni	60	32	11885	2.000	0.046	**0.004233**	mg/L	3.030
Ni	62	65	2276	2.701	0.009	**0.005023**	mg/L	2.081
Cu	63	178	17052	0.534	0.066	**0.002471**	mg/L	1.413
Cu	65	156	9139	2.237	0.035	**0.002637**	mg/L	1.303
Zn	66	285	38499	0.328	0.148	**0.016769**	mg/L	1.077
Zn	68	299	31487	0.859	0.121	**0.018168**	mg/L	1.896
Y	89	655666	1035328	1.606	379661.540		mg/L	
As*	75	-414	6574	1.002	0.009	**0.002328**	mg/L	0.734
As	75	165	7370	1.702	0.009	**0.002422**	mg/L	1.394
Se	77	185	293	4.481	0.000	**0.000354**	mg/L	13.275
Se	82	78	143	6.225	0.000	**0.000177**	mg/L	16.290
Sr	86	20	266815	1.286	0.325	**0.073490**	mg/L	1.170
Sr	88	132	2214097	0.809	2.698	**0.071203**	mg/L	1.123
Zr	90	39	125946	1.678	0.153	**0.007494**	mg/L	2.045
Zr	91	17	28198	1.314	0.034	**0.007508**	mg/L	1.632
Mo	95	34	637	6.453	0.001	**0.000127**	mg/L	6.594
Mo	97	22	423	6.262	0.000	**0.000133**	mg/L	7.067
Ag	107	1821	1031	5.479	-0.001	**-0.000068**	mg/L	6.124
Ag	109	1766	630	1.212	-0.002	**-0.000095**	mg/L	0.432

Cd	111	9	120	8.343	0.000	**0.000030**	mg/L	9.500
Cd	114	17	221	10.812	0.000	**0.000024**	mg/L	11.423
In	115	747751	820559	0.423	820558.589		mg/L	
Sn	118	104	1283	23.375	0.001	**0.000115**	mg/L	25.167
Sn	120	94	1662	4.050	0.002	**0.000111**	mg/L	4.074
Sb	121	43	174	10.082	0.000	**0.000011**	mg/L	14.307
Te	125	5	24	66.508	0.000	**0.000027**	mg/L	86.187
Ba	137	55	296268	0.140	0.361	**0.055358**	mg/L	0.283
Ba	138	265	1881186	0.627	2.292	**0.054757**	mg/L	0.205
W	184	247	666	18.355	0.002	**0.000111**	mg/L	53.349
Hg	201	80	47	26.016	0.000	**0.000003**	mg/L	550.395
Hg*	202	186	100	1.354	-0.000	**-0.000000**	mg/L	8966.601
Hg	202	188	105	1.310	0.000	**0.000002**	mg/L	899.101
Tb	159	823967	899251	0.307	1.388		mg/L	
Ho	165	17	16280	0.843	0.049		mg/L	
Tl	205	256	1949	1.150	0.006	**0.000121**	mg/L	38.759
Pb	204	11	2688	2.249	0.008	**0.010300**	mg/L	33.149
Pb	208	505	216112	1.059	0.654	**0.010305**	mg/L	34.404
Bi	209	613899	355302	31.804	355301.680		mg/L	
Th	232	165	262479	7.319	0.783	**0.010729**	mg/L	27.009
U	238	250	35852	2.250	0.108	**0.001367**	mg/L	33.574
Na	23	25091	1381511	0.909	5.271	**0.231218**	mg/L	0.795
Mg	24	1548	12600414	0.320	48.947	**3.107368**	mg/L	0.714
Mg	25	157	1826411	0.946	7.095	**2.874665**	mg/L	0.307
K	39	915234	13428466	0.557	48.686	**1.391919**	mg/L	1.511
Ca	43	255	335991	0.366	1.304	**16.712071**	mg/L	0.795
Ca	44	32958	4989973	1.046	19.260	**15.381916**	mg/L	0.339
Sc	45	262577	257414	1.036	257413.720		mg/L	
Fe*	57	10623	1983656	0.836	7.667	**6.316623**	mg/L	1.871
Fe	57	10643	2010871	0.821	7.772	**6.370489**	mg/L	1.855
Fe	54	27959	4459541	0.224	17.219	**6.156494**	mg/L	0.983
Kr	83	132	166	1.863	33.250		mg/L	
Br	81	20252	20170	4.103	-81.810		mg/L	
Cl	35	156167	91400	1.146	-64766.750		mg/L	
C	13	4180	7320	2.063	3140.556		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: L4146-10X
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 21:42:09
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\L4146-10X.050
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

	Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
	Li	7	1652	22795	1.426	1.089	**0.015898**	mg/L	0.706
>	Li	6	18730	19369	0.898	19369.158		mg/L	
	Be	9	2	388	8.649	0.020	**0.000719**	mg/L	7.843
	B	10	1866	1796	4.602	-0.007	**-0.001050**	mg/L	50.968
	B	11	8409	8274	2.006	-0.022	**-0.000714**	mg/L	24.193
	Si	28	17772	692590	3.172	2.548	**0.192477**	mg/L	2.956
	Al	27	907	49804097	0.964	188.105	**7.052802**	mg/L	0.848
	P	31	7189	87443	0.322	0.303	**0.185475**	mg/L	0.517
>	Sc	45	262577	264762	0.292	264761.664		mg/L	
	Ti	47	148	103910	0.603	0.392	**0.126753**	mg/L	0.530
	Ti	49	52	84508	0.612	0.319	**0.128544**	mg/L	0.344
	V**	51	1637	300768	1.667	1.130	**0.027469**	mg/L	1.623
	V*	51	6447	302823	1.611	1.119	**0.026865**	mg/L	1.615
	V	51	6936	303719	1.118	1.121	**0.026731**	mg/L	1.021
	Cr*	52	6349	71064	1.457	0.244	**0.006885**	mg/L	1.292
	Cr	52	7057	72455	1.432	0.247	**0.006949**	mg/L	1.278
	Cr	53	2327	8866	0.213	0.025	**0.005868**	mg/L	0.604
	Mn	55	184	2881196	0.372	10.882	**0.184707**	mg/L	0.333
	Co	59	188	49642	1.387	0.187	**0.003764**	mg/L	1.376
	Ni	60	32	16340	1.426	0.062	**0.005661**	mg/L	1.359
	Ni	62	65	3067	1.244	0.011	**0.006625**	mg/L	1.052
	Cu	63	178	21909	1.043	0.082	**0.003092**	mg/L	0.810
	Cu	65	156	11488	3.217	0.043	**0.003233**	mg/L	3.134
	Zn	66	285	49047	1.895	0.184	**0.020798**	mg/L	1.736
	Zn	68	299	40008	1.573	0.150	**0.022481**	mg/L	1.291
	Y	89	655666	999322	0.449	343655.846		mg/L	
	As*	75	-414	6878	1.279	0.009	**0.002442**	mg/L	2.566
	As	75	165	7719	0.988	0.009	**0.002554**	mg/L	2.511
	Se	77	185	301	2.419	0.000	**0.000393**	mg/L	9.167
	Se	82	78	137	4.030	0.000	**0.000161**	mg/L	13.967
	Sr	86	20	357893	1.682	0.438	**0.099099**	mg/L	1.600
	Sr	88	132	2986901	1.688	3.660	**0.096576**	mg/L	2.599
	Zr	90	39	187313	0.635	0.229	**0.011207**	mg/L	2.031
	Zr	91	17	41724	2.019	0.051	**0.011174**	mg/L	3.476
	Mo	95	34	599	3.443	0.001	**0.000120**	mg/L	2.468
	Mo	97	22	372	2.547	0.000	**0.000116**	mg/L	1.138
	Ag	107	1821	1363	2.855	-0.001	**-0.000044**	mg/L	3.932
	Ag	109	1766	698	3.624	-0.002	**-0.000090**	mg/L	2.870

Cd	111	9	151	11.637	0.000	**0.000039**	mg/L	12.487
Cd	114	17	203	14.084	0.000	**0.000021**	mg/L	13.784
In	115	747751	816293	1.486	816292.808		mg/L	
Sn	118	104	1615	4.276	0.002	**0.000149**	mg/L	3.027
Sn	120	94	2339	7.098	0.003	**0.000160**	mg/L	8.871
Sb	121	43	177	2.479	0.000	**0.000011**	mg/L	3.703
Te	125	5	23	37.627	0.000	**0.000026**	mg/L	50.290
Ba	137	55	391047	0.563	0.479	**0.073459**	mg/L	0.956
Ba	138	265	2365971	0.616	2.899	**0.069243**	mg/L	1.903
W	184	247	563	8.012	0.001	**0.000036**	mg/L	26.322
Hg	201	80	45	25.573	-0.000	**-0.000022**	mg/L	29.101
Hg*	202	186	99	5.313	-0.000	**-0.000024**	mg/L	6.030
Hg	202	188	104	5.049	-0.000	**-0.000019**	mg/L	7.027
Tb	159	823967	896368	0.206	0.161		mg/L	
Ho	165	17	14579	0.669	0.024		mg/L	
Tl	205	256	2600	2.677	0.004	**0.000086**	mg/L	6.187
Pb	204	11	2774	1.133	0.005	**0.005883**	mg/L	9.265
Pb	208	505	219671	0.868	0.367	**0.005784**	mg/L	7.378
Bi	209	613899	599051	7.737	599051.093		mg/L	
Th	232	165	322538	1.764	0.540	**0.007399**	mg/L	6.529
U	238	250	41057	2.345	0.068	**0.000865**	mg/L	6.818
Na	23	25091	2040148	1.046	7.610	**0.333788**	mg/L	0.829
Mg	24	1548	18298800	1.759	69.106	**4.387213**	mg/L	1.469
Mg	25	157	2524860	0.627	9.536	**3.863717**	mg/L	0.359
K	39	915234	18404060	1.304	66.025	**1.887630**	mg/L	1.069
Ca	43	255	323400	1.716	1.220	**15.637363**	mg/L	1.472
Ca	44	32958	4837592	1.870	18.145	**14.492082**	mg/L	1.588
Sc	45	262577	264762	0.292	264761.664		mg/L	
Fe*	57	10623	2635659	0.965	9.914	**8.168560**	mg/L	0.912
Fe	57	10643	2661854	0.969	10.013	**8.207261**	mg/L	0.912
Fe	54	27959	5938769	1.521	22.324	**7.981648**	mg/L	1.353
Kr	83	132	169	0.816	36.251		mg/L	
Br	81	20252	21588	1.713	1336.128		mg/L	
Cl	35	156167	96861	1.269	-59306.112		mg/L	
C	13	4180	8202	0.590	4022.072		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

ample ID: L4146-10X50 SD
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 21:48:05
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\L4146-10X50 SD.051
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	5864	1.437	0.227	**0.003309**	mg/L	1.561
Li	6	18730	18628	0.782	18628.168		mg/L	
Be	9	2	66	12.373	0.003	**0.000125**	mg/L	11.930
B	10	1866	1497	2.561	-0.019	**-0.002920**	mg/L	12.089
B	11	8409	6864	2.756	-0.080	**-0.002636**	mg/L	16.104
Si	28	17772	109729	6.250	0.379	**0.028650**	mg/L	8.163
Al	27	907	9983344	1.082	40.654	**1.524276**	mg/L	1.964
P	31	7189	22094	0.206	0.063	**0.038328**	mg/L	1.572
Sc	45	262577	245577	0.890	245576.894		mg/L	
Ti	47	148	20601	0.727	0.083	**0.026951**	mg/L	0.837
Ti	49	52	16976	2.278	0.069	**0.027779**	mg/L	2.280
V**	51	1637	62039	0.861	0.246	**0.005991**	mg/L	1.675
V*	51	6447	63322	1.282	0.233	**0.005601**	mg/L	2.315
V	51	6936	63644	0.631	0.233	**0.005551**	mg/L	0.451
Cr*	52	6349	19057	0.539	0.053	**0.001506**	mg/L	0.511
Cr	52	7057	19995	0.467	0.055	**0.001536**	mg/L	0.631
Cr	53	2327	2671	3.256	0.002	**0.000481**	mg/L	22.257
Mn	55	184	610673	0.566	2.486	**0.042199**	mg/L	0.335
Co	59	188	10192	0.576	0.041	**0.000822**	mg/L	1.051
Ni	60	32	3415	1.327	0.014	**0.001267**	mg/L	0.441
Ni	62	65	700	5.627	0.003	**0.001522**	mg/L	6.689
Cu	63	178	4575	1.705	0.018	**0.000676**	mg/L	2.692
Cu	65	156	2471	1.125	0.009	**0.000716**	mg/L	2.096
Zn	66	285	9815	2.214	0.039	**0.004391**	mg/L	2.706
Zn	68	299	8113	1.185	0.032	**0.004782**	mg/L	1.233
Y	89	655666	752885	0.611	97218.872		mg/L	
As*	75	-414	1048	2.253	0.002	**0.000502**	mg/L	2.069
As	75	165	1577	0.983	0.002	**0.000476**	mg/L	1.626
Se	77	185	188	4.437	-0.000	**-0.000053**	mg/L	74.192
Se	82	78	92	9.271	0.000	**0.000024**	mg/L	119.405
Sr	86	20	71407	0.950	0.088	**0.019886**	mg/L	1.668
Sr	88	132	603140	0.668	0.743	**0.019611**	mg/L	0.849
Zr	90	39	43855	5.665	0.054	**0.002637**	mg/L	5.260
Zr	91	17	9702	4.003	0.012	**0.002609**	mg/L	3.331
Mo	95	34	166	3.277	0.000	**0.000028**	mg/L	5.140
Mo	97	22	114	19.627	0.000	**0.000031**	mg/L	26.398
Ag	107	1821	1288	16.617	-0.001	**-0.000049**	mg/L	29.846
Ag	109	1766	1127	6.912	-0.001	**-0.000058**	mg/L	9.146

Cd	111	9	28	17.092	0.000	**0.000005**	mg/L	26.858
Cd	114	17	57	14.972	0.000	**0.000005**	mg/L	21.044
In	115	747751	811478	1.259	811478.250		mg/L	
Sn	118	104	518	6.584	0.000	**0.000040**	mg/L	9.884
Sn	120	94	731	4.154	0.001	**0.000045**	mg/L	4.236
Sb	121	43	146	7.402	0.000	**0.000008**	mg/L	9.666
Te	125	5	21	36.661	0.000	**0.000023**	mg/L	50.654
Ba	137	55	78266	1.139	0.096	**0.014780**	mg/L	0.506
Ba	138	265	505785	0.197	0.623	**0.014882**	mg/L	1.089
W	184	247	368	7.846	0.000	**0.000011**	mg/L	30.633
Hg	201	80	45	17.131	-0.000	**-0.000025**	mg/L	18.197
Hg*	202	186	99	5.205	-0.000	**-0.000026**	mg/L	6.699
Hg	202	188	102	5.204	-0.000	**-0.000021**	mg/L	6.972
Tb	159	823967	884365	0.639	0.036		mg/L	
Ho	165	17	2939	3.737	0.005		mg/L	
Tl	205	256	598	4.825	0.001	**0.000011**	mg/L	8.743
Pb	204	11	578	7.162	0.001	**0.001120**	mg/L	6.816
Pb	208	505	44371	1.108	0.068	**0.001076**	mg/L	0.213
> Bi	209	613899	641979	1.312	641978.947		mg/L	
Th	232	165	65966	0.667	0.102	**0.001405**	mg/L	0.738
U	238	250	8384	2.658	0.013	**0.000160**	mg/L	1.634
Na	23	25091	462996	1.478	1.790	**0.078514**	mg/L	2.390
Mg	24	1548	3663130	2.096	14.913	**0.946753**	mg/L	2.948
Mg	25	157	528229	1.696	2.151	**0.871420**	mg/L	2.498
K	39	915234	4281702	0.518	13.950	**0.398831**	mg/L	0.651
Ca	43	255	65117	0.945	0.264	**3.384938**	mg/L	0.301
Ca	44	32958	1084670	1.697	4.291	**3.427166**	mg/L	0.965
> Sc	45	262577	245577	0.890	245576.894		mg/L	
Fe*	57	10623	558749	1.097	2.235	**1.841305**	mg/L	0.972
Fe	57	10643	564024	1.090	2.256	**1.849304**	mg/L	0.960
Fe	54	27959	1286757	1.569	5.133	**1.835401**	mg/L	1.665
Kr	83	132	119	5.890	-13.083		mg/L	
Br	81	20252	21308	1.884	1055.528		mg/L	
Cl	35	156167	87688	0.951	-68478.528		mg/L	
C	13	4180	5532	1.255	1352.323		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: RINSE
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 21:54:01
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\RINSE.052
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	1488	5.798	-0.006	**-0.000091**	mg/L	77.386
Li	6	18730	18159	0.098	18159.390		mg/L	
Be	9	2	4	66.667	0.000	**0.000004**	mg/L	117.098
B	10	1866	1669	3.024	-0.008	**-0.001172**	mg/L	36.382
B	11	8409	7490	1.521	-0.036	**-0.001196**	mg/L	16.680
Si	28	17772	89010	2.550	0.315	**0.023808**	mg/L	3.503
Al	27	907	6321	37.596	0.024	**0.000890**	mg/L	43.120
P	31	7189	4931	3.707	-0.006	**-0.003777**	mg/L	13.850
Sc	45	262577	232503	0.407	232502.677		mg/L	
Ti	47	148	137	19.771	0.000	**0.000008**	mg/L	459.600
Ti	49	52	78	3.705	0.000	**0.000056**	mg/L	8.065
V**	51	1637	1949	4.859	0.002	**0.000052**	mg/L	20.500
V*	51	6447	3035	1.760	-0.012	**-0.000276**	mg/L	2.349
V	51	6936	3276	0.803	-0.012	**-0.000294**	mg/L	0.871
Cr*	52	6349	6069	2.048	0.002	**0.000054**	mg/L	30.831
Cr	52	7057	6994	1.731	0.003	**0.000090**	mg/L	18.513
Cr	53	2327	1134	2.451	-0.004	**-0.000949**	mg/L	2.857
Mn	55	184	495	10.799	0.001	**0.000024**	mg/L	15.964
Co	59	188	121	9.352	-0.000	**-0.000004**	mg/L	24.418
Ni	60	32	50	28.545	0.000	**0.000008**	mg/L	66.751
Ni	62	65	70	18.898	0.000	**0.000031**	mg/L	106.265
Cu	63	178	260	8.932	0.000	**0.000017**	mg/L	22.311
Cu	65	156	213	14.008	0.000	**0.000024**	mg/L	39.926
Zn	66	285	651	8.007	0.002	**0.000194**	mg/L	13.685
Zn	68	299	535	5.096	0.001	**0.000174**	mg/L	10.125
Y	89	655666	662279	1.260	6612.377		mg/L	
As*	75	-414	-394	3.425	0.000	**0.000011**	mg/L	53.076
As	75	165	111	6.088	-0.000	**-0.000021**	mg/L	10.352
Se	77	185	165	1.708	-0.000	**-0.000106**	mg/L	15.647
Se	82	78	69	7.041	-0.000	**-0.000036**	mg/L	48.233
Sr	86	20	50	34.802	0.000	**0.000009**	mg/L	57.066
Sr	88	132	389	2.675	0.000	**0.000009**	mg/L	3.425
Zr	90	39	555	15.336	0.001	**0.000033**	mg/L	16.858
Zr	91	17	150	4.725	0.000	**0.000038**	mg/L	5.928
Mo	95	34	170	7.843	0.000	**0.000031**	mg/L	10.594
Mo	97	22	113	7.091	0.000	**0.000032**	mg/L	9.685
Ag	107	1821	12023	21.964	0.013	**0.000764**	mg/L	26.644
Ag	109	1766	11314	21.812	0.012	**0.000741**	mg/L	26.640

	Cd	111	9	8	15.014	-0.000	**-0.000000**	mg/L	264.658
	Cd	114	17	7	50.245	-0.000	**-0.000001**	mg/L	33.929
>	In	115	747751	767632	0.728	767632.074		mg/L	
	Sn	118	104	341	8.113	0.000	**0.000025**	mg/L	12.875
	Sn	120	94	460	3.526	0.000	**0.000028**	mg/L	5.381
	Sb	121	43	353	7.961	0.000	**0.000027**	mg/L	9.838
	Te	125	5	28	22.205	0.000	**0.000036**	mg/L	27.404
	Ba	137	55	203	8.723	0.000	**0.000029**	mg/L	11.817
	Ba	138	265	1602	1.551	0.002	**0.000041**	mg/L	2.608
	W	184	247	292	9.246	0.000	**0.000007**	mg/L	30.972
	Hg	201	80	293	6.832	0.000	**0.000152**	mg/L	10.709
	Hg*	202	186	597	3.117	0.001	**0.000125**	mg/L	1.380
	Hg	202	188	599	3.140	0.001	**0.000104**	mg/L	1.380
	Tb	159	823967	836747	0.679	0.104		mg/L	
	Ho	165	17	19	24.037	0.000		mg/L	
	Tl	205	256	118	18.458	-0.000	**-0.000005**	mg/L	16.642
	Pb	204	11	23	52.987	0.000	**0.000028**	mg/L	95.630
	Pb	208	505	993	5.420	0.001	**0.000014**	mg/L	6.450
>	Bi	209	613899	579099	3.491	579099.300		mg/L	
	Th	232	165	1853	18.426	0.003	**0.000040**	mg/L	23.366
	U	238	250	98	23.623	-0.000	**-0.000003**	mg/L	17.653
	Na	23	25091	77608	0.558	0.238	**0.010450**	mg/L	0.566
	Mg	24	1548	3148	3.850	0.008	**0.000485**	mg/L	6.744
	Mg	25	157	374	6.298	0.001	**0.000409**	mg/L	10.525
	K	39	915234	786860	0.141	-0.101	**-0.002895**	mg/L	9.552
	Ca	43	255	297	3.910	0.000	**0.003951**	mg/L	17.804
	Ca	44	32958	28839	0.628	-0.001	**-0.001183**	mg/L	24.605
>	Sc	45	262577	232503	0.407	232502.677		mg/L	
	Fe*	57	10623	8926	1.451	-0.002	**-0.001700**	mg/L	24.923
	Fe	57	10643	8950	1.440	-0.002	**-0.001671**	mg/L	25.130
	Fe	54	27959	24432	1.554	-0.001	**-0.000496**	mg/L	147.219
	Kr	83	132	110	7.073	-22.667		mg/L	
	Br	81	20252	20850	1.108	597.895		mg/L	
	Cl	35	156167	75890	0.805	-80276.947		mg/L	
	C	13	4180	5457	0.654	1277.699		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: MBLK WG11554-1X
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 21:59:58
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\MBLK WG11554-1X.053
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	1489	1.725	-0.006	**-0.000082**	mg/L	47.484
> Li	6	18730	18044	1.522	18043.767		mg/L	
Be	9	2	3	86.603	0.000	**0.000002**	mg/L	241.675
B	10	1866	1269	1.658	-0.029	**-0.004442**	mg/L	7.398
B	11	8409	5855	3.234	-0.125	**-0.004081**	mg/L	5.282
Si	28	17772	35428	2.558	0.086	**0.006501**	mg/L	1.557
Al	27	907	6312	14.314	0.024	**0.000899**	mg/L	17.332
P	31	7189	3406	2.481	-0.013	**-0.007712**	mg/L	4.126
> Sc	45	262577	230408	1.688	230407.555		mg/L	
Ti	47	148	163	5.827	0.000	**0.000047**	mg/L	35.013
Ti	49	52	108	13.425	0.000	**0.000109**	mg/L	22.955
V**	51	1637	2031	5.218	0.003	**0.000063**	mg/L	21.658
V*	51	6447	3045	2.184	-0.011	**-0.000272**	mg/L	4.373
V	51	6936	3350	3.017	-0.012	**-0.000283**	mg/L	3.412
Cr*	52	6349	6133	0.614	0.002	**0.000069**	mg/L	20.621
Cr	52	7057	7305	0.476	0.005	**0.000136**	mg/L	10.586
Cr	53	2327	1146	3.514	-0.004	**-0.000926**	mg/L	4.925
Mn	55	184	506	2.071	0.001	**0.000025**	mg/L	5.445
Co	59	188	142	8.468	-0.000	**-0.000002**	mg/L	52.030
Ni	60	32	128	15.520	0.000	**0.000040**	mg/L	21.107
Ni	62	65	82	11.531	0.000	**0.000063**	mg/L	35.970
Cu	63	178	430	6.536	0.001	**0.000045**	mg/L	12.398
Cu	65	156	289	0.997	0.001	**0.000050**	mg/L	1.325
Zn	66	285	16978	2.310	0.073	**0.008202**	mg/L	3.779
Zn	68	299	12681	2.507	0.054	**0.008083**	mg/L	3.691
Y	89	655666	661939	0.250	6273.130		mg/L	
As*	75	-414	-406	10.431	0.000	**0.000006**	mg/L	260.304
As	75	165	109	2.449	-0.000	**-0.000022**	mg/L	5.357
Se	77	185	166	7.299	-0.000	**-0.000098**	mg/L	53.130
Se	82	78	67	6.863	-0.000	**-0.000039**	mg/L	42.557
Sr	86	20	40	55.049	0.000	**0.000006**	mg/L	109.018
Sr	88	132	534	3.981	0.001	**0.000014**	mg/L	5.913
Zr	90	39	2389	23.675	0.003	**0.000150**	mg/L	23.432
Zr	91	17	551	23.291	0.001	**0.000153**	mg/L	23.383
Mo	95	34	49	22.353	0.000	**0.000003**	mg/L	76.777
Mo	97	22	41	30.816	0.000	**0.000007**	mg/L	68.174
Ag	107	1821	4840	3.256	0.004	**0.000226**	mg/L	6.197
Ag	109	1766	4608	3.894	0.004	**0.000220**	mg/L	7.323

Cd	111	9	22	19.366	0.000	**0.000004**	mg/L	31.014
Cd	114	17	6	616.159	-0.000	**-0.000001**	mg/L	285.522
In	115	747751	762772	0.600	762771.537		mg/L	
Sn	118	104	6250	0.266	0.008	**0.000651**	mg/L	0.812
Sn	120	94	8414	1.077	0.011	**0.000638**	mg/L	1.040
Sb	121	43	149	14.377	0.000	**0.000009**	mg/L	20.871
Te	125	5	13	21.651	0.000	**0.000013**	mg/L	35.836
Ba	137	55	382	5.335	0.000	**0.000065**	mg/L	6.724
Ba	138	265	2176	1.263	0.002	**0.000060**	mg/L	1.954
W	184	247	253	2.482	0.000	**0.000006**	mg/L	58.884
Hg	201	80	55	25.121	-0.000	**-0.000009**	mg/L	183.094
Hg*	202	186	114	5.535	-0.000	**-0.000014**	mg/L	19.650
Hg	202	188	116	5.476	-0.000	**-0.000012**	mg/L	20.299
Tb	159	823967	831754	0.251	0.273		mg/L	
Ho	165	17	22	22.876	0.000		mg/L	
Tl	205	256	69	23.238	-0.000	**-0.000006**	mg/L	6.168
Pb	204	11	947	7.022	0.002	**0.002307**	mg/L	12.685
Pb	208	505	74973	1.081	0.145	**0.002277**	mg/L	12.002
> Bi	209	613899	520695	12.349	520694.883		mg/L	
Th	232	165	697	5.375	0.001	**0.000015**	mg/L	22.143
U	238	250	301	3.747	0.000	**0.000002**	mg/L	30.745
Na	23	25091	61207	0.891	0.170	**0.007462**	mg/L	1.426
Mg	24	1548	4051	8.371	0.012	**0.000741**	mg/L	10.071
Mg	25	157	408	2.035	0.001	**0.000475**	mg/L	3.686
K	39	915234	774169	0.344	-0.125	**-0.003575**	mg/L	39.720
Ca	43	255	351	4.251	0.001	**0.007086**	mg/L	10.095
Ca	44	32958	30312	1.338	0.006	**0.004859**	mg/L	61.537
> Sc	45	262577	230408	1.688	230407.555		mg/L	
Fe*	57	10623	8766	0.113	-0.002	**-0.001978**	mg/L	28.071
Fe	57	10643	8795	0.101	-0.002	**-0.001931**	mg/L	28.569
Fe	54	27959	17058	2.048	-0.032	**-0.011598**	mg/L	4.121
Kr	83	132	113	2.398	-19.667		mg/L	
Br	81	20252	20426	1.598	173.689		mg/L	
Cl	35	156167	86109	2.168	-70057.485		mg/L	
C	13	4180	6909	1.471	2729.013		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: LCS WG11554-2X
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 22:05:55
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\LCS WG11554-2X.054
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	6294	3.241	0.240	**0.003509**	mg/L	4.412
> Li	6	18730	19162	1.605	19162.095		mg/L	
Be	9	2	15719	0.366	0.820	**0.029610**	mg/L	1.655
B	10	1866	4642	4.417	0.143	**0.021652**	mg/L	9.997
B	11	8409	20735	3.720	0.634	**0.020771**	mg/L	8.791
Si	28	17772	371561	3.809	1.431	**0.108112**	mg/L	6.043
Al	27	907	16273076	1.014	65.614	**2.460124**	mg/L	2.455
P	31	7189	83028	1.936	0.307	**0.188192**	mg/L	1.416
> Sc	45	262577	248073	1.961	248072.989		mg/L	
Ti	47	148	106411	1.589	0.428	**0.138566**	mg/L	1.213
Ti	49	52	86999	1.252	0.351	**0.141261**	mg/L	1.107
V**	51	1637	363751	2.497	1.460	**0.035497**	mg/L	0.550
V*	51	6447	374092	2.184	1.483	**0.035608**	mg/L	0.498
V	51	6936	373987	1.637	1.481	**0.035329**	mg/L	0.433
Cr*	52	6349	472489	1.819	1.881	**0.053011**	mg/L	0.404
Cr	52	7057	473939	1.809	1.884	**0.053042**	mg/L	0.409
Cr	53	2327	57045	1.545	0.221	**0.052682**	mg/L	1.500
Mn	55	184	2462054	1.186	9.927	**0.168499**	mg/L	2.360
Co	59	188	302758	0.683	1.220	**0.024582**	mg/L	1.386
Ni	60	32	170665	1.040	0.688	**0.063228**	mg/L	0.932
Ni	62	65	27035	1.103	0.109	**0.063557**	mg/L	1.147
Cu	63	178	279320	0.511	1.126	**0.042410**	mg/L	1.508
Cu	65	156	141211	1.483	0.569	**0.042961**	mg/L	0.498
Zn	66	285	428724	0.898	1.728	**0.195099**	mg/L	1.972
Zn	68	299	326013	1.294	1.313	**0.196861**	mg/L	1.223
Y	89	655666	860766	1.310	205100.306		mg/L	
As*	75	-414	232933	0.983	0.296	**0.080405**	mg/L	0.237
As	75	165	230818	1.139	0.292	**0.080803**	mg/L	0.212
Se	77	185	10850	1.194	0.014	**0.043894**	mg/L	0.243
Se	82	78	14070	0.276	0.018	**0.044736**	mg/L	1.025
Sr	86	20	313586	1.329	0.397	**0.089824**	mg/L	1.371
Sr	88	132	2567458	0.280	3.254	**0.085866**	mg/L	0.899
Zr	90	39	52010	1.390	0.066	**0.003217**	mg/L	0.893
Zr	91	17	12059	2.410	0.015	**0.003336**	mg/L	1.787
Mo	95	34	176823	0.308	0.224	**0.038899**	mg/L	1.286
Mo	97	22	112113	1.407	0.142	**0.038808**	mg/L	1.791
Ag	107	1821	1183150	8.021	1.497	**0.086423**	mg/L	8.450
Ag	109	1766	1137641	7.586	1.440	**0.086151**	mg/L	8.219

	Cd	111	9	338535	0.925	0.429	**0.095902**	mg/L	0.093
	Cd	114	17	802461	1.104	1.017	**0.097015**	mg/L	0.557
	In	115	747751	789064	1.002	789064.149		mg/L	
	Sn	118	104	134677	1.396	0.171	**0.013786**	mg/L	0.444
	Sn	120	94	186055	0.609	0.236	**0.013782**	mg/L	1.400
	Sb	121	43	123398	2.494	0.156	**0.010635**	mg/L	2.177
	Te	125	5	23	40.564	0.000	**0.000027**	mg/L	52.918
	Ba	137	55	420667	1.102	0.533	**0.081744**	mg/L	0.475
	Ba	138	265	2496798	0.763	3.164	**0.075583**	mg/L	0.650
	W	184	247	2569	3.685	0.004	**0.000244**	mg/L	3.162
	Hg	201	80	19050	0.907	0.030	**0.012077**	mg/L	1.562
	Hg*	202	186	43842	1.219	0.069	**0.011823**	mg/L	1.254
	Hg	202	188	43862	1.220	0.069	**0.009834**	mg/L	1.254
	Tb	159	823967	880073	1.339	0.048		mg/L	
	Ho	165	17	8576	2.001	0.014		mg/L	
	Tl	205	256	2085558	0.203	3.294	**0.071975**	mg/L	2.589
	Pb	204	11	28576	2.244	0.045	**0.057287**	mg/L	4.687
	Pb	208	505	2048197	0.231	3.234	**0.050939**	mg/L	2.580
>	Bi	209	613899	633353	2.446	633352.577		mg/L	
	Th	232	165	150602	2.307	0.238	**0.003255**	mg/L	0.207
	U	238	250	36118	0.300	0.057	**0.000717**	mg/L	2.256
	Na	23	25091	684540	2.071	2.665	**0.116888**	mg/L	3.510
	Mg	24	1548	3655495	1.343	14.735	**0.935475**	mg/L	3.106
	Mg	25	157	535779	1.198	2.160	**0.875129**	mg/L	2.604
	K	39	915234	8807669	1.451	32.035	**0.915861**	mg/L	3.809
	Ca	43	255	31266	1.288	0.125	**1.602546**	mg/L	0.690
	Ca	44	32958	523148	1.780	1.983	**1.584055**	mg/L	0.265
>	Sc	45	262577	248073	1.961	248072.989		mg/L	
	Fe*	57	10623	1471725	0.889	5.893	**4.855367**	mg/L	1.220
	Fe	57	10643	1474257	0.889	5.903	**4.838512**	mg/L	1.219
	Fe	54	27959	3109484	1.048	12.430	**4.444325**	mg/L	1.621
	Kr	83	132	138	5.808	5.333		mg/L	
	Br	81	20252	21775	2.183	1522.368		mg/L	
	Cl	35	156167	90745	1.395	-65422.246		mg/L	
	C	13	4180	8545	1.519	4365.276		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: RINSE
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 22:13:52
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\RINSE.055
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	1550	2.148	-0.005	**-0.000076**	mg/L	33.485
Li	6	18730	18677	1.567	18677.011		mg/L	
Be	9	2	4	17.321	0.000	**0.000005**	mg/L	31.476
B	10	1866	1636	1.989	-0.012	**-0.001828**	mg/L	14.981
B	11	8409	7570	0.863	-0.044	**-0.001427**	mg/L	20.667
Si	28	17772	84027	1.425	0.303	**0.022905**	mg/L	2.822
Al	27	907	4813	13.907	0.018	**0.000668**	mg/L	17.484
P	31	7189	4657	9.441	-0.007	**-0.004188**	mg/L	24.754
Sc	45	262577	226580	1.161	226580.061		mg/L	
Ti	47	148	126	5.900	-0.000	**-0.000002**	mg/L	487.201
Ti	49	52	75	14.530	0.000	**0.000054**	mg/L	37.514
V**	51	1637	1938	4.948	0.002	**0.000056**	mg/L	14.274
V*	51	6447	2667	2.121	-0.013	**-0.000307**	mg/L	2.903
V	51	6936	2920	0.944	-0.014	**-0.000323**	mg/L	1.655
Cr*	52	6349	5553	0.898	0.000	**0.000009**	mg/L	114.071
Cr	52	7057	6453	1.066	0.002	**0.000045**	mg/L	25.869
Cr	53	2327	960	5.350	-0.005	**-0.001101**	mg/L	5.788
Mn	55	184	512	9.324	0.002	**0.000026**	mg/L	12.130
Co	59	188	116	5.324	-0.000	**-0.000004**	mg/L	12.849
Ni	60	32	58	29.142	0.000	**0.000013**	mg/L	56.721
Ni	62	65	63	9.165	0.000	**0.000017**	mg/L	90.955
Cu	63	178	256	14.012	0.000	**0.000017**	mg/L	36.148
Cu	65	156	182	5.511	0.000	**0.000016**	mg/L	16.956
Zn	66	285	621	9.366	0.002	**0.000187**	mg/L	15.714
Zn	68	299	509	2.369	0.001	**0.000166**	mg/L	4.724
Y	89	655666	653402	0.483	-2264.535		mg/L	
As*	75	-414	-357	7.649	0.000	**0.000023**	mg/L	49.933
As	75	165	142	1.200	-0.000	**-0.000010**	mg/L	2.522
Se	77	185	169	2.778	-0.000	**-0.000083**	mg/L	26.946
Se	82	78	73	13.399	-0.000	**-0.000020**	mg/L	150.235
Sr	86	20	32	40.698	0.000	**0.000004**	mg/L	104.760
Sr	88	132	377	9.488	0.000	**0.000008**	mg/L	16.476
Zr	90	39	163	7.550	0.000	**0.000008**	mg/L	8.796
Zr	91	17	46	12.385	0.000	**0.000008**	mg/L	18.371
Mo	95	34	453	19.620	0.001	**0.000095**	mg/L	20.082
Mo	97	22	275	10.245	0.000	**0.000091**	mg/L	10.079
Ag	107	1821	100640	21.532	0.130	**0.007480**	mg/L	20.754
Ag	109	1766	96063	22.055	0.124	**0.007399**	mg/L	21.294

Cd	111	9	14	30.926	0.000	**0.000002**	mg/L	81.069
Cd	114	17	22	69.533	0.000	**0.000001**	mg/L	364.114
In	115	747751	761023	1.204	761022.885		mg/L	
Sn	118	104	647	13.010	0.001	**0.000057**	mg/L	14.231
Sn	120	94	786	12.652	0.001	**0.000053**	mg/L	13.099
Sb	121	43	373	2.747	0.000	**0.000029**	mg/L	3.876
Te	125	5	20	25.000	0.000	**0.000023**	mg/L	32.849
Ba	137	55	256	18.186	0.000	**0.000040**	mg/L	24.827
Ba	138	265	1469	2.884	0.002	**0.000038**	mg/L	2.172
W	184	247	287	10.182	0.000	**0.000007**	mg/L	30.628
Hg	201	80	359	6.643	0.001	**0.000202**	mg/L	14.430
Hg*	202	186	778	4.129	0.001	**0.000182**	mg/L	11.241
Hg	202	188	780	4.094	0.001	**0.000152**	mg/L	11.214
Tb	159	823967	825055	0.133	0.105		mg/L	
Ho	165	17	24	24.119	0.000		mg/L	
Tl	205	256	241	21.079	0.000	**0.000000**	mg/L	1412.416
Pb	204	11	15	42.233	0.000	**0.000011**	mg/L	138.386
Pb	208	505	945	7.686	0.001	**0.000013**	mg/L	8.420
Bi	209	613899	570959	4.562	570958.933		mg/L	
Th	232	165	1524	15.966	0.002	**0.000033**	mg/L	22.844
U	238	250	77	14.704	-0.000	**-0.000003**	mg/L	9.432
Na	23	25091	75265	1.238	0.237	**0.010379**	mg/L	1.292
Mg	24	1548	2663	4.468	0.006	**0.000372**	mg/L	7.929
Mg	25	157	288	7.262	0.001	**0.000272**	mg/L	12.345
K	39	915234	732005	0.526	-0.255	**-0.007282**	mg/L	12.210
Ca	43	255	302	6.234	0.000	**0.004631**	mg/L	19.479
Ca	44	32958	27133	1.339	-0.006	**-0.004589**	mg/L	46.475
Sc	45	262577	226580	1.161	226580.061		mg/L	
Fe*	57	10623	9136	0.312	-0.000	**-0.000109**	mg/L	336.796
Fe	57	10643	9160	0.307	-0.000	**-0.000084**	mg/L	427.679
Fe	54	27959	23256	0.785	-0.004	**-0.001371**	mg/L	10.040
Kr	83	132	106	2.198	-26.750		mg/L	
Br	81	20252	20457	2.084	204.588		mg/L	
Cl	35	156167	67558	1.395	-88608.450		mg/L	
C	13	4180	5310	2.687	1130.120		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: CCV
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 22:19:49
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\CCV.056
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	14401	0.651	0.661	**0.009654**	mg/L	1.037
Li	6	18730	19221	1.423	19221.374		mg/L	
Be	9	2	4943	1.258	0.257	**0.009282**	mg/L	2.693
B	10	1866	7223	0.636	0.276	**0.041887**	mg/L	1.092
B	11	8409	32662	1.064	1.251	**0.040989**	mg/L	2.553
Si	28	17772	162039	1.717	0.638	**0.048203**	mg/L	2.785
Al	27	907	59141	0.827	0.254	**0.009529**	mg/L	1.662
P	31	7189	22565	1.300	0.071	**0.043410**	mg/L	1.093
Sc	45	262577	229613	0.913	229613.420		mg/L	
Ti	47	148	7427	0.890	0.032	**0.010281**	mg/L	0.883
Ti	49	52	5992	1.748	0.026	**0.010439**	mg/L	2.549
V**	51	1637	100573	0.999	0.432	**0.010499**	mg/L	1.261
V*	51	6447	103067	0.316	0.424	**0.010186**	mg/L	1.143
V	51	6936	103789	0.273	0.426	**0.010152**	mg/L	0.828
Cr*	52	6349	91536	1.031	0.374	**0.010557**	mg/L	1.081
Cr	52	7057	92433	0.986	0.376	**0.010579**	mg/L	1.065
Cr	53	2327	11274	1.237	0.040	**0.009588**	mg/L	2.158
Mn	55	184	144546	1.526	0.629	**0.010675**	mg/L	2.071
Co	59	188	117976	0.425	0.513	**0.010339**	mg/L	0.744
Ni	60	32	26008	2.652	0.113	**0.010401**	mg/L	3.273
Ni	62	65	4060	1.479	0.017	**0.010189**	mg/L	1.907
Cu	63	178	64240	1.555	0.279	**0.010518**	mg/L	2.376
Cu	65	156	32250	2.352	0.140	**0.010568**	mg/L	3.238
Zn	66	285	21603	1.890	0.093	**0.010504**	mg/L	2.721
Zn	68	299	16380	0.087	0.070	**0.010524**	mg/L	1.011
Y	89	655666	663315	0.415	7648.402		mg/L	
As*	75	-414	26861	0.398	0.035	**0.009645**	mg/L	1.452
As	75	165	26770	0.496	0.035	**0.009560**	mg/L	1.315
Se	77	185	2463	2.293	0.003	**0.009601**	mg/L	0.827
Se	82	78	3091	1.531	0.004	**0.009876**	mg/L	0.152
Sr	86	20	34088	1.026	0.044	**0.010011**	mg/L	1.882
Sr	88	132	289970	1.126	0.377	**0.009944**	mg/L	1.607
Zr	90	39	161140	1.057	0.209	**0.010230**	mg/L	2.561
Zr	91	17	35773	0.404	0.046	**0.010163**	mg/L	1.872
Mo	95	34	44209	1.341	0.057	**0.009970**	mg/L	1.404
Mo	97	22	28170	2.006	0.037	**0.009996**	mg/L	1.837
Ag	107	1821	180245	0.911	0.232	**0.013386**	mg/L	2.382
Ag	109	1766	174353	1.743	0.224	**0.013422**	mg/L	2.751

Cd	111	9	34169	0.448	0.044	**0.009928**	mg/L	1.941
Cd	114	17	80941	0.368	0.105	**0.010036**	mg/L	1.188
In	115	747751	769280	1.528	769279.575		mg/L	
Sn	118	104	96249	1.802	0.125	**0.010103**	mg/L	0.932
Sn	120	94	132836	1.154	0.173	**0.010091**	mg/L	1.337
Sb	121	43	119110	0.670	0.155	**0.010531**	mg/L	1.202
Te	125	5	6519	7.867	0.008	**0.010016**	mg/L	6.429
Ba	137	55	52580	1.113	0.068	**0.010472**	mg/L	2.261
Ba	138	265	338621	1.160	0.440	**0.010507**	mg/L	0.431
W	184	247	87715	1.479	0.149	**0.009936**	mg/L	3.328
Hg	201	80	1626	0.992	0.003	**0.001062**	mg/L	5.748
Hg*	202	186	3662	1.967	0.006	**0.001015**	mg/L	2.778
Hg	202	188	4355	1.807	0.007	**0.001012**	mg/L	2.819
Tb	159	823967	843159	0.313	0.091		mg/L	
Ho	165	17	28	12.026	0.000		mg/L	
Tl	205	256	271073	1.677	0.460	**0.010057**	mg/L	2.960
Pb	204	11	4751	4.631	0.008	**0.010224**	mg/L	4.652
Pb	208	505	381007	0.250	0.647	**0.010189**	mg/L	4.454
> Bi	209	613899	588933	4.370	588932.963		mg/L	
Th	232	165	429981	0.184	0.731	**0.010015**	mg/L	4.669
U	238	250	456197	0.805	0.775	**0.009808**	mg/L	4.844
Na	23	25091	2707084	0.566	11.695	**0.512972**	mg/L	1.372
Mg	24	1548	1922023	0.744	8.366	**0.531090**	mg/L	1.629
Mg	25	157	265754	1.182	1.157	**0.468775**	mg/L	2.054
K	39	915234	4823110	0.416	17.521	**0.500914**	mg/L	1.085
Ca	43	255	8944	1.592	0.038	**0.486670**	mg/L	2.044
Ca	44	32958	169116	0.041	0.611	**0.488023**	mg/L	1.047
> Sc	45	262577	229613	0.913	229613.420		mg/L	
Fe*	57	10623	153889	0.887	0.630	**0.518896**	mg/L	1.459
Fe	57	10643	154613	0.890	0.633	**0.518729**	mg/L	1.461
Fe	54	27959	361384	0.417	1.468	**0.524690**	mg/L	1.197
Kr	83	132	112	5.490	-20.000		mg/L	
Br	81	20252	20939	1.756	686.415		mg/L	
Cl	35	156167	67356	0.647	-88810.663		mg/L	
C	13	4180	5291	3.663	1111.361		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: QC CCB
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 22:27:47
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\QC CCB.057
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

	Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
	Li	7	1652	1593	0.805	-0.003	**-0.000048**	mg/L	61.107
>	Li	6	18730	18768	1.642	18767.598		mg/L	
	Be	9	2	5	53.294	0.000	**0.000007**	mg/L	77.842
	B	10	1866	1548	3.614	-0.017	**-0.002595**	mg/L	23.480
	B	11	8409	7367	1.292	-0.056	**-0.001845**	mg/L	19.190
	Si	28	17772	78924	2.399	0.277	**0.020923**	mg/L	3.566
	Al	27	907	2832	9.675	0.009	**0.000334**	mg/L	14.101
	P	31	7189	4749	1.951	-0.007	**-0.004068**	mg/L	6.535
>	Sc	45	262577	229002	0.467	229002.033		mg/L	
	Ti	47	148	109	3.840	-0.000	**-0.000028**	mg/L	19.328
	Ti	49	52	52	18.013	0.000	**0.000012**	mg/L	131.031
	V**	51	1637	1990	5.508	0.002	**0.000060**	mg/L	19.821
	V*	51	6447	2784	2.998	-0.012	**-0.000298**	mg/L	3.315
	V	51	6936	2958	3.154	-0.014	**-0.000322**	mg/L	2.603
	Cr*	52	6349	5792	1.868	0.001	**0.000031**	mg/L	40.104
	Cr	52	7057	6662	1.937	0.002	**0.000062**	mg/L	22.639
	Cr	53	2327	1004	3.927	-0.004	**-0.001066**	mg/L	3.938
	Mn	55	184	456	2.121	0.001	**0.000022**	mg/L	3.092
	Co	59	188	111	22.121	-0.000	**-0.000005**	mg/L	47.573
	Ni	60	32	34	12.585	0.000	**0.000003**	mg/L	66.086
	Ni	62	65	61	10.136	0.000	**0.000011**	mg/L	143.108
	Cu	63	178	157	8.702	0.000	**0.000000**	mg/L	873.585
	Cu	65	156	154	15.359	0.000	**0.000006**	mg/L	130.900
	Zn	66	285	392	6.087	0.001	**0.000070**	mg/L	15.512
	Zn	68	299	369	3.582	0.000	**0.000071**	mg/L	13.489
	Y	89	655666	650510	0.391	-5155.985		mg/L	
	As*	75	-414	-356	16.563	0.000	**0.000025**	mg/L	84.680
	As	75	165	116	1.416	-0.000	**-0.000020**	mg/L	2.405
	Se	77	185	166	10.971	-0.000	**-0.000105**	mg/L	74.750
	Se	82	78	80	7.400	-0.000	**-0.000000**	mg/L	4879.740
	Sr	86	20	38	24.003	0.000	**0.000005**	mg/L	51.359
	Sr	88	132	275	8.080	0.000	**0.000005**	mg/L	14.906
	Zr	90	39	83	9.091	0.000	**0.000003**	mg/L	18.261
	Zr	91	17	30	11.024	0.000	**0.000004**	mg/L	25.408
	Mo	95	34	179	11.471	0.000	**0.000033**	mg/L	14.197
	Mo	97	22	118	24.027	0.000	**0.000034**	mg/L	29.549
	Ag	107	1821	30395	4.603	0.037	**0.002140**	mg/L	5.085
	Ag	109	1766	29544	6.052	0.036	**0.002157**	mg/L	6.578

Cd	111	9	11	39.247	0.000	**0.000001**	mg/L	214.476
Cd	114	17	16	34.575	-0.000	**-0.000000**	mg/L	435.526
In	115	747751	769121	0.516	769121.127		mg/L	
Sn	118	104	556	2.636	0.001	**0.000047**	mg/L	3.275
Sn	120	94	728	6.722	0.001	**0.000048**	mg/L	8.131
Sb	121	43	251	5.733	0.000	**0.000018**	mg/L	7.561
Te	125	5	95	6.963	0.000	**0.000138**	mg/L	7.785
Ba	137	55	130	5.088	0.000	**0.000015**	mg/L	8.200
Ba	138	265	713	4.942	0.001	**0.000014**	mg/L	7.624
W	184	247	530	13.777	0.001	**0.000035**	mg/L	30.846
Hg	201	80	277	10.590	0.000	**0.000142**	mg/L	14.715
Hg*	202	186	621	3.736	0.001	**0.000134**	mg/L	10.635
Hg	202	188	625	3.801	0.001	**0.000112**	mg/L	10.738
Tb	159	823967	826927	0.376	0.101		mg/L	
Ho	165	17	20	7.370	0.000		mg/L	
Tl	205	256	351	3.515	0.000	**0.000004**	mg/L	23.070
Pb	204	11	14	98.192	0.000	**0.000008**	mg/L	374.981
Pb	208	505	522	5.915	0.000	**0.000001**	mg/L	89.889
> Bi	209	613899	573694	3.850	573693.972		mg/L	
Th	232	165	1548	18.014	0.002	**0.000033**	mg/L	24.244
U	238	250	85	7.782	-0.000	**-0.000003**	mg/L	6.782
Na	23	25091	69283	0.542	0.207	**0.009079**	mg/L	1.475
Mg	24	1548	1398	3.268	0.000	**0.000013**	mg/L	98.976
Mg	25	157	119	21.357	-0.000	**-0.000033**	mg/L	138.346
K	39	915234	733120	0.774	-0.284	**-0.008123**	mg/L	13.145
Ca	43	255	265	12.978	0.000	**0.002410**	mg/L	82.558
Ca	44	32958	27283	0.941	-0.006	**-0.005091**	mg/L	25.447
> Sc	45	262577	229002	0.467	229002.033		mg/L	
Fe*	57	10623	8744	1.408	-0.002	**-0.001874**	mg/L	17.590
Fe	57	10643	8765	1.374	-0.002	**-0.001852**	mg/L	17.201
Fe	54	27959	23109	2.111	-0.006	**-0.001992**	mg/L	30.472
Kr	83	132	106	9.572	-26.834		mg/L	
Br	81	20252	20780	0.816	527.748		mg/L	
Cl	35	156167	65947	0.810	-90219.587		mg/L	
C	13	4180	5133	4.096	952.945		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

ample ID: L4106-2X
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 22:33:44
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\L4106-2X.058
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	14903	0.797	0.634	**0.009255**	mg/L	2.181
Li	6	18730	20646	1.254	20646.294		mg/L	
Be	9	2	122	6.993	0.006	**0.000210**	mg/L	8.331
B	10	1866	1601	3.210	-0.022	**-0.003349**	mg/L	15.347
B	11	8409	7368	0.763	-0.092	**-0.003017**	mg/L	7.281
Si	28	17772	767102	5.362	2.850	**0.215306**	mg/L	5.465
Al	27	907	34074461	2.725	129.620	**4.859956**	mg/L	2.971
P	31	7189	163933	0.614	0.596	**0.365085**	mg/L	0.612
Sc	45	262577	262886	0.254	262886.482		mg/L	
Ti	47	148	242113	0.709	0.920	**0.297692**	mg/L	0.851
Ti	49	52	196465	0.599	0.747	**0.301084**	mg/L	0.754
V**	51	1637	294731	0.287	1.115	**0.027108**	mg/L	0.536
V*	51	6447	298225	0.534	1.110	**0.026642**	mg/L	0.746
V	51	6936	300007	0.960	1.115	**0.026589**	mg/L	1.045
Cr*	52	6349	163500	0.505	0.598	**0.016851**	mg/L	0.637
Cr	52	7057	164989	0.512	0.601	**0.016916**	mg/L	0.656
Cr	53	2327	19820	1.992	0.067	**0.015852**	mg/L	2.358
Mn	55	184	1956730	1.474	7.443	**0.126336**	mg/L	1.711
Co	59	188	48004	1.981	0.182	**0.003665**	mg/L	2.240
Ni	60	32	28177	0.982	0.107	**0.009840**	mg/L	1.228
Ni	62	65	5436	0.796	0.020	**0.011942**	mg/L	1.011
Cu	63	178	39803	1.055	0.151	**0.005680**	mg/L	0.877
Cu	65	156	21633	0.653	0.082	**0.006172**	mg/L	0.646
Zn	66	285	39870	1.855	0.151	**0.017005**	mg/L	1.855
Zn	68	299	36345	0.670	0.137	**0.020555**	mg/L	0.658
Y	89	655666	867831	0.573	212164.613		mg/L	
As*	75	-414	8412	1.488	0.011	**0.002913**	mg/L	0.735
As	75	165	9138	1.419	0.011	**0.002991**	mg/L	0.720
Se	77	185	267	3.275	0.000	**0.000245**	mg/L	16.451
Se	82	78	132	9.530	0.000	**0.000140**	mg/L	28.500
Sr	86	20	442812	1.207	0.535	**0.120912**	mg/L	0.440
Sr	88	132	3629860	0.320	4.386	**0.115730**	mg/L	1.198
Zr	90	39	153337	2.100	0.185	**0.009046**	mg/L	2.773
Zr	91	17	33721	2.997	0.041	**0.008902**	mg/L	2.975
Mo	95	34	1125	4.835	0.001	**0.000228**	mg/L	5.859
Mo	97	22	724	3.926	0.001	**0.000231**	mg/L	4.955
Ag	107	1821	4018	17.316	0.002	**0.000140**	mg/L	34.425
Ag	109	1766	3427	16.425	0.002	**0.000106**	mg/L	37.782

Cd	111	9	271	5.477	0.000	**0.000070**	mg/L	5.061
Cd	114	17	566	9.239	0.001	**0.000063**	mg/L	9.877
In	115	747751	827719	0.898	827718.663		mg/L	
Sn	118	104	4702	10.018	0.006	**0.000448**	mg/L	10.874
Sn	120	94	6897	7.696	0.008	**0.000480**	mg/L	7.872
Sb	121	43	437	6.365	0.000	**0.000032**	mg/L	6.261
Te	125	5	46	15.746	0.000	**0.000058**	mg/L	18.705
Ba	137	55	793035	0.397	0.958	**0.146921**	mg/L	0.904
Ba	138	265	4684205	1.100	5.659	**0.135187**	mg/L	1.351
W	184	247	3080	4.836	0.005	**0.000313**	mg/L	6.184
Hg	201	80	74	15.534	-0.000	**-0.000004**	mg/L	168.178
Hg*	202	186	162	4.057	-0.000	**-0.000006**	mg/L	54.582
Hg	202	188	186	4.062	0.000	**0.000000**	mg/L	1539.619
Tb	159	823967	889774	1.421	0.128		mg/L	
Ho	165	17	8053	1.437	0.013		mg/L	
Tl	205	256	2509	1.948	0.004	**0.000082**	mg/L	5.766
Pb	204	11	4376	1.012	0.007	**0.009162**	mg/L	4.775
Pb	208	505	344141	1.045	0.568	**0.008949**	mg/L	5.290
Bi	209	613899	605747	4.831	605746.575		mg/L	
Th	232	165	226557	1.079	0.374	**0.005129**	mg/L	4.417
U	238	250	54208	0.853	0.089	**0.001129**	mg/L	4.769
Na	23	25091	2132166	2.067	8.015	**0.351570**	mg/L	2.345
Mg	24	1548	16990859	1.867	64.628	**4.102923**	mg/L	2.115
Mg	25	157	2315303	3.305	8.807	**3.568529**	mg/L	3.554
K	39	915234	6495981	1.718	21.225	**0.606829**	mg/L	2.293
Ca	43	255	875102	0.393	3.328	**42.638580**	mg/L	0.643
Ca	44	32958	12812720	2.062	48.615	**38.826984**	mg/L	2.314
Sc	45	262577	262886	0.254	262886.482		mg/L	
Fe*	57	10623	2221840	2.137	8.412	**6.930401**	mg/L	2.396
Fe	57	10643	2292724	2.083	8.681	**7.115432**	mg/L	2.342
Fe	54	27959	5061032	2.024	19.146	**6.845423**	mg/L	2.253
Kr	83	132	153	3.979	20.084		mg/L	
Br	81	20252	22141	2.078	1889.004		mg/L	
Cl	35	156167	88016	3.466	-68150.801		mg/L	
C	13	4180	8778	3.007	4597.980		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

'ample ID: DUP WG11554-3X
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 22:39:42
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\DUP WG11554-3X.059
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	13997	2.423	0.593	**0.008662**	mg/L	1.403
Li	6	18730	20542	1.300	20541.913		mg/L	
Be	9	2	109	21.493	0.005	**0.000189**	mg/L	22.157
B	10	1866	1534	1.529	-0.025	**-0.003781**	mg/L	6.461
B	11	8409	7091	1.663	-0.104	**-0.003397**	mg/L	9.573
Si	28	17772	687833	2.394	2.563	**0.193619**	mg/L	2.536
Al	27	907	33849503	1.028	129.465	**4.854171**	mg/L	1.093
P	31	7189	167533	1.075	0.613	**0.375616**	mg/L	1.132
Sc	45	262577	261450	0.081	261450.380		mg/L	
Ti	47	148	246703	0.687	0.943	**0.305004**	mg/L	0.766
Ti	49	52	200346	0.314	0.766	**0.308718**	mg/L	0.393
V**	51	1637	300201	0.140	1.142	**0.027766**	mg/L	0.213
V*	51	6447	303631	0.099	1.137	**0.027287**	mg/L	0.152
V	51	6936	302370	0.610	1.130	**0.026954**	mg/L	0.702
Cr*	52	6349	147357	0.952	0.539	**0.015206**	mg/L	0.911
Cr	52	7057	148792	0.929	0.542	**0.015269**	mg/L	0.891
Cr	53	2327	17963	1.291	0.060	**0.014258**	mg/L	1.389
Mn	55	184	2458554	0.908	9.403	**0.159607**	mg/L	0.886
Co	59	188	63183	0.792	0.241	**0.004855**	mg/L	0.807
Ni	60	32	26374	1.699	0.101	**0.009260**	mg/L	1.636
Ni	62	65	5194	0.506	0.020	**0.011467**	mg/L	0.595
Cu	63	178	38273	0.726	0.146	**0.005490**	mg/L	0.791
Cu	65	156	20836	3.297	0.079	**0.005976**	mg/L	3.348
Zn	66	285	37821	1.482	0.144	**0.016214**	mg/L	1.531
Zn	68	299	35953	1.280	0.136	**0.020444**	mg/L	1.212
Y	89	655666	859507	0.141	203841.166		mg/L	
As*	75	-414	8876	0.744	0.011	**0.003094**	mg/L	1.523
As	75	165	9614	0.505	0.012	**0.003181**	mg/L	1.649
Se	77	185	272	1.194	0.000	**0.000275**	mg/L	2.985
Se	82	78	130	3.983	0.000	**0.000139**	mg/L	10.855
Sr	86	20	423446	0.667	0.517	**0.116768**	mg/L	1.891
Sr	88	132	3494478	0.984	4.264	**0.112515**	mg/L	2.533
Zr	90	39	159724	0.177	0.195	**0.009515**	mg/L	1.815
Zr	91	17	35254	2.806	0.043	**0.009402**	mg/L	4.678
Mo	95	34	1093	1.561	0.001	**0.000224**	mg/L	0.391
Mo	97	22	644	2.584	0.001	**0.000207**	mg/L	2.725
Ag	107	1821	2139	8.068	0.000	**0.000010**	mg/L	96.315
Ag	109	1766	1637	6.074	-0.000	**-0.000022**	mg/L	23.855

Cd	111	9	244	6.987	0.000	**0.000064**	mg/L	9.356
Cd	114	17	488	6.789	0.001	**0.000055**	mg/L	6.373
In	115	747751	819814	1.932	819814.189		mg/L	
Sn	118	104	4035	1.109	0.005	**0.000387**	mg/L	2.667
Sn	120	94	5912	3.838	0.007	**0.000415**	mg/L	5.927
Sb	121	43	278	4.724	0.000	**0.000019**	mg/L	5.731
Te	125	5	25	36.056	0.000	**0.000028**	mg/L	46.570
Ba	137	55	871123	1.098	1.063	**0.162956**	mg/L	0.865
Ba	138	265	5220814	0.611	6.369	**0.152149**	mg/L	1.522
W	184	247	3011	3.145	0.005	**0.000323**	mg/L	12.115
Hg	201	80	58	7.838	-0.000	**-0.000012**	mg/L	3.545
Hg*	202	186	125	3.614	-0.000	**-0.000015**	mg/L	25.516
Hg	202	188	149	2.696	-0.000	**-0.000007**	mg/L	54.698
Tb	159	823967	886688	0.464	0.198		mg/L	
Ho	165	17	7819	0.237	0.014		mg/L	
Tl	205	256	2026	0.377	0.003	**0.000068**	mg/L	10.526
Pb	204	11	3157	1.182	0.005	**0.006931**	mg/L	8.258
Pb	208	505	263376	0.225	0.456	**0.007189**	mg/L	8.955
Bi	209	613899	578869	8.564	578869.323		mg/L	
Th	232	165	327570	0.692	0.568	**0.007788**	mg/L	8.298
U	238	250	59154	0.680	0.102	**0.001294**	mg/L	9.140
Na	23	25091	2456171	1.360	9.299	**0.407868**	mg/L	1.407
Mg	24	1548	16683771	1.707	63.807	**4.050763**	mg/L	1.735
Mg	25	157	2273987	2.350	8.697	**3.523898**	mg/L	2.370
K	39	915234	6371021	1.855	20.882	**0.597023**	mg/L	2.177
Ca	43	255	748103	0.210	2.860	**36.648721**	mg/L	0.217
Ca	44	32958	11100919	0.927	42.334	**33.810279**	mg/L	0.965
Sc	45	262577	261450	0.081	261450.380		mg/L	
Fe*	57	10623	2136705	0.778	8.132	**6.700100**	mg/L	0.821
Fe	57	10643	2197301	0.762	8.364	**6.855285**	mg/L	0.804
Fe	54	27959	4846805	0.164	18.432	**6.590040**	mg/L	0.085
Kr	83	132	148	5.666	15.667		mg/L	
Br	81	20252	21301	2.437	1048.851		mg/L	
Cl	35	156167	86443	2.360	-69724.189		mg/L	
C	13	4180	8462	1.609	4282.706		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: MS WG11554-4X
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 22:45:41
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\MS WG11554-4X.060
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	15473	2.350	0.682	**0.009957**	mg/L	0.573
Li	6	18730	20094	1.843	20094.340		mg/L	
Be	9	2	10769	0.658	0.536	**0.019343**	mg/L	1.203
B	10	1866	1476	3.733	-0.026	**-0.003973**	mg/L	5.271
B	11	8409	6636	1.193	-0.119	**-0.003886**	mg/L	8.042
Si	28	17772	673008	4.066	2.489	**0.188044**	mg/L	4.093
Al	27	907	36433075	1.123	138.427	**5.190173**	mg/L	1.222
P	31	7189	183135	0.410	0.668	**0.409323**	mg/L	0.492
Sc	45	262577	263189	0.100	263189.281		mg/L	
Ti	47	148	192191	0.334	0.730	**0.235998**	mg/L	0.348
Ti	49	52	156797	0.504	0.596	**0.239997**	mg/L	0.436
V**	51	1637	483001	0.721	1.829	**0.044469**	mg/L	0.626
V*	51	6447	489427	0.506	1.835	**0.044048**	mg/L	0.420
V	51	6936	493806	0.260	1.850	**0.044121**	mg/L	0.181
Cr*	52	6349	360288	1.076	1.345	**0.037908**	mg/L	0.999
Cr	52	7057	361483	1.074	1.347	**0.037919**	mg/L	1.000
Cr	53	2327	43041	0.431	0.155	**0.036852**	mg/L	0.423
Mn	55	184	2551596	1.358	9.694	**0.164552**	mg/L	1.259
Co	59	188	290633	0.686	1.104	**0.022237**	mg/L	0.588
Ni	60	32	81363	1.022	0.309	**0.028403**	mg/L	1.058
Ni	62	65	13357	2.258	0.051	**0.029516**	mg/L	2.228
Cu	63	178	167671	0.180	0.636	**0.023980**	mg/L	0.082
Cu	65	156	85898	0.495	0.326	**0.024612**	mg/L	0.536
Zn	66	285	87223	0.194	0.330	**0.037305**	mg/L	0.259
Zn	68	299	72547	1.200	0.275	**0.041151**	mg/L	1.243
Y	89	655666	862097	1.024	206431.074		mg/L	
As*	75	-414	66935	0.492	0.083	**0.022566**	mg/L	1.015
As	75	165	66369	0.227	0.082	**0.022539**	mg/L	0.895
Se	77	185	5256	0.499	0.006	**0.020243**	mg/L	0.933
Se	82	78	6693	0.595	0.008	**0.020544**	mg/L	1.053
Sr	86	20	479501	0.209	0.591	**0.133500**	mg/L	1.014
Sr	88	132	4010776	0.580	4.940	**0.130374**	mg/L	1.149
Zr	90	39	144383	2.040	0.178	**0.008684**	mg/L	2.529
Zr	91	17	32272	2.258	0.040	**0.008686**	mg/L	2.054
Mo	95	34	77663	1.318	0.096	**0.016600**	mg/L	1.592
Mo	97	22	49008	1.553	0.060	**0.016483**	mg/L	2.020
Ag	107	1821	1604	7.178	-0.000	**-0.000026**	mg/L	32.975
Ag	109	1766	1140	2.629	-0.001	**-0.000057**	mg/L	2.919

Cd	111	9	71761	0.792	0.088	**0.019758**	mg/L	1.445
Cd	114	17	172309	1.310	0.212	**0.020245**	mg/L	0.989
In	115	747751	811846	0.809	811845.947		mg/L	
Sn	118	104	3048	7.338	0.004	**0.000292**	mg/L	6.833
Sn	120	94	4378	3.048	0.005	**0.000308**	mg/L	3.900
Sb	121	43	21762	1.157	0.027	**0.001820**	mg/L	1.119
Te	125	5	29	52.372	0.000	**0.000035**	mg/L	64.777
Ba	137	55	897758	1.060	1.106	**0.169566**	mg/L	0.251
Ba	138	265	5446347	0.897	6.708	**0.160249**	mg/L	0.270
W	184	247	1461	2.751	0.003	**0.000203**	mg/L	26.175
Hg	201	80	57	10.425	0.000	**0.000002**	mg/L	950.794
Hg*	202	186	114	7.072	-0.000	**-0.000006**	mg/L	139.802
Hg	202	188	125	6.668	-0.000	**-0.000002**	mg/L	436.641
Tb	159	823967	887385	1.080	0.756		mg/L	
Ho	165	17	7969	0.668	0.019		mg/L	
Tl	205	256	557061	1.041	1.315	**0.028728**	mg/L	25.545
Pb	204	11	13598	1.506	0.032	**0.040831**	mg/L	27.327
Pb	208	505	1064827	0.377	2.515	**0.039614**	mg/L	26.154
> Bi	209	613899	441181	23.493	441181.301		mg/L	
Th	232	165	1107519	2.158	2.606	**0.035712**	mg/L	23.601
U	238	250	1001899	0.573	2.366	**0.029926**	mg/L	25.736
Na	23	25091	8656400	0.960	32.795	**1.438458**	mg/L	1.062
Mg	24	1548	23477546	1.553	89.199	**5.662792**	mg/L	1.643
Mg	25	157	3205000	2.251	12.177	**4.933989**	mg/L	2.347
K	39	915234	15799850	1.216	56.547	**1.616666**	mg/L	1.384
Ca	43	255	950363	0.692	3.610	**46.252700**	mg/L	0.604
Ca	44	32958	14164262	0.087	53.692	**42.882047**	mg/L	0.013
> Sc	45	262577	263189	0.100	263189.281		mg/L	
Fe*	57	10623	2505979	0.554	9.481	**7.811587**	mg/L	0.482
Fe	57	10643	2582958	0.557	9.774	**8.010779**	mg/L	0.485
Fe	54	27959	5650383	0.972	21.362	**7.637921**	mg/L	1.012
Kr	83	132	162	3.075	29.584		mg/L	
Br	81	20252	21218	0.761	966.167		mg/L	
Cl	35	156167	82399	1.899	-73767.329		mg/L	
C	13	4180	7045	0.628	2865.357		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: PDS WG11554-4X
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 22:51:39
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\PDS WG11554-4X.061
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	40094	0.378	1.833	**0.026765**	mg/L	0.173
Li	6	18730	20872	0.502	20872.177		mg/L	
Be	9	2	10478	0.549	0.502	**0.018116**	mg/L	1.049
B	10	1866	13839	1.180	0.563	**0.085453**	mg/L	1.916
B	11	8409	63777	1.057	2.607	**0.085441**	mg/L	1.730
Si	28	17772	929395	1.839	3.505	**0.264748**	mg/L	1.498
Al	27	907	34969024	0.526	134.424	**5.040095**	mg/L	1.134
P	31	7189	207384	1.232	0.770	**0.471381**	mg/L	0.933
Sc	45	262577	260147	0.798	260147.183		mg/L	
Ti	47	148	259218	0.817	0.996	**0.322115**	mg/L	1.519
Ti	49	52	208909	1.151	0.803	**0.323524**	mg/L	0.547
V**	51	1637	500588	0.611	1.918	**0.046635**	mg/L	0.572
V*	51	6447	506951	0.557	1.924	**0.046189**	mg/L	0.595
V	51	6936	505741	0.551	1.918	**0.045740**	mg/L	0.934
Cr*	52	6349	323028	0.854	1.218	**0.034323**	mg/L	0.889
Cr	52	7057	324441	0.845	1.220	**0.034363**	mg/L	0.880
Cr	53	2327	38820	0.817	0.140	**0.033443**	mg/L	1.082
Mn	55	184	2722689	1.802	10.465	**0.177640**	mg/L	1.552
Co	59	188	304235	0.972	1.169	**0.023551**	mg/L	0.665
Ni	60	32	77474	0.676	0.298	**0.027362**	mg/L	1.103
Ni	62	65	12944	0.964	0.050	**0.028936**	mg/L	0.544
Cu	63	178	165726	0.449	0.636	**0.023980**	mg/L	0.378
Cu	65	156	84759	0.924	0.325	**0.024569**	mg/L	0.610
Zn	66	285	81303	2.139	0.311	**0.035171**	mg/L	1.456
Zn	68	299	67873	0.831	0.260	**0.038942**	mg/L	1.011
Y	89	655666	844754	0.534	189088.080		mg/L	
As*	75	-414	66095	0.479	0.082	**0.022416**	mg/L	1.008
As	75	165	65586	0.451	0.081	**0.022405**	mg/L	1.072
Se	77	185	5192	0.707	0.006	**0.020108**	mg/L	1.009
Se	82	78	6592	0.875	0.008	**0.020351**	mg/L	0.707
Sr	86	20	482486	0.696	0.598	**0.135128**	mg/L	1.409
Sr	88	132	4096934	0.243	5.076	**0.133964**	mg/L	1.297
Zr	90	39	485614	1.009	0.602	**0.029389**	mg/L	2.387
Zr	91	17	108110	1.098	0.134	**0.029286**	mg/L	2.475
Mo	95	34	91745	0.642	0.114	**0.019728**	mg/L	1.278
Mo	97	22	58740	0.900	0.073	**0.019874**	mg/L	0.553
Ag	107	1821	71776	28.159	0.086	**0.004982**	mg/L	28.070
Ag	109	1766	68275	30.386	0.082	**0.004910**	mg/L	30.423

Cd	111	9	71564	0.389	0.089	**0.019820**	mg/L	1.342
Cd	114	17	169032	0.801	0.209	**0.019981**	mg/L	2.203
In	115	747751	807112	1.415	807112.024		mg/L	
Sn	118	104	204680	1.231	0.253	**0.020491**	mg/L	1.675
Sn	120	94	284669	0.698	0.353	**0.020619**	mg/L	0.892
Sb	121	43	253987	0.864	0.315	**0.021407**	mg/L	1.005
Te	125	5	13877	5.562	0.017	**0.020336**	mg/L	4.232
Ba	137	55	974873	0.735	1.208	**0.185229**	mg/L	0.911
Ba	138	265	5968591	1.020	7.396	**0.176670**	mg/L	1.723
W	184	247	185291	0.495	0.311	**0.020803**	mg/L	6.213
Hg	201	80	2882	1.773	0.005	**0.001901**	mg/L	6.133
Hg*	202	186	6679	3.242	0.011	**0.001873**	mg/L	4.333
Hg	202	188	8143	2.698	0.013	**0.001908**	mg/L	4.585
Tb	159	823967	884210	1.359	0.145		mg/L	
Ho	165	17	7654	0.392	0.013		mg/L	
Tl	205	256	556760	0.535	0.936	**0.020455**	mg/L	6.198
Pb	204	11	12673	1.530	0.021	**0.027047**	mg/L	7.406
Pb	208	505	1027010	0.581	1.727	**0.027192**	mg/L	6.039
> Bi	209	613899	596076	6.396	596075.570		mg/L	
Th	232	165	1213533	1.008	2.042	**0.027984**	mg/L	7.456
U	238	250	1003493	1.159	1.689	**0.021362**	mg/L	7.649
Na	23	25091	8887599	0.896	34.069	**1.494318**	mg/L	0.746
Mg	24	1548	21374207	0.864	82.157	**5.215699**	mg/L	0.521
Mg	25	157	2930361	0.983	11.264	**4.563823**	mg/L	0.335
K	39	915234	15818643	1.108	57.320	**1.638759**	mg/L	0.328
Ca	43	255	763693	1.238	2.935	**37.599349**	mg/L	0.483
Ca	44	32958	11517999	1.729	44.148	**35.259026**	mg/L	1.048
> Sc	45	262577	260147	0.798	260147.183		mg/L	
Fe*	57	10623	2437881	1.511	9.330	**7.687377**	mg/L	0.716
Fe	57	10643	2499740	1.504	9.568	**7.842373**	mg/L	0.708
Fe	54	27959	5499273	0.672	21.034	**7.520309**	mg/L	1.061
Kr	83	132	160	5.321	27.917		mg/L	
Br	81	20252	21928	2.940	1676.042		mg/L	
Cl	35	156167	87552	1.843	-68615.070		mg/L	
C	13	4180	8329	1.962	4149.261		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: RINSE
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 22:57:37
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\RINSE.062
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	1513	1.361	-0.007	**-0.000105**	mg/L	20.959
Li	6	18730	18675	0.507	18674.504		mg/L	
Be	9	2	3	57.282	0.000	**0.000003**	mg/L	114.679
B	10	1866	1721	2.728	-0.007	**-0.001136**	mg/L	35.695
B	11	8409	8112	4.793	-0.015	**-0.000476**	mg/L	155.758
Si	28	17772	95030	4.512	0.340	**0.025698**	mg/L	4.551
Al	27	907	7078	18.634	0.027	**0.001010**	mg/L	21.494
P	31	7189	4988	2.325	-0.006	**-0.003652**	mg/L	10.453
Sc	45	262577	232945	0.744	232944.943		mg/L	
Ti	47	148	157	14.514	0.000	**0.000036**	mg/L	88.696
Ti	49	52	124	21.879	0.000	**0.000136**	mg/L	35.349
V**	51	1637	2122	5.284	0.003	**0.000070**	mg/L	18.626
V*	51	6447	2538	2.433	-0.014	**-0.000328**	mg/L	2.079
V	51	6936	2729	0.828	-0.015	**-0.000351**	mg/L	1.231
Cr*	52	6349	6254	0.732	0.003	**0.000075**	mg/L	14.181
Cr	52	7057	7224	0.779	0.004	**0.000116**	mg/L	10.556
Cr	53	2327	947	2.502	-0.005	**-0.001143**	mg/L	1.512
Mn	55	184	655	3.385	0.002	**0.000036**	mg/L	5.427
Co	59	188	150	7.541	-0.000	**-0.000001**	mg/L	74.460
Ni	60	32	71	2.825	0.000	**0.000017**	mg/L	3.988
Ni	62	65	73	7.686	0.000	**0.000039**	mg/L	38.804
Cu	63	178	274	7.874	0.000	**0.000019**	mg/L	20.337
Cu	65	156	193	16.390	0.000	**0.000018**	mg/L	59.926
Zn	66	285	664	8.826	0.002	**0.000199**	mg/L	14.991
Zn	68	299	551	0.693	0.001	**0.000184**	mg/L	0.825
Y	89	655666	646130	0.519	-9536.608		mg/L	
As*	75	-414	-352	11.961	0.000	**0.000024**	mg/L	67.284
As	75	165	124	4.077	-0.000	**-0.000016**	mg/L	10.172
Se	77	185	166	5.377	-0.000	**-0.000092**	mg/L	45.200
Se	82	78	77	7.753	-0.000	**-0.000004**	mg/L	480.300
Sr	86	20	59	44.302	0.000	**0.000012**	mg/L	65.774
Sr	88	132	557	12.104	0.001	**0.000015**	mg/L	14.851
Zr	90	39	156	15.163	0.000	**0.000008**	mg/L	19.168
Zr	91	17	39	25.194	0.000	**0.000006**	mg/L	45.227
Mo	95	34	612	25.741	0.001	**0.000133**	mg/L	26.302
Mo	97	22	375	22.520	0.000	**0.000128**	mg/L	23.009
Ag	107	1821	80667	32.989	0.104	**0.006019**	mg/L	32.867
Ag	109	1766	77768	34.675	0.101	**0.006014**	mg/L	34.599

	Cd	111	9	11	11.721	0.000	**0.000001**	mg/L	51.345
	Cd	114	17	38	22.239	0.000	**0.000003**	mg/L	42.266
>	In	115	747751	754581	0.852	754580.668		mg/L	
	Sn	118	104	774	20.210	0.001	**0.000072**	mg/L	22.443
	Sn	120	94	1130	11.392	0.001	**0.000080**	mg/L	11.478
	Sb	121	43	440	13.076	0.001	**0.000036**	mg/L	14.827
	Te	125	5	258	31.661	0.000	**0.000397**	mg/L	31.427
	Ba	137	55	292	6.658	0.000	**0.000048**	mg/L	7.941
	Ba	138	265	1811	5.363	0.002	**0.000049**	mg/L	5.353
	W	184	247	1261	30.908	0.002	**0.000120**	mg/L	41.909
	Hg	201	80	315	5.424	0.000	**0.000167**	mg/L	10.765
	Hg*	202	186	666	5.430	0.001	**0.000146**	mg/L	12.263
	Hg	202	188	676	5.733	0.001	**0.000123**	mg/L	12.666
	Tb	159	823967	825837	0.649	0.085		mg/L	
	Ho	165	17	29	12.372	0.000		mg/L	
	Tl	205	256	238	20.295	-0.000	**-0.000000**	mg/L	2229.633
	Pb	204	11	15	23.308	0.000	**0.000011**	mg/L	72.449
	Pb	208	505	1040	8.747	0.001	**0.000015**	mg/L	22.825
>	Bi	209	613899	579202	3.451	579202.228		mg/L	
	Th	232	165	1494	11.518	0.002	**0.000032**	mg/L	16.445
	U	238	250	194	35.152	-0.000	**-0.000001**	mg/L	191.425
	Na	23	25091	84557	1.862	0.267	**0.011729**	mg/L	1.521
	Mg	24	1548	4162	8.709	0.012	**0.000760**	mg/L	13.739
	Mg	25	157	526	21.376	0.002	**0.000672**	mg/L	29.335
	K	39	915234	813989	0.758	0.009	**0.000257**	mg/L	537.107
	Ca	43	255	323	9.518	0.000	**0.005318**	mg/L	32.270
	Ca	44	32958	26909	2.586	-0.010	**-0.007976**	mg/L	35.963
>	Sc	45	262577	232945	0.744	232944.943		mg/L	
	Fe*	57	10623	9107	1.327	-0.001	**-0.001116**	mg/L	58.682
	Fe	57	10643	9133	1.335	-0.001	**-0.001083**	mg/L	60.516
	Fe	54	27959	25437	1.994	0.003	**0.000974**	mg/L	85.295
	Kr	83	132	104	1.320	-28.084		mg/L	
	Br	81	20252	20401	1.675	148.638		mg/L	
	Cl	35	156167	72637	1.813	-83529.254		mg/L	
	C	13	4180	5720	1.489	1540.763		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: L4140-1X
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 23:03:35
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\L4140-1X.063
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

	Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
	Li	7	1652	6989	1.006	0.262	**0.003827**	mg/L	1.650
>	Li	6	18730	19956	1.505	19955.728		mg/L	
	Be	9	2	57	23.380	0.003	**0.000100**	mg/L	25.559
	B	10	1866	2886	2.336	0.045	**0.006824**	mg/L	7.672
	B	11	8409	12985	0.574	0.202	**0.006616**	mg/L	4.945
	Si	28	17772	467648	3.714	1.858	**0.140366**	mg/L	3.608
	Al	27	907	11930416	0.832	49.131	**1.842109**	mg/L	0.340
	P	31	7189	87682	2.745	0.334	**0.204326**	mg/L	1.760
>	Sc	45	262577	242818	1.131	242818.334		mg/L	
	Ti	47	148	42115	1.244	0.173	**0.055914**	mg/L	0.390
	Ti	49	52	34522	0.305	0.142	**0.057216**	mg/L	0.848
	V**	51	1637	60445	2.072	0.243	**0.005901**	mg/L	1.520
	V*	51	6447	65190	2.223	0.244	**0.005855**	mg/L	1.791
	V	51	6936	65059	1.171	0.242	**0.005761**	mg/L	1.115
	Cr*	52	6349	285581	0.936	1.152	**0.032475**	mg/L	1.202
	Cr	52	7057	290468	0.911	1.169	**0.032930**	mg/L	1.192
	Cr	53	2327	34450	1.048	0.133	**0.031693**	mg/L	1.258
	Mn	55	184	1847168	0.416	7.607	**0.129123**	mg/L	0.747
	Co	59	188	37288	1.469	0.153	**0.003080**	mg/L	1.856
	Ni	60	32	36818	0.404	0.152	**0.013927**	mg/L	1.533
	Ni	62	65	5933	3.401	0.024	**0.014141**	mg/L	4.569
	Cu	63	178	2130747	0.677	8.775	**0.330671**	mg/L	1.688
	Cu	65	156	1106801	0.453	4.558	**0.344333**	mg/L	1.069
	Zn	66	285	503477	0.236	2.073	**0.234069**	mg/L	1.331
	Zn	68	299	485532	0.297	1.999	**0.299601**	mg/L	0.854
	Y	89	655666	762922	0.872	107256.220		mg/L	
	As*	75	-414	19497	0.450	0.025	**0.006736**	mg/L	1.024
	As	75	165	19979	0.455	0.025	**0.006801**	mg/L	1.084
	Se	77	185	233	1.297	0.000	**0.000136**	mg/L	13.377
	Se	82	78	168	2.215	0.000	**0.000266**	mg/L	4.632
	Sr	86	20	755213	1.444	0.938	**0.212078**	mg/L	1.747
	Sr	88	132	6378630	1.637	7.925	**0.209128**	mg/L	1.759
	Zr	90	39	80135	0.650	0.100	**0.004860**	mg/L	0.336
	Zr	91	17	17826	1.804	0.022	**0.004837**	mg/L	1.221
	Mo	95	34	96670	0.932	0.120	**0.020843**	mg/L	0.853
	Mo	97	22	61109	0.975	0.076	**0.020732**	mg/L	1.097
	Ag	107	1821	3569	4.443	0.002	**0.000115**	mg/L	10.081
	Ag	109	1766	3271	4.012	0.002	**0.000102**	mg/L	9.458

Cd	111	9	2469	2.926	0.003	**0.000683**	mg/L	2.995
Cd	114	17	5645	1.182	0.007	**0.000667**	mg/L	1.206
In	115	747751	804904	0.639	804904.091		mg/L	
Sn	118	104	6707	5.104	0.008	**0.000663**	mg/L	5.830
Sn	120	94	8971	5.772	0.011	**0.000644**	mg/L	5.289
Sb	121	43	2259	3.724	0.003	**0.000187**	mg/L	3.618
Te	125	5	76	16.593	0.000	**0.000104**	mg/L	17.215
Ba	137	55	12333005	0.555	15.323	**2.349764**	mg/L	0.929
Ba	138	265	79669727	0.455	98.983	**2.364553**	mg/L	0.889
W	184	247	40493	0.543	0.062	**0.004133**	mg/L	1.940
Hg	201	80	26517	4.251	0.041	**0.016375**	mg/L	2.797
Hg*	202	186	60818	3.061	0.093	**0.015978**	mg/L	1.351
Hg	202	188	61138	3.048	0.094	**0.013354**	mg/L	1.342
Tb	159	823967	907153	0.302	0.052		mg/L	
Ho	165	17	3480	3.630	0.005		mg/L	
Tl	205	256	9329	1.318	0.014	**0.000304**	mg/L	3.628
Pb	204	11	108071	1.450	0.166	**0.210840**	mg/L	1.888
Pb	208	505	8116167	0.683	12.476	**0.196484**	mg/L	1.765
Bi	209	613899	650680	2.415	650679.663		mg/L	
Th	232	165	66854	0.974	0.103	**0.001405**	mg/L	1.499
U	238	250	15676	1.523	0.024	**0.000300**	mg/L	3.444
Na	23	25091	5715271	1.435	23.442	**1.028192**	mg/L	0.764
Mg	24	1548	6943081	1.382	28.587	**1.814869**	mg/L	0.435
Mg	25	157	991859	3.667	4.083	**1.654532**	mg/L	2.561
K	39	915234	12018780	1.205	46.011	**1.315449**	mg/L	0.341
Ca	43	255	86838	2.190	0.357	**4.569325**	mg/L	1.120
Ca	44	32958	1415407	0.935	5.704	**4.555303**	mg/L	0.308
Sc	45	262577	242818	1.131	242818.334		mg/L	
Fe*	57	10623	4596615	1.856	18.894	**15.566815**	mg/L	2.935
Fe	57	10643	4603649	1.850	18.923	**15.509828**	mg/L	2.929
Fe	54	27959	10398532	1.056	42.723	**15.275198**	mg/L	1.894
Kr	83	132	123	1.726	-9.250		mg/L	
Br	81	20252	23726	1.335	3474.297		mg/L	
Cl	35	156167	83375	0.793	-72791.860		mg/L	
C	13	4180	28818	0.569	24638.509		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: L4140-1X50 SD
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 23:09:35
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\L4140-1X50 SD.064
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	2678	3.160	0.048	**0.000697**	mg/L	9.018
> Li	6	18730	19700	0.469	19700.219		mg/L	
Be	9	2	14	36.364	0.001	**0.000022**	mg/L	41.482
B	10	1866	1563	0.532	-0.020	**-0.003074**	mg/L	1.761
B	11	8409	7273	4.491	-0.080	**-0.002614**	mg/L	19.969
Si	28	17772	117217	1.255	0.439	**0.033136**	mg/L	1.217
Al	27	907	2368520	0.921	10.228	**0.383481**	mg/L	0.471
P	31	7189	21203	2.983	0.064	**0.039316**	mg/L	3.515
> Sc	45	262577	231502	1.034	231501.674		mg/L	
Ti	47	148	8512	2.131	0.036	**0.011712**	mg/L	2.881
Ti	49	52	6879	2.238	0.030	**0.011894**	mg/L	1.384
V**	51	1637	13526	3.525	0.052	**0.001269**	mg/L	4.640
V*	51	6447	14930	0.561	0.040	**0.000959**	mg/L	2.432
V	51	6936	15248	0.406	0.039	**0.000941**	mg/L	1.735
Cr*	52	6349	60962	1.552	0.239	**0.006742**	mg/L	2.239
Cr	52	7057	62620	1.532	0.244	**0.006861**	mg/L	2.218
Cr	53	2327	7544	0.517	0.024	**0.005654**	mg/L	0.726
Mn	55	184	366717	0.607	1.583	**0.026878**	mg/L	0.859
Co	59	188	7361	0.542	0.031	**0.000626**	mg/L	1.586
Ni	60	32	7332	1.430	0.032	**0.002900**	mg/L	0.838
Ni	62	65	1193	0.472	0.005	**0.002869**	mg/L	1.573
Cu	63	178	440127	0.382	1.901	**0.071621**	mg/L	1.411
Cu	65	156	224192	0.348	0.968	**0.073120**	mg/L	0.737
Zn	66	285	94958	0.536	0.409	**0.046203**	mg/L	0.592
Zn	68	299	94844	0.766	0.409	**0.061249**	mg/L	1.062
Y	89	655666	677245	0.963	21579.107		mg/L	
As*	75	-414	3401	1.873	0.005	**0.001339**	mg/L	2.078
As	75	165	3903	0.508	0.005	**0.001326**	mg/L	1.031
Se	77	185	177	6.130	-0.000	**-0.000067**	mg/L	62.528
Se	82	78	85	4.343	0.000	**0.000016**	mg/L	85.677
Sr	86	20	148565	0.428	0.191	**0.043168**	mg/L	0.059
Sr	88	132	1260585	0.836	1.621	**0.042767**	mg/L	0.951
Zr	90	39	15714	0.773	0.020	**0.000984**	mg/L	0.670
Zr	91	17	3522	1.939	0.005	**0.000985**	mg/L	1.783
Mo	95	34	19067	0.754	0.024	**0.004248**	mg/L	0.667
Mo	97	22	12053	1.126	0.015	**0.004225**	mg/L	1.339
Ag	107	1821	7565	11.040	0.007	**0.000421**	mg/L	14.610
Ag	109	1766	7309	11.892	0.007	**0.000421**	mg/L	15.823

Cd	111	9	468	3.752	0.001	**0.000132**	mg/L	3.350
Cd	114	17	1152	1.704	0.001	**0.000139**	mg/L	1.659
In	115	747751	777772	0.483	777772.018		mg/L	
Sn	118	104	1614	9.302	0.002	**0.000156**	mg/L	9.432
Sn	120	94	1986	2.248	0.002	**0.000142**	mg/L	2.831
Sb	121	43	546	0.926	0.001	**0.000044**	mg/L	1.242
Te	125	5	41	43.436	0.000	**0.000054**	mg/L	49.938
Ba	137	55	2455528	0.651	3.157	**0.484138**	mg/L	0.351
Ba	138	265	15744237	1.126	20.242	**0.483552**	mg/L	0.818
W	184	247	8654	2.279	0.013	**0.000892**	mg/L	2.657
Hg	201	80	5548	1.798	0.009	**0.003501**	mg/L	2.127
Hg*	202	186	12689	1.283	0.020	**0.003406**	mg/L	1.499
Hg	202	188	12757	1.284	0.020	**0.002847**	mg/L	1.502
Tb	159	823967	869519	0.473	0.039		mg/L	
Ho	165	17	698	10.464	0.001		mg/L	
Tl	205	256	1899	2.050	0.003	**0.000057**	mg/L	2.597
Pb	204	11	21107	1.868	0.034	**0.042540**	mg/L	2.103
Pb	208	505	1595378	0.361	2.534	**0.039904**	mg/L	0.558
> Bi	209	613899	629447	0.299	629446.647		mg/L	
Th	232	165	13832	2.057	0.022	**0.000297**	mg/L	2.382
U	238	250	3257	2.202	0.005	**0.000060**	mg/L	2.480
Na	23	25091	1206917	1.006	5.118	**0.224482**	mg/L	0.481
Mg	24	1548	1413486	0.788	6.100	**0.387277**	mg/L	1.348
Mg	25	157	192439	0.739	0.831	**0.336585**	mg/L	0.787
K	39	915234	2979325	0.864	9.384	**0.268295**	mg/L	0.943
Ca	43	255	17510	1.499	0.075	**0.956640**	mg/L	0.611
Ca	44	32958	300257	0.827	1.172	**0.935635**	mg/L	0.285
> Sc	45	262577	231502	1.034	231501.674		mg/L	
Fe*	57	10623	955396	0.346	4.087	**3.367219**	mg/L	1.351
Fe	57	10643	956814	0.344	4.093	**3.354728**	mg/L	1.349
Fe	54	27959	2081884	0.323	8.887	**3.177544**	mg/L	1.303
Kr	83	132	113	0.667	-19.917		mg/L	
Br	81	20252	21578	2.773	1326.114		mg/L	
Cl	35	156167	73445	0.386	-82721.356		mg/L	
C	13	4180	9776	1.608	5596.404		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: L4148-3X
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 23:15:35
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\L4148-3X.065
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	6209	1.924	0.227	**0.003321**	mg/L	2.076
Li	6	18730	19676	2.479	19676.013		mg/L	
Be	9	2	78	22.581	0.004	**0.000139**	mg/L	24.420
B	10	1866	1351	5.055	-0.031	**-0.004698**	mg/L	9.382
B	11	8409	5869	4.082	-0.151	**-0.004940**	mg/L	3.310
Si	28	17772	399921	1.206	1.648	**0.124477**	mg/L	0.601
Al	27	907	20861518	0.919	89.489	**3.355309**	mg/L	0.776
P	31	7189	268670	0.187	1.125	**0.689056**	mg/L	1.605
Sc	45	262577	233124	1.504	233124.352		mg/L	
Ti	47	148	186020	1.013	0.797	**0.257908**	mg/L	0.543
Ti	49	52	151364	0.443	0.649	**0.261595**	mg/L	1.079
V**	51	1637	179684	0.836	0.765	**0.018592**	mg/L	1.775
V*	51	6447	191631	0.701	0.798	**0.019145**	mg/L	1.403
V	51	6936	191918	1.325	0.797	**0.019007**	mg/L	1.151
Cr*	52	6349	608814	0.712	2.588	**0.072944**	mg/L	0.990
Cr	52	7057	610236	0.706	2.591	**0.072961**	mg/L	0.997
Cr	53	2327	73016	0.881	0.304	**0.072516**	mg/L	0.716
Mn	55	184	2007360	1.307	8.611	**0.146164**	mg/L	1.582
Co	59	188	52079	1.242	0.223	**0.004487**	mg/L	1.381
Ni	60	32	58500	0.409	0.251	**0.023057**	mg/L	1.757
Ni	62	65	10010	1.887	0.043	**0.024951**	mg/L	0.560
Cu	63	178	92876	1.967	0.398	**0.014986**	mg/L	0.591
Cu	65	156	47545	0.908	0.203	**0.015365**	mg/L	1.454
Zn	66	285	39585	0.437	0.169	**0.019056**	mg/L	1.121
Zn	68	299	33943	1.043	0.144	**0.021659**	mg/L	1.833
Y	89	655666	830686	1.620	175020.283		mg/L	
As*	75	-414	5907	0.769	0.008	**0.002229**	mg/L	0.497
As	75	165	6560	1.159	0.008	**0.002286**	mg/L	0.448
Se	77	185	287	1.534	0.000	**0.000403**	mg/L	2.422
Se	82	78	172	4.537	0.000	**0.000300**	mg/L	10.088
Sr	86	20	179188	2.119	0.232	**0.052410**	mg/L	1.280
Sr	88	132	1531182	1.224	1.982	**0.052291**	mg/L	0.559
Zr	90	39	81757	1.256	0.106	**0.005166**	mg/L	1.817
Zr	91	17	18322	1.030	0.024	**0.005180**	mg/L	1.683
Mo	95	34	44320	1.847	0.057	**0.009950**	mg/L	1.152
Mo	97	22	28155	1.319	0.036	**0.009946**	mg/L	0.637
Ag	107	1821	5192	5.829	0.004	**0.000247**	mg/L	8.337
Ag	109	1766	4857	6.206	0.004	**0.000235**	mg/L	8.832

	Cd	111	9	168	9.574	0.000	**0.000046**	mg/L	11.058
	Cd	114	17	365	18.305	0.000	**0.000043**	mg/L	20.169
	In	115	747751	772646	0.856	772645.657		mg/L	
	Sn	118	104	7903	11.922	0.010	**0.000815**	mg/L	11.658
	Sn	120	94	10594	4.069	0.014	**0.000794**	mg/L	3.320
	Sb	121	43	618	3.945	0.001	**0.000051**	mg/L	3.573
	Te	125	5	25	26.458	0.000	**0.000030**	mg/L	34.480
	Ba	137	55	601947	2.248	0.779	**0.119456**	mg/L	1.756
	Ba	138	265	3670253	0.780	4.750	**0.113468**	mg/L	0.283
	W	184	247	2726	1.075	0.004	**0.000285**	mg/L	4.638
	Hg	201	80	205	20.920	0.000	**0.000090**	mg/L	41.759
	Hg*	202	186	482	22.430	0.001	**0.000090**	mg/L	44.013
	Hg	202	188	503	21.425	0.001	**0.000080**	mg/L	41.647
	Tb	159	823967	847710	1.034	0.108		mg/L	
	Ho	165	17	7598	1.416	0.013		mg/L	
	Tl	205	256	1495	4.434	0.002	**0.000047**	mg/L	1.469
	Pb	204	11	6687	2.561	0.011	**0.014493**	mg/L	5.927
	Pb	208	505	526309	0.300	0.899	**0.014164**	mg/L	5.650
>	Bi	209	613899	585814	5.190	585813.876		mg/L	
	Th	232	165	226637	1.357	0.387	**0.005305**	mg/L	3.975
	U	238	250	38575	1.835	0.066	**0.000829**	mg/L	4.642
	Na	23	25091	3064465	0.662	13.052	**0.572500**	mg/L	2.074
	Mg	24	1548	10625840	0.609	45.582	**2.893746**	mg/L	1.724
	Mg	25	157	1528765	1.290	6.557	**2.656933**	mg/L	0.611
	K	39	915234	5611362	0.302	20.588	**0.588615**	mg/L	1.829
	Ca	43	255	259463	0.591	1.112	**14.248953**	mg/L	0.932
	Ca	44	32958	3878912	0.832	16.515	**13.189948**	mg/L	1.249
>	Sc	45	262577	233124	1.504	233124.352		mg/L	
	Fe*	57	10623	3560594	0.926	15.234	**12.551340**	mg/L	0.665
	Fe	57	10643	3581610	0.923	15.324	**12.560136**	mg/L	0.666
	Fe	54	27959	8022750	0.728	34.312	**12.268025**	mg/L	1.577
	Kr	83	132	132	2.750	-0.583		mg/L	
	Br	81	20252	19815	3.554	-437.526		mg/L	
	Cl	35	156167	76431	0.956	-79736.180		mg/L	
	C	13	4180	8381	2.130	4200.971		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: L4150-1X
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 23:21:36
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\L4150-1X.066
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	6317	1.612	0.232	**0.003394**	mg/L	1.315
Li	6	18730	19704	0.974	19704.395		mg/L	
Be	9	2	91	4.939	0.005	**0.000164**	mg/L	5.077
B	10	1866	1375	2.372	-0.030	**-0.004527**	mg/L	7.612
B	11	8409	6257	0.442	-0.131	**-0.004306**	mg/L	2.044
Si	28	17772	421353	7.626	1.712	**0.129292**	mg/L	8.457
Al	27	907	19534062	2.265	82.466	**3.091992**	mg/L	2.610
P	31	7189	233802	0.955	0.960	**0.587655**	mg/L	1.490
Sc	45	262577	236880	0.686	236879.933		mg/L	
Ti	47	148	146684	0.822	0.619	**0.200097**	mg/L	0.570
Ti	49	52	119819	0.977	0.506	**0.203756**	mg/L	0.820
V**	51	1637	171180	0.505	0.716	**0.017420**	mg/L	1.203
V*	51	6447	173419	0.554	0.708	**0.016985**	mg/L	1.206
V	51	6936	173758	0.619	0.707	**0.016866**	mg/L	0.390
Cr*	52	6349	113125	0.979	0.453	**0.012782**	mg/L	1.756
Cr	52	7057	114481	0.964	0.456	**0.012853**	mg/L	1.750
Cr	53	2327	13692	1.418	0.049	**0.011661**	mg/L	2.148
Mn	55	184	2261226	1.192	9.545	**0.162022**	mg/L	0.873
Co	59	188	34764	1.472	0.146	**0.002943**	mg/L	1.019
Ni	60	32	23396	1.489	0.099	**0.009066**	mg/L	0.908
Ni	62	65	4303	0.805	0.018	**0.010474**	mg/L	1.487
Cu	63	178	28604	2.155	0.120	**0.004525**	mg/L	2.478
Cu	65	156	15526	1.966	0.065	**0.004908**	mg/L	2.673
Zn	66	285	35912	0.946	0.151	**0.017000**	mg/L	1.639
Zn	68	299	29622	0.418	0.124	**0.018576**	mg/L	0.690
Y	89	655666	810230	0.991	154563.894		mg/L	
As*	75	-414	4222	1.299	0.006	**0.001652**	mg/L	2.174
As	75	165	4881	0.953	0.006	**0.001703**	mg/L	1.744
Se	77	185	264	4.227	0.000	**0.000316**	mg/L	11.442
Se	82	78	143	2.381	0.000	**0.000209**	mg/L	7.416
Sr	86	20	150681	1.075	0.197	**0.044529**	mg/L	0.550
Sr	88	132	1296647	0.969	1.695	**0.044740**	mg/L	1.017
Zr	90	39	89090	1.287	0.116	**0.005687**	mg/L	0.526
Zr	91	17	19937	0.949	0.026	**0.005694**	mg/L	0.187
Mo	95	34	994	8.647	0.001	**0.000218**	mg/L	8.224
Mo	97	22	632	17.135	0.001	**0.000218**	mg/L	17.418
Ag	107	1821	2607	11.438	0.001	**0.000056**	mg/L	37.983
Ag	109	1766	2293	16.830	0.001	**0.000038**	mg/L	77.062

	Cd	111	9	245	10.545	0.000	**0.000069**	mg/L	11.877
	Cd	114	17	489	1.504	0.001	**0.000059**	mg/L	2.574
>	In	115	747751	764764	1.098	764763.917		mg/L	
	Sn	118	104	3727	5.822	0.005	**0.000383**	mg/L	5.046
	Sn	120	94	4983	2.279	0.006	**0.000374**	mg/L	3.426
	Sb	121	43	206	10.567	0.000	**0.000014**	mg/L	14.330
	Te	125	5	25	40.000	0.000	**0.000031**	mg/L	49.869
	Ba	137	55	334019	1.210	0.437	**0.066968**	mg/L	0.986
	Ba	138	265	2044683	0.575	2.673	**0.063863**	mg/L	0.794
	W	184	247	515	10.101	0.000	**0.000032**	mg/L	23.997
	Hg	201	80	98	8.967	0.000	**0.000015**	mg/L	18.863
	Hg*	202	186	207	12.588	0.000	**0.000009**	mg/L	127.778
	Hg	202	188	211	12.390	0.000	**0.000008**	mg/L	120.057
	Tb	159	823967	848856	0.690	0.106		mg/L	
	Ho	165	17	7063	0.608	0.012		mg/L	
	Tl	205	256	1351	2.047	0.002	**0.000041**	mg/L	6.608
	Pb	204	11	2151	0.596	0.004	**0.004633**	mg/L	4.972
	Pb	208	505	169192	0.771	0.288	**0.004533**	mg/L	6.282
>	Bi	209	613899	587414	5.381	587414.406		mg/L	
	Th	232	165	247557	1.861	0.422	**0.005779**	mg/L	3.754
	U	238	250	36383	1.200	0.062	**0.000780**	mg/L	6.596
	Na	23	25091	2705895	2.939	11.329	**0.496892**	mg/L	3.321
	Mg	24	1548	19483082	2.331	82.250	**5.221605**	mg/L	2.726
	Mg	25	157	2645019	2.252	11.167	**4.524525**	mg/L	2.757
	K	39	915234	5924168	0.933	21.525	**0.615400**	mg/L	1.798
	Ca	43	255	561238	0.860	2.368	**30.345694**	mg/L	1.350
	Ca	44	32958	8358831	1.634	35.163	**28.083783**	mg/L	1.938
>	Sc	45	262577	236880	0.686	236879.933		mg/L	
	Fe*	57	10623	1891138	0.666	7.943	**6.544393**	mg/L	0.033
	Fe	57	10643	1936599	0.641	8.135	**6.667725**	mg/L	0.064
	Fe	54	27959	4175015	0.276	17.519	**6.263830**	mg/L	0.930
	Kr	83	132	134	5.918	1.250		mg/L	
	Br	81	20252	19142	3.121	-1109.671		mg/L	
	Cl	35	156167	77842	1.408	-78324.498		mg/L	
	C	13	4180	7994	3.416	3814.406		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

ample ID: L4151-1X
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 23:27:37
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\L4151-1X.067
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
Li	7	1652	6481	1.843	0.243	**0.003550**	mg/L	1.791
Li	6	18730	19565	1.998	19564.542		mg/L	
Be	9	2	94	8.430	0.005	**0.000170**	mg/L	7.620
B	10	1866	1224	2.452	-0.037	**-0.005616**	mg/L	6.361
B	11	8409	5524	0.642	-0.167	**-0.005458**	mg/L	2.278
Si	28	17772	355530	4.832	1.454	**0.109860**	mg/L	5.076
Al	27	907	18562487	0.930	79.463	**2.979396**	mg/L	0.898
P	31	7189	218912	0.738	0.910	**0.557108**	mg/L	0.789
Sc	45	262577	233588	0.221	233587.929		mg/L	
Ti	47	148	146073	1.121	0.625	**0.202070**	mg/L	0.930
Ti	49	52	118875	0.239	0.509	**0.205000**	mg/L	0.189
V**	51	1637	125003	0.518	0.529	**0.012860**	mg/L	0.411
V*	51	6447	128156	0.428	0.524	**0.012580**	mg/L	0.293
V	51	6936	127561	0.504	0.520	**0.012395**	mg/L	0.749
Cr*	52	6349	129701	0.375	0.531	**0.014971**	mg/L	0.225
Cr	52	7057	130881	0.362	0.533	**0.015021**	mg/L	0.215
Cr	53	2327	15844	0.362	0.059	**0.014050**	mg/L	0.219
Mn	55	184	2003635	0.546	8.577	**0.145590**	mg/L	0.754
Co	59	188	38699	0.990	0.165	**0.003324**	mg/L	0.941
Ni	60	32	27292	0.991	0.117	**0.010728**	mg/L	0.927
Ni	62	65	4902	1.341	0.021	**0.012121**	mg/L	1.443
Cu	63	178	50905	0.390	0.217	**0.008186**	mg/L	0.405
Cu	65	156	26190	1.027	0.112	**0.008425**	mg/L	0.810
Zn	66	285	57593	0.580	0.245	**0.027723**	mg/L	0.772
Zn	68	299	48304	0.618	0.206	**0.030829**	mg/L	0.616
Y	89	655666	876061	0.478	220394.767		mg/L	
As*	75	-414	2004	1.220	0.003	**0.000854**	mg/L	0.859
As	75	165	2601	1.193	0.003	**0.000867**	mg/L	1.030
Se	77	185	237	1.057	0.000	**0.000190**	mg/L	11.129
Se	82	78	135	2.589	0.000	**0.000178**	mg/L	9.294
Sr	86	20	124281	0.376	0.160	**0.036274**	mg/L	1.563
Sr	88	132	1055087	0.318	1.362	**0.035953**	mg/L	1.001
Zr	90	39	67956	0.575	0.088	**0.004284**	mg/L	0.942
Zr	91	17	15344	3.308	0.020	**0.004328**	mg/L	3.936
Mo	95	34	5124	1.558	0.007	**0.001141**	mg/L	2.676
Mo	97	22	3155	1.815	0.004	**0.001105**	mg/L	1.241
Ag	107	1821	1253	2.708	-0.001	**-0.000047**	mg/L	5.499
Ag	109	1766	1026	1.062	-0.001	**-0.000062**	mg/L	2.859

Cd	111	9	221	4.852	0.000	**0.000061**	mg/L	6.096
Cd	114	17	445	5.492	0.001	**0.000053**	mg/L	6.885
In	115	747751	774385	1.198	774385.356		mg/L	
Sn	118	104	4408	4.239	0.006	**0.000449**	mg/L	5.522
Sn	120	94	6299	4.918	0.008	**0.000468**	mg/L	5.776
Sb	121	43	200	10.461	0.000	**0.000014**	mg/L	14.824
Te	125	5	18	34.317	0.000	**0.000020**	mg/L	46.279
Ba	137	55	664029	0.049	0.858	**0.131499**	mg/L	1.225
Ba	138	265	4036842	0.421	5.213	**0.124530**	mg/L	1.026
W	184	247	1103	5.313	0.002	**0.000162**	mg/L	34.226
Hg	201	80	58	11.503	0.000	**0.000009**	mg/L	315.672
Hg*	202	186	140	8.393	0.000	**0.000011**	mg/L	234.417
Hg	202	188	149	7.687	0.000	**0.000012**	mg/L	188.549
Tb	159	823967	840187	0.570	0.825		mg/L	
Ho	165	17	10211	0.430	0.026		mg/L	
Tl	205	256	1729	2.213	0.004	**0.000088**	mg/L	36.806
Pb	204	11	2179	3.309	0.006	**0.007075**	mg/L	30.229
Pb	208	505	188102	0.813	0.484	**0.007629**	mg/L	32.816
Bi	209	613899	413208	28.491	413207.891		mg/L	
Th	232	165	212644	4.838	0.542	**0.007428**	mg/L	26.972
U	238	250	42064	1.556	0.108	**0.001365**	mg/L	32.166
Na	23	25091	2319773	1.065	9.836	**0.431409**	mg/L	1.199
Mg	24	1548	12999719	0.886	55.647	**3.532754**	mg/L	1.051
Mg	25	157	1869280	0.889	8.002	**3.242264**	mg/L	1.004
K	39	915234	5073816	0.890	18.236	**0.521352**	mg/L	1.046
Ca	43	255	302519	0.813	1.294	**16.581161**	mg/L	0.937
Ca	44	32958	4531855	0.746	19.275	**15.394574**	mg/L	0.556
Sc	45	262577	233588	0.221	233587.929		mg/L	
Fe*	57	10623	2308472	0.910	9.842	**8.109147**	mg/L	0.971
Fe	57	10643	2332976	0.894	9.947	**8.153047**	mg/L	0.956
Fe	54	27959	5228355	0.383	22.276	**7.964653**	mg/L	0.254
Kr	83	132	135	1.588	2.083		mg/L	
Br	81	20252	18712	1.479	-1539.660		mg/L	
Cl	35	156167	74845	1.705	-81322.239		mg/L	
C	13	4180	6956	1.043	2776.128		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: CCV
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 23:35:37
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\CCV.068
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

	Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
	Li	7	1652	14569	0.605	0.683	**0.009969**	mg/L	0.633
>	Li	6	18730	18902	1.160	18901.598		mg/L	
	Be	9	2	4805	1.850	0.254	**0.009174**	mg/L	2.205
	B	10	1866	7045	1.944	0.273	**0.041414**	mg/L	1.670
	B	11	8409	31362	1.843	1.210	**0.039666**	mg/L	0.961
	Si	28	17772	157759	2.366	0.654	**0.049411**	mg/L	2.017
	Al	27	907	59108	0.742	0.267	**0.010011**	mg/L	1.342
	P	31	7189	21982	2.350	0.073	**0.044819**	mg/L	2.409
>	Sc	45	262577	218551	0.602	218550.796		mg/L	
	Ti	47	148	7058	2.344	0.032	**0.010263**	mg/L	1.912
	Ti	49	52	5639	0.906	0.026	**0.010318**	mg/L	0.585
	V**	51	1637	95549	0.756	0.431	**0.010478**	mg/L	0.168
	V*	51	6447	97823	0.347	0.423	**0.010155**	mg/L	0.373
	V	51	6936	98211	1.074	0.423	**0.010088**	mg/L	0.513
	Cr*	52	6349	87157	1.919	0.375	**0.010560**	mg/L	1.426
	Cr	52	7057	88014	1.904	0.376	**0.010583**	mg/L	1.418
	Cr	53	2327	10703	0.821	0.040	**0.009557**	mg/L	0.847
	Mn	55	184	136025	0.754	0.622	**0.010553**	mg/L	1.193
	Co	59	188	112626	1.420	0.515	**0.010369**	mg/L	0.823
	Ni	60	32	24099	0.421	0.110	**0.010124**	mg/L	1.022
	Ni	62	65	3776	1.909	0.017	**0.009953**	mg/L	2.551
	Cu	63	178	59805	0.630	0.273	**0.010286**	mg/L	1.115
	Cu	65	156	30146	2.024	0.137	**0.010376**	mg/L	2.297
	Zn	66	285	20126	1.328	0.091	**0.010278**	mg/L	1.916
	Zn	68	299	15606	0.751	0.070	**0.010534**	mg/L	0.490
	Y	89	655666	625618	1.307	-30048.280		mg/L	
	As*	75	-414	25040	0.506	0.035	**0.009448**	mg/L	1.524
	As	75	165	25030	0.347	0.034	**0.009389**	mg/L	1.397
	Se	77	185	2302	0.528	0.003	**0.009416**	mg/L	0.720
	Se	82	78	2856	0.105	0.004	**0.009581**	mg/L	1.254
	Sr	86	20	31925	1.173	0.044	**0.009850**	mg/L	2.270
	Sr	88	132	272485	0.555	0.372	**0.009817**	mg/L	1.609
	Zr	90	39	149463	1.107	0.204	**0.009967**	mg/L	0.948
	Zr	91	17	33352	1.521	0.046	**0.009953**	mg/L	0.839
	Mo	95	34	41750	0.890	0.057	**0.009892**	mg/L	1.691
	Mo	97	22	26701	1.698	0.036	**0.009953**	mg/L	0.569
	Ag	107	1821	147762	3.401	0.199	**0.011510**	mg/L	4.498
	Ag	109	1766	141318	4.111	0.191	**0.011410**	mg/L	5.201

	Cd	111	9	32250	0.348	0.044	**0.009843**	mg/L	1.007
	Cd	114	17	76221	0.423	0.104	**0.009929**	mg/L	1.427
>	In	115	747751	732239	1.126	732239.319		mg/L	
	Sn	118	104	91104	1.453	0.124	**0.010046**	mg/L	0.329
	Sn	120	94	127447	0.725	0.174	**0.010172**	mg/L	1.526
	Sb	121	43	112651	0.366	0.154	**0.010464**	mg/L	1.457
	Te	125	5	6104	6.208	0.008	**0.009864**	mg/L	7.281
	Ba	137	55	49753	0.693	0.068	**0.010409**	mg/L	0.525
	Ba	138	265	319256	0.187	0.436	**0.010408**	mg/L	1.267
	W	184	247	83320	1.587	0.147	**0.009834**	mg/L	2.033
	Hg	201	80	1526	3.364	0.003	**0.001037**	mg/L	2.613
	Hg*	202	186	3465	0.606	0.006	**0.001001**	mg/L	3.733
	Hg	202	188	4123	0.630	0.007	**0.000998**	mg/L	3.449
	Tb	159	823967	804436	0.589	0.083		mg/L	
	Ho	165	17	21	44.227	0.000		mg/L	
	Tl	205	256	254413	1.267	0.450	**0.009836**	mg/L	2.177
	Pb	204	11	4485	0.103	0.008	**0.010062**	mg/L	3.447
	Pb	208	505	360631	0.511	0.638	**0.010047**	mg/L	2.948
>	Bi	209	613899	564952	3.405	564952.337		mg/L	
	Th	232	165	412130	0.574	0.730	**0.010000**	mg/L	3.038
	U	238	250	440639	1.046	0.780	**0.009868**	mg/L	2.755
	Na	23	25091	2741208	2.385	12.447	**0.545958**	mg/L	2.348
	Mg	24	1548	1915793	1.820	8.760	**0.556114**	mg/L	1.489
	Mg	25	157	261807	0.673	1.197	**0.485146**	mg/L	0.738
	K	39	915234	4788762	1.571	18.425	**0.526776**	mg/L	1.442
	Ca	43	255	8631	1.234	0.039	**0.493569**	mg/L	0.673
	Ca	44	32958	160682	1.055	0.610	**0.486938**	mg/L	0.845
>	Sc	45	262577	218551	0.602	218550.796		mg/L	
	Fe*	57	10623	146688	1.392	0.631	**0.519666**	mg/L	1.392
	Fe	57	10643	147387	1.388	0.634	**0.519531**	mg/L	1.386
	Fe	54	27959	344486	0.719	1.470	**0.525492**	mg/L	0.259
	Kr	83	132	100	2.661	-32.834		mg/L	
	Br	81	20252	19410	3.722	-842.485		mg/L	
	Cl	35	156167	64305	0.965	-91861.894		mg/L	
	C	13	4180	5051	1.305	871.652		mg/L	

ELAN 6000 ICP-MS ANALYSIS REPORT

Sample ID: QC CCB
Initial Sample Quantity (mg):
Sample Prep Volume (mL):
Aliquot Volume (mL):
Diluted To Volume (mL):
Sample Date/Time: Tuesday, November 27, 2001 23:43:35
Sample File: c:\elandata\Sample\112701.sam
Method File: c:\elandata\Method\isquant2000b.mth
Dataset File: c:\elandata\Dataset\112701\QC CCB.069
Tuning File: c:\elandata\Tuning\liquid.tun
Optimization File: c:\elandata\Optimize\liquid.dac

Summary

	Analyte	Mass	Blk Intens.	Intens.	Intens. RSD	Net Intens.	**Conc. Mean**	Unit	Conc. RSD
	Li	7	1652	1503	3.358	-0.008	**-0.000115**	mg/L	42.107
>	Li	6	18730	18720	0.765	18720.424		mg/L	
	Be	9	2	3	24.744	0.000	**0.000002**	mg/L	56.604
	B	10	1866	1534	2.430	-0.018	**-0.002683**	mg/L	11.612
	B	11	8409	6751	0.995	-0.088	**-0.002896**	mg/L	1.195
	Si	28	17772	77224	2.160	0.286	**0.021616**	mg/L	3.344
	Al	27	907	2967	11.712	0.010	**0.000380**	mg/L	16.421
	P	31	7189	4604	5.364	-0.006	**-0.003851**	mg/L	17.736
>	Sc	45	262577	218267	0.545	218266.766		mg/L	
	Ti	47	148	110	12.148	-0.000	**-0.000019**	mg/L	99.027
	Ti	49	52	60	17.228	0.000	**0.000032**	mg/L	57.954
	V**	51	1637	1967	5.397	0.003	**0.000068**	mg/L	19.111
	V*	51	6447	2162	1.486	-0.015	**-0.000352**	mg/L	1.167
	V	51	6936	2329	0.173	-0.016	**-0.000375**	mg/L	0.349
	Cr*	52	6349	5620	0.784	0.002	**0.000044**	mg/L	9.798
	Cr	52	7057	6464	0.933	0.003	**0.000077**	mg/L	5.729
	Cr	53	2327	791	4.401	-0.005	**-0.001248**	mg/L	2.674
	Mn	55	184	443	8.789	0.001	**0.000023**	mg/L	13.091
	Co	59	188	105	6.627	-0.000	**-0.000005**	mg/L	13.365
	Ni	60	32	34	24.860	0.000	**0.000003**	mg/L	119.121
	Ni	62	65	64	8.985	0.000	**0.000026**	mg/L	57.391
	Cu	63	178	151	4.678	0.000	**0.000001**	mg/L	259.793
	Cu	65	156	153	15.171	0.000	**0.000008**	mg/L	97.596
	Zn	66	285	349	6.880	0.001	**0.000058**	mg/L	19.864
	Zn	68	299	350	3.419	0.000	**0.000070**	mg/L	13.255
	Y	89	655666	621745	0.278	-33921.346		mg/L	
	As*	75	-414	-352	9.211	0.000	**0.000019**	mg/L	68.134
	As	75	165	84	1.080	-0.000	**-0.000029**	mg/L	0.908
	Se	77	185	148	1.126	-0.000	**-0.000144**	mg/L	7.721
	Se	82	78	70	9.247	-0.000	**-0.000018**	mg/L	118.473
	Sr	86	20	21	12.253	0.000	**0.000001**	mg/L	145.674
	Sr	88	132	271	5.084	0.000	**0.000005**	mg/L	10.711
	Zr	90	39	66	30.695	0.000	**0.000002**	mg/L	73.504
	Zr	91	17	19	26.667	0.000	**0.000001**	mg/L	196.625
	Mo	95	34	170	2.358	0.000	**0.000033**	mg/L	2.219
	Mo	97	22	107	9.758	0.000	**0.000032**	mg/L	11.936
	Ag	107	1821	21229	7.019	0.027	**0.001546**	mg/L	8.268
	Ag	109	1766	20374	7.564	0.026	**0.001537**	mg/L	8.871

	Cd	111	9	9	15.577	0.000	**0.000000**	mg/L	173.221
	Cd	114	17	16	20.089	-0.000	**-0.000000**	mg/L	300.883
>	In	115	747751	726552	0.588	726552.418		mg/L	
	Sn	118	104	459	9.806	0.000	**0.000040**	mg/L	11.869
	Sn	120	94	658	14.603	0.001	**0.000046**	mg/L	17.416
	Sb	121	43	206	6.083	0.000	**0.000015**	mg/L	7.967
	Te	125	5	74	15.930	0.000	**0.000113**	mg/L	16.409
	Ba	137	55	177	3.561	0.000	**0.000026**	mg/L	5.001
	Ba	138	265	1199	4.350	0.001	**0.000031**	mg/L	4.817
	W	184	247	520	3.846	0.001	**0.000037**	mg/L	5.630
	Hg	201	80	271	2.439	0.000	**0.000148**	mg/L	10.415
	Hg*	202	186	586	4.503	0.001	**0.000132**	mg/L	13.462
	Hg	202	188	590	4.457	0.001	**0.000111**	mg/L	13.411
	Tb	159	823967	792995	0.410	0.111		mg/L	
	Ho	165	17	20	22.416	0.000		mg/L	
	Tl	205	256	397	12.983	0.000	**0.000007**	mg/L	41.595
	Pb	204	11	26	39.016	0.000	**0.000037**	mg/L	56.983
	Pb	208	505	571	6.214	0.000	**0.000004**	mg/L	48.874
>	Bi	209	613899	546692	5.062	546692.059		mg/L	
	Th	232	165	1214	19.100	0.002	**0.000027**	mg/L	27.746
	U	238	250	82	9.840	-0.000	**-0.000003**	mg/L	8.221
	Na	23	25091	69308	0.799	0.222	**0.009737**	mg/L	0.772
	Mg	24	1548	1599	8.273	0.001	**0.000091**	mg/L	44.723
	Mg	25	157	162	14.781	0.000	**0.000058**	mg/L	79.602
	K	39	915234	739026	0.480	-0.100	**-0.002850**	mg/L	4.603
	Ca	43	255	245	7.316	0.000	**0.001984**	mg/L	53.225
	Ca	44	32958	24007	1.082	-0.016	**-0.012395**	mg/L	11.278
>	Sc	45	262577	218267	0.545	218266.766		mg/L	
	Fe*	57	10623	8067	1.802	-0.003	**-0.002878**	mg/L	23.089
	Fe	57	10643	8087	1.783	-0.003	**-0.002852**	mg/L	23.063
	Fe	54	27959	23029	2.416	-0.001	**-0.000348**	mg/L	222.016
	Kr	83	132	102	7.801	-30.750		mg/L	
	Br	81	20252	19147	2.673	-1104.665		mg/L	
	Cl	35	156167	62299	0.651	-93867.454		mg/L	
	C	13	4180	4978	2.863	798.283		mg/L	

ENVIRO-TEST LABORATORIES
SAMPLE PREPARATION FORM FOR METALS

Digestion Date: 11/26/01 ETL-ISOP#: 6018.CC

Work Group #: WG11556 Batch: 11/26B

Method 3010A_____ Method 3005A_____ Method 3050B ✓

Method 200.7 (Total Recovery) ____ Method 200.7 (Total)_____ Method 200.7 (Suspended) _____

Method 200.8 (aqueous) _____ Method 200.8 (solid)_____ Other _____

Sample Progress	Sample ID:	Sample Weight or Volume Used:	Moisture:	Moisture Corrected Sample Weight:
Sample Preparation & Extraction:	1. Blank	0.5	N/A %	N/A g
	2. LCS	0.2593	N/A %	N/A g
Spike: 10 ml of 00096-59-6 00096-45-12 00096-62-1	3. 4146-1	0.7050 FT 11/26/01	9.96 %	0.6348 g
	4. -2	0.6996	15.5 %	0.5912 g
	5. -3	0.7337	16.5 %	0.6126 g
LCS: 0.5g of 00096-66-1	6. -4	0.6936	14.5 %	0.5930 g
	7. -5	0.7302	19.3 %	0.5893 g
	8. -6	0.7415	15.7 %	0.6251 g
	9. -7	0.7127	15.2 %	0.6044 g
Reagent Used: Aqua Regia HNO3 1ct# HCl CH3OH	10. -8	0.7237	15.4 %	0.6123 g
	11. -9	0.7063	20.7 %	0.5601 g
	12. -10	0.7066	18.2 %	0.5780 g
	13. 4194-1	0.5050	N/A %	N/A g
	14. -1DUP	0.5026	%	g
Final Volume (mL): 50	15. -1spk	0.5068	%	g
	16. -2	0.4916	%	g
	17. -3	0.5087	%	g
	18. -4	0.5045	%	g
	19. -5	0.5071	%	g
	20. -6	0.5116	%	g
	21. -7	0.5110	%	g
	22. -8	0.4991	%	g
	23. -9	0.5106	%	g
	24.		FT 11/26/01	g

Misc. Notes &/or Method Deviations: _____

Analyst: J.T	Date: 11/26/01
Reviewed by: G.C	Date: 11/27/01

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01129

Book #:

Page #:

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00096-66-1

ENVIRONMENTAL RESOURCE ASSOCIATES®

SOIL-33 Final Complete Report

ENVIROTEST LABORATORIES
420 W 1st St
Casper, Wy 82601

EPA ID: WY00012 **Report Issued: 03/28/01**
State ID:
ERA Laboratory Code: E5567-01

ERA Standard/Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation		Method Description
Trace Metals in Soil							
Aluminum	mg/Kg	6140	6040	1270 - 10200	Acceptable	21%-169	SW 846 6020
Antimony	mg/Kg	8.93	243	0.00 - 243	Acceptable	0 - 100	SW 846 6020
Arsenic	mg/Kg	169	184	103 - 243	Acceptable	56 - 132	SW 846 6020
Barium	mg/Kg	149	148	104 - 198	Acceptable	70 - 134	SW 846 6020
Beryllium	mg/Kg	67.7	69.5	42.0 - 82.4	Acceptable	60 - 119	SW 846 6020
Boron	mg/Kg	50.2	133	28.6 - 133	Acceptable	22 - 100	SW 846 6020
Cadmium	mg/Kg	200	219	126 - 248	Acceptable	58 - 113	SW 846 6020
Calcium	mg/Kg	3350	3310	1970 - 4430	Acceptable	60 - 134	SW 846 6020
Chromium	mg/Kg	108	117	70.4 - 150	Acceptable	60 - 128	SW 846 6020
Cobalt	mg/Kg	48.7	70.6	34.5 - 70.6	Acceptable	49 - 100	SW 846 6020
Copper	mg/Kg	81.6	87.6	60.1 - 113	Acceptable	69 - 129	SW 846 6020
Iron	mg/Kg	9270	11800	330 - 21300	Acceptable	3 - 181	SW 846 6020
Lead	mg/Kg	112	110	64.4 - 150	Acceptable	59 - 136	SW 846 6020
Magnesium	mg/Kg	1960	1960	881 - 2940	Acceptable	45 - 150	SW 846 6020
Manganese	mg/Kg	365	382	230 - 496	Acceptable	60 - 130	SW 846 6020
Mercury	mg/Kg	46.1	28.6	14.1 - 44.7	Not Acceptable	49 - 156	SW 846 6020
Molybdenum	mg/Kg	77.5	92.8	56.0 - 109	Acceptable	60 - 117	SW 846 6020
Nickel	mg/Kg	120	142	85.9 - 168	Acceptable	60 - 118	SW 846 6020
Potassium	mg/Kg	1790	1820	621 - 3100	Acceptable	34 - 170	SW 846 6020
Selenium	mg/Kg	96.9	95.9	51.5 - 124	Acceptable	54 - 129	SW 846 6020
Silver	mg/Kg	66.6	207	0.00 - 507	Acceptable	0 - 245	SW 846 6020
Sodium	mg/Kg	215	218	0.00 - 573	Acceptable	0 - 263	SW 846 6020
Strontium	mg/Kg	170	182	117 - 225	Acceptable	64 - 124	SW 846 6020
Thallium	mg/Kg	135	166	85.5 - 215	Acceptable	52 - 130	SW 846 6020
Tin	mg/Kg	12.6	167	55.0 - 167	Not Acceptable	33 - 100	SW 846 6020
Titanium	mg/Kg	221	282	0.00 - 669	Acceptable	0 - 237	SW 846 6020
Vanadium	mg/Kg	71.5	84.2	39.9 - 113	Acceptable	47 - 134	SW 846 6020
Zinc	mg/Kg	374	414	261 - 493	Acceptable	63 - 119	SW 846 6020
Cyanide in Soil							
Cyanide, total	mg/Kg		277	0.00 - 461			
Reactive Cyanide	mg/Kg		< 25.0				

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LESS- LESW1 LESW2

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00096-59-6

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CERTIFICATE OF ANALYSIS

P/N 4400-010037

Multi-element Solution for Method 200.8
Standard A – Revision 4.4
in 1% HNO_3 + tr HF

Lot # 1DF133

Material Source: Metals, Salts and Oxides
Source Purity: 99.99+%

Elements and Concentrations: µg/mL

Al	10	As	10	Be	10	Cd	10	Co	10
Cr	10	Cu	10	Mn	10	Mo	10	Ni	10
Pb	10	Sb	10	Se	10	Th	10	Tl	10
U	10	V	10	Zn	10				

This standard solution was prepared using high-purity reference materials, sub-boiled distilled nitric and hydrofluoric acid and 18-megaohm deionized water. The starting materials were weighed to five significant figures and diluted in volumetric glassware calibrated to five significant figures.

Starting materials were analyzed by ICP-MS for trace impurities. The standard solution concentrations were certified instrumentally against an independent source traceable to the National Institute of Standards and Technology's SRM 3100 series.

Accuracy and stability are guaranteed to within plus or minus 0.5% of the certified value for 18 months after the date of shipment. The solution should be kept tightly capped and stored under normal laboratory conditions. See attached MSDS for proper handling information.

For questions or comments please call 1-800-878-7654 in the USA or +31 20 638 05 97 in Europe.

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00096-45-12

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CERTIFICATE OF ANALYSIS

P/N: 4400-131736
Lot Number: 1CF127
Shelf Life: 18 months

Enviro-Test
Envirotest Laboratories
500 ug/mL ± 0.5% in 5% HNO_3

Ca Fe Mg K Na

This standard solution was prepared using high-purity starting materials, high-purity acid (if required) and 18-megaohm de-ionized water. The starting materials were weighed to five significant figures and diluted in volumetric glassware calibrated to five significant figures.

Starting materials were analyzed at 1000µg/mL by ICP-MS for trace impurities. The standard solution concentrations were certified instrumentally against the National Institute of Standards and Technology's SRM 3100 series, NIST approved second source and/or gravimetrically.

Accuracy and stability are guaranteed to within plus or minus 0.5% of the certified value for the stated shelf life from the date of shipment. The solution should be kept tightly capped and stored under normal laboratory conditions. See attached MSDS for proper handling information.

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CERTIFICATE OF ANALYSIS

P/N: 4400-131817
Lot Number: 1EF098
Shelf Life: 18 months

Enviro Test Laboratories
Custom Standard
ug/mL ± 0.5% in 2% HNO_3 + 0.1% HF

Ba 10 B 50 Li 10 P 50 Si 50 Ag 10 Sr 10
Te 10 Sn 10 Ti 10 W 10 Zr 10

This standard solution was prepared using high-purity starting materials, high-purity acid (if required) and 18-megaohm de-ionized water. The starting materials were weighed to five significant figures and diluted in volumetric glassware calibrated to five significant figures.

Starting materials were analyzed at 1000µg/mL by ICP-MS for trace impurities. The standard solution concentrations were certified instrumentally against the National Institute of Standards and Technology's SRM 3100 series, NIST approved second source and/or gravimetrically.

Accuracy and stability are guaranteed to within plus or minus 0.5% of the certified value for the stated shelf life from the date of shipment. The solution should be kept tightly capped and stored under normal laboratory conditions. See attached MSDS for proper handling information.

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ENVIRO-TEST
LABORATORIES LLC.
Reviewed By: _____

ICP-MS Standard
Preparation Logbook
Date: _____

	Stock Standard Used				Dilutent	Final Volume (mL)	Standard Made			Analyst
	Standard Used	Lot Number	Expired Date	Volume Used (mL)			Lab ID	Prepared Date	Expired Date	
1	00096-45-12	1CF127	3-30-02	0.20						
2	00096-59-6	1DF133	5-12-02	0.20						
3	00096-62-1	1EF098	5-23-02	0.20	1% HNO_3	100	00096-103-1	11-12-01	11-26-01	GL
4	00096-102-4	—	11-26-01	0.20	lot# 110040					
5	00096-102-6	—	02-12-02	1.0						
6	00096-59-7	0EJ177	5-12-02	0.20						
7	00096-45-13	1CF128	3-30-02	0.20						
8	00096-62-2	1EF099	5-23-02	0.20	1% HNO_3	100	00096-103-6	11-12-01	11-26-01	GL
9	00096-102-5	—	11-26-01	0.2	lot# 110040					
10	00096-102-6	—	2-12-02	1.0						
11	Std. Solution A	1DF133	Nov. 27, 02	—	—	—	00096-103-11	—	—	GL
12	Std. Solution A	1DF133	05-10-03	—	—	—	00096-103-12	—	—	GL
13	[redacted]	0DJ059	3-30-02	0.1	1% HNO_3 lot# 110020	100	[redacted]	11-27-01	12-11-01	GL
14	00096-46-1	1AS010	3-30-02	0.1	1% HNO_3 lot# 110020	100	00096-103-14	11-27-01	12-11-01	GL
15	00096-45-12	1CF127	3-30-02	0.05						
16	00096-59-6	1DF133	5-12-02	0.05						
17	00096-62-1	1EF098	5-23-02	0.05	1% HNO_3	100	00096-103-15	11-27-01	12-11-01	GL
18	00096-103-13	~~12-11-01~~ @GL 11/27/01	12-11-01	0.05	lot# 110020					
	00096-102-6	—	02-12-02	1.0						

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00096-45-18

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CERTIFICATE OF ANALYSIS

P/N 4400-1000331
P/N S4400-1000331

Single Element Mercury Standard
Hg in 2% HNO_3
1000 ± 3 µg/mL

Lot # 0DJ059

Material Source: Mercury metal
Source Purity: 99.998%
Specific Gravity: 1.009 @ 21 °C

This standard solution was prepared using high-purity metal, sub-boiled distilled nitric acid and 18-megaohm deionized water. The starting material was weighed to five significant figures and diluted in volumetric glassware calibrated to five significant figures.

The standard solution concentration was certified by ICP against the National Institute of Standards and Technology's SRM 3133. Trace impurities of the 1000 µg/mL standard were analyzed by ICP-MS.

	ppb	DL		ppb	DL		ppb	DL		ppb	DL		ppb	DL
Al	1.2	0.1	Cu	0.19	0.1	Pb	ND	0.1	K	ND	70	Tl	0.9	0.1
Sb	ND	0.1	Dy	ND	0.1	Li	ND	0.4	Pr	ND	0.1	Th	ND	0.1
As	ND	6	Er	ND	0.1	Lu	ND	1	Re	ND	0.1	Tm	ND	0.1
Ba	ND	0.1	Eu	ND	0.1	Mg	0.89	0.2	Rh	ND	0.1	Sn	ND	0.1
Be	ND	0.1	Gd	ND	0.1	Mn	ND	1	Rb	ND	0.1	Ti	ND	0.1
Bi	0.12	0.1	Ga	ND	0.1	Hg	X	0.2	Ru	ND	0.1	W	0.31	0.1
B	ND	4	Ge	ND	0.1	Mo	ND	0.1	Sm	ND	0.1	U	ND	0.1
Br	ND	10	Au	0.7	0.1	Nd	ND	0.1	Se	ND	6	V	ND	1
Cd	ND	0.1	Hf	ND	0.1	Ni	0.18	0.1	Si	206	8	Yb	ND	0.1
Ca	34	7	Ho	ND	0.1	Nb	ND	0.1	Ag	5.1	0.1	Y	ND	0.1
Ce	ND	0.1	I	1	0.2	Os	ND	0.1	Na	4.2	1	Zn	ND	2
Cs	0.25	0.1	Ir	ND	0.1	Pd	ND	0.1	Sr	ND	0.1	Zr	ND	0.1
Cr	ND	1	Fe	ND	30	P	ND	10	Ta	4	0.1			
Co	0.22	0.1	La	ND	0.1	Pt	ND	0.1	Te	ND	0.1			

X=Majojr Element INT=Interference from Major Element DL=Detection Limit ND=None Detected

Accuracy and stability are guaranteed to within plus or minus 0.3 % of the certified value for 18 months after the date of shipment. The solution should be kept tightly capped and stored under normal laboratory conditions. See attached MSDS for proper handling information.

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CERTIFICATE OF ANALYSIS

P/N 4400-1000331
P/N S4400-1000331

Single Element Mercury Standard
Hg in 2% HNO_3
1000 ± 3 µg/mL

Lot # 1AS010

Material Source: Mercury metal
Source Purity: 99.998%
Specific Gravity: 1.007 @ 21 °C

This standard solution was prepared using high-purity metal, sub-boiled distilled nitric acid and 18-megaohm deionized water. The starting material was weighed to five significant figures and diluted in volumetric glassware calibrated to five significant figures.

The standard solution concentration was certified by ICP against the National Institute of Standards and Technology's SRM 3133. Trace impurities of the 1000 µg/mL standard were analyzed by ICP-MS.

	ppb	DL		ppb	DL		ppb	DL		ppb	DL		ppb	DL
Al	1.2	0.1	Cu	0.19	0.1	Pb	ND	0.1	K	ND	70	Tl	0.9	0.1
Sb	ND	0.1	Dy	ND	0.1	Li	ND	0.4	Pr	ND	0.1	Th	ND	0.1
As	ND	6	Er	ND	0.1	Lu	ND	1	Re	ND	0.1	Tm	ND	0.1
Ba	ND	0.1	Eu	ND	0.1	Mg	0.89	0.2	Rh	ND	0.1	Sn	ND	0.1
Be	ND	0.1	Gd	ND	0.1	Mn	ND	1	Rb	ND	0.1	Ti	ND	0.1
Bi	0.12	0.1	Ga	ND	0.1	Hg	X	0.2	Ru	ND	0.1	W	0.31	0.1
B	ND	4	Ge	ND	0.1	Mo	ND	0.1	Sm	ND	0.1	U	ND	0.1
Br	ND	10	Au	0.7	0.1	Nd	ND	0.1	Se	ND	6	V	ND	1
Cd	ND	0.1	Hf	ND	0.1	Ni	0.18	0.1	Si	206	8	Yb	ND	0.1
Ca	34	7	Ho	ND	0.1	Nb	ND	0.1	Ag	5.1	0.1	Y	ND	0.1
Ce	ND	0.1	I	1	0.2	Os	ND	0.1	Na	4.2	1	Zn	ND	2
Cs	0.25	0.1	Ir	ND	0.1	Pd	ND	0.1	Sr	ND	0.1	Zr	ND	0.1
Cr	ND	1	Fe	ND	30	P	ND	10	Ta	4	0.1			
Co	0.22	0.1	La	ND	0.1	Pt	ND	0.1	Te	ND	0.1			

X=Majojr Element INT=Interference from Major Element DL=Detection Limit ND=None Detected

Accuracy and stability are guaranteed to within plus or minus 0.3 % of the certified value for 18 months after the date of shipment. The solution should be kept tightly capped and stored under normal laboratory conditions. See attached MSDS for proper handling information.

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Raw Data for PCBs

PCB Case Narrative
(ETLL)
SDG#52055

Method/Analysis Information

Procedure:	**Polychlorinated Biphenyls by Method 8082**
Analytical Method:	SW846 8082
Prep Method:	SW846 3550B
Analytical Batch Number:	121122
Prep Batch Number:	121121

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 8082:

Sample ID	Client ID
52055001	L4094-1
52055002	L4094-2
52055003	L4094-3
52055004	L4094-4
52055005	L4094-5
52055006	L4094-6
52055007	L4094-7
52055008	L4094-8
52055009	L4094-9
1200110631	PBLK01 (Method Blank)
1200110632	PBLK01LCS (Laboratory Control Sample)
1200110633	L4094-1MS (Matrix Spike)
1200110634	L4094-1MSD (Matrix Spike Duplicate)

System Configuration

Chromatographic Columns

Column ID	Column Description
J&W1	DB-5(5%-Phenyl)-methylsiloxane 30m x 0.53mm x 1.5um DB-608 Durabond stationary phase* 30m x 0.53mm x 0.5um
J&W2	DB-5(5%-Phenyl)-methylsiloxane 30m x 0.32mm x 1.0um DB-1701 Durabond stationary phase* 30m x 0.32mm x 0.5um
J&W3	DB-5(5%-Phenyl)-methylsiloxane 30m x 0.53mm x 1.5um DB-1701(14% Cyanopropylphenyl)-methylsiloxane 30m x 0.53mm x 0.5um
J&W4	DB-608 Durabond stationary phase* 30m x 0.53mm x .83um DB-XLB* 30m x 0.53mm x 1.5um
J&W5	DB-XLB* 30m x 0.25mm x 0.25um DB-17MS(50%-Phenyl)-methylsiloxane 30m x 0.25mm x 0.25um
J&W6	DB-5(5%-Phenyl)-methylsiloxane 30m x 0.25mm x 0.25um DB-17MS(50%-Phenyl)-methylsiloxane 30m x 0.25mm x 0.25um

* Durabond and DB-XLB are trademarks of J & W.

Instrument Configuration

The samples reported in this SDG were analyzed on one or more of the following instrument systems. Instrument systems are referenced in the raw data and individual form headers by the Instrument ID designations listed below.

Instrument ID	System Configuration	Chromatographic Column
ECD1	HP 6890 Series GC ECD/ECD	J&W5
ECD2	HP 6890 Series GC ECD/ECD	J&W6
ECD3	HP 6890 Series GC ECD/ECD	J&W6
ECD4	HP 5890 Series II Plus GC ECD/ECD	J&W4
ECD5	HP 6890 Series GC ECD/ECD	J&W5
ECD7	HP 6890 Series GC ECD/ECD	J&W5

Preparation/Analytical Method Verification

Procedures for preparation, analysis, and reporting of analytical data are documented by General Engineering Laboratories, Inc. (GEL) as Standard Operating Procedures (SOP).

Calibration Information

Initial Calibration

All initial calibration requirements have been met for this SDG.

CVS Requirements

All continuing calibration (CCAL) criteria have not been met for this sample set.

Some target analytes failed acceptance criteria with a positive and negative bias on both analytical columns (DB-XLB and DB-17MS) in the standards bracketing the samples in this SDG. The positive and negative bias for the analytical data is the result of instrument response increasing or decreasing after the initial calibration. The responses never decreased to a point where the targets would not be detected. All samples with detected target analytes were re-analyzed with acceptable continuing calibration standards bracketing the associated samples. Therefore, the non-compliance has no adverse effects on the data.

Quality Control (QC) Information

Surrogate Recoveries

All the surrogate recoveries were not within the established acceptance criteria for this SDG. QC samples 1200110631 (Method Blank) and 1200110632 (LCS) exceeded the surrogate recovery acceptance range with a positive bias for Decachlorobiphenyl (DCB) on the non-primary column.

Blank Acceptance

The blank(s) analyzed with this SDG met the established acceptance criteria.

LCS Recovery Statement

The Laboratory Control Sample (LCS) spike recoveries for this SDG were within the established acceptance limits.

QC Sample Designation

The following samples were selected for the PCB method QC:

Client Sample ID#	Laboratory Sample ID#
L4094-1	52055001

The method QC included a Matrix Spike (MS) and Matrix Spike Duplicate (MSD).

MS Recovery Statement

The matrix spike recoveries for this SDG were not within the established acceptance limits. QC sample 1200110633 (MS) was outside the spike recovery acceptance range for Aroclor-1260 due to matrix interference and the presence of the target analyte in the parent sample. Aroclor 1016

is used for monitoring only at this time.

MSD Recovery Statement

The matrix spike duplicate recoveries for this SDG were not within the established acceptance limits. QC sample 1200110634 (MSD) was outside the spike recovery acceptance range for Aroclor-1260 due to matrix interference and the presence of the target analyte in the parent sample. Aroclor 1016 is used for monitoring only at this time.

MS/MSD RPD Statement

The relative percent differences (RPD) between each MS and MSD were not within the required acceptance limits due to matrix interference and non-homogeneity of the sample matrix.

Technical Information:

Holding Time Specifications

GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection or sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time requirements.

Preparation/Analytical Method Verification

All procedures were performed as stated in the SOP.

Sample Dilutions

The indicated samples below were diluted due to matrix interference and the presence of target analytes:

Sample ID	Dilutions
52055001	10X
52055002	10X
52055003	10X
52055004	10X
52055005	10X
52055006	10X
52055007	20X
52055008	10X

52055009	10X
1200110633	10X
1200110634	10X

Sample Re-prep/Re-analysis

None of the samples in this sample group were reprepped or reanalyzed.

Miscellaneous Information:

Nonconformance (NCR) Documentation

No nonconformance reports (NCRs) have been generated for this SDG.

Manual Integrations

Certain standards and QC samples may have required manual integrations to correctly position the baseline as set in the calibration standard injections. If manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this PCB fraction.

Additional Comments

The additional comments field is used to address special issues associated with each analysis, clarify method/contractual issues pertaining to the analysis and to list any report documents generated as a result of sample analysis or review. The following additional comments were required for this sample set:

Aroclors quantitated on the raw data report by the Target data system do not necessarily represent a positive aroclor identification. In order for positive identification to be made, the aroclor must match in pattern and retention time; as well as quantitate relatively close between the primary and confirmation columns, as specified in SW846 method 8000. When these conditions are not met, the aroclor is reported as a non-detect on the data report. These situations will be noted on the raw data as DMP, representing "does not match pattern", or DNC "does not confirm".

Review Validation:

GEL requires all analytical data to be verified by a qualified data validator. In addition, all data designated for CLP or CLP-like packaging will receive a third level validation upon completion of the data package.

The following data validator verified the information presented in this case narrative:

Reviewer: _____ **Date:** 1/8/02

SAMPLE DATA SUMMARY

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

L4094-1

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Matrix: (soil/water) SOIL Lab Sample ID: 52055001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 046F4601

% Moisture: 13 decanted: (Y/N) N Date Received: 11/15/01

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:11/16/01

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 11/20/01

Injection Volume: 1.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	38.1	U
11104-28-2	Aroclor-1221	38.1	U
11141-16-5	Aroclor-1232	38.1	U
53469-21-9	Aroclor-1242	38.1	U
12672-29-6	Aroclor-1248	38.1	U
11097-69-1	Aroclor-1254	144	P
11096-82-5	Aroclor-1260	84.8	P

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

L4094-2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Matrix: (soil/water) SOIL Lab Sample ID: 52055002

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 047F4701

% Moisture: 3 decanted: (Y/N) N Date Received: 11/15/01

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:11/16/01

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 11/20/01

Injection Volume: 1.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2------	Aroclor-1016	34.4	U
11104-28-2------	Aroclor-1221	34.4	U
11141-16-5------	Aroclor-1232	34.4	U
53469-21-9------	Aroclor-1242	34.4	U
12672-29-6------	Aroclor-1248	34.4	U
11097-69-1------	Aroclor-1254	173	
11096-82-5------	Aroclor-1260	63.2	P

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

L4094-3

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Matrix: (soil/water) SOIL Lab Sample ID: 52055003

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 048F4801

% Moisture: 8 decanted: (Y/N) N Date Received: 11/15/01

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 11/16/01

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 11/20/01

Injection Volume: 1.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36.4	U
11104-28-2	Aroclor-1221	36.4	U
11141-16-5	Aroclor-1232	36.4	U
53469-21-9	Aroclor-1242	36.4	U
12672-29-6	Aroclor-1248	36.4	U
11097-69-1	Aroclor-1254	73.7	P
11096-82-5	Aroclor-1260	19.0	J

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

L4094-4

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Matrix: (soil/water) SOIL Lab Sample ID: 52055004

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 049F4901

% Moisture: 13 decanted: (Y/N) N Date Received: 11/15/01

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:11/16/01

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 11/20/01

Injection Volume: 1.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	38.4	U
11104-28-2	Aroclor-1221	38.4	U
11141-16-5	Aroclor-1232	38.4	U
53469-21-9	Aroclor-1242	38.4	U
12672-29-6	Aroclor-1248	38.4	U
11097-69-1	Aroclor-1254	122	P
11096-82-5	Aroclor-1260	69.2	

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

L4094-5

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Matrix: (soil/water) SOIL Lab Sample ID: 52055005

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 050F5001

% Moisture: 3 decanted: (Y/N) N Date Received: 11/15/01

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:11/16/01

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 11/20/01

Injection Volume: 1.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	34.3	U
11104-28-2	Aroclor-1221	34.3	U
11141-16-5	Aroclor-1232	34.3	U
53469-21-9	Aroclor-1242	34.3	U
12672-29-6	Aroclor-1248	34.3	U
11097-69-1	Aroclor-1254	125	
11096-82-5	Aroclor-1260	43.0	

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

L4094-6

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Matrix: (soil/water) SOIL Lab Sample ID: 52055006

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 053F5301

% Moisture: 3 decanted: (Y/N) N Date Received: 11/15/01

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:11/16/01

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 11/20/01

Injection Volume: 1.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	34.5	U
11104-28-2	Aroclor-1221	34.5	U
11141-16-5	Aroclor-1232	34.5	U
53469-21-9	Aroclor-1242	34.5	U
12672-29-6	Aroclor-1248	34.5	U
11097-69-1	Aroclor-1254	845	
11096-82-5	Aroclor-1260	183	P

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

L4094-7

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Matrix: (soil/water) SOIL Lab Sample ID: 52055007

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 054F5401

% Moisture: 5 decanted: (Y/N) N Date Received: 11/15/01

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:11/16/01

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 11/20/01

Injection Volume: 1.0(uL) Dilution Factor: 20.0

GPC Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2------	Aroclor-1016	70.0	U
11104-28-2------	Aroclor-1221	70.0	U
11141-16-5------	Aroclor-1232	70.0	U
53469-21-9------	Aroclor-1242	70.0	U
12672-29-6------	Aroclor-1248	70.0	U
11097-69-1------	Aroclor-1254	1810	
11096-82-5------	Aroclor-1260	348	P

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

L4094-8

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Matrix: (soil/water) SOIL Lab Sample ID: 52055008

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 055F5501

% Moisture: 9 decanted: (Y/N) N Date Received: 11/15/01

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:11/16/01

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 11/20/01

Injection Volume: 1.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36.8	U
11104-28-2	Aroclor-1221	36.8	U
11141-16-5	Aroclor-1232	36.8	U
53469-21-9	Aroclor-1242	36.8	U
12672-29-6	Aroclor-1248	36.8	U
11097-69-1	Aroclor-1254	130	
11096-82-5	Aroclor-1260	64.1	

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

L4094-9

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Matrix: (soil/water) SOIL Lab Sample ID: 52055009

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 056F5601

% Moisture: 1 decanted: (Y/N) N Date Received: 11/15/01

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:11/16/01

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 11/20/01

Injection Volume: 1.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	33.8	U
11104-28-2	Aroclor-1221	33.8	U
11141-16-5	Aroclor-1232	33.8	U
53469-21-9	Aroclor-1242	33.8	U
12672-29-6	Aroclor-1248	33.8	U
11097-69-1	Aroclor-1254	218	P
11096-82-5	Aroclor-1260	64.4	P

QUALITY CONTROL SUMMARY

2F
SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

GC Column(1): DB-XLB ID: 0.25 (mm) GC Column(2): DB-17MS ID: 0.25 (mm)

	EPA SAMPLE NO.	S1 1 %REC #	S1 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	PBLK01	79	93	105	131*			1
02	PBLK01LCS	79	93	107	133*			1
03	L4094-1MS	64	58	67	71			0
04	L4094-1MSD	63	59	67	72			0
05	L4094-1	80	71	77	82			0
06	L4094-2	82	70	72	82			0
07	L4094-3	77	69	70	74			0
08	L4094-4	69	64	58	62			0
09	L4094-5	77	71	66	71			0
10	L4094-6	70	67	62	69			0
11	L4094-7	90	80	85	97			0
12	L4094-8	77	72	90	109			0
13	L4094-9	81	72	72	85			0
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

		ADVISORY QC LIMITS
S1	= 4cmx	(41-132)
S2 (DCB)	= Decachlorobiphenyl	(44-127)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

3F
SOIL PESTICIDE LAB CONTROL SAMPLE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Matrix Spike - EPA Sample No.: PBLK01

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Aroclor-1016	33.3	0.0	25.0	75	70-130
Aroclor-1260	33.3	0.0	25.8	77	53-116

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 2 outside limits

COMMENTS:

3F

SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Matrix Spike - EPA Sample No.: L4094-1

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Aroclor-1016	38.1	0.0	44.9	118	70-130
Aroclor-1260	38.1	84.8	94.3	25*	48-130

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Aroclor-1016	38.1	59.5	156*	28	40	70-130
Aroclor-1260	38.1	84.5	-1*	217*	27	48-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 2 outside limits
Spike Recovery: 3 out of 4 outside limits

COMMENTS: _____

4C
PESTICIDE METHOD BLANK SUMMARY

EPA SAMPLE NO.

PBLK01

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Lab Sample ID: 1200110631 Lab File ID: 040F4001

Matrix (soil/water) SOIL Extraction:(SepF/Cont/Sonc) SONC

Sulfur Cleanup (Y/N) N Date Extracted: 11/16/01

Date Analyzed (1): 11/17/01 Date Analyzed (2): 11/17/01

Time Analyzed (1): 2257 Time Analyzed (2): 2257

Instrument ID (1): ECD1A Instrument ID (2): ECD1A

GC Column (1): DB-XLB ID: 0.25(mm) GC Column (2): DB-17MS ID: 0.25(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	PBLK01LCS	1200110632	11/17/01	11/17/01
02	L4094-1MS	1200110633	11/20/01	11/20/01
03	L4094-1MSD	1200110634	11/20/01	11/20/01
04	L4094-1	52055001	11/20/01	11/20/01
05	L4094-2	52055002	11/20/01	11/20/01
06	L4094-3	52055003	11/20/01	11/20/01
07	L4094-4	52055004	11/20/01	11/20/01
08	L4094-5	52055005	11/20/01	11/20/01
09	L4094-6	52055006	11/20/01	11/20/01
10	L4094-7	52055007	11/20/01	11/20/01
11	L4094-8	52055008	11/20/01	11/20/01
12	L4094-9	52055009	11/20/01	11/20/01
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

SAMPLE DATA

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

L4094-1

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Matrix: (soil/water) SOIL Lab Sample ID: 52055001

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 046F4601

% Moisture: 13 decanted: (Y/N) N Date Received: 11/15/01

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:11/16/01

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 11/20/01

Injection Volume: 1.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	38.1	U
11104-28-2	Aroclor-1221	38.1	U
11141-16-5	Aroclor-1232	38.1	U
53469-21-9	Aroclor-1242	38.1	U
12672-29-6	Aroclor-1248	38.1	U
11097-69-1	Aroclor-1254	144	P
11096-82-5	Aroclor-1260	84.8	P

General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/046b4601.d
Lab Smp Id: 52055001 Client Smp ID: L4094-1
Inj Date : 20-NOV-2001 07:49
Operator : mm Inst ID: ecd1a.i
Smp Info : |52055001|10|
Misc Info : |ECD82P_1S|121122|SVA|ETLL|
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m
Meth Date : 20-Nov-2001 13:44 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012b1201.d
Als bottle: 46
Dil Factor: 10.00000
Integrator: Falcon Compound Sublist: 52055.sub
Target Version: 3.50 Sample Matrix: Soil

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVariab

Name	Value	Description
DF	10.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.00000	Weight of sample extracted (g)
M	12.59310	% Moisture

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
$ 1 4cmx					CAS #: 877-09-8		
6.158	6.159	-0.001	16440135	14.2609	5.4	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.374	15.375	-0.001	15990761	16.3293	6.2	80.00- 120.00	100.00
4 Aroclor-1232					CAS #: 11141-16-5		
0.000	7.331	-7.331	0			80.00- 120.00	0.00(T)
8.049	8.049	0.000	823834	40.8270	15.6	70.60- 110.60	0.00
8.430	8.430	0.000	675067	117.961	45.0	5.55- 45.55	0.00
8.989	8.992	-0.003	129387	9.91177	3.8	35.02- 75.02	0.00
9.789	9.790	-0.001	4799130	363.044	138	39.22- 79.22	0.00
Average of Peak Concentrations =					50.7		

JC 12/4/01

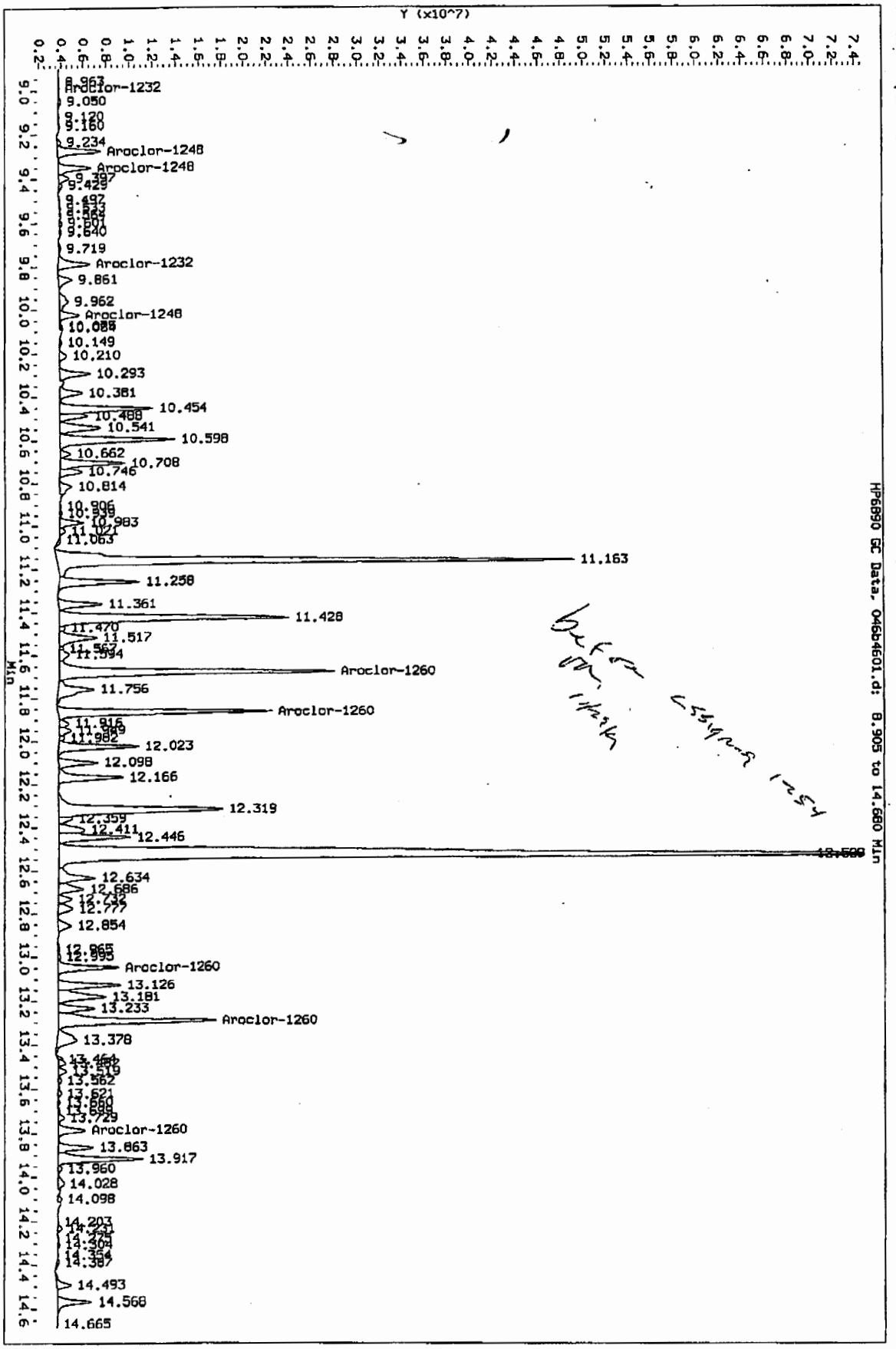
RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
9 Aroclor-1248					CAS #: 12672-29-6		
8.049	8.048	0.001	823834	46.1399	17.6	80.00- 120.00	100.00
9.274	9.274	0.000	5826887	172.831	65.9	174.49- 214.49	707.29
9.350	9.351	-0.001	4397152	137.014	52.2	163.02- 203.02	533.74
9.789	9.791	-0.002	4799130	113.862	43.4	222.44- 262.44	582.54
10.024	10.025	-0.001	2479148	100.803	38.4	119.72- 159.72	300.93
Average of Peak Concentrations =					43.5		
15 Aroclor-1254					CAS #: 11097-69-1		
10.598	10.599	-0.001	16286087	231.896	88.4	80.00- 120.00	100.00(M)
10.708	10.706	0.002	8451352	324.179	124	15.38- 55.38	51.89
11.135	11.132	0.003	4158686	199.206	76.0	9.62- 49.62	25.54
11.258	11.257	0.001	10725877	248.709	94.8	42.13- 82.13	65.86
11.677	11.679	-0.002	38030559	440.019	168	107.51- 147.51	233.52
Average of Peak Concentrations =					110		
21 Aroclor-1260					CAS #: 11096-82-5		
11.677	11.679	-0.002	38030559	~~557.560~~	~~216~~	80.00- 120.00	100.00
11.864	11.866	-0.002	26512397	~~352.227~~	~~134~~	95.12- 135.12	69.71
13.047	13.047	0.000	7846214	165.714	63.2	51.18- 91.18	20.63
13.292	13.294	-0.002	22933021	183.385	69.9	178.37- 218.37	60.30
13.785	13.785	0.000	3803041	176.392	67.3	13.35- 53.35	10.00
Average of Peak Concentrations =					~~110~~ 66.8		

QC Flag Legend

T - Target compound detected outside RT window.
M - Compound response manually integrated.

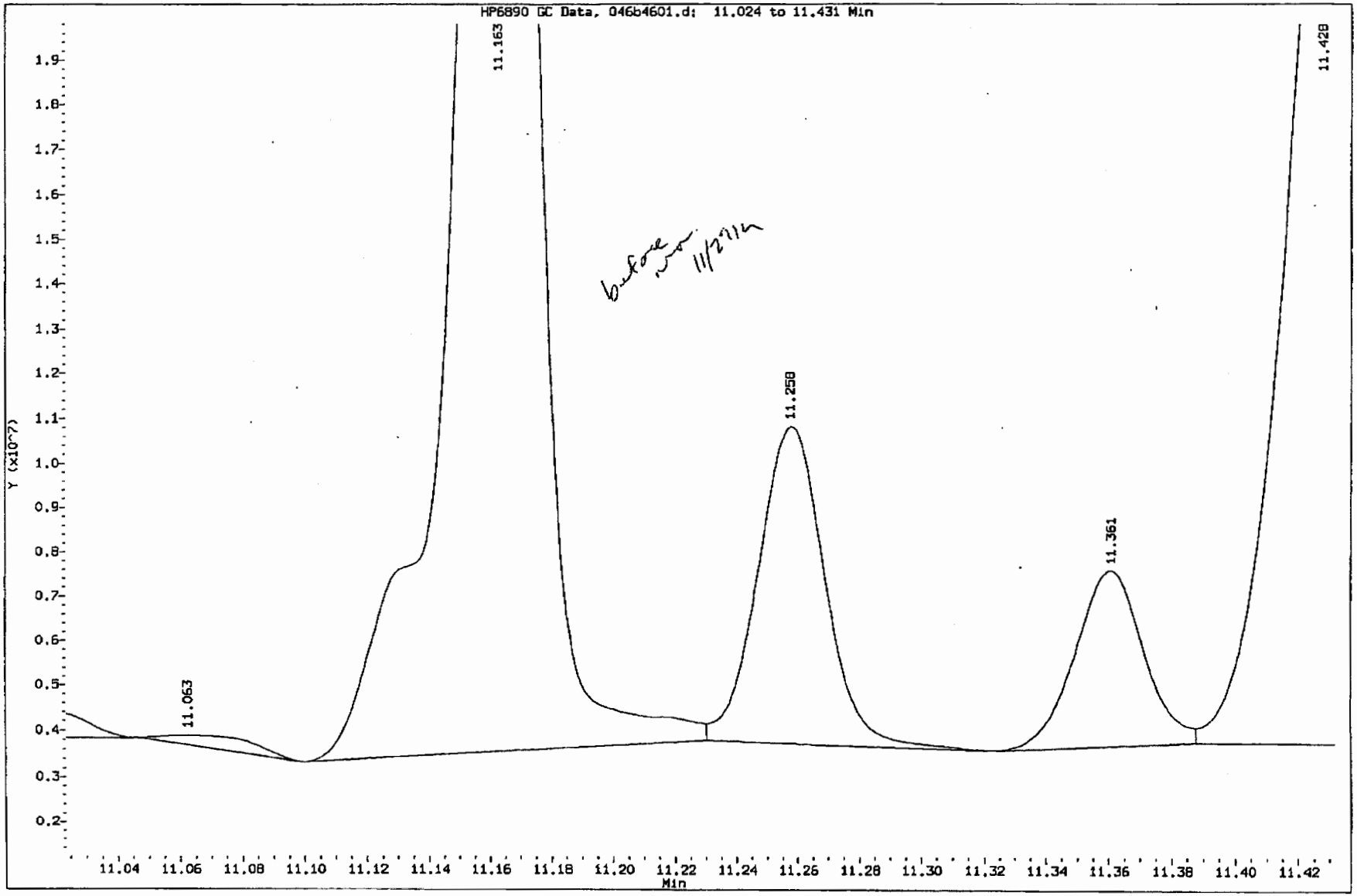
Data File: /chem/ecdia.i/111901a.b/04684601.d
Injection Date: 20-NOV-2001 07:49
Instrument: ecdia.i
Client Sample ID: L4094-1

HP6890 GC Data: 04684601.d: 8.905 to 14.680 Min



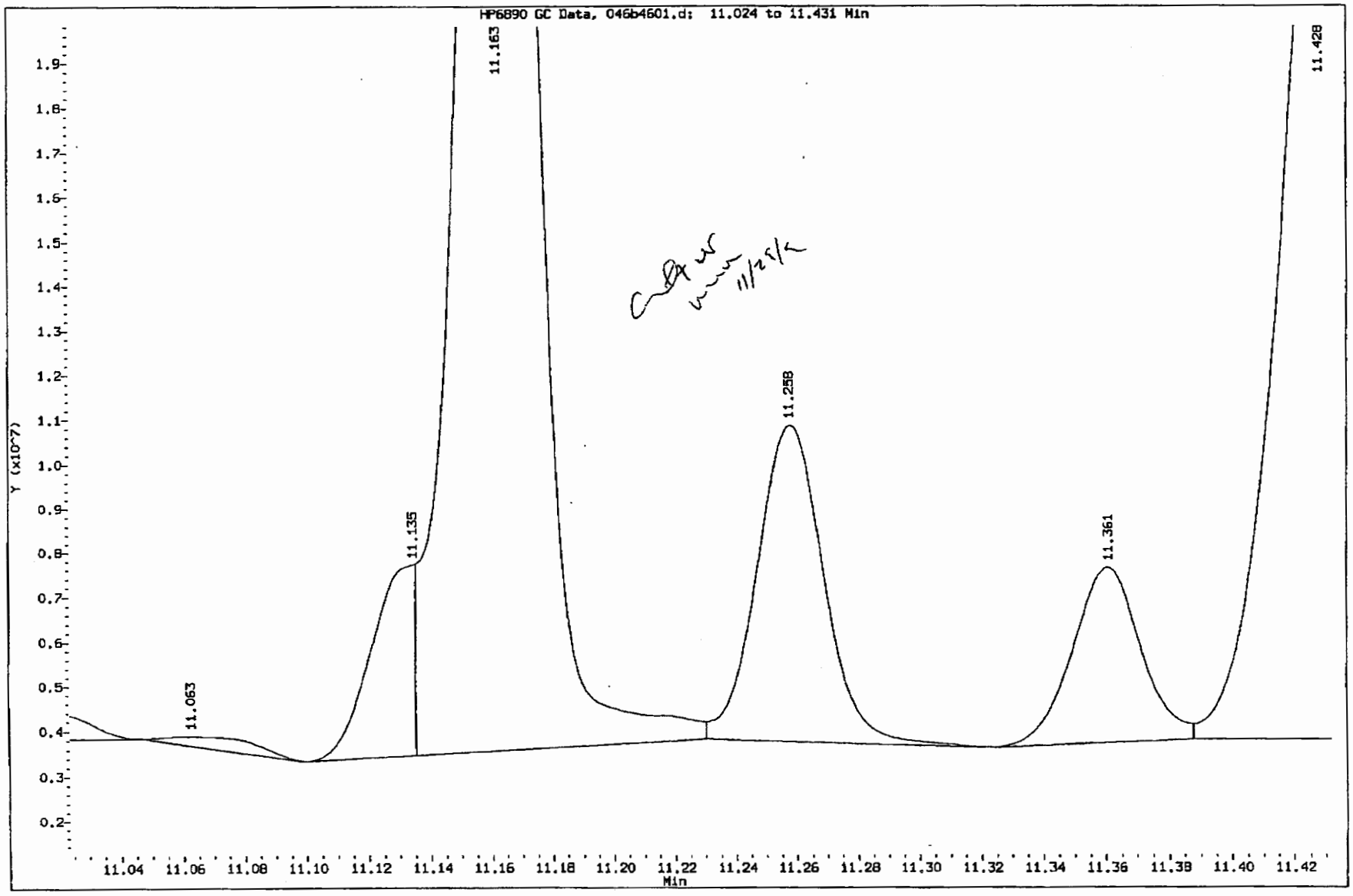
before 1/12/02 [illegible]

Data File: /chem/ecd1a.i/111901a.b/046b4601.d
Injection Date: 20-NOV-2001 07:49
Instrument: ecd1a.i
Client Sample ID: L4094-1

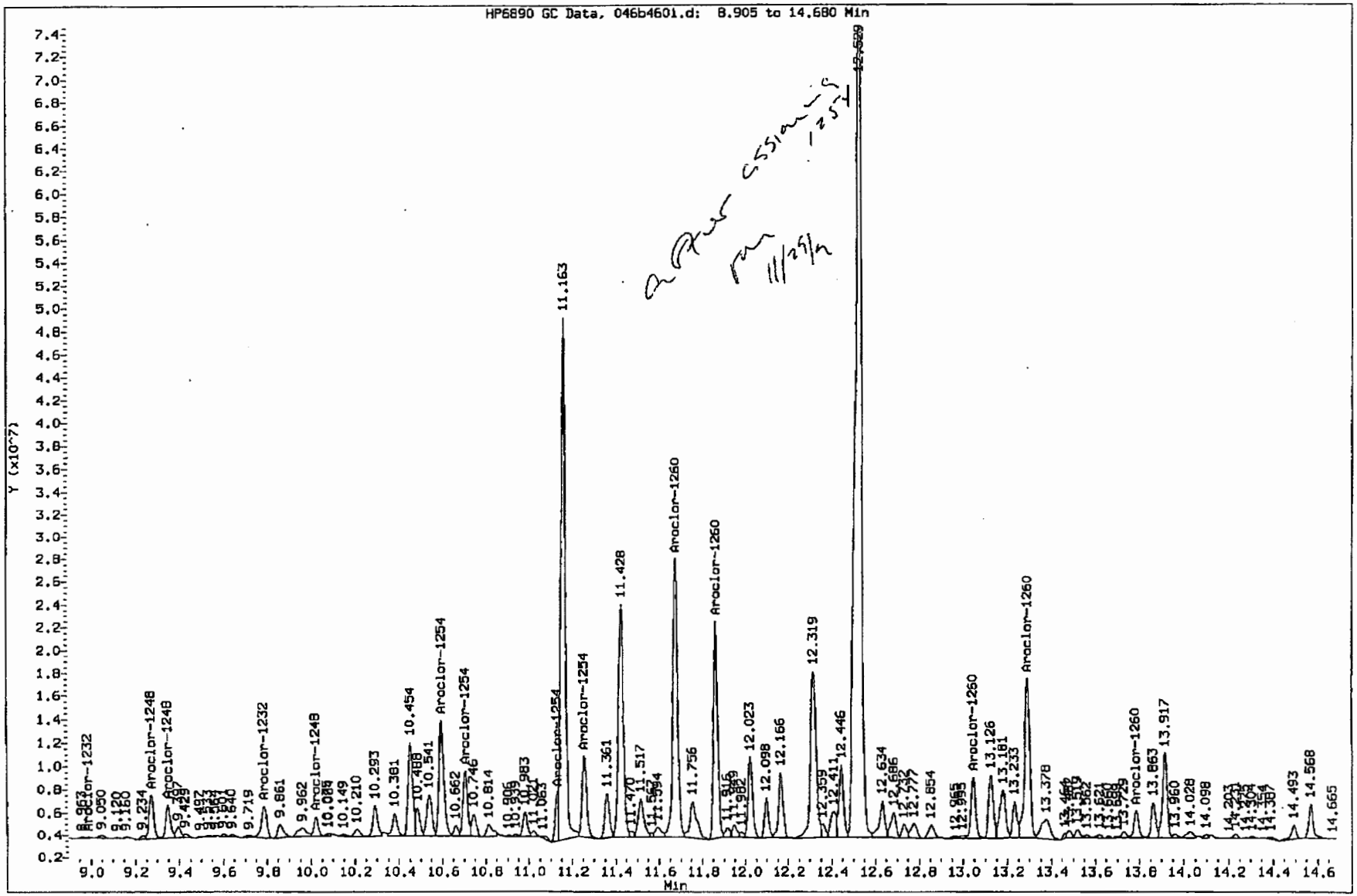


before run 11/20/01

Data File: /chem/ecd1a.i/111901a.b/046b4601.d
Injection Date: 20-NOV-2001 07:49
Instrument: ecd1a.i
Client Sample ID: L4094-1



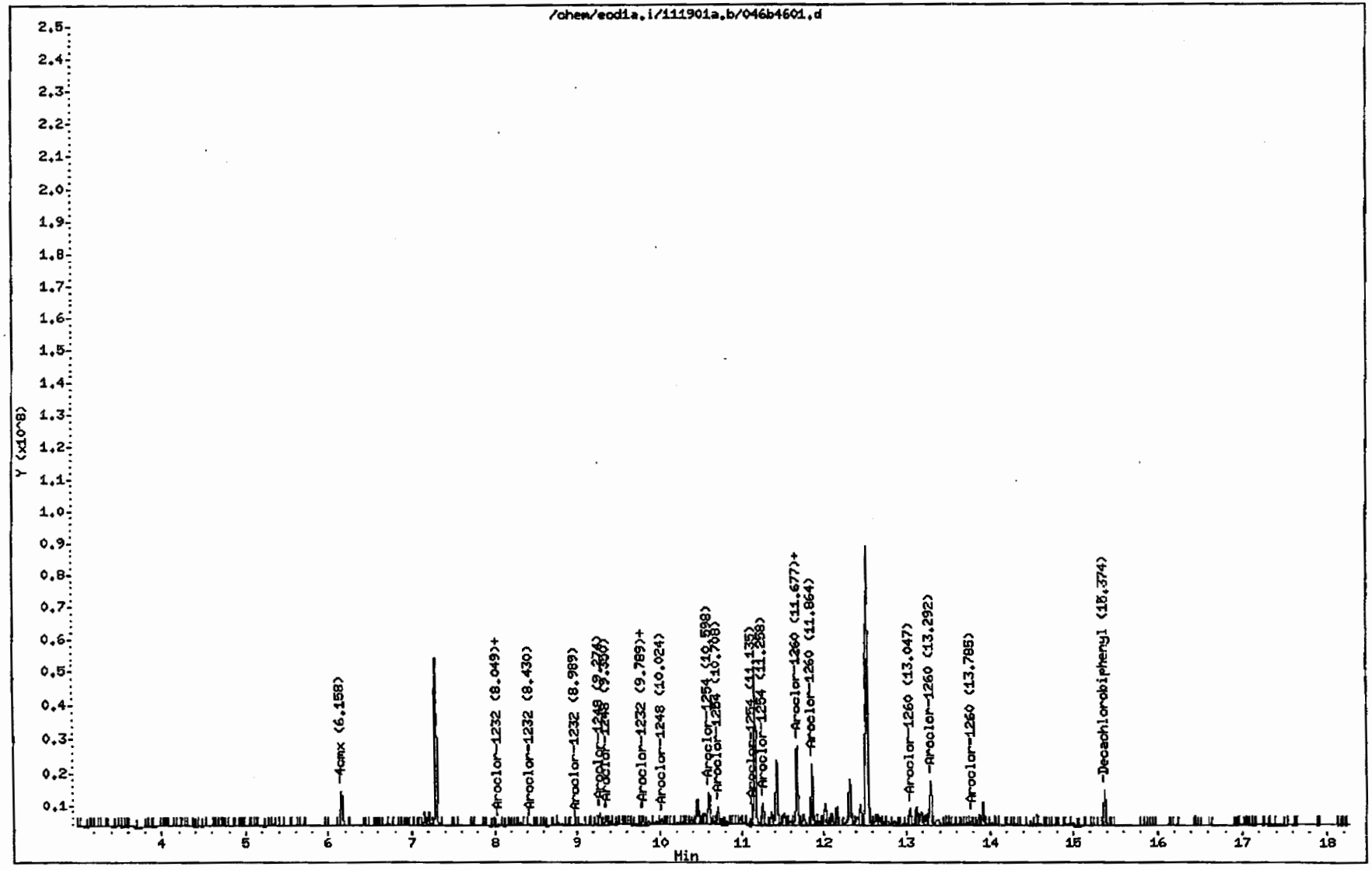
Data File: /chem/ecd1a.i/111901a.b/046b4601.d
Injection Date: 20-NOV-2001 07:49
Instrument: ecd1a.i
Client Sample ID: L4094-1



464

Data File: /chem/ecd1a.i/111901a.b/046b4601.d
Date : 20-NOV-2001 07:49
Client ID: L4094-1
Sample Info: |52055001|10|
Volume Injected (uL): 1.0
Column phase: DB-17MS

Instrument: ecd1a.i
Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/046f4601.d
Lab Smp Id: 52055001 Client Smp ID: L4094-1
Inj Date : 20-NOV-2001 07:49
Operator : mm Inst ID: ecd1a.i
Smp Info : |52055001|10|
Misc Info : |ECD82P_1S|121122|SVA|ETLL|
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m
Meth Date : 20-Nov-2001 13:43 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012f1201.d
Als bottle: 46
Dil Factor: 10.00000
Integrator: Falcon Compound Sublist: 52055.sub
Target Version: 3.50 Sample Matrix: Soil

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVariab

Name	Value	Description
DF	10.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.00000	Weight of sample extracted (g)
M	12.59310	% Moisture

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
$ 1 4cmx					CAS #: 877-09-8		
6.304	6.303	0.001	59917651	15.9621	6.1	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.078	15.078	0.000	46605200	15.3239	5.8	80.00- 120.00	100.00
3 Aroclor-1016					CAS #: 12674-11-2		
6.941	6.943	-0.002	64748	1.02594	0.39	80.00- 120.00	100.00
7.583	7.584	-0.001	1911434	18.8998	7.2	141.60- 181.60	2952.11
8.985	8.987	-0.002	17481566	204.417	78.0	114.56- 154.56	26999.31
9.068	9.068	0.000	15692842	167.303	63.8	131.20- 171.20	24236.72
9.303	9.305	-0.002	13471877	147.498	56.2	125.87- 165.87	20806.57
Average of Peak Concentrations =					41.1		

JC 12/4/01

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
2 Aroclor-1221					CAS #: 11104-28-2		
6.669	6.656	0.013	63871	2.53468	0.97	80.00- 120.00	100.00
6.784	6.787	-0.003	20596640	827.141	315	74.38- 114.38	32247.15
6.941	6.943	-0.002	64748	0.78548	0.30	293.71- 333.71	101.37
Average of Peak Concentrations =					106		
4 Aroclor-1232					CAS #: 11141-16-5		
6.941	6.944	-0.003	64748	0.92381	0.35	80.00- 120.00	100.00
7.583	7.584	-0.001	1911434	45.1169	17.2	40.95- 80.95	2952.11
8.985	8.987	-0.002	17481566	492.752	188	24.75- 64.75	26999.31
9.068	9.070	-0.002	15692842	516.082	197	30.72- 70.72	24236.72
9.303	9.305	-0.002	13471877	387.217	148	30.46- 70.46	20806.57
Average of Peak Concentrations =					110		
6 Aroclor-1242					CAS #: 53469-21-9		
6.941	6.944	-0.003	64748	1.27815	0.49	80.00- 120.00	100.00
7.583	7.585	-0.002	1911434	24.7761	9.4	122.38- 162.38	2952.11
8.985	8.986	-0.001	17481566	269.251	103	91.55- 131.55	26999.31
9.068	9.068	0.000	15692842	215.363	82.1	105.39- 145.39	24236.72
9.303	9.305	-0.002	13471877	188.119	71.7	109.29- 149.29	20806.57
Average of Peak Concentrations =					53.3		
9 Aroclor-1248					CAS #: 12672-29-6		
8.985	8.987	-0.002	17481566	158.239	60.3	80.00- 120.00	100.00
9.068	9.068	0.000	15692842	149.200	56.9	76.06- 116.06	89.77
9.303	9.305	-0.002	13471877	112.806	43.0	87.83- 127.83	77.06
10.064	10.068	-0.004	13489556	91.4354	34.9	113.94- 153.94	77.16
10.130	10.137	-0.007	17960178	130.993	50.0	112.47- 152.47	102.74
Average of Peak Concentrations =					49.0		
15 Aroclor-1254					CAS #: 11097-69-1		
10.003	10.004	-0.001	45444345	291.333	111	80.00- 120.00	100.00
10.403	10.404	-0.001	88445930	533.470	203	94.32- 134.32	194.62
11.013	11.016	-0.003	92635749	398.042	152	135.66- 175.66	203.84
11.526	11.529	-0.003	52644335	290.826	111	94.57- 134.57	115.84
11.750	11.752	-0.002	80859762	~~791.396~~	~~302~~	49.22- 89.22	177.93
Average of Peak Concentrations =				326	~~176~~ 144		
21 Aroclor-1260					CAS #: 11096-82-5		
12.336	12.338	-0.002	32674177	214.756	81.9	80.00- 120.00	100.00
12.421	12.425	-0.004	17154191	199.511	76.1	34.80- 74.80	52.50
12.799	12.800	-0.001	24252128	303.880	116	30.84- 70.84	74.22
13.129	13.133	-0.004	68605556	194.631	74.2	212.78- 252.78	209.97
13.539	13.541	-0.002	44456193	199.049	75.9	120.82- 160.82	136.06
Average of Peak Concentrations =					84.8		

Data File: /chem/eodia.i/111901a.b/046f4601.d

Date : 20-NOV-2001 07:49

Client ID: L4094-1

Sample Info: [52055001|10]

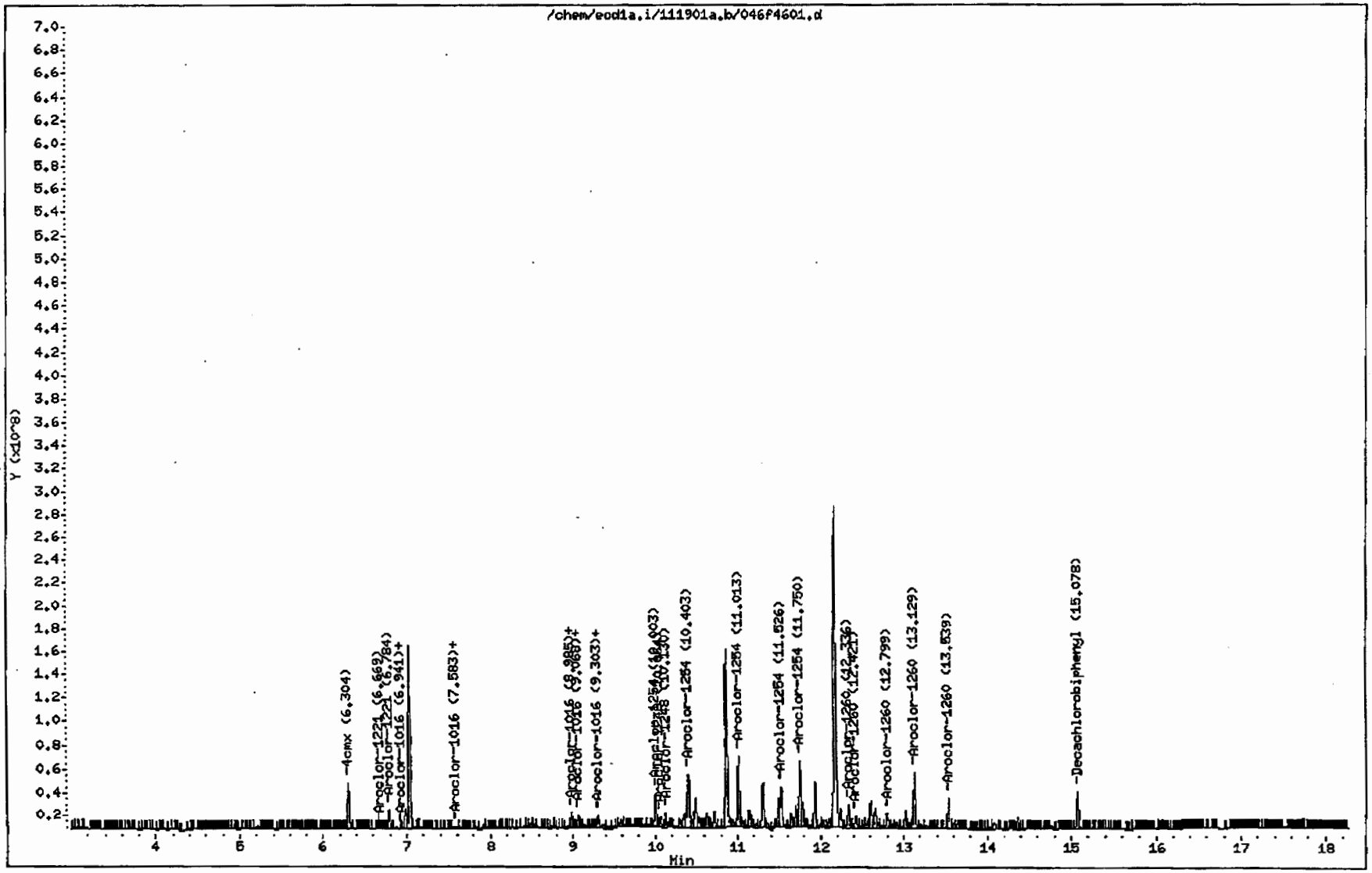
Volume Injected (uL): 1.0

Column phase: DB-XLB

Instrument: eodia.i

Operator: mm

Column diameter: 0.25



1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

L4094-2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Matrix: (soil/water) SOIL Lab Sample ID: 52055002

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 047F4701

% Moisture: 3 decanted: (Y/N) N Date Received: 11/15/01

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:11/16/01

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 11/20/01

Injection Volume: 1.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	34.4	U
11104-28-2	Aroclor-1221	34.4	U
11141-16-5	Aroclor-1232	34.4	U
53469-21-9	Aroclor-1242	34.4	U
12672-29-6	Aroclor-1248	34.4	U
11097-69-1	Aroclor-1254	173	
11096-82-5	Aroclor-1260	63.2	P

General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/047b4701.d
Lab Smp Id: 52055002 Client Smp ID: L4094-2
Inj Date : 20-NOV-2001 08:11
Operator : mm Inst ID: ecd1a.i
Smp Info : |52055002|10|
Misc Info : |ECD82P_1S|121122|SVA|ETLL|
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m
Meth Date : 20-Nov-2001 13:44 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012b1201.d
Als bottle: 47
Dil Factor: 10.00000
Integrator: Falcon Compound Sublist: 52055.sub
Target Version: 3.50 Sample Matrix: Soil

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVariab

Name	Value	Description
DF	10.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.00000	Weight of sample extracted (g)
M	3.13180	% Moisture

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
$ 1 4cmx					CAS #: 877-09-8		
6.157	6.159	-0.002	16074023	13.9433	4.8	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.374	15.375	-0.001	16108695	16.4497	5.7	80.00- 120.00	100.00
4 Aroclor-1232					CAS #: 11141-16-5		
0.000	7.331	-7.331	0			80.00- 120.00	0.00 (TM)
8.041	8.049	-0.008	117030	5.79969	2.0	70.60- 110.60	0.00
8.434	8.430	0.004	404700	70.7171	24.3	5.55- 45.55	0.00
8.995	8.992	0.003	297243	22.7705	7.8	35.02- 75.02	0.00
9.790	9.790	0.000	4220628	319.282	110	39.22- 79.22	0.00
Average of Peak Concentrations =					36.0		

JC 12/4/01

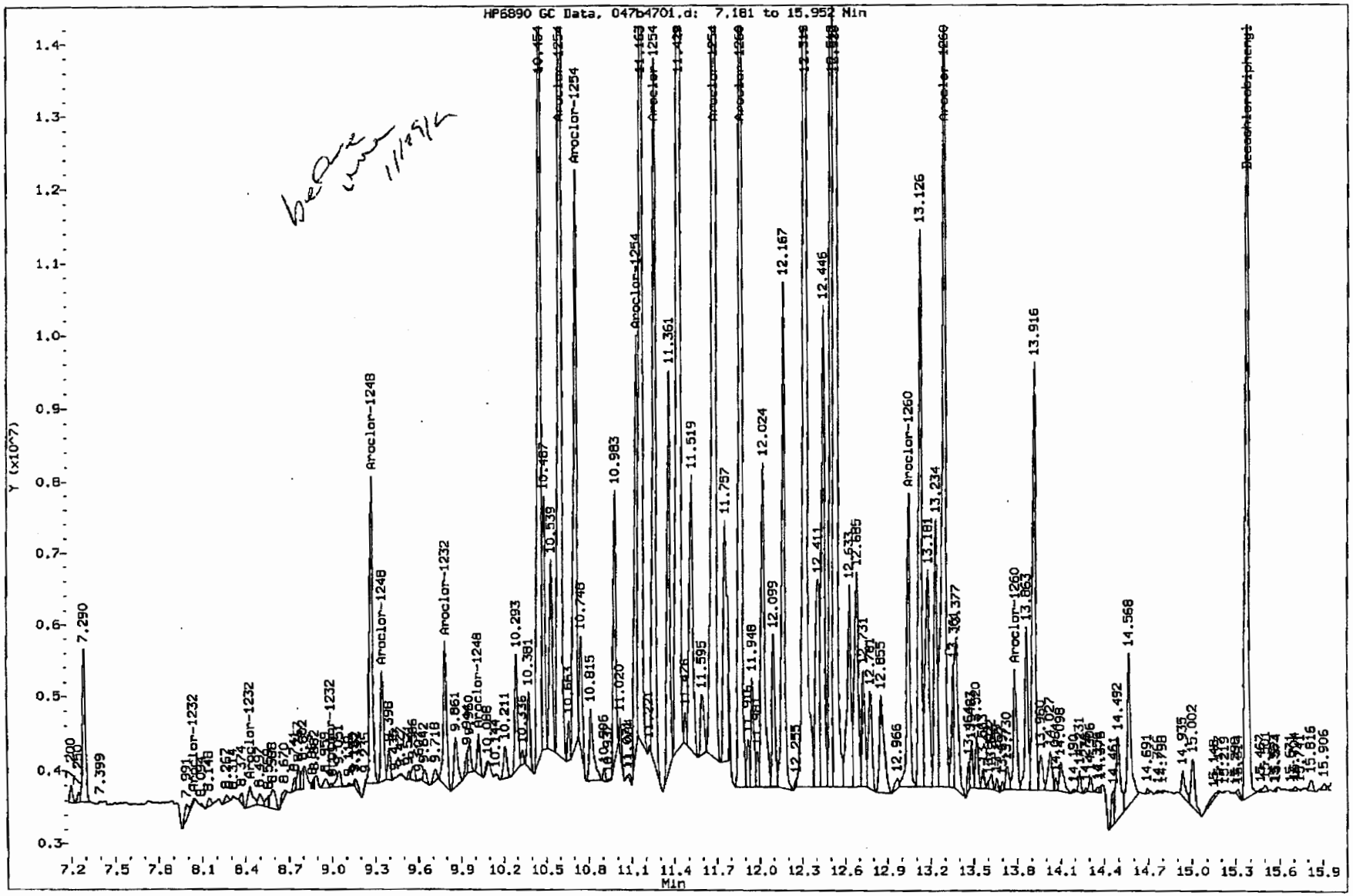
RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
9 Aroclor-1248					CAS #: 12672-29-6		
8.041	8.048	-0.007	117030	6.55442	2.2	80.00- 120.00	100.00(aM)
9.275	9.274	0.001	7268447	215.589	74.2	174.49- 214.49	6210.76
9.350	9.351	-0.001	2904616	90.5072	31.1	163.02- 203.02	2481.94
9.790	9.791	-0.001	4220628	100.137	34.4	222.44- 262.44	3606.45
10.024	10.025	-0.001	1790814	72.8149	25.0	119.72- 159.72	1530.22
Average of Peak Concentrations =					33.4		
15 Aroclor-1254					CAS #: 11097-69-1		
10.598	10.599	-0.001	32788929	466.878	161	80.00- 120.00	100.00(M)
10.706	10.706	0.000	13273607	509.152	175	15.38- 55.38	40.48
11.131	11.132	-0.001	8444382	404.495	139	9.62- 49.62	25.75
11.257	11.257	0.000	15949534	369.835	127	42.13- 82.13	48.64
11.677	11.679	-0.002	45004258	520.705	179	107.51- 147.51	137.25
Average of Peak Concentrations =					156		
21 Aroclor-1260					CAS #: 11096-82-5		
11.677	11.679	-0.002	45004258	~~671.634~~	~~231~~	80.00- 120.00	100.00(M)
11.864	11.866	-0.002	30570795	~~406.145~~	~~140~~	95.12- 135.12	67.93
13.046	13.047	-0.001	6469613	136.640	47.0	51.18- 91.18	14.38
13.293	13.294	-0.001	18763133	150.040	51.6	178.37- 218.37	41.69
13.785	13.785	0.000	2587380	120.008	41.3	13.35- 53.35	5.75
Average of Peak Concentrations =					~~108~~ 46.7		

136

QC Flag Legend

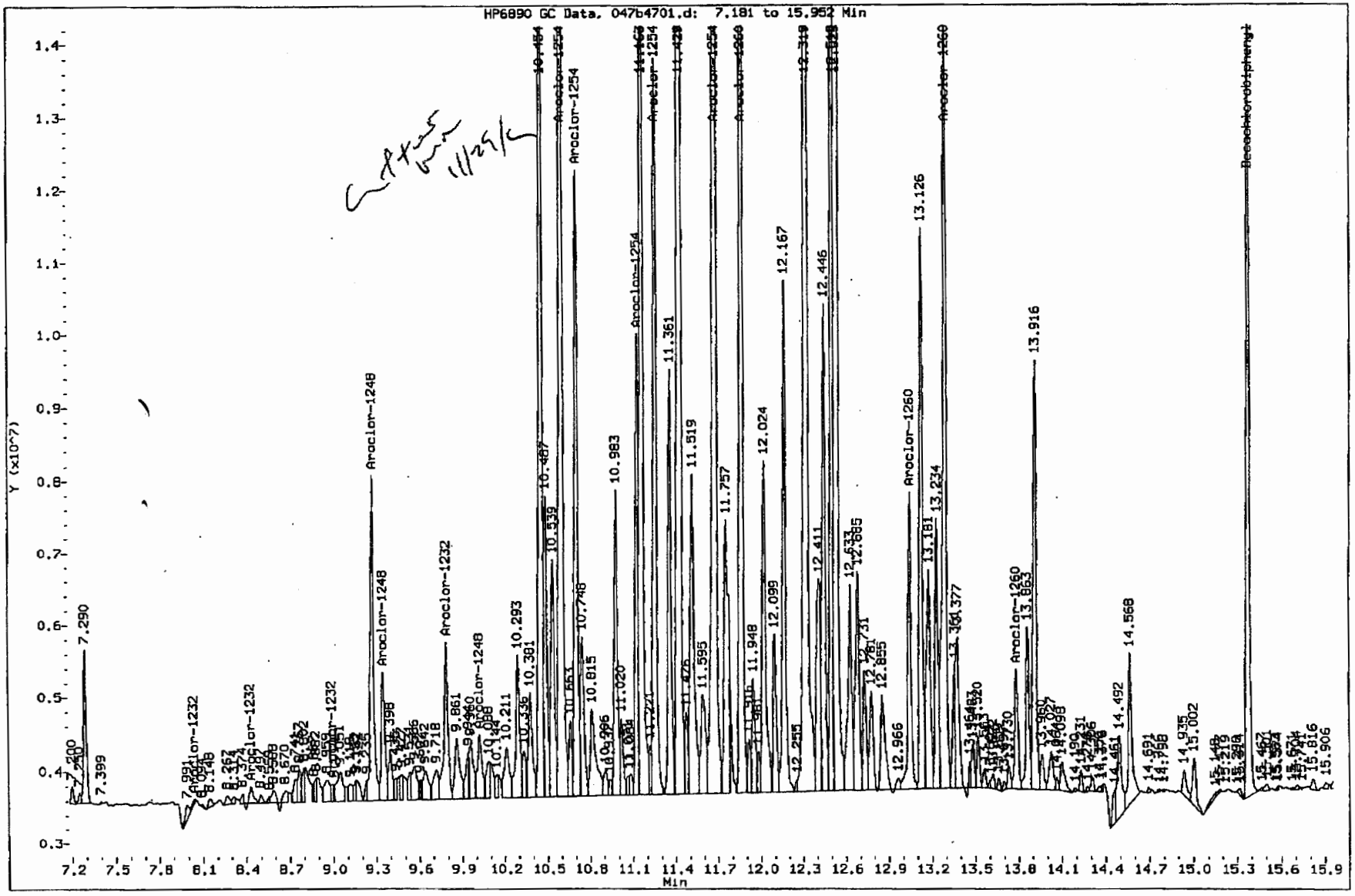
T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: /chem/ecd1a.i/111901a.b/047b4701.d
Injection Date: 20-NOV-2001 08:11
Instrument: ecd1a.i
Client Sample ID: L4094-2



472

Data File: /chem/ecdia.i/111901a.b/047b4701.d
Injection Date: 20-NOV-2001 08:11
Instrument: ecdia.i
Client Sample ID: L4094-2



Data File: /chem/ecdia.i/111901a.b/047b4701.d

Date : 20-NOV-2001 08:11

Client ID: L4094-2

Sample Info: 152055002110

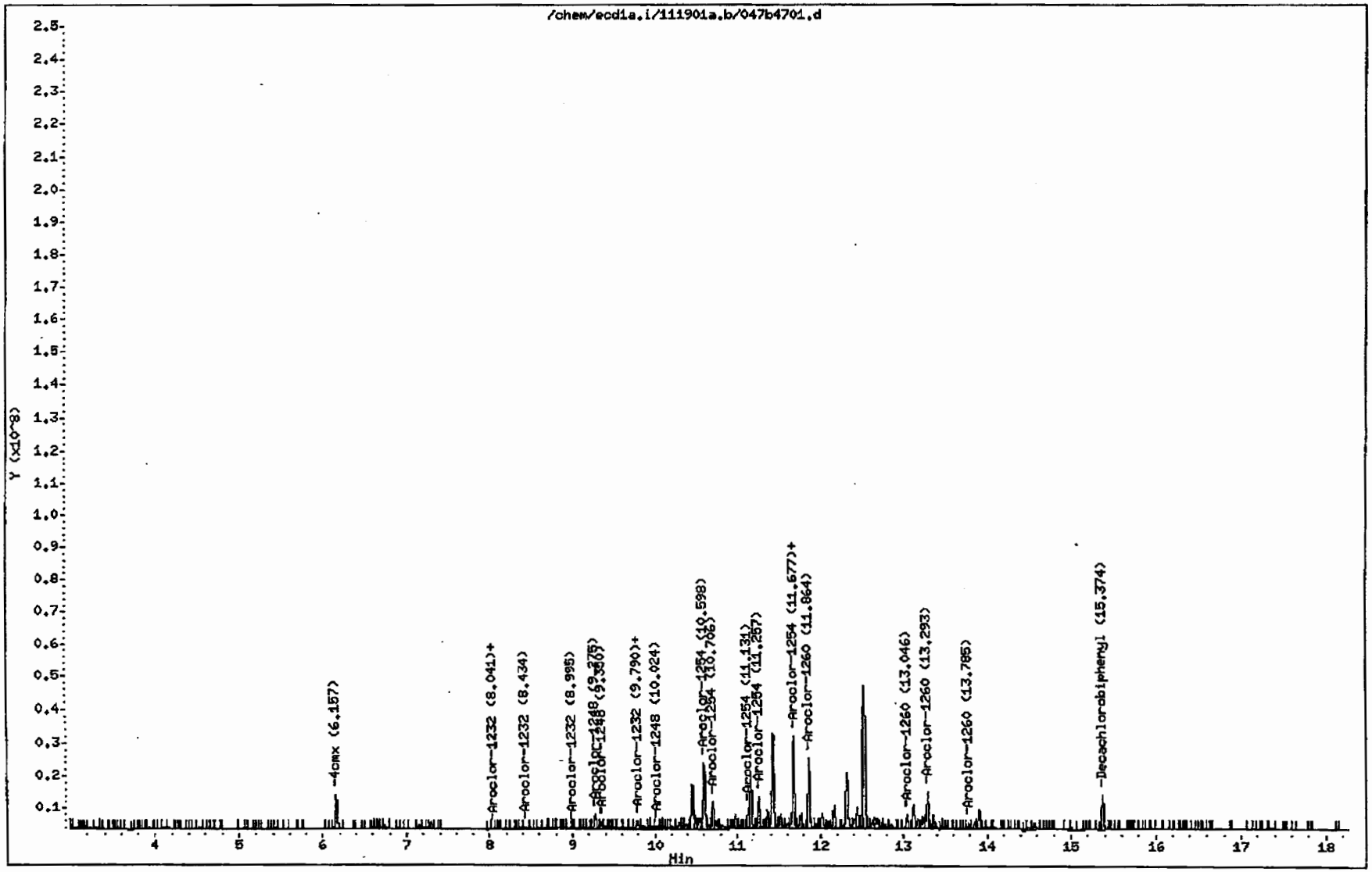
Volume Injected (uL): 1.0

Column phase: DB-17MS

Instrument: ecdia.i

Operator: mm

Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/047f4701.d
Lab Smp Id: 52055002 Client Smp ID: L4094-2
Inj Date : 20-NOV-2001 08:11
Operator : mm Inst ID: ecd1a.i
Smp Info : |52055002|10|
Misc Info : |ECD82P_1S|121122|SVA|ETLL|
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m
Meth Date : 20-Nov-2001 13:43 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012f1201.d
Als bottle: 47
Dil Factor: 10.00000
Integrator: Falcon Compound Sublist: 52055.sub
Target Version: 3.50 Sample Matrix: Soil

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVariab

Name	Value	Description
DF	10.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.00000	Weight of sample extracted (g)
M	3.13180	% Moisture

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
$ 1 4cmx					CAS #: 877-09-8		
6.303	6.303	0.000	61418273	16.3618	5.6	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.079	15.078	0.001	43956355	14.4530	5.0	80.00- 120.00	100.00
3 Aroclor-1016					CAS #: 12674-11-2		
6.946	6.943	0.003	12896	0.20434	0.070	80.00- 120.00	100.00(a)
7.579	7.584	-0.005	139496	1.37930	0.47	141.60- 181.60	1081.62
8.985	8.987	-0.002	20332135	237.749	81.8	114.56- 154.56	157650.12
9.068	9.068	0.000	8379652	89.3366	30.7	131.20- 171.20	64973.66
9.304	9.305	-0.001	9804885	107.349	36.9	125.87- 165.87	76024.54
Average of Peak Concentrations =					30.0		

DMC

JC 12/4/01

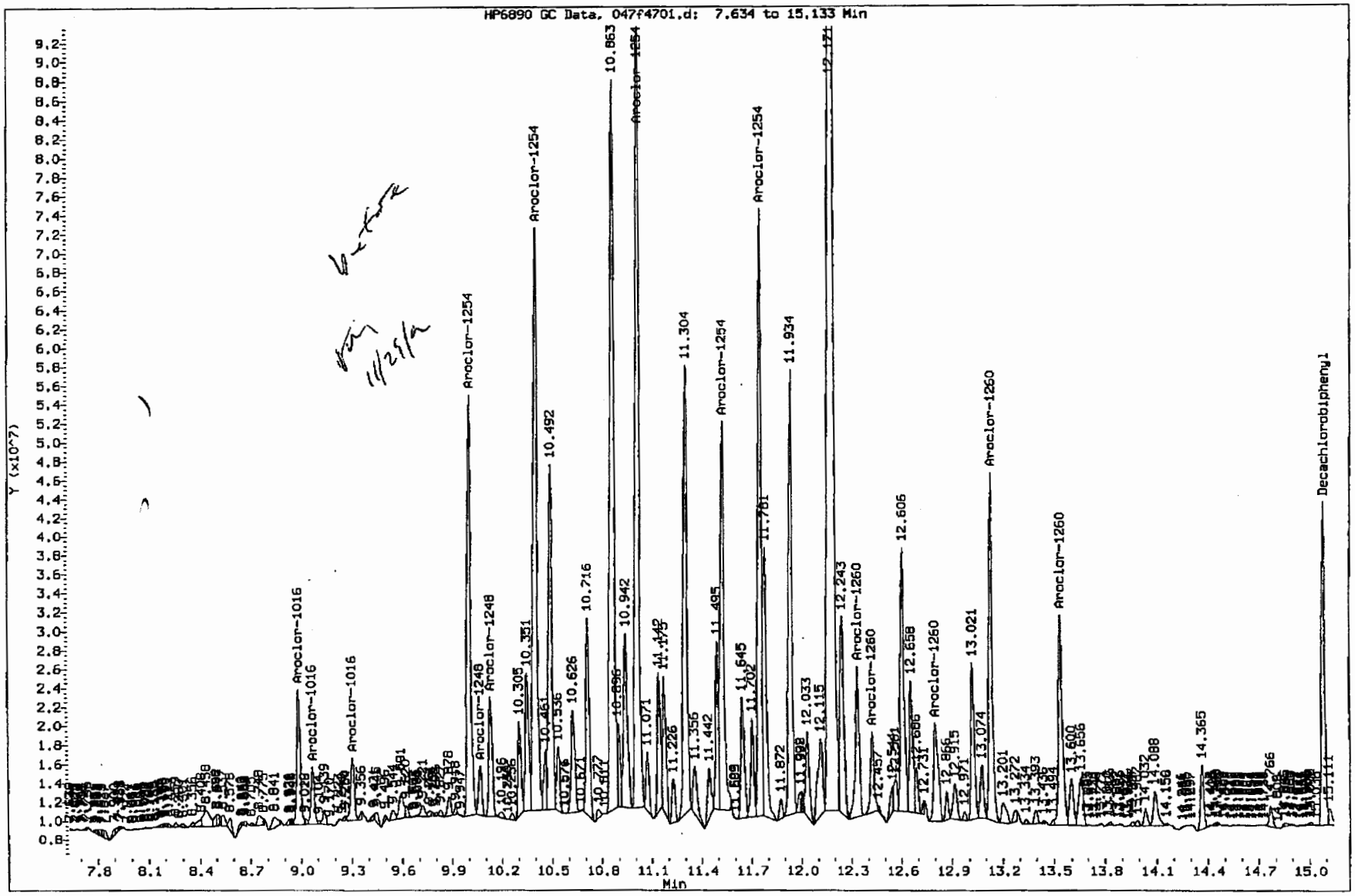
RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
4 Aroclor-1232					CAS #: 11141-16-5		
6.946	6.944	0.002	12896	0.18400	0.063	80.00- 120.00	100.00
7.579	7.584	-0.005	139496	3.29262	1.1	40.95- 80.95	1081.62
8.985	8.987	-0.002	20332135	573.101	197	24.75- 64.75	157650.12
9.068	9.070	-0.002	8379652	275.577	94.8	30.72- 70.72	64973.66
9.304	9.305	-0.001	9804885	281.818	97.0	30.46- 70.46	76024.54
Average of Peak Concentrations =					78.0		
6 Aroclor-1242					CAS #: 53469-21-9		
6.946	6.944	0.002	12896	0.25457	0.088	80.00- 120.00	100.00
7.579	7.585	-0.006	139496	1.80815	0.62	122.38- 162.38	1081.62
8.985	8.986	-0.001	20332135	313.155	108	91.55- 131.55	157650.12
9.068	9.068	0.000	8379652	114.999	39.6	105.39- 145.39	64973.66
9.304	9.305	-0.001	9804885	136.914	47.1	109.29- 149.29	76024.54
Average of Peak Concentrations =					39.0		
9 Aroclor-1248					CAS #: 12672-29-6		
8.985	8.987	-0.002	20332135	184.041	63.3	80.00- 120.00	100.00(M)
9.068	9.068	0.000	8379652	79.6697	27.4	76.06- 116.06	41.21
9.304	9.305	-0.001	9804885	82.1009	28.2	87.83- 127.83	48.22
10.066	10.068	-0.002	9423987	63.8780	22.0	113.94- 153.94	46.35
10.130	10.137	-0.007	20026038	146.061	50.3	112.47- 152.47	98.49
Average of Peak Concentrations =					38.2		
15 Aroclor-1254					CAS #: 11097-69-1		
10.003	10.004	-0.001	69160980	443.374	152	80.00- 120.00	100.00(M)
10.403	10.404	-0.001	102843134	620.308	213	94.32- 134.32	148.70
11.014	11.016	-0.002	133052869	571.708	197	135.66- 175.66	192.38
11.526	11.529	-0.003	67178402	371.117	128	94.57- 134.57	97.13
11.751	11.752	-0.001	92483529	905.161	~~311~~	49.22- 89.22	133.72
Average of Peak Concentrations =					200		
21 Aroclor-1260					CAS #: 11096-82-5		
12.336	12.338	-0.002	27010503	177.530	61.1	80.00- 120.00	100.00(M)
12.421	12.425	-0.004	16729276	194.569	67.0	34.80- 74.80	61.94
12.799	12.800	-0.001	19216387	240.782	82.8	30.84- 70.84	71.14
13.129	13.133	-0.004	52719839	149.564	51.5	212.78- 252.78	195.18
13.538	13.541	-0.003	34696245	155.349	53.4	120.82- 160.82	128.45
Average of Peak Concentrations =					63.2		

QC Flag Legend

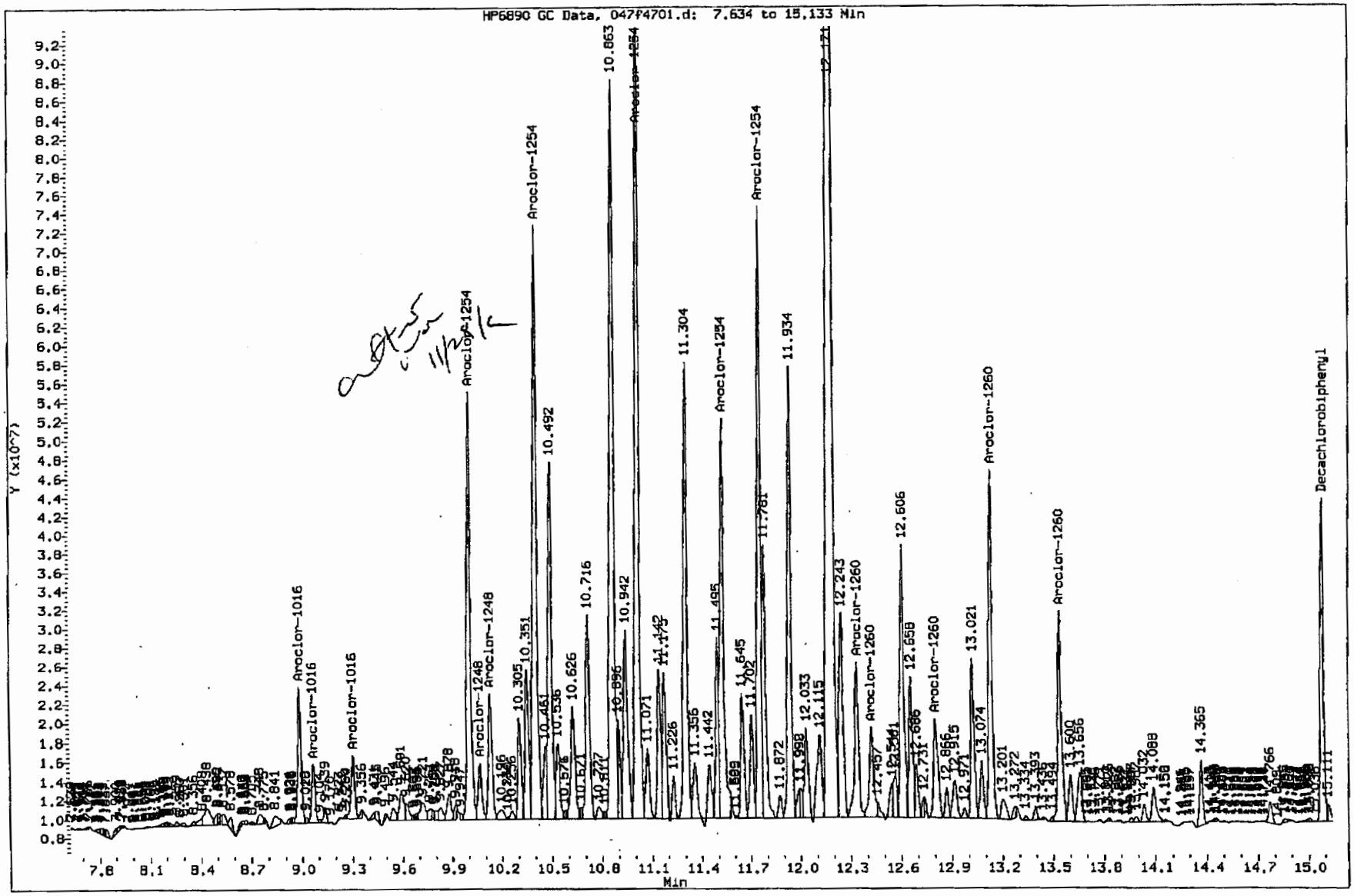
a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

476

Data File: /chem/ecd1a.i/111901a.b/047f4701.d
Injection Date: 20-NOV-2001 08:11
Instrument: ecd1a.i
Client Sample ID: L4094-2



Data File: /chem/ecd1a.i/111901a.b/047f4701.d
Injection Date: 20-NOV-2001 08:11
Instrument: ecd1a.i
Client Sample ID: L4094-2



Data File: /chem/ecdia.i/111901a.b/047f4701.d

Date : 20-NOV-2001 08:11

Client ID: L4094-2

Sample Info: |52055002|10|

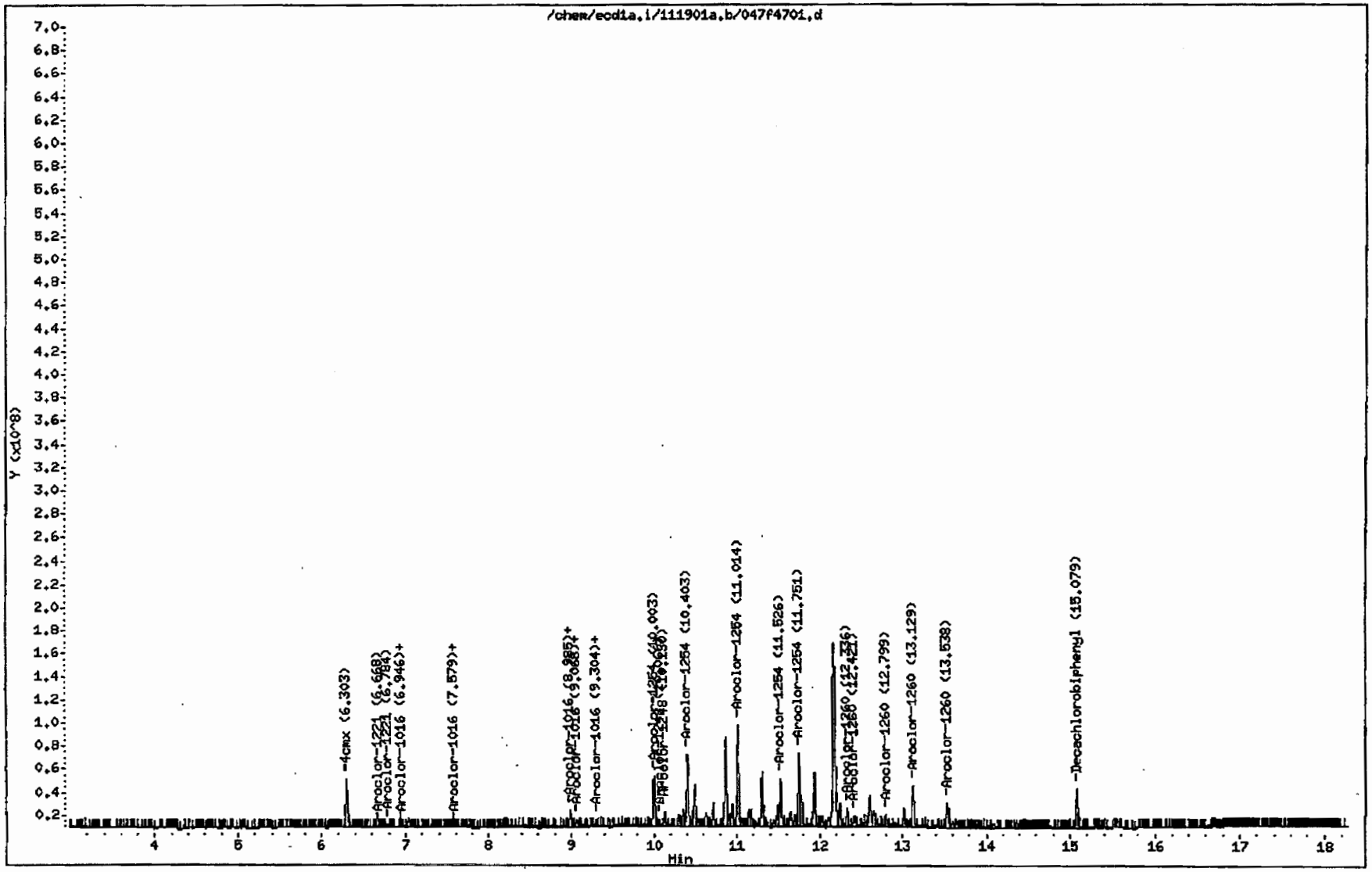
Volume Injected (uL): 1.0

Column phase: DB-XLB

Instrument: ecdia.i

Operator: mm

Column diameter: 0.25



1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

L4094-3

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Matrix: (soil/water) SOIL Lab Sample ID: 52055003

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 048F4801

% Moisture: 8 decanted: (Y/N) N Date Received: 11/15/01

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:11/16/01

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 11/20/01

Injection Volume: 1.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36.4	U
11104-28-2	Aroclor-1221	36.4	U
11141-16-5	Aroclor-1232	36.4	U
53469-21-9	Aroclor-1242	36.4	U
12672-29-6	Aroclor-1248	36.4	U
11097-69-1	Aroclor-1254	73.7	P
11096-82-5	Aroclor-1260	19.0	J

General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/048b4801.d
Lab Smp Id: 52055003 Client Smp ID: L4094-3
Inj Date : 20-NOV-2001 08:34
Operator : mm Inst ID: ecd1a.i
Smp Info : |52055003|10|
Misc Info : |ECD82P_1S|121122|SVA|ETLL|
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m
Meth Date : 20-Nov-2001 13:44 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012b1201.d
Als bottle: 48
Dil Factor: 10.00000
Integrator: Falcon Compound Sublist: 52055.sub
Target Version: 3.50 Sample Matrix: Soil

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVariab

Name	Value	Description
DF	10.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.00000	Weight of sample extracted (g)
M	8.38180	% Moisture

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
$ 1 4cmx					CAS #: 877-09-8		
6.158	6.159	-0.001	15835912	13.7367	5.0	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.373	15.375	-0.002	14442294	14.7481	5.4	80.00- 120.00	100.00
4 Aroclor-1232					CAS #: 11141-16-5		
0.000	7.331	-7.331	0			80.00- 120.00	0.00(TaM)
8.049	8.049	0.000	214389	10.6245	3.9	70.60- 110.60	0.00
8.428	8.430	-0.002	269283	47.0545	17.1	5.55- 45.55	0.00
8.995	8.992	0.003	302243	23.1536	8.4	35.02- 75.02	0.00
9.790	9.790	0.000	2770382	209.574	76.2	39.22- 79.22	0.00
			Average of Peak Concentrations =		26.4		

11/29/01

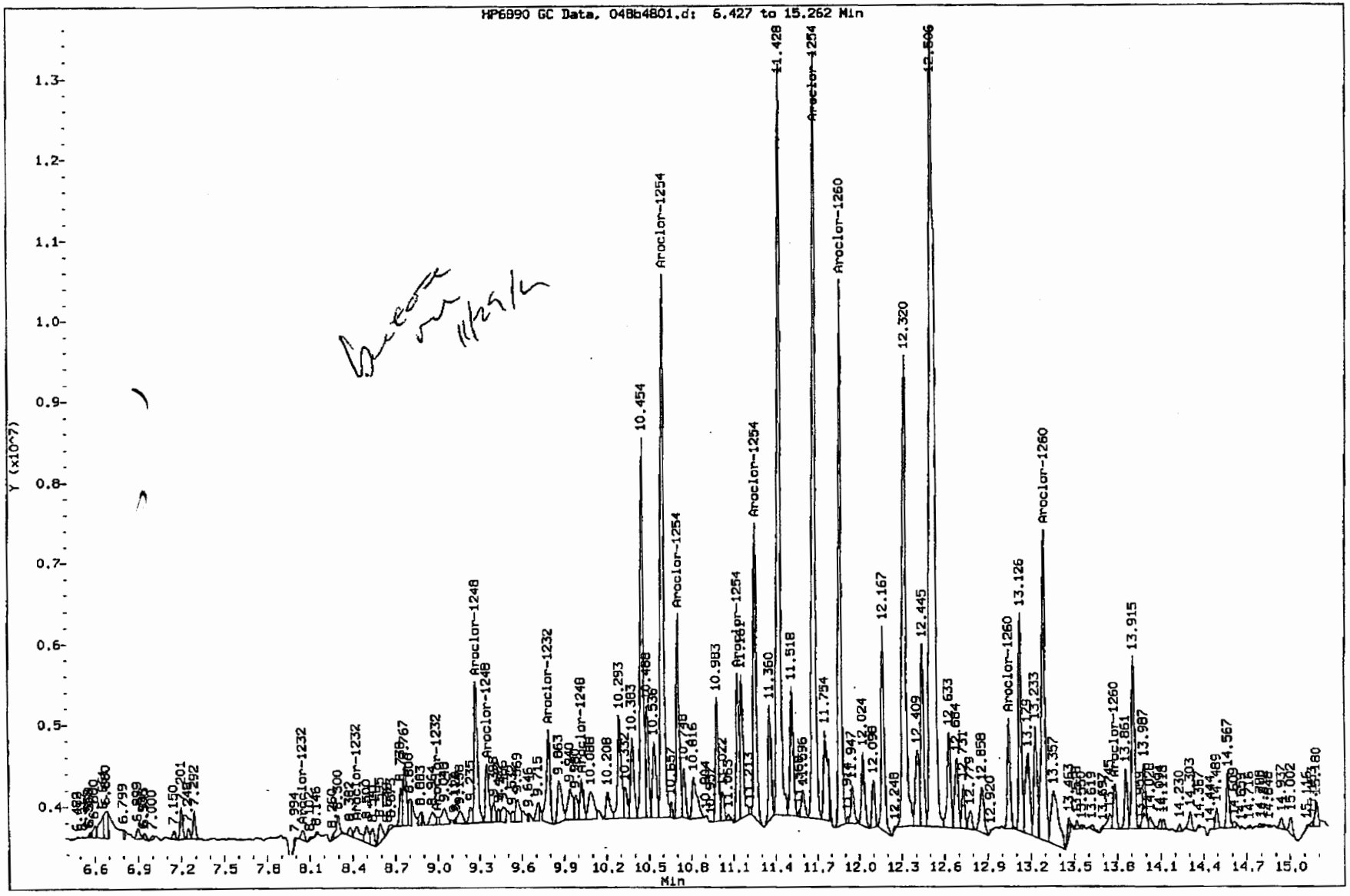
JC 12/6/01

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
9 Aroclor-1248					CAS #: 12672-29-6		
8.049	8.048	0.001	214389	12.0071	4.4	80.00- 120.00	100.00(aM)
9.275	9.274	0.001	3566837	105.796	38.5	174.49- 214.49	1663.72
9.351	9.351	0.000	1718038	53.5337	19.5	163.02- 203.02	801.37
9.790	9.791	-0.001	2770382	65.7290	23.9	222.44- 262.44	1292.22
10.023	10.025	-0.002	1382775	56.2240	20.4	119.72- 159.72	644.98
Average of Peak Concentrations =					21.3		
15 Aroclor-1254					CAS #: 11097-69-1		
10.598	10.599	-0.001	11830796	168.458	61.3	80.00- 120.00	100.00(M)
10.707	10.706	0.001	4243459	162.772	59.2	15.38- 55.38	35.87
11.131	11.132	-0.001	3101608	148.570	54.0	9.62- 49.62	26.22
11.258	11.257	0.001	6108851	141.651	51.5	42.13- 82.13	51.64
11.678	11.679	-0.001	15310509	177.145	64.4	107.51- 147.51	129.41
Average of Peak Concentrations =					58.1		
21 Aroclor-1260					CAS #: 11096-82-5		
11.678	11.679	-0.001	15310509	~~228.491~~	~~83.1~~	80.00- 120.00	100.00(aM)
11.864	11.866	-0.002	9860548	~~131.001~~	~~47.7~~	95.12- 135.12	64.40
13.046	13.047	-0.001	2000203	42.2447	15.4	51.18- 91.18	13.06
13.293	13.294	-0.001	6112584	48.8796	17.8	178.37- 218.37	39.92
13.783	13.785	-0.002	929695	43.1210	15.7	13.35- 53.35	6.07
Average of Peak Concentrations =				44.8	~~35.9~~ 16.3		

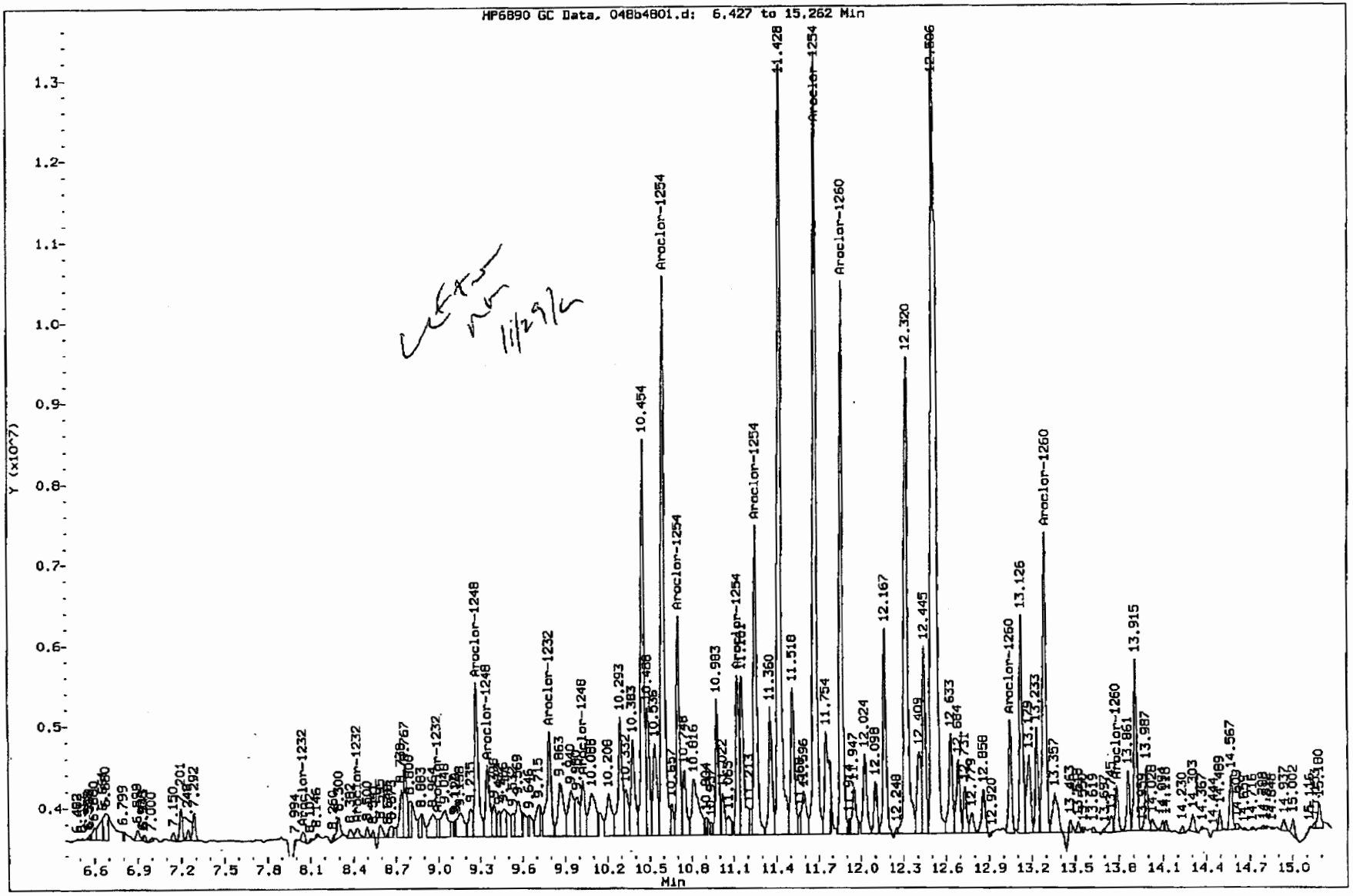
QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: /chem/ecd1a.i/111901a.b/048b4801.d
Injection Date: 20-NOV-2001 08:34
Instrument: ecd1a.i
Client Sample ID: L4094-3

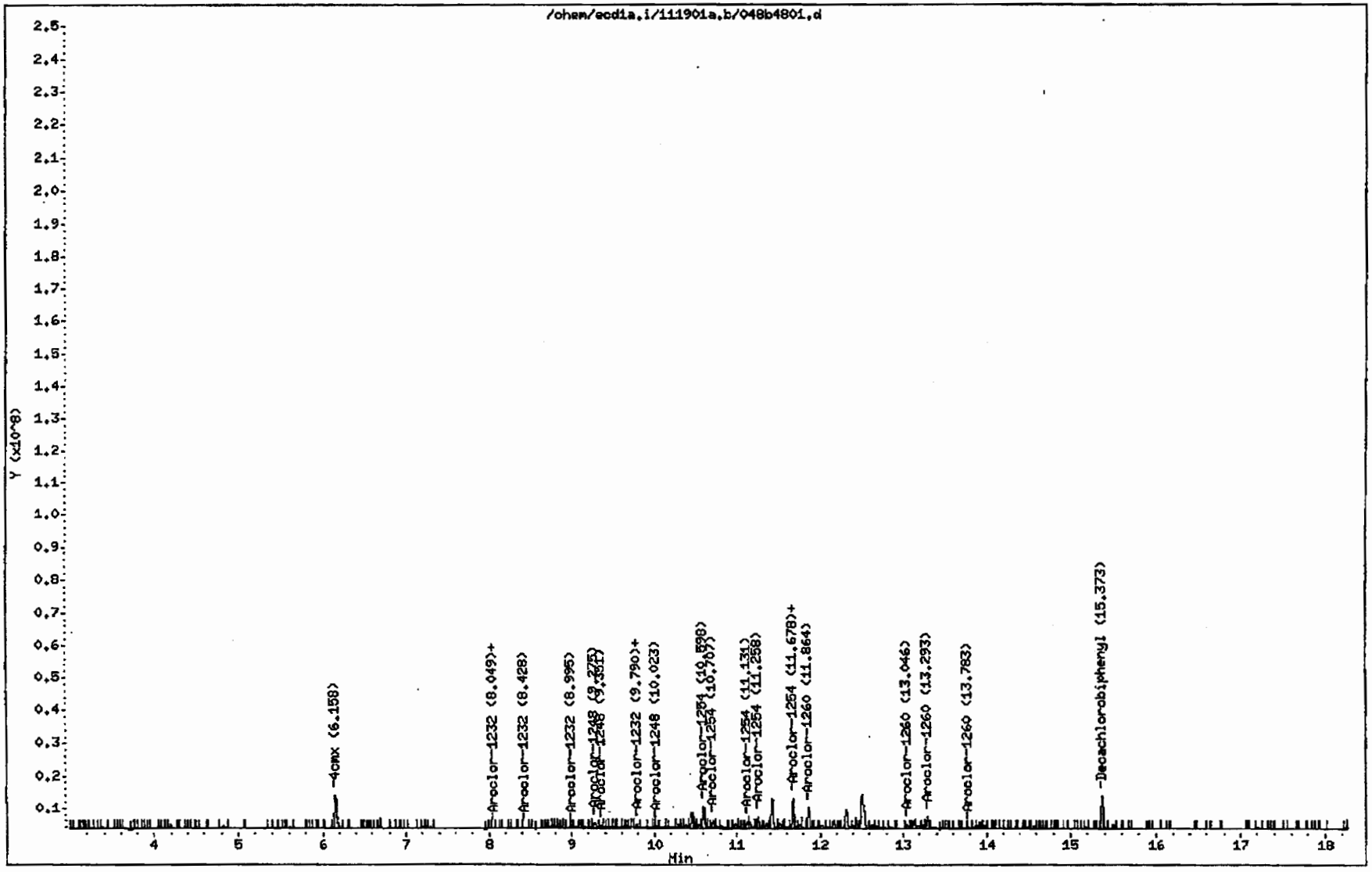


Data File: /chem/ecd1a.i/111901a.b/048b4801.d
Injection Date: 20-NOV-2001 08:34
Instrument: ecd1a.i
Client Sample ID: L4094-3



Data File: /chem/ecd1a.i/111901a.b/048b4801.d
Date : 20-NOV-2001 08:34
Client ID: L4094-3
Sample Info: |520550031101|
Volume Injected (uL): 1.0
Column phase: DB-17MS

Instrument: ecd1a.i
Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/048f4801.d
Lab Smp Id: 52055003 Client Smp ID: L4094-3
Inj Date : 20-NOV-2001 08:34
Operator : mm Inst ID: ecd1a.i
Smp Info : |52055003|10|
Misc Info : |ECD82P_1S|121122|SVA|ETLL|
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m
Meth Date : 20-Nov-2001 13:43 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012f1201.d
Als bottle: 48
Dil Factor: 10.00000
Integrator: Falcon Compound Sublist: 52055.sub
Target Version: 3.50 Sample Matrix: Soil

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVariab

Name	Value	Description
DF	10.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.00000	Weight of sample extracted (g)
M	8.38180	% Moisture

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
$ 1 4cmx					CAS #: 877-09-8		
6.303	6.303	0.000	57874846	15.4179	5.6	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.078	15.078	0.000	42593519	14.0049	5.1	80.00- 120.00	100.00
3 Aroclor-1016					CAS #: 12674-11-2		
6.941	6.943	-0.002	42518	0.67372	0.24	80.00- 120.00	100.00(a)
7.583	7.584	-0.001	271177	2.68133	0.98	141.60- 181.60	637.78
8.986	8.987	-0.001	9208767	107.681	39.2	114.56- 154.56	21658.06
9.068	9.068	0.000	3622215	38.6169	14.0	131.20- 171.20	8519.07
9.303	9.305	-0.002	4307618	47.1622	17.2	125.87- 165.87	10131.07
Average of Peak Concentrations =					14.3		

12/4/01

DMP

JC 12/4/01

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
4 Aroclor-1232					CAS #: 11141-16-5		
6.941	6.944	-0.003	42518	0.60665	0.22	80.00- 120.00	100.00
7.583	7.584	-0.001	271177	6.40080	2.3	40.95- 80.95	637.78
8.986	8.987	-0.001	9208767	259.567	94.4	24.75- 64.75	21658.06
9.068	9.070	-0.002	3622215	119.122	43.3	30.72- 70.72	8519.07
9.303	9.305	-0.002	4307618	123.812	45.0	30.46- 70.46	10131.07
Average of Peak Concentrations =					37.1		
6 Aroclor-1242					CAS #: 53469-21-9		
6.941	6.944	-0.003	42518	0.83934	0.30	80.00- 120.00	100.00(a)
7.583	7.585	-0.002	271177	3.51502	1.3	122.38- 162.38	637.78
8.986	8.986	0.000	9208767	141.833	51.6	91.55- 131.55	21658.06
9.068	9.068	0.000	3622215	49.7100	18.1	105.39- 145.39	8519.07
9.303	9.305	-0.002	4307618	60.1510	21.9	109.29- 149.29	10131.07
Average of Peak Concentrations =					18.6		
9 Aroclor-1248					CAS #: 12672-29-6		
8.986	8.987	-0.001	9208767	83.3555	30.3	80.00- 120.00	100.00(a)
9.068	9.068	0.000	3622215	34.4383	12.5	76.06- 116.06	39.33
9.303	9.305	-0.002	4307618	36.0697	13.1	87.83- 127.83	46.78
10.065	10.068	-0.003	6312537	42.7879	15.6	113.94- 153.94	68.55
10.131	10.137	-0.006	8632913	62.9645	22.9	112.47- 152.47	93.75
Average of Peak Concentrations =					18.9		
15 Aroclor-1254					CAS #: 11097-69-1		
10.003	10.004	-0.001	27238275	174.618	63.5	80.00- 120.00	100.00
10.401	10.404	-0.003	38472058	232.048	84.4	94.32- 134.32	141.24
11.013	11.016	-0.003	45030463	193.489	70.4	135.66- 175.66	165.32
11.525	11.529	-0.004	24680450	136.343	49.6	94.57- 134.57	90.61
11.749	11.752	-0.003	28231075	276.305	100	49.22- 89.22	103.64
Average of Peak Concentrations =					73.7		
21 Aroclor-1260					CAS #: 11096-82-5		
12.335	12.338	-0.003	6802791	44.7123	16.3	80.00- 120.00	100.00(a)
12.419	12.425	-0.006	3716968	43.2299	15.7	34.80- 74.80	54.64
12.797	12.800	-0.003	5768483	72.2793	26.3	30.84- 70.84	84.80
13.128	13.133	-0.005	17798492	50.4936	18.4	212.78- 252.78	261.64
13.538	13.541	-0.003	11304724	50.6159	18.4	120.82- 160.82	166.18
Average of Peak Concentrations =					19.0		

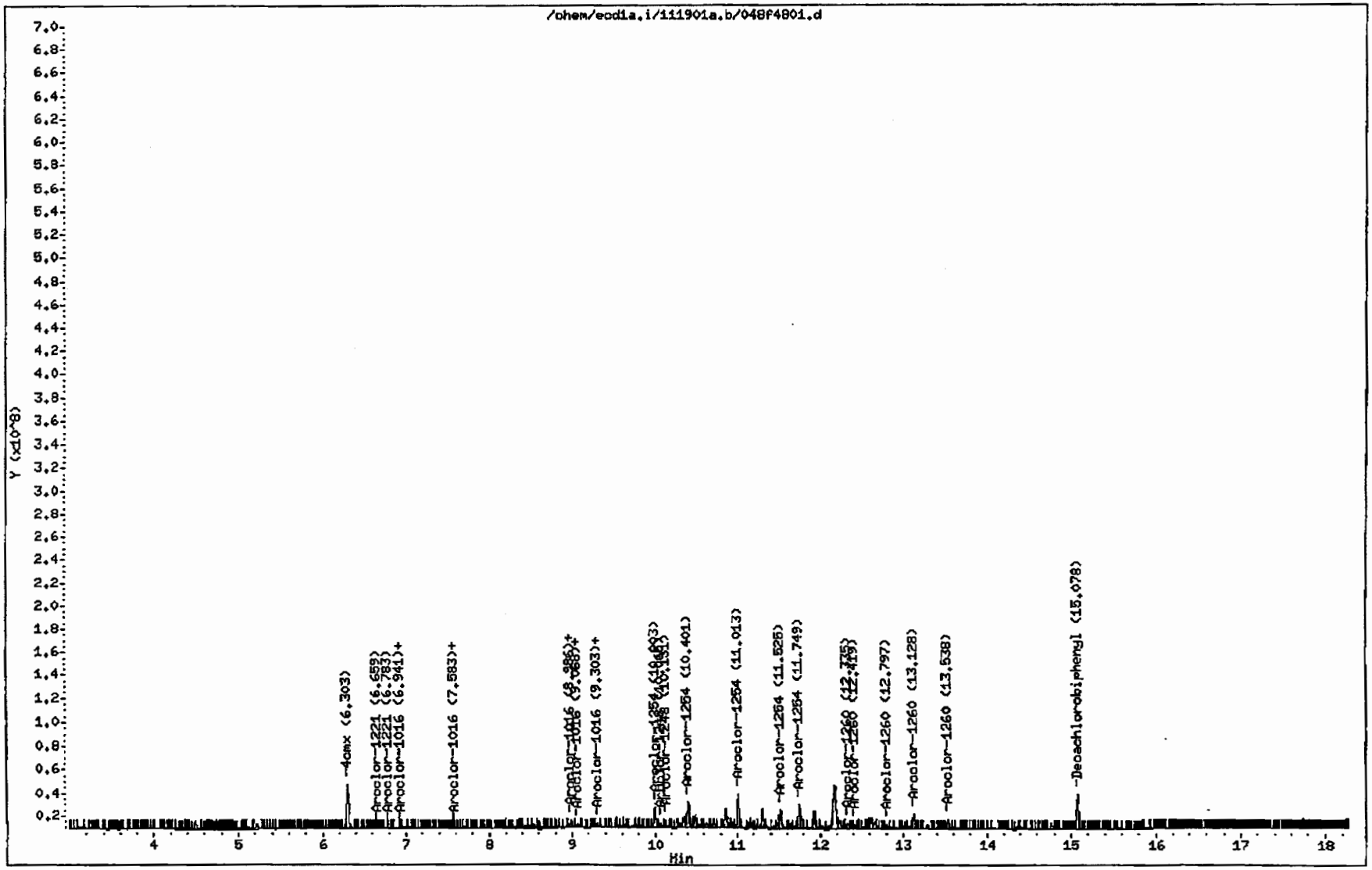
DMP

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

Data File: /ohem/ecdia.i/111901a.b/048f4801.d
Date : 20-NOV-2001 08:34
Client ID: L4094-3
Sample Info: 1520550031101
Volume Injected (uL): 1.0
Column phase: DB-XLB

Instrument: ecdia.i
Operator: mm
Column diameter: 0.25



1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

L4094-4

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Matrix: (soil/water) SOIL Lab Sample ID: 52055004

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 049F4901

% Moisture: 13 decanted: (Y/N) N Date Received: 11/15/01

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:11/16/01

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 11/20/01

Injection Volume: 1.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2------	Aroclor-1016	38.4	U
11104-28-2------	Aroclor-1221	38.4	U
11141-16-5------	Aroclor-1232	38.4	U
53469-21-9------	Aroclor-1242	38.4	U
12672-29-6------	Aroclor-1248	38.4	U
11097-69-1------	Aroclor-1254	122	P
11096-82-5------	Aroclor-1260	69.2	

General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/049b4901.d
Lab Smp Id: 52055004 Client Smp ID: L4094-4
Inj Date : 20-NOV-2001 08:56
Operator : mm Inst ID: ecd1a.i
Smp Info : |52055004|10|
Misc Info : |ECD82P_1S|121122|SVA|ETLL|
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m
Meth Date : 20-Nov-2001 13:44 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012b1201.d
Als bottle: 49
Dil Factor: 10.00000
Integrator: Falcon Compound Sublist: 52055.sub
Target Version: 3.50 Sample Matrix: Soil

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVariab

Name	Value	Description
DF	10.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.00000	Weight of sample extracted (g)
M	13.09920	% Moisture

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
$ 1 4cmx					CAS #: 877-09-8		
6.159	6.159	0.000	14728187	12.7759	4.9	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.374	15.375	-0.001	12137505	12.3945	4.8	80.00- 120.00	100.00
4 Aroclor-1232					CAS #: 11141-16-5		
0.000	7.331	-7.331	0			80.00- 120.00	0.00(Ta)
8.049	8.049	0.000	1132769	56.1370	21.5	70.60- 110.60	0.00
8.432	8.430	0.002	90575	15.8271	6.1	5.55- 45.55	0.00
8.993	8.992	0.001	280134	21.4599	8.2	35.02- 75.02	0.00
9.790	9.790	0.000	2573195	194.657	74.7	39.22- 79.22	0.00
Average of Peak Concentrations =					27.6		

Mm 12/4

JC 12/4/01

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
9 Aroclor-1248					CAS #: 12672-29-6		
8.049	8.048	0.001	1132769	63.4423	24.3	80.00- 120.00	100.00(a)
9.275	9.274	0.001	3831879	113.657	43.6	174.49- 214.49	338.28
9.351	9.351	0.000	1459768	45.4861	17.4	163.02- 203.02	128.87
9.790	9.791	-0.001	2573195	61.0506	23.4	222.44- 262.44	227.16
10.025	10.025	0.000	1234782	50.2065	19.2	119.72- 159.72	109.01
			Average of Peak Concentrations =		25.6		
15 Aroclor-1254					CAS #: 11097-69-1		
10.600	10.599	0.001	16631683	236.817	90.8	80.00- 120.00	100.00
10.708	10.706	0.002	5565599	213.487	81.9	15.38- 55.38	33.46
11.132	11.132	0.000	3957389	189.563	72.7	9.62- 49.62	23.79
11.258	11.257	0.001	7890234	182.957	70.2	42.13- 82.13	47.44
11.677	11.679	-0.002	26443746	305.958	117	107.51- 147.51	159.00
			Average of Peak Concentrations =		86.6		
21 Aroclor-1260					CAS #: 11096-82-5		
11.677	11.679	-0.002	26443746	394.641	151	80.00- 120.00	100.00
11.863	11.866	-0.003	21242853	282.219	108	95.12- 135.12	80.33
13.045	13.047	-0.002	6537711	138.078	53.0	51.18- 91.18	24.72
13.291	13.294	-0.003	20231667	161.784	62.0	178.37- 218.37	76.51
13.785	13.785	0.000	2830961	131.305	50.4	13.35- 53.35	10.71
			Average of Peak Concentrations =		85.0		

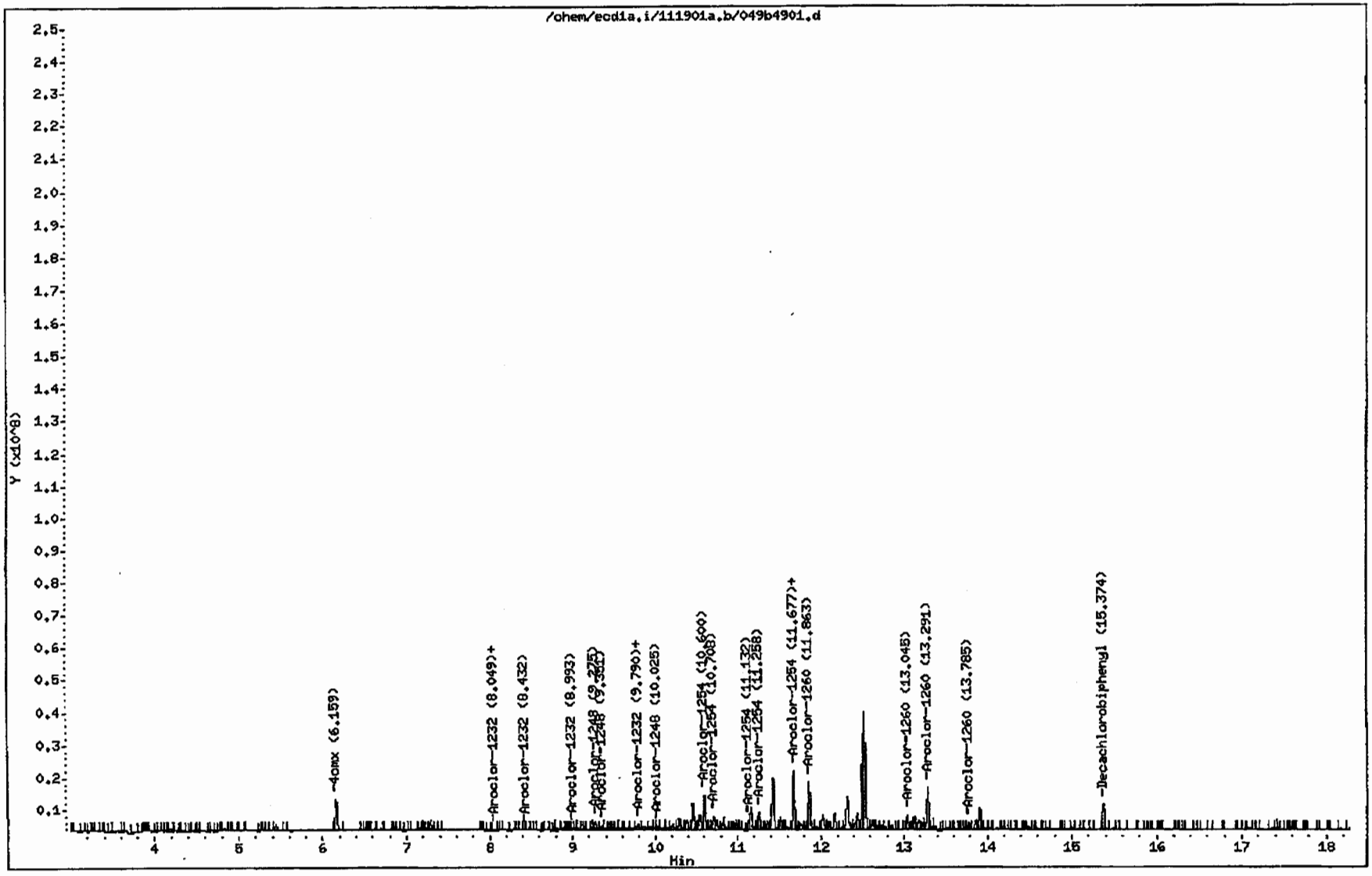
QC Flag Legend

T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

Data File: /ohem/ecd1a.i/111901a.b/049b4901.d
Date : 20-NOV-2001 08:56
Client ID: L4094-4
Sample Info: 1520550041101
Volume Injected (uL): 1.0
Column phase: DB-17MS

Instrument: ecd1a.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/049f4901.d
Lab Smp Id: 52055004 Client Smp ID: L4094-4
Inj Date : 20-NOV-2001 08:56
Operator : mm Inst ID: ecd1a.i
Smp Info : |52055004|10|
Misc Info : |ECD82P_1S|121122|SVA|ETLL|
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m
Meth Date : 20-Nov-2001 13:43 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012f1201.d
Als bottle: 49
Dil Factor: 10.00000
Integrator: Falcon Compound Sublist: 52055.sub
Target Version: 3.50 Sample Matrix: Soil

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVariab

Name	Value	Description
DF	10.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.00000	Weight of sample extracted (g)
M	13.09920	% Moisture

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
$ 1 4cmx					CAS #: 877-09-8		
6.304	6.303	0.001	51864622	13.8167	5.3	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.079	15.078	0.001	35266380	11.5957	4.4	80.00- 120.00	100.00
3 Aroclor-1016					CAS #: 12674-11-2		
6.944	6.943	0.001	130582	2.06909	0.79	80.00- 120.00	100.00(a)
7.578	7.584	-0.006	505759	5.00081	1.9	141.60- 181.60	387.31
8.986	8.987	-0.001	18892492	220.915	84.7	114.56- 154.56	14467.81
9.069	9.068	0.001	9379606	99.9972	38.4	131.20- 171.20	7182.87
9.304	9.305	-0.001	10581338	115.850	44.4	125.87- 165.87	8103.15
			Average of Peak Concentrations =		34.0		

12/4/01

JC 12/4/01

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RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
4 Aroclor-1232					CAS #: 11141-16-5		
6.944	6.944	0.000	130582	1.86311	0.71	80.00- 120.00	100.00
7.578	7.584	-0.006	505759	11.9378	4.6	40.95- 80.95	387.31
8.986	8.987	-0.001	18892492	532.522	204	24.75- 64.75	14467.81
9.069	9.070	-0.001	9379606	308.462	118	30.72- 70.72	7182.87
9.304	9.305	-0.001	10581338	304.135	117	30.46- 70.46	8103.15
Average of Peak Concentrations =					88.9		
6 Aroclor-1242					CAS #: 53469-21-9		
6.944	6.944	0.000	130582	2.57773	0.99	80.00- 120.00	100.00
7.578	7.585	-0.007	505759	6.55567	2.5	122.38- 162.38	387.31
8.986	8.986	0.000	18892492	290.982	112	91.55- 131.55	14467.81
9.069	9.068	0.001	9379606	128.722	49.4	105.39- 145.39	7182.87
9.304	9.305	-0.001	10581338	147.756	56.7	109.29- 149.29	8103.15
Average of Peak Concentrations =					44.2		
9 Aroclor-1248					CAS #: 12672-29-6		
8.986	8.987	-0.001	18892492	171.010	65.6	80.00- 120.00	100.00
9.069	9.068	0.001	9379606	89.1768	34.2	76.06- 116.06	49.65
9.304	9.305	-0.001	10581338	88.6025	34.0	87.83- 127.83	56.01
10.065	10.068	-0.003	16659232	112.920	43.3	113.94- 153.94	88.18
10.131	10.137	-0.006	22546142	164.441	63.1	112.47- 152.47	119.34
Average of Peak Concentrations =					48.0		
15 Aroclor-1254					CAS #: 11097-69-1		
10.004	10.004	0.000	52338966	335.532	129	80.00- 120.00	100.00(M)
10.403	10.404	-0.001	65418140	394.576	151	94.32- 134.32	124.99
11.012	11.016	-0.004	80175204	344.501	132	135.66- 175.66	153.18
11.525	11.529	-0.004	35807346	197.812	75.9	94.57- 134.57	68.41
11.750	11.752	-0.002	58718626	574.695	220	49.22- 89.22	112.19
Average of Peak Concentrations =					142		
21 Aroclor-1260					CAS #: 11096-82-5		
12.336	12.338	-0.002	26700632	175.494	67.3	80.00- 120.00	100.00(M)
12.421	12.425	-0.004	17005360	197.780	75.9	34.80- 74.80	63.69
12.799	12.800	-0.001	16077652	201.454	77.3	30.84- 70.84	60.21
13.129	13.133	-0.004	57741214	163.809	62.8	212.78- 252.78	216.25
13.538	13.541	-0.003	36591557	163.835	62.8	120.82- 160.82	137.04
Average of Peak Concentrations =					69.2		

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

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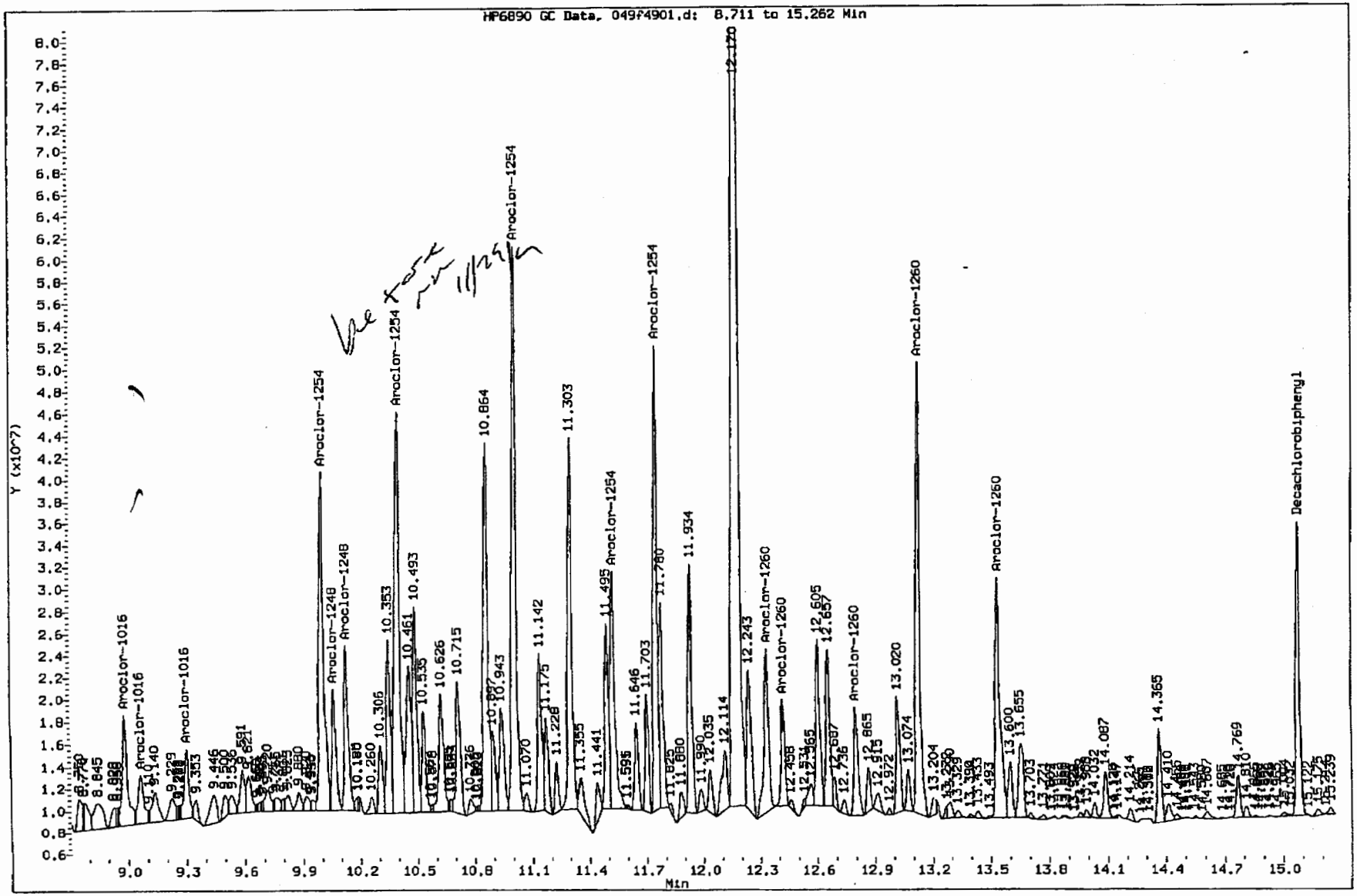
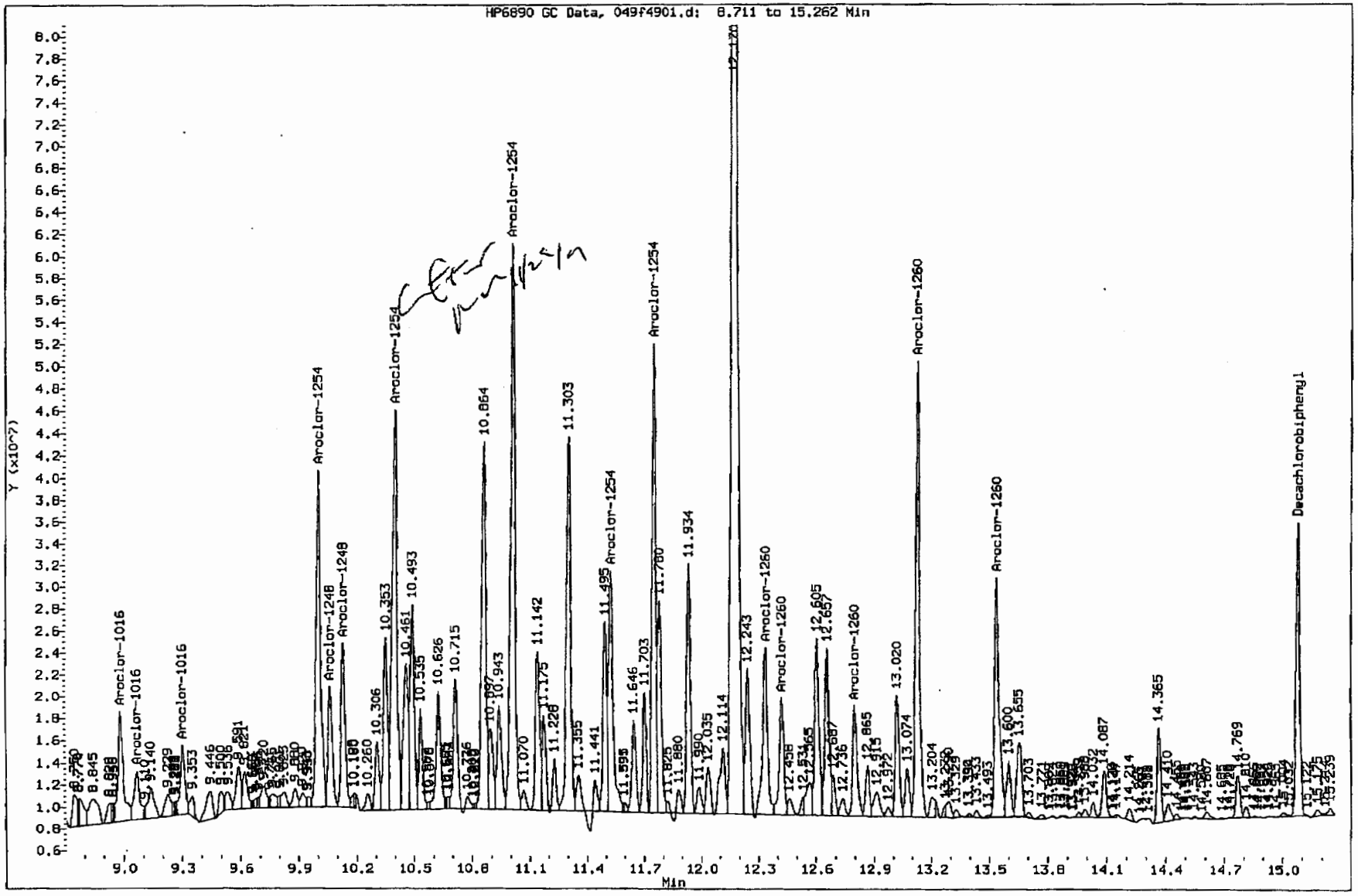
Data File: /chem/ecd1a.i/111901a.b/049f4901.d
Injection Date: 20-NOV-2001 08:56
Instrument: ecd1a.i
Client Sample ID: L4094-4



495

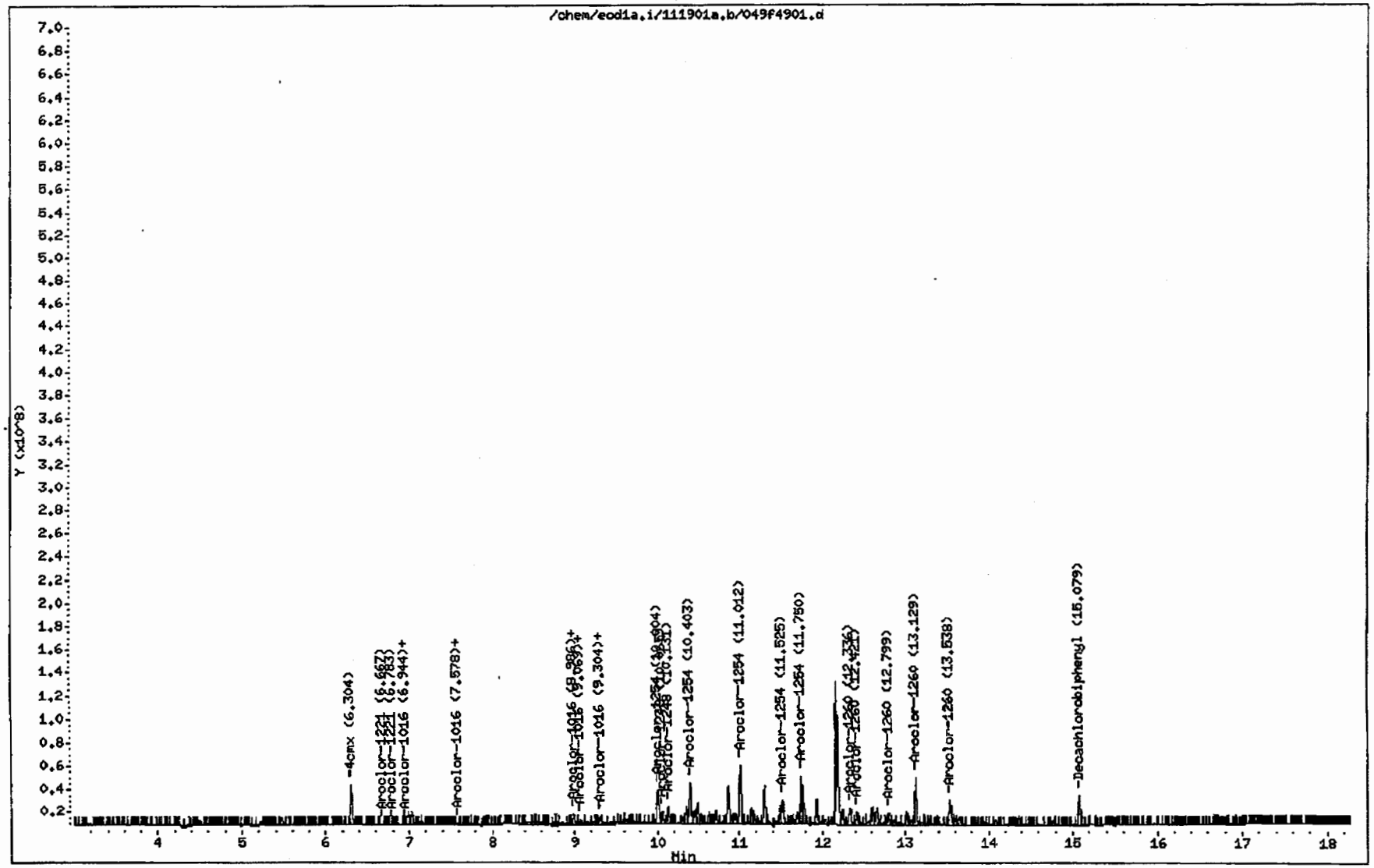
Data File: /chem/ecd1a.i/111901a.b/049f4901.d
Injection Date: 20-NOV-2001 08:56
Instrument: ecd1a.i
Client Sample ID: L4094-4



496

Data File: /chem/ecdia.i/111901a.b/049f4901.d
Date : 20-NOV-2001 08:56
Client ID: L4094-4
Sample Info: 1520550041101
Volume Injected (uL): 1.0
Column phase: DB-XLB

Instrument: ecdia.i
Operator: mm
Column diameter: 0.25



1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

L4094-5

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Matrix: (soil/water) SOIL Lab Sample ID: 52055005

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 050F5001

% Moisture: 3 decanted: (Y/N) N Date Received: 11/15/01

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:11/16/01

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 11/20/01

Injection Volume: 1.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	34.3	U
11104-28-2	Aroclor-1221	34.3	U
11141-16-5	Aroclor-1232	34.3	U
53469-21-9	Aroclor-1242	34.3	U
12672-29-6	Aroclor-1248	34.3	U
11097-69-1	Aroclor-1254	125	
11096-82-5	Aroclor-1260	43.0	

General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/050b5001.d
Lab Smp Id: 52055005 Client Smp ID: L4094-5
Inj Date : 20-NOV-2001 09:19
Operator : mm Inst ID: ecd1a.i
Smp Info : |52055005|10|
Misc Info : |ECD82P_1S|121122|SVA|ETLL|
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m
Meth Date : 20-Nov-2001 13:44 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012b1201.d
Als bottle: 50
Dil Factor: 10.00000
Integrator: Falcon Compound Sublist: 52055.sub
Target Version: 3.50 Sample Matrix: Soil

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVariab

Name	Value	Description
DF	10.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.00000	Weight of sample extracted (g)
M	2.94510	% Moisture

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
$ 1 4cmx					CAS #: 877-09-8		
6.159	6.159	0.000	16369516	14.1996	4.9	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.375	15.375	0.000	13971946	14.2678	4.9	80.00- 120.00	100.00
4 Aroclor-1232					CAS #: 11141-16-5		
7.322	7.331	-0.009	15703	0.70823	0.24	80.00- 120.00	100.00(a)
8.045	8.049	-0.004	14576	0.72235	0.25	70.60- 110.60	92.82
8.428	8.430	-0.002	102392	17.8920	6.1	5.55- 45.55	652.03
9.012	8.992	0.020	64924	4.97354	1.7	35.02- 75.02	413.43
9.790	9.790	0.000	2199132	166.360	57.1	39.22- 79.22	14003.92
Average of Peak Concentrations =					13.1		

12/4/01

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
9 Aroclor-1248					CAS #: 12672-29-6		
8.045	8.048	-0.003	14576	0.81635	0.28	80.00- 120.00	100.00(a)
9.275	9.274	0.001	7277966	215.871	74.1	174.49- 214.49	49931.16
9.351	9.351	0.000	1303181	40.6069	13.9	163.02- 203.02	8940.60
9.790	9.791	-0.001	2199132	52.1758	17.9	222.44- 262.44	15087.35
10.024	10.025	-0.001	953532	38.7708	13.3	119.72- 159.72	6541.80
Average of Peak Concentrations =					23.9		
15 Aroclor-1254					CAS #: 11097-69-1		
10.600	10.599	0.001	25017831	356.226	122	80.00- 120.00	100.00
10.707	10.706	0.001	9023069	346.109	119	15.38- 55.38	36.07
11.132	11.132	0.000	5585264	267.540	91.9	9.62- 49.62	22.33
11.258	11.257	0.001	11171006	259.031	89.0	42.13- 82.13	44.65
11.679	11.679	0.000	30651982	354.648	122	107.51- 147.51	122.52
Average of Peak Concentrations =					109		
21 Aroclor-1260					CAS #: 11096-82-5		
11.679	11.679	0.000	30651982	~~457.444~~	~~157~~	80.00- 120.00	100.00
11.865	11.866	-0.001	22068551	~~293.189~~	~~101~~	95.12- 135.12	72.00
13.047	13.047	0.000	4882257	103.114	35.4	51.18- 91.18	15.93
13.294	13.294	0.000	13830336	110.595	38.0	178.37- 218.37	45.12
13.785	13.785	0.000	2482571	115.146	39.5	13.35- 53.35	8.10
Average of Peak Concentrations =					~~74.1~~ 37.6		

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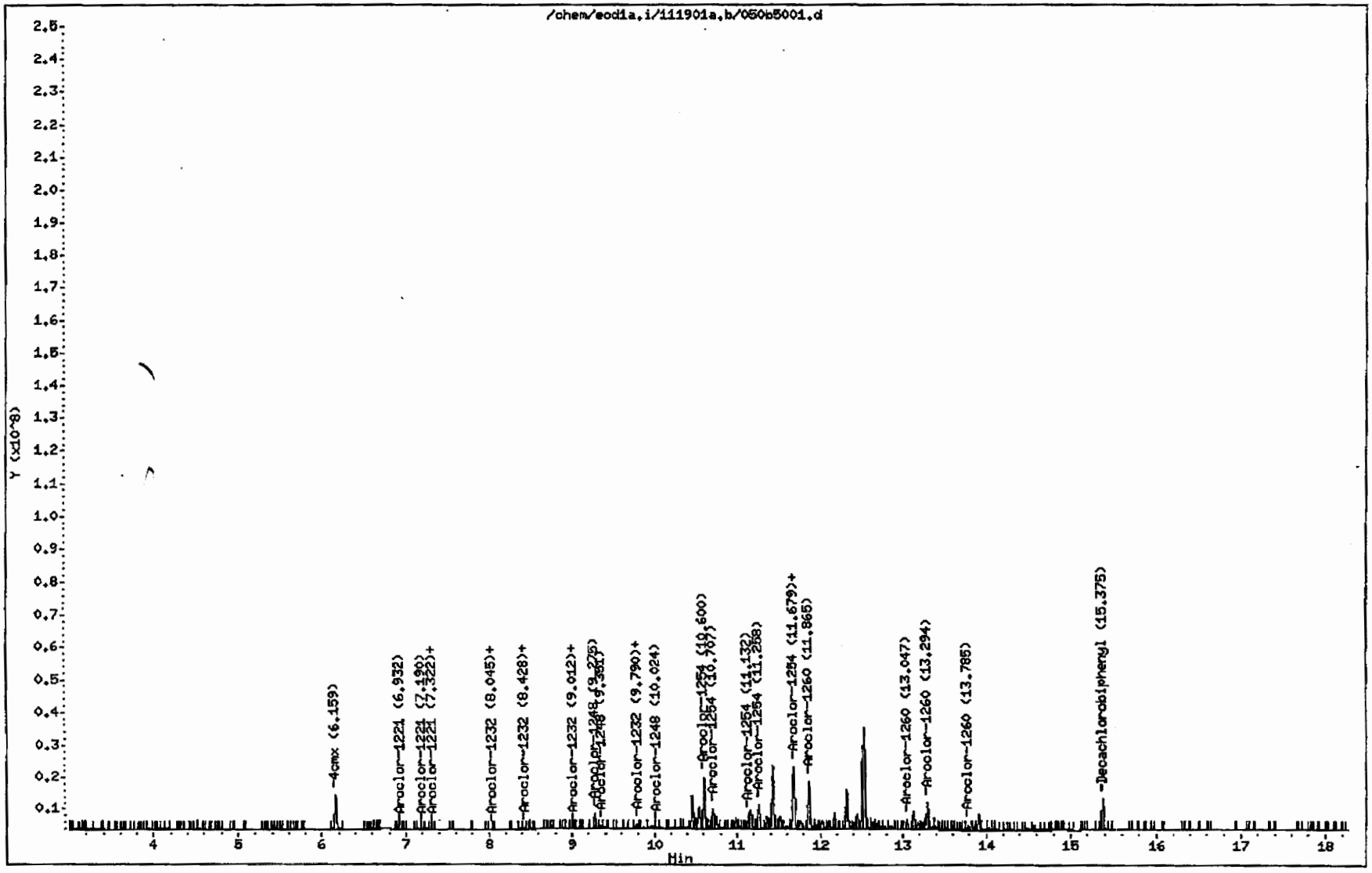
QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

Data File: /chem/ecd1a.i/111901a.b/050b5001.d
Date : 20-NOV-2001 09:19
Client ID: L4094-5
Sample Info: 152055005|10|
Volume Injected (uL): 1.0
Column phase: DB-17MS

Instrument: ecd1a.i
Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/050f5001.d
Lab Smp Id: 52055005 Client Smp ID: L4094-5
Inj Date : 20-NOV-2001 09:19
Operator : mm Inst ID: ecd1a.i
Smp Info : |52055005|10|
Misc Info : |ECD82P_1S|121122|SVA|ETLL|
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m
Meth Date : 20-Nov-2001 13:43 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012f1201.d
Als bottle: 50
Dil Factor: 10.00000
Integrator: Falcon Compound Sublist: 52055.sub
Target Version: 3.50 Sample Matrix: Soil

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVariab

Name	Value	Description
DF	10.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.00000	Weight of sample extracted (g)
M	2.94510	% Moisture

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
$ 1 4cmx					CAS #: 877-09-8		
6.304	6.303	0.001	57849642	15.4112	5.3	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.079	15.078	0.001	40128119	13.1942	4.5	80.00- 120.00	100.00
3 Aroclor-1016					CAS #: 12674-11-2		
6.945	6.943	0.002	5146	0.08154	0.028	80.00- 120.00	100.00(a)
7.580	7.584	-0.004	38908	0.38471	0.13	141.60- 181.60	756.04
8.987	8.987	0.000	24316215	284.336	97.6	114.56- 154.56	472498.99
9.070	9.068	0.002	4564736	48.6653	16.7	131.20- 171.20	88699.38
9.304	9.305	-0.001	5553118	60.7986	20.9	125.87- 165.87	107905.07
Average of Peak Concentrations =					27.1		

JC 12/4/01

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
4 Aroclor-1232					CAS #: 11141-16-5		
6.945	6.944	0.001	5146	0.07343	0.025	80.00- 120.00	100.00
7.580	7.584	-0.004	38908	0.91838	0.32	40.95- 80.95	756.04
8.987	8.987	0.000	24316215	685.400	235	24.75- 64.75	472498.99
9.070	9.070	0.000	4564736	150.118	51.6	30.72- 70.72	88699.38
9.304	9.305	-0.001	5553118	159.611	54.8	30.46- 70.46	107905.07
			Average of Peak Concentrations =		68.4		
6 Aroclor-1242					CAS #: 53469-21-9		
6.945	6.944	0.001	5146	0.10159	0.035	80.00- 120.00	100.00
7.580	7.585	-0.005	38908	0.50433	0.17	122.38- 162.38	756.04
8.987	8.986	0.001	24316215	374.518	129	91.55- 131.55	472498.99
9.070	9.068	0.002	4564736	62.6448	21.5	105.39- 145.39	88699.38
9.304	9.305	-0.001	5553118	77.5429	26.6	109.29- 149.29	107905.07
			Average of Peak Concentrations =		35.4		
9 Aroclor-1248					CAS #: 12672-29-6		
8.987	8.987	0.000	24316215	220.104	75.6	80.00- 120.00	100.00(a)
9.070	9.068	0.002	4564736	43.3993	14.9	76.06- 116.06	18.77
9.304	9.305	-0.001	5553118	46.4989	16.0	87.83- 127.83	22.84
10.067	10.068	-0.001	2654320	17.9916	6.2	113.94- 153.94	10.92
10.130	10.137	-0.007	11478180	83.7166	28.8	112.47- 152.47	47.20
			Average of Peak Concentrations =		28.3		
15 Aroclor-1254					CAS #: 11097-69-1		
10.004	10.004	0.000	54304395	348.132	120	80.00- 120.00	100.00
10.402	10.404	-0.002	79514860	479.602	165	94.32- 134.32	146.42
11.015	11.016	-0.001	91455460	392.970	135	135.66- 175.66	168.41
11.528	11.529	-0.001	42845065	236.691	81.3	94.57- 134.57	78.90
11.752	11.752	0.000	63406152	620.573	213	49.22- 89.22	116.76
			Average of Peak Concentrations =		142		
21 Aroclor-1260					CAS #: 11096-82-5		
12.335	12.338	-0.003	18091058	118.906	40.8	80.00- 120.00	100.00
12.421	12.425	-0.004	10857936	126.282	43.4	34.80- 74.80	60.02
12.800	12.800	0.000	14092569	176.580	60.6	30.84- 70.84	77.90
13.130	13.133	-0.003	36555921	103.708	35.6	212.78- 252.78	202.07
13.539	13.541	-0.002	22525643	100.857	34.6	120.82- 160.82	124.51
			Average of Peak Concentrations =		43.0		

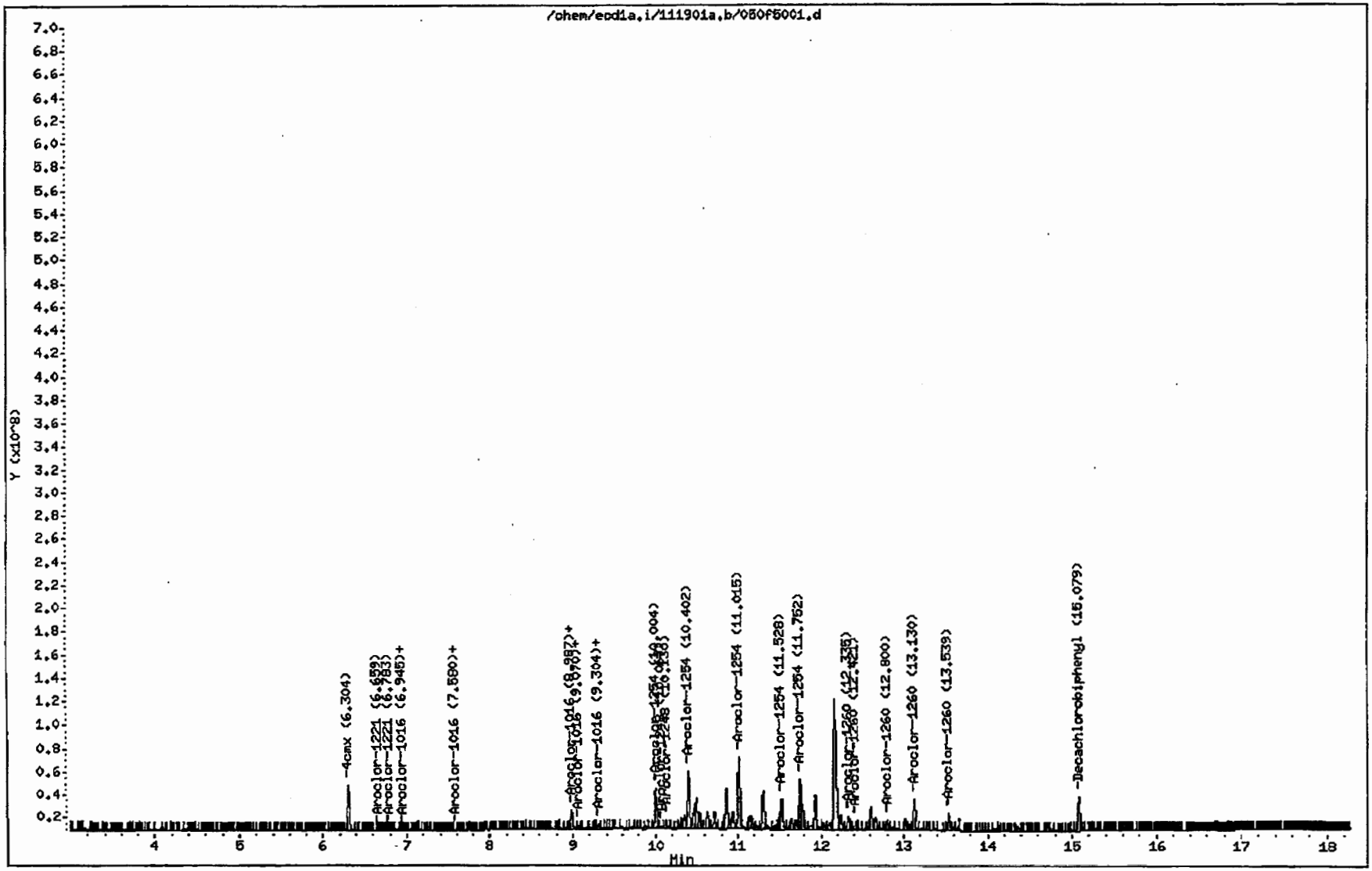
DNF

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

Data File: /chem/ecd1a.i/111901a.b/050f5001.d
Date : 20-NOV-2001 09:19
Client ID: L4094-5
Sample Info: 152055005|10|
Volume Injected (uL): 1.0
Column phase: DB-XLB

Instrument: ecd1a.i
Operator: mm
Column diameter: 0.25



1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

L4094-6

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Matrix: (soil/water) SOIL Lab Sample ID: 52055006

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 053F5301

% Moisture: 3 decanted: (Y/N) N Date Received: 11/15/01

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 11/16/01

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 11/20/01

Injection Volume: 1.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	34.5	U
11104-28-2	Aroclor-1221	34.5	U
11141-16-5	Aroclor-1232	34.5	U
53469-21-9	Aroclor-1242	34.5	U
12672-29-6	Aroclor-1248	34.5	U
11097-69-1	Aroclor-1254	845	
11096-82-5	Aroclor-1260	183	P

General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/053b5301.d
Lab Smp Id: 52055006 Client Smp ID: L4094-6
Inj Date : 20-NOV-2001 10:27
Operator : mm Inst ID: ecd1a.i
Smp Info : |52055006|10|
Misc Info : |ECD82P_1S|121122|SVA|ETLL|
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m
Meth Date : 20-Nov-2001 13:44 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012b1201.d
Als bottle: 53
Dil Factor: 10.00000
Integrator: Falcon Compound Sublist: 52055.sub
Target Version: 3.50 Sample Matrix: Soil

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVariab

Name	Value	Description
DF	10.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.00000	Weight of sample extracted (g)
M	3.47470	% Moisture

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
$ 1 4cmx					CAS #: 877-09-8		
6.158	6.159	-0.001	15424040	13.3795	4.6	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.374	15.375	-0.001	13608734	13.8969	4.8	80.00- 120.00	100.00
3 Aroclor-1016					CAS #: 12674-11-2		
7.329	7.330	-0.001	35634	1.76109	0.61	80.00- 120.00	100.00(a)
8.052	8.047	0.005	235316	4.79060	1.6	232.90- 272.90	660.37
8.433	8.429	0.004	457942	31.1286	10.7	53.90- 93.90	1285.13
9.009	8.992	0.017	71474	2.25664	0.78	131.58- 171.58	200.58
9.790	9.791	-0.001	14878003	428.506	148	147.33- 187.33	41752.27

Average of Peak Concentrations = 32.4

JC 12/4/01

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
4 Aroclor-1232					CAS #: 11141-16-5		
7.329	7.331	-0.002	35634	1.60708	0.55	80.00- 120.00	100.00
8.052	8.049	0.003	235316	11.6617	4.0	70.60- 110.60	660.37
8.433	8.430	0.003	457942	80.0206	27.6	5.55- 45.55	1285.16
9.009	8.992	0.017	71474	5.47533	1.9	35.02- 75.02	200.58
9.790	9.790	0.000	14878003	1125.49	389	39.22- 79.22	41752.27
Average of Peak Concentrations =					84.6		
6 Aroclor-1242					CAS #: 53469-21-9		
7.329	7.331	-0.002	35634	2.26672	0.78	80.00- 120.00	100.00
8.052	8.047	0.005	235316	6.35306	2.2	196.73- 236.73	660.37
8.433	8.429	0.004	457942	41.9098	14.5	44.70- 84.70	1285.13
9.009	8.992	0.017	71474	3.24157	1.1	113.25- 153.25	200.58
9.790	9.790	0.000	14878003	564.321	195	125.31- 165.31	41752.27
Average of Peak Concentrations =					42.7		
9 Aroclor-1248					CAS #: 12672-29-6		
8.052	8.048	0.004	235316	13.1792	4.6	80.00- 120.00	100.00
9.275	9.274	0.001	42104435	1248.86	431	174.49- 214.49	17892.69
9.351	9.351	0.000	8976502	279.706	96.6	163.02- 203.02	3814.65
9.790	9.791	-0.001	14878003	352.990	122	222.44- 262.44	6322.55
10.025	10.025	0.000	4545967	184.840	63.8	119.72- 159.72	1931.85
Average of Peak Concentrations =					144		
15 Aroclor-1254					CAS #: 11097-69-1		
10.598	10.599	-0.001	162027804	2307.10	797	80.00- 120.00	100.00
10.706	10.706	0.000	60680435	2327.59	804	15.38- 55.38	37.45
11.131	11.132	-0.001	46889752	2246.07	776	9.62- 49.62	28.94
11.258	11.257	0.001	91527272	2122.32	733	42.13- 82.13	56.49
11.678	11.679	-0.001	203099423	2349.89	811	107.51- 147.51	125.35
Average of Peak Concentrations =					784		
21 Aroclor-1260					CAS #: 11096-82-5		
11.678	11.679	-0.001	203099423	3021.01	1050	80.00- 120.00	100.00
11.864	11.866	-0.002	113023023	1501.55	518	95.12- 135.12	55.65
13.046	13.047	-0.001	20319588	429.154	148	51.18- 91.18	10.00
13.293	13.294	-0.001	53152266	425.035	147	178.37- 218.37	26.17
13.786	13.785	0.001	4629354	214.718	74.1	13.35- 53.35	2.28
Average of Peak Concentrations =					387		

356 173

DMP

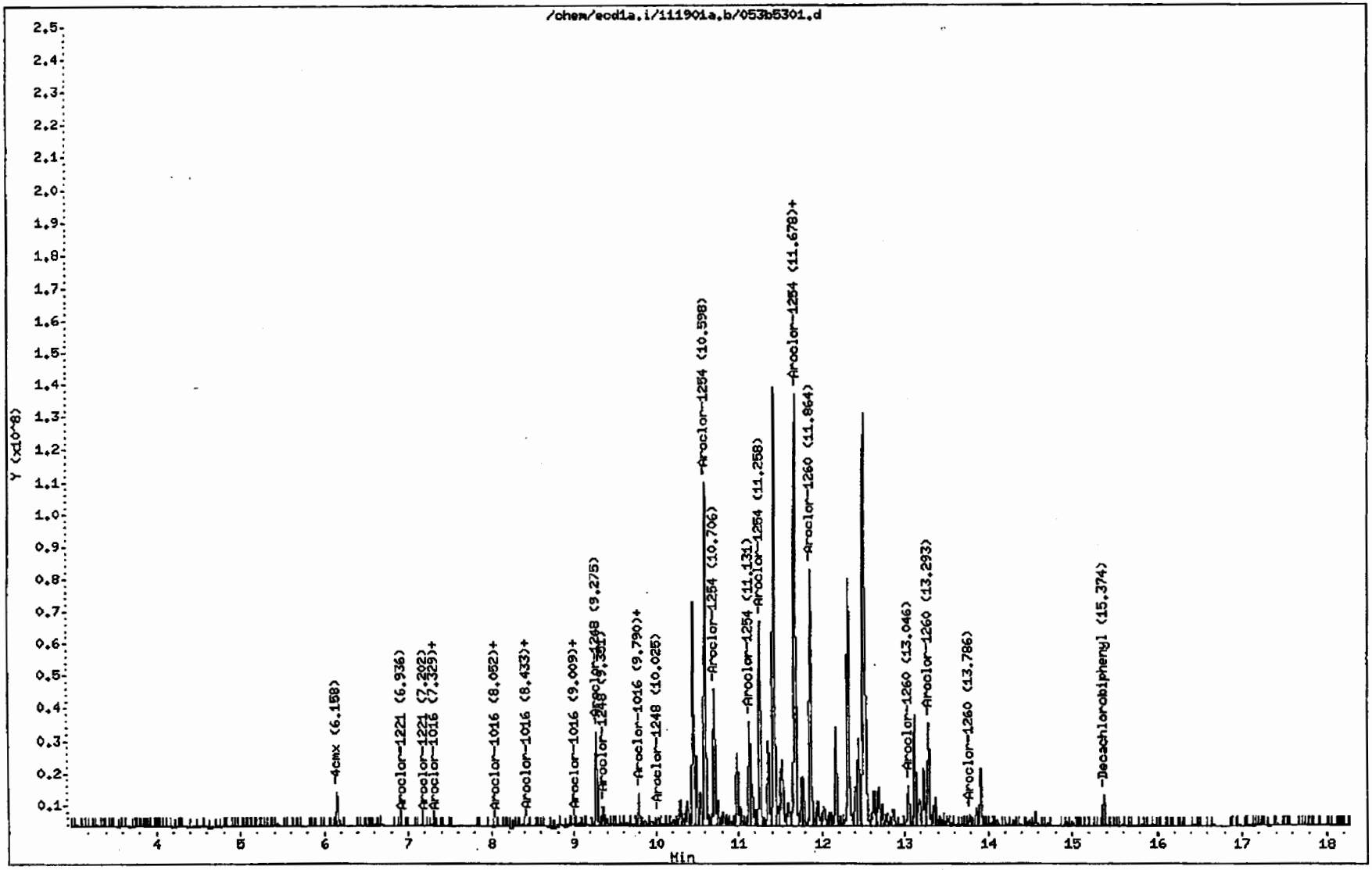
QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

Data File: /chem/ecd1a.i/111901a.b/053b5301.d
Date : 20-NOV-2001 10:27
Client ID: L4094-6
Sample Info: 152055006|101
Volume Injected (uL): 1.0
Column phase: DB-17MS

Instrument: ecd1a.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/053f5301.d
Lab Smp Id: 52055006 Client Smp ID: L4094-6
Inj Date : 20-NOV-2001 10:27
Operator : mm Inst ID: ecd1a.i
Smp Info : |52055006|10|
Misc Info : |ECD82P_1S|121122|SVA|ETLL|
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m
Meth Date : 20-Nov-2001 13:43 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012f1201.d
Als bottle: 53
Dil Factor: 10.00000
Integrator: Falcon Compound Sublist: 52055.sub
Target Version: 3.50 Sample Matrix: Soil

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVariab

Name	Value	Description
DF	10.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.00000	Weight of sample extracted (g)
M	3.47470	% Moisture

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
$ 1 4cmx					CAS #: 877-09-8		
6.303	6.303	0.000	52282771	13.9281	4.8	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.079	15.078	0.001	37640395	12.3763	4.3	80.00- 120.00	100.00
3 Aroclor-1016					CAS #: 12674-11-2		
6.946	6.943	0.003	107084	1.69678	0.58	80.00- 120.00	100.00
7.577	7.584	-0.007	317797	3.14229	1.1	141.60- 181.60	296.77
8.986	8.987	-0.001	132877845	1553.78	536	114.56- 154.56	124086.47
9.068	9.068	0.000	27641535	294.690	102	131.20- 171.20	25812.74
9.304	9.305	-0.001	51365303	562.375	194	125.87- 165.87	47966.91
			Average of Peak Concentrations =		167		

JC 12/4/01

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
4 Aroclor-1232					CAS #: 11141-16-5		
6.946	6.944	0.002	107084	1.52786	0.53	80.00- 120.00	100.00
7.577	7.584	-0.007	317797	7.50118	2.6	40.95- 80.95	296.77
8.986	8.987	-0.001	132877845	3745.42	1290	24.75- 64.75	124086.47
9.068	9.070	-0.002	27641535	909.031	314	30.72- 70.72	25812.74
9.304	9.305	-0.001	51365303	1476.37	510	30.46- 70.46	47966.91
Average of Peak Concentrations =					424		
6 Aroclor-1242					CAS #: 53469-21-9		
6.946	6.944	0.002	107084	2.11389	0.73	80.00- 120.00	100.00
7.577	7.585	-0.008	317797	4.11930	1.4	122.38- 162.38	296.77
8.986	8.986	0.000	132877845	2046.58	707	91.55- 131.55	124086.47
9.068	9.068	0.000	27641535	379.343	131	105.39- 145.39	25812.74
9.304	9.305	-0.001	51365303	717.258	248	109.29- 149.29	47966.91
Average of Peak Concentrations =					218		
9 Aroclor-1248					CAS #: 12672-29-6		
8.986	8.987	-0.001	132877845	1202.78	415	80.00- 120.00	100.00
9.068	9.068	0.000	27641535	262.802	90.8	76.06- 116.06	20.80
9.304	9.305	-0.001	51365303	430.106	148	87.83- 127.83	38.66
10.067	10.068	-0.001	43402607	294.193	102	113.94- 153.94	32.66
10.131	10.137	-0.006	86491858	630.832	218	112.47- 152.47	65.09
Average of Peak Concentrations =					195		
15 Aroclor-1254					CAS #: 11097-69-1		
10.003	10.004	-0.001	335354438	2149.88	742	80.00- 120.00	100.00
10.403	10.404	-0.001	473887865	2858.30	987	94.32- 134.32	141.31
11.013	11.016	-0.003	607650655	2610.98	902	135.66- 175.66	181.20
11.526	11.529	-0.003	392899314	2170.51	750	94.57- 134.57	117.16
11.751	11.752	-0.001	357880377	~~3502.67~~ 2430	~~1210~~ 840	49.22- 89.22	106.72
Average of Peak Concentrations =					~~918~~ 845		
21 Aroclor-1260					CAS #: 11096-82-5		
12.336	12.338	-0.002	75949945	499.192	172	80.00- 120.00	100.00
12.423	12.425	-0.002	47299899	550.118	190	34.80- 74.80	62.28
12.801	12.800	0.001	61903061	775.647	268	30.84- 70.84	81.51
13.130	13.133	-0.003	140256183	397.901	137	212.78- 252.78	184.67
13.538	13.541	-0.003	95011816	425.407	147	120.82- 160.82	125.10
Average of Peak Concentrations =					183		

DMD

Data File: /ohem/eodia.i/111901a.b/053f5301.d

Date : 20-NOV-2001 10:27

Client ID: L4094-6

Sample Info: |52055006|10|

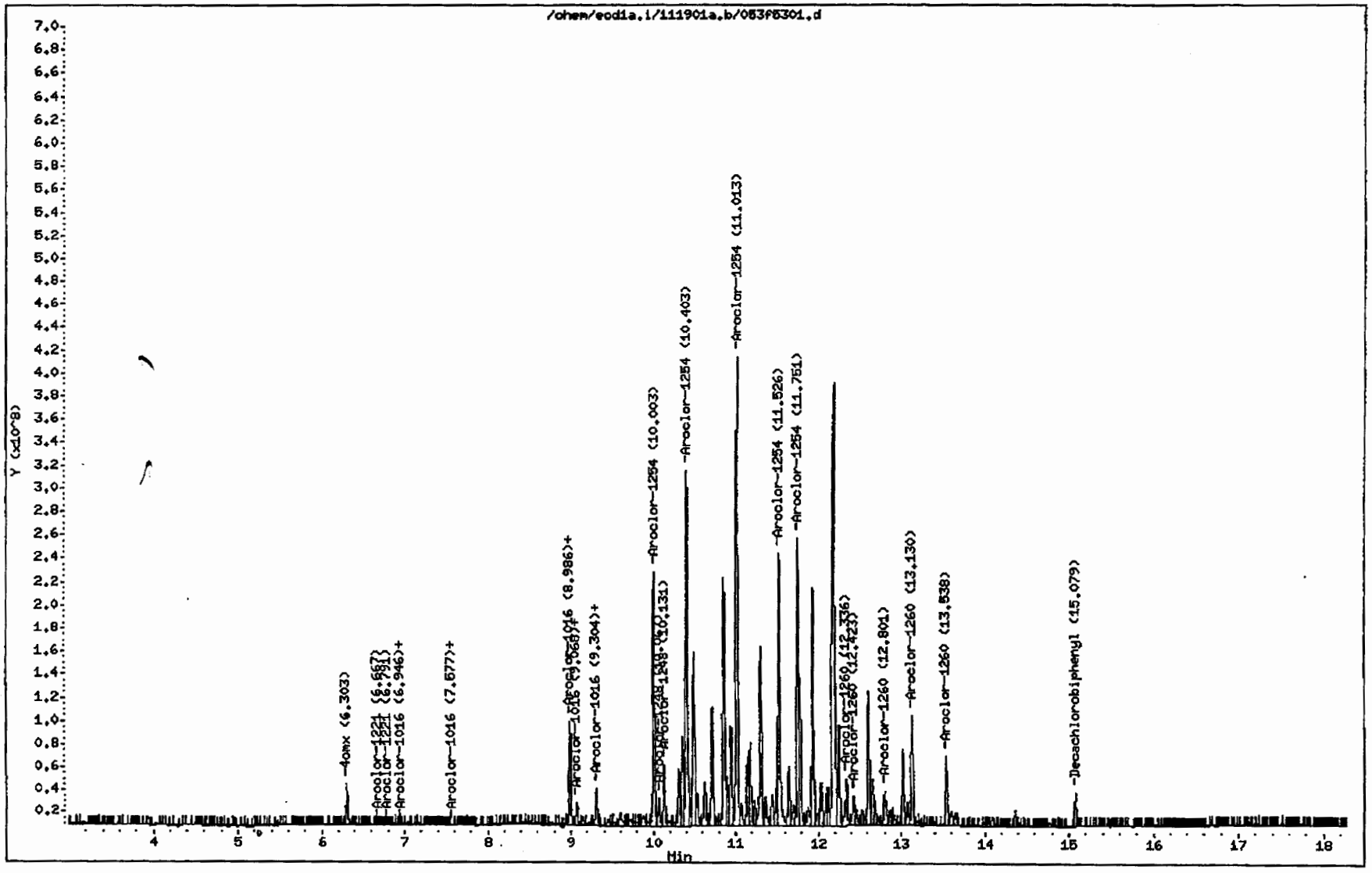
Volume Injected (uL): 1.0

Column phase: DB-XLB

Instrument: eodia.i

Operator: mm

Column diameter: 0.25



1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

L4094-7

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Matrix: (soil/water) SOIL Lab Sample ID: 52055007

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 054F5401

% Moisture: 5 decanted: (Y/N) N Date Received: 11/15/01

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:11/16/01

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 11/20/01

Injection Volume: 1.0(uL) Dilution Factor: 20.0

GPC Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2------	Aroclor-1016	70.0	U
11104-28-2------	Aroclor-1221	70.0	U
11141-16-5------	Aroclor-1232	70.0	U
53469-21-9------	Aroclor-1242	70.0	U
12672-29-6------	Aroclor-1248	70.0	U
11097-69-1------	Aroclor-1254	1810	
11096-82-5------	Aroclor-1260	348	P

General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/054b5401.d
Lab Smp Id: 52055007 Client Smp ID: L4094-7
Inj Date : 20-NOV-2001 10:50
Operator : mm Inst ID: ecd1a.i
Smp Info : |52055007|20|
Misc Info : |ECD82P_1S|121122|SVA|ETLL|
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m
Meth Date : 20-Nov-2001 13:44 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012b1201.d
Als bottle: 54
Dil Factor: 20.00000
Integrator: Falcon Compound Sublist: 52055.sub
Target Version: 3.50 Sample Matrix: Soil

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVariab

Name	Value	Description
DF	20.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.00000	Weight of sample extracted (g)
M	4.75320	% Moisture

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
$ 1 4cmx					CAS #: 877-09-8		
6.158	6.159	-0.001	9232294	8.00849	5.6	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.374	15.375	-0.001	9479061	9.67975	6.8	80.00- 120.00	100.00
9 Aroclor-1248					CAS #: 12672-29-6		
8.044	8.048	-0.004	66275	3.71183	2.6	80.00- 120.00	100.00
9.275	9.274	0.001	39213050	1163.10	814	174.49- 214.49	59167.00
9.350	9.351	-0.001	10872515	338.785	237	163.02- 203.02	16405.10
9.790	9.791	-0.001	18446518	437.655	306	222.44- 262.44	27833.21
10.025	10.025	0.000	4958444	201.611	141	119.72- 159.72	7481.60
Average of Peak Concentrations =					300		

hm 12/4/01

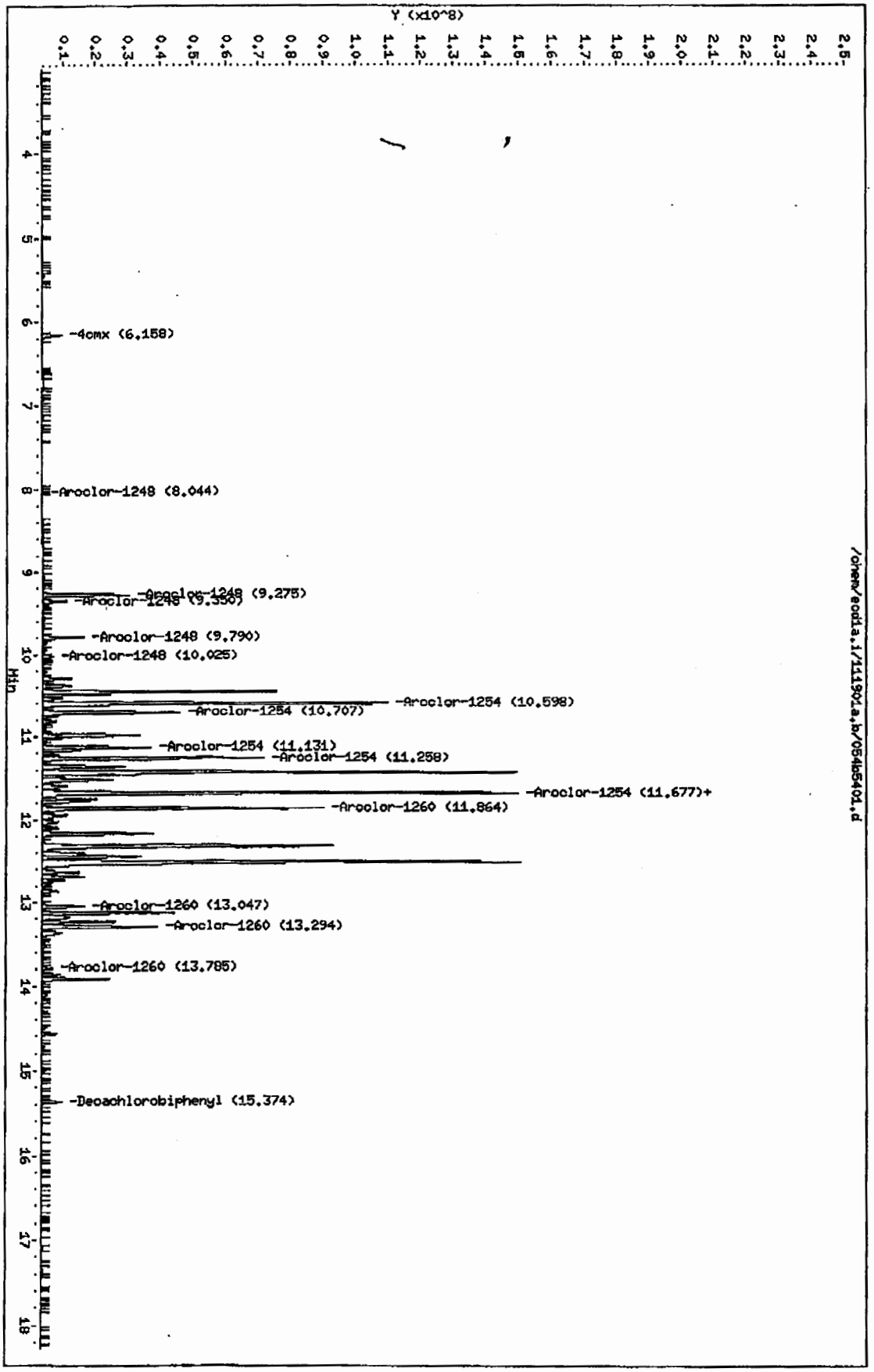
JC 12/4/01

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
15 Aroclor-1254					CAS #: 11097-69-1		
10.598	10.599	-0.001	166914417	2376.68	1660	80.00- 120.00	100.00
10.707	10.706	0.001	60161826	2307.70	1620	15.38- 55.38	36.04
11.131	11.132	-0.001	49470660	2369.70	1660	9.62- 49.62	29.64
11.258	11.257	0.001	102199052	2369.77	1660	42.13- 82.13	61.23
11.677	11.679	-0.002	222978647	2579.89	1800	107.51- 147.51	133.59
Average of Peak Concentrations =					1680		
21 Aroclor-1260					CAS #: 11096-82-5		
11.677	11.679	-0.002	222978647	3327.69	2330	80.00- 120.00	100.00
11.864	11.866	-0.002	123216616	1636.98	1140	95.12- 135.12	55.26
13.047	13.047	0.000	20949543	442.459	310	51.18- 91.18	9.40
13.294	13.294	0.000	56442967	451.349	316	178.37- 218.37	25.31
13.785	13.785	0.000	5185850	240.529	168	13.35- 53.35	2.33
Average of Peak Concentrations =					884		

378 265

Data File: /chem/ecdia.i/111901a.b/054b5401.d
Date : 20-NOV-2001 10:50
Client ID: L4094-7
Sample Info: 15205500712O1
Volume Injected (uL): 1.0
Column phase: DB-17MS

Instrument: ecdia.i
Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/054f5401.d
Lab Smp Id: 52055007 Client Smp ID: L4094-7
Inj Date : 20-NOV-2001 10:50
Operator : mm Inst ID: ecd1a.i
Smp Info : |52055007|20|
Misc Info : |ECD82P_1S|121122|SVA|ETLL|
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m
Meth Date : 20-Nov-2001 13:43 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012f1201.d
Als bottle: 54
Dil Factor: 20.00000
Integrator: Falcon Compound Sublist: 52055.sub
Target Version: 3.50 Sample Matrix: Soil

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVariab

Name	Value	Description
DF	20.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.00000	Weight of sample extracted (g)
M	4.75320	% Moisture

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
$ 1 4cmx					CAS #: 877-09-8		
6.304	6.303	0.001	33728382	8.98525	6.3	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.080	15.078	0.002	25905389	8.51776	6.0	80.00- 120.00	100.00
3 Aroclor-1016					CAS #: 12674-11-2		
6.945	6.943	0.002	70147	1.11150	0.78	80.00- 120.00	100.00
7.580	7.584	-0.004	535152	5.29144	3.7	141.60- 181.60	762.89
8.985	8.987	-0.002	122256217	1429.58	1000	114.56- 154.56	174283.50
9.069	9.068	0.001	36769196	392.001	274	131.20- 171.20	52416.67
9.304	9.305	-0.001	59072927	646.763	453	125.87- 165.87	84211.97
Average of Peak Concentrations =					346		

Mm 12/4/01

JC 12/4/01

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
4 Aroclor-1232					CAS #: 11141-16-5		
6.945	6.944	0.001	70147	1.00085	0.70	80.00- 120.00	100.00
7.580	7.584	-0.004	535152	12.6316	8.8	40.95- 80.95	762.89
8.985	8.987	-0.002	122256217	3446.03	2410	24.75- 64.75	174283.50
9.069	9.070	-0.001	36769196	1209.21	846	30.72- 70.72	52416.67
9.304	9.305	-0.001	59072927	1697.91	1190	30.46- 70.46	84211.97
Average of Peak Concentrations =					891		
6 Aroclor-1242					CAS #: 53469-21-9		
6.945	6.944	0.001	70147	1.38474	0.97	80.00- 120.00	100.00
7.580	7.585	-0.005	535152	6.93667	4.8	122.38- 162.38	762.89
8.985	8.986	-0.001	122256217	1882.99	1320	91.55- 131.55	174283.50
9.069	9.068	0.001	36769196	504.607	353	105.39- 145.39	52416.67
9.304	9.305	-0.001	59072927	824.886	577	109.29- 149.29	84211.97
Average of Peak Concentrations =					451		
9 Aroclor-1248					CAS #: 12672-29-6		
8.985	8.987	-0.002	122256217	1106.63	774	80.00- 120.00	100.00
9.069	9.068	0.001	36769196	349.584	245	76.06- 116.06	30.08
9.304	9.305	-0.001	59072927	494.645	346	87.83- 127.83	48.32
10.065	10.068	-0.003	43235477	293.060	205	113.94- 153.94	35.36
10.130	10.137	-0.007	88069697	642.340	450	112.47- 152.47	72.04
Average of Peak Concentrations =					404		
15 Aroclor-1254					CAS #: 11097-69-1		
10.004	10.004	0.000	322053161	2064.60	1440	80.00- 120.00	100.00
10.402	10.404	-0.002	485671862	2929.38	2050	94.32- 134.32	150.80
11.014	11.016	-0.002	643031596	2763.01	1930	135.66- 175.66	199.67
11.526	11.529	-0.003	469042512	2591.16	1810	94.57- 134.57	145.64
11.751	11.752	-0.001	372296367	3643.76	2550	49.22- 89.22	115.60
Average of Peak Concentrations =					1960		
21 Aroclor-1260					CAS #: 11096-82-5		
12.336	12.338	-0.002	63846633	419.641	294	80.00- 120.00	100.00
12.422	12.425	-0.003	44313168	515.381	361	34.80- 74.80	69.41
12.800	12.800	0.000	51543323	645.840	452	30.84- 70.84	80.73
13.129	13.133	-0.004	149680127	424.636	297	212.78- 252.78	234.44
13.538	13.541	-0.003	106634242	477.445	334	120.82- 160.82	167.02
Average of Peak Concentrations =					348		

Data File: /chem/ecd1a.i/111901a.b/054f5401.d

Date : 20-NOV-2001 10:50

Client ID: L4094-7

Sample Info: 1520550071201

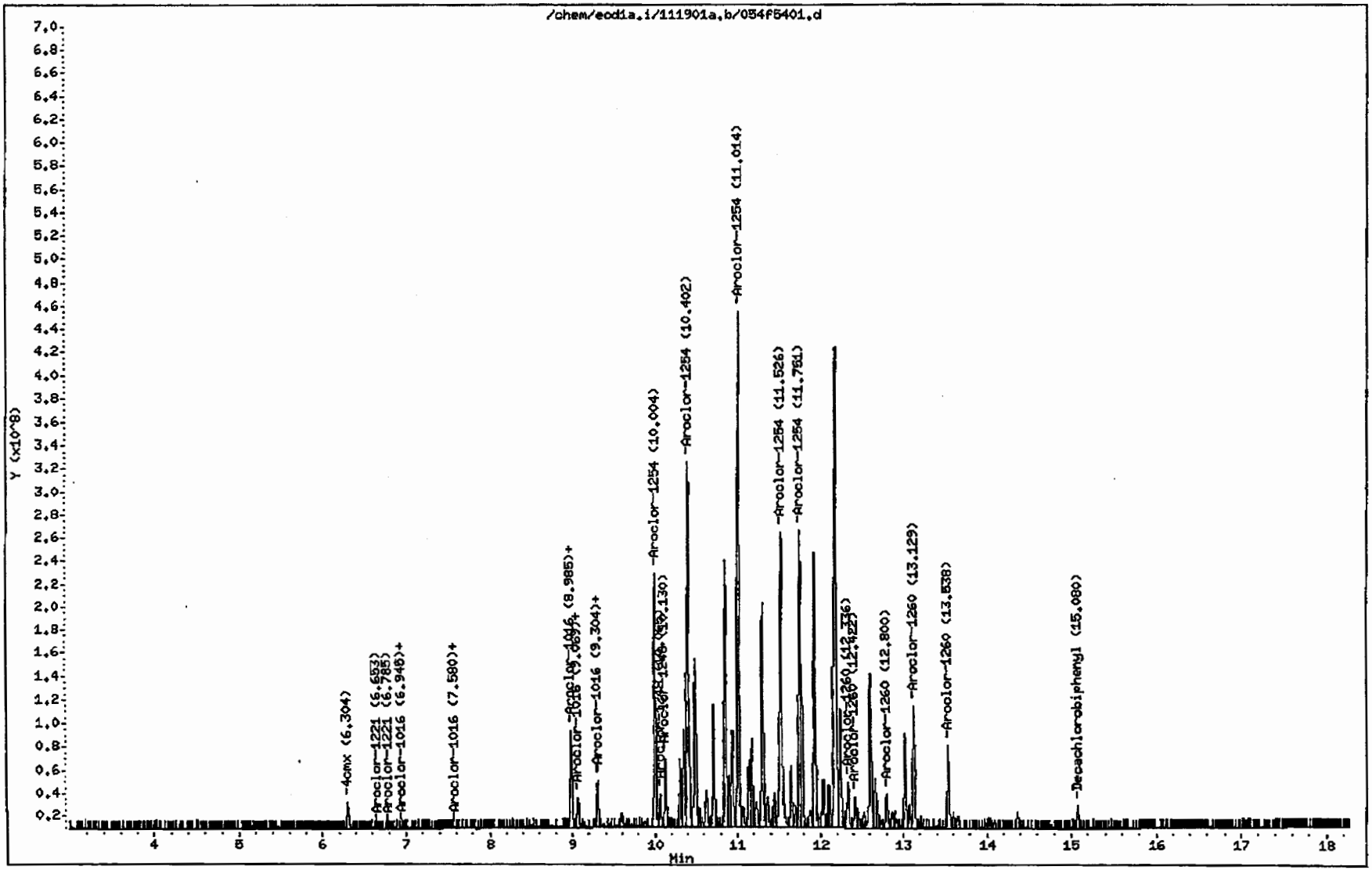
Volume Injected (uL): 1.0

Column phase: DB-XLB

Instrument: ecd1a.i

Operator: mm

Column diameter: 0.25



1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

L4094-8

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Matrix: (soil/water) SOIL Lab Sample ID: 52055008

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 055F5501

% Moisture: 9 decanted: (Y/N) N Date Received: 11/15/01

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:11/16/01

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 11/20/01

Injection Volume: 1.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36.8	U
11104-28-2	Aroclor-1221	36.8	U
11141-16-5	Aroclor-1232	36.8	U
53469-21-9	Aroclor-1242	36.8	U
12672-29-6	Aroclor-1248	36.8	U
11097-69-1	Aroclor-1254	130	
11096-82-5	Aroclor-1260	64.1	

General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/055b5501.d
Lab Smp Id: 52055008 Client Smp ID: L4094-8
Inj Date : 20-NOV-2001 11:12
Operator : mm Inst ID: ecd1a.i
Smp Info : |52055008|10|
Misc Info : |ECD82P_1S|121122|SVA|ETLL|
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m
Meth Date : 20-Nov-2001 13:44 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012b1201.d
Als bottle: 55
Dil Factor: 10.00000
Integrator: Falcon Compound Sublist: 52055.sub
Target Version: 3.50 Sample Matrix: Soil

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVariab

Name	Value	Description
DF	10.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.00000	Weight of sample extracted (g)
M	9.37330	% Moisture

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
$ 1 4cmx					CAS #: 877-09-8		
6.158	6.159	-0.001	16630086	14.4256	5.3	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.374	15.375	-0.001	21398800	21.8519	8.0	80.00- 120.00	100.00
3 Aroclor-1016					CAS #: 12674-11-2		
7.329	7.330	-0.001	12749	0.63008	0.23	80.00- 120.00	100.00(a)
8.042	8.047	-0.005	118622	2.41492	0.89	232.90- 272.90	930.40
8.437	8.429	0.008	2169763	147.490	54.2	53.90- 93.90	17018.28
8.988	8.992	-0.004	20606	0.65059	0.24	131.58- 171.58	161.62
9.791	9.791	0.000	3987953	114.858	42.2	147.33- 187.33	31279.05
Average of Peak Concentrations =					19.6		

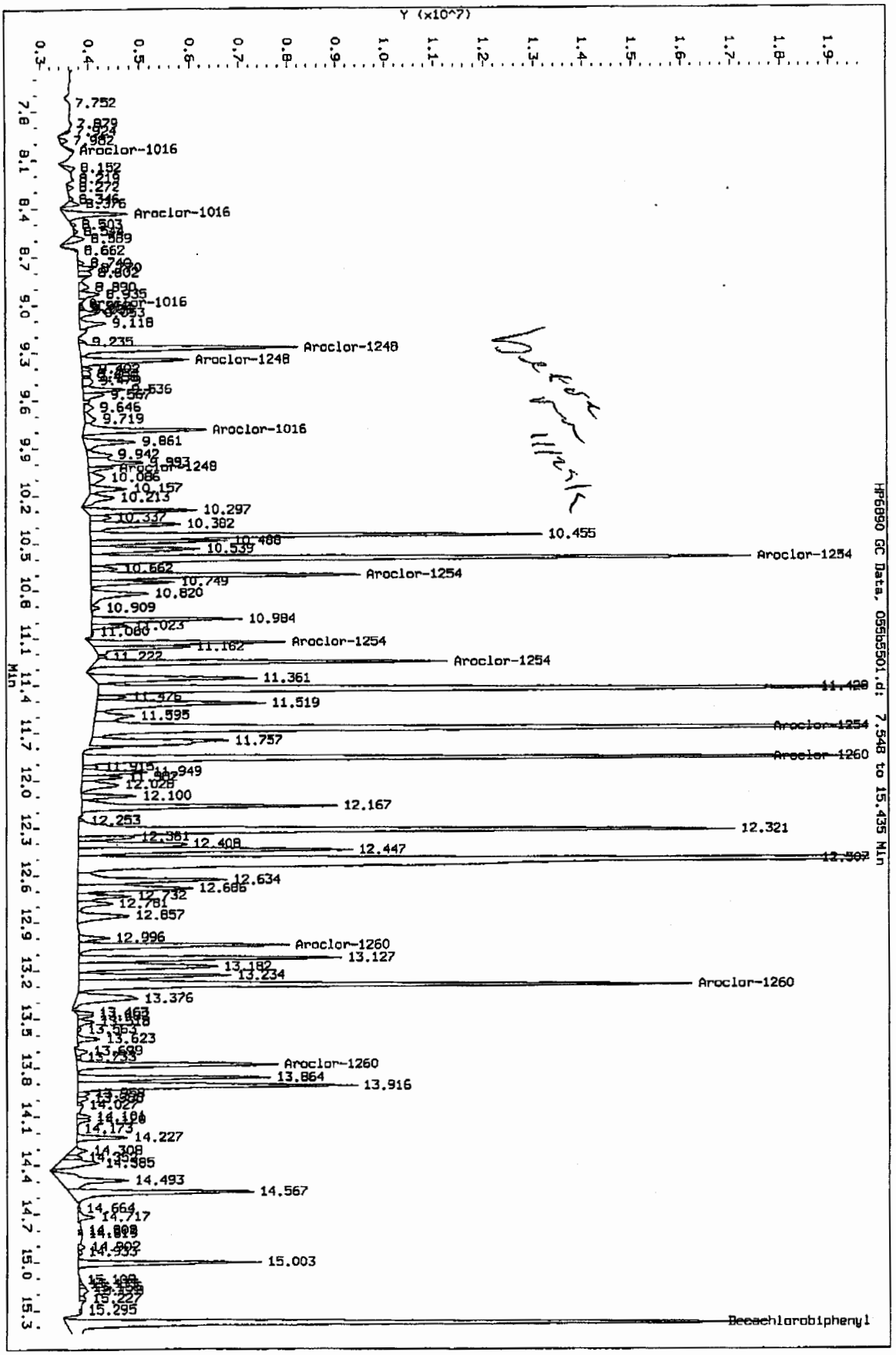
JC 12/4/01

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	CONCENTRATIONS FINAL (ug/Kg)	TARGET RANGE	RATIO
4 Aroclor-1232					CAS #: 11141-16-5		
7.329	7.331	-0.002	12749	0.57497	0.21	80.00- 120.00	100.00
8.042	8.049	-0.007	118622	5.87859	2.2	70.60- 110.60	930.40
8.437	8.430	0.007	2169763	379.143	139	5.55- 45.55	17018.28
8.988	8.992	-0.004	20606	1.57854	0.58	35.02- 75.02	161.62
9.791	9.790	0.001	3987953	301.680	111	39.22- 79.22	31279.05
Average of Peak Concentrations =					50.7		
6 Aroclor-1242					CAS #: 53469-21-9		
7.329	7.331	-0.002	12749	0.81098	0.30	80.00- 120.00	100.00(a)
8.042	8.047	-0.005	118622	3.20255	1.2	196.73- 236.73	930.40
8.437	8.429	0.008	2169763	198.571	73.0	44.70- 84.70	17018.28
8.988	8.992	-0.004	20606	0.93454	0.34	113.25- 153.25	161.62
9.791	9.790	0.001	3987953	151.263	55.6	125.31- 165.31	31279.05
Average of Peak Concentrations =					26.1		
9 Aroclor-1248					CAS #: 12672-29-6		
8.042	8.048	-0.006	118622	6.64358	2.4	80.00- 120.00	100.00(aM)
9.276	9.274	0.002	6702993	198.817	73.1	174.49- 214.49	5650.72
9.351	9.351	0.000	3301739	102.881	37.8	163.02- 203.02	2783.41
9.791	9.791	0.000	3987953	94.6166	34.8	222.44- 262.44	3361.90
10.025	10.025	0.000	1001659	40.7277	15.0	119.72- 159.72	844.41
Average of Peak Concentrations =					32.6		
15 Aroclor-1254					CAS #: 11097-69-1		
10.599	10.599	0.000	22396874	318.907	117	80.00- 120.00	100.00(M)
10.707	10.706	0.001	9074677	348.088	128	15.38- 55.38	40.52
11.132	11.132	0.000	6456555	309.276	114	9.62- 49.62	28.83
11.258	11.257	0.001	11572484	268.340	98.7	42.13- 82.13	51.67
11.678	11.679	-0.001	36360134	420.692	155	107.51- 147.51	162.34
Average of Peak Concentrations =					122		
21 Aroclor-1260					CAS #: 11096-82-5		
11.678	11.679	-0.001	36360134	542.631	200	80.00- 120.00	100.00(M)
11.865	11.866	-0.001	23278958	309.270	114	95.12- 135.12	64.02
13.047	13.047	0.000	6089829	128.618	47.3	51.18- 91.18	16.75
13.293	13.294	-0.001	18994556	151.891	55.9	178.37- 218.37	52.24
13.786	13.785	0.001	5708530	264.772	97.4	13.35- 53.35	15.70
Average of Peak Concentrations =					105		

QC Flag Legend

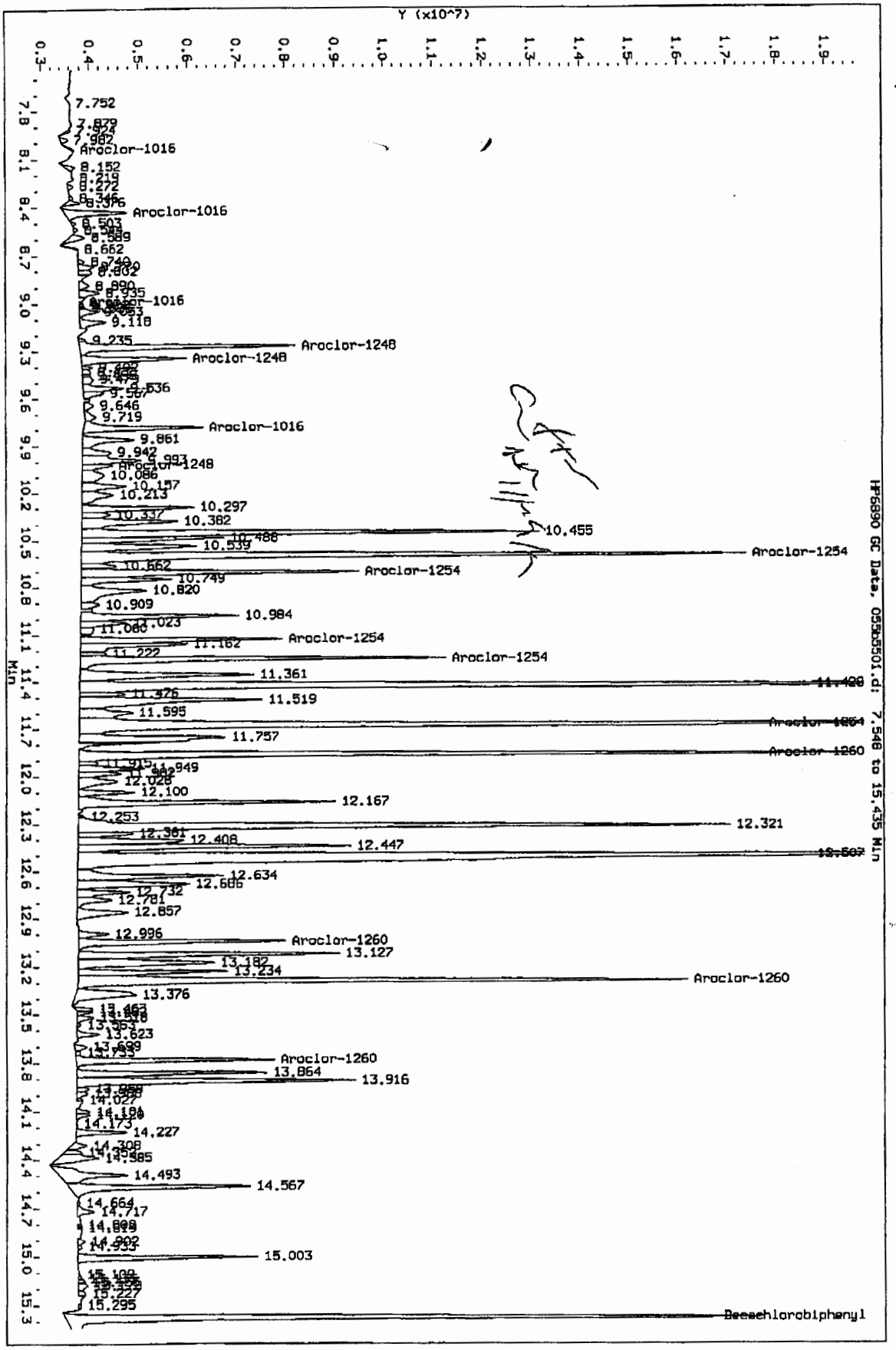
a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: /chem/ecdia.i/111901a.b/05556501.d
Injection Date: 20-NOV-2001 11:12
Instrument: ecdia.i
Client Sample ID: L4094-8



HP6890 GC Data, 05556501.d: 7.548 to 15.435 Min

Data File: /chem/ecd1a.i/111901a.b/055b5501.d
Injection Date: 20-NOV-2001 11:12
Instrument: ecd1a.i
Client Sample ID: L4094-8

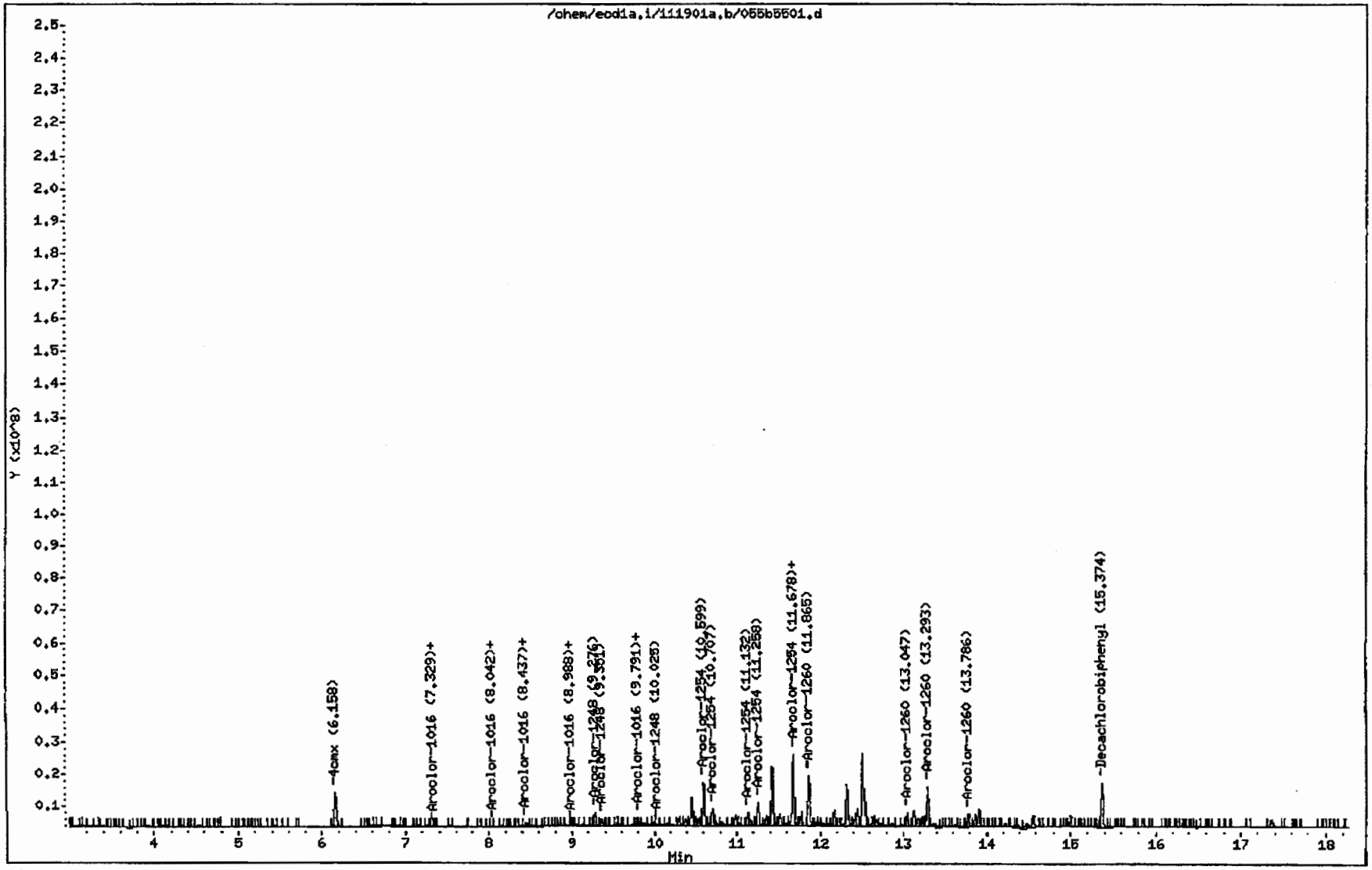


HP6890 GC Data, 055b5501.d; 7.548 to 15.435 Min

522

Data File: /chem/ecd1a.i/111901a.b/055b5501.d
Date : 20-NOV-2001 11:12
Client ID: L4094-8
Sample Info: 152055008110:
Volume Injected (uL): 1.0
Column phase: DB-17MS

Instrument: ecd1a.i
Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/055f5501.d
Lab Smp Id: 52055008 Client Smp ID: L4094-8
Inj Date : 20-NOV-2001 11:12
Operator : mm Inst ID: ecd1a.i
Smp Info : |52055008|10|
Misc Info : |ECD82P_1S|121122|SVA|ETLL|
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m
Meth Date : 20-Nov-2001 13:43 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012f1201.d
Als bottle: 55
Dil Factor: 10.00000
Integrator: Falcon Compound Sublist: 52055.sub
Target Version: 3.50 Sample Matrix: Soil

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVariab

Name	Value	Description
DF	10.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.00000	Weight of sample extracted (g)
M	9.37330	% Moisture

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
$ 1 4cmx					CAS #: 877-09-8		
6.304	6.303	0.001	58080046	15.4725	5.7	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.079	15.078	0.001	54750712	18.0022	6.6	80.00- 120.00	100.00
3 Aroclor-1016					CAS #: 12674-11-2		
6.944	6.943	0.001	24232	0.38396	0.14	80.00- 120.00	100.00(M)
7.578	7.584	-0.006	402890	3.98367	1.5	141.60- 181.60	1662.64
8.987	8.987	0.000	19537946	228.463	84.0	114.56- 154.56	80628.70
9.067	9.068	-0.001	11316940	120.651	44.4	131.20- 171.20	46702.46
9.304	9.305	-0.001	13437099	147.117	54.1	125.87- 165.87	55451.88
Average of Peak Concentrations =					36.8		

JC 12/4/01

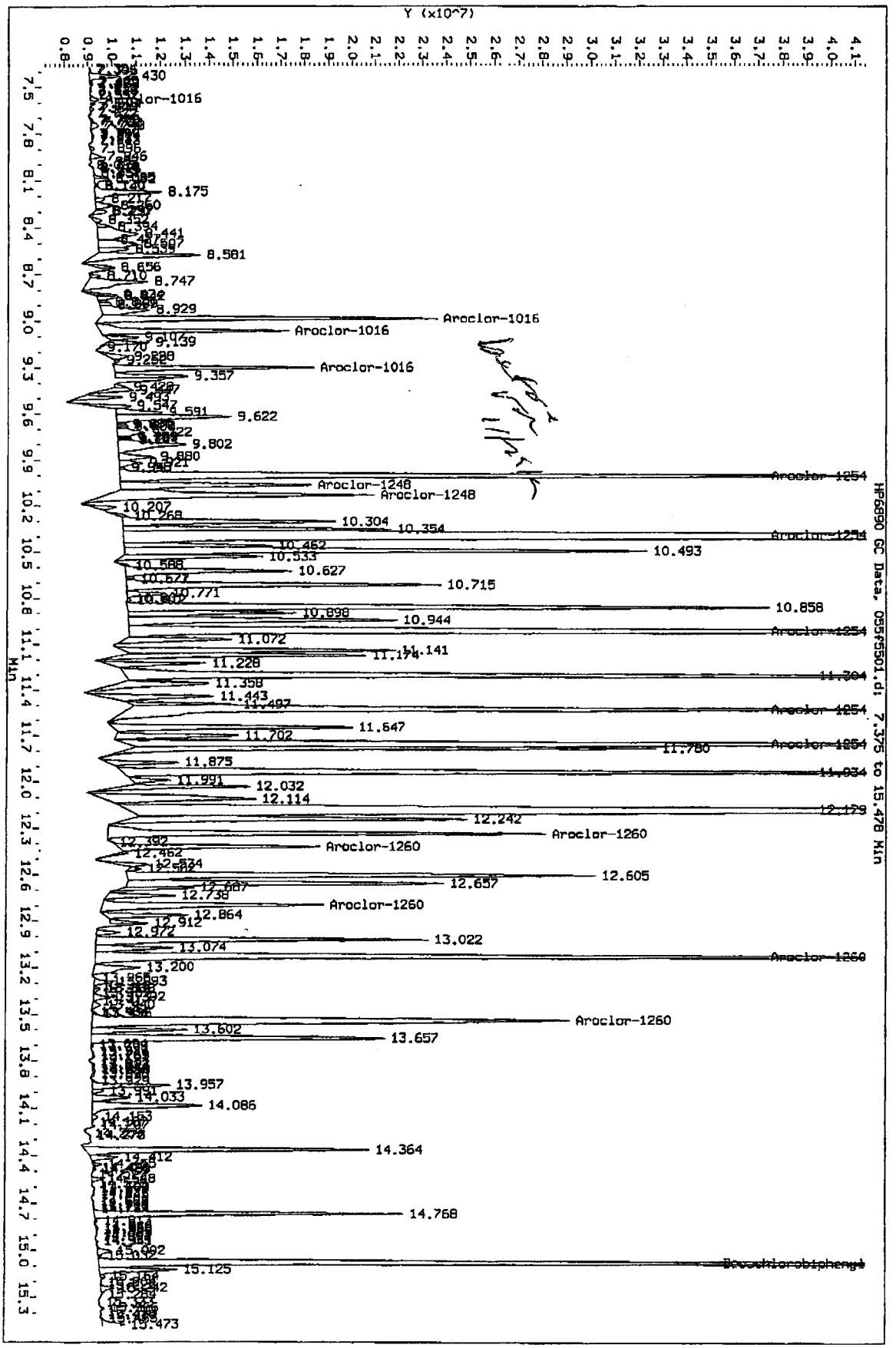
RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	CONCENTRATIONS FINAL (ug/Kg)	TARGET RANGE	RATIO
4 Aroclor-1232					CAS #: 11141-16-5		
6.944	6.944	0.000	24232	0.34574	0.13	80.00- 120.00	100.00(M)
7.578	7.584	-0.006	402890	9.50969	3.5	40.95- 80.95	1662.64
8.987	8.987	0.000	19537946	550.715	202	24.75- 64.75	80628.70
9.067	9.070	-0.003	11316940	372.174	137	30.72- 70.72	46702.46
9.304	9.305	-0.001	13437099	386.217	142	30.46- 70.46	55451.88
Average of Peak Concentrations =					97.0		
6 Aroclor-1242					CAS #: 53469-21-9		
6.944	6.944	0.000	24232	0.47835	0.18	80.00- 120.00	100.00(M)
7.578	7.585	-0.007	402890	5.22228	1.9	122.38- 162.38	1662.64
8.987	8.986	0.001	19537946	300.923	111	91.55- 131.55	80628.70
9.067	9.068	-0.001	11316940	155.310	57.1	105.39- 145.39	46702.46
9.304	9.305	-0.001	13437099	187.634	69.0	109.29- 149.29	55451.88
Average of Peak Concentrations =					47.8		
9 Aroclor-1248					CAS #: 12672-29-6		
8.987	8.987	0.000	19537946	176.853	65.0	80.00- 120.00	100.00(M)
9.067	9.068	-0.001	11316940	107.596	39.6	76.06- 116.06	57.92
9.304	9.305	-0.001	13437099	112.515	41.4	87.83- 127.83	68.77
10.066	10.068	-0.002	15175499	102.863	37.8	113.94- 153.94	77.67
10.131	10.137	-0.006	21339069	155.637	57.2	112.47- 152.47	109.22
Average of Peak Concentrations =					48.2		
15 Aroclor-1254					CAS #: 11097-69-1		
10.004	10.004	0.000	52419925	336.051	124	80.00- 120.00	100.00(M)
10.388	10.404	-0.016	172088048	~~1037.97~~	~~382~~	94.32- 134.32	328.29
11.013	11.016	-0.003	92823083	398.847	147	135.66- 175.66	177.08
11.527	11.529	-0.002	58581624	323.625	119	94.57- 134.57	111.75
11.751	11.752	-0.001	70026617	~~688.369~~	~~254~~	49.22- 89.22	133.59
Average of Peak Concentrations =					~~205~~ 130		
21 Aroclor-1260					CAS #: 11096-82-5		
12.337	12.338	-0.001	28390674	186.602	68.6	80.00- 120.00	100.00(M)
12.422	12.425	-0.003	13772648	160.182	58.9	34.80- 74.80	48.51
12.799	12.800	-0.001	15413242	193.128	71.0	30.84- 70.84	54.29
13.129	13.133	-0.004	53366379	151.398	55.7	212.78- 252.78	187.97
13.539	13.541	-0.002	40325444	180.554	66.4	120.82- 160.82	142.04
Average of Peak Concentrations =					64.1		

353

QC Flag Legend

M - Compound response manually integrated.

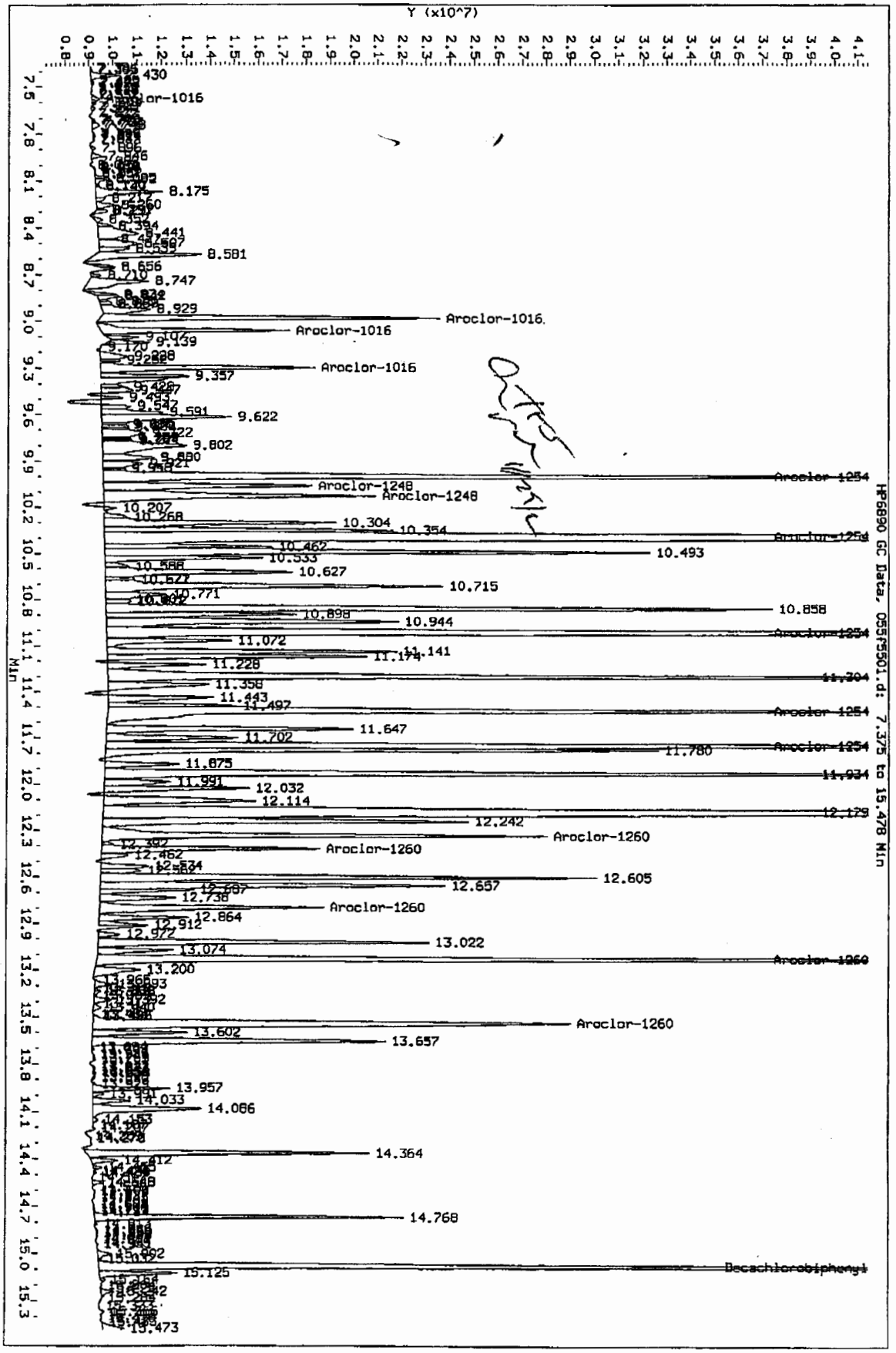
Data File: /chem/ecdia.i/111901a.b/0555f501.d
Injection Date: 20-NOV-2001 11:12
Instrument: ecdia.i
Client Sample ID: L4094-8



526

96

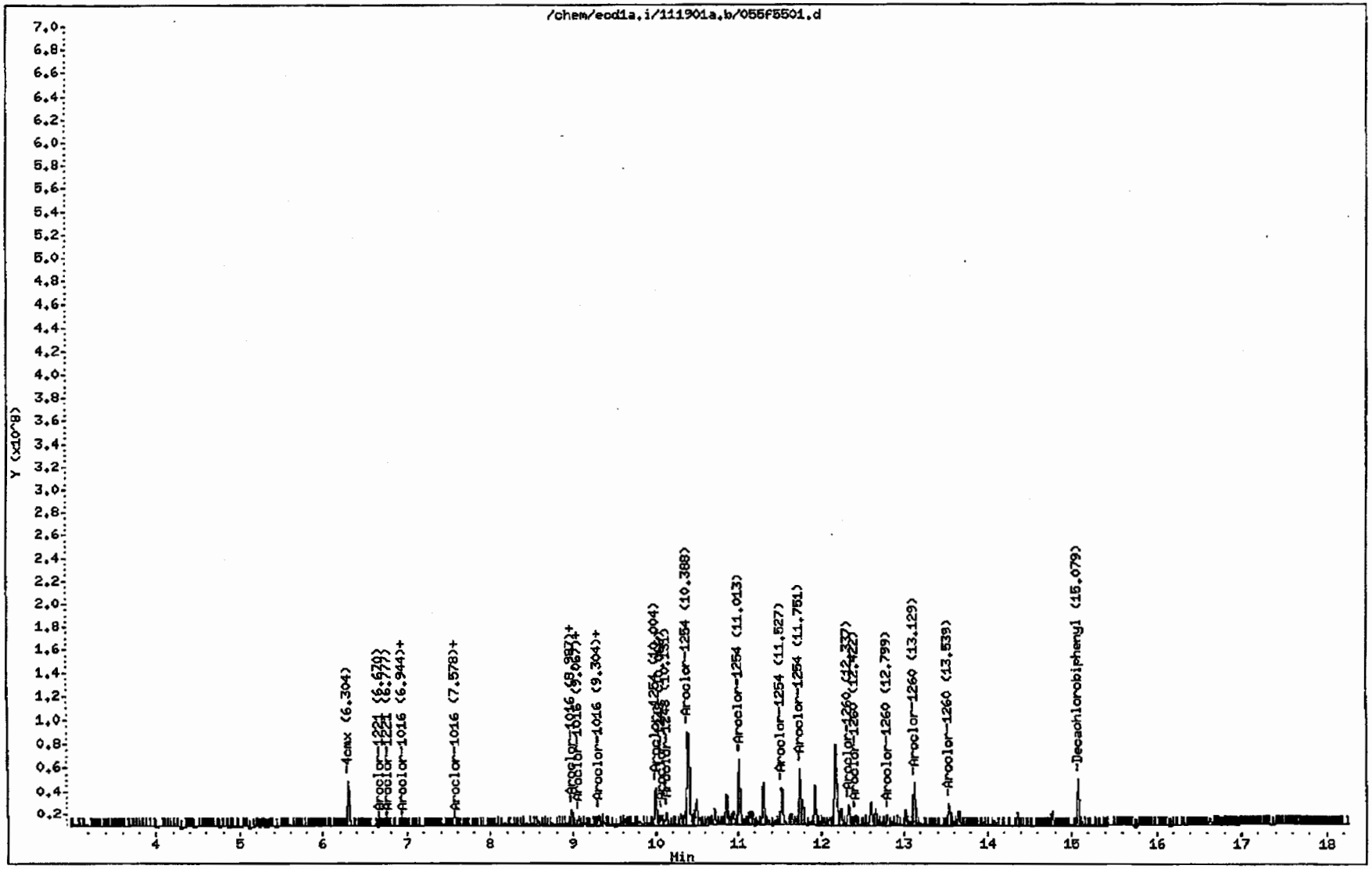
Data File: /chem/ecdia.i/111901a.b/055f5501.d
Injection Date: 20-NOV-2001 11:12
Instrument: ecdia.i
Client Sample ID: L4094-B



528

Data File: /chem/ecd1a.i/111901a.b/055f5501.d
Date : 20-NOV-2001 11:12
Client ID: L4094-8
Sample Info: |52055008110|
Volume Injected (uL): 1.0
Column phase: DB-XLB

Instrument: ecd1a.i
Operator: mm
Column diameter: 0.25



1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

L4094-9

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Matrix: (soil/water) SOIL Lab Sample ID: 52055009

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 056F5601

% Moisture: 1 decanted: (Y/N) N Date Received: 11/15/01

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:11/16/01

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 11/20/01

Injection Volume: 1.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	33.8	U
11104-28-2	Aroclor-1221	33.8	U
11141-16-5	Aroclor-1232	33.8	U
53469-21-9	Aroclor-1242	33.8	U
12672-29-6	Aroclor-1248	33.8	U
11097-69-1	Aroclor-1254	218	P
11096-82-5	Aroclor-1260	64.4	P

General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/056b5601.d
Lab Smp Id: 52055009 Client Smp ID: L4094-9
Inj Date : 20-NOV-2001 11:35
Operator : mm Inst ID: ecd1a.i
Smp Info : |52055009|10|
Misc Info : |ECD82P_1S|121122|SVA|ETLL|
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m
Meth Date : 20-Nov-2001 13:44 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012b1201.d
Als bottle: 56
Dil Factor: 10.00000
Integrator: Falcon Compound Sublist: 52055.sub
Target Version: 3.50 Sample Matrix: Soil

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVariab

Name	Value	Description
DF	10.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.00000	Weight of sample extracted (g)
M	1.45450	% Moisture

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
$ 1 4cmx					CAS #: 877-09-8		
6.159	6.159	0.000	16532615	14.3411	4.8	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.375	15.375	0.000	16600768	16.9522	5.7	80.00- 120.00	100.00
4 Aroclor-1232					CAS #: 11141-16-5		
0.000	7.331	-7.331	0			80.00- 120.00	0.00 (TaM)
8.045	8.049	-0.004	574146	28.4531	9.6	70.60- 110.60	0.00
8.434	8.430	0.004	276172	48.2582	16.3	5.55- 45.55	0.00
8.997	8.992	0.005	18537	1.42004	0.48	35.02- 75.02	0.00
9.790	9.790	0.000	3120730	236.077	79.8	39.22- 79.22	0.00
Average of Peak Concentrations =					26.6		

JC 12/4/01

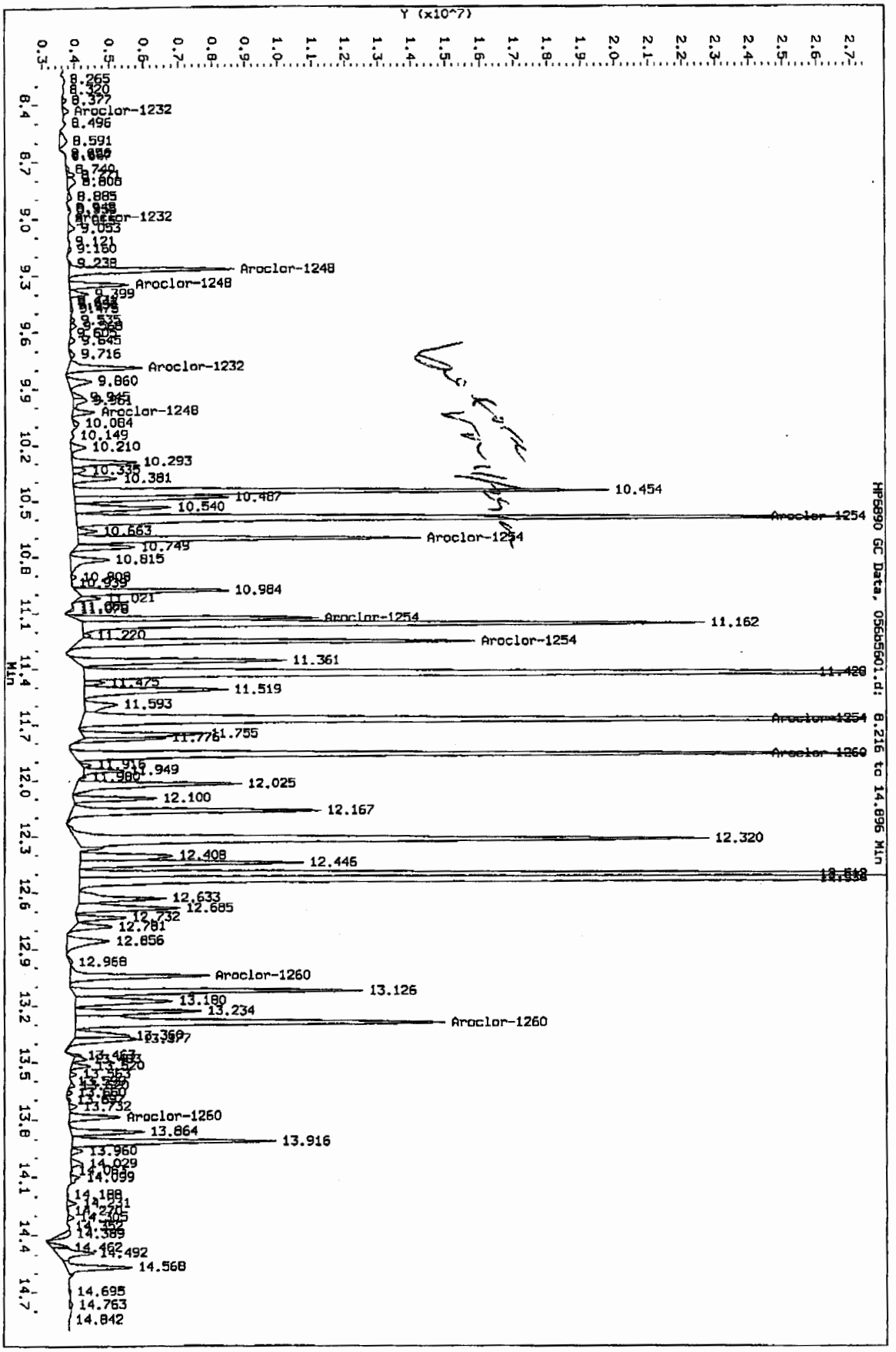
RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	CONCENTRATIONS FINAL (ug/Kg)	TARGET RANGE	RATIO
9 Aroclor-1248					CAS #: 12672-29-6		
8.045	8.048	-0.003	574146	32.1558	10.9	80.00- 120.00	100.00(aM)
9.275	9.274	0.001	6914471	205.090	69.4	174.49- 214.49	1204.31
9.350	9.351	-0.001	2362118	73.6031	24.9	163.02- 203.02	411.41
9.790	9.791	-0.001	3120730	74.0412	25.0	222.44- 262.44	543.54
10.024	10.025	-0.001	1114412	45.3123	15.3	119.72- 159.72	194.10
Average of Peak Concentrations =					29.1		
15 Aroclor-1254					CAS #: 11097-69-1		
10.598	10.599	-0.001	36536804	520.244	176	80.00- 120.00	100.00(M)
10.707	10.706	0.001	15238210	584.511	198	15.38- 55.38	41.71
11.131	11.132	-0.001	9213469	441.335	149	9.62- 49.62	25.22
11.258	11.257	0.001	17688074	410.147	139	42.13- 82.13	48.41
11.678	11.679	-0.001	49150552	568.679	192	107.51- 147.51	134.52
Average of Peak Concentrations =					171		
21 Aroclor-1260					CAS #: 11096-82-5		
11.678	11.679	-0.001	49150552	735.513	248	80.00- 120.00	100.00(M)
11.865	11.866	-0.001	32756384	435.181	147	95.12- 135.12	66.64
13.047	13.047	0.000	6513682	137.570	46.5	51.18- 91.18	13.25
13.294	13.294	0.000	19018187	152.080	51.4	178.37- 218.37	38.69
13.786	13.785	0.001	2123177	98.4769	33.3	13.35- 53.35	4.32
Average of Peak Concentrations =					105		

130 43.7

QC Flag Legend

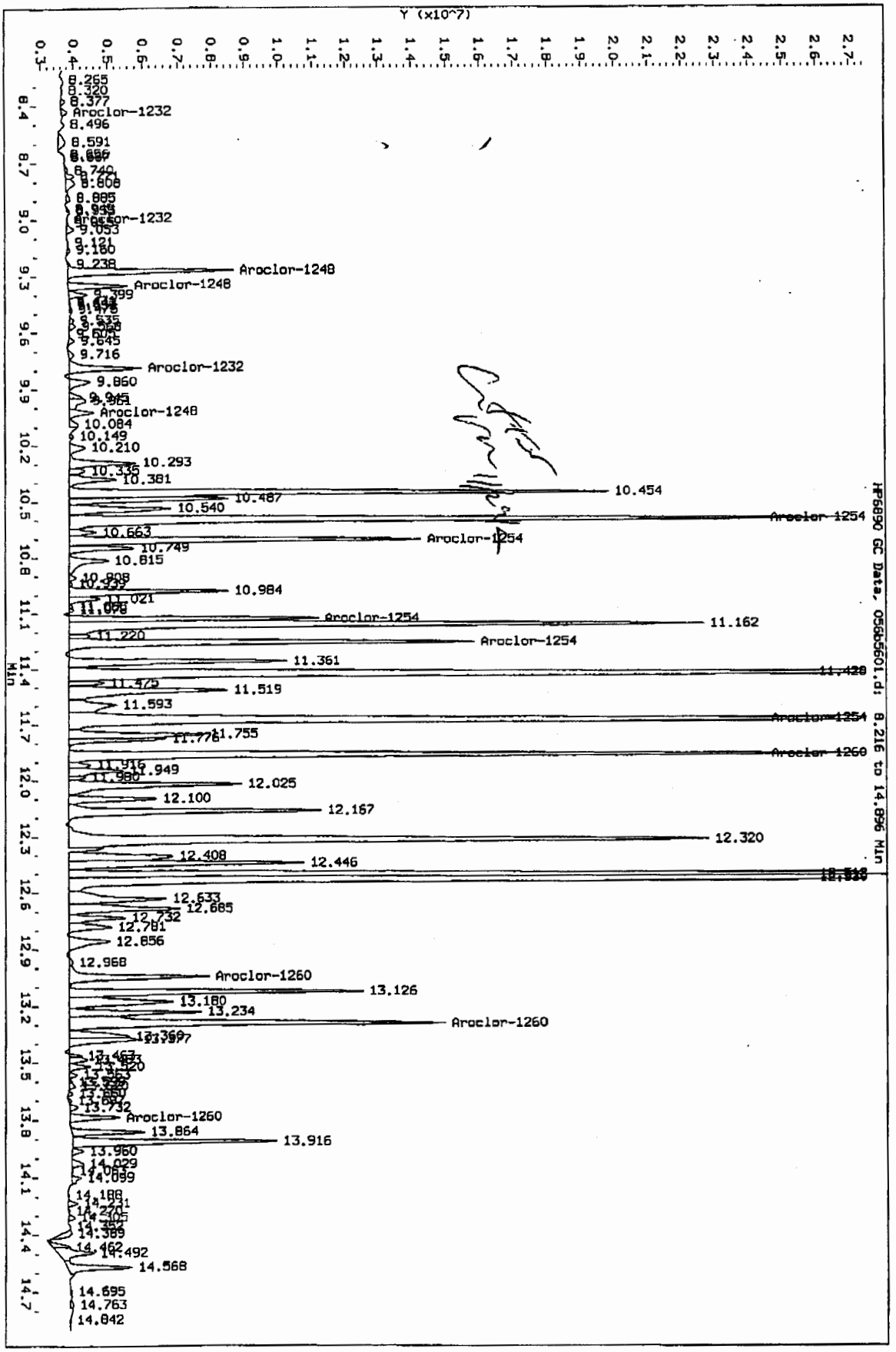
T - Target compound detected outside RT window.
a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: /chem/ecdia.i/111901a.b/056b5601.d
Injection Date: 20-NOV-2001 11:35
Instrument: ecdia.i
Client Sample ID: L4094-9



532

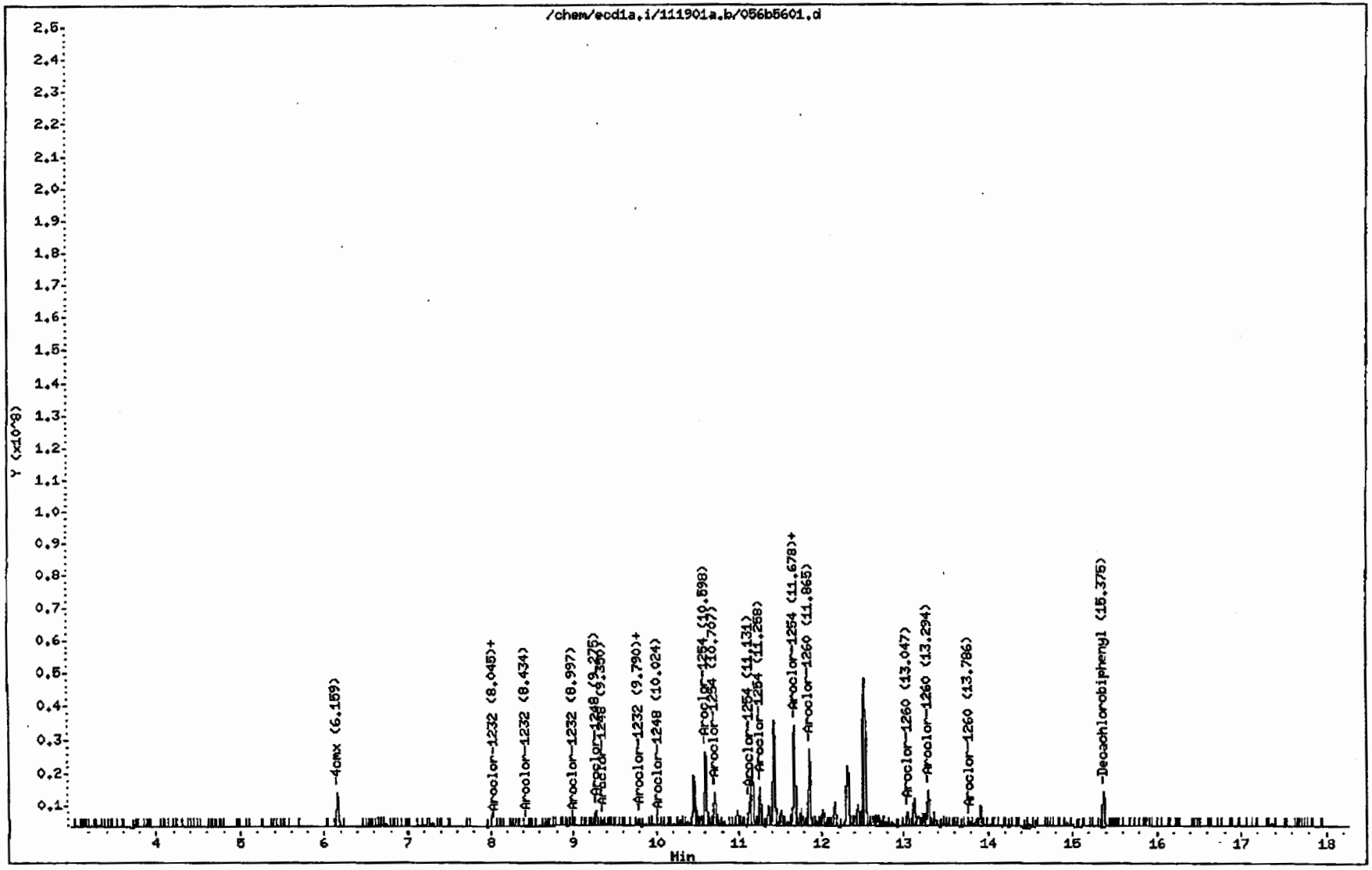
Data File: /chem/ecdia.i/111901a.b/056b5601.d
Injection Date: 20-NOV-2001 11:35
Instrument: ecdia.i
Client Sample ID: L4094-9



533

Data File: /chem/ecdia.i/111901a.b/056b5601.d
Date : 20-NOV-2001 11:35
Client ID: L4094-9
Sample Info: 152055009|101
Volume Injected (uL): 1.0
Column phase: DB-17MS

Instrument: ecdia.i
Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/056f5601.d
Lab Smp Id: 52055009 Client Smp ID: L4094-9
Inj Date : 20-NOV-2001 11:35
Operator : mm Inst ID: ecd1a.i
Smp Info : |52055009|10|
Misc Info : |ECD82P_1S|121122|SVA|ETLL|
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m
Meth Date : 20-Nov-2001 13:43 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012f1201.d
Als bottle: 56
Dil Factor: 10.00000
Integrator: Falcon Compound Sublist: 52055.sub
Target Version: 3.50 Sample Matrix: Soil

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVariab

Name	Value	Description
DF	10.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.00000	Weight of sample extracted (g)
M	1.45450	% Moisture

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
$ 1 4cmx					CAS #: 877-09-8		
6.303	6.303	0.000	60549350	16.1304	5.4	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.080	15.078	0.002	43945217	14.4493	4.9	80.00- 120.00	100.00
3 Aroclor-1016					CAS #: 12674-11-2		
6.940	6.943	-0.003	22493	0.35640	0.12	80.00- 120.00	100.00(a)
7.591	7.584	0.007	7871	0.07783	0.026	141.60- 181.60	35.00
8.985	8.987	-0.002	23782133	278.091	94.1	114.56- 154.56	105730.91
9.068	9.068	0.000	9343440	99.6117	33.7	131.20- 171.20	41539.19
9.304	9.305	-0.001	10672823	116.852	39.5	125.87- 165.87	47449.38
Average of Peak Concentrations =					33.5		

12/4/01

JC 12/4/01

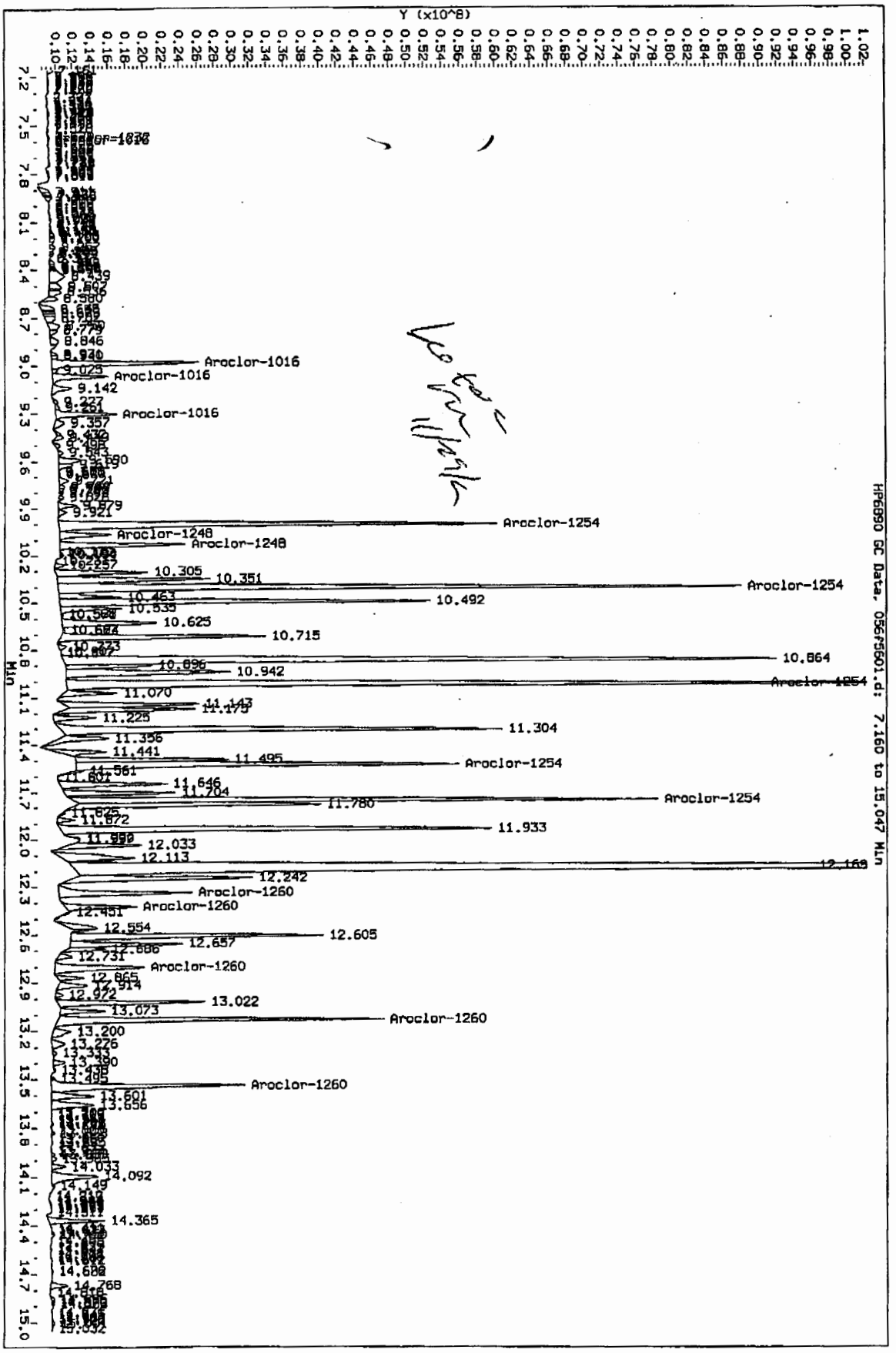
535

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
4 Aroclor-1232					CAS #: 11141-16-5		
6.946	6.944	0.002	44320	0.63235	0.21	80.00- 120.00	100.00
7.576	7.584	-0.008	107334	2.53348	0.86	40.95- 80.95	242.18
8.985	8.987	-0.002	23782133	670.346	227	24.75- 64.75	53659.78
9.068	9.070	-0.002	9343440	307.272	104	30.72- 70.72	21081.66
9.304	9.305	-0.001	10672823	306.765	104	30.46- 70.46	24081.16
Average of Peak Concentrations =					87.1		
6 Aroclor-1242					CAS #: 53469-21-9		
6.946	6.944	0.002	44320	0.87489	0.30	80.00- 120.00	100.00
7.591	7.585	0.006	7871	0.10202	0.034	122.38- 162.38	17.76
8.985	8.986	-0.001	23782133	366.292	124	91.55- 131.55	53659.78
9.068	9.068	0.000	9343440	128.226	43.4	105.39- 145.39	21081.66
9.304	9.305	-0.001	10672823	149.034	50.4	109.29- 149.29	24081.16
Average of Peak Concentrations =					43.6		
9 Aroclor-1248					CAS #: 12672-29-6		
8.985	8.987	-0.002	23782133	215.270	72.8	80.00- 120.00	100.00(M)
9.068	9.068	0.000	9343440	88.8329	30.0	76.06- 116.06	39.29
9.304	9.305	-0.001	10672823	89.3686	30.2	87.83- 127.83	44.88
10.065	10.068	-0.003	10165334	68.9031	23.3	113.94- 153.94	42.74
10.130	10.137	-0.007	22677057	165.396	55.9	112.47- 152.47	95.35
Average of Peak Concentrations =					42.5		
15 Aroclor-1254					CAS #: 11097-69-1		
10.002	10.004	-0.002	77549302	497.150	168	80.00- 120.00	100.00(M)
10.402	10.404	-0.002	122437259	738.492	250	94.32- 134.32	157.88
11.013	11.016	-0.003	146743073	630.533	213	135.66- 175.66	189.23
11.525	11.529	-0.004	73692924	407.106	138	94.57- 134.57	95.03
11.750	11.752	-0.002	97771516	956.916	324	49.22- 89.22	126.08
Average of Peak Concentrations =					218		
21 Aroclor-1260					CAS #: 11096-82-5		
12.336	12.338	-0.002	27853887	183.074	61.9	80.00- 120.00	100.00(M)
12.421	12.425	-0.004	17675950	205.579	69.5	34.80- 74.80	63.46
12.801	12.800	0.001	20541190	257.382	87.1	30.84- 70.84	73.75
13.129	13.133	-0.004	53397918	151.488	51.2	212.78- 252.78	191.71
13.538	13.541	-0.003	34486075	154.408	52.2	120.82- 160.82	123.81
Average of Peak Concentrations =					64.4		

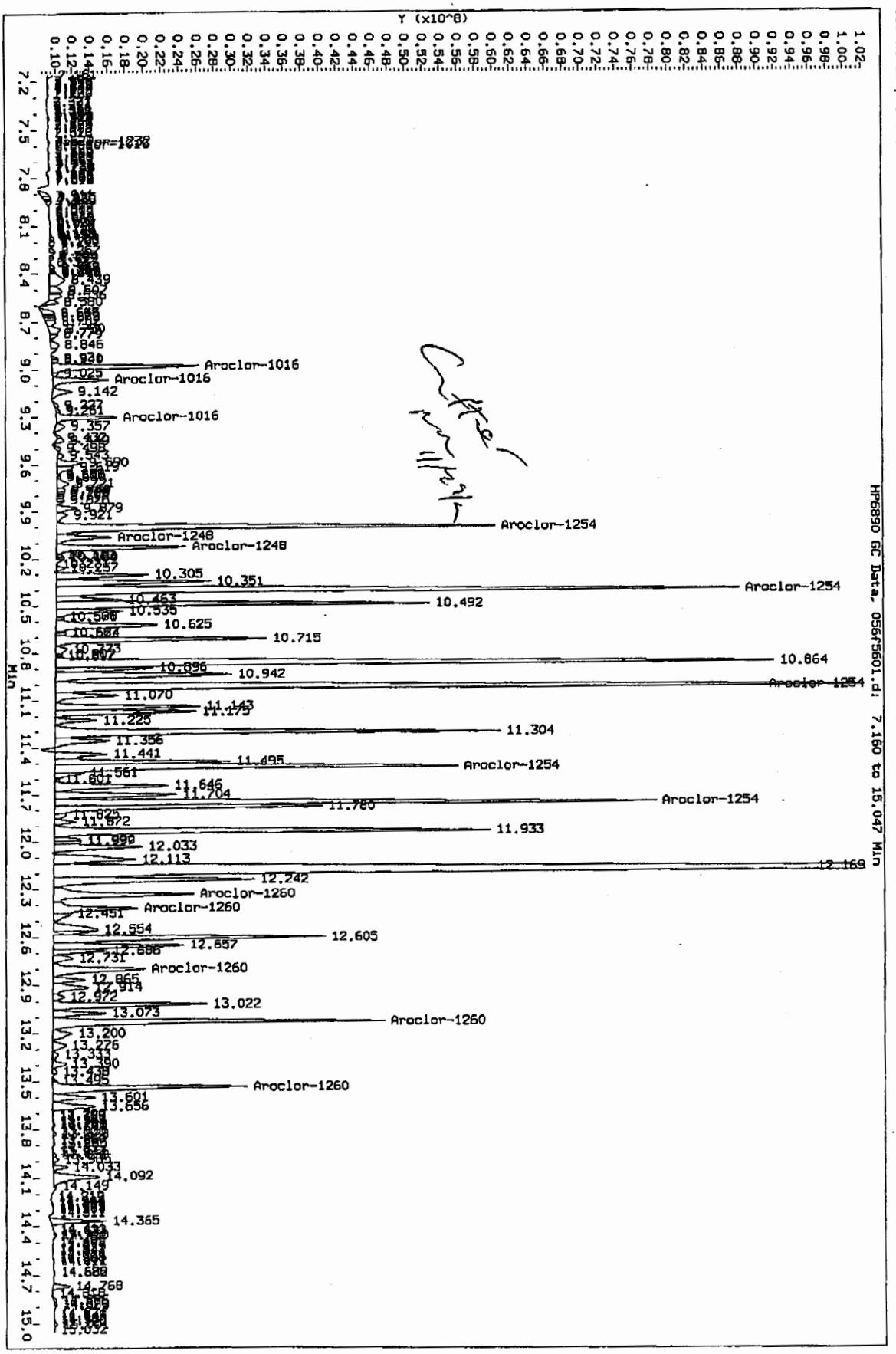
QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: /chem/ecdia.i/11190la.b/0566f601.d
Injection Date: 20-NOV-2001 11:35
Instrument: ecdia.i
Client Sample ID: L4094-9



Data File: /chem/ecdia.i/111901a.b/056f5601.d
Injection Date: 20-NOV-2001 11:35
Instrument: ecdia.i
Client Sample ID: L4094-9



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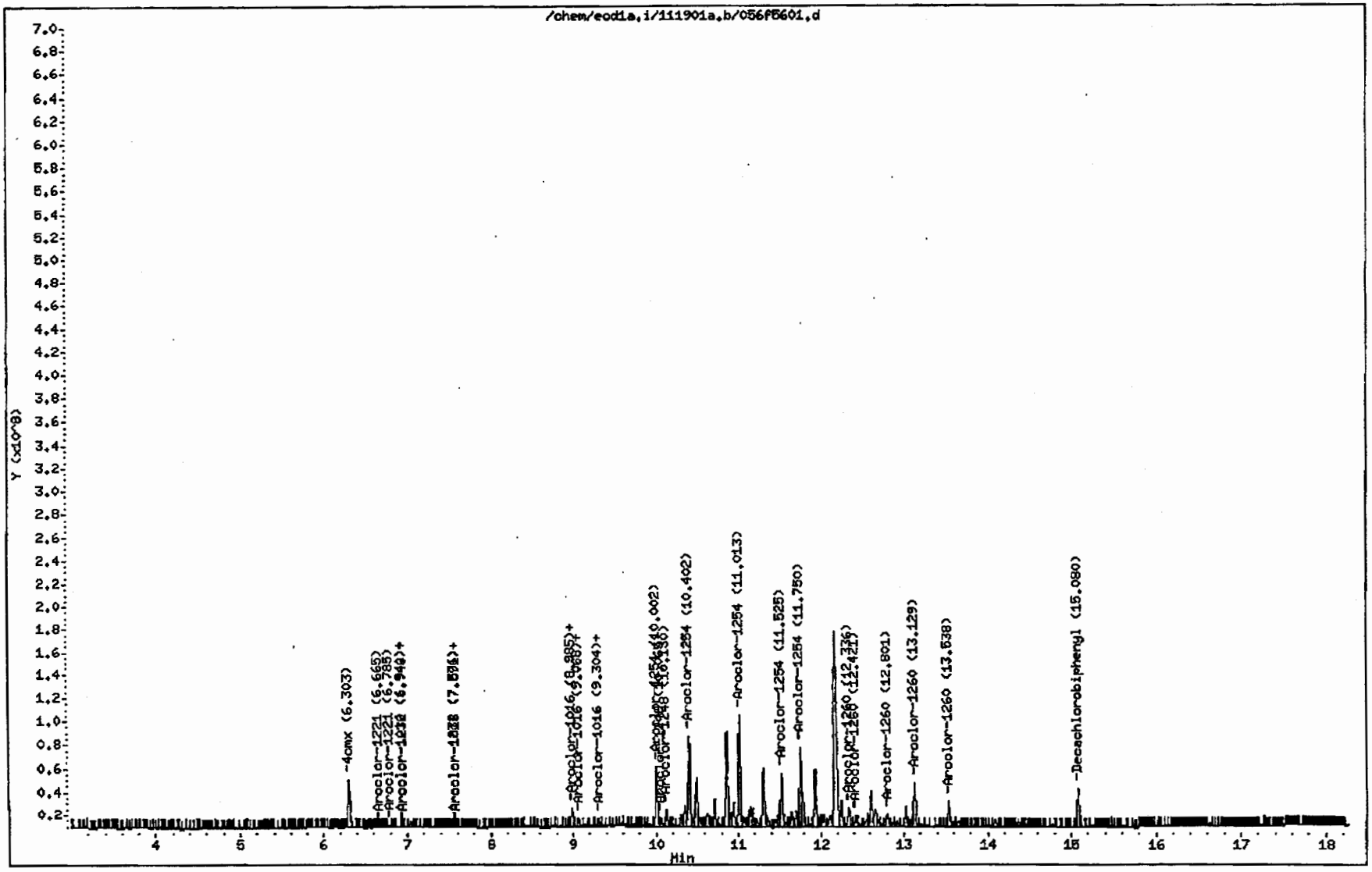
Data File: /chem/ecd1a.i/111901a.b/056f5601.d
Date : 20-NOV-2001 11:35
Client ID: L4094-9
Sample Info: |52055009|10|
Volume Injected (uL): 1.0
Column phase: DB-XLB

Instrument: ecd1a.i
Operator: mm
Column diameter: 0.25



STANDARDS DATA

Report Date: 19-Nov-2001 11:07

Calibration History

Method : /chem/ecd1a.i/111701.b/PESTA_DB-XLB_ecd1.m
Start Cal Date: 27-OCT-2001 09:22
End Cal Date : 17-NOV-2001 11:23

Initial Calibration

Injection Date	Sublist	Calibration File
Cal Level: 1 , Cal Amount: 2.00000		
17-NOV-2001 09:53	AR1242	/chem/ecd1a.i/111701.b/005f0501.d
12-NOV-2001 19:29	AR1254	/chem/ecd1a.i/111201.b/006f0601.d
02-NOV-2001 11:30	AR1660	/chem/ecd1a.i/110201.b/006f0601.d
27-OCT-2001 15:20	Chlor	/chem/ecd1a.i/102701.b/019f1901.d
31-OCT-2001 19:37	Tox	/chem/ecd1a.i/103101.b/014f1401.d
31-OCT-2001 16:35	INDAB	/chem/ecd1a.i/103101.b/006f0601.d
Cal Level: 2 , Cal Amount: 10.00000		
17-NOV-2001 10:16	AR1242	/chem/ecd1a.i/111701.b/006f0601.d
12-NOV-2001 19:52	AR1254	/chem/ecd1a.i/111201.b/007f0701.d
02-NOV-2001 11:53	AR1660	/chem/ecd1a.i/110201.b/007f0701.d
27-OCT-2001 15:42	Chlor	/chem/ecd1a.i/102701.b/020f2001.d
31-OCT-2001 20:00	Tox	/chem/ecd1a.i/103101.b/015f1501.d
31-OCT-2001 17:01	INDAB	/chem/ecd1a.i/103101.b/007f0701.d
Cal Level: 3 , Cal Amount: 20.00000		
02-NOV-2001 15:14	AR1221	/chem/ecd1a.i/110201.b/016f1601.d
02-NOV-2001 14:52	AR1232	/chem/ecd1a.i/110201.b/015f1501.d
17-NOV-2001 10:38	AR1242	/chem/ecd1a.i/111701.b/007f0701.d
02-NOV-2001 14:07	AR1248	/chem/ecd1a.i/110201.b/013f1301.d
12-NOV-2001 20:14	AR1254	/chem/ecd1a.i/111201.b/008f0801.d
02-NOV-2001 12:15	AR1660	/chem/ecd1a.i/110201.b/008f0801.d
27-OCT-2001 16:04	Chlor	/chem/ecd1a.i/102701.b/021f2101.d
31-OCT-2001 20:22	Tox	/chem/ecd1a.i/103101.b/016f1601.d
31-OCT-2001 17:23	INDAB	/chem/ecd1a.i/103101.b/008f0801.d
Cal Level: 4 , Cal Amount: 50.00000		
17-NOV-2001 11:01	AR1242	/chem/ecd1a.i/111701.b/008f0801.d
12-NOV-2001 20:37	AR1254	/chem/ecd1a.i/111201.b/009f0901.d
02-NOV-2001 12:37	AR1660	/chem/ecd1a.i/110201.b/009f0901.d
27-OCT-2001 16:27	Chlor	/chem/ecd1a.i/102701.b/022f2201.d
31-OCT-2001 20:44	Tox	/chem/ecd1a.i/103101.b/017f1701.d
31-OCT-2001 17:45	INDAB	/chem/ecd1a.i/103101.b/009f0901.d
Cal Level: 5 , Cal Amount: 100.00000		
17-NOV-2001 11:23	AR1242	/chem/ecd1a.i/111701.b/009f0901.d
12-NOV-2001 20:59	AR1254	/chem/ecd1a.i/111201.b/010f1001.d
02-NOV-2001 13:00	AR1660	/chem/ecd1a.i/110201.b/010f1001.d

27-OCT-2001 16:49	Chlor	/chem/ecd1a.i/102701.b/023f2301.d
31-OCT-2001 21:07	Tox	/chem/ecd1a.i/103101.b/018f1801.d
31-OCT-2001 18:08	INDAB	/chem/ecd1a.i/103101.b/010f1001.d

Cal Level: 6 , Cal Amount: 150.00000

27-OCT-2001 17:11	Chlor	/chem/ecd1a.i/102701.b/024f2401.d
31-OCT-2001 21:29	Tox	/chem/ecd1a.i/103101.b/019f1901.d
31-OCT-2001 18:30	INDAB	/chem/ecd1a.i/103101.b/011f1101.d

Cal Level: 7 , Cal Amount: 200.00000

27-OCT-2001 17:34	Chlor	/chem/ecd1a.i/102701.b/025f2501.d
31-OCT-2001 21:52	Tox	/chem/ecd1a.i/103101.b/020f2001.d
31-OCT-2001 18:53	INDAB	/chem/ecd1a.i/103101.b/012f1201.d

Continuing Calibration
Ccal Level Mode: GLOBAL LEVEL 5

Ccal Level: 5 , Ccal Amount: 100

18-NOV-2001 05:18	AR1660	/chem/ecd1a.i/111701.b/057f5701.d

Ccal Level: 5 , Ccal Amount: 100

18-NOV-2001 03:04	AR1660	/chem/ecd1a.i/111701.b/051f5101.d

Ccal Level: 5 , Ccal Amount: 100

17-NOV-2001 18:06	AR1660	/chem/ecd1a.i/111701.b/027f2701.d

Ccal Level: 5 , Ccal Amount: 100

18-NOV-2001 06:25	AR1242	/chem/ecd1a.i/111701.b/060f6001.d

Ccal Level: 5 , Ccal Amount: 100

18-NOV-2001 06:03	AR1660	/chem/ecd1a.i/111701.b/059f5901.d

Ccal Level: 5 , Ccal Amount: 100

18-NOV-2001 00:27	AR1660	/chem/ecd1a.i/111701.b/044f4401.d

Ccal Level: 5 , Ccal Amount: 100

17-NOV-2001 22:35	AR1660	/chem/ecd1a.i/111701.b/039f3901.d

Ccal Level: 5 , Ccal Amount: 100

17-NOV-2001 18:51	AR1660	/chem/ecd1a.i/111701.b/029f2901.d

Ccal Level: 5 , Ccal Amount: 100

17-NOV-2001 15:30	AR1660	/chem/ecd1a.i/111701.b/020f2001.d

Ccal Level: 5 , Ccal Amount: 100

17-NOV-2001 15:07	AR1242	/chem/ecd1a.i/111701.b/019f1901.d

Ccal Level: 5 , Ccal Amount: 100

17-NOV-2001 12:30	AR1221	/chem/ecd1a.i/111701.b/012f1201.d
Ccal Level: 5 , Ccal Amount: 100		
17-NOV-2001 12:08	AR1232	/chem/ecd1a.i/111701.b/011f1101.d
Ccal Level: 5 , Ccal Amount: 100		
17-NOV-2001 11:46	AR1242	/chem/ecd1a.i/111701.b/010f1001.d
Ccal Level: 5 , Ccal Amount: 100		
17-NOV-2001 11:23	AR1242	/chem/ecd1a.i/111701.b/009f0901.d
Ccal Level: 5 , Ccal Amount: 100		
17-NOV-2001 09:08	AR1254	/chem/ecd1a.i/111701.b/003f0301.d
Ccal Level: 5 , Ccal Amount: 100		
17-NOV-2001 08:46	AR1660	/chem/ecd1a.i/111701.b/002f0201.d
Ccal Level: 5 , Ccal Amount: 100		
17-NOV-2001 07:48	AR1660	/chem/ecd1a.i/111701.b/002f0201.d
Ccal Level: 5 , Ccal Amount: 100		
17-NOV-2001 07:16	AR1660	/chem/ecd1a.i/111701.b/002f0201.d
Ccal Level: 5 , Ccal Amount: 100		
17-NOV-2001 06:49	AR1660	/chem/ecd1a.i/111701.b/002f0201.d

eport Date: 19-Nov-2001 11:07

Calibration History

ethod : /chem/ecd1a.i/111701.b/PESTB_DB-17MS_ecd1.m
tart Cal Date: 27-OCT-2001 09:22
nd Cal Date : 17-NOV-2001 11:23

nitial Calibration

Injection Date	Sublist	Calibration File
Cal Level: 1 , Cal Amount: 2.00000		
17-NOV-2001 09:53	AR1242	/chem/ecd1a.i/111701.b/005b0501.d
12-NOV-2001 19:29	AR1254	/chem/ecd1a.i/111201.b/006b0601.d
02-NOV-2001 11:30	AR1660	/chem/ecd1a.i/110201.b/006b0601.d
27-OCT-2001 15:20	Chlor	/chem/ecd1a.i/102701.b/019b1901.d
31-OCT-2001 19:37	Tox	/chem/ecd1a.i/103101.b/014b1401.d
31-OCT-2001 16:35	INDAB	/chem/ecd1a.i/103101.b/006b0601.d
Cal Level: 2 , Cal Amount: 10.00000		
17-NOV-2001 10:16	AR1242	/chem/ecd1a.i/111701.b/006b0601.d
12-NOV-2001 19:52	AR1254	/chem/ecd1a.i/111201.b/007b0701.d
02-NOV-2001 11:53	AR1660	/chem/ecd1a.i/110201.b/007b0701.d
27-OCT-2001 15:42	Chlor	/chem/ecd1a.i/102701.b/020b2001.d
31-OCT-2001 20:00	Tox	/chem/ecd1a.i/103101.b/015b1501.d
31-OCT-2001 17:01	INDAB	/chem/ecd1a.i/103101.b/007b0701.d
Cal Level: 3 , Cal Amount: 20.00000		
02-NOV-2001 15:14	AR1221	/chem/ecd1a.i/110201.b/016b1601.d
02-NOV-2001 14:52	AR1232	/chem/ecd1a.i/110201.b/015b1501.d
17-NOV-2001 10:38	AR1242	/chem/ecd1a.i/111701.b/007b0701.d
02-NOV-2001 14:07	AR1248	/chem/ecd1a.i/110201.b/013b1301.d
12-NOV-2001 20:14	AR1254	/chem/ecd1a.i/111201.b/008b0801.d
02-NOV-2001 12:15	AR1660	/chem/ecd1a.i/110201.b/008b0801.d
27-OCT-2001 16:04	Chlor	/chem/ecd1a.i/102701.b/021b2101.d
31-OCT-2001 20:22	Tox	/chem/ecd1a.i/103101.b/016b1601.d
31-OCT-2001 17:23	INDAB	/chem/ecd1a.i/103101.b/008b0801.d
Cal Level: 4 , Cal Amount: 50.00000		
17-NOV-2001 11:01	AR1242	/chem/ecd1a.i/111701.b/008b0801.d
12-NOV-2001 20:37	AR1254	/chem/ecd1a.i/111201.b/009b0901.d
02-NOV-2001 12:37	AR1660	/chem/ecd1a.i/110201.b/009b0901.d
27-OCT-2001 16:27	Chlor	/chem/ecd1a.i/102701.b/022b2201.d
31-OCT-2001 20:44	Tox	/chem/ecd1a.i/103101.b/017b1701.d
31-OCT-2001 17:45	INDAB	/chem/ecd1a.i/103101.b/009b0901.d
Cal Level: 5 , Cal Amount: 100.00000		
17-NOV-2001 11:23	AR1242	/chem/ecd1a.i/111701.b/009b0901.d
12-NOV-2001 20:59	AR1254	/chem/ecd1a.i/111201.b/010b1001.d
02-NOV-2001 13:00	AR1660	/chem/ecd1a.i/110201.b/010b1001.d

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27-OCT-2001 16:49	Chlor	/chem/ecd1a.i/102701.b/023b2301.d
31-OCT-2001 21:07	Tox	/chem/ecd1a.i/103101.b/018b1801.d
31-OCT-2001 18:08	INDAB	/chem/ecd1a.i/103101.b/010b1001.d

Cal Level: 6 , Cal Amount: 150.00000

27-OCT-2001 17:11	Chlor	/chem/ecd1a.i/102701.b/024b2401.d
31-OCT-2001 21:29	Tox	/chem/ecd1a.i/103101.b/019b1901.d
31-OCT-2001 18:30	INDAB	/chem/ecd1a.i/103101.b/011b1101.d

Cal Level: 7 , Cal Amount: 200.00000

27-OCT-2001 17:34	Chlor	/chem/ecd1a.i/102701.b/025b2501.d
31-OCT-2001 21:52	Tox	/chem/ecd1a.i/103101.b/020b2001.d
31-OCT-2001 18:53	INDAB	/chem/ecd1a.i/103101.b/012b1201.d

Continuing Calibration
Ccal Level Mode: GLOBAL LEVEL 5

Ccal Level: 5 , Ccal Amount: 100

18-NOV-2001 05:18	AR1660	/chem/ecd1a.i/111701.b/057b5701.d

Ccal Level: 5 , Ccal Amount: 100

18-NOV-2001 03:04	AR1660	/chem/ecd1a.i/111701.b/051b5101.d

Ccal Level: 5 , Ccal Amount: 100

18-NOV-2001 06:25	AR1242	/chem/ecd1a.i/111701.b/060b6001.d

Ccal Level: 5 , Ccal Amount: 100

18-NOV-2001 06:03	AR1660	/chem/ecd1a.i/111701.b/059b5901.d

Ccal Level: 5 , Ccal Amount: 100

18-NOV-2001 00:27	AR1660	/chem/ecd1a.i/111701.b/044b4401.d

Ccal Level: 5 , Ccal Amount: 100

17-NOV-2001 22:35	AR1660	/chem/ecd1a.i/111701.b/039b3901.d

Ccal Level: 5 , Ccal Amount: 100

17-NOV-2001 18:51	AR1660	/chem/ecd1a.i/111701.b/029b2901.d

Ccal Level: 5 , Ccal Amount: 100

17-NOV-2001 18:06	AR1660	/chem/ecd1a.i/111701.b/027b2701.d

Ccal Level: 5 , Ccal Amount: 100

17-NOV-2001 11:46	AR1242	/chem/ecd1a.i/111701.b/010b1001.d

Ccal Level: 5 , Ccal Amount: 100

17-NOV-2001 15:30	AR1660	/chem/ecd1a.i/111701.b/020b2001.d

Ccal Level: 5 , Ccal Amount: 100

17-NOV-2001 15:07	AR1242	/chem/ecd1a.i/111701.b/019b1901.d
Ccal Level: 5 , Ccal Amount: 100		
17-NOV-2001 12:30	AR1221	/chem/ecd1a.i/111701.b/012b1201.d
Ccal Level: 5 , Ccal Amount: 100		
17-NOV-2001 12:08	AR1232	/chem/ecd1a.i/111701.b/011b1101.d
Ccal Level: 5 , Ccal Amount: 100		
17-NOV-2001 11:23	AR1242	/chem/ecd1a.i/111701.b/009b0901.d
Ccal Level: 5 , Ccal Amount: 100		
17-NOV-2001 09:08	AR1254	/chem/ecd1a.i/111701.b/003b0301.d
Ccal Level: 5 , Ccal Amount: 100		
17-NOV-2001 08:46	AR1660	/chem/ecd1a.i/111701.b/002b0201.d
Ccal Level: 5 , Ccal Amount: 100		
17-NOV-2001 07:48	AR1660	/chem/ecd1a.i/111701.b/002b0201.d
Ccal Level: 5 , Ccal Amount: 100		
17-NOV-2001 07:16	AR1660	/chem/ecd1a.i/111701.b/002b0201.d
Ccal Level: 5 , Ccal Amount: 100		
17-NOV-2001 06:49	AR1660	/chem/ecd1a.i/111701.b/002b0201.d

General Engineering Laboratories, Inc.

COMPOUND LISTING

ethod file : /chem/ecd1a.i/111701.b/PESTA_DB-XLB_ecd1.m
uant Method : ESTD Target Version : 3.50
ast Update : 18-Nov-2001 11:20 Number of Cpnds : 42
ata Type : GC MULTI COMP

lobal Integrator : Falcon

hromat Events	Values
nitial:Start Threshold	3240.000000
nitial:End Threshold	1620.000000
nitial:Area Threshold	4000.000000
nitial:P-P Resolution	1.000000
nitial:Bunch Factor	1.000000
nitial:Negative Peaks	OFF
nitial:Tension	1.000000

Compound	RT	RT Window	RF
$ 1 4cmx	6.308	6.288-6.328	3.384e+06
60 Aroclor-1262	12.376	12.356-12.396	
	12.697	12.677-12.717	
	13.167	13.147-13.187	
	13.589	13.569-13.609	
	14.398	14.378-14.418	
2 Aroclor-1221	6.659	6.639-6.679	2.520e+04
	6.789	6.769-6.809	2.490e+04
	6.947	6.927-6.967	8.243e+04
3 Aroclor-1016	6.946	6.926-6.966	6.311e+04
	7.586	7.566-7.606	1.011e+05
	8.990	8.970-9.010	8.552e+04
	9.072	9.052-9.092	9.380e+04
	9.308	9.288-9.328	9.134e+04
4 Aroclor-1232	6.946	6.926-6.966	7.009e+04
	7.585	7.565-7.605	4.237e+04
	8.989	8.969-9.009	3.548e+04
	9.070	9.050-9.090	3.041e+04
	9.308	9.288-9.328	3.479e+04
5 alpha-BHC	7.050	7.030-7.070	4.821e+06
59 Hexachlorobenzene	6.836	6.816-6.856	

General Engineering Laboratories, Inc.

COMPOUND LISTING

ethod file : /chem/ecd1a.i/111701.b/PESTA_DB-XLB_ecd1.m

Compound	RT	RT Window	RF
6 Aroclor-1242	6.947	6.927-6.967	4.505e+04
	7.586	7.566-7.606	7.094e+04
	8.989	8.969-9.009	5.667e+04
	9.070	9.050-9.090	6.408e+04
	9.308	9.288-9.328	6.124e+04
7 gamma-BHC (Lindane)	7.625	7.605-7.645	4.286e+06
8 Chlordane (tech.)	8.637	8.617-8.657	2.716e+05
	10.472	10.452-10.492	4.030e+05
	10.545	10.525-10.565	3.019e+05
	10.637	10.617-10.657	2.697e+05
	11.903	11.883-11.923	1.646e+05
9 Aroclor-1248	8.990	8.970-9.010	1.105e+05
	9.072	9.052-9.092	1.052e+05
	9.308	9.288-9.328	1.194e+05
	10.073	10.053-10.093	1.475e+05
	10.141	10.121-10.161	1.371e+05
10 Heptachlor	8.638	8.618-8.658	3.845e+06
11 Aldrin	9.169	9.149-9.189	3.909e+06
12 beta-BHC	8.176	8.156-8.196	1.952e+06
13 delta-BHC	8.589	8.569-8.609	4.241e+06
14 Heptachlor epoxide	9.930	9.910-9.950	3.590e+06
15 Aroclor-1254	10.007	9.987-10.027	1.560e+05
	10.408	10.388-10.428	1.658e+05
	11.021	11.001-11.041	2.327e+05
	11.536	11.516-11.556	1.810e+05
	11.756	11.736-11.776	1.022e+05
16 Endosulfan I	10.584	10.564-10.604	3.390e+06
17 gamma-Chlordane	10.472	10.452-10.492	3.812e+06
18 alpha-Chlordane	10.545	10.525-10.565	3.479e+06
19 4,4'-DDE	10.876	10.856-10.896	3.376e+06
20 Dieldrin	11.009	10.989-11.029	3.587e+06
21 Aroclor-1260	12.340	12.320-12.360	1.521e+05
	12.427	12.407-12.447	8.598e+04
	12.803	12.783-12.823	7.981e+04
	13.136	13.116-13.156	3.525e+05
	13.545	13.525-13.565	2.233e+05
22 Endrin	11.368	11.348-11.388	2.908e+06

General Engineering Laboratories, Inc.

COMPOUND LISTING

Method file : /chem/ecd1a.i/111701.b/PESTA_DB-XLB_ecd1.m

	Compound	RT	RT Window	RF
	23 Toxaphene	11.766	11.746-11.786	6.951e+04
		11.803	11.783-11.823	7.257e+04
		11.925	11.905-11.945	9.489e+04
		12.322	12.302-12.342	8.707e+04
		13.079	13.059-13.099	1.115e+05
	24 Endosulfan II	11.819	11.799-11.839	2.967e+06
	25 4,4'-DDD	11.712	11.692-11.732	2.857e+06
	26 4,4'-DDT	12.174	12.154-12.194	2.566e+06
	27 Endrin aldehyde	11.993	11.973-12.013	2.339e+06
	28 Methoxychlor	12.875	12.855-12.895	1.041e+06
	29 Endosulfan sulfate	12.434	12.414-12.454	2.685e+06
	30 Aroclor-1268	13.591	13.571-13.611	
		13.693	13.673-13.713	
		13.988	13.968-14.008	
		14.398	14.378-14.418	
		14.799	14.779-14.819	
	31 Endrin ketone	13.019	12.999-13.039	3.163e+06
	51 Mirex	13.364	13.344-13.384	
	52 cis-Nonachlor	11.313	11.293-11.333	
	53 O-Chlordane.	9.538	9.518-9.558	
	54 trans-Nonachlor	10.678	10.658-10.698	
	55 1,2-Dichlorobenzene	6.527	6.507-6.547	
	56 2,4-DDE	9.922	9.902-9.942	
	58 2,4-DDD	10.283	10.262-10.303	
	57 2,4-DDT	11.157	11.137-11.177	
$	32 Decachlorobiphenyl	15.083	15.063-15.103	2.268e+06

General Engineering Laboratories, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2001 09:22
End Cal Date : 17-NOV-2001 11:23
Quant Method : ESTD
Target Version : 3.50
Integrator : Falcon
Method file : /chem/ecd1a.i/111701.b/PESTA_DB-XLB_ecd1.m
Cal Date : 18-Nov-2001 11:20 mm

Calibration File Names:
Level 1: /chem/ecd1a.i/111701.b/005f0501.d
Level 2: /chem/ecd1a.i/111701.b/006f0601.d
Level 3: /chem/ecd1a.i/110201.b/016f1601.d
Level 4: /chem/ecd1a.i/111701.b/008f0801.d
Level 5: /chem/ecd1a.i/111701.b/009f0901.d
Level 6: /chem/ecd1a.i/102701.b/024f2401.d
Level 7: /chem/ecd1a.i/102701.b/025f2501.d

Compound	2 Level 1	10 Level 2	20 Level 3	50 Level 4	100 Level 5	150 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
	200 Level 7											
60 Aroclor-1262(1)	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						LINR	0.000e+00	0.000e+00		0.000e+00	<-
(2)	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						LINR	0.000e+00	0.000e+00		0.000e+00	<-
(3)	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						LINR	0.000e+00	0.000e+00		0.000e+00	<-
(4)	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						LINR	0.000e+00	0.000e+00		0.000e+00	<-
(5)	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						LINR	0.000e+00	0.000e+00		0.000e+00	<-
2 Aroclor-1221(1)	+++++	+++++	25199	+++++	+++++	+++++						
	+++++						AVRG		25199		0.000e+00	
(2)	+++++	+++++	24901	+++++	+++++	+++++						
	+++++						AVRG		24901		0.000e+00	
(3)	+++++	+++++	82432	+++++	+++++	+++++						
	+++++						AVRG		82432		0.000e+00	

General Engineering Laboratories, Inc.

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Method file : /chem/ecd1a.i/111701.b/PESTA_DB-XLB_ecd1.m
Cal Date : 18-Nov-2001 11:20 mm

Compound	2 Level 1 / 200 Level 7	10 Level 2	20 Level 3	50 Level 4	100 Level 5	150 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
3 Aroclor-1016(1)	70168	67465	64719	61195	52007	++++++					
	++++++						AVRG		63111		11.15678
(2)	114058	108615	103470	97568	81966	++++++					
	++++++						AVRG		101135		12.19631
(3)	100114	90778	85628	80592	70484	++++++					
	++++++						AVRG		85519		12.95524
(4)	103721	98993	94849	90574	80856	++++++					
	++++++						AVRG		93799		9.30091
(5)	100087	96906	93012	88245	78431	++++++					
	++++++						AVRG		91336		9.26610
4 Aroclor-1232(1)	++++++	++++++	70088	++++++	++++++	++++++					
	++++++						AVRG		70088		0.000e+00
(2)	++++++	++++++	42366	++++++	++++++	++++++					
	++++++						AVRG		42366		0.000e+00
(3)	++++++	++++++	35477	++++++	++++++	++++++					
	++++++						AVRG		35477		0.000e+00
(4)	++++++	++++++	30408	++++++	++++++	++++++					
	++++++						AVRG		30408		0.000e+00
(5)	++++++	++++++	34792	++++++	++++++	++++++					
	++++++						AVRG		34792		0.000e+00

General Engineering Laboratories, Inc.

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Cal Date : 18-Nov-2001 11:20 mm

Compound	2 Level 1 / 200 Level 7	10 Level 2	20 Level 3	50 Level 4	100 Level 5	150 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
5 alpha-BHC	3625539	4949327	4836988	5145288	5095192	4993017					
	5103444						AVRG		4821256		11.15536
59 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
6 Aroclor-1242(1)	44687	46889	46457	45123	42104	+++++					
	+++++						AVRG		45052		4.17915
(2)	74992	74021	72780	69833	63086	+++++					
	+++++						AVRG		70942		6.76810
(3)	58696	60472	57328	54411	52454	+++++					
	+++++						AVRG		56672		5.70866
(4)	61692	67974	65863	63580	61309	+++++					
	+++++						AVRG		64083		4.41161
(5)	58147	62408	63427	61927	60278	+++++					
	+++++						AVRG		61237		3.37772
7 gamma-BHC (Lindane)	3232810	4428254	4293450	4565149	4528354	4430340					
	4524717						AVRG		4286153		11.04214
8 Chlordane (tech.)(1)	256898	264760	274785	280531	277143	258944					
	287871						AVRG		271562		4.27455
(2)	415173	431408	405278	418524	389450	366006					
	394875						AVRG		402959		5.37959
(3)	315049	313446	304445	309691	294092	274983					
	301321						AVRG		301861		4.60462
(4)	285604	275356	265686	272690	262582	250579					

		275632						AVRG		269733		4.17644
	(5)	164502	157892	171465	158899	160813	157816					
		180795						AVRG		164598		5.24551

General Engineering Laboratories, Inc.

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Method file : /chem/ecd1a.i/111701.b/PESTA_DB-XLB_ecd1.m
Cal Date : 18-Nov-2001 11:20 mm

Compound	2 Level 1	10 Level 2	20 Level 3	50 Level 4	100 Level 5	150 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
	200 Level 7										
9 Aroclor-1248(1)	+++++	+++++	110476	+++++	+++++	+++++					
	+++++						AVRG		110476		0.000e+00
(2)	+++++	+++++	105180	+++++	+++++	+++++					
	+++++						AVRG		105180		0.000e+00
(3)	+++++	+++++	119425	+++++	+++++	+++++					
	+++++						AVRG		119425		0.000e+00
(4)	+++++	+++++	147531	+++++	+++++	+++++					
	+++++						AVRG		147531		0.000e+00
(5)	+++++	+++++	137108	+++++	+++++	+++++					
	+++++						AVRG		137108		0.000e+00
10 Heptachlor	3199646	4119807	3936506	4082549	3957018	3808512					
	3810747						AVRG		3844969		8.02926
11 Aldrin	3138696	4182861	3996738	4177216	4035410	3905648					
	3925733						AVRG		3908900		9.13050
12 beta-BHC	1701886	2108974	1934120	2010680	1987759	1941293					
	1978674						AVRG		1951912		6.38056
13 delta-BHC	3272046	4319764	4205627	4512217	4493542	4394329					
	4492201						AVRG		4241390		10.41262

General Engineering Laboratories, Inc.

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Method file : /chem/ecd1a.i/111701.b/PESTA_DB-XLB_ecd1.m
Cal Date : 18-Nov-2001 11:20 mm

Compound	2 Level 1	10 Level 2	20 Level 3	50 Level 4	100 Level 5	150 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
	200 Level 7										
14 Heptachlor epoxide	3128126	3917086	3657054	3789442	3631363	3498597					
	3506560						AVRG		3589747		7.02542
15 Aroclor-1254(1)	190209	159277	161207	143423	125824	+++++					
	+++++						AVRG		155988		15.29489
(2)	166872	173658	184620	162902	140916	+++++					
	+++++						AVRG		165794		9.74752
(3)	262182	233760	247846	224675	195181	+++++					
	+++++						AVRG		232729		10.89520
(4)	198039	168300	195037	181166	162541	+++++					
	+++++						AVRG		181017		8.68839
(5)	111397	99224	108823	99809	91614	+++++					
	+++++						AVRG		102174		7.81573
16 Endosulfan I	2674084	3750608	3438277	3625279	3494927	3373624					
	3375333						AVRG		3390305		10.15899
17 gamma-Chlordane	3803830	4243460	3729953	3873501	3743026	3627316					
	3659430						AVRG		3811502		5.44976
18 alpha-Chlordane	2924529	3799522	3500915	3647627	3540806	3440740					
	3496968						AVRG		3478730		7.82590

General Engineering Laboratories, Inc.

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Method file : /chem/ecd1a.i/111701.b/PESTA_DB-XLB_ecd1.m
Cal Date : 18-Nov-2001 11:20 mm

Compound	2 Level 1 / 200 Level 7	10 Level 2	20 Level 3	50 Level 4	100 Level 5	150 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
19 4,4'-DDE	3141558	3035098	3470326	3518719	3306394	3174007					
	3188236						AVRG		3376334		7.41337
20 Dieldrin	3295844	4011591	3660535	3729934	3548079	3415096					
	3446157						AVRG		3586748		6.65431
21 Aroclor-1260(1)	166881	159316	153994	148173	132366	+++++					
	+++++						AVRG		152146		8.56316
(2)	92038	88802	86636	84288	78142	+++++					
	+++++						AVRG		85981		6.08230
(3)	84679	83023	80982	77776	72582	+++++					
	+++++						AVRG		79808		6.00225
(4)	384258	367457	357678	344036	309021	+++++					
	+++++						AVRG		352490		8.05066
(5)	239590	229183	225288	219759	202896	+++++					
	+++++						AVRG		223343		6.06023
22 Endrin	2468716	3265728	3110478	3066901	2898651	2769472					
	2775770						AVRG		2907959		9.14098
23 Toxaphene(1)	67782	70902	71156	68919	65588	73905					
	68342						AVRG		69513		3.89756
(2)	73705	74206	71715	72335	68698	74292					
	73049						AVRG		72571		2.69397
(3)	90658	90962	97978	94323	91090	101206					
	97996						AVRG		94888		4.45430
(4)	81962	87230	86834	87079	85453	91623					

556

126

	89296						AVRG		87068		3.46064
(5)	102343	111009	109817	111683	108036	119593					
	117989						AVRG		111496		5.26244

General Engineering Laboratories, Inc.

INITIAL CALIBRATION DATA

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End Cal Date : 17-NOV-2001 11:23
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Target Version : 3.50
Integrator : Falcon
Method file : /chem/ecd1a.i/111701.b/PESTA_DB-XLB_ecd1.m
Cal Date : 18-Nov-2001 11:20 mm

Compound	2 Level 1	10 Level 2	20 Level 3	50 Level 4	100 Level 5	150 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
	200 Level 7										
24 Endosulfan II	2671387	3273738	3025911	3105193	2954270	2849356					
	2888990						AVRG		2966978		6.51419
25 4,4'-DDD	2419547	3161754	2941171	3022458	2870041	2761419					
	2820325						AVRG		2856673		8.20150
26 4,4'-DDT	1882561	2673008	2547295	2760744	2714891	2652811					
	2730152						AVRG		2565923		12.04853
27 Endrin aldehyde	2005544	2541142	2335924	2451113	2373818	2306131					
	2356581						AVRG		2338608		7.13887
28 Methoxychlor	990953	1198255	1073288	1035493	984435	973989					
	1032303						AVRG		1041245		7.44657
29 Endosulfan sulfate	2362756	2932158	2739968	2804560	2704611	2594147					
	2656569						AVRG		2684967		6.65713
30 Aroclor-1268 (1)	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
(2)	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
(3)	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
(4)	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
(5)	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00

General Engineering Laboratories, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2001 09:22
End Cal Date : 17-NOV-2001 11:23
Quant Method : ESTD
Target Version : 3.50
Integrator : Falcon
Method file : /chem/ecd1a.i/111701.b/PESTA_DB-XLB_ecd1.m
Cal Date : 18-Nov-2001 11:20 mm

Compound	2 Level 1 / 200 Level 7	10 Level 2	20 Level 3	50 Level 4	100 Level 5	150 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
31 Endrin ketone	2798652	3471785	3222676	3292317	3155321	3062523					
	3135457						AVRG		3162676		6.57303
51 Mirex	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
52 cis-Nonachlor	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
53 O-Chlordane	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
54 trans-Nonachlor	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
55 1,2-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
56 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
58 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
57 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00

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Compound	2 Level 1	10 Level 2	20 Level 3	50 Level 4	100 Level 5	150 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
	200 Level 7										
$ 1 4cmx	2904194	3746418	3540676	3572404	3401167	3260609					
	3264921						AVRG		3384341		8.10372
$ 32 Decachlorobiphenyl	2552533	2316239	2132467	2224162	2189861	2172622					
	2286859						AVRG		2267820		6.21349

Curve	Formula	Units
Averaged	Amt = Rsp/m1	Response
Linear	Amt = b + Rsp/m1	Response

General Engineering Laboratories, Inc.

COMPOUND LISTING

Method file : /chem/ecd1a.i/111701.b/PESTB_DB-17MS_ecd1.m
Quant Method : ESTD Target Version : 3.50
Last Update : 18-Nov-2001 11:20 Number of Cpnds : 42
Data Type : GC MULTI COMP

Global Integrator : Falcon

Chromat Events	Values
Initial:Start Threshold	5105.000000
Initial:End Threshold	2552.500000
Initial:Area Threshold	6561.000000
Initial:P-P Resolution	1.000000
Initial:Bunch Factor	2.000000
Initial:Negative Peaks	OFF
Initial:Tension	2.000000

Compound	RT	RT Window	RF
$ 1 4cmx	6.163	6.143-6.183	1.196e+06
61 Aroclor-1262	12.675	12.655-12.695	
	13.180	13.160-13.200	
	13.424	13.404-13.444	
	13.912	13.892-13.932	
	14.692	14.672-14.712	
2 Aroclor-1221	6.947	6.927-6.967	1.271e+04
	7.200	7.180-7.220	8.075e+03
	7.337	7.317-7.357	2.636e+04
3 Aroclor-1016	7.337	7.317-7.357	2.023e+04
	8.053	8.033-8.073	4.912e+04
	8.435	8.415-8.455	1.471e+04
	8.998	8.978-9.018	3.167e+04
	9.798	9.778-9.818	3.472e+04
4 Aroclor-1232	7.336	7.316-7.356	2.217e+04
	8.053	8.033-8.073	2.018e+04
	8.434	8.414-8.454	5.723e+03
	8.998	8.978-9.018	1.305e+04
	9.796	9.776-9.816	1.322e+04
60 Hexachlorobenzene	6.927	6.907-6.947	
5 alpha-BHC	7.450	7.430-7.470	1.614e+06

General Engineering Laboratories, Inc.

COMPOUND LISTING

Method file : /chem/ecd1a.i/111701.b/PESTB_DB-17MS_ecd1.m

Compound	RT	RT Window	RF
6 Aroclor-1242	7.337	7.317-7.357	1.693e+04
	8.053	8.033-8.073	3.994e+04
	8.435	8.415-8.455	1.185e+04
	8.999	8.979-9.019	2.316e+04
	9.798	9.778-9.818	2.823e+04
7 gamma-BHC (Lindane)	8.167	8.147-8.187	1.429e+06
8 Chlordane (tech.)	8.397	8.377-8.417	5.976e+04
	8.696	8.676-8.716	1.011e+05
	10.555	10.535-10.575	2.479e+05
	10.766	10.746-10.786	1.267e+05
	12.365	12.345-12.385	5.654e+04
9 Aroclor-1248	8.052	8.032-8.072	1.786e+04
	9.279	9.259-9.299	3.371e+04
	9.356	9.336-9.376	3.209e+04
	9.795	9.775-9.815	4.215e+04
	10.030	10.010-10.050	2.459e+04
10 Heptachlor	8.694	8.674-8.714	1.196e+06
11 Aldrin	9.254	9.234-9.274	1.291e+06
12 beta-BHC	8.508	8.488-8.528	6.540e+05
13 delta-BHC	9.056	9.036-9.076	1.424e+06
14 Heptachlor epoxide	10.233	10.213-10.253	1.204e+06
15 Aroclor-1254	10.606	10.586-10.626	7.023e+04
	10.714	10.694-10.734	2.607e+04
	11.140	11.120-11.160	2.088e+04
	11.266	11.246-11.286	4.313e+04
	11.687	11.667-11.707	8.643e+04
16 Endosulfan I	10.853	10.833-10.873	1.133e+06
17 gamma-Chlordane	10.551	10.531-10.571	1.228e+06
18 alpha-Chlordane	10.767	10.747-10.787	1.149e+06
19 4,4'-DDE	11.179	11.159-11.199	1.100e+06
20 Dieldrin	11.362	11.342-11.382	1.169e+06
21 Aroclor-1260	11.686	11.666-11.706	6.701e+04
	11.873	11.853-11.893	7.527e+04
	13.054	13.034-13.074	4.735e+04
	13.302	13.282-13.322	1.251e+05
	13.793	13.773-13.813	2.156e+04
22 Endrin	11.931	11.911-11.951	9.106e+05

General Engineering Laboratories, Inc.

COMPOUND LISTING

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Compound	RT	RT Window	RF
23 Toxaphene	12.067	12.047-12.087	3.017e+04
	12.309	12.289-12.329	2.741e+04
	12.619	12.599-12.639	3.015e+04
	12.757	12.737-12.777	3.055e+04
	13.537	13.517-13.557	2.356e+04
24 Endosulfan II	12.304	12.284-12.324	9.735e+05
25 4,4'-DDD	12.114	12.094-12.134	9.370e+05
26 4,4'-DDT	12.544	12.524-12.564	7.980e+05
27 Endrin aldehyde	12.738	12.718-12.758	7.688e+05
28 Methoxychlor	13.723	13.703-13.743	3.725e+05
29 Endosulfan sulfate	12.963	12.943-12.983	8.800e+05
30 Aroclor-1268	13.912	13.892-13.932	
	13.993	13.973-14.013	
	14.353	14.333-14.373	
	14.692	14.672-14.712	
	15.127	15.107-15.147	
31 Endrin ketone	14.006	13.986-14.026	1.014e+06
51 Mirex	13.763	13.743-13.783	
52 cis-Nonachlor	11.688	11.668-11.707	
53 O-Chlordane	9.731	9.711-9.751	
54 trans-Nonachlor	10.312	10.292-10.332	
55 1,2-Dichlorobenzene	6.610	6.590-6.630	
56 2,4-DDE	10.504	10.484-10.524	
58 2,4-DDD	11.341	11.321-11.361	
57 2,4-DDT	11.799	11.779-11.819	
$ 32 Decachlorobiphenyl	15.382	15.362-15.402	7.566e+05

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Calibration File Names:
Level 1: /chem/ecd1a.i/111701.b/005b0501.d
Level 2: /chem/ecd1a.i/111701.b/006b0601.d
Level 3: /chem/ecd1a.i/110201.b/016b1601.d
Level 4: /chem/ecd1a.i/111701.b/008b0801.d
Level 5: /chem/ecd1a.i/111701.b/009b0901.d
Level 6: /chem/ecd1a.i/102701.b/024b2401.d
Level 7: /chem/ecd1a.i/102701.b/025b2501.d

Compound	2 Level 1	10 Level 2	20 Level 3	50 Level 4	100 Level 5	150 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
	200 Level 7											
61 Aroclor-1262(1)	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						LINR	0.000e+00	0.000e+00		0.000e+00	<-
(2)	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						LINR	0.000e+00	0.000e+00		0.000e+00	<-
(3)	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						LINR	0.000e+00	0.000e+00		0.000e+00	<-
(4)	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						LINR	0.000e+00	0.000e+00		0.000e+00	<-
(5)	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						LINR	0.000e+00	0.000e+00		0.000e+00	<-
2 Aroclor-1221(1)	+++++	+++++	12714	+++++	+++++	+++++						
	+++++						AVRG		12714		0.000e+00	
(2)	+++++	+++++	8075	+++++	+++++	+++++						
	+++++						AVRG		8075		0.000e+00	
(3)	+++++	+++++	26356	+++++	+++++	+++++						
	+++++						AVRG		26356		0.000e+00	

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	200 Level 7										
3 Aroclor-1016 (1)	22188	21242	20571	19665	17504	+++++					
	+++++						AVRG		20234		8.82647
(2)	53442	51453	50066	48042	42599	+++++					
	+++++						AVRG		49120		8.43735
(3)	15236	14841	14746	14589	14145	+++++					
	+++++						AVRG		14711		2.69517
(4)	35732	32782	31626	30604	27621	+++++					
	+++++						AVRG		31673		9.37467
(5)	41126	35961	33806	32579	30131	+++++					
	+++++						AVRG		34721		11.96661
4 Aroclor-1232 (1)	+++++	+++++	22173	+++++	+++++	+++++					
	+++++						AVRG		22173		0.000e+00
(2)	+++++	+++++	20179	+++++	+++++	+++++					
	+++++						AVRG		20179		0.000e+00
(3)	+++++	+++++	5723	+++++	+++++	+++++					
	+++++						AVRG		5723		0.000e+00
(4)	+++++	+++++	13054	+++++	+++++	+++++					
	+++++						AVRG		13054		0.000e+00
(5)	+++++	+++++	13219	+++++	+++++	+++++					
	+++++						AVRG		13219		0.000e+00

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Compound	2 Level 1 / 200 Level 7	10 Level 2	20 Level 3	50 Level 4	100 Level 5	150 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
60 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
5 alpha-BHC	1074966	1559750	1592364	1769190	1774706	1748964					
	1780265						AVRG		1614315		15.78783
6 Aroclor-1242(1)	17002	17226	17301	16947	16162	+++++					
	+++++						AVRG		16928		2.67540
(2)	40941	40724	40503	39733	37805	+++++					
	+++++						AVRG		39941		3.20026
(3)	11737	11939	11873	11743	11942	+++++					
	+++++						AVRG		11847		0.85492
(4)	22334	22167	24156	23506	23628	+++++					
	+++++						AVRG		23158		3.73917
(5)	33249	27205	27682	27057	25945	+++++					
	+++++						AVRG		28228		10.19619
7 gamma-BHC (Lindane)	974103	1401330	1413637	1559381	1558150	1535363					
	1560890						AVRG		1428979		14.85380
8 Chlordane (tech.)(1)	51256	54192	56283	61368	63048	61686					
	70477						AVRG		59756		10.74499
(2)	78745	84797	96638	106608	110531	107610					
	122771						AVRG		101100		15.19912
(3)	238918	240089	243866	255036	253586	238365					
	265442						AVRG		247900		4.16570
(4)	119087	118760	121159	129015	132401	126349					

	140260						AVRG		126719		6.22676
(5)	48742	51036	58560	54870	57677	57706					
	67186						AVRG		56540		10.56191

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Compound	2 Level 1 / 200 Level 7	10 Level 2	20 Level 3	50 Level 4	100 Level 5	150 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
9 Aroclor-1248(1)	+++++	+++++	17855	+++++	+++++	+++++					
	+++++						AVRG		17855		0.000e+00
(2)	+++++	+++++	33714	+++++	+++++	+++++					
	+++++						AVRG		33714		0.000e+00
(3)	+++++	+++++	32093	+++++	+++++	+++++					
	+++++						AVRG		32093		0.000e+00
(4)	+++++	+++++	42149	+++++	+++++	+++++					
	+++++						AVRG		42149		0.000e+00
(5)	+++++	+++++	24594	+++++	+++++	+++++					
	+++++						AVRG		24594		0.000e+00
10 Heptachlor	841630	1183960	1189232	1305868	1300294	1273203					
	1281016						AVRG		1196457		13.72953
11 Aldrin	980973	1303587	1273786	1391136	1378849	1347678					
	1363909						AVRG		1291417		11.07983
12 beta-BHC	497656	669668	653093	698074	688057	677010					
	694760						AVRG		654045		10.80824
13 delta-BHC	1037608	1381485	1379997	1538438	1545992	1524537					
	1560908						AVRG		1424138		13.13258

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	200 Level 7										
14 Heptachlor epoxide	1014004	1241426	1192052	1275415	1252539	1220165					
	1233363						AVRG		1204138		7.28905
15 Aroclor-1254(1)	80878	72268	74004	67548	56453	+++++					
	+++++						AVRG		70230		12.90905
(2)	29237	25248	27377	25551	22937	+++++					
	+++++						AVRG		26070		9.09701
(3)	22450	20188	22163	20572	19010	+++++					
	+++++						AVRG		20876		6.84984
(4)	45644	42129	46107	42836	38915	+++++					
	+++++						AVRG		43126		6.76368
(5)	96691	86817	92610	83933	72097	+++++					
	+++++						AVRG		86429		10.90459
16 Endosulfan I	959220	1151200	1106220	1195554	1183408	1158870					
	1179546						AVRG		1133431		7.25192
17 gamma-Chlordane	1036341	1242714	1202797	1296626	1281942	1258463					
	1279713						AVRG		1228371		7.34224
18 alpha-Chlordane	895418	1163387	1139676	1224998	1214467	1193881					
	1214277						AVRG		1149443		10.10415

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19 4,4'-DDE	824898	1160895	1130414	1194330	1152371	1112632					
	1127274						AVRG		1100402		11.30530
20 Dieldrin	873576	1214334	1187172	1261183	1228885	1198130					
	1218336						AVRG		1168802		11.31966
21 Aroclor-1260(1)	73065	69379	68064	65713	58814	+++++					
	+++++						AVRG		67007		7.90496
(2)	80523	77395	76592	74633	67210	+++++					
	+++++						AVRG		75271		6.61672
(3)	48908	47685	47856	47352	44940	+++++					
	+++++						AVRG		47348		3.09767
(4)	127763	126955	127941	125802	116808	+++++					
	+++++						AVRG		125054		3.74731
(5)	22021	21623	21541	21375	21240	+++++					
	+++++						AVRG		21560		1.37881
22 Endrin	651437	949139	966939	978958	951591	932107					
	944090						AVRG		910609		12.66165
23 Toxaphene(1)	27524	29821	30011	30009	29356	32288					
	32171						AVRG		30169		5.46779
(2)	25151	27252	27127	27375	26682	29185					
	29089						AVRG		27409		5.09697
(3)	26795	28898	31328	29479	28897	33574					
	32055						AVRG		30146		7.61064
(4)	26473	29879	30275	30771	29959	33511					

	33012						AVRG		30554		7.60203
(5)	20858	23202	23211	23276	23064	25832					
	25462						AVRG		23558		7.07362

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24 Endosulfan II	738641	1024770	984711	1044689	1016241	992888					
	1012827						AVRG		973538		10.83261
25 4,4'-DDD	701727	971873	949672	1007561	979446	962284					
	986546						AVRG		937015		11.24423
26 4,4'-DDT	521928	769656	771373	871089	880761	870130					
	900828						AVRG		797966		16.63295
27 Endrin aldehyde	597608	792754	758911	819507	807894	791001					
	813602						AVRG		768754		10.15656
28 Methoxychlor	305473	398100	375748	385191	375287	372697					
	395200						AVRG		372527		8.37656
29 Endosulfan sulfate	669344	909634	879876	935806	921586	907350					
	936085						AVRG		879954		10.78021
30 Aroclor-1268 (1)	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
(2)	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
(3)	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
(4)	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
(5)	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00

General Engineering Laboratories, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2001 09:22
End Cal Date : 17-NOV-2001 11:23
Quant Method : ESTD
Target Version : 3.50
Integrator : Falcon
Method file : /chem/ecd1a.i/111701.b/PESTB_DB-17MS_ecd1.m
Cal Date : 18-Nov-2001 11:20 mm

Compound	2 Level 1 / 200 Level 7	10 Level 2	20 Level 3	50 Level 4	100 Level 5	150 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
31 Endrin ketone	831977 1065348	1058298	1007261	1065162	1044813	1026888	AVRG		1014249		8.20072
51 Mirex	+++++ +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+00		0.000e+00
52 cis-Nonachlor	+++++ +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+00		0.000e+00
53 O-Chlordane	+++++ +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+00		0.000e+00
54 trans-Nonachlor	+++++ +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+00		0.000e+00
55 1,2-Dichlorobenzene	+++++ +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+00		0.000e+00
56 2,4-DDE	+++++ +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+00		0.000e+00
58 2,4-DDD	+++++ +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+00		0.000e+00
57 2,4-DDT	+++++ +++++	+++++	+++++	+++++	+++++	+++++	AVRG		0.000e+00		0.000e+00

General Engineering Laboratories, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2001 09:22
End Cal Date : 17-NOV-2001 11:23
Quant Method : ESTD
Target Version : 3.50
Integrator : Falcon
Method file : /chem/ecd1a.i/111701.b/PESTB_DB-17MS_ecd1.m
Cal Date : 18-Nov-2001 11:20 mm

Compound	2 Level 1	10 Level 2	20 Level 3	50 Level 4	100 Level 5	150 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
	200 Level 7										
$ 1 4cmx	914745	1287152	1259113	1298521	1236239	1188521					
	1184491						AVRG		1195540		10.99706
$ 32 Decachlorobiphenyl	848378	760557	703777	741896	736488	731244					
	773584						AVRG		756561		6.10048

Curve	Formula	Units
Averaged	Amt = Rsp/m1	Response
Linear	Amt = b + Rsp/m1	Response

Report Date: 20-Nov-2001 09:15

Calibration History

Method : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m
Start Cal Date: 27-OCT-2001 09:22
End Cal Date : 19-NOV-2001 19:07

JC 12/4/01

Initial Calibration

Injection Date	Sublist	Calibration File
Cal Level: 1 , Cal Amount: 2.00000		
19-NOV-2001 17:37	AR1242	/chem/ecd1a.i/111901a.b/008f0801.d
12-NOV-2001 19:29	AR1254	/chem/ecd1a.i/111201.b/006f0601.d
02-NOV-2001 11:30	AR1660	/chem/ecd1a.i/110201.b/006f0601.d
27-OCT-2001 15:20	Chlor	/chem/ecd1a.i/102701.b/019f1901.d
31-OCT-2001 19:37	Tox	/chem/ecd1a.i/103101.b/014f1401.d
31-OCT-2001 16:35	INDAB	/chem/ecd1a.i/103101.b/006f0601.d
Cal Level: 2 , Cal Amount: 10.00000		
19-NOV-2001 18:00	AR1242	/chem/ecd1a.i/111901a.b/009f0901.d
12-NOV-2001 19:52	AR1254	/chem/ecd1a.i/111201.b/007f0701.d
02-NOV-2001 11:53	AR1660	/chem/ecd1a.i/110201.b/007f0701.d
27-OCT-2001 15:42	Chlor	/chem/ecd1a.i/102701.b/020f2001.d
31-OCT-2001 20:00	Tox	/chem/ecd1a.i/103101.b/015f1501.d
31-OCT-2001 17:01	INDAB	/chem/ecd1a.i/103101.b/007f0701.d
Cal Level: 3 , Cal Amount: 20.00000		
02-NOV-2001 15:14	AR1221	/chem/ecd1a.i/110201.b/016f1601.d
02-NOV-2001 14:52	AR1232	/chem/ecd1a.i/110201.b/015f1501.d
19-NOV-2001 18:22	AR1242	/chem/ecd1a.i/111901a.b/010f1001.d
02-NOV-2001 14:07	AR1248	/chem/ecd1a.i/110201.b/013f1301.d
12-NOV-2001 20:14	AR1254	/chem/ecd1a.i/111201.b/008f0801.d
02-NOV-2001 12:15	AR1660	/chem/ecd1a.i/110201.b/008f0801.d
27-OCT-2001 16:04	Chlor	/chem/ecd1a.i/102701.b/021f2101.d
31-OCT-2001 20:22	Tox	/chem/ecd1a.i/103101.b/016f1601.d
31-OCT-2001 17:23	INDAB	/chem/ecd1a.i/103101.b/008f0801.d
Cal Level: 4 , Cal Amount: 50.00000		
19-NOV-2001 18:45	AR1242	/chem/ecd1a.i/111901a.b/011f1101.d
12-NOV-2001 20:37	AR1254	/chem/ecd1a.i/111201.b/009f0901.d
02-NOV-2001 12:37	AR1660	/chem/ecd1a.i/110201.b/009f0901.d
27-OCT-2001 16:27	Chlor	/chem/ecd1a.i/102701.b/022f2201.d
31-OCT-2001 20:44	Tox	/chem/ecd1a.i/103101.b/017f1701.d
31-OCT-2001 17:45	INDAB	/chem/ecd1a.i/103101.b/009f0901.d
Cal Level: 5 , Cal Amount: 100.00000		
19-NOV-2001 19:07	AR1242	/chem/ecd1a.i/111901a.b/012f1201.d
12-NOV-2001 20:59	AR1254	/chem/ecd1a.i/111201.b/010f1001.d
02-NOV-2001 13:00	AR1660	/chem/ecd1a.i/110201.b/010f1001.d

27-OCT-2001 16:49	Chlor	/chem/ecd1a.i/102701.b/023f2301.d
31-OCT-2001 21:07	Tox	/chem/ecd1a.i/103101.b/018f1801.d
31-OCT-2001 18:08	INDAB	/chem/ecd1a.i/103101.b/010f1001.d

Cal Level: 6 , Cal Amount: 150.00000

27-OCT-2001 17:11	Chlor	/chem/ecd1a.i/102701.b/024f2401.d
31-OCT-2001 21:29	Tox	/chem/ecd1a.i/103101.b/019f1901.d
31-OCT-2001 18:30	INDAB	/chem/ecd1a.i/103101.b/011f1101.d

Cal Level: 7 , Cal Amount: 200.00000

27-OCT-2001 17:34	Chlor	/chem/ecd1a.i/102701.b/025f2501.d
31-OCT-2001 21:52	Tox	/chem/ecd1a.i/103101.b/020f2001.d
31-OCT-2001 18:53	INDAB	/chem/ecd1a.i/103101.b/012f1201.d

Continuing Calibration
Ccal Level Mode: GLOBAL LEVEL 5

Ccal Level: 5 , Ccal Amount: 100

20-NOV-2001 06:42	AR1660	/chem/ecd1a.i/111901a.b/043f4301.d

Ccal Level: 5 , Ccal Amount: 100

20-NOV-2001 04:50	AR1660	/chem/ecd1a.i/111901a.b/038f3801.d

Ccal Level: 5 , Ccal Amount: 100

20-NOV-2001 04:05	AR1660	/chem/ecd1a.i/111901a.b/036f3601.d

Ccal Level: 5 , Ccal Amount: 100

20-NOV-2001 02:35	AR1660	/chem/ecd1a.i/111901a.b/032f3201.d

Ccal Level: 5 , Ccal Amount: 100

19-NOV-2001 22:29	AR1660	/chem/ecd1a.i/111901a.b/021f2101.d

Ccal Level: 5 , Ccal Amount: 100

19-NOV-2001 17:15	AR1221	/chem/ecd1a.i/111901a.b/007f0701.d

Ccal Level: 5 , Ccal Amount: 100

19-NOV-2001 16:53	AR1232	/chem/ecd1a.i/111901a.b/006f0601.d

Ccal Level: 5 , Ccal Amount: 100

19-NOV-2001 16:30	AR1248	/chem/ecd1a.i/111901a.b/005f0501.d

Ccal Level: 5 , Ccal Amount: 100

19-NOV-2001 15:45	AR1254	/chem/ecd1a.i/111901a.b/003f0301.d

Ccal Level: 5 , Ccal Amount: 100

19-NOV-2001 15:23	AR1660	/chem/ecd1a.i/111901a.b/002f0201.d

Ccal Level: 5 , Ccal Amount: 100

19-NOV-2001 16:08	AR1242	/chem/ecd1a.i/111901a.b/004f0401.d
Ccal Level: 5 , Ccal Amount: 100		
19-NOV-2001 19:07	AR1242	/chem/ecd1a.i/111901a.b/012f1201.d

Report Date: 20-Nov-2001 09:16

Calibration History

Method : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m
Start Cal Date: 27-OCT-2001 09:22
End Cal Date : 19-NOV-2001 19:07

JC 12/4/01

Initial Calibration

Injection Date	Sublist	Calibration File
Cal Level: 1 , Cal Amount: 2.00000		
19-NOV-2001 17:37	AR1242	/chem/ecd1a.i/111901a.b/008b0801.d
12-NOV-2001 19:29	AR1254	/chem/ecd1a.i/111201.b/006b0601.d
02-NOV-2001 11:30	AR1660	/chem/ecd1a.i/110201.b/006b0601.d
27-OCT-2001 15:20	Chlor	/chem/ecd1a.i/102701.b/019b1901.d
31-OCT-2001 19:37	Tox	/chem/ecd1a.i/103101.b/014b1401.d
31-OCT-2001 16:35	INDAB	/chem/ecd1a.i/103101.b/006b0601.d
Cal Level: 2 , Cal Amount: 10.00000		
19-NOV-2001 18:00	AR1242	/chem/ecd1a.i/111901a.b/009b0901.d
12-NOV-2001 19:52	AR1254	/chem/ecd1a.i/111201.b/007b0701.d
02-NOV-2001 11:53	AR1660	/chem/ecd1a.i/110201.b/007b0701.d
27-OCT-2001 15:42	Chlor	/chem/ecd1a.i/102701.b/020b2001.d
31-OCT-2001 20:00	Tox	/chem/ecd1a.i/103101.b/015b1501.d
31-OCT-2001 17:01	INDAB	/chem/ecd1a.i/103101.b/007b0701.d
Cal Level: 3 , Cal Amount: 20.00000		
02-NOV-2001 15:14	AR1221	/chem/ecd1a.i/110201.b/016b1601.d
02-NOV-2001 14:52	AR1232	/chem/ecd1a.i/110201.b/015b1501.d
19-NOV-2001 18:22	AR1242	/chem/ecd1a.i/111901a.b/010b1001.d
02-NOV-2001 14:07	AR1248	/chem/ecd1a.i/110201.b/013b1301.d
12-NOV-2001 20:14	AR1254	/chem/ecd1a.i/111201.b/008b0801.d
02-NOV-2001 12:15	AR1660	/chem/ecd1a.i/110201.b/008b0801.d
27-OCT-2001 16:04	Chlor	/chem/ecd1a.i/102701.b/021b2101.d
31-OCT-2001 20:22	Tox	/chem/ecd1a.i/103101.b/016b1601.d
31-OCT-2001 17:23	INDAB	/chem/ecd1a.i/103101.b/008b0801.d
Cal Level: 4 , Cal Amount: 50.00000		
19-NOV-2001 18:45	AR1242	/chem/ecd1a.i/111901a.b/011b1101.d
12-NOV-2001 20:37	AR1254	/chem/ecd1a.i/111201.b/009b0901.d
02-NOV-2001 12:37	AR1660	/chem/ecd1a.i/110201.b/009b0901.d
27-OCT-2001 16:27	Chlor	/chem/ecd1a.i/102701.b/022b2201.d
31-OCT-2001 20:44	Tox	/chem/ecd1a.i/103101.b/017b1701.d
31-OCT-2001 17:45	INDAB	/chem/ecd1a.i/103101.b/009b0901.d
Cal Level: 5 , Cal Amount: 100.00000		
19-NOV-2001 19:07	AR1242	/chem/ecd1a.i/111901a.b/012b1201.d
12-NOV-2001 20:59	AR1254	/chem/ecd1a.i/111201.b/010b1001.d
02-NOV-2001 13:00	AR1660	/chem/ecd1a.i/110201.b/010b1001.d

27-OCT-2001 16:49	Chlor	/chem/ecd1a.i/102701.b/023b2301.d
31-OCT-2001 21:07	Tox	/chem/ecd1a.i/103101.b/018b1801.d
31-OCT-2001 18:08	INDAB	/chem/ecd1a.i/103101.b/010b1001.d

Cal Level: 6 , Cal Amount: 150.00000

27-OCT-2001 17:11	Chlor	/chem/ecd1a.i/102701.b/024b2401.d
31-OCT-2001 21:29	Tox	/chem/ecd1a.i/103101.b/019b1901.d
31-OCT-2001 18:30	INDAB	/chem/ecd1a.i/103101.b/011b1101.d

Cal Level: 7 , Cal Amount: 200.00000

27-OCT-2001 17:34	Chlor	/chem/ecd1a.i/102701.b/025b2501.d
31-OCT-2001 21:52	Tox	/chem/ecd1a.i/103101.b/020b2001.d
31-OCT-2001 18:53	INDAB	/chem/ecd1a.i/103101.b/012b1201.d

Continuing Calibration
Ccal Level Mode: GLOBAL LEVEL 5

Ccal Level: 5 , Ccal Amount: 100

20-NOV-2001 06:42	AR1660	/chem/ecd1a.i/111901a.b/043b4301.d

Ccal Level: 5 , Ccal Amount: 100

20-NOV-2001 04:50	AR1660	/chem/ecd1a.i/111901a.b/038b3801.d

Ccal Level: 5 , Ccal Amount: 100

20-NOV-2001 04:05	AR1660	/chem/ecd1a.i/111901a.b/036b3601.d

Ccal Level: 5 , Ccal Amount: 100

20-NOV-2001 02:35	AR1660	/chem/ecd1a.i/111901a.b/032b3201.d

Ccal Level: 5 , Ccal Amount: 100

19-NOV-2001 22:29	AR1660	/chem/ecd1a.i/111901a.b/021b2101.d

Ccal Level: 5 , Ccal Amount: 100

19-NOV-2001 17:15	AR1221	/chem/ecd1a.i/111901a.b/007b0701.d

Ccal Level: 5 , Ccal Amount: 100

19-NOV-2001 16:53	AR1232	/chem/ecd1a.i/111901a.b/006b0601.d

Ccal Level: 5 , Ccal Amount: 100

19-NOV-2001 16:30	AR1248	/chem/ecd1a.i/111901a.b/005b0501.d

Ccal Level: 5 , Ccal Amount: 100

19-NOV-2001 15:45	AR1254	/chem/ecd1a.i/111901a.b/003b0301.d

Ccal Level: 5 , Ccal Amount: 100

19-NOV-2001 15:23	AR1660	/chem/ecd1a.i/111901a.b/002b0201.d

Ccal Level: 5 , Ccal Amount: 100

19-NOV-2001 19:07	AR1242	/chem/ecd1a.i/111901a.b/012b1201.d

General Engineering Laboratories, Inc.

COMPOUND LISTING

Method file : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m
Quant Method : ESTD Target Version : 3.50
Last Update : 20-Nov-2001 08:18 Number of Cpnds : 42
Data Type : GC MULTI COMP

Global Integrator : Falcon

Chromat Events	Values
Initial:Start Threshold	3240.000000
Initial:End Threshold	1620.000000
Initial:Area Threshold	4000.000000
Initial:P-P Resolution	1.000000
Initial:Bunch Factor	1.000000
Initial:Negative Peaks	OFF
Initial:Tension	1.000000

Mmuhera
wom 11/21/01

Compound	RT	RT Window	RF
$ 1 4cmx	6.303	6.283-6.323	3.754e+06
60 Aroclor-1262	12.376	12.356-12.396	
	12.697	12.677-12.717	
	13.167	13.147-13.187	
	13.589	13.569-13.609	
	14.398	14.378-14.418	
2 Aroclor-1221	6.656	6.636-6.676	2.520e+04
	6.787	6.767-6.807	2.490e+04
	6.943	6.923-6.963	8.243e+04
3 Aroclor-1016	6.943	6.923-6.963	6.311e+04
	7.584	7.564-7.604	1.011e+05
	8.987	8.967-9.007	8.552e+04
	9.068	9.048-9.088	9.380e+04
	9.305	9.285-9.325	9.134e+04
4 Aroclor-1232	6.944	6.924-6.964	7.009e+04
	7.584	7.564-7.604	4.237e+04
	8.987	8.967-9.007	3.548e+04
	9.070	9.050-9.090	3.041e+04
	9.305	9.285-9.325	3.479e+04
5 alpha-BHC	7.050	7.030-7.070	4.821e+06
59 Hexachlorobenzene	6.836	6.816-6.856	

General Engineering Laboratories, Inc.

COMPOUND LISTING

Method file : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m

Compound	RT	RT Window	RF
6 Aroclor-1242	6.944	6.924-6.964	5.066e+04
	7.585	7.565-7.605	7.715e+04
	8.986	8.966-9.006	6.493e+04
	9.068	9.048-9.088	7.287e+04
	9.305	9.285-9.325	7.161e+04
7 gamma-BHC (Lindane)	7.625	7.605-7.645	4.286e+06
8 Chlordane (tech.)	8.637	8.617-8.657	2.716e+05
	10.472	10.452-10.492	4.030e+05
	10.545	10.525-10.565	3.019e+05
	10.637	10.617-10.657	2.697e+05
	11.903	11.883-11.923	1.646e+05
9 Aroclor-1248	8.987	8.967-9.007	1.105e+05
	9.068	9.048-9.088	1.052e+05
	9.305	9.285-9.325	1.194e+05
	10.068	10.048-10.088	1.475e+05
	10.137	10.117-10.157	1.371e+05
10 Heptachlor	8.638	8.618-8.658	3.845e+06
11 Aldrin	9.169	9.149-9.189	3.909e+06
12 beta-BHC	8.176	8.156-8.196	1.952e+06
13 delta-BHC	8.589	8.569-8.609	4.241e+06
14 Heptachlor epoxide	9.930	9.910-9.950	3.590e+06
15 Aroclor-1254	10.004	9.984-10.024	1.560e+05
	10.404	10.384-10.424	1.658e+05
	11.016	10.996-11.036	2.327e+05
	11.529	11.509-11.549	1.810e+05
	11.752	11.732-11.772	1.022e+05
16 Endosulfan I	10.584	10.564-10.604	3.390e+06
17 gamma-Chlordane	10.472	10.452-10.492	3.812e+06
18 alpha-Chlordane	10.545	10.525-10.565	3.479e+06
19 4,4'-DDE	10.876	10.856-10.896	3.376e+06
20 Dieldrin	11.009	10.989-11.029	3.587e+06
21 Aroclor-1260	12.338	12.318-12.358	1.521e+05
	12.425	12.405-12.445	8.598e+04
	12.800	12.780-12.820	7.981e+04
	13.133	13.113-13.153	3.525e+05
	13.541	13.521-13.561	2.233e+05
22 Endrin	11.368	11.348-11.388	2.908e+06

General Engineering Laboratories, Inc.

COMPOUND LISTING

Method file : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m

Compound	RT	RT Window	RF
23 Toxaphene	11.766	11.746-11.786	6.951e+04
	11.803	11.783-11.823	7.257e+04
	11.925	11.905-11.945	9.489e+04
	12.322	12.302-12.342	8.707e+04
	13.079	13.059-13.099	1.115e+05
24 Endosulfan II	11.819	11.799-11.839	2.967e+06
25 4,4'-DDD	11.712	11.692-11.732	2.857e+06
26 4,4'-DDT	12.174	12.154-12.194	2.566e+06
27 Endrin aldehyde	11.993	11.973-12.013	2.339e+06
28 Methoxychlor	12.875	12.855-12.895	1.041e+06
29 Endosulfan sulfate	12.434	12.414-12.454	2.685e+06
30 Aroclor-1268	13.591	13.571-13.611	
	13.693	13.673-13.713	
	13.988	13.968-14.008	
	14.398	14.378-14.418	
	14.799	14.779-14.819	
31 Endrin ketone	13.019	12.999-13.039	3.163e+06
51 Mirex	13.364	13.344-13.384	
52 cis-Nonachlor	11.313	11.293-11.333	
53 O-Chlordane	9.538	9.518-9.558	
54 trans-Nonachlor	10.678	10.658-10.698	
55 1,2-Dichlorobenzene	6.527	6.507-6.547	
56 2,4-DDE	9.922	9.902-9.942	
58 2,4-DDD	10.283	10.262-10.303	
57 2,4-DDT	11.157	11.137-11.177	
$ 32 Decachlorobiphenyl	15.078	15.058-15.098	3.041e+06

General Engineering Laboratories, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2001 09:22
End Cal Date : 19-NOV-2001 19:07
Quant Method : ESTD
Target Version : 3.50
Integrator : Falcon
Method file : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m
Cal Date : 20-Nov-2001 08:18 mm

Calibration File Names:
Level 1: /chem/ecd1a.i/111901a.b/008f0801.d
Level 2: /chem/ecd1a.i/111901a.b/009f0901.d
Level 3: /chem/ecd1a.i/110201.b/016f1601.d
Level 4: /chem/ecd1a.i/111901a.b/011f1101.d
Level 5: /chem/ecd1a.i/111901a.b/012f1201.d
Level 6: /chem/ecd1a.i/102701.b/024f2401.d
Level 7: /chem/ecd1a.i/102701.b/025f2501.d

Compound	2 Level 1 / 200 Level 7	10 Level 2	20 Level 3	50 Level 4	100 Level 5	150 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
60 Aroclor-1262(1)	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						LINR	0.000e+00	0.000e+00		0.000e+00	<-
(2)	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						LINR	0.000e+00	0.000e+00		0.000e+00	<-
(3)	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						LINR	0.000e+00	0.000e+00		0.000e+00	<-
(4)	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						LINR	0.000e+00	0.000e+00		0.000e+00	<-
(5)	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						LINR	0.000e+00	0.000e+00		0.000e+00	<-
2 Aroclor-1221(1)	+++++	+++++	25199	+++++	+++++	+++++						
	+++++						AVRG		25199		0.000e+00	
(2)	+++++	+++++	24901	+++++	+++++	+++++						
	+++++						AVRG		24901		0.000e+00	
(3)	+++++	+++++	82432	+++++	+++++	+++++						
	+++++						AVRG		82432		0.000e+00	

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General Engineering Laboratories, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2001 09:22
End Cal Date : 19-NOV-2001 19:07
Quant Method : ESTD
Target Version : 3.50
Integrator : Falcon
Method file : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m
Cal Date : 20-Nov-2001 08:18 mm

Compound	2 Level 1 / 200 Level 7	10 Level 2	20 Level 3	50 Level 4	100 Level 5	150 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
3 Aroclor-1016 (1)	70168	67465	64719	61195	52007	++++++					
	++++++						AVRG		63111		11.15678
(2)	114058	108615	103470	97568	81966	++++++					
	++++++						AVRG		101135		12.19631
(3)	100114	90778	85628	80592	70484	++++++					
	++++++						AVRG		85519		12.95524
(4)	103721	98993	94849	90574	80856	++++++					
	++++++						AVRG		93799		9.30091
(5)	100087	96906	93012	88245	78431	++++++					
	++++++						AVRG		91336		9.26610
4 Aroclor-1232 (1)	++++++	++++++	70088	++++++	++++++	++++++					
	++++++						AVRG		70088		0.000e+00
(2)	++++++	++++++	42366	++++++	++++++	++++++					
	++++++						AVRG		42366		0.000e+00
(3)	++++++	++++++	35477	++++++	++++++	++++++					
	++++++						AVRG		35477		0.000e+00
(4)	++++++	++++++	30408	++++++	++++++	++++++					
	++++++						AVRG		30408		0.000e+00
(5)	++++++	++++++	34792	++++++	++++++	++++++					
	++++++						AVRG		34792		0.000e+00

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General Engineering Laboratories, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2001 09:22
End Cal Date : 19-NOV-2001 19:07
Quant Method : ESTD
Target Version : 3.50
Integrator : Falcon
Method file : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m
Cal Date : 20-Nov-2001 08:18 mm

Compound	2 Level 1	10 Level 2	20 Level 3	50 Level 4	100 Level 5	150 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
	200 Level 7										
5 alpha-BHC	3625539	4949327	4836988	5145288	5095192	4993017					
	5103444						AVRG		4821256		11.15536
59 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
6 Aroclor-1242(1)	56107	54424	51431	49111	42214	+++++					
	+++++						AVRG		50658		10.72925
(2)	87484	83180	78773	73689	62615	+++++					
	+++++						AVRG		77148		12.45030
(3)	73635	68190	63833	61835	57141	+++++					
	+++++						AVRG		64927		9.67555
(4)	76526	76170	72816	72049	66774	+++++					
	+++++						AVRG		72867		5.40721
(5)	74276	74797	72014	70625	66354	+++++					
	+++++						AVRG		71613		4.73671
7 gamma-BHC (Lindane)	3232810	4428254	4293450	4565149	4528354	4430340					
	4524717						AVRG		4286153		11.04214
8 Chlordane (tech.)(1)	256898	264760	274785	280531	277143	258944					
	287871						AVRG		271562		4.27455
(2)	415173	431408	405278	418524	389450	366006					
	394875						AVRG		402959		5.37959
(3)	315049	313446	304445	309691	294092	274983					
	301321						AVRG		301861		4.60462
(4)	285604	275356	265686	272690	262582	250579					

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	275632						AVRG	269733		4.17644
(5)	164502	157892	171465	158899	160813	157816				
	180795						AVRG	164598		5.24551

General Engineering Laboratories, Inc.

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Method file : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m
Cal Date : 20-Nov-2001 08:18 mm

Compound	2 Level 1 / 200 Level 7	10 Level 2	20 Level 3	50 Level 4	100 Level 5	150 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
9 Aroclor-1248(1)	+++++	+++++	110476	+++++	+++++	+++++					
	+++++						AVRG		110476		0.000e+00
(2)	+++++	+++++	105180	+++++	+++++	+++++					
	+++++						AVRG		105180		0.000e+00
(3)	+++++	+++++	119425	+++++	+++++	+++++					
	+++++						AVRG		119425		0.000e+00
(4)	+++++	+++++	147531	+++++	+++++	+++++					
	+++++						AVRG		147531		0.000e+00
(5)	+++++	+++++	137108	+++++	+++++	+++++					
	+++++						AVRG		137108		0.000e+00
10 Heptachlor	3199646	4119807	3936506	4082549	3957018	3808512					
	3810747						AVRG		3844969		8.02926
11 Aldrin	3138696	4182861	3996738	4177216	4035410	3905648					
	3925733						AVRG		3908900		9.13050
12 beta-BHC	1701886	2108974	1934120	2010680	1987759	1941293					
	1978674						AVRG		1951912		6.38056
13 delta-BHC	3272046	4319764	4205627	4512217	4493542	4394329					
	4492201						AVRG		4241390		10.41262

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General Engineering Laboratories, Inc.

INITIAL CALIBRATION DATA

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Integrator : Falcon
Method file : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m
Cal Date : 20-Nov-2001 08:18 mm

Compound	2 Level 1 / 200 Level 7	10 Level 2	20 Level 3	50 Level 4	100 Level 5	150 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
14 Heptachlor epoxide	3128126	3917086	3657054	3789442	3631363	3498597					
	3506560						AVRG		3589747		7.02542
15 Aroclor-1254(1)	190209	159277	161207	143423	125824	+++++					
	+++++						AVRG		155988		15.29489
(2)	166872	173658	184620	162902	140916	+++++					
	+++++						AVRG		165794		9.74752
(3)	262182	233760	247846	224675	195181	+++++					
	+++++						AVRG		232729		10.89520
(4)	198039	168300	195037	181166	162541	+++++					
	+++++						AVRG		181017		8.68839
(5)	111397	99224	108823	99809	91614	+++++					
	+++++						AVRG		102174		7.81573
16 Endosulfan I	2674084	3750608	3438277	3625279	3494927	3373624					
	3375333						AVRG		3390305		10.15899
17 gamma-Chlordane	3803830	4243460	3729953	3873501	3743026	3627316					
	3659430						AVRG		3811502		5.44976
18 alpha-Chlordane	2924529	3799522	3500915	3647627	3540806	3440740					
	3496968						AVRG		3478730		7.82590

General Engineering Laboratories, Inc.

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Target Version : 3.50
Integrator : Falcon
Method file : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m
Cal Date : 20-Nov-2001 08:18 mm

Compound	2 Level 1 200 Level 7	10 Level 2	20 Level 3	50 Level 4	100 Level 5	150 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
19 4,4'-DDE	3141558	3835098	3470326	3518719	3306394	3174007					
	3188236						AVRG		3376334		7.41337
20 Dieldrin	3295844	4011591	3660535	3729934	3548079	3415096					
	3446157						AVRG		3586748		6.65431
21 Aroclor-1260(1)	166881	159316	153994	148173	132366	+++++					
	+++++						AVRG		152146		8.56316
(2)	92038	88802	86636	84288	78142	+++++					
	+++++						AVRG		85981		6.08230
(3)	84679	83023	80982	77776	72582	+++++					
	+++++						AVRG		79808		6.00225
(4)	384258	367457	357678	344036	309021	+++++					
	+++++						AVRG		352490		8.05066
(5)	239590	229183	225288	219759	202896	+++++					
	+++++						AVRG		223343		6.06023
22 Endrin	2468716	3265728	3110478	3066901	2898651	2769472					
	2775770						AVRG		2907959		9.14098
23 Toxaphene(1)	67782	70902	71156	68919	65588	73905					
	68342						AVRG		69513		3.89756
(2)	73705	74206	71715	72335	68698	74292					
	73049						AVRG		72571		2.69397
(3)	90658	90962	97978	94323	91090	101206					
	97996						AVRG		94888		4.45430
(4)	81962	87230	86834	87079	85453	91623					

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	89296						AVRG		87068	3.46064
(5)	102343	111009	109817	111683	108036	119593				
	117989						AVRG		111496	5.26244

General Engineering Laboratories, Inc.

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Integrator : Falcon
Method file : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m
Cal Date : 20-Nov-2001 08:18 mm

Compound	2 Level 1 / 200 Level 7	10 Level 2	20 Level 3	50 Level 4	100 Level 5	150 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
24 Endosulfan II	2671387	3273738	3025911	3105193	2954270	2849356					
	2888990						AVRG		2966978		6.51419
25 4,4'-DDD	2419547	3161754	2941171	3022458	2870041	2761419					
	2820325						AVRG		2856673		8.20150
26 4,4'-DDT	1882561	2673008	2547295	2760744	2714891	2652811					
	2730152						AVRG		2565923		12.04853
27 Endrin aldehyde	2005544	2541142	2335924	2451113	2373818	2306131					
	2356581						AVRG		2338608		7.13887
28 Methoxychlor	990953	1198255	1073288	1035493	984435	973989					
	1032303						AVRG		1041245		7.44657
29 Endosulfan sulfate	2362756	2932158	2739968	2804560	2704611	2594147					
	2656569						AVRG		2684967		6.65713
30 Aroclor-1268 (1)	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
(2)	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
(3)	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
(4)	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
(5)	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00

General Engineering Laboratories, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2001 09:22
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Quant Method : ESTD
Target Version : 3.50
Integrator : Falcon
Method file : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m
Cal Date : 20-Nov-2001 08:18 mm

Compound	2 Level 1	10 Level 2	20 Level 3	50 Level 4	100 Level 5	150 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
	200 Level 7										
31 Endrin ketone	2798652	3471785	3222676	3292317	3155321	3062523					
	3135457						AVRG		3162676		6.57303
51 Mirex	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
52 cis-Nonachlor	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
53 O-Chlordane	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
54 trans-Nonachlor	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
55 1,2-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
56 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
58 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
57 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00

General Engineering Laboratories, Inc.

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Target Version : 3.50
Integrator : Falcon
Method file : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m
Cal Date : 20-Nov-2001 08:18 mm

Compound	2 Level 1	10 Level 2	20 Level 3	50 Level 4	100 Level 5	150 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
	200 Level 7										
$ 1 4cmx	3999874 +++++	3923777	3806494	3662919	3375692	+++++	AVRG		3753751		6.57213
$ 32 Decachlorobiphenyl	3033542 +++++	3170772	3070781	2950667	2980932	+++++	AVRG		3041339		2.82612

Curve	Formula	Units
Averaged	Amt = Rsp/m1	Response
Linear	Amt = b + Rsp/m1	Response

General Engineering Laboratories, Inc.

COMPOUND LISTING

Method file : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m
Quant Method : ESTD Target Version : 3.50
Last Update : 20-Nov-2001 08:19 Number of Cpnds : 42
Data Type : GC MULTI COMP

Global Integrator : Falcon

Chromat Events	Values
Initial:Start Threshold	5105.000000
Initial:End Threshold	2552.500000
Initial:Area Threshold	6561.000000
Initial:P-P Resolution	1.000000
Initial:Bunch Factor	2.000000
Initial:Negative Peaks	OFF
Initial:Tension	2.000000

JC 12/4/01

Compound	RT	RT Window	RF
$ 1 4cmx	6.159	6.139-6.179	1.153e+06
61 Aroclor-1262	12.675	12.655-12.695	
	13.180	13.160-13.200	
	13.424	13.404-13.444	
	13.912	13.892-13.932	
	14.692	14.672-14.712	
2 Aroclor-1221	6.941	6.921-6.961	1.271e+04
	7.196	7.176-7.216	8.075e+03
	7.332	7.312-7.352	2.636e+04
3 Aroclor-1016	7.330	7.310-7.350	2.023e+04
	8.047	8.027-8.067	4.912e+04
	8.429	8.409-8.449	1.471e+04
	8.992	8.972-9.012	3.167e+04
	9.791	9.771-9.811	3.472e+04
4 Aroclor-1232	7.331	7.311-7.351	2.217e+04
	8.049	8.029-8.069	2.018e+04
	8.430	8.410-8.450	5.723e+03
	8.992	8.972-9.012	1.305e+04
	9.790	9.770-9.810	1.322e+04
60 Hexachlorobenzene	6.927	6.907-6.947	
5 alpha-BHC	7.450	7.430-7.470	1.614e+06

General Engineering Laboratories, Inc.

COMPOUND LISTING

Method file : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m

Compound	RT	RT Window	RF
6 Aroclor-1242	7.331	7.311-7.351	1.572e+04
	8.047	8.027-8.067	3.704e+04
	8.429	8.409-8.449	1.093e+04
	8.992	8.972-9.012	2.205e+04
	9.790	9.770-9.810	2.636e+04
7 gamma-BHC (Lindane)	8.167	8.147-8.187	1.429e+06
8 Chlordane (tech.)	8.397	8.377-8.417	5.976e+04
	8.696	8.676-8.716	1.011e+05
	10.555	10.535-10.575	2.479e+05
	10.766	10.746-10.786	1.267e+05
	12.365	12.345-12.385	5.654e+04
9 Aroclor-1248	8.048	8.028-8.068	1.786e+04
	9.274	9.254-9.294	3.371e+04
	9.351	9.331-9.371	3.209e+04
	9.791	9.771-9.811	4.215e+04
	10.025	10.005-10.045	2.459e+04
10 Heptachlor	8.694	8.674-8.714	1.196e+06
11 Aldrin	9.254	9.234-9.274	1.291e+06
12 beta-BHC	8.508	8.488-8.528	6.540e+05
13 delta-BHC	9.056	9.036-9.076	1.424e+06
14 Heptachlor epoxide	10.233	10.213-10.253	1.204e+06
15 Aroclor-1254	10.599	10.579-10.619	7.023e+04
	10.706	10.686-10.726	2.607e+04
	11.132	11.112-11.152	2.088e+04
	11.257	11.237-11.277	4.313e+04
	11.679	11.659-11.699	8.643e+04
16 Endosulfan I	10.853	10.833-10.873	1.133e+06
17 gamma-Chlordane	10.551	10.531-10.571	1.228e+06
18 alpha-Chlordane	10.767	10.747-10.787	1.149e+06
19 4,4'-DDE	11.179	11.159-11.199	1.100e+06
20 Dieldrin	11.362	11.342-11.382	1.169e+06
21 Aroclor-1260	11.679	11.659-11.699	6.701e+04
	11.866	11.846-11.886	7.527e+04
	13.047	13.027-13.067	4.735e+04
	13.294	13.274-13.314	1.251e+05
	13.785	13.765-13.805	2.156e+04
22 Endrin	11.931	11.911-11.951	9.106e+05

General Engineering Laboratories, Inc.

COMPOUND LISTING

Method file : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m

Compound	RT	RT Window	RF
23 Toxaphene	12.067	12.047-12.087	3.017e+04
	12.309	12.289-12.329	2.741e+04
	12.619	12.599-12.639	3.015e+04
	12.757	12.737-12.777	3.055e+04
	13.537	13.517-13.557	2.356e+04
24 Endosulfan II	12.304	12.284-12.324	9.735e+05
25 4,4'-DDD	12.114	12.094-12.134	9.370e+05
26 4,4'-DDT	12.544	12.524-12.564	7.980e+05
27 Endrin aldehyde	12.738	12.718-12.758	7.688e+05
28 Methoxychlor	13.723	13.703-13.743	3.725e+05
29 Endosulfan sulfate	12.963	12.943-12.983	8.800e+05
30 Aroclor-1268	13.912	13.892-13.932	
	13.993	13.973-14.013	
	14.353	14.333-14.373	
	14.692	14.672-14.712	
	15.127	15.107-15.147	
31 Endrin ketone	14.006	13.986-14.026	1.014e+06
51 Mirex	13.763	13.743-13.783	
52 cis-Nonachlor	11.688	11.668-11.707	
53 O-Chlordane	9.731	9.711-9.751	
54 trans-Nonachlor	10.312	10.292-10.332	
55 1,2-Dichlorobenzene	6.610	6.590-6.630	
56 2,4-DDE	10.504	10.484-10.524	
58 2,4-DDD	11.341	11.321-11.361	
57 2,4-DDT	11.799	11.779-11.819	
$ 32 Decachlorobiphenyl	15.375	15.355-15.395	9.793e+05

General Engineering Laboratories, Inc.

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Start Cal Date : 27-OCT-2001 09:22
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Target Version : 3.50
Integrator : Falcon
Method file : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m
Cal Date : 20-Nov-2001 08:19 mm

Calibration File Names:
Level 1: /chem/ecd1a.i/111901a.b/008b0801.d
Level 2: /chem/ecd1a.i/111901a.b/009b0901.d
Level 3: /chem/ecd1a.i/110201.b/016b1601.d
Level 4: /chem/ecd1a.i/111901a.b/011b1101.d
Level 5: /chem/ecd1a.i/111901a.b/012b1201.d
Level 6: /chem/ecd1a.i/102701.b/024b2401.d
Level 7: /chem/ecd1a.i/102701.b/025b2501.d

JC 12/4/1

Compound	2 Level 1 / 200 Level 7	10 Level 2	20 Level 3	50 Level 4	100 Level 5	150 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2	
61 Aroclor-1262(1)	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						LINR	0.000e+00	0.000e+00		0.000e+00	<-
(2)	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						LINR	0.000e+00	0.000e+00		0.000e+00	<-
(3)	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						LINR	0.000e+00	0.000e+00		0.000e+00	<-
(4)	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						LINR	0.000e+00	0.000e+00		0.000e+00	<-
(5)	+++++	+++++	+++++	+++++	+++++	+++++						
	+++++						LINR	0.000e+00	0.000e+00		0.000e+00	<-
2 Aroclor-1221(1)	+++++	+++++	12714	+++++	+++++	+++++						
	+++++						AVRG		12714		0.000e+00	
(2)	+++++	+++++	8075	+++++	+++++	+++++						
	+++++						AVRG		8075		0.000e+00	
(3)	+++++	+++++	26356	+++++	+++++	+++++						
	+++++						AVRG		26356		0.000e+00	

General Engineering Laboratories, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2001 09:22
End Cal Date : 19-NOV-2001 19:07
Quant Method : ESTD
Target Version : 3.50
Integrator : Falcon
Method file : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m
Cal Date : 20-Nov-2001 08:19 mm

Compound	2 Level 1 / 200 Level 7	10 Level 2	20 Level 3	50 Level 4	100 Level 5	150 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
3 Aroclor-1016(1)	22188	21242	20571	19665	17504	+++++					
	+++++						AVRG		20234		8.81647
(2)	53442	51453	50066	48042	42599	+++++					
	+++++						AVRG		49120		8.43735
(3)	15236	14841	14746	14589	14145	+++++					
	+++++						AVRG		14711		2.69517
(4)	35732	32782	31626	30604	27621	+++++					
	+++++						AVRG		31673		9.37467
(5)	41126	35961	33806	32579	30131	+++++					
	+++++						AVRG		34721		11.96661
4 Aroclor-1232(1)	+++++	+++++	22173	+++++	+++++	+++++					
	+++++						AVRG		22173		0.000e+00
(2)	+++++	+++++	20179	+++++	+++++	+++++					
	+++++						AVRG		20179		0.000e+00
(3)	+++++	+++++	5723	+++++	+++++	+++++					
	+++++						AVRG		5723		0.000e+00
(4)	+++++	+++++	13054	+++++	+++++	+++++					
	+++++						AVRG		13054		0.000e+00
(5)	+++++	+++++	13219	+++++	+++++	+++++					
	+++++						AVRG		13219		0.000e+00

General Engineering Laboratories, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2001 09:22
End Cal Date : 19-NOV-2001 19:07
Quant Method : ESTD
Target Version : 3.50
Integrator : Falcon
Method file : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m
Cal Date : 20-Nov-2001 08:19 mm

Compound	2 Level 1 / 200 Level 7	10 Level 2	20 Level 3	50 Level 4	100 Level 5	150 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
60 Hexachlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
5 alpha-BHC	1074966	1559750	1592364	1769190	1774706	1748964					
	1780265						AVRG		1614315		15.78783
6 Aroclor-1242 (1)	15751	16181	15842	15567	15261	+++++					
	+++++						AVRG		15721		2.16316
(2)	37921	37616	36990	36786	35887	+++++					
	+++++						AVRG		37040		2.13635
(3)	11343	10950	10652	10701	10988	+++++					
	+++++						AVRG		10927		2.52365
(4)	21598	22056	22006	22129	22457	+++++					
	+++++						AVRG		22049		1.39397
(5)	29874	27017	25517	24810	24604	+++++					
	+++++						AVRG		26364		8.26039
7 gamma-BHC (Lindane)	974103	1401330	1413637	1559381	1558150	1535363					
	1560890						AVRG		1428979		14.85380
8 Chlordane (tech.) (1)	51256	54192	56283	61368	63048	61686					
	70477						AVRG		59758		10.74499
(2)	78745	84797	96638	106608	110531	107610					
	122771						AVRG		101100		15.19912
(3)	238918	240089	243866	255036	253586	238365					
	265442						AVRG		247900		4.16570
(4)	119087	118760	121159	129015	132401	126349					

600

170

	140260						AVRG		126719	6.22676
(5)	48742	51036	58560	54870	57677	57706				
	67186						AVRG		56540	10.56191

General Engineering Laboratories, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2001 09:22
End Cal Date : 19-NOV-2001 19:07
Quant Method : ESTD
Target Version : 3.50
Integrator : Falcon
Method file : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m
Cal Date : 20-Nov-2001 08:19 mm

Compound	2 Level 1 / 200 Level 7	10 Level 2	20 Level 3	50 Level 4	100 Level 5	150 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
9 Aroclor-1248(1)	+++++	+++++	17855	+++++	+++++	+++++					
	+++++						AVRG		17855		0.000e+00
(2)	+++++	+++++	33714	+++++	+++++	+++++					
	+++++						AVRG		33714		0.000e+00
(3)	+++++	+++++	32093	+++++	+++++	+++++					
	+++++						AVRG		32093		0.000e+00
(4)	+++++	+++++	42149	+++++	+++++	+++++					
	+++++						AVRG		42149		0.000e+00
(5)	+++++	+++++	24594	+++++	+++++	+++++					
	+++++						AVRG		24594		0.000e+00
10 Heptachlor	841630	1183960	1189232	1305868	1300294	1273203					
	1281016						AVRG		1196457		13.72953
11 Aldrin	980973	1303587	1273786	1391136	1378849	1347678					
	1363909						AVRG		1291417		11.07983
12 beta-BHC	497656	669668	653093	698074	688057	677010					
	694760						AVRG		654045		10.80824
13 delta-BHC	1037608	1381485	1379997	1538438	1545992	1524537					
	1560908						AVRG		1424138		13.13258

General Engineering Laboratories, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2001 09:22
End Cal Date : 19-NOV-2001 19:07
Quant Method : ESTD
Target Version : 3.50
Integrator : Falcon
Method file : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m
Cal Date : 20-Nov-2001 08:19 mm

Compound	2 Level 1 / 200 Level 7	10 Level 2	20 Level 3	50 Level 4	100 Level 5	150 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
14 Heptachlor epoxide	1014004	1241426	1192052	1275415	1252539	1220165					
	1233363						AVRG		1204138		7.28905
15 Aroclor-1254(1)	80878	72268	74004	67548	56453	+++++					
	+++++						AVRG		70230		12.90905
(2)	29237	25248	27377	25551	22937	+++++					
	+++++						AVRG		26070		9.09701
(3)	22450	20188	22163	20572	19010	+++++					
	+++++						AVRG		20876		6.84984
(4)	45644	42129	46107	42836	38915	+++++					
	+++++						AVRG		43126		6.76368
(5)	96691	86817	92610	83933	72097	+++++					
	+++++						AVRG		86429		10.90459
16 Endosulfan I	959220	1151200	1106220	1195554	1183408	1158870					
	1179546						AVRG		1133431		7.25192
17 gamma-Chlordane	1036341	1242714	1202797	1296626	1281942	1258463					
	1279713						AVRG		1228371		7.34224
18 alpha-Chlordane	895418	1163387	1139676	1224998	1214467	1193881					
	1214277						AVRG		1149443		10.10415

General Engineering Laboratories, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2001 09:22
End Cal Date : 19-NOV-2001 19:07
Quant Method : ESTD
Target Version : 3.50
Integrator : Falcon
Method file : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m
Cal Date : 20-Nov-2001 08:19 mm

Compound	2 Level 1 / 200 Level 7	10 Level 2	20 Level 3	50 Level 4	100 Level 5	150 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
19 4,4'-DDE	824898	1160895	1130414	1194330	1152371	1112632					
	1127274						AVRG		1100402		11.30530
20 Dieldrin	873576	1214334	1187172	1261183	1228885	1198130					
	1218336						AVRG		1168802		11.31966
21 Aroclor-1260(1)	73065	69379	68064	65713	58814	+++++					
	+++++						AVRG		67007		7.90496
(2)	80523	77395	76592	74633	67210	+++++					
	+++++						AVRG		75271		6.61672
(3)	48908	47685	47856	47352	44940	+++++					
	+++++						AVRG		47348		3.09767
(4)	127763	126955	127941	125802	116808	+++++					
	+++++						AVRG		125054		3.74731
(5)	22021	21623	21541	21375	21240	+++++					
	+++++						AVRG		21560		1.37881
22 Endrin	651437	949139	966939	978958	951591	932107					
	944090						AVRG		910609		12.66165
23 Toxaphene(1)	27524	29821	30011	30009	29356	32288					
	32171						AVRG		30169		5.46779
(2)	25151	27252	27127	27375	26682	29185					
	29089						AVRG		27409		5.09697
(3)	26795	28898	31328	29479	28897	33574					
	32055						AVRG		30146		7.61064
(4)	26473	29879	30275	30771	29959	33511					

	33012					AVRG		30554		7.60203
(5)	20858	23202	23211	23276	23064	25832				
	25462					AVRG		23558		7.07362

General Engineering Laboratories, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2001 09:22
End Cal Date : 19-NOV-2001 19:07
Quant Method : ESTD
Target Version : 3.50
Integrator : Falcon
Method file : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m
Cal Date : 20-Nov-2001 08:19 mm

Compound	2 Level 1	10 Level 2	20 Level 3	50 Level 4	100 Level 5	150 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
	200 Level 7										
24 Endosulfan II	738641	1024770	984711	1044689	1016241	992888					
	1012827						AVRG		973538		10.83261
25 4,4'-DDD	701727	971873	949672	1007561	979446	962284					
	986546						AVRG		937015		11.24423
26 4,4'-DDT	521928	769656	771373	871089	880761	870130					
	900828						AVRG		797966		16.63295
27 Endrin aldehyde	597608	792754	758911	819507	807894	791001					
	813602						AVRG		768754		10.15656
28 Methoxychlor	305473	398100	375748	385181	375287	372697					
	395200						AVRG		372527		8.37656
29 Endosulfan sulfate	669344	909634	879876	935806	921586	907350					
	936085						AVRG		879954		10.78021
30 Aroclor-1268 (1)	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
(2)	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
(3)	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
(4)	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
(5)	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00

General Engineering Laboratories, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2001 09:22
End Cal Date : 19-NOV-2001 19:07
Quant Method : ESTD
Target Version : 3.50
Integrator : Falcon
Method file : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m
Cal Date : 20-Nov-2001 08:19 mm

Compound	2 Level 1	10 Level 2	20 Level 3	50 Level 4	100 Level 5	150 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
	200 Level 7										
31 Endrin ketone	831977	1058298	1007261	1065162	1044813	1026888					
	1065348						AVRG		1014249		8.20072
51 Mirex	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
52 cis-Nonachlor	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
53 O-Chlordane	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
54 trans-Nonachlor	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
55 1,2-Dichlorobenzene	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
56 2,4-DDE	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
58 2,4-DDD	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00
57 2,4-DDT	+++++	+++++	+++++	+++++	+++++	+++++					
	+++++						AVRG		0.000e+00		0.000e+00

General Engineering Laboratories, Inc.

INITIAL CALIBRATION DATA

Start Cal Date : 27-OCT-2001 09:22
End Cal Date : 19-NOV-2001 19:07
Quant Method : ESTD
Target Version : 3.50
Integrator : Falcon
Method file : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m
Cal Date : 20-Nov-2001 08:19 mm

Compound	2 Level 1	10 Level 2	20 Level 3	50 Level 4	100 Level 5	150 Level 6	Curve	Coefficients b	m1	m2	%RSD or R^2
	200 Level 7										
$ 1 4cmx	1083174 +++++	1143546	1169299	1185638	1182411	+++++	AVRG		1152814		3.67022
$ 32 Decachlorobiphenyl	930435 +++++	1000342	991999	971488	1002070	+++++	AVRG		979267		3.05127

Curve	Formula	Units
Averaged	Amt = Rsp/m1	Response
Linear	Amt = b + Rsp/m1	Response

General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/110201.b/006b0601.d
Lab Smp Id: PW011102-04 601 Client Smp ID: AR166001
Inj Date : 02-NOV-2001 11:30
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011102-04 601
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/110201.b/PESTB_DB-17MS_ecd1.m
Meth Date : 05-Nov-2001 09:38 mm Quant Type: ESTD
Cal Date : 02-NOV-2001 11:30 Cal File: 006b0601.d
Als bottle: 6 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1660.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
3 Aroclor-1016					CAS #: 12674-11-2		
7.334	7.335	-0.001	2218848	100.000	110	80.00- 120.00	100.00
8.050	8.051	-0.001	5344235	100.000	109	226.50- 266.50	240.86
8.432	8.433	-0.001	1523583	100.000	104	53.50- 93.50	68.67
8.994	8.995	-0.001	3573150	100.000	113	134.91- 174.91	161.04
9.793	9.792	0.001	4112584	100.000	118	146.66- 186.66	185.35
Average of Peak Amounts =					111		
21 Aroclor-1260					CAS #: 11096-82-5		
11.680	11.681	-0.001	7306452	100.000	109	80.00- 120.00	100.00
11.865	11.866	-0.001	8052300	100.000	107	91.47- 131.47	110.21
13.048	13.049	-0.001	4890774	100.000	103	50.04- 90.04	66.94
13.294	13.295	-0.001	12776348	100.000	102	166.94- 206.94	174.86
13.786	13.786	0.000	2202109	100.000	102	11.52- 51.52	30.14
Average of Peak Amounts =					105		
$ 1 4cmx					CAS #: 877-09-8		
6.161	6.163	-0.002	12545102	4.00000	10.5	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.376	15.377	-0.001	9597186	4.00000	12.7	80.00- 120.00	100.00

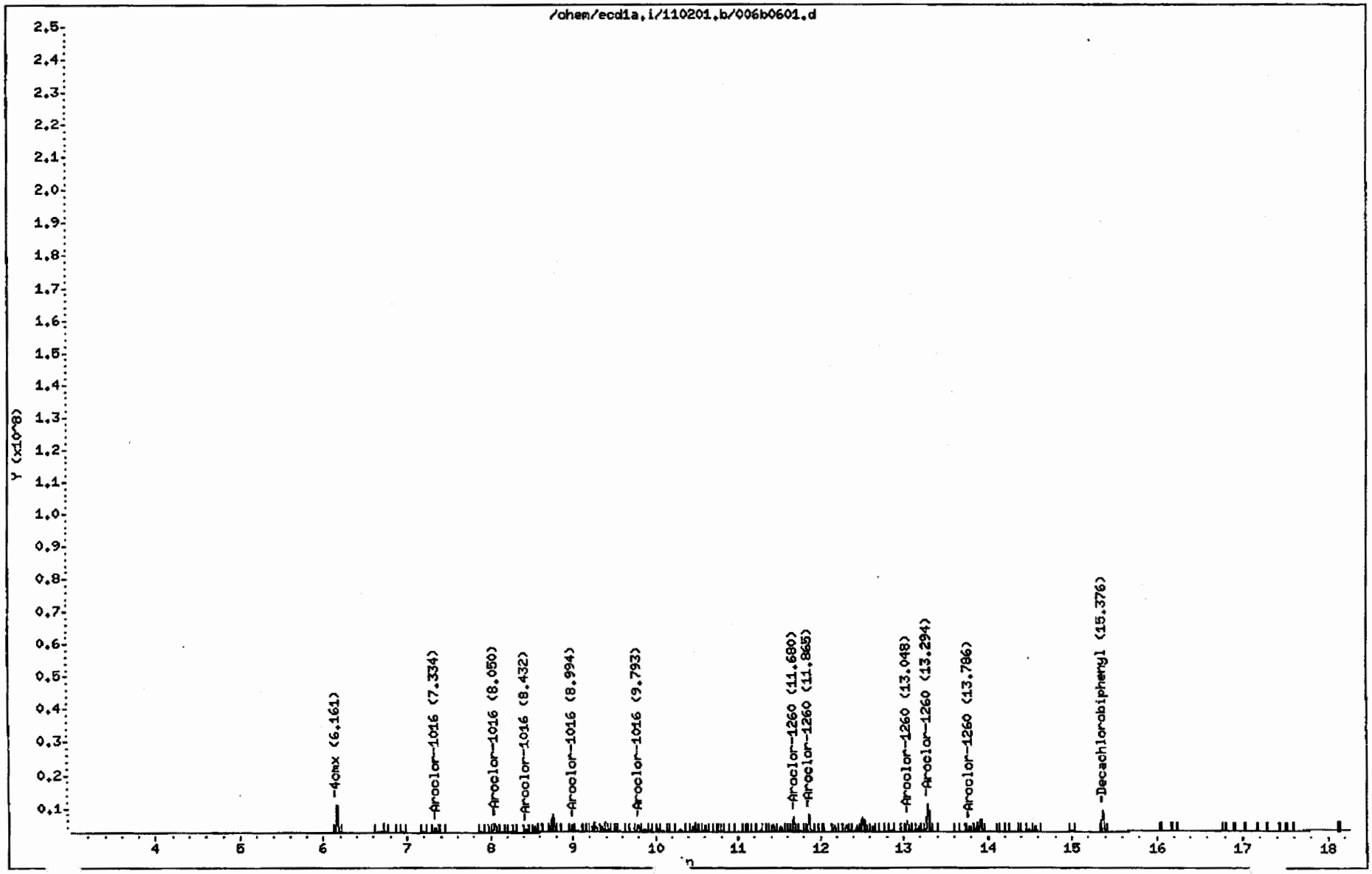
JC 11/8/01

Data File: /chem/ecdia.i/110201.b/006b0601.d
Date : 02-NOV-2001 11:30
Client ID: AR166001
Sample Info: IPW011102-04 601

Column phase: DB-17MS

Instrument: ecdia.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/110201.b/006f0601.d
Lab Smp Id: PW011102-04 601 Client Smp ID: AR166001
Inj Date : 02-NOV-2001 11:30
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011102-04 601
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/110201.b/PESTA_DB-XLB_ecd1.m
Meth Date : 05-Nov-2001 09:38 mm Quant Type: ESTD
Cal Date : 02-NOV-2001 13:00 Cal File: 010f1001.d
Als bottle: 6 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1660.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
3 Aroclor-1016					CAS #: 12674-11-2		
6.943	6.943	0.000	7016842	100.000	111	80.00- 120.00	100.00
7.581	7.584	-0.003	11405796	100.000	113	140.25- 180.25	162.55
8.984	8.985	-0.001	10011415	100.000	117	110.66- 150.66	142.68
9.065	9.065	0.000	10372089	100.000	110	127.83- 167.83	147.82
9.301	9.302	-0.001	10008696	100.000	110	123.01- 163.01	142.64
Average of Peak Amounts =					112		
21 Aroclor-1260					CAS #: 11096-82-5		
12.331	12.331	0.000	16688079	100.000	110	80.00- 120.00	100.00
12.416	12.418	-0.002	9203849	100.000	107	36.01- 76.01	55.15
12.792	12.794	-0.002	8467903	100.000	106	31.81- 71.81	50.74
13.123	13.123	0.000	38425803	100.000	109	210.83- 250.83	230.26
13.531	13.532	-0.001	23959047	100.000	107	125.29- 165.29	143.57
Average of Peak Amounts =					108		
$ 1 4cmx					CAS #: 877-09-8		
6.304	6.305	-0.001	43537295	4.00000	12.9	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.070	15.071	-0.001	29539519	4.00000	13.0	80.00- 120.00	100.00

JC 11/8/01

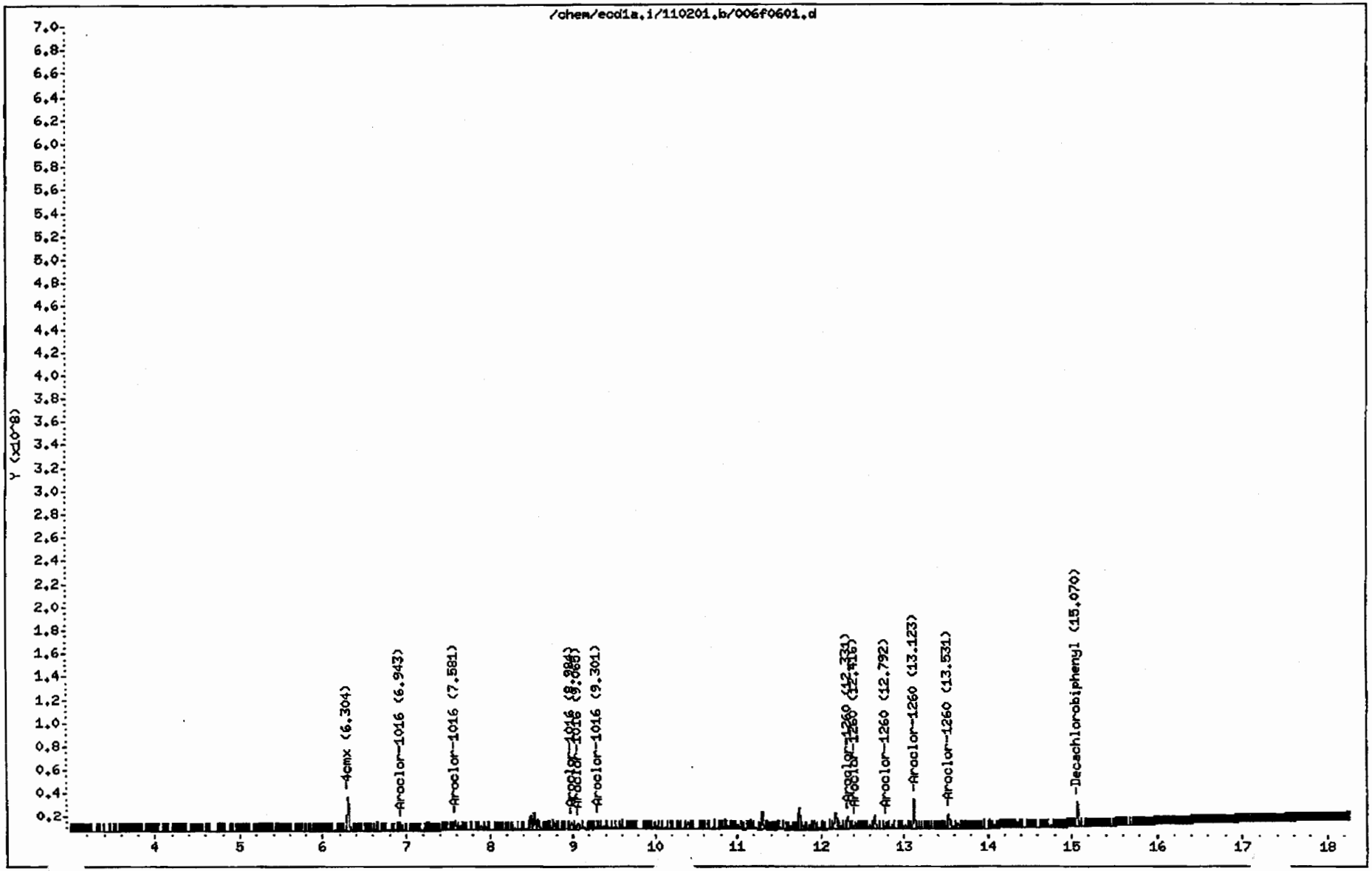
612

Data File: /chem/ecdia.i/110201.b/006f0601.d
Date : 02-NOV-2001 11:30
Client ID: AR166001
Sample Info: !PW011102-04 601

Column phase: DB-XLB

Instrument: ecdia.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/110201.b/007b0701.d
Lab Smp Id: PW011102-03 602 Client Smp ID: AR166002
Inj Date : 02-NOV-2001 11:53
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011102-03 602
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/110201.b/PESTB_DB-17MS_ecd1.m
Meth Date : 05-Nov-2001 09:38 mm Quant Type: ESTD
Cal Date : 02-NOV-2001 11:53 Cal File: 007b0701.d
Als bottle: 7 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1660.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
3 Aroclor-1016					CAS #: 12674-11-2		
7.334	7.335	-0.001	5310608	250.000	262	80.00- 120.00	100.00
8.051	8.051	0.000	12863148	250.000	262	226.50- 266.50	242.22
8.432	8.433	-0.001	3710240	250.000	252	53.50- 93.50	69.86
8.994	8.995	-0.001	8195444	250.000	259	134.91- 174.91	154.32
9.793	9.792	0.001	8990357	250.000	259	146.66- 186.66	169.29
Average of Peak Amounts =					259		
21 Aroclor-1260					CAS #: 11096-82-5		
11.681	11.681	0.000	17344694	250.000	259	80.00- 120.00	100.00
11.866	11.866	0.000	19348829	250.000	257	91.47- 131.47	111.55
13.047	13.049	-0.002	11921246	250.000	252	50.04- 90.04	68.73
13.294	13.295	-0.001	31738777	250.000	254	166.94- 206.94	182.99
13.787	13.786	0.001	5405760	250.000	251	11.52- 51.52	31.17
Average of Peak Amounts =					254		
$ 1 4cmx					CAS #: 877-09-8		
6.162	6.163	-0.001	32131467	20.0000	26.9	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.377	15.377	0.000	22957848	20.0000	30.3	80.00- 120.00	100.00

11/6/01

11/8/01

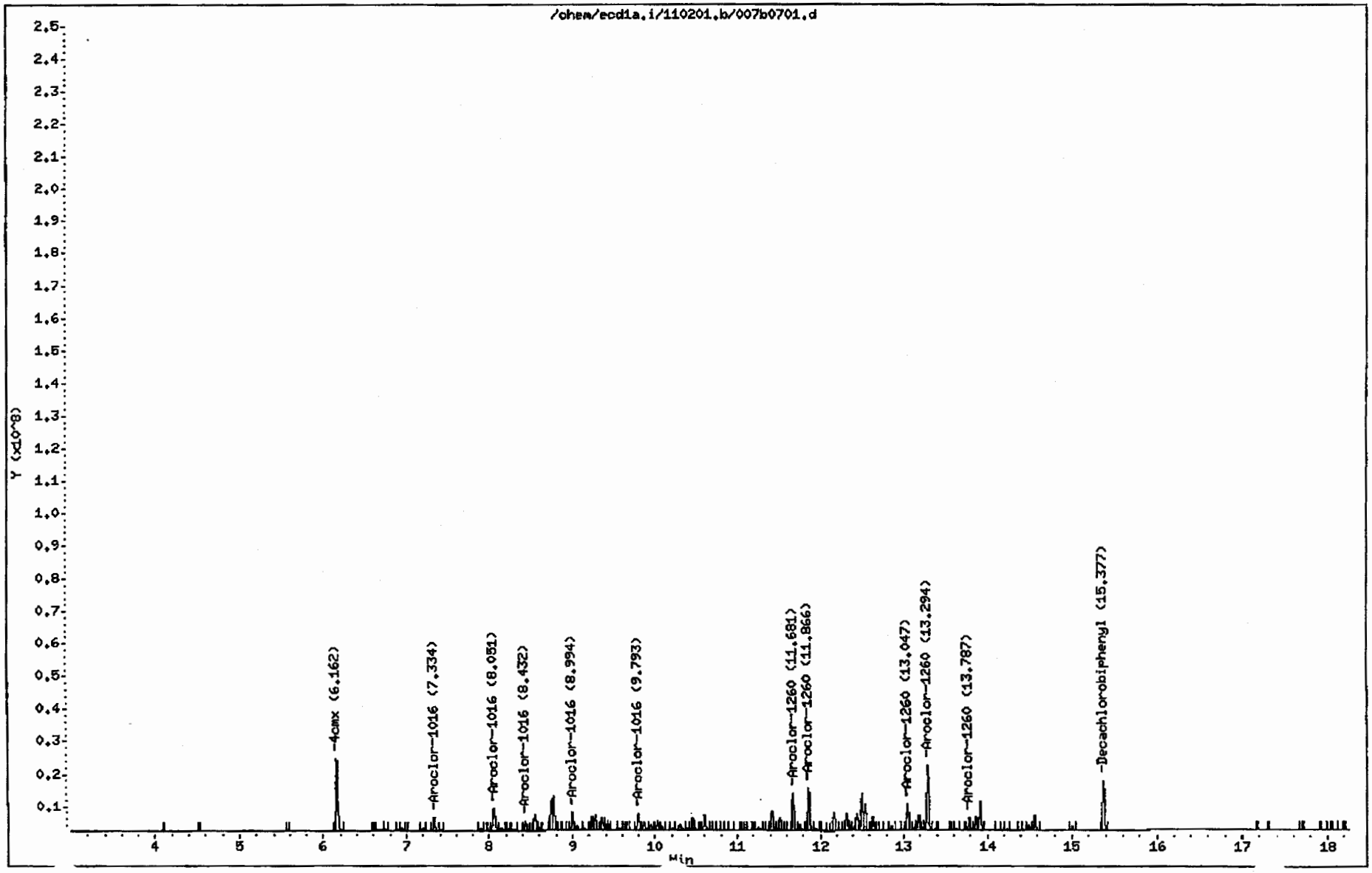
613

Data File: /chem/eodia.i/110201.b/007b0701.d
Date : 02-NOV-2001 11:53
Client ID: AR166002
Sample Info: IPW011102-03 602

Column phase: DB-17MS

Instrument: eodia.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/110201.b/007f0701.d
Lab Smp Id: PW011102-03 602 Client Smp ID: AR166002
Inj Date : 02-NOV-2001 11:53
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011102-03 602
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/110201.b/PESTA_DB-XLB_ecd1.m
Meth Date : 05-Nov-2001 09:38 mm Quant Type: ESTD
Cal Date : 02-NOV-2001 13:00 Cal File: 010f1001.d
Als bottle: 7 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1660.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
3 Aroclor-1016					CAS #: 12674-11-2		
6.942	6.943	-0.001	16866153	250.000	267	80.00- 120.00	100.00
7.582	7.584	-0.002	27153825	250.000	268	140.25- 180.25	161.00
8.985	8.985	0.000	22694417	250.000	265	110.66- 150.66	134.56
9.065	9.065	0.000	24748322	250.000	264	127.83- 167.83	146.73
9.302	9.302	0.000	24226606	250.000	265	123.01- 163.01	143.64
Average of Peak Amounts =					266		
21 Aroclor-1260					CAS #: 11096-82-5		
12.332	12.331	0.001	39828882	250.000	262	80.00- 120.00	100.00
12.417	12.418	-0.001	22200552	250.000	258	36.01- 76.01	55.74
12.794	12.794	0.000	20755751	250.000	260	31.81- 71.81	52.11
13.124	13.123	0.001	91864342	250.000	261	210.83- 250.83	230.65
13.532	13.532	0.000	57295736	250.000	256	125.29- 165.29	143.85
Average of Peak Amounts =					259		
$ 1 4cmx					CAS #: 877-09-8		
6.305	6.305	0.000	105505513	20.0000	31.2	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.072	15.071	0.001	70290105	20.0000	31.0	80.00- 120.00	100.00

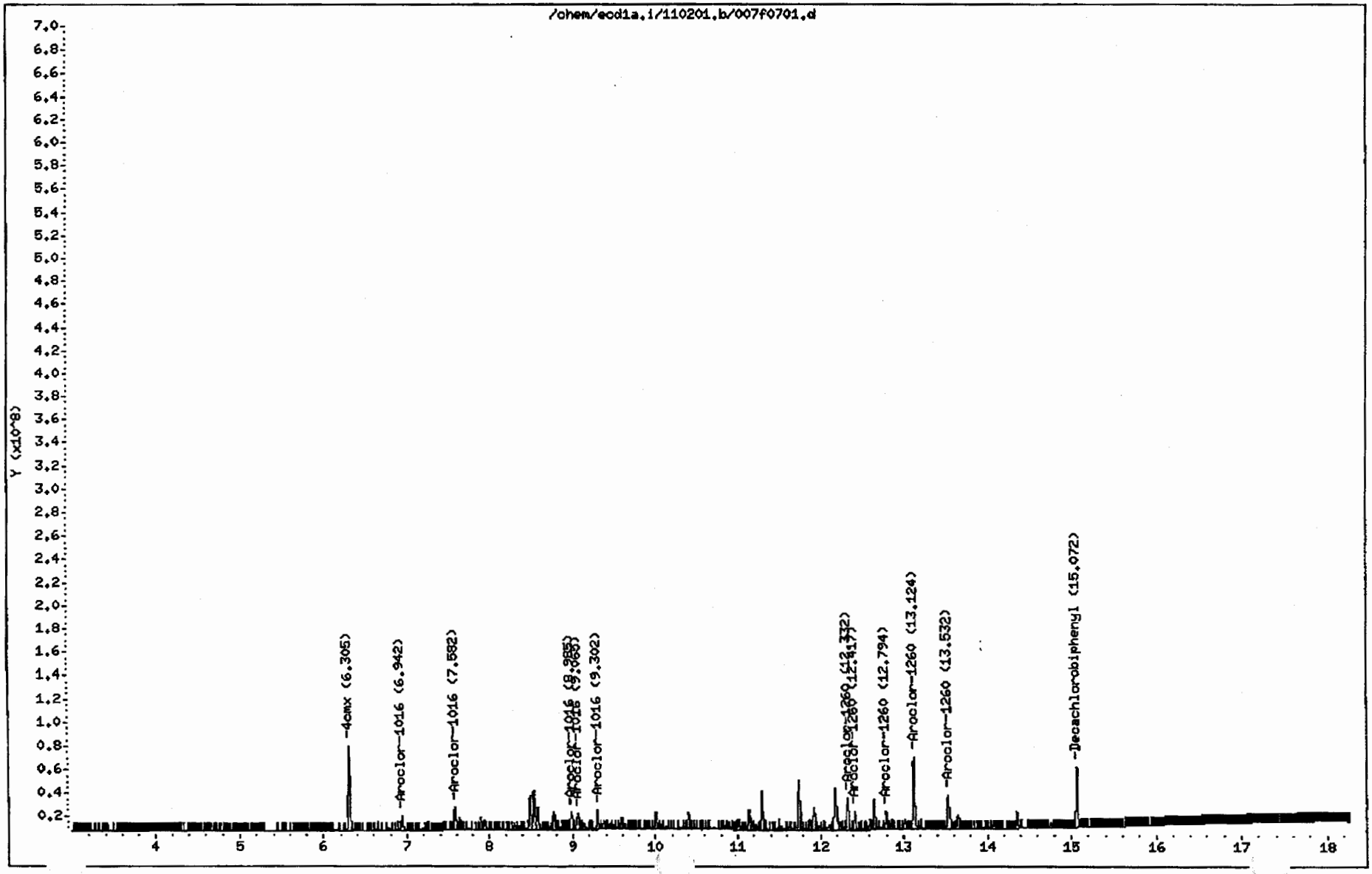
SC 11/8/01

Data File: /chem/ecdia.i/110201.b/007f0701.d
Date : 02-NOV-2001 11:53
Client ID: AR166002
Sample Info: IPW011102-03 602

Column phase: DB-XLB

Instrument: ecdia.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/110201.b/008b0801.d
Lab Smp Id: PW011102-02 603 Client Smp ID: AR166003
Inj Date : 02-NOV-2001 12:15
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011102-02 603
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/110201.b/PESTB_DB-17MS_ecd1.m
Meth Date : 05-Nov-2001 09:38 mm Quant Type: ESTD
Cal Date : 02-NOV-2001 12:15 Cal File: 008b0801.d
Als bottle: 8 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1660.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
3 Aroclor-1016					CAS #: 12674-11-2		
7.335	7.335	0.000	10285485	500.000	508	80.00- 120.00	100.00
.051	8.051	0.000	25033154	500.000	510	226.50- 266.50	243.38
8.433	8.433	0.000	7372756	500.000	501	53.50- 93.50	71.68
8.994	8.995	-0.001	15813037	500.000	499	134.91- 174.91	153.74
9.792	9.792	0.000	16902889	500.000	487	146.66- 186.66	164.34
Average of Peak Amounts =					501		
21 Aroclor-1260					CAS #: 11096-82-5		
11.680	11.681	-0.001	34032129	500.000	508	80.00- 120.00	100.00
11.865	11.866	-0.001	38295811	500.000	509	91.47- 131.47	112.53
13.048	13.049	-0.001	23927902	500.000	505	50.04- 90.04	70.31
13.295	13.295	0.000	63970257	500.000	512	166.94- 206.94	187.97
13.786	13.786	0.000	10770727	500.000	500	11.52- 51.52	31.65
Average of Peak Amounts =					507		
$ 1 4cmx					CAS #: 877-09-8		
6.162	6.163	-0.001	65361287	40.0000	54.7	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.376	15.377	-0.001	45814650	40.0000	60.6	80.00- 120.00	100.00

JC 11/8/01

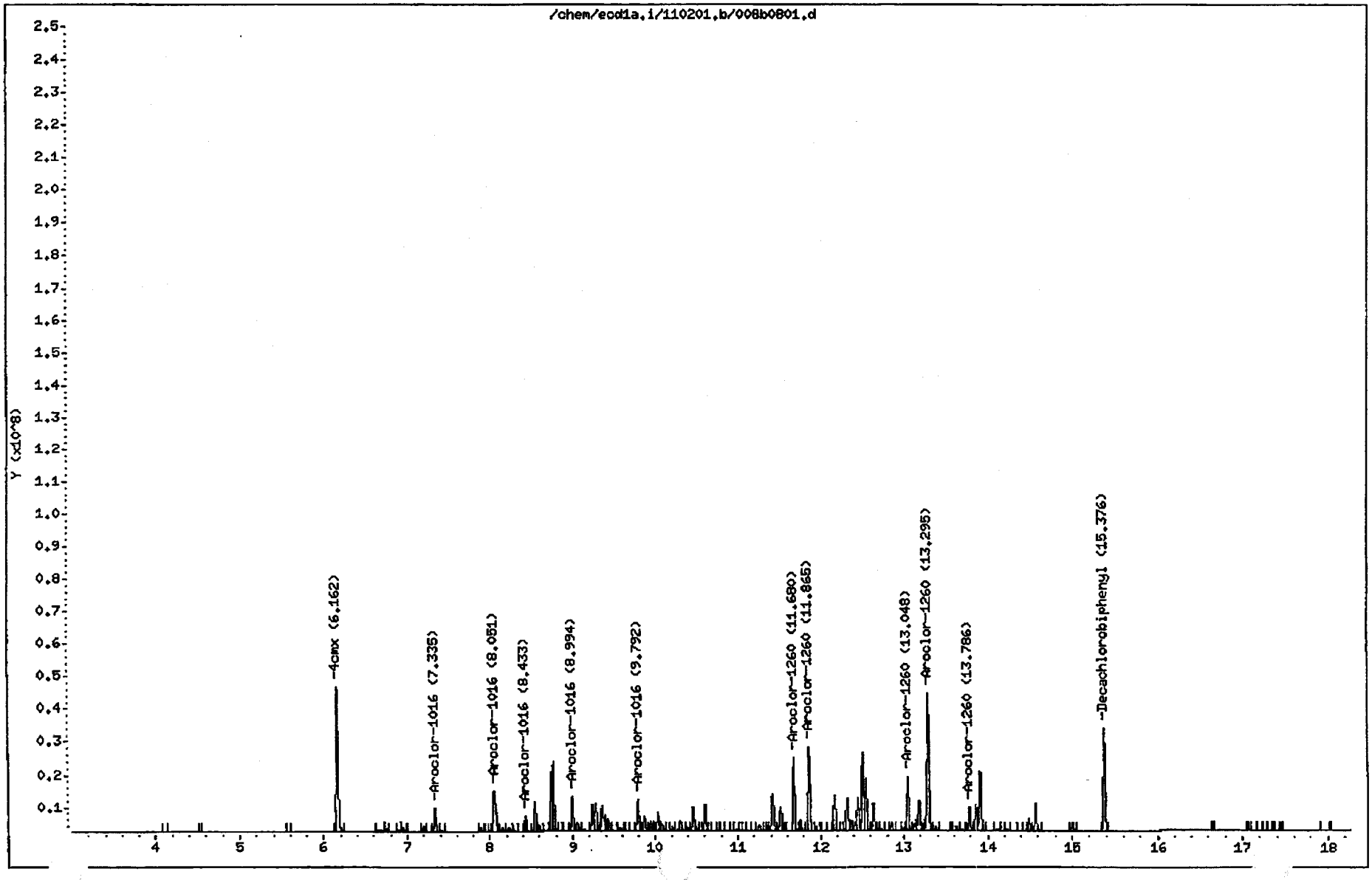
617

Data File: /chem/ecd1a.i/110201.b/008b0801.d
Date : 02-NOV-2001 12:15
Client ID: AR166003
Sample Info: IPW011102-02 603

Column phase: DB-17MS

Instrument: ecd1a.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/110201.b/008f0801.d
Lab Smp Id: PW011102-02 603 Client Smp ID: AR166003
Inj Date : 02-NOV-2001 12:15
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011102-02 603
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/110201.b/PESTA_DB-XLB_ecd1.m
Meth Date : 05-Nov-2001 09:38 mm Quant Type: ESTD
Cal Date : 02-NOV-2001 13:00 Cal File: 010f1001.d
Als bottle: 8 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1660.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
3 Aroclor-1016					CAS #: 12674-11-2		
6.942	6.943	-0.001	32359421	500.000	513	80.00- 120.00	100.00
.582	7.584	-0.002	51735176	500.000	512	140.25- 180.25	159.88
8.984	8.985	-0.001	42813880	500.000	501	110.66- 150.66	132.31
9.067	9.065	0.002	47424293	500.000	506	127.83- 167.83	146.55
9.302	9.302	0.000	46505992	500.000	509	123.01- 163.01	143.72
Average of Peak Amounts =					508		
21 Aroclor-1260					CAS #: 11096-82-5		
12.332	12.331	0.001	76997086	500.000	506	80.00- 120.00	100.00
12.417	12.418	-0.001	43318200	500.000	504	36.01- 76.01	56.26
12.794	12.794	0.000	40490807	500.000	507	31.81- 71.81	52.59
13.124	13.123	0.001	178839095	500.000	507	210.83- 250.83	232.27
13.532	13.532	0.000	112643944	500.000	504	125.29- 165.29	146.30
Average of Peak Amounts =					506		
$ 1 4cmx					CAS #: 877-09-8		
6.304	6.305	-0.001	204789660	40.0000	60.5	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.070	15.071	-0.001	138719998	40.0000	61.2	80.00- 120.00	100.00

11/5/2

JC 11/8/01

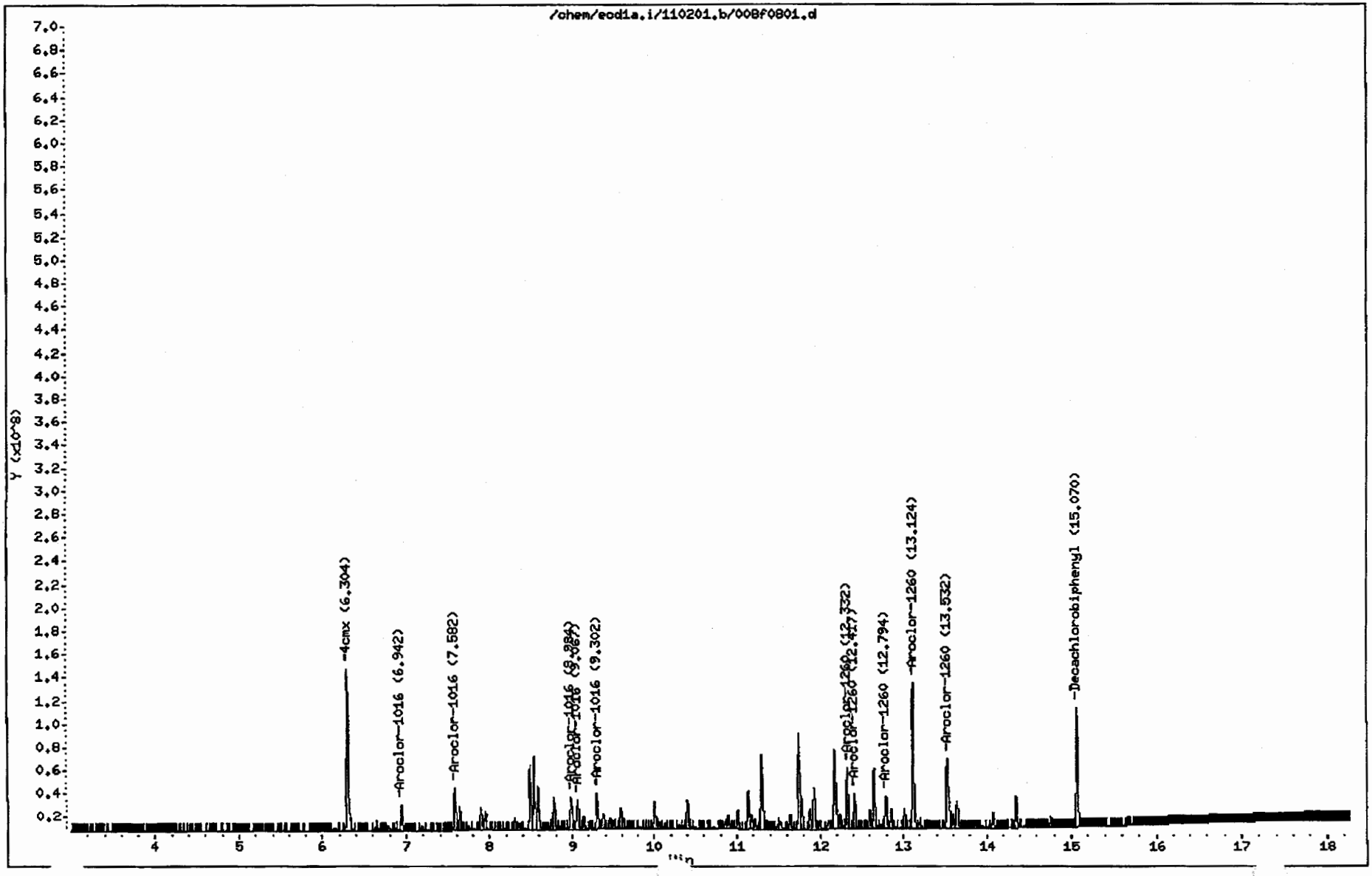
619

Data File: /chem/eodia.i/110201.b/008f0801.d
Date : 02-NOV-2001 12:15
Client ID: AR166003
Sample Info: IPW011102-02 603

Column phase: DB-XLB

Instrument: eodia.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/110201.b/009b0901.d
Lab Smp Id: PW011102-01 604 Client Smp ID: AR166004
Inj Date : 02-NOV-2001 12:37
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011102-01 604
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/110201.b/PESTB_DB-17MS_ecd1.m
Meth Date : 05-Nov-2001 09:38 mm Quant Type: ESTD
Cal Date : 02-NOV-2001 12:37 Cal File: 009b0901.d
Als bottle: 9 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1660.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
3 Aroclor-1016					CAS #: 12674-11-2		
7.335	7.335	0.000	19665024	1000.00	972	80.00- 120.00	100.00(M)
8.051	8.051	0.000	48042030	1000.00	978	226.50- 266.50	244.30
8.433	8.433	0.000	14589248	1000.00	992	53.50- 93.50	74.19
8.994	8.995	-0.001	30604408	1000.00	966	134.91- 174.91	155.63
9.792	9.792	0.000	32578700	1000.00	938	146.66- 186.66	165.67
Average of Peak Amounts =					969		
21 Aroclor-1260					CAS #: 11096-82-5		
11.680	11.681	-0.001	65713466	1000.00	981	80.00- 120.00	100.00
11.866	11.866	0.000	74633221	1000.00	992	91.47- 131.47	113.57
13.048	13.049	-0.001	47352089	1000.00	1000	50.04- 90.04	72.06
13.293	13.295	-0.002	125802337	1000.00	1000	166.94- 206.94	191.44
13.787	13.786	0.001	21375193	1000.00	991	11.52- 51.52	32.53
Average of Peak Amounts =					994		
$ 1 4cmx					CAS #: 877-09-8		
6.163	6.163	0.000	129577688	100.000	108	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.377	15.377	0.000	90656273	100.000	120	80.00- 120.00	100.00

JC 11/8/01

QC Flag Legend

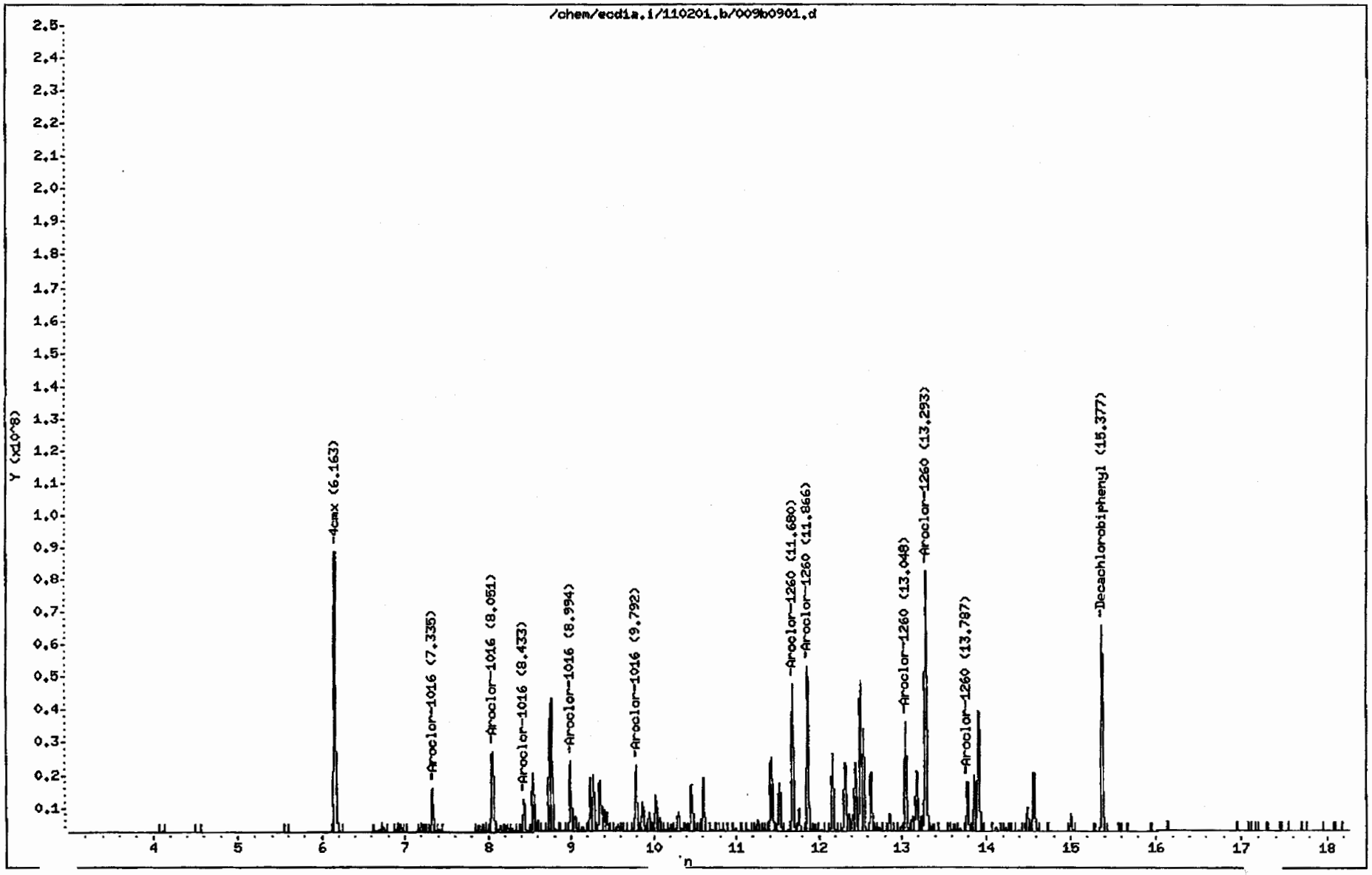
M - Compound response manually integrated.

Data File: /chem/ecd1a.i/110201.b/009b0901.d
Date : 02-NOV-2001 12:37
Client ID: AR166004
Sample Info: IPW011102-01 604

Column phase: DB-17MS

Instrument: ecd1a.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/110201.b/009f0901.d
Lab Smp Id: PW011102-01 604 Client Smp ID: AR166004
Inj Date : 02-NOV-2001 12:37
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011102-01 604
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/110201.b/PESTA_DB-XLB_ecd1.m
Meth Date : 05-Nov-2001 09:38 mm Quant Type: ESTD
Cal Date : 02-NOV-2001 13:00 Cal File: 010f1001.d
Als bottle: 9 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1660.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
3 Aroclor-1016					CAS #: 12674-11-2		
6.943	6.943	0.000	61194798	1000.00	970	80.00- 120.00	100.00
7.583	7.584	-0.001	97567585	1000.00	965	140.25- 180.25	159.44
8.984	8.985	-0.001	80591925	1000.00	942	110.66- 150.66	131.70
9.067	9.065	0.002	90574375	1000.00	966	127.83- 167.83	148.01
9.303	9.302	0.001	88245215	1000.00	966	123.01- 163.01	144.20
Average of Peak Amounts =					962		
21 Aroclor-1260					CAS #: 11096-82-5		
12.332	12.331	0.001	148172985	1000.00	974	80.00- 120.00	100.00
12.418	12.418	0.000	84287569	1000.00	980	36.01- 76.01	56.88
12.793	12.794	-0.001	77775750	1000.00	974	31.81- 71.81	52.49
13.123	13.123	0.000	344035750	1000.00	976	210.83- 250.83	232.19
13.532	13.532	0.000	219759245	1000.00	984	125.29- 165.29	148.31
Average of Peak Amounts =					978		
$ 1 4cmx					CAS #: 877-09-8		
6.305	6.305	0.000	394603573	100.000	116	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.071	15.071	0.000	270526012	100.000	119	80.00- 120.00	100.00

JC 11/8/01

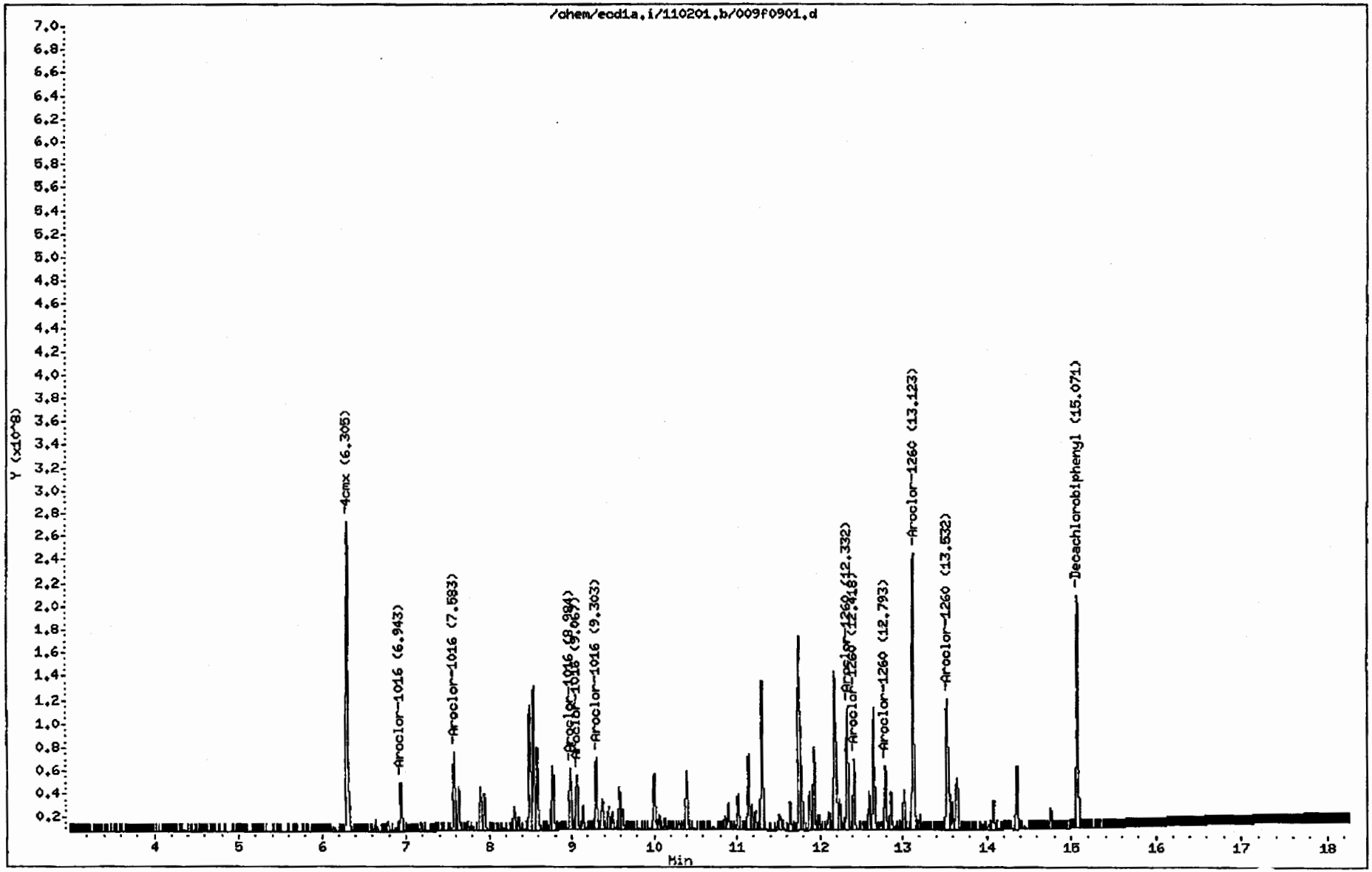
625

Data File: /chem/ecdia.i/110201.b/009f0901.d
Date : 02-NOV-2001 12:37
Client ID: AR166004
Sample Info: |PW011102-01 604

Column phase: DB-XLB

Instrument: ecdia.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/110201.b/010b1001.d
Lab Smp Id: PI010927-01 605 Client Smp ID: AR166005
Inj Date : 02-NOV-2001 13:00
Operator : mm Inst ID: ecd1a.i
Smp Info : |PI010927-01 605
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/110201.b/PESTB_DB-17MS_ecd1.m
Meth Date : 05-Nov-2001 09:38 mm Quant Type: ESTD
Cal Date : 02-NOV-2001 13:00 Cal File: 010b1001.d
Als bottle: 10 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1660.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
3 Aroclor-1016					CAS #: 12674-11-2		
7.335	7.335	0.000	70014131	4000.00	3460	80.00- 120.00	100.00(A)
8.051	8.051	0.000	170395493	4000.00	3470	226.50- 266.50	243.37
8.433	8.433	0.000	56579558	4000.00	3840	53.50- 93.50	80.81
8.994	8.995	-0.001	110483147	4000.00	3490	134.91- 174.91	157.80
9.793	9.792	0.001	120525578	4000.00	3470	146.66- 186.66	172.14
Average of Peak Amounts =					3.55e+03		
21 Aroclor-1260					CAS #: 11096-82-5		
11.680	11.681	-0.001	235257794	4000.00	3510	80.00- 120.00	100.00
11.866	11.866	0.000	268841772	4000.00	3570	91.47- 131.47	114.28
13.049	13.049	0.000	179758334	4000.00	3800	50.04- 90.04	76.41
13.295	13.295	0.000	467232942	4000.00	3740	166.94- 206.94	198.60
13.787	13.786	0.001	84959919	4000.00	3940	11.52- 51.52	36.11
Average of Peak Amounts =					3.71e+03		
$ 1 4cmx					CAS #: 877-09-8		
6.162	6.163	-0.001	487375967	200.000	408	80.00- 120.00	100.00(A)
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.377	15.377	0.000	350345344	200.000	463	80.00- 120.00	100.00

JC 11/8/01

QC Flag Legend

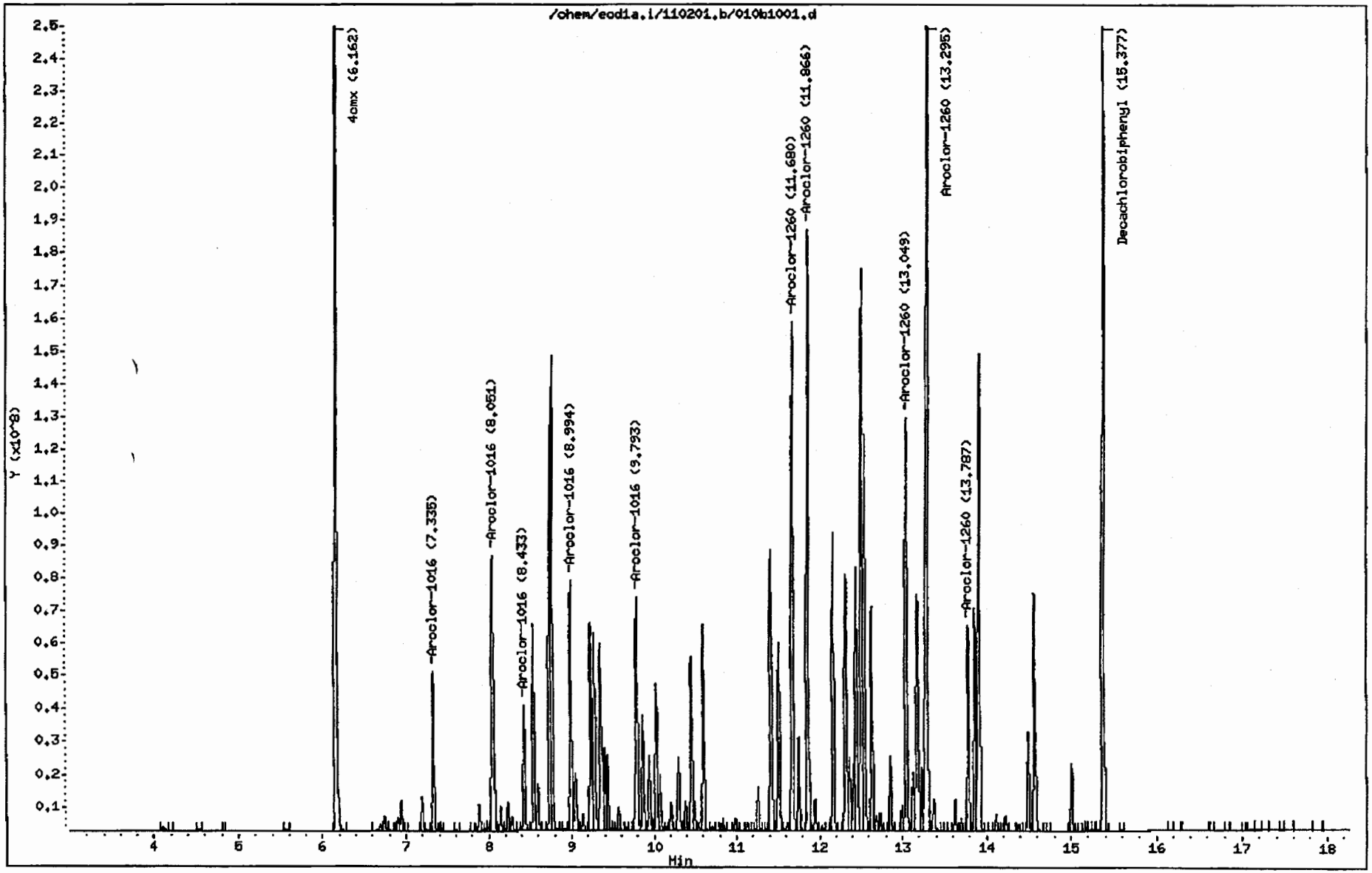
A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: /chem/ecdia.i/110201.b/010b1001.d
Date : 02-NOV-2001 13:00
Client ID: AR166005
Sample Info: IPI010927-01 605

Column phase: DB-17MS

Instrument: ecdia.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/110201.b/010f1001.d
Lab Smp Id: PI010927-01 605 Client Smp ID: AR166005
Inj Date : 02-NOV-2001 13:00
Operator : mm Inst ID: ecd1a.i
Smp Info : |PI010927-01 605
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/110201.b/PESTA_DB-XLB_ecd1.m
Meth Date : 05-Nov-2001 09:38 mm Quant Type: ESTD
Cal Date : 02-NOV-2001 13:00 Cal File: 010f1001.d
Als bottle: 10 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1660.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
3 Aroclor-1016					CAS #: 12674-11-2		
6.943	6.943	0.000	208029193	4000.00	3300	80.00- 120.00	100.00(A)
7.583	7.584	-0.001	327864076	4000.00	3240	140.25- 180.25	157.60
8.985	8.985	0.000	281937942	4000.00	3300	110.66- 150.66	135.53
9.066	9.065	0.001	323424635	4000.00	3450	127.83- 167.83	155.47
9.303	9.302	0.001	313723900	4000.00	3430	123.01- 163.01	150.81
Average of Peak Amounts =					3.34e+03		
21 Aroclor-1260					CAS #: 11096-82-5		
12.331	12.331	0.000	529463872	4000.00	3480	80.00- 120.00	100.00
12.416	12.418	-0.002	312568682	4000.00	3640	36.01- 76.01	59.03
12.794	12.794	0.000	290327454	4000.00	3640	31.81- 71.81	54.83
13.124	13.123	0.001	1236083235	4000.00	3510	210.83- 250.83	233.46
13.533	13.532	0.001	811583404	4000.00	3630	125.29- 165.29	153.28
Average of Peak Amounts =					3.58e+03		
$ 1 4cmx					CAS #: 877-09-8		
6.305	6.305	0.000	1409436957	200.000	416	80.00- 120.00	100.00(A)
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.073	15.071	0.002	1031542322	200.000	455	80.00- 120.00	100.00

JC 11/8/01

629

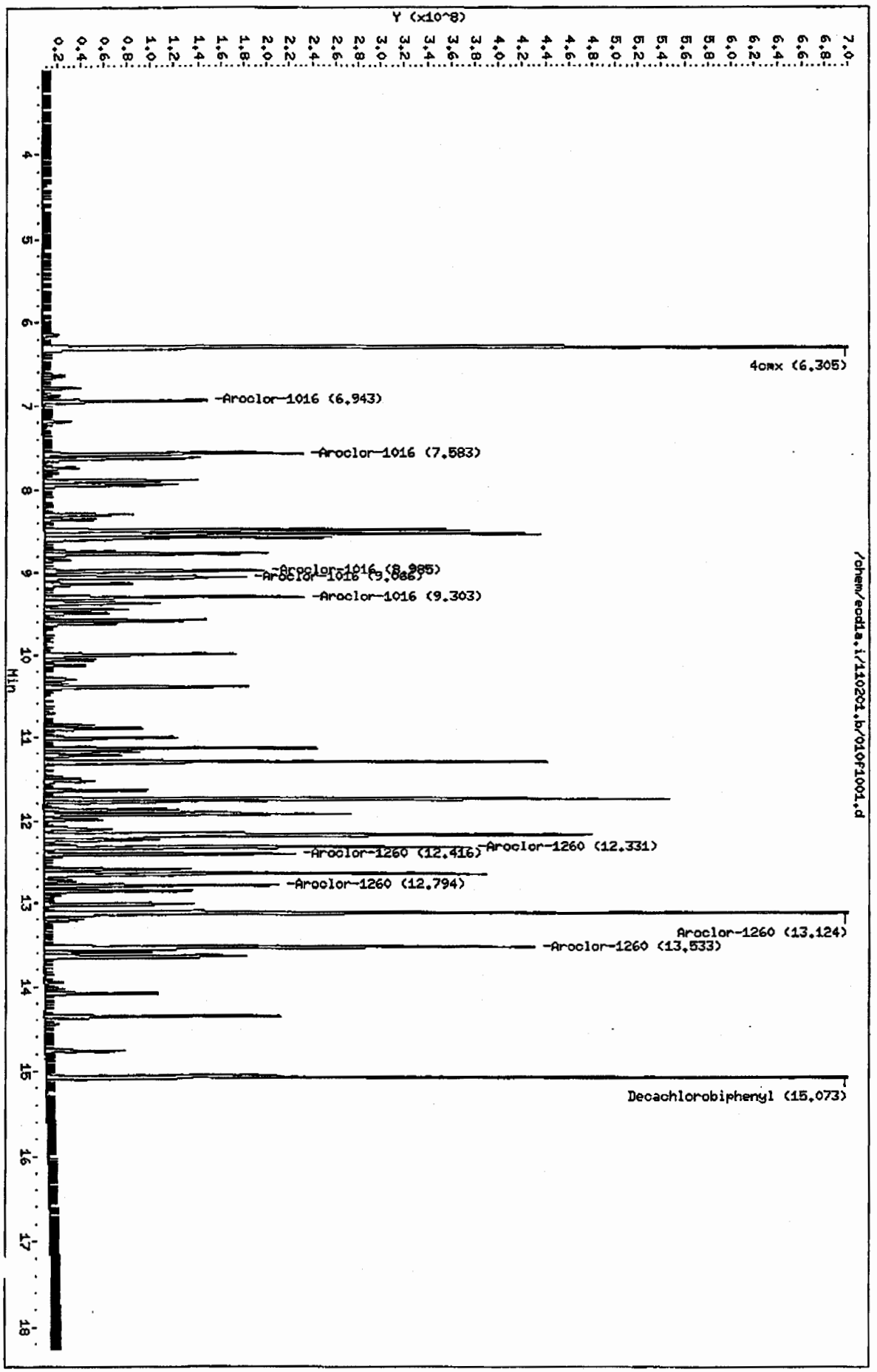
QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: /chem/ecd1a.i/110201.b/010f1001.d
Date : 02-NOV-2001 13:00
Client ID: AR166005
Sample Info: IPI010927-01 605

Column phase: DB-XLB

Instrument: ecd1a.i
Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111201.b/006b0601.d
Lab Smp Id: PW011112-09 541 Client Smp ID: AR125401
Inj Date : 12-NOV-2001 19:29
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011112-09 541
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111201.b/PESTB_DB-17MS_ecd1.m
Meth Date : 13-Nov-2001 12:02 mm Quant Type: ESTD
Cal Date : 12-NOV-2001 19:29 Cal File: 006b0601.d
Als bottle: 6 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1254.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
15 Aroclor-1254					CAS #: 11097-69-1		
10.618	10.616	0.002	8087792	100.000	115	80.00- 120.00	100.00
10.725	10.723	0.002	2923672	100.000	112	17.30- 57.30	36.15
11.150	11.150	0.000	2244953	100.000	108	10.46- 50.46	27.76
11.278	11.275	0.003	4564354	100.000	106	42.60- 82.60	56.44
11.698	11.696	0.002	9669141	100.000	112	107.25- 147.25	119.55
Average of Peak Amounts =					111		
$ 1 4cmx					CAS #: 877-09-8		
6.177	6.177	0.000	12435750	4.00000	10.4	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.389	15.389	0.000	9033066	4.00000	11.9	80.00- 120.00	100.00

JC 11/15/01

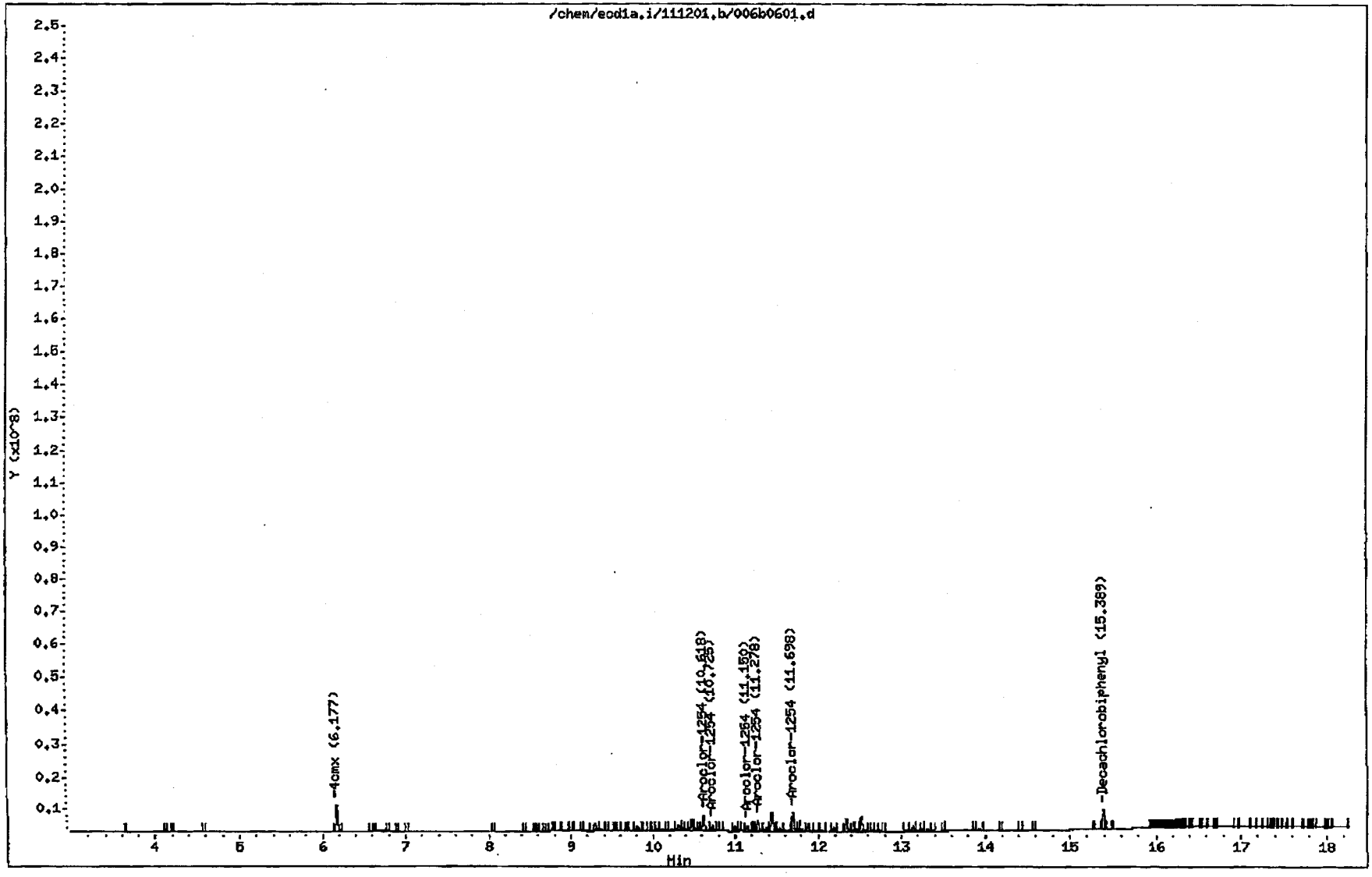
632

Data File: /chem/ecd1a.i/111201.b/006b0601.d
Date : 12-NOV-2001 19:29
Client ID: AR125401
Sample Info: IPW011112-09 541

Column phase: DB-17MS

Instrument: ecd1a.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111201.b/006f0601.d
Lab Smp Id: PW011112-09 541 Client Smp ID: AR125401
Inj Date : 12-NOV-2001 19:29
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011112-09 541
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111201.b/PESTA_DB-XLB_ecd1.m
Meth Date : 13-Nov-2001 12:02 mm Quant Type: ESTD
Cal Date : 12-NOV-2001 20:59 Cal File: 010f1001.d
Als bottle: 6 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1254.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
15 Aroclor-1254					CAS #: 11097-69-1		
10.015	10.015	0.000	19020851	100.000	122	80.00- 120.00	100.00
10.417	10.414	0.003	16687226	100.000	101	88.06- 128.06	87.73
11.028	11.025	0.003	26218196	100.000	113	131.95- 171.95	137.84
11.539	11.537	0.002	19803922	100.000	109	101.95- 141.95	104.12
11.761	11.761	0.000	11139703	100.000	109	48.61- 88.61	58.57
Average of Peak Amounts =					111		
$ 1 4cmx					CAS #: 877-09-8		
6.319	6.319	0.000	38251175	4.00000	11.3	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.082	15.082	0.000	24229339	4.00000	10.7	80.00- 120.00	100.00

JC 11/15/01

Data File: /chem/ecd1a.i/111201.b/006f0601.d

Date : 12-NOV-2001 19:29

Client ID: AR125401

Sample Info: IPW011112-09 541

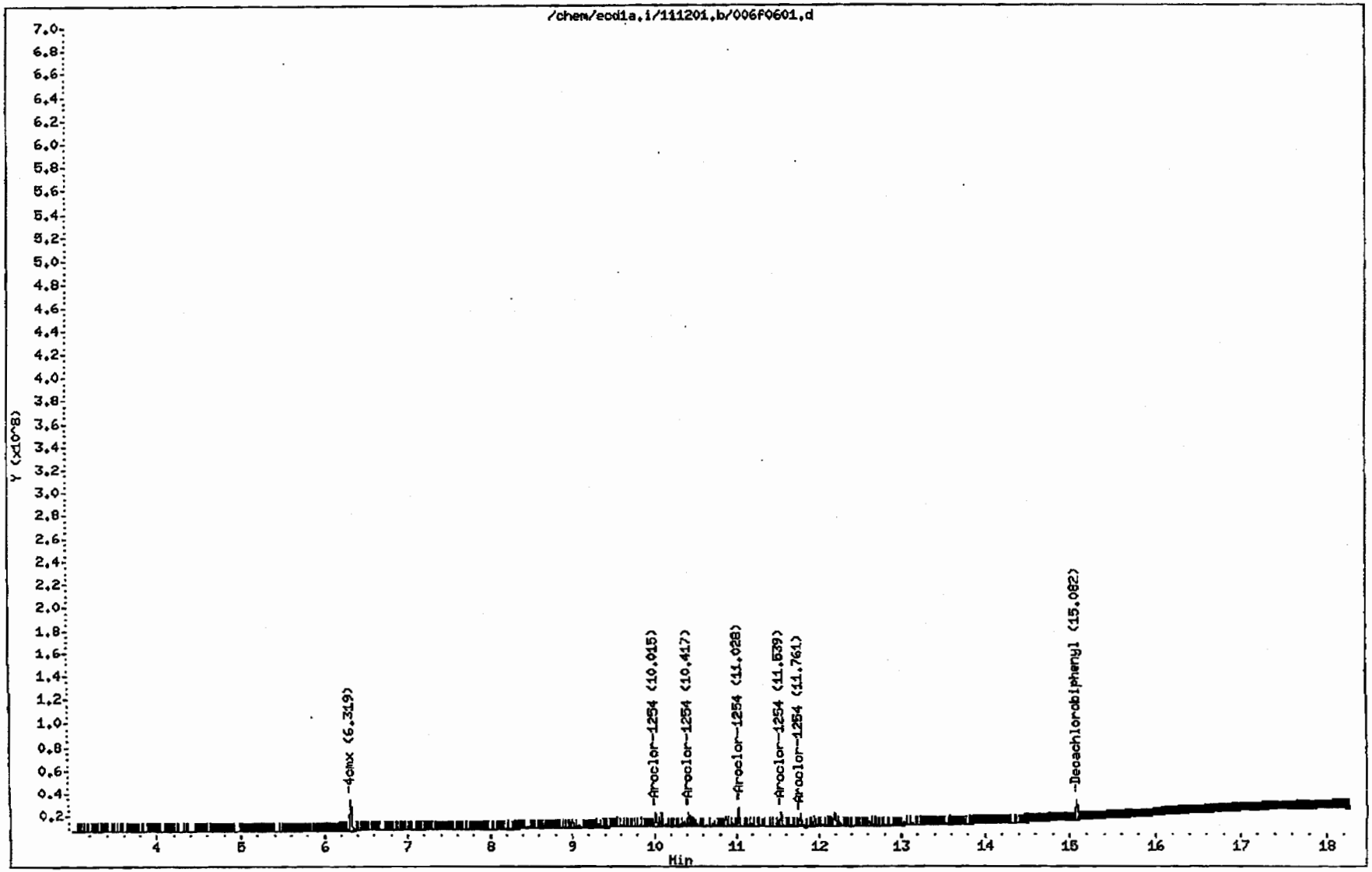
Column phase: DB-XLB

Page 2

Instrument: ecd1a.i

Operator: mm

Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

ata file : /chem/ecd1a.i/111201.b/007b0701.d
ab Smp Id: PW011112-08 542 Client Smp ID: AR125402
nj Date : 12-NOV-2001 19:52
perator : mm Inst ID: ecd1a.i
mp Info : |PW011112-08 542
isc Info :
omment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
ethod : /chem/ecd1a.i/111201.b/PESTB_DB-17MS_ecd1.m
eth Date : 13-Nov-2001 12:02 mm Quant Type: ESTD
al Date : 12-NOV-2001 19:52 Cal File: 007b0701.d
ls bottle: 7 Calibration Sample, Level: 2
il Factor: 1.00000
ntegrator: Falcon Compound Sublist: AR1254.sub
arget Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
15 Aroclor-1254					CAS #: 11097-69-1		
10.616	10.616	0.000	18067055	250.000	257	80.00- 120.00	100.00
10.725	10.723	0.002	6312072	250.000	242	17.30- 57.30	34.94
11.151	11.150	0.001	5046878	250.000	242	10.46- 50.46	27.93
11.276	11.275	0.001	10532237	250.000	244	42.60- 82.60	58.30
11.698	11.696	0.002	21704126	250.000	251	107.25- 147.25	120.13
Average of Peak Amounts =					247		
$ 1 4cmx					CAS #: 877-09-8		
6.177	6.177	0.000	30812851	20.0000	25.8	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.391	15.389	0.002	20940887	20.0000	27.7	80.00- 120.00	100.00

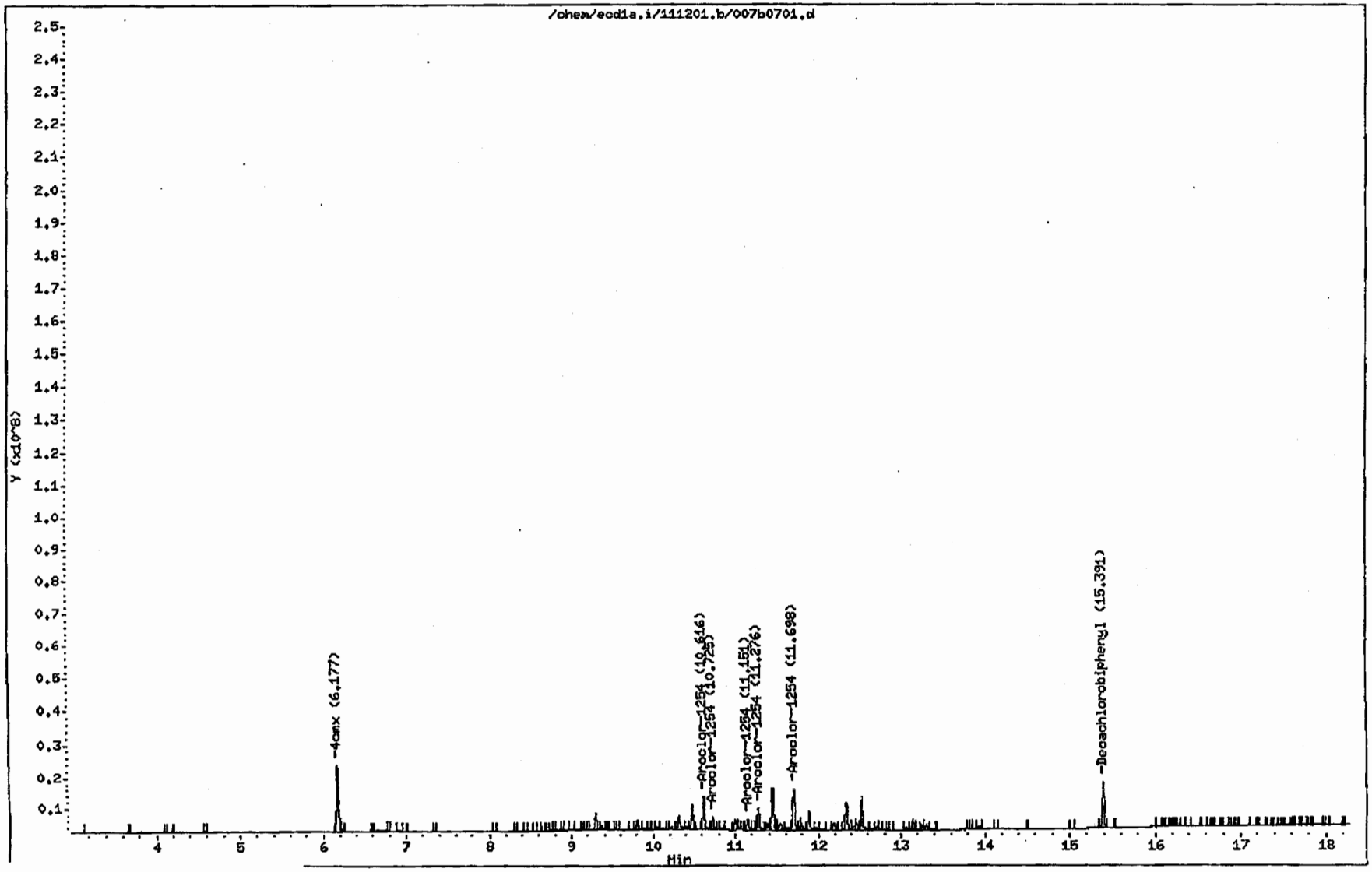
JC 11/15/01

Data File: /chem/ecd1a.i/111201.b/007b0701.d
Date : 12-NOV-2001 19:52
Client ID: AR125402
Sample Info: IPN011112-08 S42

Column phase: DB-17MS

Instrument: ecd1a.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

ata file : /chem/ecd1a.i/111201.b/007f0701.d
ab Smp Id: PW011112-08 542 Client Smp ID: AR125402
nj Date : 12-NOV-2001 19:52
perator : mm Inst ID: ecd1a.i
mp Info : |PW011112-08 542
isc Info :
omment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
ethod : /chem/ecd1a.i/111201.b/PESTA_DB-XLB_ecd1.m
eth Date : 13-Nov-2001 12:02 mm Quant Type: ESTD
al Date : 12-NOV-2001 20:59 Cal File: 010f1001.d
ls bottle: 7 Calibration Sample, Level: 2
il Factor: 1.00000
ntegrator: Falcon Compound Sublist: AR1254.sub
arget Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
15 Aroclor-1254					CAS #: 11097-69-1		
10.014	10.015	-0.001	39819230	250.000	255	80.00- 120.00	100.00
10.415	10.414	0.001	43414412	250.000	262	88.06- 128.06	109.03
11.027	11.025	0.002	58439930	250.000	251	131.95- 171.95	146.76
11.538	11.537	0.001	42075094	250.000	232	101.95- 141.95	105.67
11.761	11.761	0.000	24806102	250.000	243	48.61- 88.61	62.30
Average of Peak Amounts =					249		
$ 1 4cmx					CAS #: 877-09-8		
6.318	6.319	-0.001	89563300	20.0000	26.5	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.083	15.082	0.001	56142793	20.0000	24.8	80.00- 120.00	100.00

JC 11/15/01

638

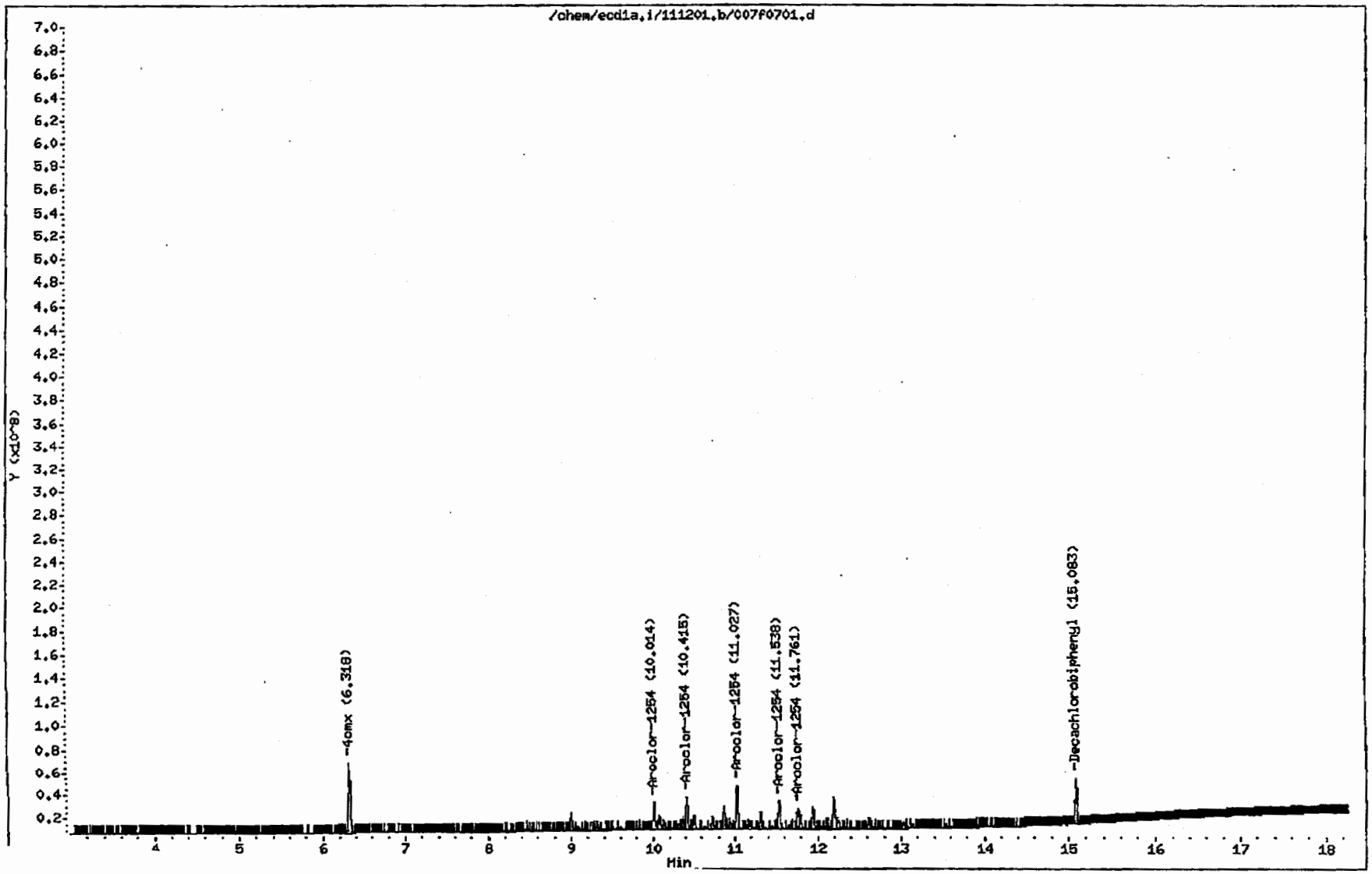
639

Data File: /chem/ecdia.i/111201.b/007f0701.d
Date : 12-NOV-2001 19:52
Client ID: AR125402
Sample Info: IPW011112-08 542

Column phase: DB-XLB

Instrument: ecdia.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

ata file : /chem/ecd1a.i/111201.b/008b0801.d
ab Smp Id: PW011112-07 543 Client Smp ID: AR125403
nj Date : 12-NOV-2001 20:14
perator : mm Inst ID: ecd1a.i
mp Info : |PW011112-07 543
isc Info :
omment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
ethod : /chem/ecd1a.i/111201.b/PESTB_DB-17MS_ecd1.m
eth Date : 13-Nov-2001 12:02 mm Quant Type: ESTD
al Date : 02-NOV-2001 15:14 Cal File: 016b1601.d
ls bottle: 8 Calibration Sample, Level: 3
il Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1254.sub
arget Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	ON-COL (ug/L)	TARGET RANGE	RATIO
15 Aroclor-1254					CAS #: 11097-69-1		
10.616	10.616	0.000	37001786	500.000	527	80.00- 120.00	100.00
10.723	10.723	0.000	13688596	500.000	525	17.30- 57.30	36.99
11.150	11.150	0.000	11081396	500.000	531	10.46- 50.46	29.95
11.275	11.275	0.000	23053451	500.000	534	42.60- 82.60	62.30
11.696	11.696	0.000	46304757	500.000	536	107.25- 147.25	125.14
Average of Peak Amounts =					531		
$ 1 4cmx					CAS #: 877-09-8		
6.177	6.177	0.000	68639311	40.0000	57.4	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.389	15.389	0.000	45467010	40.0000	60.1	80.00- 120.00	100.00

JC 11/15/01

640

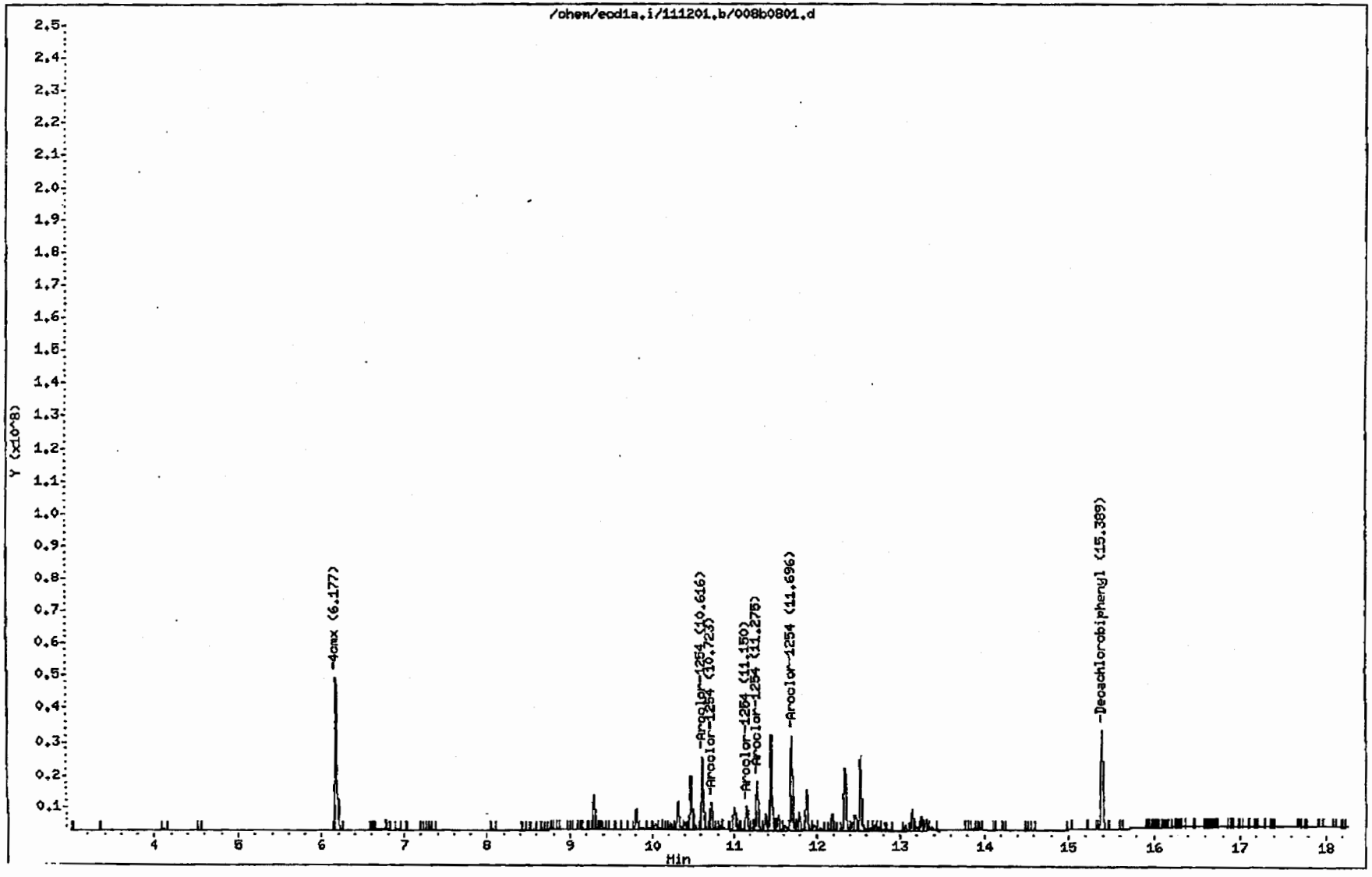
641

Data File: /chem/ecd1a.i/111201.b/008b0801.d
Date : 12-NOV-2001 20:14
Client ID: AR125403
Sample Info: IPW011112-07 543

Column phase: DB-17HS

Instrument: ecd1a.i

Operator: mm
Column diameter: 0.25



ata File: /chem/ecd1a.i/111201.b/008f0801.d
eport Date: 13-Nov-2001 12:14

General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

ata file : /chem/ecd1a.i/111201.b/008f0801.d
ab Smp Id: PW011112-07 543 Client Smp ID: AR125403
nj Date : 12-NOV-2001 20:14
perator : mm Inst ID: ecd1a.i
mp Info : |PW011112-07 543
isc Info :
omment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
ethod : /chem/ecd1a.i/111201.b/PESTA_DB-XLB_ecd1.m
eth Date : 13-Nov-2001 12:02 mm Quant Type: ESTD
al Date : 12-NOV-2001 20:59 Cal File: 010f1001.d
ls bottle: 8 Calibration Sample, Level: 3
il Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1254.sub
arget Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
15 Aroclor-1254					CAS #: 11097-69-1		
10.015	10.015	0.000	80603353	500.000	517	80.00- 120.00	100.00
10.414	10.414	0.000	92309794	500.000	557	88.06- 128.06	114.52
11.025	11.025	0.000	123922903	500.000	532	131.95- 171.95	153.74
11.537	11.537	0.000	97518562	500.000	539	101.95- 141.95	120.99
11.761	11.761	0.000	54411700	500.000	532	48.61- 88.61	67.51
Average of Peak Amounts =					535		
$ 1 4cmx					CAS #: 877-09-8		
6.318	6.319	-0.001	190673171	40.0000	56.3	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.084	15.082	0.002	121579371	40.0000	53.6	80.00- 120.00	100.00

JC 11/15/01

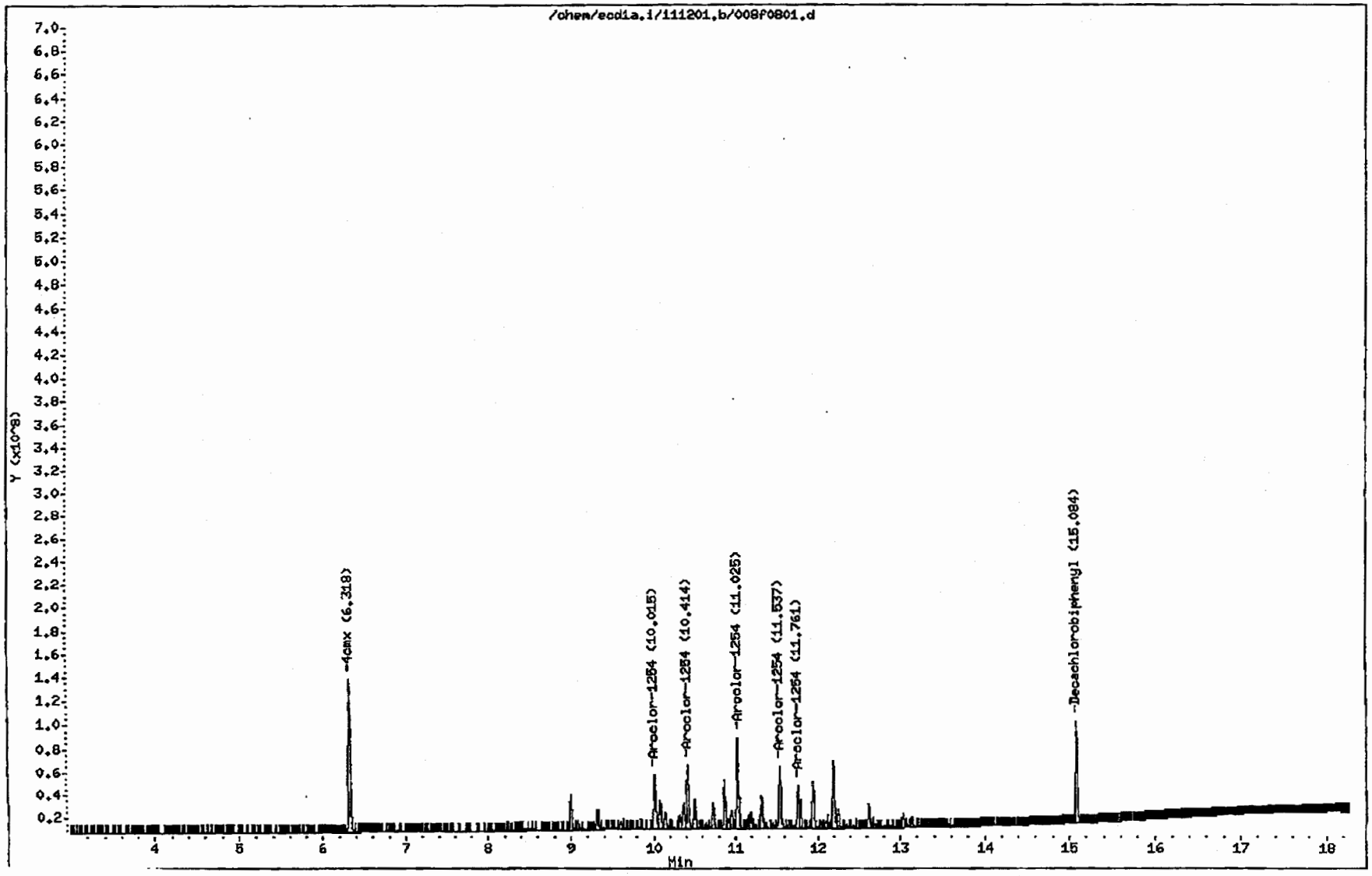
642

Data File: /chem/ecd1a.i/111201.b/008f0801.d
Date : 12-NOV-2001 20:14
Client ID: AR125403
Sample Info: IPW011112-07 543

Column phase: DB-XLB

Instrument: ecd1a.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111201.b/009b0901.d
Lab Smp Id: PW011112-06 544 Client Smp ID: AR125404
Inj Date : 12-NOV-2001 20:37
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011112-06 544
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111201.b/PESTB_DB-17MS_ecd1.m
Meth Date : 13-Nov-2001 12:02 mm Quant Type: ESTD
Cal Date : 12-NOV-2001 20:37 Cal File: 009b0901.d
Als bottle: 9 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1254.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
15 Aroclor-1254					CAS #: 11097-69-1		
10.615	10.616	-0.001	67548126	1000.00	962	80.00- 120.00	100.00
10.722	10.723	-0.001	25551080	1000.00	980	17.30- 57.30	37.83
11.148	11.150	-0.002	20571642	1000.00	985	10.46- 50.46	30.45
11.274	11.275	-0.001	42836194	1000.00	993	42.60- 82.60	63.42
11.695	11.696	-0.001	83932580	1000.00	971	107.25- 147.25	124.26
Average of Peak Amounts =					978		
$ 1 4cmx					CAS #: 877-09-8		
6.176	6.177	-0.001	128131713	100.000	107	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.389	15.389	0.000	85313434	100.000	113	80.00- 120.00	100.00

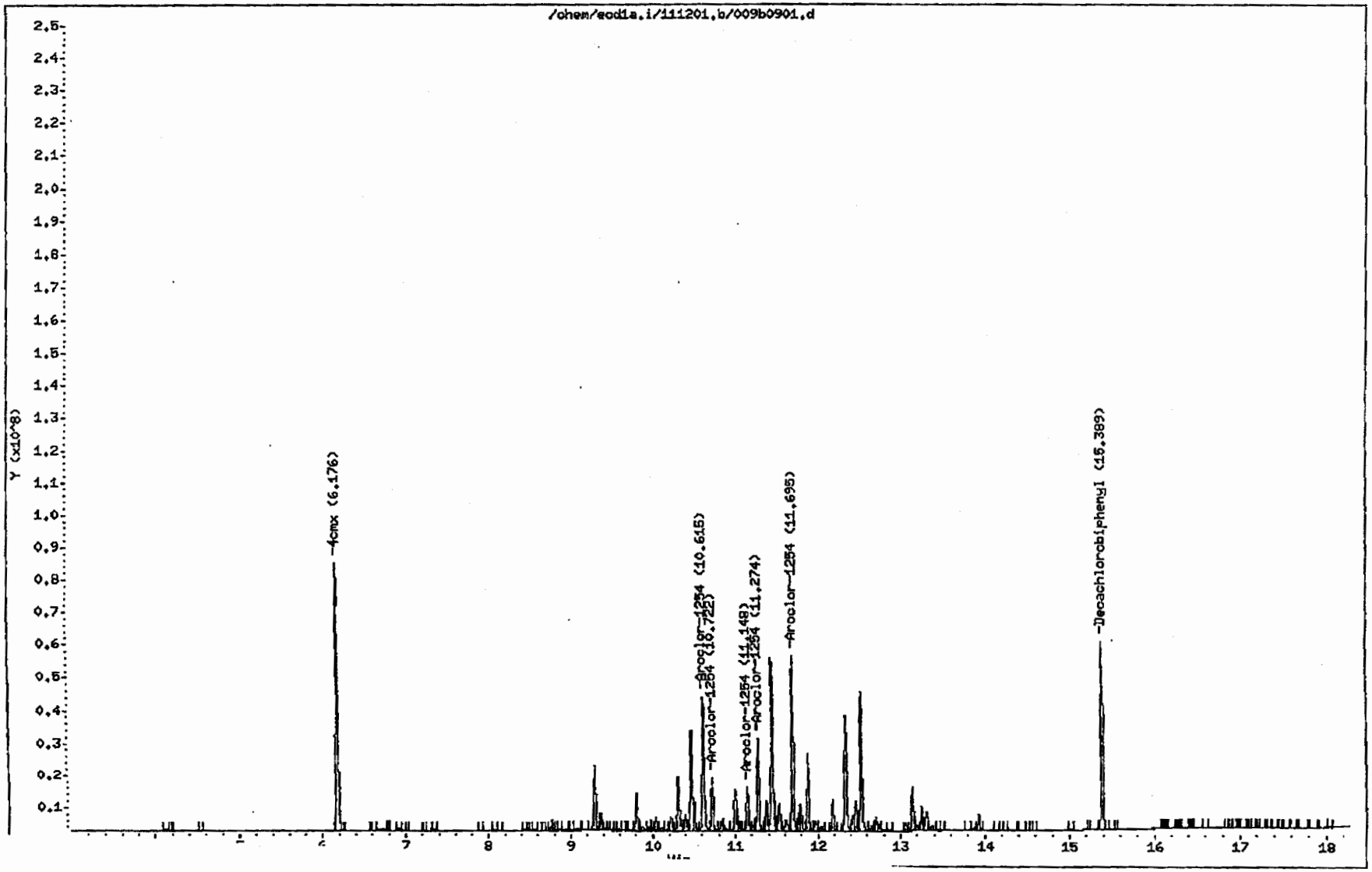
JC 11/15/01

Data File: /chem/ecdia.i/111201.b/009b0901.d
Date : 12-NOV-2001 20:37
Client ID: AR125404
Sample Info: IPW011112-06 544

Column phase: DB-17MS

Instrument: ecdia.i

Operator: mm
Column diameter: 0.25



.ta File: /chem/ecd1a.i/111201.b/009f0901.d
:port Date: 13-Nov-2001 12:14

General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

ata file : /chem/ecd1a.i/111201.b/009f0901.d
ab Smp Id: PW011112-06 544 Client Smp ID: AR125404
nj Date : 12-NOV-2001 20:37
perator : mm Inst ID: ecd1a.i
mp Info : |PW011112-06 544
isc Info :
omment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
ethod : /chem/ecd1a.i/111201.b/PESTA_DB-XLB_ecd1.m
eth Date : 13-Nov-2001 12:02 mm Quant Type: ESTD
al Date : 12-NOV-2001 20:59 Cal File: 010f1001.d
ls bottle: 9 Calibration Sample, Level: 4
il Factor: 1.00000
integrator: Falcon Compound Sublist: AR1254.sub
arget Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
15 Aroclor-1254					CAS #: 11097-69-1		
10.014	10.015	-0.001	143422952	1000.00	919	80.00- 120.00	100.00
10.412	10.414	-0.002	162902275	1000.00	982	88.06- 128.06	113.58
11.023	11.025	-0.002	224675042	1000.00	965	131.95- 171.95	156.65
11.536	11.537	-0.001	181165766	1000.00	1000	101.95- 141.95	126.32
11.761	11.761	0.000	99808833	1000.00	977	48.61- 88.61	69.59
Average of Peak Amounts =					969		
$ 1 4cmx					CAS #: 877-09-8		
6.319	6.319	0.000	347067208	100.000	102	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.081	15.082	-0.001	228532450	100.000	101	80.00- 120.00	100.00

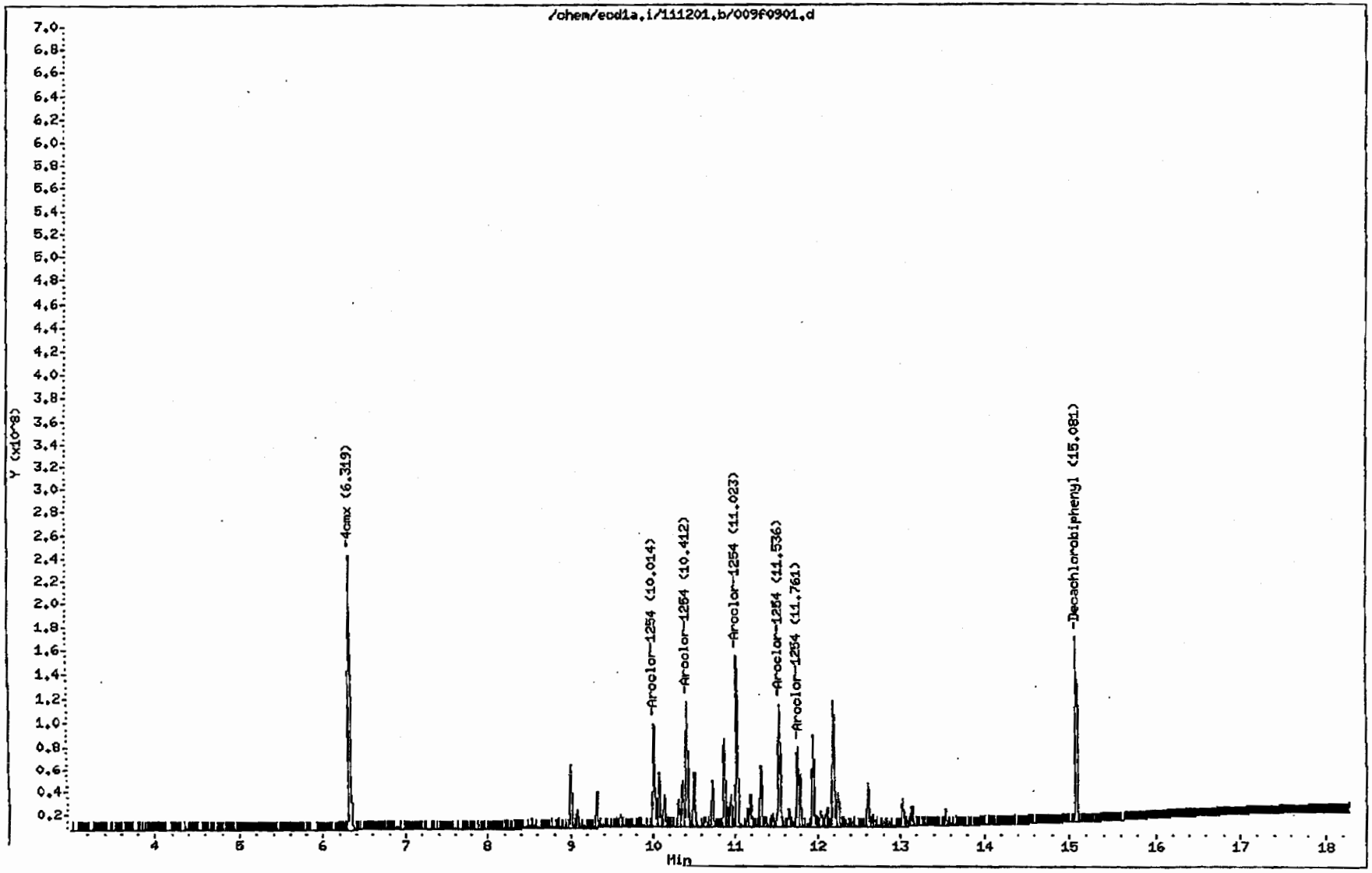
JC 11/15/01

Data File: /chem/eodia.i/111201.b/009f0901.d
Date : 12-NOV-2001 20:37
Client ID: AR125404
Sample Info: IPW011112-06 544

Column phase: DB-XLB

Instrument: eodia.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

.ta file : /chem/ecd1a.i/111201.b/010b1001.d
.b Smp Id: PI011106-01 545 Client Smp ID: AR125405
ıj Date : 12-NOV-2001 20:59
)erator : mm Inst ID: ecd1a.i
ıp Info : |PI011106-01 545
.sc Info :
)mment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
ethod : /chem/ecd1a.i/111201.b/PESTB_DB-17MS_ecd1.m
eth Date : 13-Nov-2001 12:02 mm Quant Type: ESTD
al Date : 12-NOV-2001 20:59 Cal File: 010b1001.d
ls bottle: 10 Calibration Sample, Level: 5
il Factor: 1.00000
ntegrator: Falcon Compound Sublist: AR1254.sub
arget Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
15 Aroclor-1254					CAS #: 11097-69-1		
10.614	10.616	-0.002	225811714	4000.00	3220	80.00- 120.00	100.00
10.722	10.723	-0.001	91747519	4000.00	3520	17.30- 57.30	40.63
11.147	11.150	-0.003	76040948	4000.00	3640	10.46- 50.46	33.67
11.274	11.275	-0.001	155660411	4000.00	3610	42.60- 82.60	68.93
11.694	11.696	-0.002	288387890	4000.00	3340	107.25- 147.25	127.71
Average of Peak Amounts =				3.46e+03			
$ 1 4cmx					CAS #: 877-09-8		
6.177	6.177	0.000	470149290	200.000	393	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.389	15.389	0.000	311220735	200.000	411	80.00- 120.00	100.00

JC 11/15/01

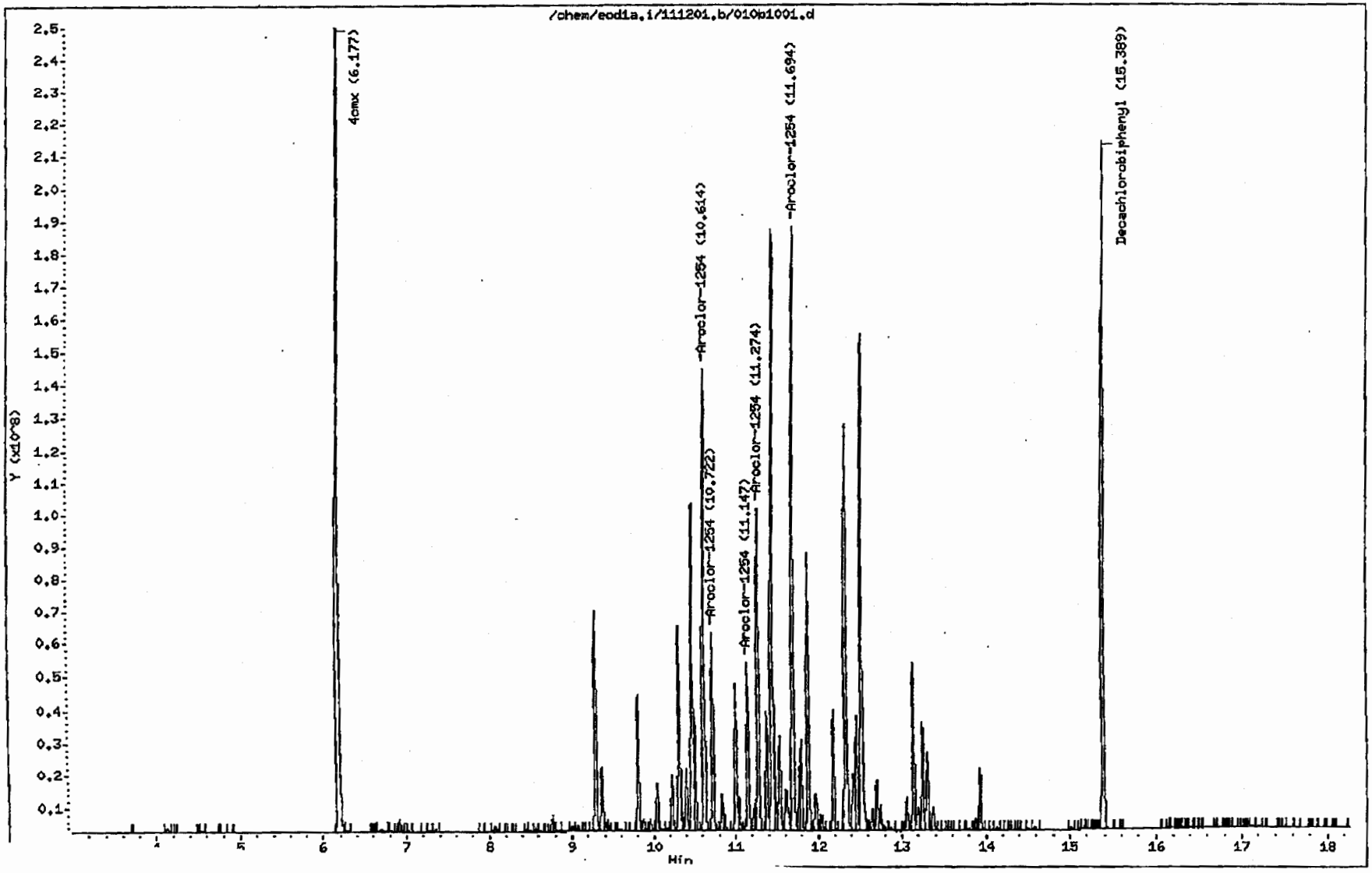
648

Data File: /chem/eod1a.i/111201.b/010b1001.d
Date : 12-NOV-2001 20:59
Client ID: AR125405
Sample Info: IPI011106-01 545

Column phase: DB-17MS

Instrument: eod1a.i

Operator: mm
Column diameter: 0.25



ata File: /chem/ecd1a.i/111201.b/010f1001.d
eport Date: 13-Nov-2001 12:14

General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

ata file : /chem/ecd1a.i/111201.b/010f1001.d
ab Smp Id: PI011106-01 545 Client Smp ID: AR125405
nj Date : 12-NOV-2001 20:59
perator : mm Inst ID: ecd1a.i
mp Info : |PI011106-01 545
isc Info :
omment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
ethod : /chem/ecd1a.i/111201.b/PESTA_DB-XLB_ecd1.m
eth Date : 13-Nov-2001 12:02 mm Quant Type: ESTD
al Date : 12-NOV-2001 20:59 Cal File: 010f1001.d
ls bottle: 10 Calibration Sample, Level: 5
il Factor: 1.00000
ntegrator: Falcon Compound Sublist: AR1254.sub
arget Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
15 Aroclor-1254					CAS #: 11097-69-1		
10.016	10.015	0.001	503295660	4000.00	3230	80.00- 120.00	100.00
10.414	10.414	0.000	563663905	4000.00	3400	88.06- 128.06	111.99
11.024	11.025	-0.001	780724776	4000.00	3350	131.95- 171.95	155.12
11.534	11.537	-0.003	650164723	4000.00	3590	101.95- 141.95	129.18
11.759	11.761	-0.002	366457211	4000.00	3590	48.61- 88.61	72.81
Average of Peak Amounts =				3.43e+03			
$ 1 4cmx					CAS #: 877-09-8		
6.319	6.319	0.000	1233710437	200.000	364	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.083	15.082	0.001	868137391	200.000	383	80.00- 120.00	100.00

JC 11/15/01

Data File: /chem/ecd1a.i/111201.b/010f1001.d

Date : 12-NOV-2001 20:59

Client ID: AR125405

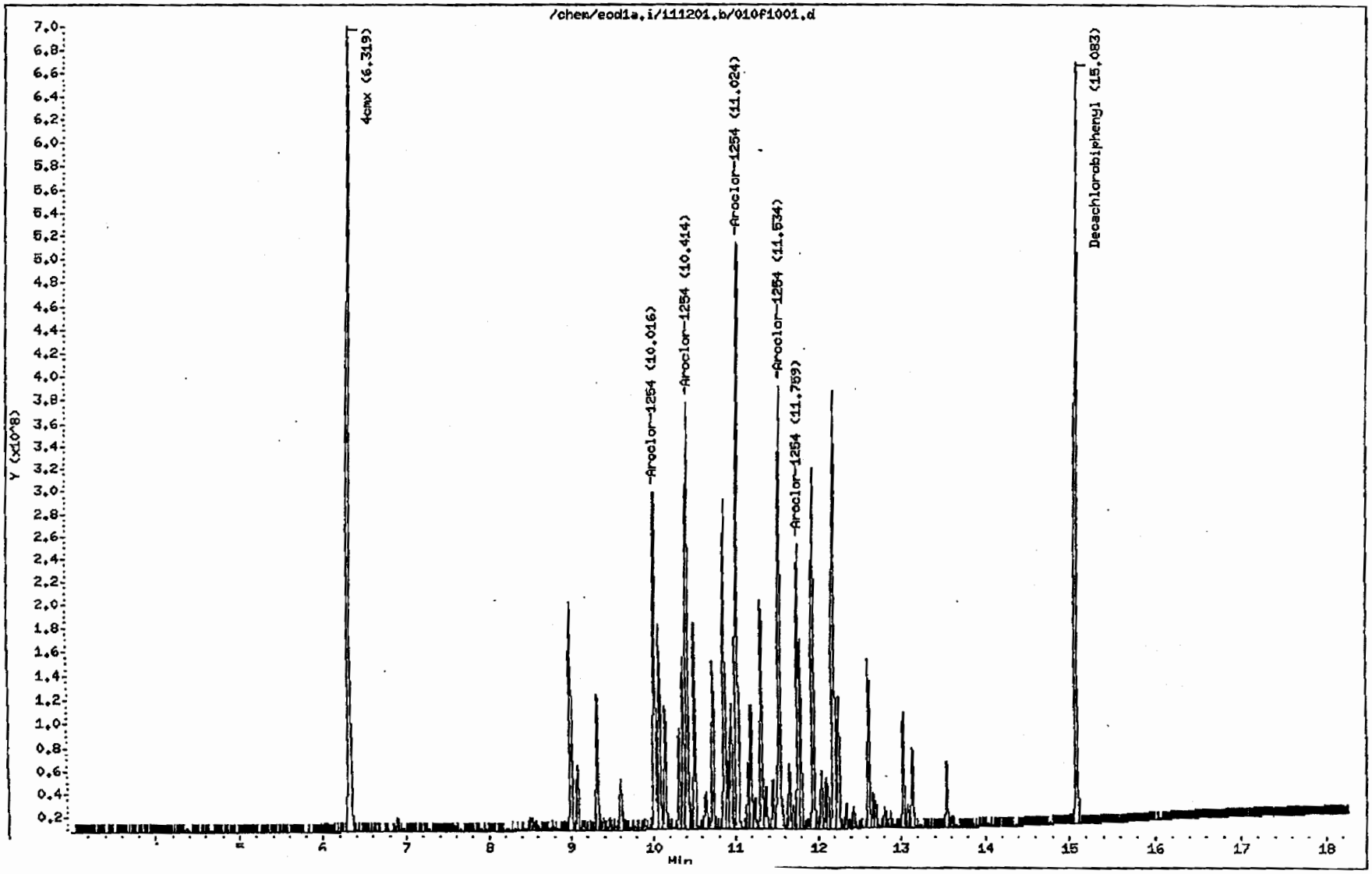
Sample Info: IPI011106-01 545

Column phase: DB-XLB

Instrument: ecd1a.i

Operator: mm

Column diameter: 0.25



FORM 7
PESTICIDE CONTINUING CALIBRATION CHECK

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Instrument ID: ECD1A Calibration Date: 11/17/01 Time: 0846

Lab File ID: 002F0201 Init. Calib. Date(s): 11/02/01 11/02/01

Heated Purge: (Y/N) N Init. Calib. Times: 1130 1300

GC Column: DB-XLB ID: 0.25 (mm)

COMPOUND	SAMPLE AMOUNT	CAL100 AMOUNT	CURVE	%D	MAX %d
Aroclor-1016	459	500	AVRG	-8.2	15.0
Aroclor-1260	436	500	AVRG	-12.8	15.0
4cmx	189	200	AVRG	-5.5	15.0
Decachlorobiphenyl	211	200	AVRG	5.5	15.0

FORM VII PEST

FORM 7
PESTICIDE CONTINUING CALIBRATION CHECK

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Instrument ID: ECD1A Calibration Date: 11/17/01 Time: 0846

Lab File ID: 002B0201 Init. Calib. Date(s): 11/02/01 11/02/01

Heated Purge: (Y/N) N Init. Calib. Times: 1130 1300

GC Column: DB-17MS ID: 0.25 (mm)

COMPOUND	SAMPLE AMOUNT	CAL100 AMOUNT	CURVE	%D	MAX %d	
Aroclor-1016	533	500	AVRG	6.6	15.0	
Aroclor-1260	513	500	AVRG	2.6	15.0	
4cmx	210	200	AVRG	5.0	15.0	
Decachlorobiphenyl	263	200	AVRG	31.5	15.0	<-

FORM VII PEST

FORM 7
PESTICIDE CONTINUING CALIBRATION CHECK

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Instrument ID: ECD1A Calibration Date: 11/17/01 Time: 2235

Lab File ID: 039F3901 Init. Calib. Date(s): 11/02/01 11/02/01

Heated Purge: (Y/N) N Init. Calib. Times: 1130 1300

GC Column: DB-XLB ID: 0.25 (mm)

COMPOUND	SAMPLE AMOUNT	CAL100 AMOUNT	CURVE	%D	MAX %d
Aroclor-1016	469	500	AVRG	-6.2	15.0
Aroclor-1260	462	500	AVRG	-7.6	15.0
4cmx	193	200	AVRG	-3.5	15.0
Decachlorobiphenyl	218	200	AVRG	9.0	15.0

FORM VII PEST

FORM 7
PESTICIDE CONTINUING CALIBRATION CHECK

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Instrument ID: ECD1A Calibration Date: 11/17/01 Time: 2235

Lab File ID: 039B3901 Init. Calib. Date(s): 11/02/01 11/02/01

Heated Purge: (Y/N) N Init. Calib. Times: 1130 1300

GC Column: DB-17MS ID: 0.25 (mm)

COMPOUND	SAMPLE AMOUNT	CAL100 AMOUNT	CURVE	%D	MAX %d	
Aroclor-1016	562	500	AVRG	12.4	15.0	
Aroclor-1260	543	500	AVRG	8.6	15.0	
4cmx	224	200	AVRG	12.0	15.0	
Decachlorobiphenyl	277	200	AVRG	38.5	15.0	<-

FORM VII PEST

FORM 7
PESTICIDE CONTINUING CALIBRATION CHECK

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Instrument ID: ECD1A Calibration Date: 11/18/01 Time: 0027

Lab File ID: 044F4401 Init. Calib. Date(s): 11/02/01 11/02/01

Heated Purge: (Y/N) N Init. Calib. Times: 1130 1300

GC Column: DB-XLB ID: 0.25 (mm)

COMPOUND	SAMPLE AMOUNT	CAL100 AMOUNT	CURVE	%D	MAX %d	
Aroclor-1016	470	500	AVRG	-6.0	15.0	
Aroclor-1260	368	500	AVRG	-26.4	15.0	<-
4cmx	195	200	AVRG	-2.5	15.0	
Decachlorobiphenyl	197	200	AVRG	-1.5	15.0	

FORM VII PEST

FORM 7
PESTICIDE CONTINUING CALIBRATION CHECK

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Instrument ID: ECD1A Calibration Date: 11/18/01 Time: 0027

Lab File ID: 044B4401 Init. Calib. Date(s): 11/02/01 11/02/01

Heated Purge: (Y/N) N Init. Calib. Times: 1130 1300

GC Column: DB-17MS ID: 0.25 (mm)

COMPOUND	SAMPLE AMOUNT	CAL100 AMOUNT	CURVE	%D	MAX %d	
Aroclor-1016	571	500	AVRG	14.2	15.0	
Aroclor-1260	514	500	AVRG	2.8	15.0	
4cmx	223	200	AVRG	11.5	15.0	
Decachlorobiphenyl	257	200	AVRG	28.5	15.0	<-

FORM VII PEST

FORM 7
PESTICIDE CONTINUING CALIBRATION CHECK

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Instrument ID: ECD1A Calibration Date: 11/19/01 Time: 1523

Lab File ID: 002F0201 Init. Calib. Date(s): 11/02/01 11/12/01

Heated Purge: (Y/N) N Init. Calib. Times: 1130 2059

GC Column: DB-XLB ID: 0.25 (mm)

COMPOUND	SAMPLE AMOUNT	CAL100 AMOUNT	CURVE	%D	MAX %d
Aroclor-1016	504	500	AVRG	0.8	15.0
Aroclor-1260	508	500	AVRG	1.6	15.0
4cmx	183	200	AVRG	-8.5	15.0
Decachlorobiphenyl	186	200	AVRG	-7.0	15.0

FORM VII PEST

FORM 7
PESTICIDE CONTINUING CALIBRATION CHECK

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Instrument ID: ECD1A Calibration Date: 11/19/01 Time: 1523

Lab File ID: 002B0201 Init. Calib. Date(s): 11/02/01 11/12/01

Heated Purge: (Y/N) N Init. Calib. Times: 1130 2059

GC Column: DB-17MS ID: 0.25 (mm)

COMPOUND	SAMPLE AMOUNT	CAL100 AMOUNT	CURVE	%D	MAX %d
Aroclor-1016	489	500	AVRG	-2.2	15.0
Aroclor-1260	473	500	AVRG	-5.4	15.0
4cmx	204	200	AVRG	2.0	15.0
Decachlorobiphenyl	197	200	AVRG	-1.5	15.0

FORM VII PEST

FORM 7
PESTICIDE CONTINUING CALIBRATION CHECK

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Instrument ID: ECD1A Calibration Date: 11/19/01 Time: 1545

Lab File ID: 003F0301 Init. Calib. Date(s): 11/02/01 11/12/01

Heated Purge: (Y/N) N Init. Calib. Times: 1130 2059

GC Column: DB-XLB ID: 0.25 (mm)

COMPOUND	SAMPLE AMOUNT	CAL100 AMOUNT	CURVE	%D	MAX %d
Aroclor-1254	548	500	AVRG	9.6	15.0
4cmx	182	200	AVRG	-9.0	15.0
Decachlorobiphenyl	182	200	AVRG	-9.0	15.0

FORM VII PEST

FORM 7
PESTICIDE CONTINUING CALIBRATION CHECK

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Instrument ID: ECD1A Calibration Date: 11/19/01 Time: 1545

Lab File ID: 003B0301 Init. Calib. Date(s): 11/02/01 11/12/01

Heated Purge: (Y/N) N Init. Calib. Times: 1130 2059

GC Column: DB-17MS ID: 0.25 (mm)

COMPOUND	SAMPLE AMOUNT	CAL100 AMOUNT	CURVE	%D	MAX %d
Aroclor-1254	452	500	AVRG	-9.6	15.0
4cmx	201	200	AVRG	0.5	15.0
Decachlorobiphenyl	190	200	AVRG	-5.0	15.0

FORM VII PEST

FORM 7
PESTICIDE CONTINUING CALIBRATION CHECK

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Instrument ID: ECD1A Calibration Date: 11/20/01 Time: 0642

Lab File ID: 043F4301 Init. Calib. Date(s): 11/02/01 11/12/01

Heated Purge: (Y/N) N Init. Calib. Times: 1130 2059

GC Column: DB-XLB ID: 0.25 (mm)

COMPOUND	SAMPLE AMOUNT	CAL100 AMOUNT	CURVE	%D	MAX %d
Aroclor-1016	554	500	AVRG	10.8	15.0
Aroclor-1260	538	500	AVRG	7.6	15.0
4cmx	199	200	AVRG	-0.5	15.0
Decachlorobiphenyl	186	200	AVRG	-7.0	15.0

FORM VII PEST

FORM 7
PESTICIDE CONTINUING CALIBRATION CHECK

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Instrument ID: ECD1A Calibration Date: 11/20/01 Time: 0642

Lab File ID: 043B4301 Init. Calib. Date(s): 11/02/01 11/12/01

Heated Purge: (Y/N) N Init. Calib. Times: 1130 2059

GC Column: DB-17MS ID: 0.25 (mm)

COMPOUND	SAMPLE AMOUNT	CAL100 AMOUNT	CURVE	%D	MAX %d
Aroclor-1016	516	500	AVRG	3.2	15.0
Aroclor-1260	503	500	AVRG	0.6	15.0
4cmx	215	200	AVRG	7.5	15.0
Decachlorobiphenyl	206	200	AVRG	3.0	15.0

FORM VII PEST

FORM 7
PESTICIDE CONTINUING CALIBRATION CHECK

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Instrument ID: ECD1A Calibration Date: 11/20/01 Time: 0941

Lab File ID: 051F5101 Init. Calib. Date(s): 11/02/01 11/12/01

Heated Purge: (Y/N) N Init. Calib. Times: 1130 2059

GC Column: DB-XLB ID: 0.25 (mm)

COMPOUND	SAMPLE AMOUNT	CAL100 AMOUNT	CURVE	%D	MAX %d	
Aroclor-1016	578	500	AVRG	15.6	15.0	<-
Aroclor-1260	533	500	AVRG	6.6	15.0	
4cmx	212	200	AVRG	6.0	15.0	
Decachlorobiphenyl	179	200	AVRG	-10.5	15.0	

FORM VII PEST

FORM 7
PESTICIDE CONTINUING CALIBRATION CHECK

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Instrument ID: ECD1A Calibration Date: 11/20/01 Time: 0941

Lab File ID: 051B5101 Init. Calib. Date(s): 11/02/01 11/12/01

Heated Purge: (Y/N) N Init. Calib. Times: 1130 2059

GC Column: DB-17MS ID: 0.25 (mm)

COMPOUND	SAMPLE AMOUNT	CAL100 AMOUNT	CURVE	%D	MAX %d
Aroclor-1016	548	500	AVRG	9.6	15.0
Aroclor-1260	519	500	AVRG	3.8	15.0
4cmx	228	200	AVRG	14.0	15.0
Decachlorobiphenyl	204	200	AVRG	2.0	15.0

FORM VII PEST

FORM 7
PESTICIDE CONTINUING CALIBRATION CHECK

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Instrument ID: ECD1A Calibration Date: 11/20/01 Time: 1005

Lab File ID: 052F5201 Init. Calib. Date(s): 11/02/01 11/12/01

Heated Purge: (Y/N) N Init. Calib. Times: 1130 2059

GC Column: DB-XLB ID: 0.25 (mm)

COMPOUND	SAMPLE AMOUNT	CAL100 AMOUNT	CURVE	%D	MAX %d	
Aroclor-1254	536	500	AVRG	7.2	15.0	
4cmx	184	200	AVRG	-8.0	15.0	
Decachlorobiphenyl	166	200	AVRG	-17.5	15.0	<-

FORM VII PEST

FORM 7
PESTICIDE CONTINUING CALIBRATION CHECK

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Instrument ID: ECD1A Calibration Date: 11/20/01 Time: 1005

Lab File ID: 052B5201 Init. Calib. Date(s): 11/02/01 11/12/01

Heated Purge: (Y/N) N Init. Calib. Times: 1130 2059

GC Column: DB-17MS ID: 0.25 (mm)

COMPOUND	SAMPLE AMOUNT	CAL100 AMOUNT	CURVE	%D	MAX %d
Aroclor-1254	442	500	AVRG	-11.6	15.0
4cmx	196	200	AVRG	-2.0	15.0
Decachlorobiphenyl	178	200	AVRG	-11.0	15.0

FORM VII PEST

FORM 7
PESTICIDE CONTINUING CALIBRATION CHECK

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Instrument ID: ECD1A Calibration Date: 11/20/01 Time: 1157

Lab File ID: 057F5701 Init. Calib. Date(s): 11/02/01 11/12/01

Heated Purge: (Y/N) N Init. Calib. Times: 1130 2059

GC Column: DB-XLB ID: 0.25 (mm)

COMPOUND	SAMPLE AMOUNT	CAL100 AMOUNT	CURVE	%D	MAX %d	
Aroclor-1016	585	500	AVRG	17.0	15.0	<-
Aroclor-1260	562	500	AVRG	12.4	15.0	
4cmx	214	200	AVRG	7.0	15.0	
Decachlorobiphenyl	193	200	AVRG	-3.5	15.0	

FORM VII PEST

FORM 7
PESTICIDE CONTINUING CALIBRATION CHECK

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Instrument ID: ECD1A Calibration Date: 11/20/01 Time: 1157

Lab File ID: 057B5701 Init. Calib. Date(s): 11/02/01 11/12/01

Heated Purge: (Y/N) N Init. Calib. Times: 1130 2059

GC Column: DB-17MS ID: 0.25 (mm)

COMPOUND	SAMPLE AMOUNT	CAL100 AMOUNT	CURVE	%D	MAX %d	
Aroclor-1016	562	500	AVRG	12.4	15.0	
Aroclor-1260	541	500	AVRG	8.2	15.0	
4cmx	233	200	AVRG	16.5	15.0	<-
Decachlorobiphenyl	217	200	AVRG	8.5	15.0	

FORM VII PEST

FORM 7
PESTICIDE CONTINUING CALIBRATION CHECK

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Instrument ID: ECD1A Calibration Date: 11/20/01 Time: 1220

Lab File ID: 058F5801 Init. Calib. Date(s): 11/02/01 11/12/01

Heated Purge: (Y/N) N Init. Calib. Times: 1130 2059

GC Column: DB-XLB ID: 0.25 (mm)

COMPOUND	SAMPLE AMOUNT	CAL100 AMOUNT	CURVE	%D	MAX %d
Aroclor-1254	548	500	AVRG	9.6	15.0
4cmx	185	200	AVRG	-7.5	15.0
Decachlorobiphenyl	173	200	AVRG	-13.5	15.0

FORM VII PEST

FORM 7
PESTICIDE CONTINUING CALIBRATION CHECK

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Instrument ID: ECD1A Calibration Date: 11/20/01 Time: 1220

Lab File ID: 058B5801 Init. Calib. Date(s): 11/02/01 11/12/01

Heated Purge: (Y/N) N Init. Calib. Times: 1130 2059

GC Column: DB-17MS ID: 0.25 (mm)

COMPOUND	SAMPLE AMOUNT	CAL100 AMOUNT	CURVE	%D	MAX %d
Aroclor-1254	456	500	AVRG	-8.8	15.0
4cmx	200	200	AVRG	0.0	15.0
Decachlorobiphenyl	186	200	AVRG	-7.0	15.0

FORM VII PEST

General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

)ata file : /chem/ecd1a.i/111701.b/002b0201.d
.ab Smp Id: PW011113-01 601 Client Smp ID: AR166001
:nj Date : 17-NOV-2001 08:46
)perator : mm Inst ID: ecd1a.i
3mp Info : |PW011113-01 601
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111701.b/PESTB_DB-17MS_ecd1.m
Meth Date : 18-Nov-2001 11:20 mm Quant Type: ESTD
Cal Date : 02-NOV-2001 15:14 Cal File: 016b1601.d
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1660.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
3 Aroclor-1016					CAS #: 12674-11-2		
7.337	7.337	0.000	10874250	4000.00	537	80.00- 120.00	100.00
8.053	8.053	0.000	27139586	4000.00	552	228.54- 268.54	249.58
8.435	8.435	0.000	8135492	4000.00	553	54.45- 94.45	74.81
8.998	8.998	0.000	16143108	4000.00	510	127.66- 167.66	148.45
9.798	9.798	0.000	17732662	4000.00	511	141.86- 181.86	163.07
Average of Peak Amounts =					533		
21 Aroclor-1260					CAS #: 11096-82-5		
11.686	11.686	0.000	33480440	4000.00	500	80.00- 120.00	100.00
11.873	11.873	0.000	38144058	4000.00	507	93.56- 133.56	113.93
13.054	13.054	0.000	23904618	4000.00	505	48.34- 88.34	71.40
13.302	13.302	0.000	66400732	4000.00	531	168.14- 208.14	198.33
13.793	13.793	0.000	11230293	4000.00	521	11.02- 51.02	33.54
Average of Peak Amounts =					513		
$ 1 4CMX					CAS #: 877-09-8		
6.163	6.163	0.000	251159090	0.00000	210	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.382	15.382	0.000	198718161	0.00000	263	80.00- 120.00	100.00

mar 11/21/01

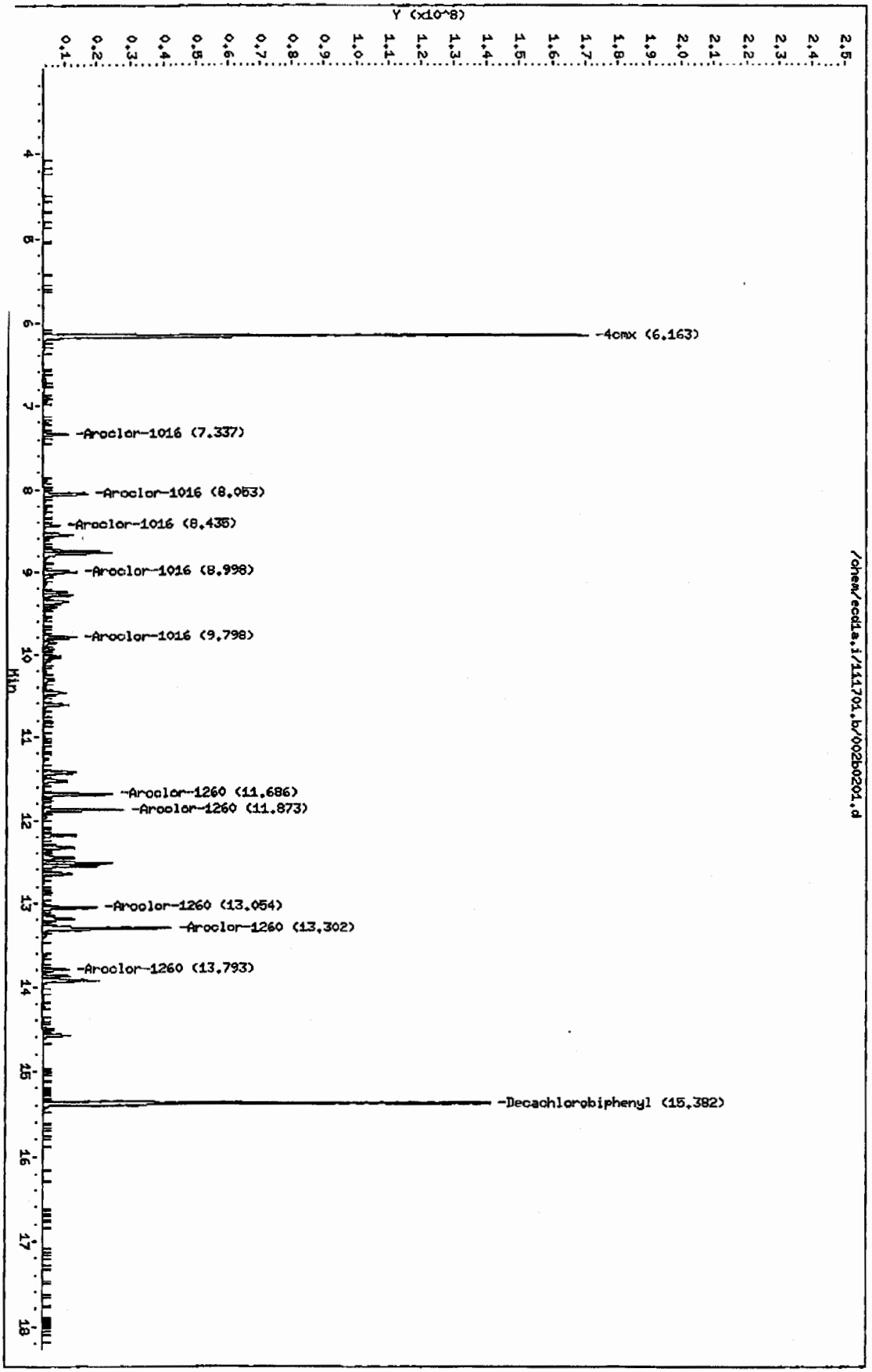
11/19/01

672

Data File: /chem/ecdia.i/111701.b/002b0201.d
Date : 17-NOV-2001 08:46
Client ID: AR166001
Sample Info: IPW011113-01 601

Column phase: DB-17MS

Instrument: ecdia.i
Operator: mm
Column diameter: 0.25



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DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111701.b/002f0201.d
Lab Smp Id: PW011113-01 601 Client Smp ID: AR166001
Inj Date : 17-NOV-2001 08:46
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011113-01 601
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111701.b/PESTA_DB-XLB_ecd1.m
Meth Date : 18-Nov-2001 11:20 mm Quant Type: ESTD
Cal Date : 17-NOV-2001 11:23 Cal File: 009f0901.d
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1660.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
3 Aroclor-1016					CAS #: 12674-11-2		
6.946	6.946	0.000	28877756	4000.00	458	80.00- 120.00	100.00
7.586	7.586	0.000	47598733	4000.00	471	144.37- 184.37	164.83
8.990	8.990	0.000	38536540	4000.00	451	111.71- 151.71	133.45
9.072	9.072	0.000	43118668	4000.00	460	127.88- 167.88	149.31
9.308	9.308	0.000	41916008	4000.00	459	122.09- 162.09	145.15
Average of Peak Amounts =					459		
21 Aroclor-1260					CAS #: 11096-82-5		
12.340	12.340	0.000	69445563	4000.00	456	80.00- 120.00	100.00
12.427	12.427	0.000	36968382	4000.00	430	33.73- 73.73	53.23
12.803	12.803	0.000	32937391	4000.00	413	27.06- 67.06	47.43
13.136	13.136	0.000	157093199	4000.00	446	204.57- 244.57	226.21
13.545	13.545	0.000	97021083	4000.00	434	112.19- 152.19	139.71
Average of Peak Amounts =					436		
$ 1 4cmx					CAS #: 877-09-8		
6.308	6.308	0.000	640754597	0.00000	189	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.083	15.083	0.000	479221427	0.00000	211	80.00- 120.00	100.00

mm 11/21/01

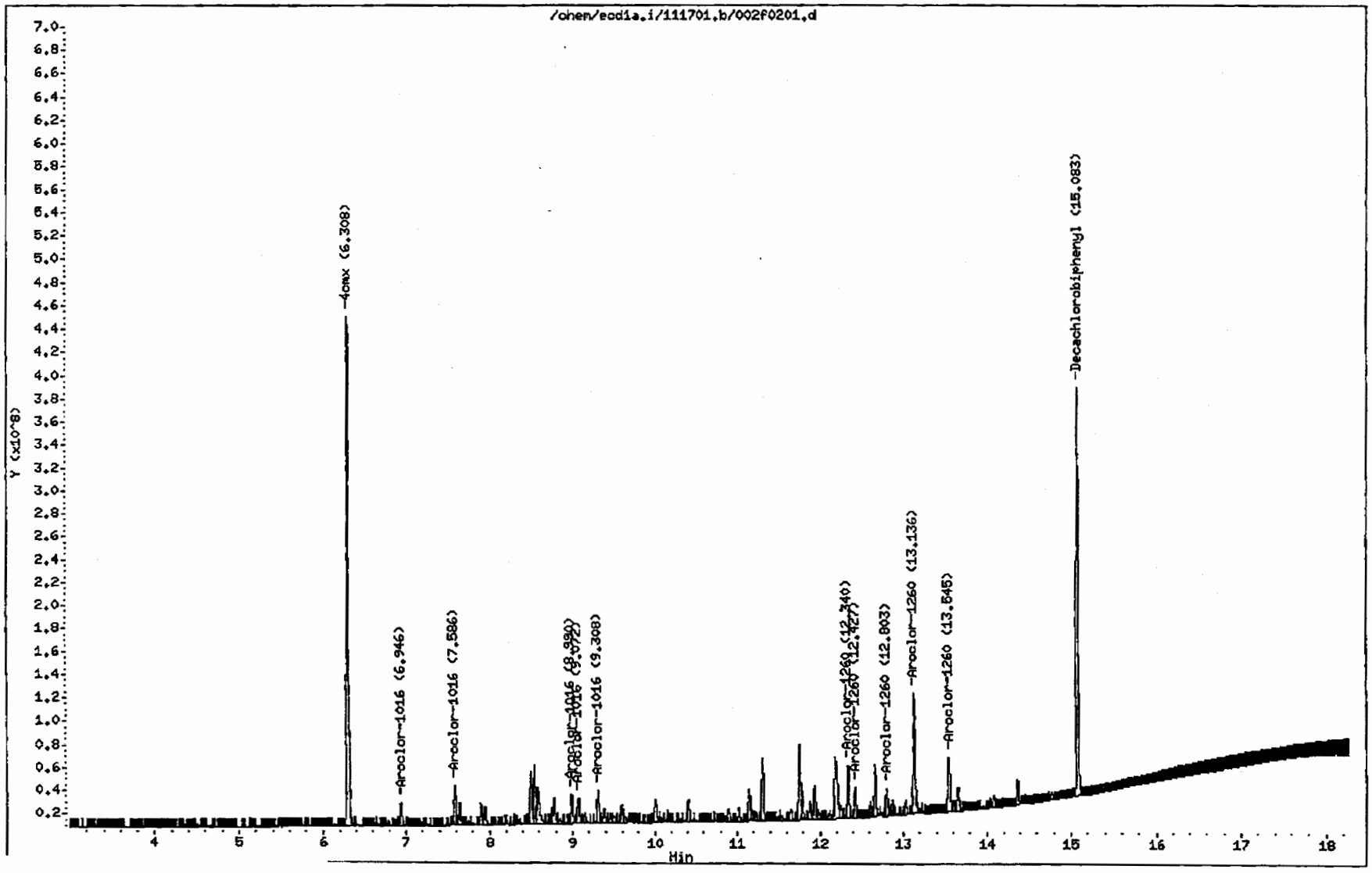
674

Data File: /chem/ecdia.i/111701.b/002f0201.d
Date : 17-NOV-2001 08:46
Client ID: AR166001
Sample Info: IPW011113-01 601

Column phase: DB-XLB

Instrument: ecdia.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111701.b/003b0301.d
Lab Smp Id: PW011022-02 541 Client Smp ID: AR125401
Inj Date : 17-NOV-2001 09:08
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011022-02 541
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111701.b/PESTB_DB-17MS_ecd1.m
Meth Date : 18-Nov-2001 11:20 mm Quant Type: ESTD
Cal Date : 02-NOV-2001 15:14 Cal File: 016b1601.d
Als bottle: 3 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1254.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	ON-COL (ug/L)	TARGET RANGE	RATIO
15 Aroclor-1254					CAS #: 11097-69-1		
10.606	10.606	0.000	34273960	4000.00	488	80.00- 120.00	100.00
10.714	10.714	0.000	12121727	4000.00	465	15.37- 55.37	35.37
11.140	11.140	0.000	9811316	4000.00	470	8.63- 48.63	28.63
11.266	11.266	0.000	20989321	4000.00	487	41.24- 81.24	61.24
11.687	11.687	0.000	43559551	4000.00	504	107.09- 147.09	127.09
Average of Peak Amounts =					483		
$ 1 4cmx					CAS #: 877-09-8		
6.164	6.163	0.001	244799703	0.00000	205	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.380	15.382	-0.002	193604747	0.00000	256	80.00- 120.00	100.00

676

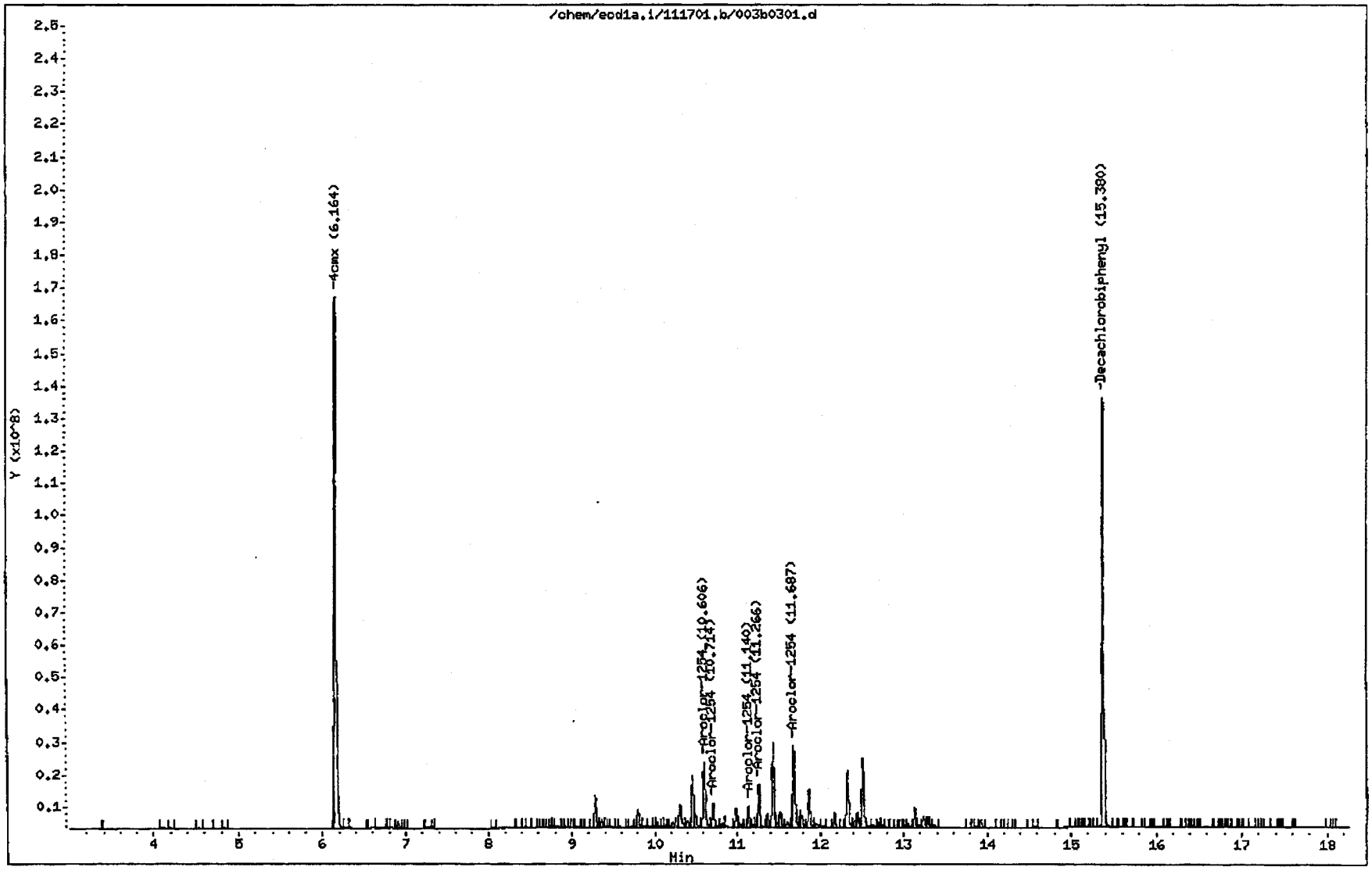
677

Data File: /chem/ecd1a.i/111701.b/003b0301.d
Date : 17-NOV-2001 09:08
Client ID: AR125401
Sample Info: IPW011022-02 541

Column phase: DB-17MS

Instrument: ecd1a.i

Operator: mm
Column diameter: 0.25



ata File: /chem/ecd1a.i/111701.b/003f0301.d
.eport Date: 19-Nov-2001 11:09

General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

)ata file : /chem/ecd1a.i/111701.b/003f0301.d
.ab Smp Id: PW011022-02 541 Client Smp ID: AR125401
:nj Date : 17-NOV-2001 09:08
)perator : mm Inst ID: ecd1a.i
3mp Info : |PW011022-02 541
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111701.b/PESTA_DB-XLB_ecd1.m
Meth Date : 18-Nov-2001 11:20 mm Quant Type: ESTD
Cal Date : 17-NOV-2001 11:23 Cal File: 009f0901.d
Als bottle: 3 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1254.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
15 Aroclor-1254					CAS #: 11097-69-1		
10.007	10.007	0.000	71898695	4000.00	461	80.00- 120.00	100.00
10.408	10.408	0.000	83274060	4000.00	502	95.82- 135.82	115.82
11.021	11.021	0.000	110751282	4000.00	476	134.04- 174.04	154.04
11.536	11.536	0.000	82501589	4000.00	456	94.75- 134.75	114.75
11.756	11.756	0.000	49656083	4000.00	486	49.06- 89.06	69.06
Average of Peak Amounts =					476		
$ 1 4cmx					CAS #: 877-09-8		
6.307	6.308	-0.001	629458119	0.00000	186	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.081	15.083	-0.002	479646828	0.00000	212	80.00- 120.00	100.00

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Data File: /chem/eod1a.i/111701.b/003f0301.d

Date : 17-NOV-2001 09:08

Client ID: AR125401

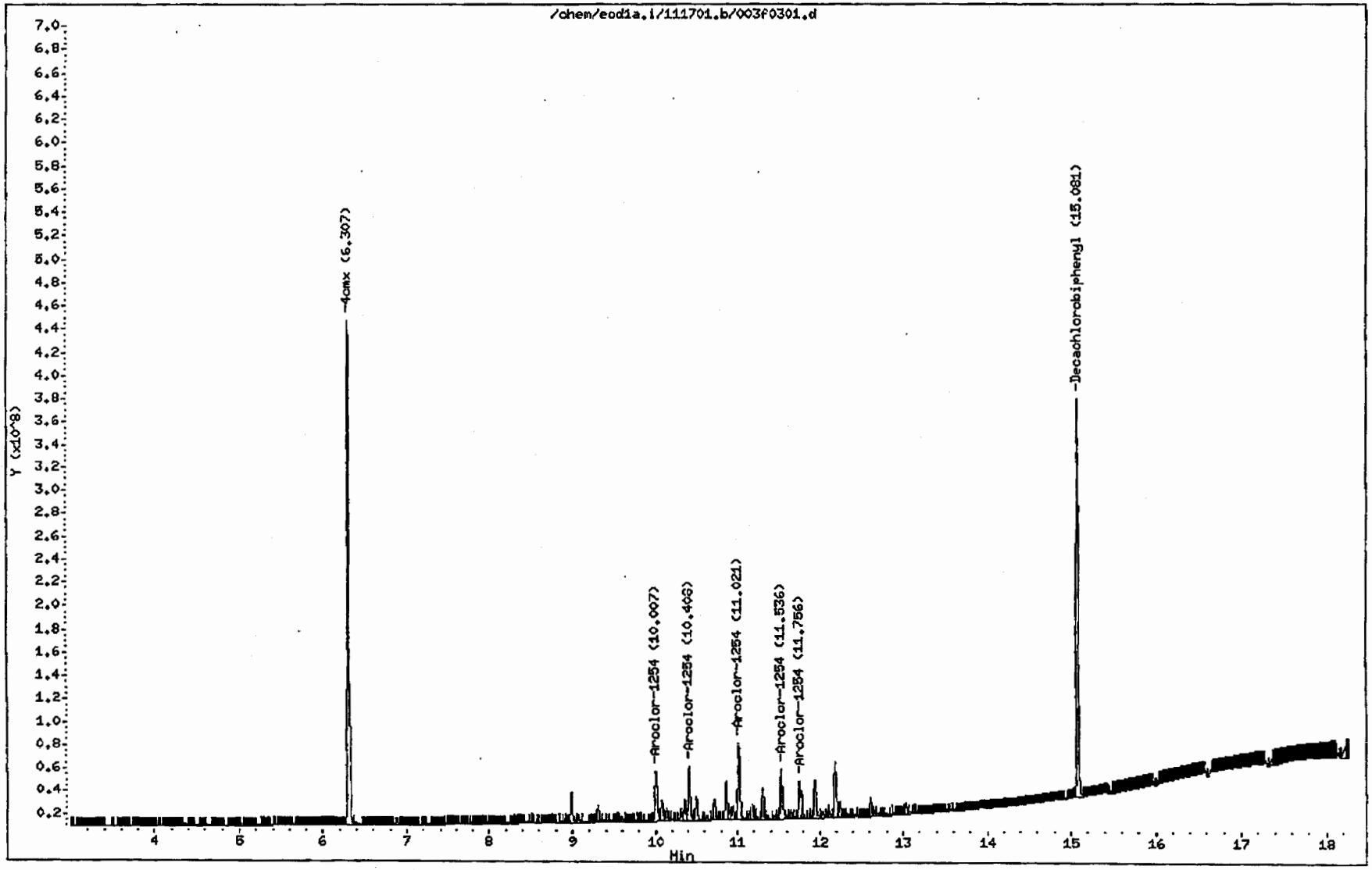
Sample Info: IPW011022-02 541

Column phase: DB-XLB

Instrument: eod1a.i

Operator: mm

Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111701.b/004b0401.d
Lab Smp Id: PW011011-01 481 Client Smp ID: AR124801
Inj Date : 17-NOV-2001 09:31
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011011-01 481
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111701.b/PESTB_DB-17MS_ecd1.m
Meth Date : 20-Nov-2001 19:12 mm Quant Type: ESTD
Cal Date : 17-NOV-2001 11:23 Cal File: 009b0901.d
Als bottle: 4 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1248.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
9 Aroclor-1248					CAS #: 12672-29-6		
8.053	8.053	0.000	10154344	4000.00	569	80.00- 120.00	100.00
9.280	9.280	0.000	20126218	4000.00	597	178.20- 218.20	198.20
9.356	9.356	0.000	18880360	4000.00	588	165.93- 205.93	185.93
9.797	9.797	0.000	24669029	4000.00	585	222.94- 262.94	242.94
10.032	10.032	0.000	14165870	4000.00	576	119.51- 159.51	139.51
Average of Peak Amounts =					583		
$ 1 4cmx					CAS #: 877-09-8		
6.164	6.163	0.001	265441347	0.00000	222	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.383	15.382	0.001	211775100	0.00000	280	80.00- 120.00	100.00

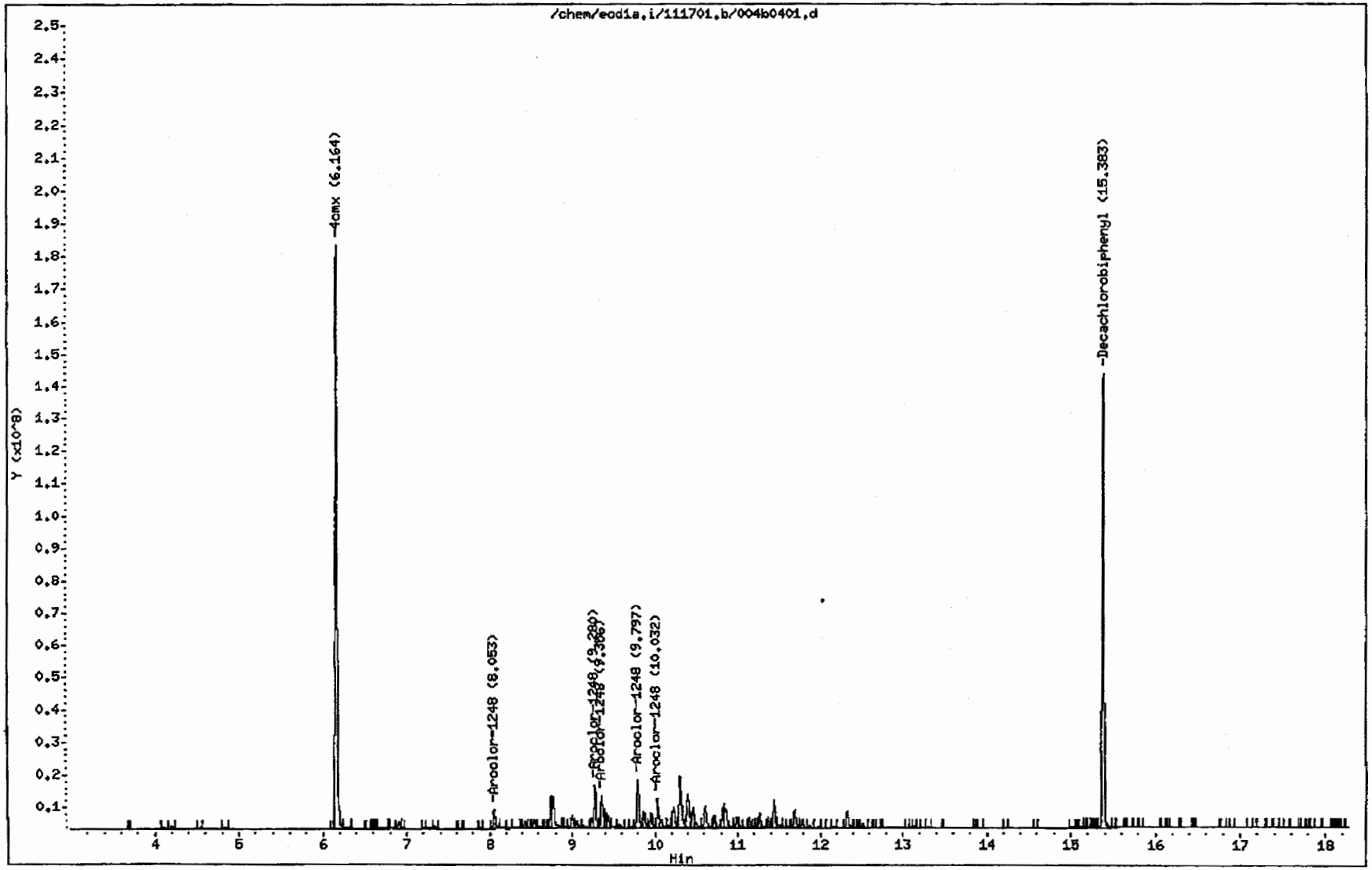
JC 1/8/02

Data File: /chem/eodia.i/111701.b/004b0401.d
Date : 17-NOV-2001 09:31
Client ID: AR124801
Sample Info: IPW011011-01 481

Column phase: DB-17MS

Instrument: eodia.i

Operator: mn
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111701.b/004f0401.d
Lab Smp Id: PW011011-01 481 Client Smp ID: AR124801
Inj Date : 17-NOV-2001 09:31
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011011-01 481
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111701.b/PESTA_DB-XLB_ecd1.m
Meth Date : 20-Nov-2001 19:12 mm Quant Type: ESTD
Cal Date : 17-NOV-2001 11:23 Cal File: 009f0901.d
Als bottle: 4 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1248.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
9 Aroclor-1248					CAS #: 12672-29-6		
8.989	8.989	0.000	56049168	4000.00	507	80.00- 120.00	100.00
9.070	9.070	0.000	54393623	4000.00	517	77.05- 117.05	97.05
9.307	9.307	0.000	59811249	4000.00	501	86.71- 126.71	106.71
10.075	10.075	0.000	72908377	4000.00	494	110.08- 150.08	130.08
10.146	10.146	0.000	75138777	4000.00	548	114.06- 154.06	134.06
Average of Peak Amounts =					514		
$ 1 4cmx					CAS #: 877-09-8		
6.308	6.308	0.000	690614366	0.00000	204	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.081	15.083	-0.002	520683326	0.00000	230	80.00- 120.00	100.00

JC 1/8/02

682

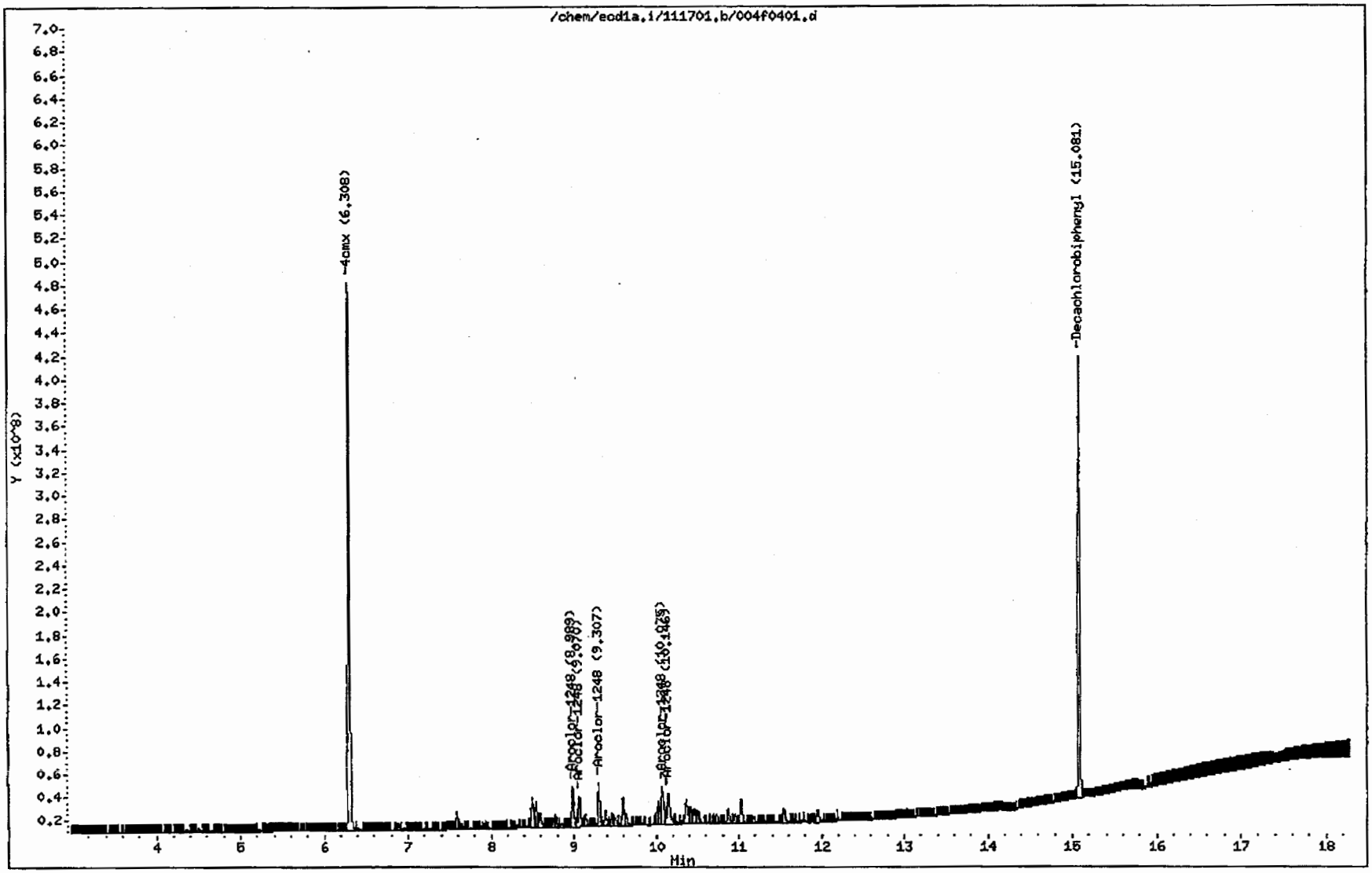
683

Data File: /chem/ecd1a.i/111701.b/004f0401.d
Date : 17-NOV-2001 09:31
Client ID: AR124801
Sample Info: IPW011011-01 481

Column phase: DB-XLB

Instrument: ecd1a.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111701.b/010b1001.d
Lab Smp Id: PW011022-03 421 Client Smp ID: AR1242001
Inj Date : 17-NOV-2001 11:46
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011022-03 421
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111701.b/PESTB_DB-17MS_ecd1.m
Meth Date : 18-Nov-2001 11:20 mm Quant Type: ESTD
Cal Date : 17-NOV-2001 11:23 Cal File: 009b0901.d
Als bottle: 10 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1242.sub
Target Version: 3.50 Sample Matrix: None

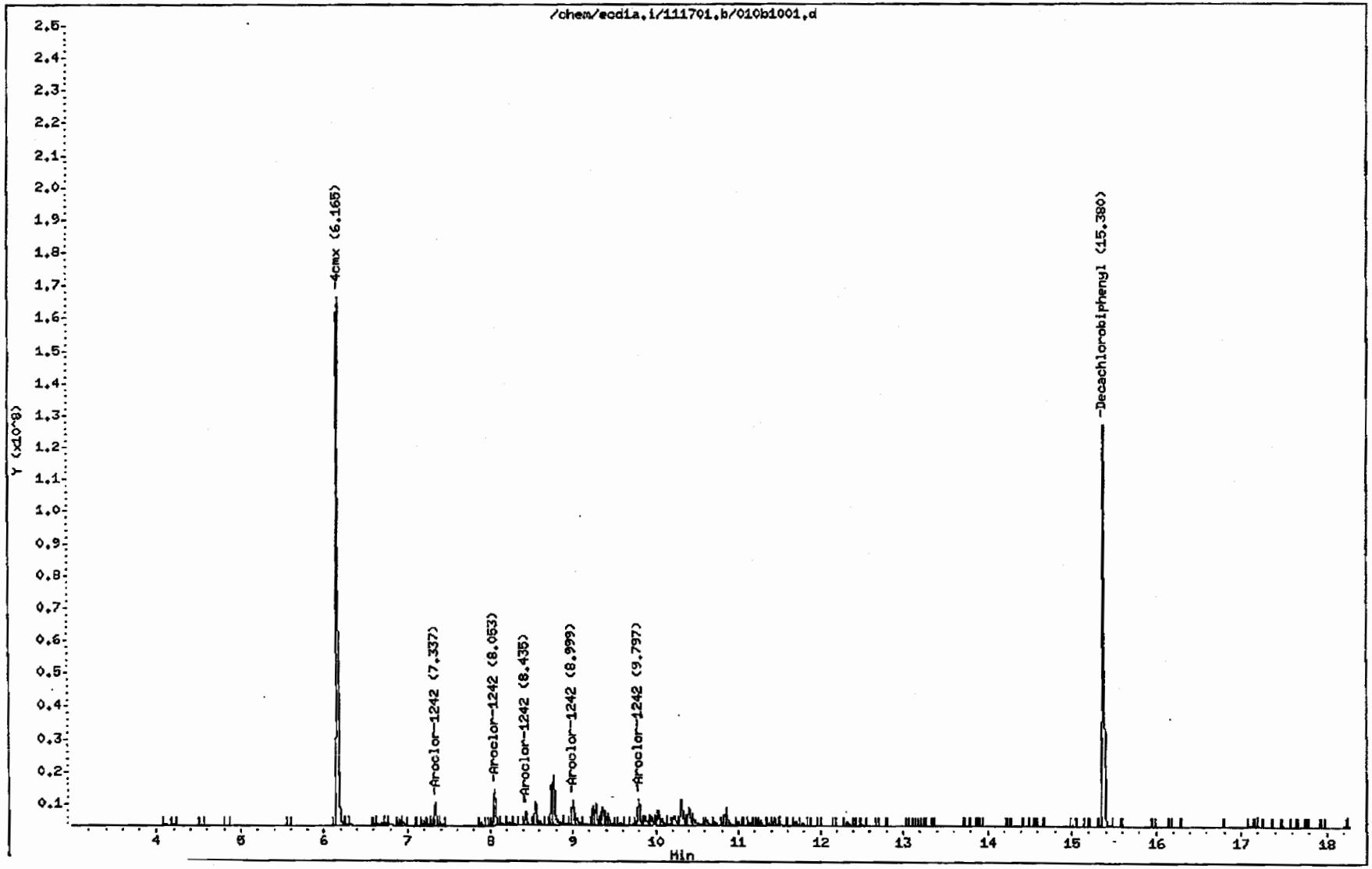
RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
6 Aroclor-1242					CAS #: 53469-21-9		
7.337	7.337	0.000	9767354	4000.00	577	80.00- 120.00	100.00
8.053	8.053	0.000	21274393	4000.00	533	198.35- 238.35	217.81
8.435	8.435	0.000	6422988	4000.00	542	44.19- 84.19	65.76
8.999	8.999	0.000	12526936	4000.00	541	112.55- 152.55	128.25
9.797	9.798	-0.001	13562367	4000.00	480	124.82- 164.82	138.85
Average of Peak Amounts =					535		
$ 1 4cmx					CAS #: 877-09-8		
6.165	6.163	0.002	246985409	0.00000	206	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.380	15.382	-0.002	186553908	0.00000	246	80.00- 120.00	100.00

Data File: /chem/ecdia.i/111701.b/010b1001.d
Date : 17-NOV-2001 11:46
Client ID: AR1242001
Sample Info: IPW011022-03 421

Column phase: DB-17MS

Instrument: ecdia.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

ata file : /chem/ecd1a.i/111701.b/010f1001.d
ab Smp Id: PW011022-03 421 Client Smp ID: AR124201
nj Date : 17-NOV-2001 11:46
perator : mm Inst ID: ecd1a.i
mp Info : |PW011022-03 421
isc Info :
omment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
ethod : /chem/ecd1a.i/111701.b/PESTA_DB-XLB_ecd1.m
eth Date : 18-Nov-2001 11:20 mm Quant Type: ESTD
al Date : 17-NOV-2001 11:23 Cal File: 009f0901.d
ls bottle: 10 Continuing Calibration Sample
il Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1242.sub
arget Version: 3.50 Sample Matrix: None

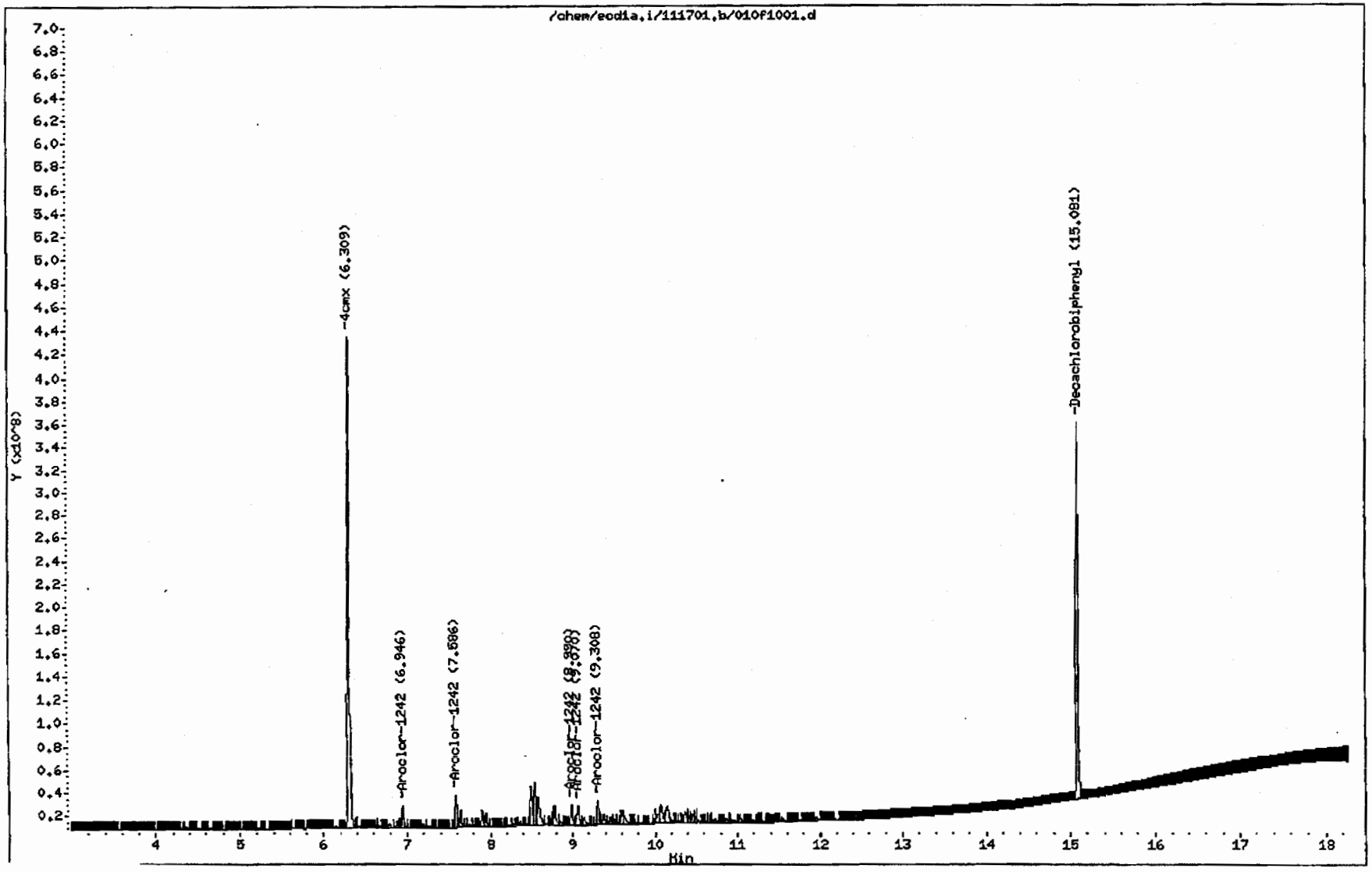
RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
6 Aroclor-1242					CAS #: 53469-21-9		
6.946	6.947	-0.001	26556643	4000.00	589	80.00- 120.00	100.00
7.586	7.586	0.000	37764225	4000.00	532	122.10- 162.10	142.20
8.990	8.989	0.001	28792481	4000.00	508	85.63- 125.63	108.42
9.070	9.070	0.000	32635762	4000.00	509	99.07- 139.07	122.89
9.308	9.308	0.000	32382205	4000.00	529	102.15- 142.15	121.94
Average of Peak Amounts =					534		
$ 1 4cmx					CAS #: 877-09-8		
6.309	6.308	0.001	635285992	0.00000	188	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.081	15.083	-0.002	455471455	0.00000	201	80.00- 120.00	100.00

Data File: /ohem/ecdia.i/111701.b/010f1001.d
Date : 17-NOV-2001 11:46
Client ID: AR124201
Sample Info: IPW011022-03 421

Column phase: DB-XLB

Instrument: ecdia.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111701.b/011b1101.d
Lab Smp Id: PW011003-01 321 Client Smp ID: AR123201
Inj Date : 17-NOV-2001 12:08
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011003-01 321
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111701.b/PESTB_DB-17MS_ecd1.m
Meth Date : 18-Nov-2001 11:20 mm Quant Type: ESTD
Cal Date : 17-NOV-2001 11:23 Cal File: 009b0901.d
Als bottle: 11 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1232.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
4 Aroclor-1232					CAS #: 11141-16-5		
7.336	7.336	0.000	12677860	4000.00	572	80.00- 120.00	100.00
8.053	8.053	0.000	11552457	4000.00	572	71.12- 111.12	91.12
8.434	8.434	0.000	3164923	4000.00	553	4.96- 44.96	24.96
8.998	8.998	0.000	6488125	4000.00	497	31.18- 71.18	51.18
9.796	9.796	0.000	6859423	4000.00	519	34.11- 74.11	54.11
Average of Peak Amounts =					543		
$ 1 4cmx					CAS #: 877-09-8		
6.164	6.163	0.001	255751838	0.00000	214	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.380	15.382	-0.002	200414414	0.00000	265	80.00- 120.00	100.00

11/21/01

688

Data File: /chem/ecdia.i/111701.b/011b1101.d

Date : 17-NOV-2001 12:08

Client ID: AR123201

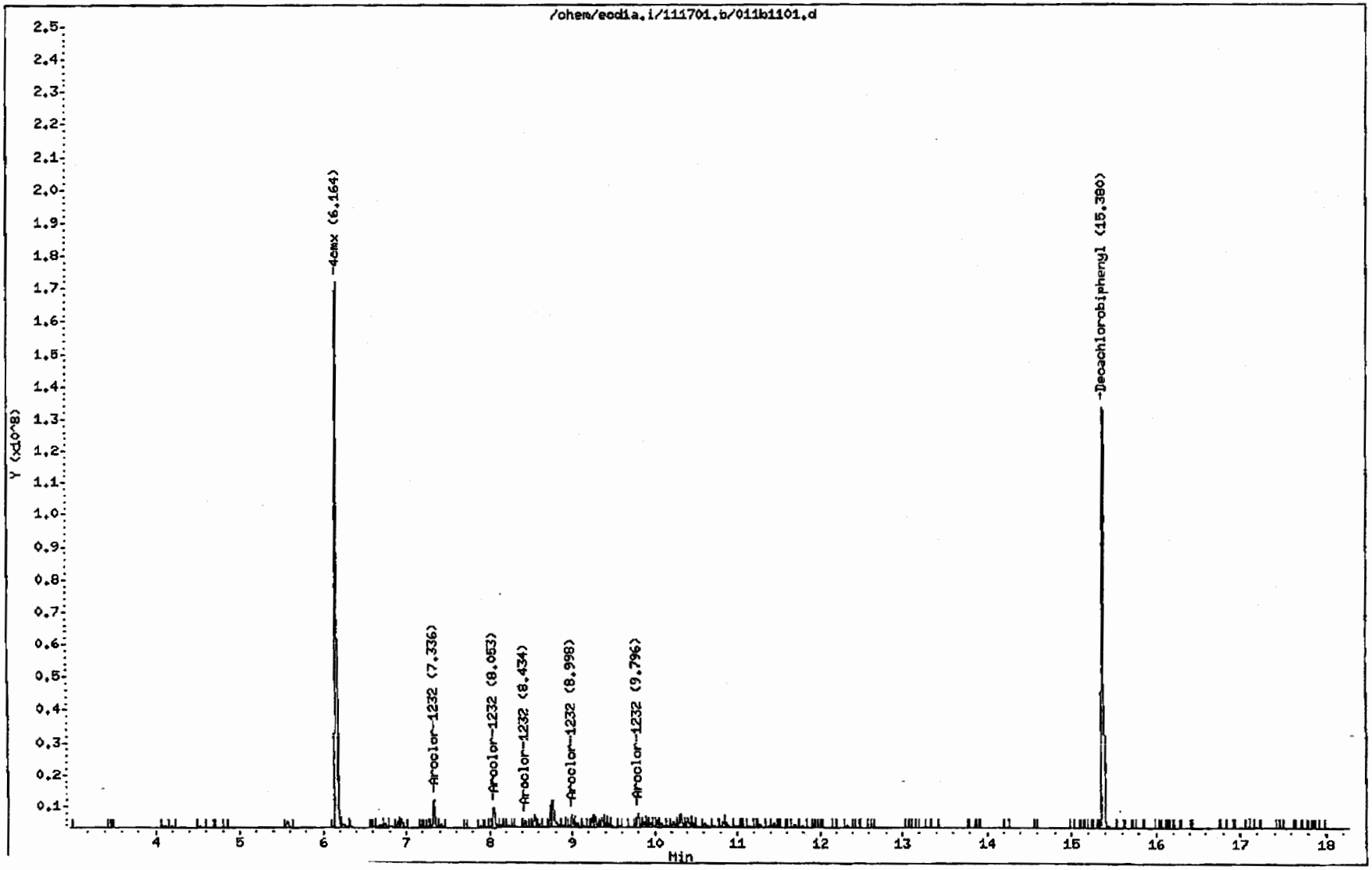
Sample Info: IPW011003-01 321

Column phase: DB-17MS

Instrument: ecdia.i

Operator: mm

Column diameter: 0.25



ata File: /chem/ecd1a.i/111701.b/011f1101.d
eport Date: 19-Nov-2001 11:09

General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111701.b/011f1101.d
Lab Smp Id: PW011003-01 321 Client Smp ID: AR123201
Inj Date : 17-NOV-2001 12:08
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011003-01 321
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111701.b/PESTA_DB-XLB_ecd1.m
Meth Date : 18-Nov-2001 11:20 mm Quant Type: ESTD
Cal Date : 17-NOV-2001 11:23 Cal File: 009f0901.d
Als bottle: 11 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1232.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
4 Aroclor-1232					CAS #: 11141-16-5		
6.946	6.945	0.000	33622435	4000.00	480	80.00- 120.00	100.00
7.585	7.585	0.000	20707542	4000.00	489	41.59- 81.59	61.59
8.989	8.989	0.000	14377140	4000.00	405	22.76- 62.76	42.76
9.070	9.070	0.000	16319206	4000.00	537	28.54- 68.54	48.54
9.308	9.308	0.000	15351159	4000.00	441	25.66- 65.66	45.66
Average of Peak Amounts =					470		
$ 1 4cmx					CAS #: 877-09-8		
6.307	6.308	-0.001	655787342	0.00000	194	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.081	15.083	-0.002	485838027	0.00000	214	80.00- 120.00	100.00

690

Data File: /chem/ecd1a.i/111701.b/011f1101.d

Date : 17-NOV-2001 12:08

Client ID: AR123201

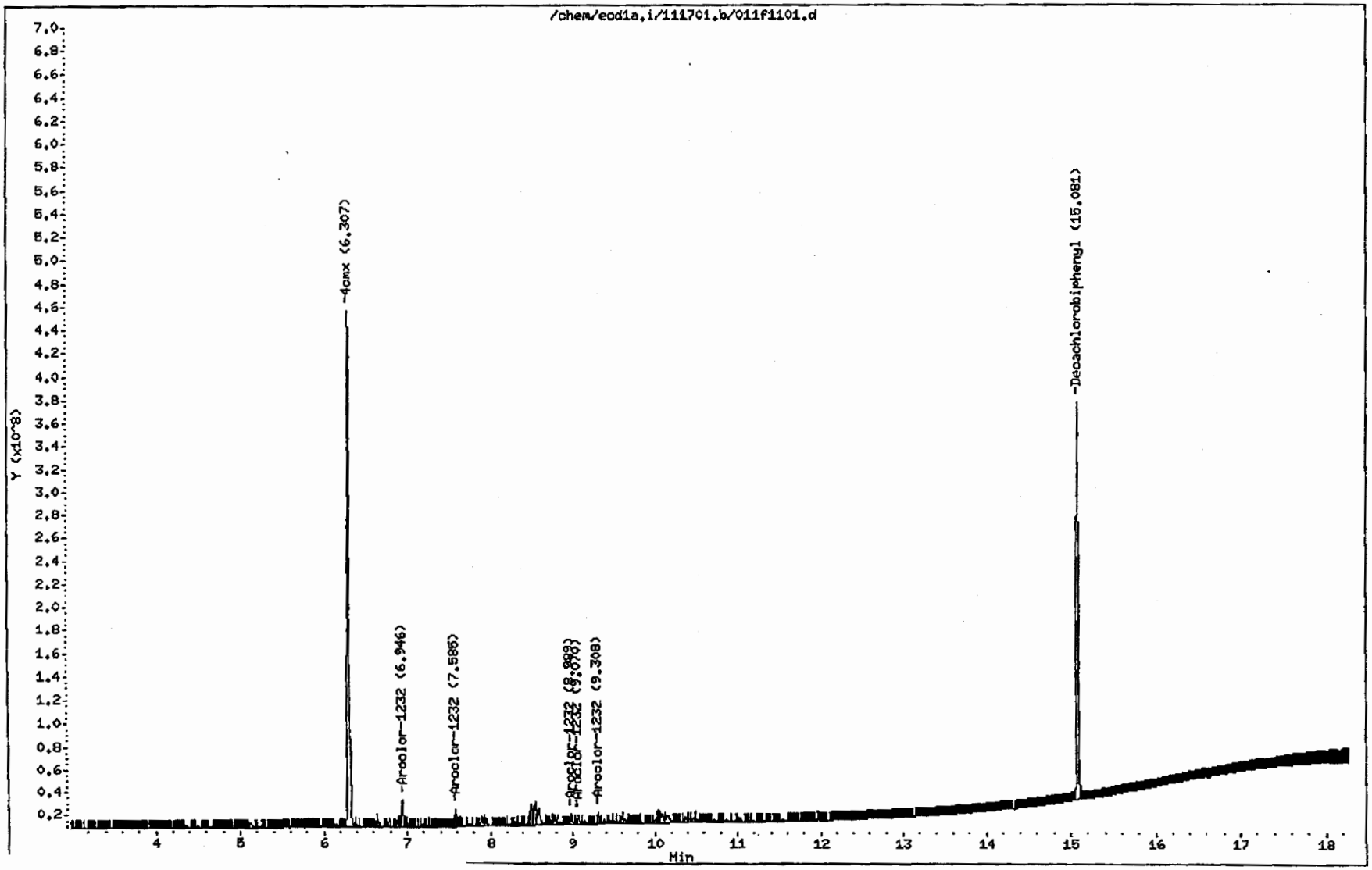
Sample Info: IPW011003-01 321

Column phase: DB-XLB

Instrument: ecd1a.i

Operator: mm

Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111701.b/012b1201.d
Lab Smp Id: PW011004-01 211 Client Smp ID: AR122101
Inj Date : 17-NOV-2001 12:30
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011004-01 211
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111701.b/PESTB_DB-17MS_ecd1.m
Meth Date : 18-Nov-2001 11:20 mm Quant Type: ESTD
Cal Date : 17-NOV-2001 11:23 Cal File: 009b0901.d
Als bottle: 12 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1221.sub
Target Version: 3.50 Sample Matrix: None

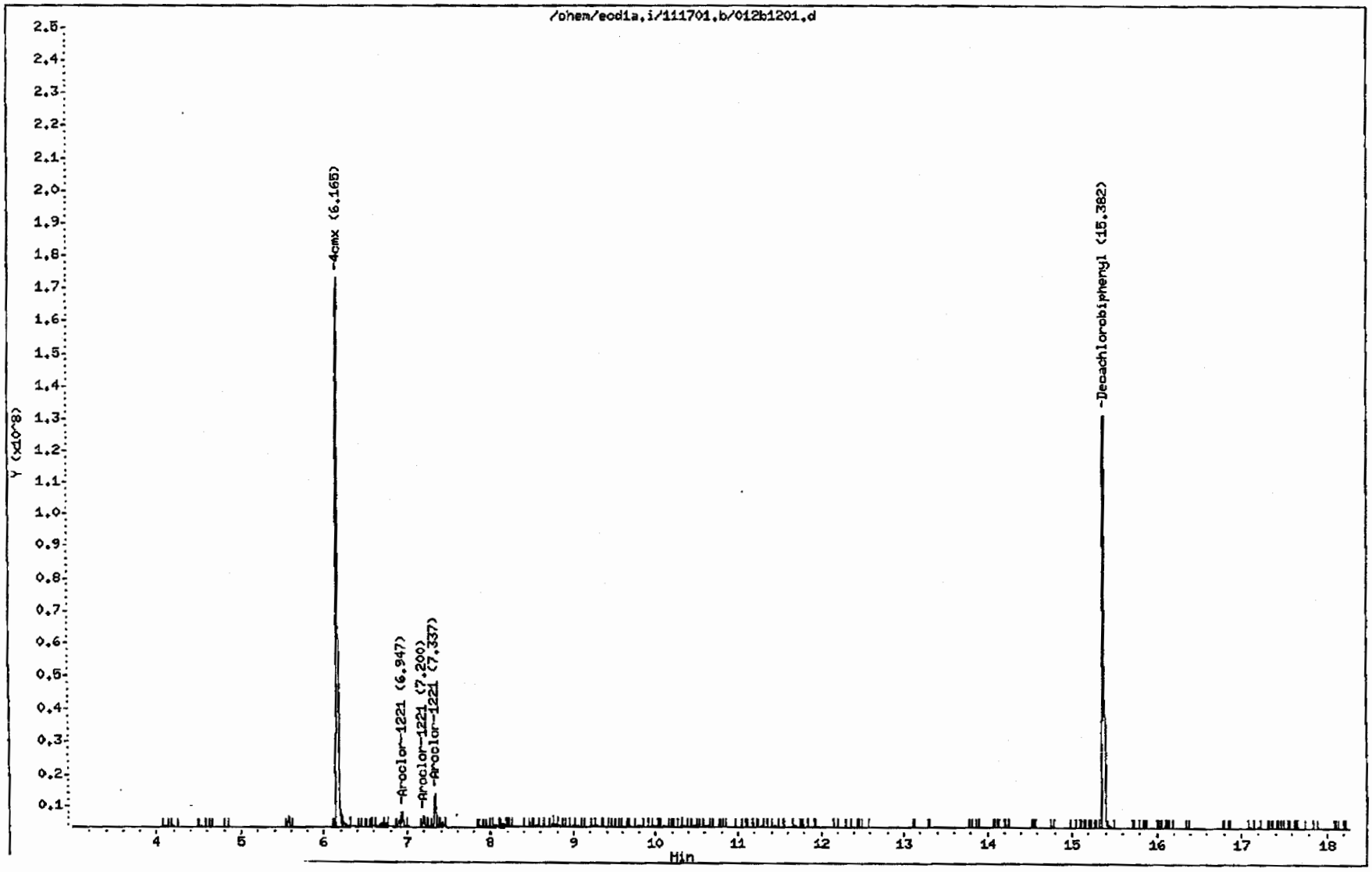
RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
2 Aroclor-1221					CAS #: 11104-28-2		
6.947	6.947	0.000	6952260	4000.00	547	80.00- 120.00	100.00
7.200	7.200	0.000	4287675	4000.00	531	41.67- 81.67	61.67
7.337	7.337	0.000	14472226	4000.00	549	188.17- 228.17	208.17
Average of Peak Amounts =					542		
$ 1 4cmx					CAS #: 877-09-8		
6.165	6.163	0.002	253572991	0.00000	212	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.382	15.382	0.000	196595656	0.00000	260	80.00- 120.00	100.00

Data File: /ohem/ecd1a.i/111701.b/012b1201.d
Date : 17-NOV-2001 12:30
Client ID: AR122101
Sample Info: IPW011004-01 211

Column phase: DB-17HS

Instrument: ecd1a.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111701.b/012f1201.d
Lab Smp Id: PW011004-01 211 Client Smp ID: AR122101
Inj Date : 17-NOV-2001 12:30
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011004-01 211
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111701.b/PESTA_DB-XLB_ecd1.m
Meth Date : 18-Nov-2001 11:20 mm Quant Type: ESTD
Cal Date : 17-NOV-2001 11:23 Cal File: 009f0901.d
Als bottle: 12 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1221.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
2 Aroclor-1221					CAS #: 11104-28-2		
6.659	6.659	0.000	11919020	4000.00	473	80.00- 120.00	100.00
6.789	6.789	0.000	11344741	4000.00	456	75.18- 115.18	95.18
6.947	6.947	0.000	38645752	4000.00	469	304.24- 344.24	324.24
Average of Peak Amounts =					466		
$ 1 4cmx					CAS #: 877-09-8		
6.307	6.308	-0.001	650753766	0.00000	192	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.082	15.083	-0.001	477257044	0.00000	210	80.00- 120.00	100.00

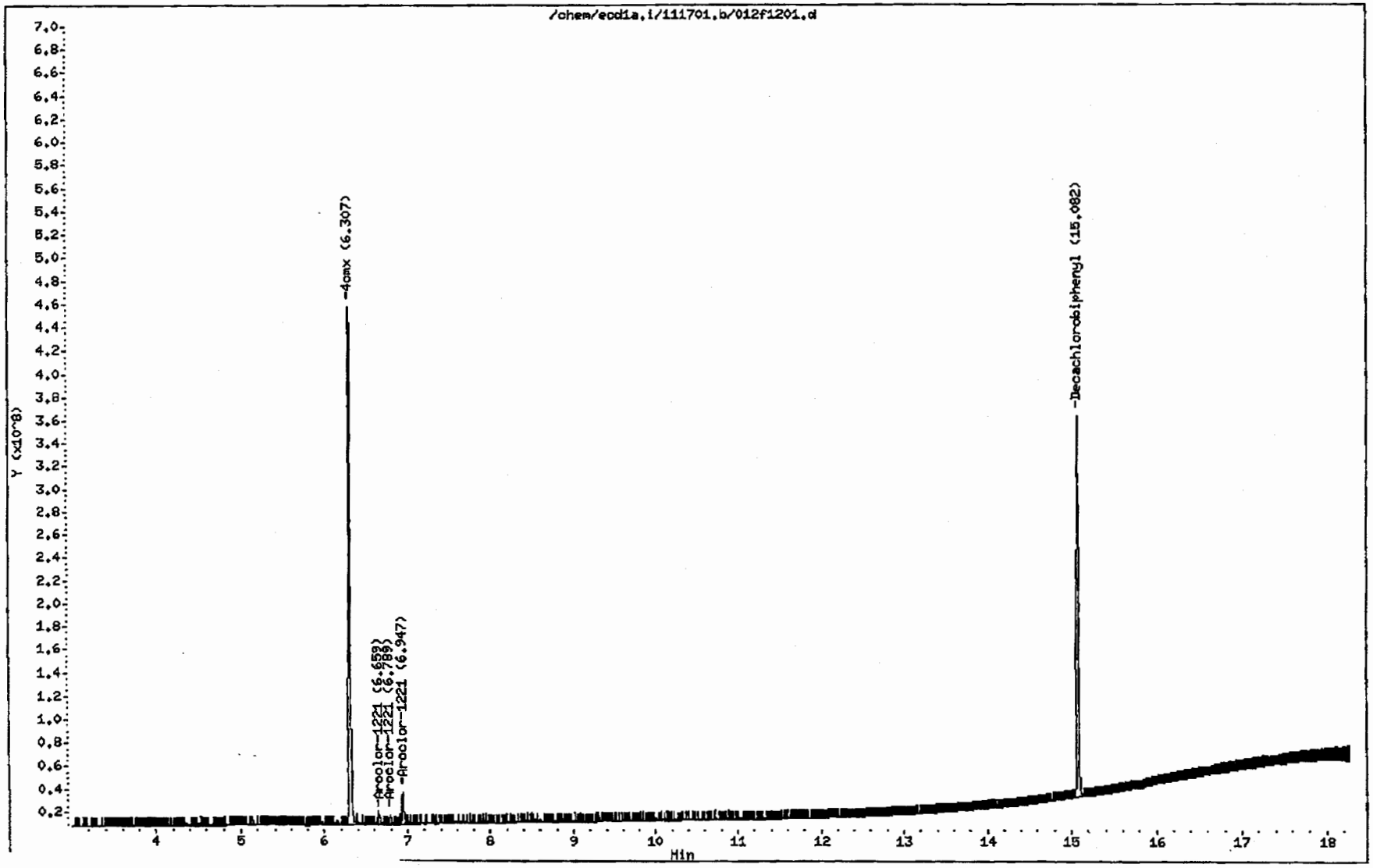
Data File: /chem/ecd1a.i/111701.b/012f1201.d
Date : 17-NOV-2001 12:30
Client ID: AR122101
Sample Info: IPW011004-01 211

Column phase: DB-XLB

Page 2

Instrument: ecd1a.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111701.b/039b3901.d
Lab Smp Id: PW011022-01 605 Client Smp ID: AR166005
Inj Date : 17-NOV-2001 22:35
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011022-01 605
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111701.b/PESTB_DB-17MS_ecd1.m
Meth Date : 18-Nov-2001 11:20 mm Quant Type: ESTD
Cal Date : 17-NOV-2001 11:23 Cal File: 009b0901.d
Als bottle: 39 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1660.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
3 Aroclor-1016					CAS #: 12674-11-2		
7.336	7.337	-0.001	11574970	4000.00	572	80.00- 120.00	100.00
8.053	8.053	0.000	28976332	4000.00	590	228.54- 268.54	250.34
8.435	8.435	0.000	8603770	4000.00	585	54.45- 94.45	74.33
8.998	8.998	0.000	16851765	4000.00	532	127.66- 167.66	145.59
9.797	9.798	-0.001	18527603	4000.00	534	141.86- 181.86	160.07
Average of Peak Amounts =					562		
21 Aroclor-1260					CAS #: 11096-82-5		
11.686	11.686	0.000	35494786	4000.00	530	80.00- 120.00	100.00
11.873	11.873	0.000	39234478	4000.00	521	93.56- 133.56	110.54
13.054	13.054	0.000	25707795	4000.00	543	48.34- 88.34	72.43
13.301	13.302	-0.001	71002450	4000.00	568	168.14- 208.14	200.04
13.792	13.793	-0.001	11956853	4000.00	554	11.02- 51.02	33.69
Average of Peak Amounts =					543		
$ 1 4cmx					CAS #: 877-09-8		
6.163	6.163	0.000	267428227	0.00000	224	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.380	15.382	-0.002	209272497	0.00000	277	80.00- 120.00	100.00

mm 1/21/02

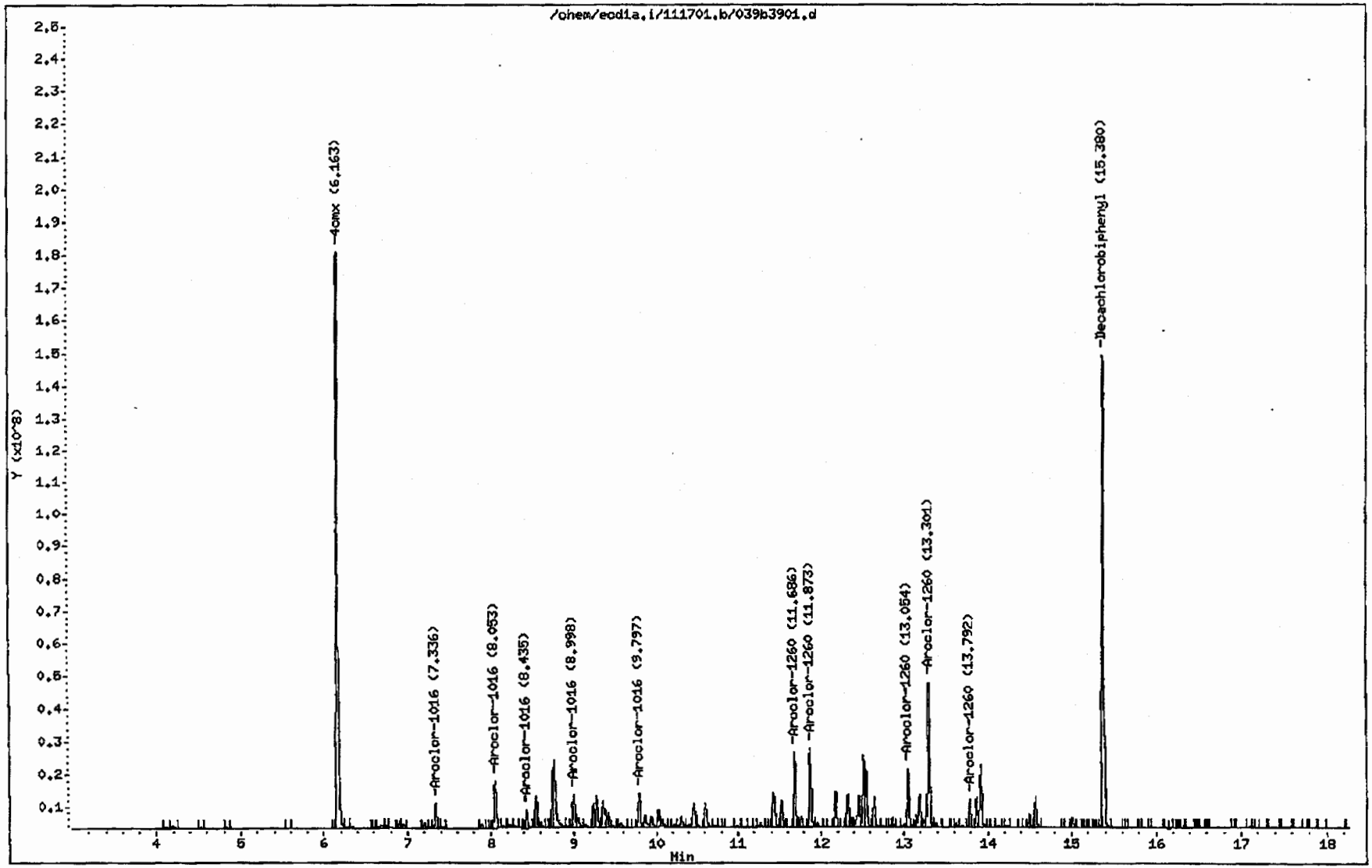
696

Data File: /chem/ecdia.i/111701.b/039b3901.d
Date : 17-NOV-2001 22:35
Client ID: AR166005
Sample Info: IPW011022-01 605

Column phase: DB-17MS

Instrument: ecdia.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111701.b/039f3901.d
Lab Smp Id: PW011022-01 605 Client Smp ID: AR166005
Inj Date : 17-NOV-2001 22:35
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011022-01 605
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111701.b/PESTA_DB-XLB_ecd1.m
Meth Date : 18-Nov-2001 11:20 mm Quant Type: ESTD
Cal Date : 17-NOV-2001 11:23 Cal File: 009f0901.d
Als bottle: 39 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1660.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
3 Aroclor-1016					CAS #: 12674-11-2		
6.945	6.946	-0.001	29595249	4000.00	469	80.00- 120.00	100.00
7.585	7.586	-0.001	48874725	4000.00	483	144.37- 184.37	165.14
8.989	8.990	-0.001	39230772	4000.00	459	111.71- 151.71	132.56
9.070	9.072	-0.002	44136135	4000.00	470	127.88- 167.88	149.13
9.307	9.308	-0.001	42225710	4000.00	462	122.09- 162.09	142.68
Average of Peak Amounts =					469		
21 Aroclor-1260					CAS #: 11096-82-5		
12.340	12.340	0.000	73280827	4000.00	482	80.00- 120.00	100.00
12.425	12.427	-0.002	39824987	4000.00	463	33.73- 73.73	54.35
12.803	12.803	0.000	34631925	4000.00	434	27.06- 67.06	47.26
13.135	13.136	-0.001	167609689	4000.00	476	204.57- 244.57	228.72
13.544	13.545	-0.001	101798449	4000.00	456	112.19- 152.19	138.92
Average of Peak Amounts =					462		
$ 1 4cmx					CAS #: 877-09-8		
6.306	6.308	-0.002	654701667	0.00000	193	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.080	15.083	-0.003	493476563	0.00000	218	80.00- 120.00	100.00

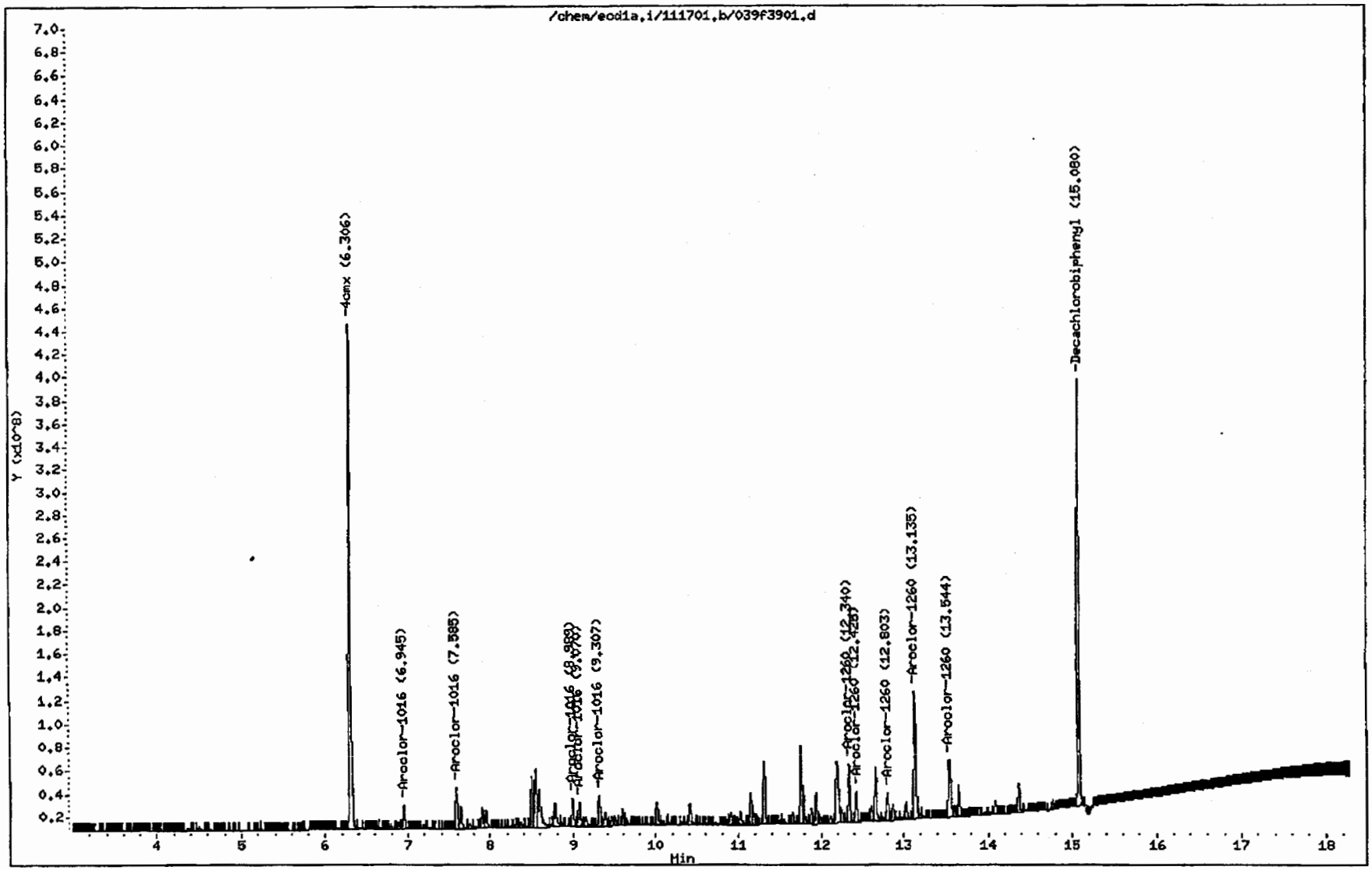
698

Data File: /chem/ecd1a.i/111701.b/039f3901.d
Date : 17-NOV-2001 22:35
Client ID: AR166005
Sample Info: IPW011022-01 605

Column phase: DB-XLB

Instrument: ecd1a.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111701.b/044b4401.d
Lab Smp Id: PW011022-01 606 Client Smp ID: AR166006
Inj Date : 18-NOV-2001 00:27
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011022-01 606
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111701.b/PESTB_DB-17MS_ecd1.m
Meth Date : 18-Nov-2001 11:20 mm Quant Type: ESTD
Cal Date : 17-NOV-2001 11:23 Cal File: 009b0901.d
Als bottle: 44 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1660.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
3 Aroclor-1016					CAS #: 12674-11-2		
7.336	7.337	-0.001	11648116	4000.00	576	80.00- 120.00	100.00
8.052	8.053	-0.001	29157856	4000.00	594	228.54- 268.54	250.32
8.434	8.435	-0.001	8539988	4000.00	580	54.45- 94.45	73.32
8.997	8.998	-0.001	17410865	4000.00	550	127.66- 167.66	149.47
9.795	9.798	-0.003	19352637	4000.00	557	141.86- 181.86	166.14
Average of Peak Amounts =					571		
21 Aroclor-1260					CAS #: 11096-82-5		
11.685	11.686	-0.001	35328943	4000.00	527	80.00- 120.00	100.00
11.871	11.873	-0.002	37636408	4000.00	500	93.56- 133.56	106.53
13.052	13.054	-0.002	23758720	4000.00	502	48.34- 88.34	67.25
13.300	13.302	-0.002	66627726	4000.00	533	168.14- 208.14	188.59
13.790	13.793	-0.003	10991382	4000.00	510	11.02- 51.02	31.11
Average of Peak Amounts =					514		
$ 1 4cmx					CAS #: 877-09-8		
6.164	6.163	0.001	267044677	0.00000	223	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.379	15.382	-0.003	194703608	0.00000	257	80.00- 120.00	100.00

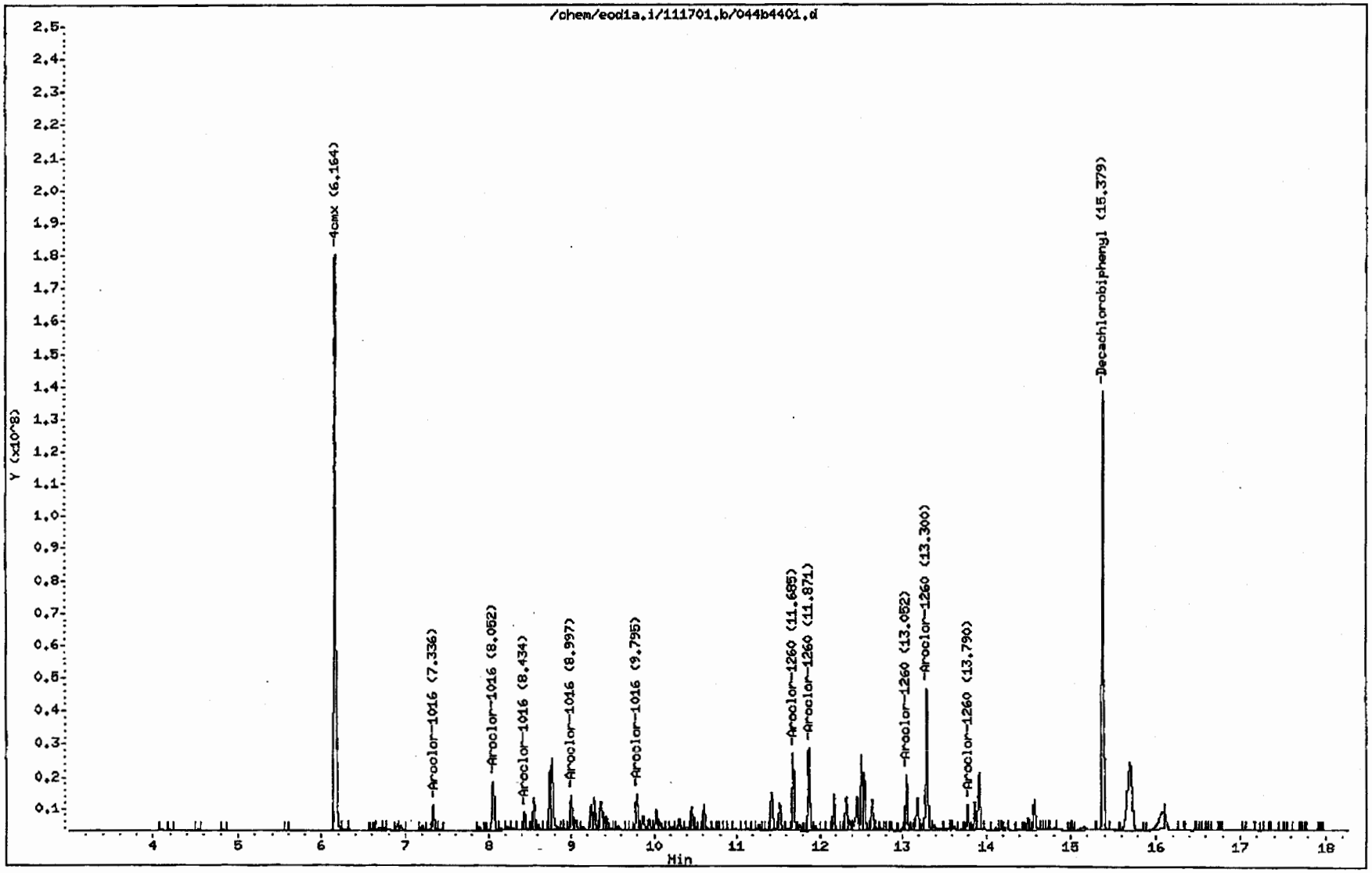
700

Data File: /chem/ecd1a.i/111701.b/044b4401.d
Date : 18-NOV-2001 00:27
Client ID: AR166006
Sample Info: IPW011022-01 606

Column phase: DB-17MS

Instrument: ecd1a.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111701.b/044f4401.d
Lab Smp Id: PW011022-01 606 Client Smp ID: AR166006
Inj Date : 18-NOV-2001 00:27
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011022-01 606
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111701.b/PESTA_DB-XLB_ecd1.m
Meth Date : 18-Nov-2001 11:20 mm Quant Type: ESTD
Cal Date : 17-NOV-2001 11:23 Cal File: 009f0901.d
Als bottle: 44 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1660.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
3 Aroclor-1016					CAS #: 12674-11-2		
6.946	6.946	0.000	30157424	4000.00	478	80.00- 120.00	100.00
7.585	7.586	-0.001	49168488	4000.00	486	144.37- 184.37	163.04
8.989	8.990	-0.001	38222045	4000.00	447	111.71- 151.71	126.74
9.070	9.072	-0.002	44249864	4000.00	472	127.88- 167.88	146.73
9.306	9.308	-0.002	42511199	4000.00	465	122.09- 162.09	140.96
Average of Peak Amounts =					470		
21 Aroclor-1260					CAS #: 11096-82-5		
12.338	12.340	-0.002	60398123	4000.00	397	80.00- 120.00	100.00
12.424	12.427	-0.003	34316904	4000.00	399	33.73- 73.73	56.82
12.800	12.803	-0.003	17437503	4000.00	218	27.06- 67.06	28.87
13.132	13.136	-0.004	148971205	4000.00	423	204.57- 244.57	246.65
13.542	13.545	-0.003	89800383	4000.00	402	112.19- 152.19	148.68
Average of Peak Amounts =					368		
$ 1 4cmx					CAS #: 877-09-8		
6.307	6.308	-0.001	659146957	0.00000	195	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.079	15.083	-0.004	447101039	0.00000	197	80.00- 120.00	100.00

AM 1/7/02

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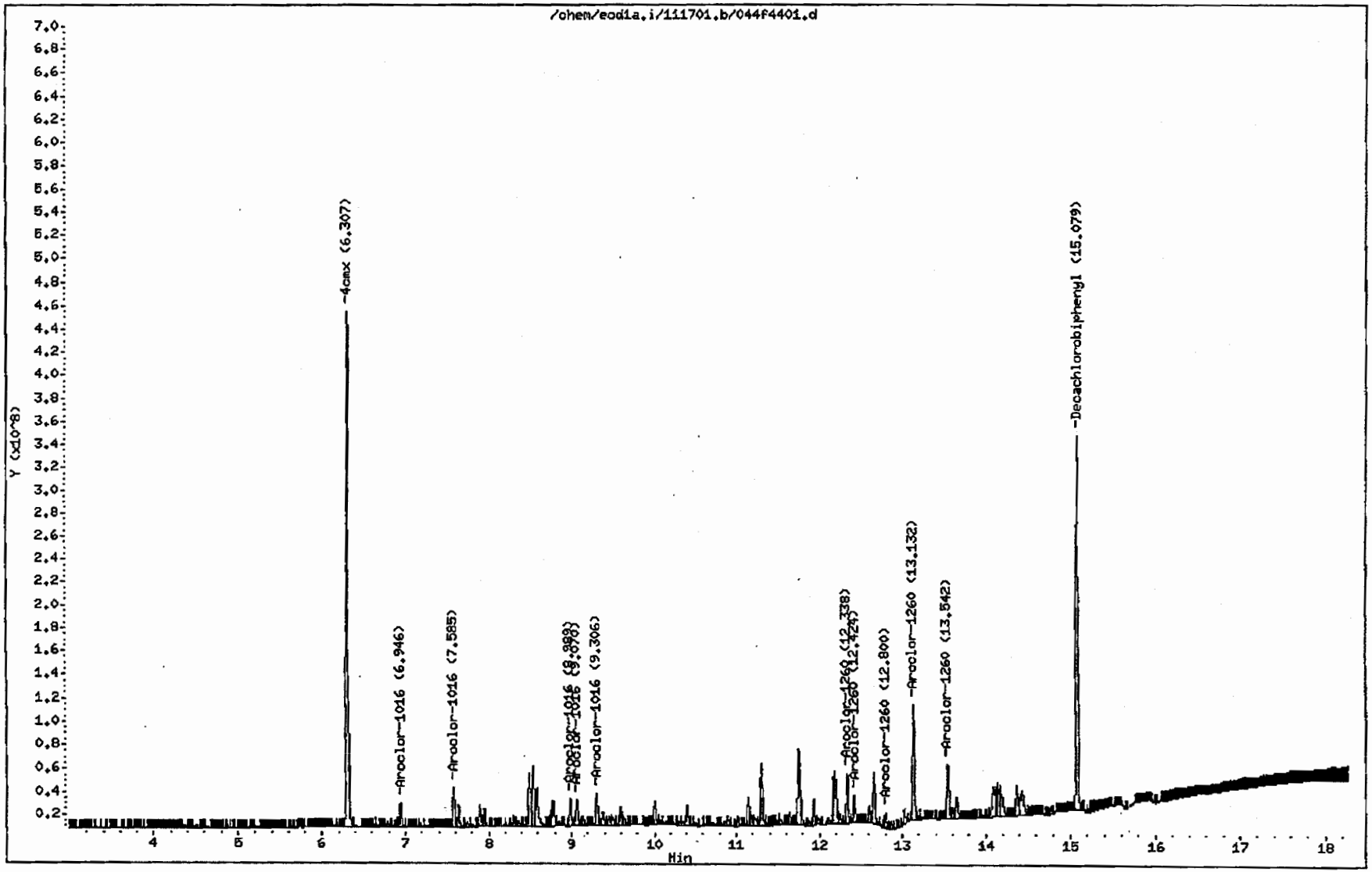
STD for use continued See # 111801.b # 23 & 24

Data File: /chem/ecdia.i/111701.b/044f4401.d
Date : 18-NOV-2001 00:27
Client ID: AR166006
Sample Info: IPW011022-01,606

Column phase: DB-XLB

Instrument: ecdia.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/002b0201.d
Lab Smp Id: PW011113-01 601 Client Smp ID: AR166001
Inj Date : 19-NOV-2001 15:23
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011113-01 601
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m
Meth Date : 20-Nov-2001 08:19 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012b1201.d
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1660.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
3 Aroclor-1016					CAS #: 12674-11-2		
7.330	7.330	0.000	9962649	4000.00	492	80.00- 120.00	100.00
8.047	8.047	0.000	24992022	4000.00	509	230.44- 270.44	250.86
8.429	8.429	0.000	7389898	4000.00	502	53.57- 93.57	74.18
8.992	8.992	0.000	15001698	4000.00	474	131.82- 171.82	150.58
9.791	9.791	0.000	16224164	4000.00	467	147.69- 187.69	162.85
Average of Peak Amounts =					489		
21 Aroclor-1260					CAS #: 11096-82-5		
11.679	11.679	0.000	30799548	4000.00	460	80.00- 120.00	100.00
11.866	11.866	0.000	35145631	4000.00	467	94.13- 134.13	114.11
13.047	13.047	0.000	21994442	4000.00	464	50.75- 90.75	71.41
13.294	13.294	0.000	61404228	4000.00	491	178.02- 218.02	199.37
13.785	13.785	0.000	10395740	4000.00	482	14.30- 54.30	33.75
Average of Peak Amounts =					473		
$ 1 4cmx					CAS #: 877-09-8		
6.157	6.159	-0.002	235541671	200.000	204	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.374	15.375	-0.001	192722389	200.000	197	80.00- 120.00	100.00

500 JC 12/4/01

500

704

Data File: /chem/ecd1a.i/111901a.b/002b0201.d

Date : 19-NOV-2001 15:23

Client ID: AR166001

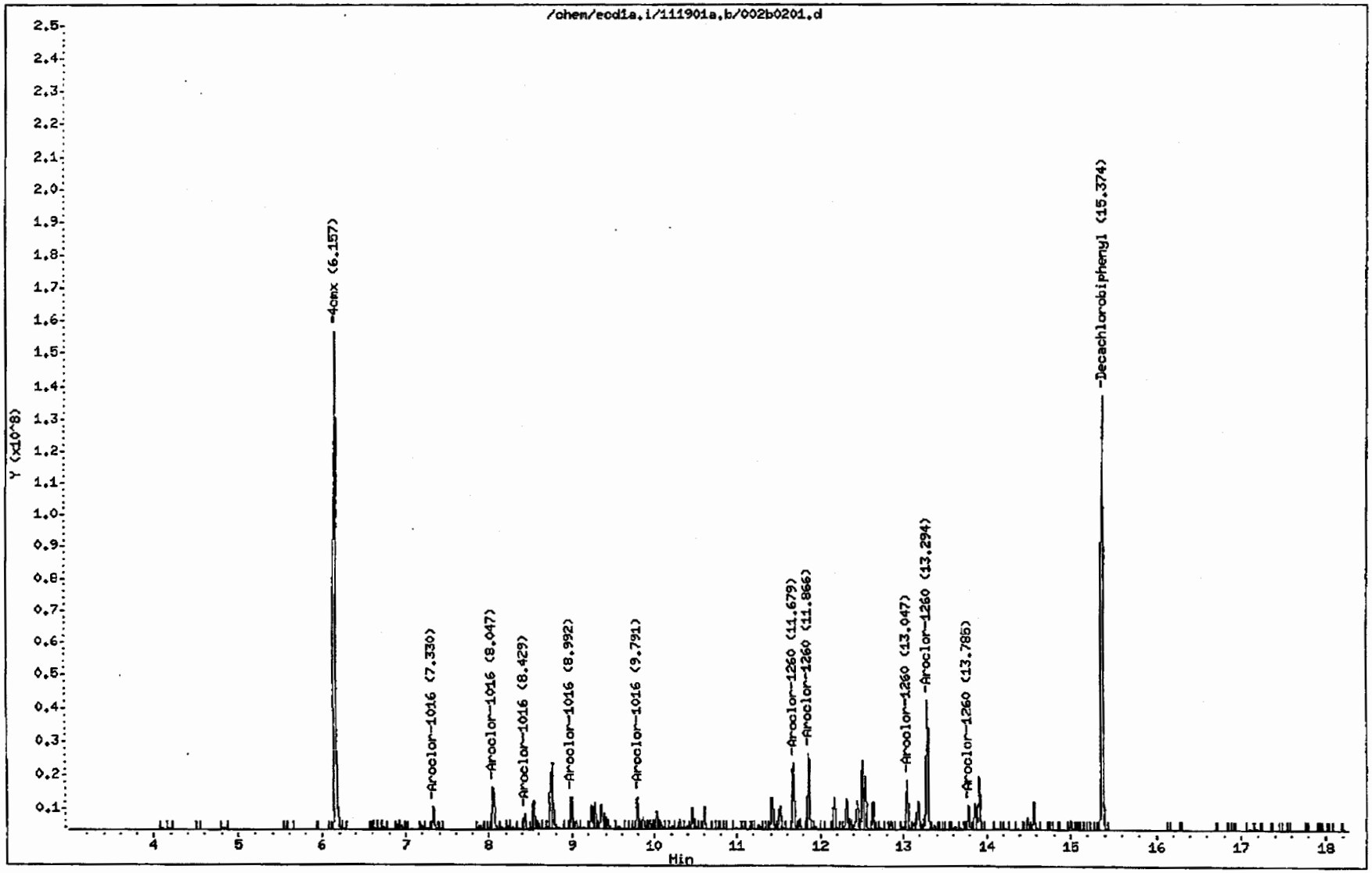
Sample Info: IPW011113-01 601

Column phase: DB-17MS

Instrument: ecd1a.i

Operator: mm

Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/002f0201.d
Lab Smp Id: PW011113-01 601 Client Smp ID: AR166001
Inj Date : 19-NOV-2001 15:23
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011113-01 601
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m
Meth Date : 20-Nov-2001 08:18 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012f1201.d
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1660.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
3 Aroclor-1016					CAS #: 12674-11-2		
6.943	6.943	0.000	31930410	4000.00	506	80.00- 120.00	100.00
7.584	7.584	0.000	51163684	4000.00	506	141.78- 181.78	160.23
8.987	8.987	0.000	42340526	4000.00	495	116.69- 156.69	132.60
9.068	9.068	0.000	47866207	4000.00	510	133.22- 173.22	149.91
9.305	9.305	0.000	46041200	4000.00	504	128.68- 168.68	144.19
Average of Peak Amounts =					504		
21 Aroclor-1260					CAS #: 11096-82-5		
12.338	12.338	0.000	77888197	4000.00	512	80.00- 120.00	100.00
12.425	12.425	0.000	43039569	4000.00	500	35.22- 75.22	55.26
12.800	12.800	0.000	39906013	4000.00	500	31.83- 71.83	51.23
13.133	13.133	0.000	183569264	4000.00	521	214.65- 254.65	235.68
13.541	13.541	0.000	113558340	4000.00	508	124.21- 164.21	145.80
Average of Peak Amounts =					508		
$ 1 4cmx					CAS #: 877-09-8		
6.304	6.303	0.001	687158796	200.000	183	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.081	15.078	0.003	564448592	200.000	186	80.00- 120.00	100.00

706

Data File: /ohem/ecd1a.i/111901a.b/002f0201.d

Date : 19-NOV-2001 15:23

Client ID: AR166001

Sample Info: IPW011113-01 601

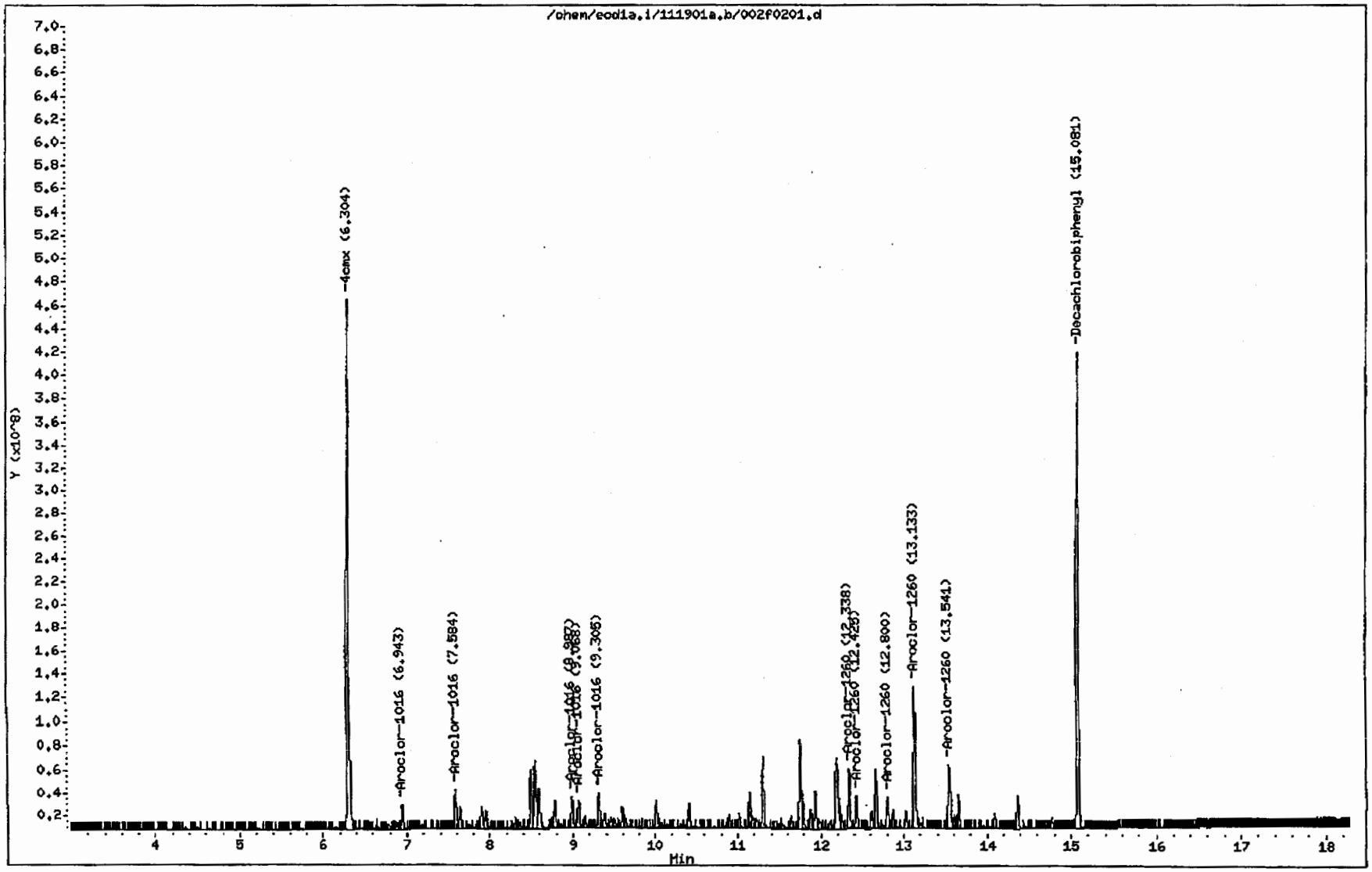
Column phase: DB-XLB

Page 2

Instrument: ecd1a.i

Operator: mm

Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/003b0301.d
Lab Smp Id: PW011022-02 541 Client Smp ID: AR125401
Inj Date : 19-NOV-2001 15:45
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011022-02 541
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m
Meth Date : 20-Nov-2001 08:19 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012b1201.d
Als bottle: 3 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1254.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
15 Aroclor-1254					CAS #: 11097-69-1		
10.599	10.599	0.000	31940672	4000.00	455	80.00- 120.00	100.00
10.706	10.706	0.000	11292449	4000.00	433	15.35- 55.35	35.35
11.132	11.132	0.000	9318400	4000.00	446	9.17- 49.17	29.17
11.257	11.257	0.000	19634777	4000.00	455	41.47- 81.47	61.47
11.679	11.679	0.000	40672562	4000.00	470	107.34- 147.34	127.34
Average of Peak Amounts =					452		
$ 1 4cmx					CAS #: 877-09-8		
6.158	6.159	-0.001	231866225	200.000	201	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.374	15.375	-0.001	186517091	200.000	190	80.00- 120.00	100.00

500

Data File: /chem/ecd1a.i/111901a.b/003b0301.d

Date : 19-NOV-2001 15:45

Client ID: AR125401

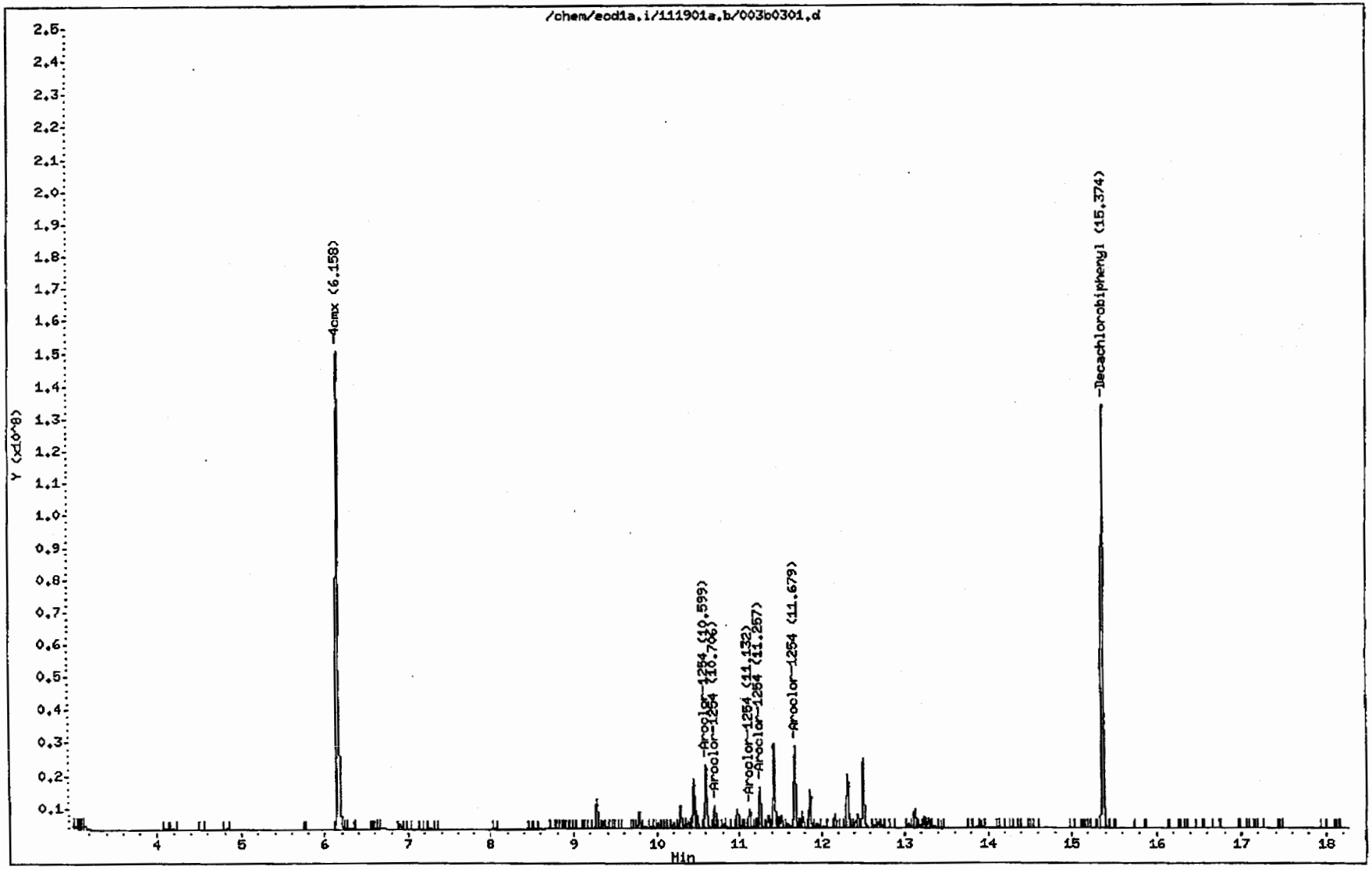
Sample Info: IPW011022-02 541

Column phase: DB-17MS

Instrument: ecd1a.i

Operator: mm

Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/003f0301.d
Lab Smp Id: PW011022-02 541 Client Smp ID: AR125401
Inj Date : 19-NOV-2001 15:45
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011022-02 541
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m
Meth Date : 20-Nov-2001 08:18 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012f1201.d
Als bottle: 3 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1254.sub
Target Version: 3.50 Sample Matrix: None

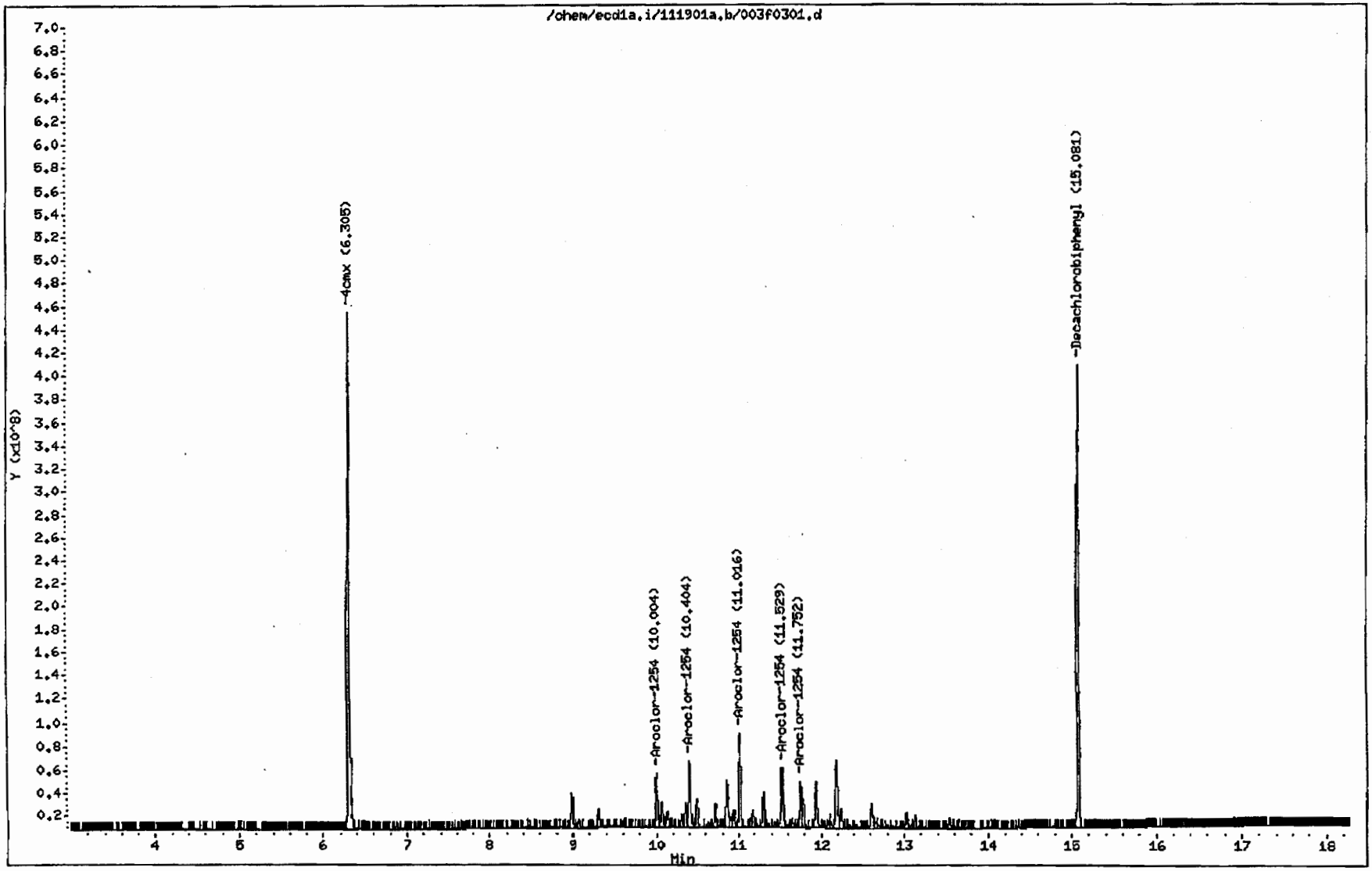
RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
15 Aroclor-1254					CAS #: 11097-69-1		
10.004	10.004	0.000	80728765	4000.00	518	80.00- 120.00	100.00
10.404	10.404	0.000	93440051	4000.00	564	95.75- 135.75	115.75
11.016	11.016	0.000	126978356	4000.00	546	137.29- 177.29	157.29
11.529	11.529	0.000	100288189	4000.00	554	104.23- 144.23	124.23
11.752	11.752	0.000	57189203	4000.00	560	50.84- 90.84	70.84
Average of Peak Amounts =					548		
$ 1 4cmx					CAS #: 877-09-8		
6.305	6.303	0.002	681738034	200.000	182	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.081	15.078	0.003	553201641	200.000	182	80.00- 120.00	100.00

Data File: /chem/ecd1a.i/111901a.b/003f0301.d
Date : 19-NOV-2001 15:45
Client ID: AR125401
Sample Info: IPW011022-02 541

Column phase: DB-XLB

Instrument: ecd1a.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/005b0501.d
Lab Smp Id: PW011011-01 481 Client Smp ID: AR124801
Inj Date : 19-NOV-2001 16:30
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011011-01 481
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m
Meth Date : 20-Nov-2001 08:19 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012b1201.d
Als bottle: 5 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1248.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
9 Aroclor-1248					CAS #: 12672-29-6		
8.048	8.048	0.000	9242912	4000.00	518	80.00- 120.00	100.00
9.274	9.274	0.000	17976788	4000.00	533	174.49- 214.49	194.49
9.351	9.351	0.000	16916062	4000.00	527	163.02- 203.02	183.02
9.791	9.791	0.000	22408055	4000.00	532	222.44- 262.44	242.44
10.025	10.025	0.000	12913916	4000.00	525	119.72- 159.72	139.72
Average of Peak Amounts =					527		
$ 1 4cmx					CAS #: 877-09-8		
6.158	6.159	-0.001	247317740	200.000	214	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.374	15.375	-0.001	202953950	200.000	207	80.00- 120.00	100.00

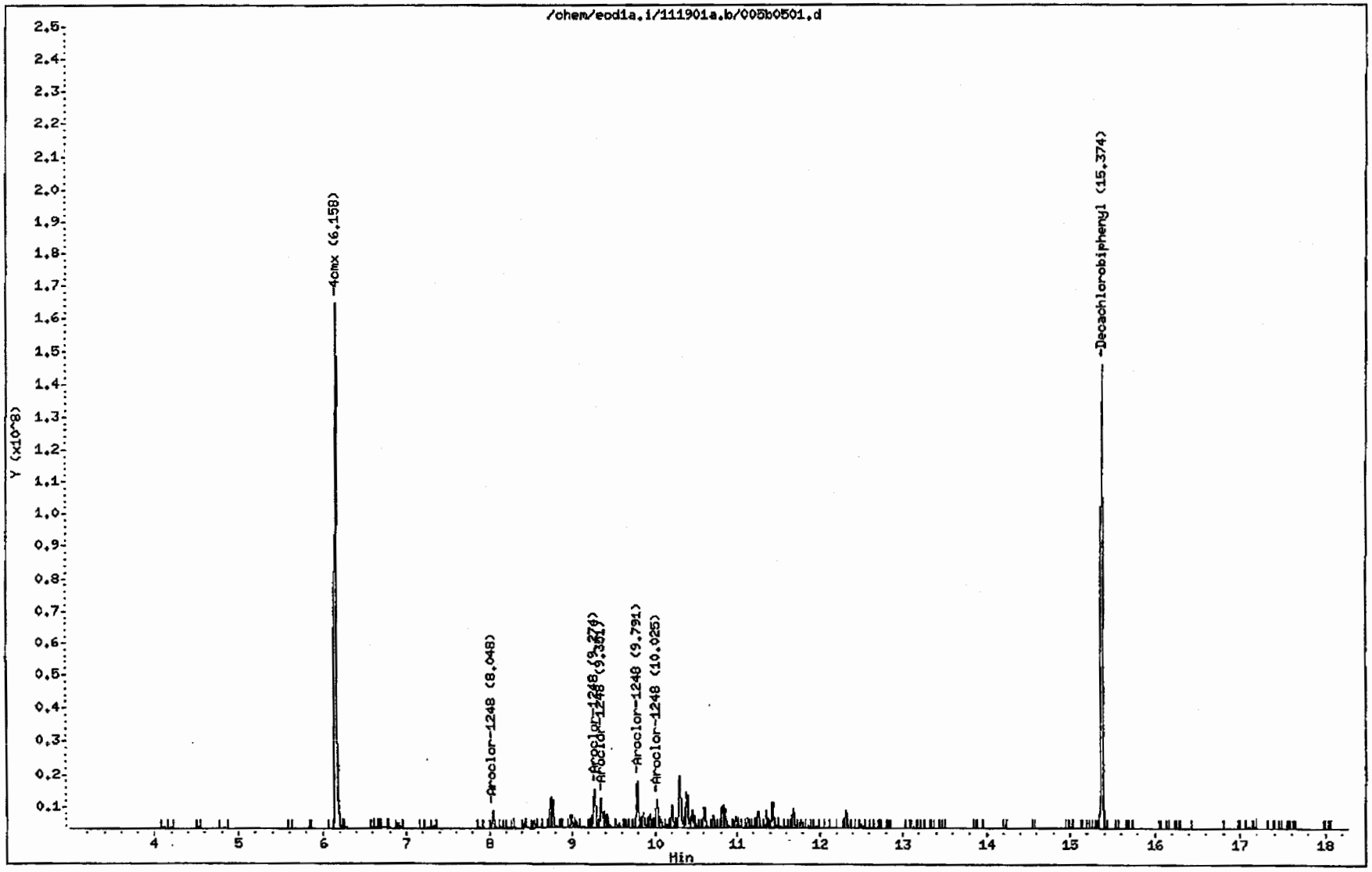
712

Data File: /chem/ecd1a.i/111901a.b/005b0501.d
Date : 19-NOV-2001 16:30
Client ID: AR124801
Sample Info: IPW011011-01 481

Column phase: DB-17MS

Instrument: ecd1a.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/005f0501.d
Lab Smp Id: PW011011-01 481 Client Smp ID: AR124801
Inj Date : 19-NOV-2001 16:30
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011011-01 481
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m
Meth Date : 20-Nov-2001 08:18 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012f1201.d
Als bottle: 5 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1248.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
9 Aroclor-1248					CAS #: 12672-29-6		
8.987	8.987	0.000	60537258	4000.00	548	80.00- 120.00	100.00
9.068	9.068	0.000	58151034	4000.00	553	76.06- 116.06	96.06
9.305	9.305	0.000	65277716	4000.00	547	87.83- 127.83	107.83
10.068	10.068	0.000	81082222	4000.00	550	113.94- 153.94	133.94
10.137	10.137	0.000	80194550	4000.00	585	112.47- 152.47	132.47
Average of Peak Amounts =					556		
$ 1 4cmx					CAS #: 877-09-8		
6.303	6.303	0.000	732317673	200.000	195	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.079	15.078	0.001	606117121	200.000	199	80.00- 120.00	100.00

714

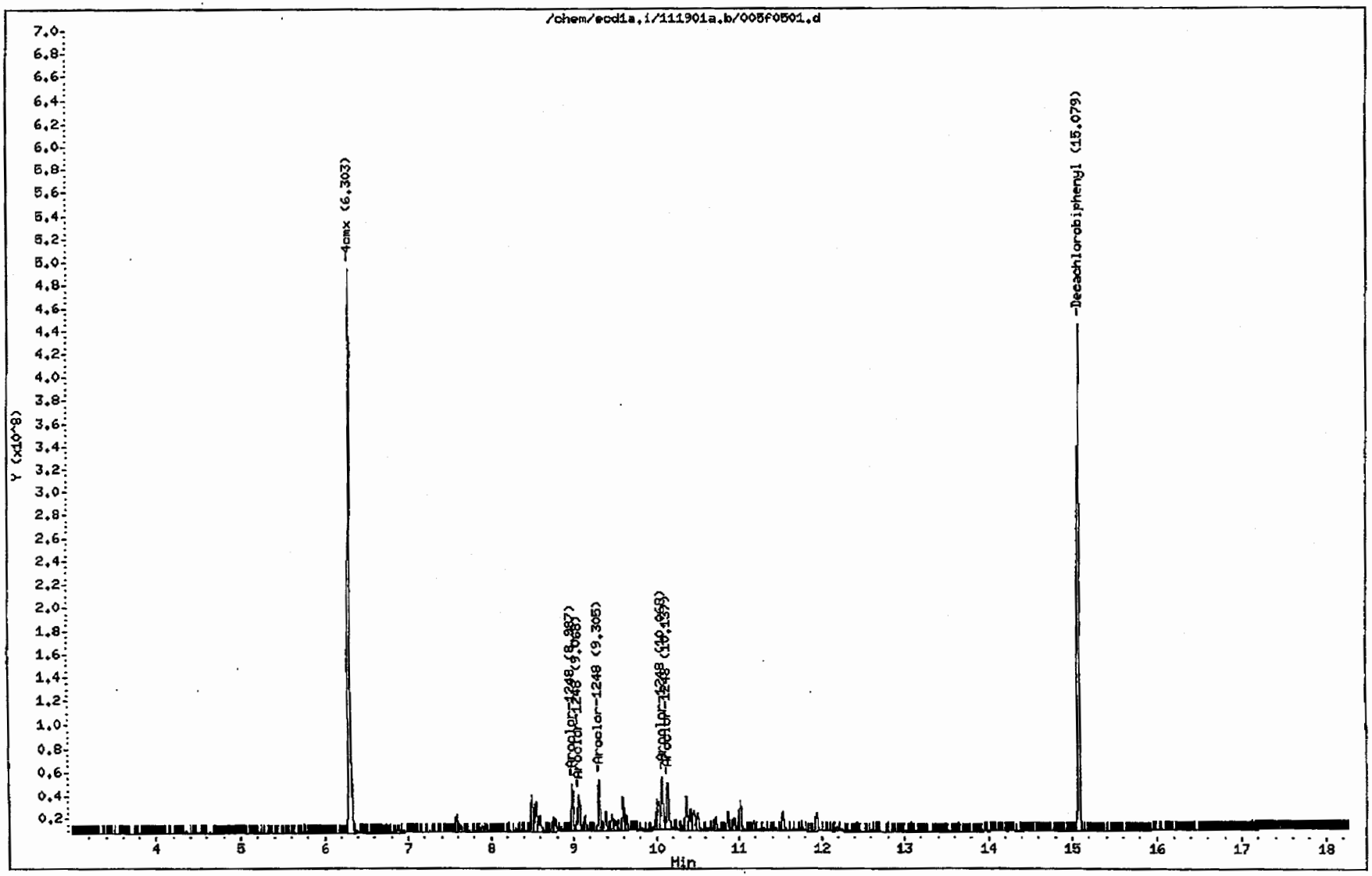
715

Data File: /chem/ecd1a.i/111901a.b/005f0501.d
Date : 19-NOV-2001 16:30
Client ID: AR124801
Sample Info: IPW011011-01 481

Column phase: DB-XLB

Instrument: ecd1a.i

Operator: MM
Column diameter: 0.25



General Engineering Laboratories, Inc.

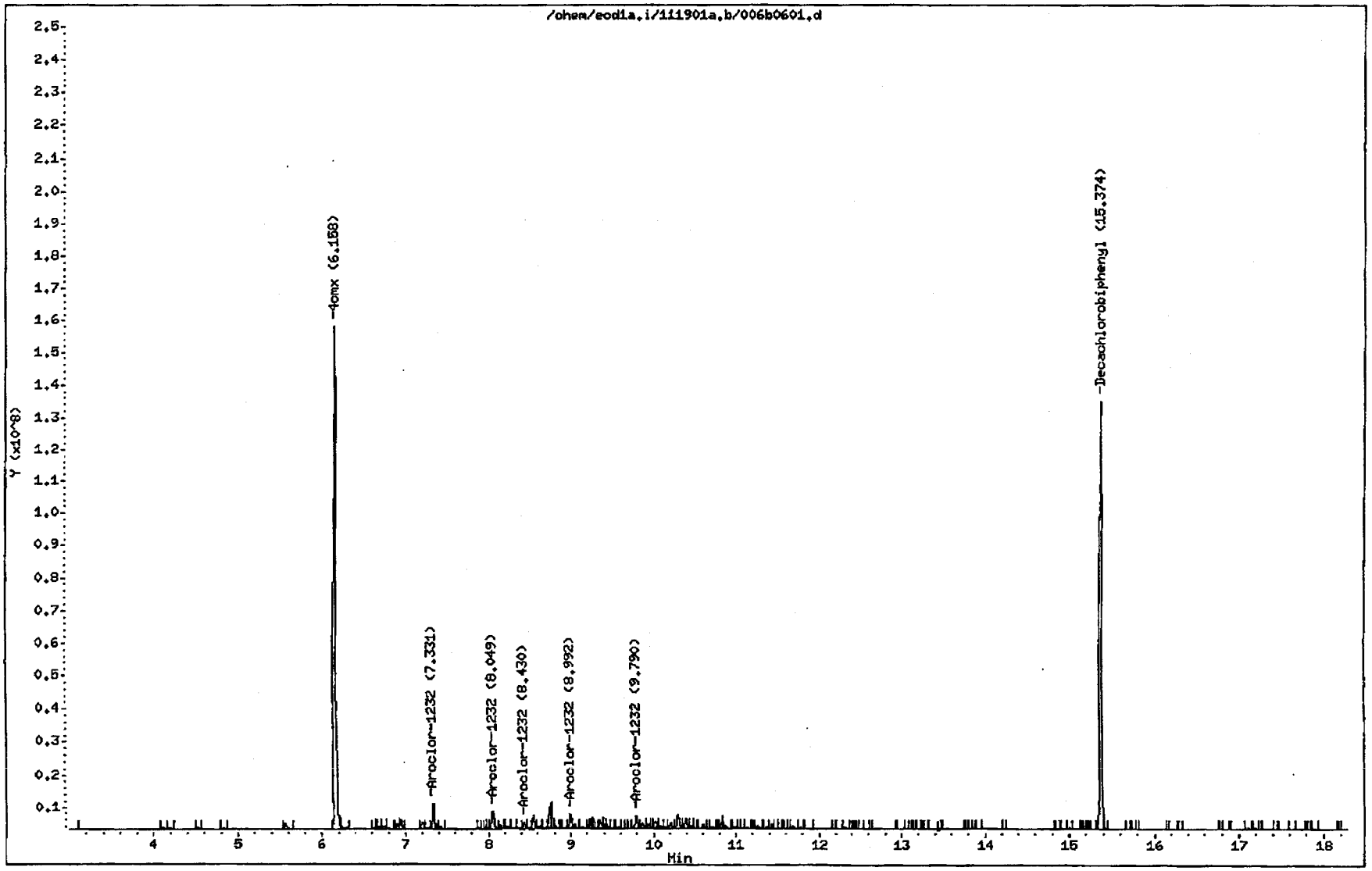
DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/006b0601.d
Lab Smp Id: PW011003-01 321 Client Smp ID: AR123201
Inj Date : 19-NOV-2001 16:53
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011003-01 321
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m
Meth Date : 20-Nov-2001 08:19 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012b1201.d
Als bottle: 6 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1232.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
4 Aroclor-1232					CAS #: 11141-16-5		
7.331	7.331	0.000	11487004	4000.00	518	80.00- 120.00	100.00
8.049	8.049	0.000	10407244	4000.00	516	70.60- 110.60	90.60
8.430	8.430	0.000	2934513	4000.00	513	5.55- 45.55	25.55
8.992	8.992	0.000	6320321	4000.00	484	35.02- 75.02	55.02
9.790	9.790	0.000	6802512	4000.00	514	39.22- 79.22	59.22
Average of Peak Amounts =					509		
$ 1 4cmx					CAS #: 877-09-8		
6.158	6.159	-0.001	236751078	200.000	205	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.374	15.375	-0.001	199388526	200.000	204	80.00- 120.00	100.00

Data File: /ohem/eod1a.i/111901a.b/006b0601.d
Date : 19-NOV-2001 16:53
Client ID: AR123201
Sample Info: IPW011003-01 321

Instrument: eod1a.i
Operator: mm
Column phase: DB-17MS
Column diameter: 0.25



717

28

General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/006f0601.d
Lab Smp Id: PW011003-01 321 Client Smp ID: AR123201
Inj Date : 19-NOV-2001 16:53
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011003-01 321
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m
Meth Date : 20-Nov-2001 08:18 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012f1201.d
Als bottle: 6 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1232.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
4 Aroclor-1232					CAS #: 11141-16-5		
6.944	6.944	0.000	37774892	4000.00	539	80.00- 120.00	100.00
7.584	7.584	0.000	23024553	4000.00	543	40.95- 80.95	60.95
8.987	8.987	0.000	16903069	4000.00	476	24.75- 64.75	44.75
9.070	9.070	0.000	19158610	4000.00	630	30.72- 70.72	50.72
9.305	9.305	0.000	19060659	4000.00	548	30.46- 70.46	50.46
Average of Peak Amounts =					547		
$ 1 4cmx					CAS #: 877-09-8		
6.305	6.303	0.002	706419834	200.000	188	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.080	15.078	0.002	594107887	200.000	195	80.00- 120.00	100.00

500

718

Data File: /chem/ecd1a.i/111901a.b/006f0601.d

Date : 19-NOV-2001 16:53

Client ID: AR123201

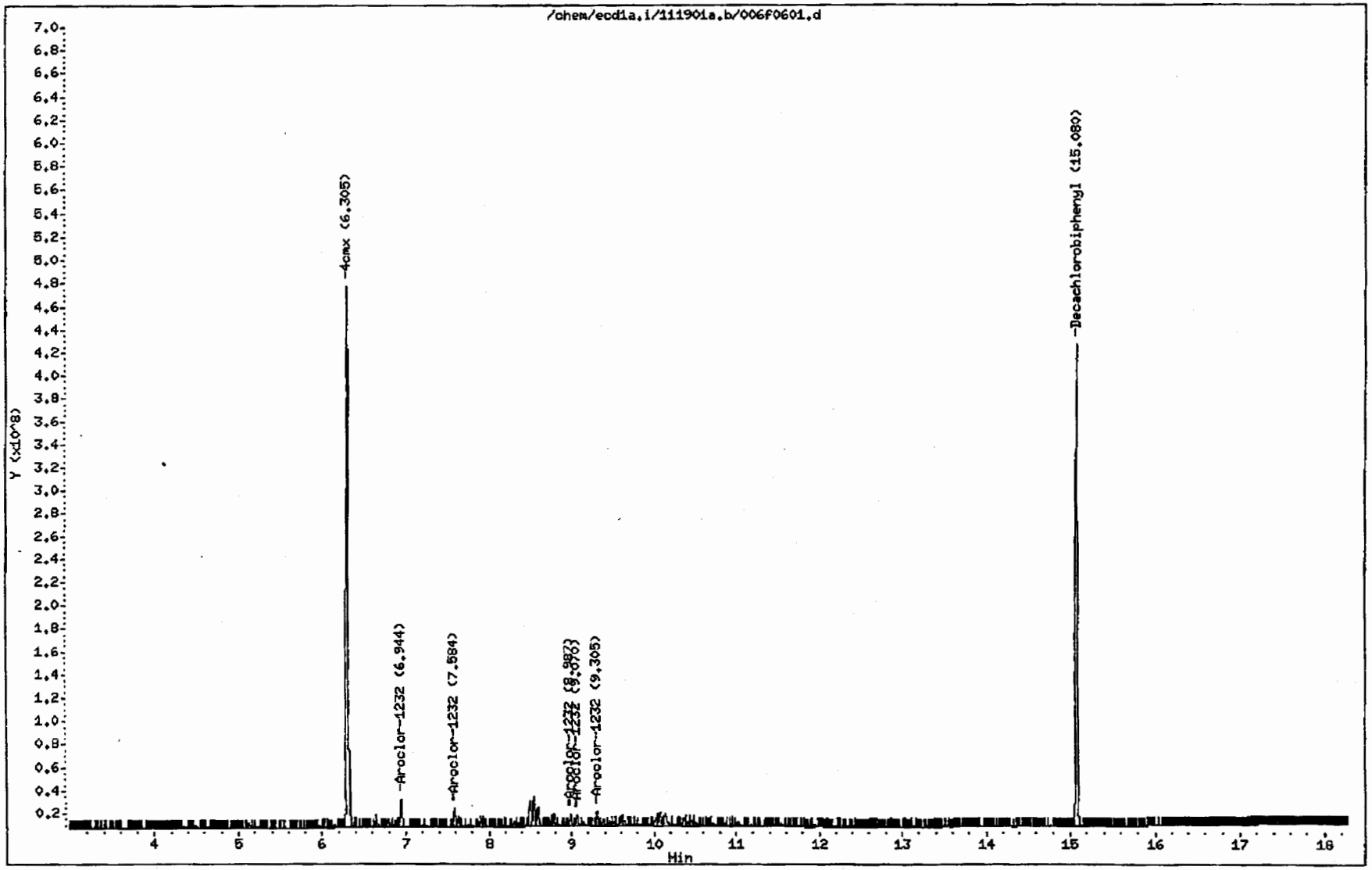
Sample Info: IPW011003-01 321

Column phase: DB-XLB

Instrument: ecd1a.i

Operator: mm

Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/007b0701.d
Lab Smp Id: PW011004-01 211 Client Smp ID: AR122101
Inj Date : 19-NOV-2001 17:15
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011004-01 211
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m
Meth Date : 20-Nov-2001 08:19 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012b1201.d
Als bottle: 7 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1221.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
2 Aroclor-1221					CAS #: 11104-28-2		
6.941	6.941	0.000	6364974	4000.00	501	80.00- 120.00	100.00
7.196	7.196	0.000	3984879	4000.00	493	42.61- 82.61	62.61
7.332	7.332	0.000	13443093	4000.00	510	191.20- 231.20	211.20
Average of Peak Amounts =					501		
$ 1 4cmx					CAS #: 877-09-8		
6.159	6.159	0.000	237975805	200.000	206	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.374	15.375	-0.001	199906253	200.000	204	80.00- 120.00	100.00

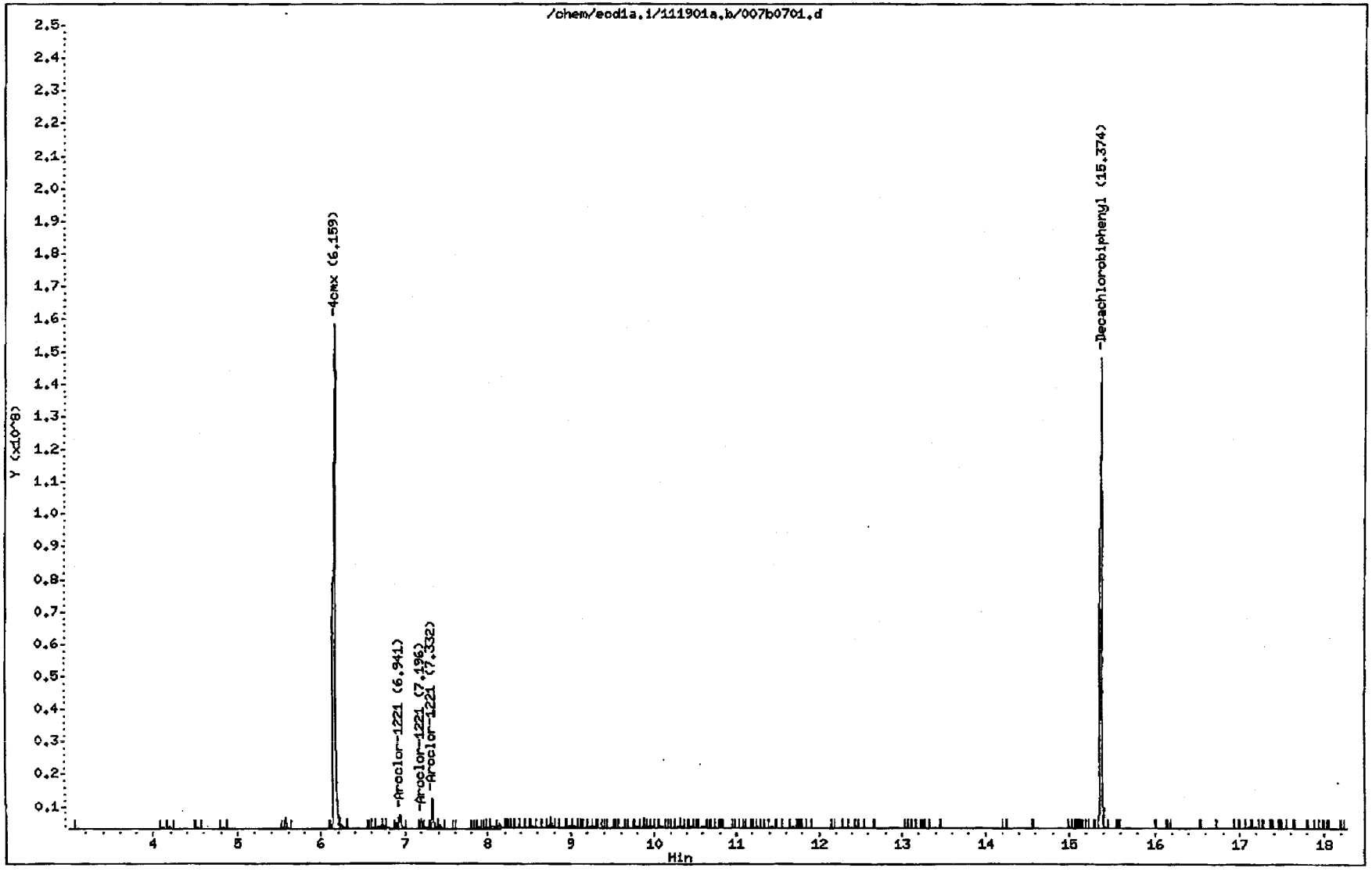
5-D

Data File: /chem/ecd1a.i/111901a.b/007b0701.d
Date : 19-NOV-2001 17:15
Client ID: AR122101
Sample Info: IPW011004-01 211

Column phase: DB-17MS

Instrument: ecd1a.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/007f0701.d
Lab Smp Id: PW011004-01 211 Client Smp ID: AR122101
Inj Date : 19-NOV-2001 17:15
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011004-01 211
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m
Meth Date : 20-Nov-2001 08:18 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012f1201.d
Als bottle: 7 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1221.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
2 Aroclor-1221					CAS #: 11104-28-2		
6.656	6.656	0.000	13902051	4000.00	552	80.00- 120.00	100.00
6.787	6.787	0.000	13120367	4000.00	527	74.38- 114.38	94.38
6.943	6.943	0.000	43612514	4000.00	529	293.71- 333.71	313.71
		Average of Peak Amounts =			536		
$ 1 4cmx					CAS #: 877-09-8		
6.304	6.303	0.001	708566832	200.000	189	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.080	15.078	0.002	595113831	200.000	196	80.00- 120.00	100.00

500

722

Data File: /chem/ecd1a.i/111901a.b/007f0701.d

Date : 19-NOV-2001 17:15

Client ID: AR122101

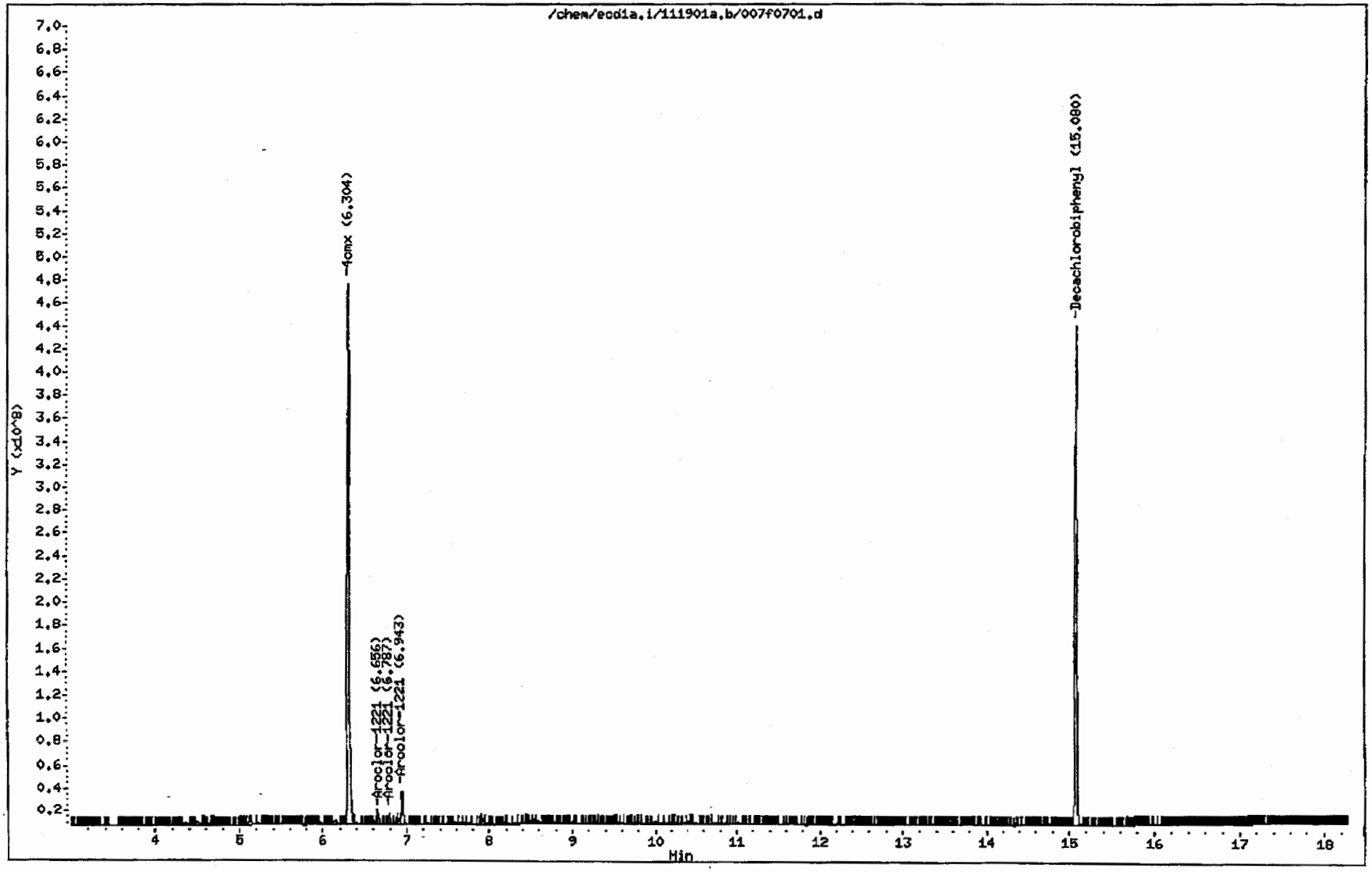
Sample Info: IPW011004-01 211

Column phase: DB-XLB

Instrument: ecd1a.i

Operator: mm

Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/013b1301.d
Lab Smp Id: PW011022-03 421 Client Smp ID: AR124201
Inj Date : 19-NOV-2001 19:29
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011022-03 421
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m
Meth Date : 20-Nov-2001 09:48 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012b1201.d
Als bottle: 13 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1242.sub
Target Version: 3.50 Sample Matrix: None
Processing Host: hpclp1

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
6 Aroclor-1242					CAS #: 53469-21-9		
7.331	7.331	0.000	9087712	4000.00	578	80.00- 120.00	100.00
8.047	8.047	0.000	19696242	4000.00	532	196.73- 236.73	216.73
8.430	8.429	0.001	5879559	4000.00	538	44.70- 84.70	64.70
8.992	8.992	0.000	12109674	4000.00	549	113.25- 153.25	133.25
9.790	9.790	0.000	13205478	4000.00	501	125.31- 165.31	145.31
Average of Peak Amounts =					540		
$ 1 4cmx					CAS #: 877-09-8		
6.158	6.159	-0.001	234318122	200.000	203	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.373	15.375	-0.002	196634711	200.000	201	80.00- 120.00	100.00

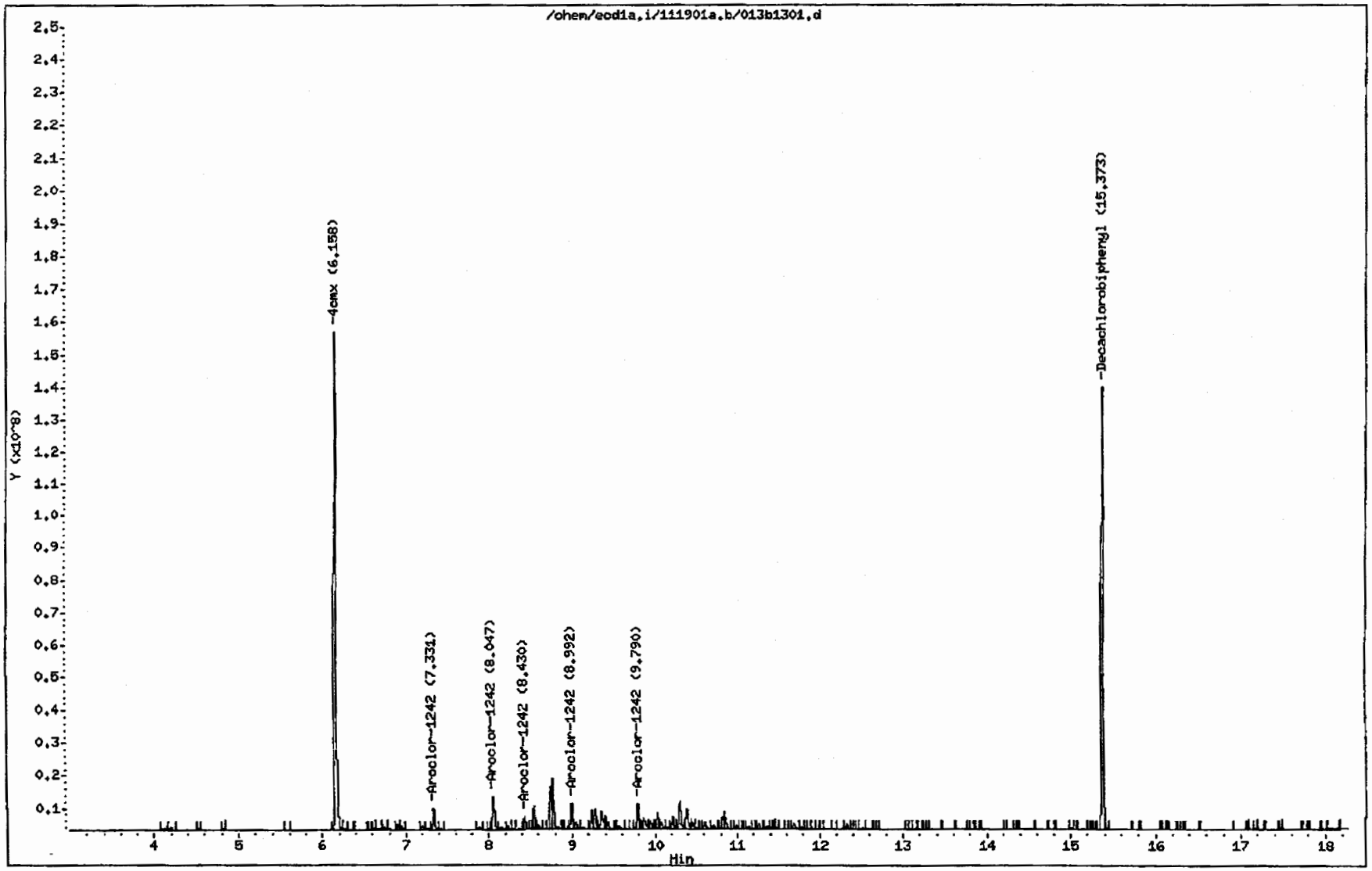
500

Data File: /chem/ecd1a.i/111901a.b/013b1301.d
Date : 19-NOV-2001 19:29
Client ID: AR124201
Sample Info: IPW011022-03 421

Column phase: DB-17HS

Instrument: ecd1a.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/013f1301.d
Lab Smp Id: PW011022-03 421 Client Smp ID: AR124201
Inj Date : 19-NOV-2001 19:29
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011022-03 421
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m
Meth Date : 20-Nov-2001 09:47 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012f1201.d
Als bottle: 13 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1242.sub
Target Version: 3.50 Sample Matrix: None
Processing Host: hpclp1

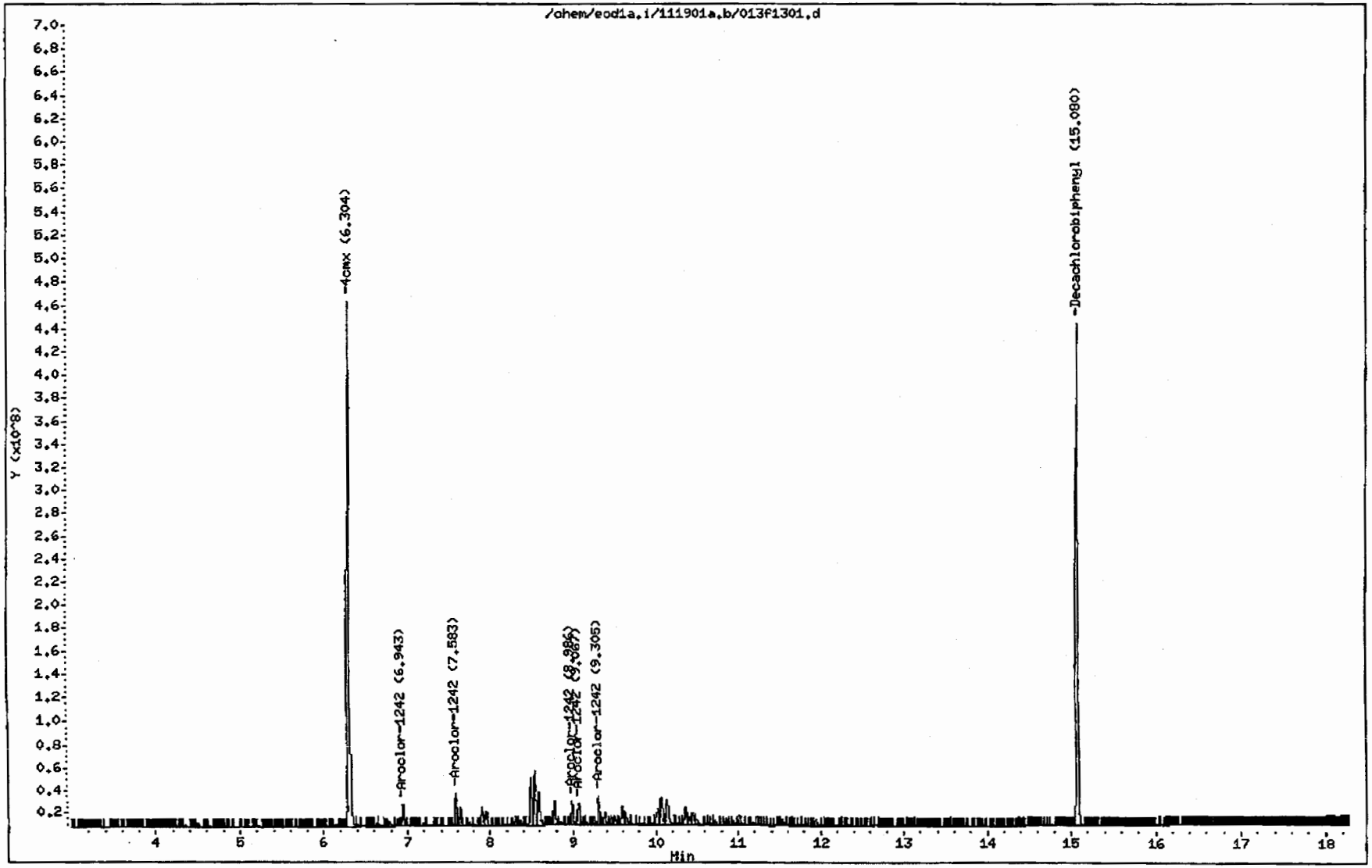
RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
6 Aroclor-1242					CAS #: 53469-21-9		
6.943	6.944	-0.001	29468381	4000.00	582	80.00- 120.00	100.00
7.583	7.585	-0.002	41957760	4000.00	544	122.38- 162.38	142.38
8.986	8.986	0.000	32870740	4000.00	506	91.55- 131.55	111.55
9.067	9.068	-0.001	36951044	4000.00	507	105.39- 145.39	125.39
9.305	9.305	0.000	38098605	4000.00	532	109.29- 149.29	129.29
Average of Peak Amounts					534		
$ 1 4cmx					CAS #: 877-09-8		
6.304	6.303	0.001	695093365	200.000	185	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.080	15.078	0.002	588715795	200.000	194	80.00- 120.00	100.00

Data File: /ohem/eod1a.i/111901a.b/013f1301.d
Date : 19-NOV-2001 19:29
Client ID: AR124201
Sample Info: IPW011022-03 421

Column phase: DB-XLB

Instrument: eod1a.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/043b4301.d
Lab Smp Id: PW011113-01 606 Client Smp ID: AR166006
Inj Date : 20-NOV-2001 06:42
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011113-01 606
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m
Meth Date : 20-Nov-2001 13:44 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012b1201.d
Als bottle: 43 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1660.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
3 Aroclor-1016				500	CAS #: 12674-11-2		
7.331	7.330	0.001	10470196	4000.00	517	80.00- 120.00	100.00
8.047	8.047	0.000	26221798	4000.00	534	232.90- 272.90	250.44
8.428	8.429	-0.001	7702411	4000.00	524	53.90- 93.90	73.57
8.992	8.992	0.000	15895536	4000.00	502	131.58- 171.58	151.82
9.790	9.791	-0.001	17557511	4000.00	506	147.33- 187.33	167.69
Average of Peak Amounts =					516		
21 Aroclor-1260				500	CAS #: 11096-82-5		
11.678	11.679	-0.001	32753157	4000.00	489	80.00- 120.00	100.00
11.864	11.866	-0.002	37382368	4000.00	497	95.12- 135.12	114.13
13.046	13.047	-0.001	23171858	4000.00	489	51.18- 91.18	70.75
13.294	13.294	0.000	64857894	4000.00	519	178.37- 218.37	198.02
13.785	13.785	0.000	11235583	4000.00	521	13.35- 53.35	34.30
Average of Peak Amounts =					503		
$ 1 4cmx					CAS #: 877-09-8		
6.158	6.159	-0.001	247436914	200.000	215	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.374	15.375	-0.001	201710552	200.000	206	80.00- 120.00	100.00

11/30/01

JC 12/4/01

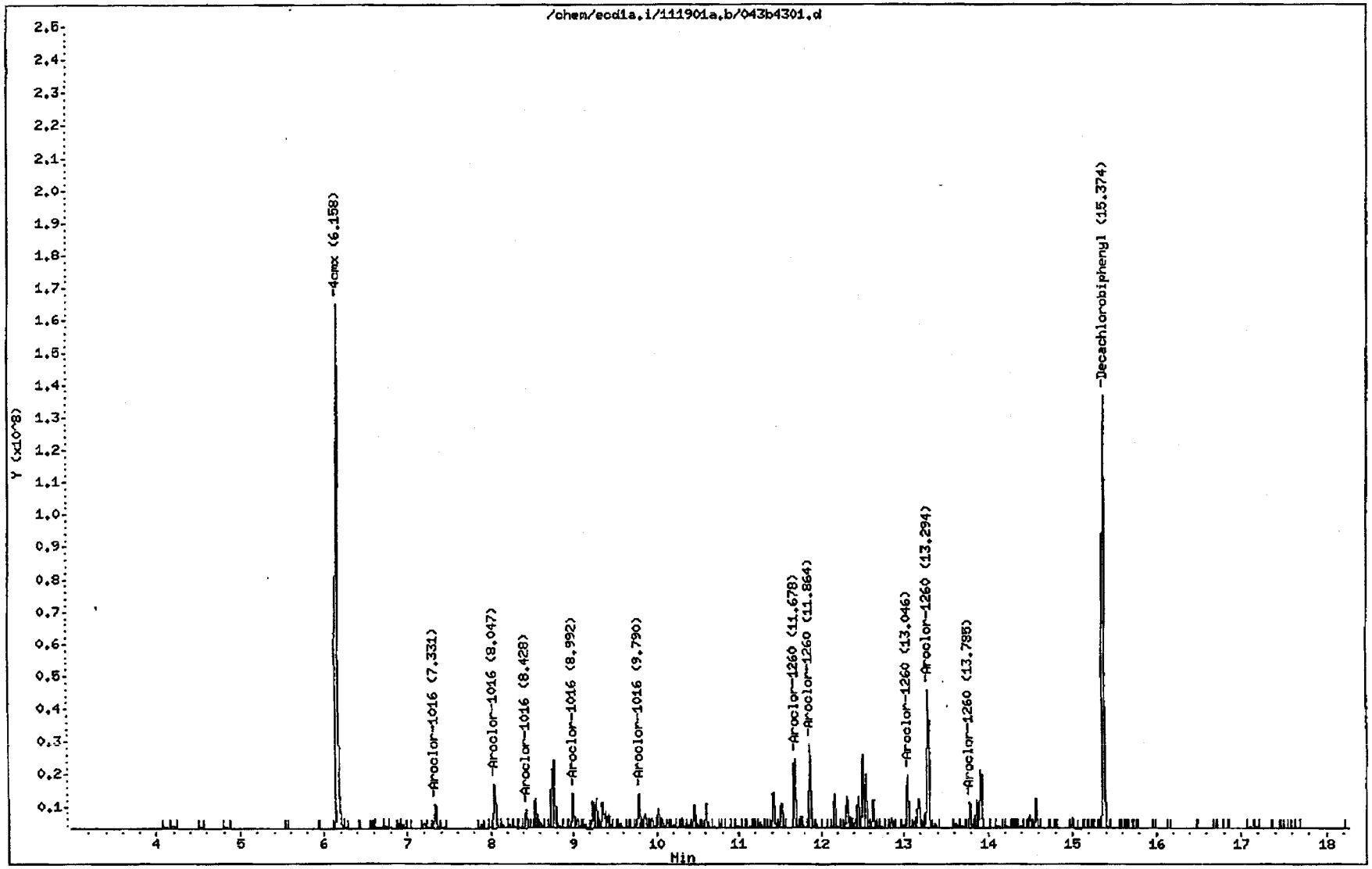
728

Data File: /chem/ecd1a.i/111901a.b/043b4301.d
Date : 20-NOV-2001 06:42
Client ID: AR166006
Sample Info: IPW011113-01 606

Column phase: DB-17MS

Instrument: ecd1a.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/043f4301.d
Lab Smp Id: PW011113-01 606 Client Smp ID: AR166006
Inj Date : 20-NOV-2001 06:42
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011113-01 606
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m
Meth Date : 20-Nov-2001 13:43 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012f1201.d
Als bottle: 43 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1660.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
3 Aroclor-1016					CAS #: 12674-11-2		
6.943	6.943	0.000	34455097	4000.00	546	80.00- 120.00	100.00
7.582	7.584	-0.002	55743065	4000.00	551	141.60- 181.60	161.78
8.985	8.987	-0.002	47096044	4000.00	551	114.56- 154.56	136.69
9.066	9.068	-0.002	52793312	4000.00	563	131.20- 171.20	153.22
9.304	9.305	-0.001	51227837	4000.00	561	125.87- 165.87	148.68
Average of Peak Amounts =					554		
21 Aroclor-1260					CAS #: 11096-82-5		
12.335	12.338	-0.003	82588080	4000.00	543	80.00- 120.00	100.00
12.421	12.425	-0.004	45604332	4000.00	530	34.80- 74.80	55.22
12.798	12.800	-0.002	42807499	4000.00	536	30.84- 70.84	51.83
13.131	13.133	-0.002	193792205	4000.00	550	212.78- 252.78	234.65
13.540	13.541	-0.001	119099680	4000.00	533	120.82- 160.82	144.21
Average of Peak Amounts =					539		
$ 1 4cmx					CAS #: 877-09-8		
6.304	6.303	0.001	748687061	200.000	199	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.079	15.078	0.001	567152928	200.000	186	80.00- 120.00	100.00

500

500

11/13/01

JC 12/4/01

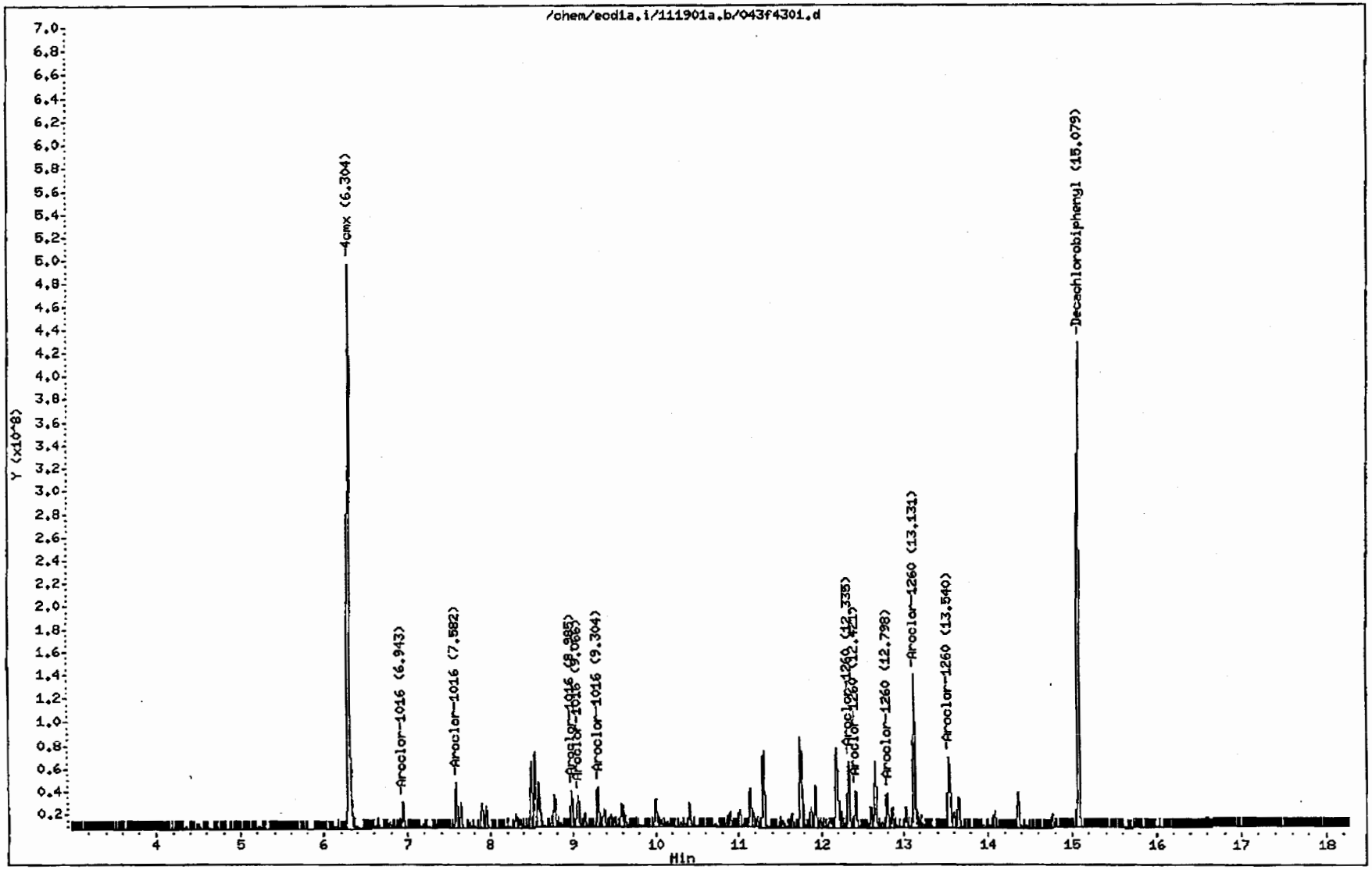
730

Data File: /chem/eodia.i/111901a.b/043f4301.d
Date : 20-NOV-2001 06:42
Client ID: AR166006
Sample Info: IPW011113-01 606

Column phase: DB-XLB

Instrument: eodia.i

Operator: mm
Column diameter: 0.25



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DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/051b5101.d
Lab Smp Id: PW011113-01 607 Client Smp ID: AR166007
Inj Date : 20-NOV-2001 09:41
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011113-01 607
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m
Meth Date : 20-Nov-2001 13:44 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012b1201.d
Als bottle: 51 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1660.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
3 Aroclor-1016					CAS #: 12674-11-2		
7.332	7.330	0.002	11029902	4000.00	545	80.00- 120.00	100.00
8.048	8.047	0.001	27849975	4000.00	567	232.90- 272.90	252.50
8.429	8.429	0.000	8211600	4000.00	558	53.90- 93.90	74.45
8.993	8.992	0.001	16876947	4000.00	533	131.58- 171.58	153.01
9.790	9.791	-0.001	18737413	4000.00	540	147.33- 187.33	169.88
Average of Peak Amounts =					549		
21 Aroclor-1260					CAS #: 11096-82-5		
11.679	11.679	0.000	34342498	4000.00	512	80.00- 120.00	100.00
11.866	11.866	0.000	39384883	4000.00	523	95.12- 135.12	114.68
13.047	13.047	0.000	24050428	4000.00	508	51.18- 91.18	70.03
13.295	13.294	0.001	66857429	4000.00	535	178.37- 218.37	194.68
13.784	13.785	-0.001	11166584	4000.00	518	13.35- 53.35	32.52
Average of Peak Amounts =					519		
$ 1 4cmx					CAS #: 877-09-8		
6.159	6.159	0.000	262922097	200.000	228	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.374	15.375	-0.001	200039066	200.000	204	80.00- 120.00	100.00

12/4/01

JC 12/4/01

Data File: /chem/ecd1a.i/111901a.b/051b5101.d

Date : 20-NOV-2001 09:41

Client ID: AR166007

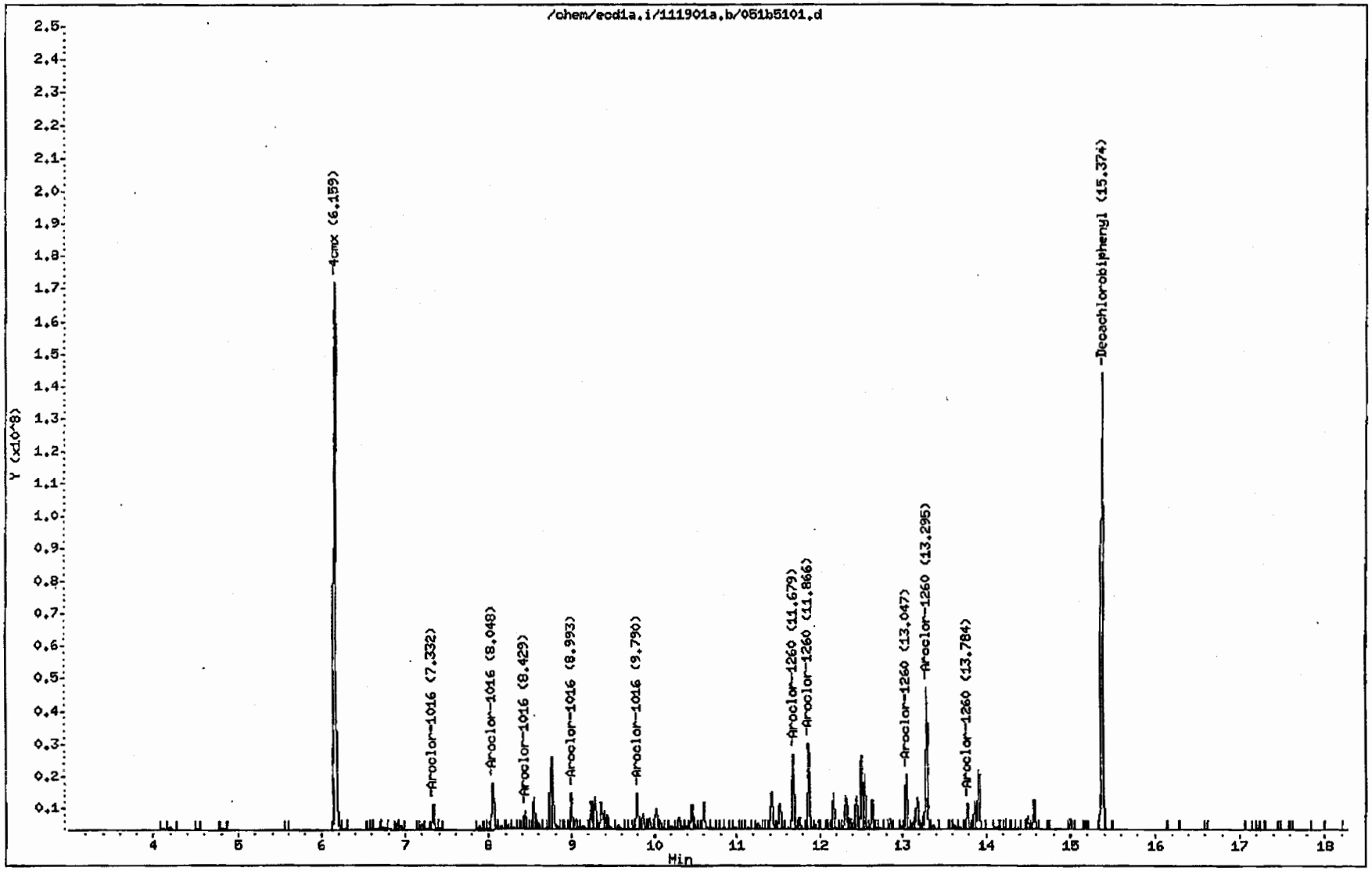
Sample Info: IPW011113-01 607

Column phase: DB-17MS

Instrument: ecd1a.i

Operator: mm

Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/051f5101.d
Lab Smp Id: PW011113-01 607 Client Smp ID: AR166007
Inj Date : 20-NOV-2001 09:41
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011113-01 607
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m
Meth Date : 20-Nov-2001 13:43 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012f1201.d
Als bottle: 51 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1660.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
3 Aroclor-1016					CAS #: 12674-11-2		
6.943	6.943	0.000	36484927	4000.00	578	80.00- 120.00	100.00
7.583	7.584	-0.001	58875215	4000.00	582	141.60- 181.60	161.37
8.986	8.987	-0.001	48739063	4000.00	570	114.56- 154.56	133.59
9.069	9.068	0.001	54645966	4000.00	582	131.20- 171.20	149.78
9.304	9.305	-0.001	52919928	4000.00	579	125.87- 165.87	145.05
Average of Peak Amounts =					578		
21 Aroclor-1260					CAS #: 11096-82-5		
12.337	12.338	-0.001	82960599	4000.00	545	80.00- 120.00	100.00
12.423	12.425	-0.002	45710133	4000.00	532	34.80- 74.80	55.10
12.799	12.800	-0.001	42127703	4000.00	528	30.84- 70.84	50.78
13.130	13.133	-0.003	193232861	4000.00	548	212.78- 252.78	232.92
13.540	13.541	-0.001	114104475	4000.00	511	120.82- 160.82	137.54
Average of Peak Amounts =					533		
$ 1 4cmx					CAS #: 877-09-8		
6.304	6.303	0.001	795774983	200.000	212	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.079	15.078	0.001	544752508	200.000	179	80.00- 120.00	100.00

12/4/01

JC 12/4/01

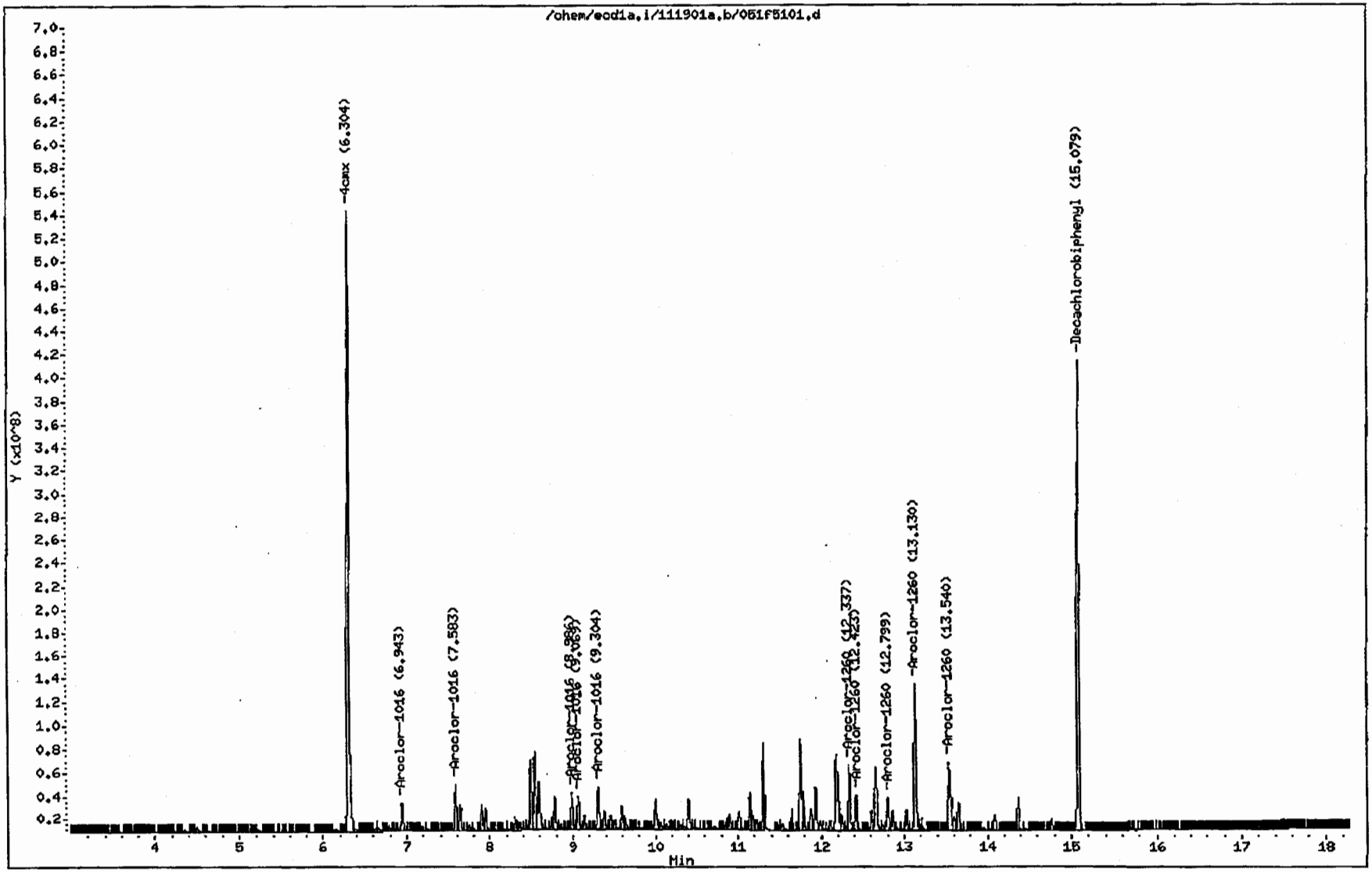
735

Data File: /ohem/ecd1a.i/111901a.b/051f5101.d
Date : 20-NOV-2001 09:41
Client ID: AR166007
Sample Info: IPW011113-01 607

Column phase: DB-XLB

Instrument: ecd1a.i

Operator: mm
Column diameter: 0.25



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DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/052b5201.d
Lab Smp Id: PW011022-02 542 Client Smp ID: AR125402
Inj Date : 20-NOV-2001 10:05
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011022-02 542
Misc Info : |ECD82P_1S|121122|SVA|ETLL|
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m
Meth Date : 20-Nov-2001 13:44 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012b1201.d
Als bottle: 52 Continuing Calibration Sample
Dil Factor: 10.00000
Integrator: Falcon Compound Sublist: AR1254.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
15 Aroclor-1254					CAS #: 11097-69-1		
10.599	10.599	0.000	31664646	4000.00	451	80.00- 120.00	100.00
10.708	10.706	0.002	11043007	4000.00	424	15.38- 55.38	34.87
11.133	11.132	0.001	9097190	4000.00	436	9.62- 49.62	28.73
11.260	11.257	0.003	19179139	4000.00	445	42.13- 82.13	60.57
11.680	11.679	0.001	39490348	4000.00	457	107.51- 147.51	124.71
Average of Peak Amounts =					442		
$ 1 4CMX					CAS #: 877-09-8		
6.156	6.159	-0.003	225983266	200.000	196	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.375	15.375	0.000	174092271	200.000	178	80.00- 120.00	100.00

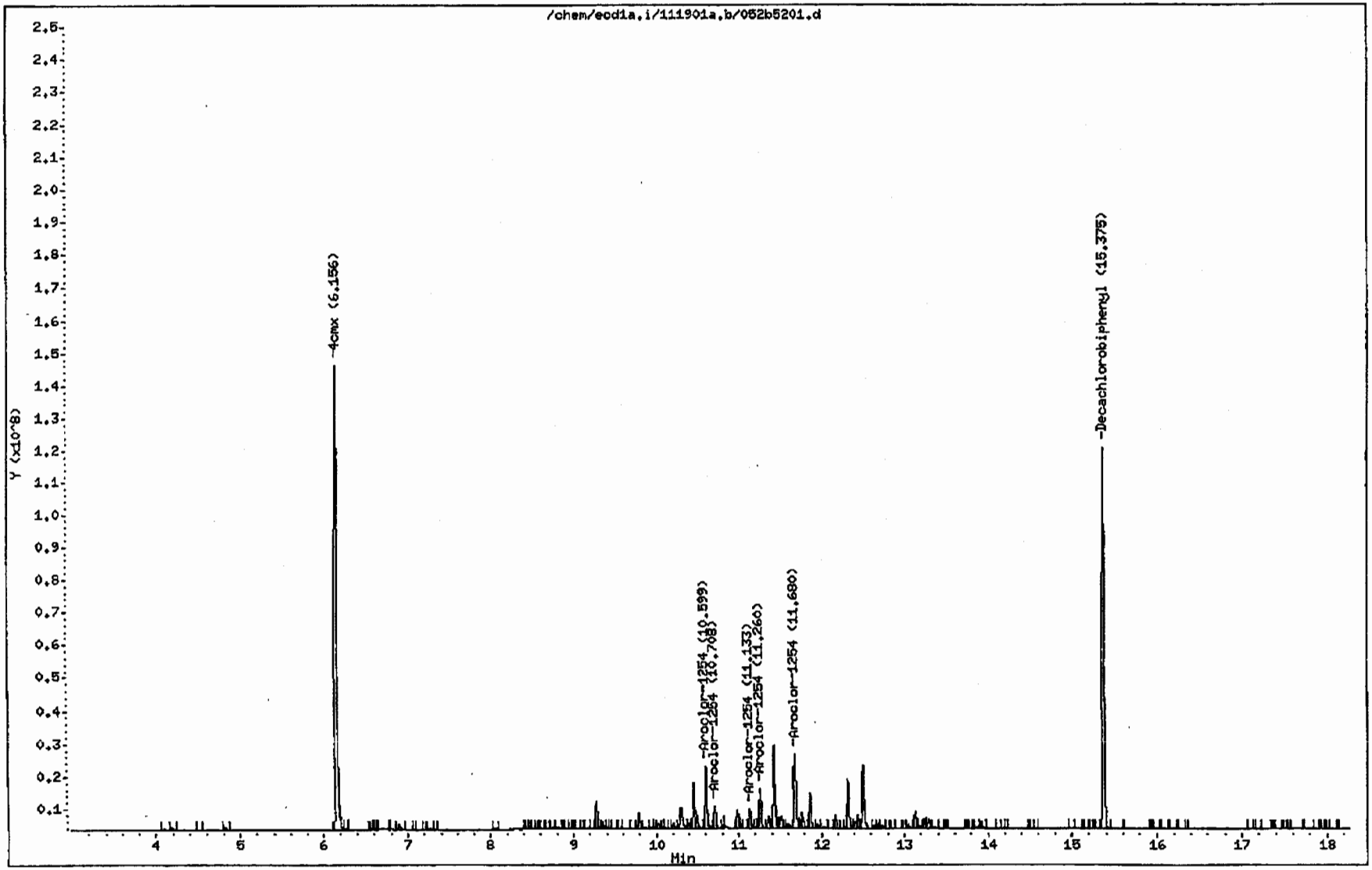
JC 12/4/01

Data File: /chem/ecdia.i/111901a.b/052b5201.d
Date : 20-NOV-2001 10:05
Client ID: AR125402
Sample Info: !PW011022-02 542

Column phase: DB-17MS

Instrument: ecdia.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/052f5201.d
Lab Smp Id: PW011022-02 542 Client Smp ID: AR125402
Inj Date : 20-NOV-2001 10:05
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011022-02 542
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m
Meth Date : 20-Nov-2001 13:43 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012f1201.d
Als bottle: 52 Continuing Calibration Sample
Dil Factor: 10.00000
Integrator: Falcon Compound Sublist: AR1254.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
15 Aroclor-1254					CAS #: 11097-69-1		
10.004	10.004	0.000	80702637	4000.00	517	80.00- 120.00	100.00
10.405	10.404	0.001	94106241	4000.00	568	94.32- 134.32	116.61
11.017	11.016	0.001	125690118	4000.00	540	135.66- 175.66	155.74
11.532	11.529	0.003	92191808	4000.00	509	94.57- 134.57	114.24
11.754	11.752	0.002	55732254	4000.00	545	49.22- 89.22	69.06
Average of Peak Amounts =					536		
$ 1 4cmx					CAS #: 877-09-8		
6.304	6.303	0.001	691385795	200.000	184	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.080	15.078	0.002	504439440	200.000	166	80.00- 120.00	100.00

2

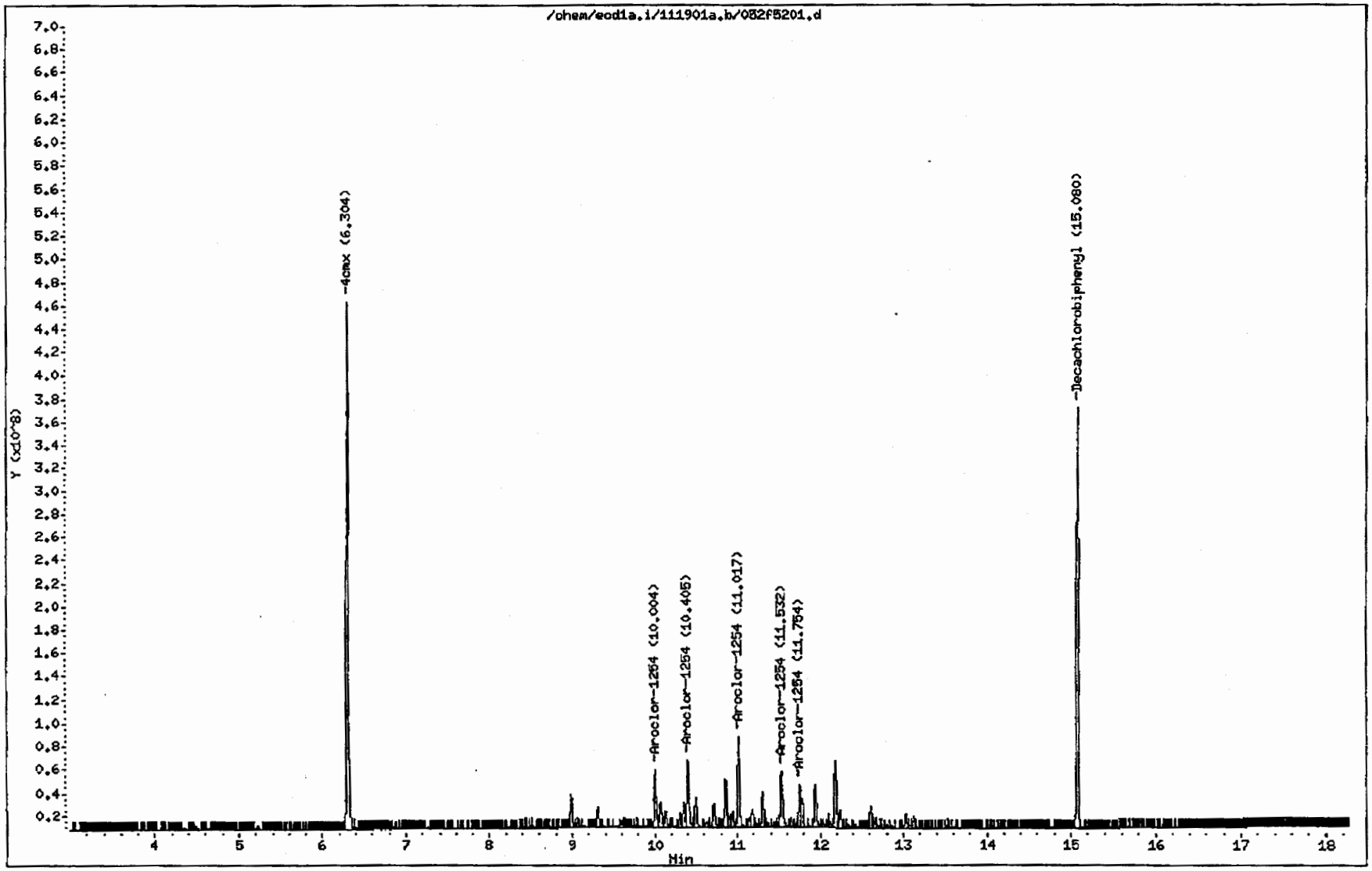
JC 12/4/01

Data File: /chem/ecd1a.i/111901a.b/052f5201.d
Date : 20-NOV-2001 10:05
Client ID: AR125402
Sample Info: IPW011022-02 542

Column phase: DB-XLB

Instrument: ecd1a.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/057b5701.d
Lab Smp Id: PW011113-01 608 Client Smp ID: AR166008
Inj Date : 20-NOV-2001 11:57
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011113-01 608
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m
Meth Date : 20-Nov-2001 13:44 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012b1201.d
Als bottle: 57 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1660.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
3 Aroclor-1016					CAS #: 12674-11-2		
7.331	7.330	0.001	11364799	4000.00	562	80.00- 120.00	100.00
8.049	8.047	0.002	28742103	4000.00	585	232.90- 272.90	252.90
8.429	8.429	0.000	8398640	4000.00	571	53.90- 93.90	73.90
8.992	8.992	0.000	17226936	4000.00	544	131.58- 171.58	151.58
9.789	9.791	-0.002	19016450	4000.00	548	147.33- 187.33	167.33
Average of Peak Amounts =					562		
21 Aroclor-1260					CAS #: 11096-82-5		
11.679	11.679	0.000	35321853	4000.00	527	80.00- 120.00	100.00
11.866	11.866	0.000	40662968	4000.00	540	95.12- 135.12	115.12
13.047	13.047	0.000	25140722	4000.00	531	51.18- 91.18	71.18
13.295	13.294	0.001	70069202	4000.00	560	178.37- 218.37	198.37
13.785	13.785	0.000	11781068	4000.00	546	13.35- 53.35	33.35
Average of Peak Amounts =					541		
$ 1 4cmx					CAS #: 877-09-8		
6.158	6.159	-0.001	269101673	200.000	233	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.375	15.375	0.000	212415368	200.000	217	80.00- 120.00	100.00

500

500

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JC 12/4/01

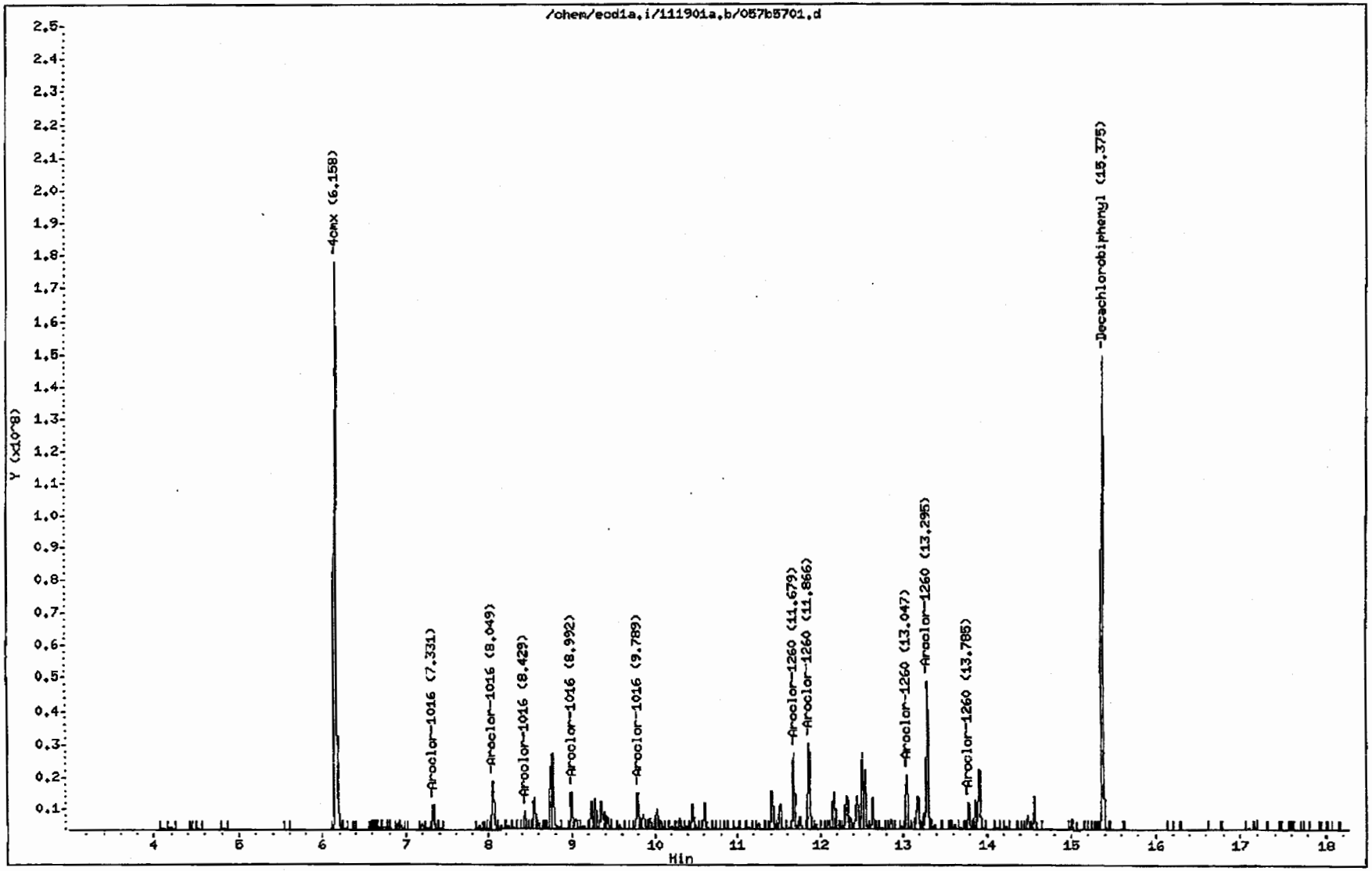
741

Data File: /chem/ecd1a.i/111901a.b/057b5701.d
Date : 20-NOV-2001 11:57
Client ID: AR166008
Sample Info: IPW011113-01 608

Column phase: DB-17MS

Instrument: ecd1a.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/057f5701.d
Lab Smp Id: PW011113-01 608 Client Smp ID: AR166008
Inj Date : 20-NOV-2001 11:57
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011113-01 608
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m
Meth Date : 20-Nov-2001 13:43 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012f1201.d
Als bottle: 57 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1660.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
3 Aroclor-1016					CAS #: 12674-11-2		
6.944	6.943	0.001	36752534	4000.00	582	80.00- 120.00	100.00
7.583	7.584	-0.001	59393324	4000.00	587	141.60- 181.60	161.60
8.985	8.987	-0.002	49452733	4000.00	578	114.56- 154.56	134.56
9.066	9.068	-0.002	55568900	4000.00	592	131.20- 171.20	151.20
9.304	9.305	-0.001	53609381	4000.00	587	125.87- 165.87	145.87
Average of Peak Amounts =					585		
21 Aroclor-1260					CAS #: 11096-82-5		
12.337	12.338	-0.001	87157178	4000.00	573	80.00- 120.00	100.00
12.422	12.425	-0.003	47760197	4000.00	555	34.80- 74.80	54.80
12.799	12.800	-0.001	44306908	4000.00	555	30.84- 70.84	50.84
13.133	13.133	0.000	202886823	4000.00	576	212.78- 252.78	232.78
13.540	13.541	-0.001	122731022	4000.00	550	120.82- 160.82	140.82
Average of Peak Amounts =					562		
$ 1 4cmx					CAS #: 877-09-8		
6.304	6.303	0.001	805296794	200.000	214	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.080	15.078	0.002	588467752	200.000	193	80.00- 120.00	100.00

500

500

JC 12/4/01

Data File: /ohem/eod1a.i/111901a.b/057f5701.d

Date : 20-NOV-2001 11:57

Client ID: AR166008

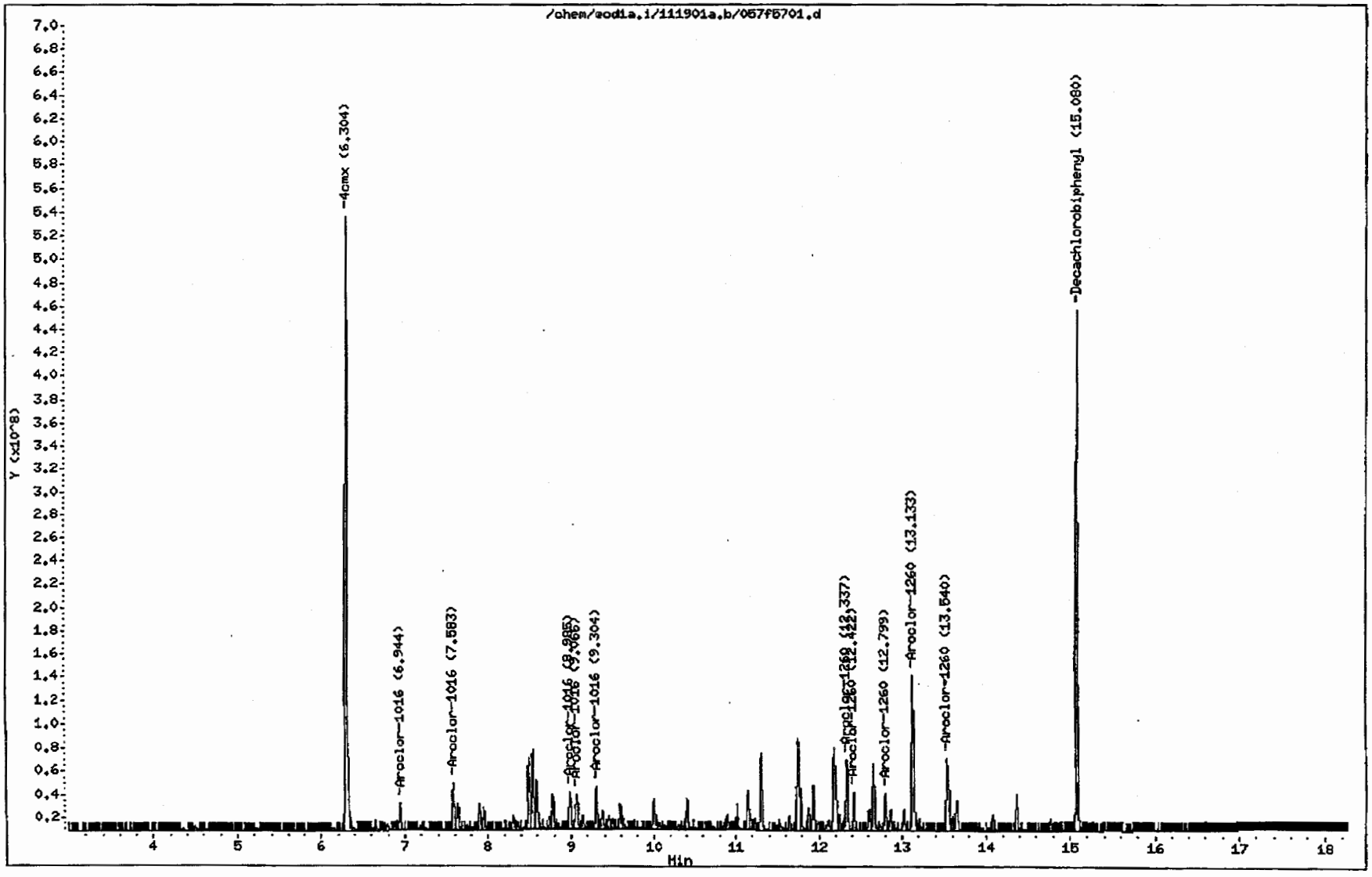
Sample Info: IPW011113-01 608

Column phase: DB-XLB

Instrument: eod1a.i

Operator: mm

Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/058b5801.d
Lab Smp Id: PW011022-02 543 Client Smp ID: AR125403
Inj Date : 20-NOV-2001 12:20
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011022-02 543
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m
Meth Date : 20-Nov-2001 13:44 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012b1201.d
Als bottle: 58 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1254.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
15 Aroclor-1254					CAS #: 11097-69-1		
10.600	10.599	0.001	32033919	4000.00	456	80.00- 120.00	100.00
10.707	10.706	0.001	11334666	4000.00	435	15.38- 55.38	35.38
11.134	11.132	0.002	9489790	4000.00	454	9.62- 49.62	29.62
11.259	11.257	0.002	19904197	4000.00	462	42.13- 82.13	62.13
11.681	11.679	0.002	40845295	4000.00	472	107.51- 147.51	127.51
Average of Peak Amounts =					456		
$ 1 4cmx					CAS #: 877-09-8		
6.158	6.159	-0.001	230329012	200.000	200	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.375	15.375	0.000	181952620	200.000	186	80.00- 120.00	100.00

500

12/1/01

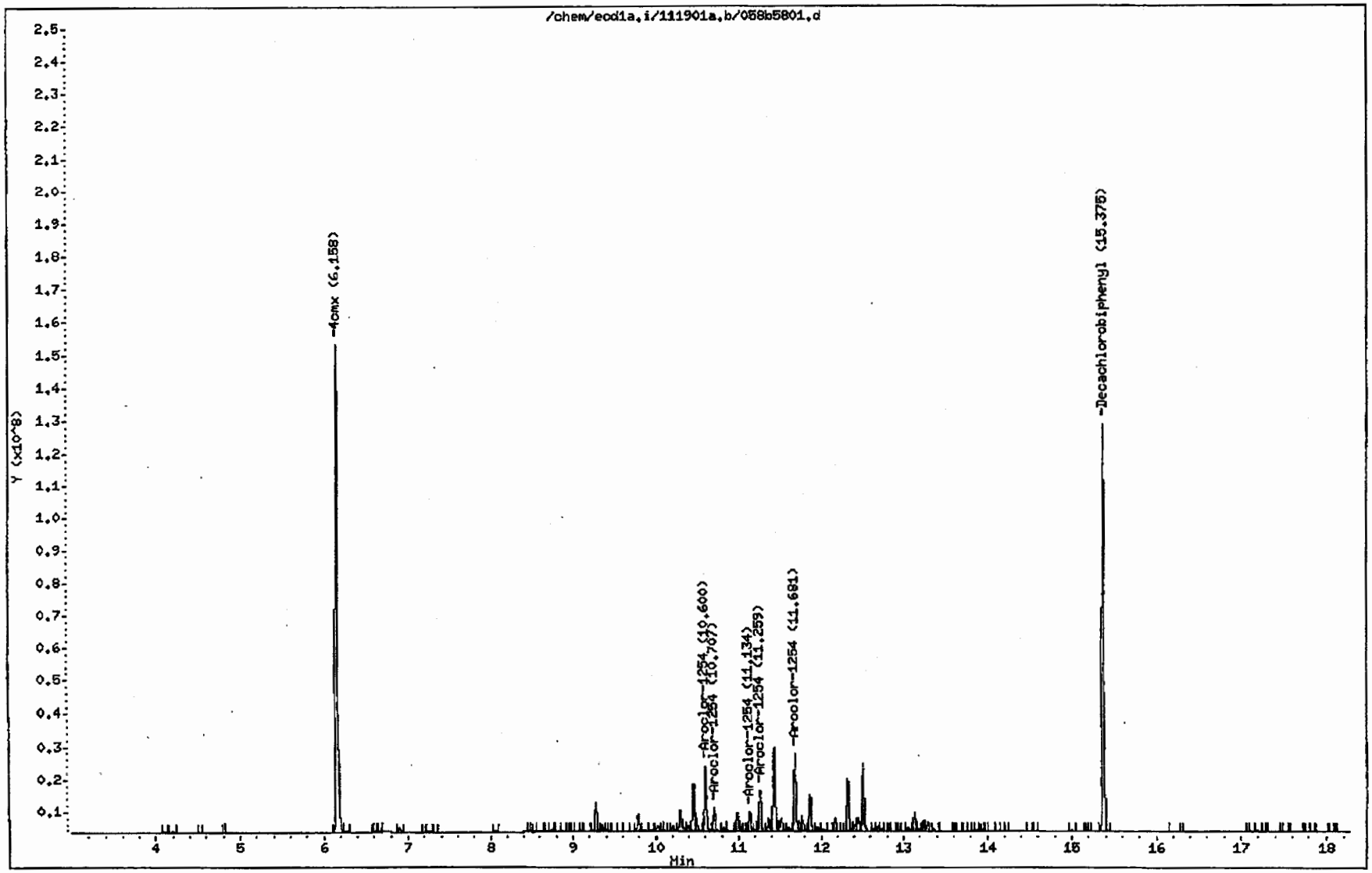
JC 12/4/01

Data File: /chem/ecd1a.i/111901a.b/058b5801.d
Date : 20-NOV-2001 12:20
Client ID: AR125403
Sample Info: IPW011022-02 543

Column phase: DB-17HS

Instrument: ecd1a.i

Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/058f5801.d
Lab Smp Id: PW011022-02 543 Client Smp ID: AR125403
Inj Date : 20-NOV-2001 12:20
Operator : mm Inst ID: ecd1a.i
Smp Info : |PW011022-02 543
Misc Info :
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m
Meth Date : 20-Nov-2001 13:43 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012f1201.d
Als bottle: 58 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: AR1254.sub
Target Version: 3.50 Sample Matrix: None

RT	EXP RT	DLT RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)	TARGET RANGE	RATIO
15 Aroclor-1254					CAS #: 11097-69-1		
10.004	10.004	0.000	82722556	4000.00	530	80.00- 120.00	100.00
10.404	10.404	0.000	94570988	4000.00	570	94.32- 134.32	114.32
11.015	11.016	-0.001	128764848	4000.00	553	135.66- 175.66	155.66
11.530	11.529	0.001	94776417	4000.00	524	94.57- 134.57	114.57
11.752	11.752	0.000	57263340	4000.00	560	49.22- 89.22	69.22
Average of Peak Amounts =					548		
$ 1 4cmx					CAS #: 877-09-8		
6.304	6.303	0.001	694525944	200.000	185	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.080	15.078	0.002	527465422	200.000	173	80.00- 120.00	100.00

560

12/4/01

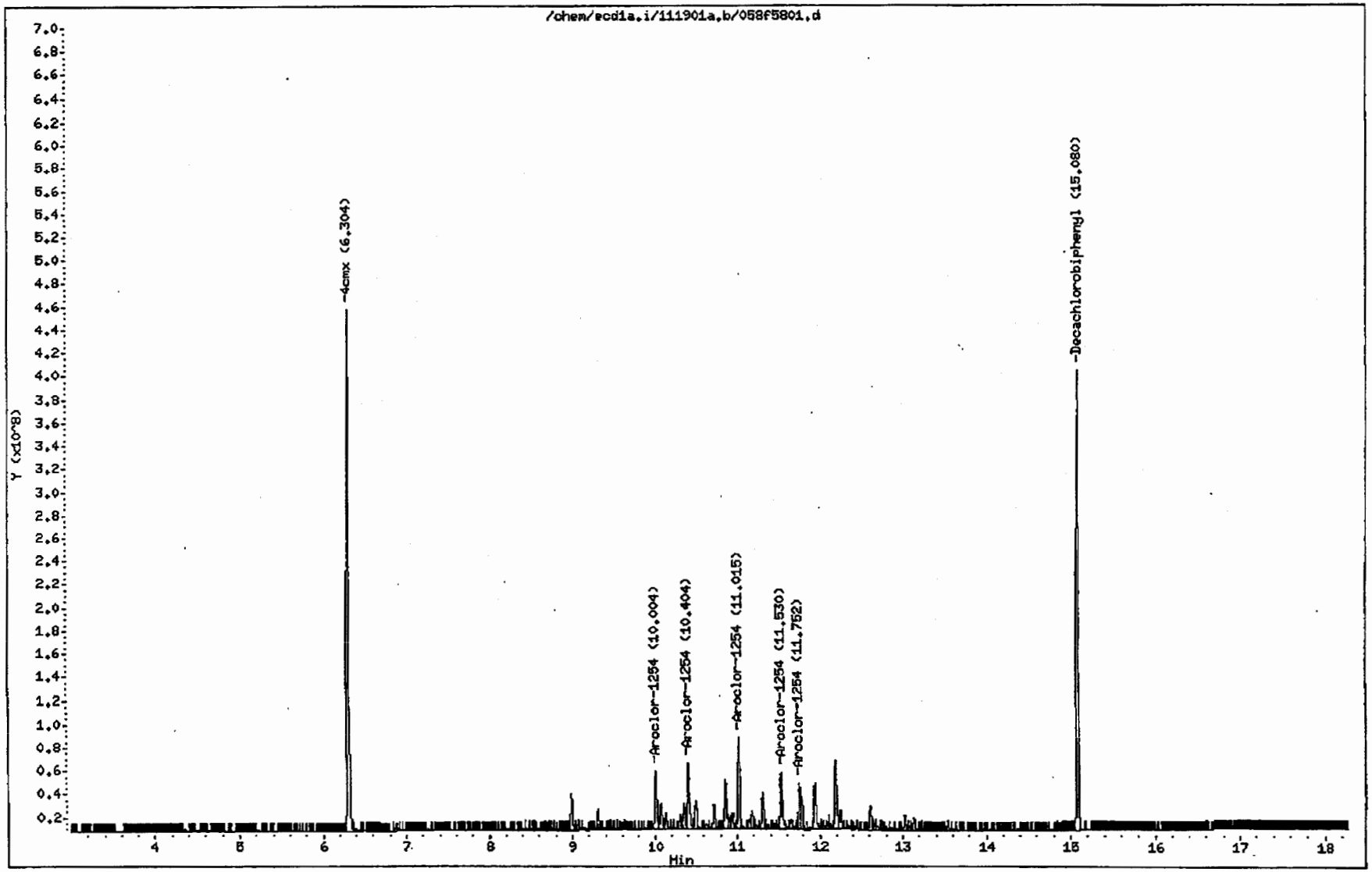
JC 12/4/01

Data File: /chem/ecd1a.i/111901a.b/058f5801.d
Date : 20-NOV-2001 12:20
Client ID: AR125403
Sample Info: IPW011022-02 543

Column phase: DB-XLB

Instrument: ecd1a.i

Operator: mm
Column diameter: 0.25



8D
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 110201

GC Column: DB-XLB ID: 0.25 (mm) Init. Calib. Date(s): 11/02/01 11/02/01

Instrument ID: ECD1A

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
S1 : 6.30 DCB: 15.07

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	DCB RT #
01	ZZZZZ	ZZZZZ	11/02/01	0938	6.31	15.08
02	PEM01	WP010925-02	11/02/01	1001	6.31	15.07
03	INDAB01	WP011030-01	11/02/01	1023	6.30	15.07
04	TOXAPH01	WP011009-07	11/02/01	1046	6.30	15.07
05	CHLOR01	WP011025-01	11/02/01	1108	6.30	15.07
06	AR166001	PW011102-04	11/02/01	1130	6.30	15.07
07	AR166002	PW011102-03	11/02/01	1153	6.30	15.07
08	AR166003	PW011102-02	11/02/01	1215	6.30	15.07
09	AR166004	PW011102-01	11/02/01	1237	6.31	15.07
10	AR166005	PI010927-01	11/02/01	1300	6.31	15.07
11	AR166001	PW011022-01	11/02/01	1322	6.30	15.07
12	AR125401	PW011022-02	11/02/01	1345	6.30	15.07
13	AR124801	PW011011-01	11/02/01	1407	6.31	15.07
14	AR124201	PW011022-03	11/02/01	1429	6.31	15.07
15	AR123201	PW011003-01	11/02/01	1452	6.30	15.07
16	AR122101	PW011004-01	11/02/01	1514	6.30	15.07
17	ZZZZZ	ZZZZZ	11/02/01	1537		
18	ZZZZZ	ZZZZZ	11/02/01	1559		
19	ZZZZZ	ZZZZZ	11/02/01	1621		
20	INDAB02	WP011030-01	11/02/01	1644	6.31	15.07
21	ZZZZZ	ZZZZZ	11/02/01	1706	6.30	15.07
22	ZZZZZ	ZZZZZ	11/02/01	1728	6.31	15.07
23	ZZZZZ	ZZZZZ	11/02/01	1751	6.31	15.07
24	ZZZZZ	ZZZZZ	11/02/01	1813	6.30	15.07
25	INDAB03	WP011030-01	11/02/01	1836	6.31	15.07
26	PEM02	WP010925-02	11/02/01	1858	6.31	15.07
27	ZZZZZ	ZZZZZ	11/02/01	1920	6.30	15.07
28	ZZZZZ	ZZZZZ	11/02/01	1943	6.30	15.07
29	ZZZZZ	ZZZZZ	11/02/01	2005	6.31	15.07
30	ZZZZZ	ZZZZZ	11/02/01	2027	6.31	15.07
31	ZZZZZ	ZZZZZ	11/02/01	2050	6.30	15.07
32	ZZZZZ	ZZZZZ	11/02/01	2112	6.30	15.07

	QC LIMITS
S1 = 4cmx	(+/- 0.02 MINUTES)
DCB = Decachlorobiphenyl	(+/- 0.02 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

8D
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 110201

GC Column: DB-17MS ID: 0.25 (mm) Init. Calib. Date(s): 11/02/01 11/02/01

Instrument ID: ECD1A

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
S1 : 6.16 DCB: 15.38

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	DCB RT #
01	ZZZZZ	ZZZZZ	11/02/01	0938	6.16	15.38
02	PEM01	WP010925-02	11/02/01	1001	6.16	15.38
03	INDAB01	WP011030-01	11/02/01	1023	6.16	15.38
04	TOXAPH01	WP011009-07	11/02/01	1046	6.16	15.38
05	CHLOR01	WP011025-01	11/02/01	1108	6.16	15.38
06	AR166001	PW011102-04	11/02/01	1130	6.16	15.38
07	AR166002	PW011102-03	11/02/01	1153	6.16	15.38
08	AR166003	PW011102-02	11/02/01	1215	6.16	15.38
09	AR166004	PW011102-01	11/02/01	1237	6.16	15.38
10	AR166005	PI010927-01	11/02/01	1300	6.16	15.38
11	AR166001	PW011022-01	11/02/01	1322	6.16	15.38
12	AR125401	PW011022-02	11/02/01	1345	6.16	15.38
13	AR124801	PW011011-01	11/02/01	1407	6.16	15.38
14	AR124201	PW011022-03	11/02/01	1429	6.16	15.38
15	AR123201	PW011003-01	11/02/01	1452	6.16	15.38
16	AR122101	PW011004-01	11/02/01	1514	6.16	15.38
17	ZZZZZ	ZZZZZ	11/02/01	1537		
18	ZZZZZ	ZZZZZ	11/02/01	1559		
19	ZZZZZ	ZZZZZ	11/02/01	1621		
20	INDAB02	WP011030-01	11/02/01	1644	6.16	15.38
21	ZZZZZ	ZZZZZ	11/02/01	1706	6.16	15.37
22	ZZZZZ	ZZZZZ	11/02/01	1728	6.16	15.38
23	ZZZZZ	ZZZZZ	11/02/01	1751	6.16	15.38
24	ZZZZZ	ZZZZZ	11/02/01	1813	6.16	15.37
25	INDAB03	WP011030-01	11/02/01	1836	6.16	15.38
26	PEM02	WP010925-02	11/02/01	1858	6.16	15.38
27	ZZZZZ	ZZZZZ	11/02/01	1920	6.16	15.38
28	ZZZZZ	ZZZZZ	11/02/01	1943	6.16	15.38
29	ZZZZZ	ZZZZZ	11/02/01	2005	6.16	15.38
30	ZZZZZ	ZZZZZ	11/02/01	2027	6.16	15.38
31	ZZZZZ	ZZZZZ	11/02/01	2050	6.16	15.38
32	ZZZZZ	ZZZZZ	11/02/01	2112	6.16	15.38

QC LIMITS
S1 = 4cmx (+/- 0.02 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.02 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

8D
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 111201

GC Column: DB-XLB ID: 0.25 (mm) Init. Calib. Date(s): 11/12/01 11/12/01

Instrument ID: ECD1A

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
S1 : 6.32 DCB: 15.08

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	DCB RT #
01	ZZZZZ	ZZZZZ	11/12/01	1737	6.32	15.09
02	PEM01	WP010925-02	11/12/01	1800	6.32	15.08
03	INDAB01	WP011108-01	11/12/01	1822	6.32	15.08
04	TOXAPH01	WP011009-07	11/12/01	1845	6.32	15.08
05	CHLOR01	WP011025-01	11/12/01	1907	6.32	15.08
06	AR125401	PW011112-09	11/12/01	1929	6.32	15.08
07	AR125402	PW011112-08	11/12/01	1952	6.32	15.08
08	AR125403	PW011112-07	11/12/01	2014	6.32	15.08
09	AR125404	PW011112-06	11/12/01	2037	6.32	15.08
10	AR125405	PI011106-01	11/12/01	2059	6.32	15.08
11	AR166001	PW011022-01	11/12/01	2122	6.32	15.08
12	AR125401	PW011022-02	11/12/01	2144	6.32	15.08
13	AR124801	PW011011-01	11/12/01	2206	6.32	15.08
14	AR124201	PW011022-03	11/12/01	2229	6.32	15.08
15	AR123201	PW011003-01	11/12/01	2251	6.32	15.08
16	AR122101	PW011004-01	11/12/01	2314	6.32	15.08
17	ZZZZZ	ZZZZZ	11/12/01	2336		
18	ZZZZZ	ZZZZZ	11/12/01	2358		
19	ZZZZZ	ZZZZZ	11/13/01	0021		
20	INDAB02	WP011108-01	11/13/01	0043	6.32	15.08
21	ZZZZZ	ZZZZZ	11/13/01	0106	6.32	15.08
22	ZZZZZ	ZZZZZ	11/13/01	0128	6.32	15.08
23	ZZZZZ	ZZZZZ	11/13/01	0151	6.32	15.08
24	INDAB03	WP011108-01	11/13/01	0213	6.32	15.08
25	AR166002	PW011022-01	11/13/01	0235	6.32	15.08
26	AR125402	PW011022-02	11/13/01	0258	6.32	15.08
27	ZZZZZ	ZZZZZ	11/13/01	0320	6.32	15.08
28	ZZZZZ	ZZZZZ	11/13/01	0343	6.32	15.08
29	ZZZZZ	ZZZZZ	11/13/01	0405	6.32	15.08
30	ZZZZZ	ZZZZZ	11/13/01	0427	6.32	15.08
31	ZZZZZ	ZZZZZ	11/13/01	0450	6.32	15.08
32	ZZZZZ	ZZZZZ	11/13/01	0512	6.32	15.08

	QC LIMITS
S1 = 4cmx	(+/- 0.02 MINUTES)
DCB = Decachlorobiphenyl	(+/- 0.02 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

8D
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 111201

GC Column: DB-17MS ID: 0.25 (mm) Init. Calib. Date(s): 11/12/01 11/12/01

Instrument ID: ECD1A

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
S1 : 6.18 DCB: 15.39

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	DCB RT #
01	ZZZZZ	ZZZZZ	11/12/01	1737	6.17	15.39
02	PEM01	WP010925-02	11/12/01	1800	6.18	15.39
03	INDAB01	WP011108-01	11/12/01	1822	6.18	15.39
04	TOXAPH01	WP011009-07	11/12/01	1845	6.18	15.39
05	CHLOR01	WP011025-01	11/12/01	1907	6.18	15.39
06	AR125401	PW011112-09	11/12/01	1929	6.18	15.39
07	AR125402	PW011112-08	11/12/01	1952	6.18	15.39
08	AR125403	PW011112-07	11/12/01	2014	6.18	15.39
09	AR125404	PW011112-06	11/12/01	2037	6.18	15.39
10	AR125405	PI011106-01	11/12/01	2059	6.18	15.39
11	AR166001	PW011022-01	11/12/01	2122	6.18	15.39
12	AR125401	PW011022-02	11/12/01	2144	6.18	15.39
13	AR124801	PW011011-01	11/12/01	2206	6.18	15.39
14	AR124201	PW011022-03	11/12/01	2229	6.18	15.39
15	AR123201	PW011003-01	11/12/01	2251	6.18	15.39
16	AR122101	PW011004-01	11/12/01	2314	6.18	15.39
17	ZZZZZ	ZZZZZ	11/12/01	2336		
18	ZZZZZ	ZZZZZ	11/12/01	2358		
19	ZZZZZ	ZZZZZ	11/13/01	0021		
20	INDAB02	WP011108-01	11/13/01	0043	6.18	15.39
21	ZZZZZ	ZZZZZ	11/13/01	0106	6.18	15.39
22	ZZZZZ	ZZZZZ	11/13/01	0128	6.18	15.39
23	ZZZZZ	ZZZZZ	11/13/01	0151	6.18	15.39
24	INDAB03	WP011108-01	11/13/01	0213	6.18	15.39
25	AR166002	PW011022-01	11/13/01	0235	6.18	15.39
26	AR125402	PW011022-02	11/13/01	0258	6.18	15.39
27	ZZZZZ	ZZZZZ	11/13/01	0320	6.18	15.39
28	ZZZZZ	ZZZZZ	11/13/01	0343	6.18	15.39
29	ZZZZZ	ZZZZZ	11/13/01	0405	6.18	15.39
30	ZZZZZ	ZZZZZ	11/13/01	0427	6.18	15.39
31	ZZZZZ	ZZZZZ	11/13/01	0450	6.18	15.39
32	ZZZZZ	ZZZZZ	11/13/01	0512	6.18	15.39

	QC LIMITS
S1 = 4cmx	(+/- 0.02 MINUTES)
DCB = Decachlorobiphenyl	(+/- 0.02 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

8D
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

GC Column: DB-XLB ID: 0.25 (mm) Init. Calib. Date(s): 11/02/01 11/02/01

Instrument ID: ECD1A

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
S1 : 6.31 DCB: 15.08

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	DCB RT #
01	ZZZZZ	ZZZZZ	11/17/01	0824	6.32	15.09
02	AR166001	PW011113-01	11/17/01	0846	6.31	15.08
03	AR125401	PW011022-02	11/17/01	0908	6.31	15.08
04	AR124801	PW011011-01	11/17/01	0931	6.31	15.08
05	AR124201	PW011117-16	11/17/01	0953	6.31	15.08
06	AR124202	PW011117-15	11/17/01	1016	6.31	15.08
07	AR124203	PW011117-14	11/17/01	1038	6.31	15.08
08	AR124204	PW011117-13	11/17/01	1101	6.31	15.08
09	AR124205	PI010814-01	11/17/01	1123	6.31	15.08
10	AR124201	PW011022-03	11/17/01	1146	6.31	15.08
11	AR123201	PW011003-01	11/17/01	1208	6.31	15.08
12	AR122101	PW011004-01	11/17/01	1230	6.31	15.08
13	ZZZZZ	ZZZZZ	11/17/01	1253	6.31	15.08
14	ZZZZZ	ZZZZZ	11/17/01	1315	6.31	15.08
15	ZZZZZ	ZZZZZ	11/17/01	1338	6.31	15.08
16	ZZZZZ	ZZZZZ	11/17/01	1400	6.31	15.08
17	ZZZZZ	ZZZZZ	11/17/01	1423	6.31	15.08
18	ZZZZZ	ZZZZZ	11/17/01	1445	6.31	15.08
19	AR124202	PW011022-03	11/17/01	1507	6.31	15.08
20	AR126002	PW011022-01	11/17/01	1530	6.31	15.08
21	ZZZZZ	ZZZZZ	11/17/01	1552	6.31	15.08
22	ZZZZZ	ZZZZZ	11/17/01	1614	6.31	15.08
23	ZZZZZ	ZZZZZ	11/17/01	1637	6.31	15.08
24	ZZZZZ	ZZZZZ	11/17/01	1659	6.31	15.08
25	ZZZZZ	ZZZZZ	11/17/01	1722	6.31	15.08
26	ZZZZZ	ZZZZZ	11/17/01	1744	6.31	15.08
27	AR166003	PW011022-01	11/17/01	1806	6.31	15.08
28	ZZZZZ	ZZZZZ	11/17/01	1829	6.31	15.08
29	AR166004	PW011022-01	11/17/01	1851	6.31	15.08
30	ZZZZZ	ZZZZZ	11/17/01	1914	6.30	15.08
31	ZZZZZ	ZZZZZ	11/17/01	1936	6.30	15.08
32	ZZZZZ	ZZZZZ	11/17/01	1958		

	QC LIMITS
S1 = 4cmx	(+/- 0.02 MINUTES)
DCB = Decachlorobiphenyl	(+/- 0.02 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PEST OLM03.0

8D
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

GC Column: DB-XLB ID: 0.25 (mm) Init. Calib. Date(s): 11/02/01 11/02/01

Instrument ID: ECD1A

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
S1 : 6.31 DCB: 15.08

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	DCB RT #
01	ZZZZZ	ZZZZZ	11/17/01	2021	6.31	15.08
02	ZZZZZ	ZZZZZ	11/17/01	2043	6.31	15.08
03	ZZZZZ	ZZZZZ	11/17/01	2105	6.31	15.08
04	ZZZZZ	ZZZZZ	11/17/01	2128		
05	ZZZZZ	ZZZZZ	11/17/01	2150	6.31	15.08
06	ZZZZZ	ZZZZZ	11/17/01	2212		
07	AR166005	PW011022-01	11/17/01	2235	6.31	15.08
08	PBLK01	1200110631	11/17/01	2257	6.31	15.08
09	PBLK01LCS	1200110632	11/17/01	2320	6.31	15.08
10	ZZZZZ	ZZZZZ	11/17/01	2342	6.31	15.08
11	ZZZZZ	ZZZZZ	11/18/01	0004	6.31	15.08
12	AR166006	PW011022-01	11/18/01	0027	6.31	15.08
13	ZZZZZ	ZZZZZ	11/18/01	0049	6.31	15.08
14	ZZZZZ	ZZZZZ	11/18/01	0112	6.31	15.08
15	ZZZZZ	ZZZZZ	11/18/01	0134	6.31	15.08
16	ZZZZZ	ZZZZZ	11/18/01	0156	6.31	15.08
17	ZZZZZ	ZZZZZ	11/18/01	0219	6.31	15.08
18	ZZZZZ	ZZZZZ	11/18/01	0241	6.31	15.08
19	AR166007	PW011022-01	11/18/01	0304	6.31	15.08
20	ZZZZZ	ZZZZZ	11/18/01	0326	6.31	15.08
21	ZZZZZ	ZZZZZ	11/18/01	0348	6.31	15.08
22	ZZZZZ	ZZZZZ	11/18/01	0411	6.31	15.08
23	ZZZZZ	ZZZZZ	11/18/01	0433	6.31	15.08
24	ZZZZZ	ZZZZZ	11/18/01	0455	6.31	15.08
25	AR166008	PW011022-01	11/18/01	0518	6.31	15.08
26	ZZZZZ	ZZZZZ	11/18/01	0540	6.32	15.08
27	AR166009	PW011022-01	11/18/01	0603	6.31	15.08
28	AR124203	PW011022-03	11/18/01	0625	6.31	15.08
29						
30						
31						
32						

	QC LIMITS
S1 = 4cmx	(+/- 0.02 MINUTES)
DCB = Decachlorobiphenyl	(+/- 0.02 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

8D
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

GC Column: DB-17MS ID: 0.25 (mm) Init. Calib. Date(s): 11/02/01 11/02/01

Instrument ID: ECD1A

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
S1 : 6.16 DCB: 15.38

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	DCB RT #
01	ZZZZZ	ZZZZZ	11/17/01	0824	6.16	15.39
02	AR166001	PW011113-01	11/17/01	0846	6.16	15.38
03	AR125401	PW011022-02	11/17/01	0908	6.16	15.38
04	AR124801	PW011011-01	11/17/01	0931	6.16	15.38
05	AR124201	PW011117-16	11/17/01	0953	6.16	15.38
06	AR124202	PW011117-15	11/17/01	1016	6.16	15.38
07	AR124203	PW011117-14	11/17/01	1038	6.16	15.38
08	AR124204	PW011117-13	11/17/01	1101	6.17	15.38
09	AR124205	PI010814-01	11/17/01	1123	6.16	15.38
10	AR124201	PW011022-03	11/17/01	1146	6.16	15.38
11	AR123201	PW011003-01	11/17/01	1208	6.16	15.38
12	AR122101	PW011004-01	11/17/01	1230	6.16	15.38
13	ZZZZZ	ZZZZZ	11/17/01	1253	6.16	15.38
14	ZZZZZ	ZZZZZ	11/17/01	1315	6.16	15.38
15	ZZZZZ	ZZZZZ	11/17/01	1338	6.16	15.38
16	ZZZZZ	ZZZZZ	11/17/01	1400	6.16	15.38
17	ZZZZZ	ZZZZZ	11/17/01	1423	6.16	15.38
18	ZZZZZ	ZZZZZ	11/17/01	1445	6.16	15.38
19	AR124202	PW011022-03	11/17/01	1507	6.16	15.38
20	AR126002	PW011022-01	11/17/01	1530	6.16	15.38
21	ZZZZZ	ZZZZZ	11/17/01	1552	6.16	15.38
22	ZZZZZ	ZZZZZ	11/17/01	1614	6.16	15.38
23	ZZZZZ	ZZZZZ	11/17/01	1637	6.16	15.38
24	ZZZZZ	ZZZZZ	11/17/01	1659	6.16	15.38
25	ZZZZZ	ZZZZZ	11/17/01	1722	6.16	15.38
26	ZZZZZ	ZZZZZ	11/17/01	1744	6.16	15.38
27	AR166003	PW011022-01	11/17/01	1806	6.16	15.38
28	ZZZZZ	ZZZZZ	11/17/01	1829	6.16	15.38
29	AR166004	PW011022-01	11/17/01	1851	6.16	15.38
30	ZZZZZ	ZZZZZ	11/17/01	1914		15.39
31	ZZZZZ	ZZZZZ	11/17/01	1936		
32	ZZZZZ	ZZZZZ	11/17/01	1958		

QC LIMITS
S1 = 4cmx (+/- 0.02 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.02 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

8D
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

GC Column: DB-17MS ID: 0.25 (mm) Init. Calib. Date(s): 11/02/01 11/02/01

Instrument ID: ECD1A

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
S1 : 6.16 DCB: 15.38

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	DCB RT #
01	ZZZZZ	ZZZZZ	11/17/01	2021	6.16	15.38
02	ZZZZZ	ZZZZZ	11/17/01	2043		15.38
03	ZZZZZ	ZZZZZ	11/17/01	2105		15.38
04	ZZZZZ	ZZZZZ	11/17/01	2128		
05	ZZZZZ	ZZZZZ	11/17/01	2150	6.16	15.38
06	ZZZZZ	ZZZZZ	11/17/01	2212		
07	AR166005	PW011022-01	11/17/01	2235	6.16	15.38
08	PBLK01	1200110631	11/17/01	2257	6.16	15.38
09	PBLK01LCS	1200110632	11/17/01	2320	6.16	15.38
10	ZZZZZ	ZZZZZ	11/17/01	2342	6.16	15.38
11	ZZZZZ	ZZZZZ	11/18/01	0004	6.16	15.38
12	AR166006	PW011022-01	11/18/01	0027	6.16	15.38
13	ZZZZZ	ZZZZZ	11/18/01	0049	6.16	15.38
14	ZZZZZ	ZZZZZ	11/18/01	0112	6.16	15.38
15	ZZZZZ	ZZZZZ	11/18/01	0134	6.16	15.38
16	ZZZZZ	ZZZZZ	11/18/01	0156	6.16	15.38
17	ZZZZZ	ZZZZZ	11/18/01	0219	6.16	15.38
18	ZZZZZ	ZZZZZ	11/18/01	0241	6.16	15.38
19	AR166007	PW011022-01	11/18/01	0304	6.16	15.38
20	ZZZZZ	ZZZZZ	11/18/01	0326	6.16	15.38
21	ZZZZZ	ZZZZZ	11/18/01	0348	6.16	15.38
22	ZZZZZ	ZZZZZ	11/18/01	0411	6.16	15.38
23	ZZZZZ	ZZZZZ	11/18/01	0433	6.16	15.38
24	ZZZZZ	ZZZZZ	11/18/01	0455	6.16	15.38
25	AR166008	PW011022-01	11/18/01	0518	6.16	15.38
26	ZZZZZ	ZZZZZ	11/18/01	0540	6.17	15.38
27	AR166009	PW011022-01	11/18/01	0603	6.16	15.38
28	AR124203	PW011022-03	11/18/01	0625	6.16	15.38
29						
30						
31						
32						

	QC LIMITS
S1 = 4cmx	(+/- 0.02 MINUTES)
DCB = Decachlorobiphenyl	(+/- 0.02 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

8D
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

GC Column: DB-XLB ID: 0.25 (mm) Init. Calib. Date(s): 11/02/01 11/12/01

Instrument ID: ECD1A

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
S1 : 6.30 DCB: 15.08

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	DCB RT #
01	ZZZZZ	ZZZZZ	11/19/01	1500	6.31	15.08
02	AR166001	PW011113-01	11/19/01	1523	6.30	15.08
03	AR125401	PW011022-02	11/19/01	1545	6.30	15.08
04	ZZZZZ	ZZZZZ	11/19/01	1608	6.30	15.08
05	AR124801	PW011011-01	11/19/01	1630	6.30	15.08
06	AR123201	PW011003-01	11/19/01	1653	6.30	15.08
07	AR122101	PW011004-01	11/19/01	1715	6.30	15.08
08	AR124201	PW011119-09	11/19/01	1737	6.30	15.08
09	AR124202	PW011119-08	11/19/01	1800	6.30	15.08
10	AR124203	PW011119-07	11/19/01	1822	6.30	15.08
11	AR124204	PW011119-06	11/19/01	1845	6.30	15.08
12	AR124205	PI081401-01	11/19/01	1907	6.30	15.08
13	AR124201	PW011022-03	11/19/01	1929	6.30	15.08
14	ZZZZZ	ZZZZZ	11/19/01	1952	6.30	15.08
15	ZZZZZ	ZZZZZ	11/19/01	2014	6.30	15.08
16	ZZZZZ	ZZZZZ	11/19/01	2037	6.30	15.08
17	ZZZZZ	ZZZZZ	11/19/01	2059	6.30	15.08
18	ZZZZZ	ZZZZZ	11/19/01	2121	6.30	15.08
19	ZZZZZ	ZZZZZ	11/19/01	2144	6.30	15.08
20	ZZZZZ	ZZZZZ	11/19/01	2206	6.30	15.08
21	AR166002	PW011113-01	11/19/01	2229	6.30	15.08
22	ZZZZZ	ZZZZZ	11/19/01	2251	6.30	15.08
23	ZZZZZ	ZZZZZ	11/19/01	2314	6.30	15.08
24	ZZZZZ	ZZZZZ	11/19/01	2336	6.30	15.08
25	ZZZZZ	ZZZZZ	11/19/01	2358	6.30	15.08
26	ZZZZZ	ZZZZZ	11/20/01	0021	6.30	15.08
27	ZZZZZ	ZZZZZ	11/20/01	0043	6.30	15.08
28	ZZZZZ	ZZZZZ	11/20/01	0105	6.30	15.08
29	ZZZZZ	ZZZZZ	11/20/01	0128	6.30	15.08
30	ZZZZZ	ZZZZZ	11/20/01	0150	6.30	15.08
31	ZZZZZ	ZZZZZ	11/20/01	0213	6.30	15.08
32	AR166003	PW011113-01	11/20/01	0235	6.30	15.08

	QC LIMITS
S1 = 4cmx	(+/- 0.02 MINUTES)
DCB = Decachlorobiphenyl	(+/- 0.02 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PEST OLM03.0

8D
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

GC Column: DB-XLB ID: 0.25 (mm) Init. Calib. Date(s): 11/02/01 11/12/01

Instrument ID: ECD1A

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
S1 : 6.30 DCB: 15.08

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	DCB RT #
01	ZZZZZ	ZZZZZ	11/20/01	0258	6.30	15.08
02	ZZZZZ	ZZZZZ	11/20/01	0320	6.30	15.08
03	ZZZZZ	ZZZZZ	11/20/01	0342	6.31	15.08
04	AR166004	PW011113-01	11/20/01	0405	6.30	15.08
05	ZZZZZ	ZZZZZ	11/20/01	0427		
06	AR166005	PW011113-01	11/20/01	0450	6.30	15.08
07	ZZZZZ	ZZZZZ	11/20/01	0512	6.30	15.08
08	ZZZZZ	ZZZZZ	11/20/01	0534	6.30	15.08
09	ZZZZZ	ZZZZZ	11/20/01	0557	6.30	15.08
10	ZZZZZ	ZZZZZ	11/20/01	0619	6.30	15.08
11	AR166006	PW011113-01	11/20/01	0642	6.30	15.08
12	L4094-1MS	1200110633	11/20/01	0704	6.30	15.08
13	L4094-1MSD	1200110634	11/20/01	0727	6.30	15.08
14	L4094-1	52055001	11/20/01	0749	6.30	15.08
15	L4094-2	52055002	11/20/01	0811	6.30	15.08
16	L4094-3	52055003	11/20/01	0834	6.30	15.08
17	L4094-4	52055004	11/20/01	0856	6.30	15.08
18	L4094-5	52055005	11/20/01	0919	6.30	15.08
19	AR166007	PW011113-01	11/20/01	0941	6.30	15.08
20	AR125402	PW011022-02	11/20/01	1005	6.30	15.08
21	L4094-6	52055006	11/20/01	1027	6.30	15.08
22	L4094-7	52055007	11/20/01	1050	6.30	15.08
23	L4094-8	52055008	11/20/01	1112	6.30	15.08
24	L4094-9	52055009	11/20/01	1135	6.30	15.08
25	AR166008	PW011113-01	11/20/01	1157	6.30	15.08
26	AR125403	PW011022-02	11/20/01	1220	6.30	15.08
27						
28						
29						
30						
31						
32						

	QC LIMITS
S1 = 4cmx	(+/- 0.02 MINUTES)
DCB = Decachlorobiphenyl	(+/- 0.02 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

8D
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

GC Column: DB-17MS ID: 0.25 (mm) Init. Calib. Date(s): 11/02/01 11/12/01

Instrument ID: ECD1A

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
S1 : 6.16 DCB: 15.38

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	DCB RT #
01	ZZZZZ	ZZZZZ	11/19/01	1500	6.16	15.38
02	AR166001	PW011113-01	11/19/01	1523	6.16	15.37
03	AR125401	PW011022-02	11/19/01	1545	6.16	15.37
04	ZZZZZ	ZZZZZ	11/19/01	1608	6.16	15.37
05	AR124801	PW011011-01	11/19/01	1630	6.16	15.37
06	AR123201	PW011003-01	11/19/01	1653	6.16	15.37
07	AR122101	PW011004-01	11/19/01	1715	6.16	15.37
08	AR124201	PW011119-09	11/19/01	1737	6.16	15.37
09	AR124202	PW011119-08	11/19/01	1800	6.16	15.37
10	AR124203	PW011119-07	11/19/01	1822	6.16	15.37
11	AR124204	PW011119-06	11/19/01	1845	6.16	15.37
12	AR124205	PI081401-01	11/19/01	1907	6.16	15.37
13	AR124201	PW011022-03	11/19/01	1929	6.16	15.37
14	ZZZZZ	ZZZZZ	11/19/01	1952	6.16	15.37
15	ZZZZZ	ZZZZZ	11/19/01	2014	6.16	15.37
16	ZZZZZ	ZZZZZ	11/19/01	2037	6.16	15.37
17	ZZZZZ	ZZZZZ	11/19/01	2059	6.16	15.37
18	ZZZZZ	ZZZZZ	11/19/01	2121	6.16	15.37
19	ZZZZZ	ZZZZZ	11/19/01	2144	6.16	15.37
20	ZZZZZ	ZZZZZ	11/19/01	2206	6.16	15.37
21	AR166002	PW011113-01	11/19/01	2229	6.16	15.37
22	ZZZZZ	ZZZZZ	11/19/01	2251	6.16	15.37
23	ZZZZZ	ZZZZZ	11/19/01	2314	6.16	15.37
24	ZZZZZ	ZZZZZ	11/19/01	2336	6.16	15.37
25	ZZZZZ	ZZZZZ	11/19/01	2358	6.16	15.37
26	ZZZZZ	ZZZZZ	11/20/01	0021	6.16	15.37
27	ZZZZZ	ZZZZZ	11/20/01	0043	6.16	15.37
28	ZZZZZ	ZZZZZ	11/20/01	0105	6.16	15.37
29	ZZZZZ	ZZZZZ	11/20/01	0128	6.16	15.37
30	ZZZZZ	ZZZZZ	11/20/01	0150	6.16	15.37
31	ZZZZZ	ZZZZZ	11/20/01	0213	6.16	15.37
32	AR166003	PW011113-01	11/20/01	0235	6.16	15.37

QC LIMITS
S1 = 4cmx (+/- 0.02 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.02 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PEST OLM03.0

8D
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

GC Column: DB-17MS ID: 0.25 (mm) Init. Calib. Date(s): 11/02/01 11/12/01

Instrument ID: ECD1A

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
S1 : 6.16 DCB: 15.38

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	DCB RT #
01	ZZZZZ	ZZZZZ	11/20/01	0258	6.16	15.37
02	ZZZZZ	ZZZZZ	11/20/01	0320	6.16	15.37
03	ZZZZZ	ZZZZZ	11/20/01	0342	6.16	15.37
04	AR166004	PW011113-01	11/20/01	0405	6.16	15.37
05	ZZZZZ	ZZZZZ	11/20/01	0427		
06	AR166005	PW011113-01	11/20/01	0450	6.16	15.38
07	ZZZZZ	ZZZZZ	11/20/01	0512	6.16	15.37
08	ZZZZZ	ZZZZZ	11/20/01	0534	6.16	15.37
09	ZZZZZ	ZZZZZ	11/20/01	0557	6.16	15.37
10	ZZZZZ	ZZZZZ	11/20/01	0619	6.16	15.37
11	AR166006	PW011113-01	11/20/01	0642	6.16	15.37
12	L4094-1MS	1200110633	11/20/01	0704	6.16	15.37
13	L4094-1MSD	1200110634	11/20/01	0727	6.16	15.37
14	L4094-1	52055001	11/20/01	0749	6.16	15.37
15	L4094-2	52055002	11/20/01	0811	6.16	15.37
16	L4094-3	52055003	11/20/01	0834	6.16	15.37
17	L4094-4	52055004	11/20/01	0856	6.16	15.37
18	L4094-5	52055005	11/20/01	0919	6.16	15.37
19	AR166007	PW011113-01	11/20/01	0941	6.16	15.37
20	AR125402	PW011022-02	11/20/01	1005	6.16	15.37
21	L4094-6	52055006	11/20/01	1027	6.16	15.37
22	L4094-7	52055007	11/20/01	1050	6.16	15.37
23	L4094-8	52055008	11/20/01	1112	6.16	15.37
24	L4094-9	52055009	11/20/01	1135	6.16	15.37
25	AR166008	PW011113-01	11/20/01	1157	6.16	15.38
26	AR125403	PW011022-02	11/20/01	1220	6.16	15.38
27						
28						
29						
30						
31						
32						

	QC LIMITS
S1 = 4cmx	(+/- 0.02 MINUTES)
DCB = Decachlorobiphenyl	(+/- 0.02 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

10B
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

EPA SAMPLE NO.

L4094-1

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Lab Sample ID: 52055001 Date(s) Analyzed: 11/20/01 11/20/01

Instrument ID (1): ECD1A Instrument ID (2): ECD1A

GC Column(1): DB-XLB ID: 0.25(mm) GC Column(2): DB-17MS ID: 0.25(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
	1	10.00	9.98	10.02	111		
Aroclor-1254	2	10.40	10.38	10.42	203		
	3	11.01	11.00	11.04	152		
COLUMN 1	4	11.53	11.51	11.55	111		
	5					144	
	1	10.60	10.58	10.62	88.4		
	2	10.71	10.69	10.73	124		
	3	11.14	11.11	11.15	76.0		
COLUMN 2	4	11.26	11.24	11.28	94.8		
	5	11.68	11.66	11.70	168	110	30.9
	1	12.34	12.32	12.36	81.9		
Aroclor-1260	2	12.42	12.40	12.44	76.1		
	3	12.80	12.78	12.82	116		
COLUMN 1	4	13.13	13.11	13.15	74.2		
	5	13.54	13.52	13.56	75.9	84.8	
	1	13.05	13.03	13.07	63.2		
	2	13.29	13.27	13.31	69.9		
	3	13.79	13.76	13.80	67.3		
COLUMN 2	4						
	5					66.8	26.9
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						

At least 3 peaks for each column are required for identification o multicomponent analytes.

10B
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

EPA SAMPLE NO.

L4094-2

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Lab Sample ID: 52055002 Date(s) Analyzed: 11/20/01 11/20/01

Instrument ID (1): ECD1A Instrument ID (2): ECD1A

GC Column(1): DB-XLB ID: 0.25(mm) GC Column(2): DB-17MS ID: 0.25(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
	1	10.00	9.98	10.02	152		
Aroclor-1254	2	10.40	10.38	10.42	213		
	3	11.01	11.00	11.04	197		
COLUMN 1	4	11.53	11.51	11.55	128		
	5					173	
	1	10.60	10.58	10.62	161		
	2	10.71	10.69	10.73	175		
	3	11.13	11.11	11.15	139		
COLUMN 2	4	11.26	11.24	11.28	127		
	5	11.68	11.66	11.70	179	156	10.9
	1	12.34	12.32	12.36	61.1		
Aroclor-1260	2	12.42	12.40	12.44	67.0		
	3	12.80	12.78	12.82	82.8		
COLUMN 1	4	13.13	13.11	13.15	51.5		
	5	13.54	13.52	13.56	53.4	63.2	
	1						
	2						
	3	13.05	13.03	13.07	47.0		
COLUMN 2	4	13.29	13.27	13.31	51.6		
	5	13.78	13.76	13.80	41.3	46.6	35.6
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						

At least 3 peaks for each column are required for identification o multicomponent analytes.

10B
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

EPA SAMPLE NO.

L4094-3

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Lab Sample ID: 52055003 Date(s) Analyzed: 11/20/01 11/20/01

Instrument ID (1): ECD1A Instrument ID (2): ECD1A

GC Column(1): DB-XLB ID: 0.25(mm) GC Column(2): DB-17MS ID: 0.25(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
	1	10.00	9.98	10.02	63.5		
Aroclor-1254	2	10.40	10.38	10.42	84.4		
	3	11.01	11.00	11.04	70.4		
COLUMN 1	4	11.53	11.51	11.55	49.6		
	5	11.75	11.73	11.77	100	73.7	
	1	10.60	10.58	10.62	61.3		
	2	10.71	10.69	10.73	59.2		
	3	11.13	11.11	11.15	54.0		
COLUMN 2	4	11.26	11.24	11.28	51.5		
	5	11.68	11.66	11.70	64.4	58.1	26.8
	1	12.34	12.32	12.36	16.3		
Aroclor-1260	2	12.42	12.40	12.44	15.7		
	3	12.80	12.78	12.82	26.3		
COLUMN 1	4	13.13	13.11	13.15	18.4		
	5	13.54	13.52	13.56	18.4	19.0	
	1	13.05	13.03	13.07	15.4		
	2	13.29	13.27	13.31	17.8		
	3	13.78	13.76	13.80	15.7		
COLUMN 2	4						
	5					16.3	16.6
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						

At least 3 peaks for each column are required for identification o multicomponent analytes.

10B
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

EPA SAMPLE NO.

L4094-4

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Lab Sample ID: 52055004 Date(s) Analyzed: 11/20/01 11/20/01

Instrument ID (1): ECD1A Instrument ID (2): ECD1A

GC Column(1): DB-XLB ID: 0.25(mm) GC Column(2): DB-17MS ID: 0.25(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
	1	10.00	9.98	10.02	129		
Aroclor-1254	2	10.40	10.38	10.42	151		
	3	11.01	11.00	11.04	132		
COLUMN 1	4	11.53	11.51	11.55	75.9		
	5					122	
	1	10.60	10.58	10.62	90.8		
	2	10.71	10.69	10.73	81.9		
	3	11.13	11.11	11.15	72.7		
COLUMN 2	4	11.26	11.24	11.28	70.2		
	5	11.68	11.66	11.70	117	86.6	40.9
	1	12.34	12.32	12.36	67.3		
Aroclor-1260	2	12.42	12.40	12.44	75.9		
	3	12.80	12.78	12.82	77.3		
COLUMN 1	4	13.13	13.11	13.15	62.8		
	5	13.54	13.52	13.56	62.8	69.2	
	1	11.68	11.66	11.70	151		
	2	11.86	11.85	11.89	108		
	3	13.05	13.03	13.07	53.0		
COLUMN 2	4	13.29	13.27	13.31	62.0		
	5	13.79	13.76	13.80	50.4	85.0	22.8
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						

At least 3 peaks for each column are required for identification o multicomponent analytes.

10B
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

EPA SAMPLE NO.

L4094-5

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A , SAS No.: N/A SDG No.: 52055

Lab Sample ID: 52055005 Date(s) Analyzed: 11/20/01 11/20/01

Instrument ID (1): ECD1A Instrument ID (2): ECD1A

GC Column(1): DB-XLB ID: 0.25(mm) GC Column(2): DB-17MS ID: 0.25(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
	1	10.00	9.98	10.02	120		
Aroclor-1254	2	10.40	10.38	10.42	165		
	3	11.01	11.00	11.04	135		
COLUMN 1	4	11.53	11.51	11.55	81.3		
	5					125	
	1	10.60	10.58	10.62	122		
	2	10.71	10.69	10.73	119		
	3	11.13	11.11	11.15	91.9		
COLUMN 2	4	11.26	11.24	11.28	89.0		
	5	11.68	11.66	11.70	122	109	14.7
	1	12.34	12.32	12.36	40.8		
Aroclor-1260	2	12.42	12.40	12.44	43.4		
	3	12.80	12.78	12.82	60.6		
COLUMN 1	4	13.13	13.11	13.15	35.6		
	5	13.54	13.52	13.56	34.6	43.0	
	1	13.05	13.03	13.07	35.4		
	2	13.29	13.27	13.31	38.0		
	3	13.78	13.76	13.80	39.5		
COLUMN 2	4						
	5					37.6	14.4
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						

At least 3 peaks for each column are required for identification o multicomponent analytes.

10B
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

EPA SAMPLE NO.

L4094-6

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Lab Sample ID: 52055006 Date(s) Analyzed: 11/20/01 11/20/01

Instrument ID (1): ECD1A Instrument ID (2): ECD1A

GC Column(1): DB-XLB ID: 0.25(mm) GC Column(2): DB-17MS ID: 0.25(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
	1	10.00	9.98	10.02	742		
Aroclor-1254	2	10.40	10.38	10.42	987		
	3	11.01	11.00	11.04	902		
COLUMN 1	4	11.53	11.51	11.55	750		
	5					845	
	1	10.60	10.58	10.62	797		
	2	10.71	10.69	10.73	804		
	3	11.13	11.11	11.15	776		
COLUMN 2	4	11.26	11.24	11.28	733		
	5	11.68	11.66	11.70	811	784	7.8
	1	12.34	12.32	12.36	172		
Aroclor-1260	2	12.42	12.40	12.44	190		
	3	12.80	12.78	12.82	268		
COLUMN 1	4	13.13	13.11	13.15	137		
	5	13.54	13.52	13.56	147	183	
	1	13.05	13.03	13.07	148		
	2	13.29	13.27	13.31	147		
	3	13.79	13.76	13.80	74.1		
COLUMN 2	4						
	5					123	48.8
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						

At least 3 peaks for each column are required for identification o multicomponent analytes.

10B
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

EPA SAMPLE NO.

L4094-7

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Lab Sample ID: 52055007 Date(s) Analyzed: 11/20/01 11/20/01

Instrument ID (1): ECD1A Instrument ID (2): ECD1A

GC Column(1): DB-XLB ID: 0.25(mm) GC Column(2): DB-17MS ID: 0.25(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
	1	10.00	9.98	10.02	1440		
Aroclor-1254	2	10.40	10.38	10.42	2050		
	3	11.01	11.00	11.04	1930		
COLUMN 1	4	11.53	11.51	11.55	1810		
	5					1810	
	1	10.60	10.58	10.62	1660		
	2	10.71	10.69	10.73	1620		
	3	11.13	11.11	11.15	1660		
COLUMN 2	4	11.26	11.24	11.28	1660		
	5	11.68	11.66	11.70	1800	1680	7.7
	1	12.34	12.32	12.36	294		
Aroclor-1260	2	12.42	12.40	12.44	361		
	3	12.80	12.78	12.82	452		
COLUMN 1	4	13.13	13.11	13.15	297		
	5	13.54	13.52	13.56	334	348	
	1	13.05	13.03	13.07	310		
	2	13.29	13.27	13.31	316		
	3	13.79	13.76	13.80	168		
COLUMN 2	4						
	5					265	31.3
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						

At least 3 peaks for each column are required for identification o multicomponent analytes.

10B
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

EPA SAMPLE NO.

L4094-8

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Lab Sample ID: 52055008 Date(s) Analyzed: 11/20/01 11/20/01

Instrument ID (1): ECD1A Instrument ID (2): ECD1A

GC Column(1): DB-XLB ID: 0.25(mm) GC Column(2): DB-17MS ID: 0.25(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
	1	10.00	9.98	10.02	124		
Aroclor-1254	2	11.01	11.00	11.04	147		
	3	11.53	11.51	11.55	119		
COLUMN 1	4						
	5					130	
	1	10.60	10.58	10.62	117		
	2	10.71	10.69	10.73	128		
	3	11.13	11.11	11.15	114		
COLUMN 2	4	11.26	11.24	11.28	98.7		
	5	11.68	11.66	11.70	155	122	6.6
	1	12.34	12.32	12.36	68.6		
Aroclor-1260	2	12.42	12.40	12.44	58.9		
	3	12.80	12.78	12.82	71.0		
COLUMN 1	4	13.13	13.11	13.15	55.7		
	5	13.54	13.52	13.56	66.4	64.1	
	1	13.05	13.03	13.07	47.3		
	2	13.29	13.27	13.31	55.9		
	3	13.79	13.76	13.80	97.4		
COLUMN 2	4						
	5					66.8	4.2
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						

At least 3 peaks for each column are required for identification o multicomponent analytes.

10B
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

EPA SAMPLE NO.

L4094-9

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Lab Sample ID: 52055009 Date(s) Analyzed: 11/20/01 11/20/01

Instrument ID (1): ECD1A Instrument ID (2): ECD1A

GC Column(1): DB-XLB ID: 0.25(mm) GC Column(2): DB-17MS ID: 0.25(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
Aroclor-1254 COLUMN 1	1	10.00	9.98	10.02	168		
	2	10.40	10.38	10.42	250		
	3	11.01	11.00	11.04	213		
	4	11.53	11.51	11.55	138		
	5	11.75	11.73	11.77	324	218	
COLUMN 2	1	10.60	10.58	10.62	176		
	2	10.71	10.69	10.73	198		
	3	11.13	11.11	11.15	149		
	4	11.26	11.24	11.28	139		
	5	11.68	11.66	11.70	192	171	27.5
Aroclor-1260 COLUMN 1	1	12.34	12.32	12.36	61.9		
	2	12.42	12.40	12.44	69.5		
	3	12.80	12.78	12.82	87.1		
	4	13.13	13.11	13.15	51.2		
	5	13.54	13.52	13.56	52.2	64.4	
COLUMN 2	1	13.05	13.03	13.07	46.5		
	2	13.29	13.27	13.31	51.4		
	3	13.79	13.76	13.80	33.3		
	4						
	5					43.8	47.0
COLUMN 1	1						
	2						
	3						
	4						
	5						
COLUMN 2	1						
	2						
	3						
	4						
	5						

At least 3 peaks for each column are required for identification o multicomponent analytes.

10B
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

EPA SAMPLE NO.

PBLK01LCS

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Lab Sample ID: 1200110632 Date(s) Analyzed: 11/17/01 11/17/01

Instrument ID (1): ECD1A Instrument ID (2): ECD1A

GC Column(1): DB-XLB ID: 0.25(mm) GC Column(2): DB-17MS ID: 0.25(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
	1	6.94	6.93	6.97	23.8		
Aroclor-1016	2	7.58	7.57	7.61	26.2		
	3	8.99	8.97	9.01	24.8		
COLUMN 1	4	9.07	9.05	9.09	24.6		
	5	9.31	9.29	9.33	25.5	25.0	
	1	7.34	7.32	7.36	31.1		
	2	8.05	8.03	8.07	31.9		
	3	8.43	8.42	8.46	31.1		
COLUMN 2	4	9.00	8.98	9.02	31.3		
	5	9.79	9.78	9.82	31.0	31.3	25.2
	1	12.34	12.32	12.36	26.1		
Aroclor-1260	2	12.42	12.41	12.45	26.6		
	3	12.80	12.78	12.82	26.6		
COLUMN 1	4	13.13	13.12	13.16	26.9		
	5	13.54	13.53	13.57	23.0	25.8	
	1	11.68	11.67	11.71	30.4		
	2	11.87	11.85	11.89	33.9		
	3	13.05	13.03	13.07	33.6		
COLUMN 2	4	13.30	13.28	13.32	34.0		
	5	13.79	13.77	13.81	35.8	33.5	29.8
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						

At least 3 peaks for each column are required for identification o multicomponent analytes.

10B
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

EPA SAMPLE NO.

L4094-1MS

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Lab Sample ID: 1200110633 Date(s) Analyzed: 11/20/01 11/20/01

Instrument ID (1): ECD1A Instrument ID (2): ECD1A

GC Column(1): DB-XLB ID: 0.25(mm) GC Column(2): DB-17MS ID: 0.25(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
	1	6.94	6.92	6.96	25.3		
Aroclor-1016	2	7.58	7.56	7.60	33.0		
	3	9.30	9.28	9.32	76.5		
COLUMN 1	4						
	5					44.9	
	1	7.33	7.31	7.35	23.5		
	2	8.05	8.03	8.07	29.2		
	3	8.43	8.41	8.45	34.6		
COLUMN 2	4	8.99	8.97	9.01	27.3		
	5					28.6	57.0
	1	10.00	9.98	10.02	110		
Aroclor-1254	2	10.40	10.38	10.42	164		
	3	11.01	11.00	11.04	132		
COLUMN 1	4	11.53	11.51	11.55	96.8		
	5					126	
	1	10.60	10.58	10.62	103		
	2	10.71	10.69	10.73	99.0		
	3	11.26	11.24	11.28	80.9		
COLUMN 2	4	11.68	11.66	11.70	163		
	5					111	13.5
	1	12.34	12.32	12.36	92.8		
Aroclor-1260	2	12.42	12.40	12.44	91.5		
	3	12.80	12.78	12.82	115		
COLUMN 1	4	13.13	13.11	13.15	86.7		
	5	13.54	13.52	13.56	85.3	94.3	
	1	13.05	13.03	13.07	77.7		
	2	13.29	13.27	13.31	83.2		
	3	13.78	13.76	13.80	77.7		
COLUMN 2	4						
	5					79.5	18.6

At least 3 peaks for each column are required for identification o multicomponent analytes.

10B
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

EPA SAMPLE NO.

L4094-1MSD

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Lab Sample ID: 1200110634 Date(s) Analyzed: 11/20/01 11/20/01

Instrument ID (1): ECD1A Instrument ID (2): ECD1A

GC Column(1): DB-XLB ID: 0.25(mm) GC Column(2): DB-17MS ID: 0.25(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
	1	6.94	6.92	6.96	24.4		
Aroclor-1016	2	7.58	7.56	7.60	30.7		
	3	8.99	8.97	9.01	102		
COLUMN 1	4	9.07	9.05	9.09	68.4		
	5	9.30	9.28	9.32	72.3	59.5	
	1	7.33	7.31	7.35	24.2		
	2	8.05	8.03	8.07	33.2		
	3	8.43	8.41	8.45	38.1		
COLUMN 2	4	8.99	8.97	9.01	25.5		
	5	9.79	9.77	9.81	63.8	37.0	60.8
	1	10.00	9.98	10.02	92.3		
Aroclor-1254	2	10.40	10.38	10.42	146		
	3	11.01	11.00	11.04	110		
COLUMN 1	4	11.52	11.51	11.55	82.3		
	5					108	
	1	10.60	10.58	10.62	89.1		
	2	10.71	10.69	10.73	92.6		
	3	11.26	11.24	11.28	72.1		
COLUMN 2	4	11.68	11.66	11.70	140		
	5					98.5	9.6
	1	12.33	12.32	12.36	80.1		
Aroclor-1260	2	12.42	12.40	12.44	88.1		
	3	12.80	12.78	12.82	96.8		
COLUMN 1	4	13.13	13.11	13.15	79.6		
	5	13.54	13.52	13.56	78.0	84.5	
	1	13.05	13.03	13.07	71.8		
	2	13.29	13.27	13.31	75.2		
	3	13.78	13.76	13.80	73.4		
COLUMN 2	4						
	5					73.5	15.0

At least 3 peaks for each column are required for identification o multicomponent analytes.

QUALITY CONTROL DATA

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLK01

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Matrix: (soil/water) SOIL Lab Sample ID: 1200110631

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 040F4001

% Moisture: 0 decanted: (Y/N) N Date Received: 11/16/01

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:11/16/01

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 11/17/01

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2------	Aroclor-1016	3.3	U
11104-28-2------	Aroclor-1221	3.3	U
11141-16-5------	Aroclor-1232	3.3	U
53469-21-9------	Aroclor-1242	3.3	U
12672-29-6------	Aroclor-1248	3.3	U
11097-69-1------	Aroclor-1254	3.3	U
11096-82-5------	Aroclor-1260	3.3	U

General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111701.b/040b4001.d
Lab Smp Id: 1200110631 Client Smp ID: MB for batch 121121
Inj Date : 17-NOV-2001 22:57
Operator : mm Inst ID: ecd1a.i
Smp Info : |1200110631|1|
Misc Info : |ECD82P_1S|121122|SVA|MB|
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111701.b/PESTB_DB-17MS_ecd1.m
Meth Date : 18-Nov-2001 11:20 mm Quant Type: ESTD
Cal Date : 17-NOV-2001 11:23 Cal File: 009b0901.d
Als bottle: 40 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: 52167.sub
Target Version: 3.50 Sample Matrix: Soil

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVariab

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.00000	Weight of sample extracted (g)
M	0.00000	% Moisture

Cpnd Variable Local Compound Variable

11/21/01

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
$ 1 4cmx					CAS #: 877-09-8		
6.164	6.163	0.001	222709390	186.283	6.2	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.380	15.382	-0.002	198851607	262.836	8.8	80.00- 120.00	100.00(R)

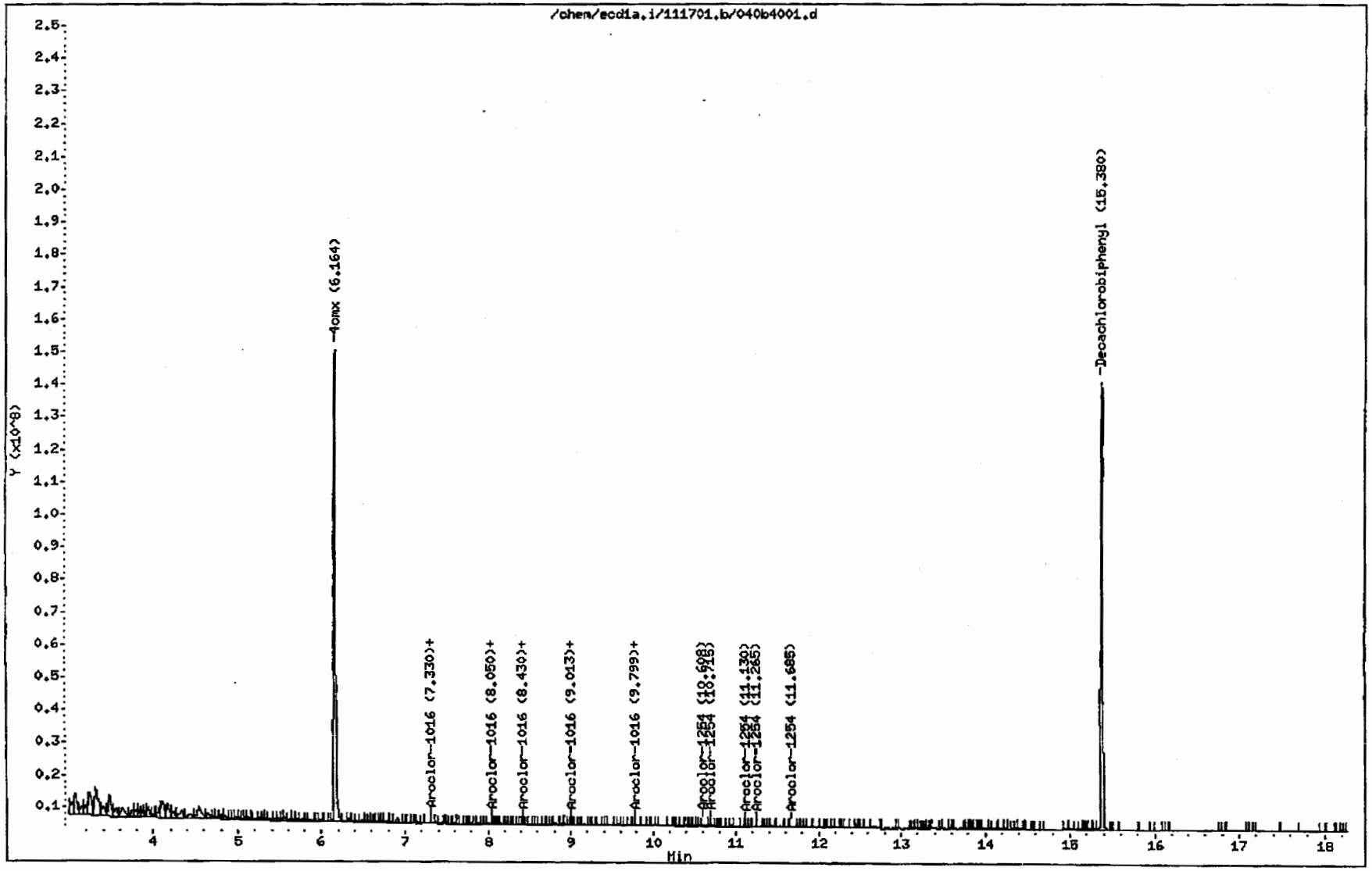
QC Flag Legend

R - Spike/Surrogate failed recovery limits.

775

Data File: /ohem/ecdia.i/111701.b/040b4001.d
Date : 17-NOV-2001 22:57
Client ID: MB for batch 121121
Sample Info: |1200110631|1|
Volume Injected (uL): 1.0
Column phase: DB-17MS

Instrument: ecdia.i
Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111701.b/040f4001.d
Lab Smp Id: 1200110631 Client Smp ID: MB for batch 121121
Inj Date : 17-NOV-2001 22:57
Operator : mm Inst ID: ecd1a.i
Smp Info : |1200110631|1|
Misc Info : |ECD82P_1S|121122|SVA|MB|
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111701.b/PESTA_DB-XLB_ecd1.m
Meth Date : 18-Nov-2001 11:20 mm Quant Type: ESTD
Cal Date : 17-NOV-2001 11:23 Cal File: 009f0901.d
Als bottle: 40 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: 52167.sub
Target Version: 3.50 Sample Matrix: Soil

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVariab

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.00000	Weight of sample extracted (g)
M	0.00000	% Moisture

Cpnd Variable Local Compound Variable

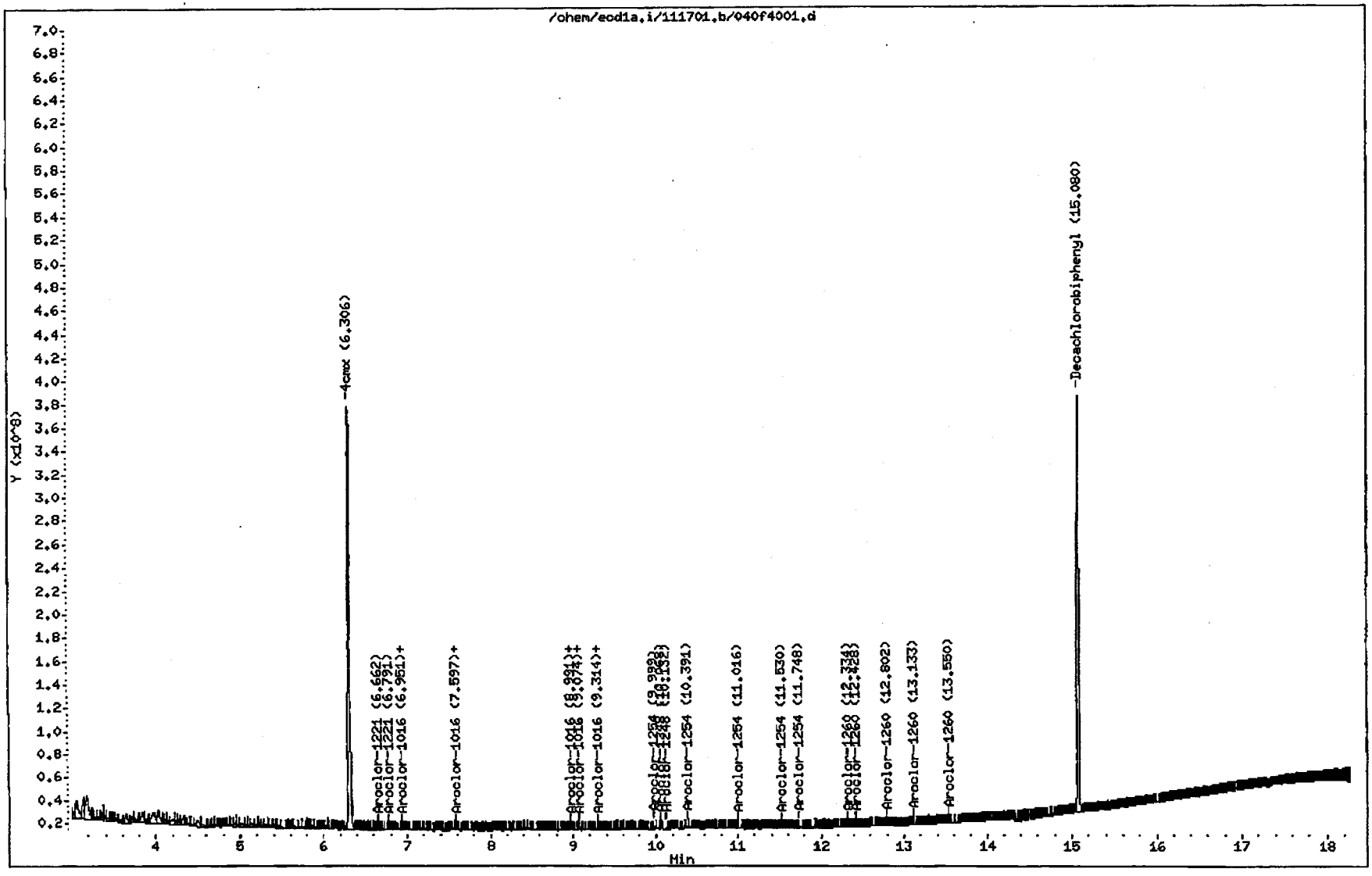
RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
$ 1 4cmx					CAS #: 877-09-8		
6.306	6.308	-0.002	537575542	158.842	5.3	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.080	15.083	-0.003	475145540	209.516	7.0	80.00- 120.00	100.00

11/21/6

11/19/01

Data File: /chem/ecd1a.i/111701.b/040f4001.d
Date : 17-NOV-2001 22:57
Client ID: MB for batch 121121
Sample Info: |1200110631|1|
Volume Injected (uL): 1.0
Column phase: DB-XLB

Instrument: ecd1a.i
Operator: mm
Column diameter: 0.25



1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLK01LCS

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Matrix: (soil/water) SOIL Lab Sample ID: 1200110632

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 041F4101

% Moisture: 0 decanted: (Y/N) N Date Received: 11/16/01

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:11/16/01

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 11/17/01

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2------	Aroclor-1016	25.0	P
11104-28-2------	Aroclor-1221	3.3	U
11141-16-5------	Aroclor-1232	3.3	U
53469-21-9------	Aroclor-1242	3.3	U
12672-29-6------	Aroclor-1248	3.3	U
11097-69-1------	Aroclor-1254	3.3	U
11096-82-5------	Aroclor-1260	25.8	P

General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111701.b/041b4101.d
Lab Smp Id: 1200110632 Client Smp ID: LCS for batch 12112
Inj Date : 17-NOV-2001 23:20
Operator : mm Inst ID: ecd1a.i
Smp Info : |1200110632|1|
Misc Info : |ECD82P_1S|121122|SVA|LCS|
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111701.b/PESTB_DB-17MS_ecd1.m
Meth Date : 18-Nov-2001 11:20 mm Quant Type: ESTD
Cal Date : 17-NOV-2001 11:23 Cal File: 009b0901.d
Als bottle: 41 QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: 52167.sub
Target Version: 3.50 Sample Matrix: Soil

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVariab

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.00000	Weight of sample extracted (g)
M	0.00000	% Moisture

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
$ 1 4cmx					CAS #: 877-09-8		
6.163	6.163	0.000	222603175	186.195	6.2	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.380	15.382	-0.002	201536945	266.386	8.9	80.00- 120.00	100.00(R)
3 Aroclor-1016					CAS #: 12674-11-2		
7.336	7.337	-0.001	18900568	934.095	31.1	80.00- 120.00	100.00
8.054	8.053	0.001	47054942	957.951	31.9	228.54- 268.54	248.96
8.434	8.435	-0.001	13746781	934.438	31.1	54.45- 94.45	72.73
8.997	8.998	-0.001	29709532	938.011	31.3	127.66- 167.66	157.19
9.795	9.798	-0.003	32274265	929.542	31.0	141.86- 181.86	170.76
Average of Peak Concentrations =					31.3		

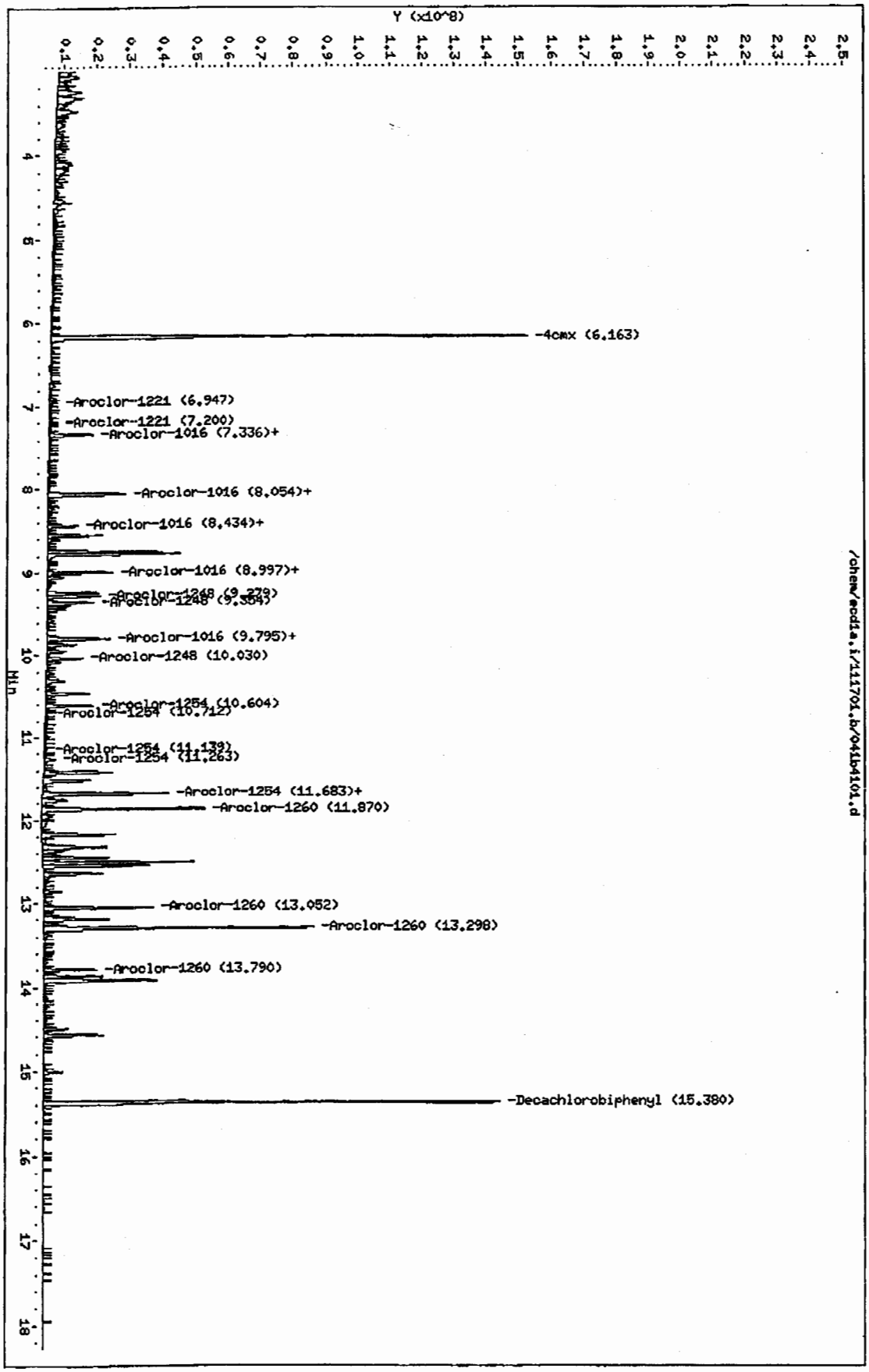
RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	CONCENTRATIONS FINAL (ug/Kg)	TARGET RANGE	RATIO
2 Aroclor-1221					CAS #: 11104-28-2		
6.947	6.947	0.000	3643840	286.606	9.6	80.00- 120.00	100.00
7.200	7.200	0.000	3636944	450.385	15.0	41.67- 81.67	99.81
7.336	7.337	-0.001	18900568	717.127	23.9	188.17- 228.17	518.70
Average of Peak Concentrations =					16.2		
4 Aroclor-1232					CAS #: 11141-16-5		
7.336	7.336	0.000	18900568	852.407	28.4	80.00- 120.00	100.00
8.054	8.053	0.001	47054942	2331.92	77.7	71.12- 111.12	248.96
8.434	8.434	0.000	13746781	2402.11	80.1	4.96- 44.96	72.73
8.997	8.998	-0.001	29709532	2275.92	75.9	31.18- 71.18	157.19
9.795	9.796	-0.001	32274265	2441.48	81.4	34.11- 74.11	170.76
Average of Peak Concentrations =					68.7		
6 Aroclor-1242					CAS #: 53469-21-9		
7.336	7.337	-0.001	18900568	1116.56	37.2	80.00- 120.00	100.00
8.054	8.053	0.001	47054942	1178.11	39.3	198.35- 238.35	248.96
8.434	8.435	-0.001	13746781	1160.39	38.7	44.19- 84.19	72.73
8.997	8.999	-0.002	29709532	1282.89	42.8	112.55- 152.55	157.19
9.795	9.798	-0.003	32274265	1143.36	38.1	124.82- 164.82	170.76
Average of Peak Concentrations =					39.2		
9 Aroclor-1248					CAS #: 12672-29-6		
8.054	8.052	0.002	47054942	2635.38	87.8	80.00- 120.00	100.00
9.279	9.279	0.000	23898778	708.860	23.6	177.36- 217.36	50.79
9.354	9.356	-0.002	27652678	861.651	28.7	163.57- 203.57	58.77
9.795	9.795	0.000	32274265	765.727	25.5	225.44- 265.44	68.59
10.030	10.030	0.000	16052852	652.713	21.8	122.96- 162.96	34.12
Average of Peak Concentrations =					37.5		
15 Aroclor-1254					CAS #: 11097-69-1		
10.604	10.606	-0.002	23890513	340.175	11.3	80.00- 120.00	100.00
10.712	10.714	-0.002	1594568	61.1648	2.0	15.37- 55.37	6.67
11.139	11.140	-0.001	1866030	89.3849	3.0	8.63- 48.63	7.81
11.263	11.266	-0.003	6609457	153.259	5.1	41.24- 81.24	27.67
11.683	11.687	-0.004	61010211	705.897	23.5	107.09- 147.09	255.37
Average of Peak Concentrations =					9.0		
21 Aroclor-1260					CAS #: 11096-82-5		
11.683	11.686	-0.003	61010211	910.504	30.4	80.00- 120.00	100.00
11.870	11.873	-0.003	76591506	1017.55	33.9	93.56- 133.56	125.54
13.052	13.054	-0.002	47660888	1006.61	33.6	48.34- 88.34	78.12
13.298	13.302	-0.004	127691992	1021.10	34.0	168.14- 208.14	209.30
13.790	13.793	-0.003	23192326	1075.70	35.8	11.02- 51.02	38.01
Average of Peak Concentrations =					33.5		

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: /chem/ecdia.i/111701.b/041b4101.d
Date : 17-NOV-2001 23:20
Client ID: LCS for batch 12112
Sample Info: 1420011063211
Volume Injected (uL): 1.0
Column phase: DB-17MS

Instrument: ecdia.i
Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111701.b/041f4101.d
Lab Smp Id: 1200110632 Client Smp ID: LCS for batch 12112
Inj Date : 17-NOV-2001 23:20
Operator : mm Inst ID: ecd1a.i
Smp Info : |1200110632|1|
Misc Info : |ECD82P_1S|121122|SVA|LCS|
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111701.b/PESTA_DB-XLB_ecd1.m
Meth Date : 18-Nov-2001 11:20 mm Quant Type: ESTD
Cal Date : 17-NOV-2001 11:23 Cal File: 009f0901.d
Als bottle: 41 QC Sample: LCS
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: 52167.sub
Target Version: 3.50 Sample Matrix: Soil

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVariab

Name	Value	Description
DF	1.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.00000	Weight of sample extracted (g)
M	0.00000	% Moisture

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
$ 1 4cmx					CAS #: 877-09-8		
6.307	6.308	-0.001	533659335	157.685	5.2	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.079	15.083	-0.004	484071032	213.452	7.1	80.00- 120.00	100.00
3 Aroclor-1016					CAS #: 12674-11-2		
6.945	6.946	-0.001	44979220	712.702	23.8	80.00- 120.00	100.00
7.585	7.586	-0.001	79484026	785.917	26.2	144.37- 184.37	176.71
8.988	8.990	-0.002	63698586	744.845	24.8	111.71- 151.71	141.62
9.069	9.072	-0.003	69304743	738.867	24.6	127.88- 167.88	154.08
9.307	9.308	-0.001	69870016	764.975	25.5	122.09- 162.09	155.34

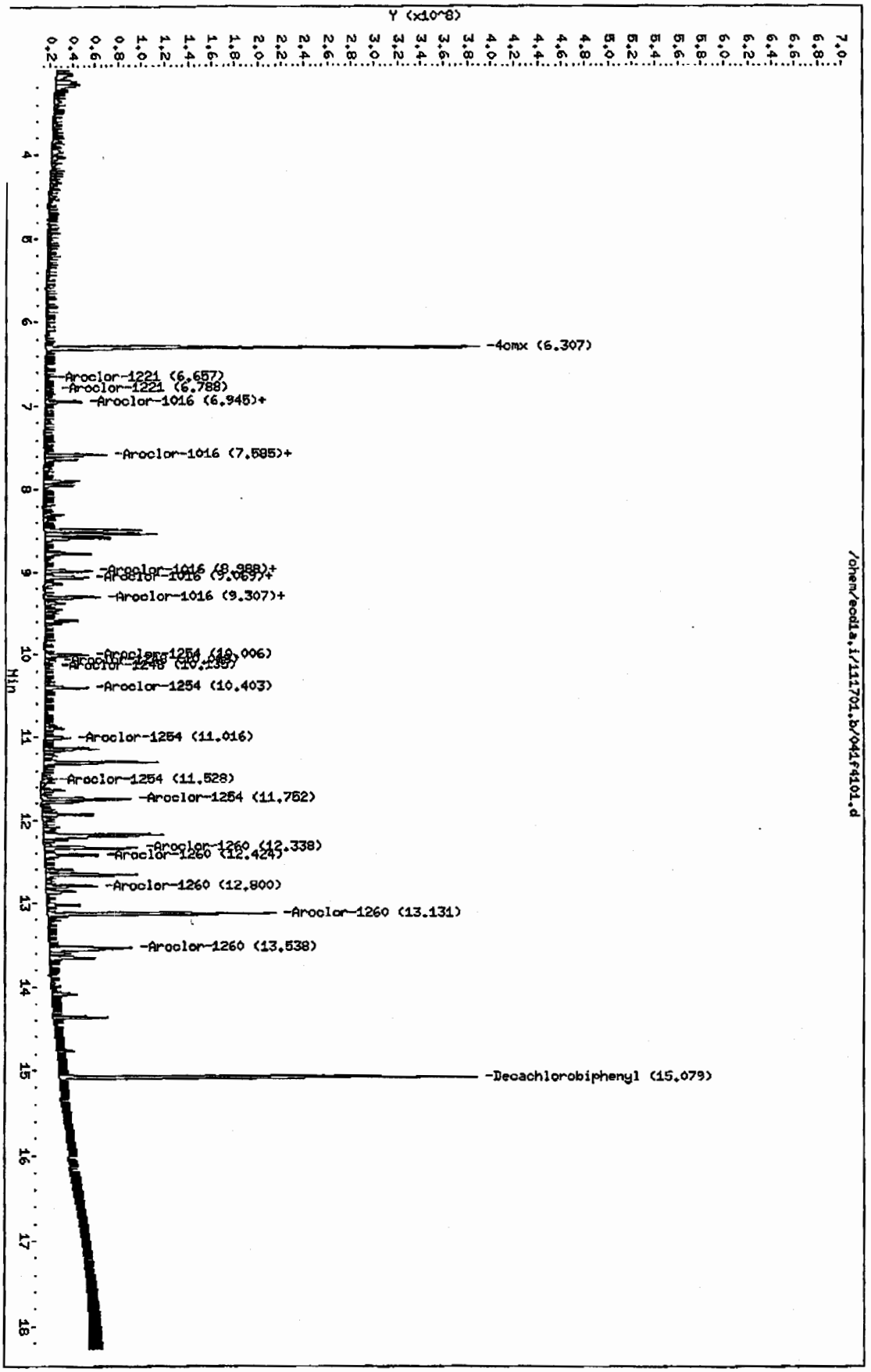
Average of Peak Concentrations = 25.0

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
2 Aroclor-1221					CAS #: 11104-28-2		
6.657	6.659	-0.002	3855242	152.992	5.1	80.00- 120.00	100.00
6.788	6.789	-0.001	9809578	393.943	13.1	75.18- 115.18	254.45
6.945	6.947	-0.002	44979220	545.654	18.2	304.24- 344.24	1166.70
Average of Peak Concentrations =					12.1		
4 Aroclor-1232					CAS #: 11141-16-5		
6.945	6.946	-0.001	44979220	641.751	21.4	80.00- 120.00	100.00
7.585	7.585	0.000	79484026	1876.12	62.5	41.59- 81.59	176.71
8.988	8.989	-0.001	63698586	1795.47	59.8	22.76- 62.76	141.62
9.069	9.070	-0.001	69304743	2279.19	76.0	28.54- 68.54	154.08
9.307	9.308	-0.001	69870016	2008.25	66.9	25.66- 65.66	155.34
Average of Peak Concentrations =					57.3		
6 Aroclor-1242					CAS #: 53469-21-9		
6.945	6.947	-0.002	44979220	998.383	33.3	80.00- 120.00	100.00
7.585	7.586	-0.001	79484026	1120.40	37.3	122.10- 162.10	176.71
8.988	8.989	-0.001	63698586	1123.98	37.5	85.63- 125.63	141.62
9.069	9.070	-0.001	69304743	1081.48	36.0	99.07- 139.07	154.08
9.307	9.308	-0.001	69870016	1140.97	38.0	102.15- 142.15	155.34
Average of Peak Concentrations =					36.4		
9 Aroclor-1248					CAS #: 12672-29-6		
8.988	8.990	-0.002	63698586	576.584	19.2	80.00- 120.00	100.00
9.069	9.072	-0.003	69304743	658.916	22.0	75.63- 115.63	108.80
9.307	9.308	-0.001	69870016	585.055	19.5	87.97- 127.97	109.69
10.068	10.073	-0.005	12324040	83.5353	2.8	113.74- 153.74	19.35
10.135	10.141	-0.006	9459202	68.9911	2.3	113.87- 153.87	14.85
Average of Peak Concentrations =					13.2		
15 Aroclor-1254					CAS #: 11097-69-1		
10.006	10.007	-0.001	60931786	390.619	13.0	80.00- 120.00	100.00
10.403	10.408	-0.005	58553907	353.174	11.8	95.82- 135.82	96.10
11.016	11.021	-0.005	35226229	151.362	5.0	134.04- 174.04	57.81
11.528	11.536	-0.008	18227763	100.697	3.4	94.75- 134.75	29.92
11.752	11.756	-0.004	123359049	1207.35	40.2	49.06- 89.06	202.45
Average of Peak Concentrations =					14.7		
21 Aroclor-1260					CAS #: 11096-82-5		
12.338	12.340	-0.002	119096436	782.778	26.1	80.00- 120.00	100.00
12.424	12.427	-0.003	68617302	798.049	26.6	33.73- 73.73	57.61
12.800	12.803	-0.003	63812903	799.578	26.6	27.06- 67.06	53.58
13.131	13.136	-0.005	284978033	808.471	26.9	204.57- 244.57	239.28
13.538	13.545	-0.007	153775109	688.515	23.0	112.19- 152.19	129.12
Average of Peak Concentrations =					25.8		

DNL

Data File: /chem/ecdla.i/111701.b/041f4101.d
Date : 17-NOV-2001 23:20
Client ID: LCS for batch 12112
Sample Info: 1420011063211
Volume Injected (uL): 1.0
Column phase: DB-XLB

Instrument: ecdla.i
Operator: mm
Column diameter: 0.25



/chem/ecdla.i/111701.b/041f4101.d

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

L4094-1MS

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Matrix: (soil/water) SOIL Lab Sample ID: 1200110633

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 044F4401

% Moisture: 13 decanted: (Y/N) N Date Received: 11/15/01

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 11/16/01

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 11/20/01

Injection Volume: 1.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	44.9	P
11104-28-2	Aroclor-1221	38.1	U
11141-16-5	Aroclor-1232	38.1	U
53469-21-9	Aroclor-1242	38.1	U
12672-29-6	Aroclor-1248	38.1	U
11097-69-1	Aroclor-1254	126	
11096-82-5	Aroclor-1260	94.3	

General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/044b4401.d
Lab Smp Id: 1200110633 Client Smp ID: L4094-1(52055001MS)
Inj Date : 20-NOV-2001 07:04
Operator : mm Inst ID: ecd1a.i
Smp Info : |1200110633|10|
Misc Info : |ECD82P_1S|121122|SVA|MS|
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m
Meth Date : 20-Nov-2001 13:44 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012b1201.d
Als bottle: 44 QC Sample: MS
Dil Factor: 10.00000
Integrator: Falcon Compound Sublist: 52055.sub
Target Version: 3.50 Sample Matrix: Soil

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVariab

Name	Value	Description
DF	10.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.00000	Weight of sample extracted (g)
M	12.59310	% Moisture

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
$ 1 4cmx					CAS #: 877-09-8		
6.158	6.159	-0.001	13343663	11.5749	4.4	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.374	15.375	-0.001	13832254	14.1251	5.4	80.00- 120.00	100.00
3 Aroclor-1016					CAS #: 12674-11-2		
7.331	7.330	0.001	1245318	61.5455	23.5	80.00- 120.00	100.00(a)
8.048	8.047	0.001	3759836	76.5432	29.2	232.90- 272.90	301.92
8.430	8.429	0.001	1333092	90.6169	34.6	53.90- 93.90	107.05
8.993	8.992	0.001	2266524	71.5603	27.3	131.58- 171.58	182.00
9.790	9.791	-0.001	6453584	185.872	70.9	147.33- 187.33	518.23
Average of Peak Concentrations =					37.1		

75.1 22.9

JC 12/4/01

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
4 Aroclor-1232					CAS #: 11141-16-5		
7.331	7.331	0.000	1245318	56.1632	21.4	80.00- 120.00	100.00
8.048	8.049	-0.001	3759836	186.327	71.0	70.60- 110.60	301.92
8.430	8.430	0.000	1333092	232.944	88.8	5.55- 45.55	107.05
8.993	8.992	0.001	2266524	173.628	66.2	35.02- 75.02	182.00
9.790	9.790	0.000	6453584	488.200	186	39.22- 79.22	518.23
Average of Peak Concentrations =					86.7		
6 Aroclor-1242					CAS #: 53469-21-9		
7.331	7.331	0.000	1245318	79.2160	30.2	80.00- 120.00	100.00
8.048	8.047	0.001	3759836	101.508	38.7	196.73- 236.73	301.92
8.430	8.429	0.001	1333092	122.001	46.5	44.70- 84.70	107.05
8.993	8.992	0.001	2266524	102.794	39.2	113.25- 153.25	182.00
9.790	9.790	0.000	6453584	244.784	93.4	125.31- 165.31	518.23
Average of Peak Concentrations =					49.6		
9 Aroclor-1248					CAS #: 12672-29-6		
8.048	8.048	0.000	3759836	210.575	80.3	80.00- 120.00	100.00
9.275	9.274	0.001	6973468	206.840	78.9	174.49- 214.49	185.47
9.351	9.351	0.000	6090763	189.787	72.4	163.02- 203.02	162.00
9.790	9.791	-0.001	6453584	153.115	58.4	222.44- 262.44	171.65
10.024	10.025	-0.001	3162533	128.589	49.0	119.72- 159.72	84.11
Average of Peak Concentrations =					67.8		
15 Aroclor-1254					CAS #: 11097-69-1		
10.599	10.599	0.000	18946017	269.770	103	80.00- 120.00	100.00(M)
10.708	10.706	0.002	6765833	259.525	99.0	15.38- 55.38	35.71
11.163	11.132	0.031	59561781	2853.08	1090	9.62- 49.62	314.38
11.258	11.257	0.001	9151683	212.207	80.9	42.13- 82.13	48.30
11.678	11.679	-0.001	36925136	427.229	163	107.51- 147.51	194.90
Average of Peak Concentrations =					307		
21 Aroclor-1260					CAS #: 11096-82-5		
11.678	11.679	-0.001	36925136	551.063	220	80.00- 120.00	100.00(R)
11.864	11.866	-0.002	27630998	367.088	140	95.12- 135.12	74.83
13.046	13.047	-0.001	9642599	203.654	77.7	51.18- 91.18	26.11
13.293	13.294	-0.001	27287509	218.206	83.2	178.37- 218.37	73.90
13.784	13.785	-0.001	4392501	203.732	77.7	13.35- 53.35	11.90
Average of Peak Concentrations =					118		

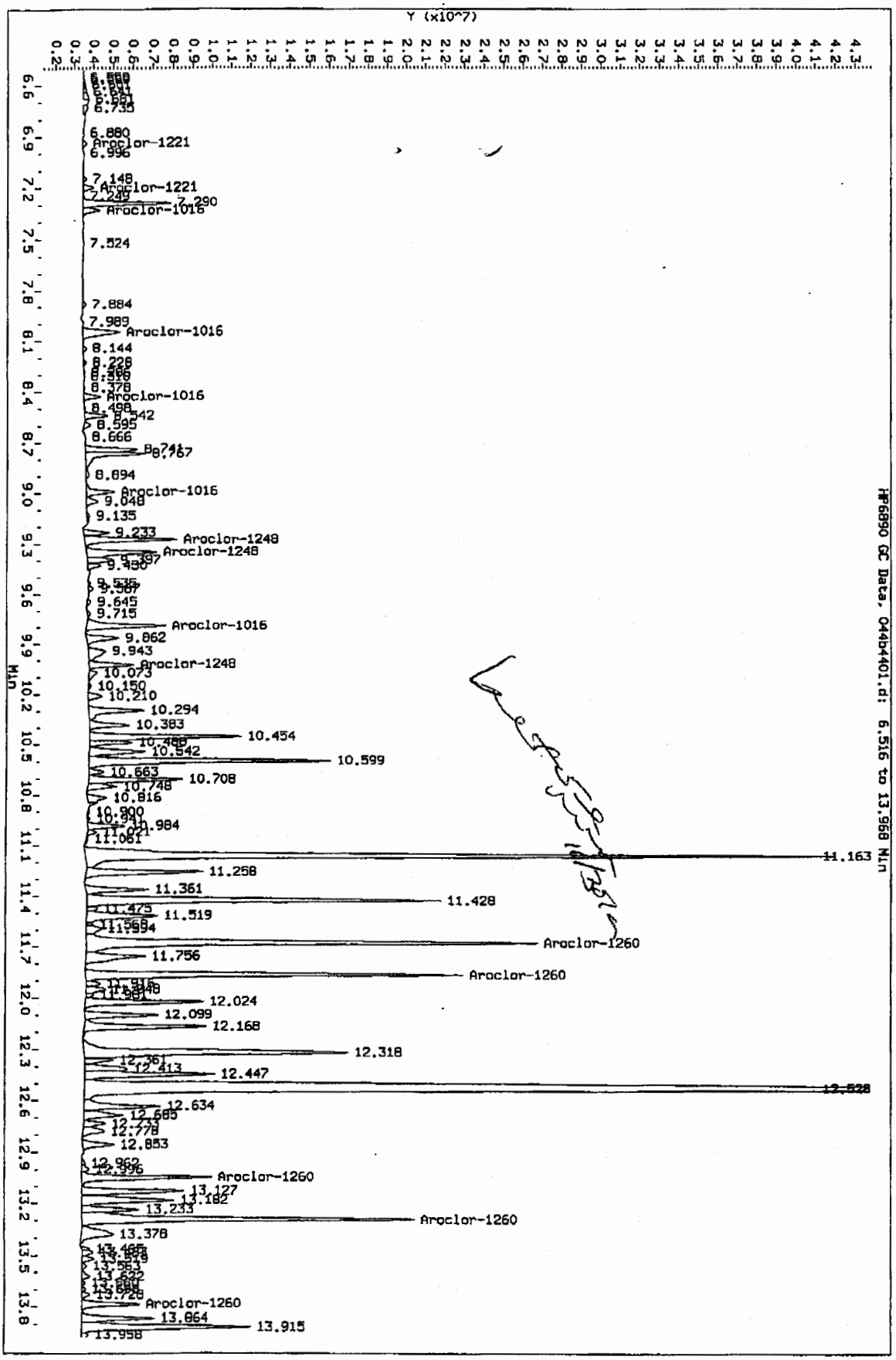
QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
R - Spike/Surrogate failed recovery limits.

QC Flag Legend

M - Compound response manually integrated.

Data File: /chem/ecdia.i/111901a.b/044b4401.d
Injection Date: 20-NOV-2001 07:04
Instrument: ecdia.i
Client Sample ID: L4094-1(52055001MS)

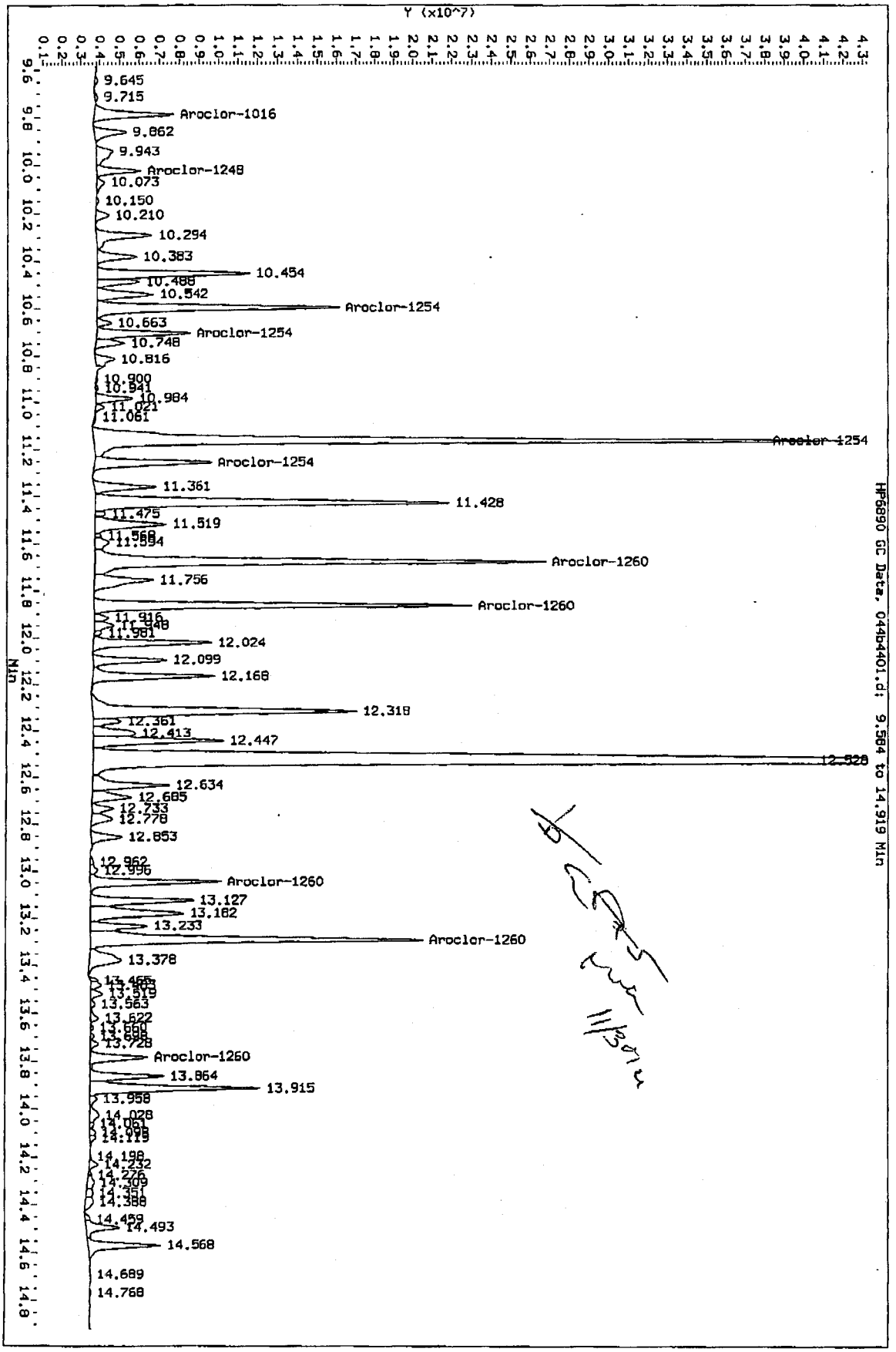


HP6890 GC Data, 044b4401.d: 6.516 to 13.968 Min

790

360

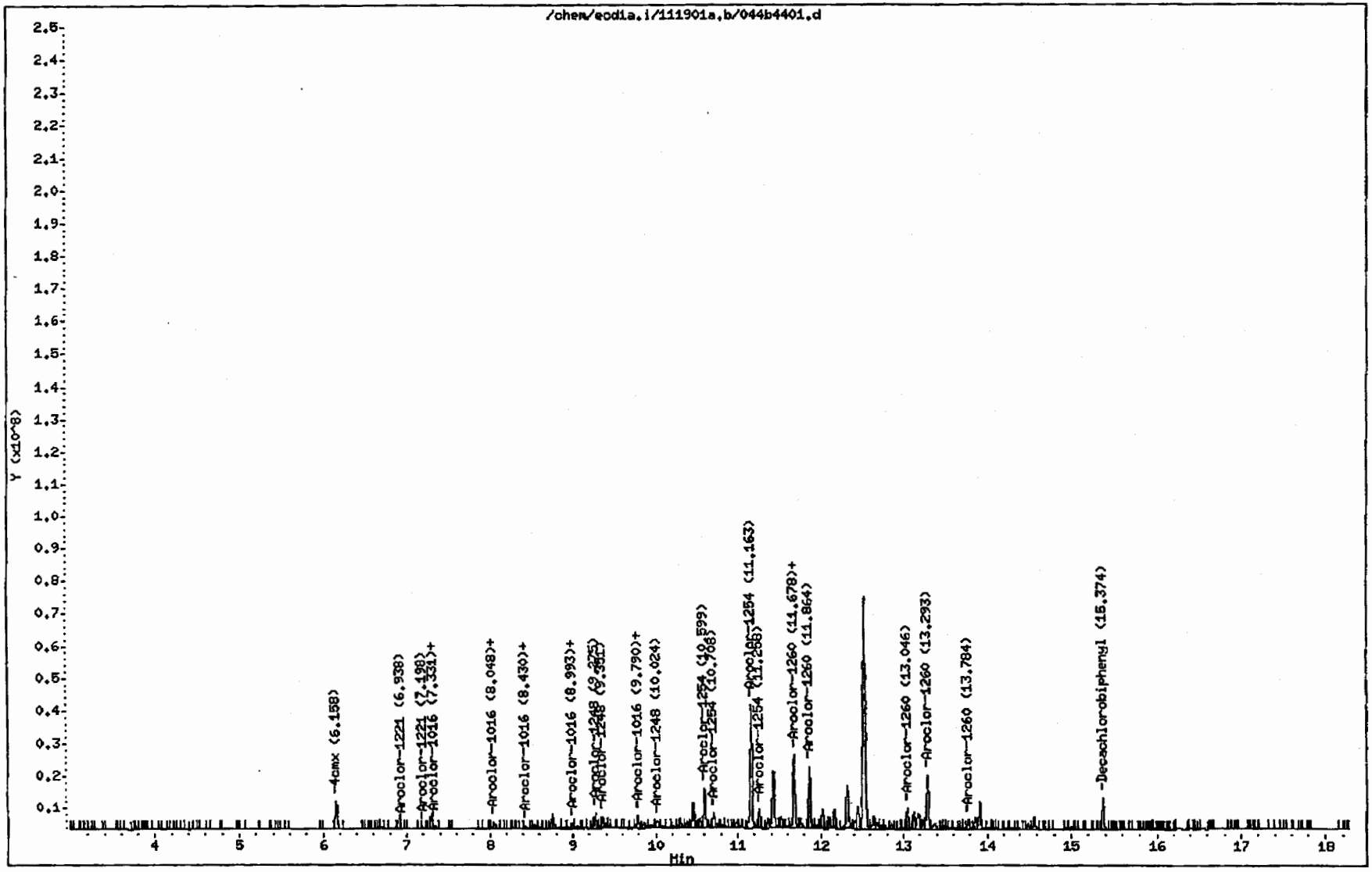
Data File: /chem/ecd1a.i/111901a.b/044b4401.d
Injection Date: 20-NOV-2001 07:04
Instrument: ecd1a.i
Client Sample ID: L4094-1(5205500)MS)



11/30/01

Data File: /chem/eodia.i/111901a.b/044b4401.d
Date : 20-NOV-2001 07:04
Client ID: L4094-1(E2055001MS)
Sample Info: |1200110633|10|
Volume Injected (uL): 1.0
Column phase: DB-17MS

Instrument: eodia.i
Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/044f4401.d
Lab Smp Id: 1200110633 Client Smp ID: L4094-1(52055001MS)
Inj Date : 20-NOV-2001 07:04
Operator : mm Inst ID: ecd1a.i
Smp Info : |1200110633|10|
Misc Info : |ECD82P_1S|121122|SVA|MS|
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m
Meth Date : 20-Nov-2001 13:43 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012f1201.d
Als bottle: 44 QC Sample: MS
Dil Factor: 10.00000
Integrator: Falcon Compound Sublist: 52055.sub
Target Version: 3.50 Sample Matrix: Soil

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVariab

Name	Value	Description
DF	10.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.00000	Weight of sample extracted (g)
M	12.59310	% Moisture

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
$ 1 4cmx					CAS #: 877-09-8		
6.303	6.303	0.000	48042706	12.7986	4.9	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.079	15.078	0.001	40776142	13.4073	5.1	80.00- 120.00	100.00
3 Aroclor-1016					CAS #: 12674-11-2		
6.943	6.943	0.000	4193271	66.4430	25.3	80.00- 120.00	100.00(R)
7.583	7.584	-0.001	8755354	86.5706	33.0	141.60- 181.60	208.80
8.987	8.987	0.000	23402671	273.654	104	114.56- 154.56	558.10
9.068	9.068	0.000	20792734	221.674	84.5	131.20- 171.20	495.86
9.304	9.305	-0.001	18316168	200.535	76.5	125.87- 165.87	436.80
Average of Peak Concentrations =					64.7		

118

44.9

JC 12/4/01

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
4 Aroclor-1232					CAS #: 11141-16-5		
6.943	6.944	-0.001	4193271	59.8285	22.8	80.00- 120.00	100.00
7.583	7.584	-0.001	8755354	206.659	78.8	40.95- 80.95	208.80
8.987	8.987	0.000	23402671	659.650	252	24.75- 64.75	558.10
9.068	9.070	-0.002	20792734	683.799	261	30.72- 70.72	495.86
9.304	9.305	-0.001	18316168	526.454	201	30.46- 70.46	436.80
Average of Peak Concentrations =					163		
6 Aroclor-1242					CAS #: 53469-21-9		
6.943	6.944	-0.001	4193271	82.7766	31.6	80.00- 120.00	100.00
7.583	7.585	-0.002	8755354	113.487	43.3	122.38- 162.38	208.80
8.987	8.986	0.001	23402671	360.447	137	91.55- 131.55	558.10
9.068	9.068	0.000	20792734	285.352	109	105.39- 145.39	495.86
9.304	9.305	-0.001	18316168	255.764	97.5	109.29- 149.29	436.80
Average of Peak Concentrations =					83.7		
9 Aroclor-1248					CAS #: 12672-29-6		
8.987	8.987	0.000	23402671	211.835	80.8	80.00- 120.00	100.00
9.068	9.068	0.000	20792734	197.687	75.4	76.06- 116.06	88.85
9.304	9.305	-0.001	18316168	153.370	58.5	87.83- 127.83	78.27
10.065	10.068	-0.003	13045187	88.4234	33.7	113.94- 153.94	55.74
10.132	10.137	-0.005	17183644	125.330	47.8	112.47- 152.47	73.43
Average of Peak Concentrations =					59.2		
15 Aroclor-1254					CAS #: 11097-69-1		
10.003	10.004	-0.001	44832490	287.410	110	80.00- 120.00	100.00
10.403	10.404	-0.001	71401429	430.665	164	94.32- 134.32	159.26
11.014	11.016	-0.002	80885843	347.554	132	135.66- 175.66	180.42
11.526	11.529	-0.003	45933347	253.752	96.8	94.57- 134.57	102.46
11.750	11.752	-0.002	89391396	874.897	334	49.22- 89.22	199.39
Average of Peak Concentrations =					167		
21 Aroclor-1260					CAS #: 11096-82-5		
12.337	12.338	-0.001	37017048	243.300	92.8	80.00- 120.00	100.00(R)
12.420	12.425	-0.005	20622591	239.850	91.5	34.80- 74.80	55.71
12.798	12.800	-0.002	24166344	302.805	115	30.84- 70.84	65.28
13.130	13.133	-0.003	80126901	227.317	86.7	212.78- 252.78	216.46
13.538	13.541	-0.003	49962734	223.704	85.3	120.82- 160.82	134.97
Average of Peak Concentrations =					94.3		

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: /chem/ecd1a.i/111901a.b/044f4401.d

Date : 20-NOV-2001 07:04

Client ID: L4094-1(52055001MS)

Sample Info: |1200110633|10|

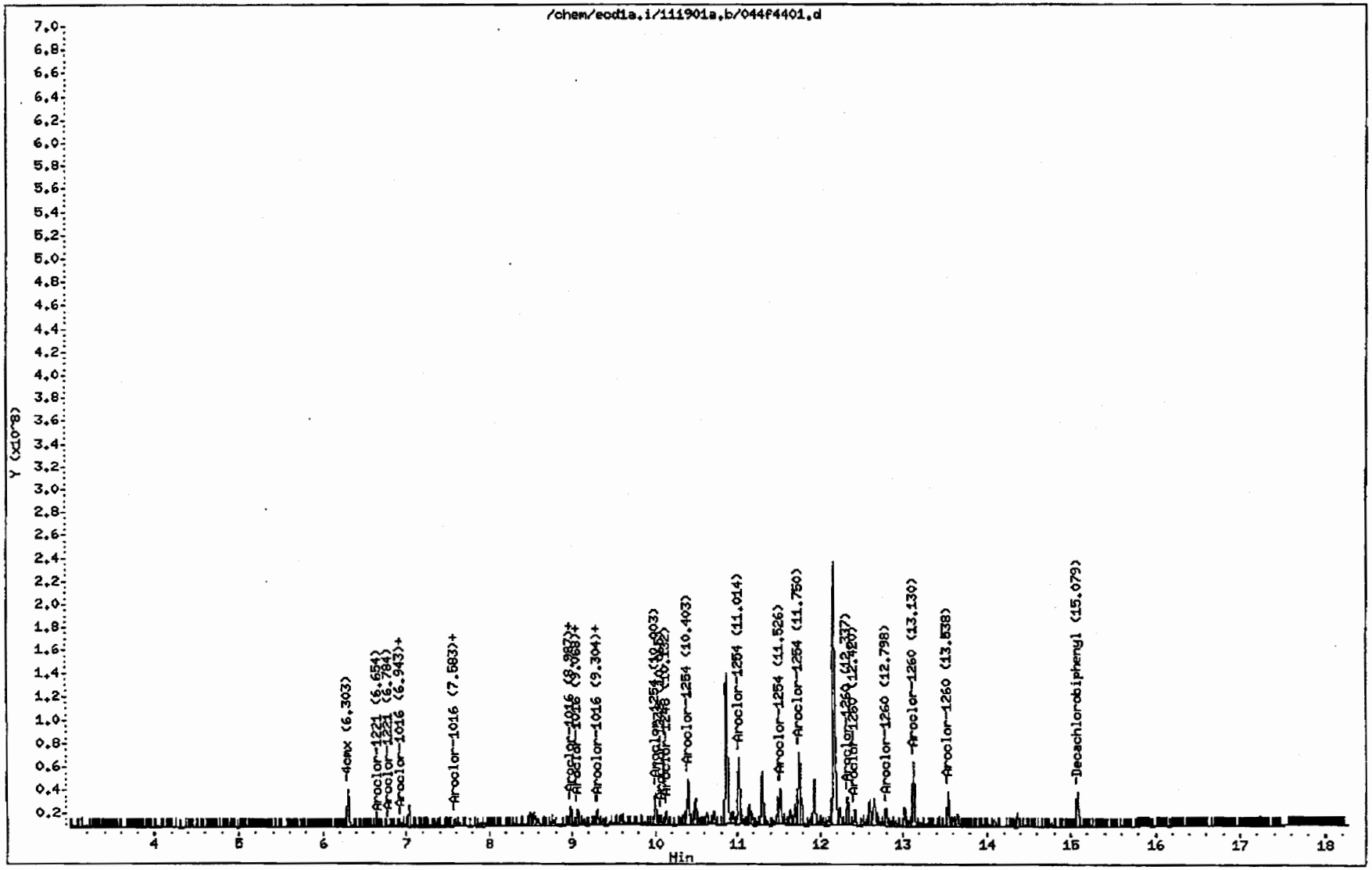
Volume Injected (uL): 1.0

Column phase: DB-XLB

Instrument: ecd1a.i

Operator: mm

Column diameter: 0.25



1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

L4094-1MSD

Lab Name: GENERAL ENGINEERING LABOR Contract: N/A

Lab Code: N/A Case No.: N/A SAS No.: N/A SDG No.: 52055

Matrix: (soil/water) SOIL Lab Sample ID: 1200110634

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 045F4501

% Moisture: 13 decanted: (Y/N) N Date Received: 11/15/01

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 11/16/01

Concentrated Extract Volume: 1.00(mL) Date Analyzed: 11/20/01

Injection Volume: 1.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	59.5	P
11104-28-2	Aroclor-1221	38.1	U
11141-16-5	Aroclor-1232	38.1	U
53469-21-9	Aroclor-1242	38.1	U
12672-29-6	Aroclor-1248	38.1	U
11097-69-1	Aroclor-1254	108	
11096-82-5	Aroclor-1260	84.5	

General Engineering Laboratories, Inc.

DB-17MS 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/045b4501.d
Lab Smp Id: 1200110634 Client Smp ID: L4094-1(52055001MSD
Inj Date : 20-NOV-2001 07:27
Operator : mm Inst ID: ecd1a.i
Smp Info : |1200110634|10|
Misc Info : |ECD82P_1S|121122|SVA|MSD|
Comment : 110 0.5M 25d to 150, 12d TO 260,12d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTB_DB-17MS_ecd1.m
Meth Date : 20-Nov-2001 13:44 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012b1201.d
Als bottle: 45 QC Sample: MSD
Dil Factor: 10.00000
Integrator: Falcon Compound Sublist: 52055.sub
Target Version: 3.50 Sample Matrix: Soil

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVariab

Name	Value	Description
DF	10.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.00000	Weight of sample extracted (g)
M	12.59310	% Moisture

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
$ 1 4cmx					CAS #: 877-09-8		
6.157	6.159	-0.002	13584008	11.7834	4.5	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.375	15.375	0.000	14147406	14.4469	5.5	80.00- 120.00	100.00
3 Aroclor-1016					CAS #: 12674-11-2		
7.331	7.330	0.001	1284782	63.4959	24.2	80.00- 120.00	100.00(a)
8.047	8.047	0.000	4279388	87.1203	33.2	232.90- 272.90	333.08
8.430	8.429	0.001	1470745	99.9739	38.1	53.90- 93.90	114.47
8.992	8.992	0.000	2116822	66.8338	25.5	131.58- 171.58	164.76
9.790	9.791	-0.001	5813517	~~167.437~~	~~63.8~~	147.33- 187.33	452.49
			Average of Peak Concentrations =		~~37.0~~		

79.4 25.3

JC 12/4/01

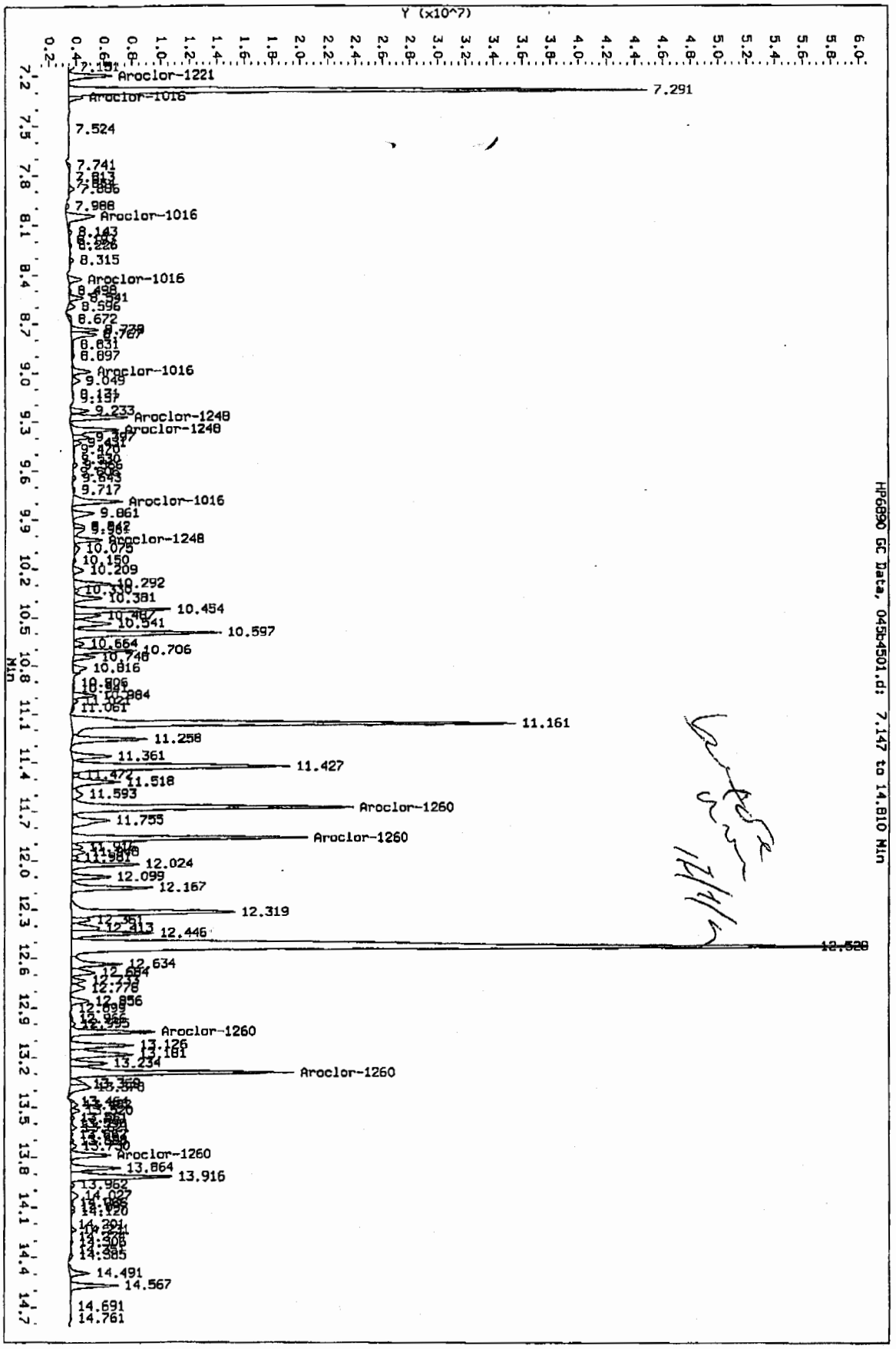
RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO	
2 Aroclor-1221					CAS #: 11104-28-2			
6.939	6.941	-0.002	396135	31.1579	11.9	80.00- 120.00	100.00	
7.201	7.196	0.005	4479407	554.713	212	42.61- 82.61	1130.78	
7.331	7.332	-0.001	1284782	48.7473	18.6	191.20- 231.20	324.33	
		Average of Peak Concentrations =			80.7			
4 Aroclor-1232					CAS #: 11141-16-5			
7.331	7.331	0.000	1284782	57.9430	22.1	80.00- 120.00	100.00	
8.047	8.049	-0.002	4279388	212.075	80.9	70.60- 110.60	333.08	
8.430	8.430	0.000	1470745	256.997	98.0	5.55- 45.55	114.47	
8.992	8.992	0.000	2116822	162.160	61.8	35.02- 75.02	164.76	
9.790	9.790	0.000	5813517	439.780	168	39.22- 79.22	452.49	
		Average of Peak Concentrations =			86.1			
6 Aroclor-1242					CAS #: 53469-21-9			
7.331	7.331	0.000	1284782	81.7263	31.2	80.00- 120.00	100.00	
8.047	8.047	0.000	4279388	115.535	44.1	196.73- 236.73	333.08	
8.430	8.429	0.001	1470745	134.599	51.3	44.70- 84.70	114.47	
8.992	8.992	0.000	2116822	96.0042	36.6	113.25- 153.25	164.76	
9.790	9.790	0.000	5813517	220.506	84.1	125.31- 165.31	452.49	
		Average of Peak Concentrations =			49.4			
9 Aroclor-1248					CAS #: 12672-29-6			
8.047	8.048	-0.001	4279388	239.673	91.4	80.00- 120.00	100.00	
9.274	9.274	0.000	5807156	172.246	65.7	174.49- 214.49	135.70	
9.350	9.351	-0.001	5610995	174.837	66.7	163.02- 203.02	131.12	
9.790	9.791	-0.001	5813517	137.929	52.6	222.44- 262.44	135.85	
10.024	10.025	-0.001	2873414	116.834	44.6	119.72- 159.72	67.15	
		Average of Peak Concentrations =			64.2			
15 Aroclor-1254					CAS #: 11097-69-1			
10.597	10.599	-0.002	16411439	233.681	89.1	80.00- 120.00	100.00	(M)
10.706	10.706	0.000	6332804	242.915	92.6	15.38- 55.38	38.59	
11.161	11.132	0.029	51346235	~~2459.54~~	~~938~~	9.62- 49.62	312.87	
11.258	11.257	0.001	8151429	189.014	72.1	42.13- 82.13	49.67	
11.678	11.679	-0.001	31785736	367.765	140	107.51- 147.51	193.68	
		Average of Peak Concentrations =		258	~~266~~ 90.5			
21 Aroclor-1260					CAS #: 11096-82-5			
11.678	11.679	-0.001	31785736	~~474.364~~	~~181~~	80.00- 120.00	100.00	(R)
11.864	11.866	-0.002	24656210	~~327.567~~	~~125~~	95.12- 135.12	77.57	
13.046	13.047	-0.001	8917438	188.338	71.8	51.18- 91.18	28.05	
13.293	13.294	-0.001	24658290	197.181	75.2	178.37- 218.37	77.58	
13.785	13.785	0.000	4148313	192.406	73.4	13.35- 53.35	13.05	
		Average of Peak Concentrations =		192	~~108~~ 73.5			

DMP

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.

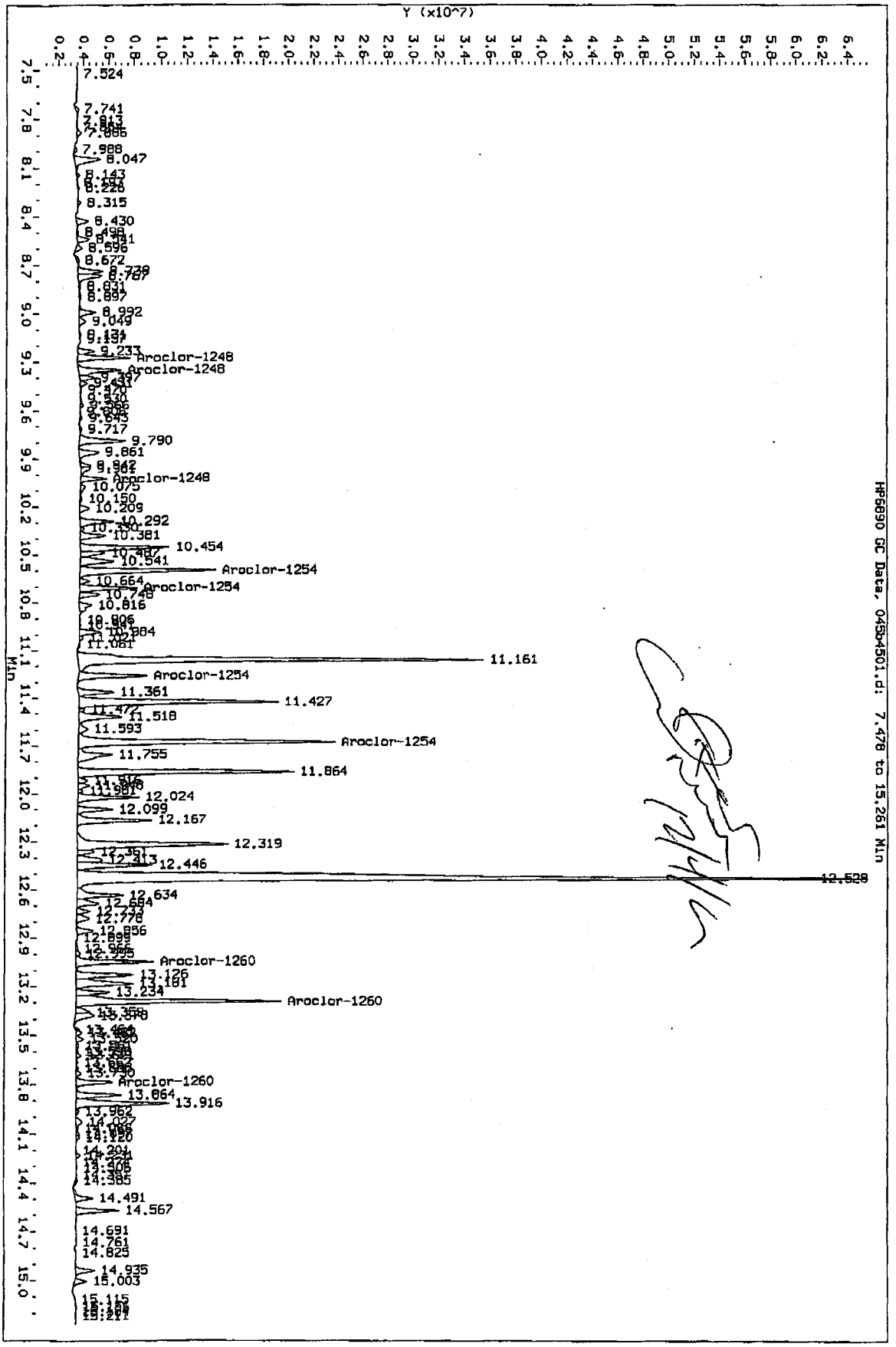
Data File: /chem/ecd1a.i/upload.b/0450450l.d
Injection Date: 20-NOV-2001 07:27
Instrument: ecd1a.i
Client Sample ID: L4094-1(520550001MSD



HP6890 GC Data, 0450450l.d: 7.147 to 14.810 Min

800

Data File: /chem/ecd1a.i/upload.b/0450b4501.d
Injection Date: 20-NOV-2001 07:27
Instrument: ecd1a.i
Client Sample ID: L4094-1(52055001MSD

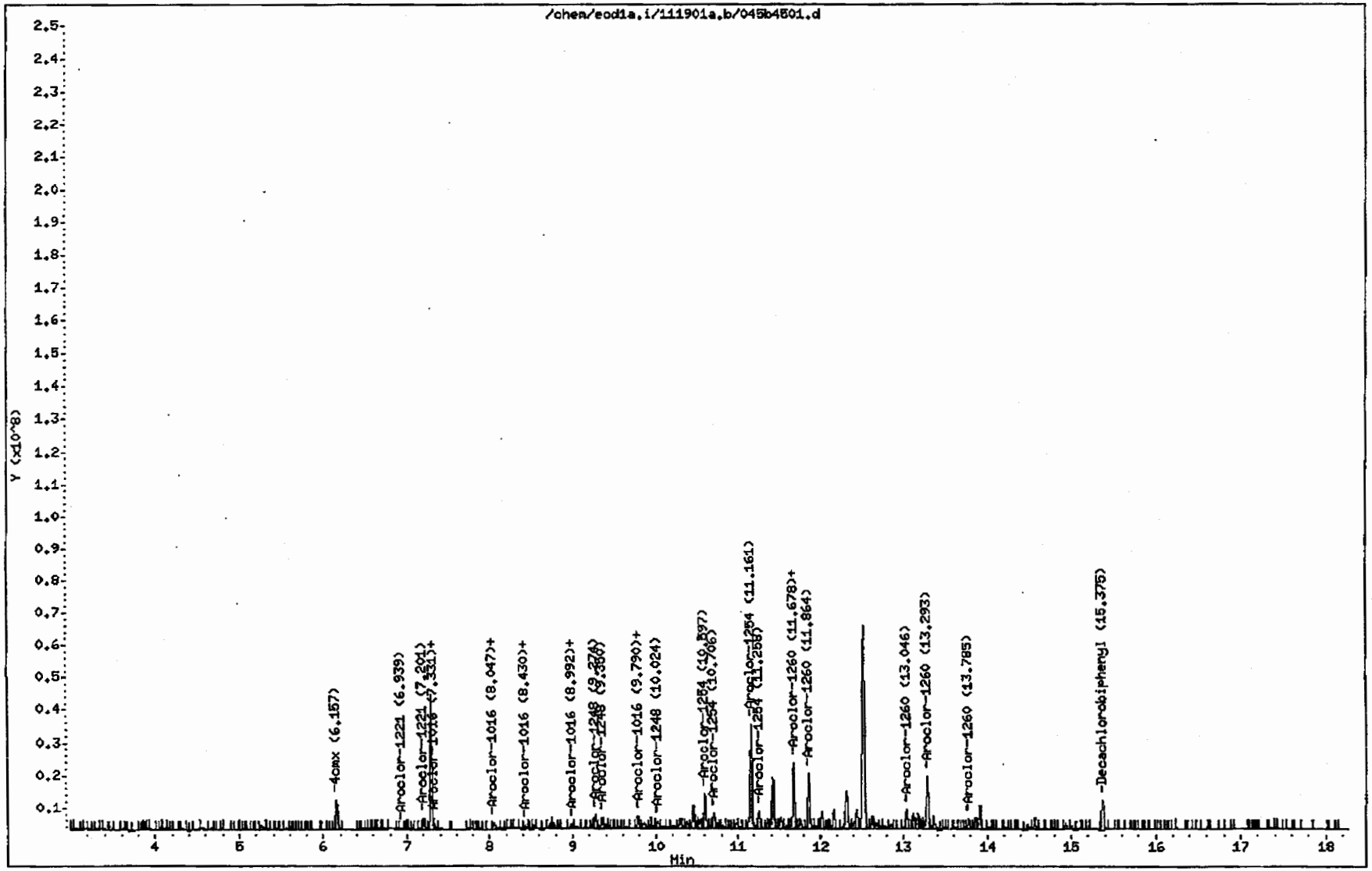


HP6890 GC Data, 0450b4501.d: 7.478 to 15.261 Min

801

Data File: /chem/eod1a.i/111901a.b/045b4501.d
Date : 20-NOV-2001 07:27
Client ID: L4094-1(52055001MSD
Sample Info: |1200110634|10|
Volume Injected (uL): 1.0
Column phase: DB-17MS

Instrument: eod1a.i
Operator: mm
Column diameter: 0.25



General Engineering Laboratories, Inc.

DB-XLB 30m/0.25 mm 2.0 INJ VOL

Data file : /chem/ecd1a.i/111901a.b/045f4501.d
Lab Smp Id: 1200110634 Client Smp ID: L4094-1(52055001MSD
Inj Date : 20-NOV-2001 07:27
Operator : mm Inst ID: ecd1a.i
Smp Info : |1200110634|10|
Misc Info : |ECD82P_1S|121122|SVA|MSD|
Comment : 110 0.5M 25d to 150, 12d TO 260,15d to 320 HOLD 3 MIN
Method : /chem/ecd1a.i/111901a.b/PESTA_DB-XLB_ecd1.m
Meth Date : 20-Nov-2001 13:43 mm Quant Type: ESTD
Cal Date : 19-NOV-2001 19:07 Cal File: 012f1201.d
Als bottle: 45 QC Sample: MSD
Dil Factor: 10.00000
Integrator: Falcon Compound Sublist: 52055.sub
Target Version: 3.50 Sample Matrix: Soil

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100) * CpndVariab

Name	Value	Description
DF	10.00000	Dilution Factor
Uf	1.00000	Correction factor
Vt	1.00000	Volume of final extract (mL)
Vi	1.00000	Volume injected (uL)
Ws	30.00000	Weight of sample extracted (g)
M	12.59310	% Moisture

Cpnd Variable Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
$ 1 4cmx					CAS #: 877-09-8		
6.302	6.303	-0.001	47534148	12.6631	4.8	80.00- 120.00	100.00
$ 32 Decachlorobiphenyl					CAS #: 2051-24-3		
15.080	15.078	0.002	40823096	13.4227	5.1	80.00- 120.00	100.00
3 Aroclor-1016					CAS #: 12674-11-2		
6.942	6.943	-0.001	4033805	63.9162	24.4	80.00- 120.00	100.00(R)
7.582	7.584	-0.002	8153689	80.6215	30.7	141.60- 181.60	202.13
8.986	8.987	-0.001	22847711	~~267.165~~	~~102~~	114.56- 154.56	566.41
9.068	9.068	0.000	16824397	~~179.367~~	~~68.4~~	131.20- 171.20	417.09
9.302	9.305	-0.003	17306653	189.483	72.3	125.87- 165.87	429.04
Average of Peak Concentrations =					~~59.5~~		

111 42.5

JC 12/4/01

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/L)	FINAL (ug/Kg)	TARGET RANGE	RATIO
4 Aroclor-1232					CAS #: 11141-16-5		
6.942	6.944	-0.002	4033805	57.5532	21.9	80.00- 120.00	100.00
7.582	7.584	-0.002	8153689	192.457	73.4	40.95- 80.95	202.13
8.986	8.987	-0.001	22847711	644.007	246	24.75- 64.75	566.41
9.068	9.070	-0.002	16824397	553.294	211	30.72- 70.72	417.09
9.302	9.305	-0.003	17306653	497.438	190	30.46- 70.46	429.04
Average of Peak Concentrations =					148		
6 Aroclor-1242					CAS #: 53469-21-9		
6.942	6.944	-0.002	4033805	79.6287	30.4	80.00- 120.00	100.00
7.582	7.585	-0.003	8153689	105.688	40.3	122.38- 162.38	202.13
8.986	8.986	0.000	22847711	351.900	134	91.55- 131.55	566.41
9.068	9.068	0.000	16824397	230.892	88.0	105.39- 145.39	417.09
9.302	9.305	-0.003	17306653	241.668	92.2	109.29- 149.29	429.04
Average of Peak Concentrations =					77.0		
9 Aroclor-1248					CAS #: 12672-29-6		
8.986	8.987	-0.001	22847711	206.812	78.9	80.00- 120.00	100.00
9.068	9.068	0.000	16824397	159.958	61.0	76.06- 116.06	73.64
9.302	9.305	-0.003	17306653	144.917	55.3	87.83- 127.83	75.75
10.066	10.068	-0.002	12693010	86.0363	32.8	113.94- 153.94	55.55
10.131	10.137	-0.006	16286200	118.784	45.3	112.47- 152.47	71.28
Average of Peak Concentrations =					54.6		
15 Aroclor-1254					CAS #: 11097-69-1		
10.002	10.004	-0.002	37768458	242.124	92.3	80.00- 120.00	100.00
10.403	10.404	-0.001	63669371	384.028	146	94.32- 134.32	168.58
11.012	11.016	-0.004	67090210	288.276	110	135.66- 175.66	177.64
11.525	11.529	-0.004	39070543	215.839	82.3	94.57- 134.57	103.45
11.751	11.752	-0.001	75317646	~~737.154~~	~~281~~	49.22- 89.22	199.42
Average of Peak Concentrations =				282	~~142~~ 108		
21 Aroclor-1260					CAS #: 11096-82-5		
12.335	12.338	-0.003	31964030	210.088	80.1	80.00- 120.00	100.00(R)
12.421	12.425	-0.004	19864530	231.033	88.1	34.80- 74.80	62.15
12.798	12.800	-0.002	20260704	253.867	96.8	30.84- 70.84	63.39
13.130	13.133	-0.003	73561720	208.692	79.6	212.78- 252.78	230.14
13.538	13.541	-0.003	45676702	204.513	78.0	120.82- 160.82	142.90
Average of Peak Concentrations =					84.5		

DMS

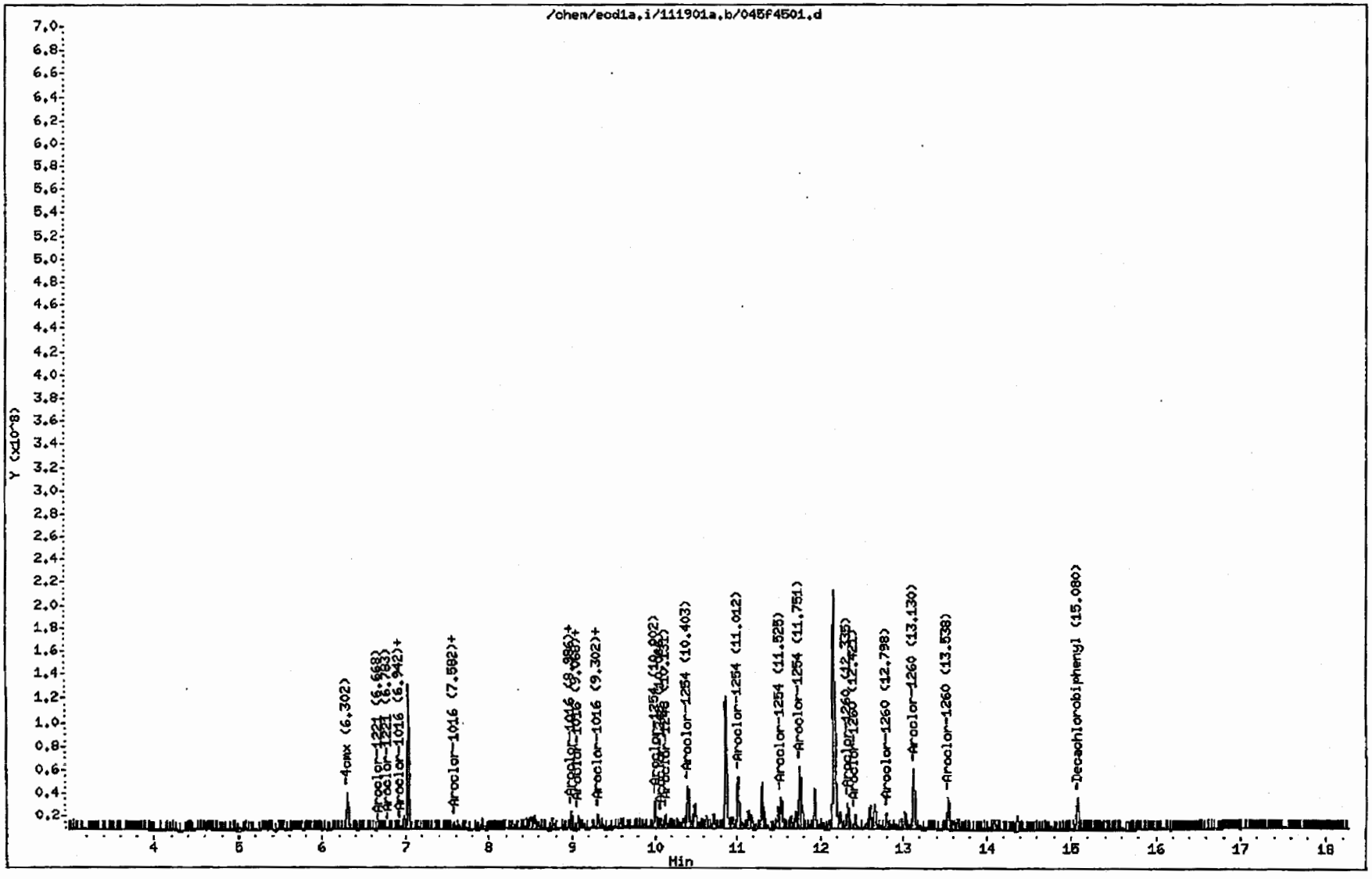
QC Flag Legend

R - Spike/Surrogate failed recovery limits.

804

Data File: /chem/ecdia.i/111901a.b/045f4501.d
Date : 20-NOV-2001 07:27
Client ID: L4094-1(52055001MSD
Sample Info: |1200110634|10|
Volume Injected (uL): 1.0
Column phase: DB-XLB

Instrument: ecdia.i
Operator: mm
Column diameter: 0.25



MISCELLANEOUS DATA

GEL ORGANIC EXTRACTION TRACKER FORM

BATCH # 12114	SOLVENT LOTS	CH2Cl2: V31E13	Cleanup or Derivation Technique	Sulfur Lot:	GEL SOP Reference	Rev
Test: PCB	Hexane: CC94732	Toluene:	GPC head Lot: --	Florisil Lot:	GL-OA-E- 010	8
Matrix: W (S) Other	Acetone: CC9476 CC9476	Isooctane:	Silica gel Lot:	Acid Lot:	GL-OA-E- 037	1
Prep Method: 3550	Ether: CC9476-01	Methanol:	Alumina Lot:		GL-OA-E-	
					GL-OA-E-	
					GL-OA-E-	
					GL-OA-E-	

Surrogate Std. Sol. ID:	UE011114-01	Conc.	200ug/l	Vol. Added (ml):	1.0
MS/LCS Std. Sol. ID:	WE011105-01	Conc.	1ppm	Vol. Added (ml):	1.0

Client	GEL Sample ID#	Date Extracted	Sample Wt. (gm) or Vol. (ml)	Sample pH Int.	Sample pH Int. Ext.	Sample pH Sec. Ext.	Extract. Analyst	Spikes Verified By	Cleanup (cleanup) Applied or Derivation	Volumes of Extract (mL) Prior to Cleanup	Amt. Cleaned	After Cleanup	Final Ext. Vol.	Final Solv.	Date Cleaned (or Deriv.) & Initials	Re-ext. sample X	Comment (Include SUOB video #)
ETLL	52055001	11-16-01	30				GRB	NRM	Permeng H_2SO_4	1	1	8	1.0	Hexane	11-16-01 GRB		
MS	12001110633		30										1.0				
MSD	12001110634		30										1.0				
ETLL	52055002		30										1.0				
	52055003		30										1.0				
	52055004		30										1.0				
	52055005		30										1.0				
	52055006		30										1.0				
	52055007		30										1.0				
	52055008		30										1.0				
	52055009		30										1.0				
[redacted]	52167005		30										1.0				
[redacted]	52167006		30										1.0				
Method Blank #1	12001110631	11-16-01	30				GRB	NRM	Permeng H_2SO_4	1	1	8	1.0	Hexane	11-16-01 GRB		
LCS #1	12001110632		30							1	1	8	1.0				
LCS #2																	

GEL ORGANIC RUN LOG INSTRUMENT ID __ECD1__

DATE: 11/20/2001 METHOD: PESTA_DB-XLB_ecd1.m OPERATOR:mm REVIEWED BY [illegible]
DATE: [illegible]

HARDWARE CONFIGURATION & METHOD SUMMARY: No.__1__ on pg.__1__

Calibration & QC Information
Initial Calibration Dates: See Calibration History and Standard Logbook.
Initial Calibration Std ID's: See Calibration History and Standard Logbook.

Chromatogram Abbreviation Legend: AB-Assign Baseline, AP-Assign Peak, BD-Percent Endrin and 4,4'-DDT Breakdown, DNC-Do Not Call, DMP-Doesn't Match Pattern, NC-Not Confirmed, RT-Retention Time.

Sequence Number: /chem/ecd1a.i/111701.b Injection Volume:__1.0__ul

Data File	GEL Lab Sample ID	Analyst	Injection Date/Time	Batch	SDG	Dilution	Client	Comments
001f0101.d	INST BLK	mm	17-NOV-2001 08:24		111701	1.0		OK
002f0201.d	PW011113-01 601	mm	17-NOV-2001 08:46		111701	1.0		OK, Continuing calibration, (500ppb), front column passes. Back column fails for DCB.
003f0301.d	PW011022-02 541	mm	17-NOV-2001 09:08		111701	1.0		OK, Continuing calibration, (500ppb), both columns pass.
004f0401.d	PW011011-01 481	mm	17-NOV-2001 09:31		111701	1.0		OK, PCB pattern Reference.
005f0501.d	PW011117-16 421	mm	17-NOV-2001 09:53		111701	1.0		Calibration Curve
006f0601.d	PW011117-15 422	mm	17-NOV-2001 10:16		111701	1.0		Calibration Curve
007f0701.d	PW011117-14 423	mm	17-NOV-2001 10:38		111701	1.0		Calibration Curve
008f0801.d	PW011117-13 424	mm	17-NOV-2001 11:01		111701	1.0		Calibration Curve
009f0901.d	PI010814-01 425	mm	17-NOV-2001 11:23		111701	1.0		Calibration Curve
010f1001.d	PW011022-03 421	mm	17-NOV-2001 11:46		111701	1.0		OK, Continuing calibration, (500ppb), both columns pass.
011f1101.d	PW011003-01 321	mm	17-NOV-2001 12:08		111701	1.0		OK, PCB pattern Reference.
012f1201.d	PW011004-01 211	mm	17-NOV-2001 12:30		111701	1.0		OK, PCB pattern Reference.
013f1301.d	1200110054	mm	17-NOV-2001 12:53		52009	1.0		Use, report from front column.
014f1401.d	1200110059	mm	17-NOV-2001 13:15		52009	1.0		Use, report from front column.
015f1501.d	1200110056	mm	17-NOV-2001 13:38		52009	20.0		Use, report from front column.

016f1601.d	1200110058	mm	17-NOV-2001 14:00		52009	20.0		Use, report from front column.

Instrument Batch: /chem/ecd1a.i/111701.b

Data File	GEL Lab Sample ID	Analyst	Injection Date/Time	Batch	SDG	Dilution	Client	Comments
017f1701.d	52009001	mm	17-NOV-2001 14:23		52009	20.0		Use, report from front column.
018f1801.d	52009002	mm	17-NOV-2001 14:45		52009	20.0		Use, report from front column.
019f1901.d	PW011022-03 422	mm	17-NOV-2001 15:07		111701	1.0		OK, Continuing calibration, (500ppb), front column passes. Back column fails for DCB.
020f2001.d	PW011022-01 602	mm	17-NOV-2001 15:30		111701	1.0		OK, Continuing calibration, (500ppb), both columns pass.
021f2101.d	1200110055	mm	17-NOV-2001 15:52		01695	10.0		Use, report from front column.
022f2201.d	INST BLK	mm	17-NOV-2001 16:14		111701	1.0		OK
023f2301.d	1200110057	mm	17-NOV-2001 16:37		01695	10.0		Use, report from front column.
024f2401.d	INST BLK	mm	17-NOV-2001 16:59		111701	1.0		OK
025f2501.d	52012001	mm	17-NOV-2001 17:22		01695	10.0		Use, report from front column.
026f2601.d	INST BLK	mm	17-NOV-2001 17:44		111701	1.0		OK
027f2701.d	PW011022-01 603	mm	17-NOV-2001 18:06		111701	1.0		OK, Continuing calibration, (500ppb), front column passes. Back column fails for DCB.
028f2801.d	52013001	mm	17-NOV-2001 18:29	120900	01694	2.0	WSRC	Reprep.
029f2901.d	PW011022-01 604	mm	17-NOV-2001 18:51		111701	1.0		OK, Continuing calibration, (500ppb), front column passes. Back column fails for DCB.
030f3001.d	52014001	mm	17-NOV-2001 19:14		01696	10000.0		Do not use, see # 32.
031f3101.d	52014001	mm	17-NOV-2001 19:36		01696	5000.0		Do not use, see # 32.
032f3201.d	52014001	mm	17-NOV-2001 19:58		01696	1000.0		Use, report from front column.
033f3301.d	INST BLK	mm	17-NOV-2001 20:21		111701	1.0		OK
034f3401.d	52014002	mm	17-NOV-2001 20:43		01696	10000.0		Do not use, see # 36.
035f3501.d	52014002	mm	17-NOV-2001 21:05		01696	5000.0		Do not use, see # 36.
036f3601.d	52014002	mm	17-NOV-2001 21:28		01696	1000.0		Use, report from front column.

Instrument Batch: /chem/ecd1a.i/111701.b

Data File	GEL Lab Sample ID	Analyst	Injection Date/Time	Batch	SDG	Dilution	Client	Comments
037f3701.d	INST BLK	mm	17-NOV-2001 21:50		111701	1.0		OK
038f3801.d	52014003	mm	17-NOV-2001 22:12		01696	40.0		Use, report from front column.
039f3901.d	PW011022-01 605	mm	17-NOV-2001 22:35		111701	1.0		OK, Continuing calibration, (500ppb), front column passes. Back column fails for DCB.
040f4001.d	1200110631	mm	17-NOV-2001 22:57	121122	111701	1.0	MB	Use, report from front column.
041f4101.d	1200110632	mm	17-NOV-2001 23:20	121122	111701	1.0	LCS	Use, report from front column.
042f4201.d	52167005	mm	17-NOV-2001 23:42	121122	52167	1.0	[redacted]	Use, report from front column.
043f4301.d	52167006	mm	18-NOV-2001 00:04	121122	52167	1.0	[redacted]	Use, report from front column.
044f4401.d	PW011022-01 606	mm	18-NOV-2001 00:27		111701	1.0		OK, Continuing calibration, (500ppb), front column passes except for 1260. Back column fails for DCB. Standard failure confirmation at 111801.b #42.
045f4501.d	1200110633	mm	18-NOV-2001 00:49		111701	10.0		Do not use. Rerun.
046f4601.d	1200110634	mm	18-NOV-2001 01:12	121122	111701	10.0	MSD	Do not use. Rerun.
047f4701.d	52055001	mm	18-NOV-2001 01:34		52055	10.0		Do not use. Rerun.
048f4801.d	52055002	mm	18-NOV-2001 01:56		52055	10.0		Do not use. Rerun.
049f4901.d	52055003	mm	18-NOV-2001 02:19		52055	10.0		Do not use. Rerun.
050f5001.d	52055004	mm	18-NOV-2001 02:41		52055	10.0		Do not use. Rerun.
051f5101.d	PW011022-01 607	mm	18-NOV-2001 03:04		111701	1.0		Do not use. Rerun.
052f5201.d	52055005	mm	18-NOV-2001 03:26		52055	10.0		Do not use. Rerun.
053f5301.d	52055006	mm	18-NOV-2001 03:48		52055	10.0		Do not use. Rerun.
054f5401.d	52055007	mm	18-NOV-2001 04:11		52055	10.0		Do not use. Rerun.
055f5501.d	52055008	mm	18-NOV-2001 04:33		52055	10.0		Do not use. Rerun.
056f5601.d	52055009	mm	18-NOV-2001 04:55		52055	10.0		Do not use. Rerun.

GEL ORGANIC RUN LOG INSTRUMENT ID __ECD1__

DATE: 11/21/2001 METHOD: PESTA_DB-XLB_ecd1.m OPERATOR:mm REVIEWED BY: [illegible]
DATE: [illegible]

HARDWARE CONFIGURATION & METHOD SUMMARY: No.__1__ on pg.__1__

Calibration & QC Information
Initial Calibration Dates: See Calibration History and Standard Logbook.
Initial Calibration Std ID's: See Calibration History and Standard Logbook.

Chromatogram Abbreviation Legend: AB-Assign Baseline, AP-Assign Peak, BD-Percent Endrin and 4,4'-DDT Breakdown, DNC-Do Not Call, DMP-Doesn't Match Pattern, NC-Not Confirmed, RT-Retention Time.

Sequence Number: /chem/ecd1a.i/111901a.b Injection Volume:__1.0__ul

Data File	GEL Lab Sample ID	Analyst	Injection Date/Time	Batch	SDG	Dilution	Client	Comments
001f0101.d	INST BLK	mm	19-NOV-2001 15:00		111901a	1.0		OK
002f0201.d	PW011113-01 601	mm	19-NOV-2001 15:23		111901a	1.0		OK, Continuing calibration, (500ppb), both columns pass.
003f0301.d	PW011022-02 541	mm	19-NOV-2001 15:45		111901a	1.0		OK, Continuing calibration, (500ppb), both columns pass.
004f0401.d	PW011022-03 421	mm	19-NOV-2001 16:08		111901a	1.0		FAIL, Continuing calibration. Recalibrate, see file #s 8-12.
005f0501.d	PW011011-01 481	mm	19-NOV-2001 16:30		111901a	1.0		OK, Continuing calibration, (500ppb), both columns pass.
006f0601.d	PW011003-01 321	mm	19-NOV-2001 16:53		111901a	1.0		OK, PCB pattern Reference.
007f0701.d	PW011004-01 211	mm	19-NOV-2001 17:15		111901a	1.0		OK, PCB pattern Reference.
008f0801.d	PW011119-09 421	mm	19-NOV-2001 17:37		111901a	1.0		Calibration Curve
009f0901.d	PW011119-08 422	mm	19-NOV-2001 18:00		111901a	1.0		Calibration Curve
010f1001.d	PW011119-07 423	mm	19-NOV-2001 18:22		111901a	1.0		Calibration Curve
011f1101.d	PW011119-06 424	mm	19-NOV-2001 18:45		111901a	1.0		Calibration Curve
012f1201.d	PI081401-01 425	mm	19-NOV-2001 19:07		111901a	1.0		Calibration Curve
013f1301.d	PW011022-03 421	mm	19-NOV-2001 19:29		111901a	1.0		OK, Continuing calibration, (500ppb), both columns pass.
014f1401.d	1200102789	mm	19-NOV-2001 19:52		51093	1.0		Use, report from back column. This is a rerun. Original run 111401.b #10.
015f1501.d	1200102790	mm	19-NOV-2001 20:14		51093	1.0		Use, report from back column. This is a rerun. Original run 111401.b #11.

Instrument Batch: /chem/ecd1a.i/111901a.b

Data File	GEL Lab Sample ID	Analyst	Injection Date/Time	Batch	SDG	Dilution	Client	Comments
016f1601.d	51093001	mm	19-NOV-2001 20:37		51093	1.0		Use, report from back column. This is a rerun. Original run 111401.b #12.
017f1701.d	51093010	mm	19-NOV-2001 20:59		51093	2.0		Use, report from back column. This is a rerun. Original run 111401.b #23.
018f1801.d	51093011	mm	19-NOV-2001 21:21		51093	2.0		Use, report from back column. This is a rerun. Original run 111401.b #24.
019f1901.d	51093012	mm	19-NOV-2001 21:44		51093	2.0		Use, report from back column. This is a rerun. Original run 111401.b #25.
020f2001.d	51093015	mm	19-NOV-2001 22:06		51093	1.0		Use, report from back column. This is a rerun. Original run 111401.b #28.
021f2101.d	PW011113-01 602	mm	19-NOV-2001 22:29		111901a	1.0		OK, Continuing calibration, (500ppb), both columns pass.
022f2201.d	1200102863	mm	19-NOV-2001 22:51		51093-2	1.0		Use, report from front column.
023f2301.d	1200102864	mm	19-NOV-2001 23:14		51093-2	1.0		Use, report from front column.
024f2401.d	1200102865	mm	19-NOV-2001 23:36		51093-2	5.0		Use, report from front column.
025f2501.d	1200102866	mm	19-NOV-2001 23:58		51093-2	5.0		Use, report from front column.
026f2601.d	51102001	mm	20-NOV-2001 00:21		51093-2	5.0		Use, report from front column.
027f2701.d	51102002	mm	20-NOV-2001 00:43		51093-2	1.0		Use, report from front column.
028f2801.d	51102003	mm	20-NOV-2001 01:05		51093-2	1.0		Use, report from front column. This sample will be repreped and run 112001.b #12 for low surrogate recovery. Both sets of data will be reported.
029f2901.d	51102004	mm	20-NOV-2001 01:28		51093-2	1.0		Use, report from front column.
030f3001.d	51102005	mm	20-NOV-2001 01:50		51093-2	1.0		Use, report from front column.
031f3101.d	51102006	mm	20-NOV-2001 02:13		51093-2	5.0		Use, report from front column.
032f3201.d	PW011113-01 603	mm	20-NOV-2001 02:35		111901a	1.0		OK, Continuing calibration, (500ppb), both columns pass.
033f3301.d	51102007	mm	20-NOV-2001 02:58		51093-2	10.0		Use, report from front column.

034f3401.d	51102008	mm	20-NOV-2001 03:20		51093-2	10.0		Use, report from front column.
035f3501.d	51102009	mm	20-NOV-2001 03:42		51093-2	10.0		Use, report from front column.

Instrument Batch: /chem/ecd1a.i/111901a.b

Data File	GEL Lab Sample ID	Analyst	Injection Date/Time	Batch	SDG	Dilution	Client	Comments
036f3601.d	PW011113-01 604	mm	20-NOV-2001 04:05		111901a	1.0		OK, Continuing calibration, (500ppb), both columns pass.
037f3701.d	51741001	mm	20-NOV-2001 04:27		51741	100.0		Use, report from front column.
038f3801.d	PW011113-01 605	mm	20-NOV-2001 04:50		111901a	1.0		OK, Continuing calibration, (100/200/1000ppb), back column passes. Front column fails for 1260 and DCB.
039f3901.d	1200110633	mm	20-NOV-2001 05:12	121122	111901a	10.0	MS	Duse, rerun, see #44.
040f4001.d	1200110633	mm	20-NOV-2001 05:34	121122	111901a	10.0	MSD	Duse, rerun, see #45.
041f4101.d	52055001	mm	20-NOV-2001 05:57		52055	10.0		Duse, rerun, see #46.
042f4201.d	52055002	mm	20-NOV-2001 06:19		52055	10.0		Duse, rerun, see #47.
043f4301.d	PW011113-01 606	mm	20-NOV-2001 06:42		111901a	1.0		OK, Continuing calibration, (5000ppb), both columns pass.
044f4401.d	1200110633	mm	20-NOV-2001 07:04	121122	111901a	10.0	MS	Use, report from front column.
045f4501.d	1200110634	mm	20-NOV-2001 07:27	121122	111901a	10.0	MSD	Use, report from front column.
046f4601.d	52055001	mm	20-NOV-2001 07:49		52055	10.0		Use, report from front column.
047f4701.d	52055002	mm	20-NOV-2001 08:11		52055	10.0		Use, report from front column.
048f4801.d	52055003	mm	20-NOV-2001 08:34		52055	10.0		Use, report from front column.
049f4901.d	52055004	mm	20-NOV-2001 08:56		52055	10.0		Use, report from front column.
050f5001.d	52055005	mm	20-NOV-2001 09:19		52055	10.0		Use, report from front column.
051f5101.d	PW011113-01 607	mm	20-NOV-2001 09:41		111901a	1.0		OK, Continuing calibration, (500ppb), back column passes. Front column fails for 1016.
052f5201.d	PW011022-02 542	mm	20-NOV-2001 10:05		52055	1.0		OK, Continuing calibration, (500ppb), both columns pass.
053f5301.d	52055006	mm	20-NOV-2001 10:27		52055	10.0		Use, report from front column.

10H16.6H

Data File	GEL Lab Sample ID	Analyst	Injection Date/Time	Batch	SDG	Dilution	Client	Comments
054f5401.d	52055007	mm	20-NOV-2001 10:50		52055	20.0		Use, report from front column.
055f5501.d	52055008	mm	20-NOV-2001 11:12		52055	10.0		Use, report from front column.
056f5601.d	52055009	mm	20-NOV-2001 11:35		52055	10.0		Use, report from front column.
057f5701.d	PW011113-01 608	mm	20-NOV-2001 11:57		111901a	1.0		OK, Continuing calibration, (500ppb), back column passes. Front column fails for 1016.
058f5801.d	PW011022-02 543	mm	20-NOV-2001 12:20		111901a	1.0		OK, Continuing calibration, (500ppb), both columns pass.

passes. Front column fails for 1260 and DCB.

Instrument Batch: /chem/ecd1a.i/111901a.b

Raw Data for Plutonium

ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 10:44:24

****
Spectral File: ND_AMS_ARCHIVE_S:S_L4094UP$025_PU.CNF
****

BATCH ID:	L4094UP	SAMPLE ID:	025
SAMPLE DATE:	12-DEC-2001 00:00	ALIQUOT:	1.000E-01 gram
SAMPLE TITLE:	L4094-01	DETECTOR NUMBER:	025
ACQ DATE:	12-DEC-2001 14:37	AVERAGE EFFICIENCY:	24.14%
ELAPSED LIVE TIME:	7599.	RECOVERY:	100.00%
TRACER ID:	none	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	MANUAL
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	27-NOV-2001 18:08	EFF CAL DATE:	27-NOV-2001 18:08
BKG FILENAME:	B_025_28NOV01	BKG ELAPSED TIME:	60002.

****

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PU236	5755.0	-0.38	0.38	100.0	-5.599E-02	6.470E-02	8.214E-01
PU-238	5487.1	6.00	0.00	99.9	8.847E-01	7.235E-01	3.996E-01
PU-239	5147.7	1562.75	0.25	99.9	2.304E+02	1.582E+01	7.447E-01
PU242	4890.7	14.62	0.38	100.4	2.145E+00	1.143E+00	8.181E-01
PU244	4580.6	0.75	0.25	99.9	1.102E-01	2.998E-01	7.447E-01

****

DT 12-13-01
Analyst Date

Reviewer Date

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 13-DEC-2001 10:44:20.74

Detector ID: 25 Acquisition Start: 12-DEC-2001 14:37:51.01
Live Time: 0 02:06:39.00 Real Time: 0 02:06:39.00
Batch Id: L4094UP Sample Id: 025
Sample Type: PU

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4504.56	1	0	3.08	342.00	340	42	1.32E-04	100.0	
2	0	4905.64	15	0	6.15	478.13	445	51	1.97E-03	25.8	
3	0	5138.22	1563	0	42.36	558.00	524	62	2.06E-01	2.5	
4	0	5485.74	6	0	0.00	678.67	667	36	7.90E-04	40.8	
5	0	5747.14	0	0	0.00	770.50	750	42	0.00E+00	0.0	

Background Counts Within Peak Regions Generated: 13-DEC-2001 10:44:22.13

Acquisition Start: 28-NOV-2001 08:56:26.01
Live Time: 0 16:40:02.00 Real Time: 0 16:40:02.00

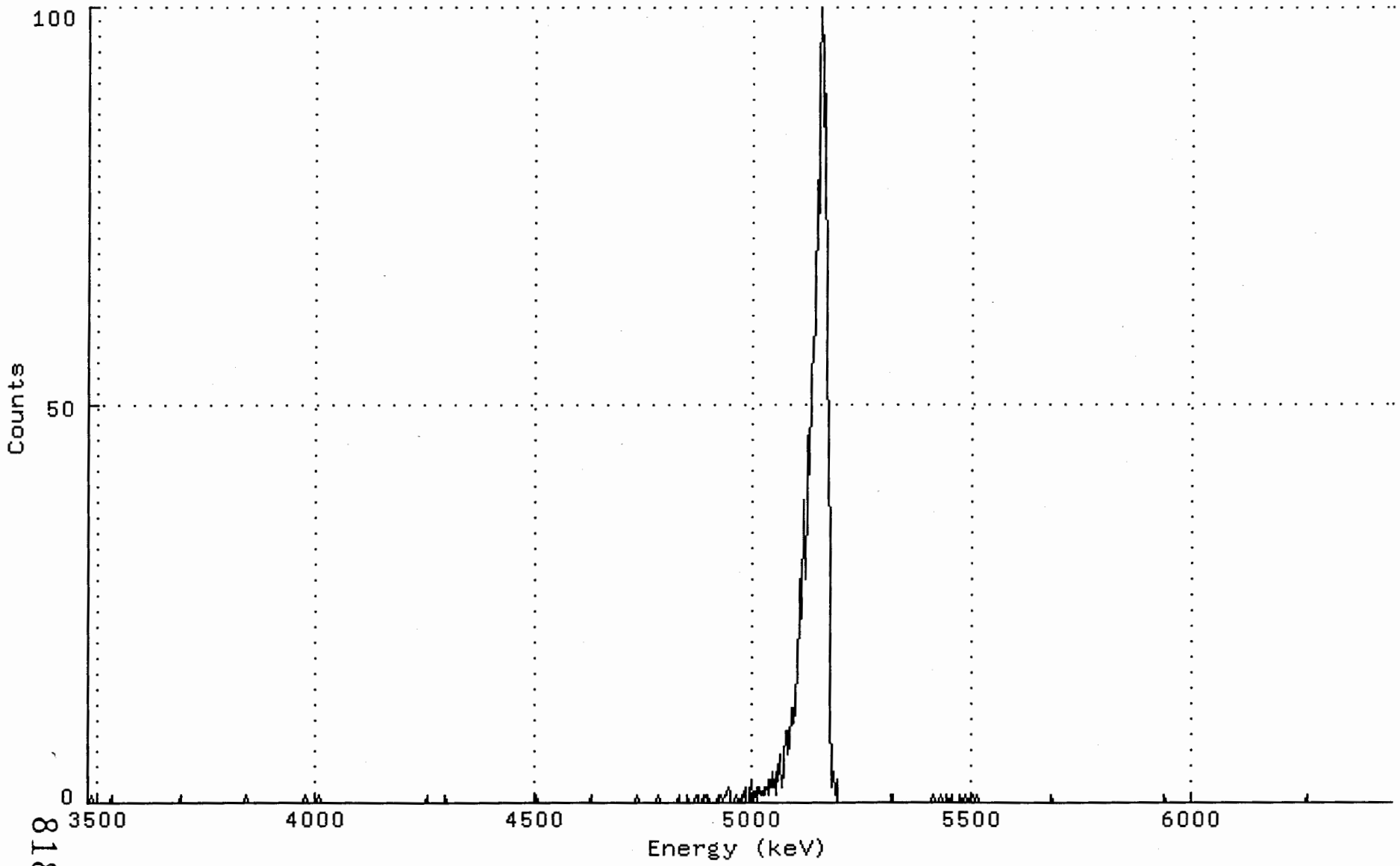
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4559.63	2	0	46.21	360.50	340	42	3.33E-05	70.7	
2	0	4882.09	3	0	0.00	470.00	445	51	5.00E-05	57.7	
3	0	5128.25	2	0	101.67	554.50	524	62	3.33E-05	70.7	
4	0	5502.38	0	0	0.00	684.50	667	36	0.00E+00	0.0	
5	0	5746.84	3	0	86.26	770.50	750	42	5.00E-05	57.7	

Net Sample Counts Within Peak Regions Generated: 13-DEC-2001 10:44:22.50

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1		4504.56*	1	0	3.08	342.00	340	42	9.83E-05	136.1	
2	0	4905.64*	15	0	6.15	478.13	445	51	1.92E-03	26.5	
3	0	5138.22*	1563	0	42.36	558.00	524	62	2.06E-01	2.5	
4	0	5485.74*	6	0	0.00	678.67	667	36	7.90E-04	40.8	
5	0	5747.14*	0	0	0.00	770.50	750	42	-5.00E-05	57.7	

Flag: "*" = Peak area was modified by background subtraction

Spectrum : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV 6]S_L4094UP$025_PU.CNF;1
Title : 025
Sample Title: L4094-01
Start Time: 12-DEC-2001 14:37 Sample Time: 12-DEC-2001 00:00 Energy Offset: 3.47098E+03
Real Time : 0 02:06:39.00 Sample ID : 025 Energy Slope : 3.07643E+00
Live Time : 0 02:06:39.00 Sample Type: PU Energy Quad : -1.58728E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 10:47:19

Spectral File: ND_AMS_ARCHIVE_S:S_L4094UP$026_PU.CNF

BATCH ID:	L4094UP	SAMPLE ID:	026
SAMPLE DATE:	12-DEC-2001 00:00	ALIQUOT:	1.000E-01 gram
SAMPLE TITLE:	L4094-02	DETECTOR NUMBER:	026
ACQ DATE:	12-DEC-2001 14:38	AVERAGE EFFICIENCY:	26.57%
ELAPSED LIVE TIME:	7576.	RECOVERY:	100.00%
TRACER ID:	none	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	MANUAL
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	28-NOV-2001 10:56	EFF CAL DATE:	28-NOV-2001 10:56
BKG FILENAME:	B_026_28NOV01	BKG ELAPSED TIME:	60003.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PU236	5755.0	2.00	0.00	100.0	2.686E-01	3.799E-01	3.638E-01
PU-238	5487.1	5.00	0.00	99.9	6.719E-01	6.010E-01	3.642E-01
PU-239	5147.7	543.00	0.00	99.9	7.297E+01	6.263E+00	3.642E-01
PU242	4890.7	46.87	0.13	100.4	6.267E+00	1.834E+00	5.833E-01
PU244	4580.6	0.75	0.25	99.9	1.005E-01	2.731E-01	6.782E-01

Analyst _____ Date 12-13-01

Reviewer _____ Date _____

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 13-DEC-2001 10:47:15.65

De or ID: 26 Acquisition Start: 12-DEC-2001 14:38:14.01
Live Time: 0 02:06:16.00 Real Time: 0 02:06:16.00
Batch Id: L4094UP Sample Id: 026
Sample Type: PU

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4600.04	1	0	3.08	385.00	351	42	1.32E-04	100.0	
2	0	4895.78	47	0	37.51	485.72	456	56	6.20E-03	14.6	
3	0	5138.45	543	0	80.32	569.26	546	51	7.17E-02	4.3	
4	0	5481.05	5	0	39.70	688.60	678	37	6.60E-04	44.7	
5	0	5699.26	2	0	12.33	765.50	762	42	2.64E-04	70.7	

Background Counts Within Peak Regions Generated: 13-DEC-2001 10:47:16.93

Acquisition Start: 28-NOV-2001 18:01:36.01
Live Time: 0 16:40:03.00 Real Time: 0 16:40:04.00

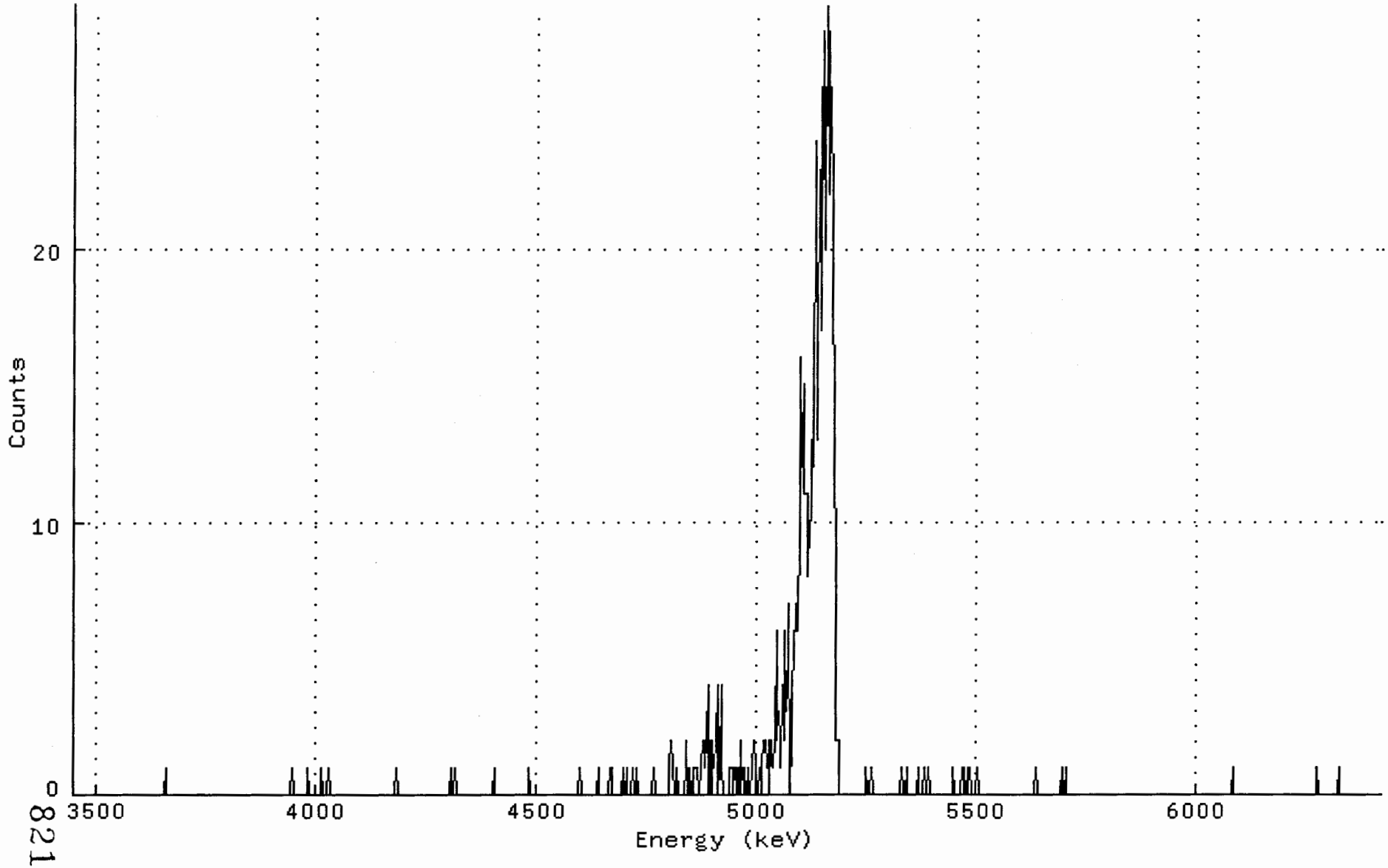
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4560.15	2	0	37.00	371.50	351	42	3.33E-05	70.7	
2	0	4889.30	1	0	3.08	483.50	456	56	1.67E-05	100.0	
3	0	5143.50	0	0	0.00	571.00	546	51	0.00E+00	0.0	
4	0	5502.14	0	0	0.00	696.00	678	37	0.00E+00	0.0	
5	0	5747.22	0	0	0.00	782.50	762	42	0.00E+00	0.0	

Net Sample Counts Within Peak Regions Generated: 13-DEC-2001 10:47:17.51

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4600.04*	1	0	3.08	385.00	351	42	9.87E-05	135.9	
2	0	4895.78*	47	0	37.51	485.72	456	56	6.19E-03	14.6	
3	0	5138.45*	543	0	80.32	569.26	546	51	7.17E-02	4.3	
4	0	5481.05*	5	0	39.70	688.60	678	37	6.60E-04	44.7	
5	0	5699.26*	2	0	12.33	765.50	762	42	2.64E-04	70.7	

lag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV S]S_L4094UP$026_PU.CNF;1
Title : 026
Sample Title: L4094-02
Start Time: 12-DEC-2001 14:38 Sample Time: 12-DEC-2001 00:00 Energy Offset: 3.43798E+03
Real Time : 0 02:06:16.00 Sample ID : 026 Energy Slope : 3.08340E+00
Live Time : 0 02:06:16.00 Sample Type: PU Energy Quad : -1.69062E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 10:48:14

Spectral File: ND_AMS_ARCHIVE_S:S_L4094UP$027_PU.CNF

BATCH ID:	L4094UP	SAMPLE ID:	027
SAMPLE DATE:	12-DEC-2001 00:00	ALIQUOT:	1.000E-01 gram
SAMPLE TITLE:	L4094-03	DETECTOR NUMBER:	027
ACQ DATE:	12-DEC-2001 14:38	AVERAGE EFFICIENCY:	25.64%
ELAPSED LIVE TIME:	7559.	RECOVERY:	100.00%
TRACER ID:	none	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	MANUAL
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	28-NOV-2001 18:01	EFF CAL DATE:	28-NOV-2001 18:01
BKG FILENAME:	B_027_29NOV01	BKG ELAPSED TIME:	60006.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PU236	5755.0	1.87	0.13	100.0	2.615E-01	3.962E-01	6.082E-01
PU-238	5487.1	0.00	0.00	99.9	0.000E+00	0.000E+00	3.784E-01
PU-239	5147.7	188.00	0.00	99.9	2.625E+01	3.829E+00	3.784E-01
PU242	4890.7	4.00	0.00	100.4	5.557E-01	5.557E-01	3.765E-01
PU244	4580.6	-0.13	0.13	99.9	-1.760E-02	3.519E-02	6.088E-01

DZ
Analyst

12-13-01
Date

Reviewer

Date

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 13-DEC-2001 10:48:10.27

De or ID: 27 Acquisition Start: 12-DEC-2001 14:38:31.01
Li ime: 0 02:05:59.00 Real Time: 0 02:05:59.00
Batch Id: L4094UP Sample Id: 027
Sample Type: PU

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4561.06	0	0	0.00	355.00	335	41	0.00E+00	0.0	
2	0	4939.05	4	0	0.00	481.50	437	56	5.29E-04	50.0	
3	0	5131.07	188	0	60.33	546.49	523	47	2.49E-02	7.3	
4	0	5502.05	0	0	0.00	673.50	656	36	0.00E+00	0.0	
5	0	5725.64	2	0	65.83	751.00	739	41	2.65E-04	70.7	

Background Counts Within Peak Regions Generated: 13-DEC-2001 10:48:12.32

Acquisition Start: 29-NOV-2001 08:38:34.01
Live Time: 0 16:40:06.00 Real Time: 0 16:40:06.00

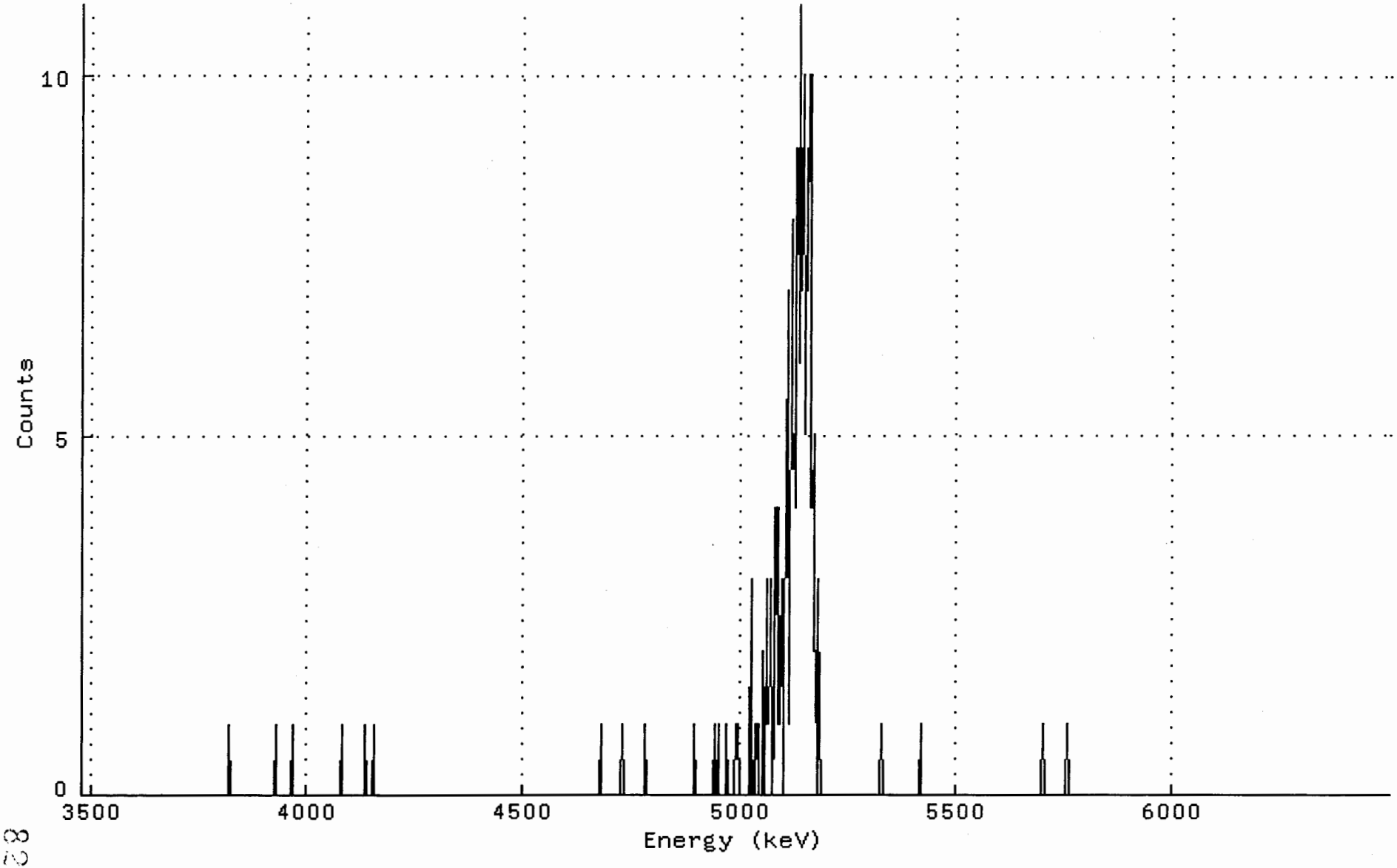
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4561.06	1	0	3.13	355.00	335	41	1.67E-05	100.0	
2	0	4888.58	0	0	0.00	464.50	437	56	0.00E+00	0.0	
3	0	5129.63	0	0	0.00	546.00	523	47	0.00E+00	0.0	
4	0	5502.05	0	0	0.00	673.50	656	36	0.00E+00	0.0	
5	0	5748.60	1	0	3.13	759.00	739	41	1.67E-05	100.0	

Net Sample Counts Within Peak Regions Generated: 13-DEC-2001 10:48:12.75

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1		4561.06*	0	0	0.00	355.00	335	41	-1.67E-05	100.0	
2	0	4939.05*	4	0	0.00	481.50	437	56	5.29E-04	50.0	
3	0	5131.07*	188	0	60.33	546.49	523	47	2.49E-02	7.3	
4	0	5502.05*	0	0	0.00	673.50	656	36	0.00E+00	0.0	
5	0	5725.64*	2	0	65.83	751.00	739	41	2.48E-04	75.8	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVTCE:[ALPHA.ALUSR.ARCHI\ S]S_L4094UP$027_PU.CNF;1
Title : 027
Sample Title: L4094-03
Start Time: 12-DEC-2001 14:38 Sample Time: 12-DEC-2001 00:00 Energy Offset: 3.47029E+03
Real Time : 0 02:05:59.00 Sample ID : 027 Energy Slope : 3.13482E+00
Live Time : 0 02:05:59.00 Sample Type: PU Energy Quad : -1.75360E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 10:48:47

****

Spectral File: ND_AMS_ARCHIVE_S:S_L4094UP$028_PU.CNF

****

BATCH ID:	L4094UP	SAMPLE ID:	028
SAMPLE DATE:	12-DEC-2001 00:00	ALIQUOT:	1.000E-01 gram
SAMPLE TITLE:	L4094-04	DETECTOR NUMBER:	028
ACQ DATE:	12-DEC-2001 14:38	AVERAGE EFFICIENCY:	24.70%
ELAPSED LIVE TIME:	7535.	RECOVERY:	100.00%
TRACER ID:	none	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	MANUAL
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	29-NOV-2001 08:38	EFF CAL DATE:	29-NOV-2001 08:38
BKG FILENAME:	B_028_29NOV01	BKG ELAPSED TIME:	60004.

****

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PU236	5755.0	-0.13	0.13	100.0	-1.824E-02	3.649E-02	6.329E-01
PU-238	5487.1	2.62	0.38	99.9	3.813E-01	5.075E-01	8.088E-01
PU-239	5147.7	427.75	0.25	99.9	6.218E+01	6.015E+00	7.327E-01
PU242	4890.7	4.62	0.38	100.4	6.687E-01	6.499E-01	8.048E-01
PU244	4580.6	0.87	0.13	99.9	1.272E-01	2.932E-01	6.335E-01

****

Analyst _____ Date 12-13-01

Reviewer _____ Date _____

ENVIROTEST LABORATORIES LLC.

ross Sample Counts Within Peak Regions Generated: 13-DEC-2001 10:48:43.85

e or ID: 28 Acquisition Start: 12-DEC-2001 14:38:55.01
iv ime: 0 02:05:35.00 Real Time: 0 02:05:36.00
atch Id: L4094UP Sample Id: 028
ample Type: PU

k	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4595.78	1	0	3.03	357.00	324	42	1.33E-04	100.0	
2	0	4884.55	5	0	124.35	456.60	430	57	6.64E-04	44.7	
3	0	5146.29	428	0	31.26	547.86	523	51	5.68E-02	4.8	
4	0	5478.22	3	0	54.21	665.00	656	37	3.98E-04	57.7	
5	0	5748.29	0	0	0.00	761.50	741	42	0.00E+00	0.0	

ackground Counts Within Peak Regions Generated: 13-DEC-2001 10:48:45.11

Acquisition Start: 29-NOV-2001 15:59:27.01
ive Time: 0 16:40:04.00 Real Time: 0 16:40:04.00

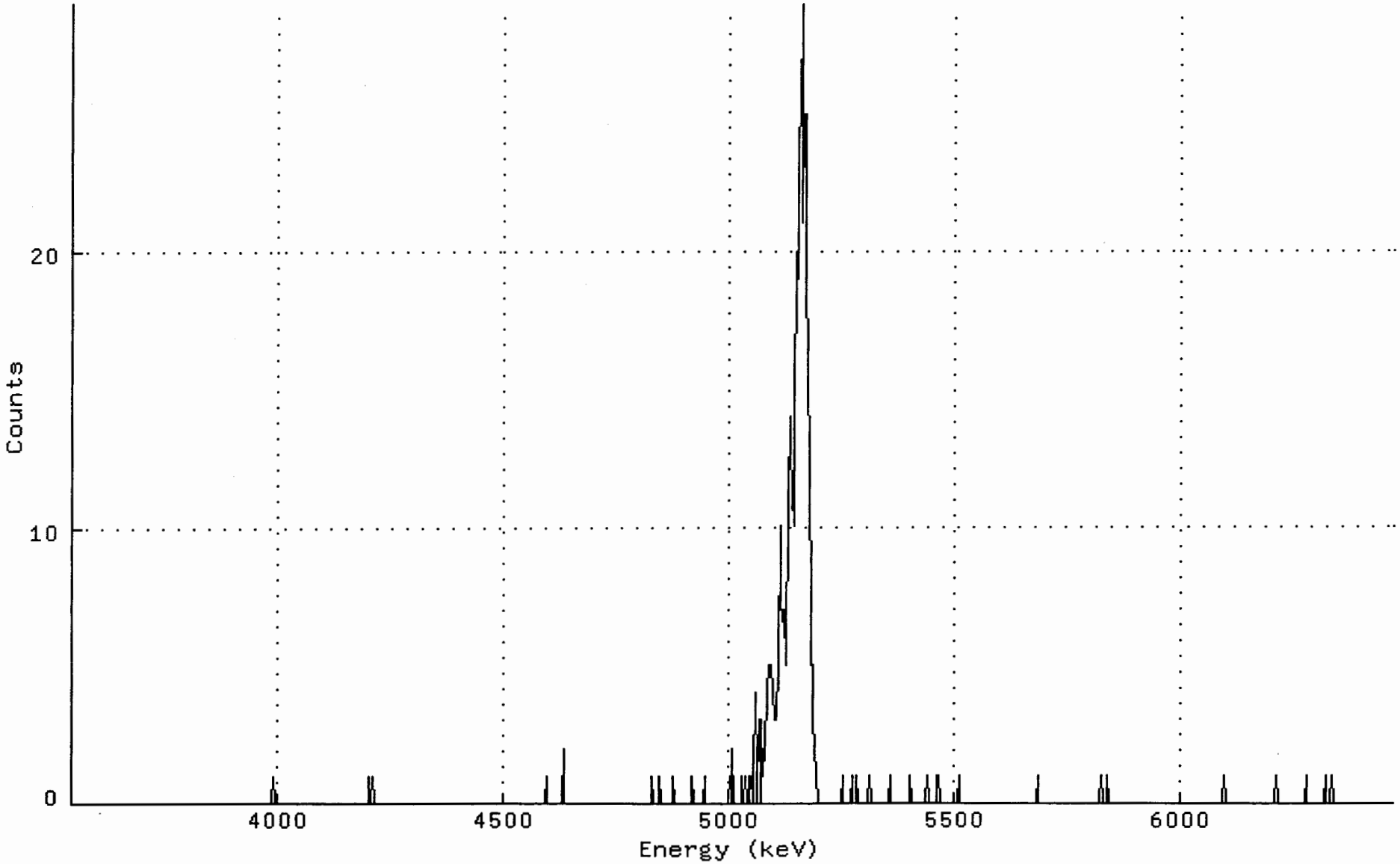
k	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4559.31	1	0	3.03	344.50	324	42	1.67E-05	100.0	
2	0	4888.59	3	0	136.48	458.00	430	57	5.00E-05	57.7	
3	0	5146.68	2	0	27.30	548.00	523	51	3.33E-05	70.7	
4	0	5503.54	3	0	39.43	674.00	656	37	5.00E-05	57.7	
5	0	5748.29	1	0	3.03	761.50	741	42	1.67E-05	100.0	

et Sample Counts Within Peak Regions Generated: 13-DEC-2001 10:48:45.51

k	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4595.78*	1	0	3.03	357.00	324	42	1.16E-04	115.3	
2	0	4884.55*	5	0	124.35	456.60	430	57	6.14E-04	48.6	
3	0	5146.29*	428	0	31.26	547.86	523	51	5.68E-02	4.8	
4	0	5478.22*	3	0	54.21	665.00	656	37	3.48E-04	66.5	
5	0	5748.29*	0	0	0.00	761.50	741	42	-1.67E-05	100.0	

ag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV S]S_L4094UP$028_PU.CNF;1
Title : 028
Sample Title: L4094-04
Start Time: 12-DEC-2001 14:38 Sample Time: 12-DEC-2001 00:00 Energy Offset: 3.53396E+03
Real Time : 0 02:05:36.00 Sample ID : 028 Energy Slope : 3.03294E+00
Live Time : 0 02:05:35.00 Sample Type: PU Energy Quad : -1.64267E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 10:50:16

Spectral File: ND_AMS_ARCHIVE_S:S_L4094UP$030_PU.CNF

BATCH ID:	L4094UP	SAMPLE ID:	030
SAMPLE DATE:	12-DEC-2001 00:00	ALIQUOT:	1.000E-01 gram
SAMPLE TITLE:	L4094-05MD	DETECTOR NUMBER:	030
ACC DATE:	12-DEC-2001 14:39	AVERAGE EFFICIENCY:	26.52%
ELAPSED LIVE TIME:	7489.	RECOVERY:	100.00%
TRACER ID:	none	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	MANUAL
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-AUG-2001 08:26	EFF CAL DATE:	30-AUG-2001 08:26
BKG FILENAME:	B_030_26NOV01	BKG ELAPSED TIME:	60005.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PU236	5755.0	-1.37	1.37	100.0	-1.869E-01	1.127E-01	1.110E+00
PU-238	5487.1	2.63	0.37	99.9	3.577E-01	4.756E-01	7.568E-01
PU-239	5147.7	709.88	0.12	99.9	9.671E+01	7.260E+00	5.930E-01
PU242	4890.7	4.88	0.12	100.4	6.609E-01	6.072E-01	5.900E-01
PU244	4580.6	3.00	0.00	99.9	4.089E-01	4.721E-01	3.692E-01

Analyst _____ Date 12-13-01

Reviewer _____ Date _____

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 13-DEC-2001 10:50:10.03

De or ID: 30 Acquisition Start: 12-DEC-2001 14:39:42.01
Live Time: 0 02:04:49.00 Real Time: 0 02:04:49.00
Batch Id: L4094UP Sample Id: 030
Sample Type: PU

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4569.56	3	0	26.96	352.67	329	42	4.01E-04	57.7	
2	0	4920.04	5	0	104.84	475.40	436	58	6.68E-04	44.7	
3	0	5141.15	710	0	34.57	553.76	524	58	9.48E-02	3.8	
4	0	5485.64	3	0	32.95	677.33	665	38	4.01E-04	57.7	
5	0	5748.79	0	0	0.00	773.00	752	43	0.00E+00	0.0	

Background Counts Within Peak Regions Generated: 13-DEC-2001 10:50:14.18

Acquisition Start: 26-NOV-2001 15:37:51.01
Live Time: 0 16:40:05.00 Real Time: 0 16:40:05.00

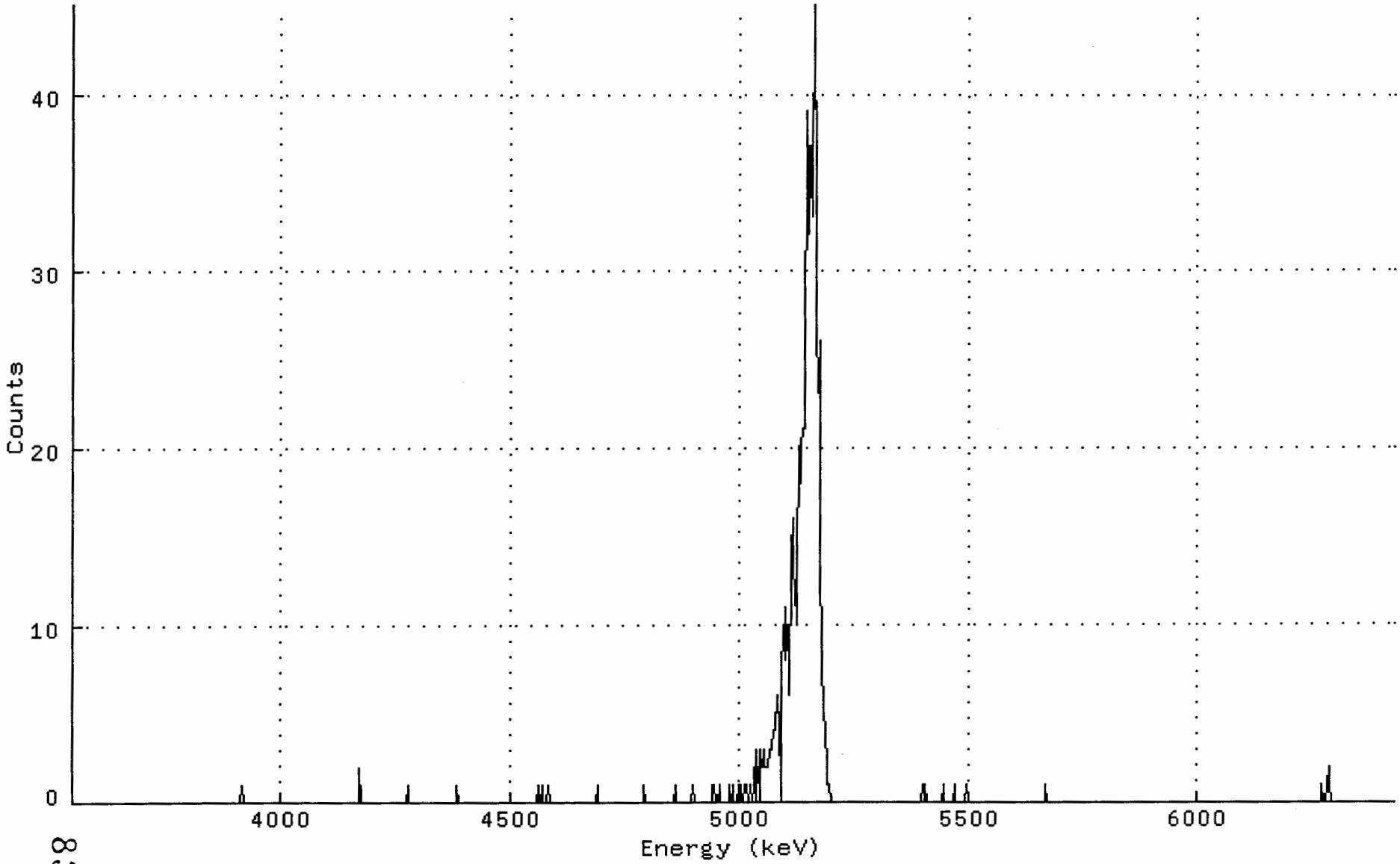
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4560.45	0	0	0.00	349.50	329	42	0.00E+00	0.0	
2	0	4889.12	1	0	0.00	464.50	436	58	1.67E-05	100.0	
3	0	5137.62	1	0	3.00	552.50	524	58	1.67E-05	100.0	
4	0	5502.70	3	0	38.94	683.50	665	38	5.00E-05	57.7	
5	0	5748.79	11	0	3.00	773.00	752	43	1.83E-04	30.2	

Net Sample Counts Within Peak Regions Generated: 13-DEC-2001 10:50:14.57

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4569.56*	3	0	26.96	352.67	329	42	4.01E-04	57.7	
2	0	4920.04*	5	0	104.84	475.40	436	58	6.51E-04	45.9	
3	0	5141.15*	710	0	34.57	553.76	524	58	9.48E-02	3.8	
4	0	5485.64*	3	0	32.95	677.33	665	38	3.51E-04	66.5	
5	0	5748.79*	-1	0	0.00	773.00	752	43	-1.83E-04	30.2	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV S]S_L4094UP$030_PU.CNF;1
Title : 030
Sample Title: L4094-05MD
Start Time: 12-DEC-2001 14:39 Sample Time: 12-DEC-2001 00:00 Energy Offset: 3.53419E+03
Real Time : 0 02:04:49.00 Sample ID : 030 Energy Slope : 2.99530E+00
Live Time : 0 02:04:49.00 Sample Type: PU Energy Quad : -1.68642E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 10:49:19

Spectral File: ND_AMS_ARCHIVE_S:S_L4094UP$029_PU.CNF

BATCH ID:	L4094UP	SAMPLE ID:	029
SAMPLE DATE:	12-DEC-2001 00:00	ALIQUOT:	1.000E-01 gram
SAMPLE TITLE:	L4094-05MD	DETECTOR NUMBER:	029
ACQ DATE:	12-DEC-2001 14:39	AVERAGE EFFICIENCY:	25.68%
ELAPSED LIVE TIME:	7510.	RECOVERY:	100.00%
TRACER ID:	none	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	MANUAL
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	29-AUG-2001 15:49	EFF CAL DATE:	29-AUG-2001 15:49
BKG FILENAME:	B_029_26NOV01	BKG ELAPSED TIME:	60002.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PU236	5755.0	0.50	1.50	100.0	6.982E-02	4.147E-01	1.178E+00
PU-238	5487.1	19.62	0.38	99.9	2.753E+00	1.256E+00	7.798E-01
PU-239	5147.7	752.75	1.25	99.9	1.056E+02	7.704E+00	1.110E+00
PU242	4890.7	146.87	0.13	100.4	2.050E+01	3.385E+00	6.078E-01
PU244	4580.6	0.75	0.25	99.9	1.052E-01	2.850E-01	7.065E-01

a few drops of Pu-242 tracer fell into sample while tracing the matrix set of samples. per [illegible] 12-20-01 [illegible]

Analyst — Date 12-13-01

Reviewer — Date

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 13-DEC-2001 10:49:15.65

De[illegible]r ID: 29 Acquisition Start: 12-DEC-2001 14:39:21.01
Liv[illegible]ime: 0 02:05:10.00 Real Time: 0 02:05:10.00
Batch Id: L4094UP Sample Id: 029
Sample Type: PU

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4546.97	1	0	2.91	366.00	349	44	1.33E-04	100.0	
2	0	4892.20	147	0	108.80	490.69	460	60	1.96E-02	8.2	
3	0	5146.82	754	0	46.78	583.86	558	53	1.00E-01	3.6	
4	0	5487.29	20	0	47.96	710.10	697	39	2.66E-03	22.4	
5	0	5726.56	2	0	43.64	800.00	786	45	2.66E-04	70.7	

Background Counts Within Peak Regions Generated: 13-DEC-2001 10:49:16.85

Acquisition Start: 26-NOV-2001 15:37:48.01
Live Time: 0 16:40:02.00 Real Time: 0 16:40:02.00

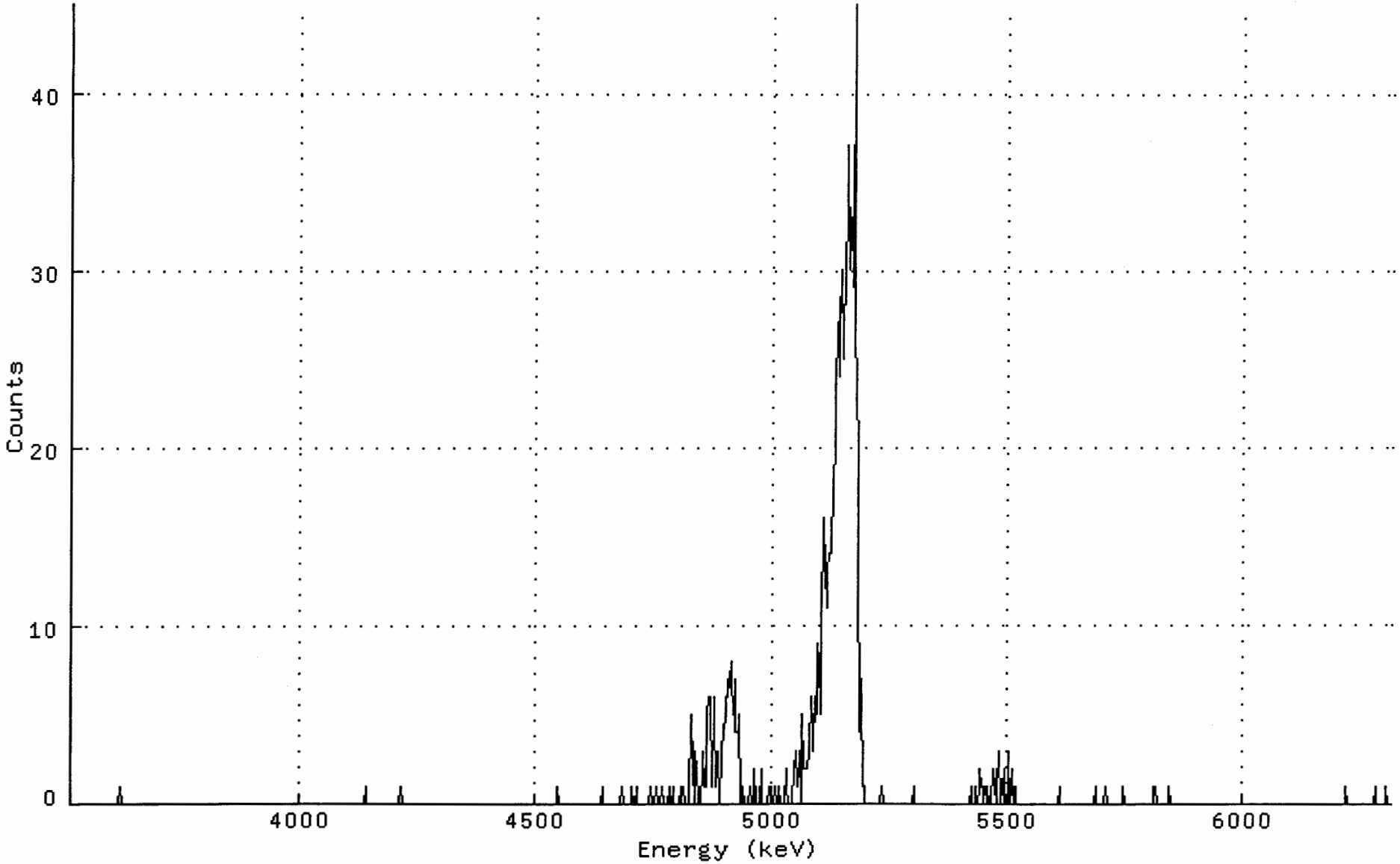
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4559.52	2	0	98.91	370.50	349	44	3.33E-05	70.7	
2	0	4888.92	1	0	2.91	489.50	460	60	1.67E-05	100.0	
3	0	5147.20	10	0	116.36	584.00	558	53	1.67E-04	31.6	
4	0	5503.07	3	0	60.73	716.00	697	39	5.00E-05	57.7	
5	0	5747.72	12	0	4.27	808.00	786	45	2.00E-04	28.9	

Net Sample Counts Within Peak Regions Generated: 13-DEC-2001 10:49:17.44

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	[illegible]	4546.97*	1	0	2.91	366.00	349	44	9.98E-05	135.5	
2	0	4892.20*	147	0	108.80	490.69	460	60	1.96E-02	8.3	
3	0	5146.82*	753	0	46.78	583.86	558	53	1.00E-01	3.6	
4	0	5487.29*	20	0	47.96	710.10	697	39	2.61E-03	22.8	
5	0	5726.56*	0	0	43.64	800.00	786	45	6.63E-05	297.0	

lag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV S]S_L4094UP$029_PU.CNF;1
Title : 029
Sample Title: L4094-05
Start Time: 12-DEC-2001 14:39 Sample Time: 12-DEC-2001 00:00 Energy Offset: 3.50422E+03
Real Time : 0 02:05:10.00 Sample ID : 029 Energy Slope : 2.90903E+00
Live Time : 0 02:05:10.00 Sample Type: PU Energy Quad : -1.63879E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 10:50:50

Spectral File: ND_AMS_ARCHIVE_S:S_L4094UP$031_PU.CNF

BATCH ID:	L4094UP	SAMPLE ID:	031
SAMPLE DATE:	12-DEC-2001 00:00	ALIQUOT:	1.000E-01 gram
SAMPLE TITLE:	L4094-06	DETECTOR NUMBER:	031
ACQ DATE:	12-DEC-2001 14:40	AVERAGE EFFICIENCY:	26.39%
ELAPSED LIVE TIME:	7462.	RECOVERY:	100.00%
TRACER ID:	none	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	MANUAL
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-AUG-2001 15:41	EFF CAL DATE:	30-AUG-2001 15:41
BKG FILENAME:	B_031_26NOV01	BKG ELAPSED TIME:	60002.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PU236	5755.0	0.13	0.87	100.0	1.778E-02	2.891E-01	9.675E-01
PU-238	5487.1	4.75	0.25	99.9	6.528E-01	6.163E-01	6.910E-01
PU-239	5147.7	414.38	0.62	99.9	5.693E+01	5.598E+00	8.761E-01
PU242	4890.7	3.88	0.12	100.4	5.298E-01	5.479E-01	5.947E-01
PU244	4580.6	0.88	0.12	99.9	1.204E-01	2.770E-01	5.976E-01

D7 — Analyst

12-B-01 — Date

Reviewer

Date

ENVIROTEST LABORATORIES LLC.

oss Sample Counts Within Peak Regions Generated: 13-DEC-2001 10:50:46.50

or ID: 31 Acquisition Start: 12-DEC-2001 14:40:10.01
ime: 0 02:04:22.00 Real Time: 0 02:04:22.00
tch Id: L4094UP Sample Id: 031
mple Type: PU

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
0	4514.05	1	0	3.14	346.00	341	41	1.34E-04	100.0	
0	4927.91	4	0	81.61	484.25	444	55	5.36E-04	50.0	
0	5148.41	415	0	65.41	558.84	534	49	5.56E-02	4.9	
0	5493.14	5	0	0.00	676.80	663	35	6.70E-04	44.7	
0	5724.74	1	0	3.14	757.00	745	41	1.34E-04	100.0	

ckground Counts Within Peak Regions Generated: 13-DEC-2001 10:50:47.68

Acquisition Start: 26-NOV-2001 15:37:54.01
ve Time: 0 16:40:02.00 Real Time: 0 16:40:02.00

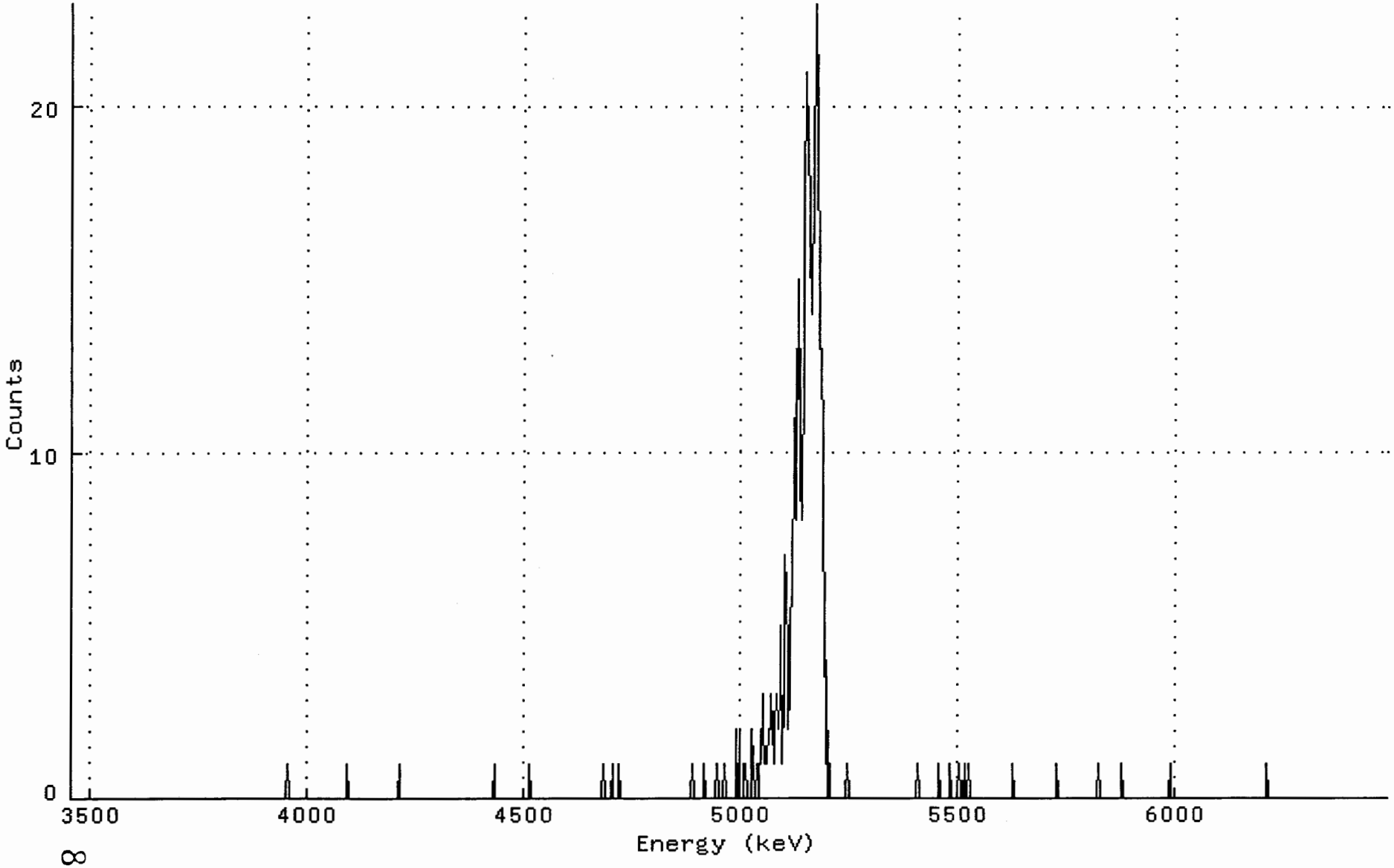
It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
0	4559.28	1	0	3.14	361.00	341	41	1.67E-05	100.0	
0	4888.53	1	0	3.14	471.00	444	55	1.67E-05	100.0	
0	5145.94	5	0	0.00	558.00	534	49	8.33E-05	44.7	
0	5502.43	2	0	31.39	680.00	663	35	3.33E-05	70.7	
0	5747.71	7	0	97.31	765.00	745	41	1.17E-04	37.8	

et Sample Counts Within Peak Regions Generated: 13-DEC-2001 10:50:48.28

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
0	4514.05*	1	0	3.14	346.00	341	41	1.17E-04	115.1	
0	4927.91*	4	0	81.61	484.25	444	55	5.19E-04	51.7	
0	5148.41*	414	0	65.41	558.84	534	49	5.55E-02	4.9	
0	5493.14*	5	0	0.00	676.80	663	35	6.37E-04	47.2	
0	5724.74*	0	0	3.14	757.00	745	41	1.73E-05	813.2	

ag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHI\ S]S_L4094UP$031_PU.CNF;1
Title : 031
Sample Title: L4094-06
Start Time: 12-DEC-2001 14:40 Sample Time: 12-DEC-2001 00:00 Energy Offset: 3.44894E+03
Real Time : 0 02:04:22.00 Sample ID : 031 Energy Slope : 3.13901E+00
Live Time : 0 02:04:22.00 Sample Type: PU Energy Quad : -1.75261E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 10:51:25

Spectral File: ND_AMS_ARCHIVE_S:S_L4094UP$032_PU.CNF

BATCH ID:	L4094UP	SAMPLE ID:	032
SAMPLE DATE:	12-DEC-2001 00:00	ALIQUOT:	1.000E-01 gram
SAMPLE TITLE:	L4094-07	DETECTOR NUMBER:	032
ACQ DATE:	12-DEC-2001 14:40	AVERAGE EFFICIENCY:	24.45%
ELAPSED LIVE TIME:	7442.	RECOVERY:	100.00%
TRACER ID:	none	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	MANUAL
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	31-AUG-2001 11:09	EFF CAL DATE:	31-AUG-2001 11:09
BKG FILENAME:	B_032_26NOV01	BKG ELAPSED TIME:	60007.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PU236	5755.0	-0.12	1.12	100.0	-1.726E-02	3.171E-01	1.132E+00
PU-238	5487.1	20.00	0.00	99.9	2.974E+00	1.330E+00	4.029E-01
PU-239	5147.7	1178.26	0.74	99.9	1.752E+02	1.021E+01	9.993E-01
PU242	4890.7	20.88	0.12	100.4	3.088E+00	1.356E+00	6.432E-01
PU244	4580.6	1.00	0.00	99.9	1.487E-01	2.975E-01	4.029E-01

DJ 12-13-01
Analyst Date

Reviewer Date

ENVIROTEST LABORATORIES LLC.

oss Sample Counts Within Peak Regions Generated: 13-DEC-2001 10:51:22.27

or ID: 32 Acquisition Start: 12-DEC-2001 14:40:29.01
ime: 0 02:04:02.00 Real Time: 0 02:04:02.00
tch Id: L4094UP Sample Id: 032
mple Type: PU

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
0	4525.86	1	0	3.08	349.00	340	42	1.34E-04	100.0	
0	4900.20	21	0	110.16	475.76	444	57	2.82E-03	21.8	
0	5135.47	1179	0	51.32	556.32	525	60	1.58E-01	2.9	
0	5485.50	20	0	3.58	677.50	666	36	2.69E-03	22.4	
0	5746.74	1	0	3.08	769.00	749	42	1.34E-04	100.0	

ıckground Counts Within Peak Regions Generated: 13-DEC-2001 10:51:23.53

Acquisition Start: 26-NOV-2001 15:37:58.01
ve Time: 0 16:40:07.00 Real Time: 0 16:40:07.00

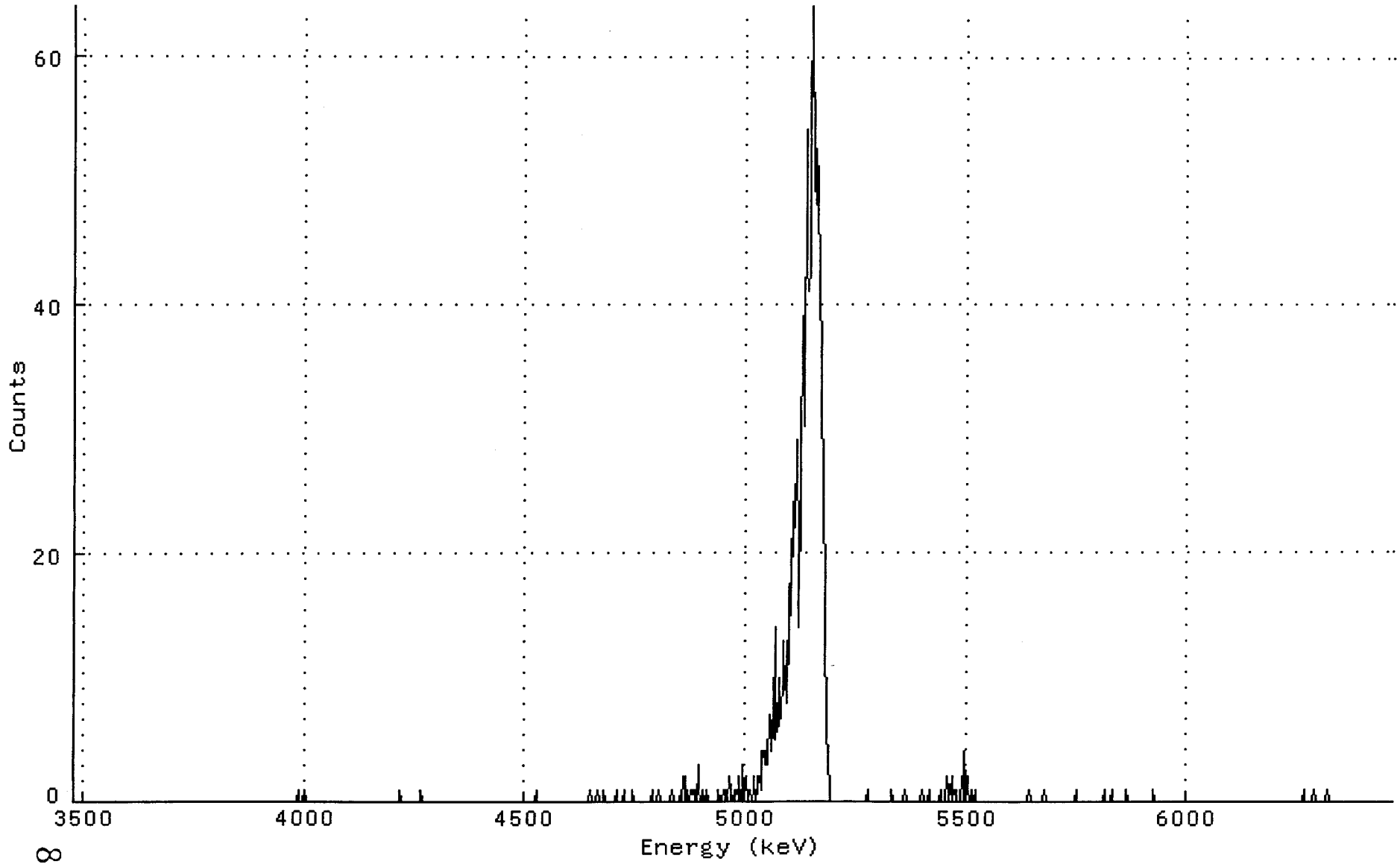
It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
0	4560.03	0	0	0.00	360.50	340	42	0.00E+00	0.0	
0	4889.17	1	0	3.08	472.00	444	57	1.67E-05	100.0	
0	5130.17	6	0	80.16	554.50	525	60	1.00E-04	40.8	
0	5502.71	0	0	0.00	683.50	666	36	0.00E+00	0.0	
0	5748.16	9	0	4.53	769.50	749	42	1.50E-04	33.3	

et Sample Counts Within Peak Regions Generated: 13-DEC-2001 10:51:23.95

	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
	4525.86*	1	0	3.08	349.00	340	42	1.34E-04	100.0	
0	4900.20*	21	0	110.16	475.76	444	57	2.81E-03	22.0	
0	5135.47*	1178	0	51.32	556.32	525	60	1.58E-01	2.9	
0	5485.50*	20	0	3.58	677.50	666	36	2.69E-03	22.4	
0	5746.74*	0	0	3.08	769.00	749	42	-1.56E-05	918.5	

ag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV 5]S_L4094UP$032_PU.CNF;1
Title : 032
Sample Title: L4094-07
Start Time: 12-DEC-2001 14:40 Sample Time: 12-DEC-2001 00:00 Energy Offset: 3.46905E+03
Real Time : 0 02:04:02.00 Sample ID : 032 Energy Slope : 3.08313E+00
Live Time : 0 02:04:02.00 Sample Type: PU Energy Quad : -1.57675E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 10:52:14

****
ectral File: ND_AMS_ARCHIVE_S:S_L4094UP$033_PU.CNF
****

TCH ID:	L4094UP	SAMPLE ID:	033
MPLE DATE:	12-DEC-2001 00:00	ALIQUOT:	1.000E-01 gram
MPLE TITLE:	L4094-08	DETECTOR NUMBER:	033
Q DATE:	12-DEC-2001 14:40	AVERAGE EFFICIENCY:	26.22%
APSED LIVE TIME:	7416.	RECOVERY:	100.00%
RACER ID:	none	TRACER FWHM (kev):	0.00
MBDA VALUE:	0.	ROI TYPE:	MANUAL
RACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE FACTOR:	4.65
MPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
NERGY CAL DATE:	31-AUG-2001 18:22	EFF CAL DATE:	31-AUG-2001 18:22
KG FILENAME:	B_033_26NOV01	BKG ELAPSED TIME:	60003.

****

NUCLIDE ACTIVITY SUMMARY

UCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
U236	5755.0	3.26	0.74	100.0	4.532E-01	5.626E-01	9.334E-01
U-238	5487.1	1.38	0.62	99.9	1.923E-01	4.010E-01	8.857E-01
U-239	5147.7	1232.13	0.87	99.9	1.715E+02	9.773E+00	9.789E-01
U242	4890.7	5.51	0.49	100.4	7.623E-01	6.817E-01	8.279E-01
U244	4580.6	1.51	0.49	99.9	2.096E-01	3.997E-01	8.320E-01

****

Analyst _____ Date 12-13-01

Reviewer _____ Date _____

ENVIROTEST LABORATORIES LLC.

ross Sample Counts Within Peak Regions Generated: 13-DEC-2001 10:52:08.80

e or ID: 33 Acquisition Start: 12-DEC-2001 14:40:56.01
ive Time: 0 02:03:36.00 Real Time: 0 02:03:36.00
atch Id: L4094UP Sample Id: 033
ample Type: PU

k	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4534.59	2	0	36.82	360.50	349	41	2.70E-04	70.7	
2	0	4901.97	6	0	0.00	485.67	453	57	8.09E-04	40.8	
3	0	5140.55	1233	0	61.87	567.86	532	63	1.66E-01	2.8	
4	0	5505.38	2	0	27.61	695.00	676	37	2.70E-04	70.7	
5	0	5741.52	4	0	85.91	778.25	760	42	5.39E-04	50.0	

ackground Counts Within Peak Regions Generated: 13-DEC-2001 10:52:10.08

Acquisition Start: 26-NOV-2001 15:38:01.01
ive Time: 0 16:40:03.00 Real Time: 0 16:40:04.00

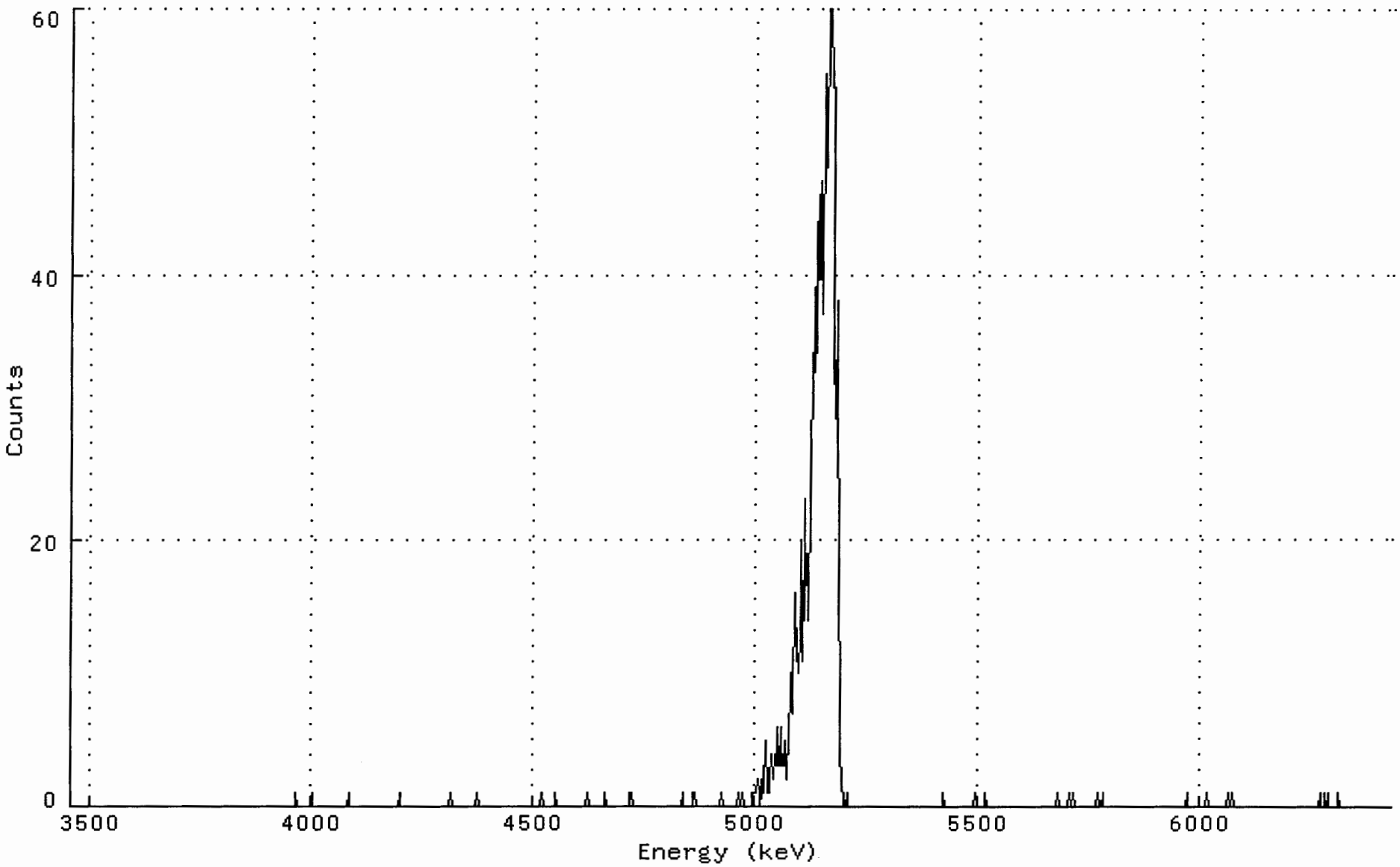
k	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4559.69	4	0	0.00	369.00	349	41	6.67E-05	50.0	
2	0	4888.36	4	0	49.09	481.00	453	57	6.67E-05	50.0	
3	0	5126.49	7	0	149.96	563.00	532	63	1.17E-04	37.8	
4	0	5502.53	5	0	46.02	694.00	676	37	8.33E-05	44.7	
5	0	5747.87	6	0	122.73	780.50	760	42	1.00E-04	40.8	

let Sample Counts Within Peak Regions Generated: 13-DEC-2001 10:52:10.51

k	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4534.59*	2	0	36.82	360.50	349	41	2.03E-04	95.4	
2	0	4901.97*	6	0	0.00	485.67	453	57	7.42E-04	44.7	
3	0	5140.55*	1232	0	61.87	567.86	532	63	1.66E-01	2.8	
4	0	5505.38*	1	0	27.61	695.00	676	37	1.86E-04	104.3	
5	0	5741.52*	3	0	85.91	778.25	760	42	4.39E-04	62.1	

ag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV S]S_L4094UP$033_PU.CNF;1
Title : 033
Sample Title: L4094-08
Start Time: 12-DEC-2001 14:40 Sample Time: 12-DEC-2001 00:00 Energy Offset: 3.44894E+03
Real Time : 0 02:03:36.00 Sample ID : 033 Energy Slope : 3.06818E+00
Live Time : 0 02:03:36.00 Sample Type: PU Energy Quad : -1.57249E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 10:52:51

Spectral File: ND_AMS_ARCHIVE_S:S_L4094UP$034_PU.CNF

BATCH ID:	L4094UP	SAMPLE ID:	034
SAMPLE DATE:	12-DEC-2001 00:00	ALIQUOT:	1.000E-01 gram
SAMPLE TITLE:	L4094-09	DETECTOR NUMBER:	034
ACQ DATE:	12-DEC-2001 14:41	AVERAGE EFFICIENCY:	25.09%
ELAPSED LIVE TIME:	7377.	RECOVERY:	100.00%
TRACER ID:	none	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	0.	ROI TYPE:	MANUAL
TRACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	4-SEP-2001 08:57	EFF CAL DATE:	4-SEP-2001 08:57
BKG FILENAME:	B_034_26NOV01	BKG ELAPSED TIME:	60000.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PU236	5755.0	0.39	0.61	100.0	5.629E-02	3.031E-01	9.282E-01
PU-238	5487.1	0.65	1.35	99.9	9.466E-02	4.303E-01	1.187E+00
PU-239	5147.7	619.51	0.49	99.9	9.056E+01	7.280E+00	8.729E-01
PU242	4890.7	2.88	0.12	100.4	4.185E-01	5.052E-01	6.314E-01
PU244	4580.6	0.63	0.37	99.9	9.231E-02	2.991E-01	8.090E-01

Analyst _____ Date 12-13-01

Reviewer _____ Date _____

ENVIROTEST LABORATORIES LLC.

'oss Sample Counts Within Peak Regions Generated: 13-DEC-2001 10:52:47.24

or ID: 34 Acquisition Start: 12-DEC-2001 14:41:35.01
ime: 0 02:02:57.00 Real Time: 0 02:02:57.00
atch Id: L4094UP Sample Id: 034
ample Type: PU

<	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4567.80	1	0	3.10	360.00	337	42	1.36E-04	100.0	
2	0	4899.82	3	0	152.07	472.00	441	56	4.07E-04	57.7	
3	0	5150.80	620	0	45.72	557.62	531	50	8.40E-02	4.0	
4	0	5489.49	2	0	18.62	674.50	661	37	2.71E-04	70.7	
5	0	5734.35	1	0	3.10	760.00	744	42	1.36E-04	100.0	

ackground Counts Within Peak Regions Generated: 13-DEC-2001 10:52:49.07

Acquisition Start: 26-NOV-2001 15:38:04.01
ive Time: 0 16:40:00.00 Real Time: 0 16:40:00.00

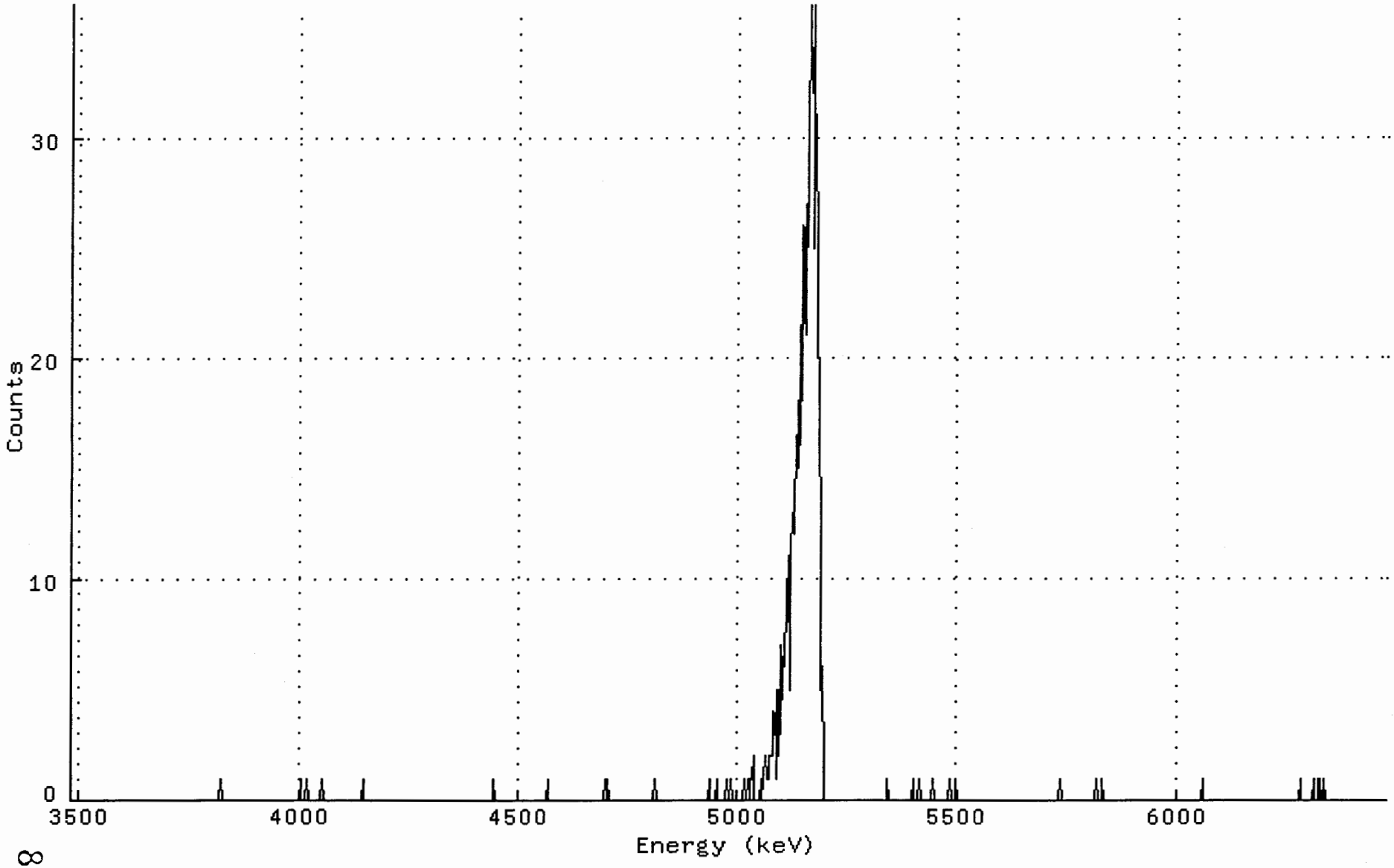
k	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4560.34	3	0	52.76	357.50	337	42	5.00E-05	57.7	
2	0	4889.51	1	0	3.10	468.50	441	56	1.67E-05	100.0	
3	0	5144.63	4	0	108.62	555.50	531	50	6.67E-05	50.0	
4	0	5502.44	11	0	27.93	679.00	661	37	1.83E-04	30.2	
5	0	5747.17	5	0	117.93	764.50	744	42	8.33E-05	44.7	

et Sample Counts Within Peak Regions Generated: 13-DEC-2001 10:52:49.51

k	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4567.80*	1	0	3.10	360.00	337	42	8.56E-05	162.0	
2	0	4899.82*	3	0	152.07	472.00	441	56	3.90E-04	60.4	
3	0	5150.80*	620	0	45.72	557.62	531	50	8.40E-02	4.0	
4	0	5489.49*	1	0	18.62	674.50	661	37	8.78E-05	227.3	
5	0	5734.35*	0	0	3.10	760.00	744	42	5.22E-05	269.2	

ag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHI S]S_L4094UP$034_PU.CNF;1
Title : 034
Sample Title: L4094-09
Start Time: 12-DEC-2001 14:41 Sample Time: 12-DEC-2001 00:00 Energy Offset: 3.47221E+03
Real Time : 0 02:02:57.00 Sample ID : 034 Energy Slope : 3.10342E+00
Live Time : 0 02:02:57.00 Sample Type: PU Energy Quad : -1.66996E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 10:43:07

****
ectral File: ND_AMS_ARCHIVE_R:R_L4094UP$036_PU.CNF
****

TCH ID:	L4094UP	SAMPLE ID:	036
MPLE DATE:	12-DEC-2001 00:00	ALIQUOT:	1.000E-01 gram
MPLE TITLE:	L4094 MBBPU1206	DETECTOR NUMBER:	036
Q DATE:	12-DEC-2001 14:42	AVERAGE EFFICIENCY:	25.74%
APSED LIVE TIME:	7295.	RECOVERY:	100.00%
ACER ID:	none	TRACER FWHM (kev):	0.00
MBDA VALUE:	0.	ROI TYPE:	STANDARD
ACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE FACTOR:	4.65
MPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ERGY CAL DATE:	5-SEP-2001 13:46	EFF CAL DATE:	5-SEP-2001 13:46
G FILENAME:	B_036_26NOV01	BKG ELAPSED TIME:	60005.

****

NUCLIDE ACTIVITY SUMMARY

CLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
236	5755.0	1.78	1.22	100.0	2.570E-01	5.110E-01	1.128E+00
-238	5487.1	-0.36	0.36	99.9	-5.255E-02	6.069E-02	7.951E-01
-239	5147.7	0.27	0.73	99.9	3.899E-02	3.007E-01	9.628E-01
242	4890.7	3.51	0.49	100.4	5.038E-01	5.777E-01	8.535E-01
244	4580.6	-0.12	0.12	99.9	-1.753E-02	3.505E-02	6.241E-01

****

[illegible]7 _____ 12-13-01
alyst Date

_____ _____
eviewer Date

ENVIROTEST LABORATORIES LLC.

oss Sample Counts Within Peak Regions Generated: 13-DEC-2001 10:43:01.80

or ID: 36 Acquisition Start: 12-DEC-2001 14:42:58.01
ime: 0 02:01:35.00 Real Time: 0 02:01:35.00
tch Id: L4094UP Sample Id: 036
mp.e Type: PU

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
0	4559.50	0	0	0.00	366.00	346	41	0.00E+00	0.0	
0	4872.26	4	0	53.75	469.50	448	55	5.48E-04	50.0	
0	5187.37	1	0	3.16	575.00	542	44	1.37E-04	100.0	
0	5503.15	0	0	0.00	682.00	665	35	0.00E+00	0.0	
0	5744.49	3	0	85.37	764.67	746	41	4.11E-04	57.7	

ıckground Counts Within Peak Regions Generated: 13-DEC-2001 10:43:04.55

Acquisition Start: 26-NOV-2001 15:38:11.01
ve Time: 0 16:40:05.00 Real Time: 0 16:40:06.00

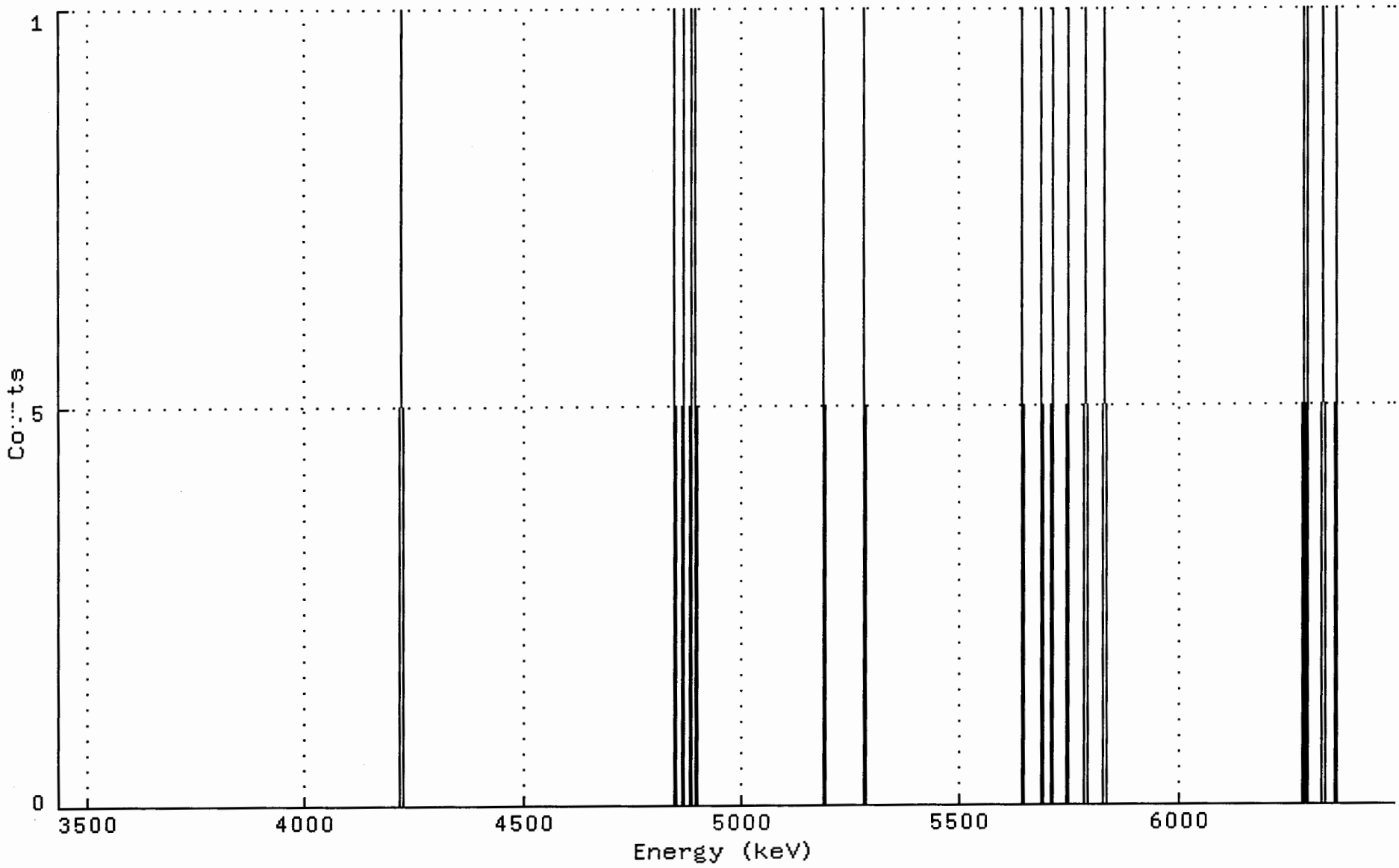
It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
0	4559.50	1	0	3.16	366.00	346	41	1.67E-05	100.0	
0	4888.78	4	0	132.80	475.00	448	55	6.67E-05	50.0	
0	5153.20	6	0	3.16	563.50	542	44	1.00E-04	40.8	
0	5503.15	3	0	18.97	682.00	665	35	5.00E-05	57.7	
0	5748.36	10	0	0.00	766.00	746	41	1.67E-04	31.6	

et Sample Counts Within Peak Regions Generated: 13-DEC-2001 10:43:05.19

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
	4559.50*	0	0	0.00	366.00	346	41	-1.67E-05	100.0	
0	4872.26*	4	0	53.75	469.50	448	55	4.82E-04	57.3	
0	5187.37*	0	0	3.16	575.00	542	44	3.71E-05	385.6	
0	5503.15*	0	0	0.00	682.00	665	35	-5.00E-05	57.7	
0	5744.49*	2	0	85.37	764.67	746	41	2.45E-04	99.4	

ag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHI R]R_L4094UP$036_PU.CNF;1
Title : 036
Sample Title: L4094 MBBPU1206
Start Time: 12-DEC-2001 14:42 Sample Time: 12-DEC-2001 00:00 Energy Offset: 3.42472E+03
Real Time : 0 02:01:35.00 Sample ID : 036 Energy Slope : 3.16182E+00
Live Time : 0 02:01:35.00 Sample Type: PU Energy Quad : -1.67540E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 10:45:43

ectral File: ND_AMS_ARCHIVE_C:C_L4094UP$037_PU.CNF

TCH ID:	L4094UP	SAMPLE ID:	037
MPLE DATE:	12-DEC-2001 00:00	ALIQUOT:	1.000E+00 gram
MPLE TITLE:	L4094 LCBPU1206	DETECTOR NUMBER:	037
Q DATE:	12-DEC-2001 14:43	AVERAGE EFFICIENCY:	25.42%
APSED LIVE TIME:	7263.	RECOVERY:	100.00%
ACER ID:	none	TRACER FWHM (kev):	0.00
MBDA VALUE:	0.	ROI TYPE:	STANDARD
ACER DPM AT SAMPLE DATE:	0.000	CONFIDENCE FACTOR:	4.65
MPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ERGY CAL DATE:	6-SEP-2001 09:08	EFF CAL DATE:	6-SEP-2001 09:08
G FILENAME:	B_037_26NOV01	BKG ELAPSED TIME:	60003.

NUCLIDE ACTIVITY SUMMARY

CLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
236	5755.0	-0.82	1.82	100.0	-1.195E-02	3.235E-02	1.314E-01
-238	5487.1	2.52	0.48	99.9	3.687E-02	5.126E-02	8.712E-02
-239	5147.7	578.27	0.73	99.9	8.474E+00	7.052E-01	9.778E-02
242	4890.7	29.88	0.12	100.4	4.356E-01	1.598E-01	6.310E-02
244	4580.6	1.52	0.48	99.9	2.222E-02	4.207E-02	8.712E-02

alyst — Date: 12-13-01

viewer — Date

ENVIROTEST LABORATORIES LLC.

oss Sample Counts Within Peak Regions Generated: 13-DEC-2001 10:45:28.46

r ID: 37 Acquisition Start: 12-DEC-2001 14:43:31.01
ve ime: 0 02:01:03.00 Real Time: 0 02:01:03.00
itch Id: L4094UP Sample Id: 037
mple Type: PU

:	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4571.03	2	0	86.73	364.50	339	44	2.75E-04	70.7	
2	0	4893.90	30	0	48.28	481.23	450	60	4.13E-03	18.3	
3	0	5156.25	579	0	52.72	577.18	552	49	7.97E-02	4.2	
4	0	5482.72	3	0	49.15	698.00	687	38	4.13E-04	57.7	
5	0	5717.79	1	0	2.89	786.00	776	44	1.38E-04	100.0	

ackground Counts Within Peak Regions Generated: 13-DEC-2001 10:45:41.09

Acquisition Start: 26-NOV-2001 15:38:14.01
ive Time: 0 16:40:03.00 Real Time: 0 16:40:03.00

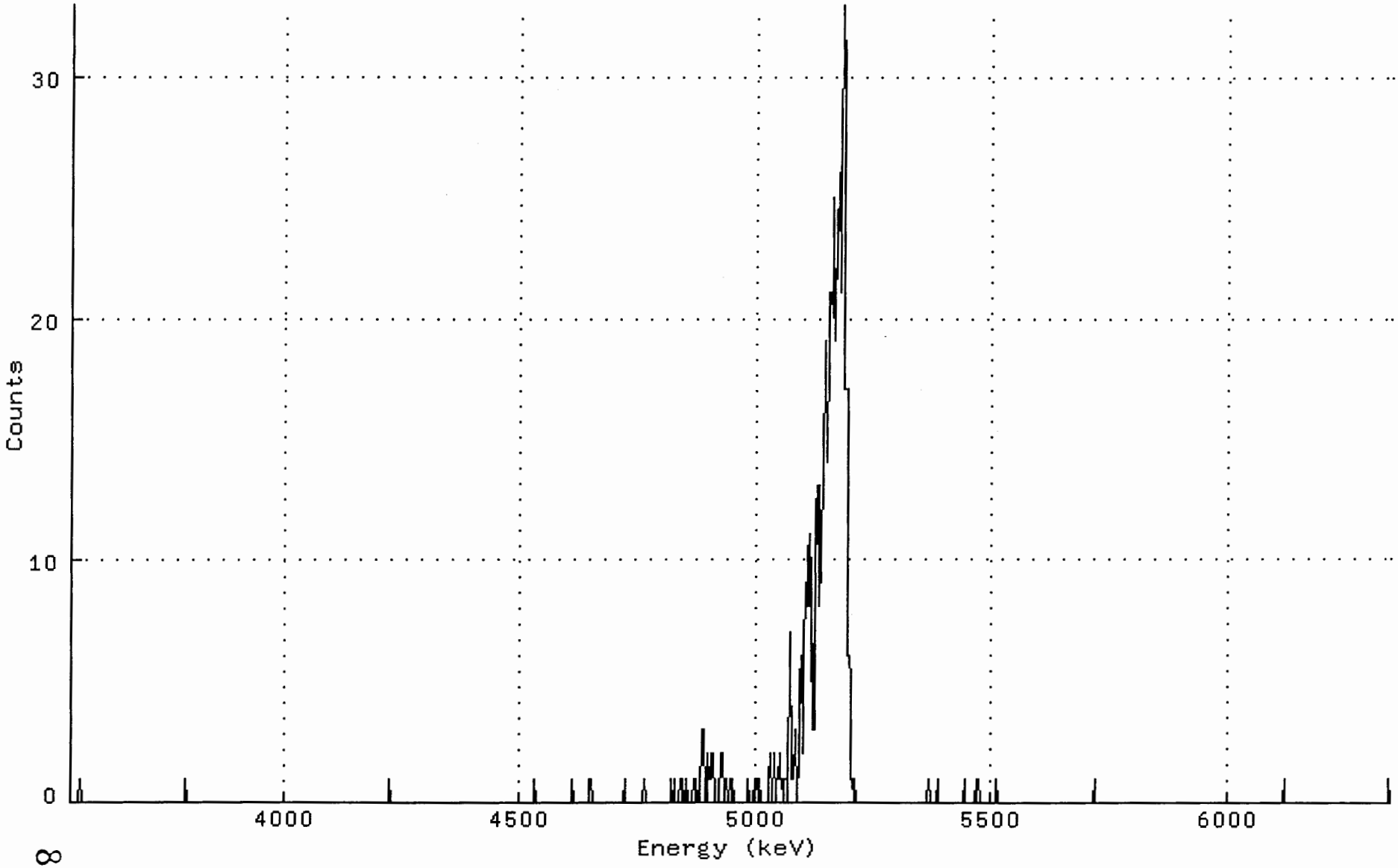
k	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4559.90	4	0	49.15	360.50	339	44	6.67E-05	50.0	
2	0	4889.13	1	0	2.89	479.50	450	60	1.67E-05	100.0	
3	0	5153.03	6	0	101.19	576.00	552	49	1.00E-04	40.8	
4	0	5502.84	4	0	0.00	705.50	687	38	6.67E-05	50.0	
5	0	5748.34	15	0	0.00	797.50	776	44	2.50E-04	25.8	

et Sample Counts Within Peak Regions Generated: 13-DEC-2001 10:45:41.57

k	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4571.03*	2	0	86.73	364.50	339	44	2.09E-04	94.7	
2	0	4893.90*	30	0	48.28	481.23	450	60	4.11E-03	18.3	
3	0	5156.25*	578	0	52.72	577.18	552	49	7.96E-02	4.2	
4	0	5482.72*	3	0	49.15	698.00	687	38	3.46E-04	69.5	
5	0	5717.79*	-1	0	2.89	786.00	776	44	-1.12E-04	135.4	

ag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV C]C_L4094UP$037_PU.CNF;2
Title : 037
Sample Title: L4094 LCBPU1206
Start Time: 12-DEC-2001 14:43 Sample Time: 12-DEC-2001 00:00 Energy Offset: 3.53691E+03
Real Time : 0 02:01:03.00 Sample ID : 037 Energy Slope : 2.89109E+00
Live Time : 0 02:01:03.00 Sample Type: PU Energy Quad : -1.48137E-04



ANALYST: JC
DATE: 12/12/05 14:51
INSTRUMENT: Alpha spec
QC BATCH: WG11908
Run ID R14900

Contaminated Correction Sample ID	Corrected Pu238 Activity pCi/vol	Pu238 Error pCi/vol	Pu238 MDC pCi/vol	Corrected Pu239 Activity pCi/vol	Pu239 Error pCi/vol	Pu239 MDC pCi/vol
L0001-1	-0.1429	0.0300	0.0028			
L4094-1	-3.7089	2.700	0.396	243.429	21.79	0.7373
L4094-2	-5.3796	2.300	0.700	82.539	8.3	0.7
L4094-3	-4.5989	2.601	0.646	32.389	5.206	0.8241
L4094-4	-4.6189	2.753	0.452	67.979	8.828	0.9992
L4094-5	-1.4889	3.109	0.690	116.639	12.68	0.8803
L4094-5MD	-1.2489	3.122	0.868	108.339	11.91	0.8676
L4094-6	-3.5389	2.792	0.848	63.499	8.074	0.7684
L4094-7	-1.2589	3.300	0.800	194.039	18.1	0.8
L4094-8	-2.1689	3.054	0.703	187.739	18.61	0.8128
L4094-9	-3.5989	2.839	0.946	94.719	10.88	0.9463
MBAPU1206	-3.9989	2.809	0.413	0	1.116	0.6577
LCAPU1206				7.73		

74.5%

Known value
9.8

Contaminated Tracer Correction

Sample ID	Pu238 Activity pCi/vol	Pu238 Error pCi/vol	Pu238 MDC pCi/vol	Pu242 Activity pCi/vol	% Contamination In Tracer	Pu239 Activity pCi/vol	Pu239 Error pCi/vol	Pu239 MDC pCi/vol	Blank Pu239 Activity pCi/vol
L0001-1	1.353			10.40	14.38356				
L4094-1	11.25	2.7	0.3961	104	14.38356	245.39	21.79	0.7373	1.961
L4094-2	9.5793	2.3	0.7	104	14.38356	84.5	8.3	0.7	1.961
L4094-3	10.36	2.601	0.6456	104	14.38356	34.35	5.206	0.8241	1.961
L4094-4	10.34	2.753	0.4518	104	14.38356	69.94	8.828	0.9992	1.961
L4094-5	13.47	3.109	0.69	104	14.38356	118.6	12.68	0.8803	1.961
L4094-5MD	13.71	3.122	0.8676	104	14.38356	110.3	11.91	0.8676	1.961
L4094-6	11.42	2.792	0.8479	104	14.38356	65.46	8.074	0.7684	1.961
L4094-7	13.7	3.3	0.8	104	14.38356	196	18.1	0.8	1.961
L4094-8	12.79	3.054	0.7034	104	14.38356	189.7	18.61	0.8128	1.961
L4094-9	11.36	2.839	0.9463	104	14.38356	96.68	10.88	0.9463	1.961
MBAPU1206	10.96	2.809	0.4125	104	14.38356	1.961	1.116	0.6577	1.961
LCAPU1206						9.691			1.961

ETL EnviroTest LABORATORIES

Sample Digestion Logbook

SOP ETL - RSOP- 0003

WG11907
R14901

Analysis 190 Pu Analyst Jeni Date 12-6-01 Reviewed By Toni

Sample ID	Analyzed Volume g	Sample Volume Digested	Dilution Volume ml/l	Digestate Volume Used (ml)	Sample Matrix	Comments
L4094-1	0.1	1.0	100 ml	10 ml	Soil	Reruns-
2						
3						
4						
5						
5 MD						
6						
7						
8						
9						
PEM-1						
TRM-2						
MBB Pu 1206		NA	NA	NA	DI H_2O	
LCS Pu 1206	1.0 L					

Jeni 12-6-01

UNTraced

Spike	Trace	Nuclide	Isotope Number	Expiration Date	Activity pCi/ml	Vol Ml	Standard Control	Spiked By	Witness
X		Pu 239	045·06	6·13·02	4.9	2mL	LCB Pu 1206	Jeni	Toni

Jeni 12-6-01

FORM DIGESTLG-1, REV. 0 Effective 09-25-00 **Book Number** 01134 **Page Number** 854

000082

ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 13:21:47

****

ectral File: ND_AMS_ARCHIVE_S:S_L4094PURR$038_PU.CNF

****

TCH ID:	L4094PURR	SAMPLE ID:	038
MPLE DATE:	12-DEC-2001 00:00	ALIQUOT:	1.000E-01 gram
MPLE TITLE:	L4094-01 TRACED	DETECTOR NUMBER:	038
Q DATE:	12-DEC-2001 14:51	AVERAGE EFFICIENCY:	25.61%
APSED LIVE TIME:	7557.	RECOVERY:	97.22%
RACER ID:	RAD011-10	TRACER FWHM (kev):	47.13
MBDA VALUE:	2000.	ROI TYPE:	MANUAL
RACER DPM AT SAMPLE DATE:	23.088	CONFIDENCE FACTOR:	4.65
MPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ERGY CAL DATE:	6-SEP-2001 16:29	EFF CAL DATE:	6-SEP-2001 16:29
G FILENAME:	B_038_26NOV01	BKG ELAPSED TIME:	60005.

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NUCLIDE ACTIVITY SUMMARY

UCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
U236	5755.0	-2.02	3.02	100.0	-2.907E-01	3.384E-01	1.551E+00
U-238	5487.1	77.00	0.00	99.9	1.107E+01	2.654E+00	3.897E-01
U-239	5147.7	1678.75	0.25	99.9	2.414E+02	2.144E+01	7.253E-01
U242	4890.7	726.87	0.13	100.4	1.040E+02	7.716E+00	6.238E-01
U244	4580.6	2.75	0.25	99.9	3.954E-01	5.018E-01	7.253E-01

11.25 ± 2.70 0.3961

245.39 ± 21.79 mBq = 0.7373

****

7 12-13-01
nalyst Date

eviewer Date

726.87
- 14.62
712.25

712.25 / (0.924)(125.95) = 22.08 / 23.08 = 95.64%

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 13-DEC-2001 13:21:43.83

De[illegible]r ID: 38 Acquisition Start: 12-DEC-2001 14:51:27.01
Live[illegible]ime: 0 02:05:57.00 Real Time: 0 02:05:57.00
Batch Id: L4094PURR Sample Id: 038
Sample Type: PU

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4567.49	3	0	3.09	363.67	341	41	3.97E-04	57.7	
2	0	4894.18	727	0	47.13	474.14	445	56	9.62E-02	3.7	
3	0	5149.15	1679	0	51.84	561.30	526	60	2.22E-01	2.4	
4	0	5493.44	77	0	49.28	680.34	666	36	1.02E-02	11.4	
5	0	5749.77	1	0	3.09	770.00	749	41	1.32E-04	100.0	

Background Counts Within Peak Regions Generated: 13-DEC-2001 13:21:44.96

Acquisition Start: 26-NOV-2001 15:38:17.01
Live Time: 0 16:40:05.00 Real Time: 0 16:40:06.00

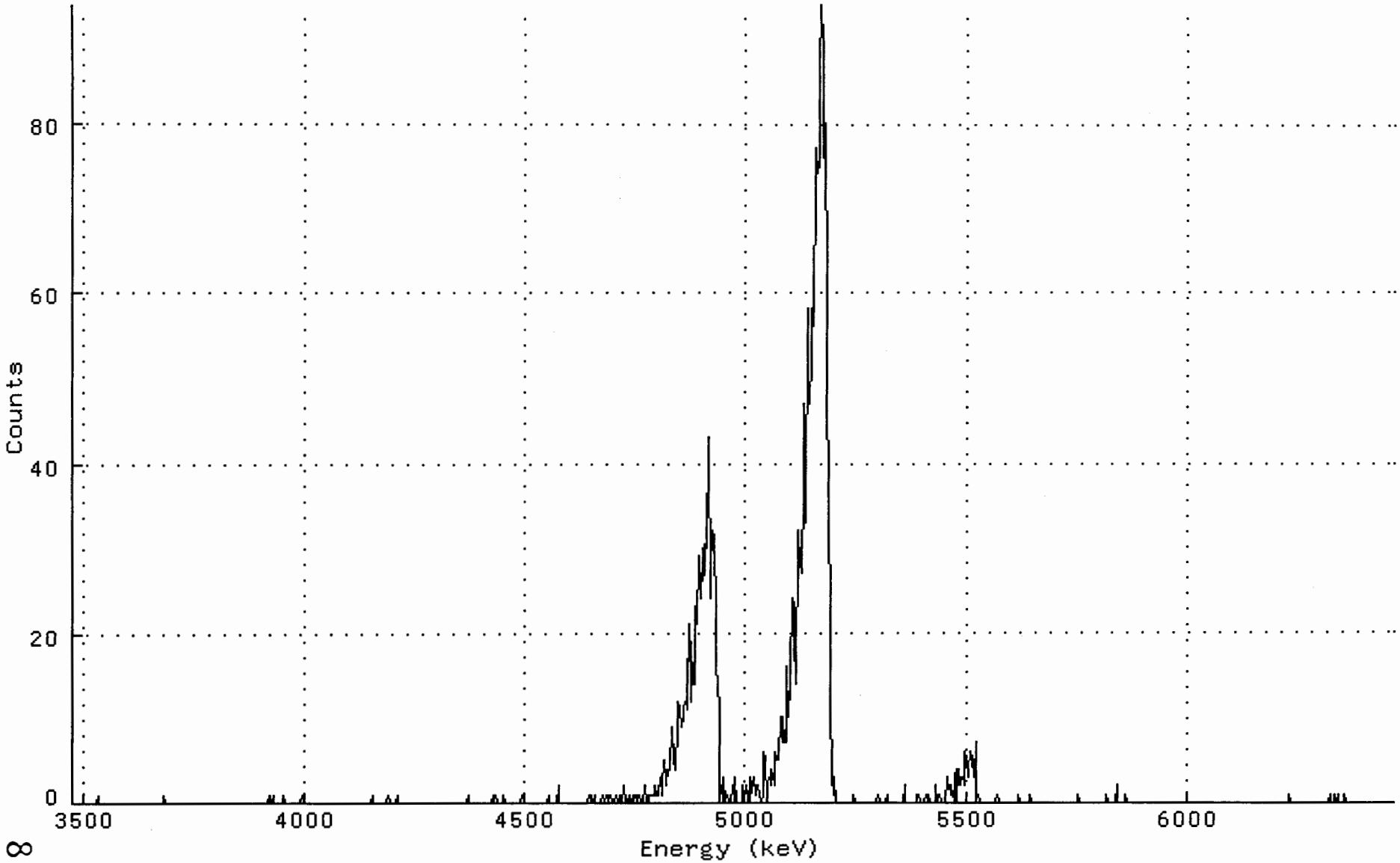
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4559.55	2	0	24.73	361.00	341	41	3.33E-05	70.7	
2	0	4889.34	1	0	3.09	472.50	445	56	1.67E-05	100.0	
3	0	5132.25	2	0	52.55	555.50	526	60	3.33E-05	70.7	
4	0	5502.52	0	0	0.00	683.50	666	36	0.00E+00	0.0	
5	0	5746.93	24	0	119.40	769.00	749	41	4.00E-04	20.4	

Net Sample Counts Within Peak Regions Generated: 13-DEC-2001 13:21:45.42

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	[illegible]	4567.49*	3	0	3.09	363.67	341	41	3.64E-04	63.4	
2	0	4894.18*	727	0	47.13	474.14	445	56	9.62E-02	3.7	
3	0	5149.15*	1679	0	51.84	561.30	526	60	2.22E-01	2.4	
4	0	5493.44*	77	0	49.28	680.34	666	36	1.02E-02	11.4	
5	0	5749.77*	-2	0	3.09	770.00	749	41	-2.68E-04	58.1	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV S]S_L4094PURR$038_PU.CNF;4
Title : 038
Sample Title: L4094-01 TRACED
Start Time: 12-DEC-2001 14:51 Sample Time: 12-DEC-2001 00:00 Energy Offset: 3.46446E+03
Real Time : 0 02:05:57.00 Sample ID : 038 Energy Slope : 3.09137E+00
Live Time : 0 02:05:57.00 Sample Type: PU Energy Quad : -1.60303E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 13:22:21

Spectral File: ND_AMS_ARCHIVE_S:S_L4094PURR$039_PU.CNF

BATCH ID:	L4094PURR	SAMPLE ID:	039
SAMPLE DATE:	12-DEC-2001 00:00	ALIQUOT:	1.000E-01 gram
SAMPLE TITLE:	L4094-02 TRACED	DETECTOR NUMBER:	039
ACQ DATE:	12-DEC-2001 14:51	AVERAGE EFFICIENCY:	25.29%
ELAPSED LIVE TIME:	7531.	RECOVERY:	102.96%
TRACER ID:	RAD011-10	TRACER FWHM (kev):	58.95
LAMBDA VALUE:	2000.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	23.088	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	7-SEP-2001 08:28	EFF CAL DATE:	7-SEP-2001 08:28
BKG FILENAME:	B_039_26NOV01	BKG ELAPSED TIME:	60002.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PU236	5755.0	0.49	1.51	100.0	6.809E-02	4.080E-01	1.160E+00
PU-238	5487.1	73.75	0.25	99.9	1.017E+01	2.487E+00	6.953E-01
PU-239	5147.7	576.75	0.25	99.9	7.957E+01	8.796E+00	6.953E-01
PU242	4890.7	757.62	0.38	100.4	1.040E+02	7.559E+00	7.637E-01
PU244	4580.6	-0.25	0.25	99.9	-3.465E-02	4.906E-02	6.953E-01

9.5793 ± 2.3 0.7

84.5 ± 8.3 0.7

Analyst _____ Date 12-13-01

Reviewer _____ Date _____

757.62
−46.87
710.75

$\frac{710.75}{(0.2529)(125.5)} = 22.3906$

$\frac{22.3906}{23.088} = 0.9698$

$\frac{1.0296}{0.9698} = 1.0617$

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 13-DEC-2001 13:21:55.32

Detector ID: 39 Acquisition Start: 12-DEC-2001 14:51:52.01
Live Time: 0 02:05:31.00 Real Time: 0 02:05:31.00
Batch Id: L4094PURR Sample Id: 039
Sample Type: PU

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4559.43	0	0	0.00	371.00	351	41	0.00E+00	0.0	
2	0	4892.88	758	0	58.95	482.56	454	56	1.01E-01	3.6	
3	0	5152.26	577	0	45.15	570.25	549	44	7.66E-02	4.2	
4	0	5487.73	74	0	53.10	684.91	673	35	9.83E-03	11.6	
5	0	5746.98	2	0	0.00	774.50	755	41	2.66E-04	70.7	

Background Counts Within Peak Regions Generated: 13-DEC-2001 13:22:19.10

Acquisition Start: 26-NOV-2001 15:38:21.01
Live Time: 0 16:40:02.00 Real Time: 0 16:40:02.00

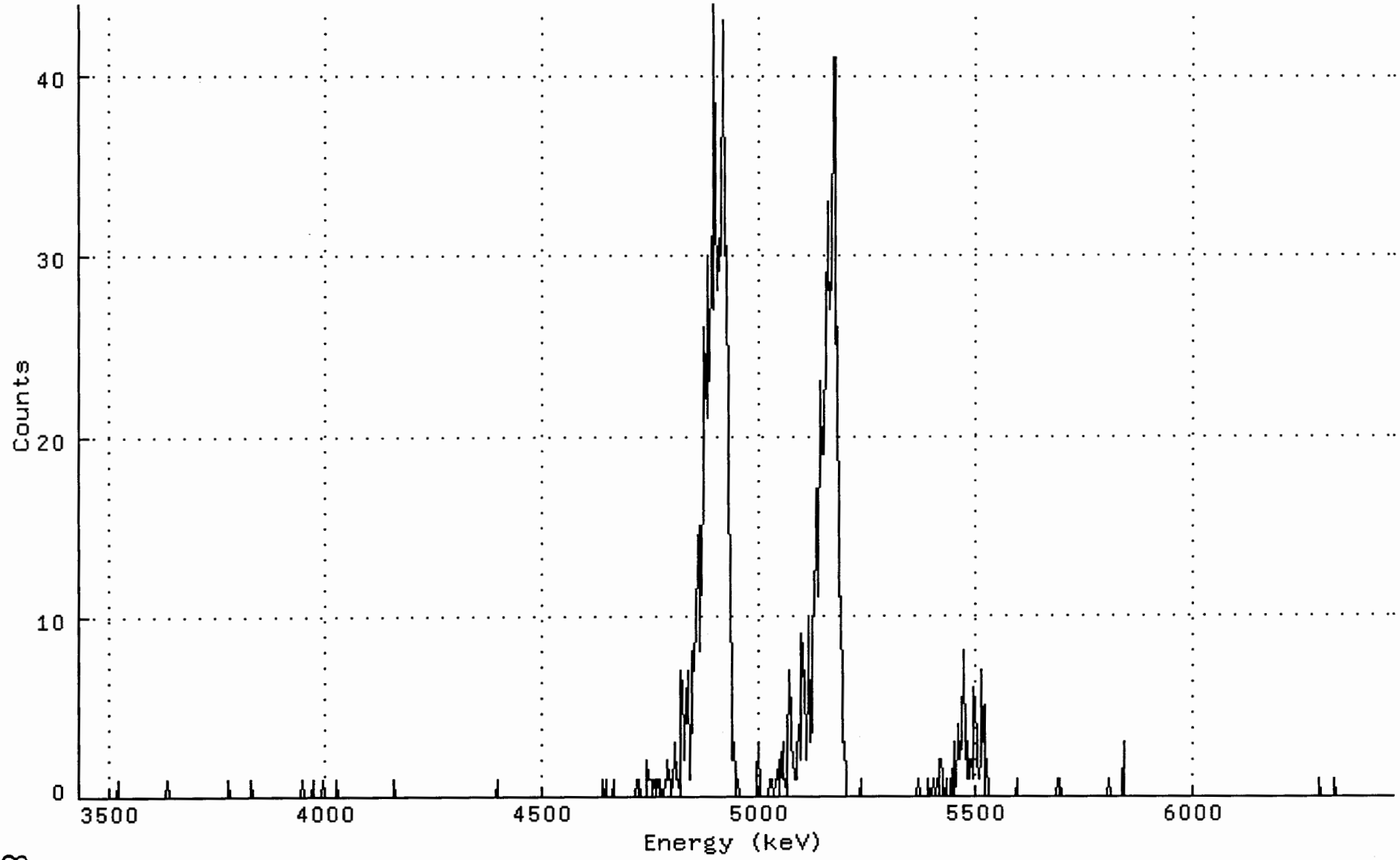
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4559.43	2	0	96.84	371.00	351	41	3.33E-05	70.7	
2	0	4889.75	3	0	156.19	481.50	454	56	5.00E-05	57.7	
3	0	5153.00	2	0	34.36	570.50	549	44	3.33E-05	70.7	
4	0	5502.54	2	0	28.11	690.00	673	35	3.33E-05	70.7	
5	0	5748.42	12	0	4.59	775.00	755	41	2.00E-04	28.9	

Net Sample Counts Within Peak Regions Generated: 13-DEC-2001 13:22:19.48

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4559.43*	0	0	0.00	371.00	351	41	-3.33E-05	70.7	
2	0	4892.88*	758	0	58.95	482.56	454	56	1.01E-01	3.6	
3	0	5152.26*	577	0	45.15	570.25	549	44	7.66E-02	4.2	
4	0	5487.73*	74	0	53.10	684.91	673	35	9.79E-03	11.7	
5	0	5746.98*	0	0	0.00	774.50	755	41	6.56E-05	299.6	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHI\ S]S_L4094PURR$039_PU.CNF:4
Title : 039
Sample Title: L4094-02 TRACED
Start Time: 12-DEC-2001 14:51 Sample Time: 12-DEC-2001 00:00 Energy Offset: 3.42222E+03
Real Time : 0 02:05:31.00 Sample ID : 039 Energy Slope : 3.12372E+00
Live Time : 0 02:05:31.00 Sample Type: PU Energy Quad : -1.57638E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 13:29:03

****

pectral File: ND_AMS_ARCHIVE_S:S_L4094PURR$040_PU.CNF

****

ATCH ID:	L4094PURR	SAMPLE ID:	040
AMPLE DATE:	12-DEC-2001 00:00	ALIQUOT:	1.000E-01 gram
AMPLE TITLE:	L4094-3 TRACED	DETECTOR NUMBER:	040
CQ DATE:	12-DEC-2001 14:52	AVERAGE EFFICIENCY:	24.28%
LAPSED LIVE TIME:	7501.	RECOVERY:	100.19%
RACER ID:	RAD011-10	TRACER FWHM (kev):	47.85
AMBDA VALUE:	2000.	ROI TYPE:	STANDARD
RACER DPM AT SAMPLE DATE:	23.088	CONFIDENCE FACTOR:	4.65
AMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
NERGY CAL DATE:	7-SEP-2001 15:32	EFF CAL DATE:	7-SEP-2001 15:32
KG FILENAME:	B_040_26NOV01	BKG ELAPSED TIME:	60003.

****

NUCLIDE ACTIVITY SUMMARY

UCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
U236	5755.0	-0.50	1.50	100.0	-7.412E-02	3.230E-01	1.245E+00
U-238	5487.1	69.87	0.13	99.9	1.036E+01	2.601E+00	6.456E-01
U-239	5147.7	231.62	0.38	99.9	3.435E+01	5.206E+00	8.241E-01
U242	4890.7	704.88	0.13	100.4	1.040E+02	7.835E+00	6.424E-01
U244	4580.6	-0.25	0.25	99.9	-3.709E-02	5.253E-02	7.466E-01

****

704.88
-4.00
700.88

DJ
nalyst

12-13-01
Date

$\frac{700.88}{(0.2428)(125.0167)} = 23.0902$

eviewer

Date

$\frac{23.0902}{23.088} = 100.01\%$

insignificant contribution from sample

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 13-DEC-2001 13:28:56.37

Detector ID: 40 Acquisition Start: 12-DEC-2001 14:52:23.01
Live Time: 0 02:05:01.00 Real Time: 0 02:05:01.00
Batch Id: L4094PURR Sample Id: 040
Sample Type: PU

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4560.66	0	0	0.00	356.00	336	41	0.00E+00	0.0	
2	0	4893.25	705	0	47.85	468.60	440	56	9.40E-02	3.8	
3	0	5149.46	232	0	40.66	556.27	536	45	3.09E-02	6.6	
4	0	5494.06	70	0	41.07	675.50	661	36	9.33E-03	12.0	
5	0	5695.71	1	0	3.08	746.00	744	41	1.33E-04	100.0	

Background Counts Within Peak Regions Generated: 13-DEC-2001 13:28:59.96

Acquisition Start: 26-NOV-2001 15:38:24.01
Live Time: 0 16:40:03.00 Real Time: 0 16:40:03.00

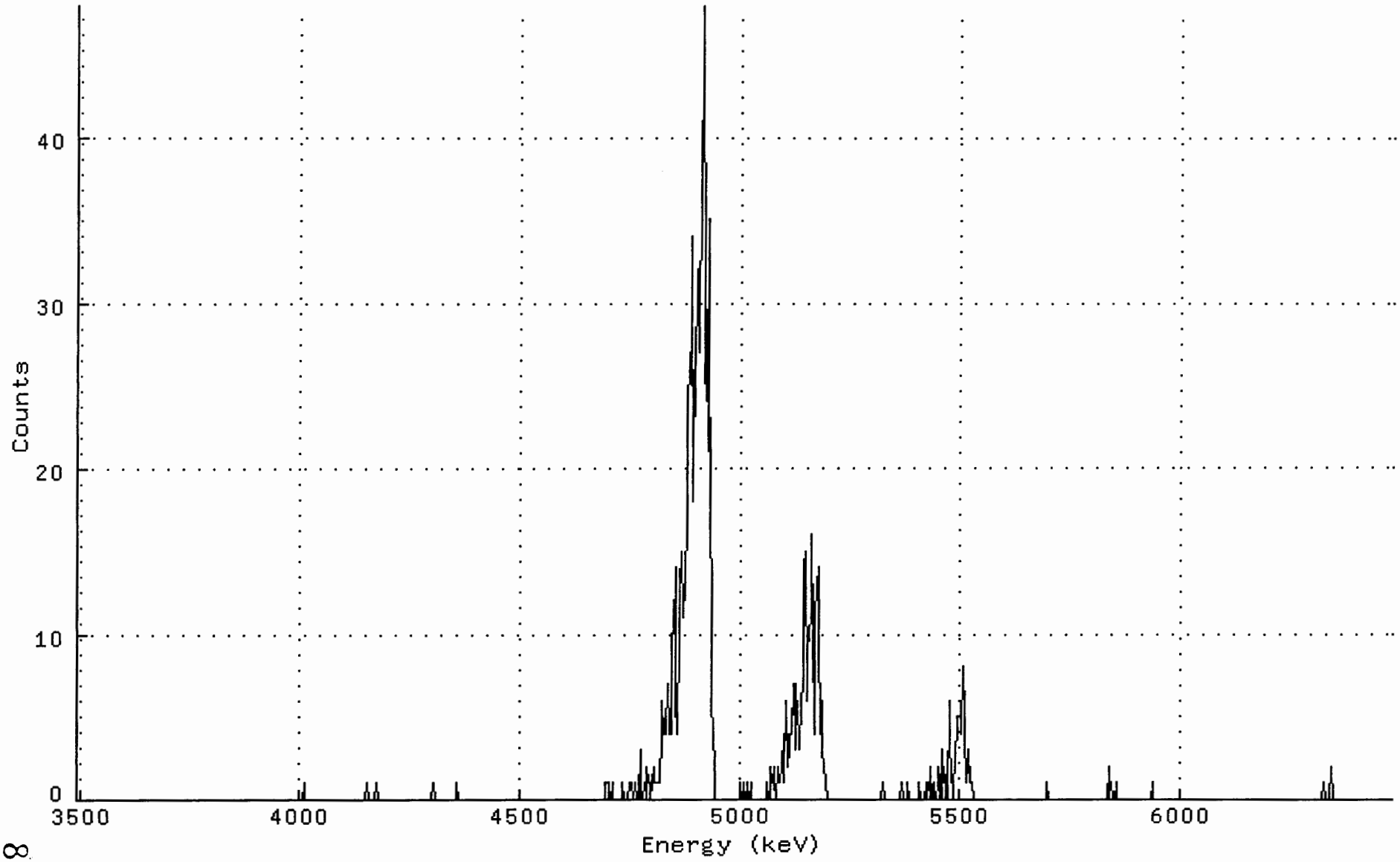
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4560.66	2	0	24.66	356.00	336	41	3.33E-05	70.7	
2	0	4890.03	1	0	3.08	467.50	440	56	1.67E-05	100.0	
3	0	5154.50	3	0	104.81	558.00	536	45	5.00E-05	57.7	
4	0	5502.67	1	0	3.08	678.50	661	36	1.67E-05	100.0	
5	0	5746.95	12	0	3.08	764.00	744	41	2.00E-04	28.9	

Net Sample Counts Within Peak Regions Generated: 13-DEC-2001 13:29:00.34

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4560.66*	0	0	0.00	356.00	336	41	-3.33E-05	70.7	
2	0	4893.25*	705	0	47.85	468.60	440	56	9.40E-02	3.8	
3	0	5149.46*	232	0	40.66	556.27	536	45	3.09E-02	6.6	
4	0	5494.06*	70	0	41.07	675.50	661	36	9.32E-03	12.0	
5	0	5695.71*	-1	0	3.08	746.00	744	41	-6.67E-05	217.9	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV 5]S_L4094PURR$040_PU.CNF;3
Title : 040
Sample Title: L4094-3 TRACED
Start Time: 12-DEC-2001 14:52 Sample Time: 12-DEC-2001 00:00 Energy Offset: 3.48302E+03
Real Time : 0 02:05:01.00 Sample ID : 040 Energy Slope : 3.08277E+00
Live Time : 0 02:05:01.00 Sample Type: PU Energy Quad : -1.56421E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 13:29:33

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Spectral File: ND_AMS_ARCHIVE_S:S_L4094PURR$041_PU.CNF

****

BATCH ID:	L4094PURR	SAMPLE ID:	041
SAMPLE DATE:	12-DEC-2001 00:00	ALIQUOT:	1.000E-01 gram
SAMPLE TITLE:	L4094-04 TRACED	DETECTOR NUMBER:	041
ACQ DATE:	12-DEC-2001 14:52	AVERAGE EFFICIENCY:	24.11%
ELAPSED LIVE TIME:	7477.	RECOVERY:	90.01%
TRACER ID:	RAD011-10	TRACER FWHM (kev):	30.04
LAMBDA VALUE:	2000.	ROI TYPE:	MANUAL
TRACER DPM AT SAMPLE DATE:	23.088	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	8-SEP-2001 12:19	EFF CAL DATE:	8-SEP-2001 12:19
BKG FILENAME:	B_041_26NOV01	BKG ELAPSED TIME:	60006.

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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PU236	5755.0	-2.12	2.12	100.0	-3.530E-01	1.735E-01	1.579E+00
PU-238	5487.1	62.00	0.00	99.9	1.034E+01	2.753E+00	4.518E-01
PU-239	5147.7	419.50	0.50	99.9	6.994E+01	8.828E+00	9.992E-01
PU242	4890.7	626.88	0.12	100.4	1.040E+02	8.308E+00	7.219E-01
PU244	4580.6	-0.25	0.25	99.9	-4.157E-02	5.888E-02	8.389E-01

****

Analyst _____ Date 12-13-01

626.88
- 4.62
622.46

Reviewer _____ Date _____

$\frac{62246}{(0.2411)(124.6167)} = 20.7175$

$\frac{20.7175}{23.088} = 89.73\%$

Pu 242 < MDA on unbracketed
No correction
necessary

ENVIROTEST LABORATORIES LLC.

ss Sample Counts Within Peak Regions Generated: 13-DEC-2001 13:29:25.49

r ID: 41 Acquisition Start: 12-DEC-2001 14:52:47.01
e Time: 0 02:04:37.00 Real Time: 0 02:04:37.00
ch Id: L4094PURR Sample Id: 041
ple Type: PU

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
0	4559.47	0	0	0.00	343.00	323	41	0.00E+00	0.0	
0	4897.84	627	0	30.04	457.45	427	56	8.39E-02	4.0	
0	5154.19	420	0	67.65	545.06	521	47	5.62E-02	4.9	
0	5496.33	62	0	57.05	663.24	648	36	8.29E-03	12.7	
0	5747.68	0	0	0.00	751.00	731	41	0.00E+00	0.0	

kground Counts Within Peak Regions Generated: 13-DEC-2001 13:29:31.02

Acquisition Start: 26-NOV-2001 15:38:27.01
e Time: 0 16:40:06.00 Real Time: 0 16:40:06.00

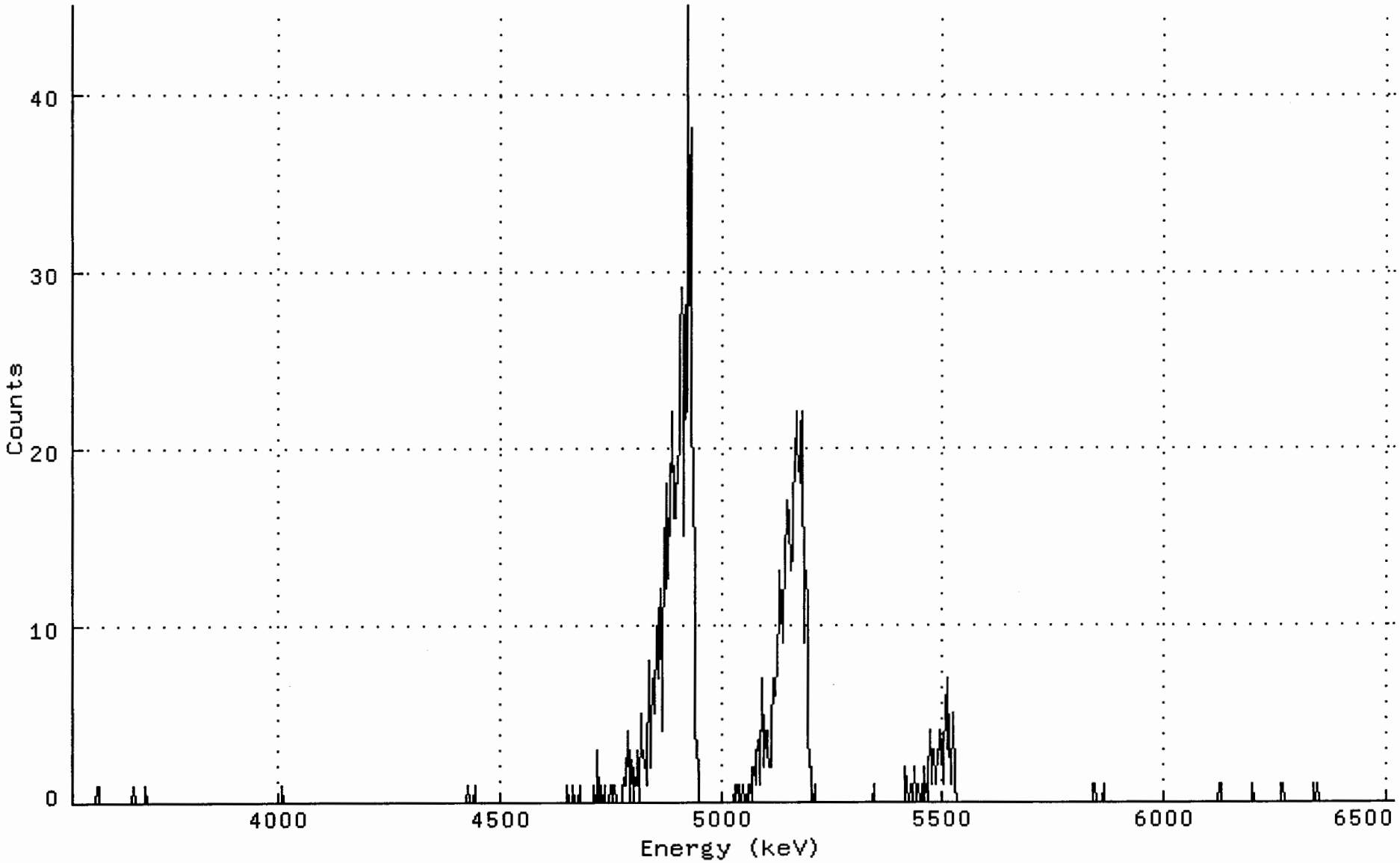
It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
0	4559.47	2	0	24.61	343.00	323	41	3.33E-05	70.7	
0	4889.16	1	0	3.08	454.50	427	56	1.67E-05	100.0	
0	5151.09	4	0	116.91	544.00	521	47	6.67E-05	50.0	
0	5502.82	0	0	0.00	665.50	648	36	0.00E+00	0.0	
0	5747.68	17	0	4.52	751.00	731	41	2.83E-04	24.3	

t Sample Counts Within Peak Regions Generated: 13-DEC-2001 13:29:31.46

	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
0	4559.47*	0	0	0.00	343.00	323	41	-3.33E-05	70.7	
0	4897.84*	627	0	30.04	457.45	427	56	8.38E-02	4.0	
0	5154.19*	420	0	67.65	545.06	521	47	5.61E-02	4.9	
0	5496.33*	62	0	57.05	663.24	648	36	8.29E-03	12.7	
0	5747.68*	-2	0	0.00	751.00	731	41	-2.83E-04	24.3	

g: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV 6]S_L4094PURR$041_PU.CNF;1
Title : 041
Sample Title: L4094-04 TRACED
Start Time: 12-DEC-2001 14:52 Sample Time: 12-DEC-2001 00:00 Energy Offset: 3.52185E+03
Real Time : 0 02:04:37.00 Sample ID : 041 Energy Slope : 3.07670E+00
Live Time : 0 02:04:37.00 Sample Type: PU Energy Quad : -1.50303E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 13:34:22

Spectral File: ND_AMS_ARCHIVE_S:S_L4094PURR$042_PU.CNF

BATCH ID:	L4094PURR	SAMPLE ID:	042
SAMPLE DATE:	12-DEC-2001 00:00	ALIQUOT:	1.000E-01 gram
SAMPLE TITLE:	L4094-05 TRACED	DETECTOR NUMBER:	042
ACQ DATE:	12-DEC-2001 14:53	AVERAGE EFFICIENCY:	24.74%
ELAPSED LIVE TIME:	7452.	RECOVERY:	92.49%
TRACER ID:	RAD011-10	TRACER FWHM (kev):	60.22
LAMBDA VALUE:	2000.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	23.088	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	8-SEP-2001 20:43	EFF CAL DATE:	8-SEP-2001 20:43
BKG FILENAME:	B_042_26NOV01	BKG ELAPSED TIME:	60002.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PU236	5755.0	-2.23	3.23	100.0	-3.535E-01	3.764E-01	1.754E+00
PU-238	5487.1	84.88	0.12	99.9	1.347E+01	3.109E+00	6.900E-01
PU-239	5147.7	747.63	0.37	99.9	1.186E+02	1.268E+01	8.803E-01
PU242	4890.7	658.75	0.25	100.4	1.040E+02	8.106E+00	7.937E-01
PU244	4580.6	1.88	0.12	99.9	2.978E-01	4.513E-01	6.900E-01

Analyst _____ Date 12-13-01

Reviewer _____ Date _____

No counts necessary

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 13-DEC-2001 13:34:07.27

De or ID: 42 Acquisition Start: 12-DEC-2001 14:53:12.01
Live Time: 0 02:04:12.00 Real Time: 0 02:04:12.00
Batch Id: L4094PURR Sample Id: 042
Sample Type: PU

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4532.76	2	0	49.58	372.50	361	42	2.68E-04	70.7	
2	0	4896.92	659	0	60.22	495.97	466	56	8.84E-02	3.9	
3	0	5156.36	748	0	53.56	585.03	562	45	1.00E-01	3.7	
4	0	5493.55	85	0	63.64	702.21	688	36	1.14E-02	10.8	
5	0	5802.36	1	0	3.10	811.00	771	42	1.34E-04	100.0	

Background Counts Within Peak Regions Generated: 13-DEC-2001 13:34:19.69

Acquisition Start: 26-NOV-2001 15:38:31.01
Live Time: 0 16:40:02.00 Real Time: 0 16:40:02.00

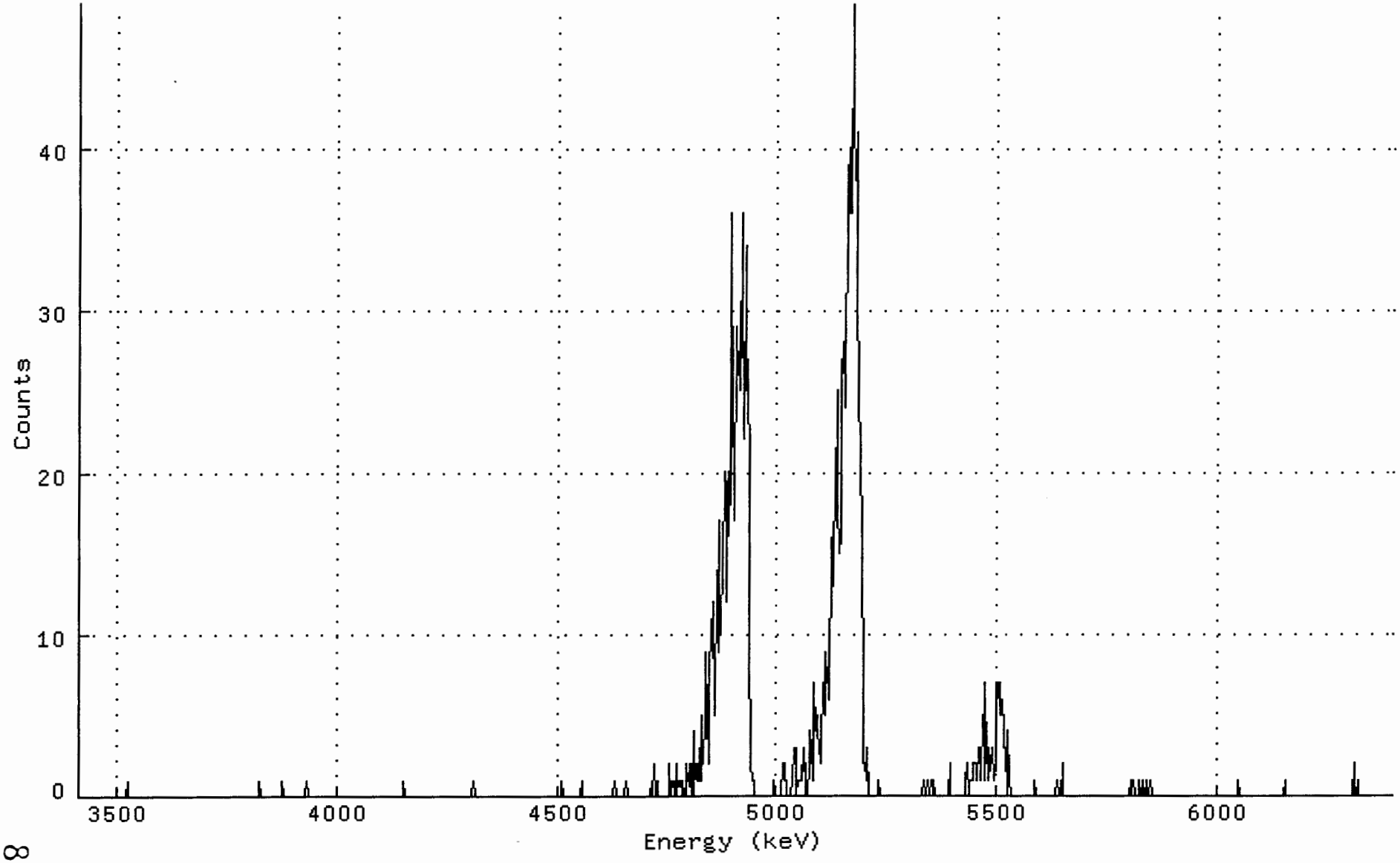
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4559.48	1	0	3.10	381.50	361	42	1.67E-05	100.0	
2	0	4889.69	2	0	114.65	493.50	466	56	3.33E-05	70.7	
3	0	5153.37	3	0	102.25	584.00	562	45	5.00E-05	57.7	
4	0	5502.94	1	0	3.10	705.50	688	36	1.67E-05	100.0	
5	0	5747.31	26	0	0.00	791.50	771	42	4.33E-04	19.6	

Net Sample Counts Within Peak Regions Generated: 13-DEC-2001 13:34:20.18

Pk		Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4532.76*	2	0	49.58	372.50	361	42	2.52E-04	75.7	
2	0	4896.92*	659	0	60.22	495.97	466	56	8.84E-02	3.9	
3	0	5156.36*	748	0	53.56	585.03	562	45	1.00E-01	3.7	
4	0	5493.55*	85	0	63.64	702.21	688	36	1.14E-02	10.9	
5	0	5802.36*	-2	0	3.10	811.00	771	42	-2.99E-04	53.1	

lag: "*" = Peak area was modified by background subtraction

Spectrum : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV 5]S_L4094PURR$042_PU.CNF;3
Title : 042
Sample Title: L4094-05 TRACED
Start Time: 12-DEC-2001 14:53 Sample Time: 12-DEC-2001 00:00 Energy Offset: 3.40236E+03
Real Time : 0 02:04:12.00 Sample ID : 042 Energy Slope : 3.09862E+00
Live Time : 0 02:04:12.00 Sample Type: PU Energy Quad : -1.71778E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 13:35:35

Spectral File: ND_AMS_ARCHIVE_S:S_L4094PURR$043_PU.CNF

BATCH ID:	L4094PURR	SAMPLE ID:	043
SAMPLE DATE:	12-DEC-2001 00:00	ALIQUOT:	1.000E-01 gram
SAMPLE TITLE:	L4094-05 MD TRACED	DETECTOR NUMBER:	043
ACQ DATE:	12-DEC-2001 14:53	AVERAGE EFFICIENCY:	23.93%
ELAPSED LIVE TIME:	7435.	RECOVERY:	97.17%
TRACER ID:	RAD011-10	TRACER FWHM (kev):	64.69
LAMBDA VALUE:	2000.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	23.088	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	9-SEP-2001 11:41	EFF CAL DATE:	9-SEP-2001 11:41
BKG FILENAME:	B_043_26NOV01	BKG ELAPSED TIME:	60003.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PU236	5755.0	-0.99	0.99	100.0	-1.550E-01	1.103E-01	1.147E+00
PU-238	5487.1	87.63	0.37	99.9	1.371E+01	3.122E+00	8.676E-01
PU-239	5147.7	704.63	0.37	99.9	1.103E+02	1.191E+01	8.676E-01
PU242	4890.7	668.00	0.00	100.4	1.040E+02	8.048E+00	4.219E-01
PU244	4580.6	0.75	0.25	99.9	1.177E-01	3.180E-01	7.862E-01

Analyst _____ Date 12-13-01

Reviewer _____ Date _____

ENVIROTEST LABORATORIES LLC.

oss Sample Counts Within Peak Regions Generated: 13-DEC-2001 13:35:30.69

or ID: 43 Acquisition Start: 12-DEC-2001 14:53:30.01
ime: 0 02:03:55.00 Real Time: 0 02:03:55.00
atch Id: L4094PURR Sample Id: 043
ample Type: PU

k	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4607.88	1	0	3.13	388.00	352	41	1.34E-04	100.0	
2	0	4914.35	668	0	64.69	490.47	455	55	8.98E-02	3.9	
3	0	5171.75	705	0	48.15	577.43	549	45	9.48E-02	3.8	
4	0	5506.84	88	0	66.10	691.89	673	36	1.18E-02	10.7	
5	0	5747.51	0	0	0.00	775.00	755	41	0.00E+00	0.0	

ackground Counts Within Peak Regions Generated: 13-DEC-2001 13:35:32.96

Acquisition Start: 26-NOV-2001 15:38:34.01
ive Time: 0 16:40:03.00 Real Time: 0 16:40:03.00

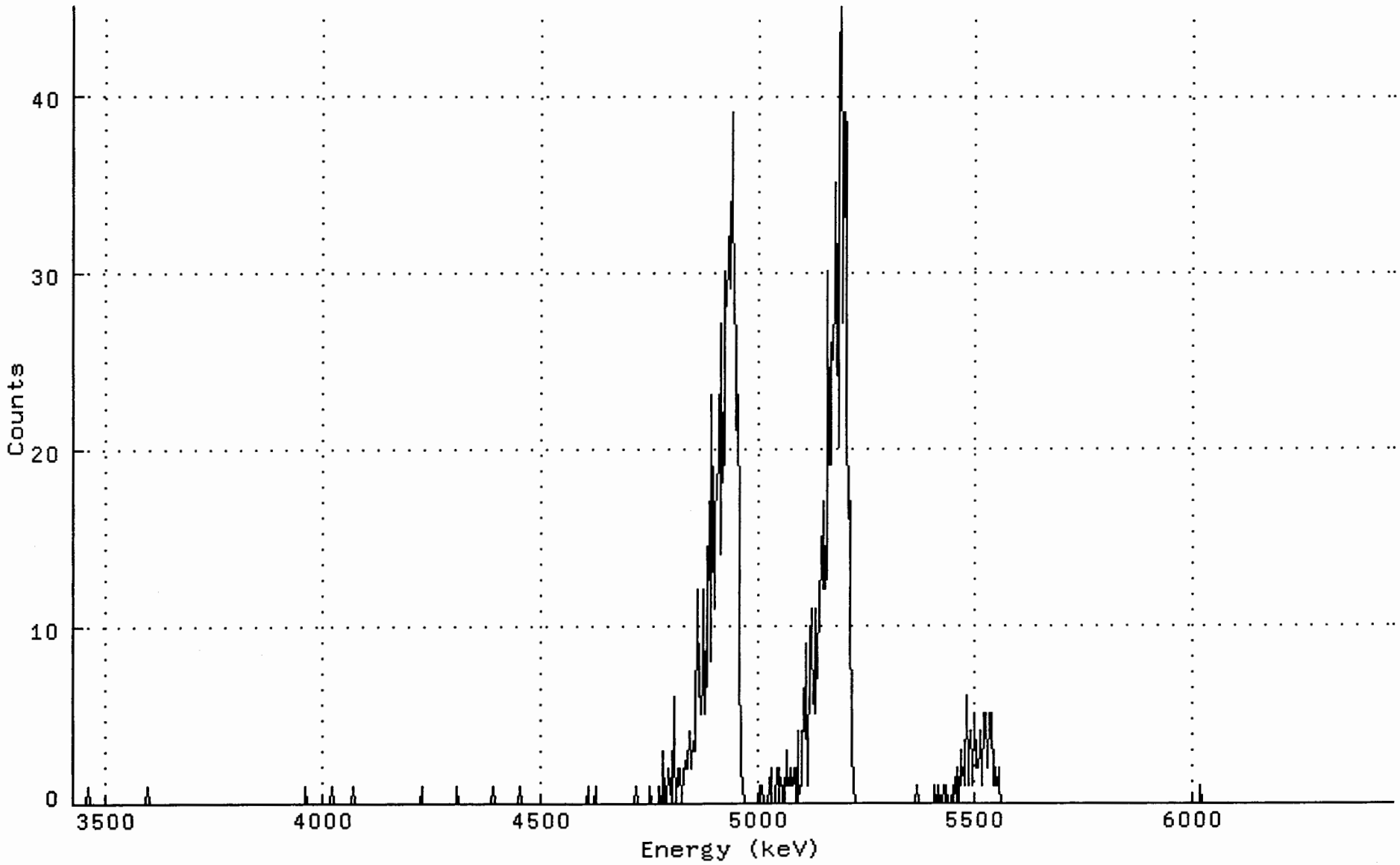
k	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4559.72	2	0	9.40	372.00	352	41	3.33E-05	70.7	
2	0	4889.14	0	0	0.00	482.00	455	55	0.00E+00	0.0	
3	0	5152.81	3	0	3.13	571.00	549	45	5.00E-05	57.7	
4	0	5502.81	3	0	37.59	690.50	673	36	5.00E-05	57.7	
5	0	5747.51	8	0	4.60	775.00	755	41	1.33E-04	35.4	

et Sample Counts Within Peak Regions Generated: 13-DEC-2001 13:35:33.40

k	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	[illegible]	4607.88*	1	0	3.13	388.00	352	41	1.01E-04	135.0	
2	0	4914.35*	668	0	64.69	490.47	455	55	8.98E-02	3.9	
3	0	5171.75*	705	0	48.15	577.43	549	45	9.48E-02	3.8	
4	0	5506.84*	88	0	66.10	691.89	673	36	1.18E-02	10.7	
5	0	5747.51*	-1	0	0.00	775.00	755	41	-1.33E-04	35.4	

ag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV 3]S_L4094PURR$043_PU.CNF;3
Title : 043
Sample Title: L4094-05 MD TRACED
Start Time: 12-DEC-2001 14:53 Sample Time: 12-DEC-2001 00:00 Energy Offset: 3.41670E+03
Real Time : 0 02:03:55.00 Sample ID : 043 Energy Slope : 3.13278E+00
Live Time : 0 02:03:55.00 Sample Type: PU Energy Quad : -1.61659E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 13:36:52

Spectral File: ND_AMS_ARCHIVE_S:S_L4094PURR$044_PU.CNF

BATCH ID:	L4094PURR	SAMPLE ID:	044
SAMPLE DATE:	12-DEC-2001 00:00	ALIQUOT:	1.000E-01 gram
SAMPLE TITLE:	L4094-06 TRACED	DETECTOR NUMBER:	044
ACQ DATE:	12-DEC-2001 14:53	AVERAGE EFFICIENCY:	25.19%
ELAPSED LIVE TIME:	7411.	RECOVERY:	94.70%
TRACER ID:	RAD011-10	TRACER FWHM (kev):	38.17
LAMBDA VALUE:	2000.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	23.088	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	10-SEP-2001 08:26	EFF CAL DATE:	10-SEP-2001 08:26
BKG FILENAME:	B_044_26NOV01	BKG ELAPSED TIME:	60006.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PU236	5755.0	0.76	1.24	100.0	1.170E-01	4.489E-01	1.204E+00
PU-238	5487.1	74.63	0.37	99.9	1.142E+01	2.792E+00	8.479E-01
PU-239	5147.7	427.75	0.25	99.9	6.546E+01	8.074E+00	7.684E-01
PU242	4890.7	683.00	0.00	100.4	1.040E+02	7.959E+00	4.127E-01
PU244	4580.6	3.00	0.00	99.9	4.593E-01	5.315E-01	4.147E-01

DT
Analyst

12-13-01
Date

Reviewer

Date

Pu 242 < MDA
No correction

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 13-DEC-2001 13:36:47.42

D :or ID: 44 Acquisition Start: 12-DEC-2001 14:53:53.01
Live Time: 0 02:03:31.00 Real Time: 0 02:03:32.00
Batch Id: L4094PURR Sample Id: 044
Sample Type: PU

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4532.90	3	0	65.62	349.00	338	41	4.05E-04	57.7	
2	0	4892.90	683	0	38.17	469.63	441	56	9.22E-02	3.8	
3	0	5152.40	428	0	46.13	557.64	536	45	5.78E-02	4.8	
4	0	5493.15	75	0	31.61	674.60	660	36	1.01E-02	11.5	
5	0	5747.58	2	0	96.87	763.00	743	41	2.70E-04	70.7	

Background Counts Within Peak Regions Generated: 13-DEC-2001 13:36:49.93

Acquisition Start: 26-NOV-2001 15:38:37.01
Live Time: 0 16:40:06.00 Real Time: 0 16:40:06.00

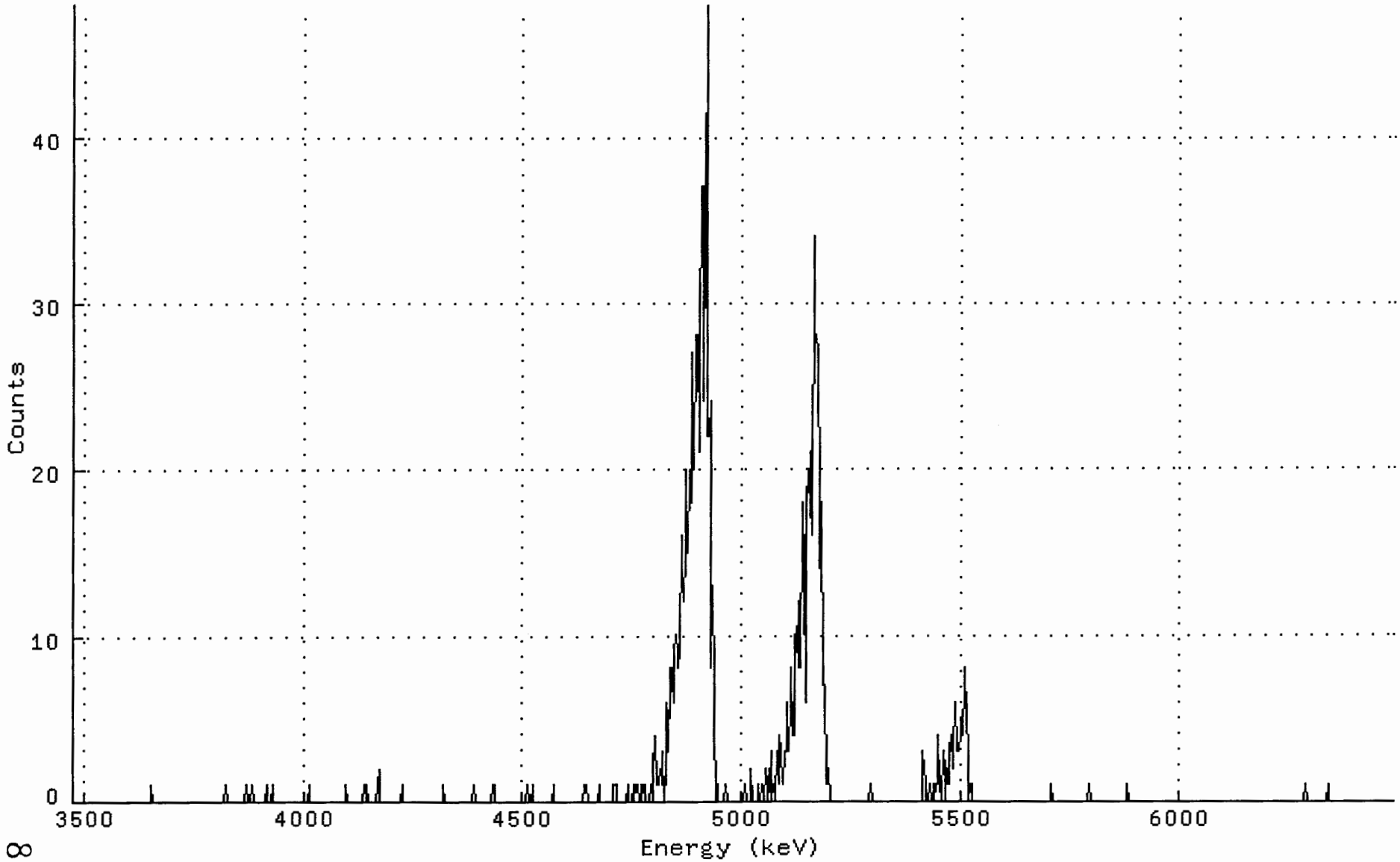
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4559.93	0	0	0.00	358.00	338	41	0.00E+00	0.0	
2	0	4889.56	0	0	0.00	468.50	441	56	0.00E+00	0.0	
3	0	5153.46	2	0	25.00	558.00	536	45	3.33E-05	70.7	
4	0	5501.54	3	0	18.75	677.50	660	36	5.00E-05	57.7	
5	0	5747.58	10	0	113.76	763.00	743	41	1.67E-04	31.6	

Net Sample Counts Within Peak Regions Generated: 13-DEC-2001 13:36:50.30

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4532.90*	3	0	65.62	349.00	338	41	4.05E-04	57.7	
2	0	4892.90*	683	0	38.17	469.63	441	56	9.22E-02	3.8	
3	0	5152.40*	428	0	46.13	557.64	536	45	5.77E-02	4.8	
4	0	5493.15*	75	0	31.61	674.60	660	36	1.01E-02	11.6	
5	0	5747.58*	1	0	96.87	763.00	743	41	1.03E-04	191.8	

lag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV 3]S_L4094PURR$044_PU.CNF;3
Title : 044
Sample Title: L4094-06 TRACED
Start Time: 12-DEC-2001 14:53 Sample Time: 12-DEC-2001 00:00 Energy Offset: 3.46323E+03
Real Time : 0 02:03:32.00 Sample ID : 044 Energy Slope : 3.12486E+00
Live Time : 0 02:03:31.00 Sample Type: PU Energy Quad : -1.71642E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 13:37:22

Spectral File: ND_AMS_ARCHIVE_S:S_L4094PURR$045_PU.CNF

BATCH ID:	L4094PURR	SAMPLE ID:	045
SAMPLE DATE:	12-DEC-2001 00:00	ALIQUOT:	1.000E-01 gram
SAMPLE TITLE:	L4094-07 TRACED	DETECTOR NUMBER:	045
ACQ DATE:	12-DEC-2001 14:54	AVERAGE EFFICIENCY:	25.68%
ELAPSED LIVE TIME:	7395.	RECOVERY:	88.58%
TRACER ID:	RAD011-10	TRACER FWHM (kev):	56.35
LAMBDA VALUE:	2000.	ROI TYPE:	MANUAL
TRACER DPM AT SAMPLE DATE:	23.088	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	10-SEP-2001 16:22	EFF CAL DATE:	10-SEP-2001 16:22
BKG FILENAME:	B_045_26NOV01	BKG ELAPSED TIME:	60002.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram	
PU236	5755.0	1.40	1.60	100.0	2.246E-01	5.750E-01	1.381E+00	
PU-238	5487.1	87.75	0.25	99.9	1.411E+01	3.214E+00	8.070E-01	13.7 ± 3.3 0.8
PU-239	5147.7	1184.75	0.25	99.9	1.905E+02	1.860E+01	8.070E-01	196 ± 18.1 0.8
PU242	4890.7	650.00	0.00	100.4	1.040E+02	8.158E+00	4.336E-01	
PU244	4580.6	4.00	0.00	99.9	6.435E-01	6.455E-01	4.358E-01	

Analyst _____ Date 12-13-01

650.00
20.88
629.12

Reviewer _____ Date _____

$\frac{629.12}{(0.2568 \times 123.25)} = \frac{19.877}{23.088} = 0.8607 = 86.09\%$

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 13-DEC-2001 13:37:17.70

De or ID: 45 Acquisition Start: 12-DEC-2001 14:54:10.01
Live Time: 0 02:03:15.00 Real Time: 0 02:03:15.00
Batch Id: L4094PURR Sample Id: 045
Sample Type: PU

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4559.85	4	0	0.00	376.50	356	42	5.41E-04	50.0	
2	0	4892.21	650	0	56.35	489.14	460	57	8.79E-02	3.9	
3	0	5146.60	1185	0	47.43	576.38	547	55	1.60E-01	2.9	
4	0	5481.99	88	0	54.95	692.82	673	38	1.19E-02	10.7	
5	0	5752.65	3	0	117.85	788.00	766	42	4.06E-04	57.7	

Background Counts Within Peak Regions Generated: 13-DEC-2001 13:37:19.61

Acquisition Start: 26-NOV-2001 15:38:41.01
Live Time: 0 16:40:02.00 Real Time: 0 16:40:02.00

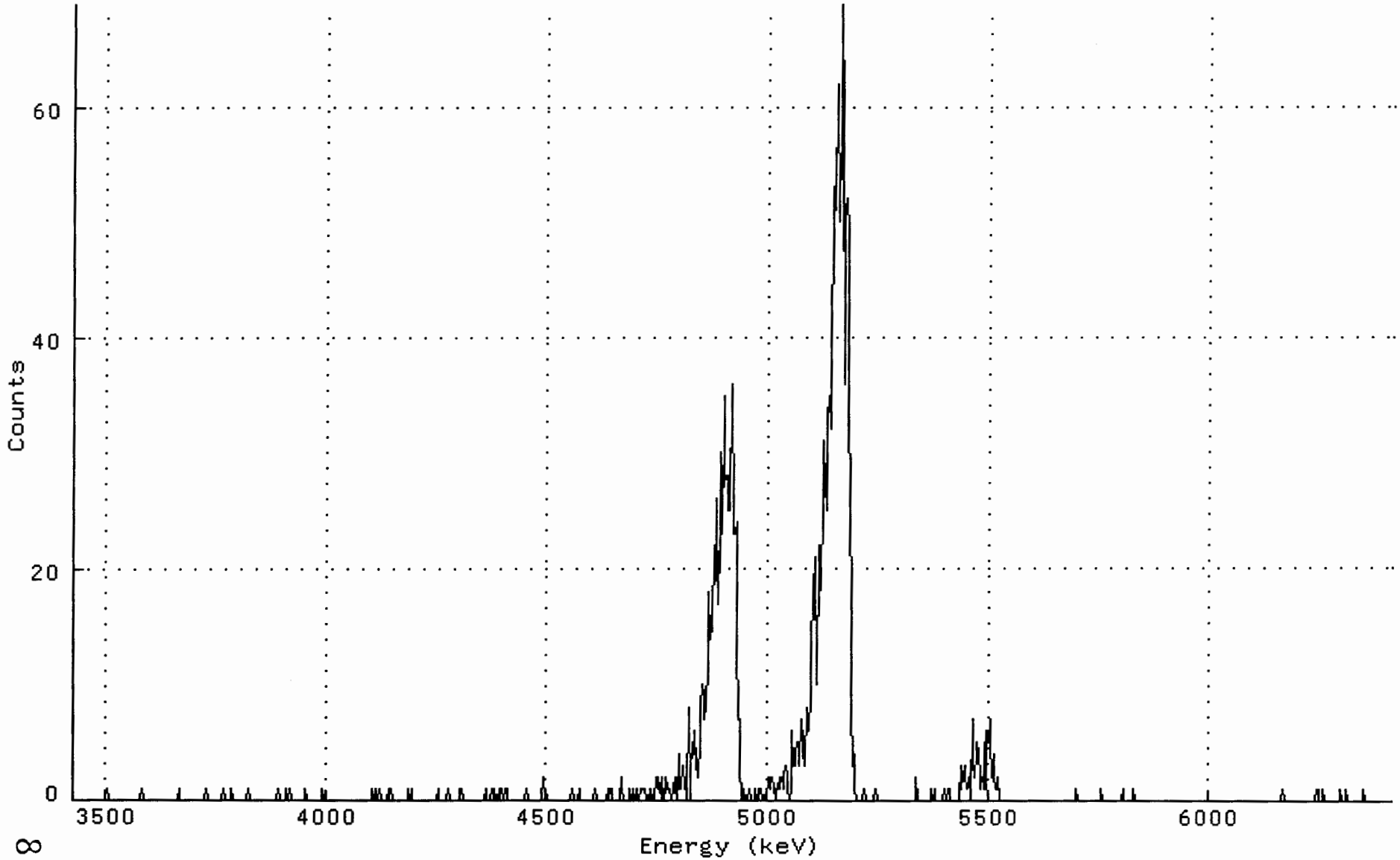
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4559.85	0	0	0.00	376.50	356	42	0.00E+00	0.0	
2	0	4888.87	0	0	0.00	488.00	460	57	0.00E+00	0.0	
3	0	5139.69	2	0	5.81	574.00	547	55	3.33E-05	70.7	
4	0	5478.22	2	0	80.63	691.50	673	38	3.33E-05	70.7	
5	0	5748.41	13	0	0.00	786.50	766	42	2.17E-04	27.7	

Net Sample Counts Within Peak Regions Generated: 13-DEC-2001 13:37:20.25

Pk		Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4559.85*	4	0	0.00	376.50	356	42	5.41E-04	50.0	
2	0	4892.21*	650	0	56.35	489.14	460	57	8.79E-02	3.9	
3	0	5146.60*	1185	0	47.43	576.38	547	55	1.60E-01	2.9	
4	0	5481.99*	88	0	54.95	692.82	673	38	1.19E-02	10.7	
5	0	5752.65*	1	0	117.85	788.00	766	42	1.89E-04	127.9	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV 3]S_L4094PURR$045_PU.CNF;3
Title : 045
Sample Title: L4094-07 TRACED
Start Time: 12-DEC-2001 14:54 Sample Time: 12-DEC-2001 00:00 Energy Offset: 3.41687E+03
Real Time : 0 02:03:15.00 Sample ID : 045 Energy Slope : 3.10130E+00
Live Time : 0 02:03:15.00 Sample Type: PU Energy Quad : -1.74006E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 13:38:03

Spectral File: ND_AMS_ARCHIVE_S:S_L4094PURR$046_PU.CNF

BATCH ID:	L4094PURR	SAMPLE ID:	046
SAMPLE DATE:	12-DEC-2001 00:00	ALIQUOT:	1.000E-01 gram
SAMPLE TITLE:	L4094-08 TRACED	DETECTOR NUMBER:	046
ACQ DATE:	12-DEC-2001 14:54	AVERAGE EFFICIENCY:	24.54%
ELAPSED LIVE TIME:	7357.	RECOVERY:	92.41%
TRACER ID:	RAD011-10	TRACER FWHM (kev):	58.57
LAMBDA VALUE:	2000.	ROI TYPE:	MANUAL
TRACER DPM AT SAMPLE DATE:	23.088	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	11-SEP-2001 08:15	EFF CAL DATE:	11-SEP-2001 08:15
BKG FILENAME:	B_046_26NOV01	BKG ELAPSED TIME:	60003.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PU236	5755.0	-1.21	2.21	100.0	-1.956E-01	3.657E-01	1.558E+00
PU-238	5487.1	78.88	0.12	99.9	1.279E+01	3.054E+00	7.034E-01
PU-239	5147.7	1169.75	0.25	99.9	1.897E+02	1.861E+01	8.128E-01
PU242	4890.7	644.63	0.37	100.4	1.040E+02	8.195E+00	8.922E-01
PU244	4580.6	14.00	0.00	99.9	2.271E+00	1.227E+00	4.394E-01

Analyst _____ Date 12-13-01

Reviewer _____ Date _____

Pu242 < MDA
No correction

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 13-DEC-2001 13:37:59.59

De or ID: 46 Acquisition Start: 12-DEC-2001 14:54:49.01
Live Time: 0 02:02:37.00 Real Time: 0 02:02:37.00
Batch Id: L4094PURR Sample Id: 046
Sample Type: PU

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4567.08	14	0	77.83	379.36	357	41	1.90E-03	26.7	
2	0	4890.57	645	0	58.57	486.16	459	55	8.77E-02	3.9	
3	0	5144.01	1170	0	54.82	570.75	541	55	1.59E-01	2.9	
4	0	5487.86	79	0	56.78	686.85	670	40	1.07E-02	11.3	
5	0	5699.24	1	0	3.18	759.00	756	40	1.36E-04	100.0	

Background Counts Within Peak Regions Generated: 13-DEC-2001 13:38:00.71

Acquisition Start: 26-NOV-2001 15:38:44.01
Live Time: 0 16:40:03.00 Real Time: 0 16:40:03.00

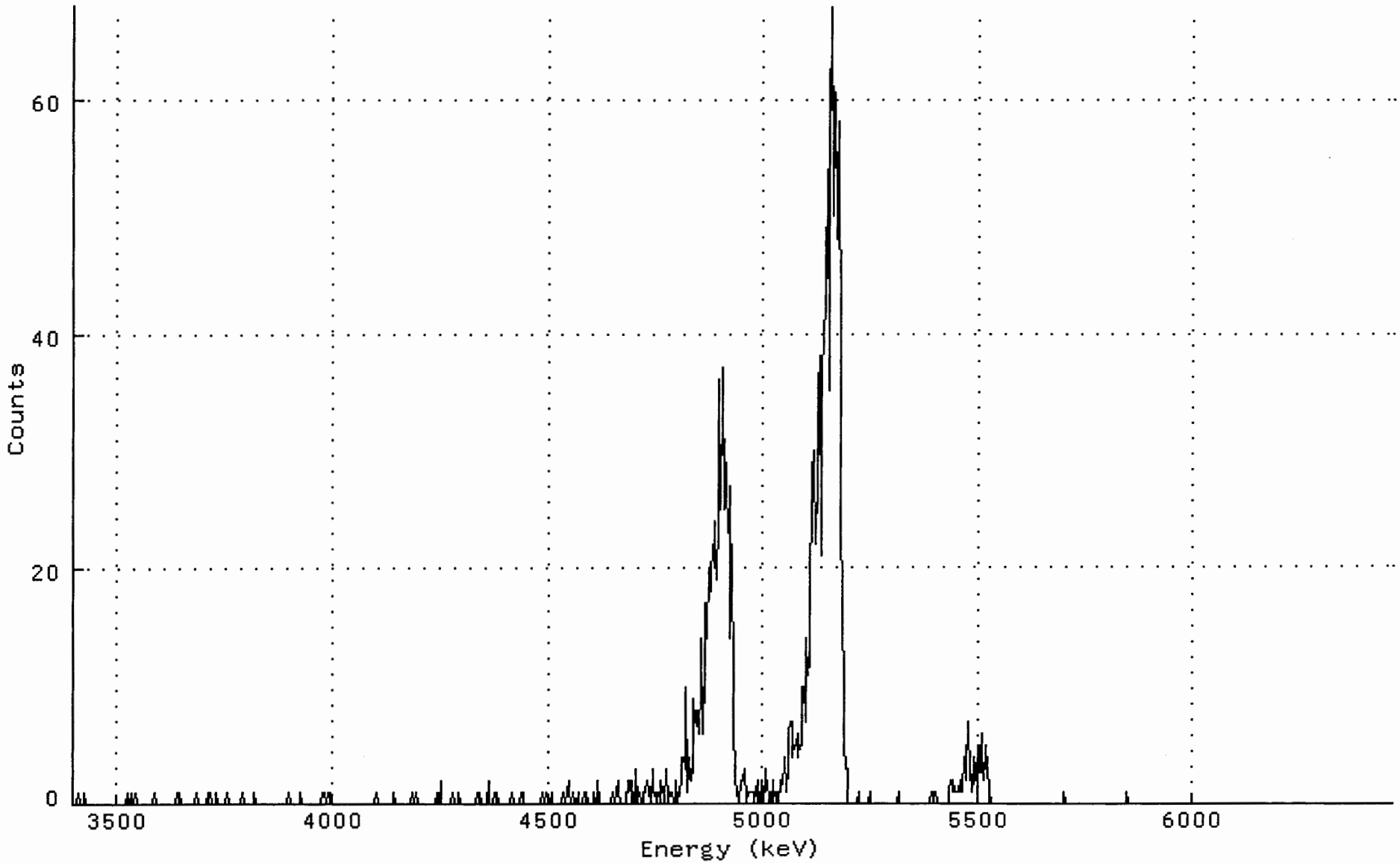
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4559.89	0	0	0.00	377.00	357	41	0.00E+00	0.0	
2	0	4890.08	3	0	79.42	486.00	459	55	5.00E-05	57.7	
3	0	5135.80	2	0	0.00	568.00	541	55	3.33E-05	70.7	
4	0	5495.66	1	0	3.18	689.50	670	40	1.67E-05	100.0	
5	0	5747.33	18	0	22.97	775.50	756	40	3.00E-04	23.6	

Net Sample Counts Within Peak Regions Generated: 13-DEC-2001 13:38:01.33

Pk		Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4567.08*	14	0	77.83	379.36	357	41	1.90E-03	26.7	
2	0	4890.57*	645	0	58.57	486.16	459	55	8.76E-02	3.9	
3	0	5144.01*	1170	0	54.82	570.75	541	55	1.59E-01	2.9	
4	0	5487.86*	79	0	56.78	686.85	670	40	1.07E-02	11.3	
5	0	5699.24*	-1	0	3.18	759.00	756	40	-1.64E-04	93.4	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV S]S_L4094PURR$046_PU.CNF;3
Title : 046
Sample Title: L4094-08 TRACED
Start Time: 12-DEC-2001 14:54 Sample Time: 12-DEC-2001 00:00 Energy Offset: 3.38657E+03
Real Time : 0 02:02:37.00 Sample ID : 046 Energy Slope : 3.17669E+00
Live Time : 0 02:02:37.00 Sample Type: PU Energy Quad : -1.70875E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 13:38:42

****

pectral File: ND_AMS_ARCHIVE_S:S_L4094PURR$047_PU.CNF

****

ATCH ID:	L4094PURR	SAMPLE ID:	047
AMPLE DATE:	12-DEC-2001 00:00	ALIQUOT:	1.000E-01 gram
AMPLE TITLE:	L4094-09 TRACED	DETECTOR NUMBER:	047
CQ DATE:	12-DEC-2001 14:55	AVERAGE EFFICIENCY:	26.43%
LAPSED LIVE TIME:	7311.	RECOVERY:	88.12%
RACER ID:	RAD011-10	TRACER FWHM (kev):	52.73
AMBDA VALUE:	2000.	ROI TYPE:	MANUAL
RACER DPM AT SAMPLE DATE:	23.088	CONFIDENCE FACTOR:	4.65
AMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
NERGY CAL DATE:	11-SEP-2001 16:01	EFF CAL DATE:	11-SEP-2001 16:01
KG FILENAME:	B_047_26NOV01	BKG ELAPSED TIME:	60004.

****

NUCLIDE ACTIVITY SUMMARY

UCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
U236	5755.0	0.39	0.61	100.0	6.205E-02	3.292E-01	1.006E+00
U-238	5487.1	71.51	0.49	99.9	1.136E+01	2.839E+00	9.463E-01
U-239	5147.7	608.51	0.49	99.9	9.668E+01	1.088E+01	9.463E-01
U242	4890.7	657.88	0.12	100.4	1.040E+02	8.110E+00	6.850E-01
U244	4580.6	5.76	0.24	99.9	9.150E-01	7.839E-01	7.952E-01

****

D7 — 12-13-01
nalyst — Date

eviewer — Date

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 13-DEC-2001 13:38:38.54

Detector ID: 47 Acquisition Start: 12-DEC-2001 14:55:35.01
Live Time: 0 02:01:51.00 Real Time: 0 02:01:51.00
Batch Id: L4094PURR Sample Id: 047
Sample Type: PU

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4588.29	6	0	33.24	388.17	358	42	8.21E-04	40.8	
2	0	4898.42	658	0	52.73	493.13	462	57	9.00E-02	3.9	
3	0	5152.29	609	0	50.96	579.93	551	52	8.33E-02	4.1	
4	0	5492.69	72	0	40.60	697.60	683	37	9.85E-03	11.8	
5	0	5742.75	1	0	3.09	785.00	766	42	1.37E-04	100.0	

Background Counts Within Peak Regions Generated: 13-DEC-2001 13:38:39.69

Acquisition Start: 26-NOV-2001 15:38:47.01
Live Time: 0 16:40:04.00 Real Time: 0 16:40:04.00

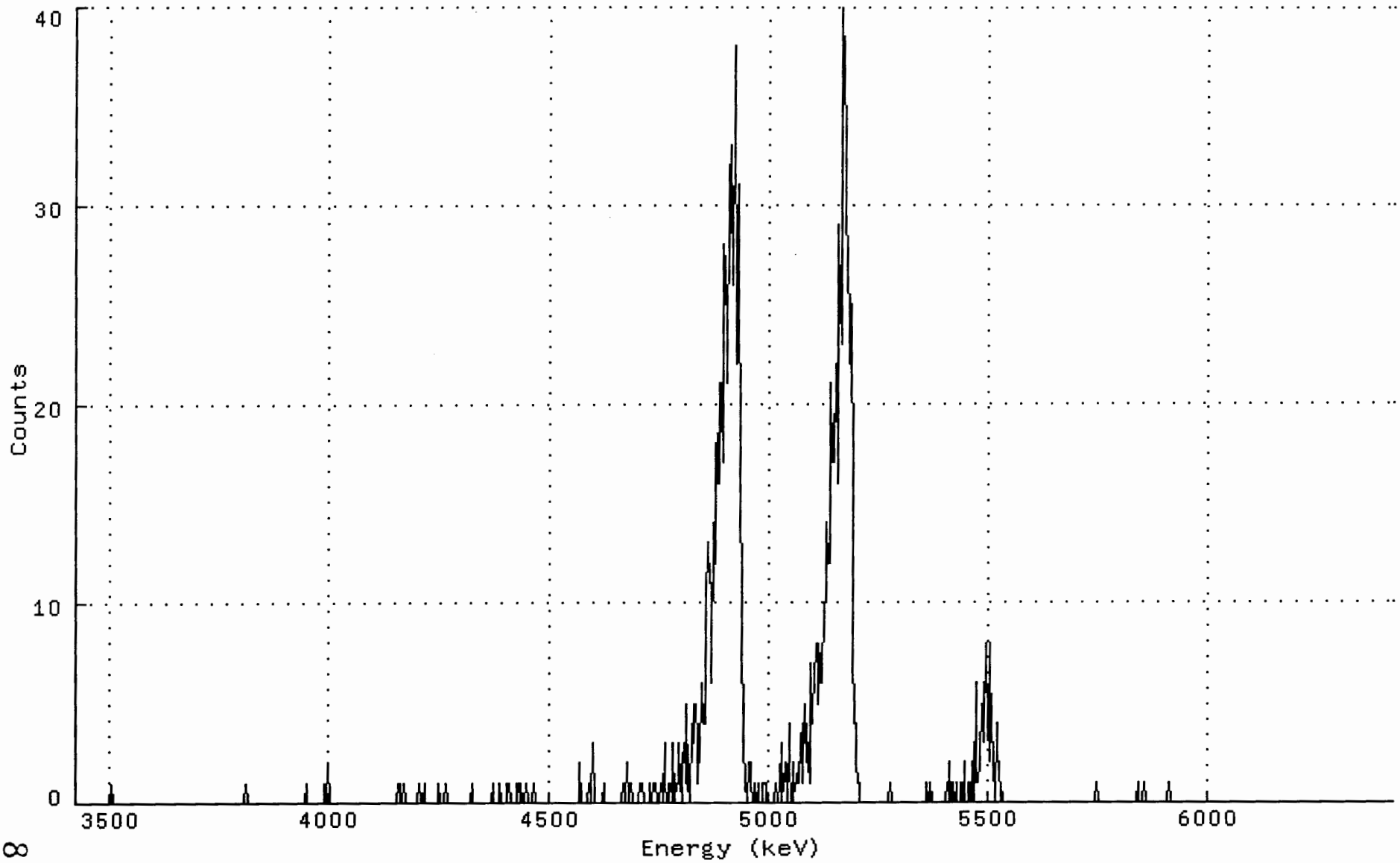
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4559.56	2	0	74.20	378.50	358	42	3.33E-05	70.7	
2	0	4889.22	1	0	3.09	490.00	462	57	1.67E-05	100.0	
3	0	5142.30	4	0	98.93	576.50	551	52	6.67E-05	50.0	
4	0	5502.47	4	0	0.00	701.00	683	37	6.67E-05	50.0	
5	0	5747.02	5	0	0.00	786.50	766	42	8.33E-05	44.7	

Net Sample Counts Within Peak Regions Generated: 13-DEC-2001 13:38:40.17

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4588.29*	6	0	33.24	388.17	358	42	7.87E-04	42.7	
2	0	4898.42*	658	0	52.73	493.13	462	57	9.00E-02	3.9	
3	0	5152.29*	609	0	50.96	579.93	551	52	8.32E-02	4.1	
4	0	5492.69*	72	0	40.60	697.60	683	37	9.78E-03	11.9	
5	0	5742.75*	0	0	3.09	785.00	766	42	5.35E-05	265.2	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV S]S_L4094PURR$047_PU.CNF;3
Title : 047
Sample Title: L4094-09 TRACED
Start Time: 12-DEC-2001 14:55 Sample Time: 12-DEC-2001 00:00 Energy Offset: 3.41163E+03
Real Time : 0 02:01:51.00 Sample ID : 047 Energy Slope : 3.09171E+00
Live Time : 0 02:01:51.00 Sample Type: PU Energy Quad : -1.55582E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 13:51:27

Spectral File: ND_AMS_ARCHIVE_R:R_L4094PURRA$025_PU.CNF

BATCH ID:	L4094PURRA	SAMPLE ID:	025
SAMPLE DATE:	12-DEC-2001 00:00	ALIQUOT:	1.000E-01 gram
SAMPLE TITLE:	L4094-MBAPU1206	DETECTOR NUMBER:	025
ACQ DATE:	12-DEC-2001 17:42	AVERAGE EFFICIENCY:	24.14%
ELAPSED LIVE TIME:	7201.	RECOVERY:	102.22%
TRACER ID:	RAD011-10	TRACER FWHM (kev):	58.02
LAMBDA VALUE:	2000.	ROI TYPE:	MANUAL
TRACER DPM AT SAMPLE DATE:	23.088	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	27-NOV-2001 18:08	EFF CAL DATE:	27-NOV-2001 18:08
BKG FILENAME:	B_025_28NOV01	BKG ELAPSED TIME:	60002.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PU236	5755.0	0.64	0.36	100.0	9.737E-02	3.110E-01	8.364E-01
PU-238	5487.1	72.00	0.00	99.9	1.096E+01	2.809E+00	4.125E-01
PU-239	5147.7	12.88	0.12	99.9	1.961E+00	1.116E+00	6.577E-01
PU242	4890.7	686.64	0.36	100.4	1.040E+02	9.292E+00	8.331E-01
PU244	4580.6	1.76	0.24	99.9	2.681E-01	4.347E-01	7.593E-01

Analyst _____ Date 12-13-01

Reviewer _____ Date _____

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 13-DEC-2001 13:51:23.81

De or ID: 25 Acquisition Start: 12-DEC-2001 17:42:09.01
Live Time: 0 02:00:01.00 Real Time: 0 02:00:01.00
Batch Id: L4094PURRA Sample Id: 025
Sample Type: PU

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4569.77	2	0	83.06	364.00	340	42	2.78E-04	70.7	
2	0	4883.26	687	0	58.02	470.48	445	56	9.54E-02	3.8	
3	0	5142.67	13	0	21.53	559.54	541	45	1.81E-03	27.7	
4	0	5466.62	72	0	63.81	671.99	652	46	1.00E-02	11.8	
5	0	5697.53	1	0	3.08	753.00	750	42	1.39E-04	100.0	

Background Counts Within Peak Regions Generated: 13-DEC-2001 13:51:24.72

Acquisition Start: 28-NOV-2001 08:56:26.01
Live Time: 0 16:40:02.00 Real Time: 0 16:40:02.00

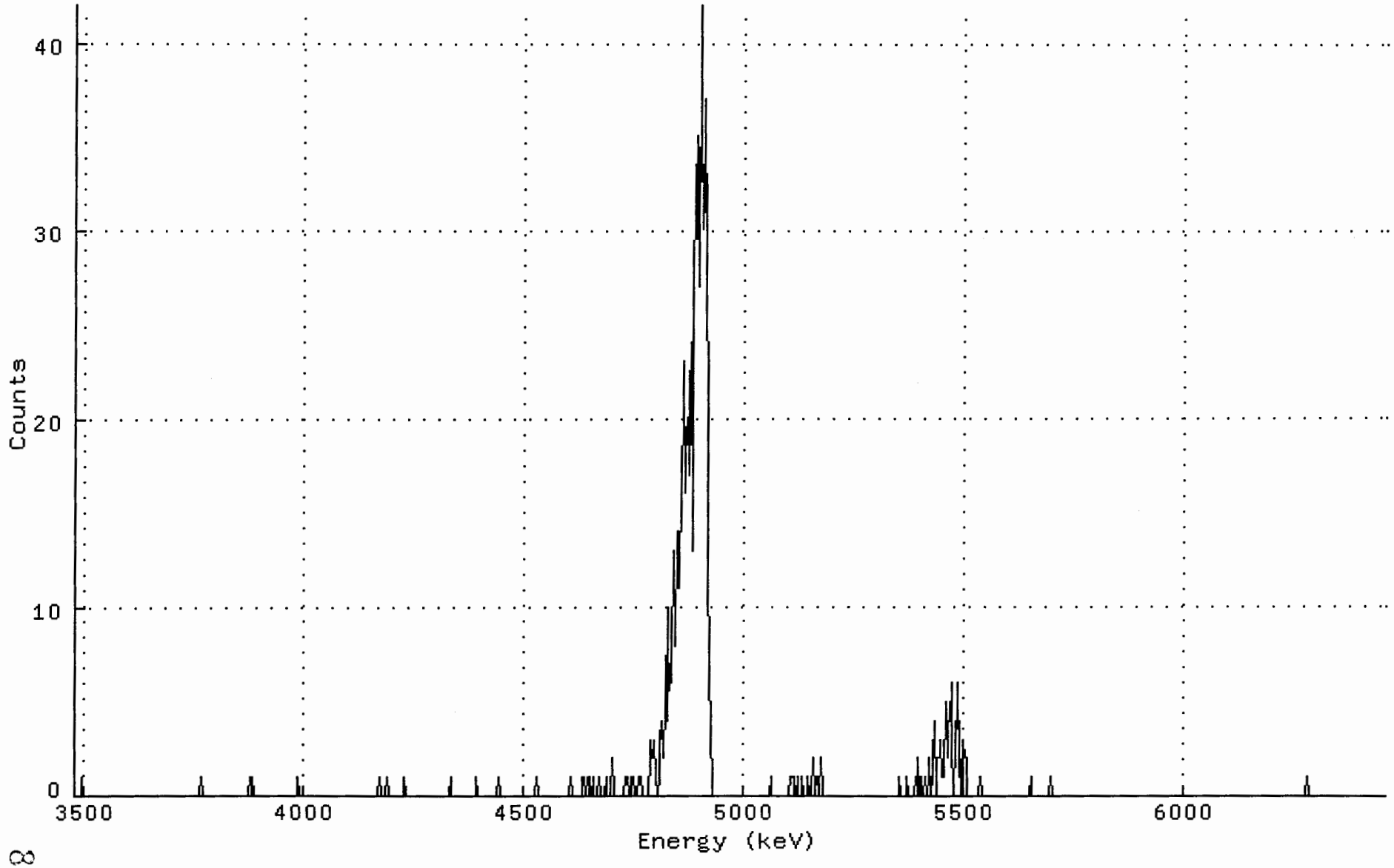
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4559.63	2	0	46.21	360.50	340	42	3.33E-05	70.7	
2	0	4889.40	3	0	0.00	472.50	445	56	5.00E-05	57.7	
3	0	5152.88	1	0	3.08	563.00	541	45	1.67E-05	100.0	
4	0	5473.80	0	0	0.00	674.50	652	46	0.00E+00	0.0	
5	0	5746.84	3	0	86.26	770.50	750	42	5.00E-05	57.7	

Net Sample Counts Within Peak Regions Generated: 13-DEC-2001 13:51:25.22

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4569.77*	2	0	83.06	364.00	340	42	2.44E-04	80.9	
2	0	4883.26*	687	0	58.02	470.48	445	56	9.54E-02	3.8	
3	0	5142.67*	13	0	21.53	559.54	541	45	1.79E-03	28.0	
4	0	5466.62*	72	0	63.81	671.99	652	46	1.00E-02	11.8	
5	0	5697.53*	1	0	3.08	753.00	750	42	8.89E-05	159.6	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV R]R_L4094PURRA$025_PU.CNF;4
Title : 025
Sample Title: L4094-MBAPU1206
Start Time: 12-DEC-2001 17:42 Sample Time: 12-DEC-2001 00:00 Energy Offset: 3.47098E+03
Real Time : 0 02:00:01.00 Sample ID : 025 Energy Slope : 3.07643E+00
Live Time : 0 02:00:01.00 Sample Type: PU Energy Quad : -1.58728E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 13:51:57

Spectral File: ND_AMS_ARCHIVE_C:C_L4094PURRA$026_PU.CNF

BATCH ID:	L4094PURRA	SAMPLE ID:	026
SAMPLE DATE:	12-DEC-2001 00:00	ALIQUOT:	1.000E+00 gram
SAMPLE TITLE:	L4094-LCAPU1206	DETECTOR NUMBER:	026
ACQ DATE:	12-DEC-2001 17:42	AVERAGE EFFICIENCY:	26.57%
ELAPSED LIVE TIME:	7202.	RECOVERY:	96.41%
TRACER ID:	RAD011-10	TRACER FWHM (kev):	61.70
LAMBDA VALUE:	2000.	ROI TYPE:	MANUAL
TRACER DPM AT SAMPLE DATE:	23.088	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	28-NOV-2001 10:56	EFF CAL DATE:	28-NOV-2001 10:56
BKG FILENAME:	B_026_28NOV01	BKG ELAPSED TIME:	60003.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
PU236	5755.0	0.00	0.00	100.0	0.000E+00	0.000E+00	3.969E-02
PU-238	5487.1	77.00	0.00	99.9	1.129E+00	2.709E-01	3.973E-02
PU-239	5147.7	661.00	0.00	99.9	9.691E+00	1.047E+00	3.973E-02
PU242	4890.7	712.88	0.12	100.4	1.040E+01	7.791E-01	6.304E-02
PU244	4580.6	0.76	0.24	99.9	1.115E-02	2.977E-02	7.314E-02

Analyst _____ Date 12-13-01

Reviewer _____ Date _____

ENVIROTEST LABORATORIES LLC.

-oss Sample Counts Within Peak Regions Generated: 13-DEC-2001 13:51:53.85

et r ID: 26 Acquisition Start: 12-DEC-2001 17:42:47.01
ive Time: 0 02:00:02.00 Real Time: 0 02:00:02.00
atch Id: L4094PURRA Sample Id: 026
ample Type: PU

k	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4608.89	1	0	3.08	388.00	351	42	1.39E-04	100.0	
2	0	4888.24	713	0	61.70	483.14	456	56	9.90E-02	3.7	
3	0	5145.83	661	0	44.40	571.81	547	50	9.18E-02	3.9	
4	0	5480.75	77	0	14.34	688.49	670	45	1.07E-02	11.4	
5	0	5747.23	0	0	0.00	782.50	762	42	0.00E+00	0.0	

ackground Counts Within Peak Regions Generated: 13-DEC-2001 13:51:54.82

Acquisition Start: 28-NOV-2001 18:01:36.01
ive Time: 0 16:40:03.00 Real Time: 0 16:40:04.00

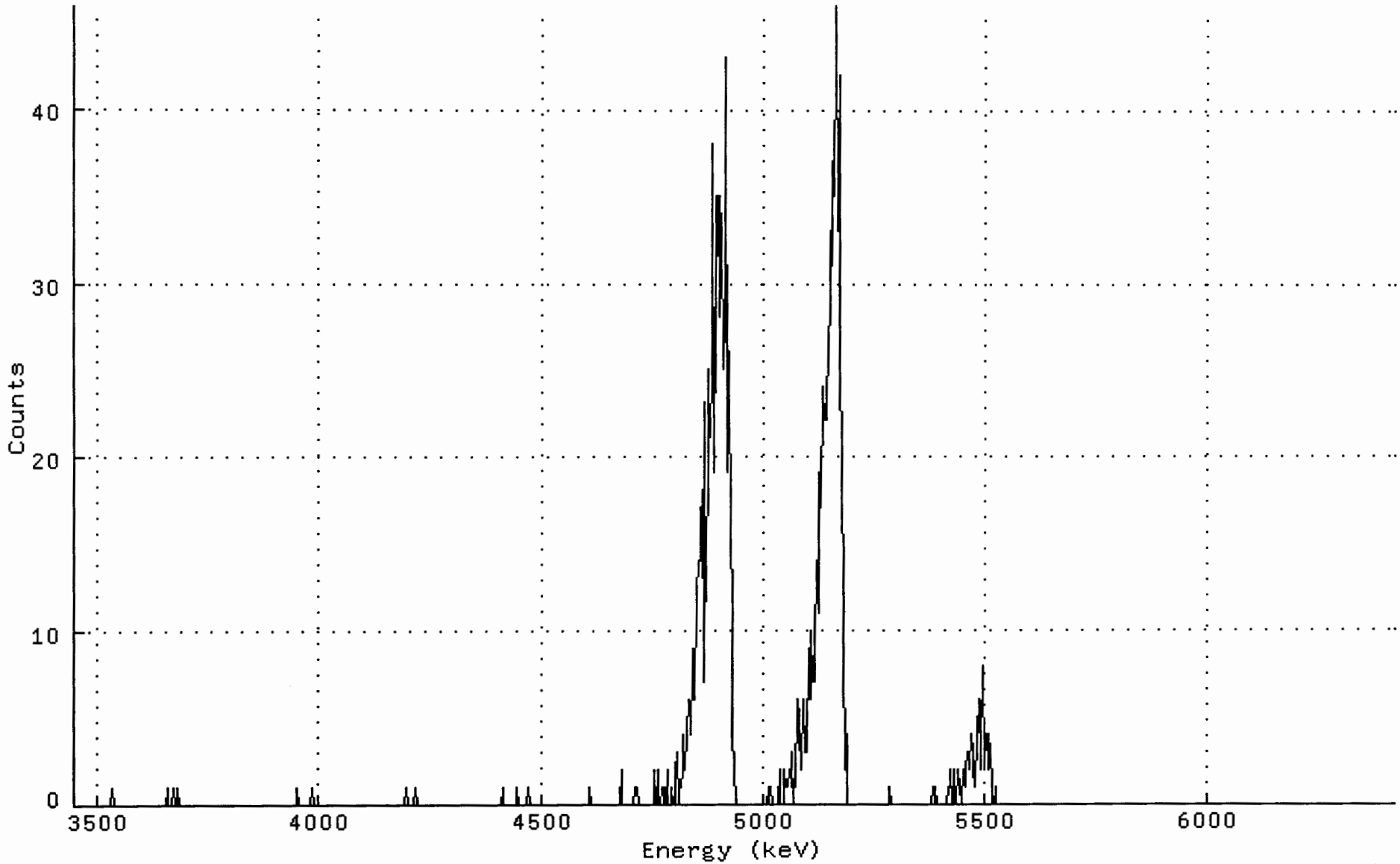
k	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4560.15	2	0	37.00	371.50	351	42	3.33E-05	70.7	
2	0	4889.30	1	0	3.08	483.50	456	56	1.67E-05	100.0	
3	0	5144.94	0	0	0.00	571.50	547	50	0.00E+00	0.0	
4	0	5490.75	0	0	0.00	692.00	670	45	0.00E+00	0.0	
5	0	5747.22	0	0	0.00	782.50	762	42	0.00E+00	0.0	

Net Sample Counts Within Peak Regions Generated: 13-DEC-2001 13:51:55.24

Pk		Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4608.89*	1	0	3.08	388.00	351	42	1.06E-04	133.5	
2	0	4888.24*	713	0	61.70	483.14	456	56	9.90E-02	3.7	
3	0	5145.83*	661	0	44.40	571.81	547	50	9.18E-02	3.9	
4	0	5480.75*	77	0	14.34	688.49	670	45	1.07E-02	11.4	
5	0	5747.23*	0	0	0.00	782.50	762	42	0.00E+00	0.0	

lag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV C]C_L4094PURRA$026_PU.CNF;3
Title : 026
Sample Title: L4094-LCAPU1206
Start Time: 12-DEC-2001 17:42 Sample Time: 12-DEC-2001 00:00 Energy Offset: 3.43798E+03
Real Time : 0 02:00:02.00 Sample ID : 026 Energy Slope : 3.08340E+00
Live Time : 0 02:00:02.00 Sample Type: PU Energy Quad : -1.69062E-04



ETL Enviro·Test LABORATORIES

Sample Digestion Logbook

SOP ETL - RSOP- 0003

Analysis Iso Pu Analyst Jeni Date 12-6-01 Reviewed By [illegible]

Sample ID	Analyzed Volume g	Sample Volume Digested	Dilution Volume ml/l	Digestate Volume Used (ml)	Sample Matrix	Comments
L4094-1	0.1	1.0	100 ml	10 ml	Soil	Reruns
2						
3						
4						
5						
5 MD						
6						
7						
8						
9						
PEM-1						
TRM-2						
MBA Pu 1206		NA	NA	NA	DI H_2O	
LCA Pu 1206	1.0L					
						Jeni 12-6-01

Traced

Spike	Trace	Nuclide	Isotope Number	Expiration Date	Activity pCi/ml	Vol Ml	Standard Control	Spiked By	Witness
X		Pu 239	045.06	6.13.02	4.9	2 ml	LCA Pu 1206	Jeni	[illegible]
	X	Pu 242	011.10	11.8.02	5.2	2 ml	All Samples		
								Jeni	12-6-01

ETL EnviroTest LABORATORIES

Check off sheet for
ISO Plutonium and Americium
(Includes Pu241and Cm)

Job# 4094 ISO Pu

Effervesce Samples

1. X Dissolve the sample residue in 75ml of 8 N HNO3.

2. X Heat as necessary to dissolve residue Cool to room temperature.

~~3. ___ Pu/Am samples~~: Add seven drops of 50% H202 to the sample, place a watch glass over each beaker and warm sample slightly on a hot plate using low heat, allow theH202 to effervesce for 1 hr.

Date/Time effervesce started 2:15 12-7-01

X **Pu only samples:** Add seven drops of 50% H202 and 3 ml of the 25% NaNO2 solution to the sample, place a watch glass over each beaker ,place samples under hood, allow the H2O2 /25% NaNO2 solution to effervesce (**without heat**) for 3hr.

Comments: Samples will be ready for Column at 5:15 pm 12-7-01.

Need to be ran before ~~3~~ 5:15 pm on Dec. 8, 01

- Jeni -

892

ETL EnviroTest LABORATORIES

Column Separation of Am From Pu

1. K Add 9cm AG 1-x8 (50-100 mesh) cleaned anion exchange resin each column.

2. X Precondition the columns by passing 100ml 8 N HNO3 though the column. Discard the preconditioning wash in appropriate waste container.

NOTE: **Pu only samples** Skip steps 3 and 5 Go to step 4 (the elute is waste from step 4)

Pu /Am samples: continue with steps 3,4 and 5.

Elute Americium

3. ___ ~~Place~~ Americium beakers under respective column.

4. X To elute the Americium from the column transfer the sample solution to the column. Rinse the beaker walls with a small amount of 8 N HNO3 add to the column. Allow the sample solution to pass though the column and collect the elute into appropriately labeled beakers. This is the Am fraction.

5. ___ ~~To the~~ Americium fraction add 5ml conc. HNO3 and 7 drops of H202. Take samples to just dryness using hot plate on low heat. DO NOT BAKE

Proceed to the "*Ferric hydroxide Precipitation*" page 4

NOTE **To extract the Pu fraction proceed to the "*Elute Plutonium* "**

Elute Plutonium

1. X Elute the Thorium from the column with 2 additions of 25ml each of 9N HCL (elute is waste)

   1. X 25ml 2. X 25ml

2. X Place Plutonium beakers under respective column.

3. X Elute Plutonium from the column with 3 additions of of the Hydrochloric acid / Ammonium Iodide solution. (9 N HCL + 0.1 NH_4I).

   1. X 30ml 2. X 20ml 3. X 20ml

4. X Add 5ml HNO_3 and 7 drops H_2O_2 to each sample beaker. Evaporate to dryness using hot plate on low heat. This may need to be repeated more than once to remove the Ammonium Iodide solution. Take samples just to dryness using hot plate on low heat. DO NOT BAKE

Note: For Iso Pu proceed to the "*Final Precipitation for Pu/Am*" page 3

For Pu241 proceed to "*Pu241 LCS You will have two sets for Pu241's one set Traced one set Plain* page 3

ETL EnviroTest LABORATORIES

Final Precipitation for Pu/AM

1.___ Add 5 -10ml conc. HCL and 3 Drops of Conc. H_2SO_4. Take to just wet dry.

2.___ Add 5 -10ml of 3 N HCL to each sample Place on hot plate just long enough to dissolve sample residue.

3.___ While samples are cooling, label clean C-tubes and disks with sample ID's.

4.___ Rinse sample solution into respective C-tube with 3 N HCL. Final volume should be 20ml or less.

5.X Add 0.3ml of 10% Ascorbic Acid to each C-tube.

6.X Add 1ml of the 1:100 Neodymium Solution to each C-tube.

7.aX For **Pu samples** :Add 2ml conc. HF to each C-tube.

b___ For **Am or Am/Cm samples:** Add 3ml HF to each C-tube.

8.X Swirl and let stand for 30 minutes.

Date/Time Precipitated: 12-11-01 DONE- 12:04
Ready - 12:34

Proceed to the *"Filtration"*

~~*Pu241 by LSC*~~

1.___ Add 2 to 3 drops of Conc. HNO_3 and 5ml DI H_2O into each of the Pu 241 beakers from step 4 of the **Elute Plutonium** process.

2.___ Warm samples slightly just long enough to dissolve the residue.

Note: Don't reduce the volume of the sample.

NA

3.___ Cool samples. While samples are cooling label LCS vials with the appropriate sample ID's

4.___ Rinse the sample into the appropriate labeled LCS vial using only 5ml DI H_2O to rinse the beakers. It is helpful to use a transfer pipette to do this. You only want a total of 10ml of sample into the LSC vial.

5.___ Pipette 15ml *Ultima Gold AB* into each LSC vial cap and shake.

6.___ Copy all paper work and place with the Pu241 samples into the count room.

ETL EnviroTest LABORATORIES

Ferric Hydroxide Precipitation for Am

1.___ Dissolve residue from step 5 of the *Elute Americium* process with 5ml HNO_3. Place on a hot plate on low heat heating briefly just until residue is dissolved.

2.___ Transfer the sample solution into a clean labeled C-tube with DI H_2O. Bring sample solution up to 30mls with DI H_2O.

3.___ Add 1ml Iron carrier (10mg Fe/ ml) to each sample.

4.___ Place samples under a hood. Slowly while stirring add conc. NH_4OH until a red/brown precipitation is formed. Check pH with pH strips to achieve a pH between 8 and 10. Add more NH_4OH.if necessary to achieve the correct pH.

5.___ Cap C-tubes and place in a centrifuge for 10min.

6.___ Carefully pour off supernate leaving the precipitation.

NA Whole page

Proceed to ***"Final Am Column"***

Final Americium Column

1.___ Dissolve the precipitate from step 6 of the "*Ferric Hydroxide*" process with 30ml of 3 N HNO_3

2.___ Add a small amount of solid ascorbic acid to each of the samples, stir gently, allow the samples to set for about 10min.

3.___ Prepare column by adding 0.35g Tru-Resin (add resin to the 1.2ml mark on column). Add 10ml 4 N HNO_3 the resin in the column and let soak 30 to 45 min.

4.___ Let the resin wash from step 1 pass though the columns. (elute is waste)

5.___ Wash column with 15ml 4 N HNO_3. (elute is waste)

6.___ Wash Column with 5ml 3 N HNO_3 (elute is waste)

7.___ Load sample onto column . Rinse C-tube with a small amount of 3 N HNO_3. (elute is waste)

8.___ Add 2ml 8 N HCL. (elute is waste)

9.___ Place clean labeled C-tube under each column. Pipette 15ml of 3 M HCL into column to elute the Am (avoid using any more than 15 ml of the 3 N HCL or it will pull off Pu and may cause interferences)

Proceed to the "*Final Precipitation for Pu/Am*" page3

895

ETL Enviro • Test
LABORATORIES LLC.

RADIOCHEMISTRY
OUT OF CONTROL EVENT REPORT

DEPARTMENT RAD-ENV PARAMETER ISO Pu
METHOD Column
COMPLETED BY DT DATE 12-5-01

OUT OF CONTROL EVENT

SAMPLE ANALYSIS

- X Sample Activity too high
- ___ Calculation error
- ___ Reporting error
- ___ Tracer % rec. not within QC limits

QUALITY CONTROL ANALYSIS

- ___ Blank out / % rec. not acceptable
- ___ LCS % rec. not acceptable
- ___ Duplicate RER not acceptable
- ___ MS % rec. not acceptable

SAMPLE ID	VOLUME	SAMPLE ID	VOLUME	SAMPLE ID	VOLUME
L4094 1-9	0.1g				

CORRECTIVE ACTION

- ___ Recalculate/report results
- ___ Reanalyze sample(s)
- X Redigest/re-extract sample(s)
- ___ Perform standard additions
- ___ Repeat QC analysis
- ___ Repeat calibration
- ___ Prepare new standards
- ___ Perform instrument service

OTHER (Explain)

Run Sample set with Tracer and
one Set with NO Tracer - use ~~5.0~~ 10 pCi activity for Tracer & STD. DT 12-5-01

RESOLUTION

APPROVED BY:
Laboratory Supervisor/Manager Dee Fauscenzi Date 12-5-01
QA/QC ___ Date ___
Case Narrative Required: Yes ___ No ___

AUTHORIZATION REQUIRED FOR WORK RELEASE

Review of QA results (Backgrounds) 14-DEC-2001 11:45:21

Detector	Parameter	Flag	Filename
25	ALL	Passed	B_025_28nov01
26	ALL	Passed	B_026_28nov01
27	ALL	Passed	B_027_29nov01
28	ALL	Passed	B_028_29nov01
29	ALL	Passed	B_029_26nov01
30	ALL	Passed	B_030_26nov01
31	ALL	Passed	B_031_26nov01
32	ALL	Passed	B_032_26nov01
33	ALL	Passed	B_033_26nov01
34	ALL	Passed	B_034_26nov01
35	ALL	Passed	B_035_26nov01
36	ALL	Passed	B_036_26nov01
37	ALL	Passed	B_037_26nov01
38	ALL	Passed	B_038_26nov01
39	ALL	Passed	B_039_26nov01
40	ALL	Passed	B_040_26nov01
41	ALL	Passed	B_041_26nov01
42	ALL	Passed	B_042_26nov01
43	ALL	Passed	B_043_26nov01
44	ALL	Passed	B_044_26nov01
45	ALL	Passed	B_045_26nov01
46	ALL	Passed	B_046_26nov01
47	ALL	Passed	B_047_26nov01
48	ALL	Passed	B_048_26nov01

APPROVAL DATE: 12-14-01 APPROVAL TIME: _____

APPROVED BY: [illegible] PROCEDURE # _____

Report completed at 14-DEC-2001 11:45:37

Review of QA results (Backgrounds AM) 14-DEC-2001 11:45:38

Detector	Parameter	Flag	Filename
25	ALL	Passed	B_025_28nov01
26	ALL	Passed	B_026_28nov01
27	ALL	Passed	B_027_29nov01
28	ALL	Passed	B_028_29nov01
29	ALL	Passed	B_029_26nov01
30	ALL	Passed	B_030_26nov01
31	ALL	Passed	B_031_26nov01
32	ALL	Passed	B_032_26nov01
33	ALL	Passed	B_033_26nov01
34	ALL	Passed	B_034_26nov01
35	ALL	Passed	B_035_26nov01
36	ALL	Passed	B_036_26nov01
37	ALL	Passed	B_037_26nov01
38	ALL	Passed	B_038_26nov01
39	ALL	Passed	B_039_26nov01
40	ALL	Passed	B_040_26nov01
41	ALL	Passed	B_041_26nov01
42	ALL	Passed	B_042_26nov01
43	ALL	Passed	B_043_26nov01
44	ALL	Passed	B_044_26nov01
45	ALL	Passed	B_045_26nov01
46	ALL	Passed	B_046_26nov01
47	ALL	Passed	B_047_26nov01
48	ALL	Passed	B_048_26nov01

APPROVAL DATE: 12-14-01 APPROVAL TIME: _____

APPROVED BY: [illegible] PROCEDURE # _____

Report completed at 14-DEC-2001 11:45:52

Review of QA results (Backgrounds PU) 14-DEC-2001 11:46:21

Detector	Parameter	Flag	Filename
25	ALL	Passed	B_025_28nov01
26	ALL	Passed	B_026_28nov01
27	ALL	Passed	B_027_29nov01
28	ALL	Passed	B_028_29nov01
29	ALL	Passed	B_029_26nov01
30	ALL	Passed	B_030_26nov01
31	ALL	Passed	B_031_26nov01
32	ALL	Passed	B_032_26nov01
33	ALL	Passed	B_033_26nov01
34	ALL	Passed	B_034_26nov01
35	ALL	Passed	B_035_26nov01
36	ALL	Passed	B_036_26nov01
37	ALL	Passed	B_037_26nov01
38	PSAREA-PU236	Above	B_038_26nov01
39	ALL	Passed	B_039_26nov01
40	ALL	Passed	B_040_26nov01
41	ALL	Passed	B_041_26nov01
42	PSAREA-PU236	Above	B_042_26nov01
43	ALL	Passed	B_043_26nov01
44	ALL	Passed	B_044_26nov01
45	ALL	Passed	B_045_26nov01
46	ALL	Passed	B_046_26nov01
47	ALL	Passed	B_047_26nov01
48	ALL	Passed	B_048_26nov01

APPROVAL DATE: 12-14-01 APPROVAL TIME: _____

APPROVED BY: _____ PROCEDURE # _____

Report completed at 14-DEC-2001 11:46:36

Review of QA results (Backgrounds UU) 14-DEC-2001 11:46:51

Detector	Parameter	Flag	Filename
25	ALL	Passed	B_025_28nov01
26	ALL	Passed	B_026_28nov01
27	ALL	Passed	B_027_29nov01
28	ALL	Passed	B_028_29nov01
29	ALL	Passed	B_029_26nov01
30	ALL	Passed	B_030_26nov01
31	ALL	Passed	B_031_26nov01
32	ALL	Passed	B_032_26nov01
33	ALL	Passed	B_033_26nov01
34	ALL	Passed	B_034_26nov01
35	ALL	Passed	B_035_26nov01
36	ALL	Passed	B_036_26nov01
37	ALL	Passed	B_037_26nov01
38	ALL	Passed	B_038_26nov01
39	ALL	Passed	B_039_26nov01
40	ALL	Passed	B_040_26nov01
41	ALL	Passed	B_041_26nov01
42	ALL	Passed	B_042_26nov01
43	ALL	Passed	B_043_26nov01
44	ALL	Passed	B_044_26nov01
45	ALL	Passed	B_045_26nov01
46	ALL	Passed	B_046_26nov01
47	ALL	Passed	B_047_26nov01
48	ALL	Passed	B_048_26nov01

APPROVAL DATE: 12-14-01 APPROVAL TIME: _____

APPROVED BY: DJ PROCEDURE # _____

Report completed at 14-DEC-2001 11:47:05

Review of QA results (Daily Pulser Check) 14-DEC-2001 08:26:49

Detector	Parameter	Flag	Filename
25	ALL	Passed	D_025_NONE
26	ALL	Passed	D_026_NONE
27	ALL	Passed	D_027_NONE
28	ALL	Passed	D_028_NONE
29	ALL	Passed	D_029_NONE
30	ALL	Passed	D_030_NONE
31	ALL	Passed	D_031_NONE
32	ALL	Passed	D_032_NONE
33	ALL	Passed	D_033_NONE
34	ALL	Passed	D_034_NONE
35	ALL	Passed	D_035_NONE
36	ALL	Passed	D_036_NONE
37	ALL	Passed	D_037_NONE
38	ALL	Passed	D_038_NONE
39	ALL	Passed	D_039_NONE
40	ALL	Passed	D_040_NONE
41	ALL	Passed	D_041_NONE
42	ALL	Passed	D_042_NONE
43	ALL	Passed	D_043_NONE
44	ALL	Passed	D_044_NONE
45	ALL	Passed	D_045_NONE
46	ALL	Passed	D_046_NONE
47	ALL	Passed	D_047_NONE
48	ALL	Passed	D_048_NONE

APPROVAL DATE: 12-14-01 APPROVAL TIME: _____

APPROVED BY: DT PROCEDURE # _____

Report completed at 14-DEC-2001 08:27:02

Review of QA results (Daily Pulser Check) 12-DEC-2001 08:02:44

Detector	Parameter	Flag	Filename
25	ALL	Passed	D_025_NONE
26	ALL	Passed	D_026_NONE
27	ALL	Passed	D_027_NONE
28	ALL	Passed	D_028_NONE
29	ALL	Passed	D_029_NONE
30	ALL	Passed	D_030_NONE
31	ALL	Passed	D_031_NONE
32	ALL	Passed	D_032_NONE
33	ALL	Passed	D_033_NONE
34	ALL	Passed	D_034_NONE
35	ALL	Passed	D_035_NONE
36	ALL	Passed	D_036_NONE
37	ALL	Passed	D_037_NONE
38	ALL	Passed	D_038_NONE
39	ALL	Passed	D_039_NONE
40	ALL	Passed	D_040_NONE
41	ALL	Passed	D_041_NONE
42	ALL	Passed	D_042_NONE
43	ALL	Passed	D_043_NONE
44	ALL	Passed	D_044_NONE
45	ALL	Passed	D_045_NONE
46	ALL	Passed	D_046_NONE
47	ALL	Passed	D_047_NONE
48	ALL	Passed	D_048_NONE

APPROVAL DATE: 12/12/01 APPROVAL TIME: _____

APPROVED BY: DDB PROCEDURE # _____

Report completed at 12-DEC-2001 08:02:56

RAD# 11

ISO# 354

CERTIFICATE OF CALIBRATION
ALPHA STANDARD SOLUTION

Radionuclide	Pu-242	Customer:	CORE LABORATORIES
Half Life:	(3.76 ± 0.02) x 10^5 years	P.O.No.:	57210-62697
Catalog No.:	7242-100N	Reference Date:	1 August 1997 12:00 PST.
Source No.:	561-99-3	Contained Radioactivity:	Pu-242: 104.7 nCi (3874 Bq)

Description of Solution

a. Mass of solution: 5.60411 g in 5 ml flame sealed ampoule

b. Chemical form: Plutonium nitrate in 4 M nitric acid

c. Carrier content: None added

d. Density: 1.130 gram/ml @ 20°C.

Radioimpurities

See technical data sheet.

Radioactive Daughters

See technical data sheet.

Radionuclide Concentration

Pu-242: 18.68 nCi/g

Method of Calibration

This source was prepared from a weighed aliquot of a calibrated solution whose concentration in μCi/gram was determined by a liquid scintillation counter.

Uncertainty of Measurement

a. Systematic uncertainty in instrument calibration:	±3.0%
b. Random uncertainty in assay:	±2.1%
c. Random uncertainty in weighing(s):	±0.1%
d. Total uncertainty at the 99% confidence level:	±3.7%

NIST Traceability

This calibration is implicitly traceable to the National Institute of Standards and Technology.

Leak Test(s)

See reverse side for Leak Test(s) applied to this source.

Notes

1. IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay(and later NIST certification) of Standard Reference Materials. (As in NRC Regulatory Guide 4.15)

QUALITY CONTROL

6 AUG 97

Date Signed

ISOTOPE PRODUCTS LABORATORIES
1800 N. KEYSTONE STREET
BURBANK, CALIFORNIA 91504
818·843·7000 FAX 818·843·6168

ISOTOPE PRODUCTS LABORATORIES

porate and
in Laboratory
0 N. Keystone Street
bank, California
04

-843-7000
818-843-6168

Pu-242 TECHNICAL DATA

The Pu-242 used to prepare your order was taken from Isotope Products Laboratories Lot #7202 and had the following composition as of January 1, 1996.

NUCLIDE	ATOM%	ACTIVITY%	% ALPHA
Pu-238	0.004	2.880	14.38356
Pu-239	0.005	0.012	0.063922
Pu-240	0.020	0.188	0.964733
Pu-241	0.018	80.087	_____
Pu-242	99.951	16.516	84.58782
Pu-244	0.000	_____	1.52E-6

Isotopic composition provided by New Brunswick Laboratory.

Am-241 (daughter) removed on 5 Feb 96

No other alpha emitting nuclides were detected.

If you have any questions, please contact Technical Service.

RADIOACTIVE MATERIAL INFORMATION

Source/Stock Standard

RAD#: 011 Iso#(cross ref.) 354

Date Received: 11/15/97
Received by: MDG

NIST Traceable: Yes
Certificate Filed: Yes

Nuclide: Pu-242
Manufacturer: Isotope Prod
Serial Number: 561-99-3
Date of Calibration: 08/01/97
Matrix: 4M HNO3
Mass/Volume: 5.6060g
Activity: 18.68 nCi/g

Half-Life: 1.37E+08 days
Activity at DOC: 1.05E+05 pCi

Today's Date: 11/8/01
Activity Today: 1.05E+05 pCi

Stock/Primary Solution

RAD#	Prep Date	Final Volume	Activity at DOC	Decay Correction to Date	Disposal Date
011-00	01/19/99	1000 mL	104.7 pCi/mL	104.7 pCi/mL	

Working Solutions

RAD#	Prep Date	User Soln ID	Volume of User Soln Used	Activity of User Soln	Final Volume	**Activity**	**Decay Correction to Date**	Disposal Date
011-01			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
011-02	02/23/99		50 mL	1.3 pCi/mL	500 mL	0.1 pCi/mL	0.13 pCi/mL	5/17/01 disposed
011-03	11/23/99	011-00	10 mL	104.7 pCi/mL	1000 mL	1.0 pCi/mL	1.04699 pCi/mL	expired
011-04	04/12/00	011-00	100 mL	104.7 pCi/mL	2000 mL	5.2 pCi/mL	5.23496 pCi/mL	
011-05	05/11/00	011-04	25 mL	5.2 pCi/mL	1000 mL	0.1 pCi/mL	0.130 pCi/mL	
011-06	11/02/00	011-04	50 mL	5.2 pCi/mL	2000 mL	0.1 pCi/mL	0.130 pCi/mL	
011-07	04/05/01	011-00	100 mL	104.7 pCi/mL	2000 mL	5.2 pCi/mL	5.23496 pCi/mL	
011-08	08/03/01	011-00	50 mL	104.7 pCi/mL	1000 mL	5.2 pCi/mL	5.23496 pCi/mL	
011-09	08/08/01	011-00	10 mL	104.7 pCi/mL	1000 mL	1.0 pCi/mL	1.04699 pCi/mL	
011-10	11/08/01	011-00	50 mL	104.7 pCi/mL	1000 mL	5.2 pCi/mL	5.23496 pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	

ETL Enviro-Test LABORATORIES

RADIOACTIVE STANDARD PREPARATION FORM

Date: 11-8-01 , RAD# (Standard ID): 011-10

Prepared by: DT

Analysis ID: _____ Nuclide: Pu-242

Stock Solution ☐

Serial # : _____ Witness: _____

Original Activity: _____

Gross Weight of syringe: _____

Empty Weight of syringe: _____

Net weight of standard: _____

Standard activity: _____

Dilution volume: _____

Dilutent: _____

Calculated activity: _____

Final activity: _____

(Decay corrected to): _____

Expiration: _____

11-8-01

Secondary Stock ☐ **Tertiary Stock** ☐ **Working Solution** ☒

Stock RAD#: 011-00 Witness: CLP

Stock activity: 01400

Volume of stock used: 50.0mls

Dilution volume: 1000mls

Dilutent: 1N HNO_3

Calculated activity: 5.2 pCi/ml

Final Activity: 5.2 pCi/ml

(Decay corrected to): 11-8-01

Expiration: 11-8-02

Form RadStdPrep, Revision 0, Effective Date 7/5/01

KNJ H 011-00

STANDARD PREPARATION WORKSHEET

Isotope Number: 354.00

Radionuclide: Pu 242

Date of Preparation: 1/19/99

Prepared by: MG

Isotope Number of Stock Solution: N/A IP # 561-99-3

PREPARATION NOTES:

1) Amount of Stock Solution measured in volumetric flask.

GROSS AMPULE WT: 9.7794 g

EMPTY AMPULE WT: 4.1734 g

NET STANDARD WT: 5.6060 g

ACTIVITY: 18.68 nCi/g 104.7 nCi = 104700 pCi

2) Amount and type of dilution measured in volumetric flask

5.6060 g of STANDARD DILUTED TO 1000 mL IN 1N HNO3

3) Final Concentration.

104.7 pCi/mL ✓ MN 1/21/99

4) Notes, Comments, and Calculations. WITNESSED BY 1-19-99

QC26 EFF 07-15-94:REV 2

RAD #045

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 · U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

58593-277

Pu-239 5 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared using an aliquot measured gravimetrically from a master radionuclide solution standard. The master radionuclide solution standard was calibrated by the Department Des Applications Et De La Metrologie Des Rayonnements Ionisants (DAMRI), Paris, France, as Number 24148.

Radionuclide purity and calibration were checked by germanium gamma-ray spectrometry and liquid scintillation counting. The nuclear decay rate and assay date for this source are given below.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

ISOTOPE:	Pu-239
ACTIVITY (dps):	3.662 E+04
HALF-LIFE:	24131 years
CALIBRATION DATE:	May 10, 1999 12:00 EST
TOTAL UNCERTAINTY*:	5.0%

*99% confidence level.

5.43845 grams 3M HNO_3 solution.

Impurities detected (activity in dps/vial on May 10, 1999):

Am-241 297.04
Pu-240 1205.24
Pu-241 2152.47
Pu-242 0.17

P O NUMBER 57210-990927-DPI, Item 1

PREPARED BY: M. A. Currie for
E. A. Taskaev, Radiochemist

Q A APPROVED: J M Mt 10-11-99

RADIOACTIVE MATERIAL INFORMATION

Source/Stock Standard

RAD#: 045

Date Received: 09/13/99
Received by: MDG

NIST Traceable: Yes
Certificate Filed: Yes

Nuclide:	Pu-239
Manufacturer:	Analytics
Serial Number:	58593-277
Date of Calibration:	05/10/99
Matrix:	3M HNO3
Mass/Volume:	5.4385g
Activity:	36620 DPS

Half-Life: 8.81E+06 days
Activity at DOC: 9.90E+05 pCi

Today's Date: 8/8/01
Activity Today: 9.90E+05 pCi

Stock/Primary Solution

RAD#	Prep Date	Final Volume	Activity at DOC	Decay Correction to Date	Disposal Date
045-00	04/12/00	1000 mL	989.7 pCi/mL	989.7 pCi/mL	

Working Solutions

RAD#	Prep Date	User Soln ID	Volume of User Soln Used	Activity of User Soln	Final Volume	**Activity**	**Decay Correction to Date**	Disposal Date
045-01	04/12/00	045-00	100 mL	989.7 pCi/mL	1000 mL	99.0 pCi/mL	98.9636 pCi/mL	
045-02	04/12/00	045-01	25 mL	99.0 pCi/mL	1000 mL	2.5 pCi/mL	2.47484 pCi/mL	6/8/00 used all
045-03	05/11/00	045-02	50 mL	2.5 pCi/mL	1000 mL	0.1 pCi/mL	0.12499 pCi/mL	
045-04	06/08/00	045-01	25 mL	99.0 pCi/mL	1000 mL	2.5 pCi/mL	2.47484 pCi/mL	
045-05	05/15/01	045-01	5 mL	99.0 pCi/mL	2000 mL	0.2 pCi/mL	0.24748 pCi/mL	
045-06	06/13/01	045-01	25 mL	99.0 pCi/mL	500 mL	5.0 pCi/mL	4.94968 pCi/mL	
045-07	08/08/01	045-01	10 mL	99.0 pCi/mL	1000 mL	1.0 pCi/mL	0.98994 pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	

ETL EnviroTest LABORATORIES

RADIOACTIVE STANDARD PREPARATION FORM

Date: 6-13-01
Prepared by: DT
Analysis ID: 13463-11

RAD#(standard ID): 045-01 6-13-01
Nuclide: Pu-239

Stock Solution ☐

Witness:

Serial #:
Original Activity:

Gross weight of ampoule:
Empty weight of ampoule:
Net weight of standard:
Standard activity:

Dilution volume:
Dilutent:
Calculated activity:

DT 6-13-01

Final activity:
(Decay corrected to):
Expiration:

Secondary Stock ☐
Tertiary Stock ☐
Working Solution ☒

Witness: DT

Stock RAD#: 045-01
Stock activity: 98.8 pCi/ml

Volume of stock used: 25 mls
Dilution volume: 500 mls
Dilutent: 1N HNO3
Calculated activity: 4.9 pCi/ml

Final activity: 4.9 pCi/ml
(Decay corrected to): 6-14-01
Expiration: 6-13-02

Form RadStdPrep, Revision 0, Effective Date 3/10/00

ETL EnviroTest LABORATORIES

RADIOACTIVE STANDARD PREPARATION FORM

Date: 4/12/00
Prepared by: [illegible]
Analysis ID: _____

RAD#(standard ID): 045-01
Nuclide: Pu-239

Stock Solution ☐

Witness: N/A

Serial #: N/A
Original Activity: _____

Gross weight of ampoule: _____
Empty weight of ampoule: _____
Net weight of standard: _____
Standard activity: _____

Dilution volume: _____
Dilutent: _____
Calculated activity: _____

Final activity: N/A
(Decay corrected to): _____
Expiration: _____

Secondary Stock ☒
Tertiary Stock ☐
Working Solution ☐

Witness: [illegible]

Stock RAD#: 045-00
Stock activity: 988.5 pCi/mL

Volume of stock used: 100 mL
Dilution volume: 1000 mL
Dilutent: 3N HNO_3
Calculated activity: 98.9 pCi/mL

Final activity: 98.8 pCi/mL
(Decay corrected to): 4/12/00
Expiration: 4/12/01

ETL EnviroTest LABORATORIES

RADIOACTIVE STANDARD PREPARATION FORM

Date: 4/12/00

RAD#(standard ID): 045-00

Prepared by: MXG

Analysis ID:

Nuclide: Pu 239

Stock Solution ☒

Witness: [illegible]

Serial #: 58593-277

Original Activity: 0.990 µCi

Gross weight of ampoule: 9.1368 g

Empty weight of ampoule: ~~3.6968~~ 3.6973 g MXG 4/12/00

Net weight of standard: 5.4395 g

Standard activity: 988740 pCi

Dilution volume: 1000 mL

Dilutent: 3N HNO_3

Calculated activity: 988.7 pCi/mL

Final activity: 988.5 pCi/mL

(Decay corrected to): 4/12/00

Expiration: 4/12/05

Secondary Stock ☐

Tertiary Stock ☐

Working Solution ☐

Witness: N/A

Stock RAD#: N/A

Stock activity:

Volume of stock used:

Dilution volume:

Dilutent:

Calculated activity:

Final activity: N/A

(Decay corrected to):

Expiration:

Form RadStdPrep, Revision 0, Effective Date 3/10/00

Raw Data for Uranium

ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 14:11:09

```
*   ***************************************************************************
pectral File: ND_AMS_ARCHIVE_S:S_L4094UU$025_UU.CNF
*******************************************************************************
                                        *
ATCH ID:                    L4094UU     *   SAMPLE ID:                    025
AMPLE DATE:       4-DEC-2001 00:00      *   ALIQUOT:        5.000E-01   gram
AMPLE TITLE:                L4094-1     *   DETECTOR NUMBER:              025
CQ DATE:         12-DEC-2001 08:20      *   AVERAGE EFFICIENCY:         24.14%
LAPSED LIVE TIME:             7205.     *   RECOVERY:                  107.58%
RACER ID:                 RAD094-06     *   TRACER FWHM (kev):         121.33
AMBDA VALUE:                  2000.     *   ROI TYPE:                  MANUAL
RACER DPM AT SAMPLE DATE:   21.298      *   CONFIDENCE FACTOR:           4.65
AMPLE MATRIX:                 SOLID     *   LLD CONSTANT:                2.71
NERGY CAL DATE: 27-NOV-2001 18:08       *   EFF CAL DATE:  27-NOV-2001 18:08
KG FILENAME:          B_025_28NOV01     *   BKG ELAPSED TIME:           60002.
                                        *
*******************************************************************************
```

NUCLIDE ACTIVITY SUMMARY

UCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
232	5291.9	662.88	0.12	99.8	1.919E+01	1.736E+00	1.251E-01
-234	4761.5	87.88	0.12	99.8	2.543E+00	6.015E-01	1.251E-01
-235	4385.5	6.88	0.12	80.9	2.456E-01	1.907E-01	1.543E-01
-238	4184.4	52.76	0.24	100.2	1.520E+00	4.472E-01	1.438E-01

****

** acer FWHM > 80.0 Kev ***

DJ 12-13-01
nalyst Date

eviewer Date

ENVIROTEST LABORATORIES LLC.

ross Sample Counts Within Peak Regions Generated: 13-DEC-2001 14:11:05.84

or ID: 25 Acquisition Start: 12-DEC-2001 08:20:15.01
ime: 0 02:00:05.00 Real Time: 0 02:00:06.00
atch Id: L4094UU Sample Id: 025
ample Type: UU

k	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4142.38	53	0	127.29	220.75	183	72	7.36E-03	13.7	
2	0	4370.68	7	0	0.00	297.00	287	31	9.72E-04	37.8	
3	0	4720.93	88	0	124.06	415.19	373	77	1.22E-02	10.7	
4	0	5254.18	663	0	121.33	598.09	562	72	9.20E-02	3.9	

ackground Counts Within Peak Regions Generated: 13-DEC-2001 14:11:06.87

Acquisition Start: 28-NOV-2001 08:56:26.01
ive Time: 0 16:40:02.00 Real Time: 0 16:40:02.00

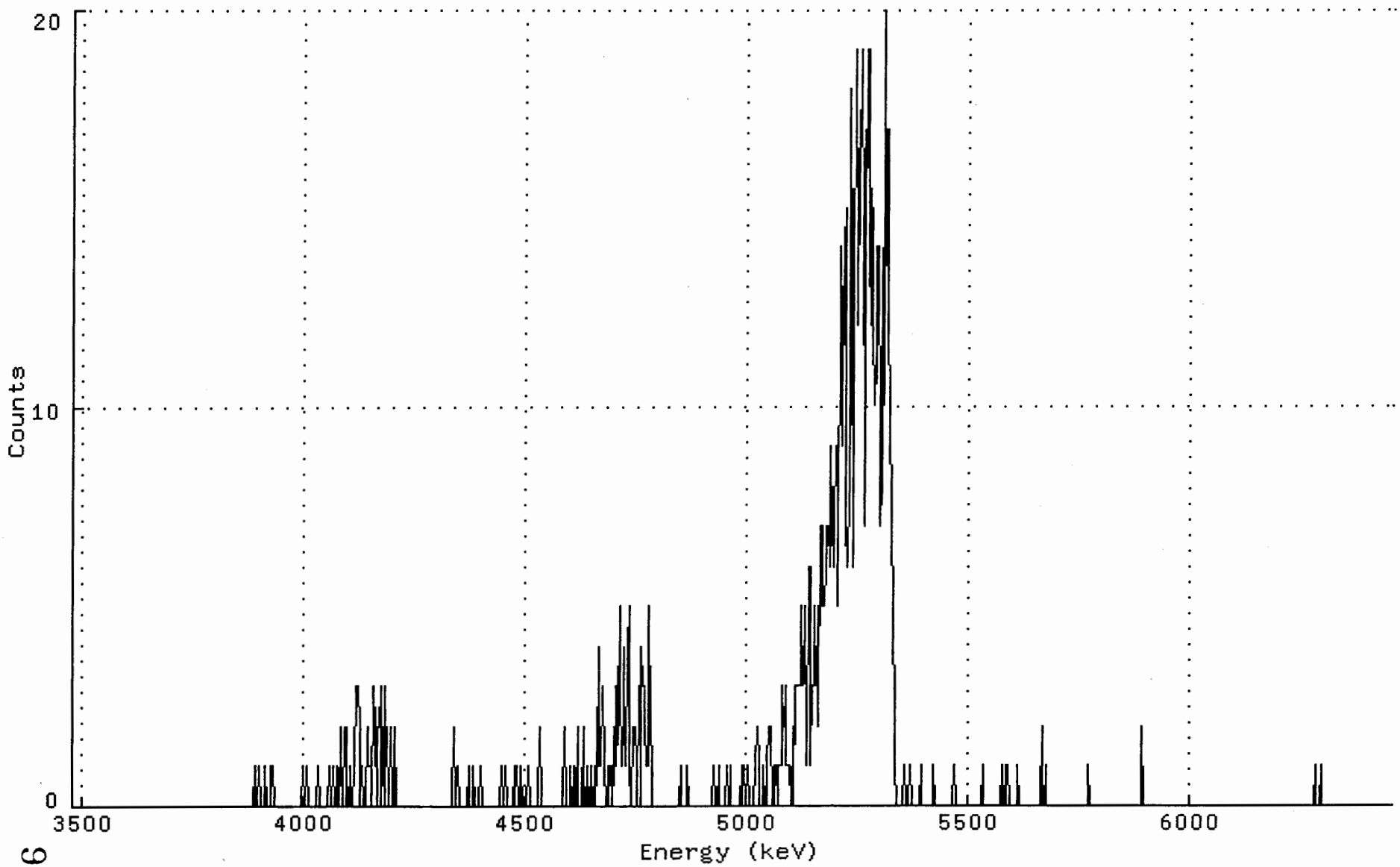
k	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4135.61	2	0	80.10	218.50	183	72	3.33E-05	70.7	
2	0	4385.74	1	0	3.08	302.00	287	31	1.67E-05	100.0	
3	0	4708.83	1	0	3.08	411.00	373	77	1.67E-05	100.0	
4	0	5252.61	1	0	3.08	597.50	562	72	1.67E-05	100.0	

et Sample Counts Within Peak Regions Generated: 13-DEC-2001 14:11:07.29

k	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4142.38*	53	0	127.29	220.75	183	72	7.32E-03	13.8	
2		4370.68*	7	0	0.00	297.00	287	31	9.55E-04	38.5	
3		4720.93*	88	0	124.06	415.19	373	77	1.22E-02	10.7	
4	0	5254.18*	663	0	121.33	598.09	562	72	9.20E-02	3.9	

ag: "*" = Peak area was modified by background subtraction

Spectr : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHI S]S_L4094UU$025_UU.CNF;2
Title : 025
Sample Title: L4094-1
Start Time: 12-DEC-2001 08:20 Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.47098E+03
Real Time : 0 02:00:06.00 Sample ID : 025 Energy Slope : 3.07643E+00
Live Time : 0 02:00:05.00 Sample Type: UU Energy Quad : -1.58728E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 14:11:44

****

pectral File: ND_AMS_ARCHIVE_S:S_L4094UU$026_UU.CNF

****

ATCH ID:	L4094UU	SAMPLE ID:	026
AMPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	5.000E-01 gram
AMPLE TITLE:	L4094-2	DETECTOR NUMBER:	026
CQ DATE:	12-DEC-2001 08:20	AVERAGE EFFICIENCY:	26.57%
LAPSED LIVE TIME:	7203.	RECOVERY:	80.68%
RACER ID:	RAD094-06	TRACER FWHM (kev):	180.56
AMBDA VALUE:	2000.	ROI TYPE:	STANDARD
RACER DPM AT SAMPLE DATE:	21.298	CONFIDENCE FACTOR:	4.65
AMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
NERGY CAL DATE:	28-NOV-2001 10:56	EFF CAL DATE:	28-NOV-2001 10:56
KG FILENAME:	B_026_28NOV01	BKG ELAPSED TIME:	60003.

****

NUCLIDE ACTIVITY SUMMARY

UCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
232	5291.9	547.00	0.00	99.8	1.919E+01	1.641E+00	9.504E-02
-234	4761.5	161.88	0.12	99.8	5.677E+00	1.016E+00	1.515E-01
-235	4385.5	7.00	0.00	80.9	3.028E-01	2.304E-01	1.172E-01
-238	4184.4	56.88	0.12	100.2	1.986E+00	5.540E-01	1.509E-01

****

* acer FWHM > 80.0 Kev ***

DJ7 — 12-13-01
nalyst — Date

eviewer — Date

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 13-DEC-2001 14:11:28.96

D: tor ID: 26 Acquisition Start: 12-DEC-2001 08:20:48.01
L Time: 0 02:00:03.00 Real Time: 0 02:00:03.00
Batch Id: L4094UU Sample Id: 026
Sample Type: UU

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4146.98	57	0	134.90	232.91	194	72	7.91E-03	13.2	
2	0	4385.25	7	0	74.00	312.57	298	31	9.72E-04	37.8	
3	0	4726.58	162	0	0.00	427.96	384	76	2.25E-02	7.9	
4	0	5258.63	547	0	180.56	610.93	575	71	7.59E-02	4.3	

Background Counts Within Peak Regions Generated: 13-DEC-2001 14:11:42.30

Acquisition Start: 28-NOV-2001 18:01:36.01
Live Time: 0 16:40:03.00 Real Time: 0 16:40:04.00

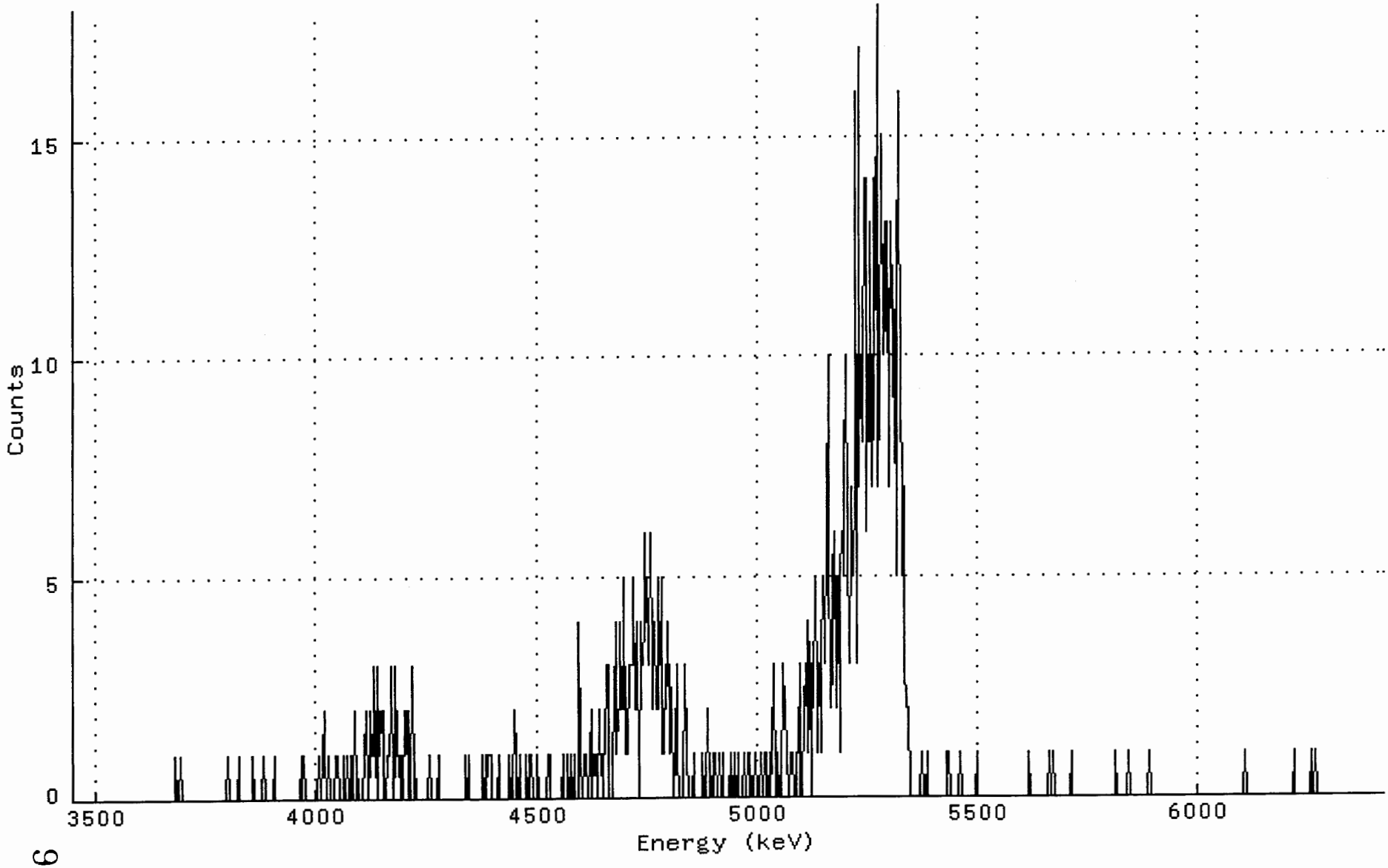
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4136.71	1	0	3.08	229.50	194	72	1.67E-05	100.0	
2	0	4386.53	0	0	0.00	313.00	298	31	0.00E+00	0.0	
3	0	4707.61	1	0	3.08	421.50	384	76	1.67E-05	100.0	
4	0	5255.96	0	0	0.00	610.00	575	71	0.00E+00	0.0	

Net Sample Counts Within Peak Regions Generated: 13-DEC-2001 14:11:42.91

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4146.98*	57	0	134.90	232.91	194	72	7.90E-03	13.3	
2		4385.25*	7	0	74.00	312.57	298	31	9.72E-04	37.8	
3		4726.58*	162	0	0.00	427.96	384	76	2.25E-02	7.9	
4	0	5258.63*	547	0	180.56	610.93	575	71	7.59E-02	4.3	

lag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHI' S]S_L4094UU$026_UU.CNF;1
Title : 026
Sample Title: L4094-2
Start Time: 12-DEC-2001 08:20 Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.43798E+03
Real Time : 0 02:00:03.00 Sample ID : 026 Energy Slope : 3.08340E+00
Live Time : 0 02:00:03.00 Sample Type: UU Energy Quad : -1.69062E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 14:12:02

****
Spectral File: ND_AMS_ARCHIVE_S:S_L4094UU$027_UU.CNF
****

BATCH ID:	L4094UU	SAMPLE ID:	027
SAMPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	3.500E-01 gram
SAMPLE TITLE:	L4094-3	DETECTOR NUMBER:	027
ACQ DATE:	12-DEC-2001 08:21	AVERAGE EFFICIENCY:	25.64%
ELAPSED LIVE TIME:	7201.	RECOVERY:	75.84%
TRACER ID:	RAD094-06	TRACER FWHM (kev):	124.96
LAMBDA VALUE:	2000.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	21.298	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	28-NOV-2001 18:01	EFF CAL DATE:	28-NOV-2001 18:01
BKG FILENAME:	B_027_29NOV01	BKG ELAPSED TIME:	60006.

****

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
U232	5291.9	495.88	0.12	99.8	2.741E+01	2.462E+00	2.388E-01
U-234	4761.5	28.00	0.00	99.8	1.547E+00	6.012E-01	1.498E-01
U-235	4385.5	0.00	0.00	80.9	0.000E+00	0.000E+00	1.848E-01
U-238	4184.4	13.64	0.36	100.2	7.506E-01	4.179E-01	3.027E-01

****

** Tracer FWHM > 80.0 Kev ***

DT 12-13-01
Analyst Date

Reviewer Date

ENVIROTEST LABORATORIES LLC.

ross Sample Counts Within Peak Regions Generated: 13-DEC-2001 14:11:51.30

et tor ID: 27 Acquisition Start: 12-DEC-2001 08:21:29.01
i ime: 0 02:00:01.00 Real Time: 0 02:00:01.00
atu Id: L4094UU Sample Id: 027
ample Type: UU

k	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4135.52	14	0	122.22	214.79	180	71	1.94E-03	26.7	
2	0	4387.38	0	0	0.00	297.50	283	30	0.00E+00	0.0	
3	0	4728.02	28	0	133.23	410.64	367	75	3.89E-03	18.9	
4	0	5259.13	496	0	124.96	590.11	555	69	6.89E-02	4.5	

ackground Counts Within Peak Regions Generated: 13-DEC-2001 14:12:00.35

Acquisition Start: 29-NOV-2001 08:38:34.01
ive Time: 0 16:40:06.00 Real Time: 0 16:40:06.00

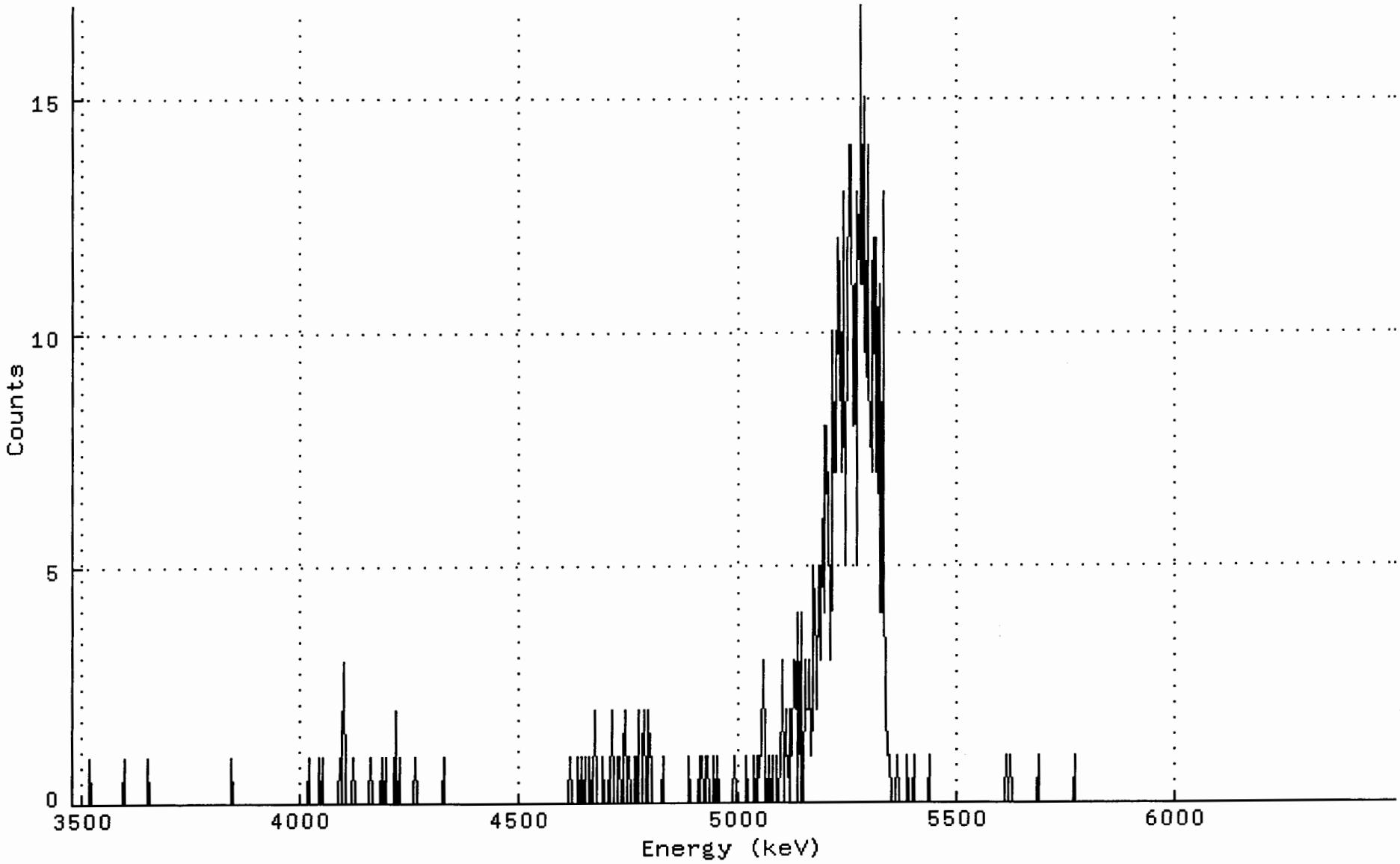
k	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4136.17	3	0	103.45	215.00	180	71	5.00E-05	57.7	
2	0	4387.38	0	0	0.00	297.50	283	30	0.00E+00	0.0	
3	0	4708.14	0	0	0.00	404.00	367	75	0.00E+00	0.0	
4	0	5255.87	1	0	3.13	589.00	555	69	1.67E-05	100.0	

et Sample Counts Within Peak Regions Generated: 13-DEC-2001 14:12:00.91

k	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4135.52*	14	0	122.22	214.79	180	71	1.89E-03	27.5	
2	[illegible]	4387.38*	0	0	0.00	297.50	283	30	0.00E+00	0.0	
3	[illegible]	4728.02*	28	0	133.23	410.64	367	75	3.89E-03	18.9	
4	0	5259.13*	496	0	124.96	590.11	555	69	6.89E-02	4.5	

ag: "*" = Peak area was modified by background subtraction

Spectr : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHI S]S_L4094UU$027_UU.CNF;1
Title : 027
Sample Title: L4094-3
Start Time: 12-DEC-2001 08:21 Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.47029E+03
Real Time : 0 02:00:01.00 Sample ID : 027 Energy Slope : 3.13482E+00
Live Time : 0 02:00:01.00 Sample Type: UU Energy Quad : -1.75360E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 14:12:27

****
pectral File: ND_AMS_ARCHIVE_S:S_L4094UU$028_UU.CNF
****

ATCH ID:	L4094UU	SAMPLE ID:	028
AMPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	3.500E-01 gram
AMPLE TITLE:	L4094-3MD	DETECTOR NUMBER:	028
CQ DATE:	12-DEC-2001 08:22	AVERAGE EFFICIENCY:	24.70%
LAPSED LIVE TIME:	7201.	RECOVERY:	96.94%
RACER ID:	RAD094-06	TRACER FWHM (kev):	93.87
AMBDA VALUE:	2000.	ROI TYPE:	STANDARD
RACER DPM AT SAMPLE DATE:	21.298	CONFIDENCE FACTOR:	4.65
AMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
NERGY CAL DATE:	29-NOV-2001 08:38	EFF CAL DATE:	29-NOV-2001 08:38
KG FILENAME:	B_028_29NOV01	BKG ELAPSED TIME:	60004.

****

NUCLIDE ACTIVITY SUMMARY

UCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
232	5291.9	610.64	0.36	99.8	2.741E+01	2.219E+00	2.468E-01
-234	4761.5	22.52	0.48	99.8	1.011E+00	4.387E-01	2.662E-01
-235	4385.5	3.00	0.00	80.9	1.661E-01	1.923E-01	1.500E-01
-238	4184.4	12.64	0.36	100.2	5.648E-01	3.260E-01	2.458E-01

****

* acer FWHM > 80.0 Kev ***

nalyst — Date 12-13-01

eviewer — Date

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 13-DEC-2001 14:12:19.67

D tor ID: 28 Acquisition Start: 12-DEC-2001 08:22:15.01
L Time: 0 02:00:01.00 Real Time: 0 02:00:02.00
Batch Id: L4094UU Sample Id: 028
Sample Type: UU

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4139.91	13	0	157.71	202.00	165	72	1.81E-03	27.7	
2	0	4362.46	3	0	0.00	277.33	270	31	4.17E-04	57.7	
3	0	4729.55	23	0	15.83	403.00	357	78	3.19E-03	20.9	
4	0	5262.96	611	0	93.87	588.85	551	72	8.48E-02	4.0	

Background Counts Within Peak Regions Generated: 13-DEC-2001 14:12:25.28

Acquisition Start: 29-NOV-2001 15:59:27.01
Live Time: 0 16:40:04.00 Real Time: 0 16:40:04.00

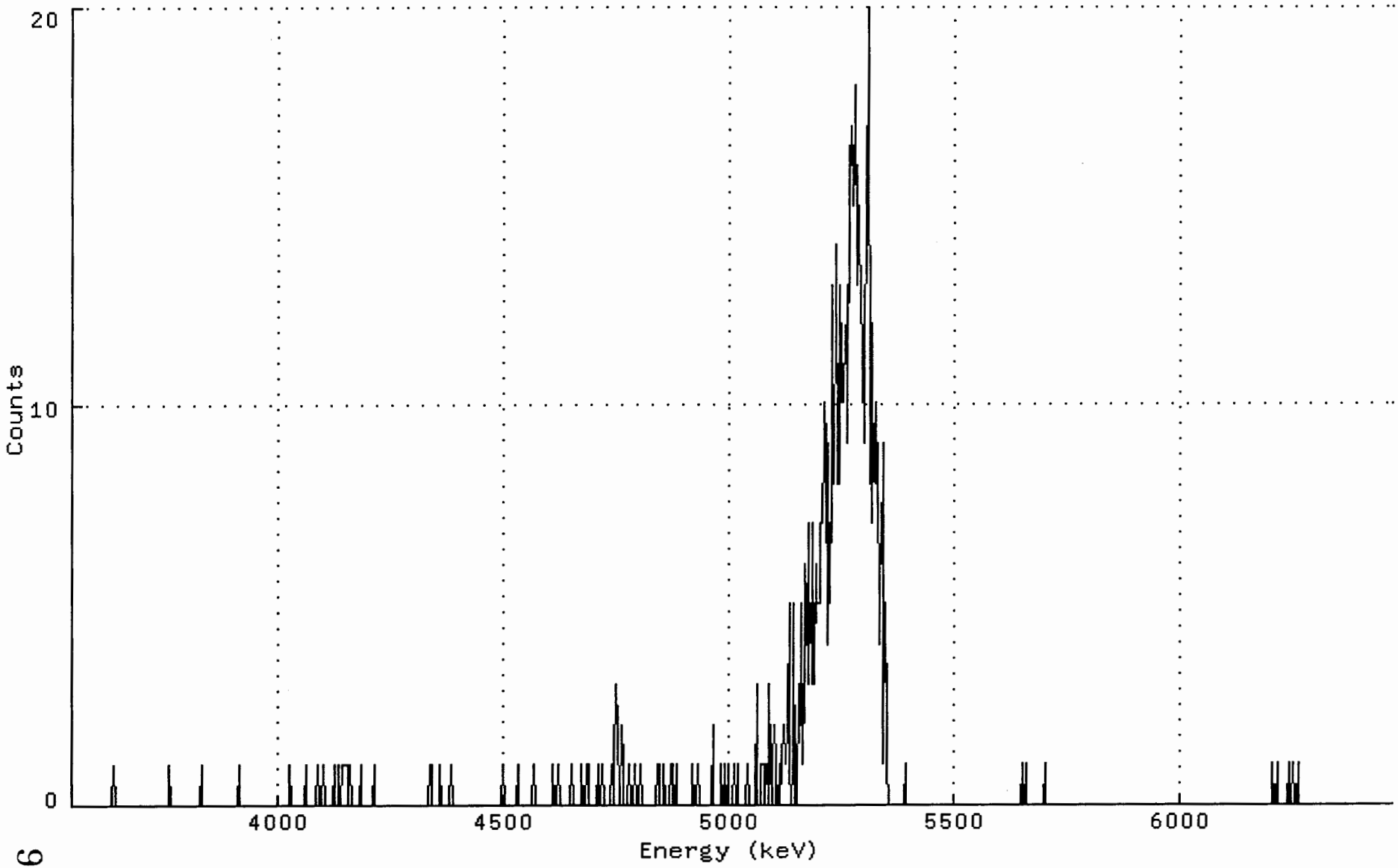
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4135.46	3	0	90.99	200.50	165	72	5.00E-05	57.7	
2	0	4385.00	0	0	0.00	285.00	270	31	0.00E+00	0.0	
3	0	4707.79	4	0	166.81	395.50	357	78	6.67E-05	50.0	
4	0	5256.27	3	0	157.71	586.50	551	72	5.00E-05	57.7	

Net Sample Counts Within Peak Regions Generated: 13-DEC-2001 14:12:25.73

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4139.91*	13	0	157.71	202.00	165	72	1.76E-03	28.6	
2		4362.46*	3	0	0.00	277.33	270	31	4.17E-04	57.7	
3		4729.55*	23	0	15.83	403.00	357	78	3.13E-03	21.3	
4	0	5262.96*	611	0	93.87	588.85	551	72	8.48E-02	4.0	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV S]S_L4094UU$028_UU.CNF;1
Title : 028
Sample Title: L4094-3MD
Start Time: 12-DEC-2001 08:22 Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.53396E+03
Real Time : 0 02:00:02.00 Sample ID : 028 Energy Slope : 3.03294E+00
Live Time : 0 02:00:01.00 Sample Type: UU Energy Quad : -1.64267E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 14:12:56

Spectral File: ND_AMS_ARCHIVE_S:S_L4094UU$029_UU.CNF

BATCH ID:	L4094UU	SAMPLE ID:	029
SAMPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	5.000E-01 gram
SAMPLE TITLE:	L4094-04	DETECTOR NUMBER:	029
ACC DATE:	12-DEC-2001 08:22	AVERAGE EFFICIENCY:	25.68%
ELAPSED LIVE TIME:	7203.	RECOVERY:	89.10%
TRACER ID:	RAD094-06	TRACER FWHM (kev):	106.49
LAMBDA VALUE:	2000.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	21.298	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	29-AUG-2001 15:49	EFF CAL DATE:	29-AUG-2001 15:49
BKG FILENAME:	B_029_26NOV01	BKG ELAPSED TIME:	60002.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
U232	5291.9	583.80	1.20	99.8	1.919E+01	1.590E+00	2.565E-01
U-234	4761.5	73.80	1.20	99.8	2.425E+00	6.041E-01	2.565E-01
U-235	4385.5	2.00	0.00	80.9	8.107E-02	1.149E-01	1.099E-01
U-238	4184.4	41.76	0.24	100.2	1.366E+00	4.391E-01	1.632E-01

** acer FWHM > 80.0 Kev ***

DJ 12-13-01
Analyst Date

Reviewer Date

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 13-DEC-2001 14:12:45.99

Detector ID: 29 Acquisition Start: 12-DEC-2001 08:22:36.01
Live Time: 0 02:00:03.00 Real Time: 0 02:00:03.00
Batch Id: L4094UU Sample Id: 029
Sample Type: UU

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4140.73	42	0	127.95	221.57	183	75	5.83E-03	15.4	
2	0	4356.56	2	0	20.36	298.00	293	32	2.78E-04	70.7	
3	0	4712.03	75	0	3.11	425.39	384	81	1.04E-02	11.5	
4	0	5258.13	585	0	106.49	624.92	587	75	8.12E-02	4.1	

Background Counts Within Peak Regions Generated: 13-DEC-2001 14:12:53.96

Acquisition Start: 26-NOV-2001 15:37:48.01
Live Time: 0 16:40:02.00 Real Time: 0 16:40:02.00

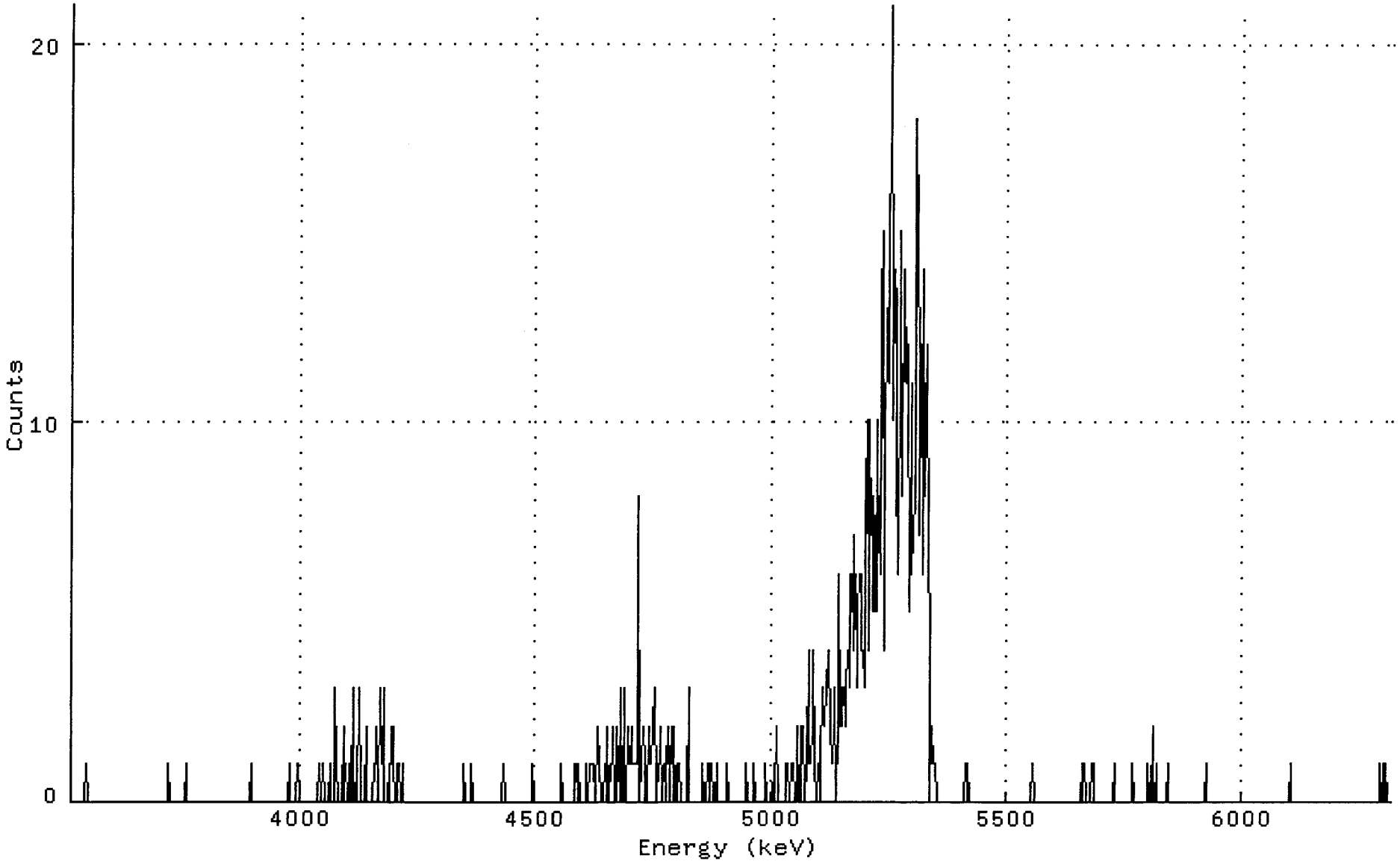
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4136.28	2	0	107.63	220.00	183	75	3.33E-05	70.7	
2	0	4386.06	0	0	0.00	308.50	293	32	0.00E+00	0.0	
3	0	4708.19	10	0	5.45	424.00	384	81	1.67E-04	31.6	
4	0	5255.64	10	0	0.00	624.00	587	75	1.67E-04	31.6	

Net Sample Counts Within Peak Regions Generated: 13-DEC-2001 14:12:54.34

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4140.73*	42	0	127.95	221.57	183	75	5.80E-03	15.5	
2		4356.56*	2	0	20.36	298.00	293	32	2.78E-04	70.7	
3		4712.03*	74	0	3.11	425.39	384	81	1.02E-02	11.7	
4	0	5258.13*	584	0	106.49	624.92	587	75	8.10E-02	4.1	

Flag: "*" = Peak area was modified by background subtraction

Spectr : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHI .S]S_L4094UU$029_UU.CNF;1
Title : 029
Sample Title: L4094-04
Start Time: 12-DEC-2001 08:22 Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.50422E+03
Real Time : 0 02:00:03.00 Sample ID : 029 Energy Slope : 2.90903E+00
Live Time : 0 02:00:03.00 Sample Type: UU Energy Quad : -1.63879E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 14:13:29

Spectral File: ND_AMS_ARCHIVE_S:S_L4094UU$030_UU.CNF

BATCH ID:	L4094UU	SAMPLE ID:	030
SAMPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	5.000E-01 gram
SAMPLE TITLE:	L4094-05	DETECTOR NUMBER:	030
ACQ DATE:	12-DEC-2001 08:22	AVERAGE EFFICIENCY:	26.52%
ELAPSED LIVE TIME:	7205.	RECOVERY:	82.08%
TRACER ID:	RAD094-06	TRACER FWHM (kev):	132.26
LAMBDA VALUE:	2000.	ROI TYPE:	MANUAL
TRACER DPM AT SAMPLE DATE:	21.298	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	30-AUG-2001 08:26	EFF CAL DATE:	30-AUG-2001 08:26
BKG FILENAME:	B_030_26NOV01	BKG ELAPSED TIME:	60005.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
U232	5291.9	555.40	0.60	99.8	1.919E+01	1.629E+00	2.180E-01
U-234	4761.5	50.00	0.00	99.8	1.727E+00	5.100E-01	9.360E-02
U-235	4385.5	0.00	0.00	80.9	0.000E+00	0.000E+00	1.155E-01
U-238	4184.4	23.64	0.36	100.2	8.130E-01	3.443E-01	1.892E-01

** acer FWHM > 80.0 Kev ***

DT 12-13-01
Analyst Date

Reviewer Date

ENVIROTEST LABORATORIES LLC.

ross Sample Counts Within Peak Regions Generated: 13-DEC-2001 14:13:26.03

ector ID: 30 Acquisition Start: 12-DEC-2001 08:22:56.01
ive Time: 0 02:00:05.00 Real Time: 0 02:00:05.00
atch Id: L4094UU Sample Id: 030
ample Type: UU

k	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4134.31	24	0	59.83	202.67	167	74	3.33E-03	20.4	
2	0	4385.75	0	0	0.00	289.00	274	31	0.00E+00	0.0	
3	0	4732.72	50	0	49.54	409.58	362	79	6.94E-03	14.1	
4	0	5254.58	556	0	132.26	594.24	551	81	7.72E-02	4.2	

ackground Counts Within Peak Regions Generated: 13-DEC-2001 14:13:27.24

Acquisition Start: 26-NOV-2001 15:37:51.01
ive Time: 0 16:40:05.00 Real Time: 0 16:40:05.00

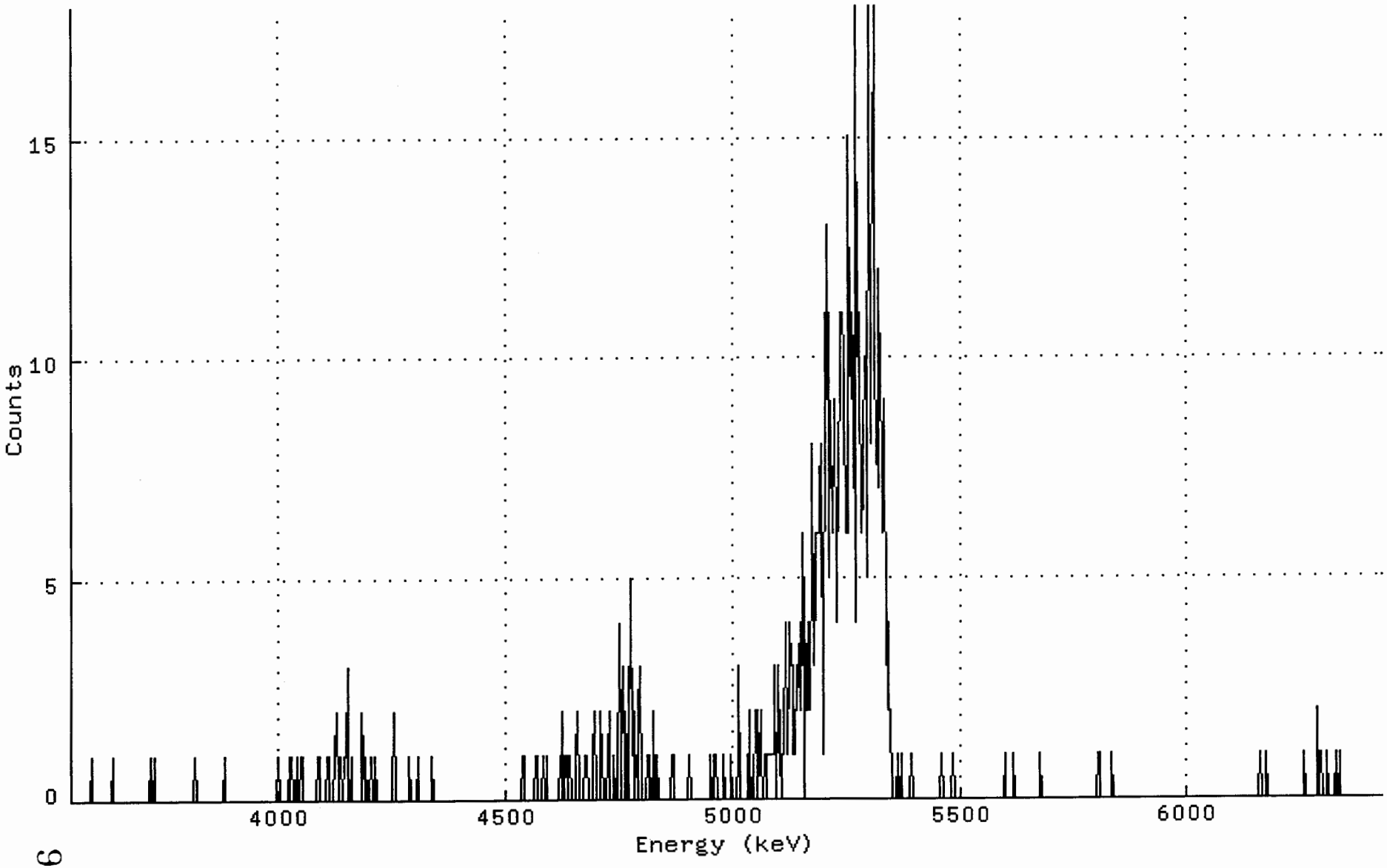
k	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4136.75	3	0	47.92	203.50	167	74	5.00E-05	57.7	
2	0	4385.75	0	0	0.00	289.00	274	31	0.00E+00	0.0	
3	0	4708.19	0	0	0.00	401.00	362	79	0.00E+00	0.0	
4	0	5245.51	5	0	137.78	591.00	551	81	8.33E-05	44.7	

Net Sample Counts Within Peak Regions Generated: 13-DEC-2001 14:13:27.64

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4134.31*	24	0	59.83	202.67	167	74	3.28E-03	20.7	
2	[illegible]	4385.75*	0	0	0.00	289.00	274	31	0.00E+00	0.0	
3	0	4732.72*	50	0	49.54	409.58	362	79	6.94E-03	14.1	
4	0	5254.58*	555	0	132.26	594.24	551	81	7.71E-02	4.2	

lag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHI S]S_L4094UU$030_UU.CNF;1
Title : 030
Sample Title: L4094-05
Start Time: 12-DEC-2001 08:22 Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.53419E+03
Real Time : 0 02:00:05.00 Sample ID : 030 Energy Slope : 2.99530E+00
Live Time : 0 02:00:05.00 Sample Type: UU Energy Quad : -1.68642E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 14:14:22

****
pectral File: ND_AMS_ARCHIVE_S:S_L4094UU$031_UU.CNF
****

ATCH ID:	L4094UU	SAMPLE ID:	031
AMPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	5.000E-01 gram
AMPLE TITLE:	L4094-6	DETECTOR NUMBER:	031
CQ DATE:	12-DEC-2001 08:23	AVERAGE EFFICIENCY:	26.39%
LAPSED LIVE TIME:	7200.	RECOVERY:	80.62%
RACER ID:	RAD094-06	TRACER FWHM (kev):	114.24
AMBDA VALUE:	2000.	ROI TYPE:	MANUAL
RACER DPM AT SAMPLE DATE:	21.298	CONFIDENCE FACTOR:	4.65
AMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
NERGY CAL DATE:	30-AUG-2001 15:41	EFF CAL DATE:	30-AUG-2001 15:41
KG FILENAME:	B_031_26NOV01	BKG ELAPSED TIME:	60002.

****

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
J232	5291.9	542.52	0.48	99.8	1.919E+01	1.648E+00	2.097E-01
J-234	4761.5	116.76	0.24	99.8	4.129E+00	8.433E-01	1.764E-01
J-235	4385.5	4.00	0.00	80.9	1.745E-01	1.751E-01	1.182E-01
J-238	4184.4	32.76	0.24	100.2	1.153E+00	4.166E-01	1.756E-01

****

*** acer FWHM > 80.0 Kev ***

Analyst _____ Date 12-13-01

Reviewer _____ Date _____

ENVIROTEST LABORATORIES LLC.

ross Sample Counts Within Peak Regions Generated: 13-DEC-2001 14:14:17.10

tor ID: 31 Acquisition Start: 12-DEC-2001 08:23:11.01
ime: 0 02:00:00.00 Real Time: 0 02:00:00.00
atch Id: L4094UU Sample Id: 031
ample Type: UU

k	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4142.63	33	0	147.53	223.79	187	70	4.58E-03	17.4	
2	0	4405.95	4	0	40.81	310.25	289	30	5.56E-04	50.0	
3	0	4743.28	117	0	68.26	422.30	381	77	1.62E-02	9.2	
4	0	5264.26	543	0	114.24	598.30	561	70	7.54E-02	4.3	

ackground Counts Within Peak Regions Generated: 13-DEC-2001 14:14:19.98

Acquisition Start: 26-NOV-2001 15:37:54.01
ive Time: 0 16:40:02.00 Real Time: 0 16:40:02.00

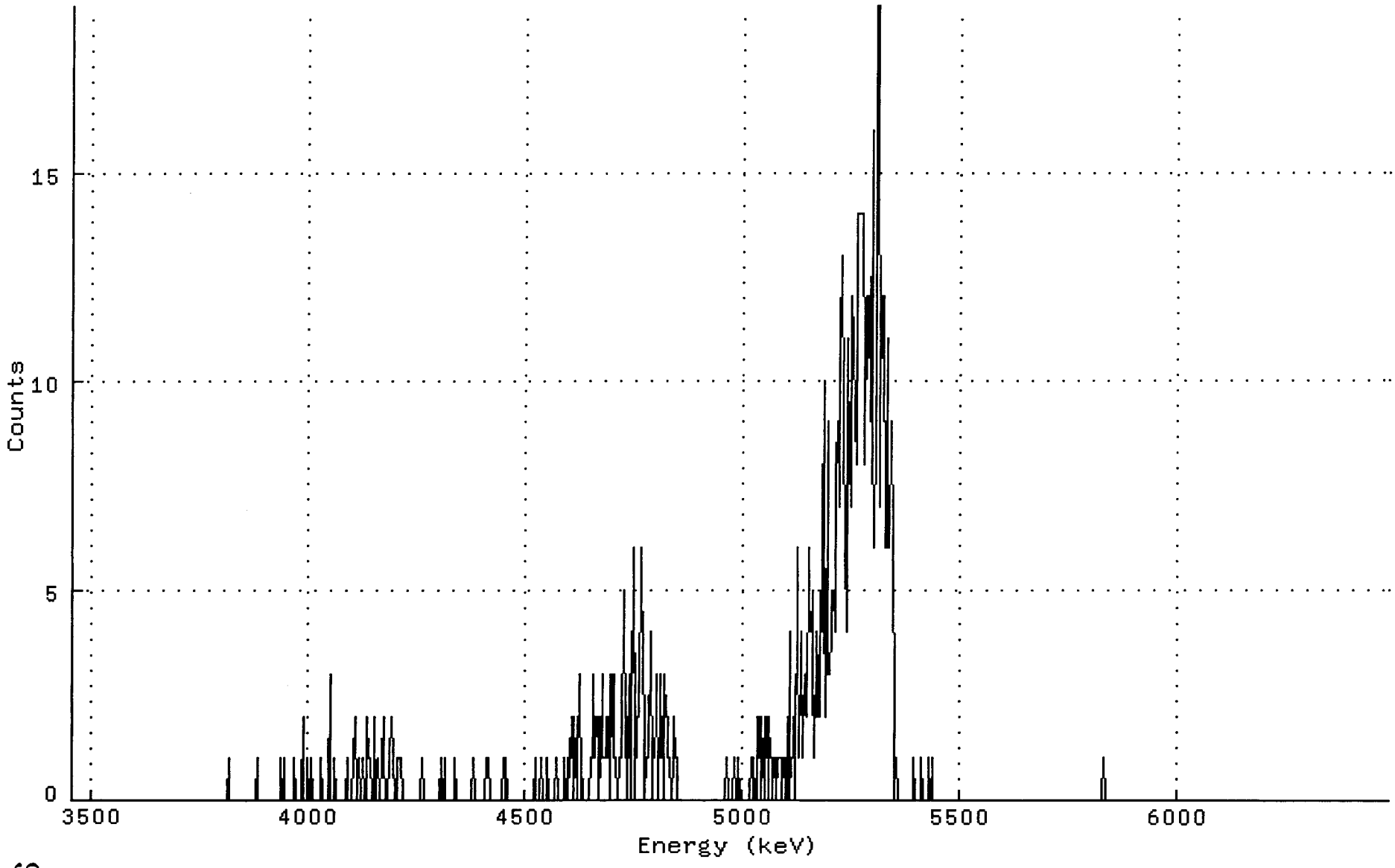
k	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4135.63	2	0	37.67	221.50	187	70	3.33E-05	70.7	
2	0	4385.48	0	0	0.00	303.50	289	30	0.00E+00	0.0	
3	0	4733.42	2	0	21.97	419.00	381	77	3.33E-05	70.7	
4	0	5256.07	4	0	46.69	595.50	561	70	6.67E-05	50.0	

et Sample Counts Within Peak Regions Generated: 13-DEC-2001 14:14:20.54

k	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4142.63*	33	0	147.53	223.79	187	70	4.55E-03	17.5	
2		4405.95*	4	0	40.81	310.25	289	30	5.56E-04	50.0	
3		4743.28*	117	0	68.26	422.30	381	77	1.62E-02	9.3	
4	0	5264.26*	543	0	114.24	598.30	561	70	7.53E-02	4.3	

ag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHI S]S_L4094UU$031_UU.CNF;1
Title : 031
Sample Title: L4094-6
Start Time: 12-DEC-2001 08:23 Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.44894E+03
Real Time : 0 02:00:00.00 Sample ID : 031 Energy Slope : 3.13901E+00
Live Time : 0 02:00:00.00 Sample Type: UU Energy Quad : -1.75261E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 14:15:06

****
pectral File: ND_AMS_ARCHIVE_S:S_L4094UU$032_UU.CNF
****

ATCH ID:	L4094UU	SAMPLE ID:	032
AMPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	5.000E-01 gram
AMPLE TITLE:	L4094-07	DETECTOR NUMBER:	032
CQ DATE:	12-DEC-2001 08:23	AVERAGE EFFICIENCY:	24.45%
LAPSED LIVE TIME:	7200.	RECOVERY:	95.97%
RACER ID:	RAD094-06	TRACER FWHM (kev):	136.05
AMBDA VALUE:	2000.	ROI TYPE:	MANUAL
RACER DPM AT SAMPLE DATE:	21.298	CONFIDENCE FACTOR:	4.65
AMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
NERGY CAL DATE:	31-AUG-2001 11:09	EFF CAL DATE:	31-AUG-2001 11:09
KG FILENAME:	B_032_26NOV01	BKG ELAPSED TIME:	60007.

****

NUCLIDE ACTIVITY SUMMARY

UCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
232	5291.9	598.40	0.60	99.8	1.919E+01	1.570E+00	2.023E-01
-234	4761.5	111.76	0.24	99.8	3.583E+00	7.392E-01	1.599E-01
-235	4385.5	4.00	0.00	80.9	1.582E-01	1.587E-01	1.072E-01
-238	4184.4	50.76	0.24	100.2	1.620E+00	4.749E-01	1.592E-01

****

** acer FWHM > 80.0 Kev ***

DJ 12-13-01
Analyst Date

Reviewer Date

ENVIROTEST LABORATORIES LLC.

oss Sample Counts Within Peak Regions Generated: 13-DEC-2001 14:15:02.48

or ID: 32 Acquisition Start: 12-DEC-2001 08:23:36.01
ime: 0 02:00:00.00 Real Time: 0 02:00:00.00
tch Id: L4094UU Sample Id: 032
mple Type: UU

.	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
	0	4137.41	51	0	171.40	219.24	184	71	7.08E-03	14.0	
!	0	4376.07	4	0	3.08	298.75	287	31	5.56E-04	50.0	
;	0	4742.32	112	0	135.51	422.09	385	73	1.56E-02	9.4	
.	0	5253.81	599	0	136.05	597.11	556	77	8.32E-02	4.1	

ackground Counts Within Peak Regions Generated: 13-DEC-2001 14:15:03.61

Acquisition Start: 26-NOV-2001 15:37:58.01
ive Time: 0 16:40:07.00 Real Time: 0 16:40:07.00

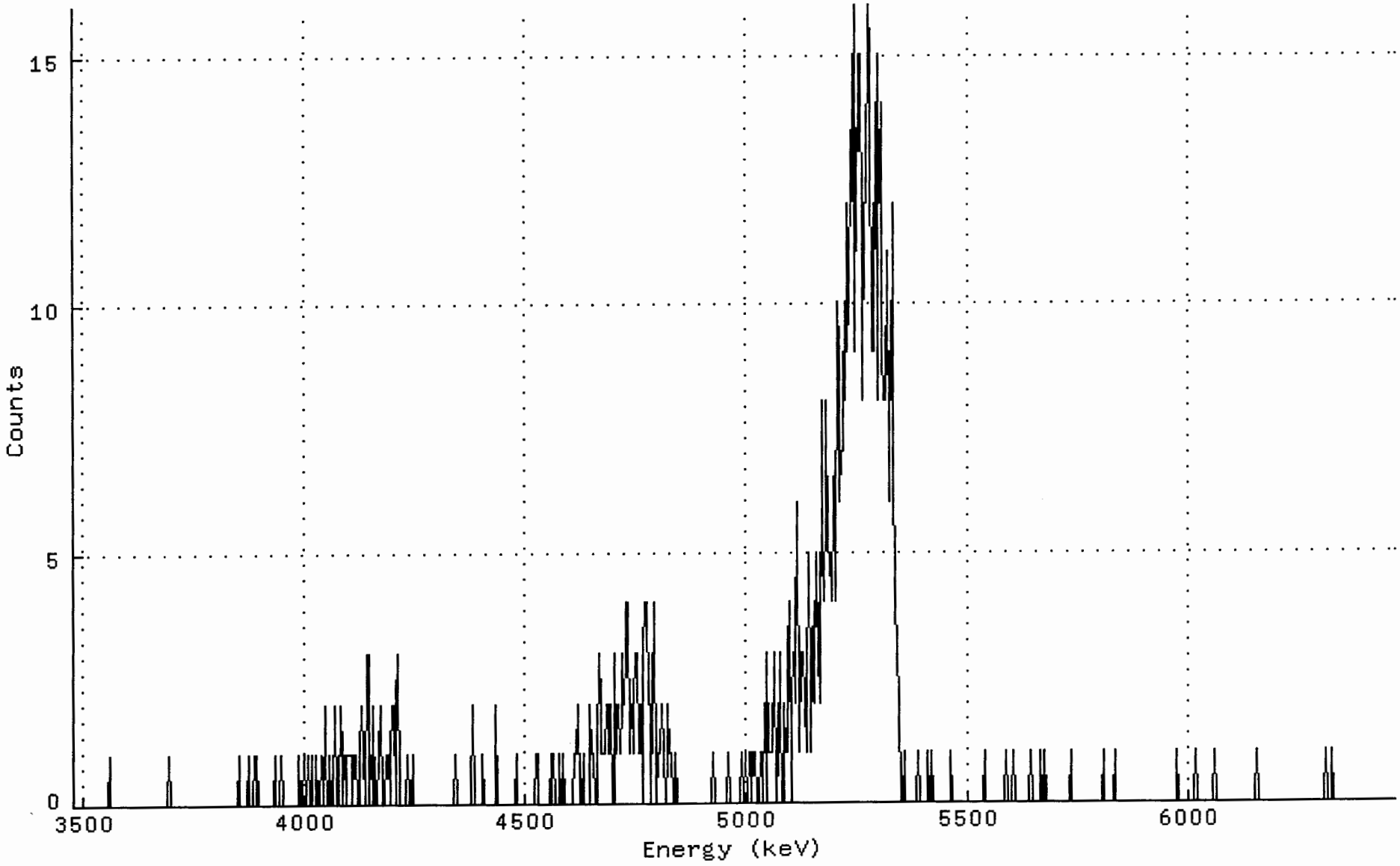
k	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4136.70	2	0	160.32	219.00	184	71	3.33E-05	70.7	
2	0	4385.78	0	0	0.00	302.00	287	31	0.00E+00	0.0	
3	0	4739.11	2	0	21.58	421.00	385	73	3.33E-05	70.7	
4	0	5244.80	5	0	203.49	594.00	556	77	8.33E-05	44.7	

et Sample Counts Within Peak Regions Generated: 13-DEC-2001 14:15:04.07

k	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4137.41*	51	0	171.40	219.24	184	71	7.05E-03	14.1	
2		4376.07*	4	0	3.08	298.75	287	31	5.56E-04	50.0	
3		4742.32*	112	0	135.51	422.09	385	73	1.55E-02	9.5	
4	0	5253.81*	598	0	136.05	597.11	556	77	8.31E-02	4.1	

ag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHI S]S_L4094UU$032_UU.CNF;1
Title : 032
Sample Title: L4094-07
Start Time: 12-DEC-2001 08:23 Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.46905E+03
Real Time : 0 02:00:00.00 Sample ID : 032 Energy Slope : 3.08313E+00
Live Time : 0 02:00:00.00 Sample Type: UU Energy Quad : -1.57675E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 14:16:36

****
pectral File: ND_AMS_ARCHIVE_S:S_L4094UU$033_UU.CNF
****

ATCH ID:	L4094UU	SAMPLE ID:	033
AMPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	5.000E-01 gram
AMPLE TITLE:	L4094-08	DETECTOR NUMBER:	033
CQ DATE:	12-DEC-2001 08:23	AVERAGE EFFICIENCY:	26.22%
LAPSED LIVE TIME:	7204.	RECOVERY:	86.75%
RACER ID:	RAD094-06	TRACER FWHM (kev):	127.13
AMBDA VALUE:	2000.	ROI TYPE:	STANDARD
RACER DPM AT SAMPLE DATE:	21.298	CONFIDENCE FACTOR:	4.65
AMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
NERGY CAL DATE:	31-AUG-2001 18:22	EFF CAL DATE:	31-AUG-2001 18:22
KG FILENAME:	B_033_26NOV01	BKG ELAPSED TIME:	60003.

****

NUCLIDE ACTIVITY SUMMARY

UCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
232	5291.9	580.28	0.72	99.8	1.919E+01	1.594E+00	2.201E-01
-234	4761.5	297.52	0.48	99.8	9.836E+00	1.404E+00	1.961E-01
-235	4385.5	4.76	0.24	80.9	1.941E-01	1.836E-01	2.034E-01
-238	4184.4	206.52	0.48	100.2	6.798E+00	1.103E+00	1.953E-01

****

* acer FWHM > 80.0 Kev ***

D7 12-13-01
nalyst Date

eviewer Date

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 13-DEC-2001 14:16:27.46

De or ID: 33 Acquisition Start: 12-DEC-2001 08:23:58.01
Li ime: 0 02:00:04.00 Real Time: 0 02:00:04.00
Batch Id: L4094UU Sample Id: 033
Sample Type: UU

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4149.27	207	0	148.49	230.99	191	72	2.87E-02	7.0	
2	0	4386.75	5	0	64.43	310.60	296	30	6.94E-04	44.7	
3	0	4722.80	298	0	148.50	424.42	382	76	4.14E-02	5.8	
4	0	5265.92	581	0	127.13	611.35	573	71	8.06E-02	4.1	

Background Counts Within Peak Regions Generated: 13-DEC-2001 14:16:33.94

Acquisition Start: 26-NOV-2001 15:38:01.01
Live Time: 0 16:40:03.00 Real Time: 0 16:40:04.00

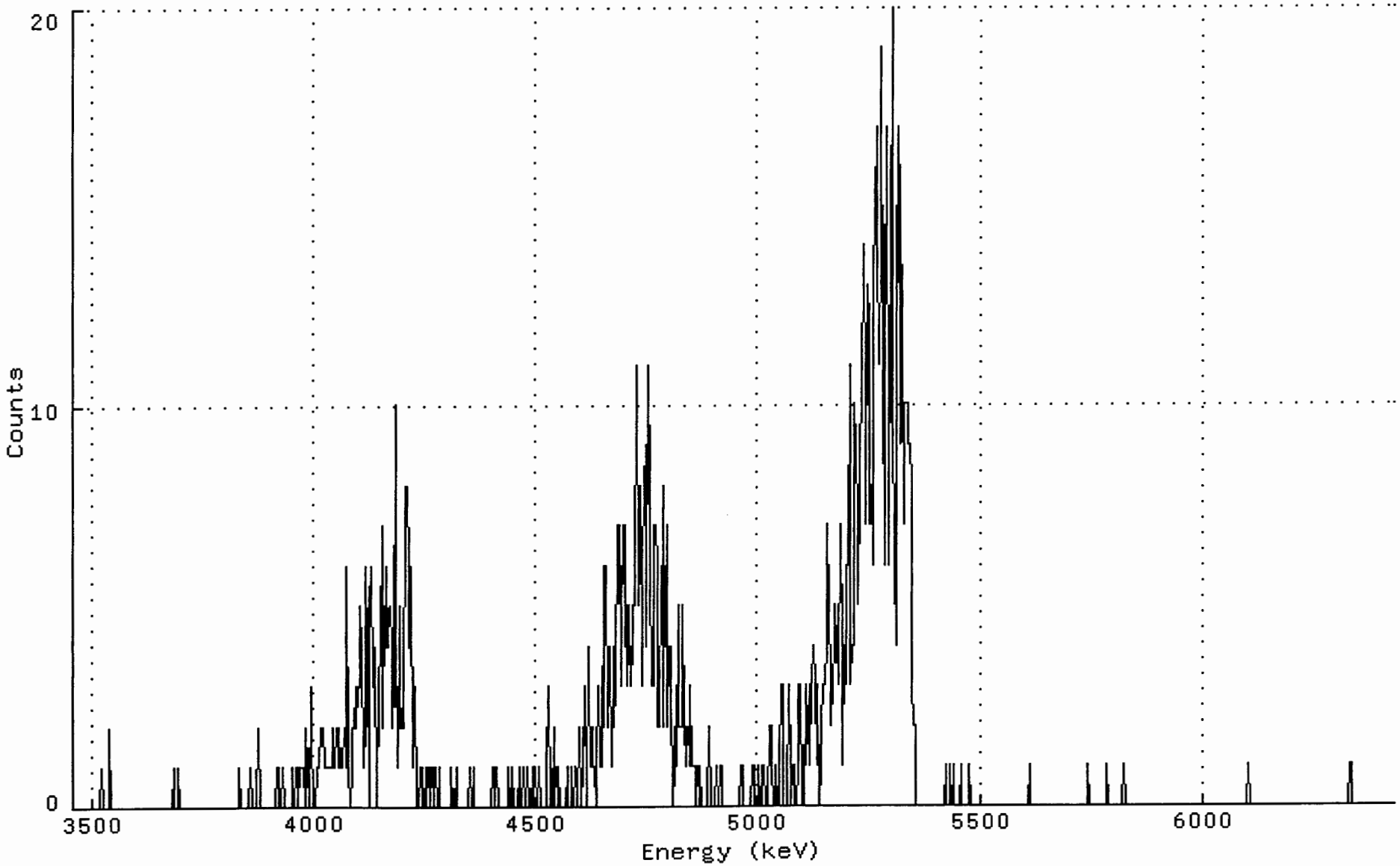
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4135.82	4	0	156.48	226.50	191	72	6.67E-05	50.0	
2	0	4386.45	2	0	21.48	310.50	296	30	3.33E-05	70.7	
3	0	4708.37	4	0	113.52	419.50	382	76	6.67E-05	50.0	
4	0	5256.27	6	0	184.09	608.00	573	71	1.00E-04	40.8	

Net Sample Counts Within Peak Regions Generated: 13-DEC-2001 14:16:34.37

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4149.27*	207	0	148.49	230.99	191	72	2.87E-02	7.0	
2		4386.75*	5	0	64.43	310.60	296	30	6.61E-04	47.1	
3		4722.80*	298	0	148.50	424.42	382	76	4.13E-02	5.8	
4	0	5265.92*	580	0	127.13	611.35	573	71	8.05E-02	4.2	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHI S]S_L4094UU$033_UU.CNF;1
Title : 033
Sample Title: L4094-08
Start Time: 12-DEC-2001 08:23 Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.44894E+03
Real Time : 0 02:00:04.00 Sample ID : 033 Energy Slope : 3.06818E+00
Live Time : 0 02:00:04.00 Sample Type: UU Energy Quad : -1.57249E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 14:17:06

****
ectral File: ND_AMS_ARCHIVE_S:S_L4094UU$034_UU.CNF
****

TCH ID:	L4094UU	SAMPLE ID:	034
MPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	5.000E-01 gram
MPLE TITLE:	L4094-09	DETECTOR NUMBER:	034
Q DATE:	12-DEC-2001 08:24	AVERAGE EFFICIENCY:	25.09%
APSED LIVE TIME:	7204.	RECOVERY:	90.67%
ACER ID:	RAD094-06	TRACER FWHM (kev):	84.25
MBDA VALUE:	2000.	ROI TYPE:	MANUAL
ACER DPM AT SAMPLE DATE:	21.298	CONFIDENCE FACTOR:	4.65
MPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ERGY CAL DATE:	4-SEP-2001 08:57	EFF CAL DATE:	4-SEP-2001 08:57
G FILENAME:	B_034_26NOV01	BKG ELAPSED TIME:	60000.

****

NUCLIDE ACTIVITY SUMMARY

CLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
32	5291.9	580.40	0.60	99.8	1.919E+01	1.594E+00	2.087E-01
234	4761.5	163.64	0.36	99.8	5.409E+00	9.585E-01	1.818E-01
235	4385.5	1.00	0.00	80.9	4.077E-02	8.162E-02	1.105E-01
238	4184.4	79.76	0.24	100.2	2.625E+00	6.279E-01	1.642E-01

****

acer FWHM > 80.0 Kev ***

DJ 12-13-01
nalyst Date

eviewer Date

ENVIROTEST LABORATORIES LLC.

ross Sample Counts Within Peak Regions Generated: 13-DEC-2001 14:17:02.56

e or ID: 34 Acquisition Start: 12-DEC-2001 08:24:17.01
i ime: 0 02:00:04.00 Real Time: 0 02:00:04.00
atch Id: L4094UU Sample Id: 034
ample Type: UU

k	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4146.96	80	0	81.10	220.03	182	70	1.11E-02	11.2	
2	0	4415.22	1	0	3.10	309.00	285	30	1.39E-04	100.0	
3	0	4746.08	164	0	104.58	419.96	382	76	2.28E-02	7.8	
4	0	5267.51	581	0	84.25	597.72	555	74	8.06E-02	4.1	

ackground Counts Within Peak Regions Generated: 13-DEC-2001 14:17:03.93

Acquisition Start: 26-NOV-2001 15:38:04.01
ive Time: 0 16:40:00.00 Real Time: 0 16:40:00.00

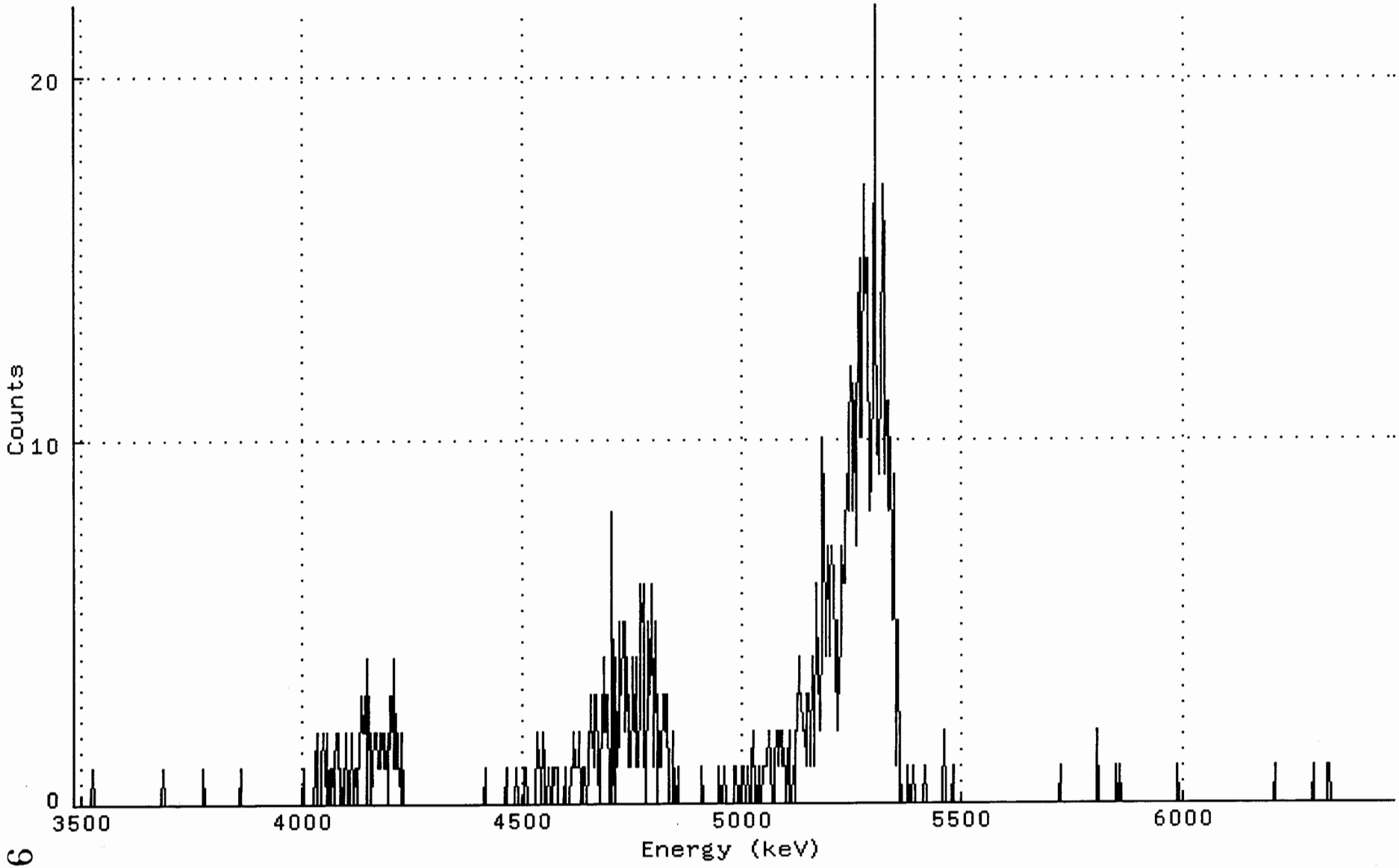
k	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4136.27	2	0	124.14	216.50	182	70	3.33E-05	70.7	
2	0	4386.71	0	0	0.00	299.50	285	30	0.00E+00	0.0	
3	0	4744.71	3	0	71.38	419.50	382	76	5.00E-05	57.7	
4	0	5249.46	5	0	145.86	591.50	555	74	8.33E-05	44.7	

et Sample Counts Within Peak Regions Generated: 13-DEC-2001 14:17:04.41

k	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4146.96*	80	0	81.10	220.03	182	70	1.11E-02	11.2	
2		4415.22*	1	0	3.10	309.00	285	30	1.39E-04	100.0	
3		4746.08*	164	0	104.58	419.96	382	76	2.27E-02	7.8	
4	0	5267.51*	580	0	84.25	597.72	555	74	8.06E-02	4.2	

ag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHI S]S_L4094UU$034_UU.CNF;1
Title : 034
Sample Title: L4094-09
Start Time: 12-DEC-2001 08:24 Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.47221E+03
Real Time : 0 02:00:04.00 Sample ID : 034 Energy Slope : 3.10342E+00
Live Time : 0 02:00:04.00 Sample Type: UU Energy Quad : -1.66996E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 14:17:34

****

pectral File: ND_AMS_ARCHIVE_S:S_L4094UU$035_UU.CNF

****

ATCH ID:	L4094UU	SAMPLE ID:	035
AMPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	1.000E-01 gram
AMPLE TITLE:	L4094-PEM1	DETECTOR NUMBER:	035
CQ DATE:	12-DEC-2001 08:24	AVERAGE EFFICIENCY:	25.77%
LAPSED LIVE TIME:	7203.	RECOVERY:	86.66%
RACER ID:	RAD094-06	TRACER FWHM (kev):	87.17
AMBDA VALUE:	2000.	ROI TYPE:	STANDARD
RACER DPM AT SAMPLE DATE:	21.298	CONFIDENCE FACTOR:	4.65
AMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
NERGY CAL DATE:	14-SEP-2001 17:13	EFF CAL DATE:	14-SEP-2001 17:13
KG FILENAME:	B_035_26NOV01	BKG ELAPSED TIME:	60003.

****

NUCLIDE ACTIVITY SUMMARY

UCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
232	5291.9	569.76	0.24	99.8	9.594E+01	8.040E+00	8.398E-01
-234	4761.5	0.40	0.60	99.8	6.730E-02	3.487E-01	1.063E+00
-235	4385.5	0.00	0.00	80.9	0.000E+00	0.000E+00	5.628E-01
-238	4184.4	-0.12	0.12	100.2	-2.012E-02	4.028E-02	7.243E-01

****

*** acer FWHM > 80.0 Kev ***

DJ 12-13-01

nalyst Date

eviewer Date

ENVIROTEST LABORATORIES LLC.

oss Sample Counts Within Peak Regions Generated: 13-DEC-2001 14:17:26.81

or ID: 35 Acquisition Start: 12-DEC-2001 08:24:40.01
ime: 0 02:00:03.00 Real Time: 0 02:00:03.00
tch Id: L4094UU Sample Id: 035
mple Type: UU

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
0	4135.34	0	0	0.00	228.00	193	71	0.00E+00	0.0	
0	4386.37	0	0	0.00	311.00	296	31	0.00E+00	0.0	
0	4697.50	1	0	3.12	415.00	381	76	1.39E-04	100.0	
0	5271.21	570	0	87.17	610.21	570	70	7.91E-02	4.2	

ckground Counts Within Peak Regions Generated: 13-DEC-2001 14:17:31.80

Acquisition Start: 26-NOV-2001 15:38:08.01
ve Time: 0 16:40:03.00 Real Time: 0 16:40:03.00

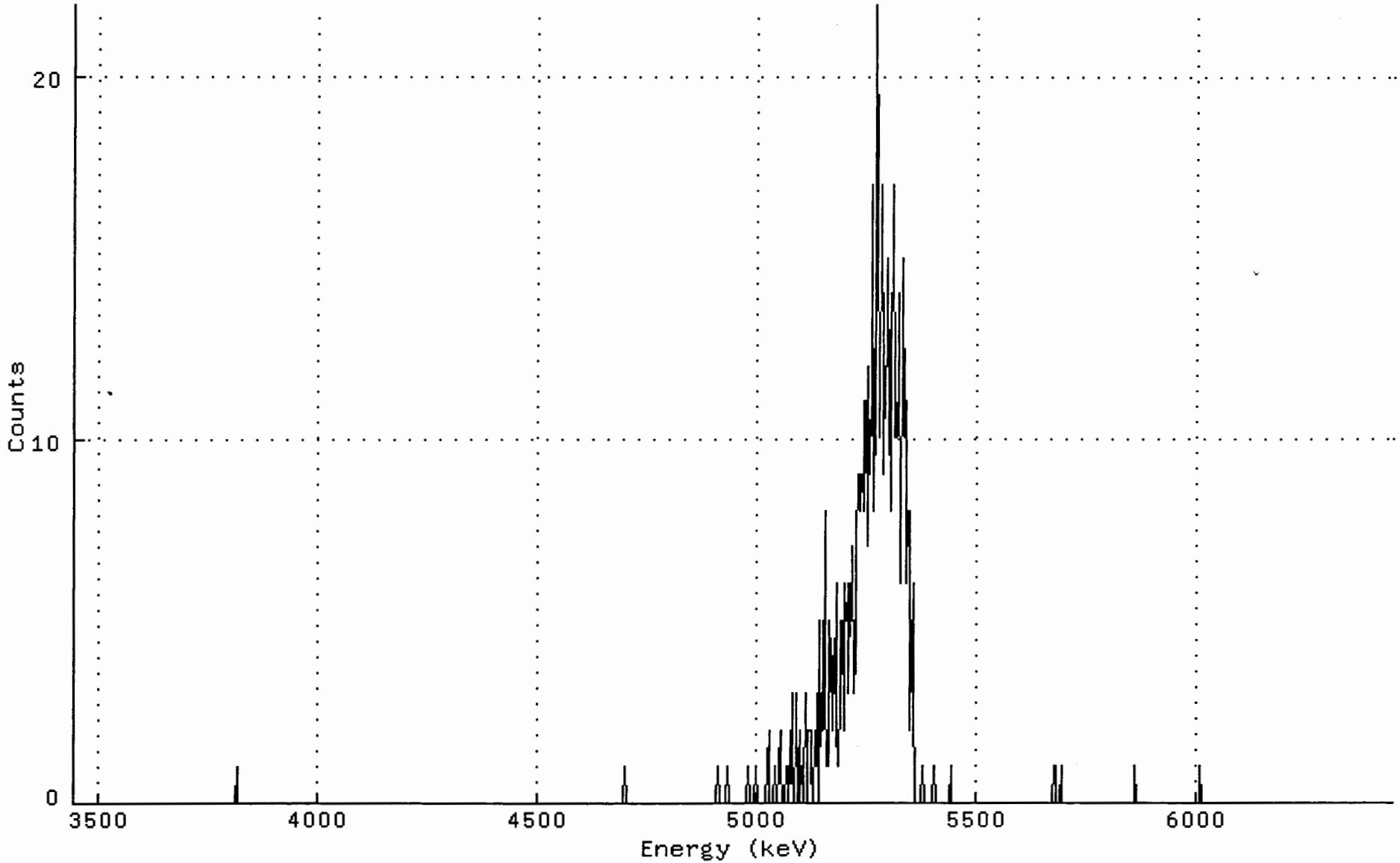
It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
0	4135.34	1	0	3.12	228.00	193	71	1.67E-05	100.0	
0	4386.37	0	0	0.00	311.00	296	31	0.00E+00	0.0	
0	4707.90	5	0	109.18	418.50	381	76	8.33E-05	44.7	
0	5254.62	2	0	177.81	604.50	570	70	3.33E-05	70.7	

t Sample Counts Within Peak Regions Generated: 13-DEC-2001 14:17:32.28

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
0	4135.34*	0	0	0.00	228.00	193	71	-1.67E-05	100.0	
	4386.37*	0	0	0.00	311.00	296	31	0.00E+00	0.0	
	4697.50*	0	0	3.12	415.00	381	76	5.55E-05	259.0	
0	5271.21*	570	0	87.17	610.21	570	70	7.91E-02	4.2	

g: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHI\ S]S_L4094UU$035_UU.CNF;1
Title : 035
Sample Title: L4094-PEM1
Start Time: 12-DEC-2001 08:24 Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.43326E+03
Real Time : 0 02:00:03.00 Sample ID : 035 Energy Slope : 3.11944E+00
Live Time : 0 02:00:03.00 Sample Type: UU Energy Quad : -1.76087E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 14:17:57

Spectral File: ND_AMS_ARCHIVE_S:S_L4094UU$036_UU.CNF

BATCH ID:	L4094UU	SAMPLE ID:	036
SAMPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	1.000E-01 gram
SAMPLE TITLE:	L4094-TRM2	DETECTOR NUMBER:	036
ACQ DATE:	12-DEC-2001 08:24	AVERAGE EFFICIENCY:	25.74%
ELAPSED LIVE TIME:	7204.	RECOVERY:	94.46%
TRACER ID:	RAD094-06	TRACER FWHM (kev):	118.80
LAMBDA VALUE:	2000.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	21.298	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	5-SEP-2001 13:46	EFF CAL DATE:	5-SEP-2001 13:46
BKG FILENAME:	B_036_26NOV01	BKG ELAPSED TIME:	60005.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
U232	5291.9	620.28	0.72	99.8	9.594E+01	7.709E+00	1.029E+00
U-234	4761.5	0.40	0.60	99.8	6.181E-02	3.203E-01	9.762E-01
U-235	4385.5	0.00	0.00	80.9	0.000E+00	0.000E+00	5.170E-01
U-238	4184.4	3.00	0.00	100.2	4.619E-01	5.347E-01	4.173E-01

*** acer FWHM > 80.0 Kev ***

DT 12-13-01
Analyst Date

Reviewer Date

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 13-DEC-2001 14:17:50.41

Detector ID: 36 Acquisition Start: 12-DEC-2001 08:24:58.01
Live Time: 0 02:00:04.00 Real Time: 0 02:00:04.00
Batch Id: L4094UU Sample Id: 036
Sample Type: UU

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4119.41	3	0	154.93	222.33	193	70	4.16E-04	57.7	
2	0	4385.72	0	0	0.00	309.00	295	29	0.00E+00	0.0	
3	0	4614.15	1	0	3.16	384.00	378	75	1.39E-04	100.0	
4	0	5270.12	621	0	118.80	602.91	564	69	8.62E-02	4.0	

Background Counts Within Peak Regions Generated: 13-DEC-2001 14:17:54.86

Acquisition Start: 26-NOV-2001 15:38:11.01
Live Time: 0 16:40:05.00 Real Time: 0 16:40:06.00

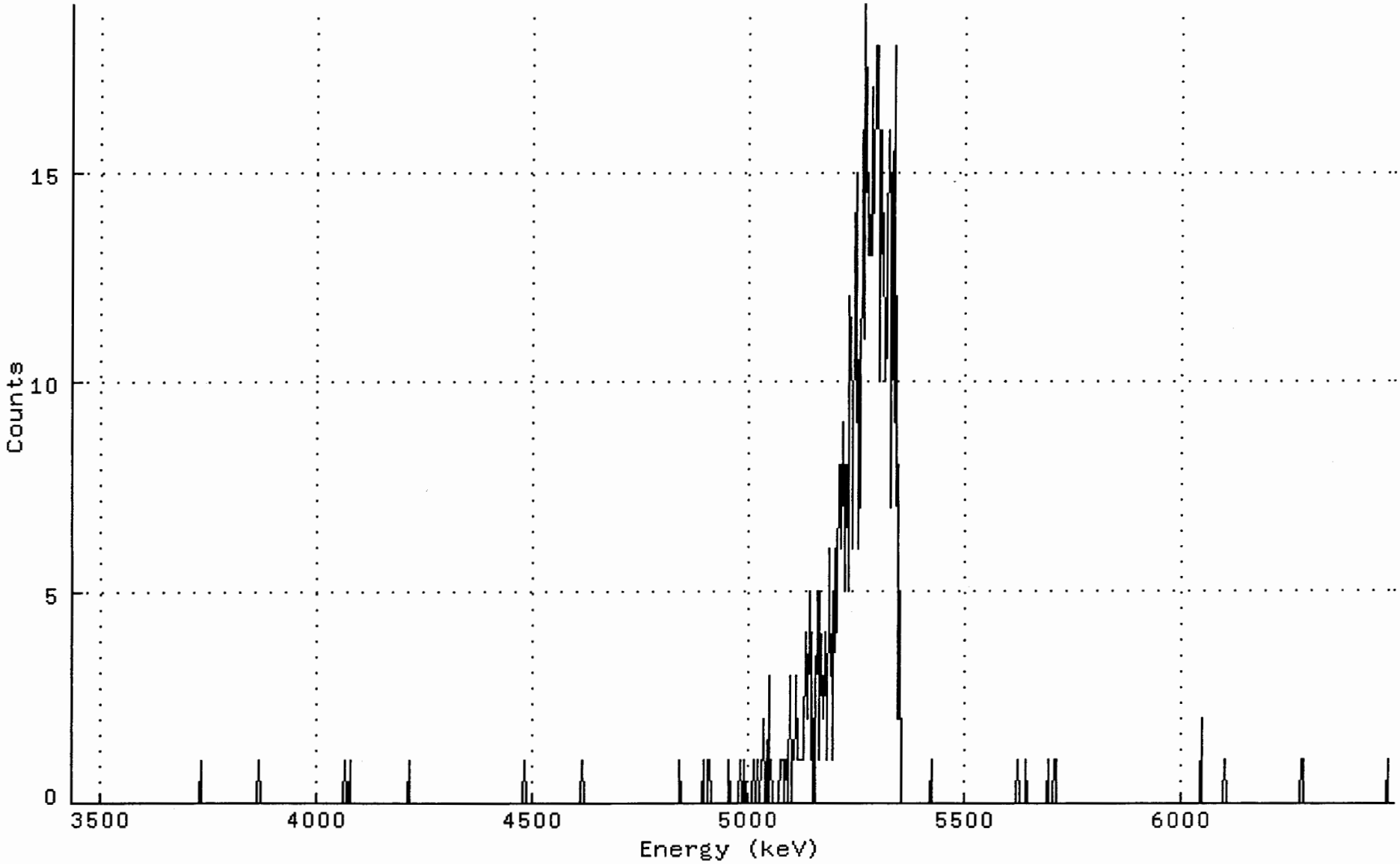
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4135.36	0	0	0.00	227.50	193	70	0.00E+00	0.0	
2	0	4385.72	0	0	0.00	309.00	295	29	0.00E+00	0.0	
3	0	4708.02	5	0	158.09	415.00	378	75	8.33E-05	44.7	
4	0	5255.57	6	0	3.16	598.00	564	69	1.00E-04	40.8	

Net Sample Counts Within Peak Regions Generated: 13-DEC-2001 14:17:55.42

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4119.41*	3	0	154.93	222.33	193	70	4.16E-04	57.7	
2		4385.72*	0	0	0.00	309.00	295	29	0.00E+00	0.0	
3		4614.15*	0	0	3.16	384.00	378	75	5.55E-05	259.0	
4	0	5270.12*	620	0	118.80	602.91	564	69	8.61E-02	4.0	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV S]S_L4094UU$036_UU.CNF;1
Title : 036
Sample Title: L4094-TRM2
Start Time: 12-DEC-2001 08:24 Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.42472E+03
Real Time : 0 02:00:04.00 Sample ID : 036 Energy Slope : 3.16182E+00
Live Time : 0 02:00:04.00 Sample Type: UU Energy Quad : -1.67540E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 13:59:05

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Spectral File: ND_AMS_ARCHIVE_R:R_L4094UU$037_UU.CNF

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BATCH ID:	L4094UU	SAMPLE ID:	037
SAMPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	5.000E-01 gram
SAMPLE TITLE:	L4094-MBAU1207	DETECTOR NUMBER:	037
ACQ DATE:	12-DEC-2001 08:26	AVERAGE EFFICIENCY:	25.42%
ELAPSED LIVE TIME:	7203.	RECOVERY:	56.92%
TRACER ID:	RAD094-06	TRACER FWHM (kev):	90.88
LAMBDA VALUE:	2000.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	21.298	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	6-SEP-2001 09:08	EFF CAL DATE:	6-SEP-2001 09:08
BKG FILENAME:	B_037_26NOV01	BKG ELAPSED TIME:	60003.

****

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
U232	5291.9	369.16	0.84	99.8	1.919E+01	2.000E+00	3.623E-01
U-234	4761.5	0.64	0.36	99.8	3.325E-02	1.062E-01	2.858E-01
U-235	4385.5	-0.12	0.12	80.9	-7.695E-03	1.541E-02	2.770E-01
U-238	4184.4	-0.24	0.24	100.2	-1.242E-02	1.762E-02	2.581E-01

****

** acer FWHM > 80.0 Kev ***

Analyst _____ Date 12-13-01

Reviewer _____ Date _____

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 13-DEC-2001 13:58:58.52

De[illegible]or ID: 37 Acquisition Start: 12-DEC-2001 08:26:36.01
Live Time: 0 02:00:03.00 Real Time: 0 02:00:03.00
Batch Id: L4094UU Sample Id: 037
Sample Type: UU

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4136.10	0	0	0.00	209.50	172	76	0.00E+00	0.0	
2	0	4386.70	0	0	0.00	298.50	283	32	0.00E+00	0.0	
3	0	4738.87	1	0	2.89	425.00	374	81	1.39E-04	100.0	
4	0	5276.92	370	0	90.88	621.65	577	75	5.14E-02	5.2	

Background Counts Within Peak Regions Generated: 13-DEC-2001 13:59:03.37

Acquisition Start: 26-NOV-2001 15:38:14.01
Live Time: 0 16:40:03.00 Real Time: 0 16:40:03.00

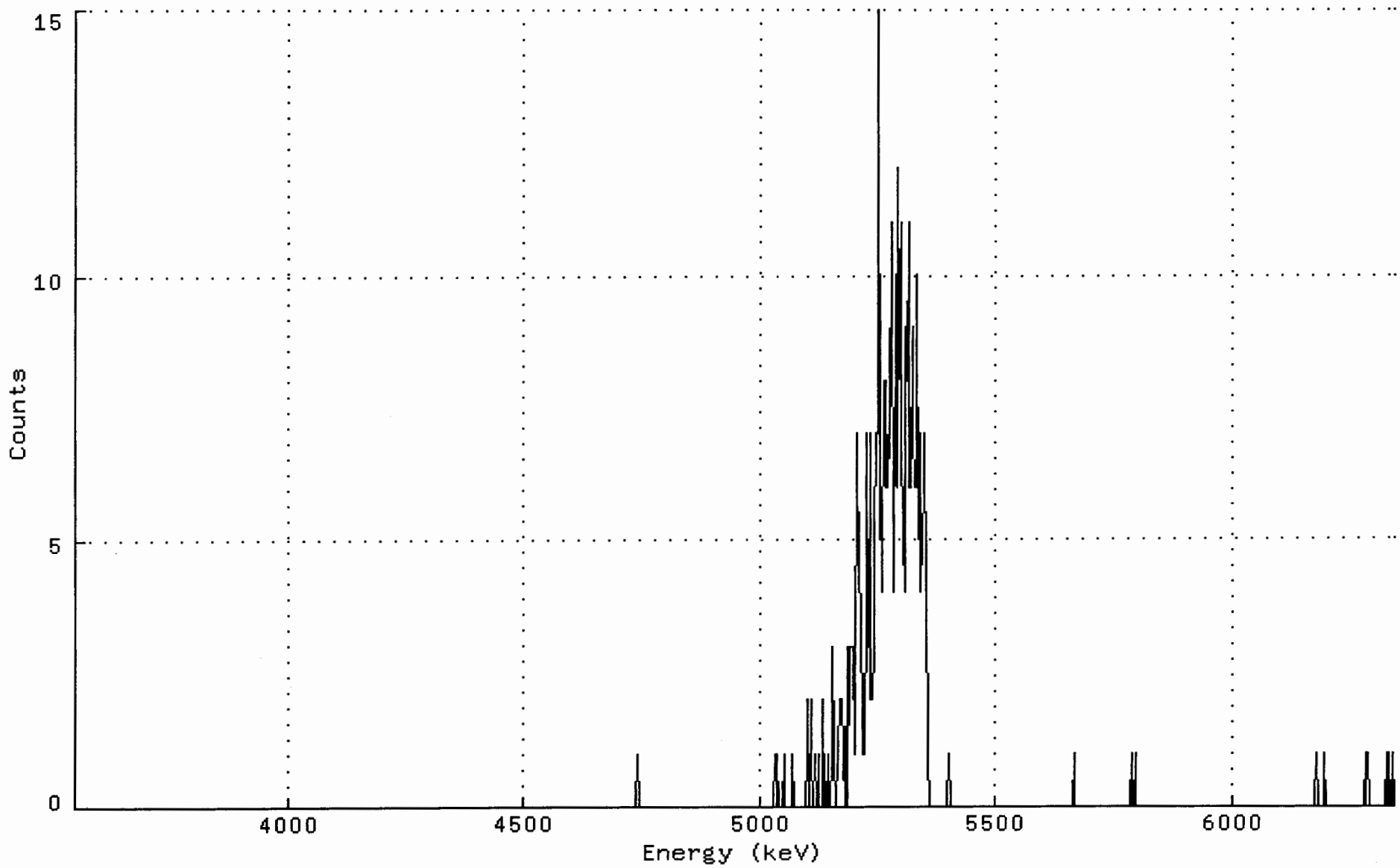
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4136.10	2	0	92.51	209.50	172	76	3.33E-05	70.7	
2	0	4386.70	1	0	2.89	298.50	283	32	1.67E-05	100.0	
3	0	4708.43	3	0	159.01	414.00	374	81	5.00E-05	57.7	
4	0	5256.19	7	0	193.34	614.00	577	75	1.17E-04	37.8	

Net Sample Counts Within Peak Regions Generated: 13-DEC-2001 13:59:03.76

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4136.10*	0	0	0.00	209.50	172	76	-3.33E-05	70.7	
2		4386.70*	0	0	0.00	298.50	283	32	-1.67E-05	100.0	
3	0	4738.87*	1	0	2.89	425.00	374	81	8.88E-05	159.6	
4	0	5276.92*	369	0	90.88	621.65	577	75	5.13E-02	5.2	

Flag: "*" = Peak area was modified by background subtraction

Spectr : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHI R]R_L4094UU$037_UU.CNF;1
Title : 037
Sample Title: L4094-MBAU1207
Start Time: 12-DEC-2001 08:26 Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.53691E+03
Real Time : 0 02:00:03.00 Sample ID : 037 Energy Slope : 2.89109E+00
Live Time : 0 02:00:03.00 Sample Type: UU Energy Quad : -1.48137E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
13-DEC-2001 13:59:43

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Spectral File: ND_AMS_ARCHIVE_C:C_L4094UU$038_UU.CNF

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BATCH ID:	L4094UU	SAMPLE ID:	038
SAMPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	1.000E+00 gram
SAMPLE TITLE:	L4094-LCAU1207	DETECTOR NUMBER:	038
ACQ DATE:	12-DEC-2001 08:27	AVERAGE EFFICIENCY:	25.61%
ELAPSED LIVE TIME:	7203.	RECOVERY:	87.77%
TRACER ID:	RAD094-06	TRACER FWHM (kev):	143.83
LAMBDA VALUE:	2000.	ROI TYPE:	MANUAL
TRACER DPM AT SAMPLE DATE:	21.298	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	6-SEP-2001 16:29	EFF CAL DATE:	6-SEP-2001 16:29
BKG FILENAME:	B_038_26NOV01	BKG ELAPSED TIME:	60005.

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NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
U232	5291.9	573.40	0.60	99.8	9.594E+00	8.018E-01	1.056E-01
U-234	4761.5	579.52	0.48	99.8	9.694E+00	1.143E+00	9.923E-02
U-235	4385.5	15.88	0.12	80.9	3.277E-01	1.674E-01	8.917E-02
U-238	4184.4	601.76	0.24	100.2	1.002E+01	1.170E+00	8.309E-02

****

** acer FWHM > 80.0 Kev ***

DJ 12-13-01
Analyst Date

Reviewer Date

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 13-DEC-2001 13:59:39.26

Dr or ID: 38 Acquisition Start: 12-DEC-2001 08:27:04.01
Li ime: 0 02:00:03.00 Real Time: 0 02:00:03.00
Batch Id: L4094UU Sample Id: 038
Sample Type: UU

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4139.35	602	0	137.01	220.84	177	79	8.36E-02	4.1	
2	0	4387.74	16	0	3.59	303.44	288	31	2.22E-03	25.0	
3	0	4722.64	580	0	130.33	415.97	374	76	8.05E-02	4.2	
4	0	5261.38	574	0	143.83	599.93	555	79	7.97E-02	4.2	

Background Counts Within Peak Regions Generated: 13-DEC-2001 13:59:40.50

Acquisition Start: 26-NOV-2001 15:38:17.01
Live Time: 0 16:40:05.00 Real Time: 0 16:40:06.00

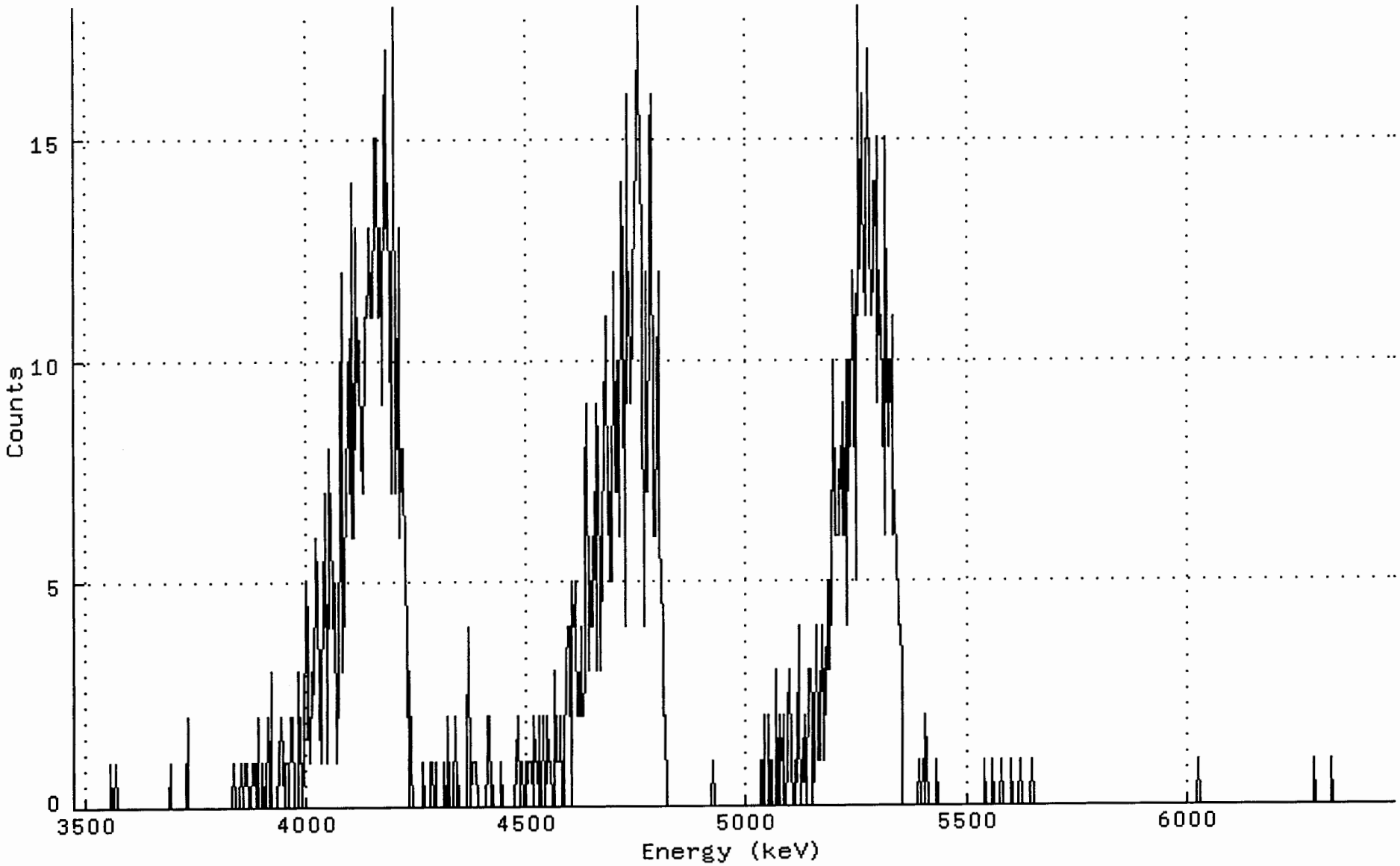
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4124.72	2	0	27.82	216.00	177	79	3.33E-05	70.7	
2	0	4386.43	1	0	3.09	303.00	288	31	1.67E-05	100.0	
3	0	4709.41	4	0	123.65	411.50	374	76	6.67E-05	50.0	
4	0	5244.17	5	0	231.85	594.00	555	79	8.33E-05	44.7	

Net Sample Counts Within Peak Regions Generated: 13-DEC-2001 13:59:40.93

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4139.35*	602	0	137.01	220.84	177	79	8.35E-02	4.1	
		4387.74*	16	0	3.59	303.44	288	31	2.20E-03	25.2	
3	0	4722.64*	580	0	130.33	415.97	374	76	8.05E-02	4.2	
4	0	5261.38*	573	0	143.83	599.93	555	79	7.96E-02	4.2	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHI\ C]C_L4094UU$038_UU.CNF;1
Title : 038
Sample Title: L4094-LCAU1207
Start Time: 12-DEC-2001 08:27 Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.46446E+03
Real Time : 0 02:00:03.00 Sample ID : 038 Energy Slope : 3.09137E+00
Live Time : 0 02:00:03.00 Sample Type: UU Energy Quad : -1.60303E-04



QA-CHECKB ISO-U 12-Dec-2001 8:27 pCi/g

	Standard Known Value	LCS Sample Value	LCS Recovery	
LCAU1207	10.0	10.020	100%	(3)
	10.0		0%	
			#DIV/0!	
			#DIV/0!	
			#DIV/0!	

L4094-003 U238

Sample Activity	Duplicate Activity	Sample ERROR	Duplicate ERROR	Duplicate RER	
0.75	0.56	0.42	0.33	0.4	(1)
	U234				
1.547	1.011	0.601	0.439	0.7	
	U235				
0.000	0.166	0.100	0.192	0.8	

MBAU1207 = 0.0 MDA 0.26 WORK GROUP # WG11609
U234 = 0.0 MDA 0.29
U235 = 0.0 MDA 0.277 RUN ID# R14645
(2)

Reviewed by JCM
Date 12-17-01

ETL EnviroTe[redacted]
LABORATOR[redacted]

Sample Digestion Logbook

SOP ETL - RSOP- 0003

Analysis ISO U Analyst Jeni Date 12-7-01 Reviewed By Toni

Sample ID	Analyzed Volume g	Sample Volume Digested	Dilution Volume ml/l	Digestate Volume Used (ml)	Sample Matrix	Comments
L4094-1	0.50	1.0 g	100 ml	50 ml	Soil	Reruns -
2	⊥	⊥	⊥	⊥	⊥	
3	0.35	1.0 g	100 ml	35 ml	⊥	
3 MD	⊥	⊥	⊥	⊥	⊥	
4	0.50	1.0 g	100 ml	50 ml	⊥	
5	⊥	⊥	⊥	⊥	⊥	
6	⊥	⊥	⊥	⊥	⊥	
7	⊥	⊥	⊥	⊥	⊥	
8	⊥	⊥	⊥	⊥	⊥	
9	⊥	⊥	⊥	⊥	⊥	
PEM-1	0.1	1.0	100 ml	10 ml	Soil	
TRM-2	⊥	⊥	⊥	⊥	⊥	
MBA U 1207	⊥	NA	NA	NA	DI H_2O	
LCA U 1207	1.0 L	⊥	⊥	⊥	⊥	

Jeni 12-7-01

Spike	Trace	Nuclide	Isotope Number	Expiration Date	Activity pCi/ml	Vol Ml	Standard Control	Spiked By	Witness
X		U238	100.03	5.14.02	2.5	4ml	LCA U 1207	Jeni	Toni
	X	U232	094.06	5.14.02	4.8	2ml	All Samples	⊥	⊥
								Jeni	12-7-01

FORM DIGESTLG-1, REV. 0 Effective 09-25-00 **Book Number** 01134 **Page Number** 957

000085

Enviro • Test
LABORATORIES LLC.

RADIOCHEMISTRY
OUT OF CONTROL EVENT REPORT

DEPARTMENT RAD-ENV. PARAMETER 150 U
METHOD Column
COMPLETED BY [illegible] DATE 12-7-01

OUT OF CONTROL EVENT

SAMPLE ANALYSIS

- ____ Sample Activity too high
- ____ Calculation error
- ____ Reporting error
- X Tracer % rec. not within QC limits

QUALITY CONTROL ANALYSIS

- ____ Blank out / % rec. not acceptable
- ____ LCS % rec. not acceptable
- ____ Duplicate RER not acceptable
- ____ MS % rec. not acceptable

SAMPLE ID	VOLUME	SAMPLE ID	VOLUME	SAMPLE ID	VOLUME
L4094-5	0.5g				
1-9					

CORRECTIVE ACTION

- ____ Recalculate/report results
- ____ Reanalyze sample(s)
- X Redigest/re-extract sample(s)
- ____ Perform standard additions
- ____ Repeat QC analysis
- ____ Repeat calibration
- ____ Prepare new standards
- ____ Perform instrument service

OTHER (Explain)

RESOLUTION

Do Pu Clean-up

APPROVED BY:
Laboratory Supervisor/Manager [illegible] Date 12-7-01
QA/QC ____ Date ____
Case Narrative Required: Yes ____ No ____

AUTHORIZATION REQUIRED FOR WORK RELEASE

ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
6-DEC-2001 17:53:54

****
ectral File: ND_AMS_ARCHIVE_S:S_L4094UU$L4094-1_UU.CNF
****

TCH ID:	L4094UU	SAMPLE ID:	L4094-1
MPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	2.000E+00 gram
MPLE TITLE:		DETECTOR NUMBER:	038
Q DATE:	5-DEC-2001 15:35	AVERAGE EFFICIENCY:	25.61%
APSED LIVE TIME:	7204.	RECOVERY:	74.46%
ACER ID:	RAD094-03	TRACER FWHM (kev):	165.20
MBDA VALUE:	1000.	ROI TYPE:	MANUAL
ACER DPM AT SAMPLE DATE:	2.124	CONFIDENCE FACTOR:	4.65
MPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ERGY CAL DATE:	6-SEP-2001 16:29	EFF CAL DATE:	6-SEP-2001 16:29
G FILENAME:	B_038_26NOV01	BKG ELAPSED TIME:	60005.

****

NUCLIDE ACTIVITY SUMMARY

UCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
232	5291.9	48.52	0.48	99.8	4.783E-01	1.381E-01	5.848E-02
-234	4761.5	400.52	0.48	99.8	3.948E+00	1.206E+00	5.848E-02
-235	4385.5	9.88	0.12	80.9	1.201E-01	8.442E-02	5.255E-02
-238	4184.4	196.76	0.24	100.2	1.931E+00	6.220E-01	4.896E-02

****

** Tracer FWHM > 80.0 Kev ***

[illegible]
nalyst

12-6-01
Date

eviewer

Date

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 6-DEC-2001 17:53:49.49

Detector ID: 38 Acquisition Start: 5-DEC-2001 15:35:41.01
Live Time: 0 02:00:04.00 Real Time: 0 02:00:04.00
Batch Id: L4094UU Sample Id: L4094-1
Sample Type: UU

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4147.61	197	0	127.36	223.58	185	71	2.73E-02	7.1	
2	0	4380.44	10	0	3.09	301.00	288	31	1.39E-03	31.6	
3	0	4722.46	401	0	173.76	415.91	374	76	5.57E-02	5.0	
4	0	5271.63	49	0	165.20	603.47	573	61	6.80E-03	14.3	

Background Counts Within Peak Regions Generated: 6-DEC-2001 17:53:51.89

Acquisition Start: 26-NOV-2001 15:38:17.01
Live Time: 0 16:40:05.00 Real Time: 0 16:40:06.00

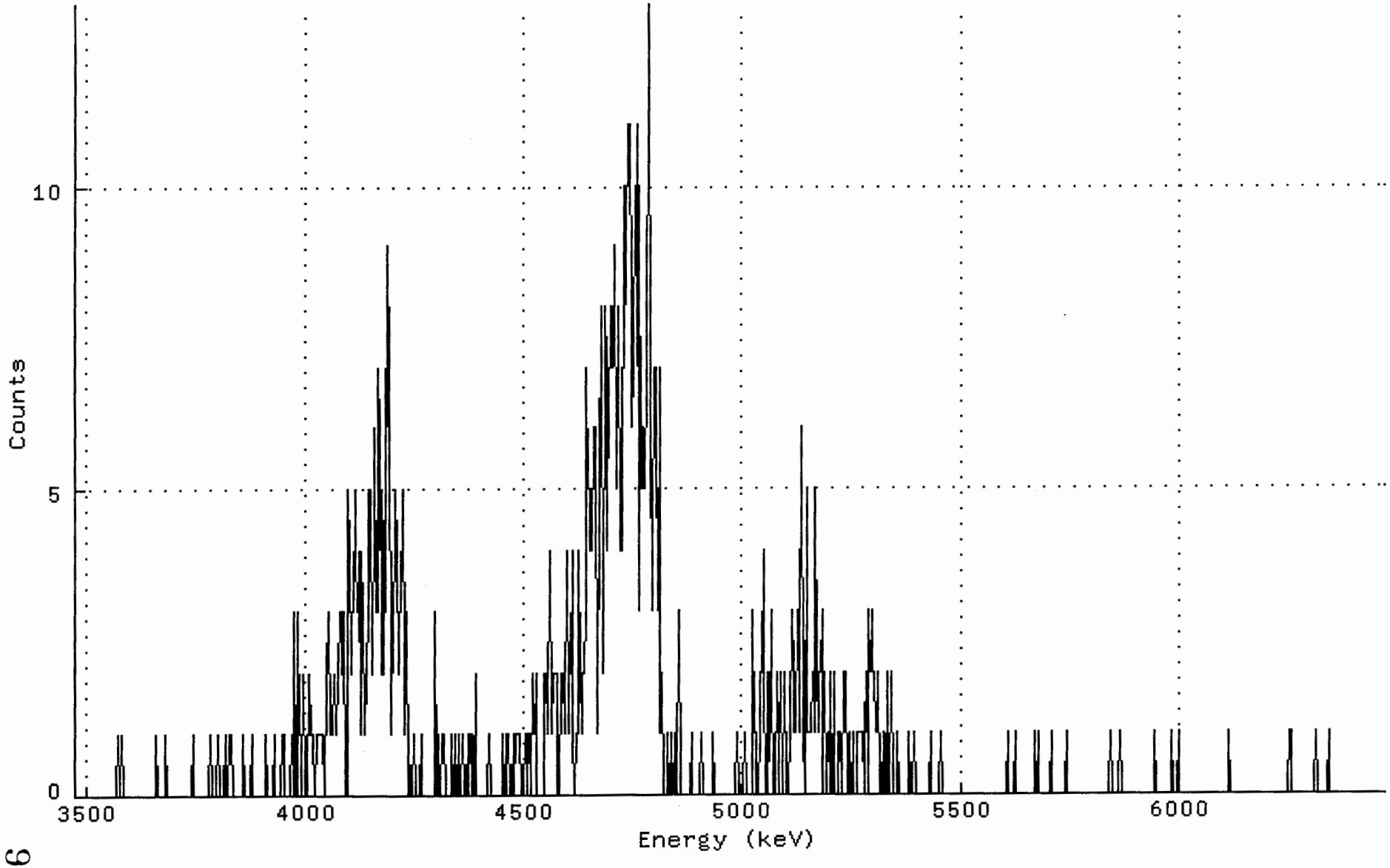
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4136.80	2	0	27.82	220.00	185	71	3.33E-05	70.7	
2	0	4386.43	1	0	3.09	303.00	288	31	1.67E-05	100.0	
3	0	4709.41	4	0	123.65	411.50	374	76	6.67E-05	50.0	
4	0	5270.27	4	0	182.39	603.00	573	61	6.67E-05	50.0	

Net Sample Counts Within Peak Regions Generated: 6-DEC-2001 17:53:52.49

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4147.61*	197	0	127.36	223.58	185	71	2.73E-02	7.1	
2	0	4380.44*	10	0	3.09	301.00	288	31	1.37E-03	32.0	
3	0	4722.46*	401	0	173.76	415.91	374	76	5.56E-02	5.0	
4	0	5271.63*	49	0	165.20	603.47	573	61	6.74E-03	14.4	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHI S]S_L4094UU$L4094-1_UU.CNF;2
Title : 038
Sample Title:
Start Time: 5-DEC-2001 15:35: Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.46446E+03
Real Time : 0 02:00:04.00 Sample ID : L4094-1 Energy Slope : 3.09137E+00
Live Time : 0 02:00:04.00 Sample Type: UU Energy Quad : -1.60303E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
6-DEC-2001 17:56:50

****
ctral File: ND_AMS_ARCHIVE_S:S_L4094UU$L4094-2_UU.CNF
****

TCH ID:	L4094UU	SAMPLE ID:	L4094-2
MPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	2.000E+00 gram
MPLE TITLE:		DETECTOR NUMBER:	039
Q DATE:	5-DEC-2001 15:35	AVERAGE EFFICIENCY:	25.29%
APSED LIVE TIME:	7202.	RECOVERY:	104.94%
ACER ID:	RAD094-03	TRACER FWHM (kev):	190.42
MBDA VALUE:	1000.	ROI TYPE:	MANUAL
ACER DPM AT SAMPLE DATE:	2.124	CONFIDENCE FACTOR:	4.65
MPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ERGY CAL DATE:	7-SEP-2001 08:28	EFF CAL DATE:	7-SEP-2001 08:28
G FILENAME:	B_039_26NOV01	BKG ELAPSED TIME:	60002.

****

NUCLIDE ACTIVITY SUMMARY

CLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
32	5291.9	67.52	0.48	99.8	4.783E-01	1.169E-01	4.202E-02
234	4761.5	682.76	0.24	99.8	4.836E+00	1.238E+00	3.534E-02
235	4385.5	7.88	0.12	80.9	6.886E-02	5.226E-02	3.776E-02
238	4184.4	279.28	0.72	100.2	1.970E+00	5.361E-01	4.695E-02

****

racer FWHM > 80.0 Kev ***

alyst _____ Date 12-6-01

viewer _____ Date _____

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 6-DEC-2001 17:56:46.67

Detector ID: 39 Acquisition Start: 5-DEC-2001 15:35:51.01
Live Time: 0 02:00:02.00 Real Time: 0 02:00:02.00
Batch Id: L4094UU Sample Id: L4094-2
Sample Type: UU

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4142.35	280	0	88.05	233.28	197	70	3.89E-02	6.0	
2	0	4406.80	8	0	71.85	320.38	299	30	1.11E-03	35.4	
3	0	4734.17	683	0	161.08	429.30	391	79	9.48E-02	3.8	
4	0	5255.28	68	0	190.42	605.31	571	70	9.44E-03	12.1	

Background Counts Within Peak Regions Generated: 6-DEC-2001 17:56:47.85

Acquisition Start: 26-NOV-2001 15:38:21.01
Live Time: 0 16:40:02.00 Real Time: 0 16:40:02.00

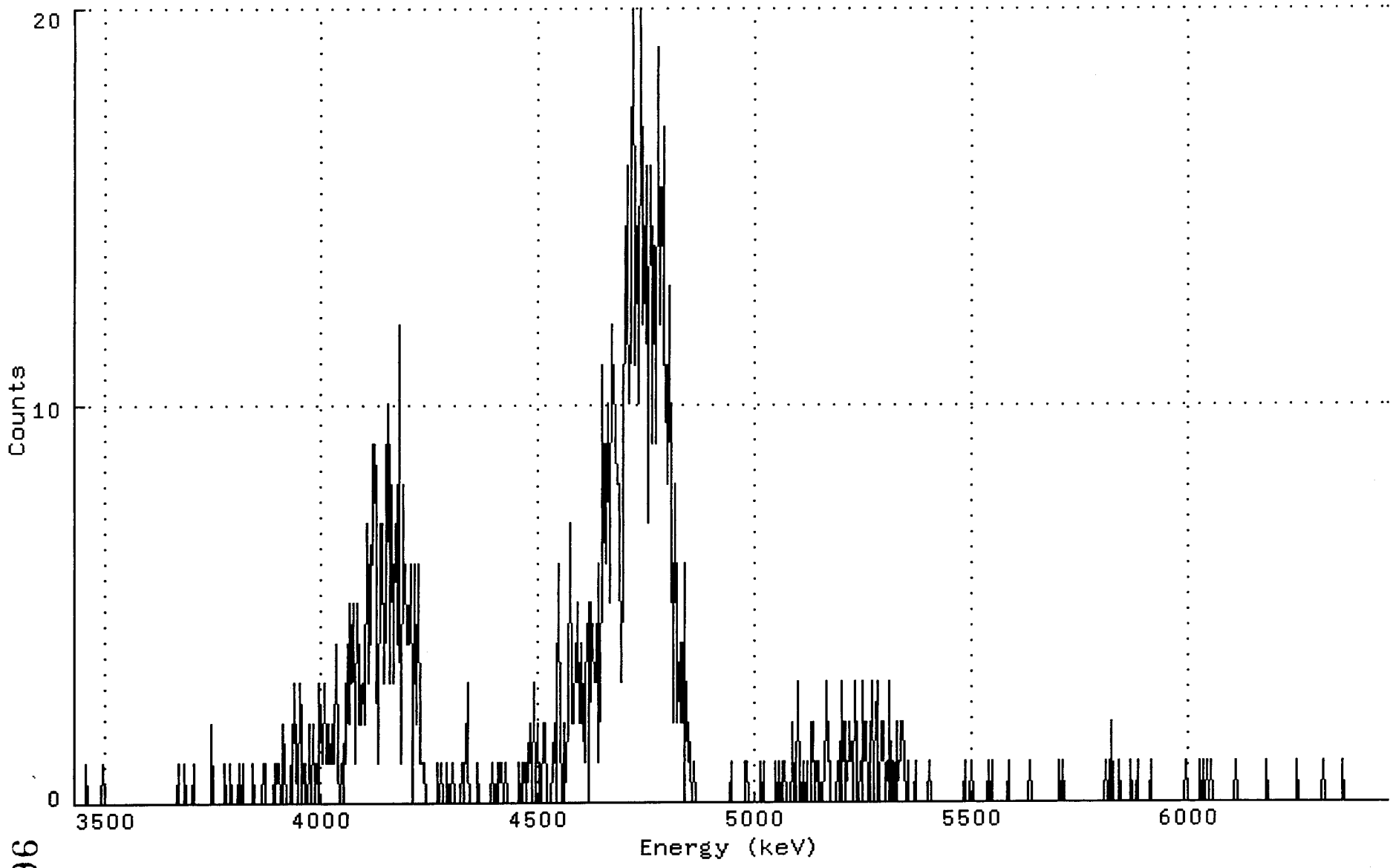
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4136.92	6	0	0.00	231.50	197	70	1.00E-04	40.8	
2	0	4386.02	1	0	3.12	313.50	299	30	1.67E-05	100.0	
3	0	4736.27	2	0	131.20	430.00	391	79	3.33E-05	70.7	
4	0	5255.84	4	0	0.00	605.50	571	70	6.67E-05	50.0	

Net Sample Counts Within Peak Regions Generated: 6-DEC-2001 17:56:48.27

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4142.35*	279	0	88.05	233.28	197	70	3.88E-02	6.0	
2	0	4406.80*	8	0	71.85	320.38	299	30	1.09E-03	35.9	
3	0	4734.17*	683	0	161.08	429.30	391	79	9.48E-02	3.8	
4	0	5255.28*	68	0	190.42	605.31	571	70	9.38E-03	12.2	

Flag: "*" = Peak area was modified by background subtraction

Spectr : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHI S]S_L4094UU$L4094-2_UU.CNF;1
Title : 039
Sample Title:
Start Time: 5-DEC-2001 15:35: Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.42222E+03
Real Time : 0 02:00:02.00 Sample ID : L4094-2 Energy Slope : 3.12372E+00
Live Time : 0 02:00:02.00 Sample Type: UU Energy Quad : -1.57638E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
6-DEC-2001 17:57:40

****

pectral File: ND_AMS_ARCHIVE_S:S_L4094UU$L4094-3_UU.CNF

****

ATCH ID:	L4094UU	SAMPLE ID:	L4094-3
AMPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	2.000E+00 gram
AMPLE TITLE:		DETECTOR NUMBER:	040
CQ DATE:	5-DEC-2001 15:36	AVERAGE EFFICIENCY:	24.28%
LAPSED LIVE TIME:	7208.	RECOVERY:	100.11%
RACER ID:	RAD094-03	TRACER FWHM (kev):	156.18
AMBDA VALUE:	1000.	ROI TYPE:	STANDARD
RACER DPM AT SAMPLE DATE:	2.124	CONFIDENCE FACTOR:	4.65
AMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
NERGY CAL DATE:	7-SEP-2001 15:32	EFF CAL DATE:	7-SEP-2001 15:32
KG FILENAME:	B_040_26NOV01	BKG ELAPSED TIME:	60003.

****

NUCLIDE ACTIVITY SUMMARY

UCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
232	5291.9	61.88	0.12	99.8	4.783E-01	1.217E-01	3.340E-02
-234	4761.5	150.76	0.24	99.8	1.165E+00	3.522E-01	3.856E-02
-235	4385.5	2.64	0.36	80.9	2.517E-02	3.388E-02	5.246E-02
-238	4184.4	109.88	0.12	100.2	8.457E-01	2.691E-01	3.326E-02

****

* acer FWHM > 80.0 Kev ***

T-7 12-6-01
nalyst Date

eviewer Date

ENVIROTEST LABORATORIES LLC.

ss Sample Counts Within Peak Regions Generated: 6-DEC-2001 17:57:30.31

r ID: 40 Acquisition Start: 5-DEC-2001 15:36:00.01
me: 0 02:00:08.00 Real Time: 0 02:00:08.00
ch Id: L4094UU Sample Id: L4094-3
nple Type: UU

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
0	4141.77	110	0	169.42	216.05	179	71	1.53E-02	9.5	
0	4407.72	3	0	40.08	304.67	283	30	4.16E-04	57.7	
0	4718.43	151	0	128.70	409.25	368	76	2.09E-02	8.1	
0	5267.73	62	0	156.18	597.02	558	71	8.60E-03	12.7	

ckground Counts Within Peak Regions Generated: 6-DEC-2001 17:57:38.16

Acquisition Start: 26-NOV-2001 15:38:24.01
ve Time: 0 16:40:03.00 Real Time: 0 16:40:03.00

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
0	4135.57	1	0	3.08	214.00	179	71	1.67E-05	100.0	
0	4386.30	3	0	80.15	297.50	283	30	5.00E-05	57.7	
0	4707.36	2	0	27.74	405.50	368	76	3.33E-05	70.7	
0	5256.10	1	0	3.08	593.00	558	71	1.67E-05	100.0	

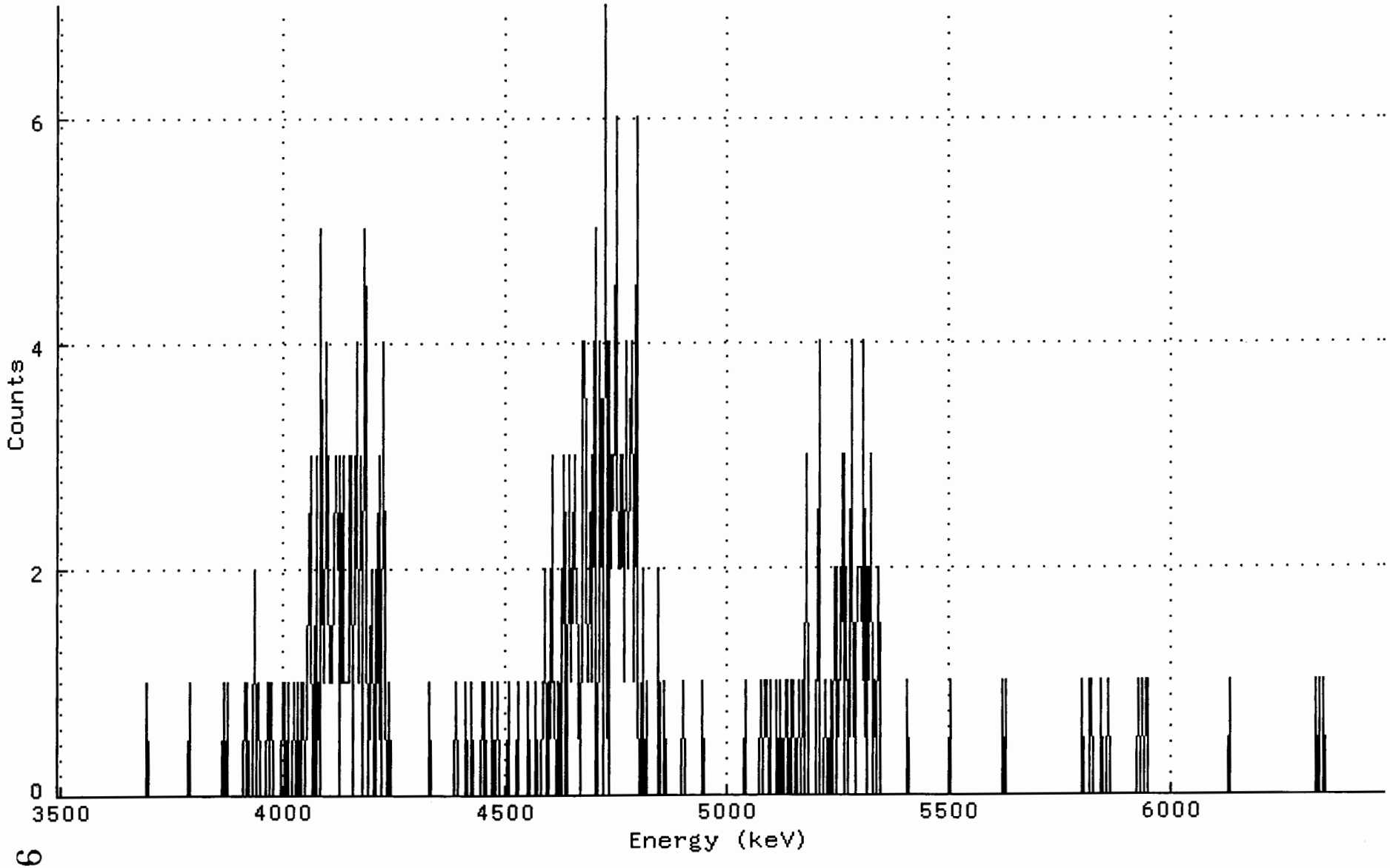
t Sample Counts Within Peak Regions Generated: 6-DEC-2001 17:57:38.54

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
0	4141.77*	110	0	169.42	216.05	179	71	1.52E-02	9.5	
	4407.72*	3	0	40.08	304.67	283	30	3.66E-04	66.1	
	4718.43*	151	0	128.70	409.25	368	76	2.09E-02	8.2	
0	5267.73*	62	0	156.18	597.02	558	71	8.58E-03	12.7	

g: "*" = Peak area was modified by background subtraction

Spectrum : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV_.S]S_L4094UU$L4094-3_UU.CNF;1
Title : 040
Sample Title:

Start Time: 5-DEC-2001 15:36:	Sample Time: 4-DEC-2001 00:00:	Energy Offset: 3.48302E+03
Real Time : 0 02:00:08.00	Sample ID : L4094-3	Energy Slope : 3.08277E+00
Live Time : 0 02:00:08.00	Sample Type: UU	Energy Quad : -1.56421E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
6-DEC-2001 17:57:15

****
ctral File: ND_AMS_ARCHIVE_S:S_L4094UU$L4094-3MD_UU.CNF
****

CH ID:	L4094UU	SAMPLE ID:	L4094-3MD
PLE DATE:	4-DEC-2001 00:00	ALIQUOT:	2.000E+00 gram
PLE TITLE:		DETECTOR NUMBER:	041
DATE:	5-DEC-2001 15:36	AVERAGE EFFICIENCY:	24.11%
PSED LIVE TIME:	7207.	RECOVERY:	98.60%
CER ID:	RAD094-03	TRACER FWHM (kev):	87.69
BDA VALUE:	1000.	ROI TYPE:	STANDARD
CER DPM AT SAMPLE DATE:	2.124	CONFIDENCE FACTOR:	4.65
PLE MATRIX:	SOLID	LLD CONSTANT:	2.71
RGY CAL DATE:	8-SEP-2001 12:19	EFF CAL DATE:	8-SEP-2001 12:19
FILENAME:	B_041_26NOV01	BKG ELAPSED TIME:	60006.

****

NUCLIDE ACTIVITY SUMMARY

LIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
2	5291.9	60.52	0.48	99.8	4.783E-01	1.235E-01	4.689E-02
34	4761.5	116.64	0.36	99.8	9.218E-01	2.931E-01	4.348E-02
35	4385.5	5.00	0.00	80.9	4.875E-02	4.538E-02	2.642E-02
38	4184.4	67.88	0.12	100.2	5.342E-01	1.894E-01	3.401E-02

****

cer FWHM > 80.0 Kev ***

57 _____ 12-6-01
lyst Date

_____ _____
iewer Date

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 6-DEC-2001 17:56:55.01

D[illegible]ctor ID: 41 Acquisition Start: 5-DEC-2001 15:36:09.01
L[illegible] Time: 0 02:00:07.00 Real Time: 0 02:00:07.00
Batch Id: L4094UU Sample Id: L4094-3MD
Sample Type: UU

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4146.25	68	0	171.22	205.00	167	71	9.44E-03	12.1	
2	0	4390.09	5	0	3.08	286.20	270	31	6.94E-04	44.7	
3	0	4724.26	117	0	216.81	398.57	356	76	1.62E-02	9.2	
4	0	5276.08	61	0	87.69	587.00	545	71	8.46E-03	12.8	

Background Counts Within Peak Regions Generated: 6-DEC-2001 17:57:12.99

Acquisition Start: 26-NOV-2001 15:38:27.01
Live Time: 0 16:40:06.00 Real Time: 0 16:40:06.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4137.21	1	0	3.08	202.00	167	71	1.67E-05	100.0	
2	0	4386.50	0	0	0.00	285.00	270	31	0.00E+00	0.0	
3	0	4709.26	3	0	116.91	393.50	356	76	5.00E-05	57.7	
4	0	5255.77	4	0	119.99	580.00	545	71	6.67E-05	50.0	

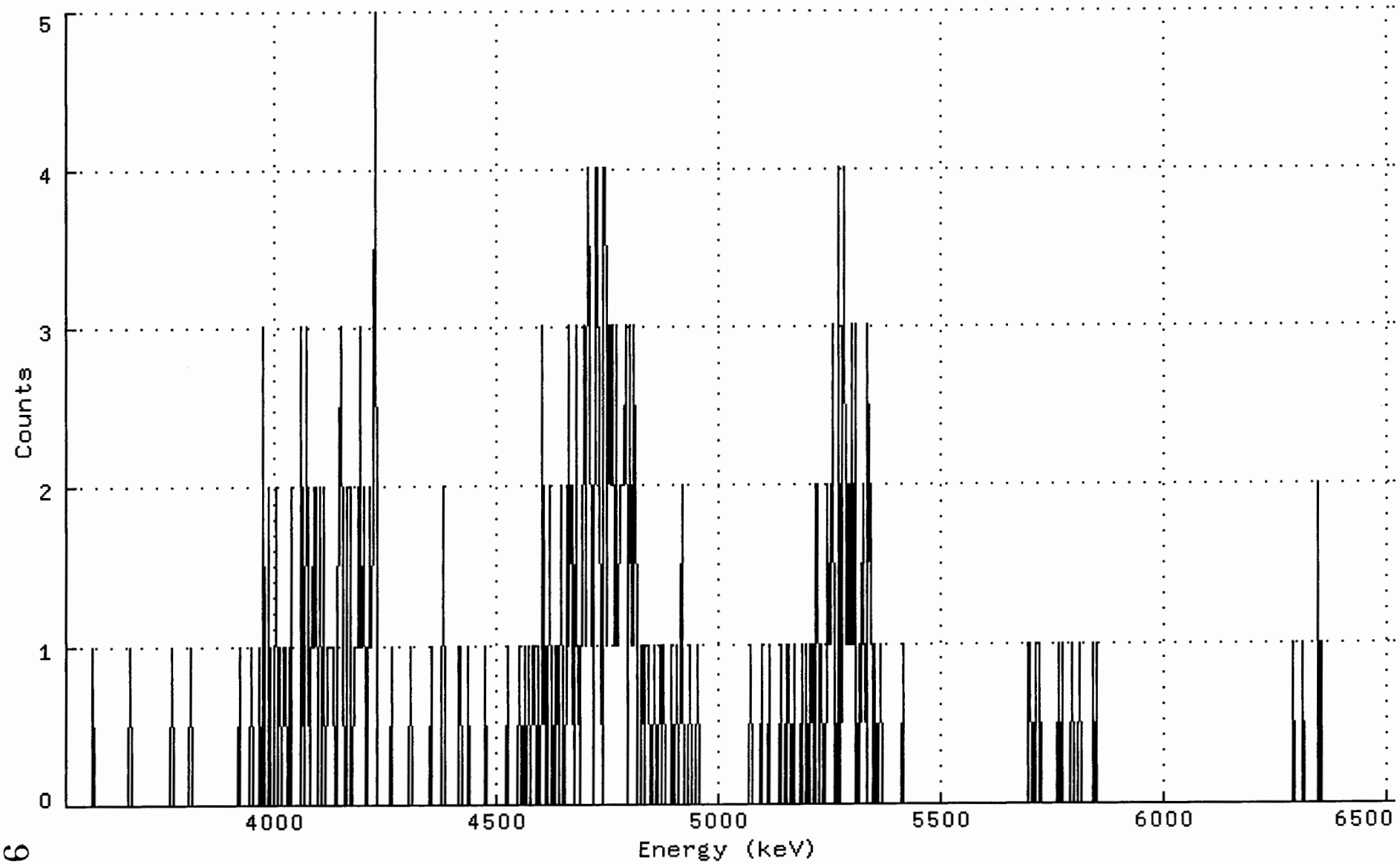
Net Sample Counts Within Peak Regions Generated: 6-DEC-2001 17:57:13.37

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4146.25*	68	0	171.22	205.00	167	71	9.42E-03	12.1	
[illegible]	0	4390.09*	5	0	3.08	286.20	270	31	6.94E-04	44.7	
[illegible]	0	4724.26*	117	0	216.81	398.57	356	76	1.62E-02	9.3	
4	0	5276.08*	61	0	87.69	587.00	545	71	8.40E-03	12.9	

Flag: "*" = Peak area was modified by background subtraction

Spectrum : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCH /E.S]S_L4094UU$L4094-3MD_UU.CNF;1
Title : 041
Sample Title:

Start Time: 5-DEC-2001 15:36:	Sample Time: 4-DEC-2001 00:00:	Energy Offset: 3.52185E+03
Real Time : 0 02:00:07.00	Sample ID : L4094-3MD	Energy Slope : 3.07670E+00
Live Time : 0 02:00:07.00	Sample Type: UU	Energy Quad : -1.50303E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
6-DEC-2001 17:58:05

Spectral File: ND_AMS_ARCHIVE_S:S_L4094UU$L4094-4_UU.CNF

BATCH ID:	L4094UU	SAMPLE ID:	L4094-4
SAMPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	2.000E+00 gram
SAMPLE TITLE:		DETECTOR NUMBER:	042
ACQ DATE:	5-DEC-2001 15:36	AVERAGE EFFICIENCY:	24.74%
ELAPSED LIVE TIME:	7203.	RECOVERY:	84.84%
TRACER ID:	RAD094-03	TRACER FWHM (kev):	0.00
LAMBDA VALUE:	1000.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	2.124	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	8-SEP-2001 20:43	EFF CAL DATE:	8-SEP-2001 20:43
BKG FILENAME:	B_042_26NOV01	BKG ELAPSED TIME:	60002.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
U232	5291.9	53.40	0.60	99.8	4.783E-01	1.317E-01	5.654E-02
U-234	4761.5	226.88	0.12	99.8	2.032E+00	6.213E-01	3.870E-02
U-235	4385.5	7.88	0.12	80.9	8.707E-02	6.700E-02	4.775E-02
U-238	4184.4	121.52	0.48	100.2	1.084E+00	3.577E-01	5.291E-02

Tracer FWHM < 10.0 Kev ***

Analyst _____ Date 12-6-01

Reviewer _____ Date _____

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 6-DEC-2001 17:57:53.29

Det[illegible]or ID: 42 Acquisition Start: 5-DEC-2001 15:36:19.01
Li[illegible]me: 0 02:00:03.00 Real Time: 0 02:00:04.00
Batch Id: L4094UU Sample Id: L4094-4
Sample Type: UU

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4150.96	122	0	190.94	244.92	205	71	1.69E-02	9.1	
2	0	4374.83	8	0	0.00	319.50	309	30	1.11E-03	35.4	
3	0	4728.41	227	0	91.52	438.61	394	76	3.15E-02	6.6	
4	0	5239.99	54	0	0.00	613.94	585	70	7.50E-03	13.6	

Background Counts Within Peak Regions Generated: 6-DEC-2001 17:58:03.18

Acquisition Start: 26-NOV-2001 15:38:31.01
Live Time: 0 16:40:02.00 Real Time: 0 16:40:02.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4136.13	4	0	161.13	240.00	205	71	6.67E-05	50.0	
2	0	4386.79	1	0	3.10	323.50	309	30	1.67E-05	100.0	
3	0	4707.43	1	0	3.10	431.50	394	76	1.67E-05	100.0	
4	0	5256.03	5	0	170.42	619.50	585	70	8.33E-05	44.7	

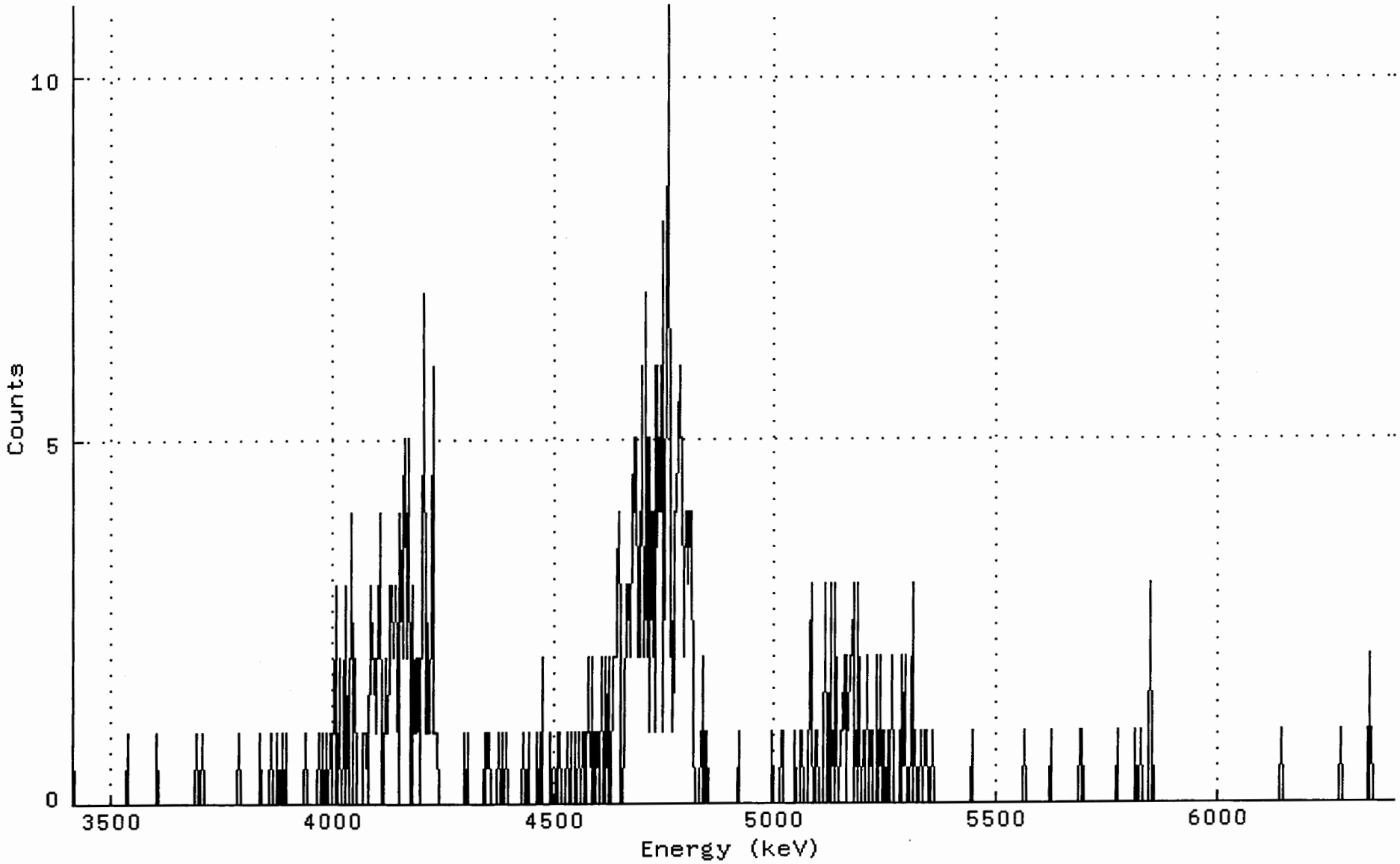
Net Sample Counts Within Peak Regions Generated: 6-DEC-2001 17:58:03.61

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4150.96*	122	0	190.94	244.92	205	71	1.69E-02	9.1	
2	[illegible]	4374.83*	8	0	0.00	319.50	309	30	1.09E-03	35.9	
3	[illegible]	4728.41*	227	0	91.52	438.61	394	76	3.15E-02	6.6	
4	0	5239.99*	53	0	0.00	613.94	585	70	7.41E-03	13.8	

lag: "*" = Peak area was modified by background subtraction

Spectra : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIVE.SJS_L4094UU$L4094-4_UU.CNF;1
Title : 042
Sample Title:

Start Time:	5-DEC-2001 15:36:	Sample Time:	4-DEC-2001 00:00:	Energy Offset:	3.40236E+03
Real Time :	0 02:00:04.00	Sample ID :	L4094-4	Energy Slope :	3.09862E+00
Live Time :	0 02:00:03.00	Sample Type:	UU	Energy Quad :	-1.71778E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
6-DEC-2001 17:59:02

ectral File: ND_AMS_ARCHIVE_S:S_L4094UU$L4094-5_UU.CNF

TCH ID:	L4094UU	SAMPLE ID:	L4094-5
MPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	2.000E+00 gram
MPLE TITLE:		DETECTOR NUMBER:	043
Q DATE:	5-DEC-2001 15:36	AVERAGE EFFICIENCY:	23.93%
AFSED LIVE TIME:	7203.	RECOVERY:	127.31%
ACER ID:	RAD094-03	TRACER FWHM (kev):	156.09
MBDA VALUE:	1000.	ROI TYPE:	MANUAL
ACER DPM AT SAMPLE DATE:	2.124	CONFIDENCE FACTOR:	4.65
MPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ERGY CAL DATE:	9-SEP-2001 11:41	EFF CAL DATE:	9-SEP-2001 11:41
G FILENAME:	B_043_26NOV01	BKG ELAPSED TIME:	60003.

NUCLIDE ACTIVITY SUMMARY

CLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
32	5291.9	77.52	0.48	99.8	4.783E-01	1.090E-01	3.660E-02
234	4761.5	210.88	0.12	99.8	1.301E+00	3.465E-01	2.666E-02
235	4385.5	4.00	0.00	80.9	3.045E-02	3.123E-02	2.063E-02
238	4184.4	105.64	0.36	100.2	6.490E-01	1.947E-01	3.379E-02

cer FWHM > 80.0 Kev ***
emical Recovery > 115.0% ***

alyst Date

viewer Date

ENVIROTEST LABORATORIES LLC.

oss Sample Counts Within Peak Regions Generated: 6-DEC-2001 17:58:58.81

t r ID: 43 Acquisition Start: 5-DEC-2001 15:36:28.01
v me: 0 02:00:03.00 Real Time: 0 02:00:03.00
tch Id: L4094UU Sample Id: L4094-5
mple Type: UU

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
0	4152.91	106	0	128.23	237.92	198	73	1.47E-02	9.7	
0	4397.33	4	0	62.66	318.25	300	30	5.55E-04	50.0	
0	4736.49	211	0	183.52	430.86	392	72	2.93E-02	6.9	
0	5263.48	78	0	156.09	608.62	572	69	1.08E-02	11.3	

ckground Counts Within Peak Regions Generated: 6-DEC-2001 17:58:59.95

Acquisition Start: 26-NOV-2001 15:38:34.01
ve Time: 0 16:40:03.00 Real Time: 0 16:40:03.00

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
0	4140.92	3	0	31.33	234.00	198	73	5.00E-05	57.7	
0	4385.97	0	0	0.00	314.50	300	30	0.00E+00	0.0	
0	4726.42	1	0	3.13	427.50	392	72	1.67E-05	100.0	
0	5255.80	4	0	75.19	606.00	572	69	6.67E-05	50.0	

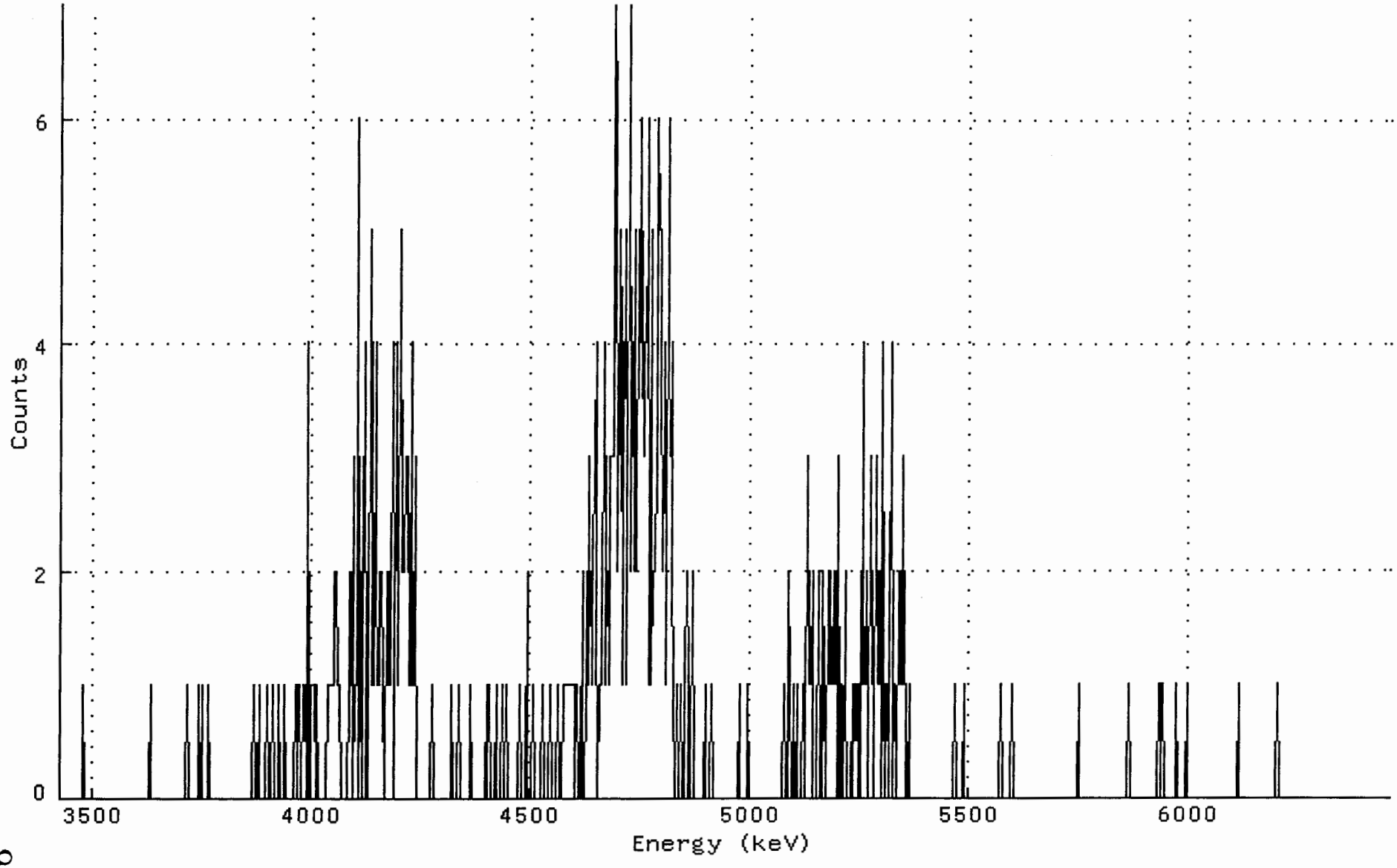
et Sample Counts Within Peak Regions Generated: 6-DEC-2001 17:59:00.35

It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
0	4152.91*	106	0	128.23	237.92	198	73	1.47E-02	9.7	
	4397.33*	4	0	62.66	318.25	300	30	5.55E-04	50.0	
	4736.49*	211	0	183.52	430.86	392	72	2.93E-02	6.9	
0	5263.48*	78	0	156.09	608.62	572	69	1.08E-02	11.4	

ag: "*" = Peak area was modified by background subtraction

Title : 043
Sample Title:

Start Time: 5-DEC-2001 15:36:	Sample Time: 4-DEC-2001 00:00:	Energy Offset: 3.41670E+03
Real Time : 0 02:00:03.00	Sample ID : L4094-5	Energy Slope : 3.13278E+00
Live Time : 0 02:00:03.00	Sample Type: UU	Energy Quad : -1.61659E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
6-DEC-2001 17:59:30

****

Spectral File: ND_AMS_ARCHIVE_S:S_L4094UU$L4094-6_UU.CNF

****

BATCH ID:	L4094UU	SAMPLE ID:	L4094-6
SAMPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	2.000E+00 gram
SAMPLE TITLE:		DETECTOR NUMBER:	044
ACQ DATE:	5-DEC-2001 15:36	AVERAGE EFFICIENCY:	25.19%
ELAPSED LIVE TIME:	7206.	RECOVERY:	75.49%
TRACER ID:	RAD094-03	TRACER FWHM (kev):	150.77
LAMBDA VALUE:	1000.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	2.124	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	10-SEP-2001 08:26	EFF CAL DATE:	10-SEP-2001 08:26
BKG FILENAME:	B_044_26NOV01	BKG ELAPSED TIME:	60006.

****

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
U232	5291.9	48.40	0.60	99.8	4.783E-01	1.385E-01	6.239E-02
U-234	4761.5	377.76	0.24	99.8	3.733E+00	1.147E+00	4.930E-02
U-235	4385.5	9.88	0.12	80.9	1.204E-01	8.467E-02	5.268E-02
U-238	4184.4	182.88	0.12	100.2	1.799E+00	5.850E-01	4.252E-02

****

*** ucer FWHM > 80.0 Kev ***

Analyst _____ Date 12-6-01

Reviewer _____ Date _____

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 6-DEC-2001 17:59:18.70

Det r ID: 44 Acquisition Start: 5-DEC-2001 15:36:37.01
Live Time: 0 02:00:06.00 Real Time: 0 02:00:06.00
Batch Id: L4094UU Sample Id: L4094-6
Sample Type: UU

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4142.99	183	0	157.41	220.20	183	71	2.54E-02	7.4	
2	0	4396.42	10	0	53.12	303.70	286	30	1.39E-03	31.6	
3	0	4725.69	378	0	0.00	413.39	370	76	5.25E-02	5.1	
4	0	5260.39	49	0	150.77	594.53	559	69	6.80E-03	14.3	

Background Counts Within Peak Regions Generated: 6-DEC-2001 17:59:27.32

Acquisition Start: 26-NOV-2001 15:38:37.01
Live Time: 0 16:40:06.00 Real Time: 0 16:40:06.00

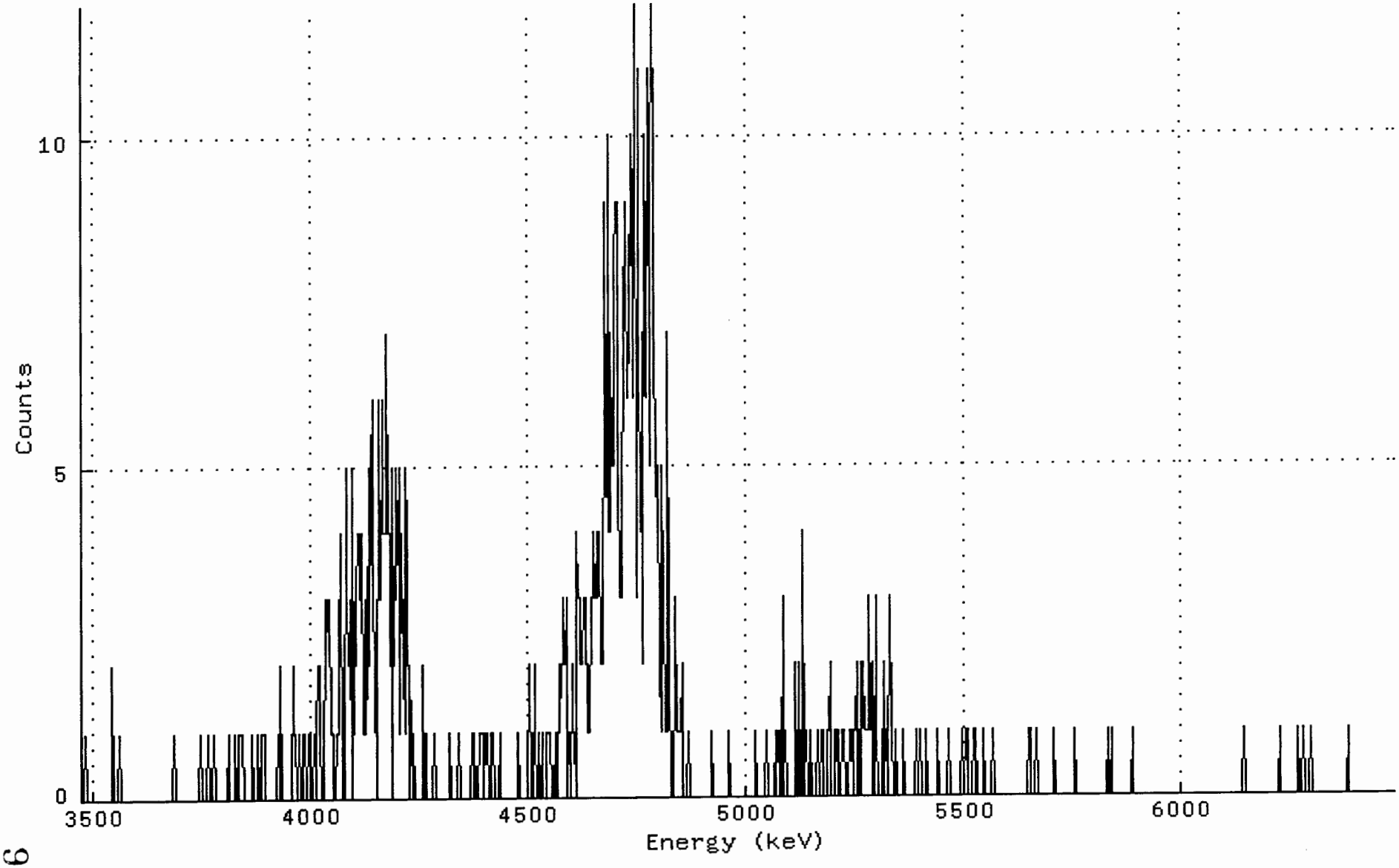
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4136.29	1	0	3.12	218.00	183	71	1.67E-05	100.0	
2	0	4386.75	1	0	3.12	300.50	286	30	1.67E-05	100.0	
3	0	4708.11	2	0	93.75	407.50	370	76	3.33E-05	70.7	
4	0	5255.92	5	0	168.74	593.00	559	69	8.33E-05	44.7	

Net Sample Counts Within Peak Regions Generated: 6-DEC-2001 17:59:27.75

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1		4142.99*	183	0	157.41	220.20	183	71	2.54E-02	7.4	
2		4396.42*	10	0	53.12	303.70	286	30	1.37E-03	32.0	
3	0	4725.69*	378	0	0.00	413.39	370	76	5.24E-02	5.1	
4	0	5260.39*	48	0	150.77	594.53	559	69	6.72E-03	14.5	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHI\ S]S_L4094UU$L4094-6_UU.CNF;1
Title : 044
Sample Title:
Start Time: 5-DEC-2001 15:36: Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.46323E+03
Real Time : 0 02:00:06.00 Sample ID : L4094-6 Energy Slope : 3.12486E+00
Live Time : 0 02:00:06.00 Sample Type: UU Energy Quad : -1.71642E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
6-DEC-2001 18:02:48

Spectral File: ND_AMS_ARCHIVE_S:S_L4094UU$L4094-7_UU.CNF

BATCH ID:	L4094UU	SAMPLE ID:	L4094-7
SAMPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	2.000E+00 gram
SAMPLE TITLE:		DETECTOR NUMBER:	045
ACQ DATE:	5-DEC-2001 15:36	AVERAGE EFFICIENCY:	25.68%
ELAPSED LIVE TIME:	7205.	RECOVERY:	109.97%
TRACER ID:	RAD094-03	TRACER FWHM (kev):	99.23
LAMBDA VALUE:	1000.	ROI TYPE:	MANUAL
TRACER DPM AT SAMPLE DATE:	2.124	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	10-SEP-2001 16:22	EFF CAL DATE:	10-SEP-2001 16:22
BKG FILENAME:	B_045_26NOV01	BKG ELAPSED TIME:	60002.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
U232	5291.9	71.88	0.12	99.8	4.783E-01	1.129E-01	2.875E-02
U-234	4761.5	540.88	0.12	99.8	3.599E+00	9.044E-01	2.875E-02
U-235	4385.5	20.88	0.12	80.9	1.714E-01	8.545E-02	3.547E-02
U-238	4184.4	266.88	0.12	100.2	1.768E+00	4.703E-01	2.863E-02

*** cer FWHM > 80.0 Kev ***

Analyst Date 12-6-01

Reviewer Date

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 6-DEC-2001 18:02:44.64

De or ID: 45 Acquisition Start: 5-DEC-2001 15:36:46.01
Li ime: 0 02:00:05.00 Real Time: 0 02:00:05.00
Batch Id: L4094UU Sample Id: L4094-7
Sample Type: UU

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4142.75	267	0	124.96	237.21	200	71	3.71E-02	6.1	
2	0	4390.33	21	0	43.29	319.62	303	31	2.91E-03	21.8	
3	0	4731.38	541	0	91.12	434.45	395	75	7.51E-02	4.3	
4	0	5250.78	72	0	99.23	612.38	583	67	9.99E-03	11.8	

Background Counts Within Peak Regions Generated: 6-DEC-2001 18:02:45.66

Acquisition Start: 26-NOV-2001 15:38:41.01
Live Time: 0 16:40:02.00 Real Time: 0 16:40:02.00

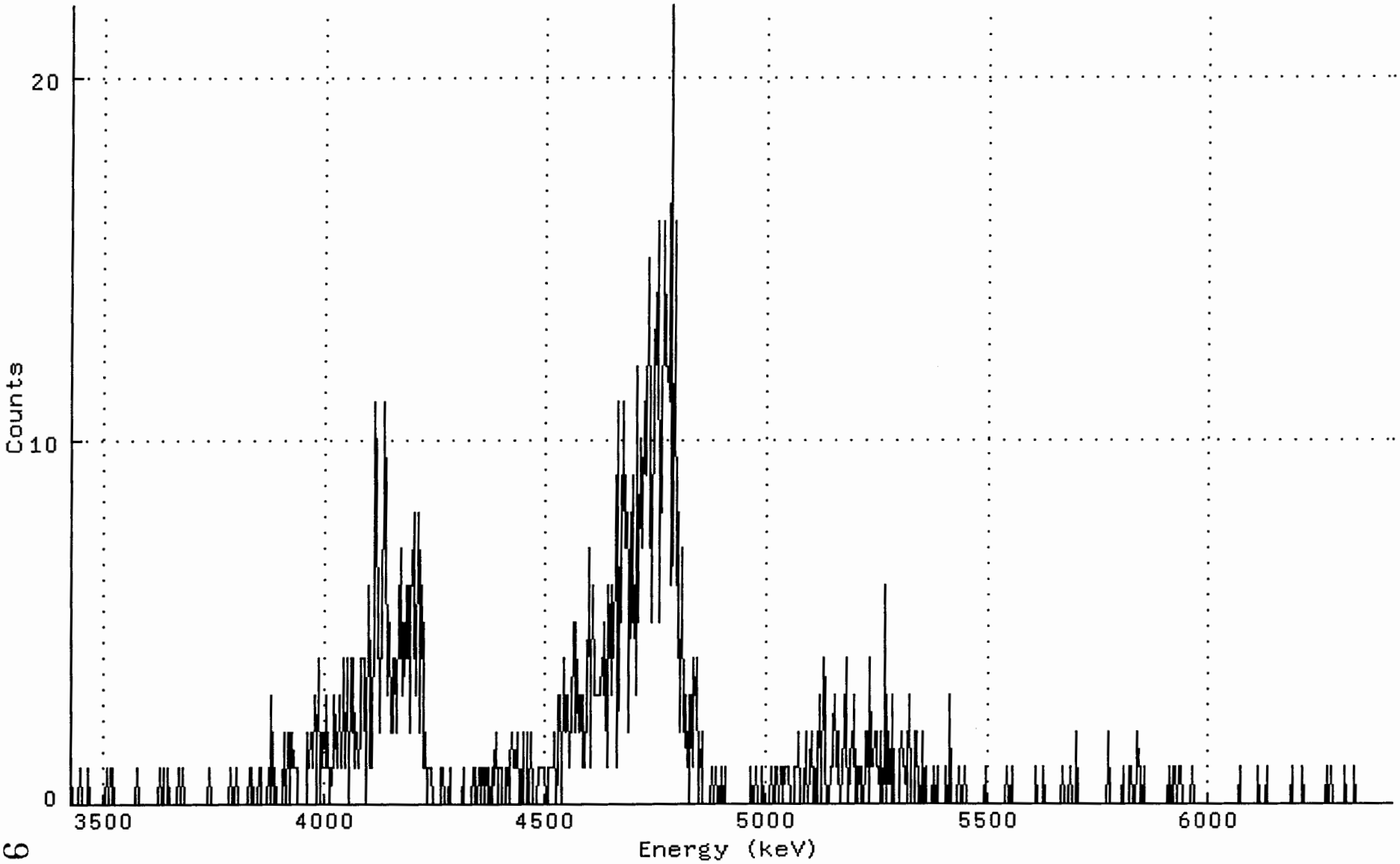
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4136.07	1	0	3.10	235.00	200	71	1.67E-05	100.0	
2	0	4385.49	1	0	3.10	318.00	303	31	1.67E-05	100.0	
3	0	4724.16	1	0	3.10	432.00	395	75	1.67E-05	100.0	
4	0	5261.25	1	0	3.10	616.00	583	67	1.67E-05	100.0	

Net Sample Counts Within Peak Regions Generated: 6-DEC-2001 18:02:46.14

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4142.75*	267	0	124.96	237.21	200	71	3.70E-02	6.1	
2		4390.33*	21	0	43.29	319.62	303	31	2.90E-03	22.0	
3		4731.38*	541	0	91.12	434.45	395	75	7.51E-02	4.3	
4	0	5250.78*	72	0	99.23	612.38	583	67	9.98E-03	11.8	

Flag: "*" = Peak area was modified by background subtraction

Spectr : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHI S]S_L4094UU$L4094-7_UU.CNF;1
Title : 045
Sample Title:
Start Time: 5-DEC-2001 15:36: Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.41687E+03
Real Time : 0 02:00:05.00 Sample ID : L4094-7 Energy Slope : 3.10130E+00
Live Time : 0 02:00:05.00 Sample Type: UU Energy Quad : -1.74006E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
6-DEC-2001 18:03:33

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Spectral File: ND_AMS_ARCHIVE_S:S_L4094UU$L4094-8_UU.CNF

****

BATCH ID:	L4094UU	SAMPLE ID:	L4094-8
SAMPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	2.000E+00 gram
SAMPLE TITLE:		DETECTOR NUMBER:	046
ACQ DATE:	5-DEC-2001 15:36	AVERAGE EFFICIENCY:	24.54%
ELAPSED LIVE TIME:	7201.	RECOVERY:	104.95%
TRACER ID:	RAD094-03	TRACER FWHM (kev):	186.32
LAMBDA VALUE:	1000.	ROI TYPE:	MANUAL
TRACER DPM AT SAMPLE DATE:	2.124	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	11-SEP-2001 08:15	EFF CAL DATE:	11-SEP-2001 08:15
BKG FILENAME:	B_046_26NOV01	BKG ELAPSED TIME:	60003.

****

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
U232	5291.9	65.52	0.48	99.8	4.783E-01	1.187E-01	4.330E-02
U-234	4761.5	985.40	0.60	99.8	7.193E+00	1.843E+00	4.608E-02
U-235	4385.5	27.88	0.12	80.9	2.511E-01	1.139E-01	3.891E-02
U-238	4184.4	691.88	0.12	100.2	5.029E+00	1.305E+00	3.141E-02

****

** acer FWHM > 80.0 Kev ***

Analyst _____ Date 12-6-01

Reviewer _____ Date _____

ENVIROTEST LABORATORIES LLC.

ross Sample Counts Within Peak Regions Generated: 6-DEC-2001 18:03:30.47

et r ID: 46 Acquisition Start: 5-DEC-2001 15:36:56.01
ive Time: 0 02:00:01.00 Real Time: 0 02:00:01.00
atch Id: L4094UU Sample Id: L4094-8
ample Type: UU

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4143.16	692	0	145.52	241.30	205	69	9.61E-02	3.8	
2	0	4381.12	28	0	37.57	318.54	306	29	3.89E-03	18.9	
3	0	4735.71	986	0	120.65	434.87	391	85	1.37E-01	3.2	
4	0	5243.27	66	0	186.32	604.11	574	69	9.17E-03	12.3	

Background Counts Within Peak Regions Generated: 6-DEC-2001 18:03:31.57

Acquisition Start: 26-NOV-2001 15:38:44.01
Live Time: 0 16:40:03.00 Real Time: 0 16:40:03.00

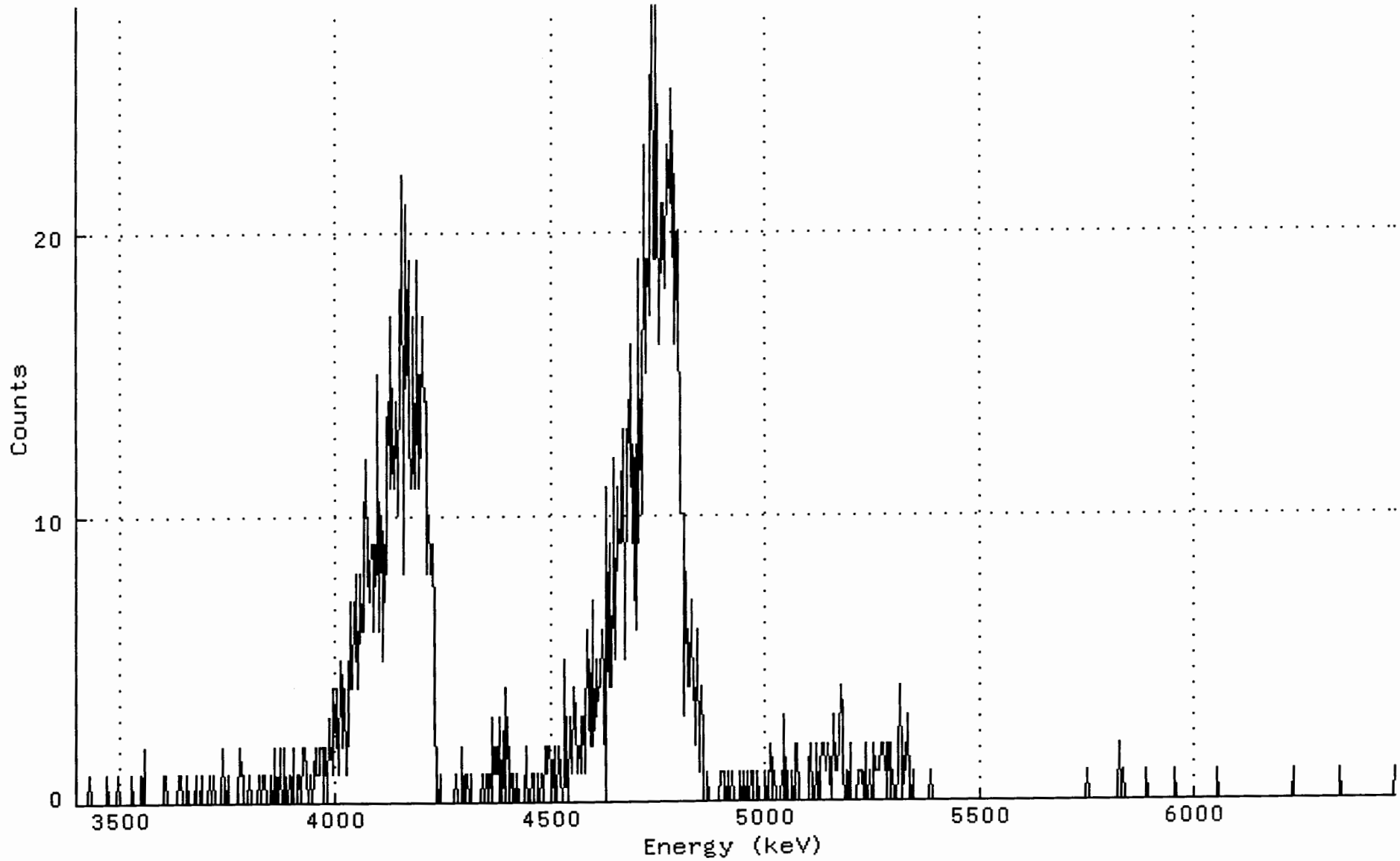
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4136.04	1	0	3.18	239.00	205	69	1.67E-05	100.0	
2	0	4385.61	1	0	3.18	320.00	306	29	1.67E-05	100.0	
3	0	4730.04	5	0	3.18	433.00	391	85	8.33E-05	44.7	
4	0	5254.83	4	0	133.42	608.00	574	69	6.67E-05	50.0	

Net Sample Counts Within Peak Regions Generated: 6-DEC-2001 18:03:31.98

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1		4143.16*	692	0	145.52	241.30	205	69	9.61E-02	3.8	
2		4381.12*	28	0	37.57	318.54	306	29	3.87E-03	19.0	
3	0	4735.71*	985	0	120.65	434.87	391	85	1.37E-01	3.2	
4	0	5243.27*	66	0	186.32	604.11	574	69	9.10E-03	12.4	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV S]S_L4094UU$L4094-8_UU.CNF;1
Title : 046
Sample Title:
Start Time: 5-DEC-2001 15:36: Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.38657E+03
Real Time : 0 02:00:01.00 Sample ID : L4094-8 Energy Slope : 3.17669E+00
Live Time : 0 02:00:01.00 Sample Type: UU Energy Quad : -1.70875E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
6-DEC-2001 18:04:23

Spectral File: ND_AMS_ARCHIVE_S:S_L4094UU$L4094-9_UU.CNF

BATCH ID:	L4094UU	SAMPLE ID:	L4094-9
SAMPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	2.000E+00 gram
SAMPLE TITLE:		DETECTOR NUMBER:	047
ACQ DATE:	5-DEC-2001 15:37	AVERAGE EFFICIENCY:	26.43%
ELAPSED LIVE TIME:	7204.	RECOVERY:	58.58%
TRACER ID:	RAD094-03	TRACER FWHM (kev):	125.21
LAMBDA VALUE:	1000.	ROI TYPE:	MANUAL
TRACER DPM AT SAMPLE DATE:	2.124	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	11-SEP-2001 16:01	EFF CAL DATE:	11-SEP-2001 16:01
BKG FILENAME:	B_047_26NOV01	BKG ELAPSED TIME:	60004.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
U232	5291.9	39.40	0.60	99.8	4.783E-01	1.537E-01	7.663E-02
U-234	4761.5	603.88	0.12	99.8	7.331E+00	2.430E+00	5.246E-02
U-235	4385.5	14.00	0.00	80.9	2.097E-01	1.308E-01	4.058E-02
U-238	4184.4	286.88	0.12	100.2	3.468E+00	1.187E+00	5.223E-02

Tracer FWHM > 80.0 Kev ***

D7 — Analyst

12-6-01 — Date

Reviewer

Date

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 6-DEC-2001 18:04:19.84

De[illegible]r ID: 47 Acquisition Start: 5-DEC-2001 15:37:05.01
Live[illegible]ime: 0 02:00:04.00 Real Time: 0 02:00:04.00
Batch Id: L4094UU Sample Id: L4094-9
Sample Type: UU

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4145.75	287	0	109.21	240.36	202	71	3.98E-02	5.9	
2	0	4392.10	14	0	3.09	322.36	307	29	1.94E-03	26.7	
3	0	4739.65	604	0	152.14	439.25	390	95	8.38E-02	4.1	
4	0	5270.21	40	0	125.21	620.53	584	67	5.55E-03	15.8	

Background Counts Within Peak Regions Generated: 6-DEC-2001 18:04:20.88

Acquisition Start: 26-NOV-2001 15:38:47.01
Live Time: 0 16:40:04.00 Real Time: 0 16:40:04.00

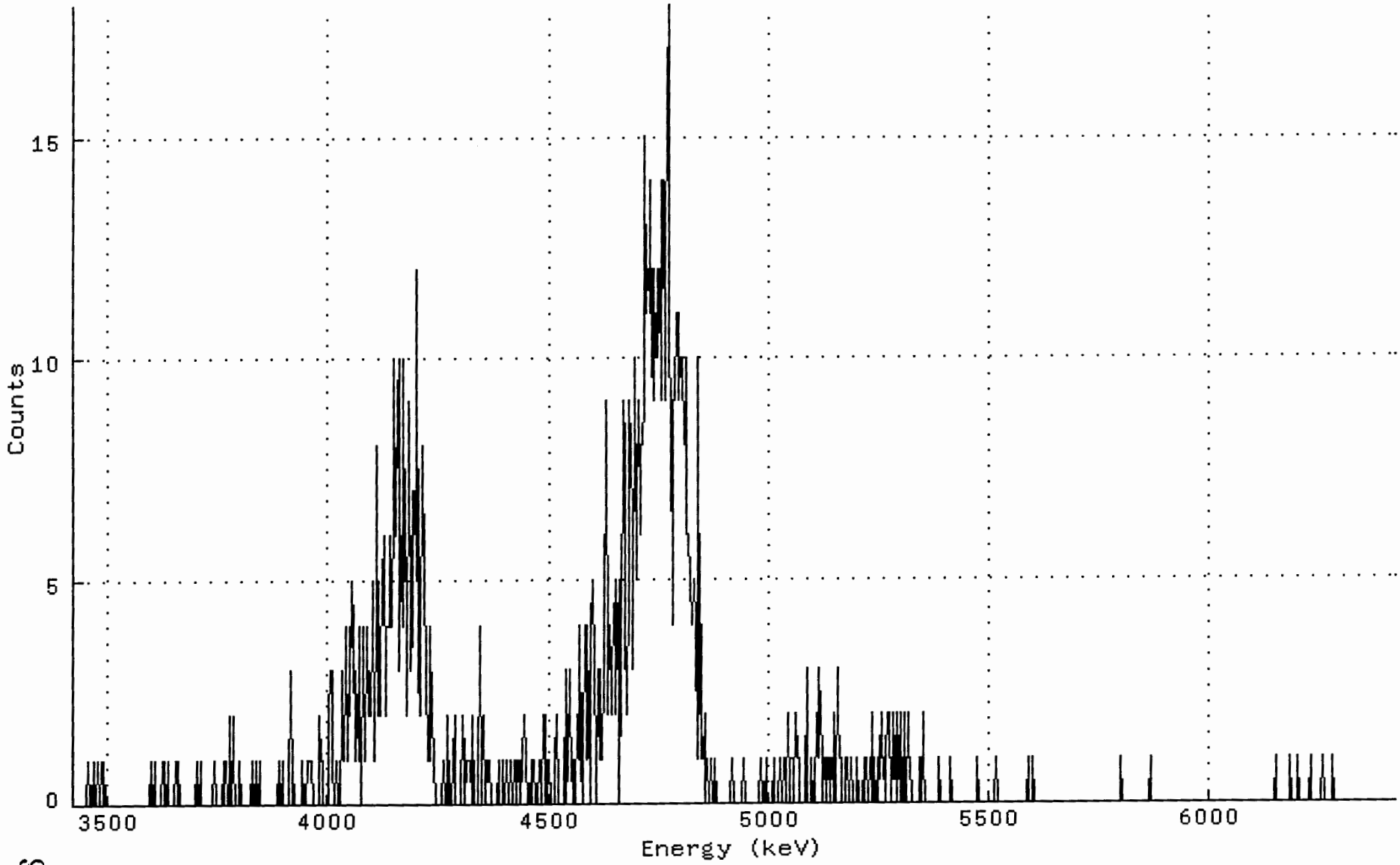
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4135.63	1	0	3.09	237.00	202	71	1.67E-05	100.0	
2	0	4388.04	0	0	0.00	321.00	307	29	0.00E+00	0.0	
3	0	4733.00	1	0	3.09	437.00	390	95	1.67E-05	100.0	
4	0	5259.99	5	0	194.78	617.00	584	67	8.33E-05	44.7	

Net Sample Counts Within Peak Regions Generated: 6-DEC-2001 18:04:21.37

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4145.75*	287	0	109.21	240.36	202	71	3.98E-02	5.9	
2		4392.10*	14	0	3.09	322.36	307	29	1.94E-03	26.7	
3	[illegible]	4739.65*	604	0	152.14	439.25	390	95	8.38E-02	4.1	
4	0	5270.21*	39	0	125.21	620.53	584	67	5.47E-03	16.1	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV S]S_L4094UU$L4094-9_UU.CNF;1
Title : 047
Sample Title:
Start Time: 5-DEC-2001 15:37: Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.41163E+03
Real Time : 0 02:00:04.00 Sample ID : L4094-9 Energy Slope : 3.09171E+00
Live Time : 0 02:00:04.00 Sample Type: UU Energy Quad : -1.55582E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
6-DEC-2001 18:05:15

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Spectral File: ND_AMS_ARCHIVE_S:S_L4094UU$L4094-PEM-1_UU.CNF

****

BATCH ID:	L4094UU	SAMPLE ID:	L4094-PEM-1
SAMPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	1.000E-01 gram
SAMPLE TITLE:		DETECTOR NUMBER:	048
ACQ DATE:	5-DEC-2001 15:37	AVERAGE EFFICIENCY:	25.03%
ELAPSED LIVE TIME:	7206.	RECOVERY:	85.75%
TRACER ID:	RAD094-03	TRACER FWHM (kev):	31.91
LAMBDA VALUE:	1000.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	2.124	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	12-SEP-2001 08:16	EFF CAL DATE:	12-SEP-2001 08:16
BKG FILENAME:	B_048_26NOV01	BKG ELAPSED TIME:	60000.

****

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
U232	5291.9	54.64	0.36	99.8	9.566E+00	2.598E+00	9.631E-01
U-234	4761.5	37.64	0.36	99.8	6.590E+00	2.805E+00	9.631E-01
U-235	4385.5	1.00	0.00	80.9	2.160E-01	4.359E-01	5.853E-01
U-238	4184.4	93.88	0.12	100.2	1.637E+01	5.584E+00	7.533E-01

****

Analyst _____ Date 12-6-01

Reviewer _____ Date _____

ENVIROTEST LABORATORIES LLC.

·oss Sample Counts Within Peak Regions Generated: 6-DEC-2001 18:05:07.63

:t ~ ID: 48 Acquisition Start: 5-DEC-2001 15:37:16.01
ive .ime: 0 02:00:06.00 Real Time: 0 02:00:06.00
atch Id: L4094UU Sample Id: L4094-PEM-1
ample Type: UU

k	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4143.40	94	0	117.71	226.99	190	70	1.30E-02	10.3	
2	0	4425.92	1	0	3.14	320.00	292	30	1.39E-04	100.0	
3	0	4722.66	38	0	164.75	418.84	377	75	5.27E-03	16.2	
4	0	5271.23	55	0	31.91	604.84	565	70	7.63E-03	13.5	

Background Counts Within Peak Regions Generated: 6-DEC-2001 18:05:12.24

Acquisition Start: 26-NOV-2001 15:38:51.01
Live Time: 0 16:40:00.00 Real Time: 0 16:40:00.00

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4135.79	1	0	3.14	224.50	190	70	1.67E-05	100.0	
2	0	4385.12	0	0	0.00	306.50	292	30	0.00E+00	0.0	
3	0	4708.21	3	0	119.28	414.00	377	75	5.00E-05	57.7	
4	0	5255.67	3	0	191.47	599.50	565	70	5.00E-05	57.7	

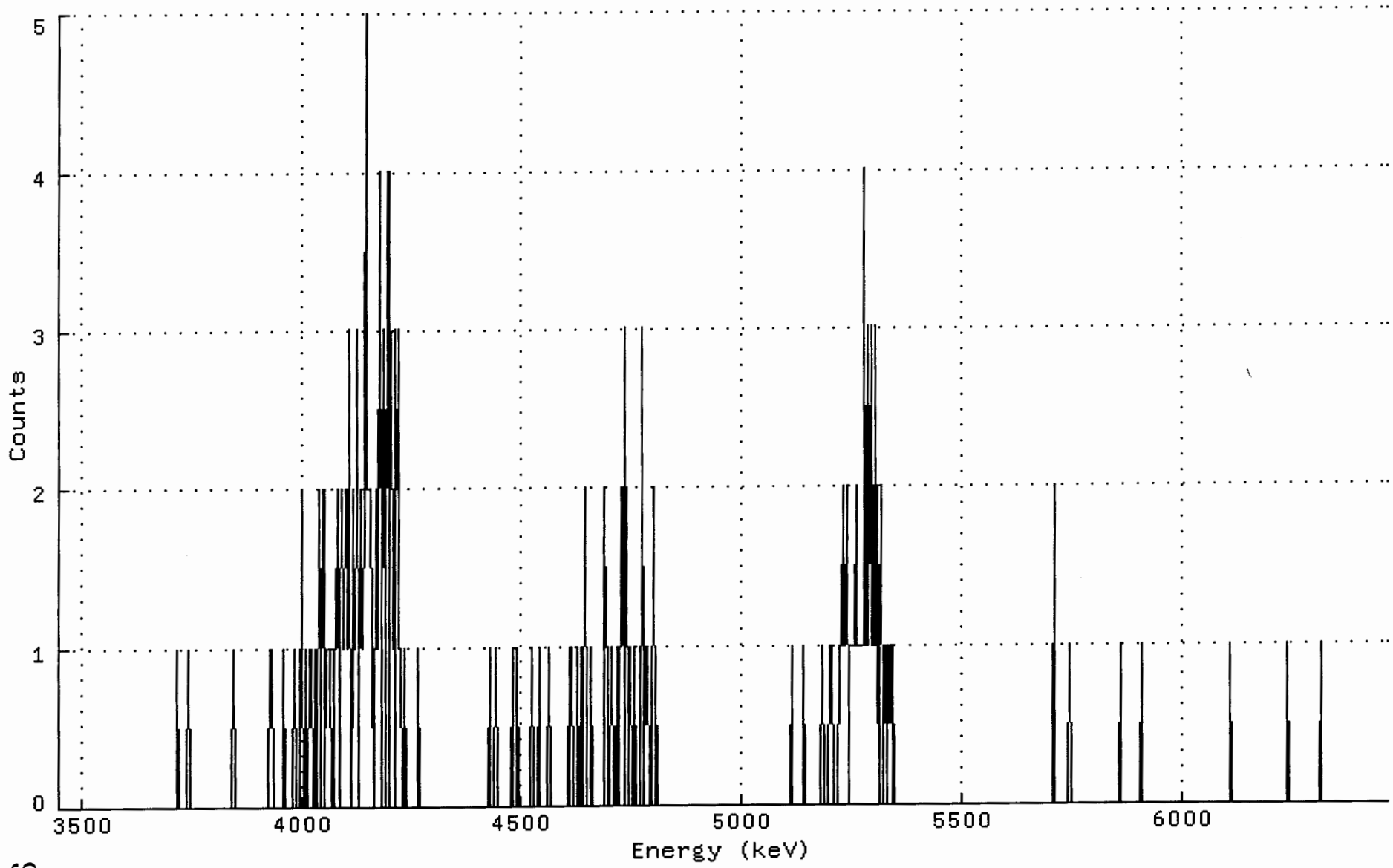
Net Sample Counts Within Peak Regions Generated: 6-DEC-2001 18:05:12.62

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4143.40*	94	0	117.71	226.99	190	70	1.30E-02	10.3	
2		4425.92*	1	0	3.14	320.00	292	30	1.39E-04	100.0	
3	0	4722.66*	38	0	164.75	418.84	377	75	5.22E-03	16.4	
4	0	5271.23*	55	0	31.91	604.84	565	70	7.58E-03	13.6	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV S]S_L4094UU$L4094-PEM-1_UU.CNF;1
Title : 048
Sample Title:

Start Time: 5-DEC-2001 15:37:	Sample Time: 4-DEC-2001 00:00:	Energy Offset: 3.44045E+03
Real Time : 0 02:00:06.00	Sample ID : L4094-PEM-1	Energy Slope : 3.13882E+00
Live Time : 0 02:00:06.00	Sample Type: UU	Energy Quad : -1.85050E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
6-DEC-2001 18:05:49

Spectral File: ND_AMS_ARCHIVE_S:S_L4094UU$L4094-TRM-2_UU.CNF

BATCH ID:	L4094UU	SAMPLE ID:	L4094-TRM-2
SAMPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	1.000E-01 gram
SAMPLE TITLE:		DETECTOR NUMBER:	025
ACQ DATE:	5-DEC-2001 17:23	AVERAGE EFFICIENCY:	24.14%
ELAPSED LIVE TIME:	7201.	RECOVERY:	74.71%
TRACER ID:	RAD094-03	TRACER FWHM (kev):	49.79
LAMBDA VALUE:	1000.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	2.124	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	27-NOV-2001 18:08	EFF CAL DATE:	27-NOV-2001 18:08
BKG FILENAME:	B_025_28NOV01	BKG ELAPSED TIME:	60002.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
U232	5291.9	45.88	0.12	99.8	9.566E+00	2.863E+00	9.009E-01
U-234	4761.5	58.88	0.12	99.8	1.228E+01	4.908E+00	9.009E-01
U-235	4385.5	-0.12	0.12	80.9	-3.087E-02	6.244E-02	1.111E+00
U-238	4184.4	44.76	0.24	100.2	9.292E+00	3.960E+00	1.036E+00

Analyst _____ Date 12-6-01

Reviewer _____ Date _____

ENVIROTEST LABORATORIES LLC.

ross Sample Counts Within Peak Regions Generated: 6-DEC-2001 18:05:44.35

e ɔr ID: 25 Acquisition Start: 5-DEC-2001 17:23:44.01
ive ɪime: 0 02:00:01.00 Real Time: 0 02:00:01.00
atch Id: L4094UU Sample Id: L4094-TRM-2
ample Type: UU

'k	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4120.26	45	0	36.39	213.40	183	72	6.25E-03	14.9	
2	0	4385.59	0	0	0.00	302.00	287	31	0.00E+00	0.0	
3	0	4711.68	59	0	180.25	412.05	373	77	8.19E-03	13.0	
4	0	5274.19	46	0	49.79	605.02	564	70	6.39E-03	14.7	

Background Counts Within Peak Regions Generated: 6-DEC-2001 18:05:46.78

Acquisition Start: 28-NOV-2001 08:56:26.01
Live Time: 0 16:40:02.00 Real Time: 0 16:40:02.00

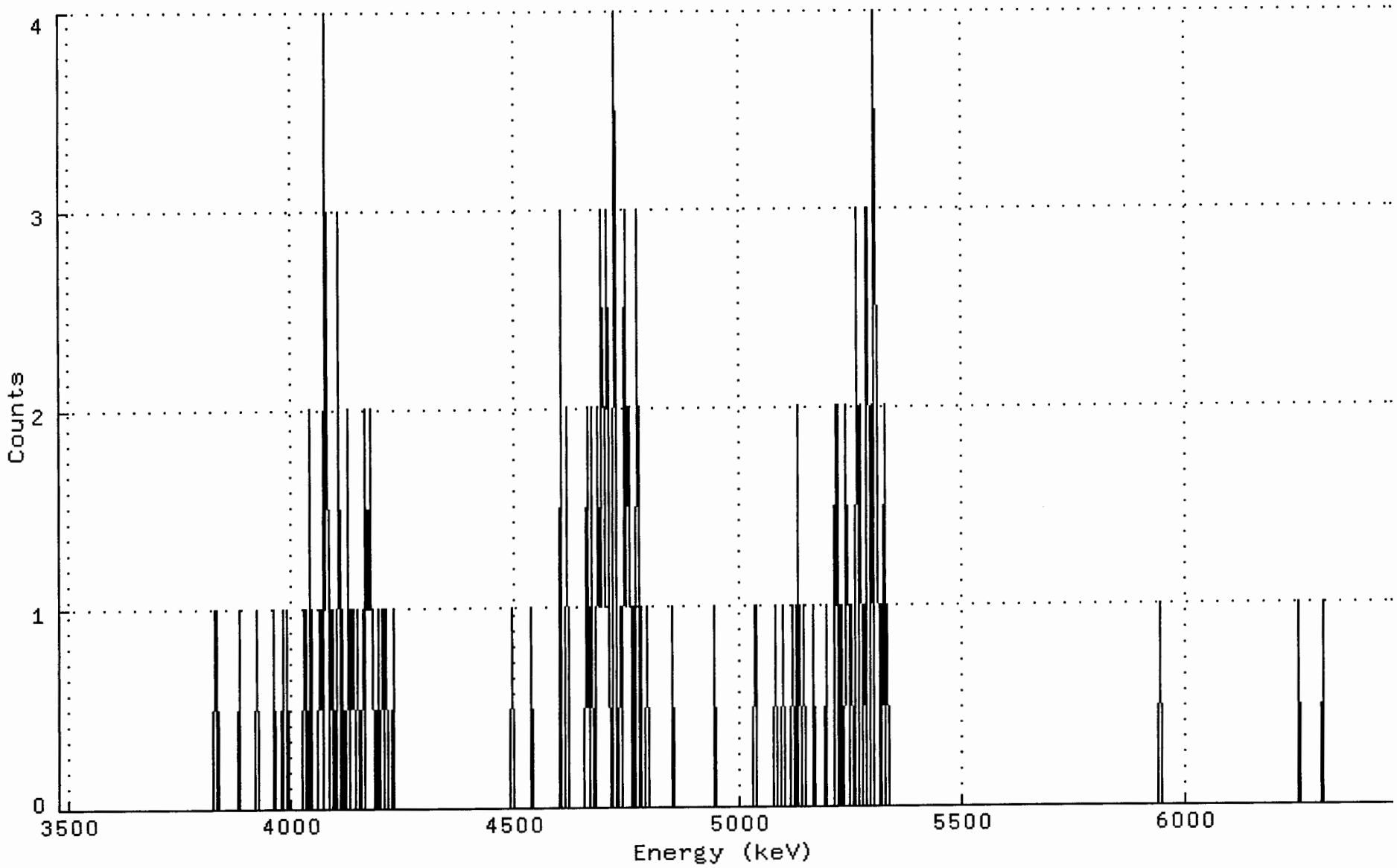
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4135.61	2	0	80.10	218.50	183	72	3.33E-05	70.7	
2	0	4385.74	1	0	3.08	302.00	287	31	1.67E-05	100.0	
3	0	4708.83	1	0	3.08	411.00	373	77	1.67E-05	100.0	
4	0	5255.50	1	0	3.08	598.50	564	70	1.67E-05	100.0	

Net Sample Counts Within Peak Regions Generated: 6-DEC-2001 18:05:47.21

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1		4120.26*	45	0	36.39	213.40	183	72	6.22E-03	15.0	
2		4385.59*	0	0	0.00	302.00	287	31	-1.67E-05	100.0	
3	0	4711.68*	59	0	180.25	412.05	373	77	8.18E-03	13.0	
4	0	5274.19*	46	0	49.79	605.02	564	70	6.37E-03	14.8	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV S]S_L4094UU$L4094-TRM-2_UU.CNF;1
Title : 025
Sample Title:
Start Time: 5-DEC-2001 17:23: Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.47098E+03
Real Time : 0 02:00:01.00 Sample ID : L4094-TRM-2 Energy Slope : 3.07643E+00
Live Time : 0 02:00:01.00 Sample Type: UU Energy Quad : -1.58728E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
6-DEC-2001 18:04:50

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pectral File: ND_AMS_ARCHIVE_S:S_L4094UU$L4094-MBAU1128_UU.CNF

****

ATCH ID:	L4094UU	SAMPLE ID:	L4094-MBAU1128
AMPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	2.000E+00 gram
AMPLE TITLE:		DETECTOR NUMBER:	026
CQ DATE:	5-DEC-2001 17:23	AVERAGE EFFICIENCY:	26.57%
LAPSED LIVE TIME:	7203.	RECOVERY:	82.82%
RACER ID:	RAD094-03	TRACER FWHM (kev):	67.30
AMBDA VALUE:	1000.	ROI TYPE:	STANDARD
RACER DPM AT SAMPLE DATE:	2.124	CONFIDENCE FACTOR:	4.65
AMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
NERGY CAL DATE:	28-NOV-2001 10:56	EFF CAL DATE:	28-NOV-2001 10:56
KG FILENAME:	B_026_28NOV01	BKG ELAPSED TIME:	60003.

****

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
U232	5291.9	56.00	0.00	99.8	4.783E-01	1.278E-01	2.315E-02
U-234	4761.5	3.88	0.12	99.8	3.314E-02	3.535E-02	3.691E-02
U-235	4385.5	0.00	0.00	80.9	0.000E+00	0.000E+00	2.855E-02
U-238	4184.4	11.88	0.12	100.2	1.010E-01	6.484E-02	3.675E-02

****

Analyst — Date: 12-6-01

Reviewer — Date

ENVIROTEST LABORATORIES LLC.

Gross Sample Counts Within Peak Regions Generated: 6-DEC-2001 18:04:41.90

De[illegible]r ID: 26 Acquisition Start: 5-DEC-2001 17:23:58.01
Live Time: 0 02:00:03.00 Real Time: 0 02:00:03.00
Batch Id: L4094UU Sample Id: L4094-MBAU1128
Sample Type: UU

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4136.22	12	0	4.53	229.33	194	72	1.67E-03	28.9	
2	0	4386.53	0	0	0.00	313.00	298	31	0.00E+00	0.0	
3	0	4695.10	4	0	215.84	417.25	384	76	5.55E-04	50.0	
4	0	5250.51	56	0	67.30	608.11	575	71	7.77E-03	13.4	

Background Counts Within Peak Regions Generated: 6-DEC-2001 18:04:48.14

Acquisition Start: 28-NOV-2001 18:01:36.01
Live Time: 0 16:40:03.00 Real Time: 0 16:40:04.00

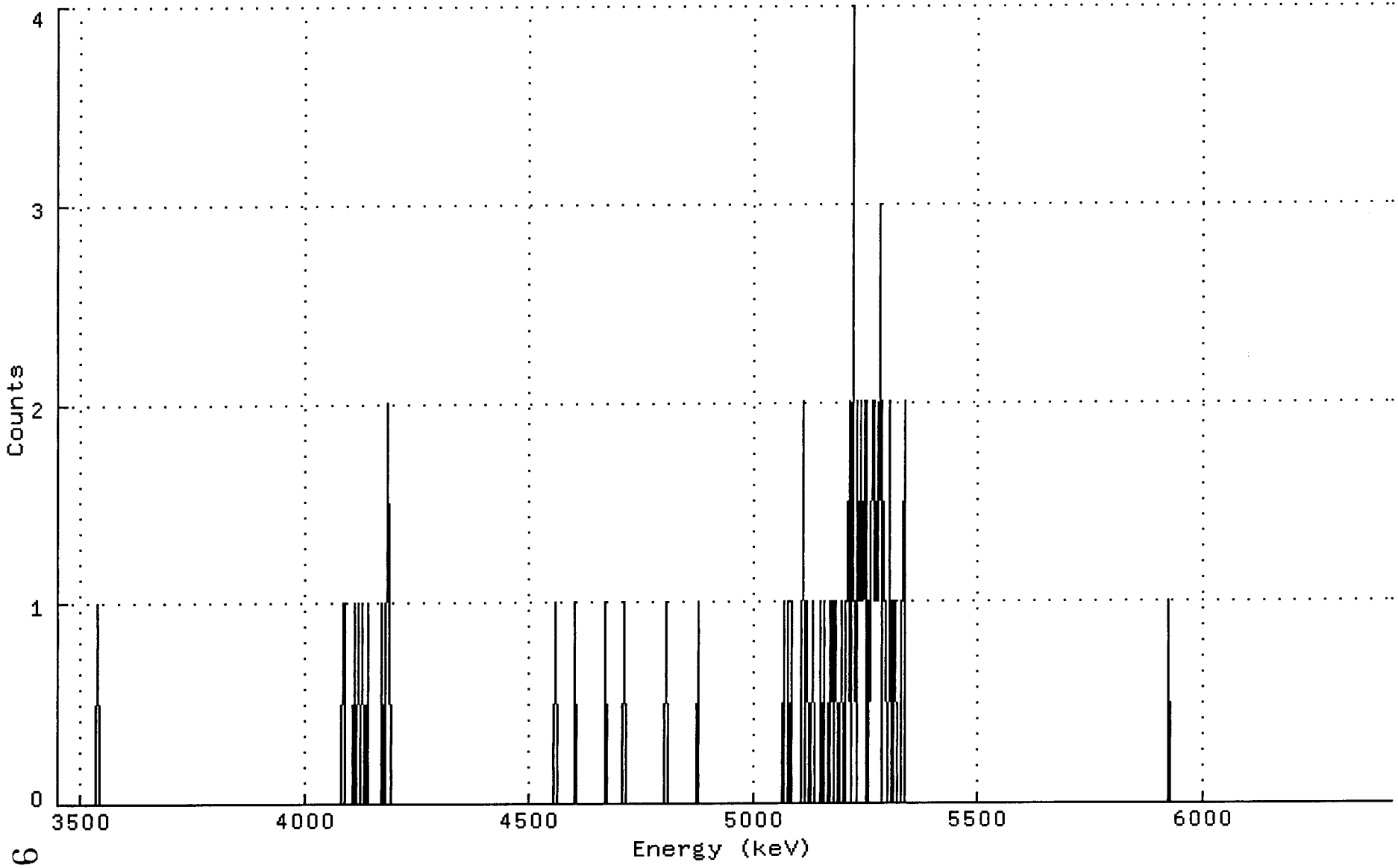
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4136.71	1	0	3.08	229.50	194	72	1.67E-05	100.0	
2	0	4386.53	0	0	0.00	313.00	298	31	0.00E+00	0.0	
3	0	4707.61	1	0	3.08	421.50	384	76	1.67E-05	100.0	
4	0	5255.96	0	0	0.00	610.00	575	71	0.00E+00	0.0	

Net Sample Counts Within Peak Regions Generated: 6-DEC-2001 18:04:48.58

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	[illegible]	4136.22*	12	0	4.53	229.33	194	72	1.65E-03	29.2	
2	[illegible]	4386.53*	0	0	0.00	313.00	298	31	0.00E+00	0.0	
3	[illegible]	4695.10*	4	0	215.84	417.25	384	76	5.39E-04	51.6	
4	0	5250.51*	56	0	67.30	608.11	575	71	7.77E-03	13.4	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHI S]S_L4094UU$L4094-MBAU1128_UU.CNF;1
Title : 026
Sample Title:
Start Time: 5-DEC-2001 17:23: Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.43798E+03
Real Time : 0 02:00:03.00 Sample ID : L4094-MBAU1128 Energy Slope : 3.08340E+00
Live Time : 0 02:00:03.00 Sample Type: UU Energy Quad : -1.69062E-04



ENVIROTEST LABORATORIES LLC.

ALPHA SPECTROMETRY REPORT
6-DEC-2001 17:51:30

Spectral File: ND_AMS_ARCHIVE_C:C_L4094UU$L4094-LCAU1128_UU.CNF

BATCH ID:	L4094UU	SAMPLE ID:	L4094-LCAU1128
SAMPLE DATE:	4-DEC-2001 00:00	ALIQUOT:	1.000E+00 gram
SAMPLE TITLE:		DETECTOR NUMBER:	027
ACQ DATE:	5-DEC-2001 17:24	AVERAGE EFFICIENCY:	25.64%
ELAPSED LIVE TIME:	7205.	RECOVERY:	90.25%
TRACER ID:	RAD094-03	TRACER FWHM (kev):	48.59
LAMBDA VALUE:	1000.	ROI TYPE:	STANDARD
TRACER DPM AT SAMPLE DATE:	2.124	CONFIDENCE FACTOR:	4.65
SAMPLE MATRIX:	SOLID	LLD CONSTANT:	2.71
ENERGY CAL DATE:	28-NOV-2001 18:01	EFF CAL DATE:	28-NOV-2001 18:01
BKG FILENAME:	B_027_29NOV01	BKG ELAPSED TIME:	60006.

NUCLIDE ACTIVITY SUMMARY

NUCLIDE	ENERGY	NET AREA	BKG	%ABN	ACTIVITY pCi/ gram	TPU/ERROR 2-SIGMA	MDC pCi/ gram
U232	5291.9	58.88	0.12	99.8	9.566E-01	2.496E-01	7.020E-02
U-234	4761.5	81.00	0.00	99.8	1.316E+00	4.510E-01	4.403E-02
U-235	4385.5	0.00	0.00	80.9	0.000E+00	0.000E+00	5.431E-02
U-238	4184.4	80.64	0.36	100.2	1.304E+00	4.480E-01	8.898E-02

Analyst _____ Date 12-6-01

Reviewer _____ Date _____

ENVIROTEST LABORATORIES LLC.

ross Sample Counts Within Peak Regions Generated: 6-DEC-2001 17:51:15.03

e or ID: 27 Acquisition Start: 5-DEC-2001 17:24:13.01
iv. ime: 0 02:00:05.00 Real Time: 0 02:00:05.00
atch Id: L4094UU Sample Id: L4094-LCAU1128
ample Type: UU

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4135.23	81	0	65.74	214.69	180	71	1.12E-02	11.1	
2	0	4387.38	0	0	0.00	297.50	283	30	0.00E+00	0.0	
3	0	4723.03	81	0	137.30	408.98	367	75	1.12E-02	11.1	
4	0	5266.44	59	0	48.59	592.61	555	69	8.19E-03	13.0	

Background Counts Within Peak Regions Generated: 6-DEC-2001 17:51:28.06

Acquisition Start: 29-NOV-2001 08:38:34.01
ive Time: 0 16:40:06.00 Real Time: 0 16:40:06.00

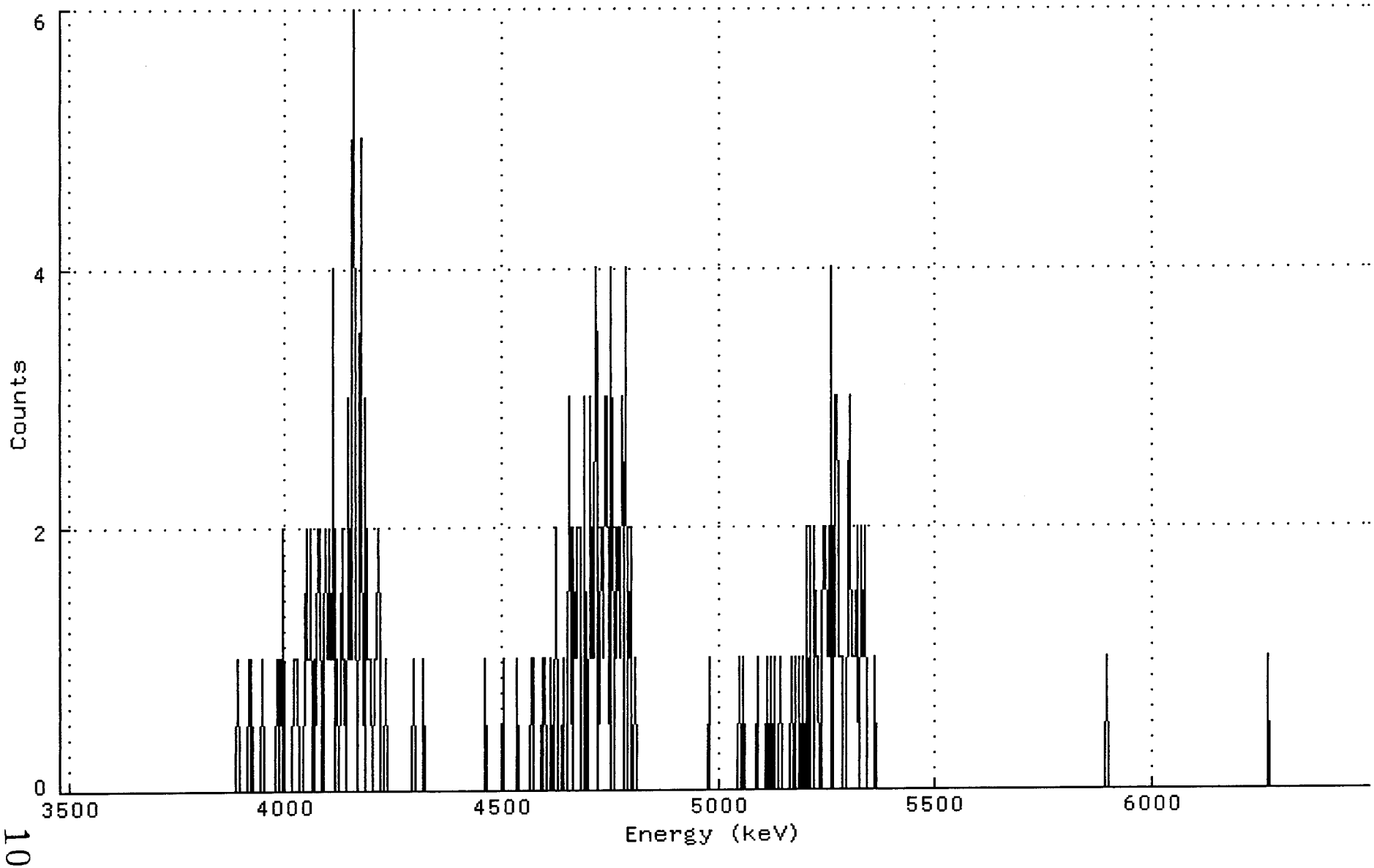
Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4136.17	3	0	103.45	215.00	180	71	5.00E-05	57.7	
2	0	4387.38	0	0	0.00	297.50	283	30	0.00E+00	0.0	
3	0	4708.14	0	0	0.00	404.00	367	75	0.00E+00	0.0	
4	0	5255.87	1	0	3.13	589.00	555	69	1.67E-05	100.0	

Net Sample Counts Within Peak Regions Generated: 6-DEC-2001 17:51:28.53

Pk	It	Energy	Area	Bkgnd	FWHM	Channel	Left	Pw	Cts/Sec	%Err	Fit
1	0	4135.23*	81	0	65.74	214.69	180	71	1.12E-02	11.2	
2		4387.38*	0	0	0.00	297.50	283	30	0.00E+00	0.0	
3		4723.03*	81	0	137.30	408.98	367	75	1.12E-02	11.1	
4	0	5266.44*	59	0	48.59	592.61	555	69	8.17E-03	13.0	

Flag: "*" = Peak area was modified by background subtraction

Spectru : SYS$SYSDEVICE:[ALPHA.ALUSR.ARCHIV C]C_L4094UU$L4094-LCAU1128_UU.CNF;1
Title : 027
Sample Title:
Start Time: 5-DEC-2001 17:24: Sample Time: 4-DEC-2001 00:00: Energy Offset: 3.47029E+03
Real Time : 0 02:00:05.00 Sample ID : L4094-LCAU1128 Energy Slope : 3.13482E+00
Live Time : 0 02:00:05.00 Sample Type: UU Energy Quad : -1.75360E-04



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ETL Enviro • Test
LABORATORIES LLC.

RADIOCHEMISTRY
OUT OF CONTROL EVENT REPORT

DEPARTMENT RAD-ENV. PARAMETER 150 U
METHOD Column
COMPLETED BY DT DATE 12-7-01

OUT OF CONTROL EVENT

SAMPLE ANALYSIS

- ____ Sample Activity too high
- ____ Calculation error
- ____ Reporting error
- X Tracer % rec. not within QC limits

QUALITY CONTROL ANALYSIS

- ____ Blank out / % rec. not acceptable
- ____ LCS % rec. not acceptable
- ____ Duplicate RER not acceptable
- ____ MS % rec. not acceptable

SAMPLE ID	VOLUME	SAMPLE ID	VOLUME	SAMPLE ID	VOLUME
LA094-5	0.5g				
1-9					

CORRECTIVE ACTION

- ____ Recalculate/report results
- ____ Reanalyze sample(s)
- X Redigest/re-extract sample(s)
- ____ Perform standard additions
- ____ Repeat QC analysis
- ____ Repeat calibration
- ____ Prepare new standards
- ____ Perform instrument service

OTHER (Explain)

RESOLUTION

Do Pu Clean-up

APPROVED BY:
Laboratory Supervisor/Manager Dee Fairsmith Date 12-7-01
QA/QC ____ Date ____
Case Narrative Required: Yes ____ No ____

AUTHORIZATION REQUIRED FOR WORK RELEASE

ETL Enviro-Test LABORATORIES

Sample Digestion Logbook

SOP ETL - RSOP- 0003

ysis ISO U Analyst Jeni Date 11.28.01 Reviewed By DmB

Sample ID	Analyzed Volume JC g 11.28.01	Sample Volume Digested	Dilution Volume ml/l	Digestate Volume Used (ml)	Sample Matrix	Comments
L4094- 1	~~0~~ 2.0	2.0	100 ml	100 ml	Soil	Digestion
2						
3						
3 MD						
4						
5						
6						
7						
8						
9						
PEM-1	0.1	1.0		10 ml		
TRM-2						
MBA U 1128		NA	NA	NA	DI H_2O	
LCA U 1128	1.0 L					

Jeni 11/28/01

Spike	Trace	Nuclide	Isotope Number	Expiration Date	Activity pCi/ml	Vol Ml	Standard Control	Spiked By	Witness
X		U238	100.04	8.8.02	0.249	5 ml	LCA U 1128	Jeni	DmB
	X	U232	094.03	1.10.02	0.958	1ml	All Samples		

Jeni 11/28/01

FORM DIGESTLG-1, REV. 0 Effective 09-25-00 Book Number 01134 Page Number 1002

Review of QA results (Backgrounds) 14-DEC-2001 11:45:21

Detector	Parameter	Flag	Filename
25	ALL	Passed	B_025_28nov01
26	ALL	Passed	B_026_28nov01
27	ALL	Passed	B_027_29nov01
28	ALL	Passed	B_028_29nov01
29	ALL	Passed	B_029_26nov01
30	ALL	Passed	B_030_26nov01
31	ALL	Passed	B_031_26nov01
32	ALL	Passed	B_032_26nov01
33	ALL	Passed	B_033_26nov01
34	ALL	Passed	B_034_26nov01
35	ALL	Passed	B_035_26nov01
36	ALL	Passed	B_036_26nov01
37	ALL	Passed	B_037_26nov01
38	ALL	Passed	B_038_26nov01
39	ALL	Passed	B_039_26nov01
40	ALL	Passed	B_040_26nov01
41	ALL	Passed	B_041_26nov01
42	ALL	Passed	B_042_26nov01
43	ALL	Passed	B_043_26nov01
44	ALL	Passed	B_044_26nov01
45	ALL	Passed	B_045_26nov01
46	ALL	Passed	B_046_26nov01
47	ALL	Passed	B_047_26nov01
48	ALL	Passed	B_048_26nov01

APPROVAL DATE: 12-14-01 APPROVAL TIME: _____

APPROVED BY: [illegible] PROCEDURE # _____

Report completed at 14-DEC-2001 11:45:37

Review of QA results (Backgrounds AM) 14-DEC-2001 11:45:38

Detector	Parameter	Flag	Filename
25	ALL	Passed	B_025_28nov01
26	ALL	Passed	B_026_28nov01
27	ALL	Passed	B_027_29nov01
28	ALL	Passed	B_028_29nov01
29	ALL	Passed	B_029_26nov01
30	ALL	Passed	B_030_26nov01
31	ALL	Passed	B_031_26nov01
32	ALL	Passed	B_032_26nov01
33	ALL	Passed	B_033_26nov01
34	ALL	Passed	B_034_26nov01
35	ALL	Passed	B_035_26nov01
36	ALL	Passed	B_036_26nov01
37	ALL	Passed	B_037_26nov01
38	ALL	Passed	B_038_26nov01
39	ALL	Passed	B_039_26nov01
40	ALL	Passed	B_040_26nov01
41	ALL	Passed	B_041_26nov01
42	ALL	Passed	B_042_26nov01
43	ALL	Passed	B_043_26nov01
44	ALL	Passed	B_044_26nov01
45	ALL	Passed	B_045_26nov01
46	ALL	Passed	B_046_26nov01
47	ALL	Passed	B_047_26nov01
48	ALL	Passed	B_048_26nov01

APPROVAL DATE: 12-14-01 APPROVAL TIME: _____

APPROVED BY: [illegible] PROCEDURE # _____

Report completed at 14-DEC-2001 11:45:52

Review of QA results (Backgrounds PU) 14-DEC-2001 11:46:21

Detector	Parameter	Flag	Filename
25	ALL	Passed	B_025_28nov01
26	ALL	Passed	B_026_28nov01
27	ALL	Passed	B_027_29nov01
28	ALL	Passed	B_028_29nov01
29	ALL	Passed	B_029_26nov01
30	ALL	Passed	B_030_26nov01
31	ALL	Passed	B_031_26nov01
32	ALL	Passed	B_032_26nov01
33	ALL	Passed	B_033_26nov01
34	ALL	Passed	B_034_26nov01
35	ALL	Passed	B_035_26nov01
36	ALL	Passed	B_036_26nov01
37	ALL	Passed	B_037_26nov01
38	PSAREA-PU236	Above	B_038_26nov01
39	ALL	Passed	B_039_26nov01
40	ALL	Passed	B_040_26nov01
41	ALL	Passed	B_041_26nov01
42	PSAREA-PU236	Above	B_042_26nov01
43	ALL	Passed	B_043_26nov01
44	ALL	Passed	B_044_26nov01
45	ALL	Passed	B_045_26nov01
46	ALL	Passed	B_046_26nov01
47	ALL	Passed	B_047_26nov01
48	ALL	Passed	B_048_26nov01

APPROVAL DATE: 12-14-01 APPROVAL TIME: _____

APPROVED BY: _____ PROCEDURE # _____

Report completed at 14-DEC-2001 11:46:36

Review of QA results (Backgrounds UU) 14-DEC-2001 11:46:51

Detector	Parameter	Flag	Filename
25	ALL	Passed	B_025_28nov01
26	ALL	Passed	B_026_28nov01
27	ALL	Passed	B_027_29nov01
28	ALL	Passed	B_028_29nov01
29	ALL	Passed	B_029_26nov01
30	ALL	Passed	B_030_26nov01
31	ALL	Passed	B_031_26nov01
32	ALL	Passed	B_032_26nov01
33	ALL	Passed	B_033_26nov01
34	ALL	Passed	B_034_26nov01
35	ALL	Passed	B_035_26nov01
36	ALL	Passed	B_036_26nov01
37	ALL	Passed	B_037_26nov01
38	ALL	Passed	B_038_26nov01
39	ALL	Passed	B_039_26nov01
40	ALL	Passed	B_040_26nov01
41	ALL	Passed	B_041_26nov01
42	ALL	Passed	B_042_26nov01
43	ALL	Passed	B_043_26nov01
44	ALL	Passed	B_044_26nov01
45	ALL	Passed	B_045_26nov01
46	ALL	Passed	B_046_26nov01
47	ALL	Passed	B_047_26nov01
48	ALL	Passed	B_048_26nov01

APPROVAL DATE: 12-14-01 APPROVAL TIME: _____

APPROVED BY: DJ PROCEDURE # _____

Report completed at 14-DEC-2001 11:47:05

Review of QA results (Daily Pulser Check) 14-DEC-2001 08:26:49

Detector	Parameter	Flag	Filename
25	ALL	Passed	D_025_NONE
26	ALL	Passed	D_026_NONE
27	ALL	Passed	D_027_NONE
28	ALL	Passed	D_028_NONE
29	ALL	Passed	D_029_NONE
30	ALL	Passed	D_030_NONE
31	ALL	Passed	D_031_NONE
32	ALL	Passed	D_032_NONE
33	ALL	Passed	D_033_NONE
34	ALL	Passed	D_034_NONE
35	ALL	Passed	D_035_NONE
36	ALL	Passed	D_036_NONE
37	ALL	Passed	D_037_NONE
38	ALL	Passed	D_038_NONE
39	ALL	Passed	D_039_NONE
40	ALL	Passed	D_040_NONE
41	ALL	Passed	D_041_NONE
42	ALL	Passed	D_042_NONE
43	ALL	Passed	D_043_NONE
44	ALL	Passed	D_044_NONE
45	ALL	Passed	D_045_NONE
46	ALL	Passed	D_046_NONE
47	ALL	Passed	D_047_NONE
48	ALL	Passed	D_048_NONE

APPROVAL DATE: 12-14-01 APPROVAL TIME: _____

APPROVED BY: DT PROCEDURE # _____

Report completed at 14-DEC-2001 08:27:02

Review of QA results (Daily Pulser Check) 12-DEC-2001 08:02:44

Detector	Parameter	Flag	Filename
25	ALL	Passed	D_025_NONE
26	ALL	Passed	D_026_NONE
27	ALL	Passed	D_027_NONE
28	ALL	Passed	D_028_NONE
29	ALL	Passed	D_029_NONE
30	ALL	Passed	D_030_NONE
31	ALL	Passed	D_031_NONE
32	ALL	Passed	D_032_NONE
33	ALL	Passed	D_033_NONE
34	ALL	Passed	D_034_NONE
35	ALL	Passed	D_035_NONE
36	ALL	Passed	D_036_NONE
37	ALL	Passed	D_037_NONE
38	ALL	Passed	D_038_NONE
39	ALL	Passed	D_039_NONE
40	ALL	Passed	D_040_NONE
41	ALL	Passed	D_041_NONE
42	ALL	Passed	D_042_NONE
43	ALL	Passed	D_043_NONE
44	ALL	Passed	D_044_NONE
45	ALL	Passed	D_045_NONE
46	ALL	Passed	D_046_NONE
47	ALL	Passed	D_047_NONE
48	ALL	Passed	D_048_NONE

APPROVAL DATE: 12/12/01 APPROVAL TIME: _____

APPROVED BY: [illegible] PROCEDURE # _____

Report completed at 12-DEC-2001 08:02:56

AB # 100

Rec'd 5-5-00

NIST TRACEABLE CERTIFICATE
ALPHA STANDARD SOLUTION

Radionuclide:	U-238	**Customer:** ,	ETL-LLC				
Half-life:	(4.468 ± 0.005)E+09 years	**P.O. No.:**	000414-01				
Catalog No.:	7338	**Reference Date:**	15-May-00	12:00	PST		
Source No.:	723-25	**Contained Radioactivity:**	0.1021	µCi	3.778	kBq	

Physical description:

A. Mass of solution:	5.16608 g in 5 mL flame-sealed ampoule
B. Chemical form:	$UO_2(NO_3)_2$ in 0.01M HNO_3
C. Carrier content:	None
D. Density:	0.9982 g/mL @ 20°C

Radioimpurities: See technical data sheet

Radionuclide concentration: 0.01976 µCi/g, 0.7311 kBq/g

Method of Calibration:

Activity calculations are based upon known specific activity and mass.

Uncertainty of Measurement:

A. Type A (random) uncertainty:	±	0.0	%
B. Type B (systematic) uncertainty:	±	3.0	%
C. Uncertainty in aliquot weighing:	±	0.0	%
D. Total uncertainty at the 99% confidence level:	±	3.0	%

Notes:

- See reverse side for leak tests performed on this source.
- IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (As in NRC Regulatory Guide 4.15).
- Nuclear data was taken from "Table of Radioactive Isotopes", edited by Virginia Shirley, 1986.
- This solution has a working life of 5 years.

Daniel James Van Dalsem
Quality Control

3-May-00
Date Signed

ISOTOPE PRODUCTS LABORATORIES
1800 N. KEYSTONE STREET
BURBANK, CALIFORNIA 91504
818·843·7000 FAX 818·843·6168

IPL Reference Number: 723-25

+D # 100

ISOTOPE PRODUCTS LABORATORIES

U-238 Technical Data

The U-238 used to prepare your order was taken from Isotope Products Laboratories Lot #1194.01and had the following composition as of 1 Jun 94:

Nuclide	Weight %	Activity %
U-234	0.0055	49.088
U-235	0.720	2.241
U-238	99.2745	48.671

Isotopic composition provided by New Brunswick Laboratory.

If you have any question, please contact IPL Technical Service: (818) 843 7000.

rporate and
ain Laboratory
300 N. Keystone Street
urbank, California
1506
843-7000
ax 818•843-6168

RADIOACTIVE MATERIAL INFORMATION

Source/Stock Standard

RAD#: 100

Date Received: 05/08/00
Received by: DF

NIST Traceable: Yes
Certificate Filed: Yes

Nuclide: U-238
Manufacturer: Isotope Prod
Serial Number: 723-25
Date of Calibration: 05/15/00
Matrix: 0.01M HNO3
Mass/Volume: 5.16608g
Activity: 0.1021 uCi

Half-Life: 1.63E+12 days
Activity at DOC: 1.02E+05 pCi

Today's Date: 8/8/01
Activity Today: 1.02E+05 pCi

Stock/Primary Solution

RAD#	Prep Date	Final Volume	Activity at DOP (date of prep)	Decay Correction to Date	Disposal Date
100-00	05/12/00	1000 mL	102.1 pCi/mL	102.1 pCi/mL	

Working Solutions

RAD#	Prep Date	User Soln ID	Volume of User Soln Used	Activity of User Soln (at date of prep)	Final Volume	**Activity**	**Decay Correction to Date**	Disposal Date
100-01T	05/25/00	100-00	25 mL	102.1 pCi/mL	1000 mL	2.6 pCi/mL	2.5525 pCi/mL	
100-01	05/25/00	100-00	25 mL	49.7 pCi/mL	1000 mL	1.2 pCi/mL	1.2425 pCi/mL	
100-02	08/28/00	100-01	100 mL	1.2 pCi/mL	1000 mL	0.1 pCi/mL	0.12425 pCi/mL	
100-03	05/14/01	100-00	50 mL	49.7 pCi/mL	1000 mL	2.5 pCi/mL	2.485 pCi/mL	
100-04	08/08/01	100-00	5 mL	49.7 pCi/mL	1000 mL	0.2 pCi/mL	0.2485 pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	

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EnviroTest LABORATORIES

RADIOACTIVE STANDARD PREPARATION FORM

Date: 5-14-01
Prepared by: DT
Analysis ID:

RAD#(standard ID): 100.03
Nuclide: U-238

Stock Solution ☐

Witness:

Serial #:
Original Activity:

Gross weight of ampoule:
Empty weight of ampoule:
Net weight of standard:
Standard activity:

Dilution volume:
Dilutent:
Calculated activity:

DT 5-14-01

Final activity:
(Decay corrected to):
Expiration:

Secondary Stock ☐
Tertiary Stock ☐
Working Solution ☒

Witness: DT

Stock RAD#: 100.00
Stock activity: 49.6 pCi/ml

Volume of stock used: 50.0 ml
Dilution volume: 1000 mls
Dilutent: 1N HNO_3
Calculated activity: 2.5 pCi/ml

Final activity: 2.48 pCi/ml
(Decay corrected to): 5-24-01
Expiration: 5-14-02

Form RadStdPrep, Revision 0, Effective Date 3/10/00

RSD # 094

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 · U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

REC'D 3/31/00

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

59408-277

U-232 5 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared using an aliquot measured gravimetrically from a master radionuclide solution standard. The master radionuclide solution standard was calibrated by the Department Des Applications Et De La Metrologie Des Rayonnements Ionisants (DAMRI), Paris, France, as Number 23236.

Radionuclide purity and calibration were checked using a germanium gamma spectrometer system. The nuclear decay rate and assay date for this source are given below.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

ISOTOPE:	U-232
ACTIVITY (dps):	3597
CALIBRATION DATE:	March 28, 2000 12:00 EST
HALF-LIFE:	~~69.8~~ 68.9 years
TOTAL UNCERTAINTY*:	5.0%

*99% Confidence Level

5.38402 grams 2M HNO_3 solution.

Impurities: γ-impurities <0.1%
U-233 <11 dps
Am-241 <6 dps

P O NUMBER 000301-01, Item 5

SOURCE PREPARED BY: M. D. Currie
M. D. Currie, Radiochemist

Q A APPROVED: 3-30-00

RADIOACTIVE MATERIAL INFORMATION

Source/Stock Standard

RAD#: 094

Date Received: 03/31/00
Received by: MDG

NIST Traceable: Yes
Certificate Filed: Yes

Nuclide: U-232
Manufacturer: Analytics
Serial Number: 59408-277
Date of Calibration: 03/28/00
Matrix: 2M HNO3
Mass/Volume: 5.3849g
Activity: 3597 dps

Half-Life: 2.55E+04 days
Activity at DOC: 9.72E+04 pCi

Activity at Prep: 9.72E+04 pCi

Today's Date: 6/5/01
Activity Today: 9.61E+04 pCi

Stock/Primary Solution

RAD#	Prep Date	Final Volume	Activity at DOP (date of prep)	Decay Correction to Date	Disposal Date
094-00	05/12/00	1000 mL	97.2 pCi/mL	96.1 pCi/mL	

Working Solutions

RAD#	Prep Date	User Soln ID	Volume of User Soln Used	Activity of User Soln (at date of prep)	Final Volume	Activity	Decay Correction to Date	Disposal Date
094-01	05/17/00	094-00	50 mL	97.2 pCi/mL	1000 mL	4.86 pCi/mL	4.80296 pCi/mL	
094-02	08/28/00	094-01	25 mL	4.9 pCi/mL	1000 mL	0.1 pCi/mL	0.12007 pCi/mL	1/24/01 used up
094-03	01/10/01	094-00	10 mL	97.2 pCi/mL	1000 mL	1.0 pCi/mL	0.96059 pCi/mL	
094-04	01/24/01	094-01	50 mL	4.8 pCi/mL	2000 mL	0.1 pCi/mL	0.11909 pCi/mL	
094-05	02/08/01	094-00	5 mL	97.2 pCi/mL	2000 mL	0.2 pCi/mL	0.24015 pCi/mL	
094-06	05/14/01	094-00	50 mL	97.2 pCi/mL	1000 mL	4.9 pCi/mL	4.80296 pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	

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EnviroTest LABORATORIES

RADIOACTIVE STANDARD PREPARATION FORM

Date: 5-14-01
Prepared by: DZ
Analysis ID: _____

RAD#(standard ID): 094-06
Nuclide: U-232

Stock Solution ☐

Witness: _____

Serial #: _____
Original Activity: _____

Gross weight of ampoule: _____
Empty weight of ampoule: _____
Net weight of standard: _____
Standard activity: _____

Dilution volume: _____
Dilutent: _____
Calculated activity: _____

DZ 5-14-01

Final activity: _____
(Decay corrected to): _____
Expiration: _____

Secondary Stock ☐
Tertiary Stock ☐
Working Solution ☒

Witness: DZ

Stock RAD#: 094-00
Stock activity: 97.1 pCi/ml

Volume of stock used: 50.0 ml
Dilution volume: 1000 ml
Dilutent: 1N HNO_3
Calculated activity: 4.9 pCi/ml

Final activity: 4.8 pCi/ml
(Decay corrected to): 6-5-01
Expiration: 5-14-02

Form RadStdPrep, Revision 0, Effective Date 3/10/00

EnviroTest LABORATORIES

RADIOACTIVE STANDARD PREPARATION FORM

Date: 5-12-00
Prepared by: DT
Analysis ID: L1455

RAD#(standard ID): RAD# 094

Nuclide: U-232

Stock Solution ☒

Witness: MRF

Serial #: 59408-277
Original Activity: 0.097 µCi

Gross weight of ampoule: 9.3338 g
Empty weight of ampoule: 3.9489 g
Net weight of standard: 5.3849 g
Standard activity: 97208 pCi

Dilution volume: 1.0 L
Dilutent: 1N HNO3
Calculated activity: 97.2 pCi/mL

Final activity: 97.1 pCi/mL
(Decay corrected to): 5-12-00
Expiration: 5-12-05

Secondary Stock ☐
Tertiary Stock ☐
Working Solution ☐

Witness:

Stock RAD#:
Stock activity:

Volume of stock used:
Dilution volume:
Dilutent:
Calculated activity:

Final activity:
(Decay corrected to):
Expiration:

EnviroTest LABORATORIES

RADIOACTIVE STANDARD PREPARATION FORM

Date: 5-12-00
Prepared by: DT
Analysis ID: L1465

RAD#(standard ID): RAD# 100

Nuclide: U-238 (U Nat)

Stock Solution ☒

Witness: [illegible]

Serial #: 723-25
Original Activity: 0.1021 µCi

Gross weight of ampoule: 9.0135 g
Empty weight of ampoule: 3.8466 g
Net weight of standard: 5.1669 g
Standard activity: 1.02E+05 pCi

Dilution volume: 1.0 L
Dilutent: 1N HNO3
Calculated activity: 102 pCi/µl

Final activity: 102 pCi/µl
(Decay corrected to): 5-12-00
Expiration: 5-12-05

Secondary Stock ☐
Tertiary Stock ☐
Working Solution ☐

Witness: _____

Stock RAD#: _____
Stock activity: _____

Volume of stock used: _____
Dilution volume: _____
Dilutent: _____
Calculated activity: _____

Final activity: _____
(Decay corrected to): _____
Expiration: _____

RAD # 100

Rec'd 5-5-00

NIST TRACEABLE CERTIFICATE
ALPHA STANDARD SOLUTION

Radionuclide:	U-238	**Customer:**	ETL-LLC				
Half-life:	(4.468 ± 0.005)E+09 years	**P.O. No.:**	000414-01				
Catalog No.:	7338	**Reference Date:**	15-May-00	12:00	PST		
Source No.:	723-25	**Contained Radioactivity:**	0.1021	**µCi**	3.778	**kBq**	

Physical description:

A. Mass of solution:	5.16608 g in 5 mL flame-sealed ampoule
B. Chemical form:	$UO_2(NO_3)_2$ in 0.01M HNO_3
C. Carrier content:	None
D. Density:	0.9982 g/mL @ 20°C

Radioimpurities: See technical data sheet

Radionuclide concentration: 0.01976 µCi/g, 0.7311 kBq/g

Method of Calibration:

Activity calculations are based upon known specific activity and mass.

Uncertainty of Measurement:

A. Type A (random) uncertainty:	± 0.0 %
B. Type B (systematic) uncertainty:	± 3.0 %
C. Uncertainty in aliquot weighing:	± 0.0 %
D. Total uncertainty at the 99% confidence level:	± 3.0 %

Notes:

- See reverse side for leak tests performed on this source.
- IPL participates in an NIST measurement assurance program to establish and maintain implicit traceability for a number of nuclides, based on the blind assay (and later NIST certification) of Standard Reference Materials (As in NRC Regulatory Guide 4.15).
- Nuclear data was taken from "Table of Radioactive Isotopes", edited by Virginia Shirley, 1986.
- This solution has a working life of 5 years.

Daniel James Van Dalsem
Quality Control

3-May-00
Date Signed

ISOTOPE PRODUCTS LABORATORIES
1800 N. KEYSTONE STREET
BURBANK, CALIFORNIA 91504
818·843·7000 FAX 818·843·6168

IPL Reference Number: 723-25

1018

D # 100

ISOTOPE PRODUCTS LABORATORIES

U-238 Technical Data

The U-238 used to prepare your order was taken from Isotope Products Laboratories Lot #1194.01and had the following composition as of 1 Jun 94:

Nuclide	Weight %	Activity %
U-234	0.0055	49.088
U-235	0.720	2.241
U-238	99.2745	48.671

Isotopic composition provided by New Brunswick Laboratory.

If you have any question, please contact IPL Technical Service: (818) 843 7000.

orporate and
ain Laboratory
00 N. Keystone Street
rbank, California
50
43-7000
ax 818•843-6168

RADIOACTIVE MATERIAL INFORMATION

Source/Stock Standard

RAD#: 100

Date Received: 05/08/00
Received by: DF

NIST Traceable: Yes
Certificate Filed: Yes

Nuclide: U-238
Manufacturer: Isotope Prod
Serial Number: 723-25
Date of Calibration: 05/15/00
Matrix: 0.01M HNO3
Mass/Volume: 5.16608g
Activity: 0.1021 uCi

Half-Life: 1.63E+12 days
Activity at DOC: 1.02E+05 pCi

Today's Date: 8/8/01
Activity Today: 1.02E+05 pCi

Stock/Primary Solution

RAD#	Prep Date	Final Volume	Activity at DOP (date of prep)	Decay Correction to Date	Disposal Date
100-00	05/12/00	1000 mL	102.1 pCi/mL	102.1 pCi/mL	

Working Solutions

RAD#	Prep Date	User Soln ID	Volume of User Soln Used	Activity of User Soln (at date of prep)	Final Volume	**Activity**	**Decay Correction to Date**	Disposal Date
100-01T	05/25/00	100-00	25 mL	102.1 pCi/mL	1000 mL	2.6 pCi/mL	2.5525 pCi/mL	
100-01	05/25/00	100-00	25 mL	49.7 pCi/mL	1000 mL	1.2 pCi/mL	1.2425 pCi/mL	
100-02	08/28/00	100-01	100 mL	1.2 pCi/mL	1000 mL	0.1 pCi/mL	0.12425 pCi/mL	
100-03	05/14/01	100-00	50 mL	49.7 pCi/mL	1000 mL	2.5 pCi/mL	2.485 pCi/mL	
100-04	08/08/01	100-00	5 mL	49.7 pCi/mL	1000 mL	0.2 pCi/mL	0.2485 pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	

1020

EtL Enviro-Test LABORATORIES

RADIOACTIVE STANDARD PREPARATION FORM

Date: 8-8-01

RAD# (Standard ID): 100-04

Prepared by: DT

Analysis ID: L3522-7

Nuclide: U238

Stock Solution ☐

Serial # : _____

Witness: _____

Original Activity: _____

Gross Weight of syringe: _____

Empty Weight of syringe: _____

Net weight of standard: _____

Standard activity: _____

8-8-01

Dilution volume: _____

Dilutent: _____

Calculated activity: _____

Final activity: _____

(Decay corrected to): _____

Expiration: _____

Secondary Stock ☐ **Tertiary Stock** ☐ **Working Solution** ☒

Stock RAD#: 100-00

Witness: CLP

Stock activity: 49.6 pCi/ml

Volume of stock used: 5.0ml

Dilution volume: 1000 mls

Dilutent: 1N HNO_3

Calculated activity: 0.248 pCi/ml

Final Activity: 0.249 pCi/ml

(Decay corrected to): 8-8-01

Expiration: 8-8-02

Form RadStdPrep, Revision 0, Effective Date 7/5/01

ETL EnviroTest LABORATORIES

RADIOACTIVE STANDARD PREPARATION FORM

Date: 5-12-00
Prepared by: DT
Analysis ID: L1465

RAD#(standard ID): RAD# 100
Nuclide: U-238 (UNat)

Stock Solution ☒

Witness: [illegible]

Serial #: 723-25
Original Activity: 0.1021 µCi

Gross weight of ampoule: 9.0135 g
Empty weight of ampoule: 3.8466 g
Net weight of standard: 5.1669 g
Standard activity: 1.02E+05 pCi

Dilution volume: 1.0 L
Dilutent: 1N HNO3
Calculated activity: 102 pCi/µl

Final activity: 102 pCi/µl
(Decay corrected to): 5-12-00
Expiration: 5-12-05

Secondary Stock ☐
Tertiary Stock ☐
Working Solution ☐

Witness: _____

Stock RAD#: _____
Stock activity: _____

Volume of stock used: _____
Dilution volume: _____
Dilutent: _____
Calculated activity: _____

Final activity: _____
(Decay corrected to): _____
Expiration: _____

RAD # 094

ANALYTICS

1380 Seaboard Industrial Blvd.
Atlanta, Georgia 30318 · U.S.A.

Phone (404) 352-8677
Fax (404) 352-2837

REC'D 3/31/00

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

59408-277

U-232 5 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared using an aliquot measured gravimetrically from a master radionuclide solution standard. The master radionuclide solution standard was calibrated by the Department Des Applications Et De La Metrologie Des Rayonnements Ionisants (DAMRI), Paris, France, as Number 23236.

Radionuclide purity and calibration were checked using a germanium gamma spectrometer system. The nuclear decay rate and assay date for this source are given below.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

ISOTOPE:	U-232
ACTIVITY (dps):	3597
CALIBRATION DATE:	March 28, 2000 12:00 EST
HALF-LIFE:	~~69.8~~ 68.9 years
TOTAL UNCERTAINTY*:	5.0%

*99% Confidence Level

5.38402 grams 2M HNO_3 solution.

Impurities: γ-impurities <0.1%
U-233 <11 dps
Am-241 <6 dps

P O NUMBER 000301-01, Item 5

SOURCE PREPARED BY: M. D. Currie
M. D. Currie, Radiochemist

Q A APPROVED: 3-30-00

RADIOACTIVE MATERIAL INFORMATION

Source/Stock Standard

RAD#: 094

Date Received: 03/31/00
Received by: MDG

NIST Traceable: Yes
Certificate Filed: Yes

Nuclide:	U-232
Manufacturer:	Analytics
Serial Number:	59408-277
Date of Calibration:	03/28/00
Matrix:	2M HNO3
Mass/Volume:	5.3849g
Activity:	3597 dps

Half-Life: 2.55E+04 days
Activity at DOC: 9.72E+04 pCi

Activity at Prep: 9.72E+04 pCi

Today's Date: 6/5/01
Activity Today: 9.61E+04 pCi

Stock/Primary Solution

RAD#	Prep Date	Final Volume	Activity at DOP (date of prep)	Decay Correction to Date	Disposal Date
094-00	05/12/00	1000 mL	97.2 pCi/mL	96.1 pCi/mL	

Working Solutions

RAD#	Prep Date	User Soln ID	Volume of User Soln Used	Activity of User Soln (at date of prep)	Final Volume	**Activity**	Decay Correction to Date	Disposal Date
094-01	05/17/00	094-00	50 mL	97.2 pCi/mL	1000 mL	4.86 pCi/mL	4.80296 pCi/mL	
094-02	08/28/00	094-01	25 mL	4.9 pCi/mL	1000 mL	0.1 pCi/mL	0.12007 pCi/mL	1/24/01 used up
094-03	01/10/01	094-00	10 mL	97.2 pCi/mL	1000 mL	1.0 pCi/mL	0.96059 pCi/mL	
094-04	01/24/01	094-01	50 mL	4.8 pCi/mL	2000 mL	0.1 pCi/mL	0.11909 pCi/mL	
094-05	02/08/01	094-00	5 mL	97.2 pCi/mL	2000 mL	0.2 pCi/mL	0.24015 pCi/mL	
094-06	05/14/01	094-00	50 mL	97.2 pCi/mL	1000 mL	4.9 pCi/mL	4.80296 pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	

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ETL EnviroTest LABORATORIES

RADIOACTIVE STANDARD PREPARATION FORM

Date: 1-10-01

Prepared by: DT

Analysis ID:

RAD#(standard ID): 094-03

Nuclide: U 232

Stock Solution ☐

Witness:

Serial #:

Original Activity:

Gross weight of ampoule:

Empty weight of ampoule:

Net weight of standard:

Standard activity:

DT 1-10-01

Dilution volume:

Dilutent:

Calculated activity:

Final activity:

(Decay corrected to):

Expiration:

Secondary Stock ☐

Tertiary Stock ☐

Working Solution ☒

Witness: DT

Stock RAD#: 094-00

Stock activity: 97.1 pCi/ml

Volume of stock used: 10.0 mls

Dilution volume: 1000 mls

Dilutent: 1N HNO3

Calculated activity: 0.97 pCi/ml

Final activity: 0.964

(Decay corrected to): 1-10-01

Expiration: 1-10-02

EnviroTest LABORATORIES

RADIOACTIVE STANDARD PREPARATION FORM

Date: 5-12-00
Prepared by: DT
Analysis ID: L1455

RAD#(standard ID): RAD# 094
Nuclide: U-232

Stock Solution ☒

Witness: YRF

Serial #: 59408-277
Original Activity: 0.097 µCi

Gross weight of ampoule: 9.3338 g
Empty weight of ampoule: 3.9489 g
Net weight of standard: 5.3849 g
Standard activity: 97208 pCi

Dilution volume: 1.0 L
Dilutent: 1N HNO3
Calculated activity: 97.2 pCi/ml

Final activity: 97.1 pCi/ml
(Decay corrected to): 5-12-00
Expiration: 5-12-05

Secondary Stock ☐
Tertiary Stock ☐
Working Solution ☐

Witness:

Stock RAD#:
Stock activity:

Volume of stock used:
Dilution volume:
Dilutent:
Calculated activity:

Final activity:
(Decay corrected to):
Expiration:

Raw Data for Sr-89/90

QA-CHECKB SR90 14-Dec-2001 16:18 pCi/g

	Standard Known Value	LCS Sample Value	LCS Recovery	
LCBSR1126	24.5	24.400	100%	(4)
	24.5		0%	
			#DIV/0!	
			#DIV/0!	
L4094-007			#DIV/0!	

Sample Activity	Spiked Sample Activity	Standard Value	Sample Volume	Spike Value	SPIKE RECOVERY	
8.4	41.1	24.500	0.5000	49.0	67%	(3)
6.9	46.4	24.500	0.5000	49.0	81%	Total Sr Report as per DDP/SMT 12/17/01
					#DIV/0!	

L4094-005

Sample Activity	Duplicate Activity	Sample ERROR	Duplicate ERROR	Duplicate RER	
1.00	0.80	0.90	0.90	0.2	(1)
	SR89				
0.300	1.200	0.900	0.900	0.7	
				#DIV/0!	
				#DIV/0!	

MBASR1126 = 0.3 MDA 1.9
SR89 = 0.3 MDA 1.9
(2)

WORK GROUP # WG11827

RUN ID# R14665

Reviewed by LPM

Date 12-17-01

File Name:
SR8990 DEC2(01

Job Number	Sample Number	SR89 pCi/L	SR89 Error	SR89 MDA
example:				
L3800	1			
END OF INGROWTH				
L4094	5	0.3	0.9	1.9
	5 MD	1.2	0.9	1.9
	6	-0.6	0.9	1.9
	7	-1.5	1.2	1.9
	7 MS			
	8	1.9	0.9	1.9
	9	0.9	0.8	1.9
MBASR1126	MB	0.3	0.8	1.9
MBBSR1126	BLK			
LCASR1126	EFF			
LCBSR1126	LCS			

12/7/01

TOTAL Sr

File Name: SR89/90
SR8990 DEC2(01

Job Number	Sample Number	LB-4100 Detector Number	Volume liters grams	Batch Eff	Sample Count Time min	Sample Counts	Method Blank Counts	Sample Detector Bkg cpm	Method Blank Detector Bkg cpm	Sample Detector Eff	Method Blank Detector Eff	Corrected Sample cpm	Activity pCi/l pCi/g	Error pCi/l pCi/g	LLD pCi/l pCi/g
example:															
L3800	1	4-1	1.00	0.3895	120	707	188	1.140	1.580	0.391	0.390	4.75	5.5	0.5	0.6
L4094	5	A-2	0.50	0.3086	120	262	248	1.48	1.8	0.3477	0.3497	0.4382	1.3	0.8	1.8
	5MD	A-3	0.50	0.3086	120	304	248	1.58	1.8	0.3616	0.3497	0.6776	2.0	0.9	1.8
	6	A-4	0.50	0.3086	120	250	248	1.60	1.8	0.3436	0.3497	0.2213	0.6	0.8	1.8
	7	B-1	0.50	0.3086	120	539	248	1.84	1.8	0.3629	0.3497	2.3749	6.9	1.1	1.8
	7MS	B-3	0.50	0.3086	120	2173	248	1.92	1.8	0.3705	0.3497	15.9058	46.4	2.2	1.8
	8	B-4	0.50	0.3086	120	449	248	2.47	1.8	0.3455	0.3497	1.0082	2.9	0.9	1.8
	9	C-1	0.50	0.3086	120	295	248	1.87	1.8	0.3438	0.3497	0.3262	1.0	0.8	1.8
MBASR1126	MB	C-2	0.50	0.3086	120	258	248	1.68	1.8	0.3351	0.3497	0.2145	0.6	0.8	1.8
MBBSR1126	BLK	C-3	1.00	0.3086	120	248	248	1.80	1.8	0.3497	0.3497	0.0000	0.0	0.4	0.9
LCASR1126	EFF	C-4	1.00	0.3086	120	2258	248	1.78	1.8	0.3299	0.3497	16.7851	24.5	1.1	0.9
LCBSR1126	LCS	D-1	1.00	0.3086	120	2265	248	1.63	1.8	0.3466	0.3497	16.9807	24.8	1.1	0.9

QA-CHECKB Sr(89+90) 7-Dec-2001 14:16 pCi/g

	Standard Known Value	LCS Sample Value			LCS Recovery	
LCBSR1126	24.5	24.800			101%	(4)
	24.5				0%	
					#DIV/0!	
					#DIV/0!	
					#DIV/0!	

L4094-7

Sample Activity	Spiked Sample Activity	Standard Value	Sample Volume	Spike Value	SPIKE RECOVERY	
6.9	46.4	24.500	0.5000	49.0	81%	(3)
0.0		24.500	0.5000	49.0	0%	
					#DIV/0!	

L4094-5

Sample Activity	Duplicate Activity	Sample ERROR	Duplicate ERROR		Duplicate RER	
1.30	2.00	0.80	0.90		0.6	(1)
					#DIV/0!	
					#DIV/0!	
					#DIV/0!	

MBASR1126 = 0.6 MDA 1.8 (2)

WORK GROUP # WG

RUN ID# R

Detector ID	Sample ID	Alpha	Beta	Gua	Count Time	Event	Voltage	TOD
A2	L4094-5	91	262	82073	120	0	1380	37232.59133
A3	L4094-5MD	133	304	82071	120	0	1380	37232.59134
A4	L4094-6	75	250	82069	120	0	1380	37232.59134

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Detector ID	Sample ID	Alpha	Beta	Gua	Count Time	Event	Voltage	TOD
B1	L4094-7	153	539	83903	120	0	1350	37232.59238
B3	L4094-7MS	156	2173	83903	120	0	1350	37232.59238
B4	L4094-8	116	449	83903	120	0	1350	37232.59238

1033

Detector ID	Sample ID	Alpha	Beta	Gua	Count Time	Event	Voltage	TOD
C1	L4094-9	103	295	84668	120	0	1320	37232.59324
C2	MBASR1126	50	258	84668	120	0	1320	37232.59324
C3	MBBSR1126	30	248	84667	120	0	1320	37232.59324
C4	LCASR1126	168	2258	84668	120	0	1320	37232.59325

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Detector ID	Sample ID	Alpha	Beta	Gua	Count Time	Event	Voltage	TOD
D1	LCBSR1126	194	2265	85846	120	0	1320	37232.59456

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ETL Enviro-Test LABORATORIES

Sample Digestion Logbook

SOP ETL - RSOP- 0003

alysis Sr 89/90 Analyst Cassie Date 11/26/01 Reviewed By BC

Sample ID	Analyzed Volume g	Sample Volume Digested	Dilution Volume ml/l	Digestate Volume Used (ml)	Sample Matrix	Comments
L4093	CB 11-26-01					
L4094-5	0.5g	0.5g	15ml	15ml 8N HNO_3	Soil	
5MD						
6						
7						
7MS						
8						
9						
MBA 1126 Sr 89/90		NA	NA	NA	DI H_2O	
MBB 1126 Sr 89/90						
LCA 1126 Sr 89/90	1.0L					
LCB 1126 Sr 89/90						

Brought 11/29/01 Cassie

Cassie 11/26

Spike	Trace	Nuclide	Isotope Number	Expiration Date	Activity pCi/ml	Vol Ml	Standard Control	Spiked By	Witness
X	NA	Sr90	'96-12	11/29/02	4.9	5ml	4094-7MS	DC	
							LCA 1126 Sr 89/90		
							LCB 1126 Sr 89/90		
NA	X	CARRIER	NA	03/18/02	5mg	1ml	All Samples		

Cassie 11/26

FORM DIGESTLG-1, REV. 0 Effective 09-25-00 Book Number 01134 Page Number 1036

000057

ENVIRO·TEST LABORATORIES LLC. — **Sr89/90 Work Book** — **ETL-RSOP-014**

Calibration file name BKGDEC2001 LB4100/W SERIAL NUMBER 67505

ANALYST [illegible] DATE 12/07/01 REVIEWED BY [illegible]

(Circle one)

DATE COUNTED 12/7/01 TIME 1211 DRAWER A,B,C,D DATA FILE NAME WATER161 Count Time 120/1

DATE COUNTED ↓ TIME 1212 DRAWER A,B,C,D DATA FILE NAME WATER162 Count Time ↓

DRAWER A
DRAWER B

DATE COUNTED ↓ TIME 1214 DRAWER A,B,C,D DATA FILE NAME WATER163 Count Time ↓

DRAWER C

DATE COUNTED ↓ TIME 1215 DRAWER A,B,C,D DATA FILE NAME WATER164 Count Time ↓

DRAWER D

COUNTED BY [illegible]

Sample ID Job#/Sample#	Sample Volume (L/g)	Initial Planchet Weight in Grams	Planchet Weight + Sample in Grams	Weight of Sample on Planchet in grams	Comments
L4094-5	0.5g	10.6847	10.6962	0.0085	
5MD	↓	10.7414	10.7512	0.0098	
6	↓	10.7962	10.8054	0.0091	
7	↓	10.6845	10.6943	0.0098	
7MS	↓	10.7536	10.7610	0.0074	
8	↓	10.7622	10.7721	0.0099	
9	↓	10.7125	10.7194	0.0069	
MBASr1126	↓	10.6969	10.7063	0.0094	
MBBSr1126	↓	10.7234	10.7310	0.0076	
LCASr1126	1.0L	10.7226	10.7324	0.0098	
LCBSr1126	↓	10.7336	10.7434	0.0098	
				0.	
				0.	
				0.	
				0.	
				0.	
				0.	
				0.	
				0.	
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				0.	
				0.	
				0.	
				0.	
				0. 12/07/01 [illegible]	

Book Number 01144 **Page Number** 16

Water Sample Analysis

Unit Type: LB4100/W
Counting Unit ID: Aqua
Data file name: WATER161
Batch Ended: 12-7-01 14:11

Alpha activity action level (pCi/l): 2.00E+00
Alpha efficiency logfile: TH230AB
Alpha attenuation logfile: OCT2001ALPHAA
Alpha Activity Multiplier: 1.00E+00

Beta activity action level (pCi/l): 2.00E+00
Beta efficiency logfile: SR90AB
Beta attenuation logfile: OCT2001DRWABETA
Beta Activity Muliplier: 1.00E+00

Certainty level for MDA and flags: 95.00%
High Voltage Mode: Simultaneous

Application Revision: 2
Application Version: Standard

Batch ID: L4094 SR89/90 DRAWER A 12/7/01

Detector ID	Sample ID	Alpha Activity				Beta Activity				Residual Mass	Sample Volume
		pCi/l	2σ	flags	MDA	pCi/l	2σ	flags	MDA	g	l
A2	L4094-5	1.976E+00	5.058E-01	At AL	3.944E-01	1.780E+00	7.185E-01	At AL	1.034E+00	0.0085	0.5000
A3	L4094-5MD	2.832E+00	6.162E-01	>AL	4.573E-01	2.356E+00	7.579E-01	At AL	1.044E+00	0.0098	0.5000
A4	L4094-6	1.351E+00	4.442E-01	<AL	4.562E-01	1.241E+00	7.143E-01	<AL	1.093E+00	0.0091	0.5000

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Water Sample Analysis

Unit Type: LB4100/W
Counting Unit ID: Aqua
Data file name: WATER162
Batch Ended: 12-7-01 14:13

Alpha activity action level (pCi/l): 2.00E+00
Alpha efficiency logfile: TH230AB
Alpha attenuation logfile: OCT2001ALPHAB
Alpha Activity Multiplier: 1.00E+00

Beta activity action level (pCi/l): 2.00E+00
Beta efficiency logfile: SR90AB
Beta attenuation logfile: OCT2001DRWBBETA
Beta Activity Muliplier: 1.00E+00

Certainty level for MDA and flags: 95.00%
High Voltage Mode: Simultaneous

Application Revision: 2
Application Version: Standard

Batch ID: L4094 SR89/90 DRAWER B 12/7/01

Detector ID	Sample ID	Alpha Activity				Beta Activity				Residual Mass	Sample Volume
		pCi/l	2σ	flags	MDA	pCi/l	2σ	flags	MDA	g	l
B1	L4094-7	3.567E+00	6.983E-01	>AL	4.587E-01	6.405E+00	1.032E+00	>AL	1.103E+00	0.0098	0.5000
B3	L4094-7MS	3.257E+00	6.520E-01	>AL	4.790E-01	3.837E+01	2.805E+00	>AL	1.109E+00	0.0074	0.5000
B4	L4094-8	2.723E+00	5.835E-01	>AL	3.538E-01	3.217E+00	9.821E-01	>AL	1.340E+00	0.0099	0.5000

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Water Sample Analysis

Unit Type: LB4100/W
Counting Unit ID: Aqua
Data file name: WATER163
Batch Ended: 12-7-01 14:14

Alpha activity action level (pCi/l): 2.00E+00
Alpha efficiency logfile: TH230AB
Alpha attenuation logfile: OCT2001ALPHAC
Alpha Activity Multiplier: 1.00E+00

Beta activity action level (pCi/l): 2.00E+00
Beta efficiency logfile: SR90AB
Beta attenuation logfile: OCT2001DRWCBETA
Beta Activity Muliplier: 1.00E+00

Certainty level for MDA and flags: 95.00%
High Voltage Mode: Simultaneous

Application Revision: 2
Application Version: Standard

Batch ID: L4094 +QC SR89/90 DRAWER B 12/7/01

Detector ID	Sample ID	Alpha Activity				Beta Activity				Residual Mass	Sample Volume
		pCi/l	2σ	flags	MDA	pCi/l	2σ	flags	MDA	g	l
C1	L4094-9	2.048E+00	5.442E-01	At AL	4.922E-01	1.502E+00	7.791E-01	At AL	1.182E+00	0.0069	0.5000
C2	MBASR1126	7.388E-01	3.757E-01	<AL	4.821E-01	1.225E+00	7.391E-01	<AL	1.139E+00	0.0094	0.5000
C3	MBBSR1126	1.206E-01	2.753E-01	<MDA	4.813E-01	6.773E-01	7.064E-01	<AL	1.146E+00	0.0076	0.5000
C4	LCASR1126	1.852E+00	3.601E-01	At AL	2.583E-01	2.269E+01	1.693E+00	>AL	5.996E-01	0.0098	1.0000

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Water Sample Analysis

Unit Type: LB4100/W
Counting Unit ID: Aqua
Data file name: WATER164
Batch Ended: 12-7-01 14:16

Alpha activity action level (pCi/l): 2.00E+00
Alpha efficiency logfile: TH230AB
Alpha attenuation logfile: OCT2001ALPHAD
Alpha Activity Multiplier: 1.00E+00

Beta activity action level (pCi/l): 2.00E+00
Beta efficiency logfile: SR90AB
Beta attenuation logfile: OCT2001DRWDBETA
Beta Activity Muliplier: 1.00E+00

Certainty level for MDA and flags: 95.00%
High Voltage Mode: Simultaneous

Application Revision: 2
Application Version: Standard

Batch ID: QC FOR L4094 SR89/90 DRAWER D 12/7/01

Detector ID	Sample ID	Alpha Activity				Beta Activity				Residual Mass	Sample Volume
		pCi/l	2σ	flags	MDA	pCi/l	2σ	flags	MDA	g	l
D1	LCBSR1126	2.211E+00	3.715E-01	At AL	2.040E-01	2.221E+01	1.699E+00	>AL	5.554E-01	0.0098	1.0000

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ENVIRO-TEST LABORATORIES LLC.

LB4100/W

1000 MINUTE BKG.

SERIAL NUMBER 67505

Date DEC 3, 2001

Background File Name:BACK021, BKGDEC2001

Alpha to Beta Crosstalk 3.5%

FILE NAMES: PLAT0000, EFF068, EFF069, ATTENUATION FILE NAME: ATTEN006, ATTEN000
(BETA= OCT2001DRWABETA) (ALPHA= OCT2001ALPHAA)

DRAWER "A"	OPERATING VOLTAGE 1380		
BETA Eff.	ALPHA Eff.	BETA BACKGROUND	ALPHA BACKGROUND
A-1) 29.76%	32.47%	1.41 cpm	0.17 cpm
A-2) 34.77%	32.28%	1.48 cpm	0.11 cpm
A-3) 36.16%	33.64%	1.58 cpm	0.17 cpm
A-4) 34.36%	33.18%	1.60 cpm	0.17 cpm

ROI's			
A-1	A-2	A-3	A-4
Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%
Alpha Lower Limit 23.83%	Alpha Lower Limit 27.57%	Alpha Lower Limit 24.07%	Alpha Lower Limit 24.15%
Beta Upper Limit 23.83%	Beta Upper Limit 27.57%	Beta Upper Limit 24.07%	Beta Upper Limit 24.15%
Beta Lower Limit 0.00%	Beta Lower Limit 0.00%	Beta Lower Limit 0.00%	Beta Lower Limit 0.00%

FILE NAMES: PLAT001, EFF068, EFF069, ATTENUATION FILE NAME: ATTEN001, ATTEN003
(BETA= OCT2001DRWBBETA) (ALPHA= OCT2001ALPHAB)

DRAWER "B"	OPERATING VOLTAGE 1380		
BETA Eff.	ALPHA Eff.	BETA BACKGROUND	ALPHA BACKGROUND
B-1) 36.29%	31.48%	1.84 cpm	0.15 cpm
B-2) 34.94%	30.01%	2.73 cpm	0.10 cpm
B-3) 37.05%	32.72%	1.92 cpm	0.19 cpm
B-4) 34.55%	32.08%	2.47 cpm	0.08 cpm

ROI's			
B-1	B-2	B-3	B-4
Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%
Alpha Lower Limit 24.59%	Alpha Lower Limit 27.57%	Alpha Lower Limit 24.15%	Alpha Lower Limit 23.58%
Beta Upper Limit 24.59%	Beta Upper Limit 27.57%	Beta Upper Limit 24.15%	Beta Upper Limit 23.58%
Beta Lower Limit 0.00%	Beta Lower Limit 0.00%	Beta Lower Limit 0.00%	Beta Lower Limit 0.00%

ENVIRO·TEST LABORATORIES LLC.

LB4100/W

1000 MINUTE BKG.

SERIAL NUMBER 67505

Date DEC 3, 2001

Background File Name:BACK021, BKGDEC2001

Alpha to Beta Crosstalk 3.5%

FILE NAMES: PLAT005, EFF070, EFF071, ATTENUATION FILE NAME: ATTEN002, ATTEN004
(BETA= OCT2001DRWCBETA) (ALPHA= OCT2001ALPHAC)

DRAWER "C"	OPERATING VOLTAGE 1320		
BETA Eff.	ALPHA Eff.	BETA BACKGROUND	ALPHA BACKGROUND
C-1) 34.38%	31.49%	1.87 cpm	0.19 cpm
C-2) 33.51%	32.01%	1.68 cpm	0.18 cpm
C-3) 34.97%	33.89%	1.80 cpm	0.21 cpm
C-4) 32.99%	32.42%	1.78 cpm	0.21 cpm

ROI's

C-1	C-2	C-3	C-4
Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%
Alpha Lower Limit 14.04%	Alpha Lower Limit 13.55%	Alpha Lower Limit 13.87%	Alpha Lower Limit 13.82%
Beta Upper Limit 14.04%	Beta Upper Limit 13.55%	Beta Upper Limit 13.87%	Beta Upper Limit 13.82%
Beta Lower Limit 0.00%	Beta Lower Limit 0.00%	Beta Lower Limit 0.00%	Beta Lower Limit 0.00%

FILE NAMES: EFF070, EFF071, PLAT006, ATTENUATION FILE NAME: ATTEN005, ATTEN007
(BETA= OCT2001DRWDBETA) (ALPHA= OCT2001ALPHAD)

DRAWER "D"	OPERATING VOLTAGE 1350		
BETA Eff.	ALPHA Eff.	BETA BACKGROUND	ALPHA BACKGROUND
D-1) 34.66%	33.57%	1.63 cpm	0.13 cpm
D-2) 34.69%	33.07%	1.60 cpm	0.13 cpm
D-3) 35.05%	33.23%	1.74 cpm	0.21 cpm
D-4) 33.43%	32.45%	1.66 cpm	0.18 cpm

ROI's

D-1	D-2	D-3	D-4
Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%
Alpha Lower Limit 12.99%	Alpha Lower Limit 13.57%	Alpha Lower Limit 13.04%	Alpha Lower Limit 12.84%
Beta Upper Limit 12.99%	Beta Upper Limit 13.57%	Beta Upper Limit 13.04%	Beta Upper Limit 12.84%
Beta Lower Limit 0.00%	Beta Lower Limit 0.00%	Beta Lower Limit 0.00%	Beta Lower Limit 0.00%

Sr90

File Name: SR89/90
SR8990 DEC2(01

Job Number	Sample Number	LB-4100 Detector Number	Volume liters grams	Batch Eff	Sample Count Time min	Sample Counts	Method Blank Counts	Sample Detector Bkg cpm	Method Blank Detector Bkg cpm	Sample Detector Eff	Method Blank Detector Eff	Corrected Sample cpm	Activity pCi/l pCi/g	Error pCi/l pCi/g	LLD pCi/l pCi/g
example:															
L3800	1	4-1	1.00	0.3895	120	707	188	1.140	1.580	0.391	0.390	4.75	5.5	0.5	0.6
END OF INGROWTH															
L4094	5	A-2	0.50	0.28856	120	252	251	1.48	1.8	0.3477	0.3497	0.3300	1.0	0.9	1.9
	5 MD	A-3	0.50	0.28856	120	255	251	1.58	1.8	0.3616	0.3497	0.2434	0.8	0.9	1.9
	6	A-4	0.50	0.28856	120	272	251	1.60	1.8	0.3436	0.3497	0.3801	1.2	0.9	1.9
	7	B-1	0.50	0.28856	120	581	251	1.84	1.8	0.3629	0.3497	2.6990	8.4	1.2	1.9
	7 MS	B-3	0.50	0.28856	120	1846	251	1.92	1.8	0.3705	0.3497	13.1543	41.1	2.2	1.9
	8	B-4	0.50	0.28856	120	370	251	2.47	1.8	0.3455	0.3497	0.3252	1.0	0.9	1.9
	9	C-1	0.50	0.28856	120	263	251	1.87	1.8	0.3438	0.3497	0.0349	0.1	0.8	1.9
MBASR1126	MB	C-2	0.50	0.28856	120	245	251	1.68	1.8	0.3351	0.3497	0.0822	0.3	0.8	1.9
MBBSR1126	BLK	C-3	1.00	0.28856	120	251	251	1.80	1.8	0.3497	0.3497	0.0000	0.0	0.4	1.0
LCASR1126	EFF	C-4	1.00	0.28856	120	2130	251	1.78	1.8	0.3299	0.3497	15.6948	24.5	1.2	1.0
LCBSR1126	LCS	D-1	1.00	0.28856	120	2103	251	1.63	1.8	0.3466	0.3497	15.6059	24.4	1.2	1.0

1041

ENVIRO·TEST LABORATORIES LLC. **Sr89/90 Work Book** **ETL-RSOP-014**

Calibration file name BKGDec2001 LB4100/W SERIAL NUMBER 67505

ANALYST [illegible] DATE 12/14/01 REVIEWED BY [illegible]

(Circle one)

DATE COUNTED 12/14/01 TIME 1618 DRAWER A,B,C,D DATA FILE NAME Water036 Count Time 1201

DRAWER A

DATE COUNTED | TIME 1627 DRAWER A,B,C,D DATA FILE NAME Water037 Count Time |

DRAWER B

DATE COUNTED | TIME 1629 DRAWER A,B,C,D DATA FILE NAME Water038 Count Time |

DRAWER C

DATE COUNTED | TIME 1631 DRAWER A,B,C,D DATA FILE NAME Water039 Count Time |

DRAWER D

COUNTED BY CLP

Sample ID Job#/Sample#	Sample Volume L/g	Initial Planchet Weight in Grams	Planchet Weight + Sample in Grams	Weight of Sample on Planchet in grams	Comments
L4094-5	0.5	10.7445	10.7462	0.0017	After Ingrowth
5MD		10.7753	10.7773	0.0020	
6		10.7285	10.7307	0.0022	
7		10.7222	10.7251	0.0029	
7MS		10.7121	10.7149	0.0028	
8		10.7356	10.7386	0.0030	
9		10.6712	10.6739	0.0027	
MBASr1126		10.7578	10.7593	0.0015	
MBBSr1126		10.7849	10.7872	0.0023	
LCASr1126	1.0L	10.7208	10.7231	0.0023	
LCBSr1126	1	10.7501	10.7525	0.0024	
				0.	
				0.	
				0.	
				0.	
				0.	
				0.	
				0.	
				0.	
				0.	
				0.	
				0.	
				0.	
				0.	
				0.	
				0.	
				0.	
				0.	12/14/01 [illegible]

Book Number 01144 Page Number 27 1045

Detector ID	Sample ID	Alpha	Beta	Guar	Count Time	Event	Voltage	TOD
A2	L4094-5	28	252	86062	120	0	1380	37239.76331
A3	L4094-5MD	30	255	86062	120	0	1380	37239.76331
A4	L4094-6	39	272	86064	120	0	1380	37239.76331

Detector ID	Sample ID	Alpha	Beta	Guar	Count Time	Event	Voltage	TOD
B1	L4094-7	52	581	87355	120	0	1350	37239.76994
B3	L4094-7MS	53	1846	87353	120	0	1350	37239.76994
B4	L4094-8	25	370	87357	120	0	1350	37239.76994

Detector ID	Sample ID	Alpha	Beta	Guard	Count Time	Event	Voltage	TOD
C1	L4094-9	33	263	87523	120	0	1320	37239.77115
C2	MBASR1126	36	245	87524	120	0	1320	37239.77115
C3	MBBSR1126	42	251	87526	120	0	1320	37239.77115
C4	LCASR1126	95	2130	87525	120	0	1320	37239.77116

Detector ID	Sample ID	Alpha	Beta	Guar.	Count Time	Event	Voltage	TOD
D1	LCBSR1126	108	2103	88769	120	0	1320	37239.7724

1049

Water Sample Analysis

Unit Type: LB4100/W
Counting Unit ID: Aqua
Data file name: WATER036
Batch Ended: 12-14-01 18:19

Alpha activity action level (pCi/l): 2.00E+00
Alpha efficiency logfile: TH230AB
Alpha attenuation logfile: OCT2001ALPHAA
Alpha Activity Multiplier: 1.00E+00

Beta activity action level (pCi/l): 2.00E+00
Beta efficiency logfile: SR90AB
Beta attenuation logfile: OCT2001DRWABETA
Beta Activity Muliplier: 1.00E+00

Certainty level for MDA and flags: 95.00%
High Voltage Mode: Simultaneous

Application Revision: 2
Application Version: Standard

Batch ID: L4094 SR89/90 AFTER INGROWTH DRAWER A 12/14/01

Detector ID	Sample ID	Alpha Activity				Beta Activity				Residual Mass	Sample Volume
		pCi/l	2σ	flags	MDA	pCi/l	2σ	flags	MDA	g	l
A2	L4094-5	3.535E-01	2.654E-01	<AL	3.758E-01	1.559E+00	6.991E-01	At AL	1.027E+00	0.0017	0.5000
A3	L4094-5MD	2.390E-01	2.707E-01	<AL	4.329E-01	1.341E+00	6.872E-01	<AL	1.035E+00	0.0020	0.5000
A4	L4094-6	4.382E-01	3.050E-01	<AL	4.345E-01	1.699E+00	7.406E-01	At AL	1.087E+00	0.0022	0.5000

1050

Water Sample Analysis

Unit Type: LB4100/W
Counting Unit ID: Aqua
Data file name: WATER037
Batch Ended: 12-14-01 18:28

Alpha activity action level (pCi/l): 2.00E+00
Alpha efficiency logfile: TH230AB
Alpha attenuation logfile: OCT2001ALPHAB
Alpha Activity Multiplier: 1.00E+00

Beta activity action level (pCi/l): 2.00E+00
Beta efficiency logfile: SR90AB
Beta attenuation logfile: OCT2001DRWBBETA
Beta Activity Muliplier: 1.00E+00

Certainty level for MDA and flags: 95.00%
High Voltage Mode: Simultaneous

Application Revision: 2
Application Version: Standard

Batch ID: L4094 SR89/90 AFTER INGROWTH DRAWER B 12/14/01

Detector ID	Sample ID	Alpha Activity				Beta Activity				Residual Mass	Sample Volume
		pCi/l	2σ	flags	MDA	pCi/l	2σ	flags	MDA	g	l
B1	L4094-7	8.597E-01	3.742E-01	<AL	4.366E-01	7.198E+00	1.074E+00	>AL	1.095E+00	0.0029	0.5000
B3	L4094-7MS	7.063E-01	3.583E-01	<AL	4.639E-01	3.175E+01	2.438E+00	>AL	1.104E+00	0.0028	0.5000
B4	L4094-8	3.660E-01	2.525E-01	<AL	3.377E-01	1.540E+00	8.681E-01	At AL	1.332E+00	0.0030	0.5000

1051

Water Sample Analysis

Unit Type: LB4100/W
Counting Unit ID: Aqua
Data file name: WATER038
Batch Ended: 12-14-01 18:30

Alpha activity action level (pCi/l): 2.00E+00
Alpha efficiency logfile: TH230AB
Alpha attenuation logfile: OCT2001ALPHAC
Alpha Activity Multiplier: 1.00E+00

Beta activity action level (pCi/l): 2.00E+00
Beta efficiency logfile: SR90AB
Beta attenuation logfile: OCT2001DRWCBETA
Beta Activity Muliplier: 1.00E+00

Certainty level for MDA and flags: 95.00%
High Voltage Mode: Simultaneous

Application Revision: 2
Application Version: Standard

Batch ID: L4094 SR89/90 AFTER INGROWTH DRAWER C 12/14/01

Detector ID	Sample ID	Alpha Activity				Beta Activity				Residual Mass	Sample Volume
		pCi/l	2σ	flags	MDA	pCi/l	2σ	flags	MDA	g	l
C1	L4094-9	2.554E-01	2.968E-01	<AL	4.778E-01	8.147E-01	7.328E-01	<AL	1.177E+00	0.0027	0.5000
C2	MBASR1126	3.584E-01	3.027E-01	<AL	4.556E-01	9.341E-01	7.135E-01	<AL	1.128E+00	0.0015	0.5000
C3	MBBSR1126	3.923E-01	3.103E-01	<AL	4.631E-01	7.363E-01	7.065E-01	<AL	1.139E+00	0.0023	0.5000
C4	LCASR1126	1.721E+00	4.980E-01	At AL	4.888E-01	4.218E+01	3.190E+00	>AL	1.189E+00	0.0023	0.5000

1052

Water Sample Analysis

Unit Type: LB4100/W
Counting Unit ID: Aqua
Data file name: WATER039
Batch Ended: 12-14-01 18:32

Alpha activity action level (pCi/l): 2.00E+00
Alpha efficiency logfile: TH230AB
Alpha attenuation logfile: OCT2001ALPHAD
Alpha Activity Multiplier: 1.00E+00

Beta activity action level (pCi/l): 2.00E+00
Beta efficiency logfile: SR90AB
Beta attenuation logfile: OCT2001DRWDBETA
Beta Activity Muliplier: 1.00E+00

Certainty level for MDA and flags: 95.00%
High Voltage Mode: Simultaneous

Application Revision: 2
Application Version: Standard

Batch ID: L4094 SR89/90 AFTER INGROWTH DRAWER D 12/14/01

Detector ID	Sample ID	Alpha Activity				Beta Activity				Residual Mass	Sample Volume
		pCi/l	2σ	flags	MDA	pCi/l	2σ	flags	MDA	g	l
D1	LCBSR1126	2.173E+00	5.102E-01	At AL	3.873E-01	4.071E+01	3.163E+00	>AL	1.105E+00	0.0024	0.5000

1053

ENVIRO·TEST LABORATORIES LLC.

LB4100/W

1000 MINUTE BKG.

SERIAL NUMBER 67505

Date DEC 3, 2001

Background File Name:BACK021, BKGDEC2001

Alpha to Beta Crosstalk 3.5%

FILE NAMES: PLAT0000, EFF068, EFF069, ATTENUATION FILE NAME: ATTEN006, ATTEN000 (BETA= OCT2001DRWABETA) (ALPHA= OCT2001ALPHAA)

DRAWER "A"	OPERATING VOLTAGE 1380

BETA Eff.	ALPHA Eff.	BETA BACKGROUND	ALPHA BACKGROUND
A-1) 29.76%	32.47%	1.41 cpm	0.17 cpm
A-2) 34.77%	32.28%	1.48 cpm	0.11 cpm
A-3) 36.16%	33.64%	1.58 cpm	0.17 cpm
A-4) 34.36%	33.18%	1.60 cpm	0.17 cpm

ROI's

A-1	A-2	A-3	A-4
Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%
Alpha Lower Limit 23.83%	Alpha Lower Limit 27.57%	Alpha Lower Limit 24.07%	Alpha Lower Limit 24.15%
Beta Upper Limit 23.83%	Beta Upper Limit 27.57%	Beta Upper Limit 24.07%	Beta Upper Limit 24.15%
Beta Lower Limit 0.00%	Beta Lower Limit 0.00%	Beta Lower Limit 0.00%	Beta Lower Limit 0.00%

FILE NAMES: PLAT001, EFF068, EFF069, ATTENUATION FILE NAME: ATTEN001, ATTEN003 (BETA= OCT2001DRWBBETA) (ALPHA= OCT2001ALPHAB)

DRAWER "B"	OPERATING VOLTAGE 1380

BETA Eff.	ALPHA Eff.	BETA BACKGROUND	ALPHA BACKGROUND
B-1) 36.29%	31.48%	1.84 cpm	0.15 cpm
B-2) 34.94%	30.01%	2.73 cpm	0.10 cpm
B-3) 37.05%	32.72%	1.92 cpm	0.19 cpm
B-4) 34.55%	32.08%	2.47 cpm	0.08 cpm

ROI's

B-1	B-2	B-3	B-4
Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%
Alpha Lower Limit 24.59%	Alpha Lower Limit 27.57%	Alpha Lower Limit 24.15%	Alpha Lower Limit 23.58%
Beta Upper Limit 24.59%	Beta Upper Limit 27.57%	Beta Upper Limit 24.15%	Beta Upper Limit 23.58%
Beta Lower Limit 0.00%	Beta Lower Limit 0.00%	Beta Lower Limit 0.00%	Beta Lower Limit 0.00%

ENVIRO·TEST LABORATORIES LLC.

LB4100/W *1000 MINUTE BKG.*

SERIAL NUMBER 67505 *Date DEC 3, 2001*

Background File Name:BACK021, BKGDEC2001

Alpha to Beta Crosstalk 3.5%

FILE NAMES: PLAT005, EFF070, EFF071, ATTENUATION FILE NAME: ATTEN002, ATTEN004 (BETA= OCT2001DRWCBETA) (ALPHA= OCT2001ALPHAC)

DRAWER "C"	*OPERATING VOLTAGE 1320*		
BETA Eff.	*ALPHA Eff.*	*BETA BACKGROUND*	*ALPHA BACKGROUND*
C-1) 34.38%	31.49%	1.87 cpm	0.19 cpm
C-2) 33.51%	32.01%	1.68 cpm	0.18 cpm
C-3) 34.97%	33.89%	1.80 cpm	0.21 cpm
C-4) 32.99%	32.42%	1.78 cpm	0.21 cpm

ROI's

C-1	*C-2*	*C-3*	*C-4*
Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%
Alpha Lower Limit 14.04%	Alpha Lower Limit 13.55%	Alpha Lower Limit 13.87%	Alpha Lower Limit 13.82%
Beta Upper Limit 14.04%	Beta Upper Limit 13.55%	Beta Upper Limit 13.87%	Beta Upper Limit 13.82%
Beta Lower Limit 0.00%	Beta Lower Limit 0.00%	Beta Lower Limit 0.00%	Beta Lower Limit 0.00%

FILE NAMES: EFF070, EFF071, PLAT006, ATTENUATION FILE NAME: ATTEN005, ATTEN007 (BETA= OCT2001DRWDBETA) (ALPHA= OCT2001ALPHAD)

DRAWER "D"	*OPERATING VOLTAGE 1350*		
BETA Eff.	*ALPHA Eff.*	*BETA BACKGROUND*	*ALPHA BACKGROUND*
D-1) 34.66%	33.57%	1.63 cpm	0.13 cpm
D-2) 34.69%	33.07%	1.60 cpm	0.13 cpm
D-3) 35.05%	33.23%	1.74 cpm	0.21 cpm
D-4) 33.43%	32.45%	1.66 cpm	0.18 cpm

ROI's

D-1	*D-2*	*D-3*	*D-4*
Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%
Alpha Lower Limit 12.99%	Alpha Lower Limit 13.57%	Alpha Lower Limit 13.04%	Alpha Lower Limit 12.84%
Beta Upper Limit 12.99%	Beta Upper Limit 13.57%	Beta Upper Limit 13.04%	Beta Upper Limit 12.84%
Beta Lower Limit 0.00%	Beta Lower Limit 0.00%	Beta Lower Limit 0.00%	Beta Lower Limit 0.00%

QA-CHECKB Sr89/90 6-Dec-2001 19:23 pCi/g

	Standard Known Value	LCS Sample Value			LCS Recovery	
LCA1121SR	24.5	28.400			116%	(4)
	24.5				0%	
					#DIV/0!	
					#DIV/0!	
					#DIV/0!	

L4094-3

Sample Activity	Spiked Sample Activity	Standard Value	Sample Volume	Spike Value	SPIKE RECOVERY	
0.0	57.5	24.500	0.5000	49.0	117%	(3)
0.0		24.500	0.5000	49.0	0%	
					#DIV/0!	

L4070-1

Sample Activity	Duplicate Activity	Sample ERROR	Duplicate ERROR	Duplicate RER	
2.50	0.10	1.40	1.30	1.3	(1)
				#DIV/0!	
				#DIV/0!	
				#DIV/0!	

MBA1121SR = 0.4 MDA 2.5 (2)

WORK GROUP # WG116974 12/6/01

RUN ID# R 145220

Reviewed by J P Meador

Date 12-10-01

File Name: SR89/90
SR8990 DEC2(01

Job Number	Sample Number	LB-4100 Detector Number	Volume liters grams	Batch Eff	Sample Count Time min	Sample Counts	Method Blank Counts	Sample Detector Bkg cpm	Method Blank Detector Bkg cpm	Sample Detector Eff	Method Blank Detector Eff	Corrected Sample cpm	Activity pCi/l pCi/g	Error pCi/l pCi/g	LLD pCi/l pCi/g
example:															
L3800	1	4-1	1.00	0.3895	120	707	188	1.140	1.580	0.391	0.390	4.75	5.5	0.5	0.6
L4070	1	A-4	0.4091	0.2103	120	270	217	1.60	1.63	0.3436	0.3466	0.4732	2.5	1.4	3.0
	1MD	B-1	0.4091	0.2103	120	246	217	1.84	1.63	0.3629	0.3466	0.0233	0.1	1.3	3.0
L4094	1	B-3	0.50	0.2103	120	261	217	1.92	1.63	0.3705	0.3466	0.0644	0.3	1.0	2.5
	2	B-4	0.50	0.2103	120	319	217	2.47	1.63	0.3455	0.3466	0.0106	0.0	1.0	2.5
	3	C-1	0.50	0.2103	120	237	217	1.87	1.63	0.3438	0.3466	-0.0719	-0.3	1.0	2.5
	3MS	C-2	0.50	0.2103	120	1834	217	1.68	1.63	0.3351	0.3466	13.4309	57.5	3.0	2.5
	4	C-3	0.50	0.2103	120	240	217	1.80	1.63	0.3497	0.3466	0.0201	0.1	1.0	2.5
MBA1121SR	MB	C-4	0.50	0.2103	120	246	217	1.78	1.63	0.3299	0.3466	0.1003	0.4	1.1	2.5
MBB1121SR	BLK	D-1	1.00	0.2103	120	217	217	1.63	1.63	0.3466	0.3466	0.0000	0.0	0.5	1.2
LCA1121SR	LCS	D-2	1.00	0.2103	120	1803	217	1.60	1.63	0.3469	0.3466	13.2465	28.4	1.5	1.2
LCB1121SR	EFF	D-3	1.00	0.2103	120	1603	217	1.74	1.63	0.3505	0.3466	11.4380	24.5	1.4	1.2

Detector ID	Sample ID	Alpha	Beta	Guard	Count Time	Event	Voltage	TOD
~~A2~~	~~L3983-11~~	~~32~~	~~266~~	~~82600~~	~~120~~	~~0~~	~~1380~~	~~37231.8044~~
~~A3~~	~~L3983-12~~	~~35~~	~~257~~	~~82596~~	~~120~~	~~0~~	~~1380~~	~~37231.8044~~
A4	L4070-1	52	270	82598	120	0	1380	37231.80441

1058

Detector ID	Sample ID	Alpha	Beta	Gua	Count Time	Event	Voltage	TOD
B1	L4070-1MD	30	246	84449	120	0	1350	37231.80559
B3	L4094-1	175	261	84451	120	0	1350	37231.8056
B4	L4094-2	115	319	84453	120	0	1350	37231.8056

1059

Detector ID	Sample ID	Alpha	Beta	Gua	Count Time	Event	Voltage	TOD
C1	L4094-3	64	237	85773	120	0	1320	37231.80661
C2	L4094-3MS	217	1834	85772	120	0	1320	37231.80661
C3	L4094-4	223	240	85771	120	0	1320	37231.80662
C4	MBA1121SR	23	246	85769	120	0	1320	37231.80662

1060

Detector ID	Sample ID	Alpha	Beta	Guar	Count Time	Event	Voltage	TOD
D1	MBB1121SR	27	217	86072	120	0	1320	37231.80772
D2	LCA1121SR	158	1803	86073	120	0	1320	37231.80772
D3	LCB1121SR	125	1603	86075	120	0	1320	37231.80773

Water Sample Analysis

Unit Type: LB4100/W
Counting Unit ID: Aqua
Data file name: WATER153
Batch Ended: 12-6-01 19:18

Alpha activity action level (pCi/l): 2.00E+00
Alpha efficiency logfile: TH230AB
Alpha attenuation logfile: OCT2001ALPHAA
Alpha Activity Multiplier: 1.00E+00

Beta activity action level (pCi/l): 2.00E+00
Beta efficiency logfile: SR90AB
Beta attenuation logfile: OCT2001DRWABETA
Beta Activity Muliplier: 1.00E+00

Certainty level for MDA and flags: 95.00%
High Voltage Mode: Simultaneous

Application Revision: 2
Application Version: Standard

Batch ID: L3983-11,12 SR90 + L4070-1 SR89/90 DRAWER A 12/6/01

Detector ID	Sample ID	Alpha Activity				Beta Activity				Residual Mass	Sample Volume
		pCi/l	2σ	flags	MDA	pCi/l	2σ	flags	MDA	g	l
~~A2~~	~~L3983-11~~	~~9.493E-01~~	~~5.965E-01~~	~~<AL~~	~~7.916E-01~~	~~1.215E+00~~	~~1.277E+00~~	~~At AL~~	~~2.070E+00~~	~~0.0090~~	~~0.2500~~
~~A3~~	~~L3983-12~~	~~7.307E-01~~	~~6.118E-01~~	~~<AL~~	~~9.089E-01~~	~~2.784E+00~~	~~1.390E+00~~	~~At AL~~	~~2.087E+00~~	~~0.0089~~	~~0.2500~~
A4	L4070-1	9.406E-01	4.438E-01	<AL	5.490E-01	2.033E+00	9.056E-01	At AL	1.334E+00	0.0069	0.4091

12-7-01

1062

Water Sample Analysis

Unit Type: LB4100/W
Counting Unit ID: Aqua
Data file name: WATER154
Batch Ended: 12-6-01 19:20

Alpha activity action level (pCi/l): 2.00E+00
Alpha efficiency logfile: TH230AB
Alpha attenuation logfile: OCT2001ALPHAB
Alpha Activity Multiplier: 1.00E+00

Beta activity action level (pCi/l): 2.00E+00
Beta efficiency logfile: SR90AB
Beta attenuation logfile: OCT2001DRWBBETA
Beta Activity Muliplier: 1.00E+00

Certainty level for MDA and flags: 95.00%
High Voltage Mode: Simultaneous

Application Revision: 2
Application Version: Standard

Batch ID: L4070 L4094 SR89/90 DRAWER B 12/6/01

Detector ID	Sample ID	Alpha Activity				Beta Activity				Residual Mass	Sample Volume
		pCi/l	2σ	flags	MDA	pCi/l	2σ	flags	MDA	g	l
B1	L4070-1MD	3.876E-01	3.603E-01	<AL	5.506E-01	6.292E-01	8.183E-01	<MDA	1.345E+00	0.0073	0.4091
B3	L4094-1	3.754E+00	7.014E-01	>AL	4.830E-01	5.983E-01	6.808E-01	<AL	1.111E+00	0.0086	0.5000
B4	L4094-2	2.637E+00	5.678E-01	>AL	3.460E-01	4.708E-01	8.052E-01	<MDA	1.336E+00	0.0066	0.5000

1063

Water Sample Analysis

Unit Type: LB4100/W
Counting Unit ID: Aqua
Data file name: WATER155
Batch Ended: 12-6-01 19:21

Alpha activity action level (pCi/l): 2.00E+00
Alpha efficiency logfile: TH230AB
Alpha attenuation logfile: OCT2001ALPHAC
Alpha Activity Multiplier: 1.00E+00

Beta activity action level (pCi/l): 2.00E+00
Beta efficiency logfile: SR90AB
Beta attenuation logfile: OCT2001DRWCBETA
Beta Activity Muliplier: 1.00E+00

Certainty level for MDA and flags: 95.00%
High Voltage Mode: Simultaneous

Application Revision: 2
Application Version: Standard

Batch ID: L4094 +QC SR89/90 DRAWER C 12/6/01

Detector ID	Sample ID	Alpha Activity				Beta Activity				Residual Mass	Sample Volume
		pCi/l	2σ	flags	MDA	pCi/l	2σ	flags	MDA	g	l
C1	L4094-3	1.055E+00	4.242E-01	<AL	4.929E-01	2.638E-01	7.010E-01	<MDA	1.183E+00	0.0071	0.5000
C2	L4094-3MS	4.950E+00	8.079E-01	>AL	4.746E-01	3.529E+01	2.643E+00	>AL	1.136E+00	0.0072	0.5000
C3	L4094-4	4.683E+00	7.714E-01	>AL	4.758E-01	5.077E-01	6.943E-01	<MDA	1.144E+00	0.0060	0.5000
C4	MBA1121SR	-4.052E-02	2.583E-01	<MDA	5.064E-01	7.249E-01	7.385E-01	<AL	1.196E+00	0.0071	0.5000

1064

Water Sample Analysis

Unit Type: LB4100/W
Counting Unit ID: Aqua
Data file name: WATER156
Batch Ended: 12-6-01 19:23

Alpha activity action level (pCi/l): 2.00E+00
Alpha efficiency logfile: TH230AB
Alpha attenuation logfile: OCT2001ALPHAD
Alpha Activity Multiplier: 1.00E+00

Beta activity action level (pCi/l): 2.00E+00
Beta efficiency logfile: SR90AB
Beta attenuation logfile: OCT2001DRWDBETA
Beta Activity Muliplier: 1.00E+00

Certainty level for MDA and flags: 95.00%
High Voltage Mode: Simultaneous

Application Revision: 2
Application Version: Standard

Batch ID: QC FOR L4070 L4094 SR89/90 DRAWER D 12/6/01

Detector ID	Sample ID	Alpha Activity				Beta Activity				Residual Mass	Sample Volume
		pCi/l	2σ	flags	MDA	pCi/l	2σ	flags	MDA	g	l
D1	MBB1121SR	2.791E-01	2.639E-01	<AL	4.032E-01	4.689E-01	6.716E-01	<MDA	1.109E+00	0.0081	0.5000
D2	LCA1121SR	1.749E+00	3.273E-01	At AL	1.990E-01	1.711E+01	1.432E+00	>AL	5.443E-01	0.0071	1.0000
D3	LCB1121SR	1.226E+00	2.902E-01	<AL	2.514E-01	1.464E+01	1.173E+00	>AL	5.622E-01	0.0061	1.0000

1065

ENVIRO·TEST LABORATORIES LLC. **Sr89/90 Work Book** **ETL-RSOP-01**

Calibration file name BKGDEC2001 LB4100/W SERIAL NUMBER 67505

ANALYST SS DATE 12/6/01 REVIEWED BY [illegible]

(Circle one)

DATE COUNTED 12/6/01 TIME 1717 DRAWER A,B,C,D DATA FILE NAME WATER153 Count Time 120/1

DATE COUNTED ↓ TIME 1719 DRAWER A,B,C,D DATA FILE NAME WATER154 Count Time ↓

DATE COUNTED ↓ TIME 1721 DRAWER A,B,C,D DATA FILE NAME WATER155 Count Time ↓

DATE COUNTED ↓ TIME 1722 DRAWER A,B,C,D DATA FILE NAME WATER156 Count Time ↓

COUNTED BY SS

Sample ID Job#/Sample#	Sample Volume L/g	Initial Planchet Weight in Grams	Planchet Weight + Sample in Grams	Weight of Sample on Planchet in grams	Comments
L4070-1	0.4091	10.7656	10.7725	0.0069	
↓ 1MD	↓	10.6890	10.6963	0.0073	
L4094-1	0.5	10.6800	10.6886	0.0086	
2		10.7699	10.7765	0.0066	
3		10.7905	10.7976	0.0071	
3MS		10.7674	10.7746	0.0072	
↓ 4		10.8258	10.8318	0.0060	
MBA1121Sr		10.6989	10.7060	0.0071	
MBB1121Sr	↓	10.7981	10.8062	0.0081	
LCA1121Sr	1.0L	10.7553	10.7624	0.0071	
LCB1121Sr	↓	10.7346	10.7407	0.0061	
				0.	
				0.	
				0.	
				0.	
				0.	
				0.	
				0.	
			SS 12-6-01	0.	
				0.	
				0.	
				0.	
				0.	
				0.	
				0.	
				0.	

Book Number 01144 Page Number 1066

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Revision Number 1 Effective Date 08/17/2000

ETL Enviro-Test LABORATORIES

Sample Digestion Logbook

S[illegible] ETL - RSOP- 0003

Analysis Sr 89/90 Analyst Cassie 11/21/01 Reviewed By BC

Sample ID	Analyzed Volume g	Sample Volume Digested	Dilution Volume ml/l	Digestate Volume Used (ml)	Sample Matrix	Comments
~~L3797-1~~	~~0.5g~~	~~0.5g~~	~~15ml~~	~~15ml 8N HNO3~~	~~Soil~~	~~will run with original~~
L4070-1	0.4091g	409.13g	1.0L	1.0ml	NaOH	Set from 1117. 11/27/01
1 1MD	1	1	1	1	1	
L4092-1	0.5g	0.5g	15ml	15ml 8N HNO3	Soil	
2	0.5g	0.5g	15ml	15ml 8N HNO3		
3						
3MS						
4						
MBA 1121 Sr 89/90		NA	NA	NA	DI H2O	
MBB 1121 Sr 89/90						
LCA 1121 Sr 89/90	1.0L					
LCB 1121 Sr 89/90						

Spike	Trace	Nuclide	Isotope Number	Expiration Date	Activity pCi/ml	Vol Ml	Standard Control	Spiked By	Witness
X	NA	Sr90	096-11	07/24/02	4.9	5ml	4092-3MS	BC	
1	1	1	1	1	1	1	LCA 1121 Sr 89/90	1	1
							LCB 1121 Sr 89/90		
NA	X	CARRIER	NA	08/15/02	50mg	1ml	All Samples	1	1

FORM DIGESTLG-1, REV. 0 Effective 09-25-00 Book Number 01134 Page Number 000017 1067

ENVIRO-TEST LABORATORIES LLC.

LB4100/W

1000 MINUTE BKG.

SERIAL NUMBER 67505

Date DEC 3, 2001

Background File Name:BACK021, BKGDEC2001

Alpha to Beta Crosstalk 3.5%

FILE NAMES: PLAT0000, EFF068, EFF069, ATTENUATION FILE NAME: ATTEN006, ATTEN000
(BETA= OCT2001DRWABETA) (ALPHA= OCT2001ALPHAA)

DRAWER "A"	OPERATING VOLTAGE 1380

BETA Eff.	ALPHA Eff.	BETA BACKGROUND	ALPHA BACKGROUND
A-1) 29.76%	32.47%	1.41 cpm	0.17 cpm
A-2) 34.77%	32.28%	1.48 cpm	0.11 cpm
A-3) 36.16%	33.64%	1.58 cpm	0.17 cpm
A-4) 34.36%	33.18%	1.60 cpm	0.17 cpm

ROI's

A-1	A-2	A-3	A-4
Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%
Alpha Lower Limit 23.83%	Alpha Lower Limit 27.57%	Alpha Lower Limit 24.07%	Alpha Lower Limit 24.15%
Beta Upper Limit 23.83%	Beta Upper Limit 27.57%	Beta Upper Limit 24.07%	Beta Upper Limit 24.15%
Beta Lower Limit 0.00%	Beta Lower Limit 0.00%	Beta Lower Limit 0.00%	Beta Lower Limit 0.00%

FILE NAMES: PLAT001, EFF068, EFF069, ATTENUATION FILE NAME: ATTEN001, ATTEN003
(BETA= OCT2001DRWBBETA) (ALPHA= OCT2001ALPHAB)

DRAWER "B"	OPERATING VOLTAGE 1380

BETA Eff.	ALPHA Eff.	BETA BACKGROUND	ALPHA BACKGROUND
B-1) 36.29%	31.48%	1.84 cpm	0.15 cpm
B-2) 34.94%	30.01%	2.73 cpm	0.10 cpm
B-3) 37.05%	32.72%	1.92 cpm	0.19 cpm
B-4) 34.55%	32.08%	2.47 cpm	0.08 cpm

ROI's

B-1	B-2	B-3	B-4
Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%
Alpha Lower Limit 24.59%	Alpha Lower Limit 27.57%	Alpha Lower Limit 24.15%	Alpha Lower Limit 23.58%
Beta Upper Limit 24.59%	Beta Upper Limit 27.57%	Beta Upper Limit 24.15%	Beta Upper Limit 23.58%
Beta Lower Limit 0.00%	Beta Lower Limit 0.00%	Beta Lower Limit 0.00%	Beta Lower Limit 0.00%

ENVIRO·TEST LABORATORIES LLC.

LB4100/W

1000 MINUTE BKG.

SERIAL NUMBER 67505

Date DEC 3, 2001

Background File Name:BACK021, BKGDEC2001

Alpha to Beta Crosstalk 3.5%

FILE NAMES: PLAT005, EFF070, EFF071, ATTENUATION FILE NAME: ATTEN002, ATTEN004
(BETA= OCT2001DRWCBETA) (ALPHA= OCT2001ALPHAC)

DRAWER "C"	OPERATING VOLTAGE 1320		
BETA Eff.	ALPHA Eff.	BETA BACKGROUND	ALPHA BACKGROUND
C-1) 34.38%	31.49%	1.87 cpm	0.19 cpm
C-2) 33.51%	32.01%	1.68 cpm	0.18 cpm
C-3) 34.97%	33.89%	1.80 cpm	0.21 cpm
C-4) 32.99%	32.42%	1.78 cpm	0.21 cpm

ROI's			
C-1	C-2	C-3	C-4
Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%
Alpha Lower Limit 14.04%	Alpha Lower Limit 13.55%	Alpha Lower Limit 13.87%	Alpha Lower Limit 13.82%
Beta Upper Limit 14.04%	Beta Upper Limit 13.55%	Beta Upper Limit 13.87%	Beta Upper Limit 13.82%
Beta Lower Limit 0.00%	Beta Lower Limit 0.00%	Beta Lower Limit 0.00%	Beta Lower Limit 0.00%

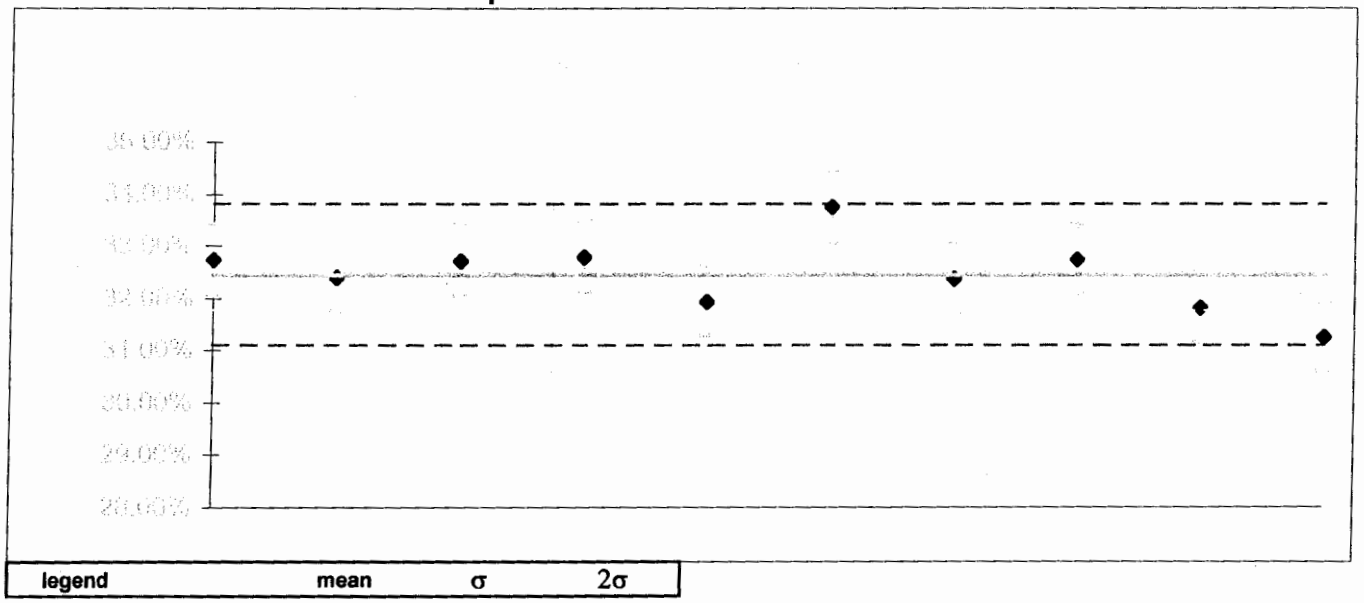
FILE NAMES: EFF070, EFF071, PLAT006, ATTENUATION FILE NAME: ATTEN005, ATTEN007
(BETA= OCT2001DRWDBETA) (ALPHA= OCT2001ALPHAD)

DRAWER "D"	OPERATING VOLTAGE 1350		
BETA Eff.	ALPHA Eff.	BETA BACKGROUND	ALPHA BACKGROUND
D-1) 34.66%	33.57%	1.63 cpm	0.13 cpm
D-2) 34.69%	33.07%	1.60 cpm	0.13 cpm
D-3) 35.05%	33.23%	1.74 cpm	0.21 cpm
D-4) 33.43%	32.45%	1.66 cpm	0.18 cpm

ROI's			
D-1	D-2	D-3	D-4
Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%	Alpha Upper Limit 100.0%
Alpha Lower Limit 12.99%	Alpha Lower Limit 13.57%	Alpha Lower Limit 13.04%	Alpha Lower Limit 12.84%
Beta Upper Limit 12.99%	Beta Upper Limit 13.57%	Beta Upper Limit 13.04%	Beta Upper Limit 12.84%
Beta Lower Limit 0.00%	Beta Lower Limit 0.00%	Beta Lower Limit 0.00%	Beta Lower Limit 0.00%

Unit Type: LB4100/W
Date Performed: 12/4/01 05:48
File Name: EFF071
Batch ID: Eff C-Beta D-Alpha Off Values 12/04/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



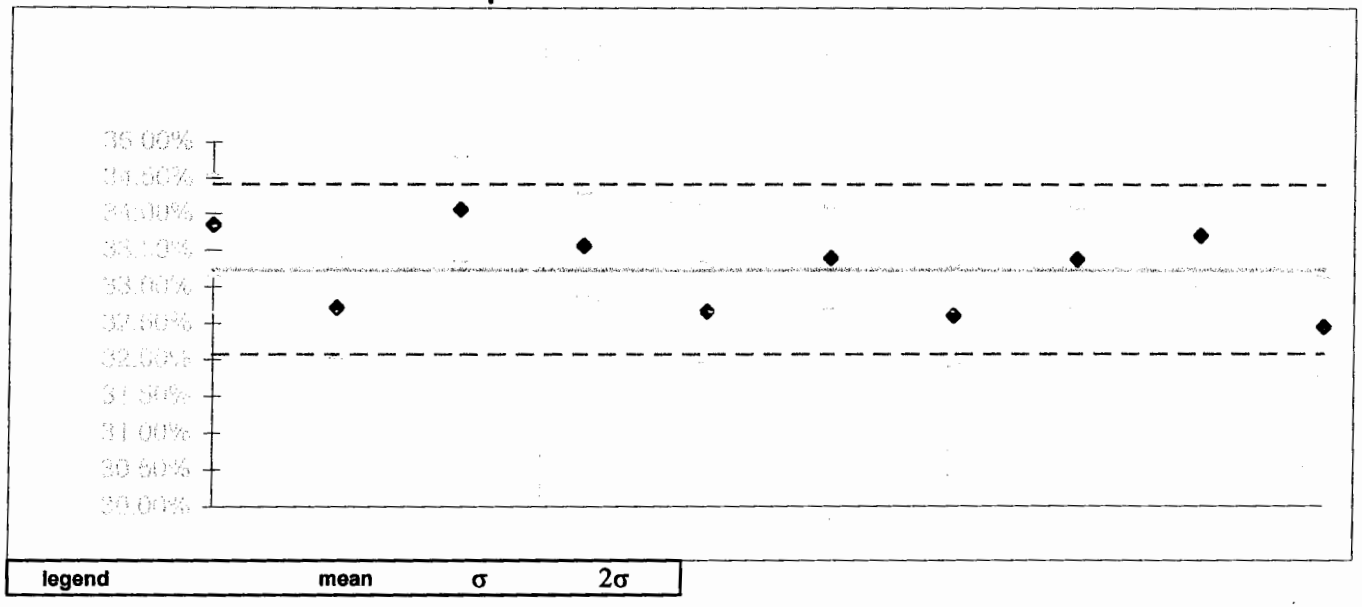
Source Identification	Rad#082
Isotope:	Th-230
Mean Alpha Efficiency:	32.45%
Error for Mean Alpha Efficiency:	0.49%
Actual standard deviation:	0.68%
Predicted standard deviation:	0.50%
Number of individual measurments:	10
Chi-square:	16.73
Reduced chi-square:	1.86
Alpha to Beta Crosstalk	17.24%
Chi-square Test (1% - 99%):	PASSED

1070

Printed 12/4/01 6:04 AM

Unit Type: LB4100/W
Date Performed: 12/4/01 05:48
File Name: EFF071
Batch ID: Eff C-Beta D-Alpha Off Values 12/04/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



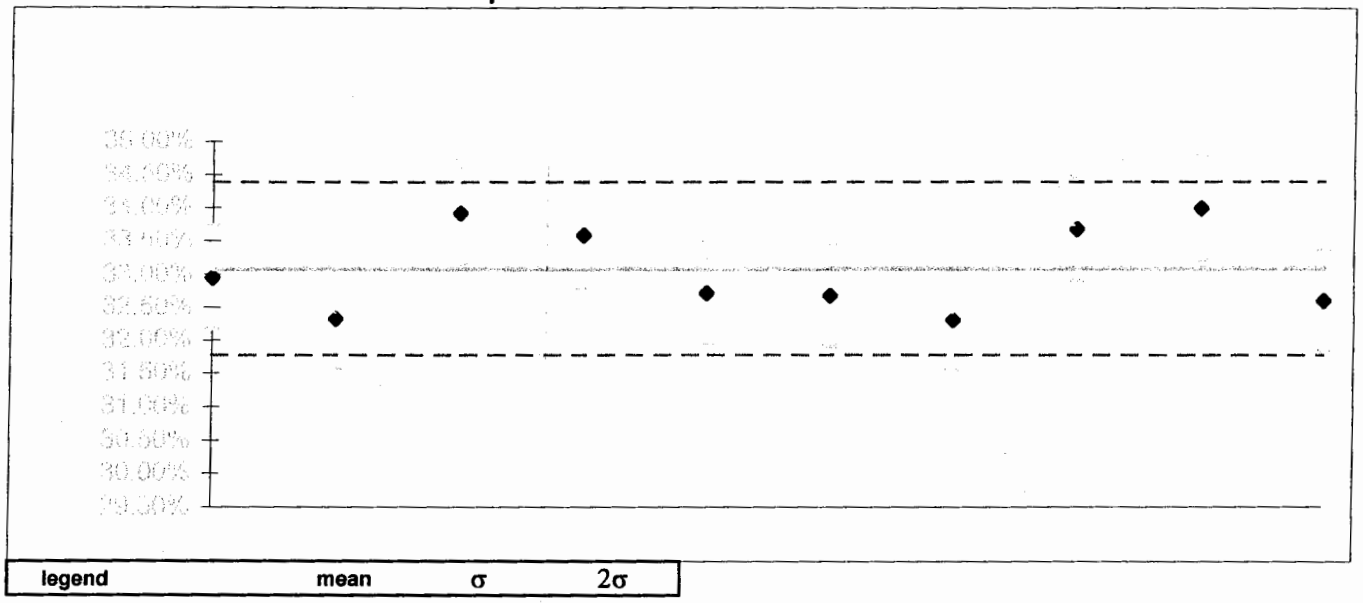
Source Identification	Rad#081
Isotope:	Th-230
Mean Alpha Efficiency:	33.23%
Error for Mean Alpha Efficiency:	0.50%
Actual standard deviation:	0.59%
Predicted standard deviation:	0.52%
Number of individual measurments:	10
Chi-square:	11.63
Reduced chi-square:	1.29
Alpha to Beta Crosstalk	17.30%
Chi-square Test (1% - 99%):	PASSED

1071

Printed 12/4/01 6:04 AM

Unit Type: LB4100/W
Date Performed: 12/4/01 05:48
File Name: EFF071
Batch ID: Eff C-Beta D-Alpha Off Values 12/04/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



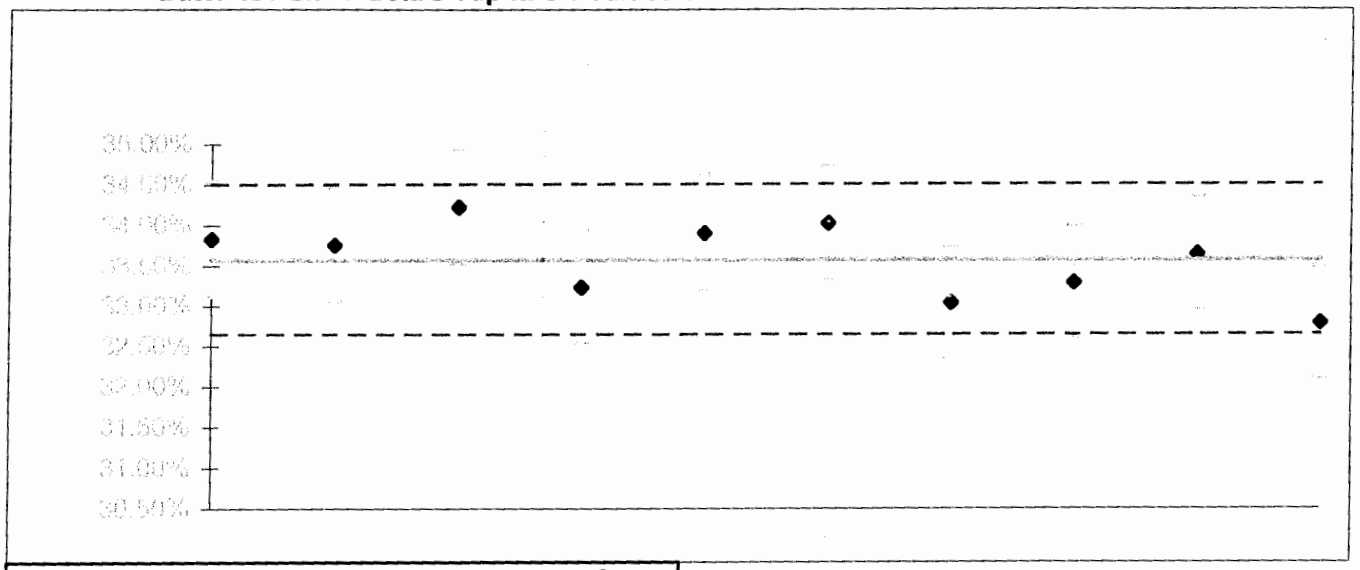
Source Identification	Rad#080
Isotope:	Th-230
Mean Alpha Efficiency:	33.07%
Error for Mean Alpha Efficiency:	0.51%
Actual standard deviation:	0.65%
Predicted standard deviation:	0.62%
Number of individual measurments:	10
Chi-square:	9.96
Reduced chi-square:	1.11
Alpha to Beta Crosstalk	17.40%
Chi-square Test (1% - 99%):	PASSED

1072

Printed 12/4/01 6:04 AM

Unit Type: LB4100/W
Date Performed: 12/4/01 05:48
File Name: EFF071
Batch ID: Eff C-Beta D-Alpha Off Values 12/04/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



legend	mean	σ	2σ

Source Identification	Rad#079
Isotope:	Th-230
Mean Alpha Efficiency:	33.57%
Error for Mean Alpha Efficiency:	0.50%
Actual standard deviation:	0.47%
Predicted standard deviation:	0.51%
Number of individual measurments:	10
Chi-square:	7.36
Reduced chi-square:	0.82
Alpha to Beta Crosstalk	15.88%
Chi-square Test (1% - 99%):	PASSED

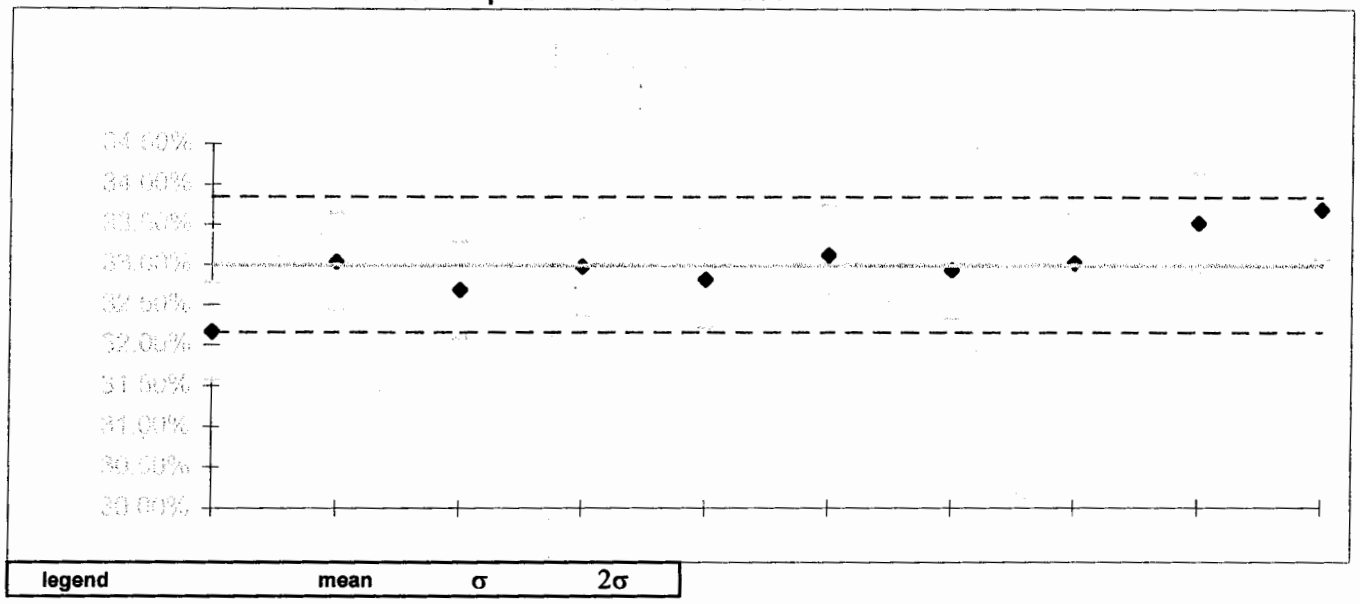
1073

Printed 12/4/01 6:04 AM

Unit Type: LB4100/W
Date Performed: 12/4/01 05:48
File Name: EFF071

Unit Id: Aqua
Application Revision: 2
Application Version: Standard

Batch ID: Eff C-Beta D-Alpha Off Values 12/04/01



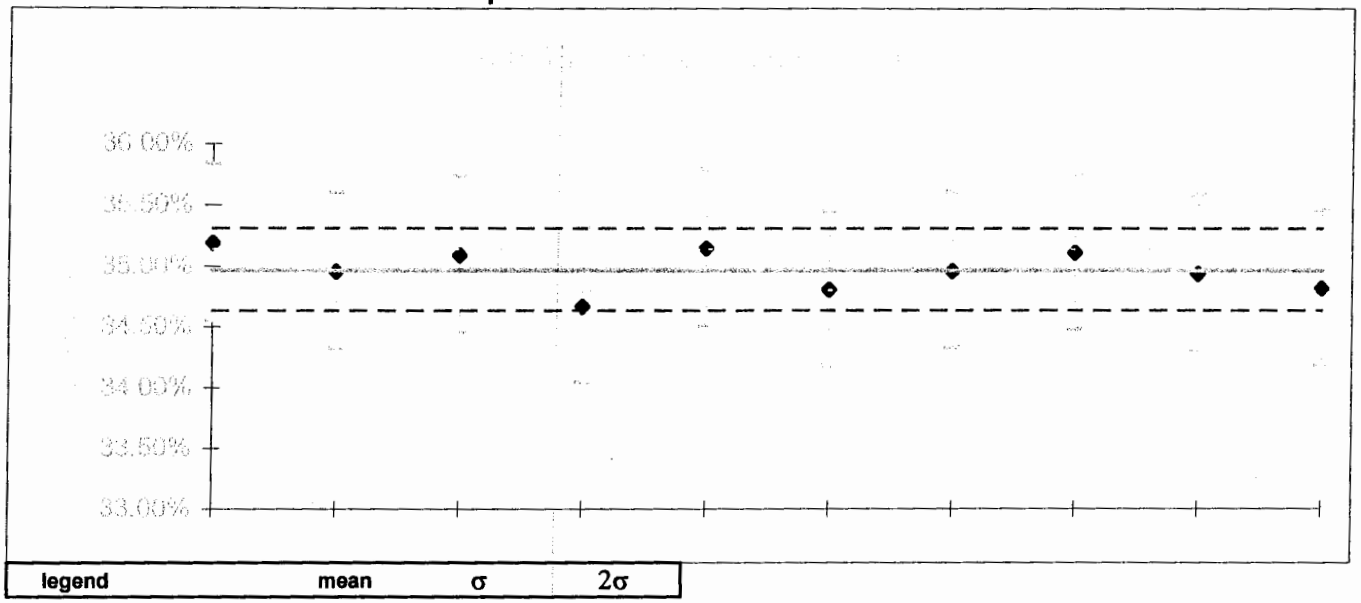
Source Identification	Rad#096-09
Isotope:	Sr-90/Y-90
Mean Beta Efficiency:	32.99%
Error for Mean Beta Efficiency:	0.48%
Actual standard deviation:	0.42%
Predicted standard deviation:	0.39%
Number of individual measurments:	10
Chi-square:	10.58
Reduced chi-square:	1.18
Beta to Alpha Crosstalk	3.27%
Chi-square Test (1% - 99%):	PASSED

1074

Printed 12/4/01 6:04 AM

Unit Type: LB4100/W
Date Performed: 12/4/01 05:48
File Name: EFF071
Batch ID: Eff C-Beta D-Alpha Off Values 12/04/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



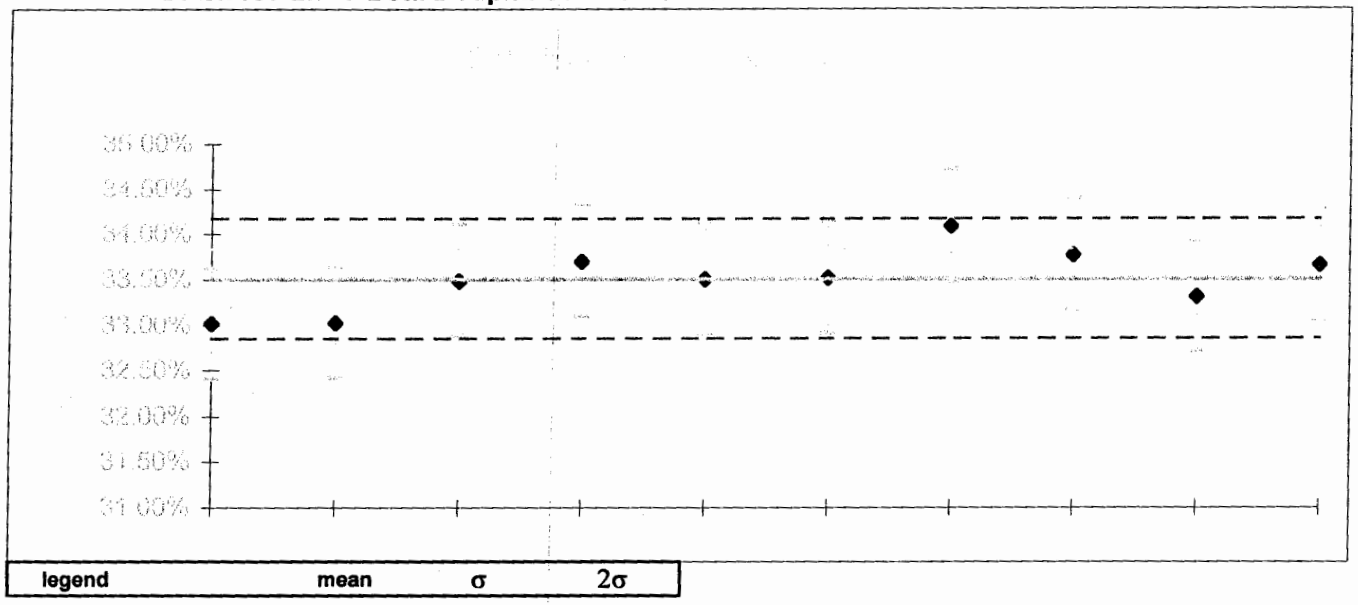
Source Identification	Rad#096-08
Isotope:	Sr-90/Y-90
Mean Beta Efficiency:	34.97%
Error for Mean Beta Efficiency:	0.51%
Actual standard deviation:	0.17%
Predicted standard deviation:	0.40%
Number of individual measurments:	10
Chi-square:	1.57
Reduced chi-square:	0.17
Beta to Alpha Crosstalk	3.22%
Chi-square Test (1% - 99%):	FAILED

1075

Printed 12/4/01 6:04 AM

Unit Type: LB4100/W
Date Performed: 12/4/01 05:48
File Name: EFF071
Batch ID: Eff C-Beta D-Alpha Off Values 12/04/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



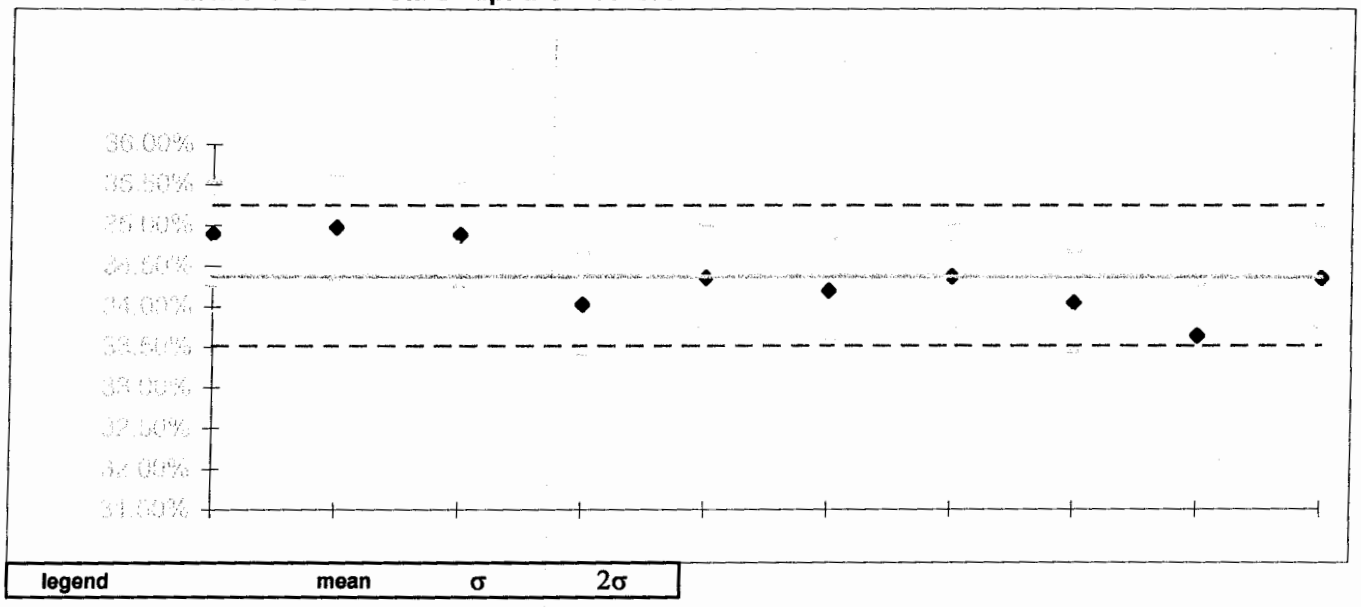
Source Identification	Rad#096-07
Isotope:	Sr-90/Y-90
Mean Beta Efficiency:	33.51%
Error for Mean Beta Efficiency:	0.49%
Actual standard deviation:	0.33%
Predicted standard deviation:	0.39%
Number of individual measurments:	10
Chi-square:	6.36
Reduced chi-square:	0.71
Beta to Alpha Crosstalk	3.25%
Chi-square Test (1% - 99%):	PASSED

1076

Printed 12/4/01 6:04 AM

Unit Type: LB4100/W
Date Performed: 12/4/01 05:48
File Name: EFF071
Batch ID: Eff C-Beta D-Alpha Off Values 12/04/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



Source Identification	Rad#096-06
Isotope:	Sr-90/Y-90
Mean Beta Efficiency:	34.38%
Error for Mean Beta Efficiency:	0.50%
Actual standard deviation:	0.43%
Predicted standard deviation:	0.40%
Number of individual measurments:	10
Chi-square:	10.53
Reduced chi-square:	1.17
Beta to Alpha Crosstalk	3.09%
Chi-square Test (1% - 99%):	PASSED

1077

Printed 12/4/01 6:04 AM

Detector ID	Sample ID	Alpha	Beta	Guard	Count Time	Event	Voltage	TOD
D4	Rad#082	4184	879	765	1	4	1320	37229.24579
D4	Rad#082	4422	919	703	1	5	1320	37229.24675
D4	Rad#082	4241	905	720	1	6	1320	37229.24771
D4	Rad#082	4289	854	694	1	7	1320	37229.24867
D4	Rad#082	4168	913	702	1	8	1320	37229.24963
D4	Rad#082	4095	876	699	1	9	1320	37229.25059

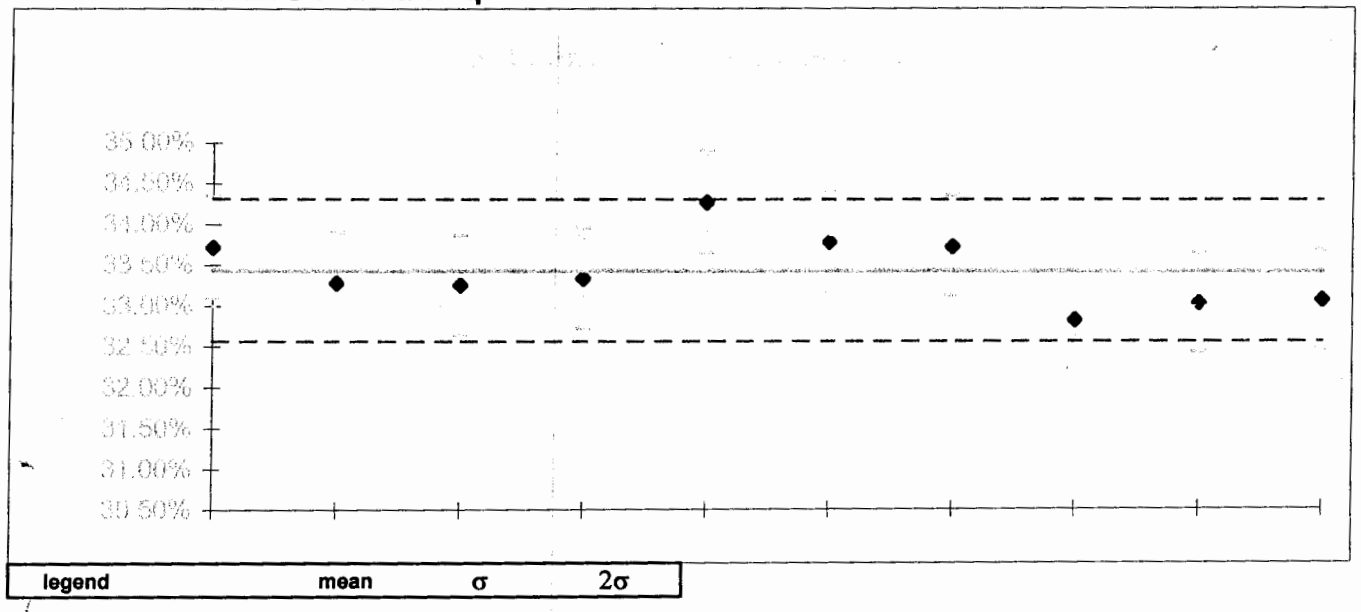
Detector ID	Sample ID	Alpha	Beta	Guard	Count Time	Event	Voltage	TOD
C4	Rad#096-09	232	7164	678	1	7	1320	37229.24866
C4	Rad#096-09	232	7272	725	1	8	1320	37229.24962
C4	Rad#096-09	231	7308	700	1	9	1320	37229.25058
D1	Rad#079	4296	805	690	1	0	1320	37229.24194
D1	Rad#079	4287	827	718	1	1	1320	37229.24291
D1	Rad#079	4347	818	719	1	2	1320	37229.24385
D1	Rad#079	4220	788	737	1	3	1320	37229.24481
D1	Rad#079	4306	818	765	1	4	1320	37229.24578
D1	Rad#079	4321	757	705	1	5	1320	37229.24674
D1	Rad#079	4196	839	719	1	6	1320	37229.24769
D1	Rad#079	4228	825	699	1	7	1320	37229.24866
D1	Rad#079	4273	782	701	1	8	1320	37229.24962
D1	Rad#079	4164	807	697	1	9	1320	37229.25058
D2	Rad#080	2817	610	690	1	0	1320	37229.24194
D2	Rad#080	2764	612	719	1	1	1320	37229.24291
D2	Rad#080	2900	635	719	1	2	1320	37229.24385
D2	Rad#080	2871	580	735	1	3	1320	37229.24483
D2	Rad#080	2797	584	764	1	4	1320	37229.24579
D2	Rad#080	2793	607	698	1	5	1320	37229.24675
D2	Rad#080	2762	589	719	1	6	1320	37229.2477
D2	Rad#080	2879	561	699	1	7	1320	37229.24866
D2	Rad#080	2906	617	701	1	8	1320	37229.24962
D2	Rad#080	2787	576	699	1	9	1320	37229.25058
D3	Rad#081	4231	870	691	1	0	1320	37229.24196
D3	Rad#081	4089	900	719	1	1	1320	37229.24291
D3	Rad#081	4258	828	719	1	2	1320	37229.24387
D3	Rad#081	4196	833	735	1	3	1320	37229.24483
D3	Rad#081	4082	823	766	1	4	1320	37229.24579
D3	Rad#081	4174	927	698	1	5	1320	37229.24675
D3	Rad#081	4074	852	719	1	6	1320	37229.2477
D3	Rad#081	4172	880	699	1	7	1320	37229.24867
D3	Rad#081	4213	900	701	1	8	1320	37229.24963
D3	Rad#081	4055	893	699	1	9	1320	37229.25059
D4	Rad#082	4289	835	697	1	0	1320	37229.24196
D4	Rad#082	4245	901	709	1	1	1320	37229.24292
D4	Rad#082	4286	876	723	1	2	1320	37229.24387
D4	Rad#082	4295	912	736	1	3	1320	37229.24483

Printed 12/4/01 6:04 AM

Detector ID	Sample ID	Alpha	Beta	Guard	Count Time	Event	Voltage	TOD
C1	Rad#096-06	232	7569	703	1	0	1320	37229.24193
C1	Rad#096-06	270	7586	728	1	1	1320	37229.24289
C1	Rad#096-06	255	7567	678	1	2	1320	37229.24384
C1	Rad#096-06	247	7382	711	1	3	1320	37229.2448
C1	Rad#096-06	248	7454	746	1	4	1320	37229.24576
C1	Rad#096-06	231	7419	712	1	5	1320	37229.24672
C1	Rad#096-06	244	7457	720	1	6	1320	37229.24767
C1	Rad#096-06	223	7387	680	1	7	1320	37229.24865
C1	Rad#096-06	247	7298	722	1	8	1320	37229.24961
C1	Rad#096-06	184	7454	698	1	9	1320	37229.25057
C2	Rad#096-07	253	7162	699	1	0	1320	37229.24193
C2	Rad#096-07	231	7164	729	1	1	1320	37229.24289
C2	Rad#096-07	248	7264	682	1	2	1320	37229.24384
C2	Rad#096-07	234	7310	709	1	3	1320	37229.2448
C2	Rad#096-07	253	7268	740	1	4	1320	37229.24576
C2	Rad#096-07	246	7271	718	1	5	1320	37229.24672
C2	Rad#096-07	218	7395	718	1	6	1320	37229.24767
C2	Rad#096-07	234	7326	677	1	7	1320	37229.24865
C2	Rad#096-07	269	7226	725	1	8	1320	37229.24961
C2	Rad#096-07	258	7302	699	1	9	1320	37229.25057
C3	Rad#096-08	243	7634	704	1	0	1320	37229.24193
C3	Rad#096-08	255	7583	732	1	1	1320	37229.24289
C3	Rad#096-08	251	7612	685	1	2	1320	37229.24384
C3	Rad#096-08	246	7521	711	1	3	1320	37229.24481
C3	Rad#096-08	252	7624	738	1	4	1320	37229.24578
C3	Rad#096-08	259	7551	727	1	5	1320	37229.24674
C3	Rad#096-08	262	7584	723	1	6	1320	37229.24767
C3	Rad#096-08	283	7616	679	1	7	1320	37229.24865
C3	Rad#096-08	227	7579	726	1	8	1320	37229.24961
C3	Rad#096-08	249	7553	700	1	9	1320	37229.25057
C4	Rad#096-09	233	6977	704	1	0	1320	37229.24194
C4	Rad#096-09	260	7165	736	1	1	1320	37229.24291
C4	Rad#096-09	238	7089	688	1	2	1320	37229.24385
C4	Rad#096-09	271	7152	712	1	3	1320	37229.24481
C4	Rad#096-09	221	7117	732	1	4	1320	37229.24578
C4	Rad#096-09	252	7185	727	1	5	1320	37229.24674
C4	Rad#096-09	251	7144	726	1	6	1320	37229.24769

Unit Type: LB4100/W
Date Performed: 12/4/01 05:28
File Name: EFF070
Batch ID: Eff Check C-Alpha D-Beta Off New Values

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



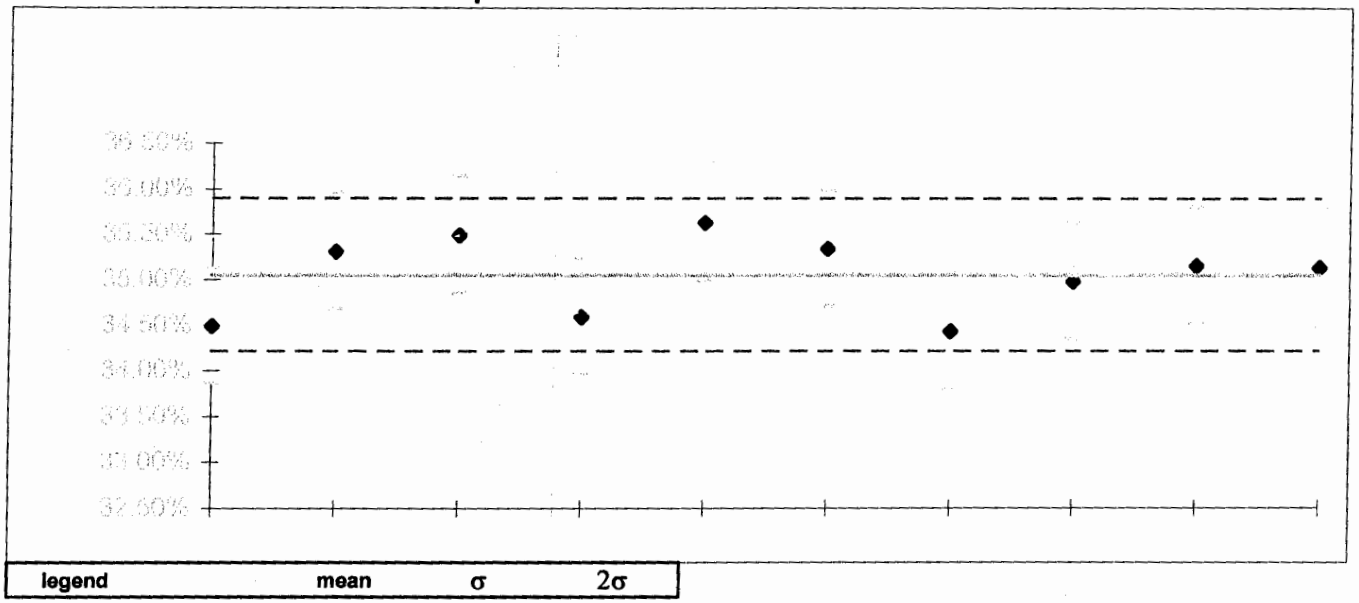
Source Identification	Rad#096-09
Isotope:	Sr-90/Y-90
Mean Beta Efficiency:	33.43%
Error for Mean Beta Efficiency:	0.49%
Actual standard deviation:	0.44%
Predicted standard deviation:	0.39%
Number of individual measurments:	10
Chi-square:	11.14
Reduced chi-square:	1.24
Beta to Alpha Crosstalk	3.23%
Chi-square Test (1% - 99%):	PASSED

1081

Printed 12/4/01 5:45 AM

Unit Type: LB4100/W
Date Performed: 12/4/01 05:28
File Name: EFF070
Batch ID: Eff Check C-Alpha D-Beta Off New Values

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



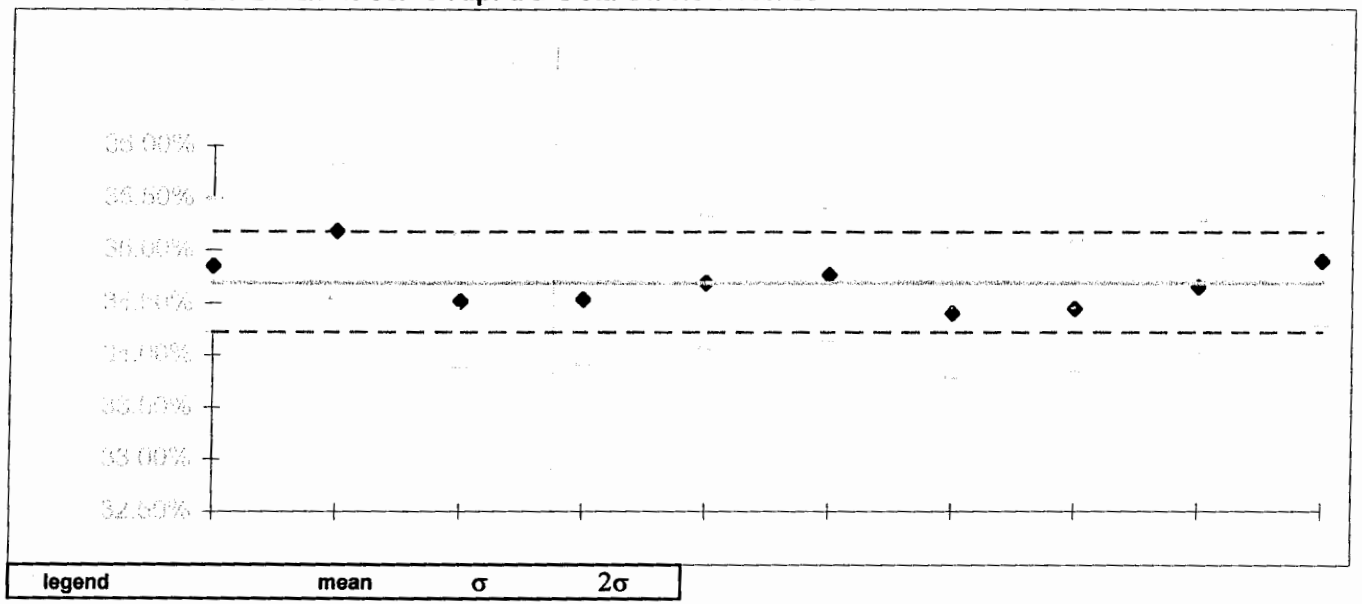
Source Identification	Rad#096-08
Isotope:	Sr-90/Y-90
Mean Beta Efficiency:	35.05%
Error for Mean Beta Efficiency:	0.51%
Actual standard deviation:	0.42%
Predicted standard deviation:	0.40%
Number of individual measurments:	10
Chi-square:	9.85
Reduced chi-square:	1.09
Beta to Alpha Crosstalk	3.33%
Chi-square Test (1% - 99%):	PASSED

1082

Printed 12/4/01 5:45 AM

Unit Type: LB4100/W
Date Performed: 12/4/01 05:28
File Name: EFF070
Batch ID: Eff Check C-Alpha D-Beta Off New Values

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



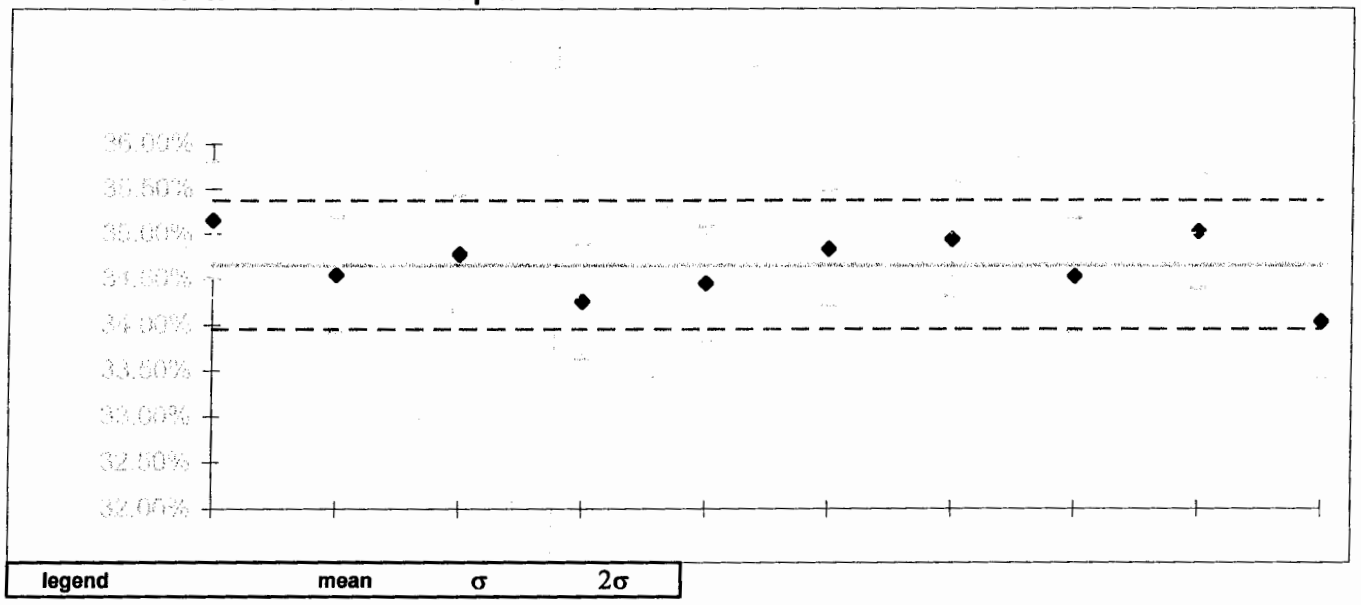
Source Identification	Rad#096-07
Isotope:	Sr-90/Y-90
Mean Beta Efficiency:	34.69%
Error for Mean Beta Efficiency:	0.51%
Actual standard deviation:	0.24%
Predicted standard deviation:	0.40%
Number of individual measurments:	10
Chi-square:	3.22
Reduced chi-square:	0.36
Beta to Alpha Crosstalk	3.08%
Chi-square Test (1% - 99%):	PASSED

1083

Printed 12/4/01 5:44 AM

Unit Type: LB4100/W
Date Performed: 12/4/01 05:28
File Name: EFF070
Batch ID: Eff Check C-Alpha D-Beta Off New Values

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



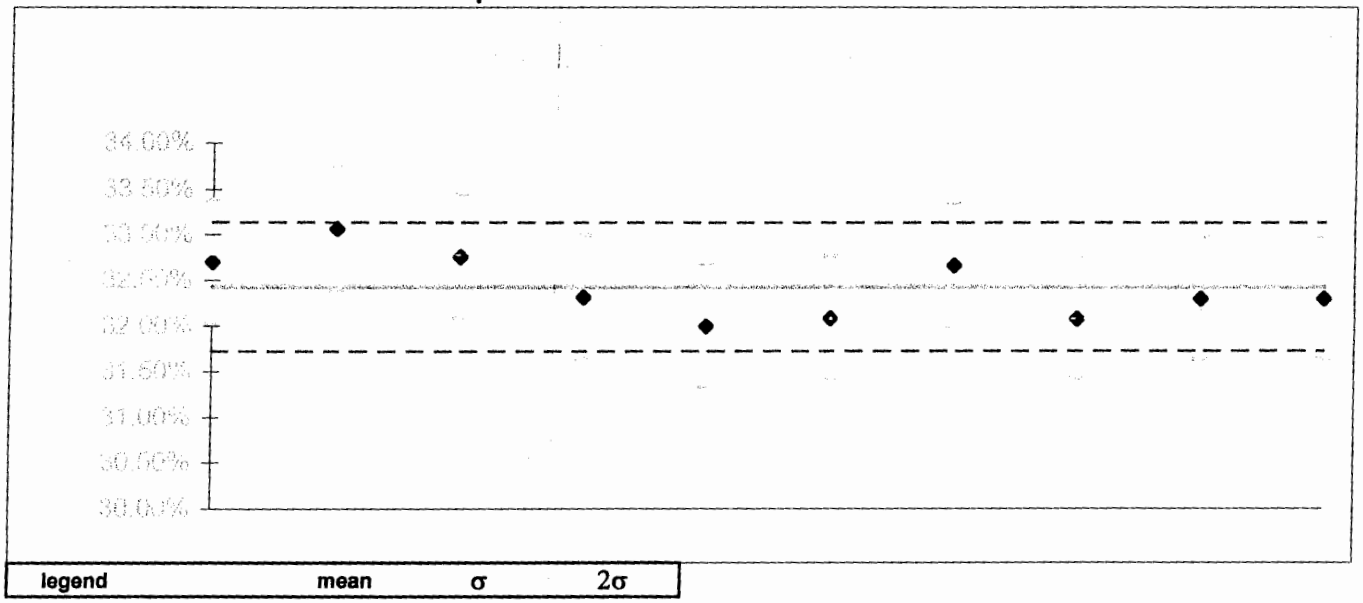
Source Identification	Rad#096-06
Isotope:	Sr-90/Y-90
Mean Beta Efficiency:	34.66%
Error for Mean Beta Efficiency:	0.51%
Actual standard deviation:	0.36%
Predicted standard deviation:	0.40%
Number of individual measurments:	10
Chi-square:	7.11
Reduced chi-square:	0.79
Beta to Alpha Crosstalk	3.61%
Chi-square Test (1% - 99%):	PASSED

1084

Printed 12/4/01 5:44 AM

Unit Type: LB4100/W
Date Performed: 12/4/01 05:28
File Name: EFF070
Batch ID: Eff Check C-Alpha D-Beta Off New Values

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



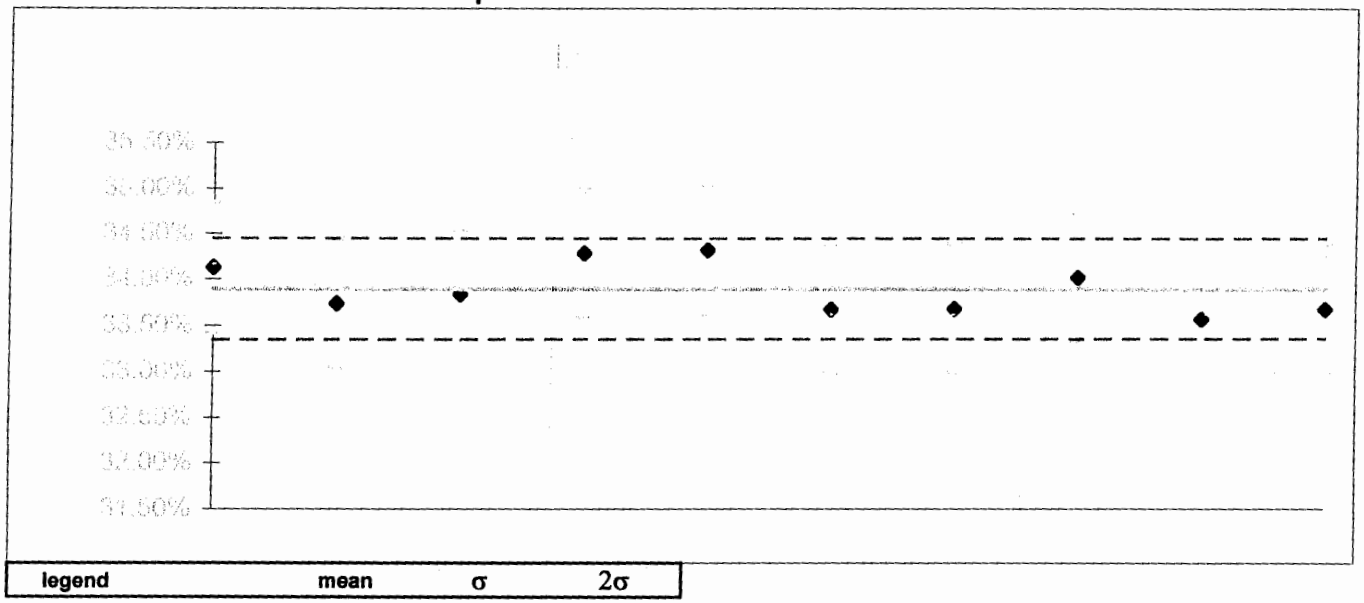
Source Identification	Rad#082
Isotope:	Th-230
Mean Alpha Efficiency:	32.42%
Error for Mean Alpha Efficiency:	0.48%
Actual standard deviation:	0.35%
Predicted standard deviation:	0.50%
Number of individual measurments:	10
Chi-square:	4.53
Reduced chi-square:	0.50
Alpha to Beta Crosstalk	17.21%
Chi-square Test (1% - 99%):	PASSED

1085

Printed 12/4/01 5:44 AM

Unit Type: LB4100/W
Date Performed: 12/4/01 05:28
File Name: EFF070
Batch ID: Eff Check C-Alpha D-Beta Off New Values

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



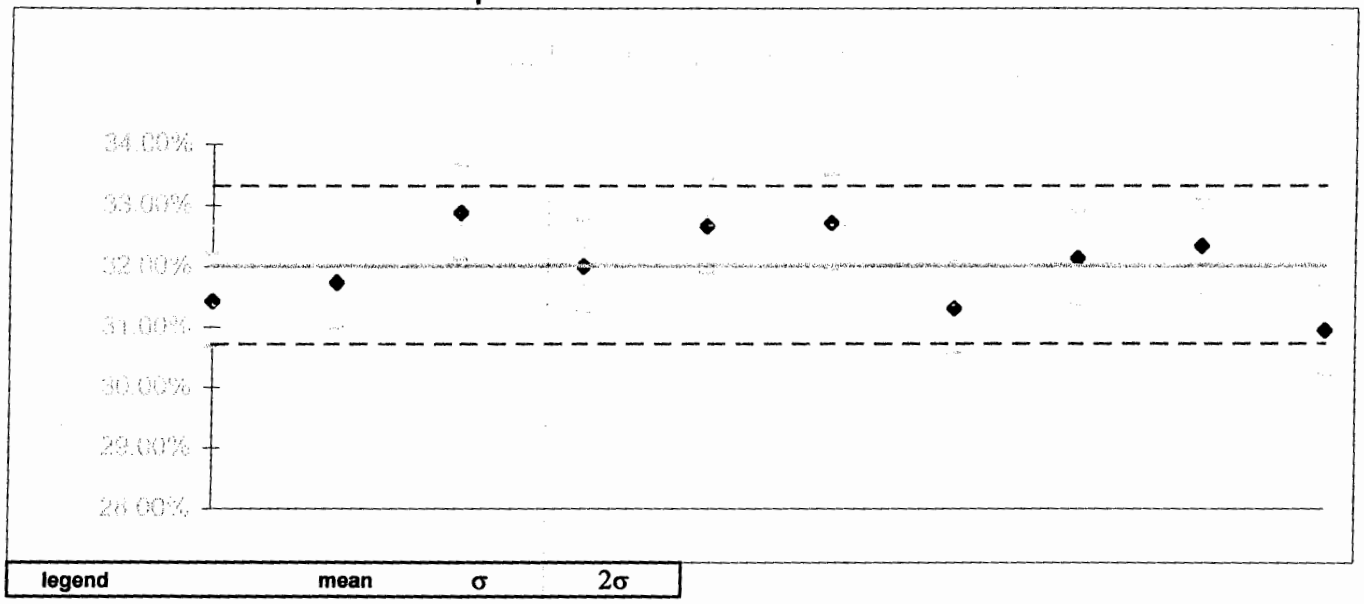
Source Identification	Rad#081
Isotope:	Th-230
Mean Alpha Efficiency:	33.89%
Error for Mean Alpha Efficiency:	0.51%
Actual standard deviation:	0.28%
Predicted standard deviation:	0.52%
Number of individual measurments:	10
Chi-square:	2.56
Reduced chi-square:	0.28
Alpha to Beta Crosstalk	16.90%
Chi-square Test (1% - 99%):	PASSED

1086

Printed 12/4/01 5:44 AM

Unit Type: LB4100/W
Date Performed: 12/4/01 05:28
File Name: EFF070
Batch ID: Eff Check C-Alpha D-Beta Off New Values

Unit Id: Aqua
Application Revision: 2
Application Version: Standard

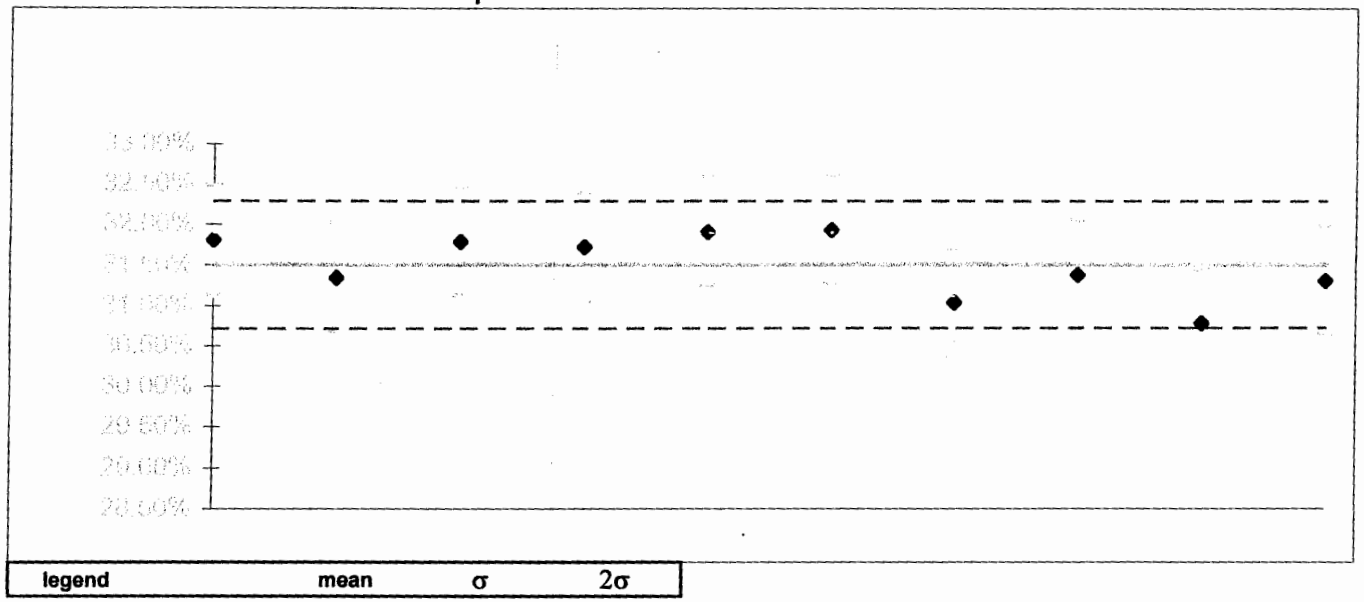


Source Identification	Rad#080
Isotope:	Th-230
Mean Alpha Efficiency:	32.01%
Error for Mean Alpha Efficiency:	0.49%
Actual standard deviation:	0.65%
Predicted standard deviation:	0.61%
Number of individual measurments:	10
Chi-square:	10.14
Reduced chi-square:	1.13
Alpha to Beta Crosstalk	18.28%
Chi-square Test (1% - 99%):	PASSED

Printed 12/4/01 5:44 AM

Unit Type: LB4100/W
Date Performed: 12/4/01 05:28
File Name: EFF070
Batch ID: Eff Check C-Alpha D-Beta Off New Values

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



Source Identification	Rad#079
Isotope:	Th-230
Mean Alpha Efficiency:	31.49%
Error for Mean Alpha Efficiency:	0.47%
Actual standard deviation:	0.39%
Predicted standard deviation:	0.50%
Number of individual measurments:	10
Chi-square:	5.64
Reduced chi-square:	0.63
Alpha to Beta Crosstalk	19.04%
Chi-square Test (1% - 99%):	PASSED

1088

Printed 12/4/01 5:44 AM

Detector ID	Sample ID	Alpha	Beta	Guard	Count Time	Event	Voltage	TOD
D4	Rad#096-09	245	7434	729	1	4	1320	37229.23216
D4	Rad#096-09	261	7330	714	1	5	1320	37229.23313
D4	Rad#096-09	236	7318	706	1	6	1320	37229.23407
D4	Rad#096-09	234	7121	704	1	7	1320	37229.23503
D4	Rad#096-09	253	7166	751	1	8	1320	37229.236
D4	Rad#096-09	233	7175	669	1	9	1320	37229.23694

Detector ID	Sample ID	Alpha	Beta	Guard	Count Time	Event	Voltage	TOD
C4	Rad#082	4202	880	711	1	7	1320	37229.23502
C4	Rad#082	4231	916	716	1	8	1320	37229.23598
C4	Rad#082	4231	881	689	1	9	1320	37229.23693
D1	Rad#096-06	285	7626	704	1	0	1320	37229.22834
D1	Rad#096-06	250	7495	696	1	1	1320	37229.22929
D1	Rad#096-06	276	7545	690	1	2	1320	37229.23024
D1	Rad#096-06	308	7430	658	1	3	1320	37229.2312
D1	Rad#096-06	318	7474	739	1	4	1320	37229.23215
D1	Rad#096-06	259	7557	714	1	5	1320	37229.23311
D1	Rad#096-06	291	7580	708	1	6	1320	37229.23406
D1	Rad#096-06	277	7491	700	1	7	1320	37229.23502
D1	Rad#096-06	258	7599	750	1	8	1320	37229.23598
D1	Rad#096-06	293	7383	669	1	9	1320	37229.23693
D2	Rad#096-07	263	7560	704	1	0	1320	37229.22834
D2	Rad#096-07	256	7632	701	1	1	1320	37229.22931
D2	Rad#096-07	209	7487	689	1	2	1320	37229.23025
D2	Rad#096-07	235	7492	658	1	3	1320	37229.2312
D2	Rad#096-07	258	7525	729	1	4	1320	37229.23215
D2	Rad#096-07	252	7542	713	1	5	1320	37229.23311
D2	Rad#096-07	209	7463	703	1	6	1320	37229.23407
D2	Rad#096-07	246	7473	701	1	7	1320	37229.23502
D2	Rad#096-07	225	7517	744	1	8	1320	37229.23598
D2	Rad#096-07	239	7571	669	1	9	1320	37229.23694
D3	Rad#096-08	271	7482	711	1	0	1320	37229.22834
D3	Rad#096-08	269	7659	701	1	1	1320	37229.22931
D3	Rad#096-08	258	7698	689	1	2	1320	37229.23025
D3	Rad#096-08	250	7504	667	1	3	1320	37229.2312
D3	Rad#096-08	262	7727	729	1	4	1320	37229.23216
D3	Rad#096-08	284	7666	711	1	5	1320	37229.23313
D3	Rad#096-08	275	7469	704	1	6	1320	37229.23407
D3	Rad#096-08	267	7587	702	1	7	1320	37229.23503
D3	Rad#096-08	263	7624	744	1	8	1320	37229.236
D3	Rad#096-08	224	7620	669	1	9	1320	37229.23694
D4	Rad#096-09	244	7313	710	1	0	1320	37229.22836
D4	Rad#096-09	248	7219	707	1	1	1320	37229.22931
D4	Rad#096-09	215	7213	690	1	2	1320	37229.23025
D4	Rad#096-09	254	7231	667	1	3	1320	37229.23122

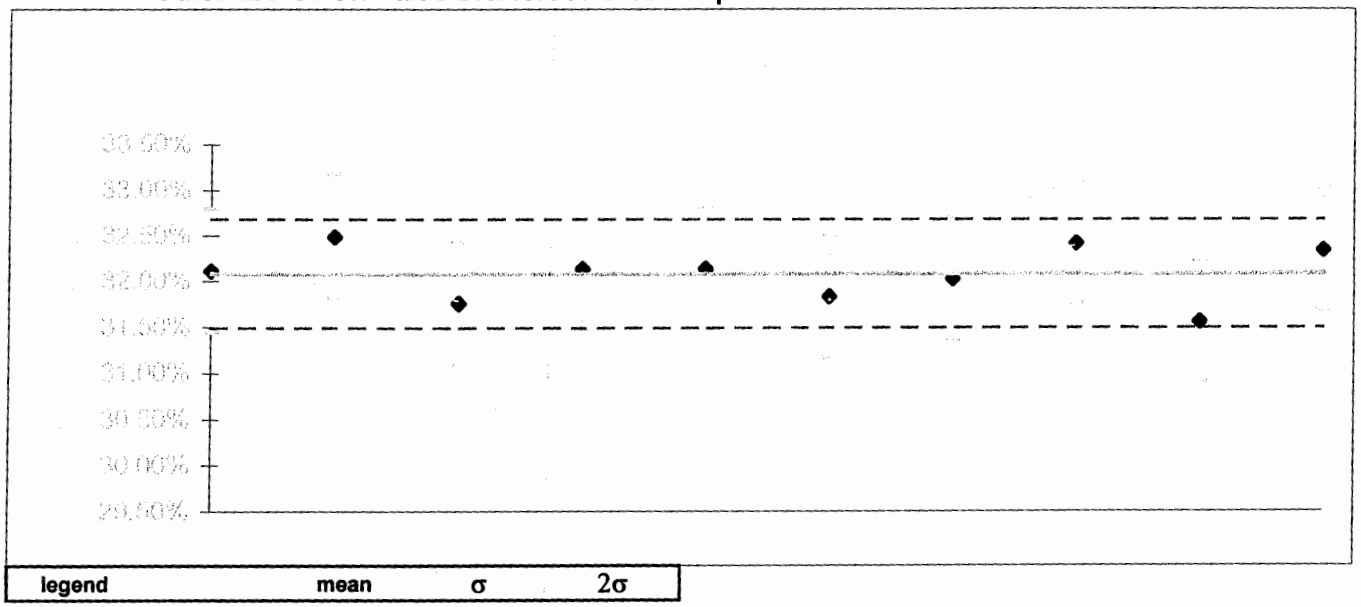
Printed 12/4/01 5:44 AM

Detector ID	Sample ID	Alpha	Beta	Guard	Count Time	Event	Voltage	TOD
C1	Rad#079	4039	958	725	1	0	1320	37229.22832
C1	Rad#079	3980	929	688	1	1	1320	37229.22928
C1	Rad#079	4036	915	730	1	2	1320	37229.23023
C1	Rad#079	4028	934	679	1	3	1320	37229.23119
C1	Rad#079	4052	910	731	1	4	1320	37229.23214
C1	Rad#079	4055	982	669	1	5	1320	37229.2331
C1	Rad#079	3941	925	743	1	6	1320	37229.23405
C1	Rad#079	3984	944	708	1	7	1320	37229.23501
C1	Rad#079	3908	940	716	1	8	1320	37229.23597
C1	Rad#079	3975	990	689	1	9	1320	37229.23692
C2	Rad#080	2688	627	727	1	0	1320	37229.22833
C2	Rad#080	2714	626	691	1	1	1320	37229.22928
C2	Rad#080	2811	631	728	1	2	1320	37229.23023
C2	Rad#080	2736	625	680	1	3	1320	37229.23119
C2	Rad#080	2792	592	733	1	4	1320	37229.23214
C2	Rad#080	2797	603	667	1	5	1320	37229.2331
C2	Rad#080	2677	645	741	1	6	1320	37229.23406
C2	Rad#080	2747	560	709	1	7	1320	37229.23501
C2	Rad#080	2764	617	719	1	8	1320	37229.23597
C2	Rad#080	2646	614	687	1	9	1320	37229.23692
C3	Rad#081	4266	893	724	1	0	1320	37229.22833
C3	Rad#081	4217	855	690	1	1	1320	37229.22929
C3	Rad#081	4229	892	724	1	2	1320	37229.23024
C3	Rad#081	4286	843	677	1	3	1320	37229.23119
C3	Rad#081	4290	866	734	1	4	1320	37229.23214
C3	Rad#081	4209	839	669	1	5	1320	37229.23311
C3	Rad#081	4210	825	734	1	6	1320	37229.23406
C3	Rad#081	4253	874	708	1	7	1320	37229.23502
C3	Rad#081	4195	868	713	1	8	1320	37229.23598
C3	Rad#081	4209	881	690	1	9	1320	37229.23693
C4	Rad#082	4284	928	727	1	0	1320	37229.22833
C4	Rad#082	4332	885	687	1	1	1320	37229.22929
C4	Rad#082	4291	823	723	1	2	1320	37229.23024
C4	Rad#082	4233	892	678	1	3	1320	37229.2312
C4	Rad#082	4192	836	736	1	4	1320	37229.23215
C4	Rad#082	4203	922	669	1	5	1320	37229.23311
C4	Rad#082	4279	887	734	1	6	1320	37229.23406

Printed 12/4/01 5:44 AM

Unit Type: LB4100/W
Date Performed: 12/4/01 05:09
File Name: EFF069
Batch ID: Eff Off Value Drawers A-Beta B-Alpha 12/04/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard

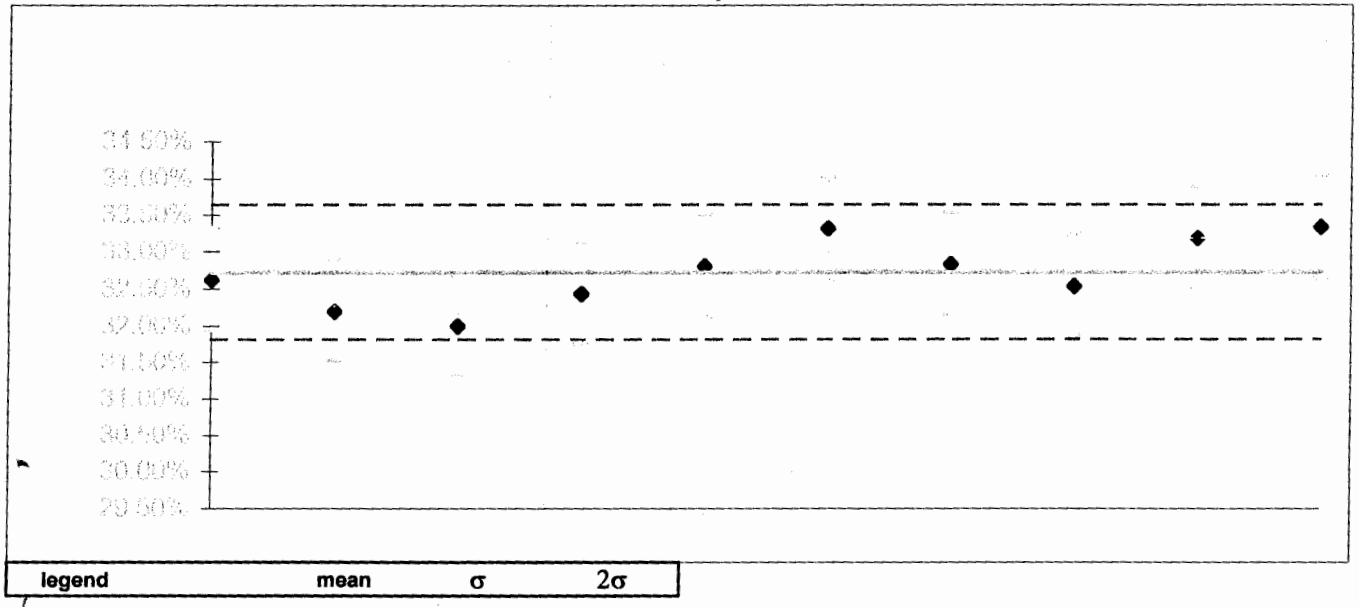


Source Identification	Rad#082
Isotope:	Th-230
Mean Alpha Efficiency:	32.08%
Error for Mean Alpha Efficiency:	0.48%
Actual standard deviation:	0.30%
Predicted standard deviation:	0.49%
Number of individual measurments:	10
Chi-square:	3.28
Reduced chi-square:	0.36
Alpha to Beta Crosstalk	19.56%
Chi-square Test (1% - 99%):	PASSED

Printed 12/4/01 5:25 AM

Unit Type: LB4100/W
Date Performed: 12/4/01 05:09
File Name: EFF069
Batch ID: Eff Off Value Drawers A-Beta B-Alpha 12/04/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



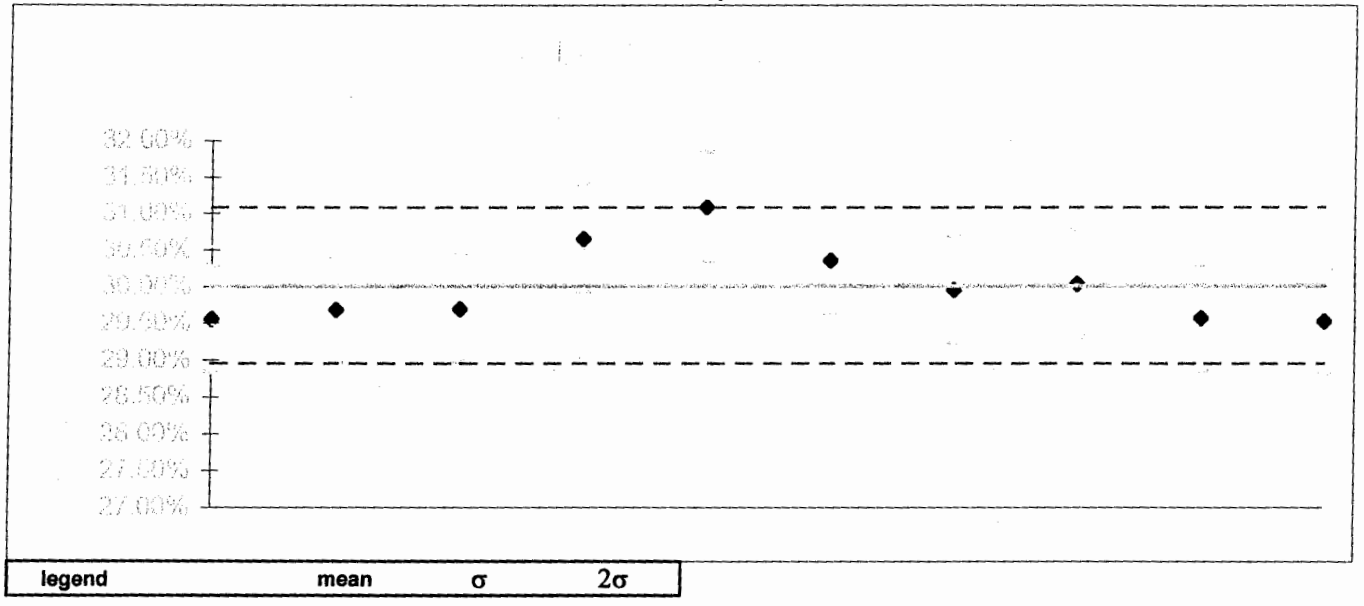
Source Identification	Rad#081
Isotope:	Th-230
Mean Alpha Efficiency:	32.72%
Error for Mean Alpha Efficiency:	0.49%
Actual standard deviation:	0.46%
Predicted standard deviation:	0.51%
Number of individual measurments:	10
Chi-square:	7.21
Reduced chi-square:	0.80
Alpha to Beta Crosstalk	20.30%
Chi-square Test (1% - 99%):	PASSED

1093

Printed 12/4/01 5:25 AM

Unit Type: LB4100/W
Date Performed: 12/4/01 05:09
File Name: EFF069
Batch ID: Eff Off Value Drawers A-Beta B-Alpha 12/04/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



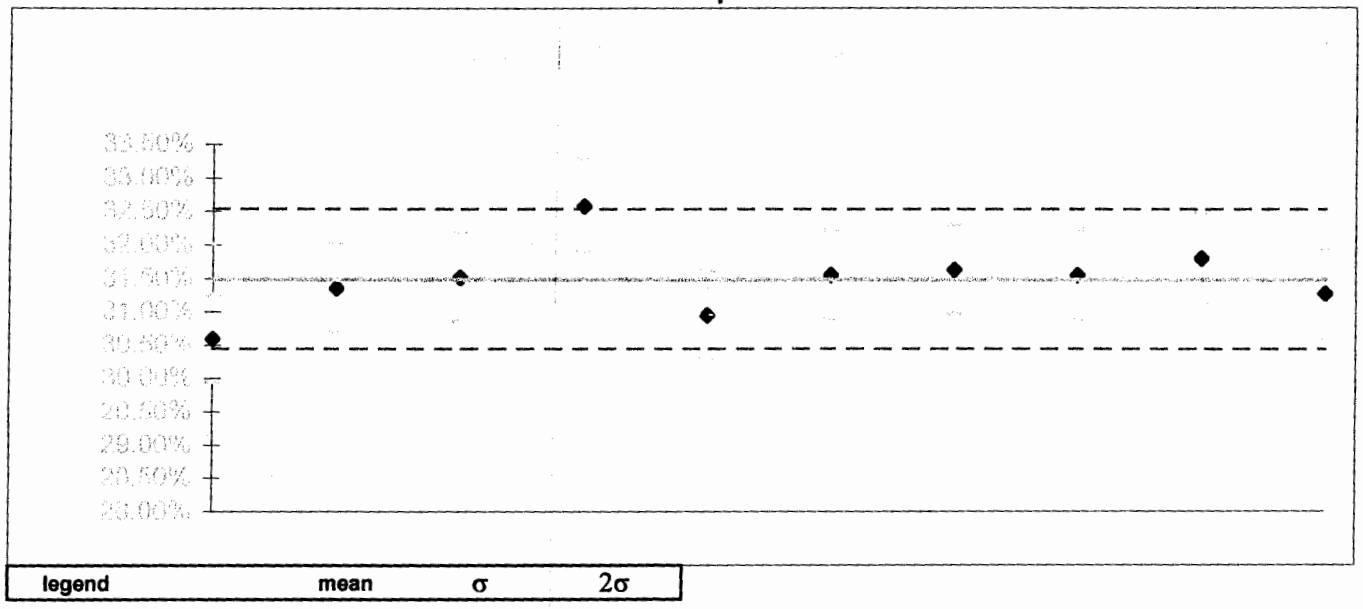
Source Identification	Rad#080
Isotope:	Th-230
Mean Alpha Efficiency:	30.01%
Error for Mean Alpha Efficiency:	0.46%
Actual standard deviation:	0.53%
Predicted standard deviation:	0.59%
Number of individual measurments:	10
Chi-square:	7.27
Reduced chi-square:	0.81
Alpha to Beta Crosstalk	22.02%
Chi-square Test (1% - 99%):	PASSED

1094

Printed 12/4/01 5:25 AM

Unit Type: LB4100/W
Date Performed: 12/4/01 05:09
File Name: EFF069
Batch ID: Eff Off Value Drawers A-Beta B-Alpha 12/04/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



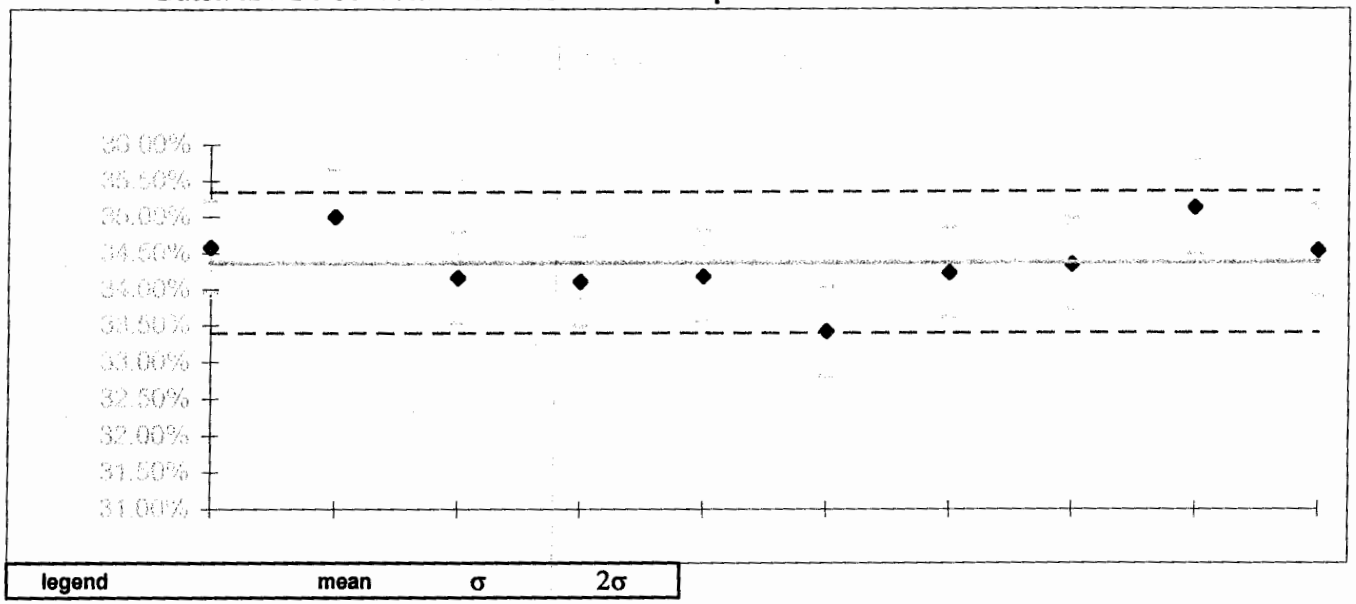
Source Identification	Rad#079
Isotope:	Th-230
Mean Alpha Efficiency:	31.48%
Error for Mean Alpha Efficiency:	0.47%
Actual standard deviation:	0.52%
Predicted standard deviation:	0.50%
Number of individual measurments:	10
Chi-square:	9.94
Reduced chi-square:	1.10
Alpha to Beta Crosstalk	22.08%
Chi-square Test (1% - 99%):	PASSED

1095

Printed 12/4/01 5:25 AM

Unit Type: LB4100/W
Date Performed: 12/4/01 05:09
File Name: EFF069
Batch ID: Eff Off Value Drawers A-Beta B-Alpha 12/04/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard

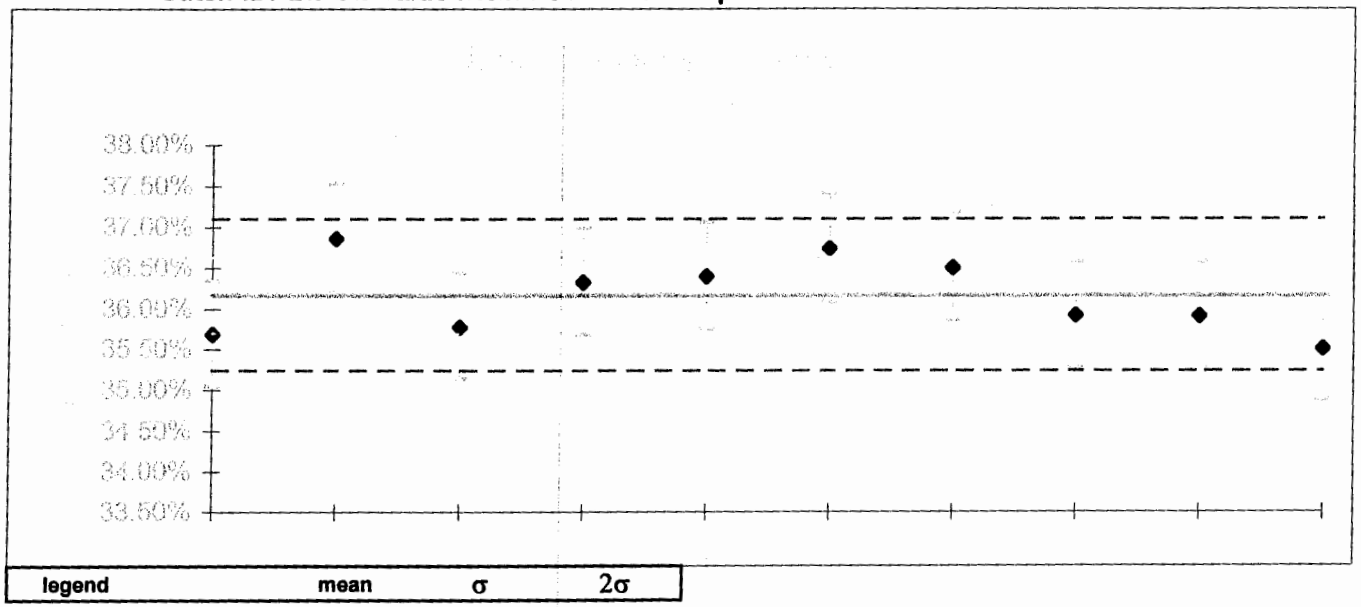


Source Identification	Rad#096-09
Isotope:	Sr-90/Y-90
Mean Beta Efficiency:	34.36%
Error for Mean Beta Efficiency:	0.50%
Actual standard deviation:	0.49%
Predicted standard deviation:	0.40%
Number of individual measurments:	10
Chi-square:	13.47
Reduced chi-square:	1.50
Beta to Alpha Crosstalk	2.82%
Chi-square Test (1% - 99%):	PASSED

Printed 12/4/01 5:25 AM

Unit Type: LB4100/W
Date Performed: 12/4/01 05:09
File Name: EFF069
Batch ID: Eff Off Value Drawers A-Beta B-Alpha 12/04/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



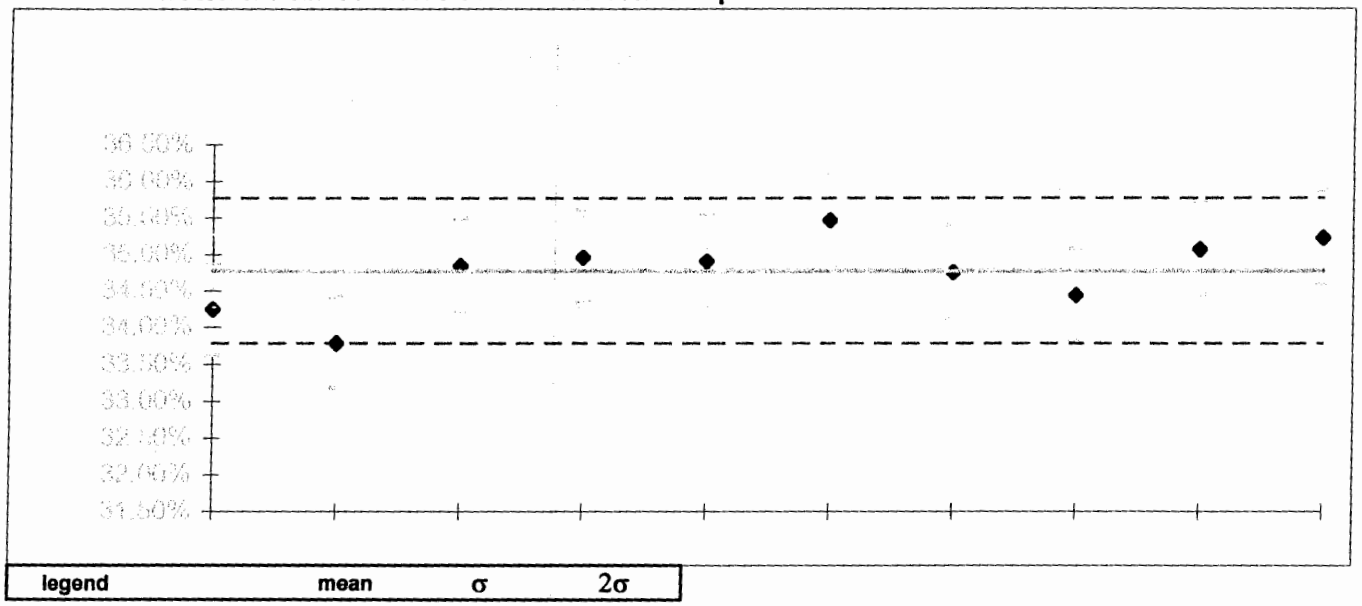
Source Identification	Rad#096-08
Isotope:	Sr-90/Y-90
Mean Beta Efficiency:	36.16%
Error for Mean Beta Efficiency:	0.53%
Actual standard deviation:	0.46%
Predicted standard deviation:	0.41%
Number of individual measurments:	10
Chi-square:	11.61
Reduced chi-square:	1.29
Beta to Alpha Crosstalk	3.27%
Chi-square Test (1% - 99%):	PASSED

Printed 12/4/01 5:25 AM

Unit Type: LB4100/W
Date Performed: 12/4/01 05:09
File Name: EFF069

Unit Id: Aqua
Application Revision: 2
Application Version: Standard

Batch ID: Eff Off Value Drawers A-Beta B-Alpha 12/04/01

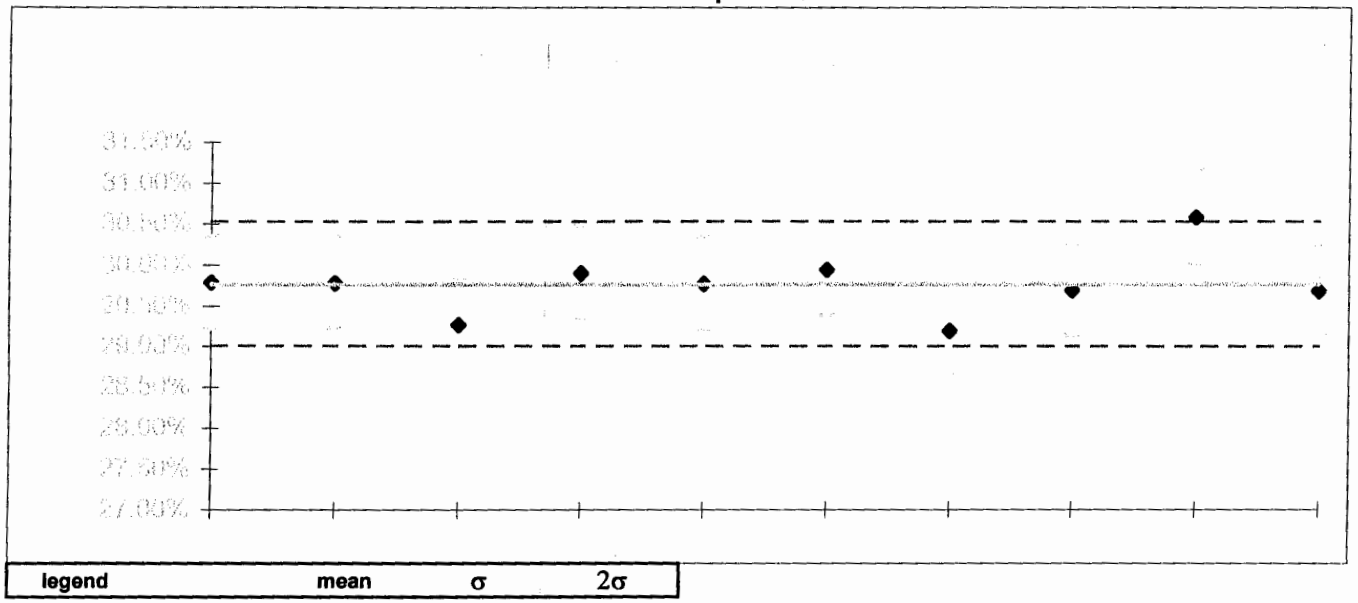


Source Identification	Rad#096-07
Isotope:	Sr-90/Y-90
Mean Beta Efficiency:	34.77%
Error for Mean Beta Efficiency:	0.51%
Actual standard deviation:	0.50%
Predicted standard deviation:	0.40%
Number of individual measurments:	10
Chi-square:	13.77
Reduced chi-square:	1.53
Beta to Alpha Crosstalk	2.26%
Chi-square Test (1% - 99%):	PASSED

Printed 12/4/01 5:25 AM

Unit Type: LB4100/W
Date Performed: 12/4/01 05:09
File Name: EFF069
Batch ID: Eff Off Value Drawers A-Beta B-Alpha 12/04/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



Source Identification	Rad#096-06
Isotope:	Sr-90/Y-90
Mean Beta Efficiency:	29.76%
Error for Mean Beta Efficiency:	0.44%
Actual standard deviation:	0.38%
Predicted standard deviation:	0.37%
Number of individual measurments:	10
Chi-square:	9.45
Reduced chi-square:	1.05
Beta to Alpha Crosstalk	3.69%
Chi-square Test (1% - 99%):	PASSED

1099

Printed 12/4/01 5:25 AM

Detector ID	Sample ID	Alpha	Beta	Guard	Count Time	Event	Voltage	TOD
B4	Rad#082	4210	1037	677	1	4	1350	37229.21887
B4	Rad#082	4169	987	696	1	5	1350	37229.21983
B4	Rad#082	4195	975	667	1	6	1350	37229.2208
B4	Rad#082	4247	1013	747	1	7	1350	37229.22176
B4	Rad#082	4134	1006	655	1	8	1350	37229.22272
B4	Rad#082	4236	1048	707	1	9	1350	37229.22367

Detector ID	Sample ID	Alpha	Beta	Guard	Count Time	Event	Voltage	TOD
A4	Rad#096-09	199	7449	723	1	7	1380	37229.22174
A4	Rad#096-09	214	7619	666	1	8	1380	37229.2227
A4	Rad#096-09	225	7489	683	1	9	1380	37229.22365
B1	Rad#079	3886	1168	736	1	0	1350	37229.21502
B1	Rad#079	3983	1217	657	1	1	1350	37229.21598
B1	Rad#079	4003	1082	683	1	2	1350	37229.21694
B1	Rad#079	4138	1205	734	1	3	1350	37229.21789
B1	Rad#079	3931	1105	677	1	4	1350	37229.21885
B1	Rad#079	4007	1076	702	1	5	1350	37229.21981
B1	Rad#079	4017	1150	659	1	6	1350	37229.22079
B1	Rad#079	4007	1082	735	1	7	1350	37229.22175
B1	Rad#079	4039	1132	661	1	8	1350	37229.22271
B1	Rad#079	3972	1131	705	1	9	1350	37229.22366
B2	Rad#080	2527	666	734	1	0	1350	37229.21502
B2	Rad#080	2538	743	656	1	1	1350	37229.21598
B2	Rad#080	2539	687	683	1	2	1350	37229.21694
B2	Rad#080	2621	739	734	1	3	1350	37229.21789
B2	Rad#080	2658	761	677	1	4	1350	37229.21887
B2	Rad#080	2596	753	699	1	5	1350	37229.21983
B2	Rad#080	2561	768	663	1	6	1350	37229.22079
B2	Rad#080	2568	730	742	1	7	1350	37229.22175
B2	Rad#080	2528	744	661	1	8	1350	37229.22271
B2	Rad#080	2524	683	709	1	9	1350	37229.22366
B3	Rad#081	4078	1058	735	1	0	1350	37229.21503
B3	Rad#081	4024	1007	656	1	1	1350	37229.21598
B3	Rad#081	4000	1108	684	1	2	1350	37229.21694
B3	Rad#081	4054	1089	735	1	3	1350	37229.21791
B3	Rad#081	4100	1066	678	1	4	1350	37229.21887
B3	Rad#081	4164	1022	699	1	5	1350	37229.21983
B3	Rad#081	4104	1097	664	1	6	1350	37229.22079
B3	Rad#081	4067	1031	747	1	7	1350	37229.22175
B3	Rad#081	4148	983	655	1	8	1350	37229.22271
B3	Rad#081	4167	974	707	1	9	1350	37229.22366
B4	Rad#082	4207	1021	730	1	0	1350	37229.21503
B4	Rad#082	4256	1062	659	1	1	1350	37229.216
B4	Rad#082	4160	1084	684	1	2	1350	37229.21696
B4	Rad#082	4210	1008	737	1	3	1350	37229.21791

Detector ID	Sample ID	Alpha	Beta	Guard	Count Time	Event	Voltage	TOD
A1	Rad#096-06	256	6461	679	1	0	1380	37229.21501
A1	Rad#096-06	256	6460	634	1	1	1380	37229.21596
A1	Rad#096-06	271	6350	719	1	2	1380	37229.21692
A1	Rad#096-06	229	6486	731	1	3	1380	37229.21788
A1	Rad#096-06	236	6458	665	1	4	1380	37229.21884
A1	Rad#096-06	257	6495	689	1	5	1380	37229.2198
A1	Rad#096-06	222	6333	674	1	6	1380	37229.22076
A1	Rad#096-06	237	6441	716	1	7	1380	37229.22172
A1	Rad#096-06	266	6634	671	1	8	1380	37229.22269
A1	Rad#096-06	243	6439	680	1	9	1380	37229.22365
A2	Rad#096-07	167	7428	677	1	0	1380	37229.21501
A2	Rad#096-07	194	7329	630	1	1	1380	37229.21597
A2	Rad#096-07	173	7559	715	1	2	1380	37229.21693
A2	Rad#096-07	171	7585	725	1	3	1380	37229.21788
A2	Rad#096-07	162	7573	661	1	4	1380	37229.21884
A2	Rad#096-07	161	7694	687	1	5	1380	37229.2198
A2	Rad#096-07	180	7540	673	1	6	1380	37229.22078
A2	Rad#096-07	185	7471	720	1	7	1380	37229.22174
A2	Rad#096-07	178	7609	669	1	8	1380	37229.2227
A2	Rad#096-07	175	7641	683	1	9	1380	37229.22365
A3	Rad#096-08	288	7742	679	1	0	1380	37229.21501
A3	Rad#096-08	254	7996	635	1	1	1380	37229.21597
A3	Rad#096-08	252	7761	717	1	2	1380	37229.21693
A3	Rad#096-08	282	7880	722	1	3	1380	37229.21788
A3	Rad#096-08	267	7896	660	1	4	1380	37229.21885
A3	Rad#096-08	252	7970	690	1	5	1380	37229.21981
A3	Rad#096-08	252	7919	671	1	6	1380	37229.22078
A3	Rad#096-08	285	7792	723	1	7	1380	37229.22174
A3	Rad#096-08	270	7790	668	1	8	1380	37229.2227
A3	Rad#096-08	249	7704	684	1	9	1380	37229.22365
A4	Rad#096-09	214	7502	680	1	0	1380	37229.21502
A4	Rad#096-09	204	7594	636	1	1	1380	37229.21597
A4	Rad#096-09	224	7410	720	1	2	1380	37229.21693
A4	Rad#096-09	215	7398	722	1	3	1380	37229.21789
A4	Rad#096-09	214	7414	661	1	4	1380	37229.21885
A4	Rad#096-09	222	7248	690	1	5	1380	37229.21981
A4	Rad#096-09	236	7423	668	1	6	1380	37229.22078

Detector ID	Sample ID	Alpha	Beta	Guard	Count Time	Event	Voltage	TOD
B4	Rad#096-09	108	7531	671	1	4	1350	37229.20539
B4	Rad#096-09	116	7527	731	1	5	1350	37229.20635
B4	Rad#096-09	114	7352	690	1	6	1350	37229.20731
B4	Rad#096-09	137	7333	674	1	7	1350	37229.20828
B4	Rad#096-09	121	7569	697	1	8	1350	37229.20924
B4	Rad#096-09	123	7514	705	1	9	1350	37229.2102

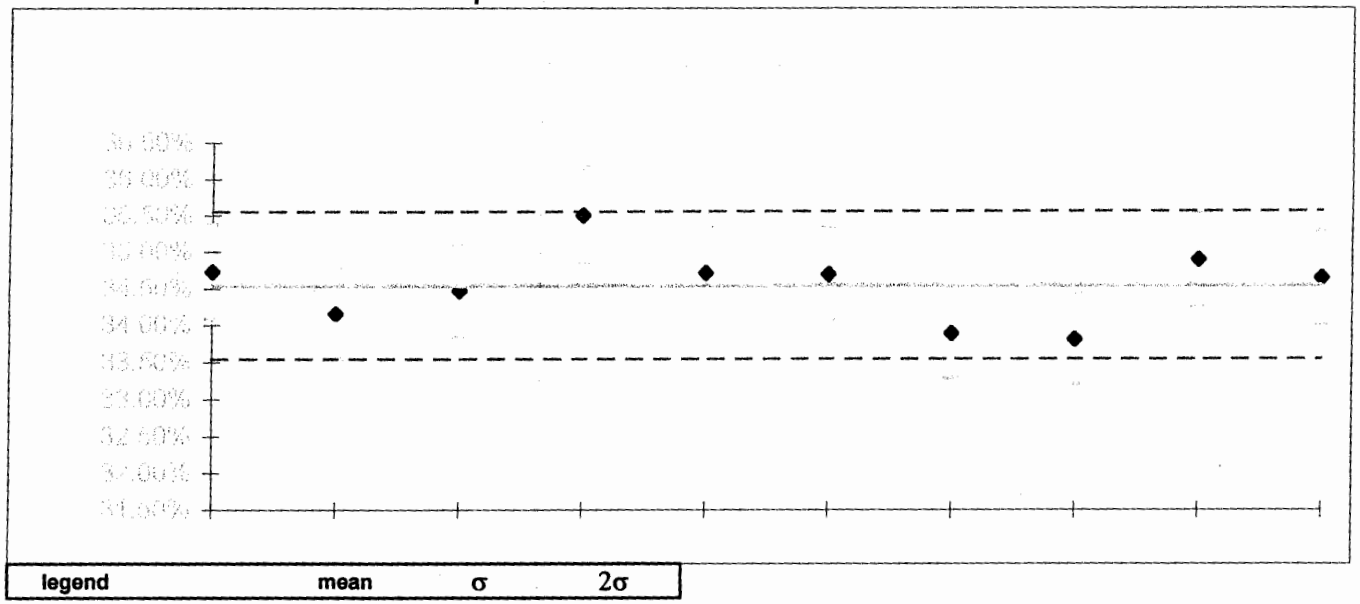
Detector ID	Sample ID	Alpha	Beta	Guard	Count Time	Event	Voltage	TOD
A4	Rad#082	4382	959	687	1	7	1380	37229.20826
A4	Rad#082	4441	1013	664	1	8	1380	37229.20922
A4	Rad#082	4304	938	706	1	9	1380	37229.21019
B1	Rad#096-06	119	7833	693	1	0	1350	37229.20148
B1	Rad#096-06	133	7978	726	1	1	1350	37229.20249
B1	Rad#096-06	99	7990	758	1	2	1350	37229.20346
B1	Rad#096-06	114	7887	750	1	3	1350	37229.20442
B1	Rad#096-06	109	7836	676	1	4	1350	37229.20538
B1	Rad#096-06	117	7740	728	1	5	1350	37229.20634
B1	Rad#096-06	113	7832	692	1	6	1350	37229.2073
B1	Rad#096-06	129	7952	668	1	7	1350	37229.20826
B1	Rad#096-06	120	7738	702	1	8	1350	37229.20922
B1	Rad#096-06	108	7936	717	1	9	1350	37229.21019
B2	Rad#096-07	91	7586	688	1	0	1350	37229.20149
B2	Rad#096-07	71	7514	720	1	1	1350	37229.20251
B2	Rad#096-07	73	7529	754	1	2	1350	37229.20346
B2	Rad#096-07	72	7671	758	1	3	1350	37229.20442
B2	Rad#096-07	74	7463	676	1	4	1350	37229.20539
B2	Rad#096-07	77	7596	724	1	5	1350	37229.20634
B2	Rad#096-07	79	7644	695	1	6	1350	37229.2073
B2	Rad#096-07	68	7631	671	1	7	1350	37229.20826
B2	Rad#096-07	81	7516	697	1	8	1350	37229.20924
B2	Rad#096-07	90	7662	717	1	9	1350	37229.2102
B3	Rad#096-08	116	8075	689	1	0	1350	37229.20149
B3	Rad#096-08	96	8046	721	1	1	1350	37229.20251
B3	Rad#096-08	113	8153	756	1	2	1350	37229.20347
B3	Rad#096-08	122	8020	759	1	3	1350	37229.20442
B3	Rad#096-08	112	8017	676	1	4	1350	37229.20539
B3	Rad#096-08	117	7957	724	1	5	1350	37229.20635
B3	Rad#096-08	118	8001	690	1	6	1350	37229.2073
B3	Rad#096-08	116	8080	672	1	7	1350	37229.20828
B3	Rad#096-08	117	8065	697	1	8	1350	37229.20924
B3	Rad#096-08	124	7954	705	1	9	1350	37229.2102
B4	Rad#096-09	132	7534	689	1	0	1350	37229.20156
B4	Rad#096-09	107	7410	721	1	1	1350	37229.20251
B4	Rad#096-09	114	7477	752	1	2	1350	37229.20347
B4	Rad#096-09	126	7702	751	1	3	1350	37229.20443

Detector ID	Sample ID	Alpha	Beta	Guard	Count Time	Event	Voltage	TOD
A1	Rad#079	4206	892	685	1	0	1380	37229.20135
A1	Rad#079	4060	899	707	1	1	1380	37229.20248
A1	Rad#079	4013	939	742	1	2	1380	37229.20345
A1	Rad#079	4039	860	725	1	3	1380	37229.20441
A1	Rad#079	4086	848	659	1	4	1380	37229.20537
A1	Rad#079	4173	828	696	1	5	1380	37229.20633
A1	Rad#079	4132	912	711	1	6	1380	37229.20728
A1	Rad#079	4190	891	685	1	7	1380	37229.20825
A1	Rad#079	4228	911	664	1	8	1380	37229.20921
A1	Rad#079	4117	867	705	1	9	1380	37229.21017
A2	Rad#080	2686	652	686	1	0	1380	37229.20135
A2	Rad#080	2847	634	707	1	1	1380	37229.20248
A2	Rad#080	2807	616	743	1	2	1380	37229.20345
A2	Rad#080	2760	630	726	1	3	1380	37229.20441
A2	Rad#080	2816	628	661	1	4	1380	37229.20537
A2	Rad#080	2711	633	695	1	5	1380	37229.20633
A2	Rad#080	2768	651	714	1	6	1380	37229.20729
A2	Rad#080	2780	622	685	1	7	1380	37229.20825
A2	Rad#080	2709	659	662	1	8	1380	37229.20921
A2	Rad#080	2712	637	703	1	9	1380	37229.21017
A3	Rad#081	4208	842	686	1	0	1380	37229.20147
A3	Rad#081	4262	813	708	1	1	1380	37229.20248
A3	Rad#081	4174	904	740	1	2	1380	37229.20346
A3	Rad#081	4251	866	728	1	3	1380	37229.20441
A3	Rad#081	4219	867	664	1	4	1380	37229.20538
A3	Rad#081	4167	907	696	1	5	1380	37229.20633
A3	Rad#081	4171	801	706	1	6	1380	37229.20729
A3	Rad#081	4154	839	686	1	7	1380	37229.20825
A3	Rad#081	4267	884	664	1	8	1380	37229.20922
A3	Rad#081	4175	869	705	1	9	1380	37229.21019
A4	Rad#082	4358	992	686	1	0	1380	37229.20147
A4	Rad#082	4359	921	712	1	1	1380	37229.20249
A4	Rad#082	4196	898	743	1	2	1380	37229.20346
A4	Rad#082	4377	936	728	1	3	1380	37229.20442
A4	Rad#082	4352	912	663	1	4	1380	37229.20538
A4	Rad#082	4354	945	697	1	5	1380	37229.20634
A4	Rad#082	4349	958	706	1	6	1380	37229.20729

Printed 12/4/01 5:06 AM

Unit Type: LB4100/W
Date Performed: 12/4/01 04:49
File Name: EFF068
Batch ID: Eff Check A-Alpha B-Beta 12/04/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



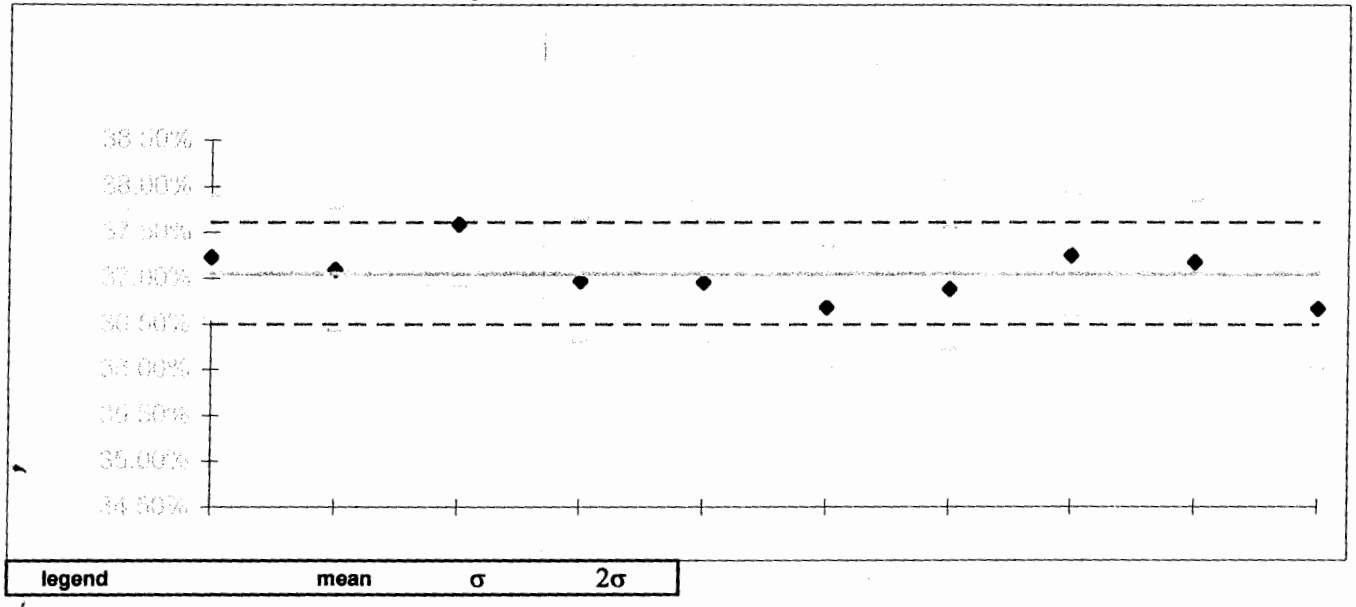
Source Identification	Rad#096-09
Isotope:	Sr-90/Y-90
Mean Beta Efficiency:	34.55%
Error for Mean Beta Efficiency:	0.50%
Actual standard deviation:	0.50%
Predicted standard deviation:	0.40%
Number of individual measurments:	10
Chi-square:	14.25
Reduced chi-square:	1.58
Beta to Alpha Crosstalk	1.57%
Chi-square Test (1% - 99%):	PASSED

1106

Printed 12/4/01 5:06 AM

Unit Type: LB4100/W
Date Performed: 12/4/01 04:49
File Name: EFF068
Batch ID: Eff Check A-Alpha B-Beta 12/04/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



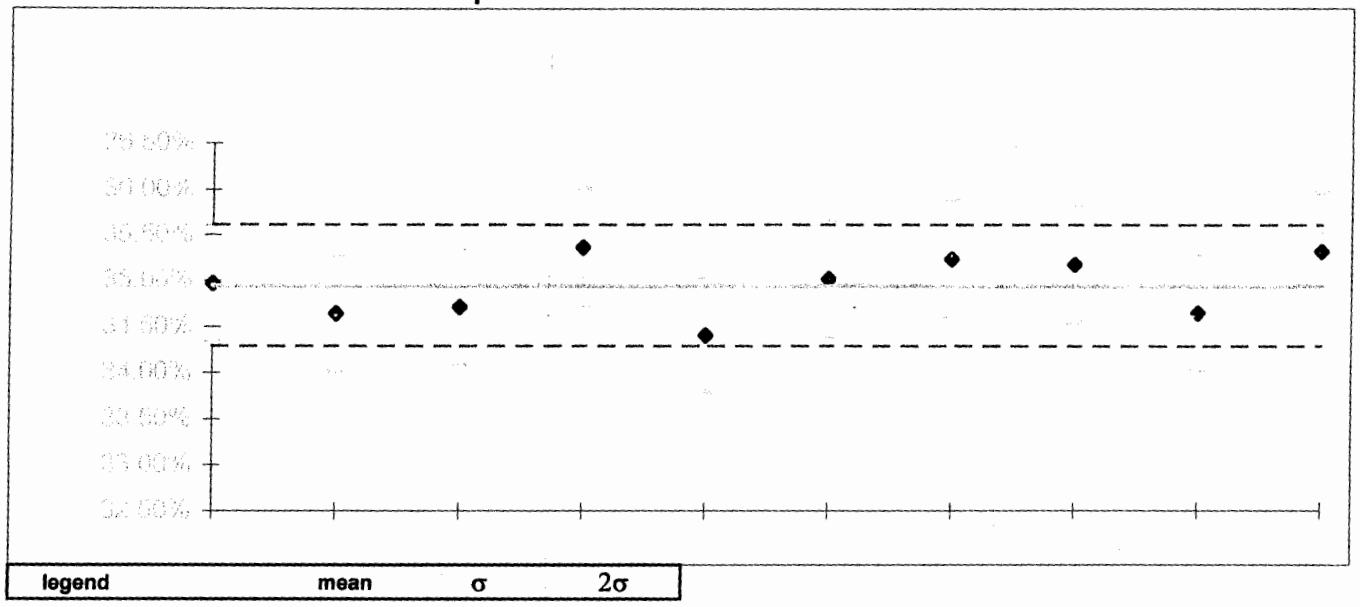
Source Identification	Rad#096-08
Isotope:	Sr-90/Y-90
Mean Beta Efficiency:	37.05%
Error for Mean Beta Efficiency:	0.54%
Actual standard deviation:	0.28%
Predicted standard deviation:	0.41%
Number of individual measurments:	10
Chi-square:	4.09
Reduced chi-square:	0.45
Beta to Alpha Crosstalk	1.41%
Chi-square Test (1% - 99%):	PASSED

1107

Printed 12/4/01 5:06 AM

Unit Type: LB4100/W
Date Performed: 12/4/01 04:49
File Name: EFF068
Batch ID: Eff Check A-Alpha B-Beta 12/04/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



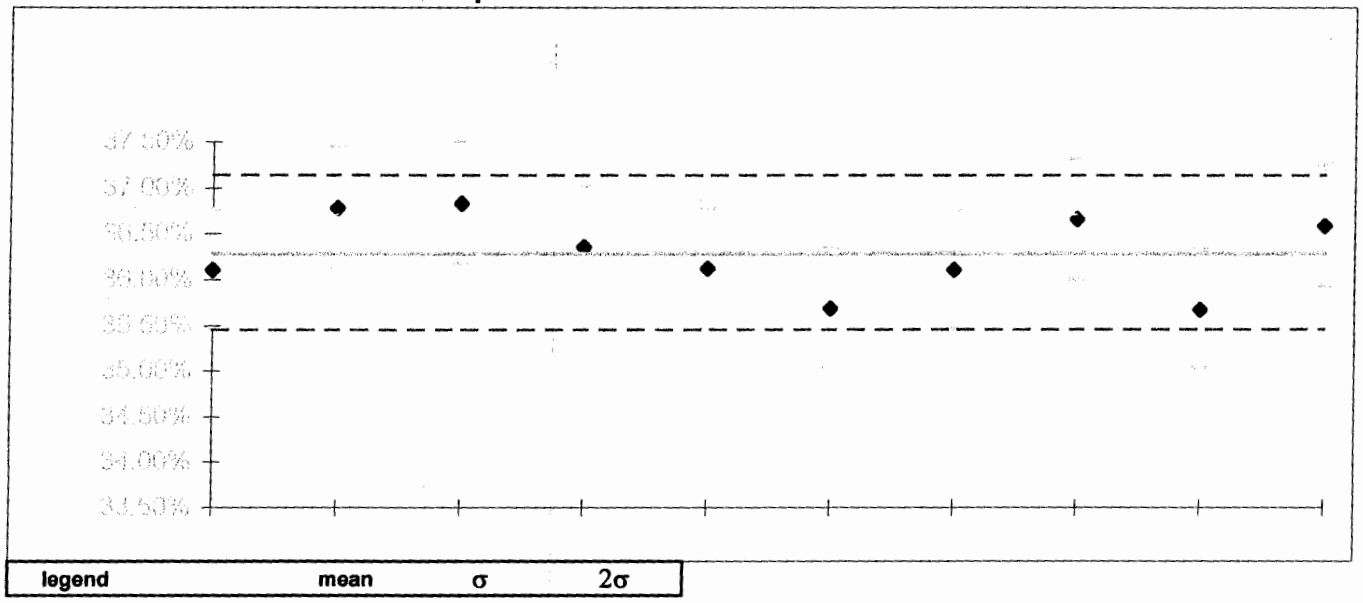
Source Identification	Rad#096-07
Isotope:	Sr-90/Y-90
Mean Beta Efficiency:	34.94%
Error for Mean Beta Efficiency:	0.51%
Actual standard deviation:	0.33%
Predicted standard deviation:	0.40%
Number of individual measurments:	10
Chi-square:	6.16
Reduced chi-square:	0.68
Beta to Alpha Crosstalk	1.01%
Chi-square Test (1% - 99%):	PASSED

1108

Printed 12/4/01 5:06 AM

Unit Type: LB4100/W
Date Performed: 12/4/01 04:49
File Name: EFF068
Batch ID: Eff Check A-Alpha B-Beta 12/04/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



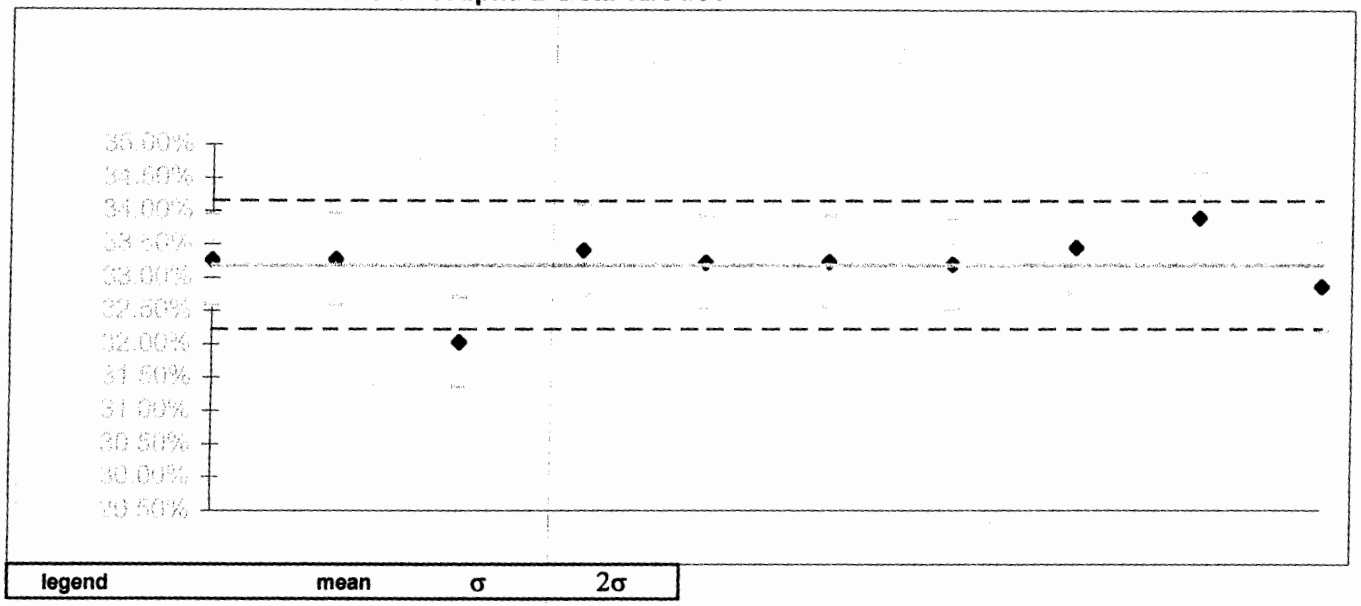
Source Identification	Rad#096-06
Isotope:	Sr-90/Y-90
Mean Beta Efficiency:	36.29%
Error for Mean Beta Efficiency:	0.53%
Actual standard deviation:	0.42%
Predicted standard deviation:	0.41%
Number of individual measurments:	10
Chi-square:	9.61
Reduced chi-square:	1.07
Beta to Alpha Crosstalk	1.45%
Chi-square Test (1% - 99%):	PASSED

1109

Printed 12/4/01 5:06 AM

Unit Type: LB4100/W
Date Performed: 12/4/01 04:49
File Name: EFF068
Batch ID: Eff Check A-Alpha B-Beta 12/04/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



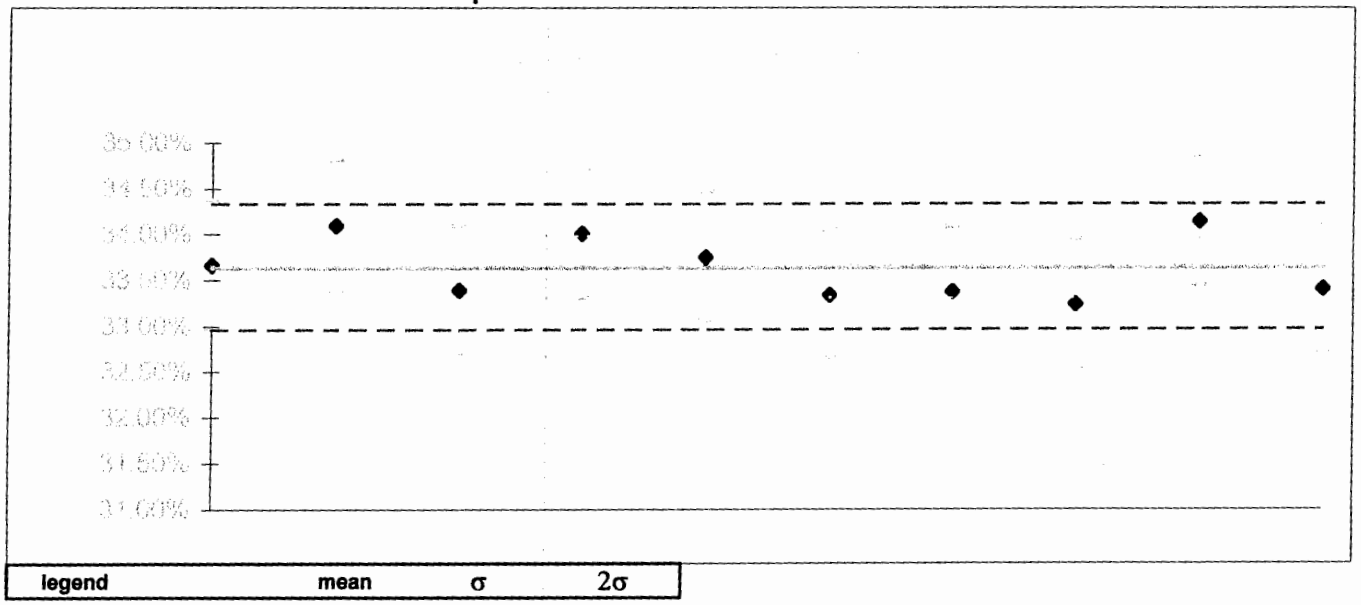
Source Identification	Rad#082
Isotope:	Th-230
Mean Alpha Efficiency:	33.18%
Error for Mean Alpha Efficiency:	0.50%
Actual standard deviation:	0.48%
Predicted standard deviation:	0.50%
Number of individual measurments:	10
Chi-square:	8.27
Reduced chi-square:	0.92
Alpha to Beta Crosstalk	17.87%
Chi-square Test (1% - 99%):	PASSED

1110

Printed 12/4/01 5:06 AM

Unit Type: LB4100/W
Date Performed: 12/4/01 04:49
File Name: EFF068
Batch ID: Eff Check A-Alpha B-Beta 12/04/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



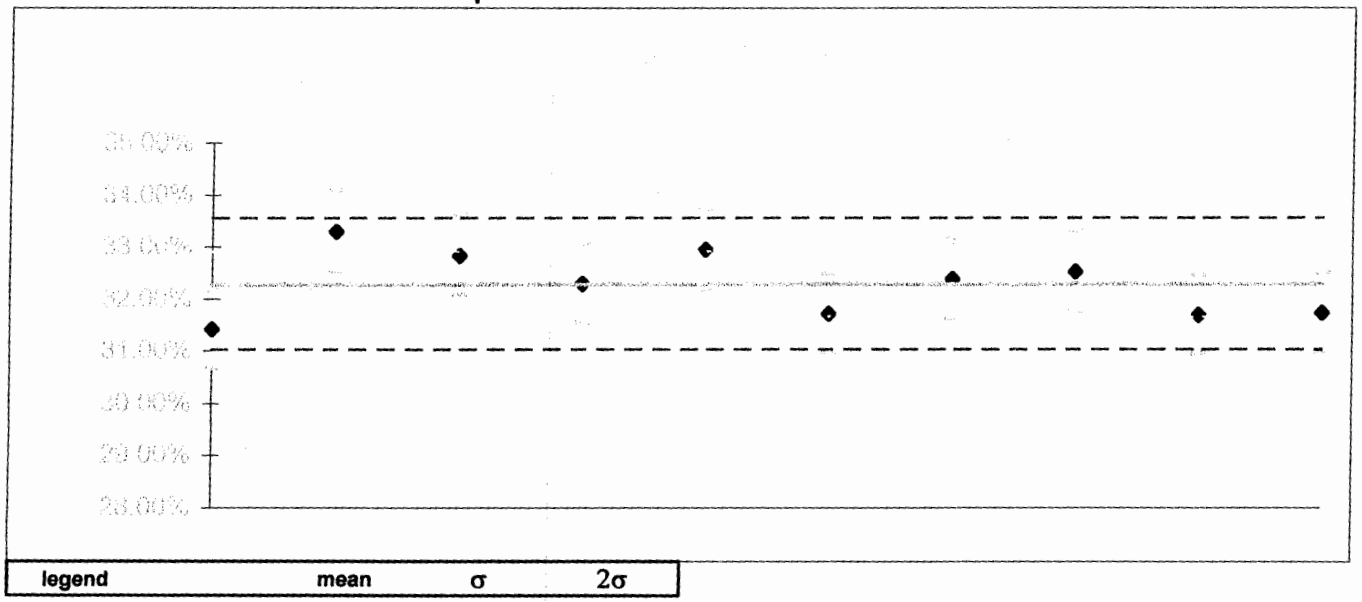
Source Identification	Rad#081
Isotope:	Th-230
Mean Alpha Efficiency:	33.64%
Error for Mean Alpha Efficiency:	0.50%
Actual standard deviation:	0.34%
Predicted standard deviation:	0.52%
Number of individual measurments:	10
Chi-square:	3.92
Reduced chi-square:	0.44
Alpha to Beta Crosstalk	16.94%
Chi-square Test (1% - 99%):	PASSED

1111

Printed 12/4/01 5:06 AM

Unit Type: LB4100/W
Date Performed: 12/4/01 04:49
File Name: EFF068
Batch ID: Eff Check A-Alpha B-Beta 12/04/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



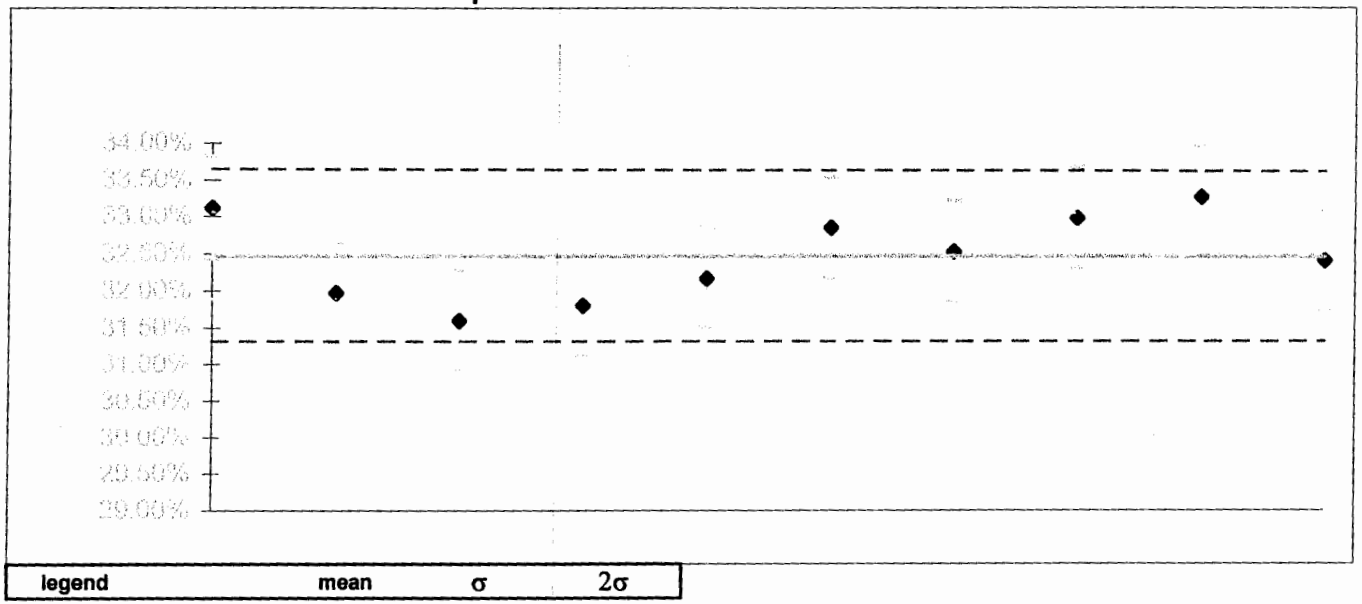
Source Identification	Rad#080
Isotope:	Th-230
Mean Alpha Efficiency:	32.28%
Error for Mean Alpha Efficiency:	0.50%
Actual standard deviation:	0.63%
Predicted standard deviation:	0.61%
Number of individual measurments:	10
Chi-square:	9.48
Reduced chi-square:	1.05
Alpha to Beta Crosstalk	18.70%
Chi-square Test (1% - 99%):	PASSED

1112

Printed 12/4/01 5:06 AM

Unit Type: LB4100/W
Date Performed: 12/4/01 04:49
File Name: EFF068
Batch ID: Eff Check A-Alpha B-Beta 12/04/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard

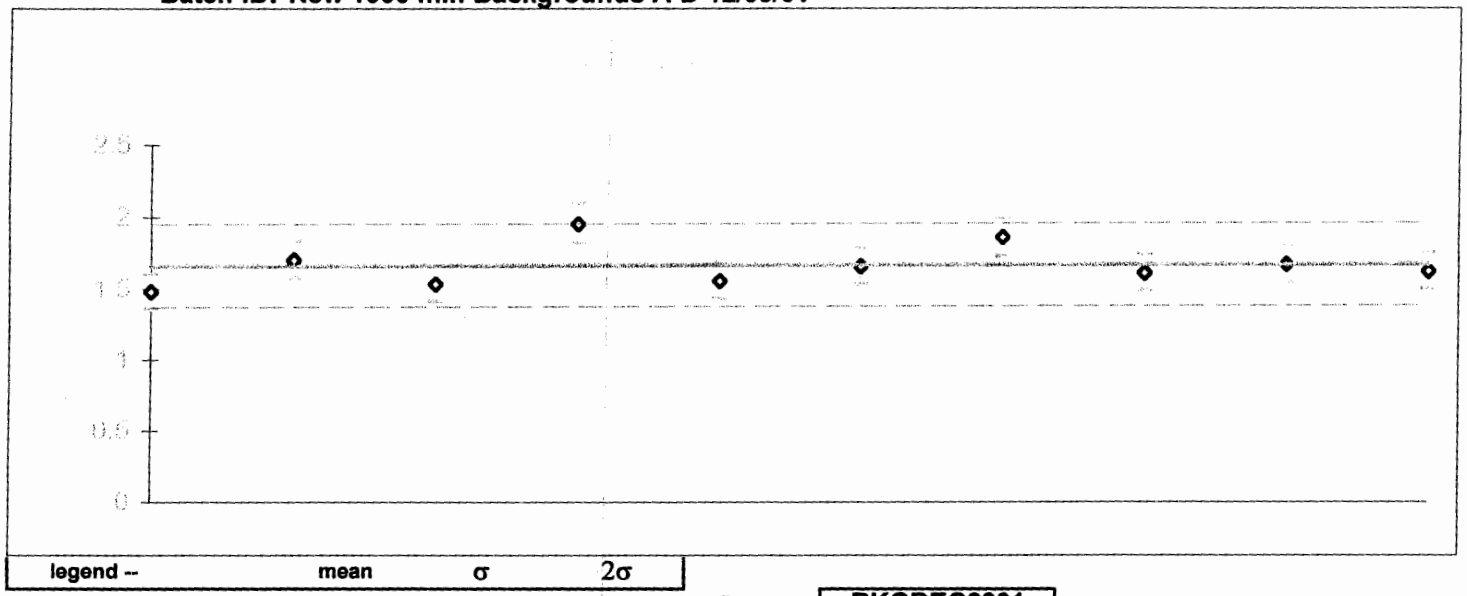


Source Identification	Rad#079
Isotope:	Th-230
Mean Alpha Efficiency:	32.47%
Error for Mean Alpha Efficiency:	0.49%
Actual standard deviation:	0.58%
Predicted standard deviation:	0.51%
Number of individual measurments:	10
Chi-square:	12.00
Reduced chi-square:	1.33
Alpha to Beta Crosstalk	17.64%
Chi-square Test (1% - 99%):	PASSED

Printed 12/4/01 5:06 AM

Unit Type: LB4100/W
Date Performed: 12/3/01 12:47
File Name: BACK021
Batch ID: New 1000 min Backgrounds A-D 12/03/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



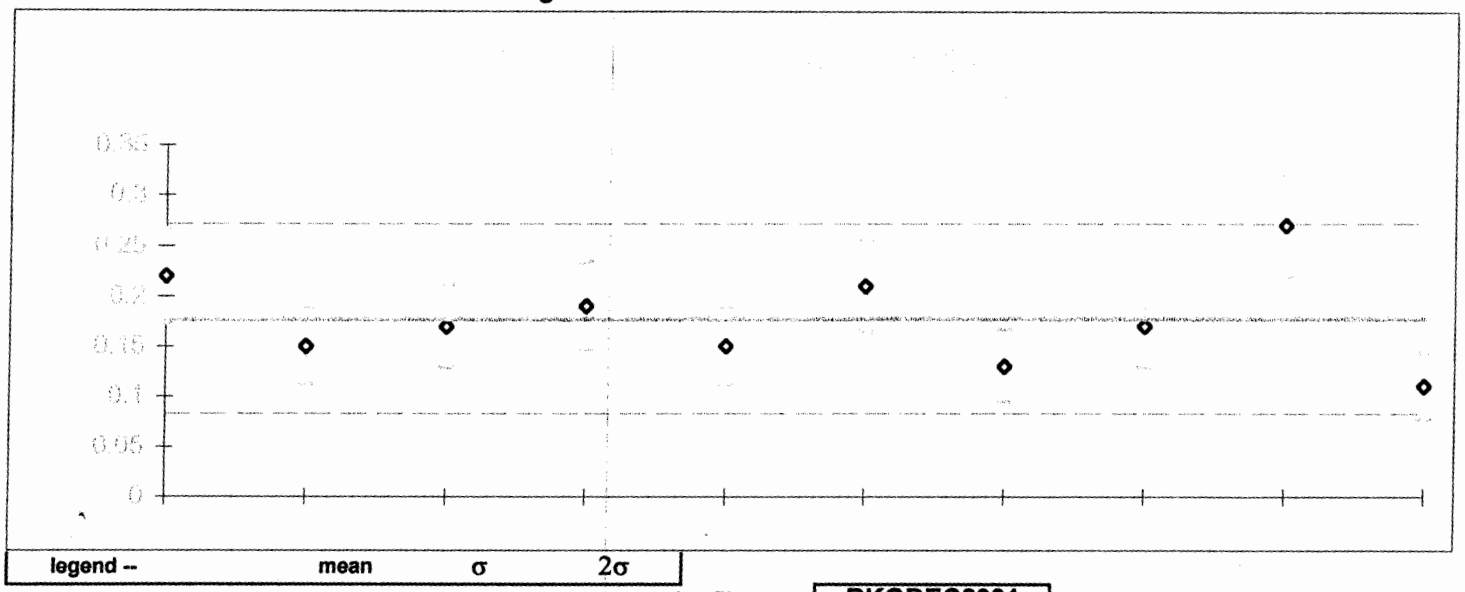
Logfile name:	BKGDEC2001
Mean beta background CPM:	1.66
Error for Mean CPM:	0.04
Actual standard deviation:	0.15
Predicted standard deviation:	0.13
Number of measurements:	10
Chi-square:	11.42
Reduced chi-square:	1.27
Chi-square Test (1% - 99%):	PASSED

1114

Printed 12/4/01 4:46 AM

Unit Type: LB4100/W
Date Performed: 12/3/01 12:47
File Name: BACK021
Batch ID: New 1000 min Backgrounds A-D 12/03/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



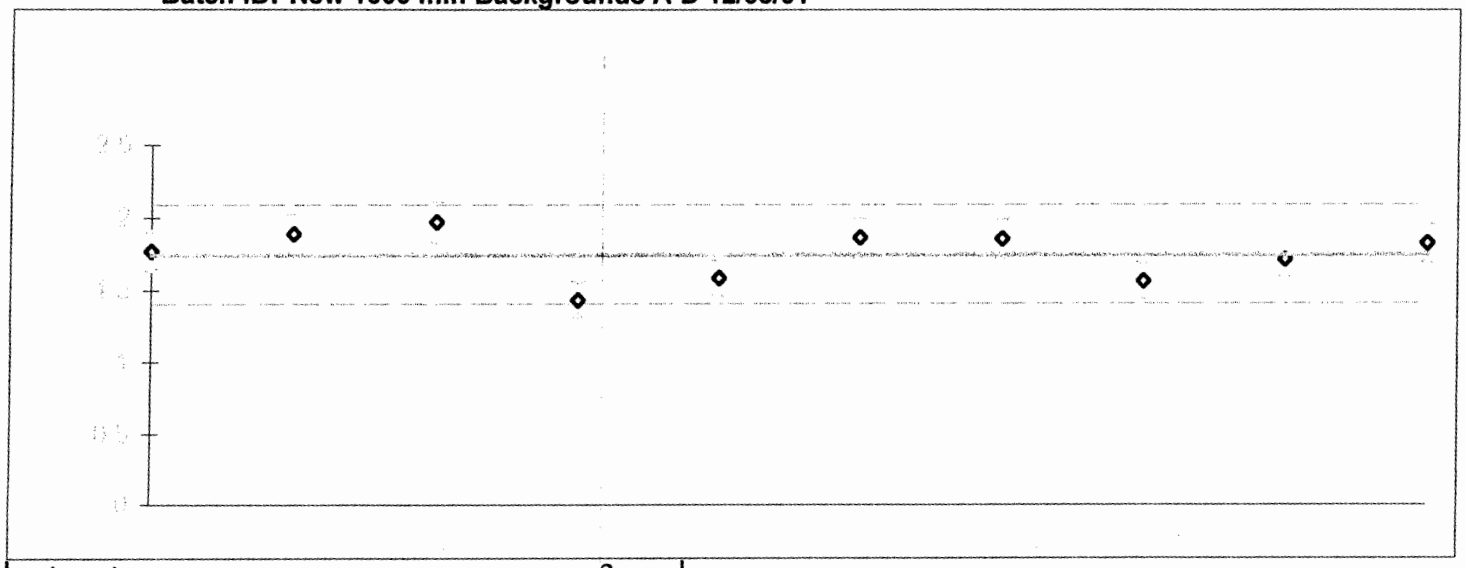
Logfile name:	BKGDEC2001
Mean alpha background CPM:	0.18
Error for Mean CPM:	0.01
Actual standard deviation:	0.05
Predicted standard deviation:	0.04
Number of measurements:	10
Chi-square:	11.31
Reduced chi-square:	1.26
Chi-square Test (1% - 99%):	PASSED

1115

Printed 12/4/01 4:46 AM

Unit Type: LB4100/W
Date Performed: 12/3/01 12:47
File Name: BACK021
Batch ID: New 1000 min Backgrounds A-D 12/03/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



legend -- mean σ 2σ

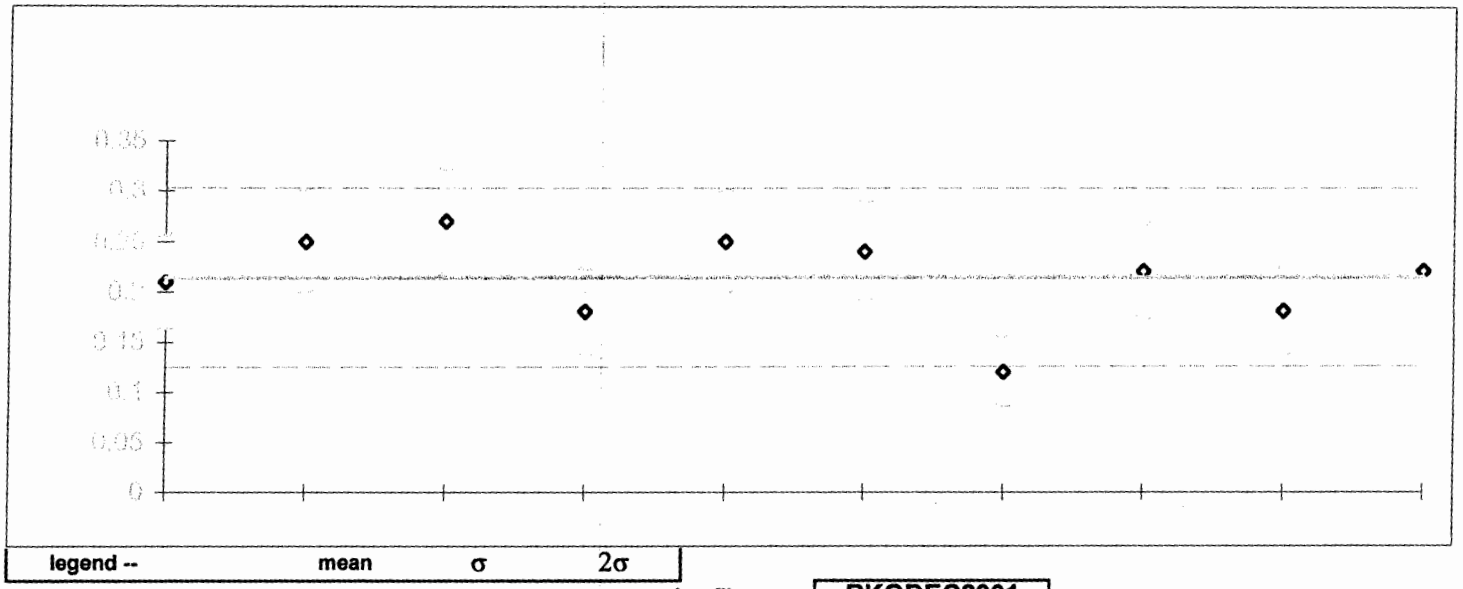
Logfile name:	BKGDEC2001
Mean beta background CPM:	1.74
Error for Mean CPM:	0.04
Actual standard deviation:	0.17
Predicted standard deviation:	0.13
Number of measurements:	10
Chi-square:	15.14
Reduced chi-square:	1.68
Chi-square Test (1% - 99%):	PASSED

1116

Printed 12/4/01 4:46 AM

Unit Type: LB4100/W
Date Performed: 12/3/01 12:47
File Name: BACK021
Batch ID: New 1000 min Backgrounds A-D 12/03/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



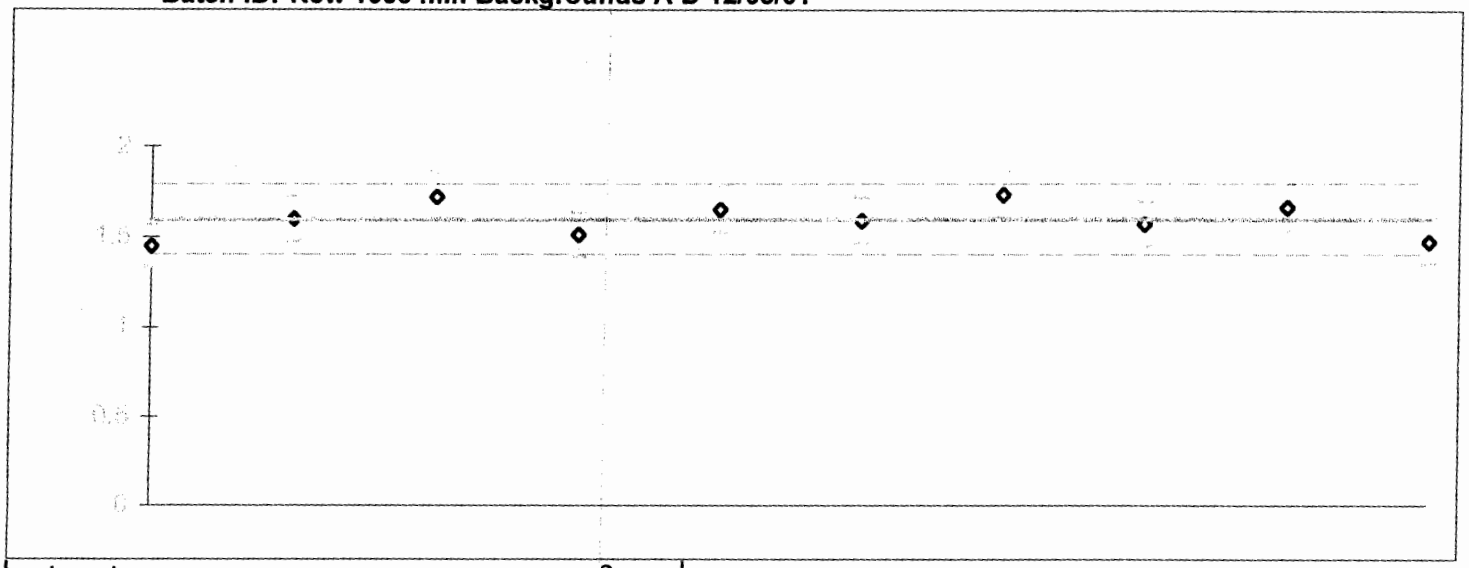
Logfile name:	BKGDEC2001
Mean alpha background CPM:	0.21
Error for Mean CPM:	0.01
Actual standard deviation:	0.04
Predicted standard deviation:	0.05
Number of measurements:	10
Chi-square:	8.24
Reduced chi-square:	0.92
Chi-square Test (1% - 99%):	PASSED

1117

Printed 12/4/01 4:46 AM

Unit Type: LB4100/W
Date Performed: 12/3/01 12:47
File Name: BACK021
Batch ID: New 1000 min Backgrounds A-D 12/03/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



legend -- mean σ 2σ

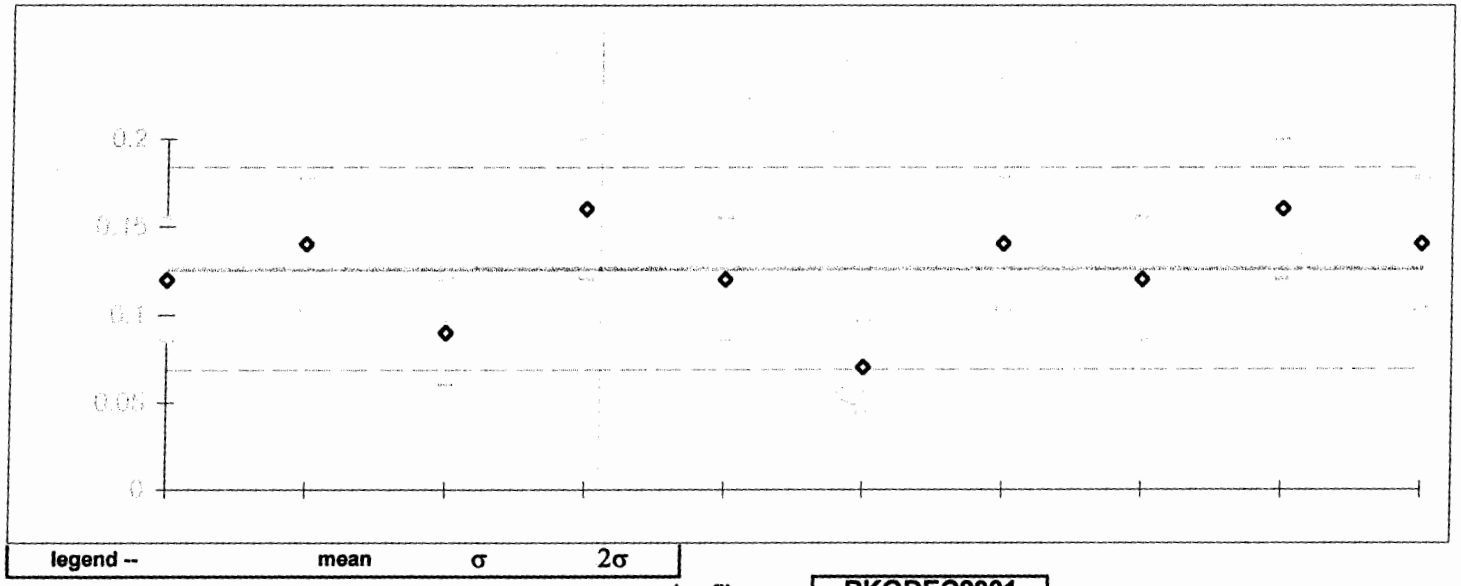
Logfile name:	BKGDEC2001
Mean beta background CPM:	1.60
Error for Mean CPM:	0.04
Actual standard deviation:	0.10
Predicted standard deviation:	0.13
Number of measurements:	10
Chi-square:	5.37
Reduced chi-square:	0.60
Chi-square Test (1% - 99%):	PASSED

Printed 12/4/01 4:46 AM

1118

Unit Type: LB4100/W
Date Performed: 12/3/01 12:47
File Name: BACK021
Batch ID: New 1000 min Backgrounds A-D 12/03/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



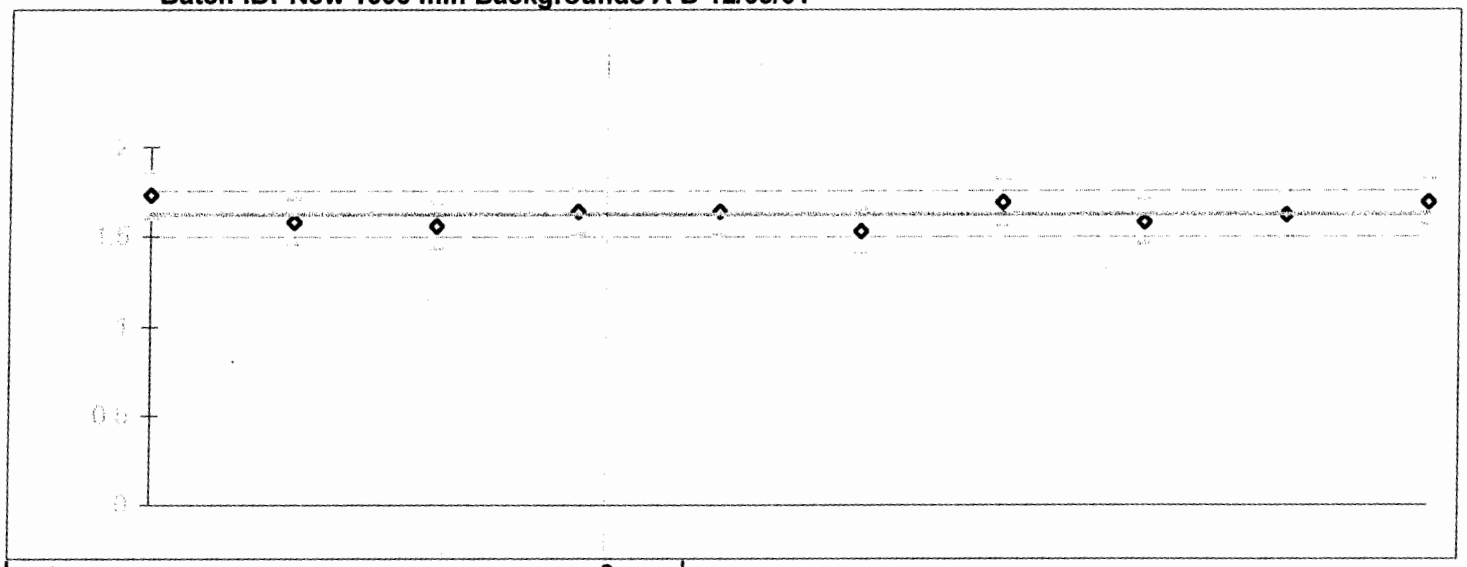
Logfile name:	BKGDEC2001
Mean alpha background CPM:	0.13
Error for Mean CPM:	0.01
Actual standard deviation:	0.03
Predicted standard deviation:	0.04
Number of measurements:	10
Chi-square:	5.90
Reduced chi-square:	0.66
Chi-square Test (1% - 99%):	PASSED

1119

Printed 12/4/01 4:46 AM

Unit Type: LB4100/W
Date Performed: 12/3/01 12:47
File Name: BACK021
Batch ID: New 1000 min Backgrounds A-D 12/03/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



legend -- mean σ 2σ

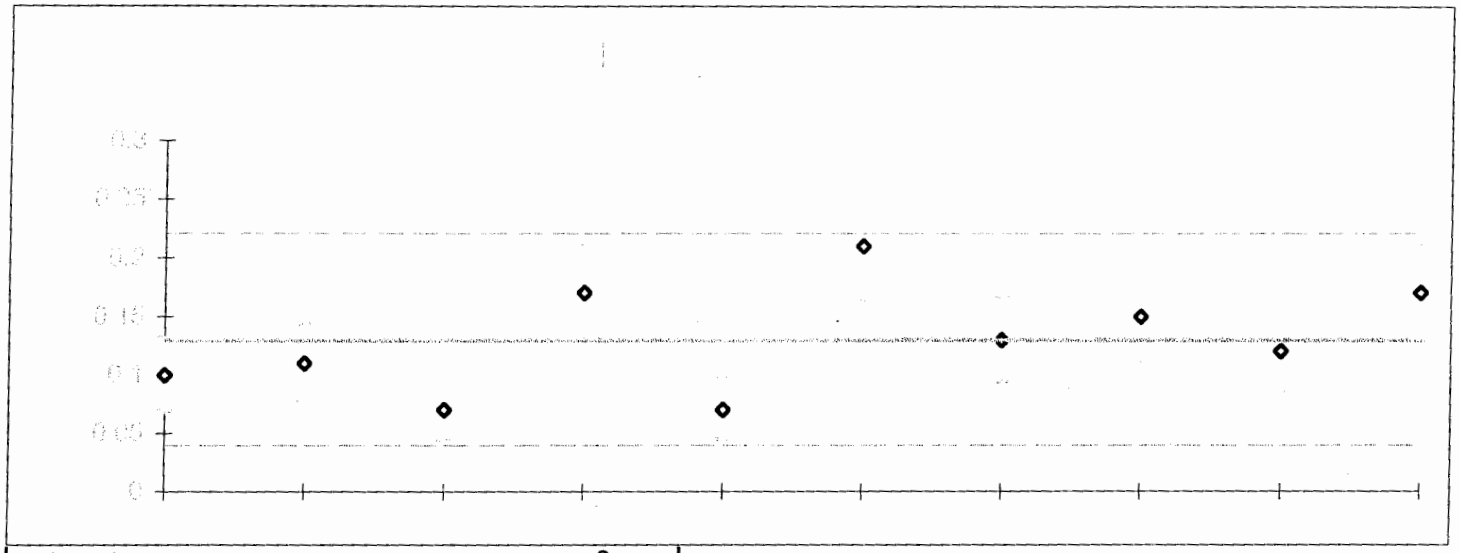
Logfile name:	BKGDEC2001
Mean beta background CPM:	1.63
Error for Mean CPM:	0.04
Actual standard deviation:	0.06
Predicted standard deviation:	0.13
Number of measurements:	10
Chi-square:	2.29
Reduced chi-square:	0.25
Chi-square Test (1% - 99%):	PASSED

1120

Printed 12/4/01 4:46 AM

Unit Type: LB4100/W
Date Performed: 12/3/01 12:47
File Name: BACK021
Batch ID: New 1000 min Backgrounds A-D 12/03/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



legend -- mean σ 2σ

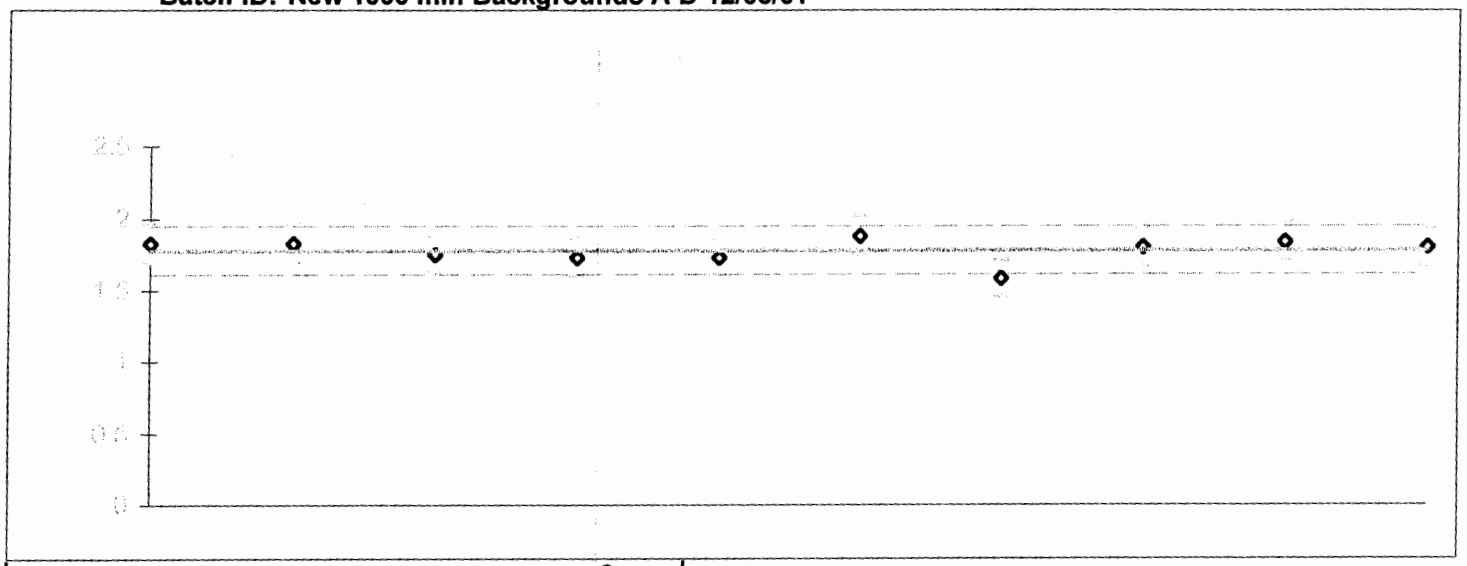
Logfile name:	BKGDEC2001
Mean alpha background CPM:	0.13
Error for Mean CPM:	0.01
Actual standard deviation:	0.05
Predicted standard deviation:	0.04
Number of measurements:	10
Chi-square:	14.31
Reduced chi-square:	1.59
Chi-square Test (1% - 99%):	PASSED

1121

Printed 12/4/01 4:46 AM

Unit Type: LB4100/W
Date Performed: 12/3/01 12:47
File Name: BACK021
Batch ID: New 1000 min Backgrounds A-D 12/03/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



legend -- mean σ 2σ

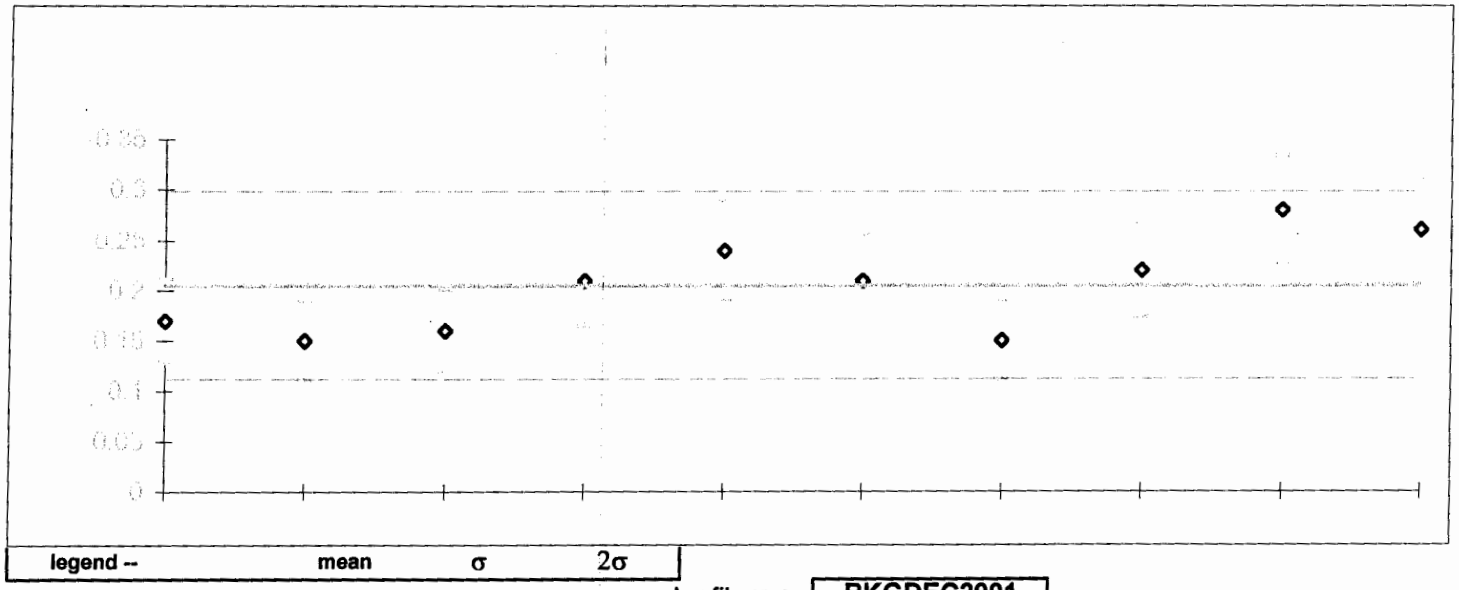
Logfile name:	BKGDEC2001
Mean beta background CPM:	1.78
Error for Mean CPM:	0.04
Actual standard deviation:	0.09
Predicted standard deviation:	0.13
Number of measurements:	10
Chi-square:	3.67
Reduced chi-square:	0.41
Chi-square Test (1% - 99%):	PASSED

1122

Printed 12/4/01 4:46 AM

Unit Type: LB4100/W
Date Performed: 12/3/01 12:47
File Name: BACK021
Batch ID: New 1000 min Backgrounds A-D 12/03/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



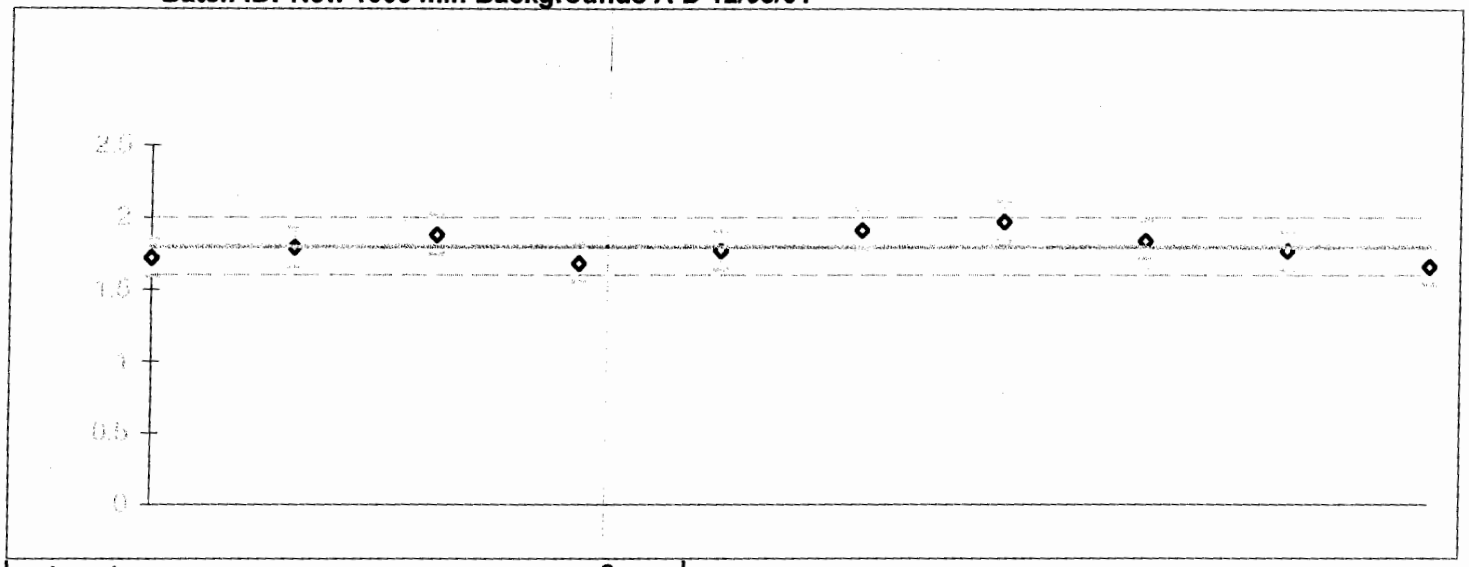
Logfile name:	BKGDEC2001
Mean alpha background CPM:	0.21
Error for Mean CPM:	0.01
Actual standard deviation:	0.05
Predicted standard deviation:	0.05
Number of measurements:	10
Chi-square:	9.49
Reduced chi-square:	1.05
Chi-square Test (1% - 99%):	PASSED

1123

Printed 12/4/01 4:46 AM

Unit Type: LB4100/W
Date Performed: 12/3/01 12:47
File Name: BACK021
Batch ID: New 1000 min Backgrounds A-D 12/03/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



legend -- mean σ 2σ

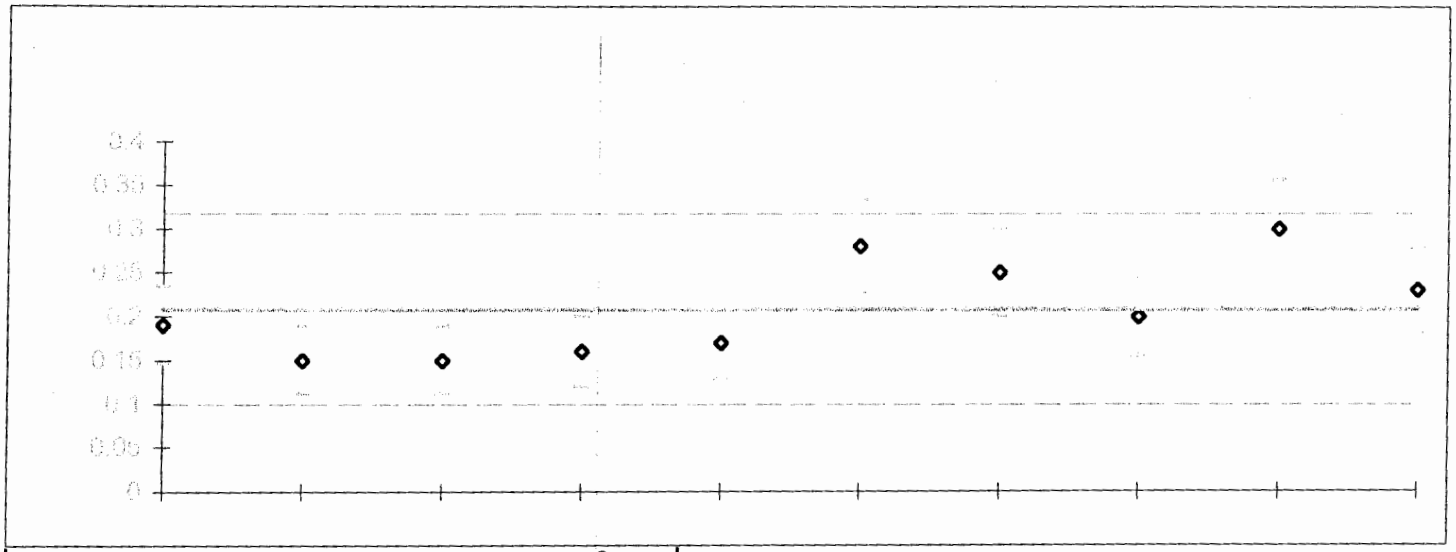
Logfile name:	BKGDEC2001
Mean beta background CPM:	1.80
Error for Mean CPM:	0.04
Actual standard deviation:	0.10
Predicted standard deviation:	0.13
Number of measurements:	10
Chi-square:	5.07
Reduced chi-square:	0.56
Chi-square Test (1% - 99%):	PASSED

1124

Printed 12/4/01 4:46 AM

Unit Type: LB4100/W
Date Performed: 12/3/01 12:47
File Name: BACK021
Batch ID: New 1000 min Backgrounds A-D 12/03/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



legend -- mean σ 2σ

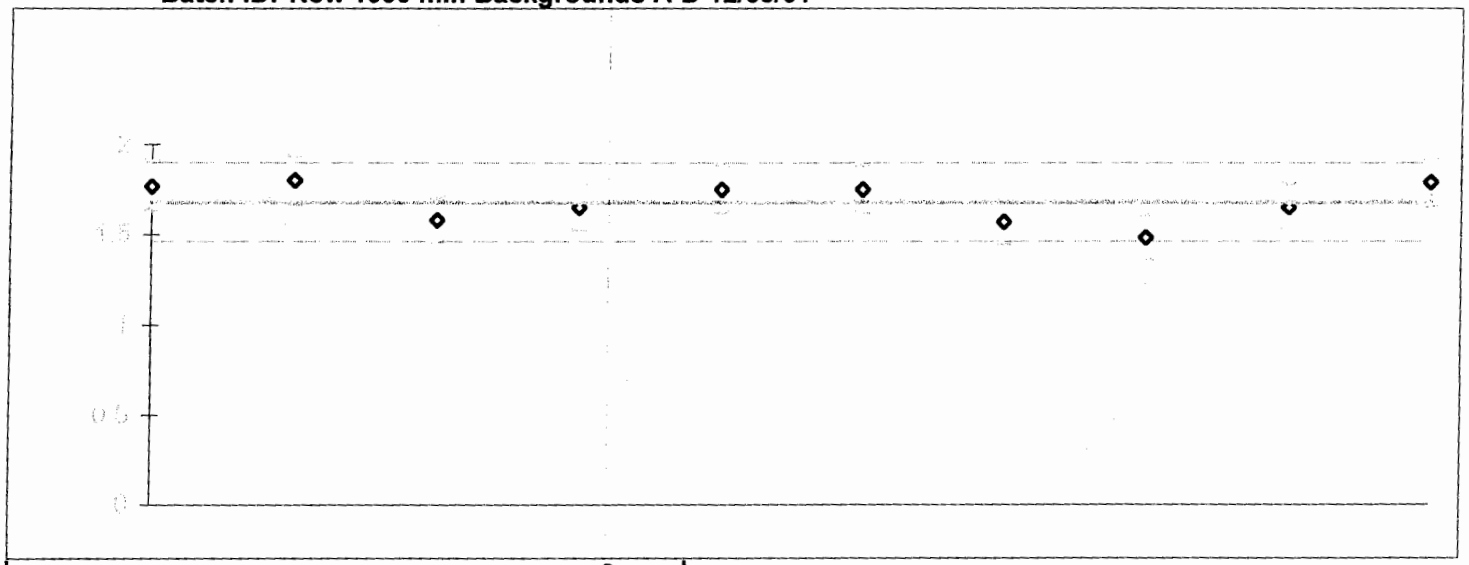
Logfile name:	BKGDEC2001
Mean alpha background CPM:	0.21
Error for Mean CPM:	0.01
Actual standard deviation:	0.05
Predicted standard deviation:	0.05
Number of measurements:	10
Chi-square:	12.87
Reduced chi-square:	1.43
Chi-square Test (1% - 99%):	PASSED

1125

Printed 12/4/01 4:46 AM

Unit Type: LB4100/W
Date Performed: 12/3/01 12:47
File Name: BACK021
Batch ID: New 1000 min Backgrounds A-D 12/03/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



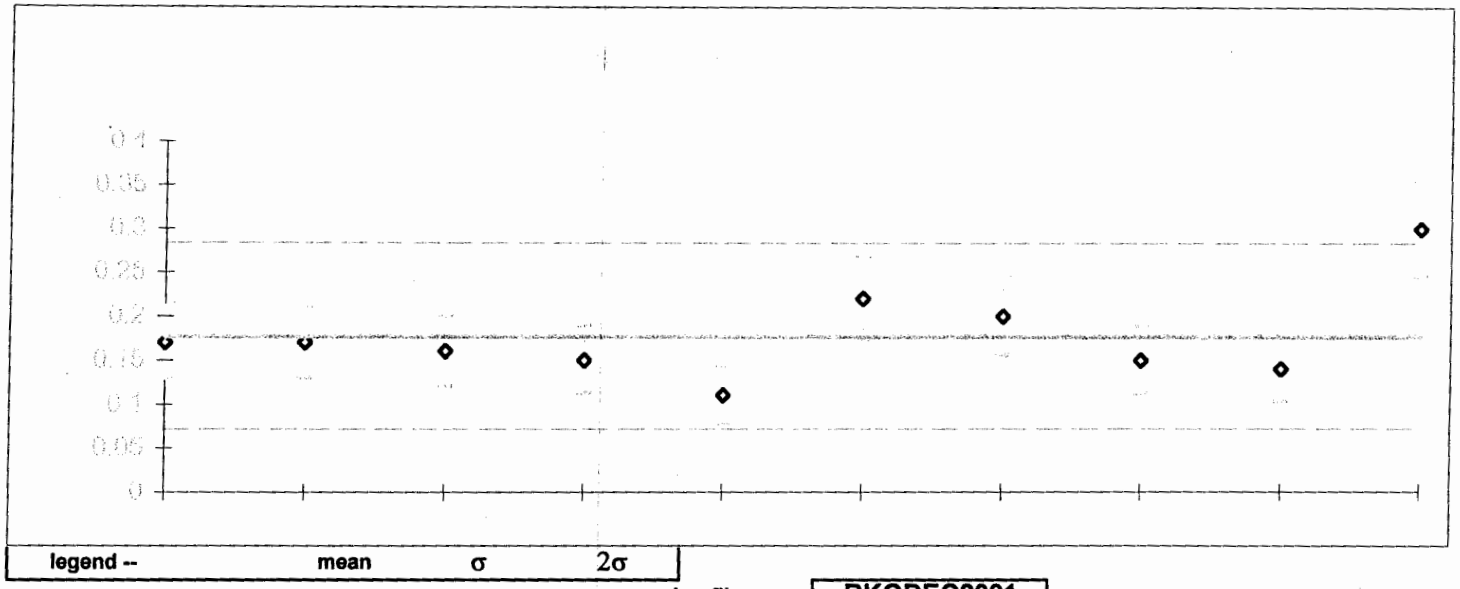
legend -- mean σ 2σ

Logfile name:	BKGDEC2001
Mean beta background CPM:	1.68
Error for Mean CPM:	0.04
Actual standard deviation:	0.11
Predicted standard deviation:	0.13
Number of measurements:	10
Chi-square:	6.45
Reduced chi-square:	0.72
Chi-square Test (1% - 99%):	PASSED

Printed 12/4/01 4:46 AM

Unit Type: LB4100/W
Date Performed: 12/3/01 12:47
File Name: BACK021
Batch ID: New 1000 min Backgrounds A-D 12/03/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



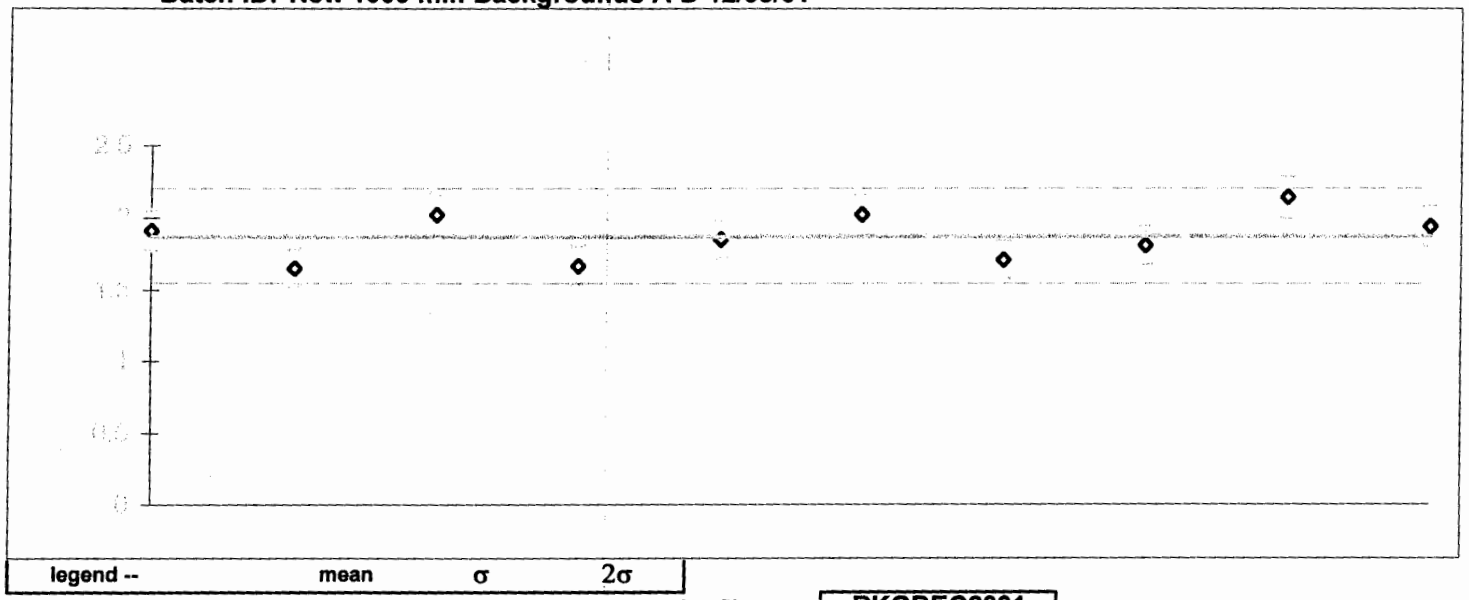
Logfile name:	BKGDEC2001
Mean alpha background CPM:	0.18
Error for Mean CPM:	0.01
Actual standard deviation:	0.05
Predicted standard deviation:	0.04
Number of measurements:	10
Chi-square:	14.24
Reduced chi-square:	1.58
Chi-square Test (1% - 99%):	PASSED

1127

Printed 12/4/01 4:46 AM

Unit Type: LB4100/W
Date Performed: 12/3/01 12:47
File Name: BACK021
Batch ID: New 1000 min Backgrounds A-D 12/03/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



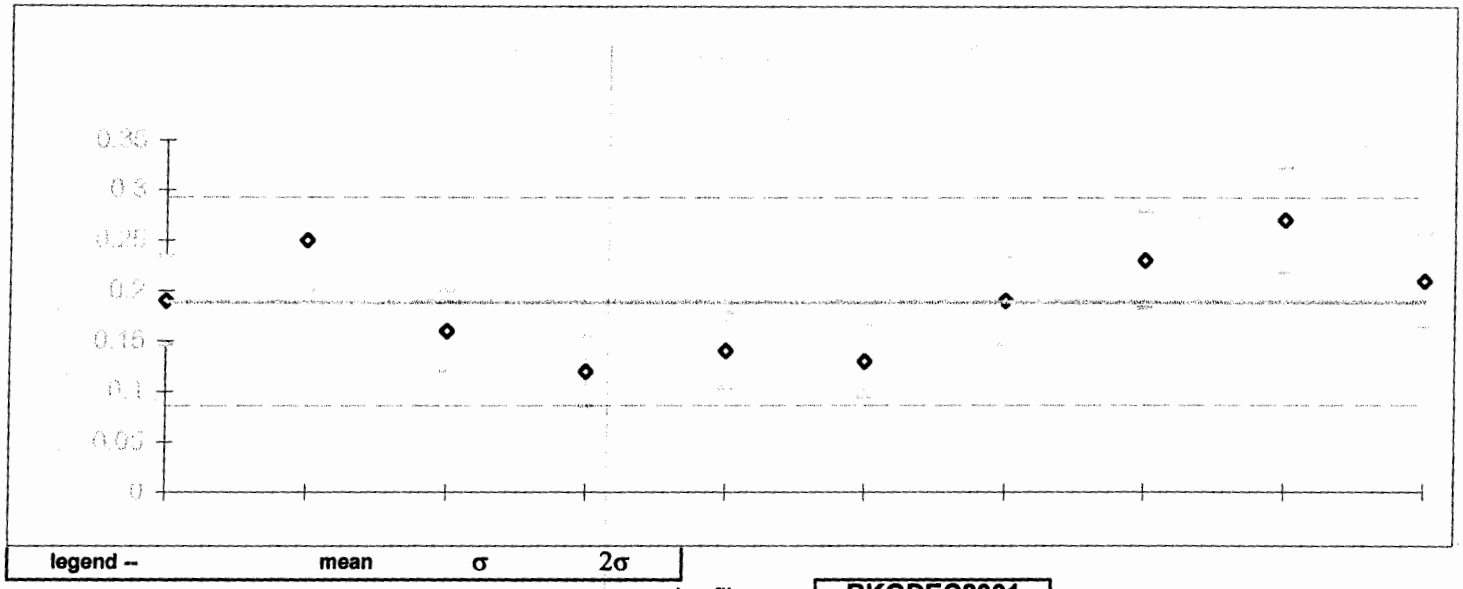
Logfile name:	BKGDEC2001
Mean beta background CPM:	1.87
Error for Mean CPM:	0.04
Actual standard deviation:	0.16
Predicted standard deviation:	0.14
Number of measurements:	10
Chi-square:	12.95
Reduced chi-square:	1.44
Chi-square Test (1% - 99%):	PASSED

1128

Printed 12/4/01 4:46 AM

Unit Type: LB4100/W
Date Performed: 12/3/01 12:47
File Name: BACK021
Batch ID: New 1000 min Backgrounds A-D 12/03/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard

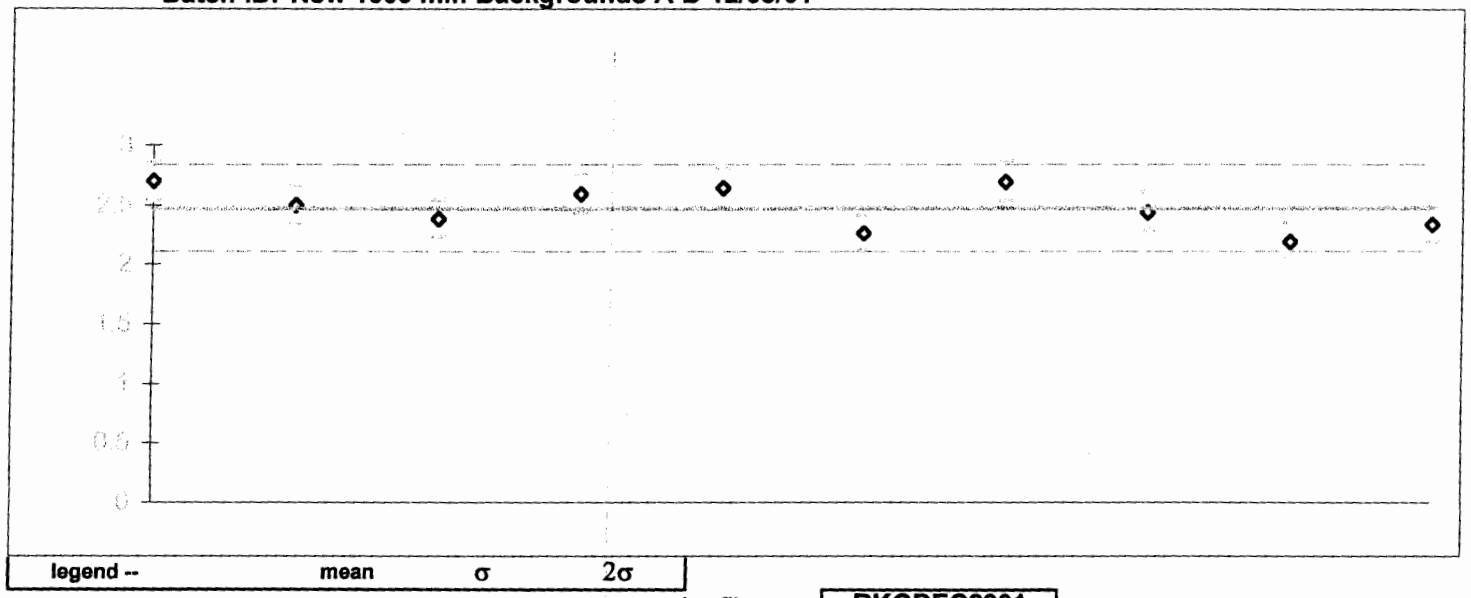


Logfile name:	BKGDEC2001
Mean alpha background CPM:	0.19
Error for Mean CPM:	0.01
Actual standard deviation:	0.05
Predicted standard deviation:	0.04
Number of measurements:	10
Chi-square:	12.64
Reduced chi-square:	1.40
Chi-square Test (1% - 99%):	PASSED

Printed 12/4/01 4:46 AM

Unit Type: LB4100/W
Date Performed: 12/3/01 12:47
File Name: BACK021
Batch ID: New 1000 min Backgrounds A-D 12/03/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



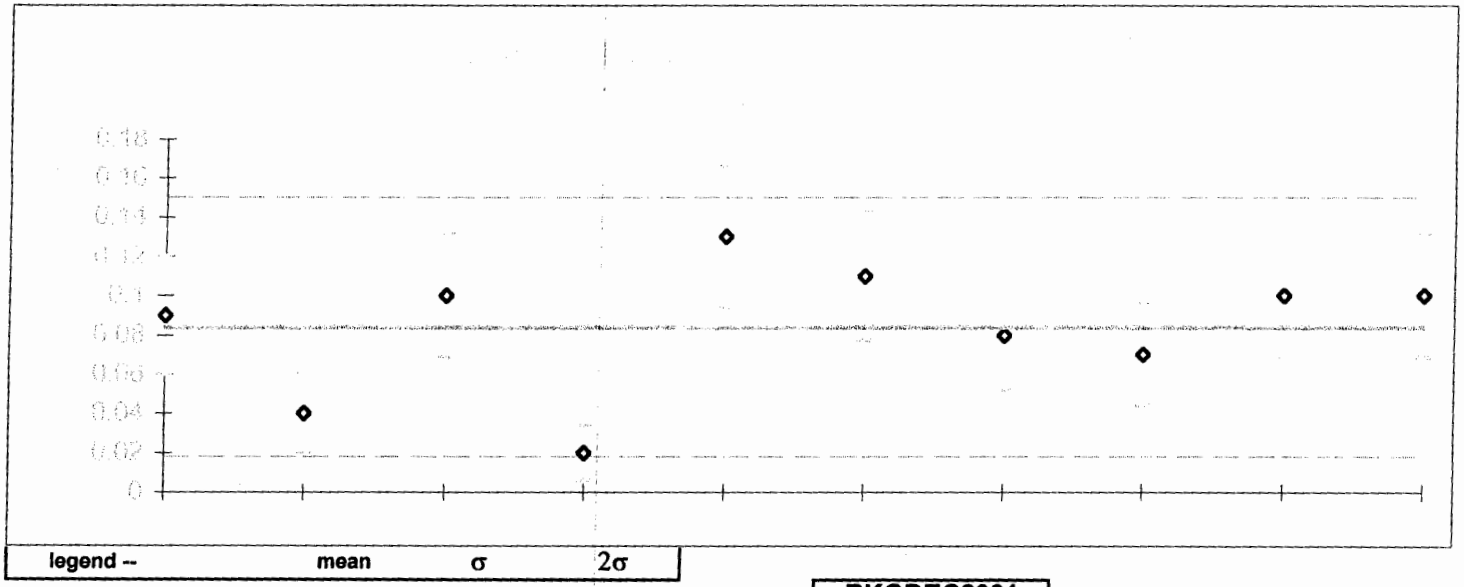
Logfile name:	BKGDEC2001
Mean beta background CPM:	2.47
Error for Mean CPM:	0.05
Actual standard deviation:	0.18
Predicted standard deviation:	0.16
Number of measurements:	10
Chi-square:	12.00
Reduced chi-square:	1.33
Chi-square Test (1% - 99%):	PASSED

1130

Printed 12/4/01 4:46 AM

Unit Type: LB4100/W
Date Performed: 12/3/01 12:47
File Name: BACK021
Batch ID: New 1000 min Backgrounds A-D 12/03/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



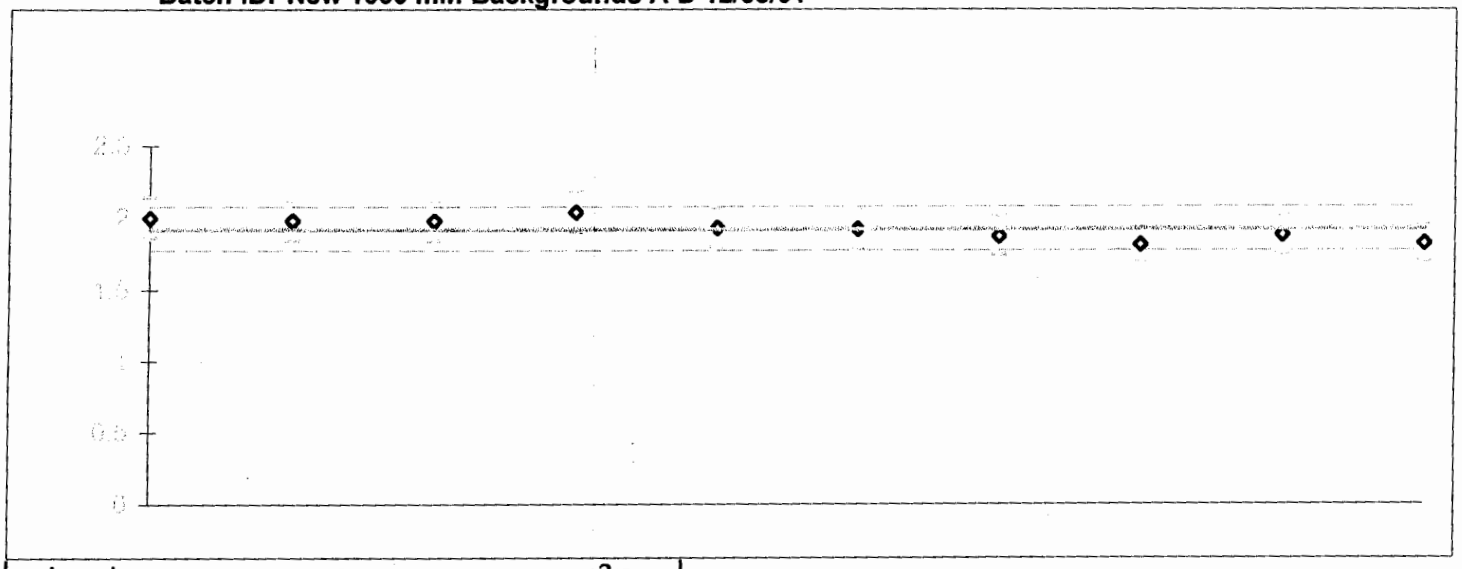
Logfile name:	BKGDEC2001
Mean alpha background CPM:	0.08
Error for Mean CPM:	0.01
Actual standard deviation:	0.03
Predicted standard deviation:	0.03
Number of measurements:	10
Chi-square:	11.71
Reduced chi-square:	1.30
Chi-square Test (1% - 99%):	PASSED

1131

Printed 12/4/01 4:46 AM

Unit Type: LB4100/W
Date Performed: 12/3/01 12:47
File Name: BACK021
Batch ID: New 1000 min Backgrounds A-D 12/03/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



legend -- mean σ 2σ

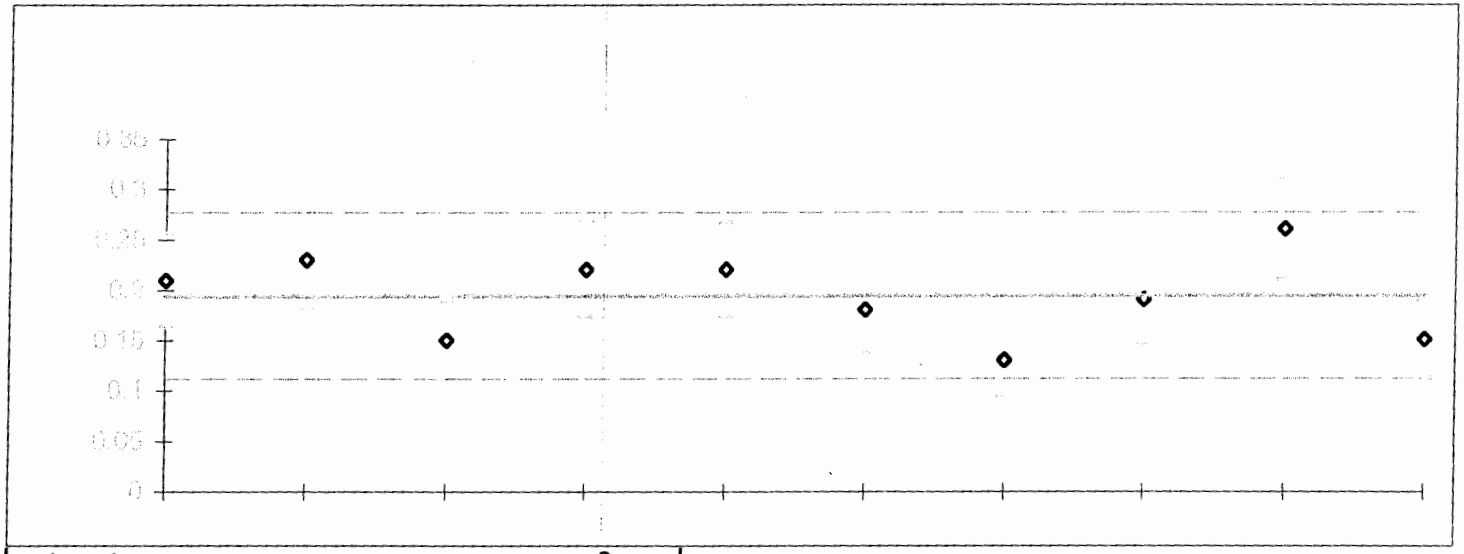
Logfile name:	BKGDEC2001
Mean beta background CPM:	1.92
Error for Mean CPM:	0.04
Actual standard deviation:	0.08
Predicted standard deviation:	0.14
Number of measurements:	10
Chi-square:	2.82
Reduced chi-square:	0.31
Chi-square Test (1% - 99%):	PASSED

1132

Printed 12/4/01 4:46 AM

Unit Type: LB4100/W
Date Performed: 12/3/01 12:47
File Name: BACK021
Batch ID: New 1000 min Backgrounds A-D 12/03/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



legend -- mean σ 2σ

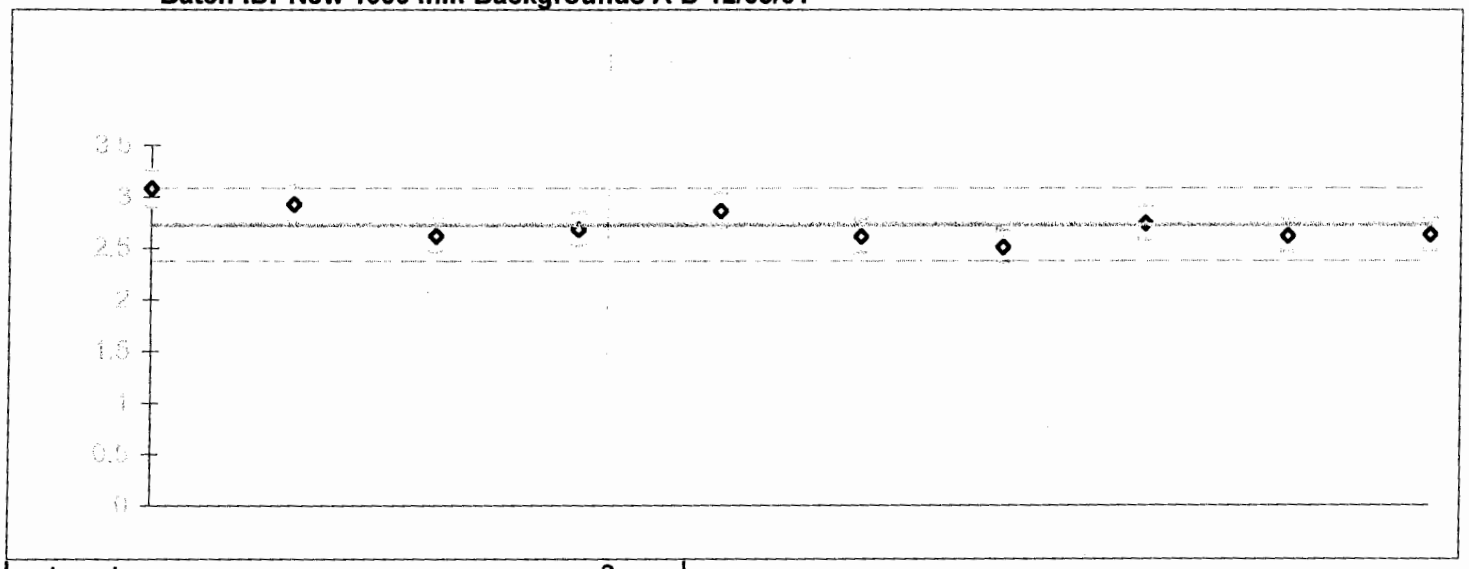
Logfile name:	BKGDEC2001
Mean alpha background CPM:	0.19
Error for Mean CPM:	0.01
Actual standard deviation:	0.04
Predicted standard deviation:	0.04
Number of measurements:	10
Chi-square:	7.96
Reduced chi-square:	0.88
Chi-square Test (1% - 99%):	PASSED

1133

Printed 12/4/01 4:46 AM

Unit Type: LB4100/W
Date Performed: 12/3/01 12:47
File Name: BACK021
Batch ID: New 1000 min Backgrounds A-D 12/03/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



legend -- mean σ 2σ

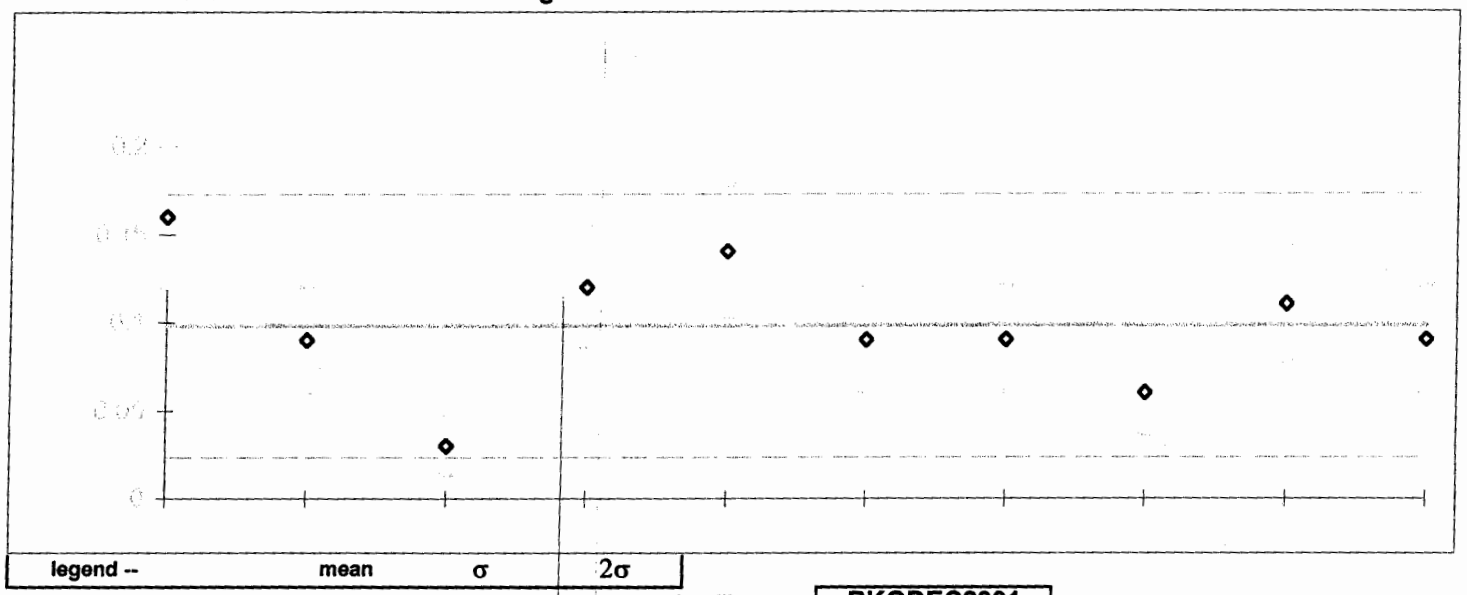
Logfile name:	BKGDEC2001
Mean beta background CPM:	2.73
Error for Mean CPM:	0.05
Actual standard deviation:	0.18
Predicted standard deviation:	0.17
Number of measurements:	10
Chi-square:	10.23
Reduced chi-square:	1.14
Chi-square Test (1% - 99%):	PASSED

1134

Printed 12/4/01 4:46 AM

Unit Type: LB4100/W
Date Performed: 12/3/01 12:47
File Name: BACK021
Batch ID: New 1000 min Backgrounds A-D 12/03/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard

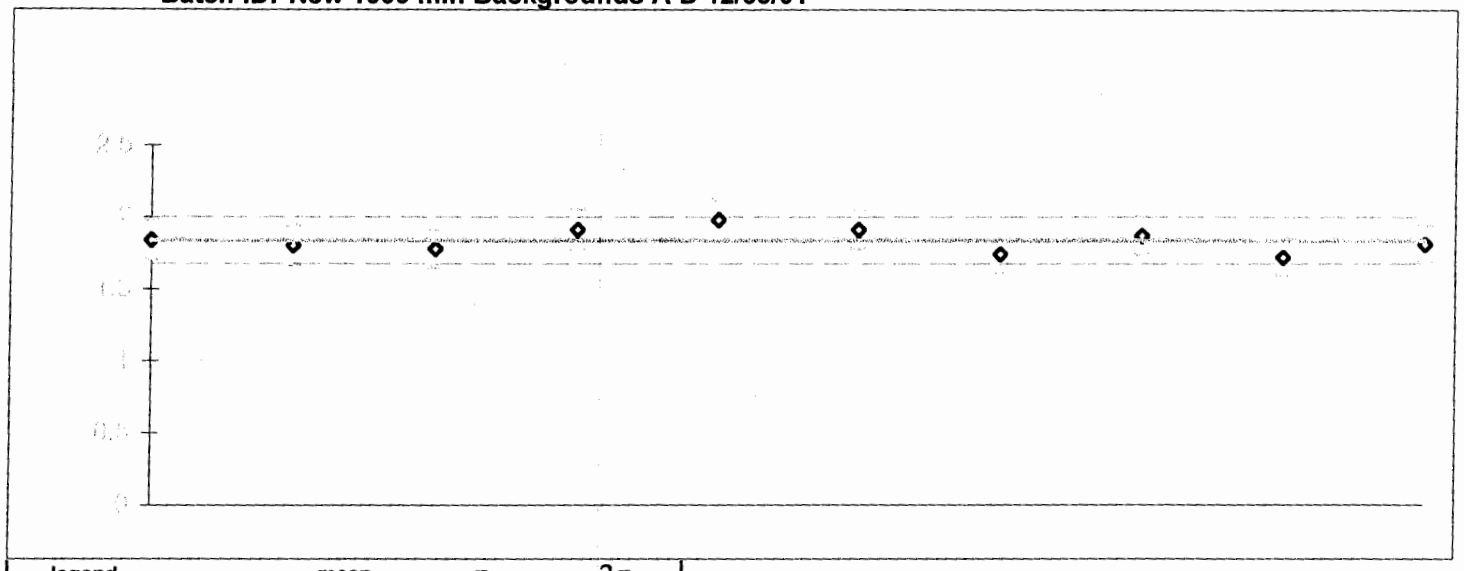


Logfile name:	BKGDEC2001
Mean alpha background CPM:	0.10
Error for Mean CPM:	0.01
Actual standard deviation:	0.04
Predicted standard deviation:	0.03
Number of measurements:	10
Chi-square:	12.82
Reduced chi-square:	1.42
Chi-square Test (1% - 99%):	PASSED

Printed 12/4/01 4:46 AM

Unit Type: LB4100/W
Date Performed: 12/3/01 12:47
File Name: BACK021
Batch ID: New 1000 min Backgrounds A-D 12/03/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



legend -- mean σ 2σ

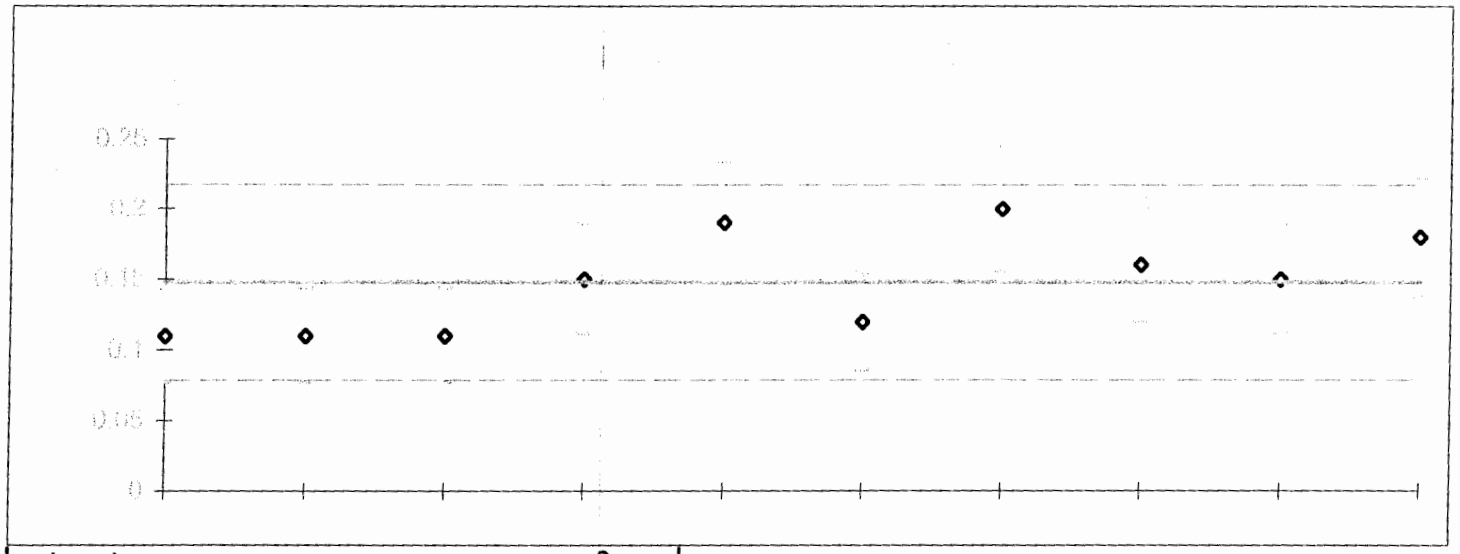
Logfile name:	BKGDEC2001
Mean beta background CPM:	1.84
Error for Mean CPM:	0.04
Actual standard deviation:	0.08
Predicted standard deviation:	0.14
Number of measurements:	10
Chi-square:	3.30
Reduced chi-square:	0.37
Chi-square Test (1% - 99%):	PASSED

1136

Printed 12/4/01 4:46 AM

Unit Type: LB4100/W
Date Performed: 12/3/01 12:47
File Name: BACK021
Batch ID: New 1000 min Backgrounds A-D 12/03/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



legend -- mean σ 2σ

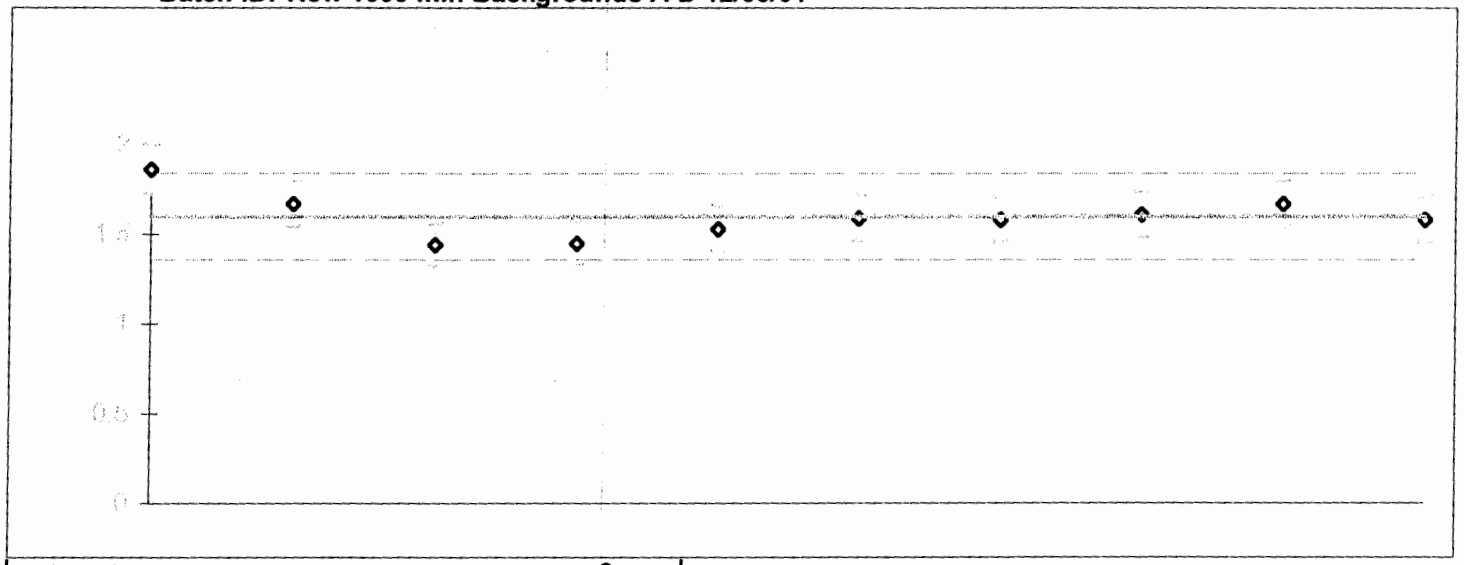
Logfile name:	BKGDEC2001
Mean alpha background CPM:	0.15
Error for Mean CPM:	0.01
Actual standard deviation:	0.03
Predicted standard deviation:	0.04
Number of measurements:	10
Chi-square:	7.27
Reduced chi-square:	0.81
Chi-square Test (1% - 99%):	PASSED

1137

Printed 12/4/01 4:46 AM

Unit Type: LB4100/W
Date Performed: 12/3/01 12:47
File Name: BACK021
Batch ID: New 1000 min Backgrounds A-D 12/03/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



legend -- mean σ 2σ

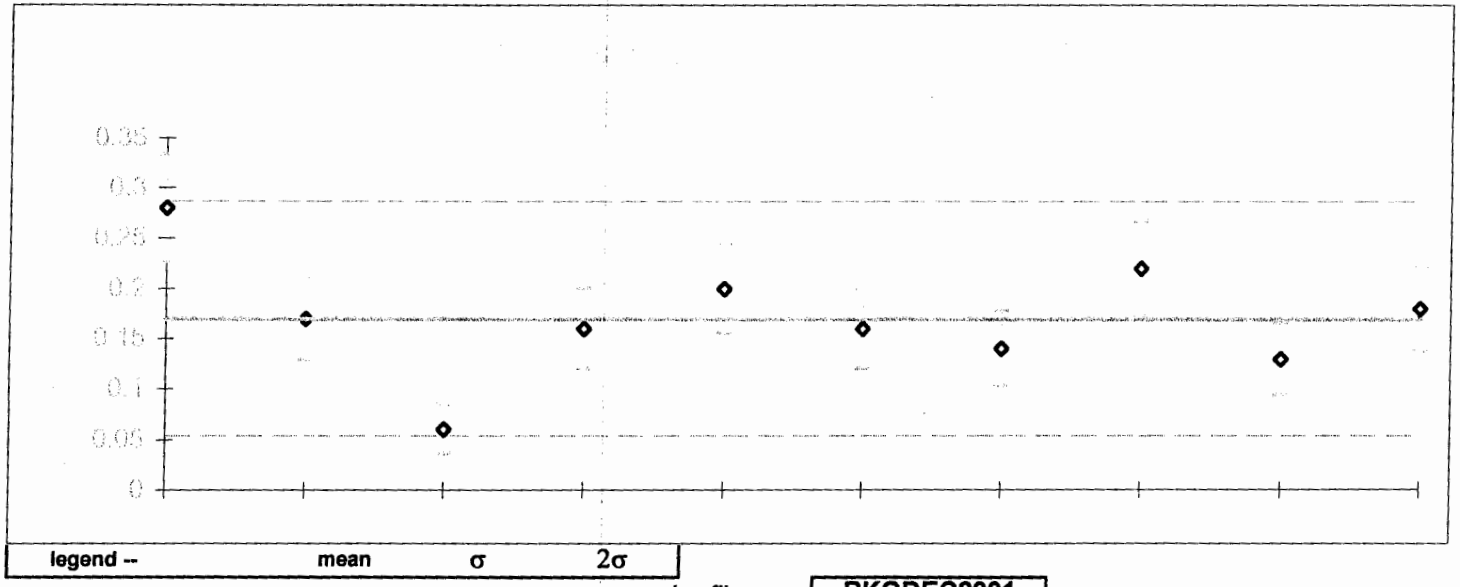
Logfile name:	BKGDEC2001
Mean beta background CPM:	1.60
Error for Mean CPM:	0.04
Actual standard deviation:	0.12
Predicted standard deviation:	0.13
Number of measurements:	10
Chi-square:	8.22
Reduced chi-square:	0.91
Chi-square Test (1% - 99%):	PASSED

1138

Printed 12/4/01 4:46 AM

Unit Type: LB4100/W
Date Performed: 12/3/01 12:47
File Name: BACK021
Batch ID: New 1000 min Backgrounds A-D 12/03/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



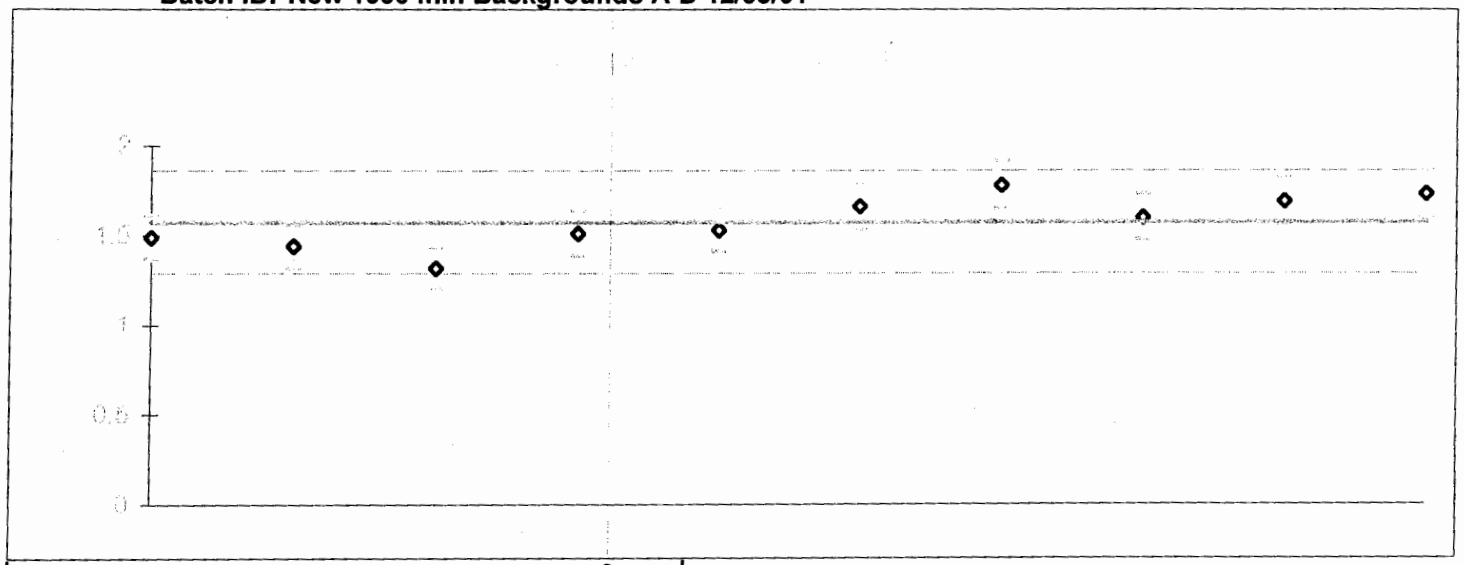
Logfile name:	BKGDEC2001
Mean alpha background CPM:	0.17
Error for Mean CPM:	0.01
Actual standard deviation:	0.06
Predicted standard deviation:	0.04
Number of measurements:	10
Chi-square:	17.88
Reduced chi-square:	1.99
Chi-square Test (1% - 99%):	PASSED

1139

Printed 12/4/01 4:45 AM

Unit Type: LB4100/W
Date Performed: 12/3/01 12:47
File Name: BACK021
Batch ID: New 1000 min Backgrounds A-D 12/03/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



legend -- mean σ 2σ

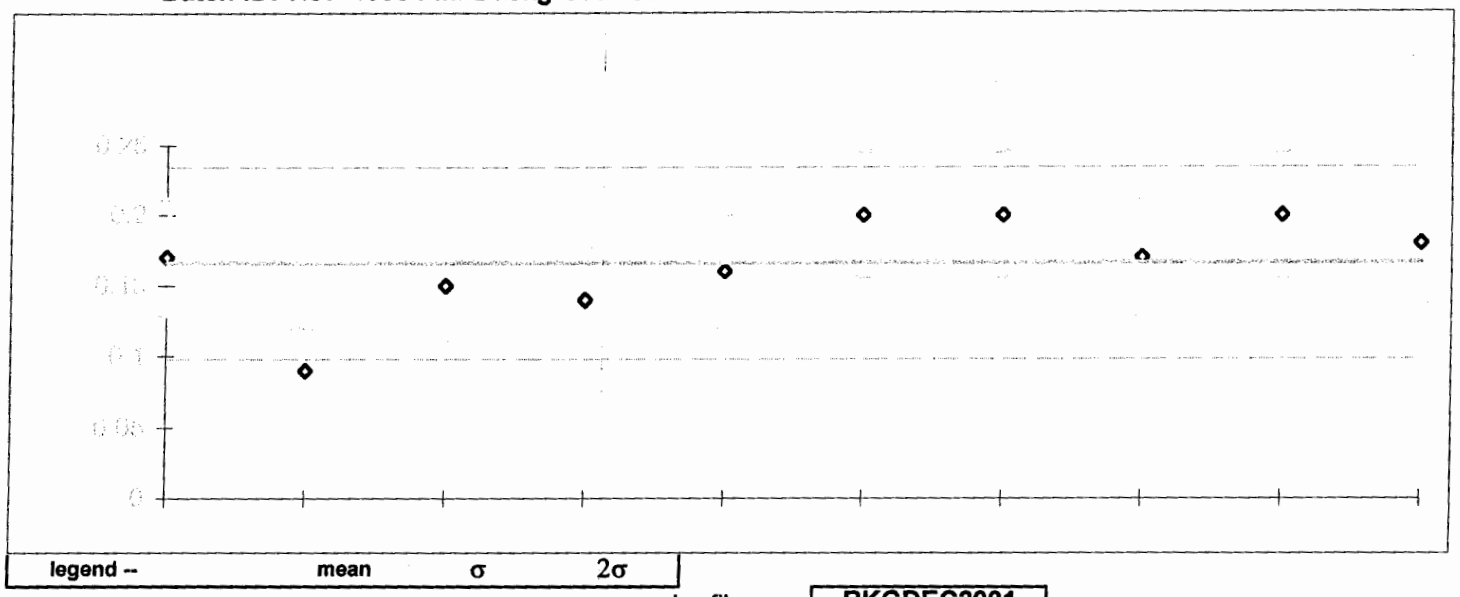
Logfile name:	BKGDEC2001
Mean beta background CPM:	1.58
Error for Mean CPM:	0.04
Actual standard deviation:	0.14
Predicted standard deviation:	0.13
Number of measurements:	10
Chi-square:	11.67
Reduced chi-square:	1.30
Chi-square Test (1% - 99%):	PASSED

1140

Printed 12/4/01 4:45 AM

Unit Type: LB4100/W
Date Performed: 12/3/01 12:47
File Name: BACK021
Batch ID: New 1000 min Backgrounds A-D 12/03/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



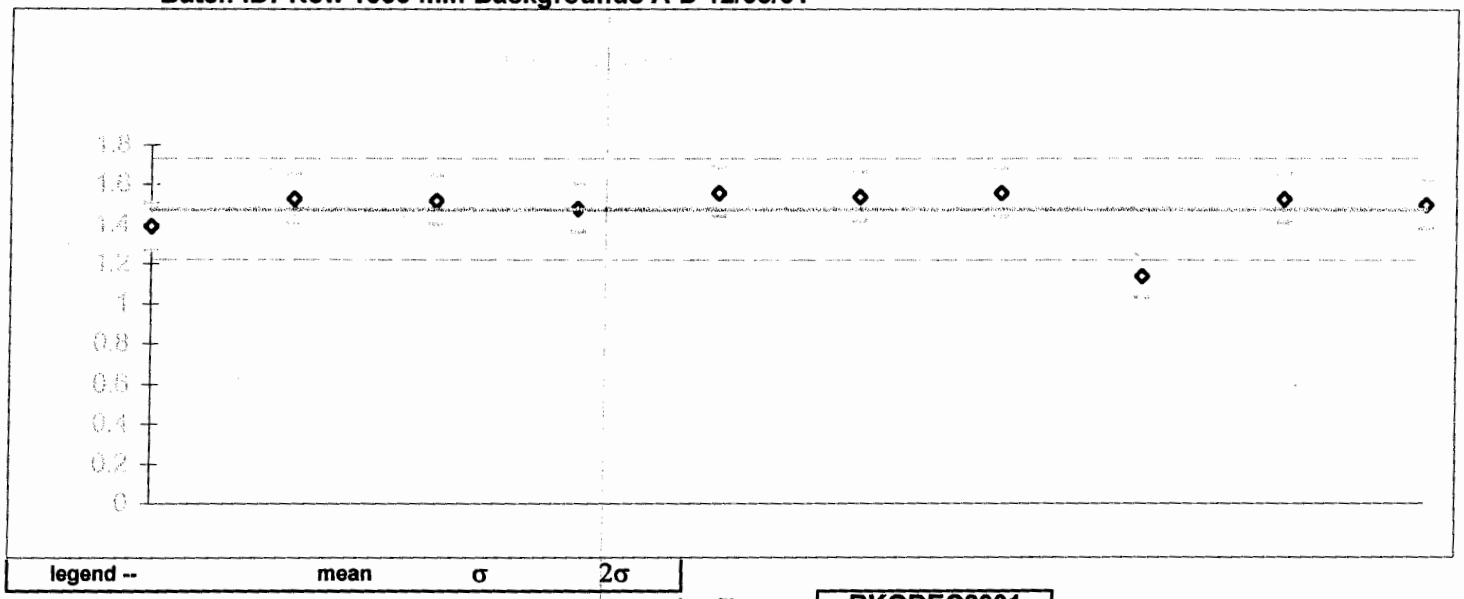
Logfile name:	BKGDEC2001
Mean alpha background CPM:	0.17
Error for Mean CPM:	0.01
Actual standard deviation:	0.03
Predicted standard deviation:	0.04
Number of measurements:	10
Chi-square:	6.29
Reduced chi-square:	0.70
Chi-square Test (1% - 99%):	PASSED

1141

Printed 12/4/01 4:45 AM

Unit Type: LB4100/W
Date Performed: 12/3/01 12:47
File Name: BACK021
Batch ID: New 1000 min Backgrounds A-D 12/03/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard

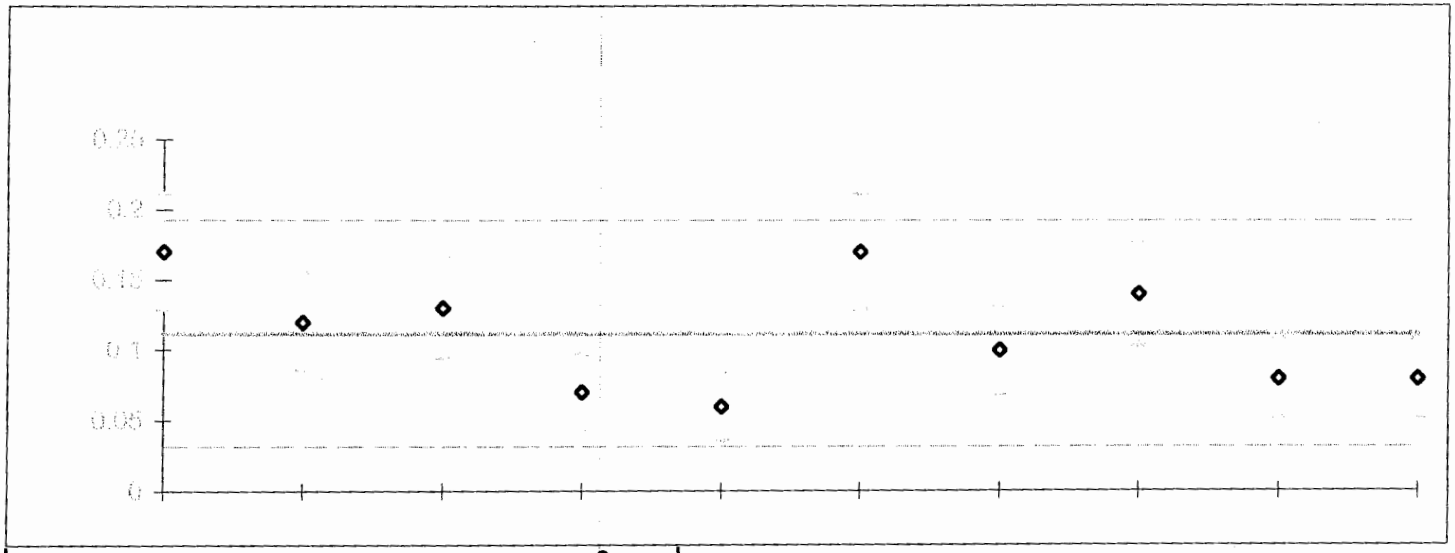


Logfile name:	BKGDEC2001
Mean beta background CPM:	1.48
Error for Mean CPM:	0.04
Actual standard deviation:	0.13
Predicted standard deviation:	0.12
Number of measurements:	10
Chi-square:	9.96
Reduced chi-square:	1.11
Chi-square Test (1% - 99%):	PASSED

Printed 12/4/01 4:45 AM

Unit Type: LB4100/W
Date Performed: 12/3/01 12:47
File Name: BACK021
Batch ID: New 1000 min Backgrounds A-D 12/03/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



legend -- mean σ 2σ

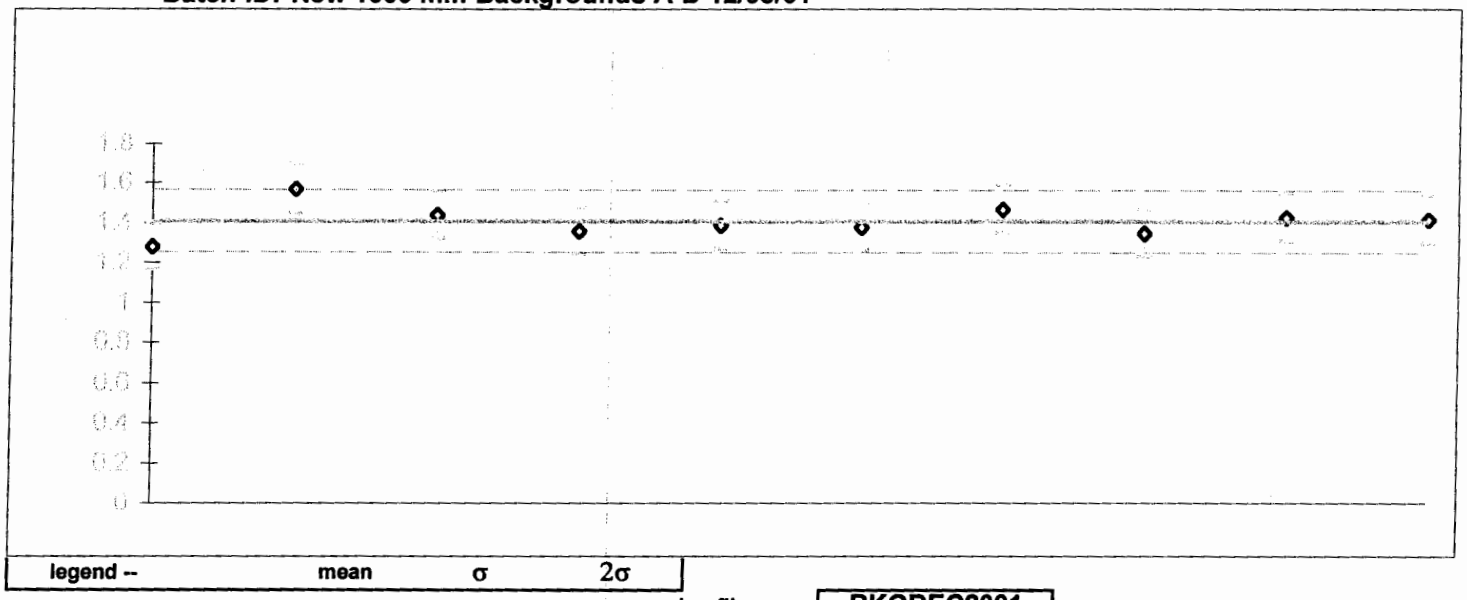
Logfile name:	BKGDEC2001
Mean alpha background CPM:	0.11
Error for Mean CPM:	0.01
Actual standard deviation:	0.04
Predicted standard deviation:	0.03
Number of measurements:	10
Chi-square:	13.00
Reduced chi-square:	1.44
Chi-square Test (1% - 99%):	PASSED

1143

Printed 12/4/01 4:45 AM

Unit Type: LB4100/W
Date Performed: 12/3/01 12:47
File Name: BACK021
Batch ID: New 1000 min Backgrounds A-D 12/03/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



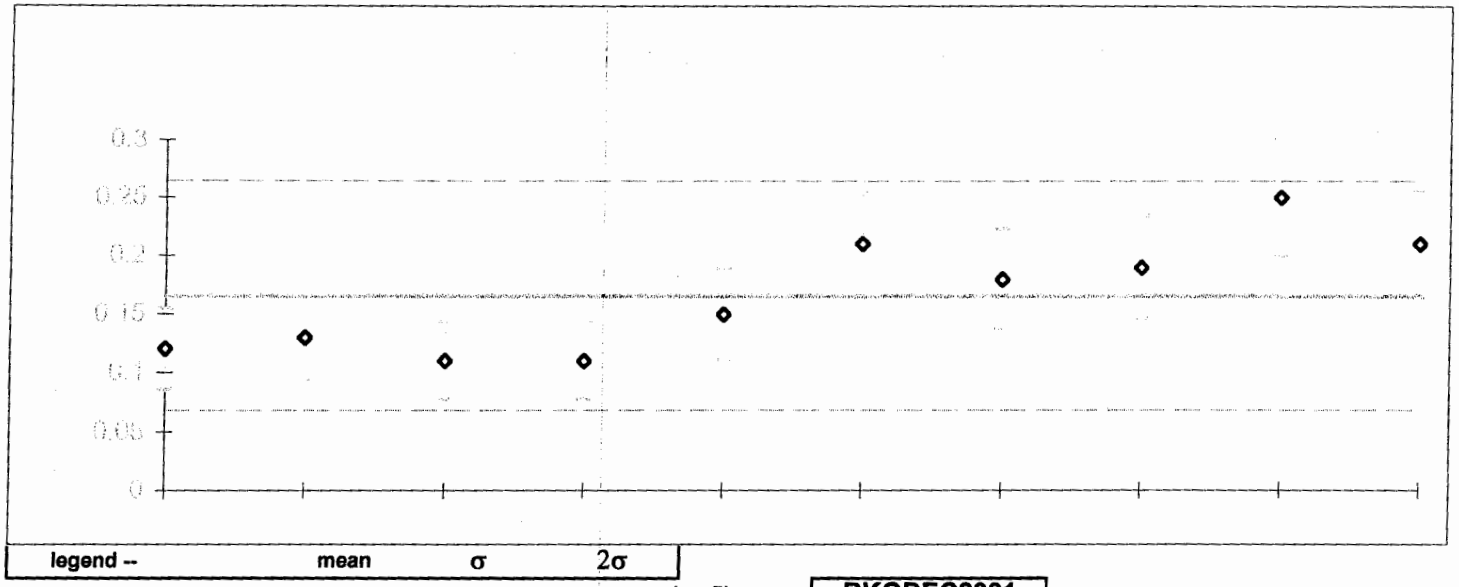
Logfile name:	BKGDEC2001
Mean beta background CPM:	1.41
Error for Mean CPM:	0.04
Actual standard deviation:	0.08
Predicted standard deviation:	0.12
Number of measurements:	10
Chi-square:	3.90
Reduced chi-square:	0.43
Chi-square Test (1% - 99%):	PASSED

1144

Printed 12/4/01 4:45 AM

Unit Type: LB4100/W
Date Performed: 12/3/01 12:47
File Name: BACK021
Batch ID: New 1000 min Backgrounds A-D 12/03/01

Unit Id: Aqua
Application Revision: 2
Application Version: Standard



Logfile name:	BKGDEC2001
Mean alpha background CPM:	0.17
Error for Mean CPM:	0.01
Actual standard deviation:	0.05
Predicted standard deviation:	0.04
Number of measurements:	10
Chi-square:	13.04
Reduced chi-square:	1.45
Chi-square Test (1% - 99%):	PASSED

1145

Printed 12/4/01 4:45 AM

Detector ID	Sample ID	Alpha	Beta	Guard	Count Count Time	Event	Voltage	TOD
D3	D3-01	25	158	72864	100	4	1320	37228.81
D3	D3-01	24	186	72039	100	5	1320	37228.88
D3	D3-01	12	185	71327	100	6	1320	37228.95
D3	D3-01	22	156	70707	100	7	1320	37229.02
D3	D3-01	18	171	70697	100	8	1320	37229.09
D3	D3-01	22	182	71491	100	9	1320	37229.16
D4	D4-01	22	148	73406	100	0	1320	37228.53
D4	D4-01	15	170	73375	100	1	1320	37228.6
D4	D4-01	17	153	73075	100	2	1320	37228.67
D4	D4-01	19	195	72537	100	3	1320	37228.74
D4	D4-01	15	155	72850	100	4	1320	37228.81
D4	D4-01	21	165	72030	100	5	1320	37228.88
D4	D4-01	13	185	71324	100	6	1320	37228.95
D4	D4-01	17	160	70682	100	7	1320	37229.02
D4	D4-01	27	166	70702	100	8	1320	37229.09
D4	D4-01	11	161	71487	100	9	1320	37229.16

Detector ID	Sample ID	Alpha	Beta	Guard	Count Count Time	Event	Voltage	TOD
C3	C3-01	30	177	69562	100	8	1320	37229.09
C3	C3-01	23	166	70503	100	9	1320	37229.16
C4	C4-01	17	183	72558	100	0	1320	37228.53
C4	C4-01	15	183	72069	100	1	1320	37228.6
C4	C4-01	16	175	71959	100	2	1320	37228.67
C4	C4-01	21	173	71396	100	3	1320	37228.74
C4	C4-01	24	173	71703	100	4	1320	37228.81
C4	C4-01	21	188	71289	100	5	1320	37228.88
C4	C4-01	15	158	70781	100	6	1320	37228.95
C4	C4-01	22	180	70349	100	7	1320	37229.02
C4	C4-01	28	184	69552	100	8	1320	37229.09
C4	C4-01	26	180	70502	100	9	1320	37229.16
D1	D1-01	10	173	73409	100	0	1320	37228.53
D1	D1-01	11	158	73365	100	1	1320	37228.6
D1	D1-01	7	156	73077	100	2	1320	37228.67
D1	D1-01	17	164	72537	100	3	1320	37228.74
D1	D1-01	7	164	72860	100	4	1320	37228.81
D1	D1-01	21	153	72044	100	5	1320	37228.88
D1	D1-01	13	169	71325	100	6	1320	37228.95
D1	D1-01	15	158	70697	100	7	1320	37229.02
D1	D1-01	12	162	70692	100	8	1320	37229.09
D1	D1-01	17	169	71498	100	9	1320	37229.16
D2	D2-01	12	145	73408	100	0	1320	37228.53
D2	D2-01	14	160	73371	100	1	1320	37228.6
D2	D2-01	9	172	73078	100	2	1320	37228.67
D2	D2-01	16	151	72534	100	3	1320	37228.74
D2	D2-01	12	165	72859	100	4	1320	37228.81
D2	D2-01	7	159	72035	100	5	1320	37228.88
D2	D2-01	14	173	71325	100	6	1320	37228.95
D2	D2-01	12	157	70702	100	7	1320	37229.02
D2	D2-01	16	166	70695	100	8	1320	37229.09
D2	D2-01	14	147	71491	100	9	1320	37229.16
D3	D3-01	21	177	73408	100	0	1320	37228.53
D3	D3-01	25	189	73376	100	1	1320	37228.6
D3	D3-01	27	197	73075	100	2	1320	37228.67
D3	D3-01	18	143	72535	100	3	1320	37228.74

Printed 12/4/01 4:45 AM

Detector ID	Sample ID	Alpha	Beta	Guard	Count Count Time	Event	Voltage	TOD
B4	B4-01	10	238	71334	100	2	1350	37228.67
B4	B4-01	2	259	70922	100	3	1350	37228.74
B4	B4-01	13	264	71069	100	4	1350	37228.81
B4	B4-01	11	226	70353	100	5	1350	37228.88
B4	B4-01	8	269	69969	100	6	1350	37228.95
B4	B4-01	7	244	69493	100	7	1350	37229.02
B4	B4-01	10	219	68934	100	8	1350	37229.09
B4	B4-01	10	233	69379	100	9	1350	37229.16
C1	C1-01	19	191	72558	100	0	1320	37228.53
C1	C1-01	25	165	72069	100	1	1320	37228.6
C1	C1-01	16	202	71965	100	2	1320	37228.67
C1	C1-01	12	167	71402	100	3	1320	37228.74
C1	C1-01	14	185	71707	100	4	1320	37228.81
C1	C1-01	13	202	71289	100	5	1320	37228.88
C1	C1-01	19	171	70774	100	6	1320	37228.95
C1	C1-01	23	181	70348	100	7	1320	37229.02
C1	C1-01	27	214	69561	100	8	1320	37229.09
C1	C1-01	21	194	70512	100	9	1320	37229.16
C2	C2-01	17	177	72559	100	0	1320	37228.53
C2	C2-01	17	180	72072	100	1	1320	37228.6
C2	C2-01	16	158	71963	100	2	1320	37228.67
C2	C2-01	15	165	71398	100	3	1320	37228.74
C2	C2-01	11	175	71709	100	4	1320	37228.81
C2	C2-01	22	175	71291	100	5	1320	37228.88
C2	C2-01	20	157	70783	100	6	1320	37228.95
C2	C2-01	15	148	70350	100	7	1320	37229.02
C2	C2-01	14	165	69565	100	8	1320	37229.09
C2	C2-01	30	179	70510	100	9	1320	37229.16
C3	C3-01	19	172	72560	100	0	1320	37228.53
C3	C3-01	15	179	72067	100	1	1320	37228.6
C3	C3-01	15	188	71965	100	2	1320	37228.67
C3	C3-01	16	168	71400	100	3	1320	37228.74
C3	C3-01	17	177	71705	100	4	1320	37228.81
C3	C3-01	28	191	71288	100	5	1320	37228.88
C3	C3-01	25	197	70783	100	6	1320	37228.95
C3	C3-01	20	184	70351	100	7	1320	37229.02

Printed 12/4/01 4:45 AM

Detector ID	Sample ID	Alpha	Beta	Guard	Count Count Time	Event	Voltage	TOD
A4	A4-01	14	158	68155	100	6	1380	37228.95
A4	A4-01	22	161	67555	100	7	1380	37229.02
A4	A4-01	13	167	67546	100	8	1380	37229.09
A4	A4-01	18	158	67551	100	9	1380	37229.16
B1	B1-01	11	184	71771	100	0	1350	37228.53
B1	B1-01	11	180	71231	100	1	1350	37228.6
B1	B1-01	11	178	71344	100	2	1350	37228.67
B1	B1-01	15	191	70924	100	3	1350	37228.74
B1	B1-01	19	198	71062	100	4	1350	37228.81
B1	B1-01	12	191	70358	100	5	1350	37228.88
B1	B1-01	20	174	69978	100	6	1350	37228.95
B1	B1-01	16	187	69485	100	7	1350	37229.02
B1	B1-01	15	172	68941	100	8	1350	37229.09
B1	B1-01	18	181	69374	100	9	1350	37229.16
B2	B2-01	16	308	71767	100	0	1350	37228.53
B2	B2-01	9	293	71230	100	1	1350	37228.6
B2	B2-01	3	262	71344	100	2	1350	37228.67
B2	B2-01	12	268	70921	100	3	1350	37228.74
B2	B2-01	14	286	71061	100	4	1350	37228.81
B2	B2-01	9	261	70363	100	5	1350	37228.88
B2	B2-01	9	251	69985	100	6	1350	37228.95
B2	B2-01	6	274	69491	100	7	1350	37229.02
B2	B2-01	11	262	68941	100	8	1350	37229.09
B2	B2-01	9	263	69376	100	9	1350	37229.16
B3	B3-01	21	200	71766	100	0	1350	37228.53
B3	B3-01	23	198	71230	100	1	1350	37228.6
B3	B3-01	15	198	71332	100	2	1350	37228.67
B3	B3-01	22	204	70920	100	3	1350	37228.74
B3	B3-01	22	193	71063	100	4	1350	37228.81
B3	B3-01	18	192	70370	100	5	1350	37228.88
B3	B3-01	13	187	69987	100	6	1350	37228.95
B3	B3-01	19	181	69492	100	7	1350	37229.02
B3	B3-01	26	188	68939	100	8	1350	37229.09
B3	B3-01	15	182	69378	100	9	1350	37229.16
B4	B4-01	9	270	71767	100	0	1350	37228.53
B4	B4-01	4	250	71231	100	1	1350	37228.6

Printed 12/4/01 4:45 AM

Detector ID	Sample ID	Alpha	Beta	Guard	Count Count Time	Event	Voltage	TOD
A1	A1-01	12	128	70233	100	0	1380	37228.53
A1	A1-01	13	157	70049	100	1	1380	37228.6
A1	A1-01	11	144	69588	100	2	1380	37228.67
A1	A1-01	11	136	69301	100	3	1380	37228.74
A1	A1-01	15	139	69305	100	4	1380	37228.81
A1	A1-01	21	138	68584	100	5	1380	37228.88
A1	A1-01	18	147	68147	100	6	1380	37228.95
A1	A1-01	19	135	67558	100	7	1380	37229.02
A1	A1-01	25	143	67546	100	8	1380	37229.09
A1	A1-01	21	142	67550	100	9	1380	37229.16
A2	A2-01	17	139	70229	100	0	1380	37228.53
A2	A2-01	12	153	70048	100	1	1380	37228.6
A2	A2-01	13	152	69587	100	2	1380	37228.67
A2	A2-01	7	148	69303	100	3	1380	37228.74
A2	A2-01	6	156	69304	100	4	1380	37228.81
A2	A2-01	17	154	68582	100	5	1380	37228.88
A2	A2-01	10	156	68155	100	6	1380	37228.95
A2	A2-01	14	114	67558	100	7	1380	37229.02
A2	A2-01	8	153	67544	100	8	1380	37229.09
A2	A2-01	8	150	67551	100	9	1380	37229.16
A3	A3-01	17	149	70230	100	0	1380	37228.53
A3	A3-01	9	144	70047	100	1	1380	37228.6
A3	A3-01	15	132	69588	100	2	1380	37228.67
A3	A3-01	14	151	69306	100	3	1380	37228.74
A3	A3-01	16	153	69305	100	4	1380	37228.81
A3	A3-01	20	166	68581	100	5	1380	37228.88
A3	A3-01	20	178	68154	100	6	1380	37228.95
A3	A3-01	17	160	67558	100	7	1380	37229.02
A3	A3-01	20	169	67551	100	8	1380	37229.09
A3	A3-01	18	173	67551	100	9	1380	37229.16
A4	A4-01	28	186	70227	100	0	1380	37228.53
A4	A4-01	17	167	70046	100	1	1380	37228.6
A4	A4-01	6	144	69587	100	2	1380	37228.67
A4	A4-01	16	145	69304	100	3	1380	37228.74
A4	A4-01	20	153	69305	100	4	1380	37228.81
A4	A4-01	16	159	68571	100	5	1380	37228.88

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TRAD # 096

ANALYTICS

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Fax (404) 352-2837

RZA 3/31/00
MDC

CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

59410-277

Sr-90 5 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared using an aliquot measured gravimetrically from a master radionuclide solution standard. The master radionuclide solution standard was calibrated by the Department Des Applications Et De La Metrologie Des Rayonnements Ionisants (DAMRI), Paris, France, as Number 25426.

Radionuclide purity and calibration were checked by germanium gamma-ray spectrometry and liquid scintillation counting. The nuclear decay rate and assay date for this source are given below.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

ISOTOPE:	Sr-90
ACTIVITY (dps):	3766
HALF-LIFE:	28.74 years
CALIBRATION DATE:	March 29, 2000 12:00 EST
TOTAL UNCERTAINTY*:	5.0%

*99% Confidence Level

Impurities: γ-impurities <0.1%

5.01035 grams 0.1M HCl solution with 30 ppm Sr carrier.

P O NUMBER 000301-01, Item 7

PREPARED BY: M. D. Currie
M. D. Currie, Radiochemist

Q A APPROVED: 3-30-00

RADIOACTIVE MATERIAL INFORMATION

Source/Stock Standard

RAD#: 096

Date Received: 03/31/00
Received by: MDG

NIST Traceable: Yes
Certificate Filed: Yes

Nuclide:	Sr-90
Manufacturer:	Analytics
Serial Number:	59410-277
Date of Calibration:	03/29/00
Matrix:	0.1M HCl
Mass/Volume:	5.01035g
Activity:	3766 dps

Half-Life: 1.05E+04 days
Activity at DOC: 1.02E+05 pCi

Today's Date: 11/29/01
Activity Today: 9.78E+04 pCi

Stock/Primary Solution

RAD#	Prep Date	Final Volume	Activity at DOP (date of prep)	Decay Correction to Date	Disposal Date
096-00	04/07/00	1000 mL	101.8 pCi/mL	97.8 pCi/mL	

Working Solutions

RAD#	Prep Date	User Soln ID	Volume of User Soln Used	Activity of User Soln (at date of prep)	Final Volume	**Activity**	**Decay Correction to Date**	Disposal Date
096-01	04/14/00	096-00	50 mL	101.8 pCi/mL	1 mL	5090.0 pCi/mL	4888.96 pCi/mL	
096-02	04/14/00	096-00	50 mL	101.8 pCi/mL	1 mL	5090.0 pCi/mL	4888.96 pCi/mL	
096-03	04/14/00	096-00	50 mL	101.8 pCi/mL	1 mL	5090.0 pCi/mL	4888.96 pCi/mL	
096-04	04/14/00	096-00	50 mL	101.8 pCi/mL	1 mL	5090.0 pCi/mL	4888.96 pCi/mL	
096-05	05/19/00	096-00	50 mL	101.8 pCi/mL	1000 mL	5.1 pCi/mL	4.88896 pCi/mL	
096-(06-09)	09/08/00	096-00	50 mL	101.8 pCi/mL	0 mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
096-10	02/14/01	096-00	50 mL	101.8 pCi/mL	1000 mL	5.1 pCi/mL	4.88896 pCi/mL	
096-11	07/24/01	096-00	50 mL	101.8 pCi/mL	1000 mL	5.1 pCi/mL	4.88896 pCi/mL	
096-12	11/29/01	096-00	50 mL	101.8 pCi/mL	1000 mL	5.1 pCi/mL	4.88896 pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	

ETL Enviro-Test LABORATORIES

RADIOACTIVE STANDARD PREPARATION FORM

Date: 7-24-01

RAD# (Standard ID): 096-11

Prepared by: DT

Analysis ID: L3463-2

Nuclide: Sr-90

Stock Solution ☐

Serial # : _____

Witness: _____

Original Activity: _____

Gross Weight of syringe: _____

Empty Weight of syringe: _____

Net weight of standard: _____

Standard activity: _____

Dilution volume: _____

Dilutent: _____

Calculated activity: _____

Final activity: _____

(Decay corrected to): _____

Expiration: _____

Secondary Stock ☐ **Tertiary Stock** ☐ **Working Solution** ☒

Stock RAD#: 096-00

Witness: SS

Stock activity: 101.8 pCi/ml

Volume of stock used: 50 mls

Dilution volume: 1000 mls

Dilutent: 1N HNO_3

Calculated activity: 5.1 pCi/ml

Final Activity: 4.9 pCi/ml

(Decay corrected to): 7-24-01

Expiration: 7-24-02

DT 7-24-01

Form RadStdPrep, Revision 0, Effective Date 7/5/01

ETL EnviroTest LABORATORIES

RADIOACTIVE STANDARD PREPARATION FORM

Date: 4/7/00
Prepared by: MAG
Analysis ID: L1274

RAD#(standard ID): 096-00
Nuclide: Sr-90

Stock Solution ☒

Witness: MAG

Serial #: 59410-277
Original Activity: 0.102 µCi (3766 DPS)

Gross weight of ampoule: 8.9486 g
Empty weight of ampoule: 3.9370 g
Net weight of standard: 5.0116 g
Standard activity: 101682 pCi

Dilution volume: 1000 ml
Dilutent: 0.1 N HCl
Calculated activity: 101.7 pCi/ml

Final activity: MAG 4/7/00 ~~101.7~~ 101.6 pCi/ml
(Decay corrected to): 4/7/00
Expiration: 4/7/05

Secondary Stock ☐
Tertiary Stock ☐
Working Solution ☐

Witness: _____

Stock RAD#: N/A
Stock activity: ↓

Volume of stock used: _____
Dilution volume: _____
Dilutent: _____
Calculated activity: ↓

Final activity: N/A
(Decay corrected to): ↓
Expiration: ↓

Form RadStdPrep, Revision 0, Effective Date 3/10/00

TRAD # 096

ANALYTICS

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RZA 3/31/00
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CERTIFICATE OF CALIBRATION

Standard Radionuclide Source

59410-277

Sr-90 5 mL Liquid in Flame Sealed Vial

This standard radionuclide source was prepared using an aliquot measured gravimetrically from a master radionuclide solution standard. The master radionuclide solution standard was calibrated by the Department Des Applications Et De La Metrologie Des Rayonnements Ionisants (DAMRI), Paris, France, as Number 25426.

Radionuclide purity and calibration were checked by germanium gamma-ray spectrometry and liquid scintillation counting. The nuclear decay rate and assay date for this source are given below.

ANALYTICS maintains traceability to the National Institute of Standards and Technology through Measurements Assurance Programs as described in USNRC Reg. Guide 4.15, Revision 1.

ISOTOPE:	Sr-90
ACTIVITY (dps):	3766
HALF-LIFE:	28.74 years
CALIBRATION DATE:	March 29, 2000 12:00 EST
TOTAL UNCERTAINTY*:	5.0%

*99% Confidence Level

Impurities: γ-impurities <0.1%

5.01035 grams 0.1M HCl solution with 30 ppm Sr carrier.

P O NUMBER 000301-01, Item 7

PREPARED BY: M. D. Currie
M. D. Currie, Radiochemist

Q A APPROVED: 3-30-00

RADIOACTIVE MATERIAL INFORMATION

Source/Stock Standard

RAD#: 096

Date Received: 03/31/00
Received by: MDG

NIST Traceable: Yes
Certificate Filed: Yes

Nuclide:	Sr-90
Manufacturer:	Analytics
Serial Number:	59410-277
Date of Calibration:	03/29/00
Matrix:	0.1M HCl
Mass/Volume:	5.01035g
Activity:	3766 dps

Half-Life: 1.05E+04 days
Activity at DOC: 1.02E+05 pCi

Today's Date: 11/29/01
Activity Today: 9.78E+04 pCi

Stock/Primary Solution

RAD#	Prep Date	Final Volume	Activity at DOP (date of prep)	Decay Correction to Date	Disposal Date
096-00	04/07/00	1000 mL	101.8 pCi/mL	97.8 pCi/mL	

Working Solutions

RAD#	Prep Date	User Soln ID	Volume of User Soln Used	Activity of User Soln (at date of prep)	Final Volume	**Activity**	**Decay Correction to Date**	Disposal Date
096-01	04/14/00	096-00	50 mL	101.8 pCi/mL	1 mL	5090.0 pCi/mL	4888.96 pCi/mL	
096-02	04/14/00	096-00	50 mL	101.8 pCi/mL	1 mL	5090.0 pCi/mL	4888.96 pCi/mL	
096-03	04/14/00	096-00	50 mL	101.8 pCi/mL	1 mL	5090.0 pCi/mL	4888.96 pCi/mL	
096-04	04/14/00	096-00	50 mL	101.8 pCi/mL	1 mL	5090.0 pCi/mL	4888.96 pCi/mL	
096-05	05/19/00	096-00	50 mL	101.8 pCi/mL	1000 mL	5.1 pCi/mL	4.88896 pCi/mL	
096-(06-09)	09/08/00	096-00	50 mL	101.8 pCi/mL	0 mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
096-10	02/14/01	096-00	50 mL	101.8 pCi/mL	1000 mL	5.1 pCi/mL	4.88896 pCi/mL	
096-11	07/24/01	096-00	50 mL	101.8 pCi/mL	1000 mL	5.1 pCi/mL	4.88896 pCi/mL	
096-12	11/29/01	096-00	50 mL	101.8 pCi/mL	1000 mL	5.1 pCi/mL	4.88896 pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	
			mL	pCi/mL	mL	#DIV/0! pCi/mL	#DIV/0! pCi/mL	

ETL Enviro-Test LABORATORIES

RADIOACTIVE STANDARD PREPARATION FORM

Date: 11-29-01 , RAD# (Standard ID): 096-12

Prepared by: DT

Analysis ID: NA Nuclide: Sr-90

Stock Solution ☐

Serial # : _____ Witness: _____

Original Activity: _____

Gross Weight of syringe: _____

Empty Weight of syringe: _____

Net weight of standard: _____

Standard activity: _____

Dilution volume: _____

Dilutent: _____

Calculated activity: _____

Final activity: _____

(Decay corrected to): _____

Expiration: _____

DT 11-29-01

Secondary Stock ☐ **Tertiary Stock** ☐ **Working Solution** ☒

Stock RAD#: 096-00 Witness: CLP

Stock activity: 101.8

Volume of stock used: 50.0ml

Dilution volume: 1000ml

Dilutent: 1N HNO_3

Calculated activity: ~~4.~~ 5.1 pCi/ml

DT 11-29-01

Final Activity: 4.9 pCi/ml

(Decay corrected to): 11-29-01

Expiration: 11-29-02

ETL EnviroTest LABORATORIES

RADIOACTIVE STANDARD PREPARATION FORM

Date: 4/7/00
Prepared by: MAG
Analysis ID: L1274

RAD#(standard ID): 096-00
Nuclide: Sr-90

Stock Solution ☒

Witness: MAG

Serial #: 59410-277
Original Activity: 0.102 µCi (3766 DPS)

Gross weight of ampoule: 8.9486 g
Empty weight of ampoule: 3.9370 g
Net weight of standard: 5.0116 g
Standard activity: 101682 pCi

Dilution volume: 1000 ml
Dilutent: 0.1 N HCl
Calculated activity: 101.7 pCi/ml

Final activity: MAG 4/7/00 ~~101.7~~ 101.6 pCi/ml
(Decay corrected to): 4/7/00
Expiration: 4/7/05

Secondary Stock ☐
Tertiary Stock ☐
Working Solution ☐

Witness: _____

Stock RAD#: N/A
Stock activity: ↓

Volume of stock used: ↓
Dilution volume: ↓
Dilutent: ↓
Calculated activity: ↓

Final activity: N/A
(Decay corrected to): ↓
Expiration: ↓

Form RadStdPrep, Revision 0, Effective Date 3/10/00