H0432-1 MA/RECRA

RECRA ENVIRONMENTAL INC.

0051765

Chemical and Environmental Measurement Information

JUL 1999 RECEIVED Data Log In

Recra LabNet Philadelphia
Analytical Report

Client : TNU-HANFORD B99-069
RFW# : 9906L178
SDG/SAF# : H0432/B99-069

W.O.# : 10985-001-001-9999-00
Date Received: 06-08-99

SEP 1999 RECEIVED EDMC

METALS CASE NARRATIVE

1. This narrative covers the analyses of 1 solid sample and 1 TCLP leachate sample.

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

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

4. The cooler temperature has been recorded on the Chain of Custody.

5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury).

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

7. All preparation/method blanks (MB) were within method criteria {less than the Practical Quantitation Limit (3X the IDL), samples greater than 20X MB value, or MB value less than 5% of the RCRA limit for leachate blanks}. Refer to the Inorganics Method Blank Data Summary.

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

9. All laboratory control samples (LCS) were within the laboratory control limits. Refer to the Inorganics Laboratory Control Standards Report.

10. The matrix spike (MS) recovery for 1 analyte was outside the 75-125% control limits. Refer to the Inorganics Accuracy Report. When the Mercury matrix spike is outside the control limits, a serial dilution is performed.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 13 pages.

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

11. All duplicate analyses for the total and the TCLP leachate samples were within the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

12. The TCLP extract from sample B0VLW9 was selected for the matrix spike (MS) for this analytical batch. All MS recoveries were greater than 50% as per method criteria.

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

Maureen L. Doughty
for J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

6/24/99
Date

mld/m06-178

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this Recra Lot#: 9906L178

Leaching Procedure: __1310 ✓1311 __1312 __Other:_____

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

Metals Digestion Methods: __3005A ✓3010A __3015 __3020A ✓3050A __3051 __200.7 __SS17
__Other: _____

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
Aluminum	__6010B		__200.7				__99
Antimony	__6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	__6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	__6010B		__200.7				__99
Beryllium	__6010B		__200.7				__99
Bismuth	__6010B [1]		__200.7 [1]			__1620	__99
Boron	__6010B		__200.7				__99
Cadmium	__6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	__6010B		__200.7				__99
Chromium	✓6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	__6010B		__200.7				__99
Copper	__6010B	__7211 [5]	__200.7	__220.2			__99
Iron	__6010B		__200.7				__99
Lead	✓6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	__6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	__6010B		__200.7				__99
Manganese	__6010B		__200.7				__99
Mercury	✓7470A [3]	✓7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	__6010B		__200.7				__99
Nickel	__6010B		__200.7				__99
Potassium	__6010B	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010B [1]		__200.7 [1]			__1620	__99
Selenium	__6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	__6010B [1]		__200.7			__1620	__99
Silica	__6010B		__200.7			__1620	__99
Silver	__6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	__6010B	__7770 [4]	__200.7	__273.1 [4]			__99
Strontium	__6010B		__200.7				__99
Thallium	__6010B	__7841 [5]	__200.7	__279.2	__200.9		__99
Tin	__6010B		__200.7				__99
Titanium	__6010B		__200.7				__99
Uranium	__6010B [1]		__200.7 [1]			__1620	__99
Vanadium	__6010B		__200.7				__99
Zinc	__6010B		__200.7				__99
Zirconium	__6010B [1]		__200.7 [1]			__1620	__99

Other:_____ Method:_____

L-WI-033/M-03/98

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

ANALYTICAL METAL METHODS

1. Not included in the method element list.

2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, 0.1 grams of sample is taken to a final volume of 50 mL (including all reagents).

3. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, three 0.1 gram of sample is taken to a final volume of 50 mL (including all reagents).

4. Flame AA.

5. Graphite Furnace AA.

RFW 21-21L-033/N-10/96

Recra LabNet - Lionville

INORGANICS DATA SUMMARY REPORT 06/23/99

CLIENT: TNU-HANFORD B99-069

RECRA LOT #: 9906L178

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	B0VLW9	Chromium, Total	5.1	MG/KG	0.35	1.0
		Mercury, Total	14.3	MG/KG	0.34	20.0
		Lead, Total	36.2	MG/KG	4.0	1.0
-002	B0VLW9	Chromium, TCLP Leachate	18.1	UG/L	3.5	1.0
		Mercury, TCLP Leachate	0.67	UG/L	0.10	1.0
		Lead, TCLP Leachate	40.7 u	UG/L	40.7	1.0

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INORGANICS METHOD BLANK DATA SUMMARY PAGE 06/23/99

CLIENT: TNU-HANFORD B99-069 RECRA LOT #: 9906L178

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	99L0402-MB1	Chromium, Total	0.35 u	MG/KG	0.35	1.0
		Lead, Total	4.1 u	MG/KG	4.1	1.0
BLANK1	99C0172-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0
BLANK1	99L0404-MB1	Chromium, TCLP Leachate	3.5 u	UG/L	3.5	1.0
		Lead, TCLP Leachate	40.7 u	UG/L	40.7	1.0
BLANK2	99L0404-MB2	Chromium, TCLP Leachate	6.7	UG/L	3.5	1.0
		Lead, TCLP Leachate	40.7 u	UG/L	40.7	1.0
BLANK3	99L0404-MB3	Chromium, TCLP Leachate	4.9	UG/L	3.5	1.0
		Lead, TCLP Leachate	40.7 u	UG/L	40.7	1.0
BLANK1	99C0175-MB1	Mercury, Total	0.10 u	UG/L	0.10	1.0
BLANK2	99C0175-MB2	Mercury, TCLP Leachate	0.10 u	UG/L	0.10	1.0
BLANK3	99C0175-MB3	Mercury, TCLP Leachate	0.10 u	UG/L	0.10	1.0
BLANK4	99C0175-MB4	Mercury, TCLP Leachate	0.10 u	UG/L	0.10	1.0

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INORGANICS ACCURACY REPORT 06/23/99

CLIENT: TNU-HANFORD B99-069 RECRA LOT #: 9906L178

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	B0VLW9	Chromium, Total	18.8	5.1	16.7	82.0	1.0
		Mercury, Total	15.0	14.3	0.17	391.7*	20.0
		Lead, Total	71.1	36.2	41.8	83.5	1.0
-002	B0VLW9	Chromium, TCLP Leachat	4760	18.1	5000	94.8	1.0
		Mercury, TCLP Leachate	194	0.67	200	96.4	50.0
		Lead, TCLP Leachate	4970	40.7 u	5000	99.5	1.0

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INORGANICS PRECISION REPORT 06/23/99

CLIENT: TNU-HANFORD B99-069 RECRA LOT #: 9906L178

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	B0VLW9	Chromium, Total	5.1	4.3	17.0	1.0
		Mercury, Total	14.3	14.5	1.4	20.0
		Lead, Total	36.2	34.0	6.3	1.0
-002REP	B0VLW9	Chromium, TCLP Leachate	18.1	15.4	16.1	1.0
		Mercury, TCLP Leachate	0.67	0.65	2.4	1.0
		Lead, TCLP Leachate	40.7 u	40.7 u	NC	1.0

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INORGANICS LABORATORY CONTROL STANDARDS REPORT 06/23/99

CLIENT: TNU-HANFORD B99-069 RECRA LOT #: 9906L178

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	99L0402-LC1	Chromium, LCS	47.3	50.0	MG/KG	94.6
		Lead, LCS	232	250	MG/KG	93.0
LCS1	99C0172-LC1	Mercury, LCS	1.1	1.0	MG/KG	111.4
LCS1	99L0404-LC1	Chromium, LCS	508	500	UG/L	101.6
		Lead, LCS	2510	2500	UG/L	100.5
LCS1	99C0175-LC1	Mercury, LCS	5.2	5.0	UG/L	103.4

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B99-069

DATE RECEIVED: 06/08/99 RFW LOT # :9906L178

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B0VLW9						
TCLP	001	SO	99LTO077	06/04/99	06/11/99	06/12/99
CHROMIUM, TOTAL	001	SO	99L0402	06/04/99	06/11/99	06/14/99
CHROMIUM, TOTAL	001 REP	SO	99L0402	06/04/99	06/11/99	06/14/99
CHROMIUM, TOTAL	001 MS	SO	99L0402	06/04/99	06/11/99	06/14/99
MERCURY, TOTAL	001	SO	99C0172	06/04/99	06/11/99	06/14/99
MERCURY, TOTAL	001 REP	SO	99C0172	06/04/99	06/11/99	06/14/99
MERCURY, TOTAL	001 MS	SO	99C0172	06/04/99	06/11/99	06/14/99
LEAD, TOTAL	001	SO	99L0402	06/04/99	06/11/99	06/14/99
LEAD, TOTAL	001 REP	SO	99L0402	06/04/99	06/11/99	06/14/99
LEAD, TOTAL	001 MS	SO	99L0402	06/04/99	06/11/99	06/14/99
CHROMIUM, TCLP LEACH	002	W	99L0404	06/12/99	06/13/99	06/16/99
CHROMIUM, TCLP LEACH	002 REP	W	99L0404	06/12/99	06/13/99	06/16/99
CHROMIUM, TCLP LEACH	002 MS	W	99L0404	06/12/99	06/13/99	06/16/99
MERCURY, TCLP LEACHA	002	W	99C0175	06/12/99	06/15/99	06/15/99
MERCURY, TCLP LEACHA	002 REP	W	99C0175	06/12/99	06/15/99	06/15/99
MERCURY, TCLP LEACHA	002 MS	W	99C0175	06/12/99	06/15/99	06/15/99
LEAD, TCLP LEACHATE	002	W	99L0404	06/12/99	06/13/99	06/16/99
LEAD, TCLP LEACHATE	002 REP	W	99L0404	06/12/99	06/13/99	06/16/99
LEAD, TCLP LEACHATE	002 MS	W	99L0404	06/12/99	06/13/99	06/16/99

LAB QC:

CHROMIUM LABORATORY	LC1 BS	S	99L0402	N/A	06/11/99	06/14/99
CHROMIUM, TOTAL	MB1	S	99L0402	N/A	06/11/99	06/14/99
MERCURY LABORATORY	LC1 BS	S	99C0172	N/A	06/11/99	06/14/99
MERCURY, TOTAL	MB1	S	99C0172	N/A	06/11/99	06/14/99
LEAD LABORATORY	LC1 BS	S	99L0402	N/A	06/11/99	06/14/99
LEAD, TOTAL	MB1	S	99L0402	N/A	06/11/99	06/14/99
CHROMIUM LABORATORY	LC1 BS	W	99L0404	N/A	06/13/99	06/16/99
CHROMIUM, TCLP LEACH	MB1	W	99L0404	N/A	06/13/99	06/16/99
CHROMIUM, TCLP LEACH	MB2	W	99L0404	N/A	06/13/99	06/16/99
CHROMIUM, TCLP LEACH	MB3	W	99L0404	N/A	06/13/99	06/16/99
MERCURY LABORATORY	LC1 BS	W	99C0175	N/A	06/15/99	06/15/99
MERCURY, TOTAL	MB1	W	99C0175	N/A	06/15/99	06/15/99
MERCURY, TCLP LEACHA	MB2	W	99C0175	N/A	06/15/99	06/15/99

Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B99-069

DATE RECEIVED: 06/08/99 RFW LOT # :9906L178

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MERCURY, TCLP LEACHA	MB3	W	99C0175	N/A	06/15/99	06/15/99
MERCURY, TCLP LEACHA	MB4	W	99C0175	N/A	06/15/99	06/15/99
LEAD LABORATORY	LC1 BS	W	99L0404	N/A	06/13/99	06/16/99
LEAD, TCLP LEACHATE	MB1	W	99L0404	N/A	06/13/99	06/16/99
LEAD, TCLP LEACHATE	MB2	W	99L0404	N/A	06/13/99	06/16/99
LEAD, TCLP LEACHATE	MB3	W	99L0404	N/A	06/13/99	06/16/99

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-069-02	Page 1 of 1

Collector Renee Nielson	Company Contact Tom Brown	Telephone No. 376-1547	Project Coordinator TRENT, SJ
Project Designation 105-N Entry Doorway Peeling Paint	Sampling Location 105N		SAF No. B99-069
Ice Chest No. 1A2	Field Logbook No. EL-1381-2		Method of Shipment Federal Express
Shipped To ~~TMA~~ RECRA Lab 6799	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A 18.5°C
			COA B10NS12W28

Price Code 9K

Data Turnaround 15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS
~~Lead~~ PCB's

Special Handling and/or Storage
Cool 4C

Preservation	None	None	None	None	Cool 4C						
Type of Container	P	aG	aG	aG	aG						
No. of Container(s)	1	1	1	1	1						
Volume	20mL	60mL	60mL	60mL	120mL						
SAMPLE ANALYSIS (178)	Activity Scan	See item (1) in Special Instructions. 15 gm	Mercury - 7471 - (CV) (Mercury) 15 gm	See item (2) in Special Instructions. 15 gm	Pest/PCBs - 8081 50 gm						

Sample No.	Matrix *	Sample Date	Sample Time										
B0VLW9	Other Solid	6-4-99	1057	X	X	X	X	X					

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
Renee Nielson / R. Nielson	6/4/99 1240	REF #1-A	6-4-99 1240
REF 1 A	6799 1300	SJGALE	6799 1300
SJGALE	6799 1300	FED EX	

SPECIAL INSTRUCTIONS
COA - B10NS12W28

(1) ICP Metals - 6010A (TAL) {Chromium}; ICP Metals - 6010A (Add-on) {Lead} Cr, Pb, Hg
(2) Metals by ICP (TCLP) - 1311/6010 {Chromium, Lead}; Mercury (TCLP) - 1311/7470 {Mercury}

Cr, Pb, Hg

COLLECTOR UNAVAILABLE TO SIGN COC

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

RECRA LabNet
a division of Recra Environmental, Inc.
Virtual Laboratories Everywhere

JUL 1999
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Data
Log In

Recra LabNet Philadelphia
Analytical Report

Client: TNU-HANFORD B99-069
RFW#: 9906L178
SDG/SAF#: H0432/B99-069

W.O.#: 10985-001-001-9999-00
Date Received: 06-08-99

PESTICIDE/PCB

The set of samples consisted of one (1) solid sample collected on 06-04-99.

The sample and its associated QC samples were extracted on 06-15-99 and analyzed based on SW846, 3rd Edition, procedures on 06-18,19-99. The extraction procedure was based on Method 3540 and the extracts were analyzed based on Method 8081.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. The cooler temperature has been recorded on the chain-of-custody.
2. All required holding times for extraction and analysis have been met.
3. The method blank was below the reporting limits for all target compounds.
4. All obtainable surrogate recoveries were within acceptance criteria.
5. All blank spike recoveries were within acceptance criteria.
6. Matrix spike recoveries were unobtainable due to the dilution required for analysis.
7. The sample and the MS/MSD required 100 & 500 fold instrument dilutions due to high concentration of target analytes. Reporting limits have been adjusted to reflect the necessary dilutions.
8. All initial calibrations associated with this data set were within acceptance criteria.
9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

for J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory

06-27-99
Date

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 13 pages.

GLOSSARY OF PESTICIDE/PCB DATA

DATA QUALIFIERS

U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).

J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.

B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.

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

I = Interference.

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.

NA = Not Applicable.

DF = Dilution Factor.

NR = Not Required.

SP = Indicates Spiked Compound.

GLOSSARY OF PESTICIDE/PCB DATA

P = This flag is used for a pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".

D = This flag identifies all compounds identified in an analysis at a secondary dilution factor.

C = This flag applies to a compound that has been confirmed by GC/MS.

Recra LabNet - Lionville Laboratory
PEST/PCB ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD B99-069

DATE RECEIVED: 06/08/99 RFW LOT # :9906L178

CLIENT ID	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B0VLW9	001	SO	99LE0721	06/04/99	06/15/99	06/19/99
B0VLW9	001 01	SO		06/04/99	06/15/99	06/18/99
B0VLW9	001 MS	SO	99LE0721	06/04/99	06/15/99	06/19/99
B0VLW9	001 MSD	SO	99LE0721	06/04/99	06/15/99	06/19/99

LAB QC:

PBLKMG	MB1	S	99LE0721	N/A	06/15/99	06/19/99
PBLKMG	MB1 BS	S	99LE0721	N/A	06/15/99	06/19/99

NW 06-21-99

Recra LabNet - Lionville Laboratory

Pesticide/PCBs by GC, CLP List

Report Date: 06/21/99 15:23

RFW Batch Number: **9906L178** Client: **TNU-HANFORD B99-069** Work Order: 10985001001 Page: 1

005

	Cust ID:	B0VLW9		B0VLW9		B0VLW9		B0VLW9		PBLKMG		PBLKMG BS	
Sample Information	RFW#:	001		001 DL		001 MS		001 MSD		99LE0721-MB1		99LE0721-MB1	
	Matrix:	SOLID		SOLID		SOLID		SOLID		SOIL		SOIL	
	D.F.:	100		500		500		500		1.00		1.00	
	Units:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
Surrogate:	Decachlorobiphenyl	D	%	D	%	D	%	D	%	86	%	79	%
	Tetrachloro-m-xylene	D	%	D	%	D	%	D	%	72	%	80	%
			fl		fl		fl		fl		fl		fl
Alpha-BHC		1000	U	NA		6300	U	6300	U	1.7	U	1.7	U
Beta-BHC		1000	U	NA		6300	U	6300	U	1.7	U	1.7	U
Delta-BHC		1000	U	NA		6300	U	6300	U	1.7	U	1.7	U
gamma-BHC (Lindane)		1000	U	NA		D	%	D	%	1.7	U	90	%
Heptachlor		1000	U	NA		D	%	D	%	1.7	U	100	%
Aldrin		1000	U	NA		D	%	D	%	1.7	U	80	%
Heptachlor epoxide		1000	U	NA		6300	U	6300	U	1.7	U	1.7	U
Endosulfan I		1000	U	NA		6300	U	6300	U	1.7	U	1.7	U
Dieldrin			E	48000		D	%	D	%	3.3	U	88	%
4,4'-DDE		9100		NA		13000	U	13000	U	3.3	U	3.3	U
Endrin		2800		NA		D	%	D	%	3.3	U	114	%
Endosulfan II		2000	U	NA		13000	U	13000	U	3.3	U	3.3	U
4,4'-DDD		2000	U	NA		13000	U	13000	U	3.3	U	3.3	U
Endosulfan sulfate		2000	U	NA		13000	U	13000	U	3.3	U	3.3	U
4,4'-DDT			E	55000		D	%	D	%	3.3	U	88	%
Methoxychlor		10000	U	NA		63000	U	63000	U	17	U	17	U
Endrin ketone		2000	U	NA		13000	U	13000	U	3.3	U	3.3	U
Endrin aldehyde		2000	U	NA		13000	U	13000	U	3.3	U	3.3	U
alpha-Chlordane		1000	U	NA		6300	U	6300	U	1.7	U	1.7	U
gamma-Chlordane		1000	U	NA		6300	U	6300	U	1.7	U	1.7	U
Toxaphene		100000	U	NA		630000	U	630000	U	170	U	170	U
Aroclor-1016		20000	U	NA		130000	U	130000	U	33	U	33	U
Aroclor-1221		40000	U	NA		250000	U	250000	U	67	U	67	U
Aroclor-1232		20000	U	NA		130000	U	130000	U	33	U	33	U
Aroclor-1242		20000	U	NA		130000	U	130000	U	33	U	33	U
Aroclor-1248		20000	U	NA		130000	U	130000	U	33	U	33	U
Aroclor-1254		20000	U	NA		130000	U	130000	U	33	U	33	U
Aroclor-1260		20000	U	NA		130000	U	130000	U	33	U	33	U

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked.
%= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

JW 06-22-99

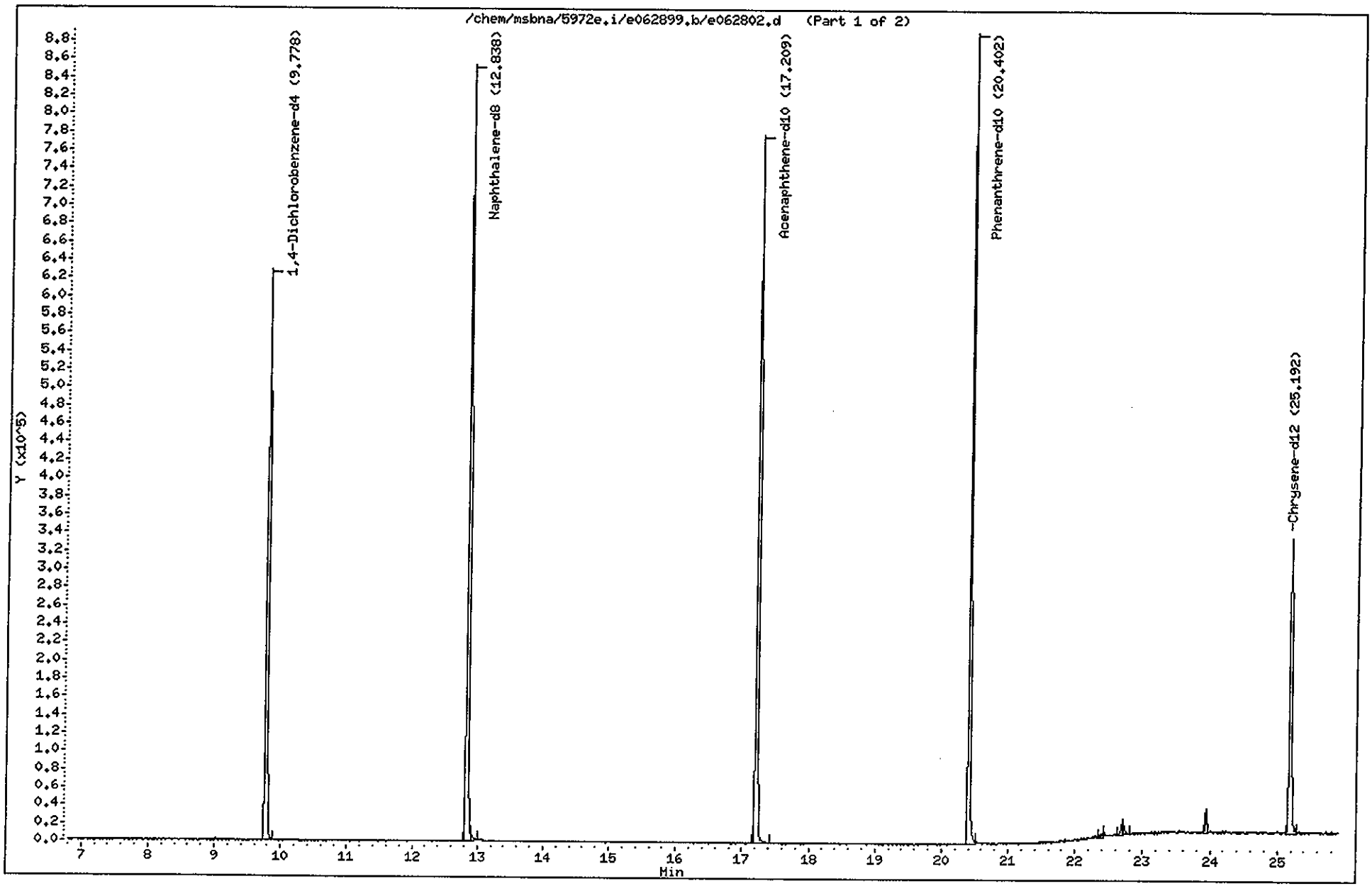
005A

Data File: /chem/msbna/5972e.i/e062899.b/e062802.d
Date : 28-JUN-99 10:48:00
Client ID:
Sample Info: DDT E062801 10NG STD

Instrument: 5972e.i

Operator: DR
Column diameter: 0.25

Column phase: DB-5



005B

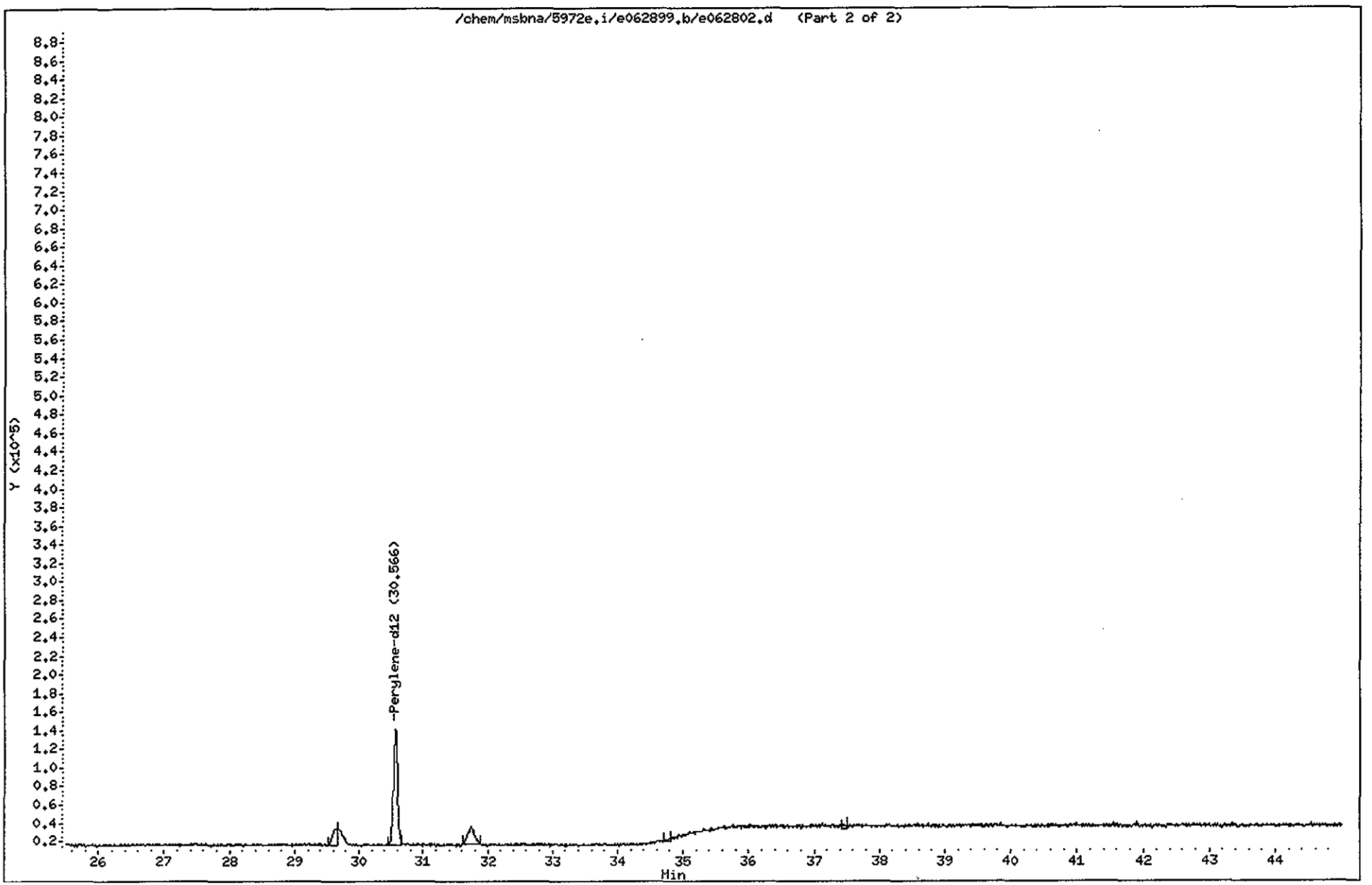
Data File: /chem/msbna/5972e.i/e062899.b/e062802.d
Date : 28-JUN-99 10:48:00
Client ID:
Sample Info: DDT E062801 10NG STD

Instrument: 5972e.i

Operator: DR

Column phase: DB-5

Column diameter: 0.25



Data File: /chem/msbna/5972e.i/e062899.b/e062802.d

Date : 28-JUN-99 10:48:00

Client ID:

Instrument: 5972e.i

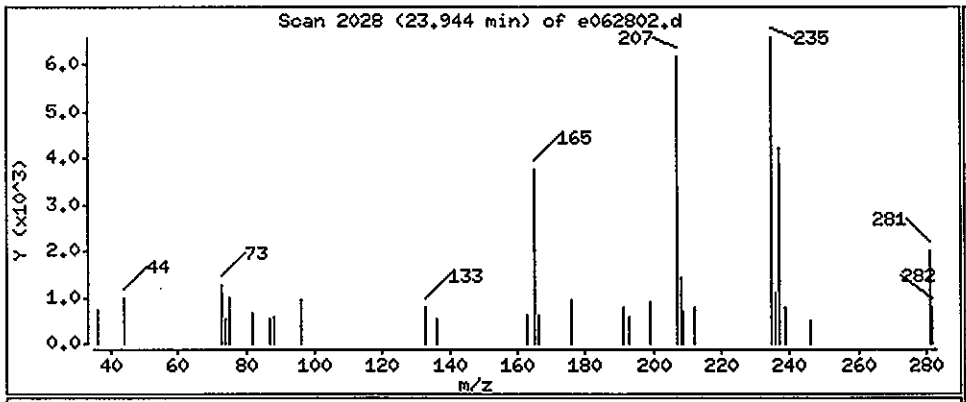
Sample Info: DDT E062801 10NG STD

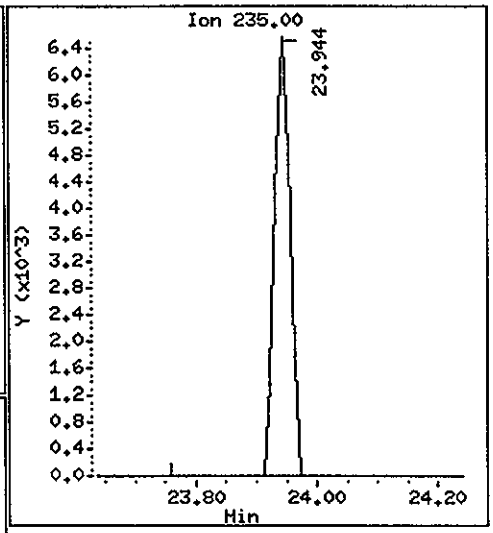
Operator: DR

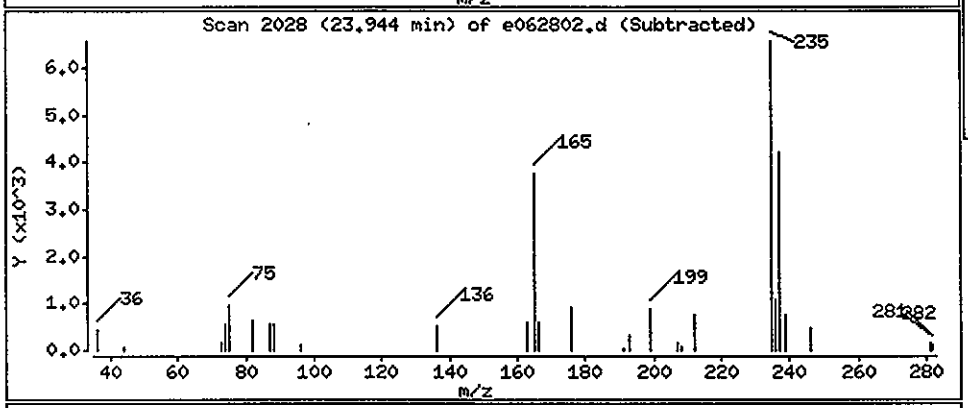
Column phase: DB-5

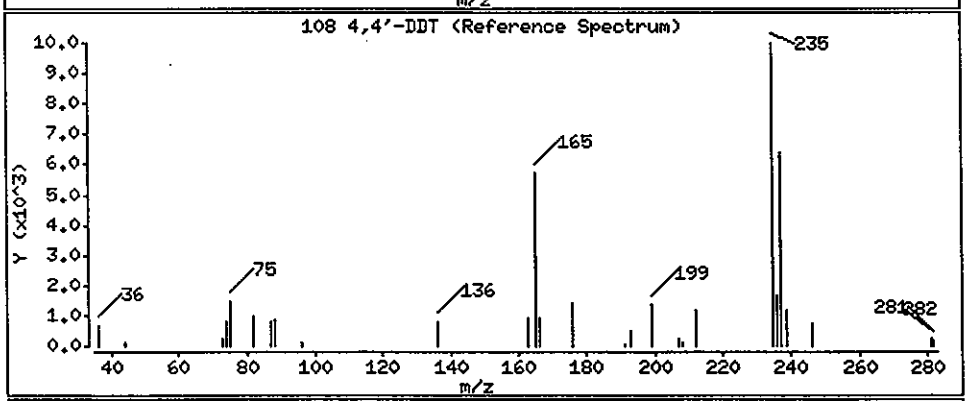
Column diameter: 0.25

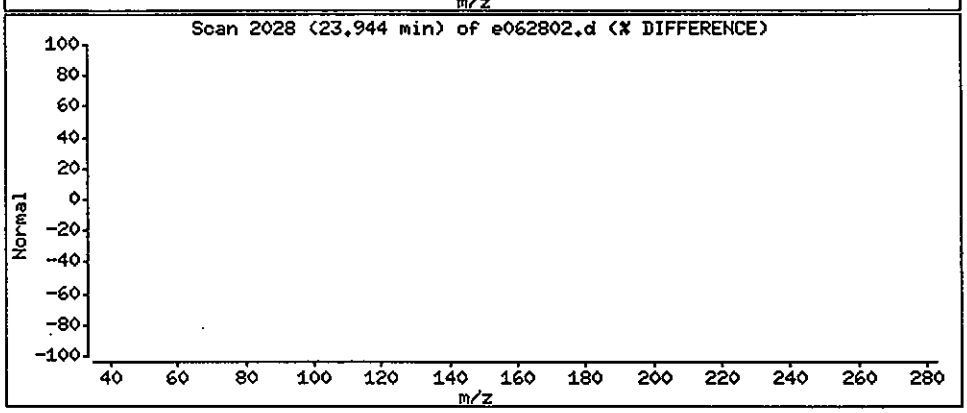
108 4,4'-DDT











005C

0054

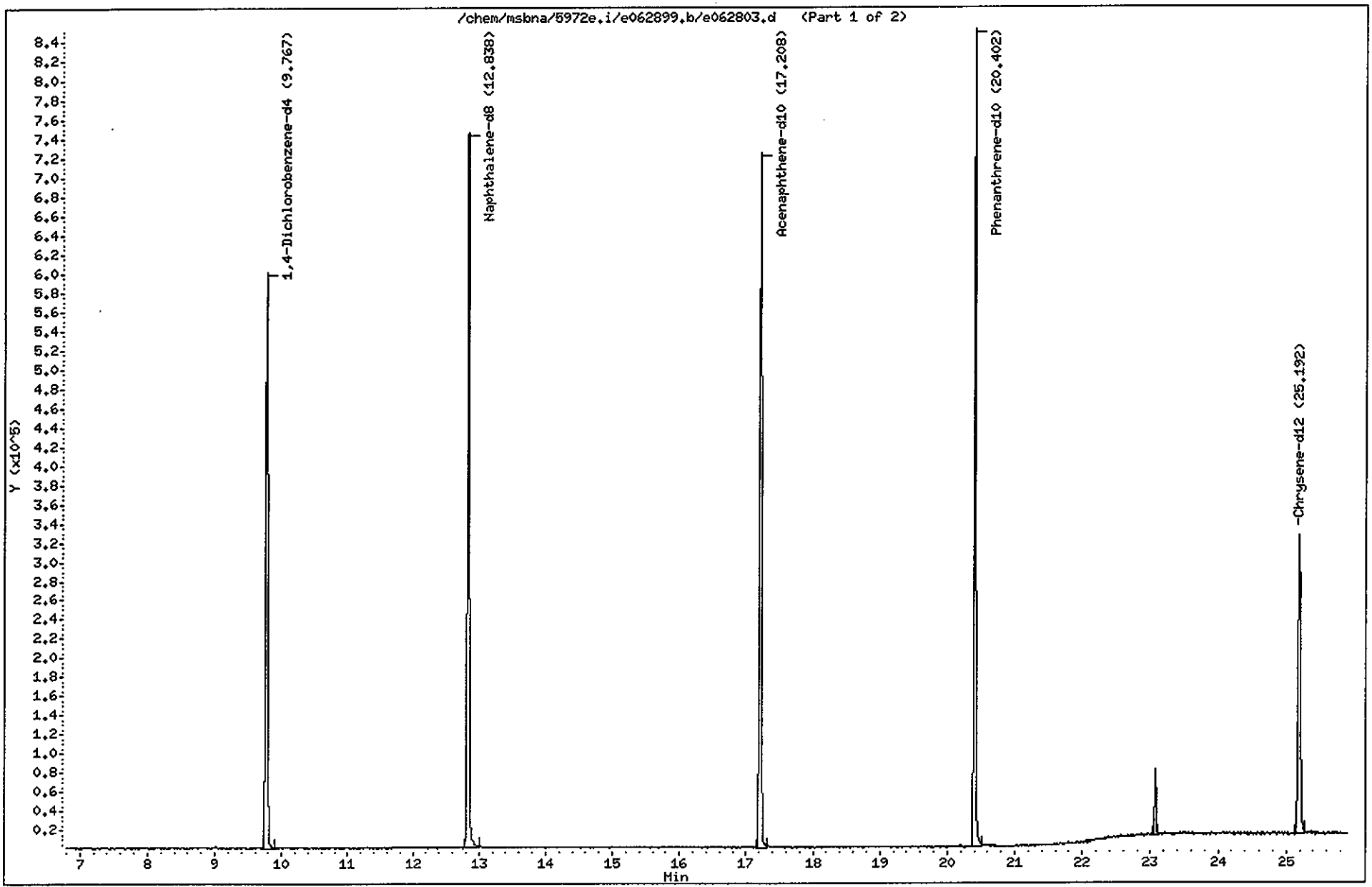
Data File: /chem/msbna/5972e.i/e062899.b/e062803.d
Date : 28-JUN-99 11:41:00
Client ID:
Sample Info: DIELDRIN E062801 10NG STD

Instrument: 5972e.i

Operator: DR

Column phase: DB-5

Column diameter: 0.25



005E

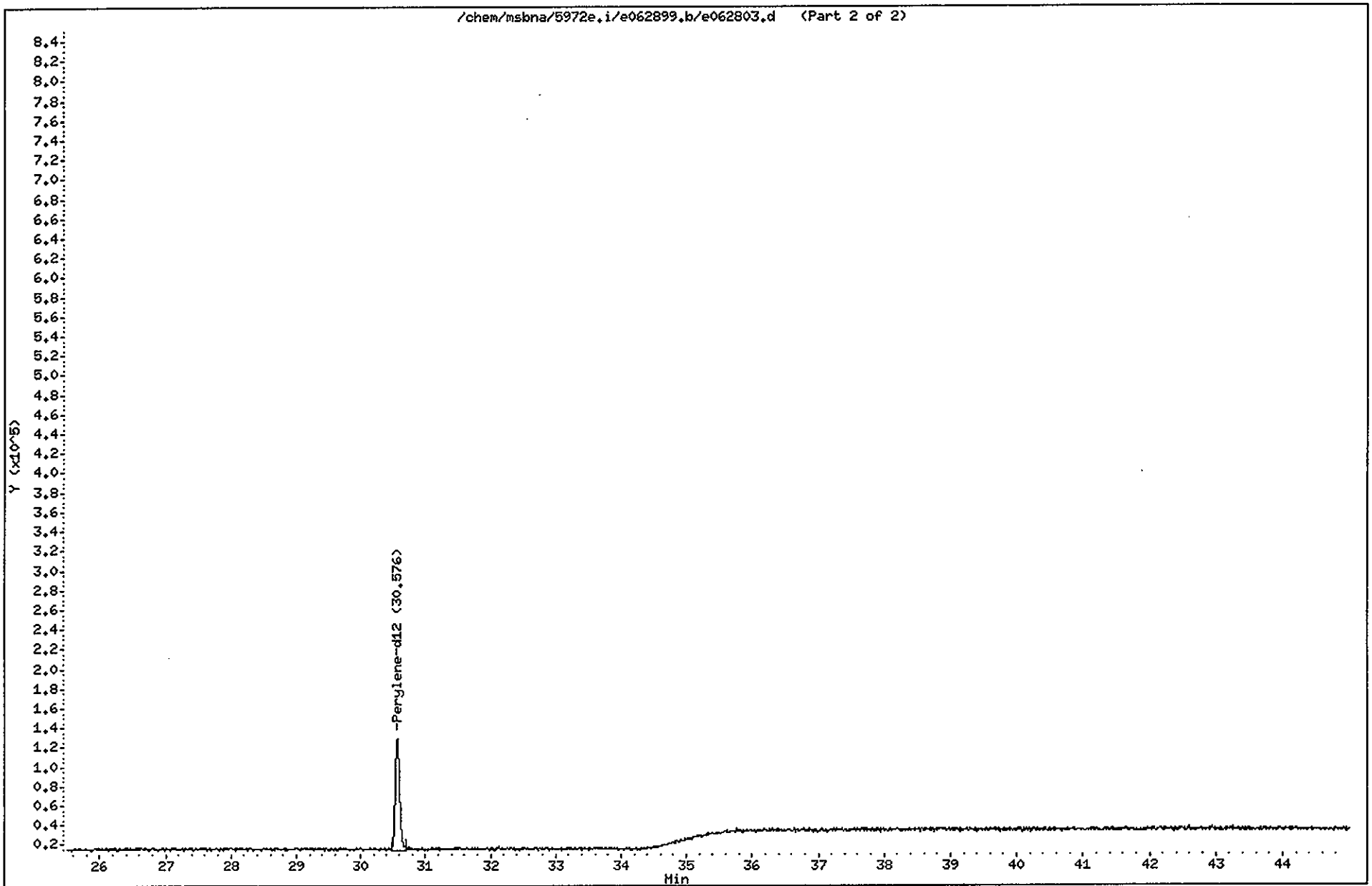
Data File: /chem/msbna/5972e.i/e062899.b/e062803.d
Date : 28-JUN-99 11:41:00
Client ID:
Sample Info: DIELDRIN E062801 10NG STD

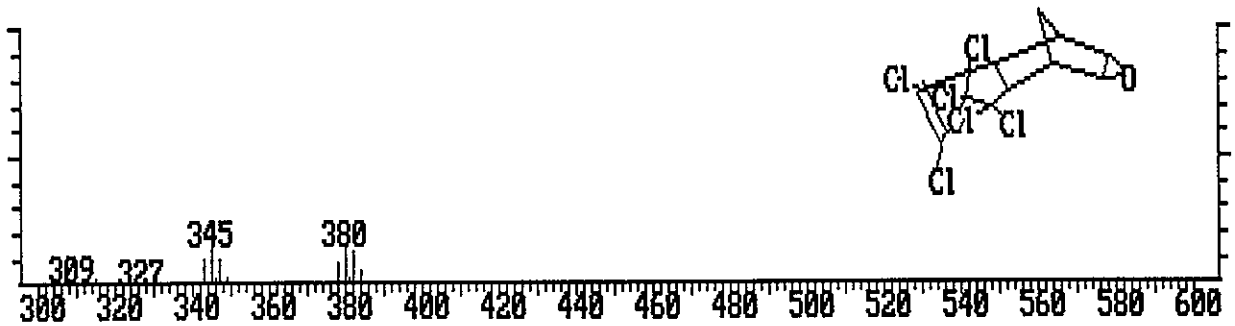
Instrument: 5972e.i

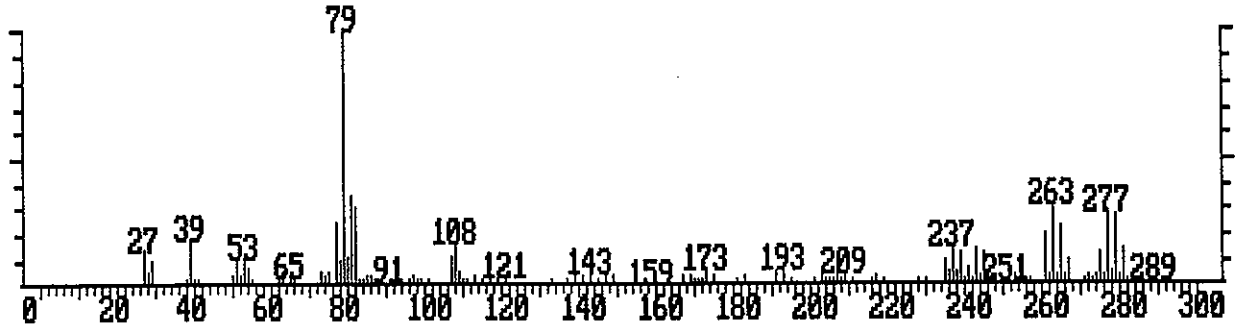
Operator: DR

Column phase: DB-5

Column diameter: 0.25







MW:378 NIST Dieldrin $C_{12}H_8Cl_6O$

005F

Data File: /chem/msbna/5972e.i/e062899.b/e062803.d

Date : 28-JUN-99 11:41:00

Client ID:

Instrument: 5972e.i

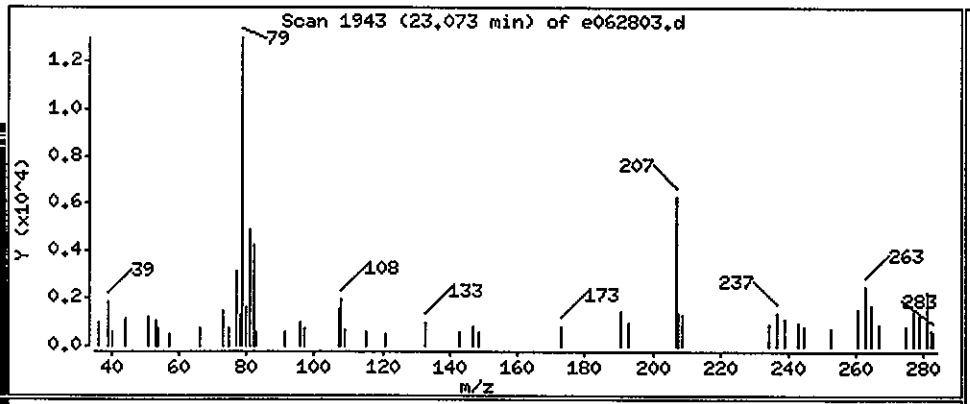
Sample Info: DIELDRIN E062801 10NG STD

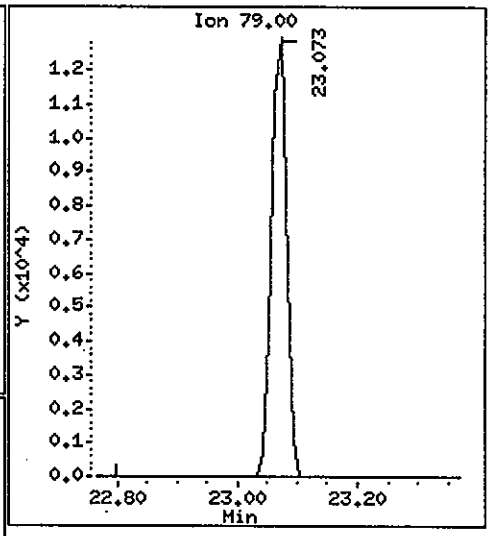
Operator: DR

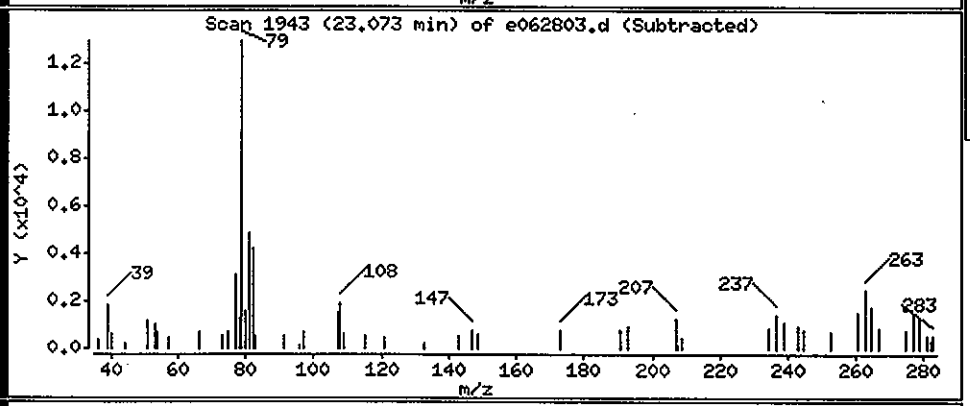
Column phase: DB-5

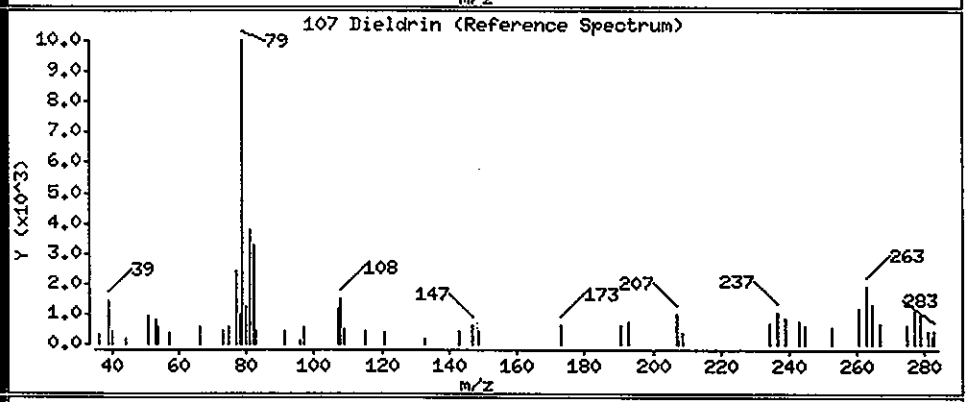
Column diameter: 0.25

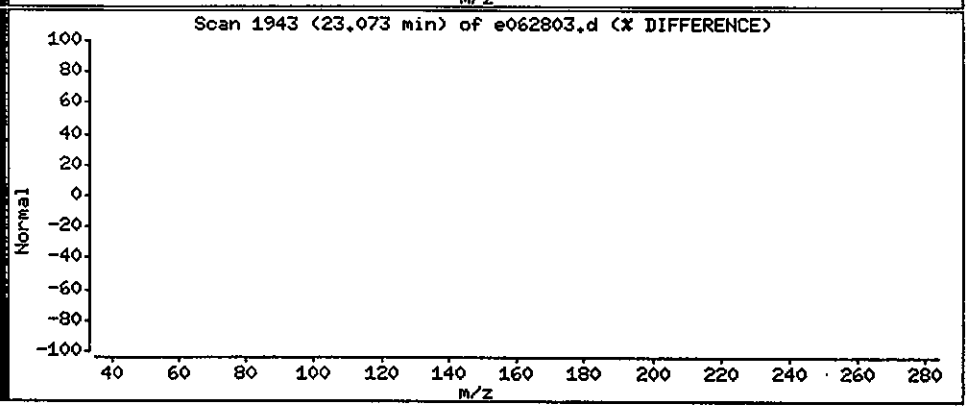
107 Dieldrin











005G

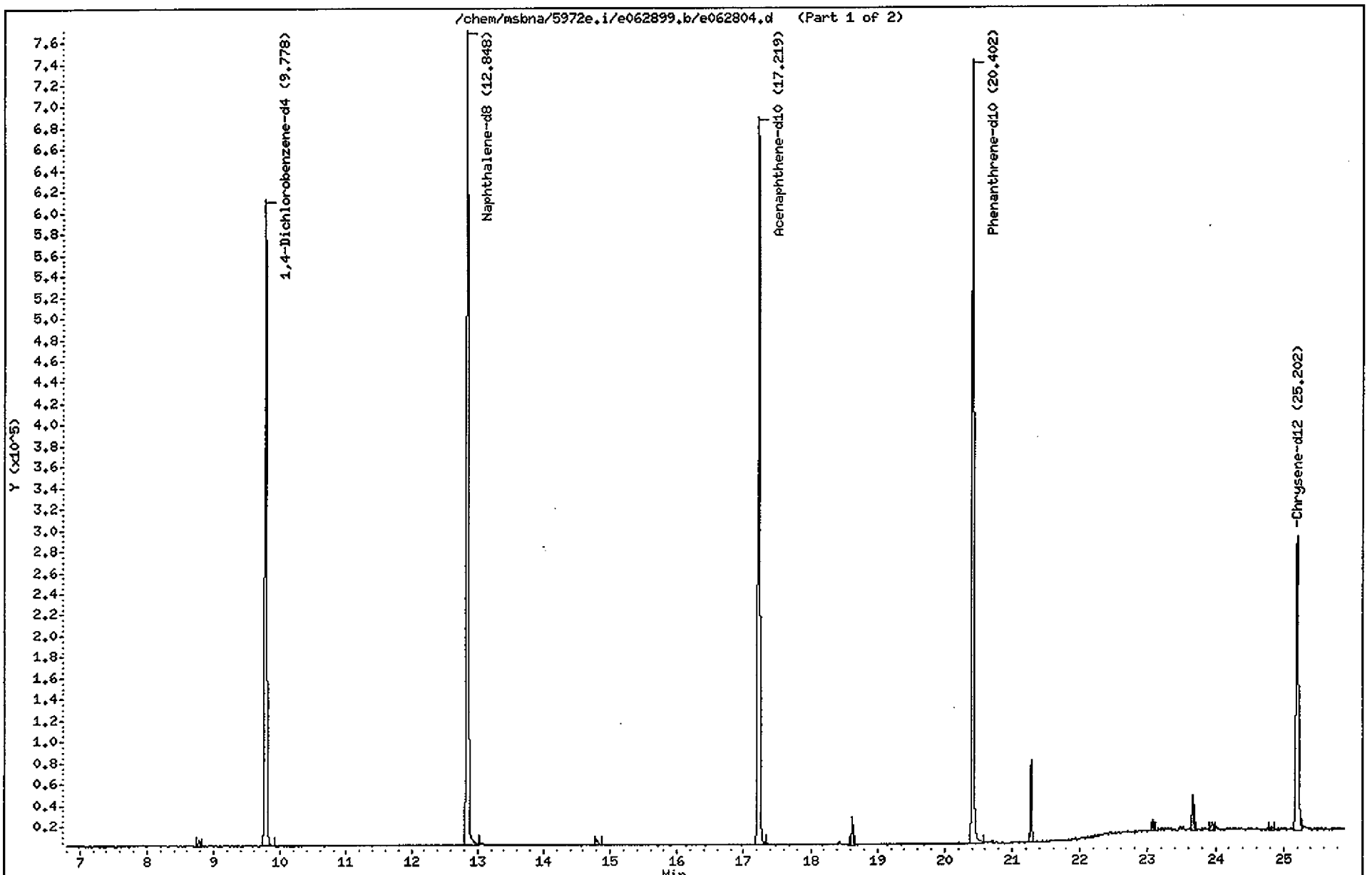
Data File: /chem/msbna/5972e.i/e062899.b/e062804.d
Date : 28-JUN-99 12:34:00
Client ID:
Sample Info: 9906L178-001 E062801 TNU

Instrument: 5972e.i

Operator: DR

Column phase: DB-5

Column diameter: 0.25



H500

ISQ0

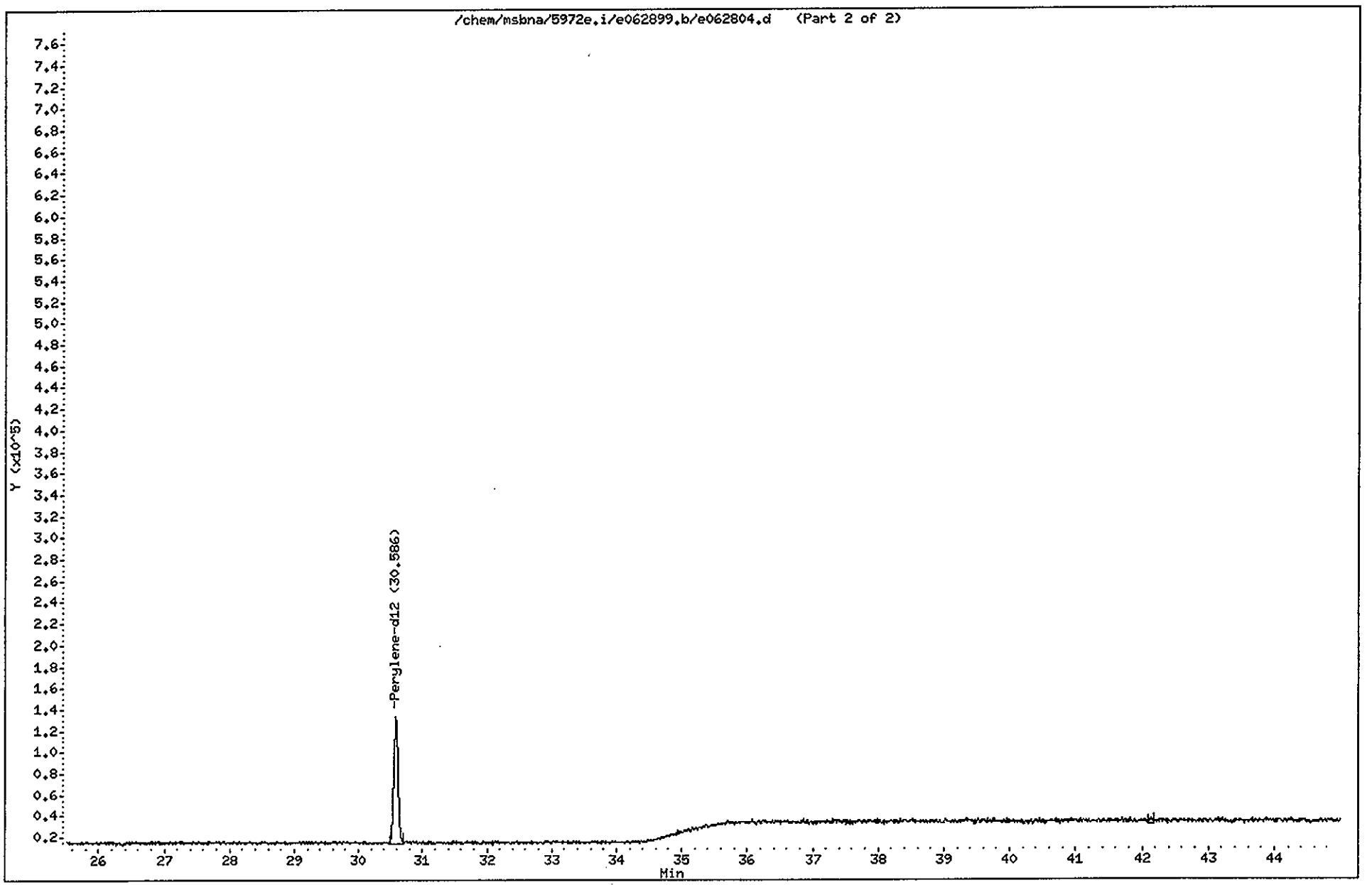
Data File: /chem/msbna/5972e.i/e062899.b/e062804.d
Date : 28-JUN-99 12:34:00
Client ID:
Sample Info: 9906L178-001 E062801 TNU

Instrument: 5972e.i

Operator: DR

Column phase: DB-5

Column diameter: 0.25



Data File: /chem/msbna/5972e.i/e062899.b/e062804.d

Date : 28-JUN-99 12:34:00

Client ID:

Instrument: 5972e.i

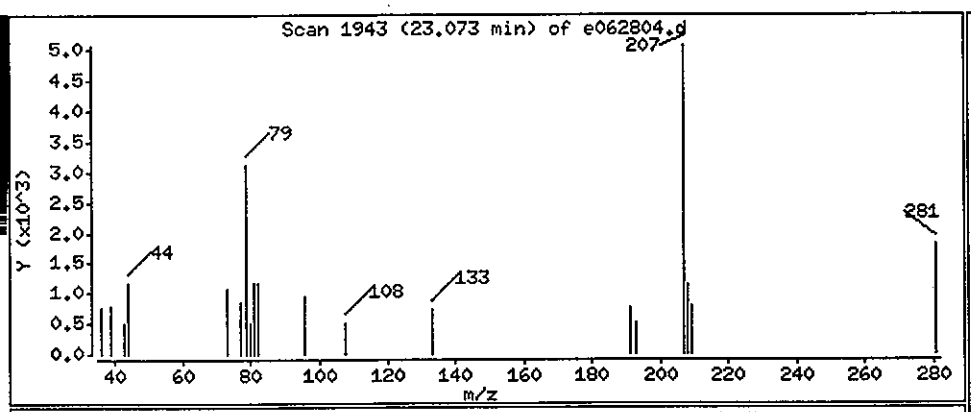
Sample Info: 9906L178-001 E062801 TNU

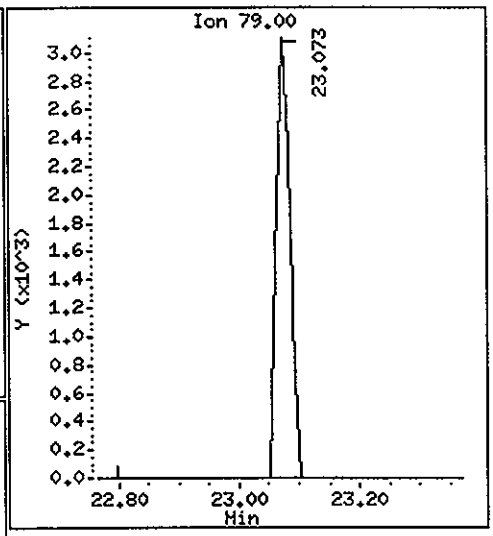
Operator: DR

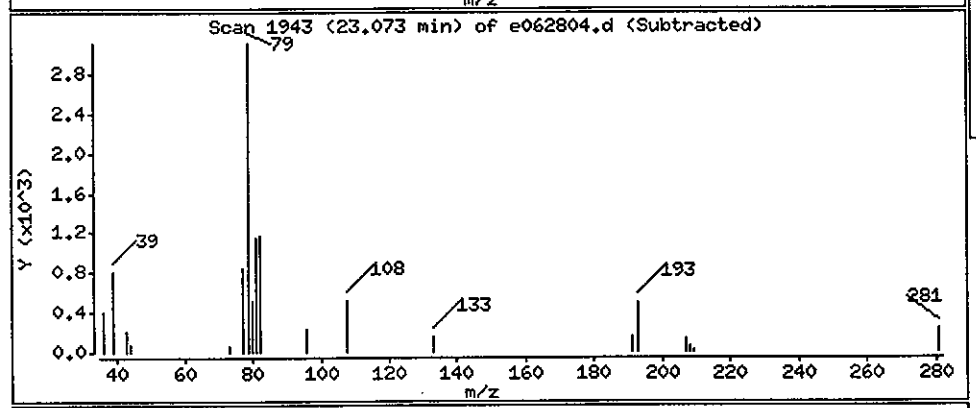
Column phase: DB-5

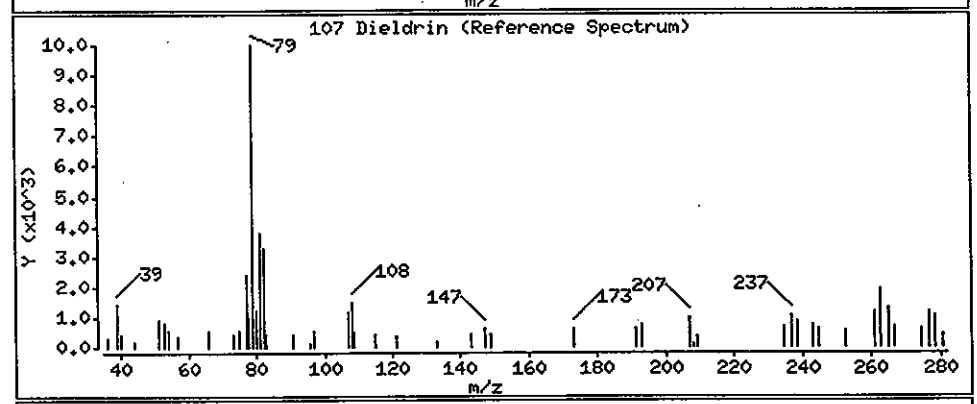
Column diameter: 0.25

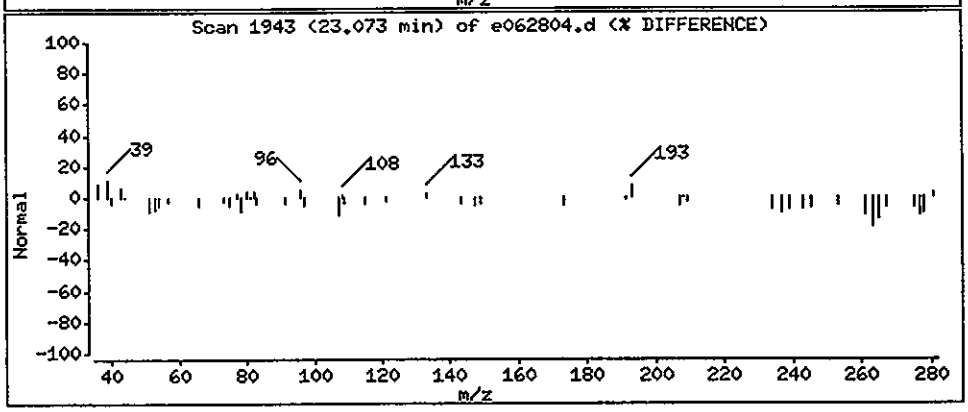
107 Dieldrin











005J

Data File: /chem/msbna/5972e.i/e062899.b/e062804.d

Date : 28-JUN-99 12:34:00

Client ID:

Instrument: 5972e.i

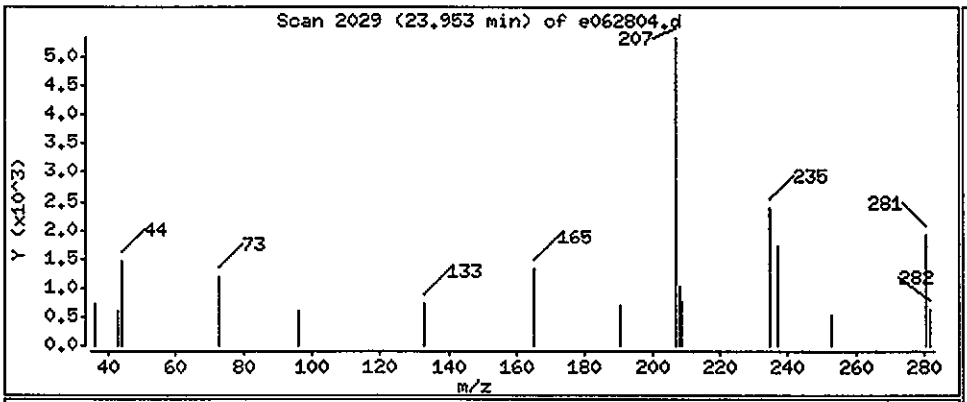
Sample Info: 9906L178-001 E062801 TNU

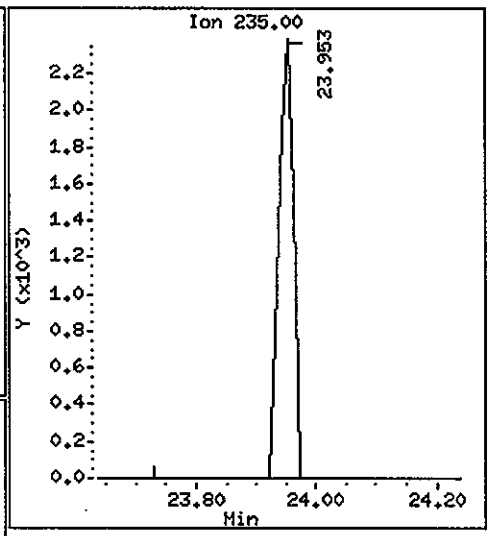
Operator: DR

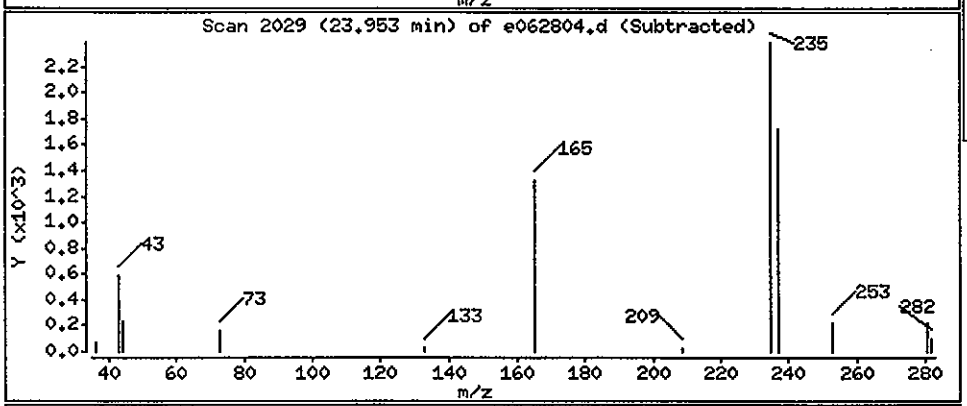
Column phase: DB-5

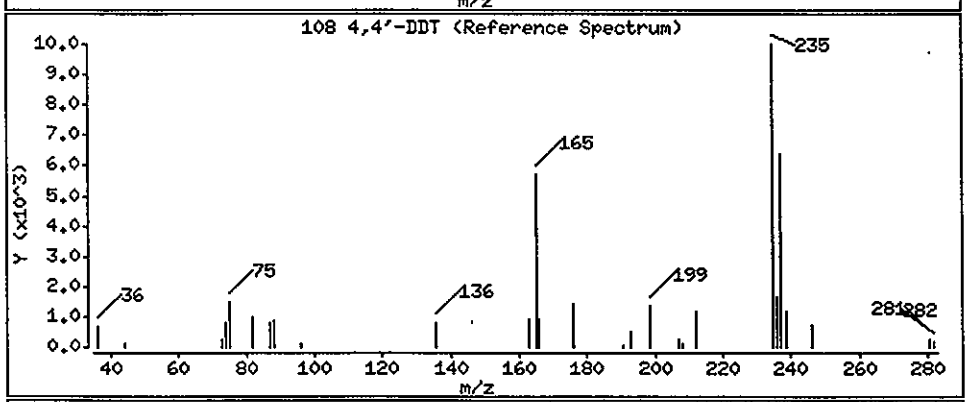
Column diameter: 0.25

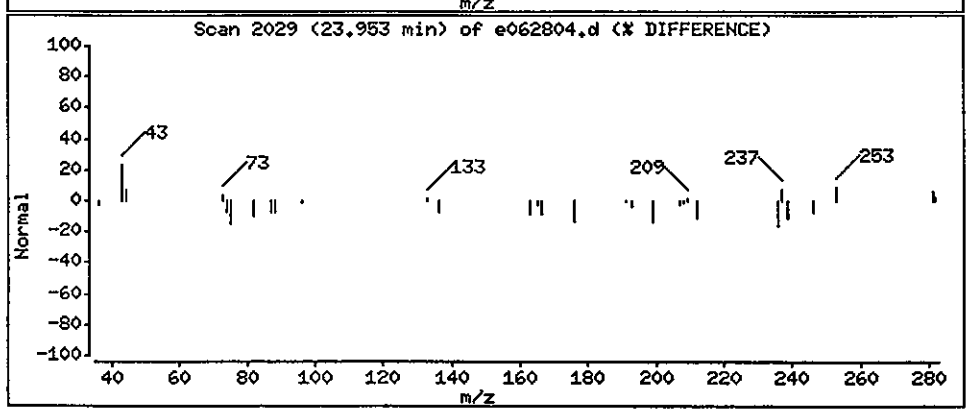
108 4,4'-DDT











OOSK

(8) Lead / PCB, Solvent

RECRA LabNet Use Only
99061178

ALL

Custody Transfer Record/Lab Work Request

RECRA LabNet

Client: TNU-HANFORD B99-069
Est. Final Proj. Sampling Date:
Project #: 10985-001-001-9999-00
Project Contact/Phone #:
RECRA Project Manager: OJ
QC: SPEC Del: SPEC TAT: 15 DAY
Date Rec'd: 6/8/99 Date Due: 6/23/99
Account #: TNUHANFORD

Refrigerator #				4					4	4							
#/Type Container	Liquid																
	Solid			1AG					1AG	1AG							
Volume	Liquid																
	Solid			120					60	60							
Preservatives				—					—	—							
ANALYSES REQUESTED		VOA	BNA	Pest/PCB	Herb				Metal	CN							
		ORGANIC							INORG								

RECRA LabNet Use Only

MATRIX CODES	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA	Pest/PCB	Herb				Metal ①	TCLP	Metal ②				
S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum Solids DL - Drum Liquids L - EP/TCLP Leachate WI - Wipe X - Other F - Fish	001	BØVLW9			SO	6/4/99	1052			✓					✓	✓					
	002	BØVLW9 (TCLP of 001)			L	*											✓				

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Special Instructions:
Saf # B99-069

COMPOSITE WASTE

DATE/REVISIONS:
1. Met ① = Cr, Pb, Hg - (Total)
2. * See Labchron
3. Met ② = Cr, Pb, Hg (Leachate)
6/11/99 4. OPCB cancelled on 060814
5. added per week review
6. * 81122605700

RECRA LabNet Use Only

Samples were:
1) Shipped X or
Hand Delivered ___
Airbill # *
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec'd Y or N

Discrepancies Between Samples Lables and COC Record? Y or N
NOTES:

Relinquished by	Received by	Date	Time
Fed Ex	B Mulley	6/8/99	—

Relinquished by			Time

ORIGINAL REWRITTEN

Page 1 of 1

906

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-069-02	Page 1 of 1

Collector Renee Nielson	Company Contact Tom Brown	Telephone No. 376-1547	Project Coordinator TRENT, SJ
Price Code 9K	Data Turnaround 15 Days		
Project Designation 105-N Entry Doorway Peeling Paint	Sampling Location 105N		SAF No. B99-069
Ice Chest No. 1A2	Field Logbook No. EL-1381-2		Method of Shipment Federal Express
Shipped To ~~TMA~~/RECRA ~~Apt~~ 6799	Offsite Property No. N/A		Bill of Lading/Air Bill No. N/A 18.5°C
			COA B10NS12W28

POSSIBLE SAMPLE HAZARDS/REMARKS
~~Lead~~ PCB's

Special Handling and/or Storage
Cool 4C

SAMPLE ANALYSIS (178)

Preservation	None	None	None	None	Cool 4C							
Type of Container	P	aG	aG	aG	aG							
No. of Container(s)	1	1	1	1	1							
Volume	20mL	60mL	60mL	60mL	120mL							
	Activity Scan	See item (1) in Special Instructions. 15 gm	Mercury - 7471 - (CV) {Mercury} 15 gm	See item (2) in Special Instructions. 15 gm	Pest/PCBs - 8081 50 gm							
Sample No.	Matrix *	Sample Date	Sample Time									
B0VLW9	Other Solid	6-4-99	1057	X	X	X	X	X				

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By	Date/Time	Received By	Date/Time
Renee Nielson / R. Nielson	6/4/99 1240	Ref #1-A	6-4-99 1240
Ref 1 A	6799 1300	SJ Gale	6799 1300
SJ Gale	6799 1300	FED EX	

SPECIAL INSTRUCTIONS
COA - B10NS12W28

(1) ICP Metals - 6010A (TAL) {Chromium}; ICP Metals - 6010A (Add-on) {Lead} Cr, Pb, Hg
(2) Metals by ICP (TCLP) - 1311/6010 {Chromium, Lead}; Mercury (TCLP) - 1311/7470 {Mercury}

Cr, Pb, Hg

COLLECTOR UNAVAILABLE TO SIGN COC

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

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

Maximum Total Activities – 100N Paint Samples - B99-069

The following values may be used to calculate maximum shipping activities for the 100N peeling paint samples. This data was taken from analytical results from reactor roof samples and is expected to be maximum potential concentrations:

Co-60	25 pCi/g
Cs-137	5 pCi/g (actual samples were non-detect for this isotope)
Sr-90	5 pCi/g
Uranium Isotopes	1 pCi/g
Plutonium Isotopes	1 pCi/g

Rich Weiss
6-7-99

GUIDE 171 - SUBSTANCES (LOW TO MODERATE HAZARD)

POTENTIAL HAZARDS

FIRE OR EXPLOSION

Some may burn but none ignite readily.
Some may polymerize (P) explosively when heated or involved in a fire.
Containers may explode when heated.
Some may be transported hot.

HEALTH

Inhalation of material may be harmful.
Contact may cause burns to skin and eyes.
Inhalation of Asbestos dust may have a damaging effect on the lungs.
Fire may produce irritating, corrosive and/or toxic gases.
Runoff from fire control may cause pollution.

PUBLIC SAFETY

CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.
Isolate spill or leak area immediately for at least 10 to 25 meters (30 to 80 feet) in all directions.
Keep unauthorized personnel away.
Stay upwind.

PROTECTIVE CLOTHING

Wear positive pressure self-contained breathing apparatus (SCBA).
Structural firefighters' protective clothing will only provide limited protection.

EVACUATION

Fire

If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

EMERGENCY RESPONSE

FIRE

Small Fires

Dry chemical, CO_2, water spray or regular foam.

Large Fires

Water spray, fog or regular foam.
Move containers from fire area if you can do it without risk.
Do not scatter spilled material with high pressure water streams.
Dike fire-control water for later disposal.

Fire involving Tanks

Cool containers with flooding quantities of water until well after fire is out.
Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
ALWAYS stay away from the ends of tanks.

SPILL OR LEAK

Do not touch or walk through spilled material.
Stop leak if you can do it without risk.
Prevent dust cloud.
Avoid inhalation of asbestos dust.

Small Dry Spills

With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.

Small Spills

Take up with sand or other noncombustible absorbent material and place into containers for later disposal.

Large Spills

Dike far ahead of liquid spill for later disposal.

Cover powder spill with plastic sheet or tarp to minimize spreading.
Prevent entry into waterways, sewers, basements or confined areas.

FIRST AID

Move victim to fresh air.
Call emergency medical care.
Apply artificial respiration if victim is not breathing.
Administer oxygen if breathing is difficult.
Remove and isolate contaminated clothing and shoes.
In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, NOS (SUSPECTED PCB's), 9, UN3077, PGIII

FedEx *USA Airbill* FedEx Tracking Number **811221605700** Form I.D. No. **0200** **Recipient's Copy**

From 6/7/99

Your's J Querbes Phone (518) 884-3300

Company KAPL Inc.

Address 350 Atomic Project Road KSO 92 Dept./Floor/Suite/Room

Ballston Spa State NY ZIP 12020-2817

Your Internal Billing Reference Information C53706 Radioactive material,excepted packages-limited quantity of material.

To Recipient's Name Judy Stone Phone ( )

Company RECRA Labnet Inc.

Address 208 Welsh Pool Road Dept./Floor/Suite/Room

(HOLD at FedEx location, print FedEx address here)

Check here if residence (Extra charge applies for FedEx Express Saver)

Lionville State PA ZIP 19341-1313

For HOLD at FedEx Location check here: Hold Weekday (Not available with FedEx First Overnight); Hold Saturday (Not available at all locations) (Unavailable for FedEx Priority Overnight and FedEx 2Day only)

For WEEKEND Delivery check here (Extra Charge. Not available at all locations): Saturday Delivery (Unavailable for FedEx Priority Overnight and FedEx 2Day only); NEW Sunday Delivery (Available for FedEx Priority Overnight only)

4a Express Package Service *Packages under 150 lbs.* Delivery commitment may be later in some areas.

- [ ] FedEx Priority Overnight (Next business morning)
- [X] FedEx Standard Overnight (Next business afternoon)
- [ ] FedEx First Overnight (Earliest next business morning delivery to select locations) (Higher rates apply)
- [ ] FedEx 2Day (Second business day)
- [ ] FedEx Express Saver (Third business day)

FedEx Letter Rate not available. Minimum charge: One pound rate.

4b Express Freight Service *Packages over 150 lbs.* Delivery commitment may be later in some areas.

- [ ] FedEx Overnight Freight (Next business day)
- [ ] FedEx 2Day Freight (Second business day)
- [ ] FedEx Express Saver Freight (Up to 3 business days)

(Call for delivery schedule. See back for detailed descriptions of freight services.)

5 Packaging

- [ ] FedEx Letter
- [ ] FedEx Pak (Declared value limit $500)
- [ ] FedEx Box
- [ ] FedEx Tube
- [X] Other Pkg.

6 Special Handling (One box must be checked)

Does this shipment contain dangerous goods?*

- [ ] No
- [ ] Yes (As per attached Shipper's Declaration)
- [X] Yes (Shipper's Declaration not required)
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg.
- [ ] Cargo Aircraft Only

*Dangerous Goods cannot be shipped in FedEx packaging.

7 Payment

Bill to:

- [ ] Sender (Account No. in Section 1 will be billed)
- [ ] Recipient
- [X] Third Party
- [ ] Credit Card
- [ ] Cash/Check
- [ ] Obtain Recipient FedEx Account No.

(Enter FedEx Account No. or Credit Card No. below)

Total Packages	Total Weight	Total Declared Value*	Total Charges
1	10 lbs	$ .00	$

*When declaring a value higher than $100 per shipment, you pay an additional charge. See SERVICE CONDITIONS, DECLARED VALUE, AND LIMIT OF LIABILITY section for further information.

Credit Card Auth.

8 Release Signature

Your signature authorizes Federal Express to deliver this shipment without obtaining a signature and agrees to indemnify and hold harmless Federal Express from any resulting claims.

Questions?
Call 1·800·Go·FedEx® (800)463-3339

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8 1 1 2 2 1 6 0 5 7 0 0

038/00200
01056

Airbill

Recipient's Copy

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FROM
6-07-99 Sender's FedEx Account Number [redacted]
G.O. BONESS Phone (509) 376 7493
WASTE MANAGEMENT Dept./Floor/Suite/Room
FED SVC INC NW/USDOE
2355 STEVENS DRIVE MS H1-14
RICHLAND State WA Zip 99352
Your Internal Billing Reference Information R116H72600

TO
ORLETTE JOHNSON Phone (610) 280-3012
Dept./Floor/Suite/Room
RECRA LAB NET
208 WELSH POOL ROAD
LIONVILLE State PA Zip 19341

For HOLD at FedEx Location check here
☐ Hold Weekday (Not available with FedEx First Overnight)
☐ Hold Saturday (Not available at all locations) (Not available with FedEx First Overnight or FedEx Standard Overnight)

For Saturday Delivery check here
☐ (Extra Charge. Not available to all locations) (Not available with FedEx First Overnight or FedEx Standard Overnight)

Express Package Service *Packages under 150 lbs.* Delivery commitment may be later in some areas.
☒ FedEx Priority Overnight (Next business morning)
☐ FedEx Standard Overnight (Next business afternoon)
☐ FedEx 2Day* (Second business day)
*FedEx Letter Rate not available. Minimum charge: One pound FedEx 2Day rate.

Express Freight Service *Packages over 150 lbs.* Delivery commitment may be later in some areas.
☐ FedEx Overnight Freight (Next business-day service for any distance)
☐ FedEx 2Day Freight (Second business-day service for any distance)
☐ FedEx Express Saver Freight (Up to 3 business-day service based upon distance)
(Call for delivery schedule. See back for detailed descriptions of freight products.)

4019644646

Questions? Call 1•800•Go•FedEx (1-800-463-3339)

5 Packaging
1 ☒ Other Packaging
Dangerous Goods cannot be shipped in FedEx packaging.

6 Special Handling
4 ☒ Dangerous Goods as per attached Shipper's Declaration ☐ Dangerous Goods Shipper's Declaration not required CA ☐ Cargo Aircraft Only
6 ☐ Dry Ice (Dangerous Goods Shipper's Declaration not required)

7 Payment
Bill to: 1 ☐ Sender (Account no. in section 1 will be billed) 2 ☐ Recipient 3 ☒ Third Party 4 ☐ Credit Card 5 ☐ Cash/Check
(Enter FedEx account no. or Credit Card no. below)

Total Packages	Total Weight	Total Declared Value*	Total Charges
1	21	$ NVD	$

*When declaring a value higher than $100 per shipment, you pay an additional charge. See SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY section for further information.

Credit Card Auth.

Signature Release Unavailable

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SRC 98

TRACKING NUMBER
4019644646

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Two completed and signed copies of this Declaration must be handed to the operator.

WARNING
Failure to comply in all respects with the applicable Dangerous Goods Regulations may be in breach of the applicable law, subject to legal penalties. This Declaration must not, in any circumstances, be completed and/or signed by a consolidator, a forwarder or an IATA cargo agent.

TRANSPORT DETAILS
This shipment is within the conditions prescribed for: (delete non-applicable)
PASSENGER AND CARGO AIRCRAFT [redacted]
Airport of Departure: PASCO, WA
Airport of Destination

Shipment type: *(delete non-applicable)*
NON-RADIOACTIVE [redacted]

NATURE AND QUANTITY OF DANGEROUS GOODS

Dangerous Goods Identification

Proper Shipping Name	Class or Division	UN or ID No.	Packing Group	Subsidiary Risk	Quantity and type of packing	Packing Inst.	Authorization
ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, NOS (SUSPECTED PCB's)	9	UN3077	III		1 STEEL DRUM x 10 kg	911	PACKAGED PER PX-06

Additional Handling Information
SHIPPED ACCORDING TO IATA/ICAO
EMERGENCY RESPONSE GUIDE # 171 ATTACHED

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I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name and are classified, packaged, marked, and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Name/Title of Signatory G.O. BONESS/TRAFFIC SPEC.
Place and Date RICHLAND, WA 6-07-99
Signature (see warning above) G.O. Boness

Emergency Telephone Number (Required for US Origin or Destination Shipments) 1-888-766-0771

ACCEPTABLE FOR PASSENGER AIRCRAFT. THIS SHIPMENT CONTAINS RADIOACTIVE MATERIAL INTENDED FOR USE IN, OR INCIDENT TO, RESEARCH, MEDICAL DIAGNOSIS, OR TREATMENT.

Recra.LabNet Lionville, Lab.

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 06/15/99 Extraction Batch No: 99LE0721 Analyst: AM Method: ****

Test: 0608 Cleanup Date: Analyst: Client: TNU-HANFORD B99-069

LIMS Report Date: 06/16/99 Solvent: ACE/DCM/HEX Adsorbent:

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
9906L178-	TNU-HANFORD B99-069										
001 H	BOVLW9		5.00	1.0		10		1.0	N	98.92	2021.8
001 HS	BOVLW9		4.00	1.0	1.0	10		1.0	N	98.92	2527.3
001 HT	BOVLW9		4.00	1.0	1.0	10		1.0	N	98.92	2527.3
99LE0721-MB1 H	PBLKMG		30.0	1.0		10		1.0	N	100.00	333.3
99LE0721-MB1 HS	PBLKMG		30.0	1.0	1.0	10		1.0	N	100.00	333.3

Comments:
Surrogate: 100 UL 8080 PSUR 65370107 @ 4-10 UG/ML
Spike: 100 UL 8080 PMS 65371701 @ 2-5 UG/ML

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
All	[illegible]	6/16/99	[illegible]	6/16/99	[illegible]

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