N00158.AR.000022
NAS WILLOW GROVE
5090.3a

EA Laboratories

RESULTS OF ANALYSIS OF 18
SOIL SAMPLES COLLECTED AT WILLOW GROVE
BETWEEN 15 FEBRUARY AND 1 MARCH 1989

Prepared for:

Northern Division
Naval Facilities Engineering Command

Prepared by:

EA Laboratories

June 1989
Rept. #890094

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1. ANALYTICAL SUMMARY

ANALYTICAL SUMMARY

Between 16 February and 1 March 1989 EA Laboratories received 18 soil samples from the Naval Air Station at Willow Grove. Upon receipt at the laboratory the samples were inspected, compared with the chain-of-custody records, logged, assigned laboratory accession numbers and distributed for analysis.

Results are summarized in the appended data package. Analytical concerns are discussed in the Quality Assurance Summary included at the end of each section.

Analytical control limits specified in the Plan of Action for Site Inspection NAS Willow Grove, Pennsylvania (Feb. 1988) were not met. The 26 day holding time for mercury was exceeded for these samples. A sample from a site other then Willow Grove was originally used for the mercury spike and duplicate. Samples PRW-2 Composite and Duplicate #2 were therefore reanalyzed for mercury with a spike and duplicate run on both samples.

The samples were originally analyzed for total organic carbon by Lancaster Laboratories in Lancaster, Pennsylvania. They had to be reanalyzed by EA Laboratories, outside of holding time, since Lancaster Laboratories is not a navy certified lab.

Twenty six target compounds were detected in the semivolatile method blank #491 (for EA #9749RE). This is believed to be contamination due to the fact that the autosampler was not functioning properly and that the 5-point calibration standards were run just prior to this blank.

Extracts for the pesticide analysis were sent to Versar ESMO in Columbia, Maryland for analysis. EA Laboratories had used hexabromobenzene (HBB) as the surrogate spiking compound rather then dibutylchlorendate (DBC). Although Versar had been sent the HBB standard for the quantitation of the surrogate recovery, they did not include any data for it in their report. In order to try to quantitate the recovery of HBB, EA Laboratories did a comparison check of the two standards by injecting both standards three times side by side and then took the average response factor of each set of three in comparing the two compounds. The same type of column that Versar had used was utilized for the quantitative analysis. In comparing the height of the

responses of the two compounds it was found that their responses were within approximately 2% of each other. EA Laboratories then looked at Versar's data and compared the response of HBB in the samples to the DBC in their EVALC. After recalculating the samples and accounting for the difference in responses, a new table was generated with the determined HBB recovery. Please see the following narrative from Versar for further details of the analysis.

All supporting data will be held in storage at EA Laboratories for three years.

In accepting analytical work, EA Laboratories, a division of EA Engineering, Science, and Technology, Inc., warrants the test results to be of precision normal for the sample type and methodology employed for each sample as submitted. The methods indicated were employed as stated to the extent permitted by sample and/or matrix limitation, if any. EA disclaims any other warranties, express or implied, including warranty of fitness for a particular purpose and warranty of merchantability. Also, EA accepts no legal responsibility for the purpose for which the client uses test results. EA cannot accept any terms and conditions or purchase orders, work orders, or requests, and any analytical work performed by EA must be governed by the terms and conditions set forth herein.

CASE NARRATIVE (PESTICIDES)

LABORATORY NAME: VERSAR INC., ESM OPERATIONS

EPA LABORATORY CODE: VERESM

CONTRACT NUMBER: WILLOW GROVE

SAMPLE ANALYSES INCLUDED IN THIS CASE:

CLIENT SAMPLE #	EA #	MATRIX
PRB1COMP	WG637	SOIL
PRD2COMP	WG638	SOIL
RINSATE BLK	WG640	WATER
PRW1COMP	WG745	SOIL
RINSATE BLK2	WG746	WATER
PRSS1SOIL	WG748	SOIL
PRSS2SOIL	WG749	SOIL
PRW2COMP	WG775	SOIL
RINSATE BLK2	WG776	WATER
PRSS3SOIL	WG777	SOIL
*DUP2	WG780	SOIL
DUP3	WG781	SOIL
PRW3COMP	WG815	SOIL
RINSATE5	WG820	WATER
PRW3COMP	WG822	SOIL

* SAMPLE USED FOR MS/MSD

Samples were received as extracts from EA Laboratories and analyzed following the EPA CLP statement of work (SOW).

All soil results are reported as ug/kg DRY WEIGHT.

Holding times were met for all analyses.

Surrogate recoveries could not be determined by the method requested since the samples apparently were not spiked with dibutyl chlorendate (DBC).

MS/MSD recoveries for sample DUP2 could not be determined since the sample required a 1-100 dilution.

RELEASE OF THE DATA CONTAINED IN THIS HARDCOPY DATA PACKAGE HAS BEEN AUTHORIZED BY THE LABORATORY MANAGER OR HIS DESIGNEE, AS VERIFIED BY THE FOLLOWING SIGNATURE:

Samuel G. Hamner, III

DATE: 24 March 89
24 March, 1989

RESULTS FOR THE COMPARATIVE CALCULATION OF HEXABROMOBENZENE (HBB) IN FOUR RINSATE BLANKS AND 11 SOIL SAMPLES COLLECTED AT WILLOW GROVE BETWEEN 15 FEBRUARY AND 1 MARCH 1989

Sample Designation	Comparatively Calculated HBB Recovery (c) (%)	EA Number
Methods Blanks		
PBLK451 (Soil)	112.9	PBLK451
PBLK456 (Water)	79.7	PBLK456
PBLK464 (Soil)	84.0	PBLK464
PBLK476 (Soil)	68.0	PBLK476
PBLK479 (Water)	117.9	PBLK479
Rinsate Blanks		
Rinsate Blank	148.7	640
Rinsate Blank #2	87.5	746
Rinsate Blank #3	140.5	776
Rinsate Blank #5	131.2	820
Soil Samples		
PR B-1, Comp.	97.9	637
PR B-2, Comp.	98.0	638
PRW-1, Comp. Dil.	404.1 (a)	745
PR-SS-1, Soil Dil.	166.1 (a)	748
PR-SS-2, Soil	137.3	749
PRW-2, Comp. Soil	(b)	775
PR-SS-3, Soil	112.7	777
Duplicate #2 Soil	(b)	780
Duplicate #3 Soil	121.2	781
PRW-3, Comp. Soil	119.7	815
PRW-4, Comp.	118.4	822
Duplicate #2 Soil MS	(b)	780MS
Duplicate #2 Soil MSD	(b)	780MSD

(a) Hexabromobenzene coeluted with PCBs.
(b) Surrogate was diluted out because of high levels of PCBs in the sample.
(c) See Analytical Summary.

Comments: Samples were spiked with one ml of a 0.200 ng/µL HBB solution.
Rinsates and their method blanks were based on a ten mL. final volume.
Soils and the soil method blanks were based on a two mL. final volume.
The concentration of DBC in Versars EVALC was 0.100 ng/µL. 5 µl of each was injected for analysis.

2. VOLATILE DATA

2000

A. QC Summary

2B
SOIL VOLATILE SURROGATE RECOVERY

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: WILL GP SAS No.: SDG No.: PR-1,S-4

Level:(low/med) LOW

		EPA SAMPLE NO.	S1 (TOL)#	S2 (BFB)#	S3 (DCE)#	OTHER	TOT OUT
	01	VBLK	99	105	102		0
635	02	PR-1,S-4	97	106	117		0
636	03	PR-2,S-5	98	106	117		0
639	04	TRIP BLANK	98	107	117 *		1
640	05	RINSATE BL	97	107	120 *		1
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	QC LIMITS
S1 (TOL) = Toluene-d8	(81-117)
S2 (BFB) = Bromofluorobenzene	(74-121)
S3 (DCE) = 1,2-Dichloroethane-d4	(70-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

Comment: the trip blank and rinsate blank are outside water QC limits for surrogates.

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2B.
SOIL VOLATILE SURROGATE RECOVERY

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: NIKE SAS No.: SDG No.: PR-1,5-4

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (TOL)#	S2 (BFB)#	S3 (DCE)#	OTHER	TOT OUT
01	VBLK1	100	103	93		0
639RE 02	TRIP BLANK	101	106	97		0
640RE 03	RINSATE BL	102	107	101		0
04						
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	QC LIMITS
S1 (TOL) = Toluene-d8	(81-117)
S2 (BFB) = Bromofluorobenzene	(74-121)
S3 (DCE) = 1,2-Dichloroethane-d4	(70-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

2B
SOIL VOLATILE SURROGATE RECOVERY

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL BR SAS No.: SDG No.: PRW-~~2~~1.S-8 RSB

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (TOL)#	S2 (BFB)#	S3 (DCE)#	OTHER	TOT OUT
01	VBLK1 RSB	99	99	96		0
744 02	PR-W-1.S-3	100	96	92		0
748 03	PR-SS-1	106	92	99		0
749 04	PR-SS-2	104	92	96		0
746 05	RINSE BL#2	108	90	98		0
747 06	TRIP BLANK	102	94	97		0
750 07	TRIP BLANK	105	94	97		0
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	QC LIMITS
S1 (TOL) = Toluene-d8	(81-117)
S2 (BFB) = Bromofluorobenzene	(74-121)
S3 (DCE) = 1,2-Dichloroethane-d4	(70-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

2B
SOIL VOLATILE SURROGATE RECOVERY

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PRW-2,S-6

Level:(low/med) LOW

		EPA SAMPLE NO.	S1 (TOL)#	S2 (BFB)#	S3 (DCE)#	OTHER	TOT OUT
	01	VBLK2	101	100	94		0
774	02	PRW-2,S-6	100	96	95		0
777	03	PR-SS-3	105	93	94		0
779	04	DUP-1	101	95	94		0
781	05	DUP-3	106	93	96		0
814	06	PRW-3,S-6	103	94	93		0
776	07	PINSE BL#3	102	94	94		0
778	08	TRIP BLANK	103	95	94		0
816	09	PRW-3,WATER	103	94	93		0
817	10	TRIP BLANK	104	95	91		0
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	QC LIMITS
S1 (TOL) = Toluene-d8	(81-117)
S2 (BFB) = Bromofluorobenzene	(74-121)
S3 (DCE) = 1,2-Dichloroethane-d4	(70-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

2 005

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2B
SOIL VOLATILE SURROGATE RECOVERY

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: RINSE BL#5

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (TOL)#	S2 (BFB)#	S3 (DCE)#	OTHER	TOT OUT
01	VBLK	101	100	94		0
820 02	RINSE BL#5	100	96	95		0
823 03	PRW-4,WATER	105	93	94		0
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	QC LIMITS
S1 (TOL) = Toluene-d8	(81-117)
S2 (BFB) = Bromofluorobenzene	(74-121)
S3 (DCE) = 1,2-Dichloroethane-d4	(70-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

2 006

FORM II VOA-2 1/87 Rev.

SOIL SURROGATE PERCENT RECOVERY SUMMARY

CASE NUMBER LABORATORY. EA ENG. CONTRACT: 10380.03

LEVEL. LOW
VOLATILE SURROGATES

SMO NUMBER	TOLUENE-D8 (81-117)	BFB (74-121)	1,2-DICHLORO-ETHANE-D4 (70-121)
VBLK	104	104	92
PRW4.S5(0821)	110	110	96
TRIP BLNK.0624	114	110	94
[illegible]	100	104	104
~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~
~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~
~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~
~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~
~~TRIP BLNK(0824)~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~
~~TRIP BLNK(0826)~~	~~104~~	~~102~~	~~108~~

RMS 4/24/89

* - ASTERISKED VALUES ARE OUTSIDE QC LIMITS
RESULTS ARE REPORTED ON A WET WEIGHT BASIS.

VOLATILES: 0 OUT OF 30 ; OUTSIDE QC LIMITS

FORM II

WATER SURROGATE PERCENT RECOVERY SUMMARY

CASE NUMBER: LABORATORY. EA ENG. CONTRACT: 10008.00

LEVEL LOW
VOLATILE SURROGATES

SMO NUMBER	TOLUENE-D8 (88-110)	BFB (86-115)	1,2-DICHLORO-ETHANE-D4 (76-114)
~~RINSATE BLANK#5 (0872)~~	~~100~~	~~104~~	~~108~~
~~RINSATE BLANK#7 (0852)~~	~~104~~	~~102~~	~~114~~
WR--1(0871)	106	102	112

pm 4/20/89

- - ASTERISKED VALUES ARE OUTSIDE QC LIMITS
RESULTS ARE REPORTED ON A WET WEIGHT BASIS.

VOLATILES. 0 OUT OF ~~0~~ 3 OUTSIDE QC LIMITS

pm 4/20/89

FORM II

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PPW-2,3-6

Matrix Spike - EPA Sample No.: DUP-1 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	60.00	0.00	42.00	70	59-172
Trichloroethene	60.00	0.00	61.00	102	62-137
Benzene	60.00	0.00	69.00	94	66-142
Toluene	60.00	0.00	59.00	98	59-139
Chlorobenzene	60.00	0.00	63.00	104	60-133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	60.00	44.00	74	4	22	59-172
Trichloroethene	60.00	70.00	119	16	24	62-137
Benzene	60.00	66.00	110	5	21	66-142
Toluene	60.00	67.00	112	14	21	59-139
Chlorobenzene	60.00	73.00	120	16	21	60-133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of qc limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

COMMENTS: _____

4A

VOLATILE METHOD BLANK SUMMARY

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENS Case No. WILL SR SAS No.: SDG No.: PR-1,S-4

Lab File ID: AC694 Lab Sample ID: METHOD BLANK

Date Analyzed: 2/22/89 Time Analyzed: 22:23

Matrix: (soil/water) WATER Level: (low/med) LOW

Instrument ID: A 1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

		EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
635	01	PR-1,S-4	EA# 0635	AC700	04:16
636	02	PR-2,S-6	EA# 0636	AC701	05:13
639	03	TRIP BLANK	EA# 0639	AC702	06:09
640	04	RINSATE BL	EA# 0640	AC703	07:04
	05				
	06				
	07				
	08				
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COMMENTS:

4A

VOLATILE METHOD BLANK SUMMARY

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PR-W-1 RSB,S-86

Lab File ID: EE941 Lab Sample ID: METHOD BLANK

Date Analyzed: 2/24/89 Time Analyzed: 12:23

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: E5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	PR-W-1 RSB,S-9	EA# 0744	EE942	13:09
02	PR-SS-1	EA# 0748	EE943	13:54
03	PR-SS-2	EA# 0749	EE944	14:39
04	RINSE BL#2	EA# 0746	EE945	15:25
05	TRIP BLANK	EA# 0747	EE946	16:10
06	TRIP BLANK	EA# 0750	EE947	16:56
07				
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COMMENTS: _____

4A

VOLATILE METHOD BLANK SUMMARY

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PRW-2,3-6

Lab File ID: EE957 Lab Sample ID: METHOD BLANK

Date Analyzed: 2/27/89 Time Analyzed: 12:47

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: E5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	PRW-2,S-6	EA# 0774	EE958	13:33
02	PR-SS-3	EA# 0777	EE959	14:19
03	DUP-1	EA# 0779	EE960	15:05
04	DUP-3	EA# 0781	EE961	15:51
05	PRW-3,S-6	EA# 0814	EE962	16:37
06	RINSE BL#3	EA# 0776	EE963	17:22
07	TRIP BLANK	EA# 0778	EE964	18:08
08	PRW-3.WATER	EA# 0816	EE965	18:53
09	TRIP BLANK	EA# 0817	EE966	19:38
10				
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COMMENTS: _____

4A

VOLATILE METHOD BLANK SUMMARY

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PRW-2,S-6

Lab File ID: AC764 Lab Sample ID: METHOD BLANK

Date Analyzed: 3/ 1/89 Time Analyzed: 15:46

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: A1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	DUP-1MS	EA# 0779	AC765	17:52
02	DUP-1MSD	EA# 0779	AC766	18:47
03				
04				
05				
06				
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COMMENTS: _____

4A
VOLATILE METHOD BLANK SUMMARY

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: RINSE BL#5

Lab File ID: AC764 Lab Sample ID: METHOD BLANK

Date Analyzed: 3/ 1/89 Time Analyzed: 15:46

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: A1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
820 01	RINSE BL#5	EA# 0820	AC768	20:38
823 02	PRW-4,WATER	EA# 0823	AC768	21:34
03				
04				
05				
06				
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COMMENTS: _____

4A

VOLATILE METHOD BLANK SUMMARY

Lab Name: EA LABS

Lab Code: _____ Case No.: _____ Contract No.: _____ SDG: _____

EPA Sample No. for Method Blank: _____ Lab Sample ID: AB06850

Instrument ID.: C3

Date Analyzed: 3/3/89 Time Analyzed: 1122

Matrix: (soil/water) S Level: (low/med) L (soil only)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

PRW4.S5(0821)	AB06851	03/03/89	12:27:00	5100
TRIP BLNK(0824	AB06852	03/03/89	13:08:00	5100

COMMENTS:

4A
VOLATILE METHOD BLANK SUMMARY

Lab Name: EA LABS

Lab Code: _____ Case No.: _____ Contract No.: _____ SDG: _____

EPA Sample No. for Method Blank: _____ Lab Sample ID: AB06882

Instrument ID.: C3

Date Analyzed: 3/7/89 Time Analyzed: 1142

Matrix: (soil/water) S Level: (low/med) L (soil only)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

~~FFB-1(0873)~~	~~AB06883~~	~~03/07/89~~	~~12:35:00~~	~~5100~~
~~FFB-2(0883)~~	~~AB06884~~	~~03/07/89~~	~~13:09:00~~	~~5100~~
~~FFB-3(0884)~~	~~AB06885~~	~~03/07/89~~	~~13:43:00~~	~~5100~~
~~FFB-4(0885)~~	~~AB06886~~	~~03/07/89~~	~~14:18:00~~	~~5100~~
~~RINSATE BLNK(0872)~~	~~AB06888~~	~~03/07/89~~	~~15:22:00~~	~~5100~~
~~TRIP BLNK(0874)~~	~~AB06889~~	~~03/07/89~~	~~15:54:00~~	~~5100~~
~~RINSATE BLNK#7(0882)~~	~~AB06890~~	~~03/07/89~~	~~16:32:00~~	~~5100~~
~~TRIP BLNK(0886)~~	~~AB06891~~	~~03/07/89~~	~~17:07:00~~	~~5100~~
WRW-1(0871)	AB06892	03/07/89	17:41:00	5100

COMMENTS:

FORM IV VOA 10/86

4A
VOLATILE METHOD BLANK SUMMARY

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PR-1,3-4

Lab File ID: AC813 Lab Sample ID: METHOD BLANK

Date Analyzed: 3/13/89 Time Analyzed: 13:14

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: A1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
639 RE 01	TRIP BLANK	EA# 0639	AC814	15:12
640 RE 02	RINSATE BL	EA# 0640	AC815	16:07
03				
04				
05				
06				
07				
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COMMENTS: _____

5A
VOLATILE ORGANIC GC/MS TUNING AND MASS
CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: EMENG Contract: 68-01-7436

Lab Code: EMENG Case No.: WILL GR SAS No.: SDG No.: FRW-2,5-6

Lab File ID: AC495 BFB Injection Date: 12/27/88

Instrument ID: A1 BFB Injection Time: 11:06

Matrix:(soil/water) SOIL Level:(low/med) LOW Column:(pack/cap) PACK

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% OF MASS 95	18.0
75	30.0 - 60.0% OF MASS 95	46.5
95	Base peak, 100% relative abundance	100.
96	5.0 - 9.0% of mass 95	5.5
173	Less than 2.0% of mass 174	0.0(0.0)1
174	Greater than 50.0% of mass 95	60.9
175	5.0 - 9.0% of mass 174	3.3(5.4)1
176	Greater than 95.0%, but less than 101.0% of mass 174	59.4(97.5)1
177	5.0 - 9.0% of mass 176	3.8(6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD50	50PPB	AC497	12/27/89	13:56
02	VSTD200	200PPB	AC498	12/27/89	15:45
03	VSTD150	150PPB	AC499	12/27/89	16:38
04	VSTD100	100PPB	AC500	12/27/89	17:30
05	VSTD20	20PPB	AC501	12/27/89	18:23
06					
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5A

VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: EAENG Contract: 68-01-7438

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: FR-3,5-8

Lab File ID: EE667 BFB Injection Date: 1/24/89

Instrument ID: E5 BFB Injection Time: 6:53

Matrix:(soil/water) SOIL Level:(low/med) LOW Column:(pack/cap PACK

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% OF MASS 95	20.0
75	30.0 - 60.0% OF MASS 95	45.1
95	Base peak, 100% relative abundance	100.
96	5.0 - 9.0% of mass 95	7.3
173	Less than 2.0% of mass 174	0.0(0.0)1
174	Greater than 50.0% of mass 95	86.2
175	5.0 - 9.0% of mass 174	6.3(7.3)1
176	Greater than 95.0%, but less than 101.0% of mass 174	83.9(97.4)1
177	5.0 - 9.0% of mass 176	6.2(7.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD200	200PPB	EE673	1/24/89	12:11
02	VSTD150	150PPB	EE674	1/24/89	12:59
03	VSTD100	100PPB	EE675	1/24/89	13:46
04	VSTD50	50PPB	EE676	1/24/89	14:32
05	VSTD20	20PPB	EE677	1/24/89	15:19
06					
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GC/MS PERFORMANCE STANDARD

Bromofluorobenzene (BFB)

Case No.: WILLOW GROVE Contractor: EA Laboratories Contract No.: ___

Instrument ID: A1 Date: 02/22/89 Time: 17:28

Lab ID: >AC691-161 Data Release Authorized By :

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	Appropriate Peak	Status
50	15-40% of mass 95	17.23	17.23	Ok
75	30-60% of mass 95	41.07	41.07	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	6.27	6.27	Ok
173	Less than 2% of mass 174	0.00	0.00	Ok
174	Greater than 50% of mass 95	80.37	80.37	Ok
175	5-9% of mass 174	5.16	6.42	Ok
176	95-101% of mass 174	77.98	97.03	Ok
177	5-9% of mass 176	5.04	6.46	Ok

This performance tune applies to the following samples, blanks and standards:

Sample ID	Lab ID	Date of Analysis	Time of Analysis
50 PPB - VSTD 50	>AC692	02-22-89	19:34
METHOD BLANK - VBLK	>AC694	02-22-89	22:23
PR1, S4 , 635	>AC700	02-23-89	04:18
PR2, S6 636	>AC701	02-23-89	05:13
TRIP BLANK , 639	>AC702	02-23-89	06:08
RINSATE BLANK , 640	>AC703	02-23-89	07:04

FORM V

5A
VOLATILE ORGANIC GC/MS TUNING AND MASS
CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: EAENG Contract: 68-01-7435

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PR~~2~~ W-1,S-8

Lab File ID: EE938 BFB Injection Date: 2/24/89

Instrument ID: E5 BFB Injection Time: 9:49

Matrix:(soil/water) SOIL Level:(low/med) LOW Column:(pack cap) PACK

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% OF MASS 95	18.4
75	30.0 - 60.0% OF MASS 95	44.0
95	Base peak, 100% relative abundance	100.
96	5.0 - 9.0% of mass 95	7.8
173	Less than 2.0% of mass 174	0.0(0.0)1
174	Greater than 50.0% of mass 95	98.1
175	5.0 - 9.0% of mass 174	7.5(7.3)1
176	Greater than 95.0%, but less than 101.0% of mass 174	92.0(95.7)1
177	5.0 - 9.0% of mass 176	6.7(7.3)2

1-Value is % mass 174 2-Value is % mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD50	50PPB	EE940	2/24/89	10:31
02	VBLK1 RSB	METHOD BLANK	EE941	2/24/89	12:23
03	PR~~2~~ W-1,S-8	EA# 0744	EE942	2/24/89	13:08
04	PR-SS-1	EA# 0748	EE943	2/24/89	13:54
05	PR-SS-2	EA# 0749	EE944	2/24/89	14:39
06	RINSE BL#2	EA# 0746	EE945	2/24/89	15:25
07	TRIP BLANK	EA# 0747	EE946	2/24/89	16:10
08	TRIP BLANK	EA# 0750	EE947	2/24/89	16:56
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20					
21					
22					

GC/MS TUNING AND MASS CALIBRATION
BROMOFLUOROBENZENE

CASE NUMBER: LABORATORY: EA ENG. CONTRACT: 10258.10
INST ID: 5100 SENS DATE: 02/27/89 SENS TIME: 9:25:00
LAB ID: AB06831 CALI DATE: 02/27/89 ANALYST: CVG
DATA RELEASE AUTHORIZED BY:

M/E	ION ABUNDANCE CRITERIA	SPEC # 157	
50	15 TO 40% OF MASS 95	32.41	
75	30 TO 60% OF MASS 95	59.91	
95	BASE PEAK, 100% RELATIVE ABUNDANCE	100.00	
96	5 TO 9% OF MASS 95	7.89	
173	LESS THAN 1% OF MASS 95	0.00	
174	GREATER THAN 50% OF MASS 95	67.81	
175	5 TO 9% OF MASS 174	5.65	(8.33) 1
176	BETWEEN 95% AND 101% OF MASS 174	65.70	(96.89) 1
177	5 TO 9% OF MASS 176	5.15	(7.85) 2

1 - VALUE IN PARENTHESIS IS % OF MASS 174
2 - VALUE IN PARENTHESIS IS % OF MASS 176

THIS PERFORMANCE TUNE APPLIES TO THE FOLLOWING SAMPLES, BLANKS, AND STANDARDS.

VOA SAMPLE, BLANK AND STANDARD LOG

SAMPLE ID	LAB ID	DATE ANALYZED	TIME ANALYZED	INST ID
VSTD50/300	AB06832	02/27/89	9:47:00	5100
VSTD200/1200	AB06833	02/27/89	12:05:00	5100
VSTD150/900	AB06834	02/27/89	12:44:00	5100
VSTD100/600	AB06835	02/27/89	13:21:00	5100
VSTD20/120	AB06836	02/27/89	13:59:00	5100

FORM V

5A

VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PR-2,S-6

Lab File ID: EE955 BFB Injection Date: 2/27/89

Instrument ID: E5 BFB Injection Time: 11:26

Matrix:(soil/water) SOIL Level:(low/med) LOW Column:(pack/cap) PACK

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% OF MASS 95	18.4
75	30.0 - 60.0% OF MASS 95	44.6
95	Base peak, 100% relative abundance	100.
96	5.0 - 9.0% of mass 95	7.7
173	Less than 2.0% of mass 174	0.0(0.0)1
174	Greater than 50.0% of mass 95	91.9
175	5.0 - 9.0% of mass 174	7.3(7.9)1
176	Greater than 95.0%, but less than 101.0% of mass 174	92.6(100.8)1
177	5.0 - 9.0% of mass 176	5.5(5.6)2

1-Value is % mass 174 2-Value is % mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD50	50PPB	EE956	2/27/89	11:44
02	VBLK2	METHOD BLANK	EE957	2/27/89	12:47
03	PRW-2,S-6	EA# 0774	EE958	2/27/89	13:33
04	PR-SS-3	EA# 0777	EE959	2/27/89	14:19
05	DUP-1	EA# 0779	EE960	2/27/89	15:05
06	DUP-3	EA# 0781	EE961	2/27/89	15:51
07	PRW-3,S-6	EA# 0814	EE962	2/27/89	16:37
08	RINSE BL#3	EA# 0776	EE963	2/27/89	17:22
09	TRIP BLANK	EA# 0778	EE964	2/27/89	18:08
10	PRW-3,WATER	EA# 0816	EE965	2/27/89	18:53
11	TRIP BLANK	EA# 0817	EE966	2/27/89	19:38
12					
13					
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21					
22					

5A
VOLATILE ORGANIC GC/MS TUNING AND MASS
CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: EAENG Contract: 68-01-7435

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PRW-1,3-6

Lab File ID: AC761 BFB Injection Date: 3/ 1/89

Instrument ID: A1 BFB Injection Time: 12:33

Matrix:(soil/water) SOIL Level:(low/med) LOW Column:(pack/cap) PACK

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% OF MASS 95	18.9
75	30.0 - 60.0% OF MASS 95	42.6
95	Base peak, 100% relative abundance	100.
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.0(0.0)1
174	Greater than 50.0% of mass 95	70.3
175	5.0 - 9.0% of mass 174	4.4(6.2)1
176	Greater than 95.0%, but less than 101.0% of mass 174	69.1(98.4)1
177	5.0 - 9.0% of mass 176	4.0(5.8)2

1-Value is % mass 174 2-Value is % mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD50	50PPB	AC762	3/ 1/89	13:18
02	VBLK	METHOD BLANK	AC764	3/ 1/89	15:46
03	DUP-1MS	EA# 0779	AC765	3/ 1/89	17:52
04	DUP-1MSD	EA# 0779	AC766	3/ 1/89	18:47
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GC/MS PERFORMANCE STANDARD

Bromofluorobenzene (BFB)

Case No.: WILLOW GROVE Contractor: EA Laboratories Contract No.: ___

Instrument ID: A1 Date: 03/01/89 Time: 12:33

Lab ID: AC761-171 Data Release Authorized By :

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
50	15-40% of mass 95	18.93	18.93	Ok
75	30-60% of mass 95	42.60	42.60	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	6.55	6.55	Ok
173	Less than 2% of mass 174	0.00	0.00	Ok
174	Greater than 50% of mass 95	70.25	70.25	Ok
175	5-9% of mass 174	4.38	6.23	Ok
176	95-101% of mass 174	69.14	98.42	Ok
177	5-9% of mass 176	4.00	5.79	Ok

This performance tune applies to the following samples, blanks and standards:

Sample ID	Lab ID	Date of Analysis	Time of Analysis
VBLK	>AC764	3-1-89	15:46
RINSE BL#5 820	>AC768	3-1-89	20:38
PRW-4, WATER 823	>AC769	3-1-89	21:34
VSTD50 -50PPB	>AC762	3-1-89	13:18

FORM V

GC/MS TUNING AND MASS CALIBRATION
BROMOFLUOROBENZENE

CASE NUMBER: LABORATORY: EA ENG. CONTRACT 10088.03
INST ID 5100 SENS DATE: 03/03/89 SENS TIME. 9:05:00
LAB ID. AB06846 CALI DATE: 02/27/89 ANALYST: CVO
DATA RELEASE AUTHORIZED BY:

M/E	ION ABUNDANCE CRITERIA	SPEC # 161	
50	15 TO 40% OF MASS 95	26.40	
75	30 TO 60% OF MASS 95	40.63	
95	BASE PEAK, 100% RELATIVE ABUNDANCE	100.00	
96	5 TO 9% OF MASS 95	5.68	
173	LESS THAN 1% OF MASS 95	0.00	
174	GREATER THAN 50% OF MASS 95	94.01	
175	5 TO 9% OF MASS 174	5.25	(5.59) 1
176	BETWEEN 95% AND 101% OF MASS 174	91.76	(97.60) 1
177	5 TO 9% OF MASS 176	6.06	(6.61) 2

1 - VALUE IN PARENTHESIS IS % OF MASS 174
2 - VALUE IN PARENTHESIS IS % OF MASS 176

THIS PERFORMANCE TUNE APPLIES TO THE FOLLOWING SAMPLES, BLANKS, AND STANDARDS.

VOA SAMPLE, BLANK AND STANDARD LOG

SAMPLE ID	LAB ID	DATE ANALYZED	TIME ANALYZED	INST ID
VSTD50/300	AB06849	03/03/89	10:15:00	5100
VBLA	AB06850	03/03/89	11:22:00	5100
PRW4.S5(0821)	AB06851	03/03/89	12:27:00	5100
TRIP BLNK(0824	AB06852	03/03/89	13:08:00	5100

FORM V

5A
VOLATILE ORGANIC GC/MS TUNING AND MASS
CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PR-1,S-4

Lab File ID: AC798 BFB Injection Date: 3/ 7/89

Instrument ID: A1 BFB Injection Time: 9:55

Matrix:(soil/water) SOIL Level:(low/med) LOW Column:(pack/cap) PACK

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% OF MASS 95	18.9
75	30.0 - 60.0% OF MASS 95	42.0
95	Base peak, 100% relative abundance	100.
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.0(0.0)1
174	Greater than 50.0% of mass 95	68.4
175	5.0 - 9.0% of mass 174	5.0(7.3)1
176	Greater than 95.0%, but less than 101.0% of mass 174	68.0(99.5)1
177	5.0 - 9.0% of mass 176	4.2(6.1)2

1-Value is % mass 174 2-Value is % mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD200	200PPB	AC799	3/ 7/89	11:08
02	VSTD150	150PPB	AC800	3/ 7/89	12:03
03	VSTD100	100PPB	AC801	3/ 7/89	12:59
04	VSTD50	50PPB	AC802	3/ 7/89	13:54
05	VSTD20	20PPB	AC803	3/ 7/89	14:50
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FORM V VOA

2/87 Rev. 027

GC/MS TUNING AND MASS CALIBRATION
BFBOMOFLUOROBENZENE

PAGE NUMBER
INST ID. 5100
LAB ID AB06880
DATA RELEASE AUTHORIZED BY:

LABORATORY. EA ENG.
SENS DATE. 03/07/89
CALI DATE: 02/27/89

CONTRACT: 10388.03
SENS TIME: 10:07.00
ANALYST: CVC

M/E	ION ABUNDANCE CRITERIA	SPEC # 160	
50	15 TO 40% OF MASS 95	35.15	
75	30 TO 60% OF MASS 95	45.59	
95	BASE PEAK, 100% RELATIVE ABUNDANCE	100.00	
96	5 TO 9% OF MASS 95	7.04	
173	LESS THAN 1% OF MASS 95	0.00	
174	GREATER THAN 50% OF MASS 95	97.92	
175	5 TO 9% OF MASS 174	8.19	(8.36) 1
176	BETWEEN 95% AND 101% OF MASS 174	94.29	(96.29) 1
177	5 TO 9% OF MASS 176	7.77	(8.24) 2

1 - VALUE IN PARENTHESIS IS % OF MASS 174
2 - VALUE IN PARENTHESIS IS % OF MASS 176

THIS PERFORMANCE TUNE APPLIES TO THE FOLLOWING SAMPLES, BLANKS, AND STANDARDS.

VOA SAMPLE, BLANK AND STANDARD LOG

SAMPLE ID	LAB ID	DATE ANALYZED	TIME ANALYZED	INST ID
VSTD50/300	AB06881	03/07/89	10:41:00	5100
VBLK	AB06882	03/07/89	11:42:00	5100
~~FFB-1(0873)~~	~~AB06883~~	~~03/07/89~~	~~12:35:00~~	~~5100~~
~~FFB-2(0883)~~	~~AB06884~~	~~03/07/89~~	~~13:09:00~~	~~5100~~
~~FFB-3(0884)~~	~~AB06885~~	~~03/07/89~~	~~13:43:00~~	~~5100~~
~~FFB-4(0885)~~	~~AB06886~~	~~03/07/89~~	~~14:18:00~~	~~5100~~
~~RINSATE BLNK(0872)~~	~~AB06888~~	~~03/07/89~~	~~15:22:00~~	~~5100~~
4/24/89 ~~TRIP BLNK(0874)~~	~~AB06889~~	~~03/07/89~~	~~15:54:00~~	~~5100~~
~~RINSATE BLNK(0882)~~	~~AB06890~~	~~03/07/89~~	~~16:32:00~~	~~5100~~
~~TRIP BLNK(0886)~~	~~AB06891~~	~~03/07/89~~	~~17:07:00~~	~~5100~~
WRW-1(0871)	AB06892	03/07/89	17:41:00	5100

FORM V

5A
VOLATILE ORGANIC GC/MS TUNING AND MASS
CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PP-1,3-4

Lab File ID: AC811 BFB Injection Date: 3/13/89

Instrument ID: A1 BFB Injection Time: 11:21

Matrix:(soil/water) SOIL Level:(low/med) LOW Column:(pack/cap) PACK

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% OF MASS 95	17.7
75	30.0 - 60.0% OF MASS 95	43.8
95	Base peak, 100% relative abundance	100.
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.0(0.0)1
174	Greater than 50.0% of mass 95	72.9
175	5.0 - 9.0% of mass 174	4.8(6.6)1
176	Greater than 95.0%, but less than 101.0% of mass 174	69.3(95.1)1
177	5.0 - 9.0% of mass 176	4.3(6.2)2

1-Value is % mass 174 2-Value is % mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD50	50PPB	AC812	3/13/89	12:10
02	VBLK1	~~200PPB~~ Method Blank	AC813	3/13/89	13:14
03	TRIP BLANK RE	EA# 0639	AC814	3/13/89	15:12
04	RINSATE BL LE	EA# 0640	AC815	3/13/89	16:07
05					
06					
07					
08					
09					
10					
11					
12					
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22					

B. Sample Data

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PP-1,S-4

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: WILL GP SAS No.: SDG No.: PP-1,S-4

Matrix: (soil/water) SOIL Lab Sample ID: EA# 0635

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AC700

Level: (low/med) LOW Date Received: 02/16/89

% Moisture: not dec. 0. Date Analyzed: 02/23/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	3.	J
67-64-1	Acetone	19.	
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

PR-1,S-1

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PR-1,S-1

Matrix: (soil/water) SOIL Lab Sample ID: EA# 0635

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AC700

Level: (low/med) LOW Date Received: 02/16 89

% Moisture: not dec. 0. Date Analyzed: 02/23/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Volatiles Detected			
2.				
3.				
4.				
5.				
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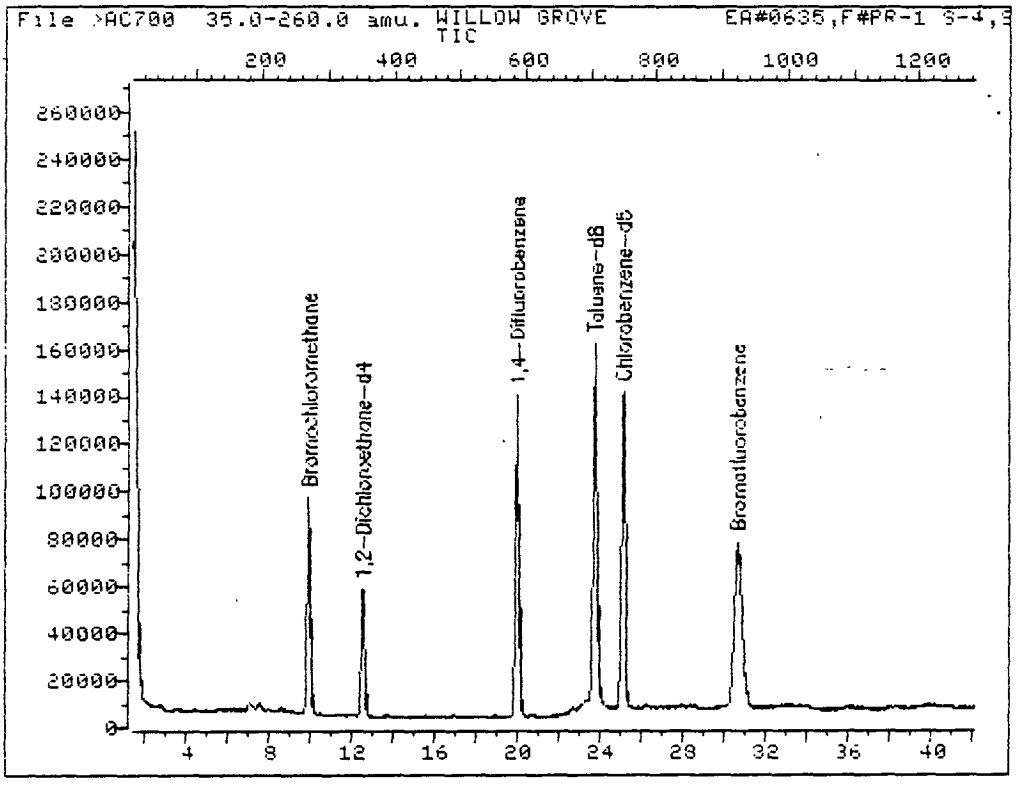
TOTAL ION CHROMATOGRAM



Data File: >AC700::D1 Quant Output File: ^AC700::QT
Name: WILLOW GROVE
Misc: EA#0635,F#PR-1 S-4,SOIL,5GM/5ML,GC/MS-A1-CVG

Id File: AVOA::BD
Title: CLP PROTOCOL 5PT. CALIBRATION, GC/MS A1
Last Calibration: 890207 18:53

Operator ID: TONY
Quant Time: 890223 05:06
Injected at: 890223 04:18

QUANT REPORT

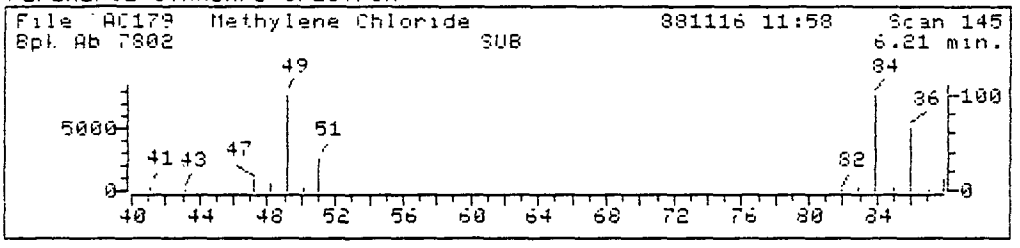
Operator ID: TONY Quant Rev: 6 Quant Time: 890223 05:06
Output File: AC700::QT Injected at: 890223 04:18
Data File: AC700::DI Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0635,F#PR-1 5-4,SOIL,5GM/5ML,GC/MS-A1-CVG

ID File: AVOA::BD
Title: CLP PROTOCOL SPT. CALIBRATION, GC/MS A1
Last Calibration: 890207 18:53

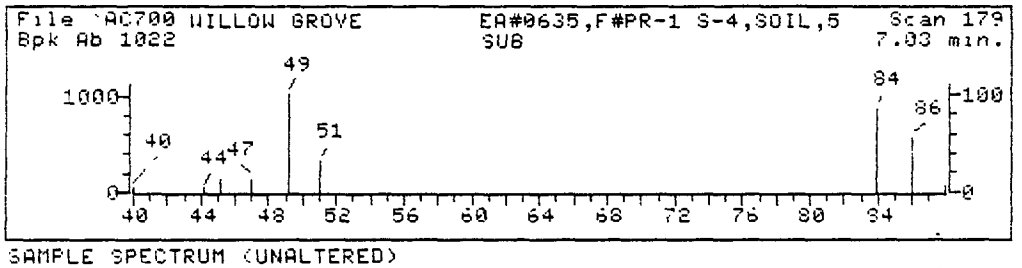
	Compound	R.T.	Q ion	Area	Conc	Units	Q
1)	*Bromochloromethane	9.92	128.0	127146	50.00	UG/L	90
6)	Methylene Chloride	7.03	84.0	13118	3.00	UG/L	84
7)	Acetone	7.48	43.0	22894	19.11	UG/L	69
13)	1,2-Dichloroethane-d4	12.48	65.0	171811	58.73	UG/L	83
15)	*1,4-Difluorobenzene	19.96	114.0	654791	50.00	UG/L	91
29)	*Chlorobenzene-d5	25.06	117.0	569087	50.00	UG/L	94
35)	Toluene-d8	23.73	98.0	672537	48.35	UG/L	93
40)	Bromofluorobenzene	30.61	95.0	390370	52.98	UG/L	69

* Compound is ISTD

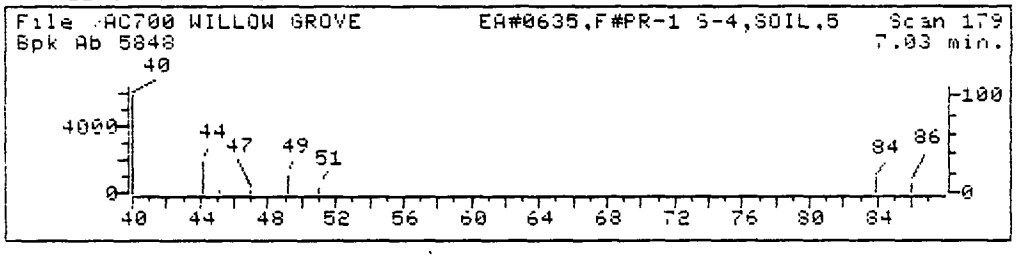
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



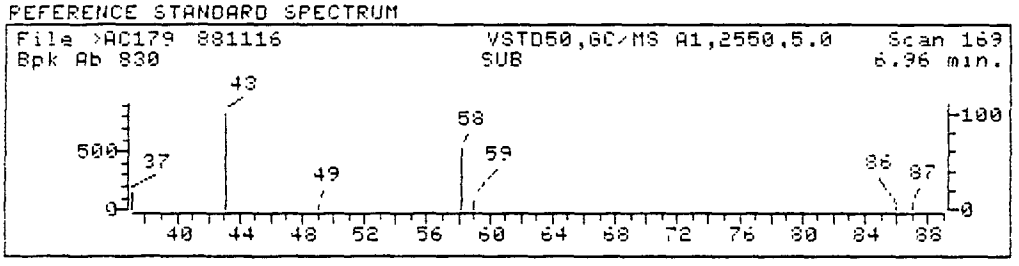
SAMPLE SPECTRUM (UNALTERED)



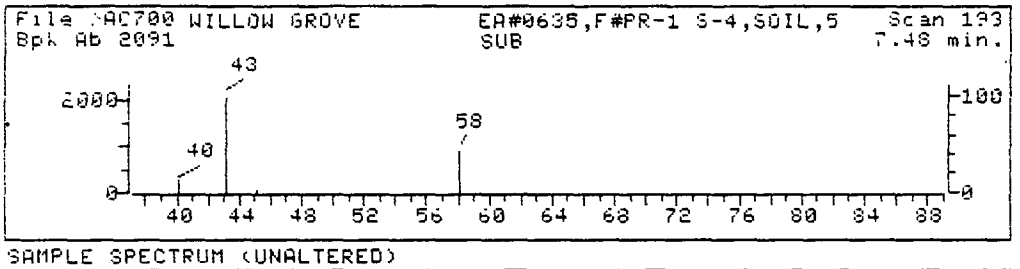
Data File: >AC700::D1 Quant Output File: ^AC700::QT
Name: WILLOW GROVE
Misc: EA#0635,F#PR-1 S-4,SOIL,5GM/5ML,GC/MS-A1-CUG
Quant Time: 890223 05:06 Quant ID File: AVOA::BD
Injected at: 890223 04:18 Last Calibration: 890207 18:53

Compound No: 6
Compound Name: Methylene Chloride
Scan Number: 179
Retention Time: 7.03 min.
Quant Ion: 84.0
Area: 13118
Concentration: 3.00 UG/L
q-value: 84

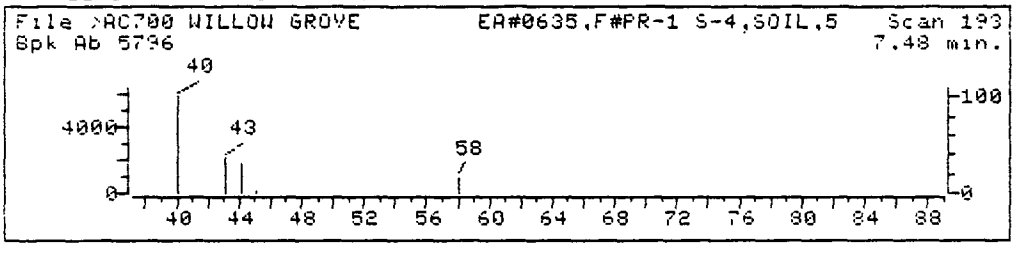
PEFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >AC700::D1 Quant Output File: ^AC700::QT
Name: WILLOW GROVE
Misc: EA#0635,F#PR-1 S-4,SOIL,5GM/5ML,GC/MS-A1-CVG
Quant Time: 890223 05:06 Quant ID File: AVOA::BD
Injected at: 890223 04:18 Last Calibration: 890207 18:53

Compound No: 7
Compound Name: Acetone
Scan Number: 193
Retention Time: 7.48 min.
Quant Ion: 43.0
Area: 22994
Concentration: 19.11 UG/L
q-value: 89

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PP-2,9-6

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PR-1,9-4

Matrix: (soil/water) SOIL Lab Sample ID: EA# 0636

Sample wt/vol: 5.0 (g/mL) G Lab File ID: A0701

Level: (low/med) LOW Date Received: 02/16/89

% Moisture: not dec. 0. Date Analyzed: 02/23/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	3.	J
67-64-1	Acetone	12.	
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

PR-2,S-8

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: WILL GP SAS No.: SDG No.: PR-1,S-4

Matrix: (soil/water) SOIL Lab Sample ID: EA# 0606

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AC701

Level: (low/med) LOW Date Received: 02/16/89

% Moisture: not dec. 0. Date Analyzed: 02/23/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Volatiles Detected			
2.				
3.				
4.				
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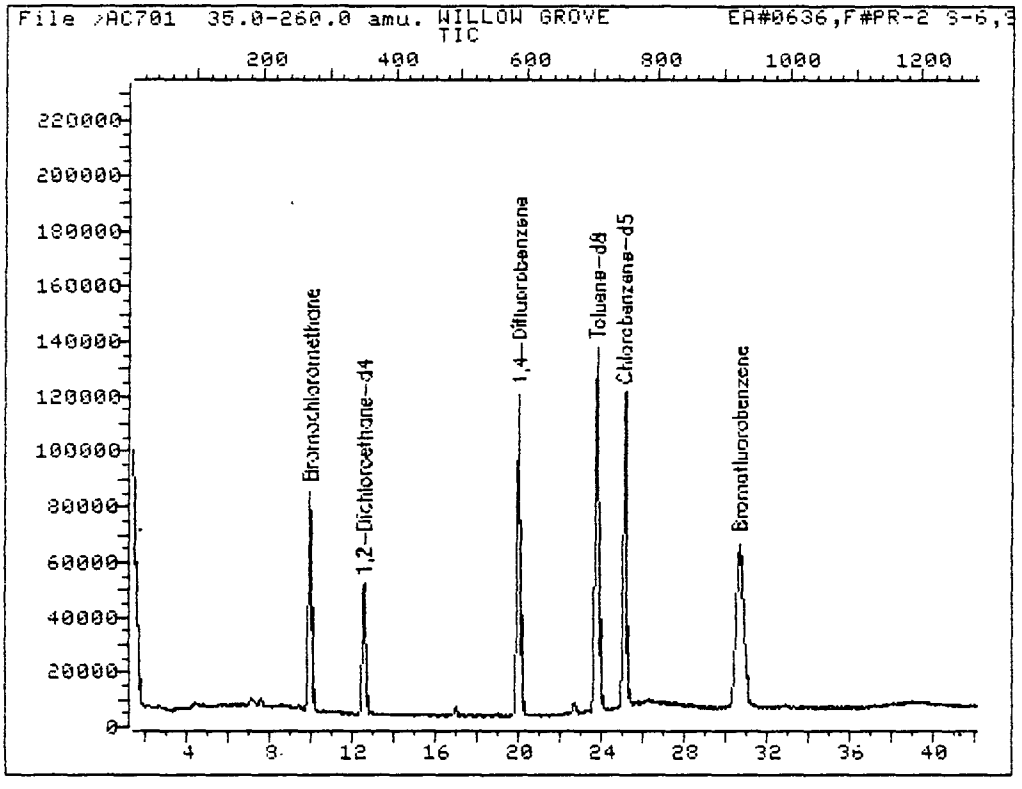
FORM I VOA-TIC 1/87 Rev.

TOTAL ION CHROMATOGRAM



Data File: >AC701::D1 Quant Output File: ^AC701::DT
Name: WILLOW GROVE
Misc: EA#0636,F#PR-2 S-6,SOIL,5GM/5ML,GC/MS-A1-CVG

Id File: AVOA::BD
Title: CLP PROTOCOL 5PT. CALIBRATION, GC/MS A1
Last Calibration: 890207 18:53

Operator ID: TONY
Quant Time: 890223 06:02
Injected at: 890223 05:13

QUANT REPORT

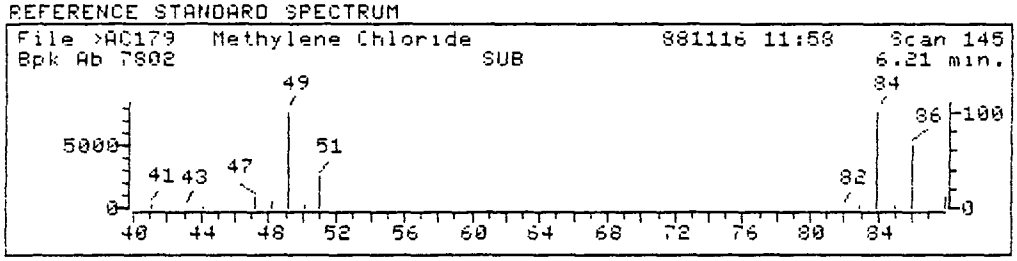
Operator ID: TONY Quant Rev: 6 Quant Time: 890223 05:02
Output File: AC70[illegible]::OT Injected at: 890223 05:[illegible]3
Data File: AC70[illegible]::D[illegible] Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0536,F#PR-2 S-8,SOIL,5GM/5ML,GC/MS-A1-CVG

ID File: AVGA::BD
Title: CLP PROTOCOL SPT. CALIBRATION, GC/MS A1
Last Calibration: 890207 18:53

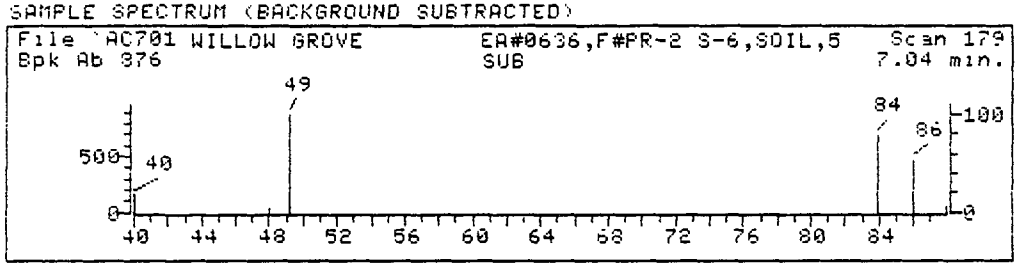
	Compound	R.T.	Q ion	Area	Conc	Units	Q
1)	*Bromochloromethane	9.92	128.0	111556	50.00	UG/L	90
6)	Methylene Chloride	7.04	84.0	10940	2.85	UG/L	79
7)	Acetone	7.48	43.0	15530	17.53	UG/L	99
13)	1,2-Dichloroethane-d4	12.49	65.0	150721	58.67	UG/L	80
15)	*1,4-Difluorobenzene	19.96	114.0	560516	50.00	UG/L	90
29)	*Chlorobenzene-d5	25.04	117.0	488896	50.00	UG/L	94
35)	Toluene-d8	23.74	98.0	586987	49.11	UG/L	97
40)	Bromofluorobenzene	30.62	95.0	336725	53.10	UG/L	91

* Compound is ISTD

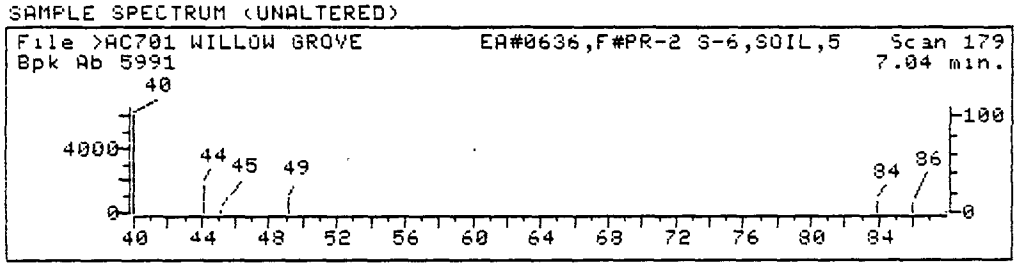
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



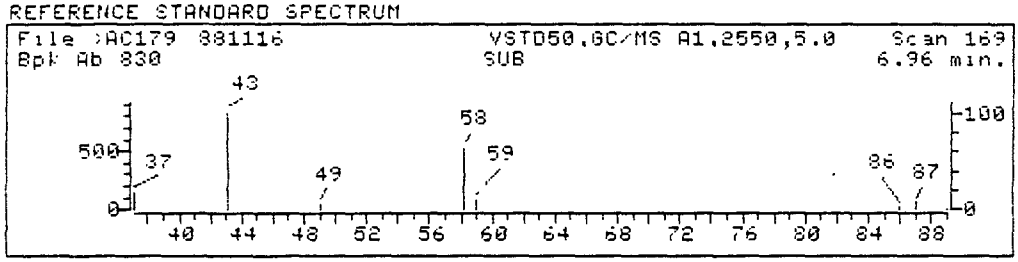
SAMPLE SPECTRUM (UNALTERED)



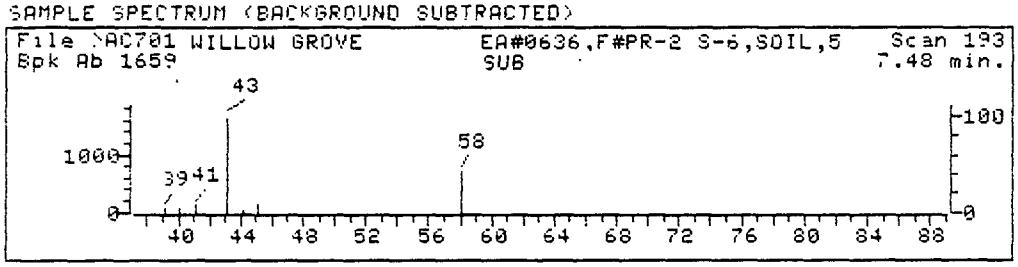
Data File: >AC701::D1 Quant Output File: ^AC701::QT
Name: WILLOW GROVE
Misc: EA#0636,F#PR-2 S-6,SOIL,5GM/5ML,GC/MS-A1-CVG
Quant Time: 890223 06:02 Quant ID File: AVOA::BD
Injected at: 890223 05:13 Last Calibration: 890207 18:53

Compound No: 6
Compound Name: Methylene Chloride
Scan Number: 179
Retention Time: 7.04 min.
Quant Ion: 84.0
Area: 10940
Concentration: 2.85 UG/L
q-value: 79

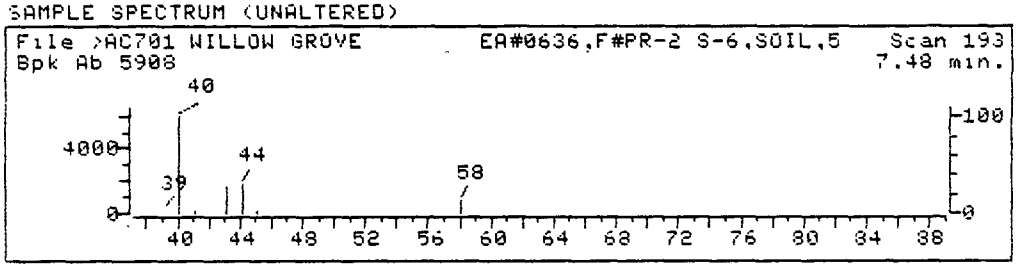
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >AC701::D1 Quant Output File: ^AC701::DT
Name: WILLOW GROVE
Misc: EA#0636,F#PR-2 S-6,SOIL,5GM/5ML,GC/MS-A1-CVG
Quant Time: 890223 06:02 Quant ID File: AVOA::BD
Injected at: 890223 05:13 Last Calibration: 890207 18:53

Compound No: 7
Compound Name: Acetone
Scan Number: 193
Retention Time: 7.48 min.
Quant Ion: 43.0
Area: 18530
Concentration: 17.53 UG/L
q-value: 89

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PR W-1 RSB 3,S-8

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PR W-1 RSB 3,S-8

Matrix: (soil/water) SOIL Lab Sample ID: EA# 0744

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE942

Level: (low/med) LOW Date Received: 2/17/89

% Moisture: not dec. 3. Date Analyzed: 2/24/89

Column: (packed/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11.	U
74-83-9	Bromomethane	11.	U
75-01-4	Vinyl Chloride	11.	U
75-00-3	Chloroethane	11.	U
75-09-2	Methylene Chloride	6.	U
67-64-1	Acetone	11.	U
75-15-0	Carbon Disulfide	6.	U
75-35-4	1,1-Dichloroethene	6.	U
75-34-3	1,1-Dichloroethane	6.	U
540-59-0	1,2-Dichloroethene (total)	6.	U
67-66-3	Chloroform	6.	U
107-06-2	1,2-Dichloroethane	6.	U
78-93-3	2-Butanone	11.	U
71-55-6	1,1,1-Trichloroethane	6.	U
56-23-5	Carbon Tetrachloride	6.	U
108-05-4	Vinyl Acetate	11.	U
75-27-4	Bromodichloromethane	6.	U
78-87-5	1,2-Dichloropropane	6.	U
10061-01-5	cis-1,3-Dichloropropene	6.	U
79-01-6	Trichloroethene	6.	U
124-48-1	Dibromochloromethane	6.	U
79-00-5	1,1,2-Trichloroethane	6.	U
71-43-2	Benzene	6.	U
10061-02-6	trans-1,3-Dichloropropene	6.	U
75-25-2	Bromoform	6.	U
108-10-1	4-Methyl-2-pentanone	11.	U
591-78-6	2-Hexanone	11.	U
127-18-4	Tetrachloroethene	6.	U
79-34-5	1,1,2,2-Tetrachloroethane	6.	U
108-88-3	Toluene	6.	U
108-90-7	Chlorobenzene	6.	U
100-41-4	Ethylbenzene	6.	U
100-42-5	Styrene	6.	U
1330-20-7	Xylene (total)	6.	U

FORM I VOA 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

PR~~B~~ W-1 RSB,S-S

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PR~~B~~ W-1 RSB,S-S

Matrix: (soil/water) SOIL Lab Sample ID: EA# 0744

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE942

Level: (low/med) LOW Date Received: 2/17/89

% Moisture: not dec. 8. Date Analyzed: 2/24/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Volatiles Detected			
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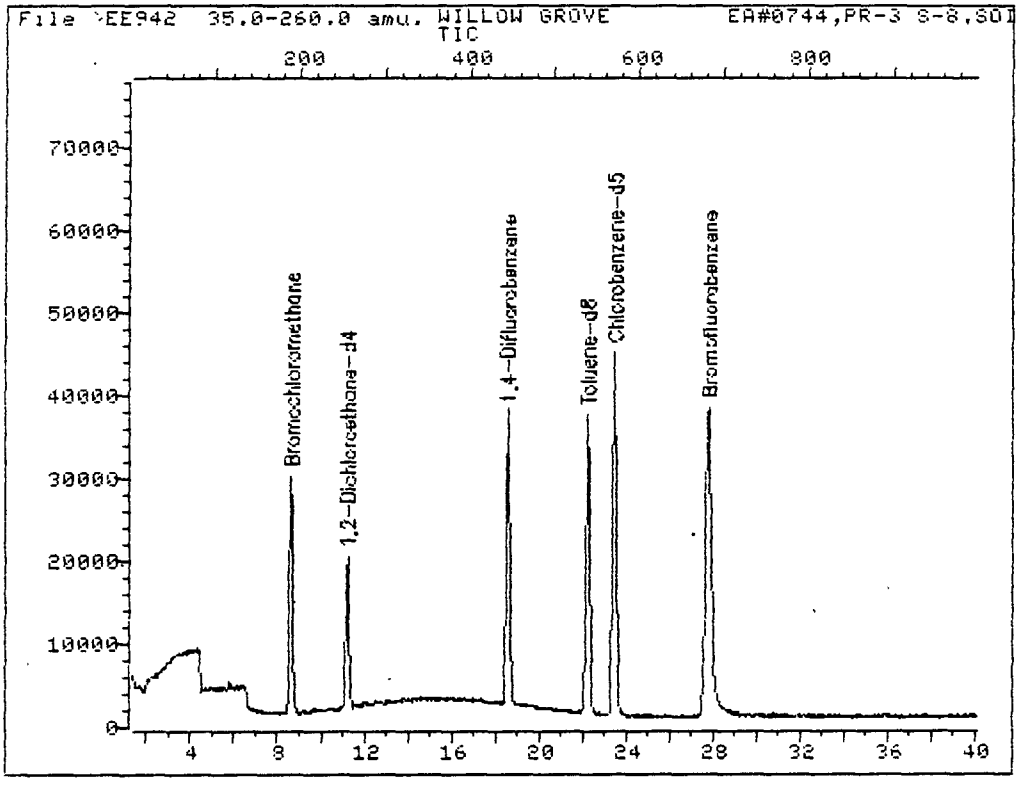
FORM I VOA-TIC 1/87 Rev.

TOTAL ION CHROMATOGRAM



Data File: >EE942::D2 Quant Output File: ^EE942::QT
Name: WILLOW GROVE
Misc: EA#0744,PR-3 S-8,SOIL,5.0,GC/MS E5
ω-1 RSB

Id File: ALL::SC
Title: EA Priority Pollutant IDfile
Last Calibration: 890224 12:11

Operator ID: CARL
Quant Time: 890224 13:49
Injected at: 890224 13:08

QUANT REPORT

Operator ID: CARL Quant Rev: 6 Quant Time: 890224 13:49
Output File: ^EE942::QT Injected at: 890224 13:08
Data File: >EE942::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0744,PR~~-3~~ S-8,SOIL,5.0,GC/MS E5
W-1
RSB
ID File: ALL::SC
Title: EA Priority Pollutant IDfile
Last Calibration: 890224 12:11

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.65	128.0	45574	50.00	ug/L	88
18)	1,2-Dichloroethane-d4	11.24	65.0	72727	48.82	ug/L	94
20)	*1,4-Difluorobenzene	18.57	114.0	175730	50.00	ug/L	90
38)	*Chlorobenzene-d5	23.45	117.0	175644	50.00	ug/L	96
44)	Toluene-d8	22.21	98.0	171450	49.93	ug/L	97
53)	Bromofluorobenzene	27.80	95.0	147364	48.10	ug/L	88

* Compound is ISTD

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PR-SS-1

Lab Name: EAENG Contract: 68-01-7435

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PR~~-2~~,S-S W-1 RSB

Matrix: (soil/water) SOIL Lab Sample ID: EA# 0748

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE943

Level: (low/med) LOW Date Received: 2/18/89

% Moisture: not dec. 32. Date Analyzed: 2/24/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	14.	U
74-83-9	Bromomethane	14.	U
75-01-4	Vinyl Chloride	14.	U
75-00-3	Chloroethane	14.	U
75-09-2	Methylene Chloride	7.	U
67-64-1	Acetone	14.	U
75-15-0	Carbon Disulfide	7.	U
75-35-4	1,1-Dichloroethene	7.	U
75-34-3	1,1-Dichloroethane	7.	U
540-59-0	1,2-Dichloroethene (total)	7.	U
67-66-3	Chloroform	7.	U
107-06-2	1,2-Dichloroethane	7.	U
78-93-3	2-Butanone	14.	U
71-55-6	1,1,1-Trichloroethane	7.	U
56-23-5	Carbon Tetrachloride	7.	U
108-05-4	Vinyl Acetate	14.	U
75-27-4	Bromodichloromethane	7.	U
78-87-5	1,2-Dichloropropane	7.	U
10061-01-5	cis-1,3-Dichloropropene	7.	U
79-01-6	Trichloroethene	7.	U
124-48-1	Dibromochloromethane	7.	U
79-00-5	1,1,2-Trichloroethane	7.	U
71-43-2	Benzene	7.	U
10061-02-6	trans-1,3-Dichloropropene	7.	U
75-25-2	Bromoform	7.	U
108-10-1	4-Methyl-2-pentanone	14.	U
591-78-6	2-Hexanone	14.	U
127-18-4	Tetrachloroethene	7.	U
79-34-5	1,1,2,2-Tetrachloroethane	7.	U
108-88-3	Toluene	7.	U
108-90-7	Chlorobenzene	7.	U
100-41-4	Ethylbenzene	7.	U
100-42-5	Styrene	7.	U
1330-20-7	Xylene (total)	7.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

PP-SS-1

Lab Name: EMENG Contract: 68-01-7436

Lab Code: EMENG Case No.: WILL GR SAS No.: SDG No.: PR~~2~~ W-1 RSB, S-3

Matrix: (soil/water) SOIL Lab Sample ID: EM# 0748

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE943

Level: (low/med) LOW Date Received: 2/19/89

% Moisture: not dec. 32. Date Analyzed: 2/24/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Volatiles Detected			
2.				
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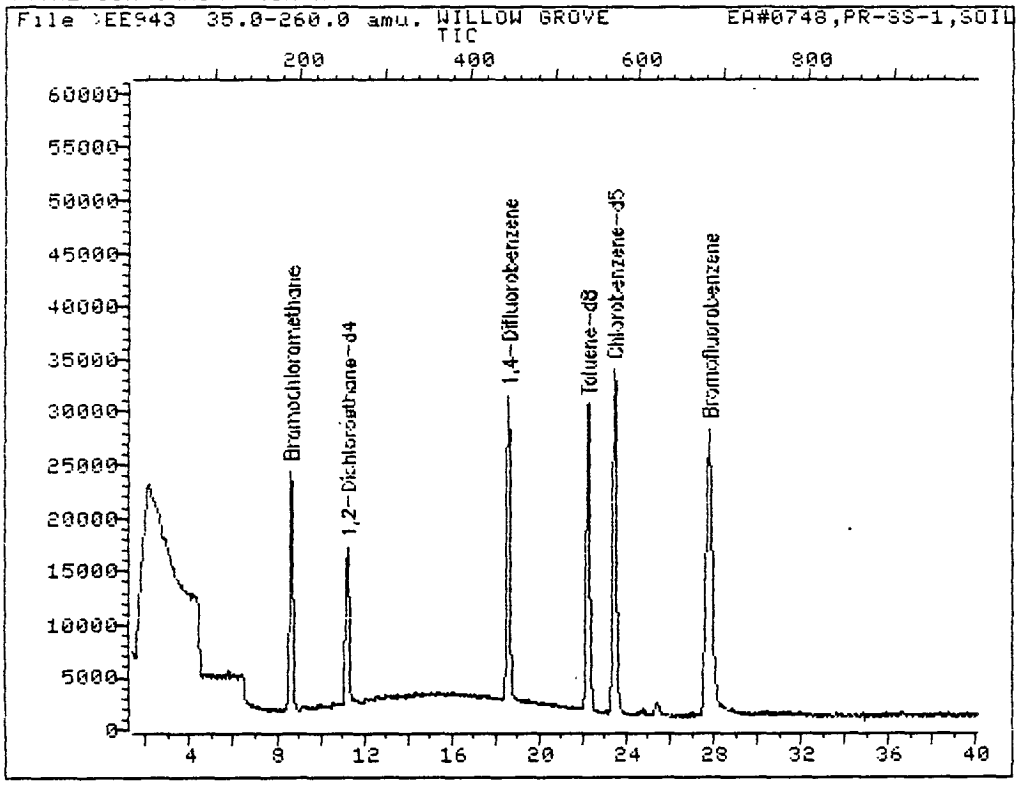
TOTAL ION CHROMATOGRAM



Data File: >EE943::D2 Quant Output File: ^EE943::QT
Name: WILLOW GROVE
Misc: EA#0748,PR-SS-1,SOIL,5.0,GC/MS E5

Id File: ALL::SC
Title: EA Priority Pollutant IDfile
Last Calibration: 890224 12:11

Operator ID: CARL
Quant Time: 890224 14:35
Injected at: 890224 13:54

QUANT REPORT

Operator ID: CARL Quant Rev: 6 Quant Time: 890224 14:35
Output File: ^EE943::QT Injected at: 890224 13:54
Data File: >EE943::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0748,PR-SS-1,SOIL,5.0,GC/MS E5

ID File: ALL::SC
Title: EA Priority Pollutant IDfile
Last Calibration: 890224 12:11

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.65	128.0	37035	50.00	ug/L	85
18)	1,2-Dichloroethane-d4	11.24	65.0	59725	49.34	ug/L	96
20)	*1,4-Difluorobenzene	18.61	114.0	140817	50.00	ug/L	90
38)	*Chlorobenzene-d5	23.46	117.0	131885	50.00	ug/L	95
44)	Toluene-d8	22.21	98.0	136487	52.94	ug/L	97
53)	Bromofluorobenzene	27.80	95.0	105794	45.99	ug/L	93

* Compound is ISTD

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PR-SS-2

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PR~~-S~~ W-1 RSD,S-3

Matrix: (soil/water) SOIL Lab Sample ID: EA# 0749

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE944

Level: (low/med) LOW Date Received: 2/18/89

% Moisture: not dec. 18. Date Analyzed: 2/24/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12.	U
74-83-9	Bromomethane	12.	U
75-01-4	Vinyl Chloride	12.	U
75-00-3	Chloroethane	12.	U
75-09-2	Methylene Chloride	6.	U
67-64-1	Acetone	12.	U
75-15-0	Carbon Disulfide	6.	U
75-35-4	1,1-Dichloroethene	6.	U
75-34-3	1,1-Dichloroethane	6.	U
540-59-0	1,2-Dichloroethene (total)	6.	U
67-66-3	Chloroform	6.	U
107-06-2	1,2-Dichloroethane	6.	U
78-93-3	2-Butanone	12.	U
71-55-6	1,1,1-Trichloroethane	6.	U
56-23-5	Carbon Tetrachloride	6.	U
108-05-4	Vinyl Acetate	12.	U
75-27-4	Bromodichloromethane	6.	U
78-87-5	1,2-Dichloropropane	6.	U
10061-01-5	cis-1,3-Dichloropropene	6.	U
79-01-6	Trichloroethene	6.	U
124-48-1	Dibromochloromethane	6.	U
79-00-5	1,1,2-Trichloroethane	6.	U
71-43-2	Benzene	6.	U
10061-02-6	trans-1,3-Dichloropropene	6.	U
75-25-2	Bromoform	6.	U
108-10-1	4-Methyl-2-pentanone	12.	U
591-78-6	2-Hexanone	12.	U
127-18-4	Tetrachloroethene	6.	U
79-34-5	1,1,2,2-Tetrachloroethane	6.	U
108-88-3	Toluene	6.	U
108-90-7	Chlorobenzene	6.	U
100-41-4	Ethylbenzene	6.	U
100-42-5	Styrene	6.	U
1330-20-7	Xylene (total)	6.	U

FORM I VOA 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FR-SS-2

Lab Name: EAENG Contract: 68-01-7428

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PP~~-2~~,S-8 W-1 KSB

Matrix: (soil/water) SOIL Lab Sample ID: EA# 0749

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE644

Level: (low/med) LOW Date Received: 2/18/99

% Moisture: not dec. 18 Date Analyzed: 2/24/99

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Volatiles Detected			
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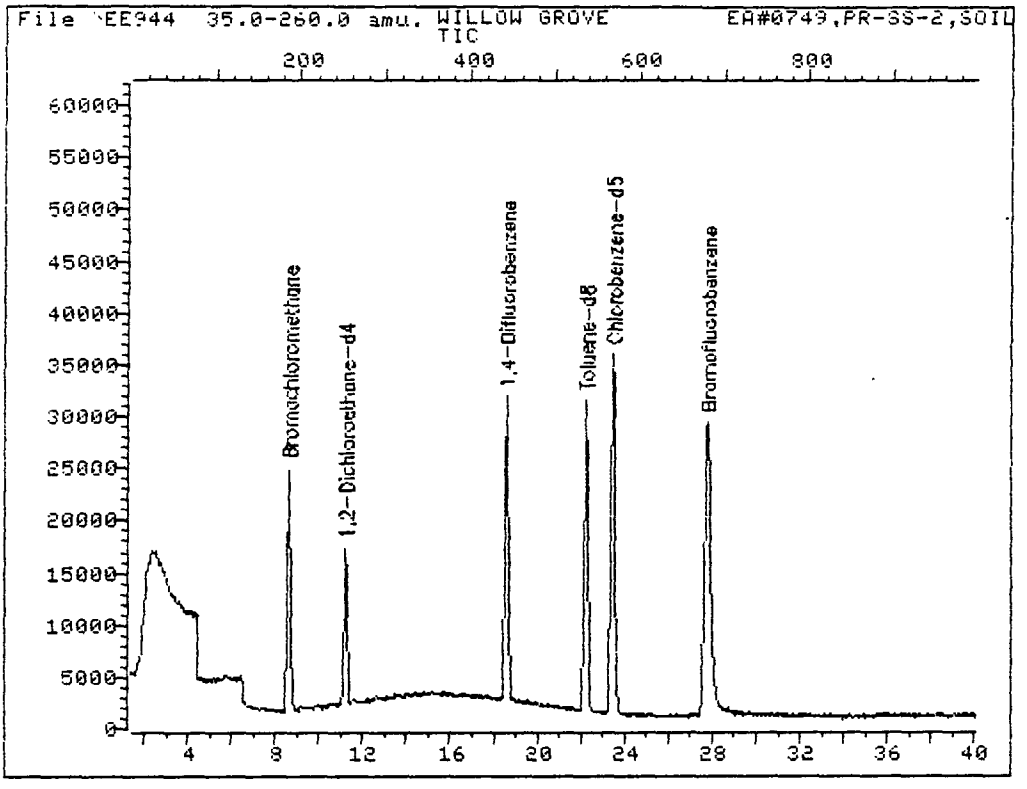
TOTAL ION CHROMATOGRAM



Data File: >EE944::D2 Quant Output File: ^EE944::QT
Name: WILLOW GROVE
Misc: EA#0749,PR-SS-2,SOIL,5.0,GC/MS E5

Id File: ALL::SC
Title: EA Priority Pollutant IDfile
Last Calibration: 890224 12:11

Operator ID: CARL
Quant Time: 890224 15:20
Injected at: 890224 14:39

QUANT REPORT

Operator ID: CARL. Quant Rev: 6 Quant Time: 890224 15:20
Output File: ^EE944::QT Injected at: 890224 14:39
Data File: >EE944::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0749,PR-SS-2,SOIL,5.0,GC/MS E5

ID File: ALL::SC
Title: EA Priority Pollutant IDfile
Last Calibration: 890224 12:11

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.65	128.0	38238	50.00	ug/L	90
18)	1,2-Dichloroethane-d4	11.25	65.0	61021	48.83	ug/L	97
20)	*1,4-Difluorobenzene	18.57	114.0	145467	50.00	ug/L	90
38)	*Chlorobenzene-d5	23.46	117.0	138119	50.00	ug/L	94
44)	Toluene-d8	22.22	98.0	140294	51.96	ug/L	96
53)	Bromofluorobenzene	27.80	95.0	111347	46.22	ug/L	93

* Compound is ISTD

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PRW-2,S-6

Lab Name: EAENS Contract: 68-01-7436

Lab Code: EAENS Case No.: WILL GR SAS No.: SDG No.: PRW-2,S-6

Matrix: (soil/water) SOIL Lab Sample ID: EA# 0771

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE958

Level: (low/med) LOW Date Received: 2/21/89

% Moisture: not dec. 19. Date Analyzed: 2/27/89

Column: (packed/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/kg) UG/KG	Q
74-87-3	Chloromethane	12.	U
74-83-9	Bromomethane	12.	U
75-01-4	Vinyl Chloride	12.	U
75-00-3	Chloroethane	12.	U
75-09-2	Methylene Chloride	6.	U
67-64-1	Acetone	12.	U
75-15-0	Carbon Disulfide	6.	U
75-35-4	1,1-Dichloroethene	6.	U
75-34-3	1,1-Dichloroethane	6.	U
540-59-0	1,2-Dichloroethene (total)	6.	U
67-66-3	Chloroform	6.	U
107-06-2	1,2-Dichloroethane	6.	U
78-93-3	2-Butanone	12.	U
71-55-6	1,1,1-Trichloroethane	6.	U
56-23-5	Carbon Tetrachloride	6.	U
108-05-4	Vinyl Acetate	12.	U
75-27-4	Bromodichloromethane	6.	U
78-87-5	1,2-Dichloropropane	6.	U
10061-01-5	cis-1,3-Dichloropropene	6.	U
79-01-6	Trichloroethene	6.	U
124-48-1	Dibromochloromethane	6.	U
79-00-5	1,1,2-Trichloroethane	6.	U
71-43-2	Benzene	6.	U
10061-02-6	trans-1,3-Dichloropropene	6.	U
75-25-2	Bromoform	6.	U
108-10-1	4-Methyl-2-pentanone	12.	U
591-78-6	2-Hexanone	12.	U
127-18-4	Tetrachloroethene	6.	U
79-34-5	1,1,2,2-Tetrachloroethane	6.	U
108-88-3	Toluene	6.	U
108-90-7	Chlorobenzene	6.	U
100-41-4	Ethylbenzene	6.	U
100-42-5	Styrene	6.	U
1330-20-7	Xylene (total)	6.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

PRW-2,S-6

Lab Name: EAENG Contract: 68-01-7435

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PRW-2,S-6

Matrix: (soil/water) SOIL Lab Sample ID: EA# 0774

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE958

Level: (low/med) LOW Date Received: 2/21/89

% Moisture: not dec. 19. Date Analyzed: 2/27/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Volatiles Detected			
2.				
3.				
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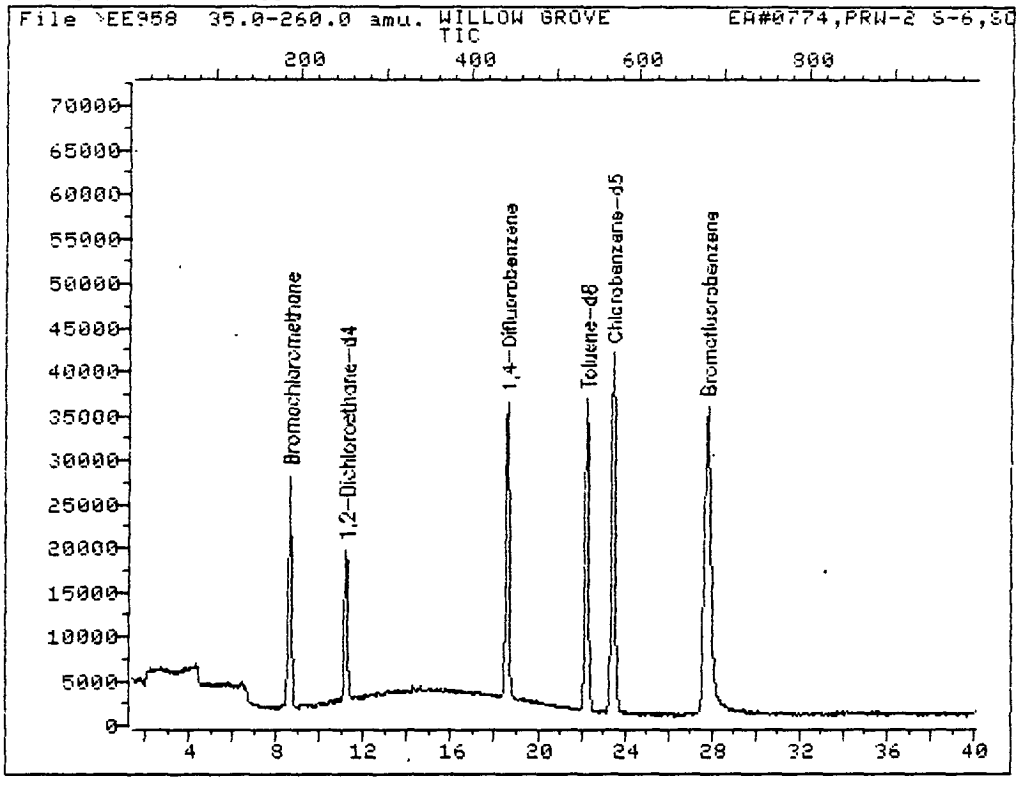
TOTAL ION CHROMATOGRAM



Data File: >EE958::D2 Quant Output File: ^EE958::QT
Name: WILLOW GROVE
Misc: EA#0774,PRW-2 S-6,SOIL,5.0,GC/MS E5

Id File: ALL::SC
Title: EA Priority Pollutant IDfile
Last Calibration: 890227 12:35

Operator ID: CARL
Quant Time: 890227 14:14
Injected at: 890227 13:33

QUANT REPORT

Operator ID: CARL Quant Rev: 6 Quant Time: 890227 14:14
Output File: ^EE958::QT Injected at: 890227 13:33
Data File: >EE958::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0774,PRW-2 S-6,SOIL,5.0,GC/MS E5

ID File: ALL::SC
Title: EA Priority Pollutant IDfile
Last Calibration: 890227 12:35

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.64	128.0	41703	50.00	ug/L	93
18)	1,2-Dichloroethane-d4	11.23	65.0	65694	47.74	ug/L	96
20)	*1,4-Difluorobenzene	18.60	114.0	163922	50.00	ug/L	89
38)	*Chlorobenzene-d5	23.44	117.0	166103	50.00	ug/L	96
44)	Toluene-d8	22.24	98.0	161747	50.13	ug/L	97
53)	Bromofluorobenzene	27.79	95.0	136328	48.21	ug/L	84

* Compound is ISTD

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PR-SS-3

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GP SAS No.: SDG No.: PRW-2,3-6

Matrix: (soil/water) SOIL Lab Sample ID: EA# 0777

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE959

Level: (low/med) LOW Date Received: 2/21/89

% Moisture: not dec. 22. Date Analyzed: 2/27/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	13.	U
74-83-9	Bromomethane	13.	U
75-01-4	Vinyl Chloride	13.	U
75-00-3	Chloroethane	13.	U
75-09-2	Methylene Chloride	7.	U
67-64-1	Acetone	13.	U
75-15-0	Carbon Disulfide	7.	U
75-35-4	1,1-Dichloroethene	7.	U
75-34-3	1,1-Dichloroethane	7.	U
540-59-0	1,2-Dichloroethene (total)	7.	U
67-66-3	Chloroform	7.	U
107-06-2	1,2-Dichloroethane	7.	U
78-93-3	2-Butanone	13.	U
71-55-6	1,1,1-Trichloroethane	7.	U
56-23-5	Carbon Tetrachloride	7.	U
108-05-4	Vinyl Acetate	13.	U
75-27-4	Bromodichloromethane	7.	U
78-87-5	1,2-Dichloropropane	7.	U
10061-01-5	cis-1,3-Dichloropropene	7.	U
79-01-6	Trichloroethene	7.	U
124-48-1	Dibromochloromethane	7.	U
79-00-5	1,1,2-Trichloroethane	7.	U
71-43-2	Benzene	7.	U
10061-02-6	trans-1,3-Dichloropropene	7.	U
75-25-2	Bromoform	7.	U
108-10-1	4-Methyl-2-pentanone	13.	U
591-78-6	2-Hexanone	13.	U
127-18-4	Tetrachloroethene	7.	U
79-34-5	1,1,2,2-Tetrachloroethane	7.	U
108-88-3	Toluene	7.	U
108-90-7	Chlorobenzene	7.	U
100-41-4	Ethylbenzene	7.	U
100-42-5	Styrene	7.	U
1330-20-7	Xylene (total)	7.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

PR-SS-3

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL SR SAS No.: SDG No.: PRW-1,3-6

Matrix: (soil/water) SOIL Lab Sample ID: EA# 0777

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE359

Level: (low/med) LOW Date Received: 2/21/89

% Moisture: not dec. 22. Date Analyzed: 2/27/89

Column: (packed cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Volatiles Detected			
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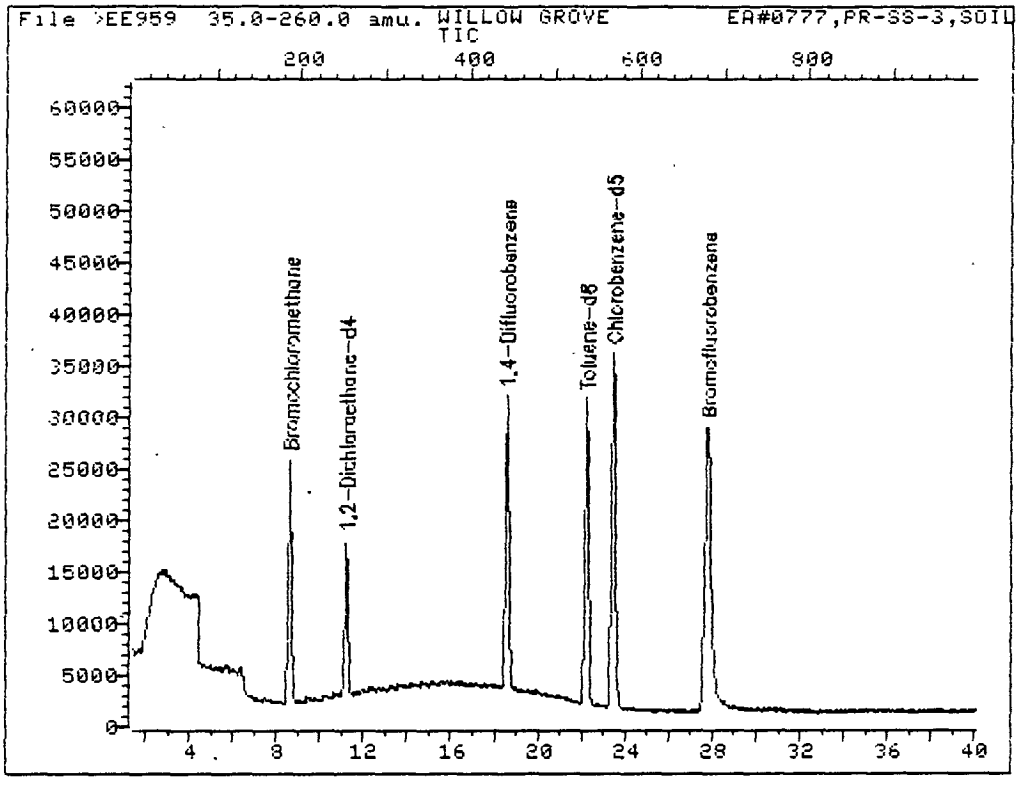
FORM I VOA-TIC 1/87 Rev.

TOTAL ION CHROMATOGRAM



Data File: >EE959::D2 Quant Output File: ^EE959::QT
Name: WILLOW GROVE
Misc: EA#0777,PR-SS-3,SOIL,5.0,GC/MS E5

Id File: ALL::SC
Title: EA Priority Pollutant IDfile
Last Calibration: 890227 12:35

Operator ID: CARL
Quant Time: 890227 15:00
Injected at: 890227 14:19

QUANT REPORT

Operator ID: CARL Quant Rev: 0 Quant Time: 890227 15:00
Output File: ^EE959::QT Injected at: 890227 14:19
Data File: >EE959::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0777,PR-SS-3,SOIL,5.0,GC/MS E5

ID File: ALL::SC
Title: EA Priority Pollutant IDfile
Last Calibration: 890227 12:35

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.65	128.0	37050	50.00	ug/L	90
18)	1,2-Dichloroethane-d4	11.25	65.0	57173	46.77	ug/L	99
20)	*1,4-Difluorobenzene	18.57	114.0	141615	50.00	ug/L	91
38)	*Chlorobenzene-d5	23.46	117.0	137741	50.00	ug/L	95
44)	Toluene-d8	22.22	98.0	140593	52.55	ug/L	97
53)	Bromofluorobenzene	27.80	95.0	109550	46.72	ug/L	86

* Compound is ISTD

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DUP-1

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PRW-2,3-6

Matrix: (soil/water) SOIL Lab Sample ID: EA# 0779

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE960

Level: (low/med) LOW Date Received: 2/21/89

% Moisture: not dec. 15. Date Analyzed: 2/27/89

Column: (packed/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12.	U
74-83-9	Bromomethane	12.	U
75-01-4	Vinyl Chloride	12.	U
75-00-3	Chloroethane	12.	U
75-09-2	Methylene Chloride	6.	U
67-64-1	Acetone	12.	U
75-15-0	Carbon Disulfide	6.	U
75-35-4	1,1-Dichloroethene	6.	U
75-34-3	1,1-Dichloroethane	6.	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6.	U
107-06-2	1,2-Dichloroethane	6.	U
78-93-3	2-Butanone	12.	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6.	U
108-05-4	Vinyl Acetate	12.	U
75-27-4	Bromodichloromethane	6.	U
78-87-5	1,2-Dichloropropane	6.	U
10061-01-5	cis-1,3-Dichloropropene	6.	U
79-01-6	Trichloroethene	6.	U
124-48-1	Dibromochloromethane	6.	U
79-00-5	1,1,2-Trichloroethane	6.	U
71-43-2	Benzene	6.	U
10061-02-6	trans-1,3-Dichloropropene	6.	U
75-25-2	Bromoform	6.	U
108-10-1	4-Methyl-2-pentanone	12.	U
591-78-6	2-Hexanone	12.	U
127-18-4	Tetrachloroethene	6.	U
79-34-5	1,1,2,2-Tetrachloroethane	6.	U
108-88-3	Toluene	6.	U
108-90-7	Chlorobenzene	6.	U
100-41-4	Ethylbenzene	6.	U
100-42-5	Styrene	6.	U
1330-20-7	Xylene (total)	6.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DUP-1

Lab Name: EAENG Contract: 68-01-7413E

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PRW-2,S-6

Matrix: (soil/water) SOIL Lab Sample ID: EA# 0779

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE960

Level: (low/med) LOW Date Received: 2/21/89

% Moisture: not dec. 15. Date Analyzed: 2/27/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Volatiles Detected			
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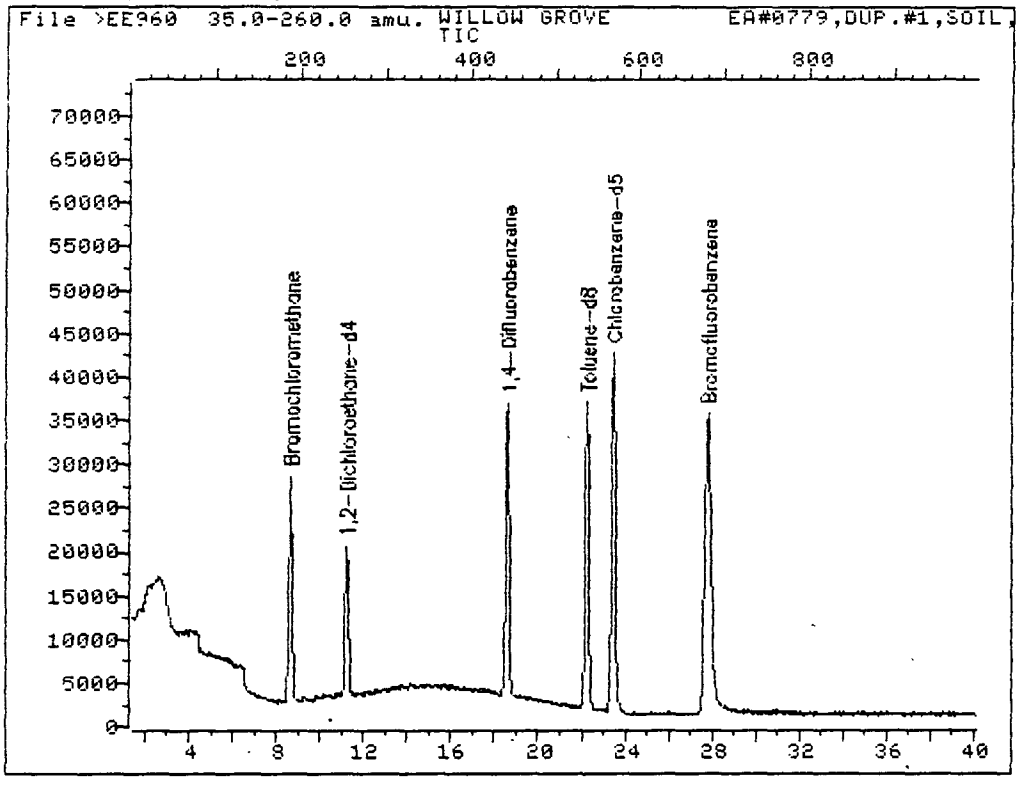
TOTAL ION CHROMATOGRAM



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Name: WILLOW GROVE
Misc: EA#0779,DUP.#1,SOIL,5.0,GC/MS E5

Id File: ALL::SC
Title: EA Priority Pollutant IDfile
Last Calibration: 890227 12:35

Operator ID: CARL
Quant Time: 890227 15:46
Injected at: 890227 15:05

QUANT REPORT

Operator ID: CARL Quant Rev: 6 Quant Time: 890227 15:46
Output File: ^EE960::OT Injected at: 890227 15:05
Data File: ^EE960::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0779,DUP.#1,SOIL,5.0,GC/MS E5

ID File: ALL::SC
Title: EA Priority Pollutant IDfile
Last Calibration: 890227 12:35

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.65	128.0	41383	50.00	ug/L	87
18)	1,2-Dichloroethane-d4	11.25	65.0	64490	47.23	ug/L	96
20)	*1,4-Difluorobenzene	18.61	114.0	163350	50.00	ug/L	91
38)	*Chlorobenzene-d5	23.46	117.0	164889	50.00	ug/L	95
44)	Toluene-d8	22.25	98.0	162012	50.58	ug/L	96
53)	Bromofluorobenzene	27.80	95.0	132700	47.28	ug/L	84

* Compound is ISTD

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DUP-3

Lab Name: EAENG Contract: 68-01-7435

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PRW-2,3-6

Matrix: (soil/water) SOIL Lab Sample ID: EA# 0781

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE961

Level: (low/med) LOW Date Received: 2/21/89

% Moisture: not dec. 34. Date Analyzed: 2/27/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	14.	U
74-83-9	Bromomethane	14.	U
75-01-4	Vinyl Chloride	14.	U
75-00-3	Chloroethane	14.	U
75-09-2	Methylene Chloride	7.	U
67-64-1	Acetone	14.	U
75-15-0	Carbon Disulfide	7.	U
75-35-4	1,1-Dichloroethene	7.	U
75-34-3	1,1-Dichloroethane	7.	U
540-59-0	1,2-Dichloroethene (total)	7.	U
67-66-3	Chloroform	7.	U
107-06-2	1,2-Dichloroethane	7.	U
78-93-3	2-Butanone	14.	U
71-55-6	1,1,1-Trichloroethane	7.	U
56-23-5	Carbon Tetrachloride	7.	U
108-05-4	Vinyl Acetate	14.	U
75-27-4	Bromodichloromethane	7.	U
78-87-5	1,2-Dichloropropane	7.	U
10061-01-5	cis-1,3-Dichloropropene	7.	U
79-01-6	Trichloroethene	7.	U
124-48-1	Dibromochloromethane	7.	U
79-00-5	1,1,2-Trichloroethane	7.	U
71-43-2	Benzene	7.	U
10061-02-6	trans-1,3-Dichloropropene	7.	U
75-25-2	Bromoform	7.	U
108-10-1	4-Methyl-2-pentanone	14.	U
591-78-6	2-Hexanone	14.	U
127-18-4	Tetrachloroethene	7.	U
79-34-5	1,1,2,2-Tetrachloroethane	7.	U
108-88-3	Toluene	7.	U
108-90-7	Chlorobenzene	7.	U
100-41-4	Ethylbenzene	7.	U
100-42-5	Styrene	7.	U
1330-20-7	Xylene (total)	7.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DUP-3

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PRW-2,3-6

Matrix: (soil/water) SOIL Lab Sample ID: EA# 0751

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE961

Level: (low/med) LOW Date Received: 2/21/88

% Moisture: not dec. 34. Date Analyzed: 2/27/88

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Volatiles Detected			
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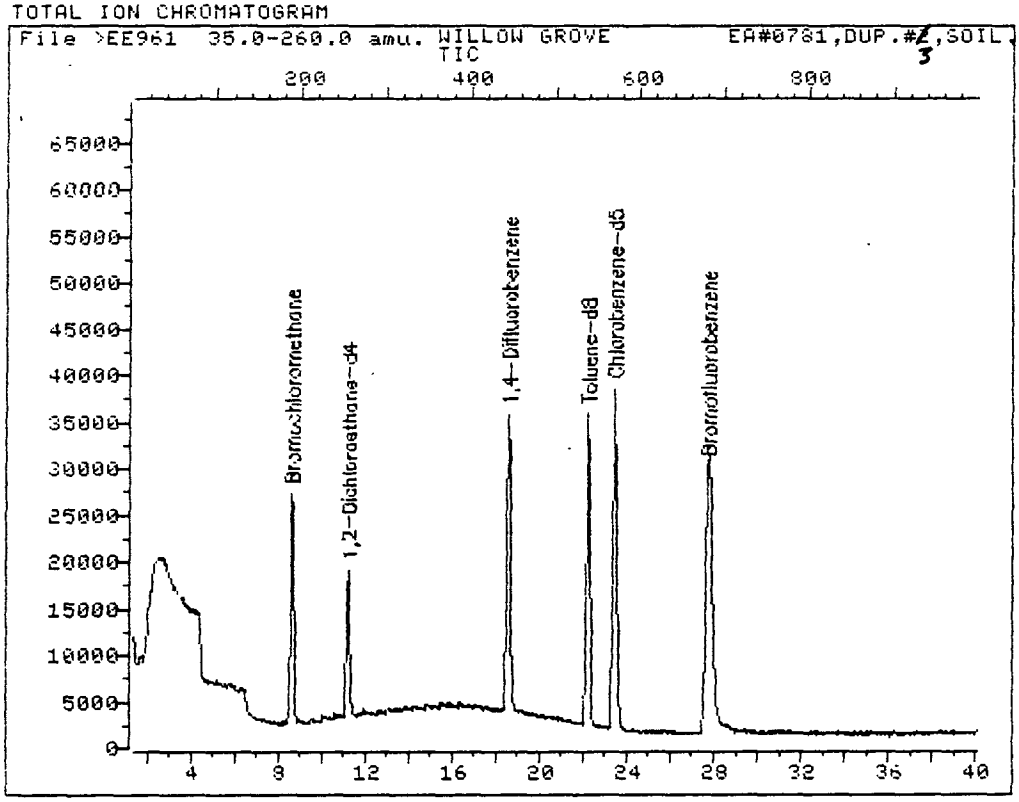
TOTAL ION CHROMATOGRAM



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Name: WILLOW GROVE
Misc: EA#0781,DUP.#Z,SOIL,5.0,GC/MS E5
3

Id File: ALL::SC
Title: EA Priority Pollutant IDfile
Last Calibration: 890227 12:35

Operator ID: CARL
Quant Time: 890227 16:31
Injected at: 890227 15:51

QUANT REPORT

Operator ID: CARL Quant Rev: 6 Quant Time: 890227 16:31
Output File: `EE961::QT Injected at: 890227 15:51
Data File: ^EE961::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0781,DUP.#~~2~~3,SOIL,5.0,GC/MS E5

ID File: ALL::SC
Title: EA Priority Pollutant IDfile
Last Calibration: 890227 12:35

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.63	128.0	39627	50.00	ug/L	90
18)	1,2-Dichloroethane-d4	11.23	65.0	62848	48.07	ug/L	97
20)	*1,4-Difluorobenzene	18.60	114.0	156718	50.00	ug/L	91
38)	*Chlorobenzene-d5	23.44	117.0	149266	50.00	ug/L	95
44)	Toluene-d8	22.24	98.0	153280	52.87	ug/L	97
53)	Bromofluorobenzene	27.74	95.0	117572	46.27	ug/L	87

* Compound is ISTD

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PRW-3,S-6

Lab Name: EAENG Contract: 68-01-7438

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PRW-3,S-6

Matrix: (soil/water) SOIL Lab Sample ID: EA# 0814

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE962

Level: (low/med) LOW Date Received: 2/24/89

% Moisture: not dec. 16. Date Analyzed: 2/27/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12.	U
74-83-9	Bromomethane	12.	U
75-01-4	Vinyl Chloride	12.	U
75-00-3	Chloroethane	12.	U
75-09-2	Methylene Chloride	6.	U
67-64-1	Acetone	12.	U
75-15-0	Carbon Disulfide	6.	U
75-35-4	1,1-Dichloroethene	6.	U
75-34-3	1,1-Dichloroethane	6.	U
540-59-0	1,2-Dichloroethene (total)	6.	U
67-66-3	Chloroform	6.	U
107-06-2	1,2-Dichloroethane	6.	U
78-93-3	2-Butanone	12.	U
71-55-6	1,1,1-Trichloroethane	6.	U
56-23-5	Carbon Tetrachloride	6.	U
108-05-4	Vinyl Acetate	12.	U
75-27-4	Bromodichloromethane	6.	U
78-87-5	1,2-Dichloropropane	6.	U
10061-01-5	cis-1,3-Dichloropropene	6.	U
79-01-6	Trichloroethene	6.	U
124-48-1	Dibromochloromethane	6.	U
79-00-5	1,1,2-Trichloroethane	6.	U
71-43-2	Benzene	6.	U
10061-02-6	trans-1,3-Dichloropropene	6.	U
75-25-2	Bromoform	6.	U
108-10-1	4-Methyl-2-pentanone	12.	U
591-78-6	2-Hexanone	12.	U
127-18-4	Tetrachloroethene	6.	U
79-34-5	1,1,2,2-Tetrachloroethane	6.	U
108-88-3	Toluene	6.	U
108-90-7	Chlorobenzene	6.	U
100-41-4	Ethylbenzene	6.	U
100-42-5	Styrene	6.	U
1330-20-7	Xylene (total)	6.	U

FORM I VOA 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

PRW-3,3-6

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PRW-3,3-6

Matrix: (soil/water) SOIL Lab Sample ID: EA# 0814

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE962

Level: (low/med) LOW Date Received: 2/24/89

% Moisture: not dec. 15. Date Analyzed: 3/27/89

Column: (packed/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Volatiles Detected			
2.				
3.				
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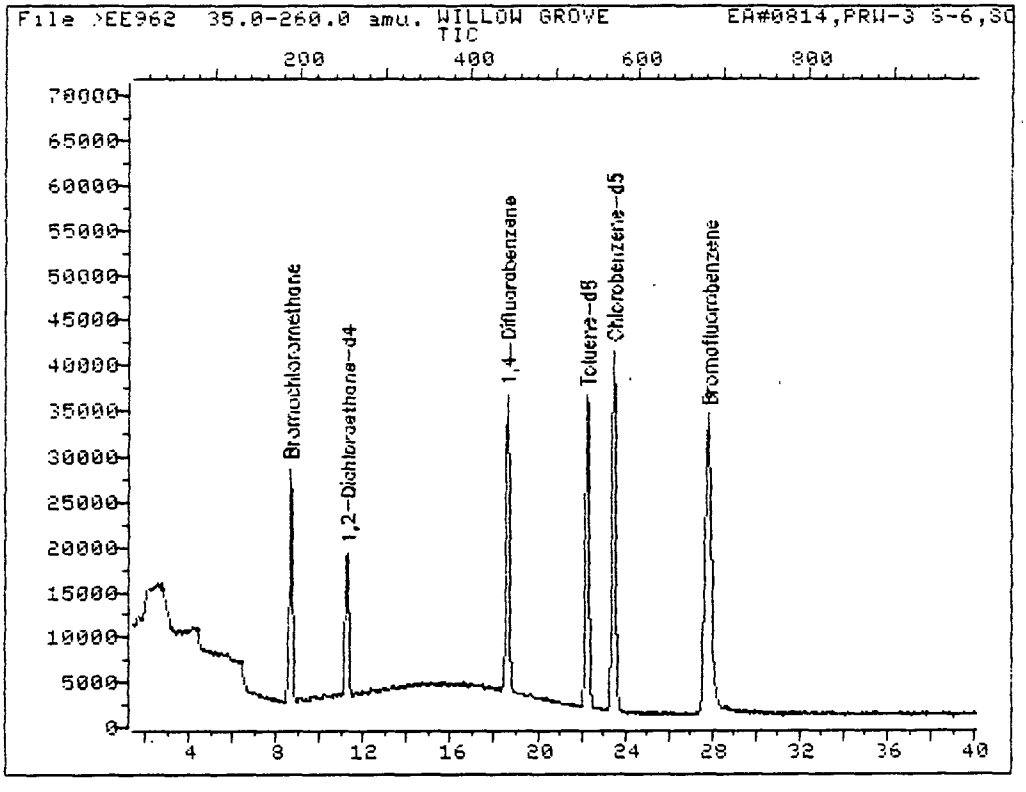
FORM I VOA-TIC 1/87 Rev.

TOTAL ION CHROMATOGRAM



Data File: >EE962::D2 Quant Output File: ^EE962::QT
Name: WILLOW GROVE
Misc: EA#0814,PRW-3 S-6,SOIL,5.0,GC/MS E5

Id File: ALL::SC
Title: EA Priority Pollutant IDfile
Last Calibration: 890227 12:35

Operator ID: CARL
Quant Time: 890227 17:18
Injected at: 890227 16:37

QUANT REPORT

Operator ID: CARL Quant Rev: 6 Quant Time: 890227 17:18
Output File: ^EE962::QT Injected at: 890227 16:37
Data File: >EE962::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0814,PRW-3 S-6,SOIL,5.0,GC/MS E5

ID File: ALL::SC
Title: EA Priority Pollutant IDfile
Last Calibration: 890227 12:35

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.68	128.0	40605	50.00	ug/L	94
18)	1,2-Dichloroethane-d4	11.27	65.0	62038	46.30	ug/L	98
20)	*1,4-Difluorobenzene	18.60	114.0	160598	50.00	ug/L	91
38)	*Chlorobenzene-d5	23.48	117.0	159958	50.00	ug/L	96
44)	Toluene-d8	22.24	98.0	159579	51.36	ug/L	94
53)	Bromofluorobenzene	27.83	95.0	128634	47.24	ug/L	86

* Compound is ISTD

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PRW-3,WATER

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PRW-3,6-6

Matrix: (soil/water) ~~SOIL~~ WATER mmc Lab Sample ID: EA# 0816

Sample wt vol: 5.0 (g/mL) ~~g~~ mL mmc Lab File ID: EE565

Level: (low/med) LOW Date Received: 2/24/89

% Moisture: not dec. 0. Date Analyzed: 2/27/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/~~KG~~ L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	1.	J
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	2.	J
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	6.	
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	10.	
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	1.	J
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

PRW-3,WATER

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PRW-3,S-6

Matrix: (soil/water) SOIL Lab Sample ID: EA# 0816

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE965

Level: (low/med) LOW Date Received: 2/24/89

% Moisture: not dec. 0. Date Analyzed: 2/27/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		No Volatiles Detected			
2.					
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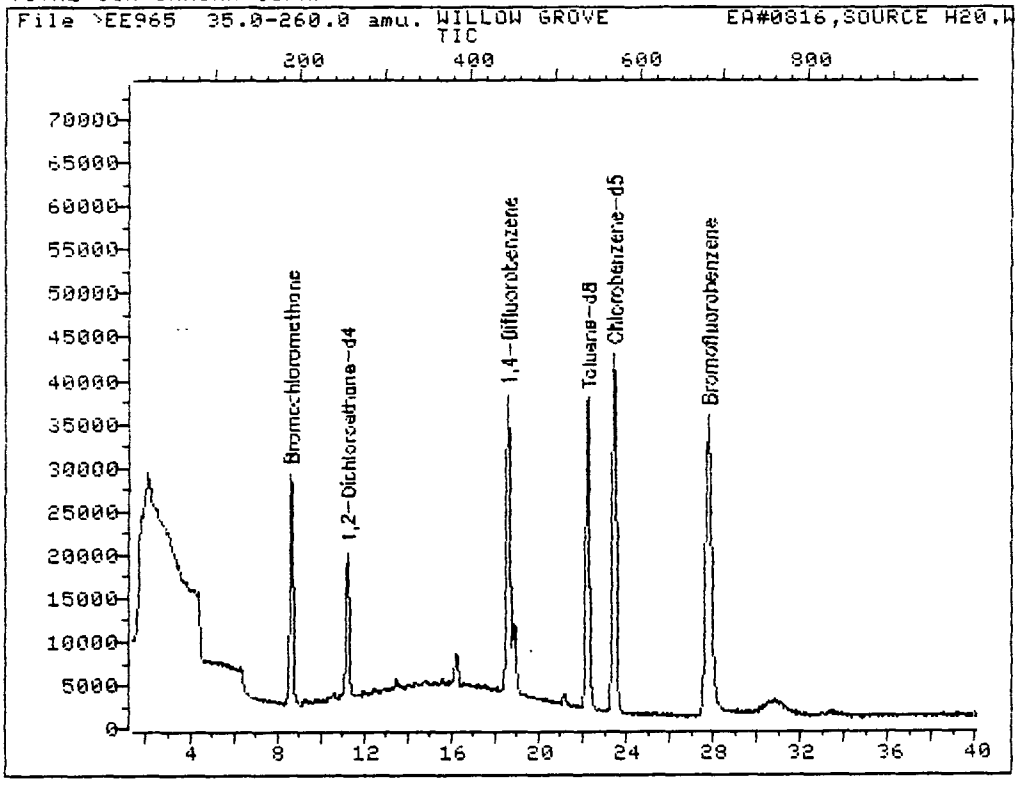
26.					
27.					
28.					
29.					
30.					

TOTAL ION CHROMATOGRAM



Data File: >EE965::D2 Quant Output File: ^EE965::QT
Name: WILLOW GROVE
Misc: EA#0816,SOURCE H20,WATER,5.0,GC/MS E5

Id File: ALL::SC
Title: EA Priority Pollutant IDfile
Last Calibration: 890227 12:35

Operator ID: CARL
Quant Time: 890227 19:34
Injected at: 890227 18:53

QUANT REPORT

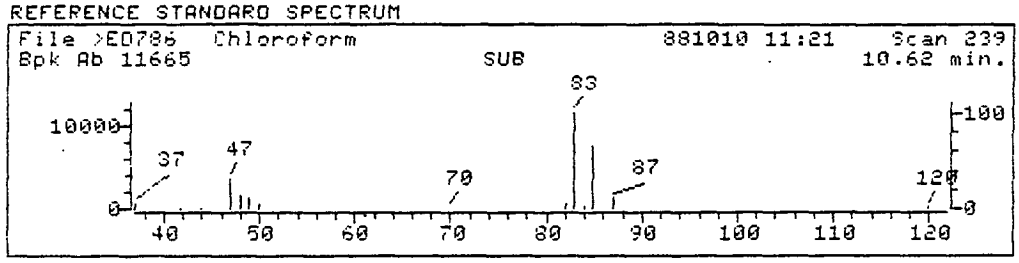
Operator ID: CARL Quant Rev: 6 Quant Time: 890227 19:34
Output File: ^EE965::QT Injected at: 890227 18:53
Data File: >EE965::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0816,SOURCE H20,WATER,5.0,GC/MS E5

ID File: ALL::SC
Title: EA Priority Pollutant IDfile
Last Calibration: 890227 12:35

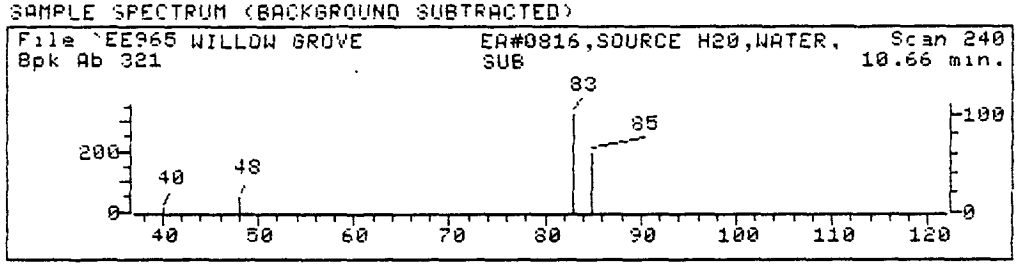
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.64	128.0	42335	50.00	ug/L	90
17)	Chloroform	10.66	83.0	3228	1.28	ug/L	87
18)	1,2-Dichloroethane-d4	11.24	65.0	64808	46.39	ug/L	99
20)	*1,4-Difluorobenzene	18.60	114.0	168417	50.00	ug/L	91
26)	Bromodichloromethane	13.49	83.0	5345	1.90	ug/L	90
30)	Dibromochloromethane	16.24	129.0	15086	5.59	ug/L	96
37)	Bromoform	18.88	173.0	26822	9.54	ug/L	96
38)	*Chlorobenzene-d5	23.45	117.0	167552	50.00	ug/L	95
41)	Tetrachloroethene	21.16	164.0	1884	1.18	ug/L	96
44)	Toluene-d8	22.25	98.0	167782	51.55	ug/L	97
53)	Bromofluorobenzene	27.79	95.0	133346	46.75	ug/L	82

* Compound is ISTD

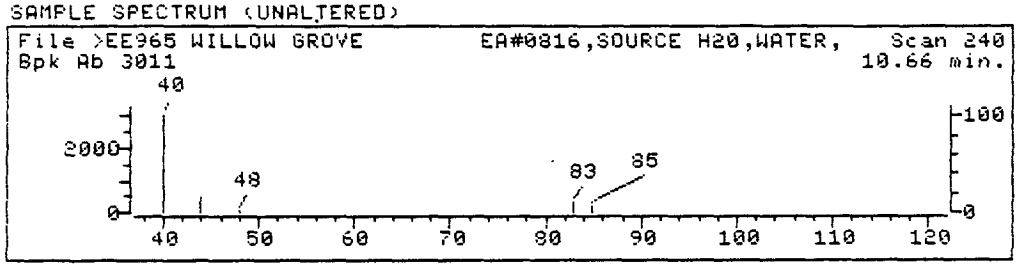
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



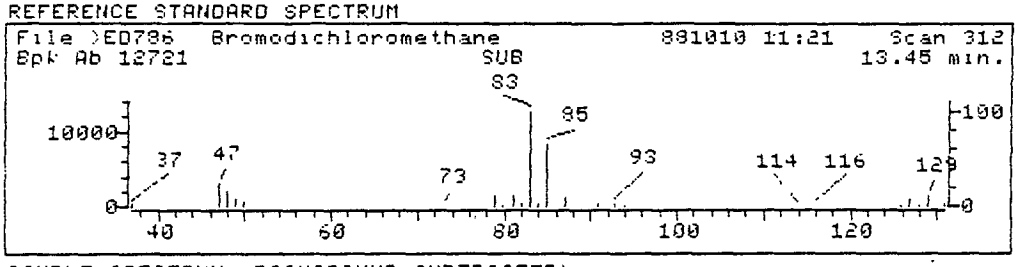
SAMPLE SPECTRUM (UNALTERED)



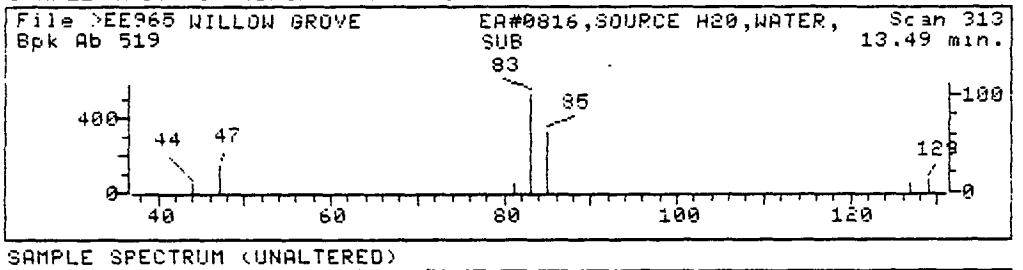
Data File: >EE965::D2 Quant Output File: ^EE965::QT
Name: WILLOW GROVE
Misc: EA#0816,SOURCE H20,WATER,5.0,GC/MS E5
Quant Time: 890227 19:34 Quant ID File: ALL::SC
Injected at: 890227 18:53 Last Calibration: 890227 12:35

Compound No: 17
Compound Name: Chloroform
Scan Number: 240
Retention Time: 10.66 min.
Quant Ion: 83.0
Area: 3228
Concentration: 1.28 ug/L
q-value: 87

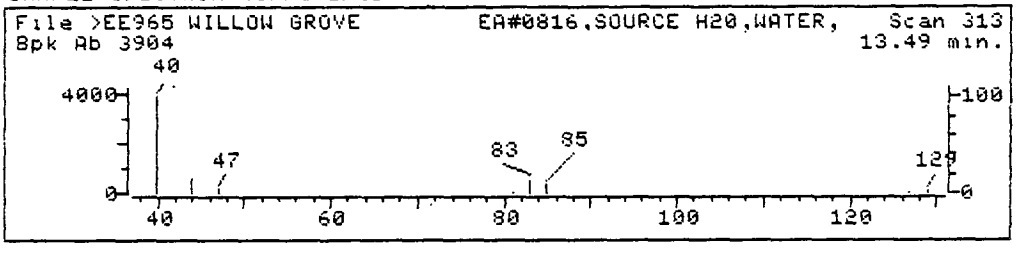
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



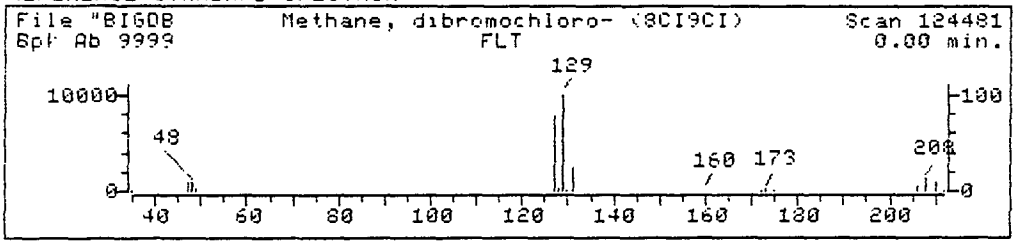
SAMPLE SPECTRUM (UNALTERED)



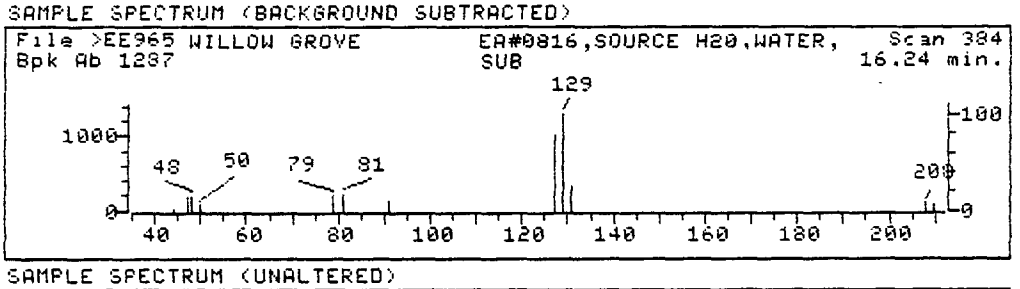
Data File: >EE965::D2 Quant Output File: ^EE965::QT
Name: WILLOW GROVE
Misc: EA#0816,SOURCE H20,WATER,5.0,GC/MS E5
Quant Time: 890227 19:34 Quant ID File: ALL::SC
Injected at: 890227 18:53 Last Calibration: 890227 12:35

Compound No: 26
Compound Name: Bromodichloromethane
Scan Number: 313
Retention Time: 13.49 min.
Quant Ion: 83.0
Area: 5345
Concentration: 1.90 ug/L
q-value: 90

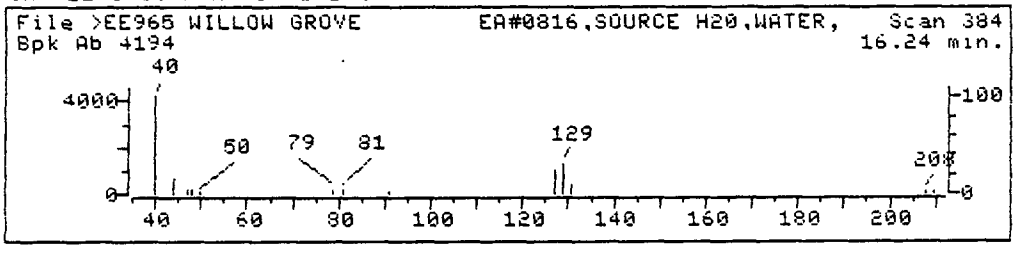
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



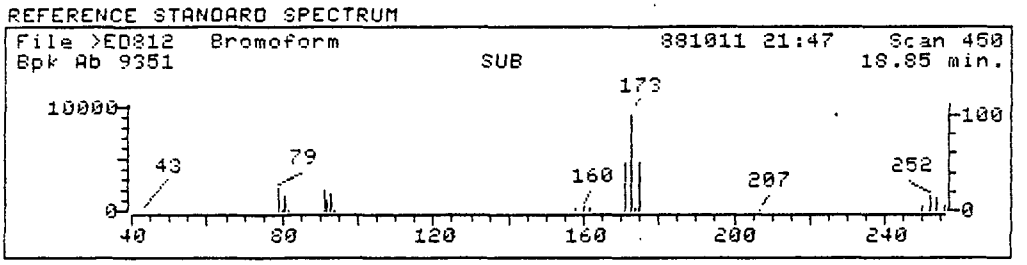
SAMPLE SPECTRUM (UNALTERED)



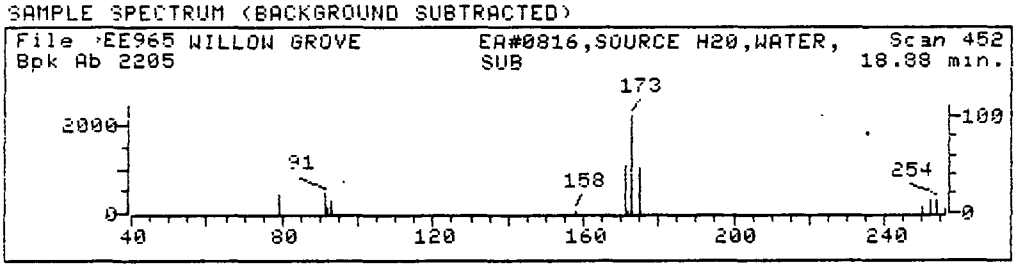
Data File: >EE965::D2 Quant Output File: ^EE965::QT
Name: WILLOW GROVE
Misc: EA#0816,SOURCE H20,WATER,5.0,GC/MS E5
Quant Time: 890227 19:34 Quant ID File: ALL::SC
Injected at: 890227 18:53 Last Calibration: 890227 12:35

Compound No: 30
Compound Name: Dibromochloromethane
Scan Number: 384
Retention Time: 16.24 min.
Quant Ion: 129.0
Area: 15086
Concentration: 5.59 ug/L
q-value: 96

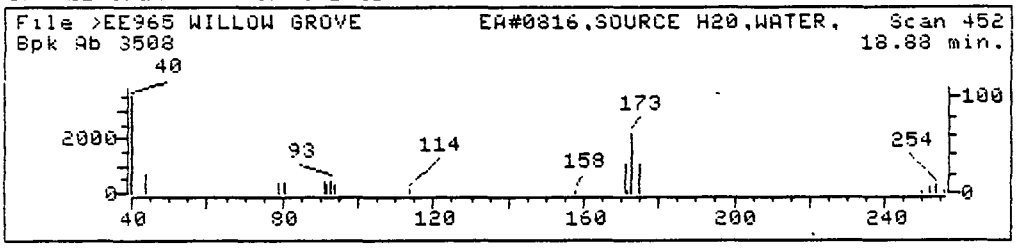
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



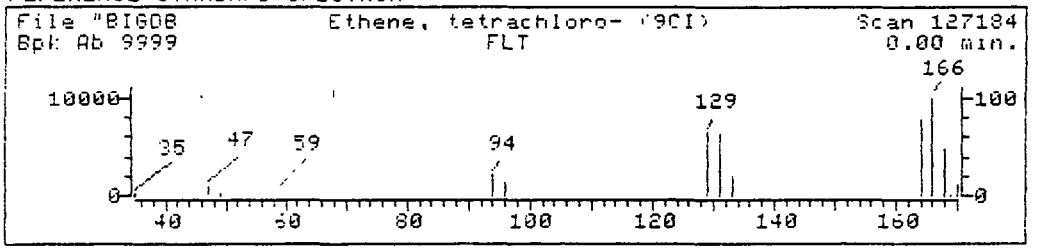
SAMPLE SPECTRUM (UNALTERED)



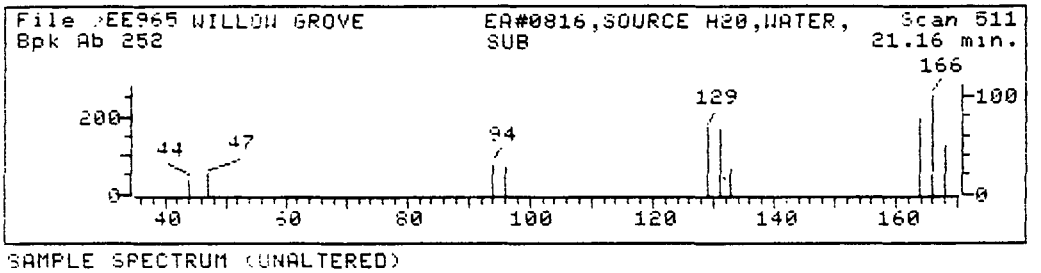
Data File: >EE965::D2 Quant Output File: ^EE965::QT
Name: WILLOW GROVE
Misc: EA#0816,SOURCE H20,WATER,5.0,GC/MS E5
Quant Time: 890227 19:34 Quant ID File: ALL::SC
Injected at: 890227 18:53 Last Calibration: 890227 12:35

Compound No: 37
Compound Name: Bromoform
Scan Number: 452
Retention Time: 18.88 min.
Quant Ion: 173.0
Area: 26822
Concentration: 9.54 ug/L
q-value: 96

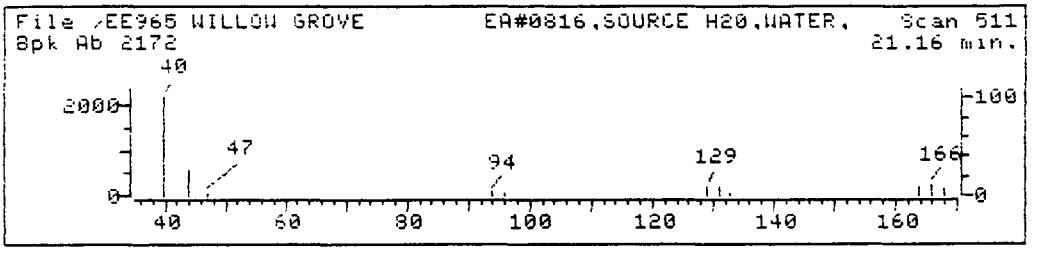
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >EE965::D2 Quant Output File: ^EE965::QT
Name: WILLOW GROVE
Misc: EA#0816,SOURCE H20,WATER,5.0,GC/MS E5
Quant Time: 890227 19:34 Quant ID File: ALL::SC
Injected at: 890227 18:53 Last Calibration: 890227 12:35

Compound No: 41
Compound Name: Tetrachloroethene
Scan Number: 511
Retention Time: 21.16 min.
Quant Ion: 164.0
Area: 1884
Concentration: 1.18 ug/L
q-value: 96

ORGANICS ANALYSIS DATA SHEET SAMPLE #: PRW4,S5(0821)

LABORATORY: EA ENG.
LABORATORY ID: AB06851
MATRIX: SOIL

CASE #/SAS #:
QC REPORT #: 2/27/89
CONTRACT #: 10388.03
DATE RECEIVED: 3/1/89

DATA RELEASE AUTHORIZED BY: _____

VOLATILE COMPOUNDS

LEVEL:	LOW
DATE EXT/PREP:	3/3/89
DATE ANALYZED:	03/03/89
CONC/DIL FACTOR:	5GM/5ML
PH:	N/A
% MOISTURE:	13.8
% MOISTURE (DECANTED):	N/A
STANDARD ID.	AB06849
SENSITIVITY ID:	AB06848

CAS #		UG/KG	
74-87-3	CHLOROMETHANE	10.	U
74-83-9	BROMOMETHANE	10.	U
75-01-4	VINYL CHLORIDE	10.	U
75-00-3	CHLOROETHANE	10.	U
75-09-2	METHYLENE CHLORIDE	8.	B
67-64-1	ACETONE	44.	B
75-15-0	CARBON DISULFIDE	5.	U
75-35-4	1,1-DICHLOROETHENE	5.	U
75-34-3	1,1-DICHLOROETHANE	5.	U
156-60-5	TRANS-1,2-DICHLOROETHENE	5.	U
67-66-3	CHLOROFORM	5.	U
107-06-2	1,2-DICHLOROETHANE	5.	U
78-93-3	2-BUTANONE (MEK)	10.	U
71-55-6	1,1,1-TRICHLOROETHANE	5.	U
56-23-5	CARBON TETRACHLORIDE	5.	U
	VINYL ACETATE	10.	U
75-27-4	BROMODICHLOROMETHANE	5.	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	5.	U
78-87-5	1,2-DICHLOROPROPANE	5.	U
10061-02-5	CIS-1,3-DICHLOROPROPENE	5.	U
79-01-6	TRICHLOROETHENE	5.	U
124-48-1	DIBROMOCHLOROETHANE	5.	U
79-00-5	1,1,2-TRICHLOROETHANE	5.	U
71-43-2	BENZENE	5.	U
10061-02-6	TRANS-1,3-DICHLOROPROPENE	5.	U
75-25-2	BROMOFORM	5.	U
	2-HEXANONE	10.	U
108-10-1	4-METHYL-2-PENTANONE (MIBK)	10.	U
127-18-4	TETRACHLOROETHENE	5.	U
108-88-3	TOLUENE	5.	U
108-90-7	CHLOROBENZENE	5.	U
100-41-4	ETHYLBENZENE	5.	U
	STYRENE	5.	U
108-38-3	M&P-XYLENE	5.	U
108-38-3	O-XYLENE	5.	U

RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

FORM I

ORGANICS ANALYSIS DATA SHEET SAMPLE #: PRW4,S5(0821)

LABORATORY: EA ENG.
CASE #/SAS #:

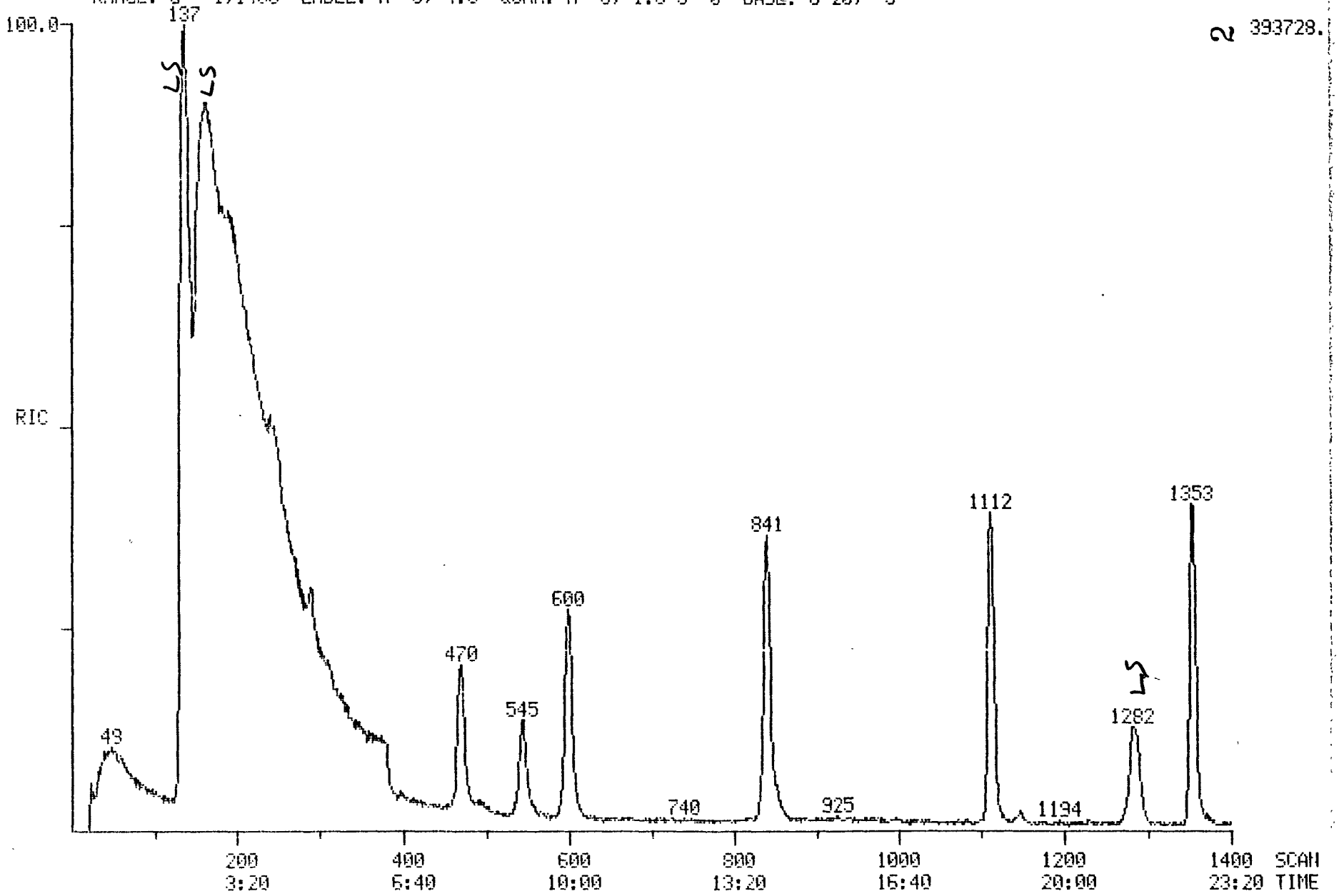
Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	Scan	Estimated Conc(J)
1.		UNKNOWN	SOIL	137	190
2.		UNKNOWN	SOIL	163	19
3.		UNKNOWN	SOIL	1282	7
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

FORM I, PART B

RIC DATA: AB06851 #1 SCANS 1 TO 1400
03/03/89 12:27:00 CALI: AB06851 #2
SAMPLE: VOA SOIL, EA#0821, F#PRW-4,S-5, WILLOW GROVE, 5GM/5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS-C3
RANGE: G 1,1400 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

2 086



Quantitation Report File: AB06851

Data: AB06851.TI
03/03/89 12:27:00
Sample: VOA SOIL, EA#0821, F#PRW-4,S-5, WILLOW GROVE, 5GM/5ML, CVG
Conds.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS-C3
Standard ID: AB06849 Instrument: 5100
Sensitivity ID: AB06848 Analyst: CVG Inst Cali: 3/3/89

AMOUNT=AREA * REF AMNT/(REF AREA * RESP FACT)

Resp. NO	fac. NAME	from Library Entry
1	IS1	BROMOCHLOROMETHANE
2	IS2	1,4-DIFLUOROBENZENE
3	IS3	CHLOROBENZENE-D5
4	SS1	1,2-DICHLOROETHANE-D4
5	SS2	TOLUENE-D8
6	SS3	BROMOFLUOROBENZENE
7	45V	CHLOROMETHANE
8	46V	BROMOMETHANE
9	88V	VINYL CHLORIDE
10	16V	CHLOROETHANE
11	44V	METHYLENE CHLORIDE
12	13H	ACETONE
13	15H	CARBON DISULFIDE
14	29V	1,1-DICHLOROETHENE
15	13V	1,1-DICHLOROETHANE
16	30V	TRANS-1,2-DICHLOROETHENE
17	23V	CHLOROFORM
18	10V	1,2-DICHLOROETHANE
19	14H	2-BUTANONE
20	11V	1,1,1-TRICHLOROETHANE
21	6V	CARBON TETRACHLORIDE
22	19H	VINYL ACETATE
23	48V	BROMODICHLOROMETHANE
24	32V	1,2-DICHLOROPROPANE
25	33VC	TRANS-1,3-DICHLOROPROPENE
26	87V	TRICHLOROETHENE
27	51V	DIBROMOCHLOROMETHANE
28	14V	1,1,2-TRICHLOROETHANE
29	4V	BENZENE
30	33VT	CIS-1,3-DICHLOROPROPENE
31	47V	BROMOFORM
32	16H	2-HEXANONE
33	17H	4-METHYL-2-PENTANONE
34	85V	TETRACHLOROETHENE
35	15V	1,1,2,2-TETRACHLOROETHANE
36	86V	TOLUENE
37	7V	CHLOROBENZENE
38	38V	ETHYLBENZENE
39	18H	STYRENE
40	20H2	O-XYLENES

Reddy
24HB
3L.S.

No	m/z	Scan	Time	Ref	RRT	Meth	Area(Hght)	Amount	%Tot
1	128	470	7:50	1	1.000	A BB	62770.	50.000 PPB*	13.91
2	114	600	10:00	2	1.000	A BV	369314.	50.000 PPB*	13.91
3	117	1112	18:32	3	1.000	A BB	348022.	50.000 PPB*	13.91
4	65	544	9:04	1	1.157	A BB	139009.	47.640 PPB**	13.25
5	98	841	14:01	3	0.756	A BB	374066.	55.059 PPB**	15.32
6	95	1354	22:34	3	1.218	A BB	275723.	54.766 PPB**	15.24
7	50	186	3:06	1	0.396	A VV	5205.	~~2.504 PPB~~ NC	0.97
8	NOT	FOUND							
9	NOT	FOUND							
10	NOT	FOUND							
11	84	291	4:51	1	0.619	A BB	20200.	7.380 PPB	2.05
12	43	249	4:09	1	0.530	A BB	81836.	40.031 PPB	11.14
13	NOT	FOUND							
14	NOT	FOUND							
15	NOT	FOUND							
16	NOT	FOUND							
17	NOT	FOUND							
18	NOT	FOUND							
19	NOT	FOUND							
20	NOT	FOUND							
21	NOT	FOUND							
22	NOT	FOUND							
23	NOT	FOUND							
24	NOT	FOUND							
25	NOT	FOUND							
26	NOT	FOUND							
27	NOT	FOUND							
28	NOT	FOUND							
29	78	557	9:17	2	0.928	A VB	4570.	~~0.475 PPB~~ ND	0.14
30	NOT	FOUND							
31	NOT	FOUND							
32	43	770	12:50	3	0.692	A BB	1571.	~~0.608 PPB~~ ND	0.17
33	NOT	FOUND							
34	NOT	FOUND							
35	NOT	FOUND							
36	NOT	FOUND							
37	NOT	FOUND							
38	NOT	FOUND							
39	NOT	FOUND							
40	NOT	FOUND							

A136851

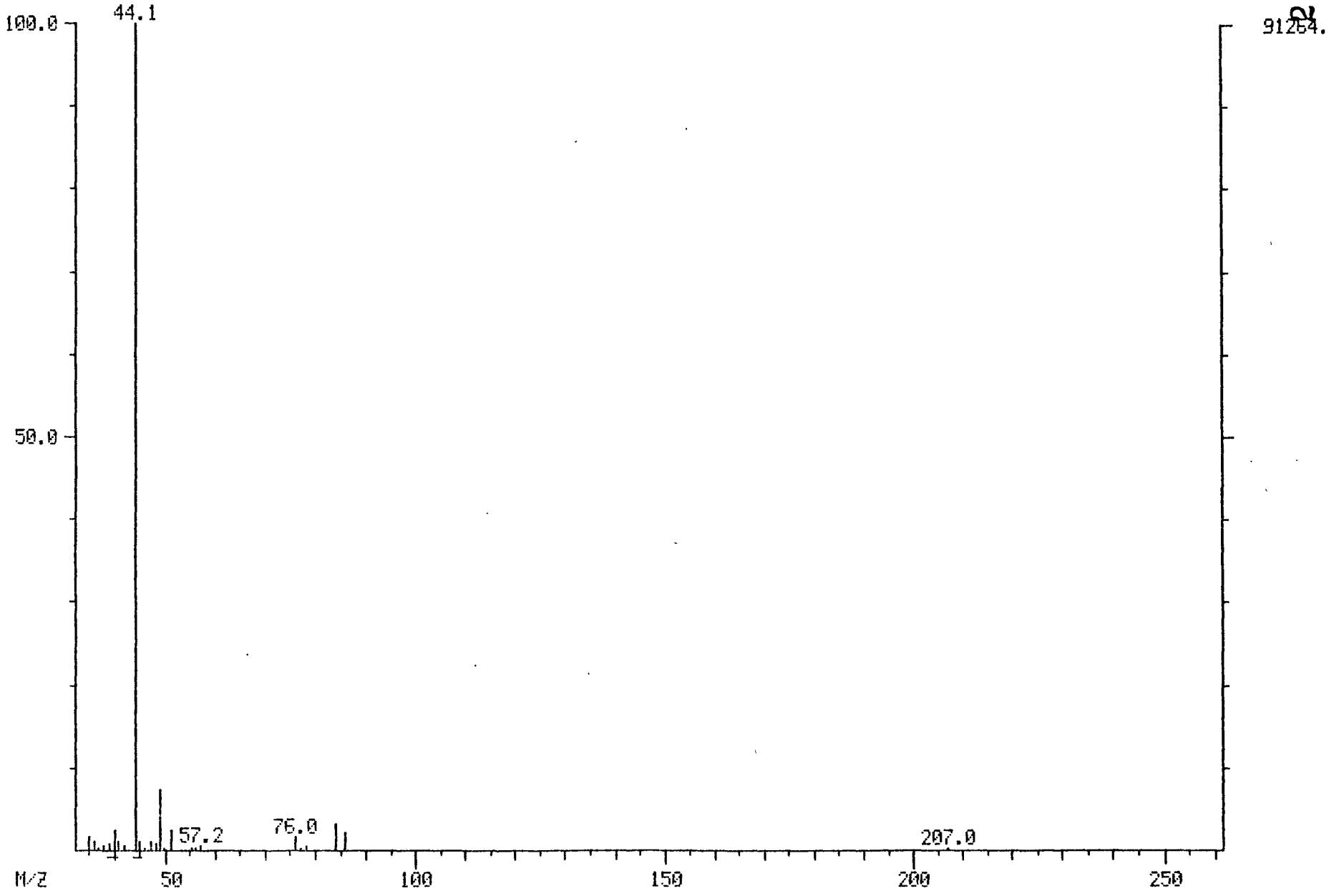
No	Ret(L)	Ratio	RRT(L)	Ratio	Amnt	Amnt(L)	R.Fac	R.Fac(L)	Ratio
1	7:50	1.00	1.000	1.00	50.00	50.00	1.000	1.000	1.00
2	10:01	1.00	1.000	1.00	50.00	50.00	1.000	1.000	1.00
3	18:34	1.00	1.000	1.00	50.00	50.00	1.000	1.000	1.00
4	9:06	1.00	1.162	1.00	47.64	50.00	2.215	2.324	0.95
5	14:01	1.00	0.755	1.00	55.06	50.00	1.075	0.976	1.10
6	22:33	1.00	1.215	1.00	54.77	50.00	0.792	0.723	1.10
7	2:57	1.05	0.377	1.05	3.50	50.00	0.083	1.183	0.07
8	3:25		0.436			50.00		1.822	
9	3:06		0.396			50.00		1.780	
10	3:22		0.430			50.00		1.917	
11	4:50	1.00	0.617	1.00	7.38	50.00	0.322	2.180	0.15
12	4:08	1.00	0.528	1.00	40.03	50.00	1.304	1.628	0.80
13	4:52		0.621			50.00		5.996	
14	4:12		0.536			50.00		1.828	
15	5:56		0.757			50.00		5.135	
16	5:13		0.666			50.00		2.120	
17	7:27		0.951			50.00		3.958	
18	9:19		1.189			50.00		3.576	
19	6:54		0.689			50.00		0.034	
20	8:17		0.827			50.00		0.561	
21	8:51		0.884			50.00		0.498	
22	6:53		0.687			50.00		0.440	
23	11:54		1.188			50.00		0.617	
24	11:17		1.126			50.00		0.643	
25	13:28		1.344			50.00		0.863	
26	10:45		1.073			50.00		0.570	
27	16:03		1.602			50.00		0.437	
28	15:23		1.536			50.00		0.361	
29	9:17	1.00	0.927	1.00	0.49	50.00	0.012	1.251	0.01
30	14:59		1.496			50.00		0.379	
31	21:42		2.166			50.00		0.454	
32	12:56	0.99	0.697	0.99	0.61	50.00	0.005	0.372	0.01
33	13:08		0.707			50.00		0.870	
34	16:04		0.865			50.00		0.464	
35	22:29		1.211			50.00		0.399	
36	14:15		0.768			50.00		0.736	
37	18:40		1.005			50.00		0.894	
38	18:55		1.019			50.00		0.453	
39	20:42		1.115			50.00		0.984	
40	20:31		1.105			50.00		0.589	

AD06651

MASS SPECTRUM
03/03/83 12:27:00 + 4:51
SAMPLE: VOA SOIL, EA#0821, F#PRW-4,5-5, WILLOW GROVE, 5GM/5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS-C3
GC TEMP: 43 DEG. C

DATA: AB06851 #291
CALI: AB06851 #2

BASE M/Z: 44
RIC: 119424.

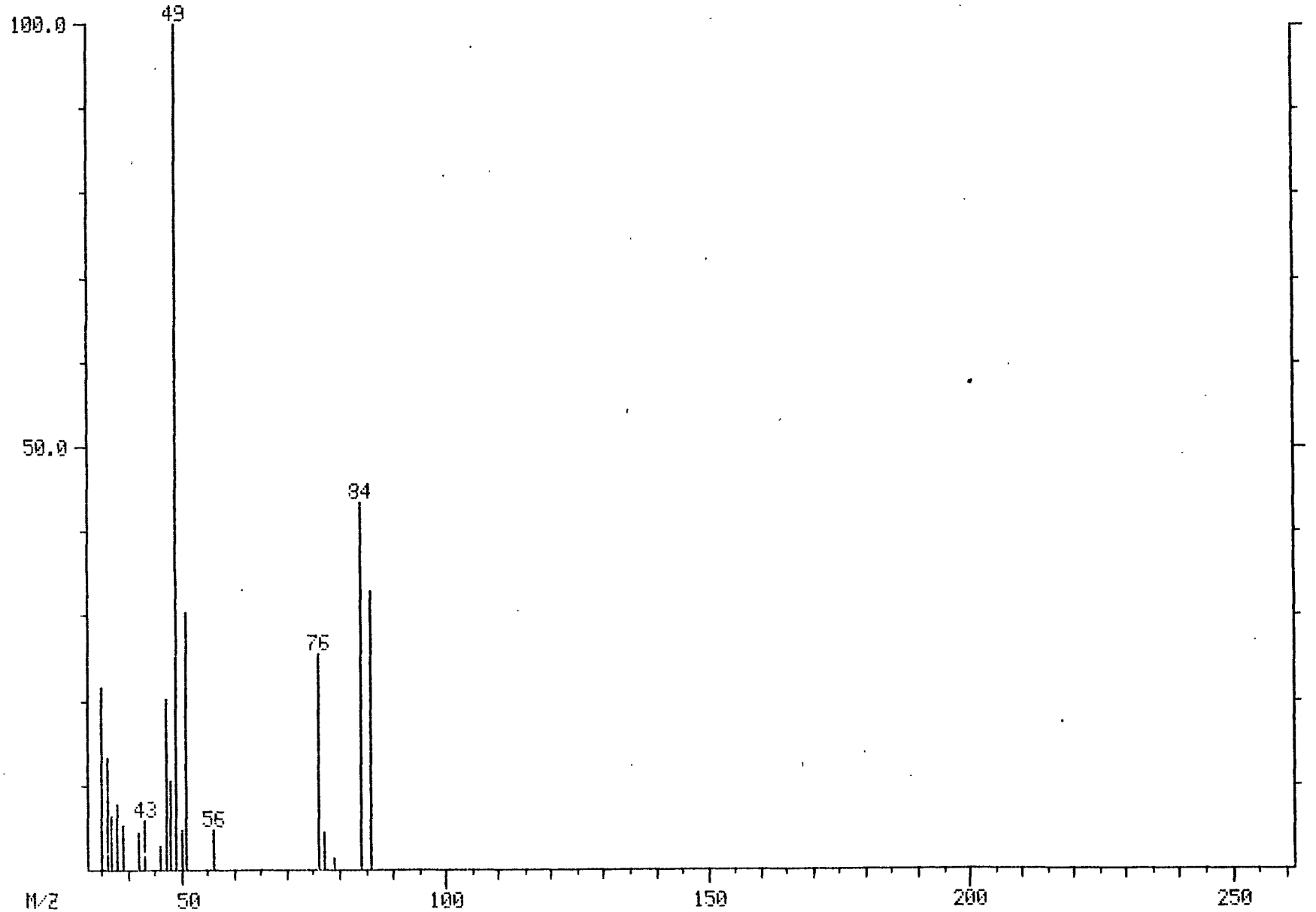


090

MASS SPECTRUM
03/03/89 12:27:00 + 4:51
SAMPLE: VOA SOIL, EA#0821, F#PRW-4,S-5, WILLOW GROVE, 5GM/5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS-C3
GC TEMP: 43 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AB06851 #291
CALI: AB06851 #2

BASE M/Z: 49
RIC: 19296.



5592.

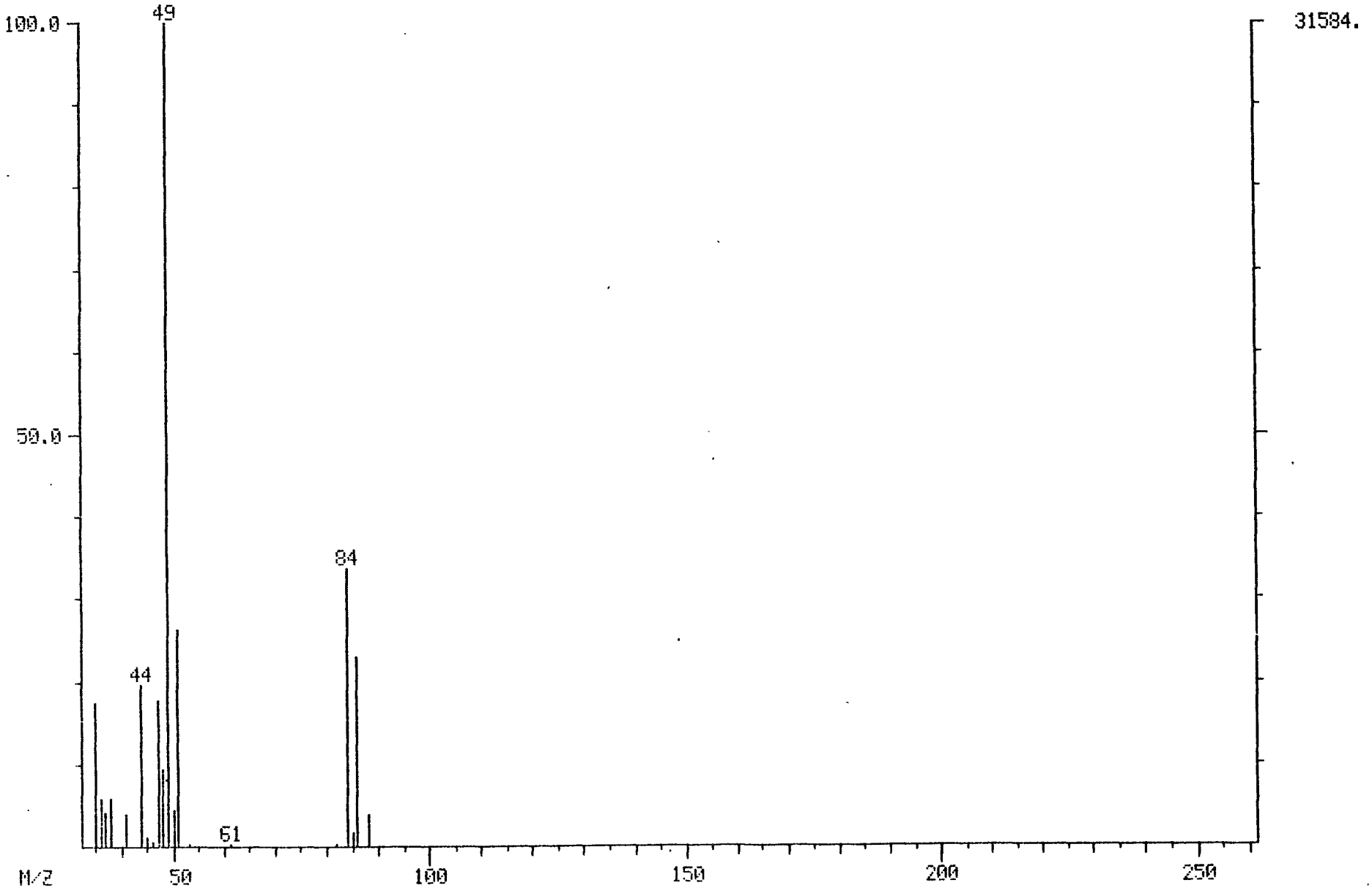
2 091

MASS SPECTRUM
03/03/89 10:15:00 + 4:50
SAMPLE: VOA WATER, STD#2771, VSTD50/300, 5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS-C3
GC TEMP: 43 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AB06849 #290
CALI: AB06849 #2

BASE M/Z: 49
RIC: 88320.

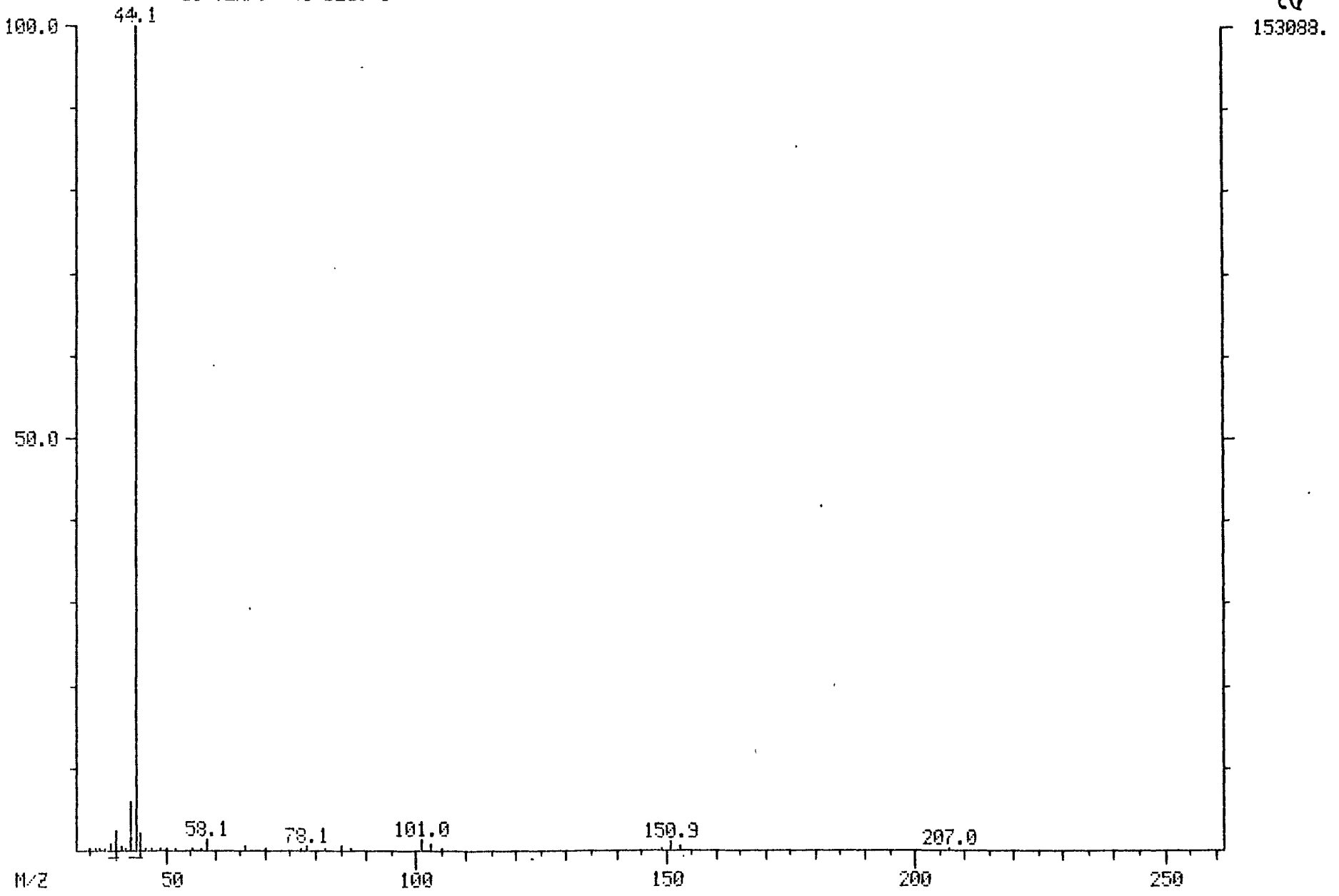
2 092



MASS SPECTRUM
03/03/89 12:27:00 + 4:03
SAMPLE: VOA SOIL, EA#0821, F#PRW-4,S-5, WILLOW GROVE, 5GM/5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS-C3
GC TEMP: 43 DEG. C

DATA: AB06851 #249
CALI: AB06851 #2

BASE M/Z: 44
RIC: 187904.

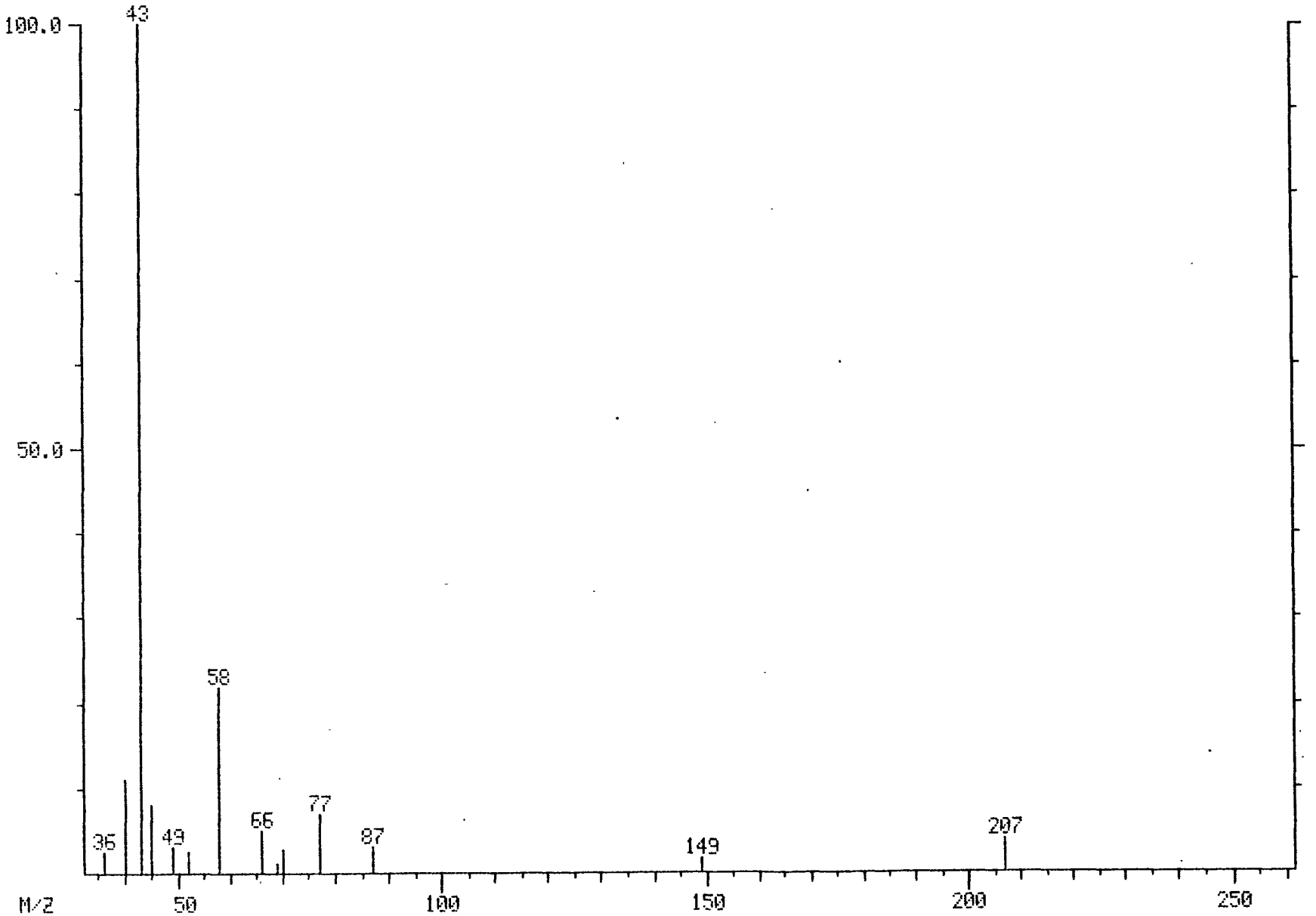


2 093

MASS SPECTRUM
03/03/89 12:27:00 + 4:09
SAMPLE: VOA SOIL, EA#0821, F#PRW-4,S-5, WILLOW GROVE, 5GM/5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS-C3
GC TEMP: 43 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AB06851 #249
CALI: AB06851 #2

BASE M/Z: 43
RIC: 10544.



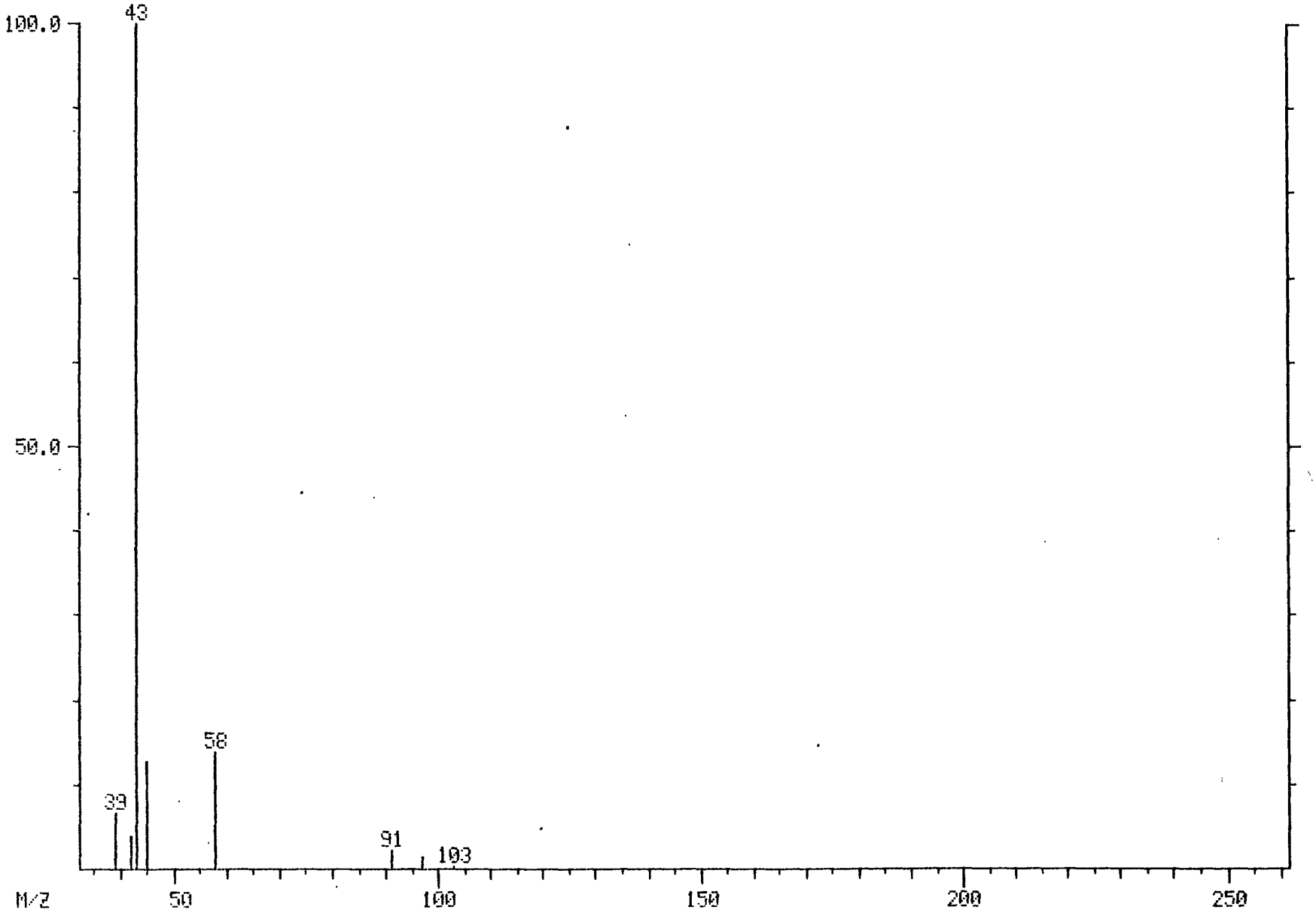
6088.

2 094

MASS SPECTRUM
03/03/83 10:15:00 + 4:08
SAMPLE: VOA WATER, STD#2771, VSTD50/300, 5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS-C3
GC TEMP: 43 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AB06849 #248
CALI: AB06849 #2

BASE M/Z: 43
RIC: 6952.



4928.

2 095

Library Search Data: AB06851 # 137 Base m/z: 40
03/03/89 12:27:00 + 2:17 Cali: AB06851 # 2 RIC: 185343.
Sample: VOA SOIL, EA#0821, F#PRW-4, S-5, WILLOW GROVE, 5GM/5ML, CVG
Conds.: EA LABS, COLUMN: VOCOL-30M, DESC: ZZ, INST: GC/MS-C3
Enhanced (S 15B 2N OT)

38761 spectra in LIBRARYNB searched for maximum PURITY
317 matched at least 4 of the 16 largest peaks in the unknown

Rank	In.	Name
1	548	ACETIC ACID, CYANO-
2	299	PROPANOIC ACID
3	31	CARBON DIOXIDE
4	36	NITROGEN OXIDE (N2O)
5	21989	CYCLOPROPANE, 1,1-DIBROMO-2-CHLORO-2-FLUORO-

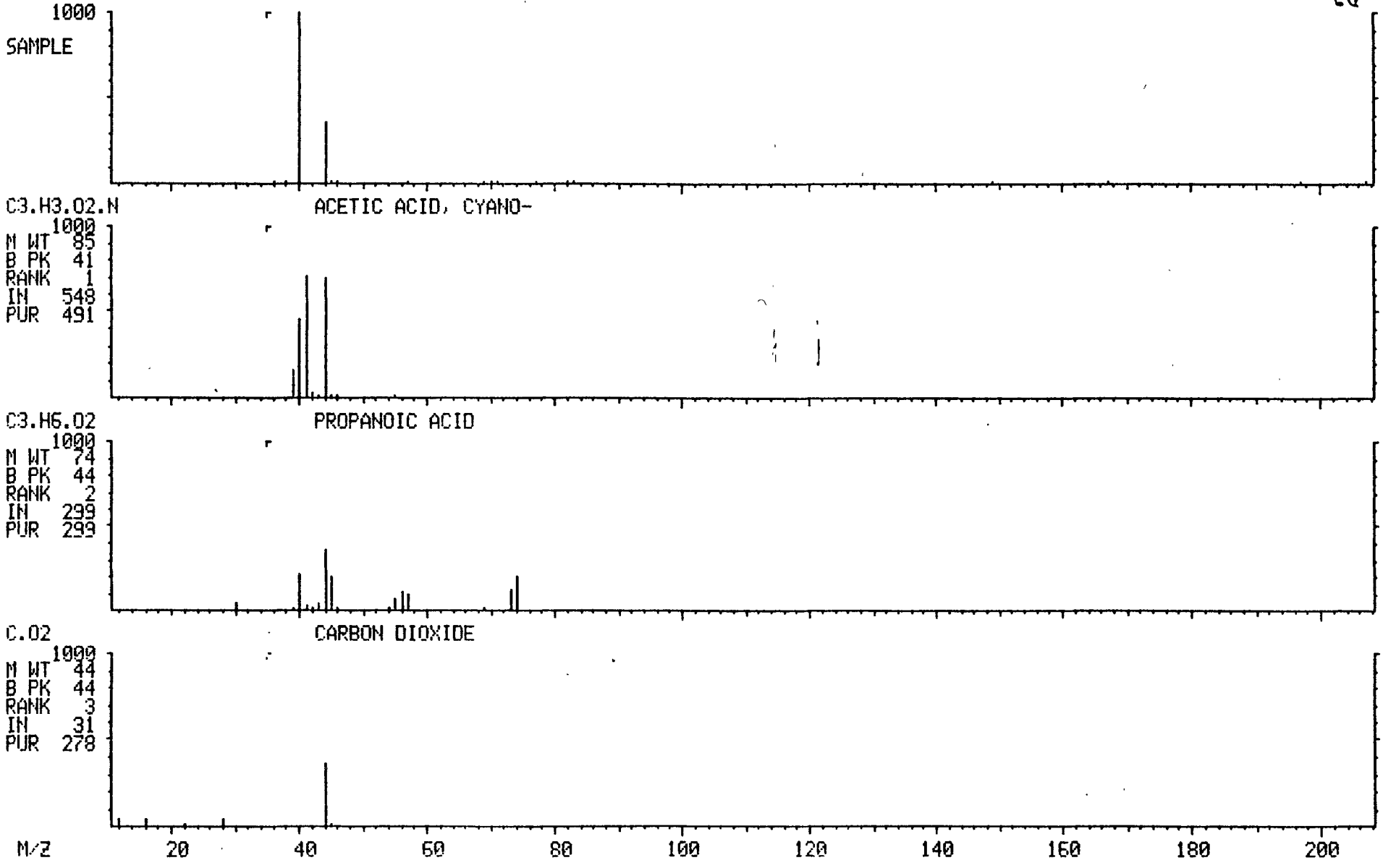
Rank	Formula	M. Wt	B. Pk	Purity	Fit	RFit
1	C3. H3. O2. N	85	41	491	504	858
2	C3. H6. O2	74	44	299	306	582
3	C. O2	44	44	278	999	278
4	O. N2	44	44	277	997	277
5	C3. H2. CL. BR2. F	250	44	273	971	280

Rank	Ret. Time	B. P. Int.	US. Par. 1	US. Par. 2	C. A. S. #
1	—	—	—	—	372-09-8
2	—	—	—	—	79-09-4
3	—	—	—	—	124-38-9
4	—	—	—	—	10024-97-2
5	—	—	—	—	24071-57-6

190

48768

LIBRARY SEARCH DATA: AB06851 # 137 BASE M/Z: 40
03/03/89 12:27:00 + 2:17 CALI: AB06851 # 2 RIC: 185343.
SAMPLE: VOA SOIL, EA#0821, F#PRW-4,S-5, WILLOW GROVE, 5GM/5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS-C3
ENHANCED (S 15B 2N 0T)



2 097

Library Search Data: AB06851 # 163 Base m/z: 44
03/03/89 12:27:00 + 2:43 Cali: AB06851 # 2 RIC: 18271.
Sample: VOA SOIL, EA#0821, F#PRW-4, S-5, WILLOW GROVE, 5GM/5ML, CVG
Conds.: EA LABS, COLUMN: VOCOL-30M, DESC: ZZ, INST: GC/MS-C3
Enhanced (S 15B 2N OT)

38761 spectra in LIBRARYNB searched for maximum PURITY
192 matched at least 5 of the 12 largest peaks in the unknown

Rank	In.	Name
1	1393	2-BUTANAMINE, 3,3-DIMETHYL-
2	714	BUTANAL, 3-HYDROXY-
3	795	1,4-BUTANEDIOL
4	1307	OXETANE, 2-PROPYL-
5	5096	1H-4-AZACYCLOPROP[CD]INDENE, OCTAHYDRO-4-METHYL-

Rank	Formula	M.Wt	B.Pk	Purity	Fit	RFit
1	C6.H15.N	101	44	718	783	892
2	C4.H8.O2	88	44	379	417	647
3	C4.H10.O2	90	42	372	407	456
4	C6.H12.O	100	44	327	357	497
5	C9.H15.N	137	44	316	358	508

Rank	Ret. Time	B.P. Int.	US. Par. 1	US. Par. 2	C.A.S. #
1	—	—	—	—	3850-30-4
2	—	—	—	—	107-89-1
3	—	—	—	—	110-63-4
4	—	—	—	—	4468-64-8
5	—	—	—	—	16967-50-3

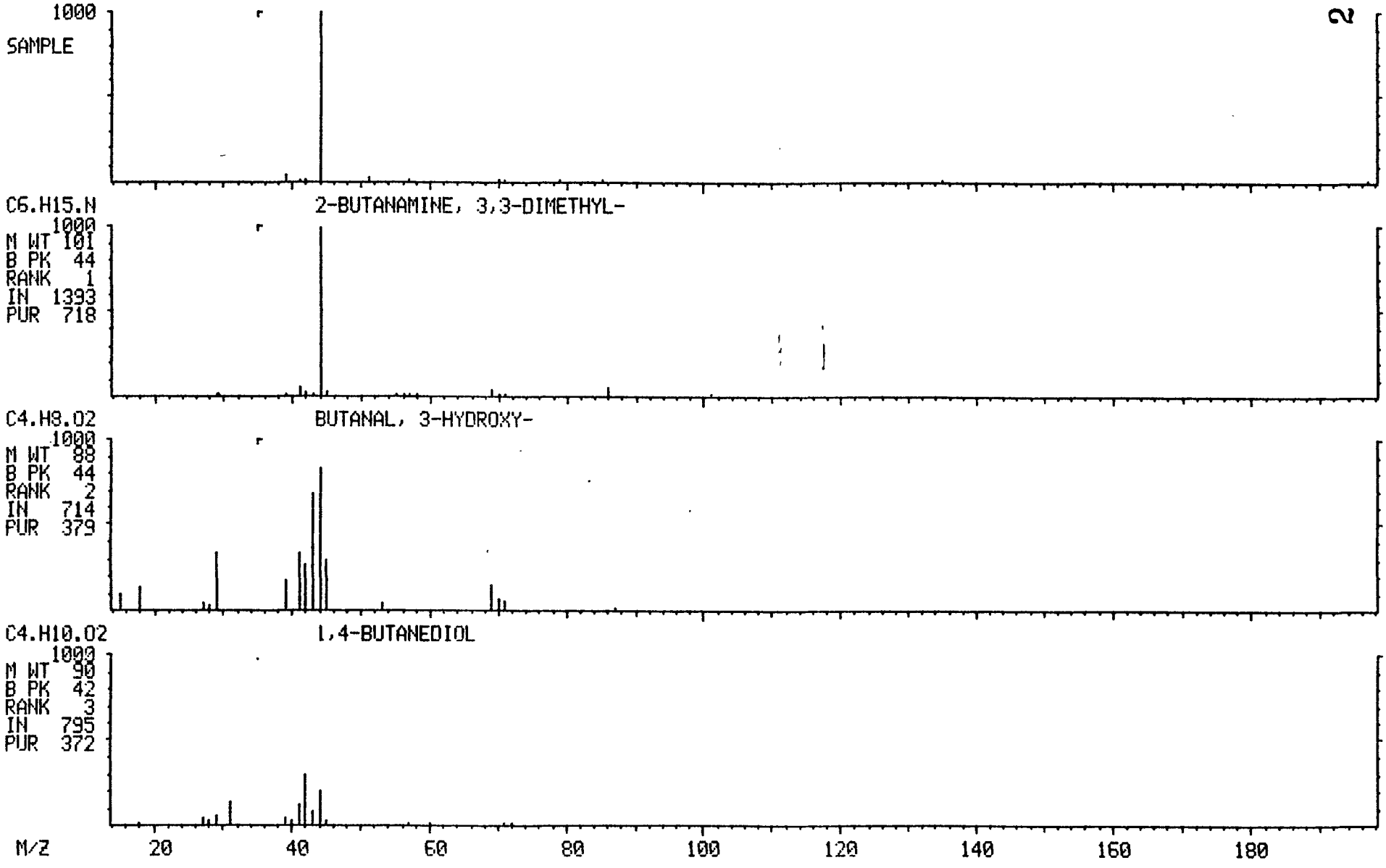
18.7

18768

LIBRARY SEARCH
03/03/89 12:27:00 + 2:43
SAMPLE: VOA SOIL, EA#0821, F#PRW-4,S-5, WILLOW GROVE, 5GM/5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS-C3
ENHANCED (S 15B 2N 0T)

DATA: AB06851 # 163
CALI: AB06851 # 2

BASE M/Z: 44
RIC: 18271.



Library Search Data: AB06851 #1282 Base m/z: 191
03/03/89 12:27:00 + 21:22 Cali: AB06851 # 2 RIC: 18047.
Sample: VOA SOIL, EA#0821, F#PRW-4, S-5, WILLOW GROVE, 5GM/5ML, CVG
Conds.: EA LABS, COLUMN: VOCOL-30M, DESC: ZZ, INST: GC/MS-C3
Enhanced (S 15B 2N OT)

38761 spectra in LIBRARYNB searched for maximum PURITY
59 matched at least 5 of the 16 largest peaks in the unknown

Rank	In.	Name
1	27845	BENZENEPROPANOIC ACID, 3-[(TRIMETHYLSILYL)OXY]-, TRIMETHYLSILYL EST*
2	13992	4-PYRIDINOL, 3,5-DICHLORO-2,6-DIMETHYL-
3	20099	PHENOL, 2,4-BIS(1-METHYLBUTYL)-
4	14422	PHENAZINE, 1-METHYL-
5	18707	HYDROXYLAMINE, O-(3-PHENANTHRENYLMETHYL)-

Rank	Formula	M.Wt	B.Pk	Purity	Fit	RFit
1	C15.H26.O3.SI2	310	73	382	636	480
2	C7.H7.O.N.CL2	191	191	351	772	417
3	C16.H26.O	234	205	350	681	406
4	C13.H10.N2	194	194	280	543	336
5	C15.H13.O.N	223	191	256	581	411

Rank	Ret. Time	B.P. Int.	US. Par. 1	US. Par. 2	C.A.S. #
1	—	—	—	—	55887-87-1
2	—	—	—	—	2971-90-6
3	—	—	—	—	96-94-6
4	—	—	—	—	1016-59-7
5	—	—	—	—	54965-41-2

7.4

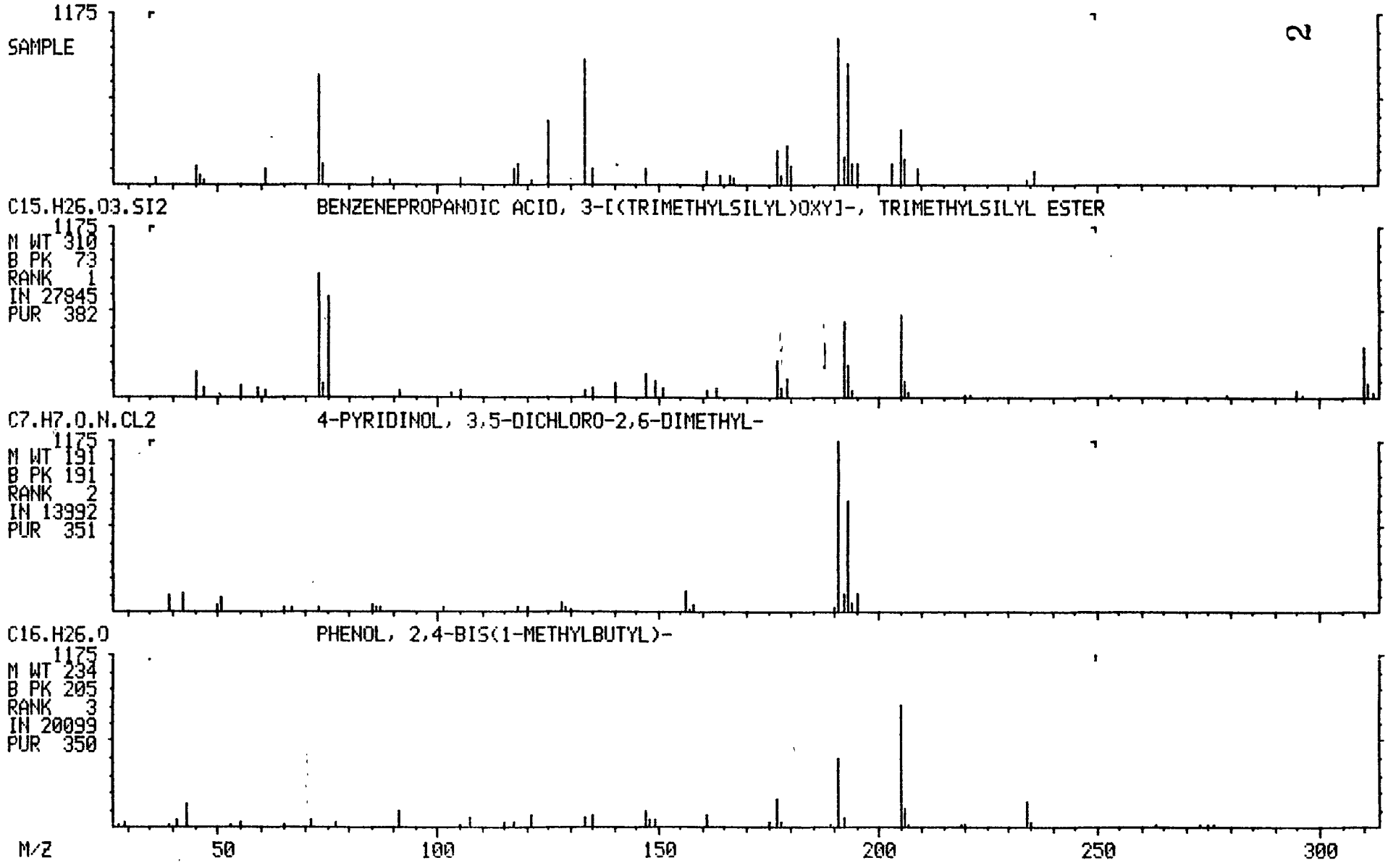
121856

LIBRARY SEARCH
03/03/89 12:27:00 + 21:22
SAMPLE: VOA SOIL, EA#0821, F#PRW-4,S-5, WILLOW GROVE, 5GM/5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS-C3
ENHANCED (S 15B 2N 0T)

DATA: AB06851 #1282
CALI: AB06851 # 2

BASE M/Z: 191
RIC: 18047.

101 2



1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PRW-4,WATER

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: RINSE BL#5

Matrix: (soil/water) ~~SOIL~~ WATER mmu Lab Sample ID: EA# 0823

Sample wt/vol: 5.0 (g/mL) ~~g~~mL mmu Lab File ID: AC769

Level: (low/med) LOW Date Received: 3/ 1/89

% Moisture: not dec. 0. Date Analyzed: 3/ 1/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/~~KG~~ L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	3.	J
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	J
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	2.	J
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

mmu 15JUN89

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

PRW-4,WATER

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: RINSE BL#5

Matrix: (soil/water) SOIL Lab Sample ID: EA# 0823

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AC769

Level: (low/med) LOW Date Received: 3/ 1/89

% Moisture: not dec. 0. Date Analyzed: 3/ 1/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	109875	Methane, dimethoxy- (8CI9CI)	9.65	16000.	B
2.					
3.					
4.					
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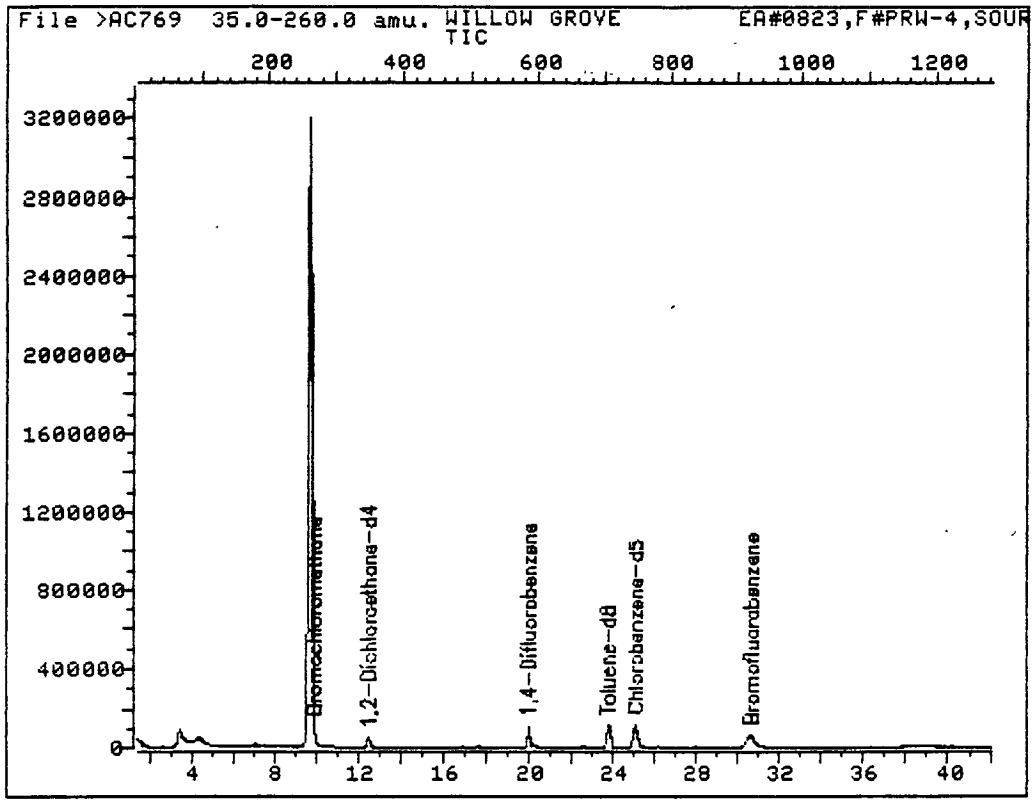
29.					
30.					

TOTAL ION CHROMATOGRAM



Data File: >AC769::D2 Quant Output File: ^AC769::QT
Name: WILLOW GROVE
Misc: EA#0823,F#PRW-4,SOURCE WATER,WATER,5ML,GC/MS A1-CVG

Id File: AVOA::BD
Title: CLP PROTOCOL 5PT. CALIBRATION, GC/MS A1
Last Calibration: 890301 15:05

Operator ID: TONY
Quant Time: 890301 22:22
Injected at: 890301 21:34

QUANT REPORT

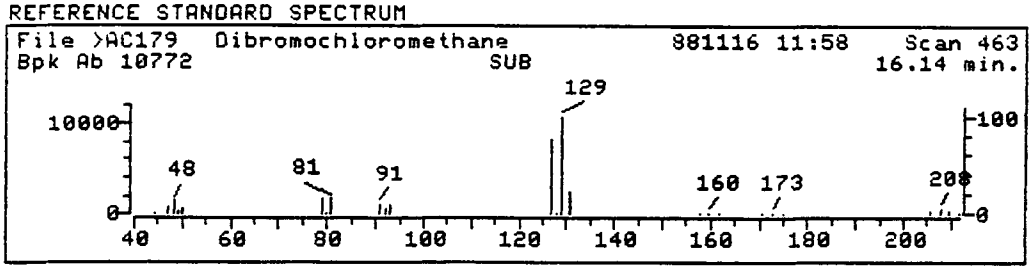
Operator ID: TONY Quant Rev: 6 Quant Time: 890301 22:22
Output File: ^AC769::QT Injected at: 890301 21:34
Data File: >AC769::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0823,F#PRW-4,SOURCE WATER,WATER,5ML,GC/MS A1-CVG

ID File: AVOA::BD
Title: CLP PROTOCOL 5PT. CALIBRATION, GC/MS A1
Last Calibration: 890301 15:05

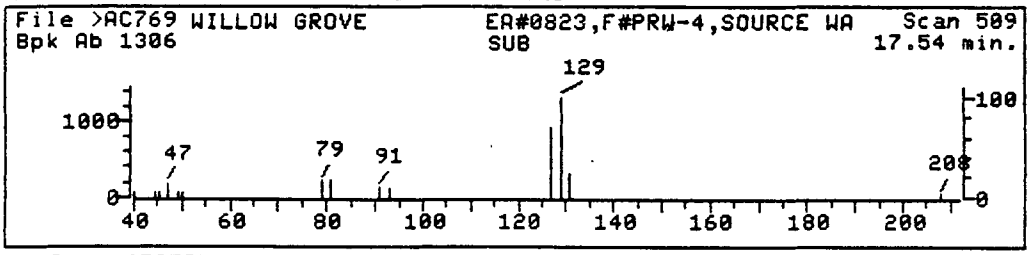
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	9.91	128.0	114726	50.00	UG/L	89
13)	1,2-Dichloroethane-d4	12.47	65.0	154308	38.26	UG/L	72
15)	*1,4-Difluorobenzene	19.95	114.0	477001	50.00	UG/L	91
24)	Dibromochloromethane	17.54	129.0	13609	2.69	UG/L	93
28)	Bromoform	20.27	173.0	16774	4.62	UG/L	98
29)	*Chlorobenzene-d5	25.05	117.0	444995	50.00	UG/L	95
32)	Tetrachloroethene	22.61	164.0	6455	2.00	UG/L	93
35)	Toluene-d8	23.72	98.0	508000	50.69	UG/L	97
40)	Bromofluorobenzene	30.63	95.0	336065	50.76	UG/L	95

* Compound is ISTD

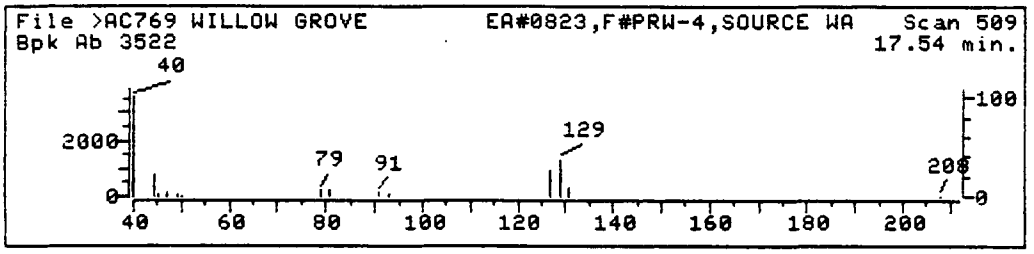
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



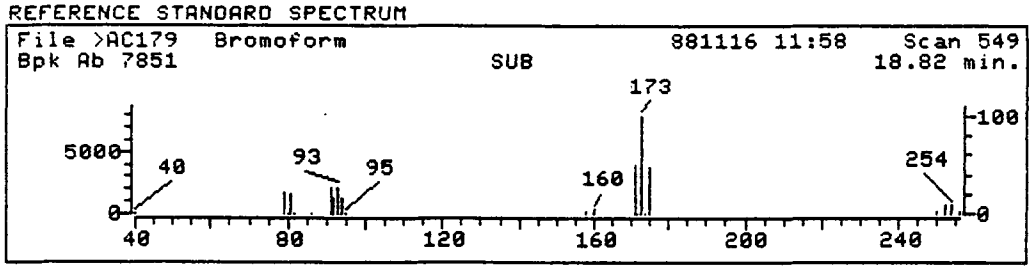
SAMPLE SPECTRUM (UNALTERED)



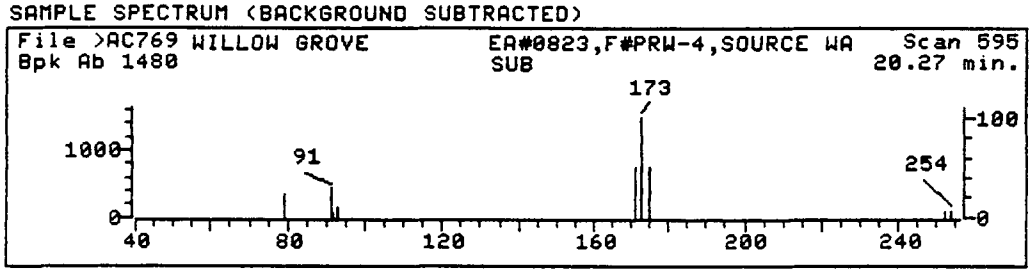
Data File: >AC769::D2 Quant Output File: ^AC769::QT
Name: WILLOW GROVE
Misc: EA#0823,F#PRW-4,SOURCE WATER,WATER,5ML,GC/MS A1-CVG
Quant Time: 890301 22:22 Quant ID File: AVOA::BD
Injected at: 890301 21:34 Last Calibration: 890301 15:05

Compound No: 24
Compound Name: Dibromochloromethane
Scan Number: 509
Retention Time: 17.54 min.
Quant Ion: 129.0
Area: 13609
Concentration: 2.69 UG/L
q-value: 93

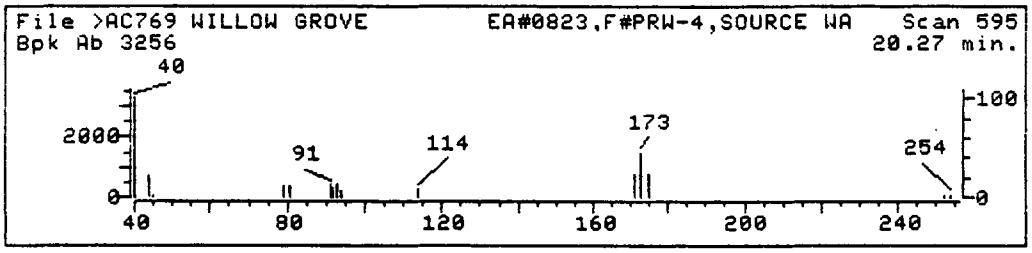
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



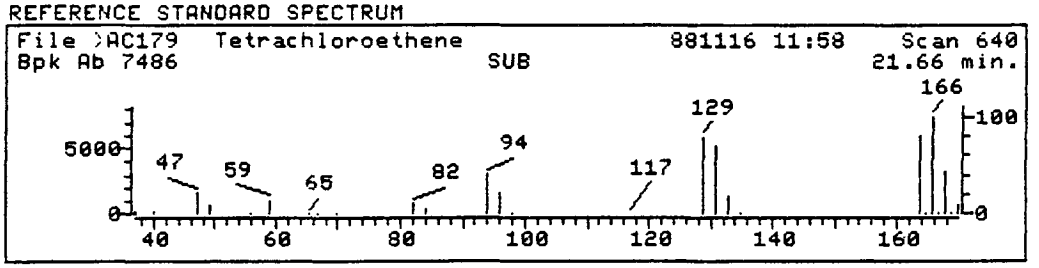
SAMPLE SPECTRUM (UNALTERED)



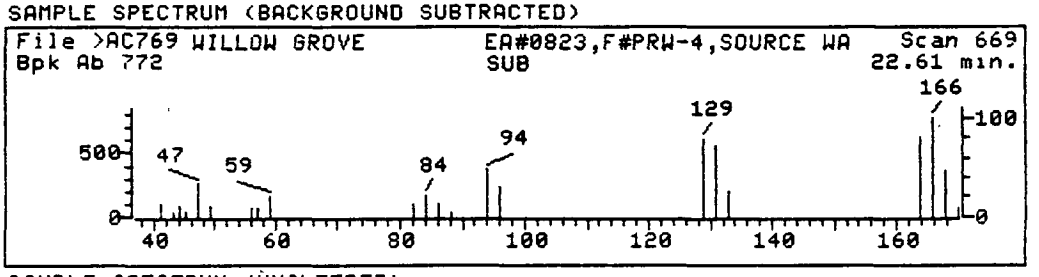
Data File: >AC769::D2 Quant Output File: ^AC769::QT
Name: WILLOW GROVE
Misc: EA#0823,F#PRW-4,SOURCE WATER,WATER,5ML,GC/MS A1-CVG
Quant Time: 890301 22:22 Quant ID File: AVOA::BD
Injected at: 890301 21:34 Last Calibration: 890301 15:05

Compound No: 28
Compound Name: Bromoform
Scan Number: 595
Retention Time: 20.27 min.
Quant Ion: 173.0
Area: 16774
Concentration: 4.62 UG/L
q-value: 98

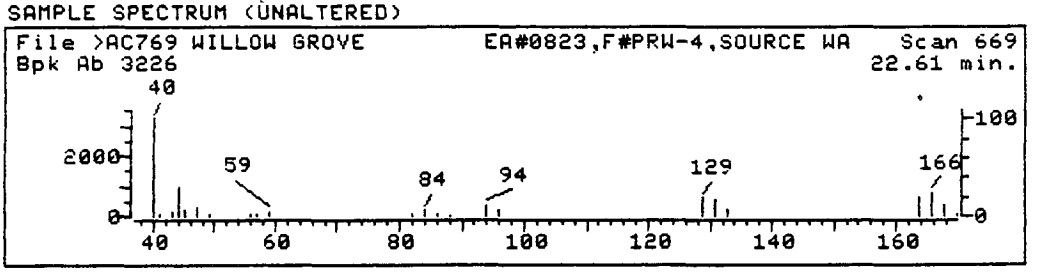
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

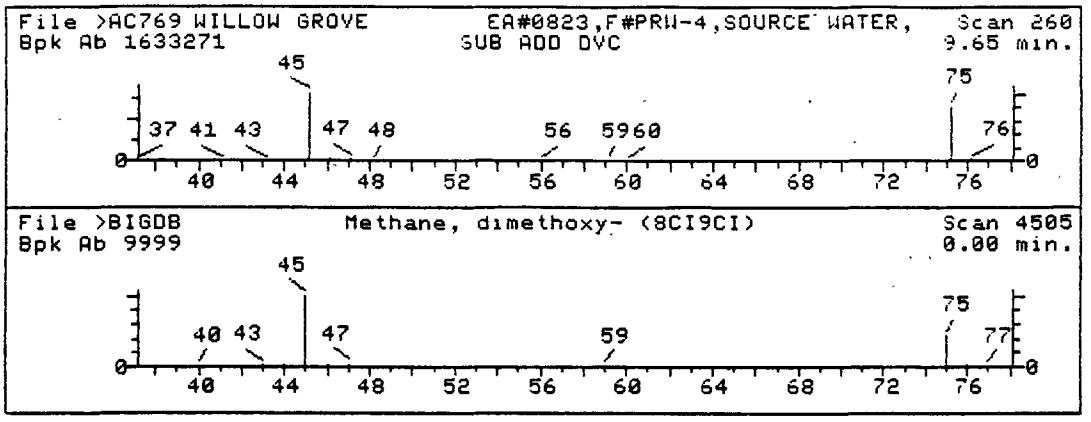


SAMPLE SPECTRUM (UNALTERED)



Data File: >AC769::D2 Quant Output File: ^AC769::QT
Name: WILLOW GROVE
Misc: EA#0823,F#PRW-4,SOURCE WATER,WATER,5ML,GC/MS A1-CVG
Quant Time: 890301 22:22 Quant ID File: AVOA::BD
Injected at: 890301 21:34 Last Calibration: 890301 15:05

Compound No: 32
Compound Name: Tetrachloroethene
Scan Number: 669
R tention Time: 22.61 min.
Quant Ion: 164.0
Area: 6455
Concentration: 2.00 UG/L
q-value: 93



Retention time = 9.65
Area= .37E+08 Tentative Concentration = 16000.00

1. Methane, dimethoxy- (8CI9CI) 76 C3H8O2

Sample file: >AC769 Spectrum #: 260
Search speed: 1 Tilting option: S No. of ion ranges searched: 41

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	32*	109875	4505	"BIGDB	26	57	0	0	85	38	10	18

ORGANICS ANALYSIS DATA SHEET SAMPLE #: WRW-1(0871)

LABORATORY: EA ENG.
LABORATORY ID: AB06892
MATRIX: WATER

CASE #/SAS #:
QC REPORT #: 2/27/89
CONTRACT #: 10388.03
DATE RECEIVED: 3/3/89

DATA RELEASE AUTHORIZED BY: _____

VOLATILE COMPOUNDS

LEVEL:	LOW
DATE EXT/PREP:	3/7/89
DATE ANALYZED:	03/07/89
CONC/DIL FACTOR:	5ML
PH:	N/A
% MOISTURE:	N/A
% MOISTURE (DECANTED):	N/A
STANDARD ID:	AB06881
SENSITIVITY ID:	AB06880

CAS #		UG/L		
74-87-3	CHLOROMETHANE	10.	U	
74-83-9	BROMOMETHANE	10.	U	
75-01-4	VINYL CHLORIDE	10.	U	
75-00-3	CHLOROETHANE	10.	U	
75-09-2	METHYLENE CHLORIDE	5.	J	B
67-64-1	ACETONE	5.	J	B
75-15-0	CARBON DISULFIDE	5.	U	
75-35-4	1,1-DICHLOROETHENE	5.	U	
75-34-3	1,1-DICHLOROETHANE	5.	U	
156-60-5	TRANS-1,2-DICHLOROETHENE	5.	U	
67-66-3	CHLOROFORM	5.	U	
107-06-2	1,2-DICHLOROETHANE	5.	U	
78-93-3	2-BUTANONE (MEK)	10.	U	
71-55-6	1,1,1-TRICHLOROETHANE	5.	U	
56-23-5	CARBON TETRACHLORIDE	5.	U	
	VINYL ACETATE	10.	U	
75-27-4	BROMODICHLOROMETHANE	5.	U	
79-34-5	1,1,2,2-TETRACHLOROETHANE	5.	U	
78-87-5	1,2-DICHLOROPROPANE	5.	U	
10061-02-5	CIS-1,3-DICHLOROPROPENE	5.	U	
79-01-6	TRICHLOROETHENE	5.	U	
124-48-1	DIBROMOCHLOROETHANE	5.	U	
79-00-5	1,1,2-TRICHLOROETHANE	5.	U	
71-43-2	BENZENE	5.	U	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	5.	U	
75-25-2	BROMOFORM	4.	J	
	2-HEXANONE	10.	U	
108-10-1	4-METHYL-2-PENTANONE (MIBK)	10.	U	
127-18-4	TETRACHLOROETHENE	5.	U	
108-88-3	TOLUENE	5.	U	
108-90-7	CHLOROBENZENE	5.	U	
100-41-4	ETHYLBENZENE	5.	U	
	STYRENE	5.	U	
108-38-3	M&P-XYLENE	5.	U	
108-38-3	O-XYLENE	5.	U	
~~95-50-1~~	~~1,2-DICHLOROBENZENE~~	~~5.~~	~~U~~	
~~541-73-1~~	~~1,3-DICHLOROBENZENE~~	~~5.~~	~~U~~	

FORM I

ORGANICS ANALYSIS DATA SHEET SAMPLE #: WRW-1(0871)

LABORATORY: EA ENG.
CASE #/SAS #:

Tentatively Identified Compounds

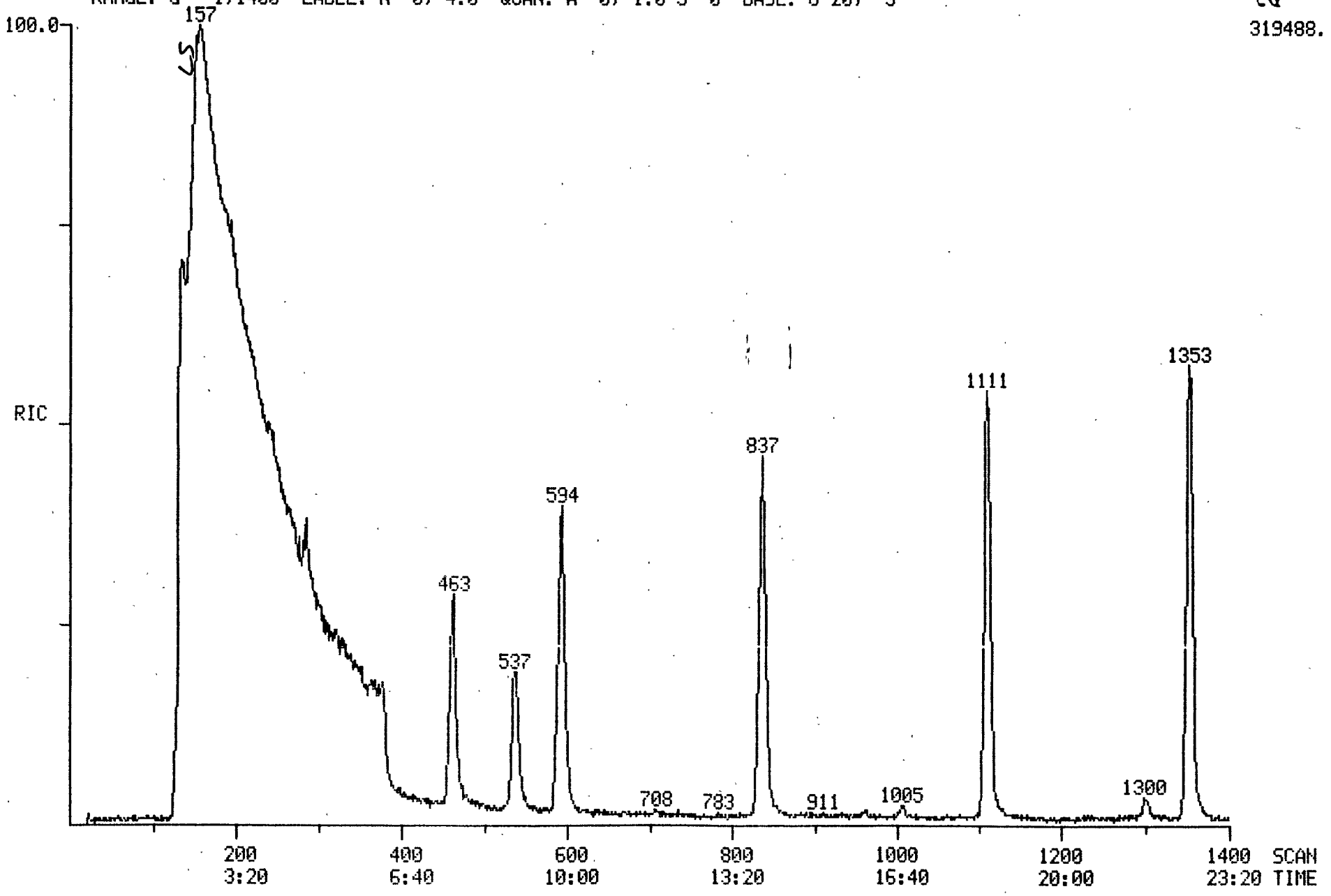
	CAS Number	Compound Name	Fraction	Scan	Estimated Conc(J)
1.		UNKNOWN	H_2O	157	15
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

FORM I, PART B

RIC DATA: AB06892 #1 SCANS 1 TO 1400
03/07/89 17:41:00 CALI: AB06892 #2
SAMPLE: VOA WATER, EA#0871, F#WRW-1, WILLOW GROVE, 5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS C3
RANGE: G 1,1400 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

2 112

319488.



Quantitation R port File: AB06892

Data: AB06892.TI
03/07/89 17:41:00
Sampl : VOA WATER, EA#0871, F#WRW-1, WILLOW GROVE, 5ML, CVG
Conds.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS C3
Standard ID: AB06881 Instrument: 5100
Sensitivity ID: AB06880 Analyst: CVG Inst Cali: 3/7/89

AMOUNT=AREA * REF AMNT/(REF AREA * RESP FACT)
Resp. fac. from Library Entry

NO	NAME	
1	IS1	BROMOCHLOROMETHANE
2	IS2	1,4-DIFLUOROBENZENE
3	IS3	CHLOROBENZENE-D5
4	SS1	1,2-DICHLOROETHANE-D4
5	SS2	TOLUENE-D8
6	SS3	BROMOFLUOROBENZENE
7	45V	CHLOROMETHANE
8	46V	BROMOMETHANE
9	88V	VINYL CHLORIDE
10	16V	CHLOROETHANE
11	44V	METHYLENE CHLORIDE
12	13H	ACETONE
13	15H	CARBON DISULFIDE
14	29V	1,1-DICHLOROETHENE
15	13V	1,1-DICHLOROETHANE
16	30V	TRANS-1,2-DICHLOROETHENE
17	23V	CHLOROFORM
18	10V	1,2-DICHLOROETHANE
19	14H	2-BUTANONE
20	11V	1,1,1-TRICHLOROETHANE
21	6V	CARBON TETRACHLORIDE
22	19H	VINYL ACETATE
23	48V	BROMODICHLOROMETHANE
24	32V	1,2-DICHLOROPROPANE
25	33VC	TRANS-1,3-DICHLOROPROPENE
26	87V	TRICHLOROETHENE
27	51V	DIBROMOCHLOROMETHANE
28	14V	1,1,2-TRICHLOROETHANE
29	4V	BENZENE
30	33VT	CIS-1,3-DICHLOROPROPENE
31	47V	BROMOFORM
32	16H	2-HEXANONE
33	17H	4-METHYL-2-PENTANONE
34	85V	TETRACHLOROETHENE
35	15V	1,1,2,2-TETRACHLOROETHANE
36	86V	TOLUENE
37	7V	CHLOROBENZENE
38	38V	ETHYLBENZENE
39	18H	STYRENE
40	20H2	O-XYLENES

Ready
3HIT
ILS.

No	m/z	Scan	Time	R f	RRT	Meth	Area(Hght)	Amount	%Tot
1	128	463	7:43	1	1.000	A BB	73617.	50.000 PPB*	15.34
2	114	594	9:54	2	1.000	A BV	443035.	50.000 PPB*	15.34
3	117	1111	18:31	3	1.000	A BV	427995.	50.000 PPB*	15.34
4	65	537	8:57	1	1.160	A BB	151843.	56.388 PPB**	17.30
5	98	837	13:57	3	0.753	A BV	447210.	53.236 PPB**	16.33
6	95	1353	22:33	3	1.218	A BB	319988.	51.376 PPB**	15.76
7	NOT	FOUND							
8	NOT	FOUND							
9	NOT	FOUND							
10	NOT	FOUND							
11	84	286	4:46	1	0.618	A BB	16612.	4.670 PPB	1.43
12	43	244	4:04	1	0.527	A BB	9892.	5.344 PPB	1.64
13	NOT	FOUND							
14	NOT	FOUND							
15	NOT	FOUND							
16	NOT	FOUND							
17	NOT	FOUND							
18	NOT	FOUND							
19	NOT	FOUND							
20	NOT	FOUND							
21	NOT	FOUND							
22	NOT	FOUND							
23	NOT	FOUND							
24	NOT	FOUND							
25	NOT	FOUND							
26	130	637	10:37	2	1.072	A BB	997.	~~0.200 PPB~~ ND	0.06
27	NOT	FOUND							
28	NOT	FOUND							
29	NOT	FOUND							
30	NOT	FOUND							
31	173	1299	21:39	2	2.187	A BB	20373.	4.293 PPB	1.32
32	NOT	FOUND							
33	NOT	FOUND							
34	164	960	16:00	3	0.864	A BB	2317.	~~0.544 PPB~~ ND	0.17
35	NOT	FOUND							
36	NOT	FOUND							
37	NOT	FOUND							
38	NOT	FOUND							
39	NOT	FOUND							
40	NOT	FOUND							

ABJ6892

No	Ret(L)	Ratio	RRT(L)	Ratio	Amnt	Amnt(L)	R. Fac	R. Fac(L)	Ratio
1	7:57	0.97	1.000	1.00	50.00	50.00	1.000	1.000	1.00
2	10:06	0.98	1.000	1.00	50.00	50.00	1.000	1.000	1.00
3	18:36	1.00	1.000	1.00	50.00	50.00	1.000	1.000	1.00
4	9:10	0.98	1.153	1.01	56.39	50.00	2.063	1.829	1.13
5	14:06	0.99	0.758	0.99	53.24	50.00	1.045	0.981	1.06
6	22:33	1.00	1.212	1.00	51.38	50.00	0.748	0.728	1.03
7	3:00		0.377			50.00		1.720	
8	3:23		0.426			50.00		1.809	
9	3:05		0.388			50.00		1.376	
10	3:22		0.423			50.00		1.922	
11	4:55	0.97	0.618	1.00	4.67	50.00	0.226	2.416	0.09
12	4:11	0.97	0.526	1.00	5.34	50.00	0.134	1.257	0.11
13	4:56		0.621			50.00		5.506	
14	4:15		0.535			50.00		1.956	
15	6:04		0.763			50.00		4.756	
16	5:18		0.667			50.00		2.148	
17	7:34		0.952			50.00		3.986	
18	9:26		1.187			50.00		3.039	
19	6:58		0.690			50.00		0.038	
20	8:26		0.835			50.00		0.546	
21	8:58		0.888			50.00		0.491	
22	6:57		0.688			50.00		0.502	
23	11:59		1.186			50.00		0.577	
24	11:21		1.124			50.00		0.633	
25	13:32		1.340			50.00		0.809	
26	10:51	0.98	1.074	1.00	0.20	50.00	0.002	0.563	0.00
27	16:08		1.597			50.00		0.430	
28	15:27		1.530			50.00		0.374	
29	9:22		0.927			50.00		1.193	
30	15:02		1.488			50.00		0.345	
31	21:44	1.00	2.152	1.02	4.29	50.00	0.046	0.536	0.09
32	13:01		0.700			50.00		0.339	
33	13:11		0.709			50.00		0.919	
34	16:06	0.99	0.866	1.00	0.54	50.00	0.005	0.498	0.01
35	22:31		1.211			50.00		0.454	
36	14:19		0.770			50.00		0.680	
37	18:43		1.006			50.00		0.866	
38	18:55		1.017			50.00		0.410	
39	20:44		1.115			50.00		0.922	
40	20:33		1.105			50.00		0.540	

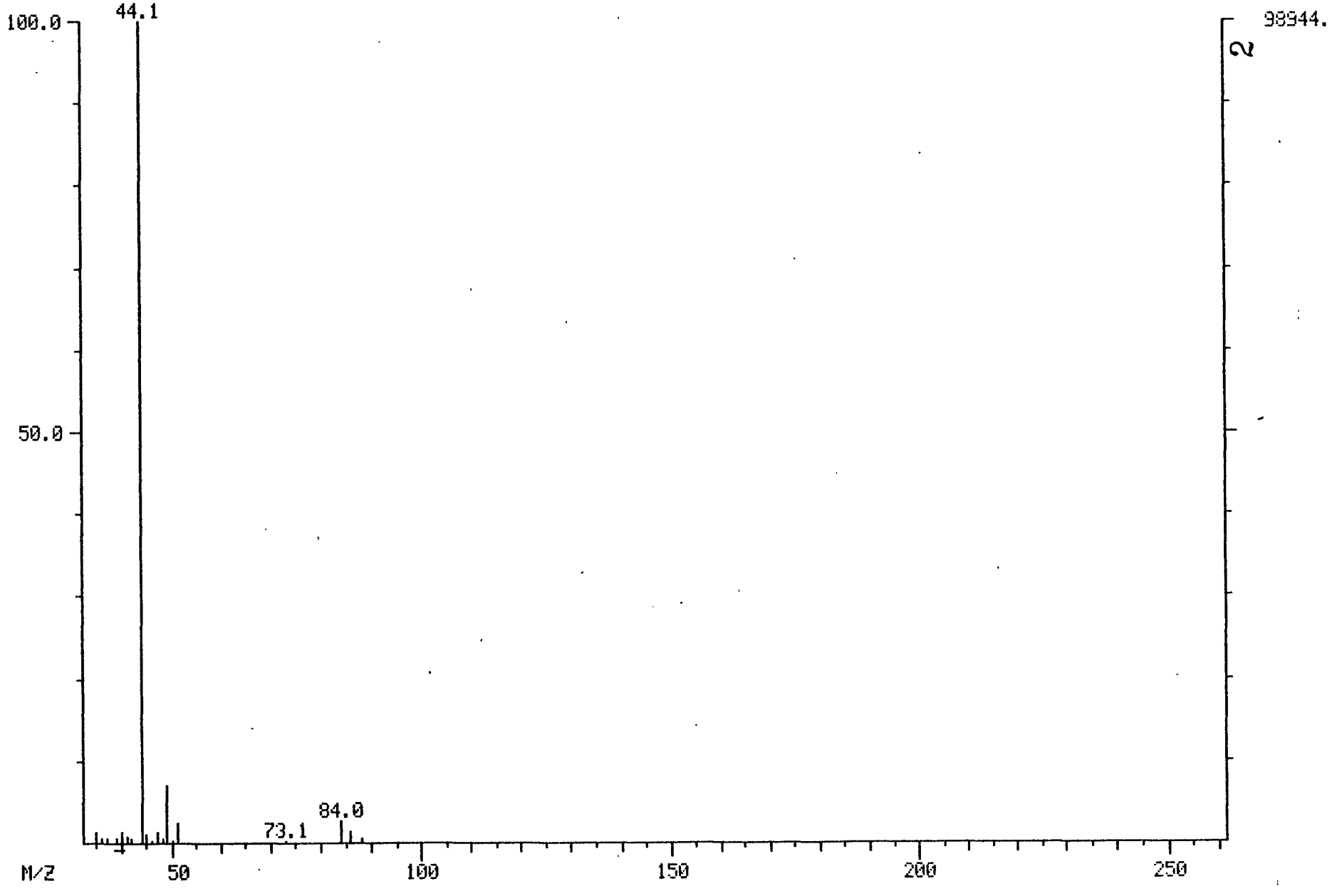
A-206892

MASS SPECTRUM
03/07/83 17:41:00 + 4:46
SAMPLE: VOA WATER, EA#0871, F#WRW-1, WILLOW GROVE, 5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS C3
GC TEMP: 44 DEG. C

DATA: AB06832 #286
CALI: AB06832 #2

BASE M/Z: 44
RIC: 121728.

116



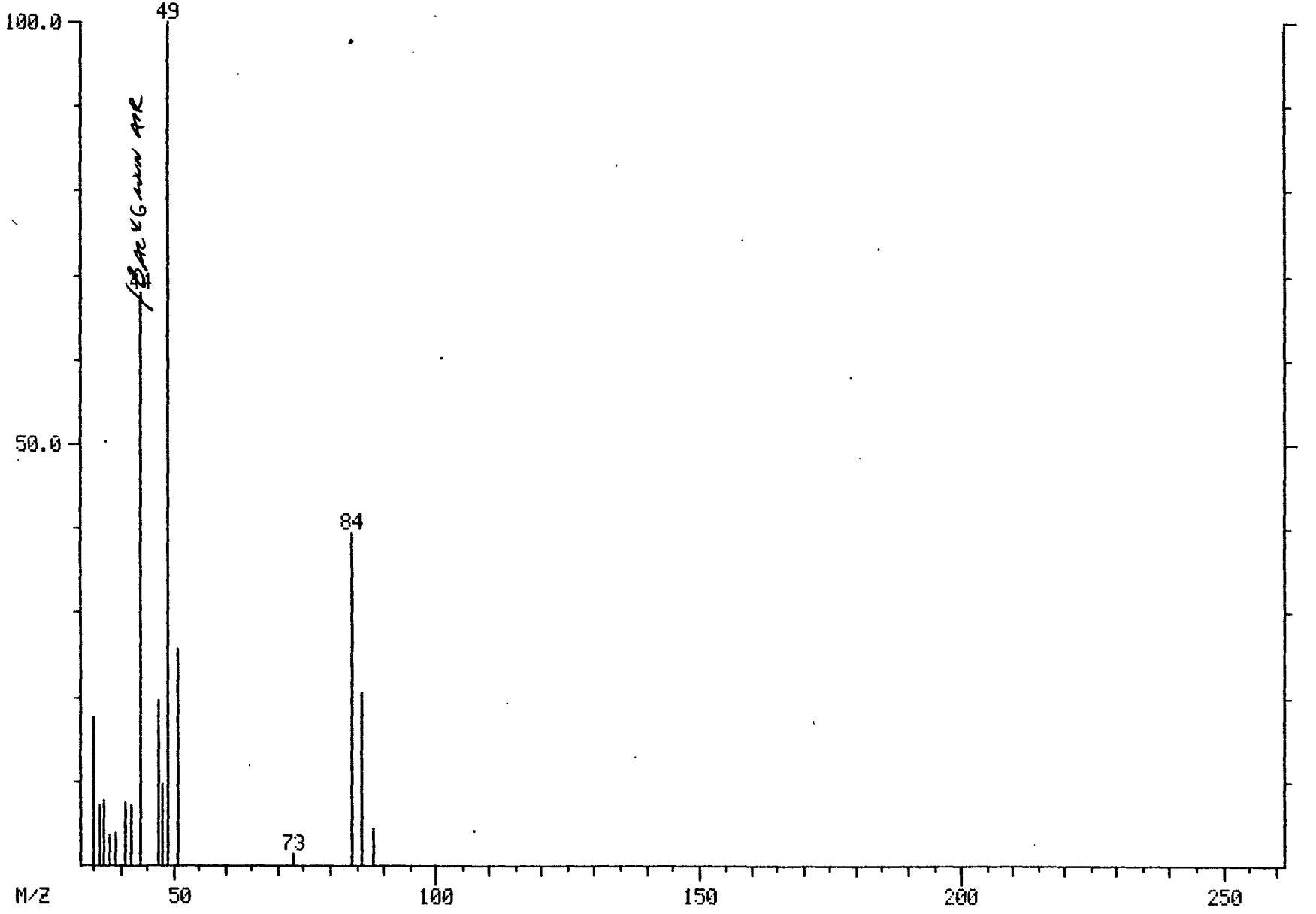
MASS SPECTRUM
03/07/83 17:41:00 + 4:46
SAMPLE: VOA WATER, EA#0871, F#WRW-1, WILLOW GROVE, 5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS C3
GC TEMP: 44 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AB06892 #286
CALI: AB06892 #2

BASE M/Z: 49
RIC: 21856.

2 117

6344.

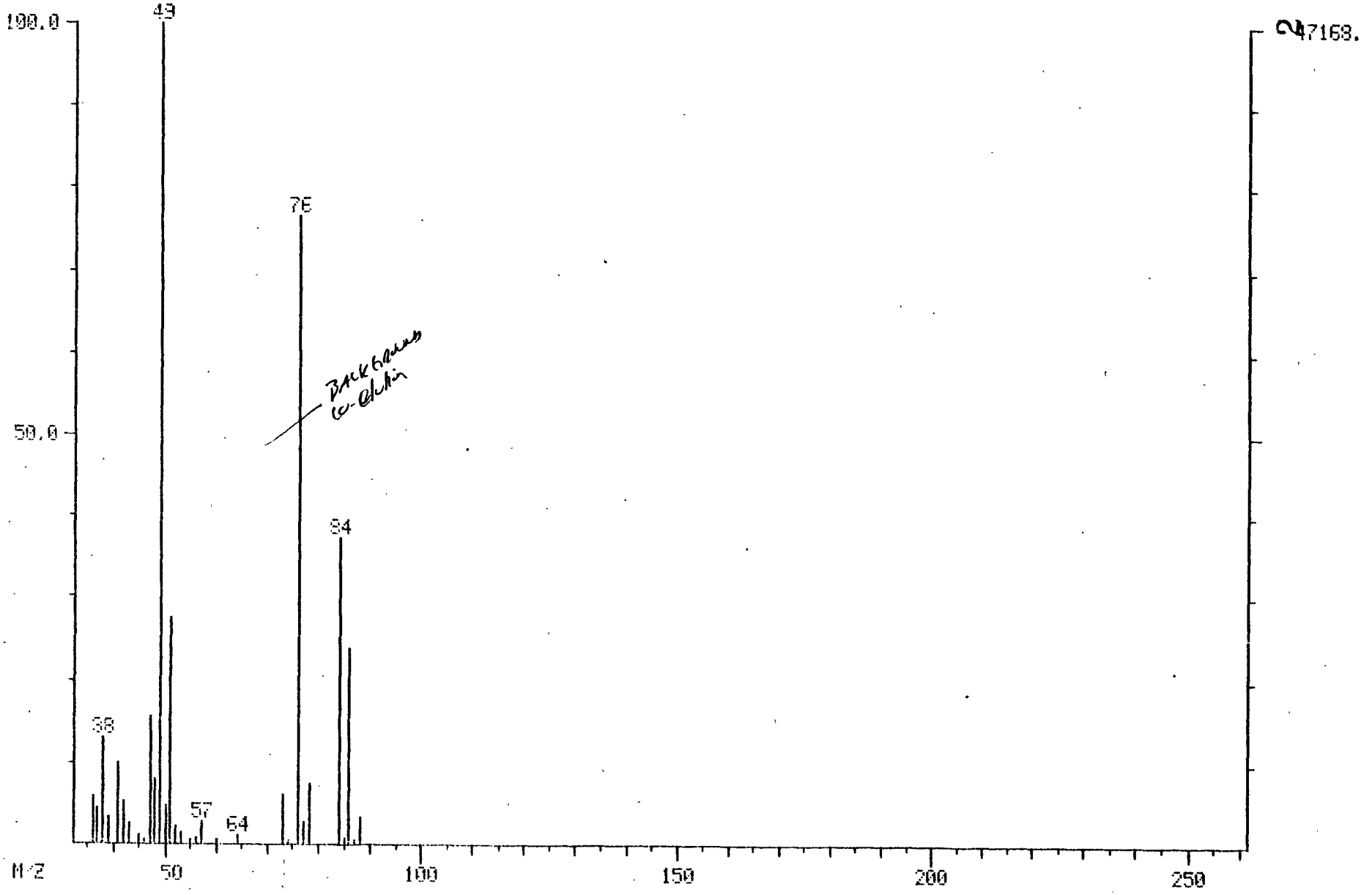


MASS SPECTRUM
03/07/89 10:41:00 + 4:55
SAMPLE: VOA WATER, STD#2776, VSTD50/300, 5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS C3
GC TEMP: 42 DEG. C
#295 - #296 - #280 TO #285 X1.00

DATA: AB06881 #295
CALI: AB06881 #2

BASE M/Z: 49
RIC: 174848.

2 118

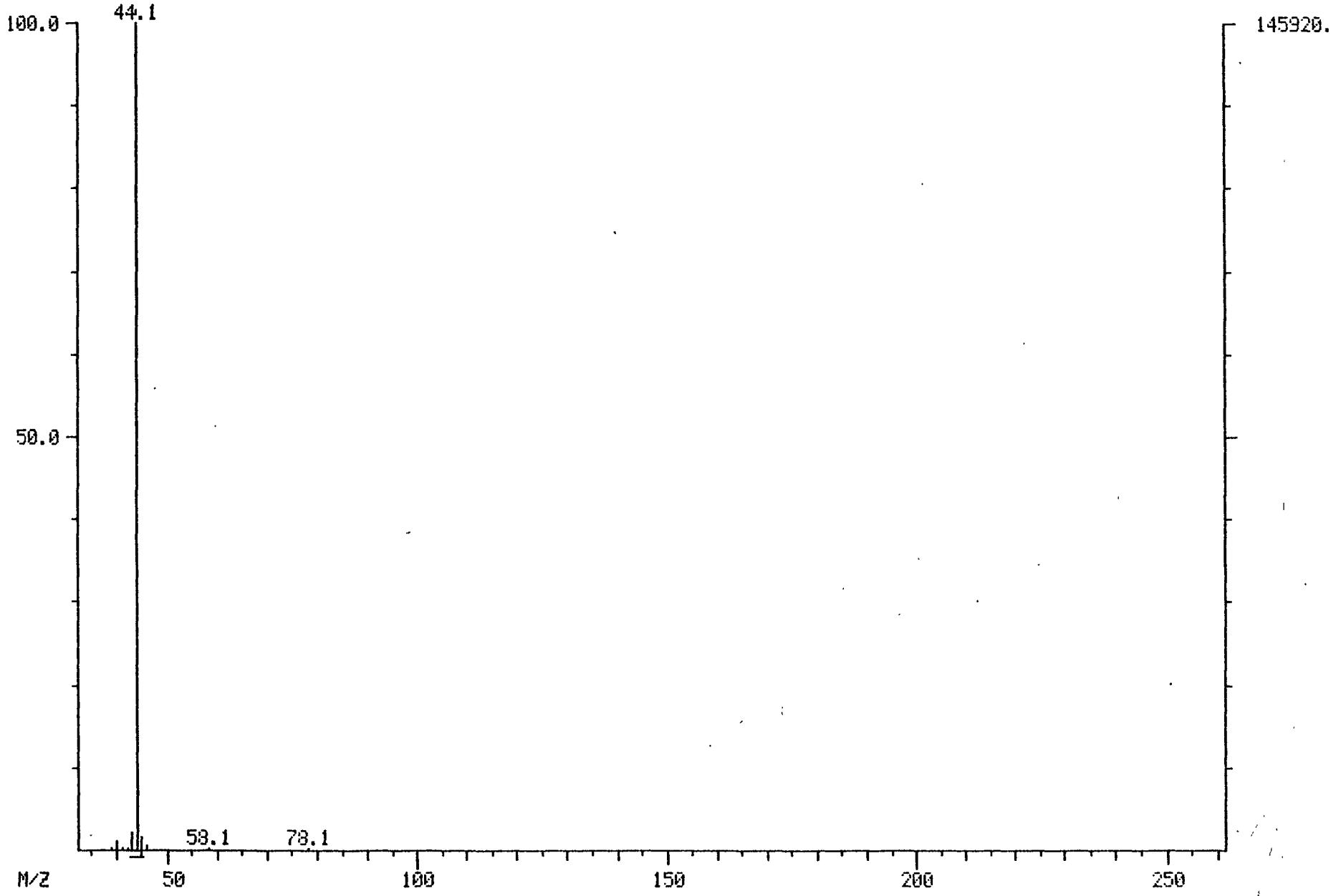


MASS SPECTRUM
03/07/89 17:41:00 + 4:04
SAMPLE: VOA WATER, EA#0871, F#WRW-1, WILLOW GROVE, 5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS C3
GC TEMP: 44 DEG. C

DATA: AB06892 #244
CALI: AB06892 #2

BASE M/Z: 44
RIC: 155648.

2 119

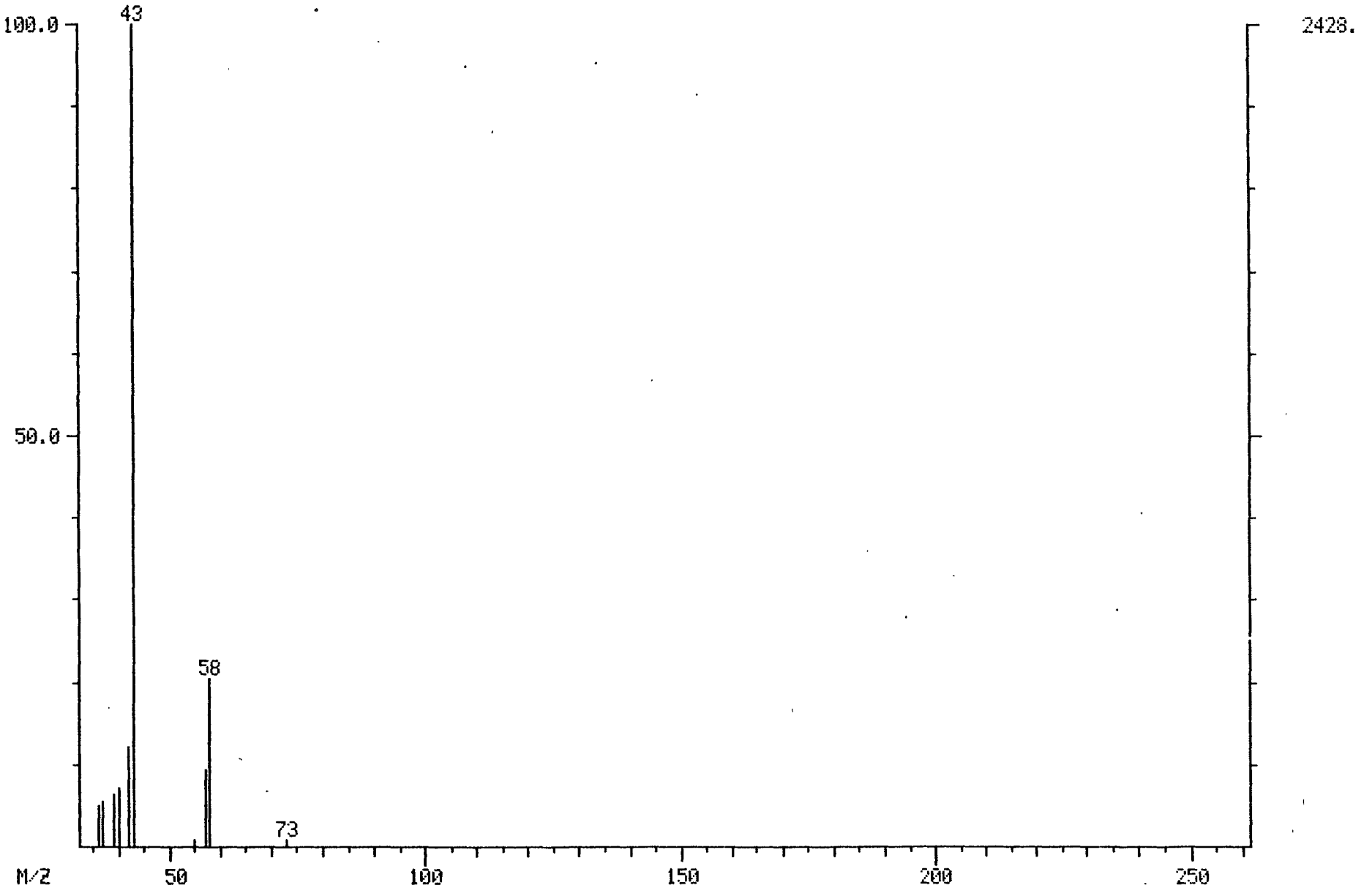


MASS SPECTRUM
03/07/89 17:41:00 + 4:05
SAMPLE: VOA WATER, EA#0871, F#WRW-1, WILLOW GROVE, 5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS C3
GC TEMP: 43 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AB06892 #245
CALI: AB06892 #2

BASE M/Z: 43
RIC: 4072.

2 120

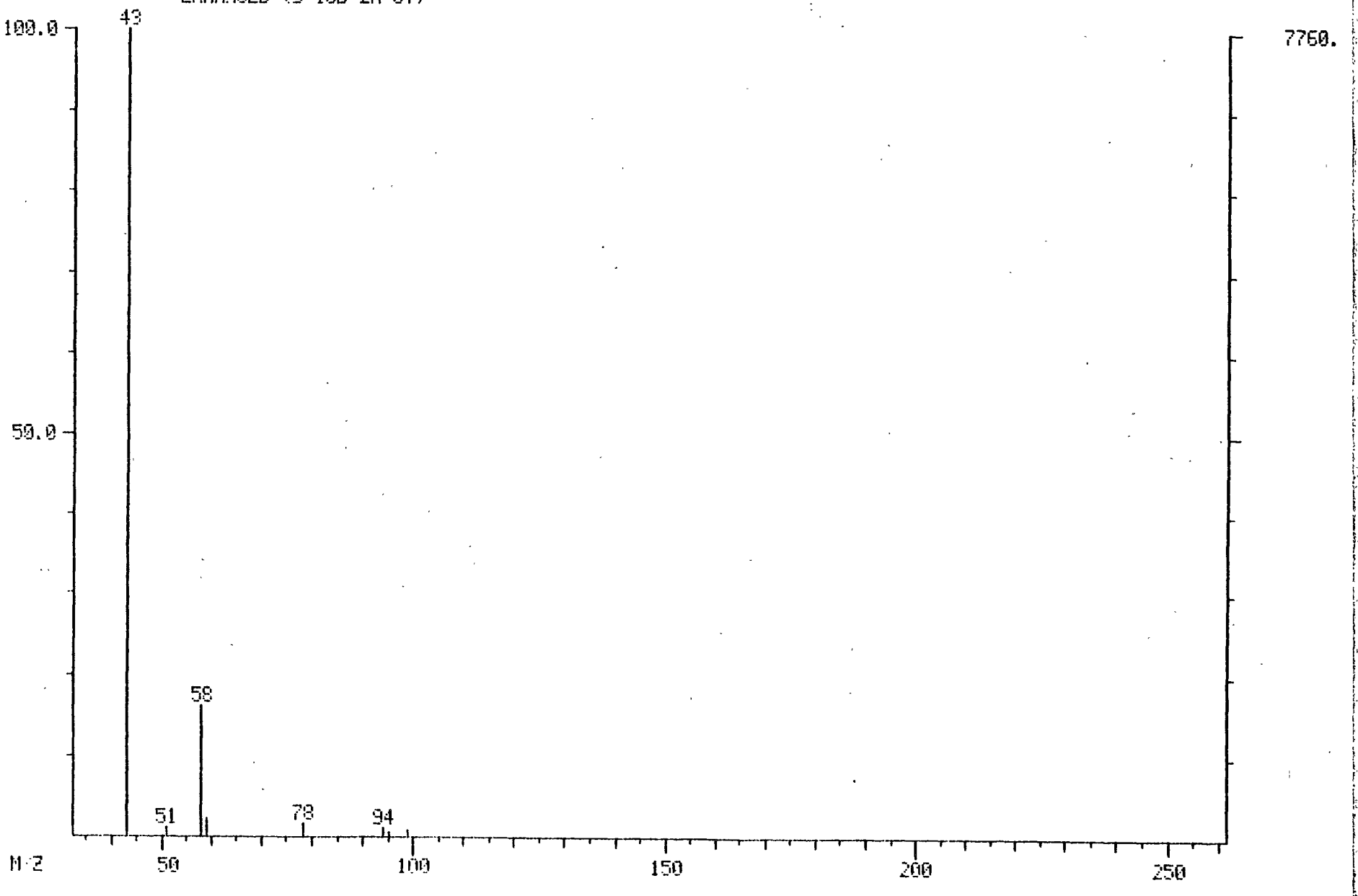


MASS SPECTRUM
03/07/89 10:41:00 + 4:11
SAMPLE: VOA WATER, STD#2776, VSTD50/300, 5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS C3
GC TEMP: 42 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AB06881 #251
CALI: AB06881 #2

BASE M/Z: 43
RIC: 9600.

2 121



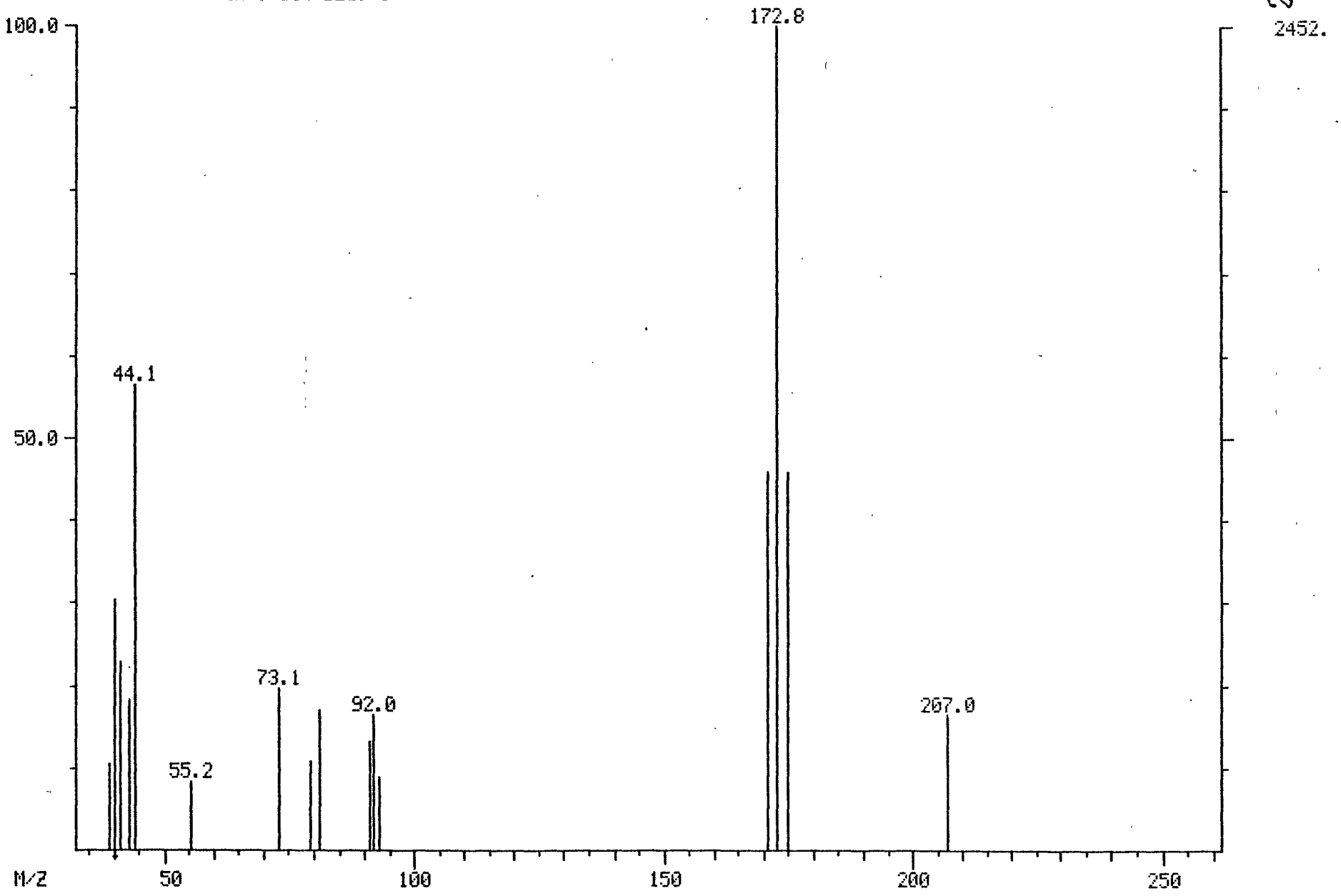
MASS SPECTRUM
03/07/89 17:41:00 + 21:39
SAMPLE: VOA WATER, EA#0871, F#WRW-1, WILLOW GROVE, 5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS C3
GC TEMP: 104 DEG. C

DATA: AB06892 #1299
CALI: AB06892 #2

BASE M/Z: 173
RIC: 10800.

122

2

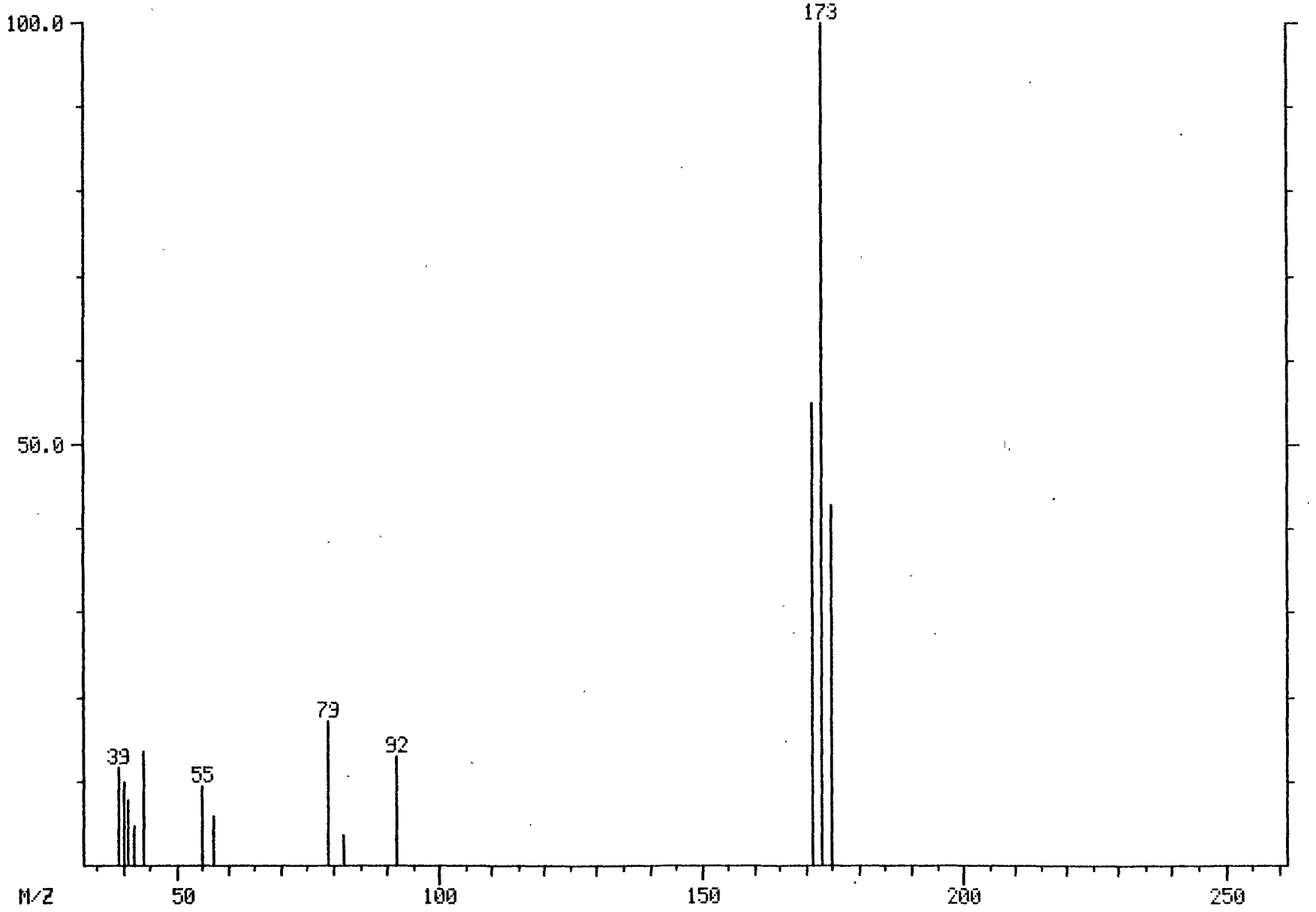


MASS SPECTRUM
03/07/89 17:41:00 + 21:39
SAMPLE: VOA WATER, EA#0871, F#WRW-1, WILLOW GROVE, 5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS C3
GC TEMP: 104 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AB06892 #1299
CALI: AB06892 #2

BASE M/Z: 173
RIC: 5808.

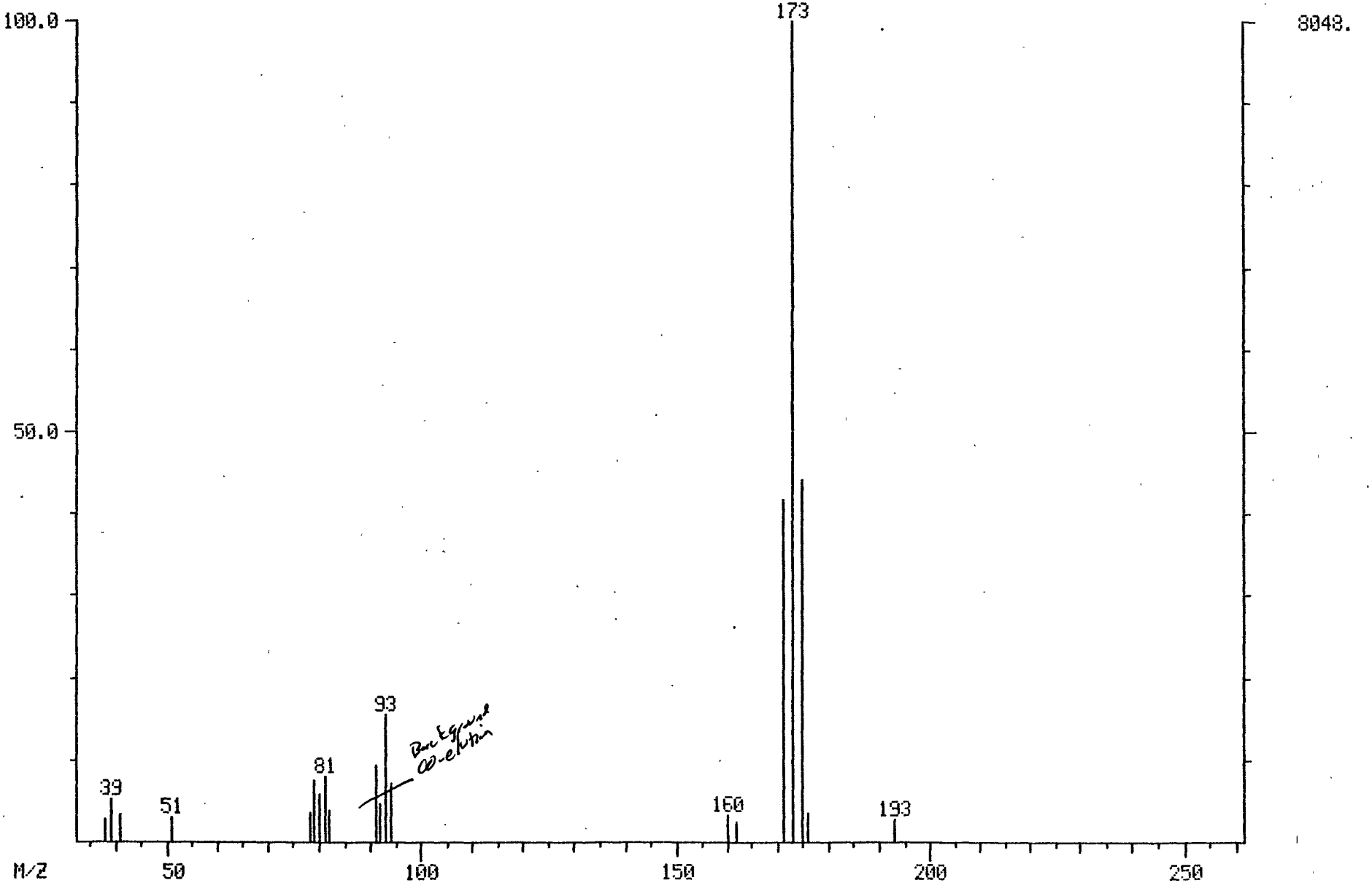
123
2
1974.



MASS SPECTRUM
03/07/89 10:41:00 + 21:44
SAMPLE: VOA WATER, STD#2776, VSTD50/300, 5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS C3
GC TEMP: 104 DEG. C
#1304 - #1306 TO #1307 X1.00

DATA: AB06881 #1304
CALI: AB06881 #2

BASE M/Z: 173
RIC: 22368.



2 124

Library Search Data: AB06892 # 157 Base m/z: 44
03/07/89 17:41:00 + 2:37 Cali: AB06892 # 2 RIC: 19487.
Sample: VOA WATER, EA#0871, F#WRW-1, WILLOW GROVE, 5ML, CVG
Conds.: EA LABS, COLUMN: VOCOL-30M, DESC: ZZ, INST: GC/MS C3
Enhanced (S 15B 2N OT)

38761 spectra in LIBRARYNB searched for maximum PURITY
103 matched at least 3 of the 5 largest peaks in the unknown

Rank	In.	Name
1	4864	HYDRAZINE, METHYL-, OXALATE (1:1)
2	2520	2-HEPTANAMINE
3	681	2-BUTANAMINE, 3-METHYL-
4	258	CYCLOBUTANOL
5	1378	FORMAMIDE, N-(2-METHYLPROPYL)-

Rank	Formula	M.Wt	B.Pk	Purity	Fit	RFit
1	C3.H8.O4.N2	136	44	691	700	945
2	C7.H17.N	115	44	619	795	769
3	C5.H13.N	87	44	603	775	743
4	C4.H8.O	72	44	563	567	893
5	C5.H11.O.N	101	44	522	528	947

Rank	R.t. Time	B.P. Int.	US. Par. 1	US. Par. 2	C.A.S. #
1	—	—	—	—	32064-64-5
2	—	—	—	—	123-82-0
3	—	—	—	—	598-74-3
4	—	—	—	—	2919-23-5
5	—	—	—	—	6281-96-5

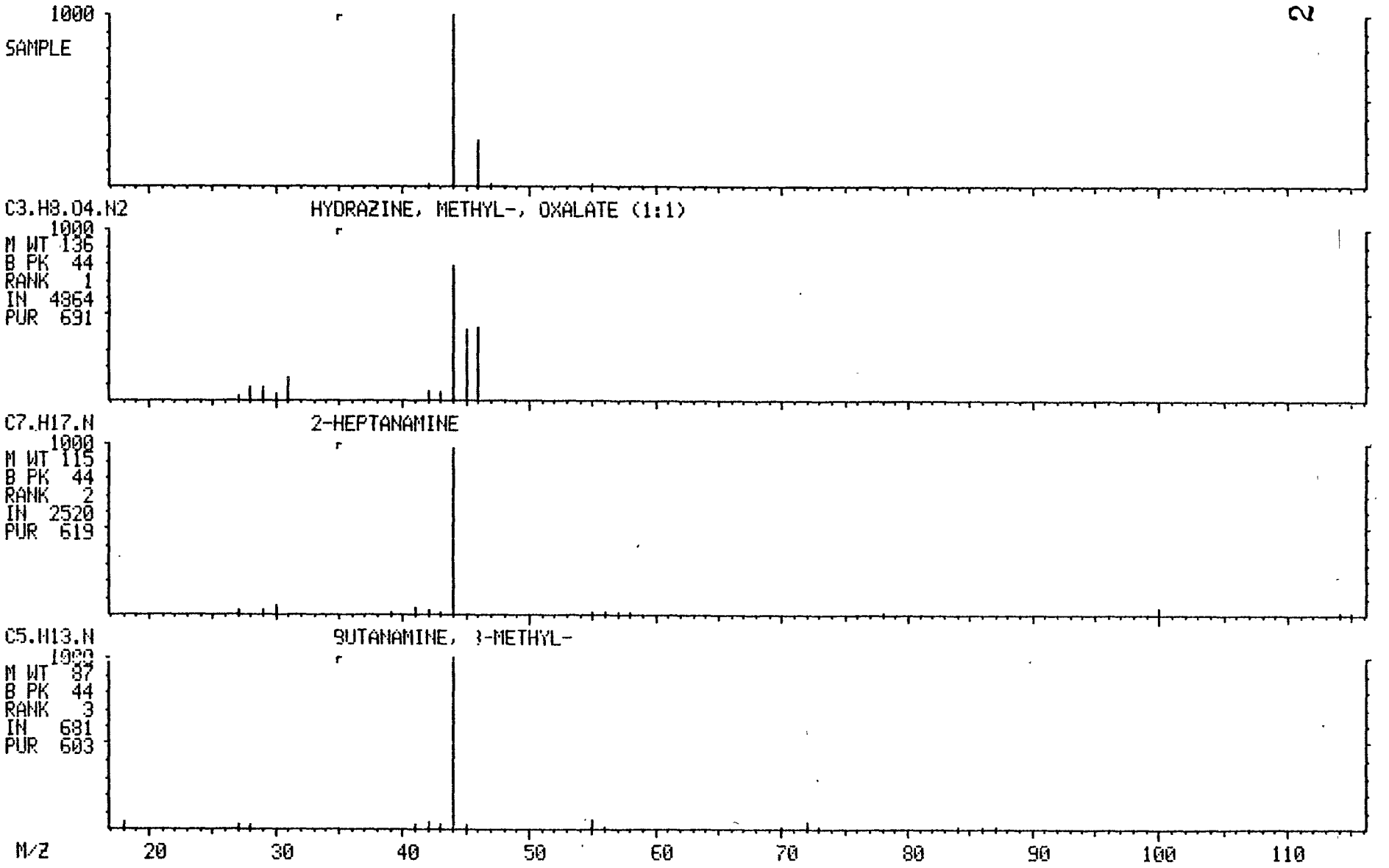
65088 15.0

LIBRARY SEARCH
03/07/89 17:41:00 + 2:37
SAMPLE: VOA WATER, EA#0871, F#WRW-1, WILLOW GROVE, 5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS C3
ENHANCED (S 15B 2N 0T)

DATA: AB06892 # 157
CALI: AB06892 # 2

BASE M/Z: 44
RIC: 19487.

2 126



1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RINSATE BLANK

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PR-1,S-4

Matrix: (soil/water) WATER Lab Sample ID: EA# 0640

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: AC703

Level: (low/med) LOW Date Received: 02/16/89

% Moisture: not dec. 100. Date Analyzed: 02/23/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/~~KG~~ L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	15.	
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

MMU 13JUN89

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

RINSATE BLANK

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PR-1,S-4

Matrix: (soil/water) WATER Lab Sample ID: EA# 0640

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: AC703

Level: (low/med) LOW Date Received: 02/16/89

% Moisture: not dec. 100. Date Analyzed: 02/23/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	13475826	Heptane, 2,2,4,6,6-pentameth	23.29	7.	
2.					
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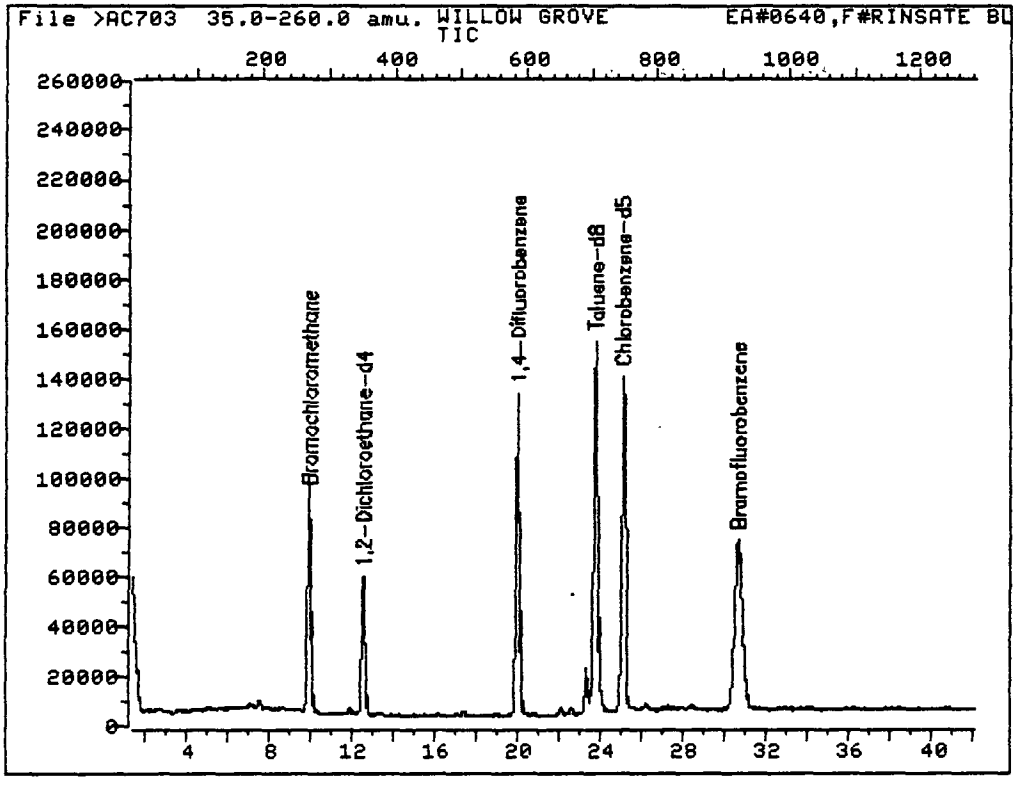
FORM I VOA-TIC 1/87 Rev.

TOTAL ION CHROMATOGRAM



Data File: >AC703::D2 Quant Output File: ^AC703::QT
Name: WILLOW GROVE
Misc: EA#0640,F#RINSATE BLANK,SOIL,5GM/5ML,GC/MS-A1-CVG

Id File: AVOA::BD
Title: CLP PROTOCOL 5PT. CALIBRATION, GC/MS A1
Last Calibration: 890207 18:53

Operator ID: TONY
Quant Time: 890223 07:53
Injected at: 890223 07:04

QUANT REPORT

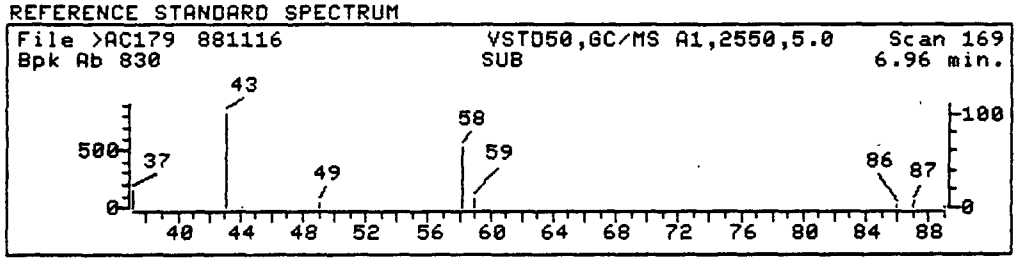
Operator ID: TONY Quant Rev: 6 Quant Time: 890223 07:53
Output File: ^AC703::QT Injected at: 890223 07:04
Data File: >AC703::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0640,F#RINSATE BLANK,SOIL,5GM/5ML,GC/MS-A1-CVG

ID File: AVOA::BD
Title: CLP PROTOCOL 5PT. CALIBRATION, GC/MS A1
Last Calibration: 890207 18:53

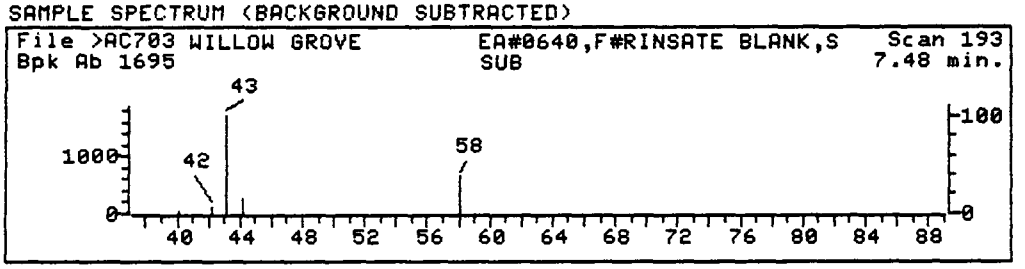
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	9.89	128.0	127488	50.00	UG/L	89
7)	Acetone	7.48	43.0	18326	15.19	UG/L	81
13)	1,2-Dichloroethane-d4	12.49	65.0	176325	60.11	UG/L	81
15)	*1,4-Difluorobenzene	19.96	114.0	632193	50.00	UG/L	90
29)	*Chlorobenzene-d5	25.03	117.0	553973	50.00	UG/L	95
35)	Toluene-d8	23.73	98.0	659115	48.67	UG/L	97
40)	Bromofluorobenzene	30.61	95.0	384514	53.51	UG/L	91

* Compound is ISTD

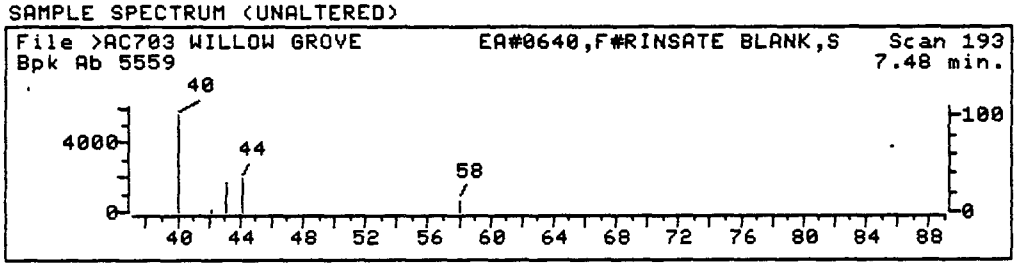
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

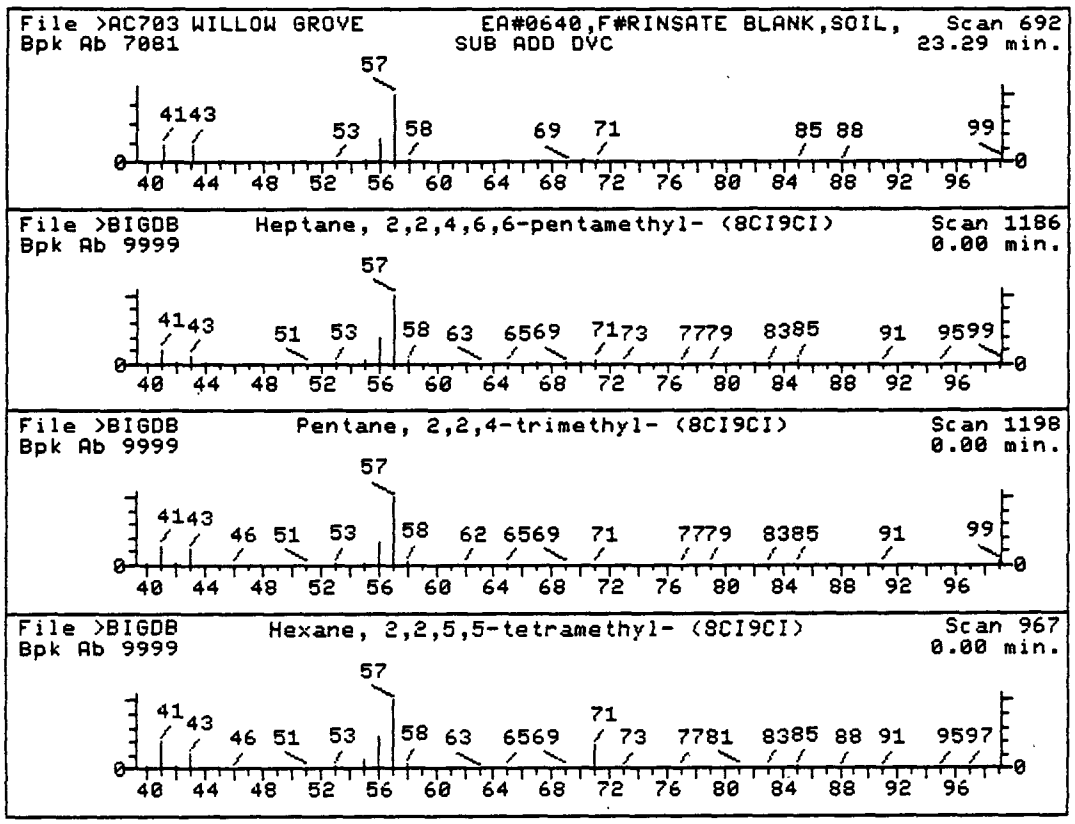


SAMPLE SPECTRUM (UNALTERED)



Data File: >AC703::D2 Quant Output File: ^AC703::QT
Name: WILLOW GROVE
Misc: EA#0640,F#RINSATE BLANK,SOIL,5GM/5ML,GC/MS-A1-CVG
Quant Time: 890223 07:53 Quant ID File: AVOA::BD
Injected at: 890223 07:04 Last Calibration: 890207 18:53

Compound No: 7
Compound Name: Acetone
Scan Number: 193
Ret ntion Time: 7.48 min.
Quant Ion: 43.0
Area: 18326
Concentration: 15.19 UG/L
q-value: 81



Retention time = 23.29

Area = 248412.0 Tentative Concentration is 7.00

1.	Heptane, 2,2,4,6,6-pentamethyl- (8CI9CI)	170	C12H26
2.	Pentane, 2,2,4-trimethyl- (8CI9CI)	114	C8H18
3.	Hexane, 2,2,5,5-tetramethyl- (8CI9CI)	142	C10H22
4.	Heptane, 2,2,4-trimethyl- (8CI9CI)	142	C10H22
5.	Methane, isocyanato- (9CI)	57	C2H3NO
6.	Pentane, 2,2,4,4-tetramethyl- (8CI9CI)	128	C9H20
7.	Butane, 2,2,3,3-tetramethyl- (8CI9CI)	114	C8H18

Sample file: >AC703 Spectrum #: 692
S arch speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	78	13475826	1186	"BIGDB	36	39	2	0	93	5	55	12
2.	76	540841	1198	"BIGDB	58	16	1	0	74	9	45	25

3.	70	1071814	967	"BIGDB	35	44	2	0	66	7	42	12
4.	70	14720742	1022	"BIGDB	42	39	2	0	74	9	42	14
5.	60*	624839	948	"BIGDB	22	42	2	0	88	15	30	13
6.	60	1070877	1168	"BIGDB	43	26	1	0	97	11	30	15
7.	60	594821	1200	"BIGDB	36	36	2	0	91	15	30	12

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RINSATE BL RE

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PR-1,S-4

Matrix: (soil/water) ~~SOIL~~ WATER mmu Lab Sample ID: EA# 0640

Sample wt/vol: 5.0 (g/mL) ~~g~~ mL mmu Lab File ID: AC815

Level: (low/med) LOW Date Received: 2/16/89

% Moisture: not dec. 0. Date Analyzed: 3/13/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/~~KG~~ L	Q mmu 13JUN89
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	3.	JB
67-64-1	Acetone	8.	JB
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

RINSATE BL RE

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL-GR SAS No.: SDG No.: PR-1,S-4

Matrix: (soil/water) SOIL Lab Sample ID: EA# 0640

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AC815

Level: (low/med) LOW Date Received: 2/16/89

% Moisture: not dec. 0. Date Analyzed: 3/13/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Volatiles Detected			
2.				
3.				
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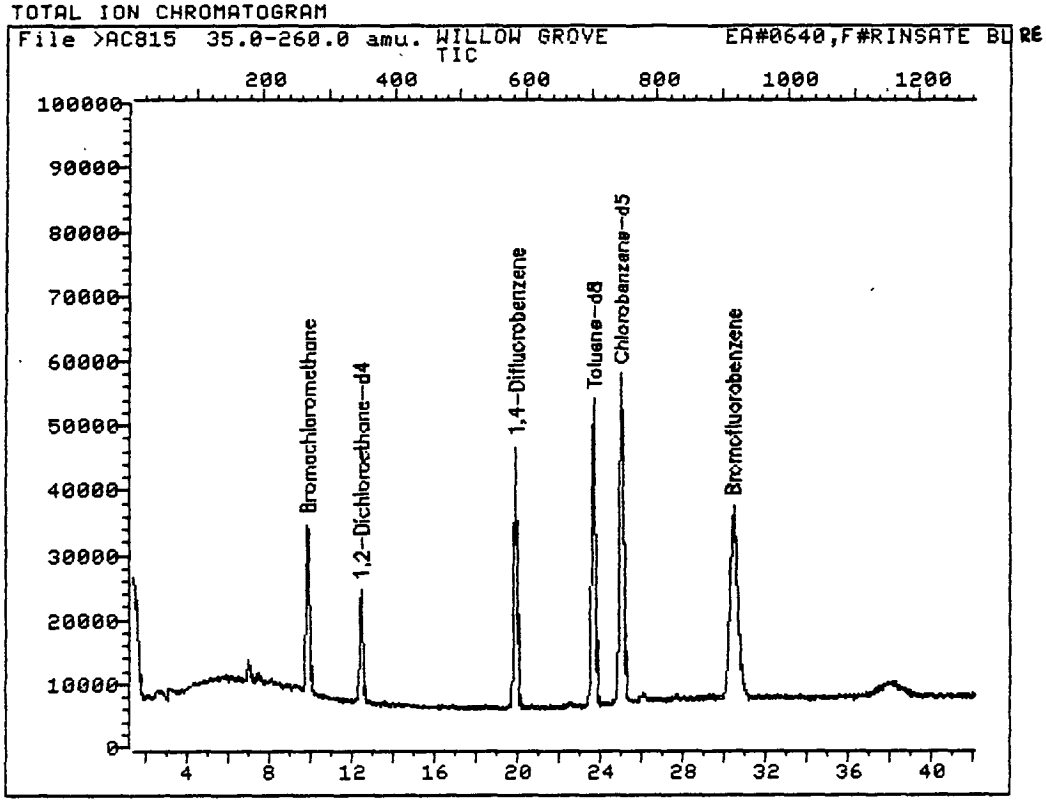
TOTAL ION CHROMATOGRAM



Data File: >AC815::D1 Quant Output File: ^AC815::QT
Name: WILLOW GROVE
Misc: EA#0640,F#RINSATE BLANK,RE,WATER,5ML,GC/MS A1-CVG

Id File: AVOA::BD
Title: CLP PROTOCOL 5PT. CALIBRATION, GC/MS A1
Last Calibration: 890313 14:31

Operator ID: TONY
Quant Time: 890313 16:56
Inj cted at: 890313 16:07

QUANT REPORT

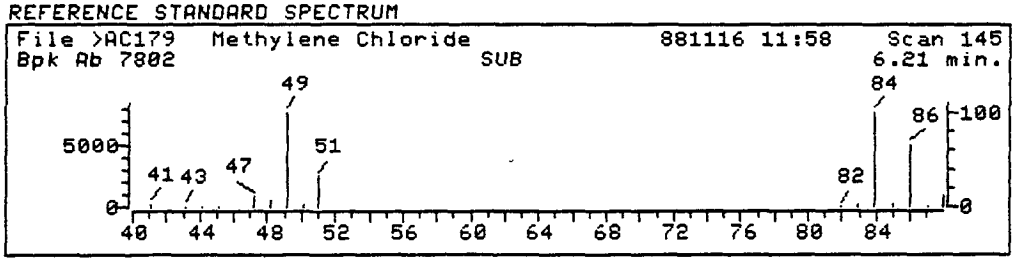
Operator ID: TONY Quant Rev: 6 Quant Time: 890313 16:56
Output File: ^AC815::QT Injected at: 890313 16:07
Data File: >AC815::D1 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0640,F#RINSATE BLANK,WATER,5ML,GC/MS A1-CVG

ID File: AVOA::BD
Title: CLP PROTOCOL 5PT. CALIBRATION, GC/MS A1
Last Calibration: 890313 14:31

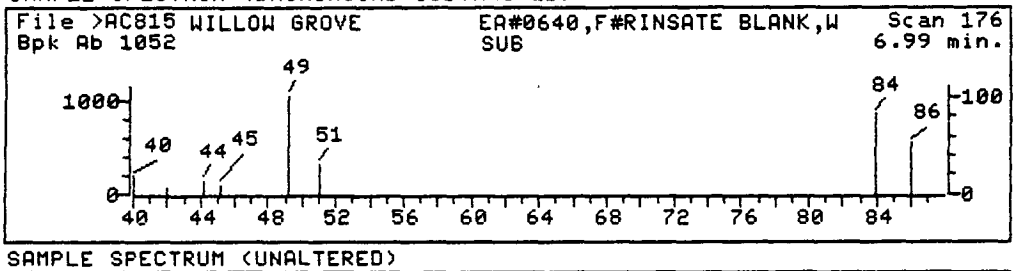
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	9.88	128.0	38640	50.00	UG/L	90
6)	Methylene Chloride	6.99	84.0	7991	3.43	UG/L	80
7)	Acetone	7.47	43.0	10967	8.15	UG/L	87
13)	1,2-Dichloroethane-d4	12.47	65.0	56970	50.73	UG/L	74
15)	*1,4-Difluorobenzene	19.92	114.0	185321	50.00	UG/L	89
29)	*Chlorobenzene-d5	24.99	117.0	205140	50.00	UG/L	95
35)	Toluene-d8	23.69	98.0	207932	50.90	UG/L	96
40)	Bromofluorobenzene	30.44	95.0	163675	53.71	UG/L	96

* Compound is ISTD

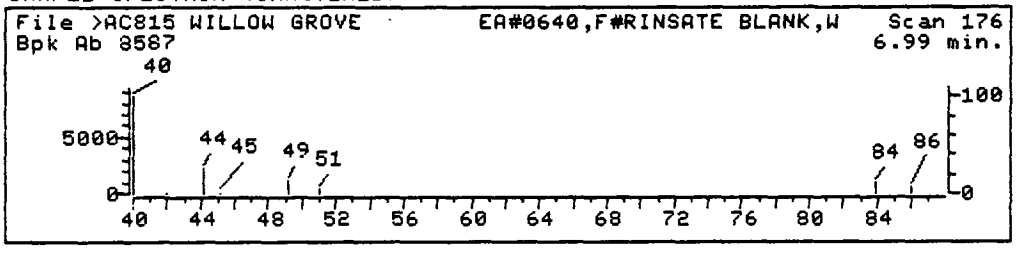
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



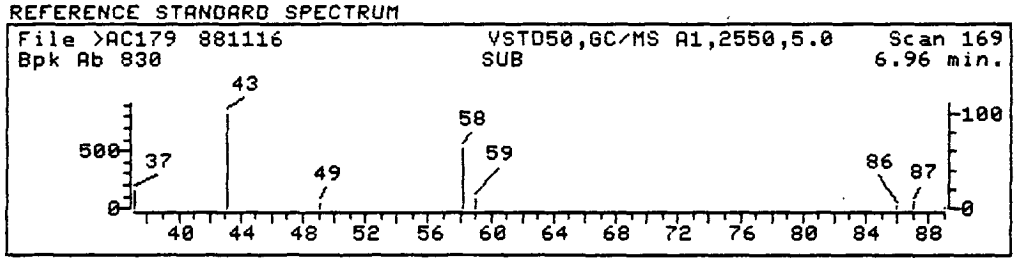
SAMPLE SPECTRUM (UNALTERED)



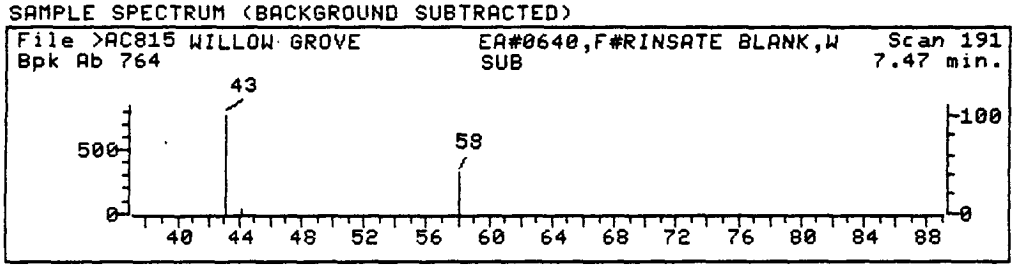
Data File: >AC815::D1 Quant Output File: ^AC815::QT
Name: WILLOW GROVE
Misc: EA#0640,F#RINSATE BLANK,WATER,5ML,GC/MS A1-CVG
Quant Time: 890313 16:56 Quant ID File: AVOA::BD
Injected at: 890313 16:07 Last Calibration: 890313 14:31

Compound No: 6
Compound Name: Methylene Chloride
Scan Number: 176
Retention Time: 6.99 min.
Quant Ion: 84.0
Area: 7991
Concentration: 3.43 UG/L
q-value: 80

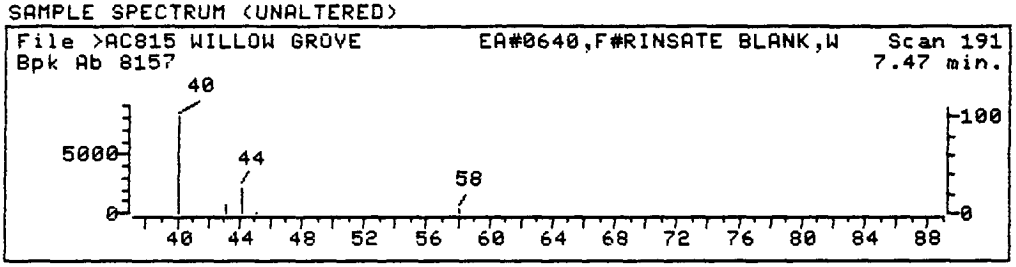
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >AC815::D1 Quant Output File: ^AC815::QT
Name: WILLOW GROVE
Misc: EA#0640,F#RINSATE BLANK,RE,WATER,5ML,GC/MS A1-CVG
Quant Time: 890313 16:56 Quant ID File: AVOA::BD
Injected at: 890313 16:07 Last Calibration: 890313 14:31

Compound No: 7
Compound Name: Acetone
Scan Number: 191
Retention Time: 7.47 min.
Quant Ion: 43.0
Area: 10967
Concentration: 8.15 UG/L
q-value: 87

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RINSE BL#2

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PR~~3~~ W-1,S-8

Matrix: (soil/water) ~~SOIL~~ WATER mmu Lab Sample ID: EA# 0746

Sample wt/vol: 5.0 (g/mL) ~~g~~ mL mmu Lab File ID: EE945

Level: (low/med) LOW Date Received: 2/17/89

% Moisture: not dec. 0. Date Analyzed: 2/24/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/~~KG~~ L mmu 12/2/89	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

RINSE BL#2

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PR~~5~~ W-1 RSB,S-8

Matrix: (soil/water) SOIL Lab Sample ID: EA# 0746

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE945

Level: (low/med) LOW Date Received: 2/17/89

% Moisture: not dec. 0. Date Analyzed: 2/24/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Volatiles Detected			
2.				
3.				
4.				
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6.				
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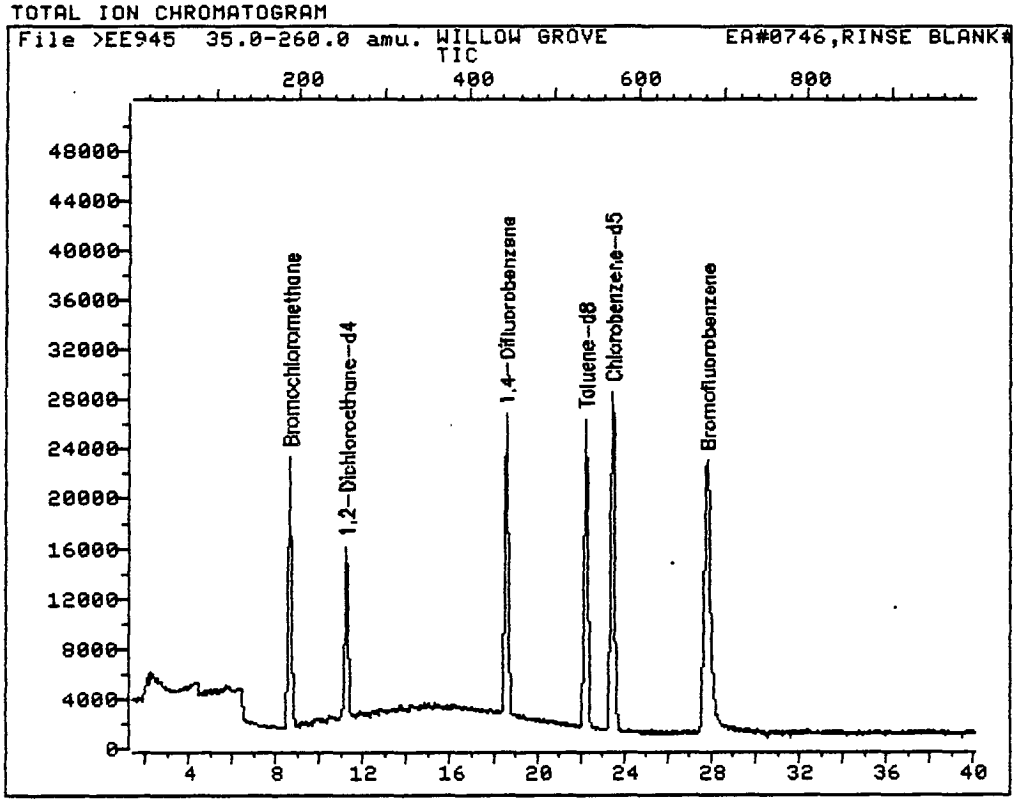
TOTAL ION CHROMATOGRAM



Data File: >EE945::D2 Quant Output File: ^EE945::QT
Name: WILLOW GROVE
Misc: EA#0746,RINSE BLANK#2,WATER,5.0,GC/MS E5

Id File: ALL::SC
Title: EA Priority Pollutant IDfile
Last Calibration: 890224 12:11

Operator ID: CARL
Quant Time: 890224 16:06
Injected at: 890224 15:25

QUANT REPORT

Operator ID: CARL Quant Rev: 6 Quant Time: 890224 16:06
Output File: ^EE945::QT Injected at: 890224 15:25
Data File: >EE945::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0746,RINSE BLANK#2,WATER,5.0,GC/MS E5

ID File: ALL::SC
Title: EA Priority Pollutant IDfile
Last Calibration: 890224 12:11

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.65	128.0	34873	50.00	ug/L	87
18)	1,2-Dichloroethane-d4	11.25	65.0	55772	48.93	ug/L	95
20)	*1,4-Difluorobenzene	18.58	114.0	121700	50.00	ug/L	91
38)	*Chlorobenzene-d5	23.46	117.0	109378	50.00	ug/L	98
44)	Toluene-d8	22.22	98.0	115674	54.10	ug/L	91
53)	Bromofluorobenzene	27.80	95.0	86297	45.24	ug/L	87

* Compound is ISTD

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RINSE BL#3

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PRW-2,S-6

Matrix: (soil/water) ~~SOIL~~ WATER mmu Lab Sample ID: EA# 0776

Sample wt/vol: 5.0 (g/mL) ~~g~~ mL mmu Lab File ID: EE963

Level: (low/med) LOW Date Received: 2/21/89

% Moisture: not dec. 0. Date Analyzed: 2/27/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/~~KG~~ L mmu	Q UJNJ49
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

FORM I VOA 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

RINSE BL#3

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PRW-2,S-6

Matrix: (soil/water) SOIL Lab Sample ID: EA# 0776

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE963

Level: (low/med) LOW Date Received: 2/21/89

% Moisture: not dec. 0. Date Analyzed: 2/27/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Volatiles Detected			
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
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27.				
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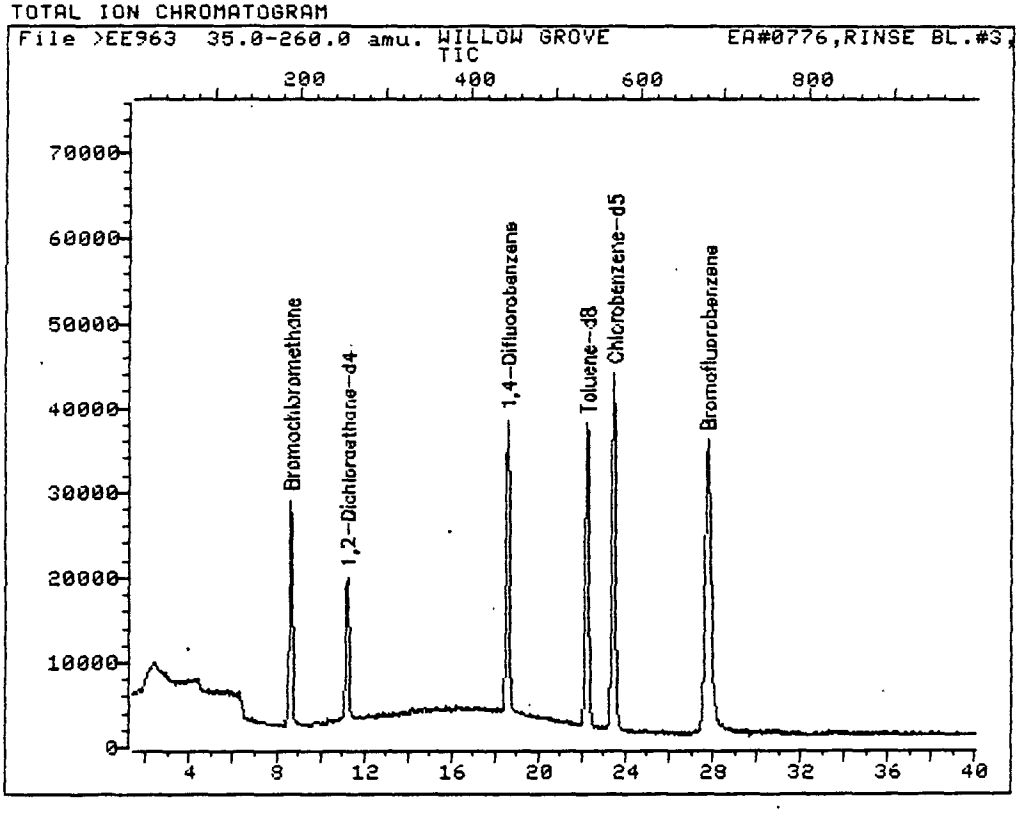
29.				
30.				

TOTAL ION CHROMATOGRAM



Data File: >EE963::D2 Quant Output File: ^EE963::QT
Name: WILLOW GROVE
Misc: EA#0776,RINSE BL.#3,WATER,5.0,GC/MS E5

Id File: ALL::SC
Title: EA Priority Pollutant IDfile
Last Calibration: 890227 12:35

Operator ID: CARL
Quant Time: 890227 18:03
Injected at: 890227 17:22

QUANT REPORT

Operator ID: CARL Quant Rev: 6 Quant Time: 890227 18:03
Output File: ^EE963::QT Injected at: 890227 17:22
Data File: >EE963::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0776,RINSE BL.#3,WATER,5.0,GC/MS E5

ID File: ALL::SC
Title: EA Priority Pollutant IDfile
Last Calibration: 890227 12:35

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.65	128.0	42714	50.00	ug/L	88
18)	1,2-Dichloroethane-d4	11.25	65.0	66051	46.86	ug/L	99
20)	*1,4-Difluorobenzene	18.57	114.0	169299	50.00	ug/L	90
38)	*Chlorobenzene-d5	23.46	117.0	168438	50.00	ug/L	95
44)	Toluene-d8	22.22	98.0	167285	51.13	ug/L	97
53)	Bromofluorobenzene	27.76	95.0	135437	47.24	ug/L	84

* Compound is ISTD

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RINSE BL#5

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: RINSE BL#5

Matrix: (soil/water) ~~SOIL~~ WATER Lab Sample ID: EA# 0820

Sample wt/vol: 5.0 (g/mL) ~~g~~ mL Lab File ID: AC768

Level: (low/med) LOW Date Received: 3/ 1/89

% Moisture: not dec. 0. Date Analyzed: 3/ 1/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/~~KG~~ L	mmuQ 1RN39
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	7.	J
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

RINSE BL#5

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: RINSE BL#5

Matrix: (soil/water) SOIL Lab Sample ID: EA# 0820

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AC768

Level: (low/med) LOW Date Received: 3/ 1/89

% Moisture: not dec. 0. Date Analyzed: 3/ 1/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	109875	Methane, dimethoxy- (8CI9CI)	9.65	1100.	B
2.					
3.					
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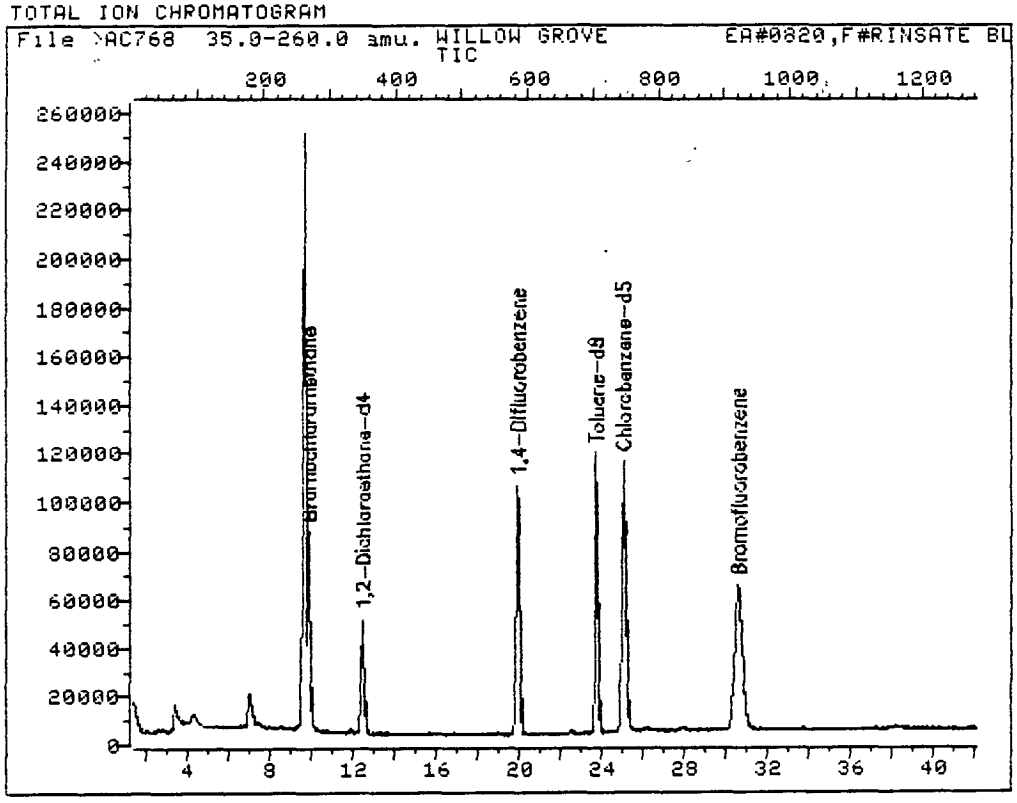
29.					
30.					

TOTAL ION CHROMATOGRAM



Data File: >AC768::D2 Quant Output File: ^AC768::QT
Name: WILLOW GROVE
Misc: EA#0820,F#RINSATE BLANK,SOIL,5GM/5ML,GC/MS A1-CVG

Id File: AVOA::BD
Title: CLP PROTOCOL 5PT. CALIBRATION, GC/MS A1
Last Calibration: 890301 15:05

Operator ID: TONY
Quant Time: 890301 21:27
Injected at: 890301 20:38

QUANT REPORT

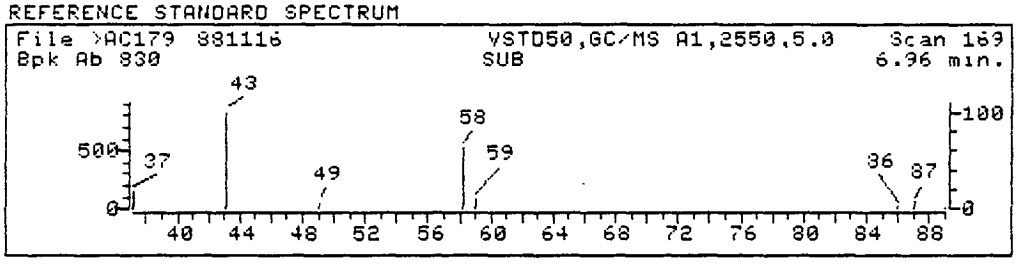
Operator ID: TONY Quant Rev: 6 Quant Time: 890301 21:27
Output File: ^AC768::QT Injected at: 890301 20:38
Data File: :AC768::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0820,F#RINSATE BLANK,SOIL,5GM/5ML,GC/MS A1-CVG

ID File: AVOA::BD
Title: CLP PROTOCOL 5PT. CALIBRATION, GC/MS A1
Last Calibration: 890301 15:05

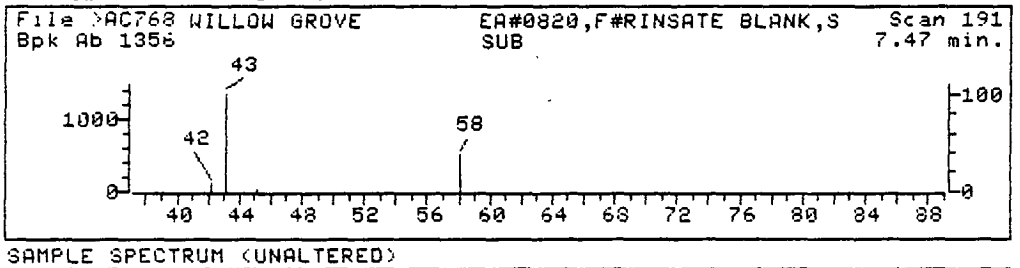
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	9.91	128.0	112722	50.00	UG/L	88
7)	Acetone	7.47	43.0	13751	7.26	UG/L	82
13)	1,2-Dichloroethane-d4	12.51	65.0	149937	37.84	UG/L	73
15)	*1,4-Difluorobenzene	19.95	114.0	475467	50.00	UG/L	90
29)	*Chlorobenzene-d5	25.05	117.0	443860	50.00	UG/L	95
35)	Toluene-d8	23.75	98.0	504575	50.47	UG/L	95
40)	Bromofluorobenzene	30.60	95.0	334627	50.67	UG/L	96

* Compound is ISTD

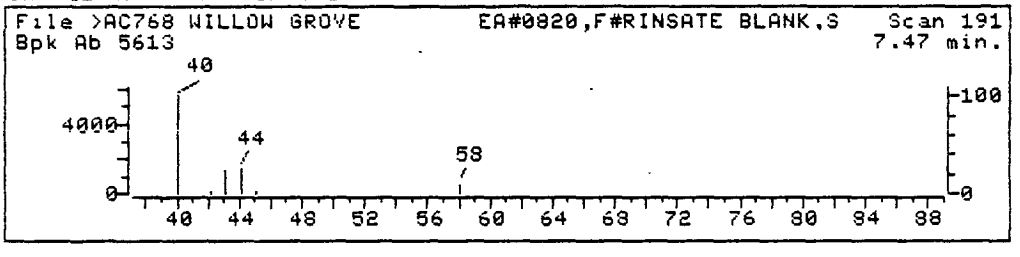
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

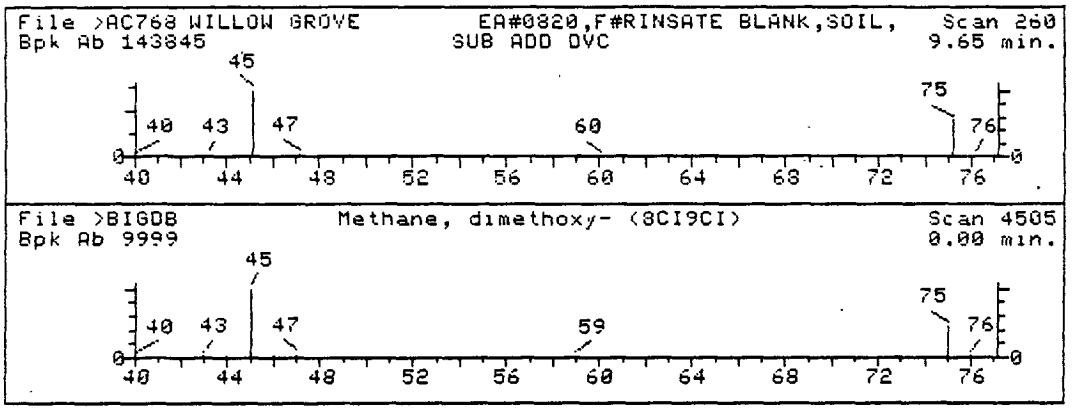


SAMPLE SPECTRUM (UNALTERED)



Data File: >AC768::D2 Quant Output File: ^AC768::QT
Name: WILLOW GROVE
Misc: EA#0820,F#RINSATE BLANK,SOIL,5GM/5ML,GC/MS A1-CVG
Quant Time: 890301 21:27 Quant ID File: AVOA::BD
Injected at: 890301 20:38 Last Calibration: 890301 15:05

Compound No: 7
Compound Name: Acetone
Scan Number: 191
Retention Time: 7.47 min.
Quant Ion: 43.0
Area: 13751
Concentration: 7.26 UG/L
q-value: 82



Retention time = 9.65
Area= 2514653. Tentative Concentration = 1100.00

1. Methane, dimethoxy- (8CI9CI) 76 C3H8O2

Sample file: >AC768 Spectrum #: 260
Search speed: 1 Tilting option: S No. of ion ranges searched: 44

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	70*	109875	4505	"BIGDB	37	46	1	0	90	7	42	19

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIP BLANK

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PR-1,S-4

Matrix: (soil/water) WATER Lab Sample ID: EA# 0639

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: AC702

Level: (low/med) LOW Date Received: 02/16/89

% Moisture: not dec. 100. Date Analyzed: 02/23/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	5.	J
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	3.	J
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

FORM I VOA 1/87 Rev.

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TRIP BLANK

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PR-1,S-4

Matrix: (soil/water) WATER Lab Sample ID: EA# 0639

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: AC702

Level: (low/med) LOW Date Received: 02/16/89

% Moisture: not dec. 100. Date Analyzed: 02/23/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Volatiles Detected			
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
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27.				
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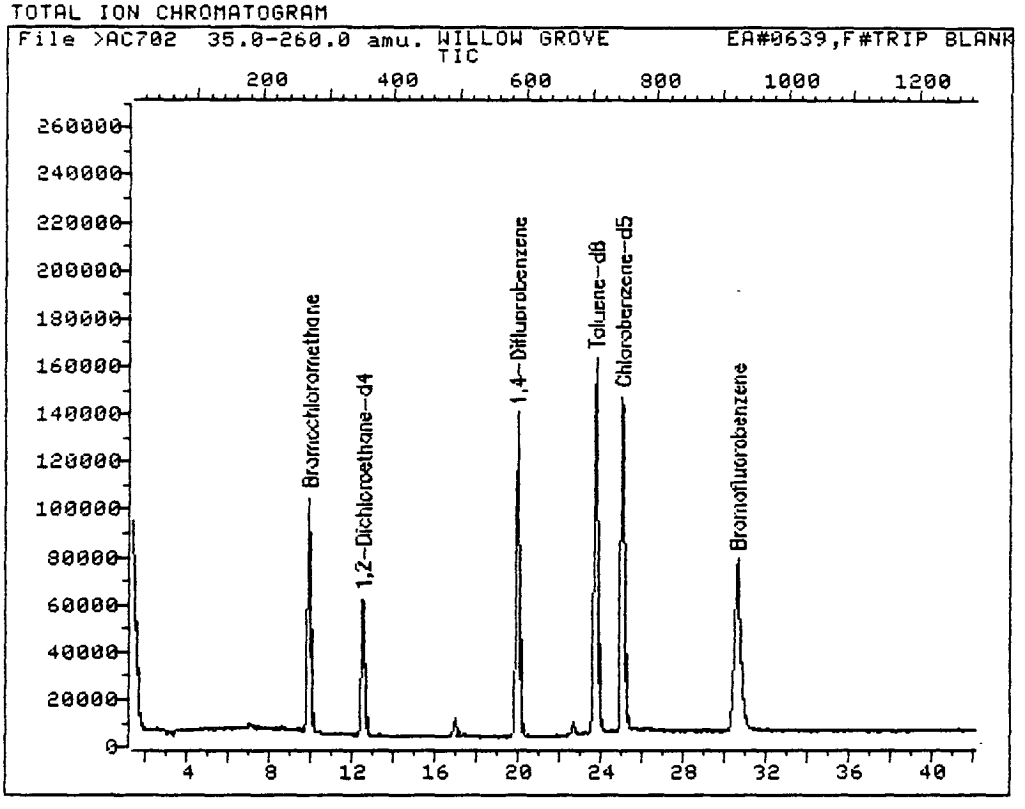
30.				

FORM I VOA-TIC 1/87 Rev.

TOTAL ION CHROMATOGRAM



Data File: >AC702::D2 Quant Output File: ^AC702::QT
Name: WILLOW GROVE
Misc: EA#0639,F#TRIP BLANK,SOIL,5GM/5ML,GC/MS-A1-CVG

Id File: AVOA::BD
Title: CLP PROTOCOL 5PT. CALIBRATION, GC/MS A1
Last Calibration: 890207 18:53

Operator ID: TONY
Quant Time: 890223 06:57
Injected at: 890223 06:08

QUANT REPORT

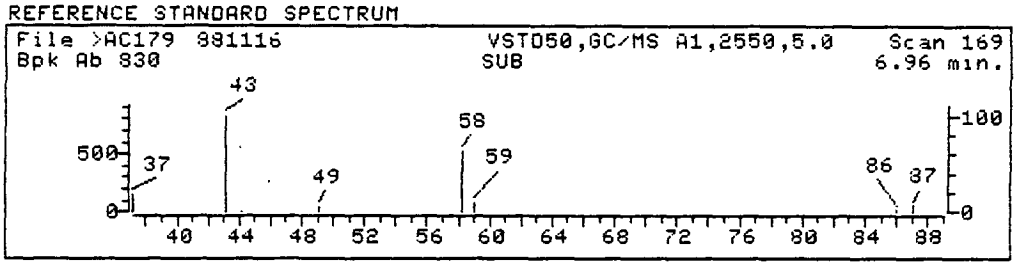
Operator ID: TONY Quant Rev: 6 Quant Time: 890223 06:57
Output File: "AC702::QT Injected at: 890223 06:08
Data File: AC702::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0639,F#TRIP BLANK,SOIL,5GM/5ML,GC/MS-A1-CVG

ID File: AVOA::BD
Title: CLP PROTOCOL 5PT. CALIBRATION, GC/MS A1
Last Calibration: 890207 18:53

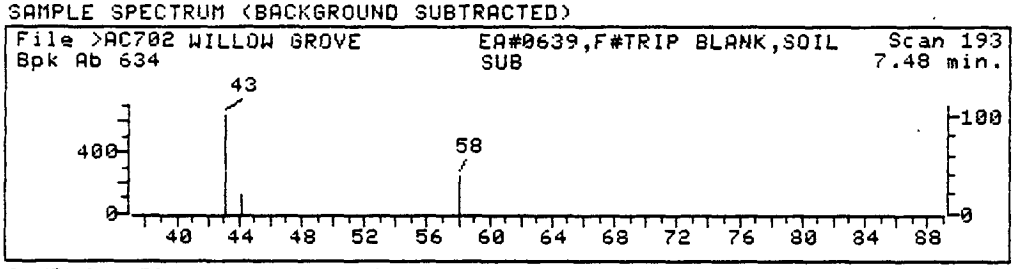
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	9.92	128.0	137227	50.00	UG/L	90
7)	Acetone	7.48	43.0	6790	5.23	UG/L	82
13)	1,2-Dichloroethane-d4	12.49	65.0	184234	58.35	UG/L	80
15)	*1,4-Difluorobenzene	19.93	114.0	676658	50.00	UG/L	90
23)	Trichloroethene	16.89	130.0	16570	3.39	UG/L	92
29)	*Chlorobenzene-d5	25.04	117.0	589387	50.00	UG/L	95
35)	Toluene-d8	23.74	98.0	703888	48.85	UG/L	94
40)	Bromofluorobenzene	30.62	95.0	409292	53.54	UG/L	92

* Compound is ISTD

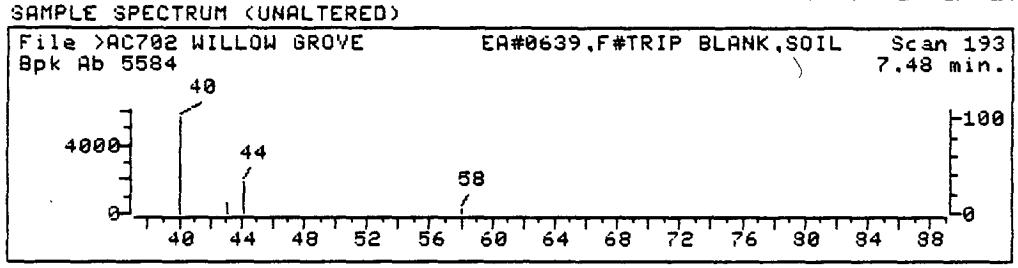
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



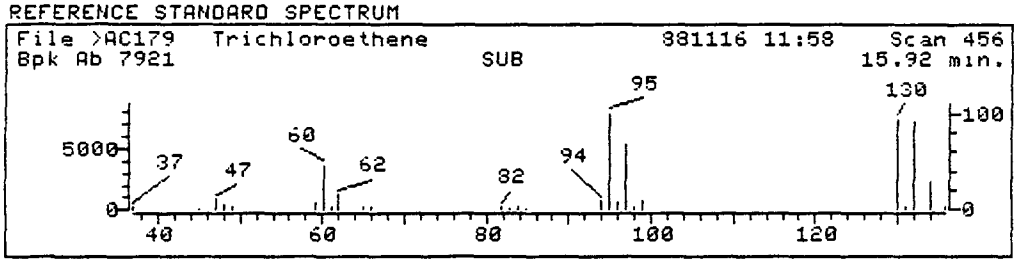
SAMPLE SPECTRUM (UNALTERED)



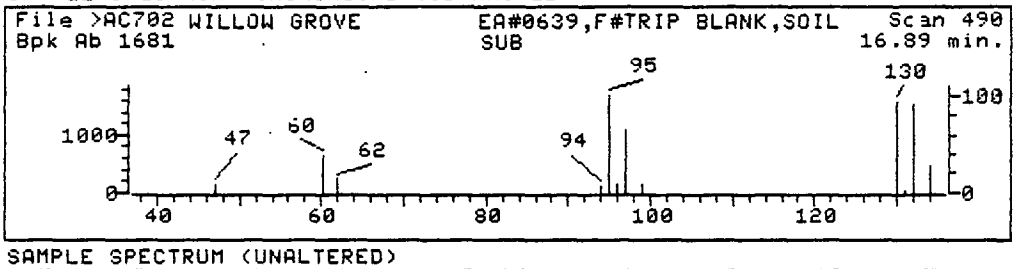
Data File: >AC702::D2 Quant Output File: ^AC702::QT
Name: WILLOW GROVE
Misc: EA#0639,F#TRIP BLANK,SOIL,5GM/5ML,GC/MS-A1-CVG
Quant Time: 890223 06:57 Quant ID File: AVOA::BD
Injected at: 890223 06:08 Last Calibration: 890207 18:53

Compound No: 7
Compound Name: Acetone
Scan Number: 193
Retention Time: 7.48 min.
Quant Ion: 43.0
Area: 6790
Concentration: 5.23 UG/L
q-value: 82

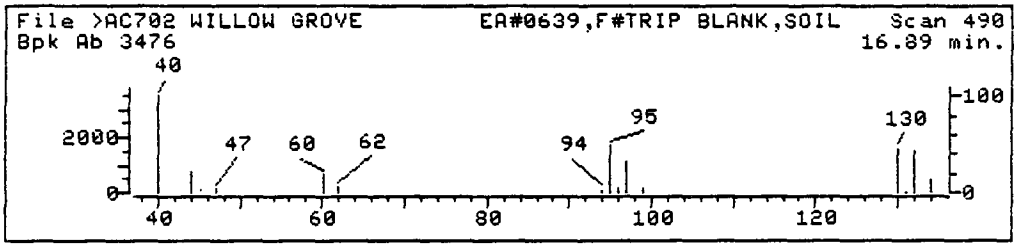
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >AC702::D2 Quant Output File: ^AC702::QT
Name: WILLOW GROVE
Misc: EA#0639,F#TRIP BLANK,SOIL,5GM/5ML,GC/MS-A1-CVG
Quant Time: 890223 06:57 Quant ID File: AVOA::BD
Injected at: 890223 06:08 Last Calibration: 890207 18:53

Compound No: 23
Compound Name: Trichloroethene
Scan Number: 490
Retention Time: 16.89 min.
Quant Ion: 130.0
Area: 16570
Concentration: 3.39 UG/L
q-value: 92

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIP BLANK RE

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PR-1,S-4

Matrix: (soil/water) ~~SOIL~~ WATER Lab Sample ID: EA# 0639

Sample wt/vol: 5.0 (g/mL) ~~G~~ mL Lab File ID: AC814

Level: (low/med) LOW Date Received: 2/16/89

% Moisture: not dec. 0. Date Analyzed: 3/13/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/~~KG~~ L

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/~~KG~~ L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	7.	JB
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

FORM I VOA 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TRIP BLANK RE

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PR-1,S-4

Matrix: (soil/water) SOIL Lab Sample ID: EA# 0639

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AC813

Level: (low/med) LOW Date Received: 2/16/89

% Moisture: not dec. 0. Date Analyzed: 3/13/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 75092	Methane, dichloro- (8CI9CI)	7.08	5.	
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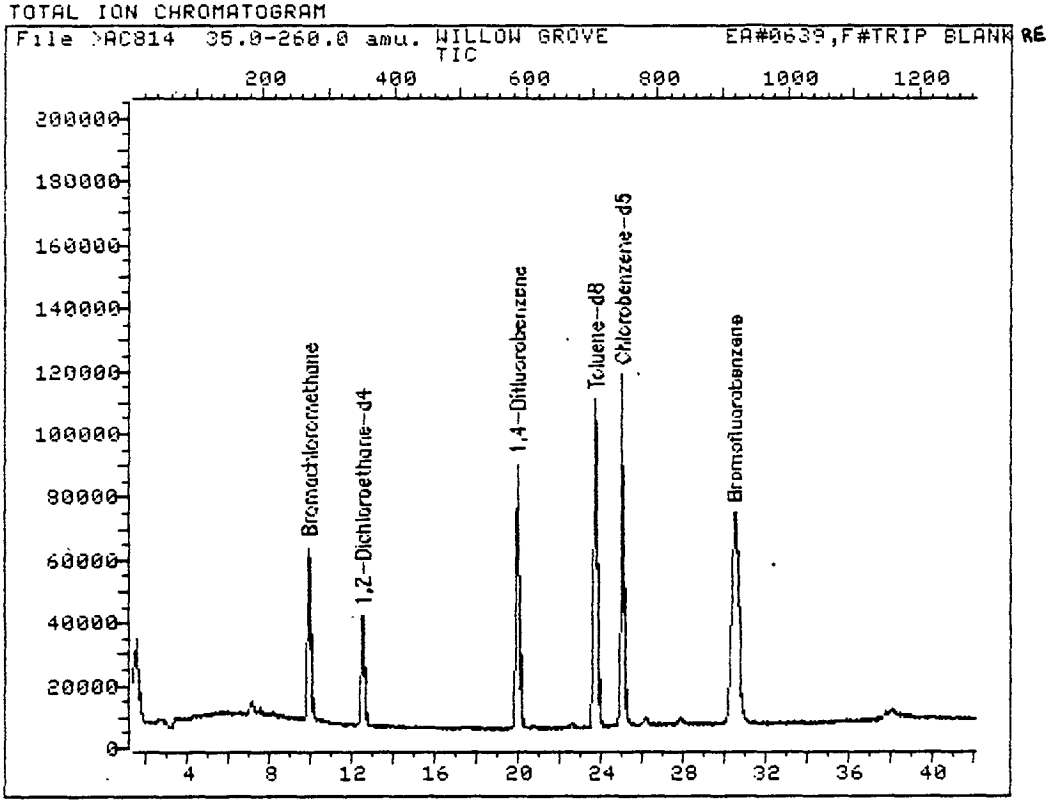
FORM I VOA-TIC 1/87 Rev.

TOTAL ION CHROMATOGRAM



Data File: >AC814::D1 Quant Output File: ^AC814::QT
Name: WILLOW GROVE
Misc: EA#0639,F#TRIP BLANK RE,WATER,5ML,GC/MS A1-CVG

Id File: AVOA::BD
Title: CLP PROTOCOL 5PT. CALIBRATION, GC/MS A1
Last Calibration: 890313 14:31

Operator ID: TONY
Quant Time: 890313 16:01
Injected at: 890313 15:12

QUANT REPORT

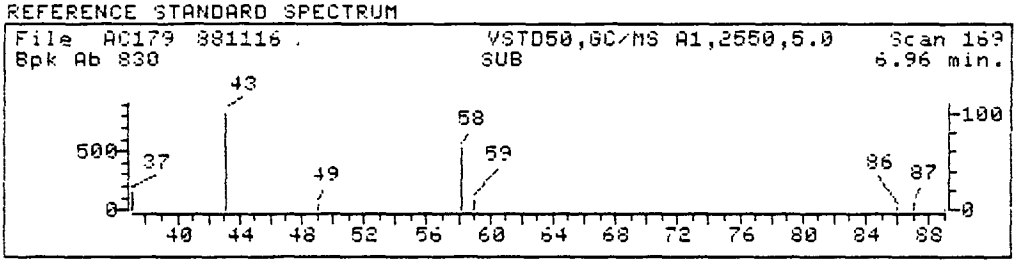
Operator ID: TONY Quant Rev: 6 Quant Time: 890313 16:01
Output File: ^AC814::QT Injected at: 890313 15:12
Data File: ^AC814::D1 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0639,F#TRIP BLANK,WATER,5ML,GC/MS A1-CVG

ID File: AVOA::BD
Title: CLP PROTOCOL 5PT. CALIBRATION, GC/MS A1
Last Calibration: 890313 14:31

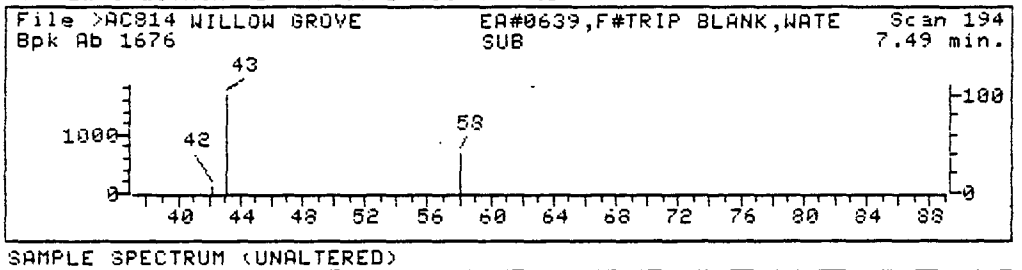
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	9.90	128.0	82206	50.00	UG/L	89
7)	Acetone	7.49	43.0	21410	7.48	UG/L	86
13)	1,2-Dichloroethane-d4	12.47	65.0	116022	48.56	UG/L	78
15)	*1,4-Difluorobenzene	19.91	114.0	402254	50.00	UG/L	90
29)	*Chlorobenzene-d5	24.98	117.0	445066	50.00	UG/L	95
35)	Toluene-d8	23.68	98.0	446880	50.42	UG/L	93
40)	Bromofluorobenzene	30.43	95.0	349612	52.87	UG/L	98

* Compound is ISTD

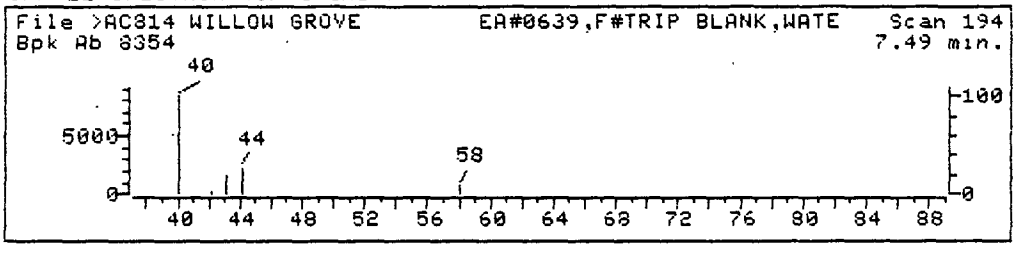
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

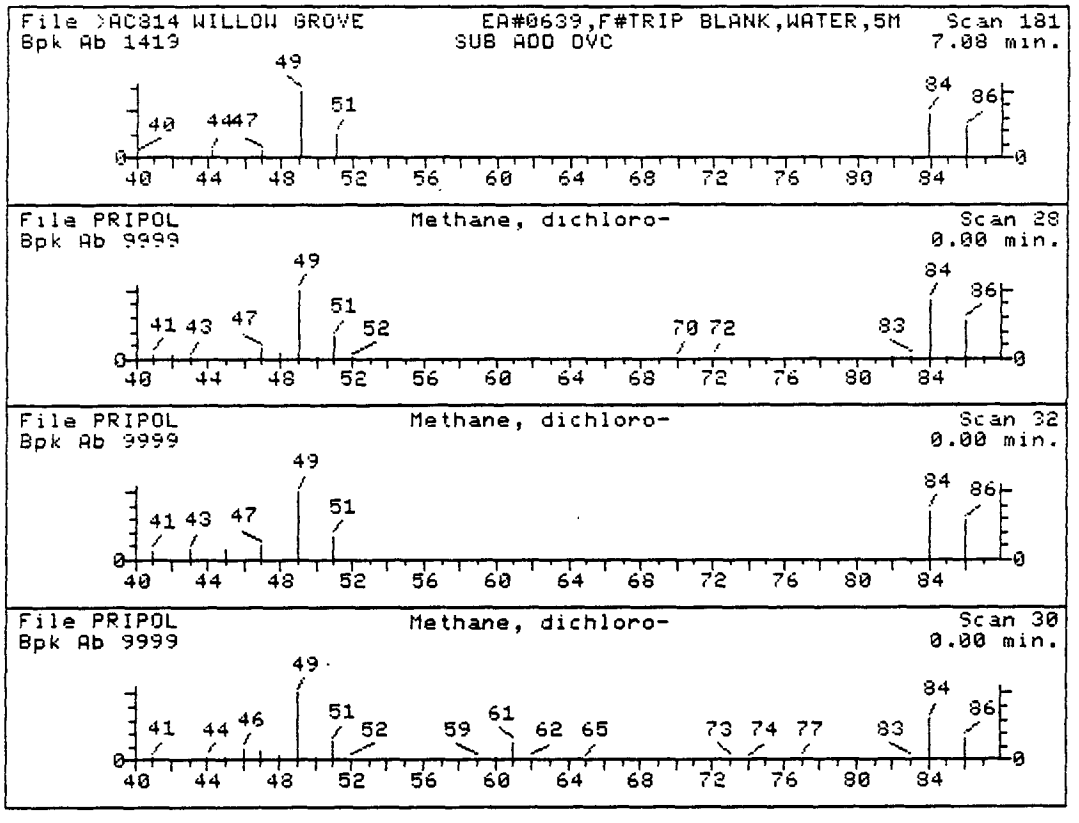


SAMPLE SPECTRUM (UNALTERED)



Data File: >AC814::D1 Quant Output File: ^AC814::QT
Name: WILLOW GROVE
Misc: EA#0639,F#TRIP BLANK,WATER,5ML,GC/MS A1-CVG
Quant Time: 890313 16:01 Quant ID File: AVOA::BD
Injected at: 890313 15:12 Last Calibration: 890313 14:31

Compound No: 7
Compound Name: Acetone
Scan Number: 194
Retention Time: 7.49 min.
Quant Ion: 43.0
Area: 21410
Concentration: 7.48 UG/L
q-value: 86



Retention time = 7.08

Area = 60335.00 Tentative Concentration is 5.00

1.	Methane, dichloro-	84 CH2Cl2
2.	Methane, dichloro-	84 CH2Cl2
3.	Methane, dichloro-	84 CH2Cl2
4.	Methane, dichloro-	84 CH2Cl2
5.	Methane, dichloro-	84 CH2Cl2
6.	Methane, dichloro- (8CI9CI)	84 CH2Cl2

Sample file: >AC814 Spectrum #: 181
Search speed: 2 Tilting option: S No. of ion ranges searched: 47

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	79*	28	109	PRIPOL	55	46	2	0	74	7	48	32
2.	70*	32	127	PRIPOL	39	41	3	0	81	7	42	16
3.	70*	30	110	PRIPOL	44	76	3	0	100	7	42	13
4.	60*	31	111	PRIPOL	44	59	3	0	100	11	30	13
5.	52*	29	126	PRIPOL	26	73	2	0	69	16	20	14
6.	52*	75092	6390	"BIGDB	26	73	2	0	69	16	20	14

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIP BLANK

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PR~~-3~~ W-1 RSB,S-8

Matrix: (soil/water) SOIL Lab Sample ID: EA# 0747

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE946

Level: (low/med) LOW Date Received: 2/17/89

% Moisture: not dec. 0. Date Analyzed: 2/24/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TRIP BLANK

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PR-3,S-8 W-1 MB

Matrix: (soil/water) SOIL Lab Sample ID: EA# 0747

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE946

Level: (low/med) LOW Date Received: 2/17/89

% Moisture: not dec. 0. Date Analyzed: 2/24/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Volatiles Detected			
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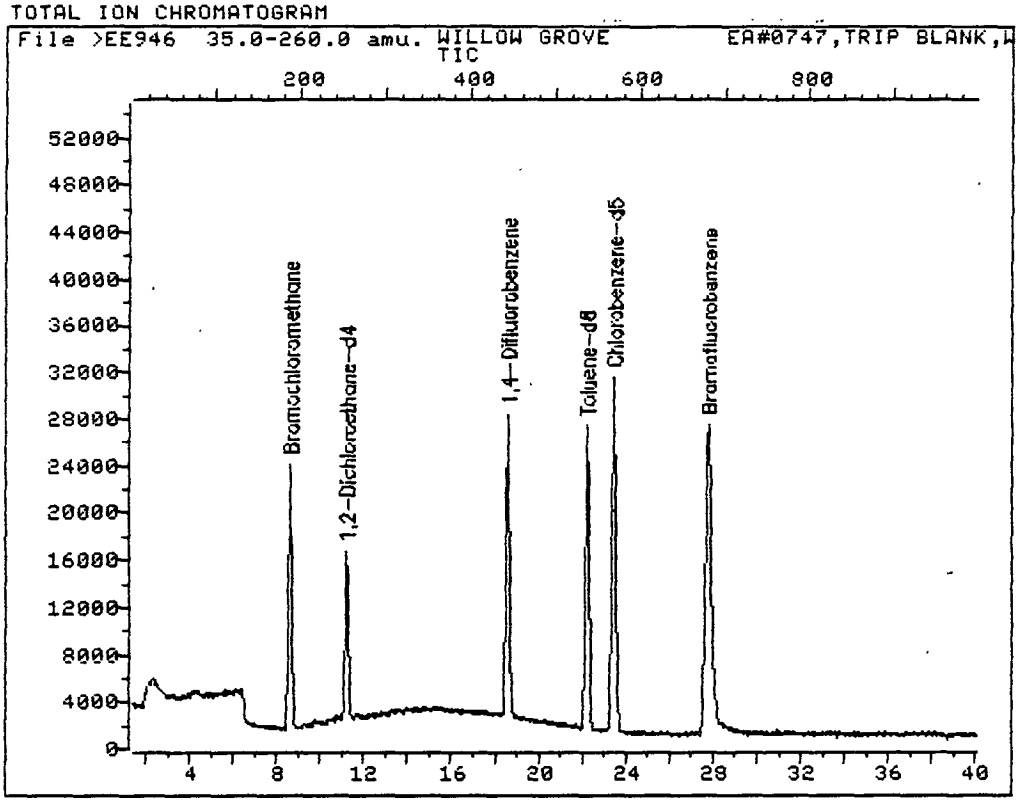
FORM I VOA-TIC 1/87 Rev.

TOTAL ION CHROMATOGRAM



Data File: >EE946::D2 Quant Output File: ^EE946::QT
Name: WILLOW GROVE
Misc: EA#0747,TRIP BLANK,WATER,5.0,GC/MS E5

Id File: ALL::SC
Title: EA Priority Pollutant IDfile
Last Calibration: 890224 12:11

Operator ID: CARL
Quant Time: 890224 16:51
Injected at: 890224 16:10

QUANT REPORT

Operator ID: CARL Quant Rev: 6 Quant Time: 890224 16:51
Output File: ^EE946::QT Injected at: 890224 16:10
Data File: >EE946::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0747,TRIP BLANK,WATER,5.0,GC/MS E5

ID File: ALL::SC
Title: EA Priority Pollutant IDfile
Last Calibration: 890224 12:11

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.65	128.0	35975	50.00	ug/L	85
18)	1,2-Dichloroethane-d4	11.25	65.0	56856	48.35	ug/L	97
20)	*1,4-Difluorobenzene	18.61	114.0	125481	50.00	ug/L	90
38)	*Chlorobenzene-d5	23.46	117.0	122312	50.00	ug/L	95
44)	Toluene-d8	22.22	98.0	122963	51.43	ug/L	97
53)	Bromofluorobenzene	27.80	95.0	100089	46.92	ug/L	87

* Compound is ISTD

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIP BLANK

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PR~~-S~~ W-1 RSB, S-8

Matrix: (soil/water) ~~SOIL~~ WATER Lab Sample ID: EA# 0750

Sample wt/vol: 5.0 (g/mL) ~~g~~ mL Lab File ID: EE947

Level: (low/med) LOW Date Received: 2/18/89

% Moisture: not dec. 0. Date Analyzed: 2/24/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/~~KG~~L	
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TRIP BLANK

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PR~~3~~ W-1 RSB S-8

Matrix: (soil/water) SOIL Lab Sample ID: EA# 0750

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE947

Level: (low/med) LOW Date Received: 2/18/89

% Moisture: not dec. 0. Date Analyzed: 2/24/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Volatiles Detected			
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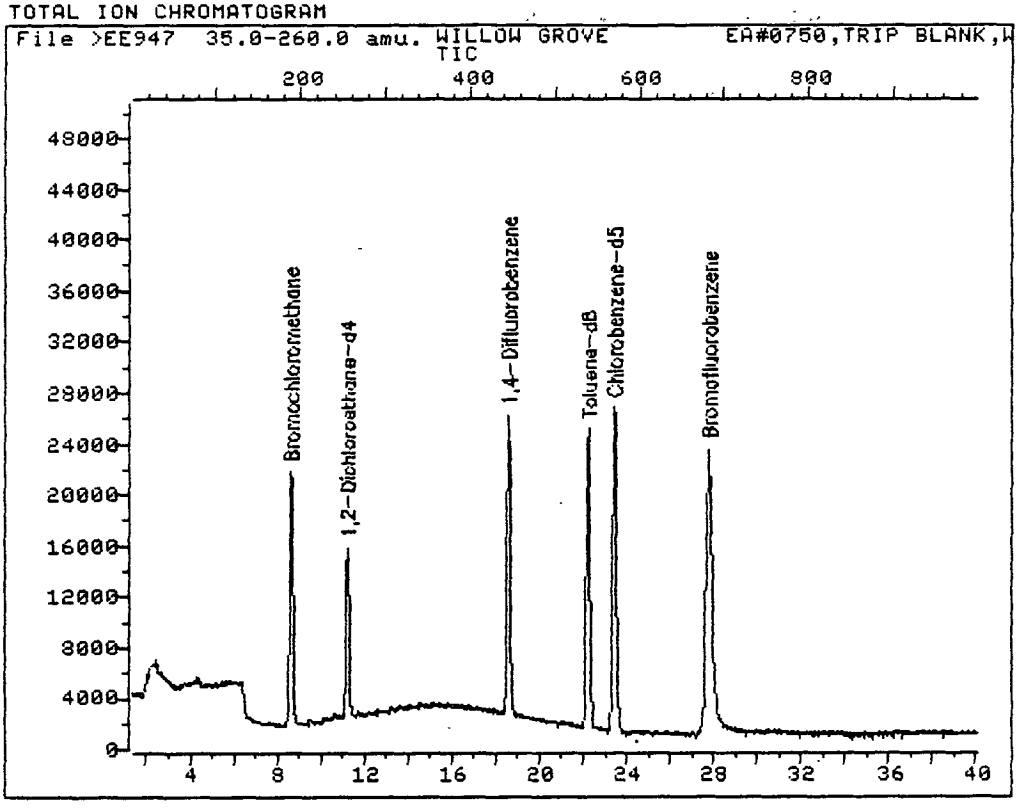
TOTAL ION CHROMATOGRAM



Data File: >EE947::D2 Quant Output File: ^EE947::QT
Name: WILLOW GROVE
Misc: EA#0750,TRIP BLANK,WATER,5.0,GC/MS E5

Id File: ALL::SC
Title: EA Priority Pollutant IDfile
Last Calibration: 890224 12:11

Operator ID: CARL
Quant Time: 890224 17:36
Injected at: 890224 16:56

QUANT REPORT

Operator ID: CARL Quant Rev: 6 Quant Time: 890224 17:36
Output File: ^EE947::QT Injected at: 890224 16:56
Data File: >EE947::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0750,TRIP BLANK,WATER,5.0,GC/MS E5

ID File: ALL::SC
Title: EA Priority Pollutant IDfile
Last Calibration: 890224 12:11

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.64	128.0	33513	50.00	ug/L	81
18)	1,2-Dichloroethane-d4	11.24	65.0	52990	48.38	ug/L	98
20)	*1,4-Difluorobenzene	18.60	114.0	114995	50.00	ug/L	90
38)	*Chlorobenzene-d5	23.45	117.0	105960	50.00	ug/L	97
44)	Toluene-d8	22.25	98.0	108218	52.25	ug/L	94
53)	Bromofluorobenzene	27.79	95.0	86438	46.77	ug/L	88

* Compound is ISTD

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIP BLANK

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PRW-2,S-6

Matrix: (soil/water) ~~SOIL~~ WATER mmu Lab Sample ID: EA# 0778

Sample wt/vol: 5.0 (g/mL) ~~g~~ mL mmu Lab File ID: EE964

Level: (low/med) LOW Date Received: 2/21/89

% Moisture: not dec. 0. Date Analyzed: 2/27/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/~~KG~~L mmu	Q 12/28/89
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TRIP BLANK

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PRW-2,3-6

Matrix: (soil/water) SOIL Lab Sample ID: EA# 0778

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE964

Level: (low/med) LOW Date Received: 2/21/89

% Moisture: not dec. 0. Date Analyzed: 2/27/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Volatiles Detected			
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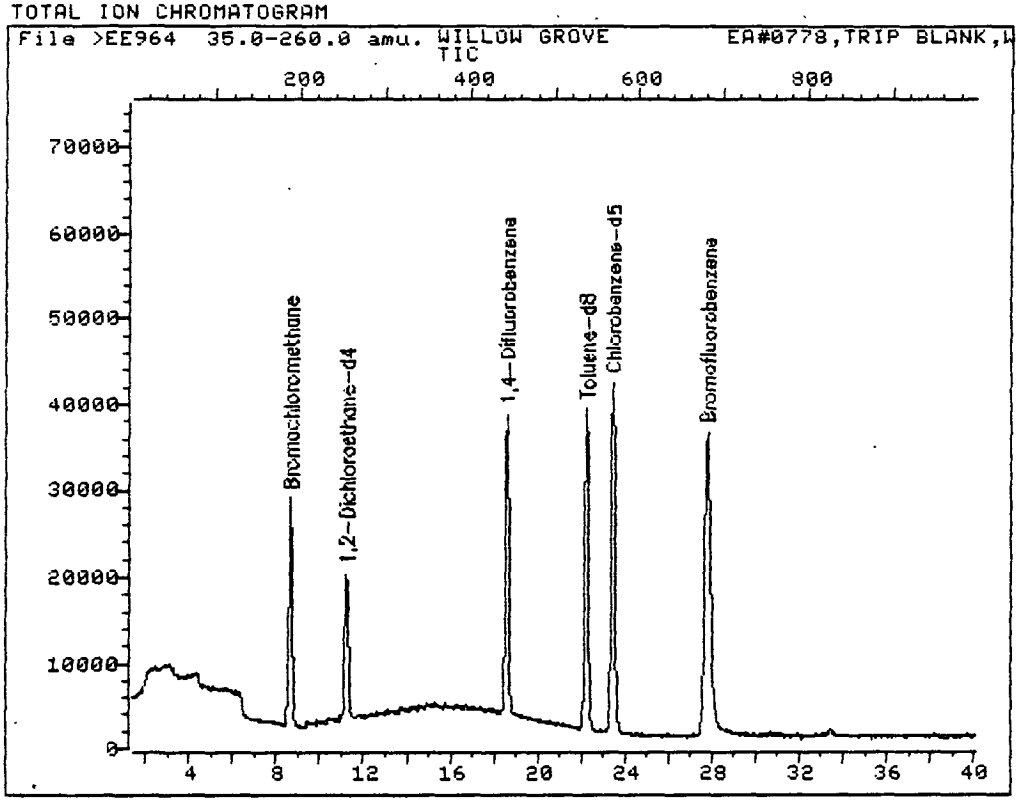
TOTAL ION CHROMATOGRAM



Data File: >EE964::D2 Quant Output File: ^EE964::QT
Name: WILLOW GROVE
Misc: EA#0778,TRIP BLANK,WATER,5.0,GC/MS E5

Id File: ALL::SC
Title: EA Priority Pollutant IDfile
Last Calibration: 890227 12:35

Operator ID: CARL
Quant Time: 890227 18:48
Injected at: 890227 18:08

QUANT REPORT

Operator ID: CARL Quant Rev: 6 Quant Time: 890227 18:48
Output File: ^EE964::QT Injected at: 890227 18:08
Data File: >EE964::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0778,TRIP BLANK,WATER,5.0,GC/MS E5

ID File: ALL::SC
Title: EA Priority Pollutant IDfile
Last Calibration: 890227 12:35

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.63	128.0	43210	50.00	ug/L	85
18)	1,2-Dichloroethane-d4	11.23	65.0	67246	47.16	ug/L	96
20)	*1,4-Difluorobenzene	18.59	114.0	171089	50.00	ug/L	90
38)	*Chlorobenzene-d5	23.44	117.0	169341	50.00	ug/L	98
44)	Toluene-d8	22.24	98.0	169380	51.49	ug/L	95
53)	Bromofluorobenzene	27.78	95.0	136317	47.29	ug/L	81

* Compound is ISTD

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIP BLANK

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PRW-3,S-6

Matrix: (soil/water) ~~SOIL~~ WATER mmu Lab Sample ID: EA# 0817

Sample wt/vol: 5.0 (g/mL) ~~g~~ mL mmu Lab File ID: EE966

Level: (low/med) LOW Date Received: 2/24/89

% Moisture: not dec. 0. Date Analyzed: 2/27/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/~~KG~~L	mmu 12/26/89
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

FORM I VOA 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TRIP BLANK

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PRW-3,S-6

Matrix: (soil/water) SOIL Lab Sample ID: EA# 0817

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE966

Level: (low/med) LOW Date Received: 2/24/89

% Moisture: not dec. 0. Date Analyzed: 2/27/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Volatiles Detected			
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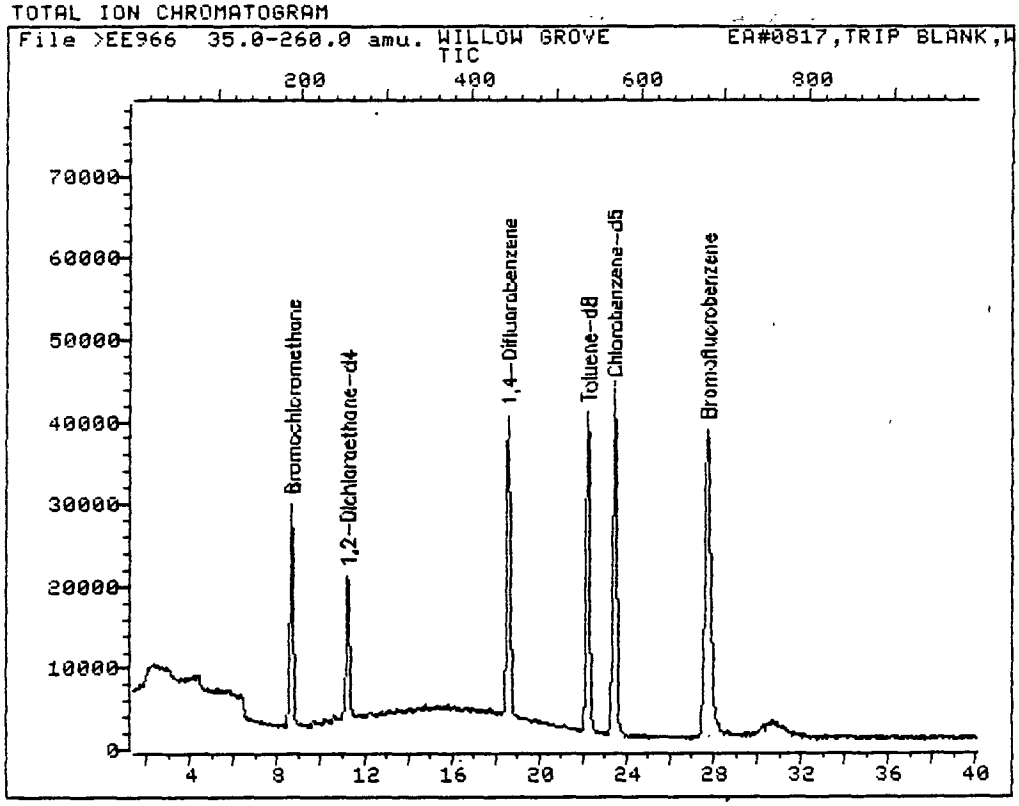
FORM I VOA-TIC 1/87 Rev.

TOTAL ION CHROMATOGRAM



Data File: >EE966::D2 Quant Output File: ^EE966::QT
Name: WILLOW GROVE
Misc: EA#0817,TRIP BLANK,WATER,5.0,GC/MS E5

Id File: ALL::SC
Title: EA Priority Pollutant IDfile
Last Calibration: 890227 12:35

Operator ID: CARL
Quant Time: 890227 20:19
Injected at: 890227 19:38

QUANT REPORT

Operator ID: CARL Quant Rev: 6 Quant Time: 890227 20:19
Output File: ^EE966::QT Injected at: 890227 19:38
Data File: >EE966::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0817,TRIP BLANK,WATER,5.0,GC/MS E5

ID File: ALL::SC
Title: EA Priority Pollutant IDfile
Last Calibration: 890227 12:35

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.66	128.0	44792	50.00	ug/L	99
18)	1,2-Dichloroethane-d4	11.22	65.0	67356	45.57	ug/L	98
20)	*1,4-Difluorobenzene	18.59	114.0	176236	50.00	ug/L	90
38)	*Chlorobenzene-d5	23.43	117.0	175563	50.00	ug/L	94
44)	Toluene-d8	22.23	98.0	177108	51.93	ug/L	97
53)	Bromofluorobenzene	27.74	95.0	142279	47.61	ug/L	85

* Compound is ISTD

ORGANICS ANALYSIS DATA SHEET SAMPLE #: TRIP BLNK(0824

LABORATORY: EA ENG.
LABORATORY ID: AB06852
MATRIX: SOIL

CASE #/SAS #:
QC REPORT #: 2/27/89
CONTRACT #: 10388.03
DATE RECEIVED: 3/1/89

DATA RELEASE AUTHORIZED BY: _____

VOLATILE COMPOUNDS

LEVEL:	LOW
DATE EXT/PREP:	3/3/89
DATE ANALYZED:	03/03/89
CONC/DIL FACTOR:	5GM/5ML
PH:	N/A
% MOISTURE:	N/A
% MOISTURE (DECANTED):	N/A
STANDARD ID:	AB06849
SENSITIVITY ID:	AB06848

CAS #		UG/~~KG~~ L		
74-87-3	CHLOROMETHANE	10.	U	nimu 13JW89
74-83-9	BROMOMETHANE	10.	U	
75-01-4	VINYL CHLORIDE	10.	U	
75-00-3	CHLOROETHANE	10.	U	
75-09-2	METHYLENE CHLORIDE	3.	J	B
67-64-1	ACETONE	10.	U	
75-15-0	CARBON DISULFIDE	5.	U	
75-35-4	1,1-DICHLOROETHENE	5.	U	
75-34-3	1,1-DICHLOROETHANE	5.	U	
156-60-5	TRANS-1,2-DICHLOROETHENE	5.	U	
67-66-3	CHLOROFORM	5.	U	
107-06-2	1,2-DICHLOROETHANE	5.	U	
78-93-3	2-BUTANONE (MEK)	10.	U	
71-55-6	1,1,1-TRICHLOROETHANE	5.	U	
56-23-5	CARBON TETRACHLORIDE	5.	U	
	VINYL ACETATE	10.	U	
75-27-4	BROMODICHLOROMETHANE	5.	U	
79-34-5	1,1,2,2-TETRACHLOROETHANE	5.	U	
78-87-5	1,2-DICHLOROPROPANE	5.	U	
10061-02-5	CIS-1,3-DICHLOROPROPENE	5.	U	
79-01-6	TRICHLOROETHENE	5.	U	
124-48-1	DIBROMOCHLOROETHANE	5.	U	
79-00-5	1,1,2-TRICHLOROETHANE	5.	U	
71-43-2	BENZENE	5.	U	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	5.	U	
75-25-2	BROMOFORM	5.	U	
	2-HEXANONE	10.	U	
108-10-1	4-METHYL-2-PENTANONE (MIBK)	10.	U	
127-18-4	TETRACHLOROETHENE	5.	U	
108-88-3	TOLUENE	5.	U	
108-90-7	CHLOROBENZENE	5.	U	
100-41-4	ETHYLBENZENE	5.	U	
	STYRENE	5.	U	
108-38-3	M&P-XYLENE	5.	U	
108-38-3	O-XYLENE	5.	U	
~~95-50-1~~	~~1,2-DICHLOROBENZENE~~	~~5.~~	~~U~~	
~~541-73-1~~	~~1,3-DICHLOROBENZENE~~	~~5.~~	~~U~~	

FORM I

ORGANICS ANALYSIS DATA SHEET SAMPLE #: TRIP BLNK(0824

LABORATORY: EA ENG.
CASE #/SAS #:

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	Scan	Estimated Conc(J)
1.		UNKNOWN	SOIL	128 ~~+37PA~~	45
2.	24071-57-6	1,1-DIBROMO-2-CHLORO-2-FLUOROCYCLO-PROPANE	SOIL	160	16
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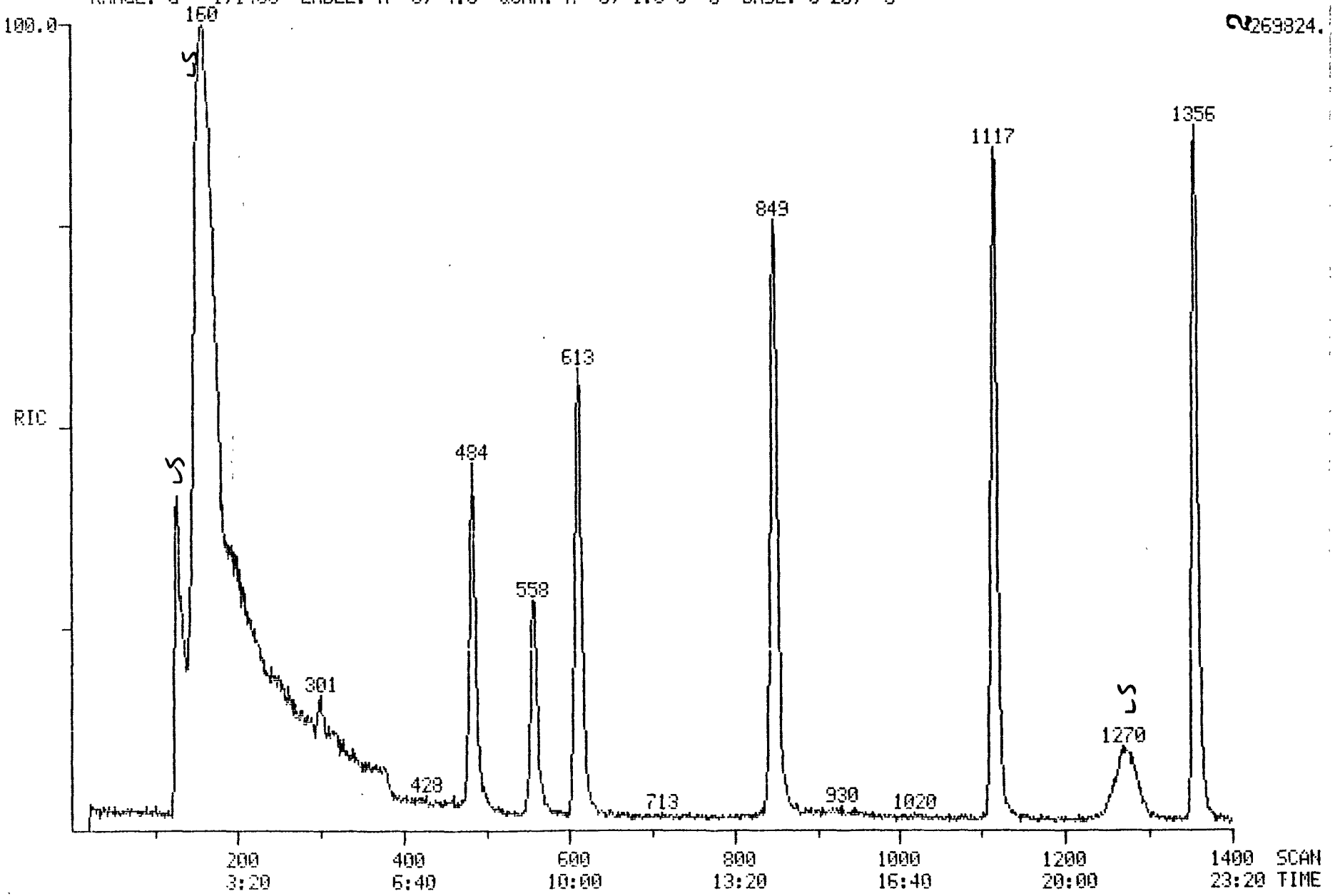
FORM I, PART B

RIC DATA: AB06852 #1 SCANS 1 TO 1400
03/03/83 13:08:00 CALI: AB06852 #2
SAMPLE: VOA SOIL, EA#0824, F#TRIP BLANK, WILLOW GROVE, 5GM/5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS-C3
RANGE: G 1,1400 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

184

2 263824.



Quantitation Report File: AB06852

Data: AB06852.TI
03/03/89 13:08:00
Sample: VOA SOIL, EA#0824, F#TRIP BLANK, WILLOW GROVE, 5GM/5ML, CVG
Conds.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS-C3
Standard ID: AB06849 Instrument: 5100
Sensitivity ID: AB06848 Analyst: CVG Inst Cali: 3/3/89

AMOUNT=AREA * REF AMNT/(REF AREA * RESP FACT)
Resp. fac. from Library Entry

NO	NAME	
1	IS1	BROMOCHLOROMETHANE
2	IS2	1,4-DIFLUOROBENZENE
3	IS3	CHLOROBENZENE-D5
4	SS1	1,2-DICHLOROETHANE-D4
5	SS2	TOLUENE-D8
6	SS3	BROMOFLUOROBENZENE
7	45V	CHLOROMETHANE
8	46V	BROMOMETHANE
9	88V	VINYL CHLORIDE
10	16V	CHLOROETHANE
11	44V	METHYLENE CHLORIDE
12	13H	ACETONE
13	15H	CARBON DISULFIDE
14	29V	1,1-DICHLOROETHENE
15	13V	1,1-DICHLOROETHANE
16	30V	TRANS-1,2-DICHLOROETHENE
17	23V	CHLOROFORM
18	10V	1,2-DICHLOROETHANE
19	14H	2-BUTANONE
20	11V	1,1,1-TRICHLOROETHANE
21	6V	CARBON TETRACHLORIDE
22	19H	VINYL ACETATE
23	48V	BROMODICHLOROMETHANE
24	32V	1,2-DICHLOROPROPANE
25	33VC	TRANS-1,3-DICHLOROPROPENE
26	87V	TRICHLOROETHENE
27	51V	DIBROMOCHLOROMETHANE
28	14V	1,1,2-TRICHLOROETHANE
29	4V	BENZENE
30	33VT	CIS-1,3-DICHLOROPROPENE
31	47V	BROMOFORM
32	16H	2-HEXANONE
33	17H	4-METHYL-2-PENTANONE
34	85V	TETRACHLOROETHENE
35	15V	1,1,2,2-TETRACHLOROETHANE
36	86V	TOLUENE
37	7V	CHLOROBENZENE
38	38V	ETHYLBENZENE
39	18H	STYRENE
40	20H2	O-XYLENES

Reanlr
1 Hit

No	m/z	Scan	Time	Ref	RRT	Meth	Area(Hght)	Amount		%Tot
1	128	485	8:05	1	1.000	A BB	86475.	50.000	PPB*	15.86
2	114	613	10:13	2	1.000	A BB	468898.	50.000	PPB*	15.86
3	117	1117	18:37	3	1.000	A BB	507699.	50.000	PPB*	15.86
4	65	559	9:19	1	1.153	A BV	188940.	47.002	PPB**	14.91
5	98	848	14:08	3	0.759	A BB	560327.	56.536	PPB**	17.94
6	95	1356	22:36	3	1.214	A BB	406753.	55.382	PPB**	17.57
7	50	200	3:20	1	0.412	A VB	4227.	2.066	PPB	0.66
8	NOT	FOUND								
9	NOT	FOUND								
10	NOT	FOUND								
11	84	301	5:01	1	0.621	A BB	11363.	3.013	PPB	0.96
12	43	265	4:25	1	0.546	A BB	2680.	~~0.952~~	~~PPB~~ µg	0.30
13	NOT	FOUND								
14	NOT	FOUND								
15	NOT	FOUND								
16	NOT	FOUND								
17	NOT	FOUND								
18	NOT	FOUND								
19	NOT	FOUND								
20	NOT	FOUND								
21	NOT	FOUND								
22	NOT	FOUND								
23	NOT	FOUND								
24	NOT	FOUND								
25	NOT	FOUND								
26	NOT	FOUND								
27	NOT	FOUND								
28	NOT	FOUND								
29	NOT	FOUND								
30	NOT	FOUND								
31	NOT	FOUND								
32	43	769	12:49	3	0.688	A BB	841.	~~0.228~~	~~PPB~~ µg	0.07
33	NOT	FOUND								
34	NOT	FOUND								
35	NOT	FOUND								
36	NOT	FOUND								
37	NOT	FOUND								
38	NOT	FOUND								
39	NOT	FOUND								
40	NOT	FOUND								

AD#6852

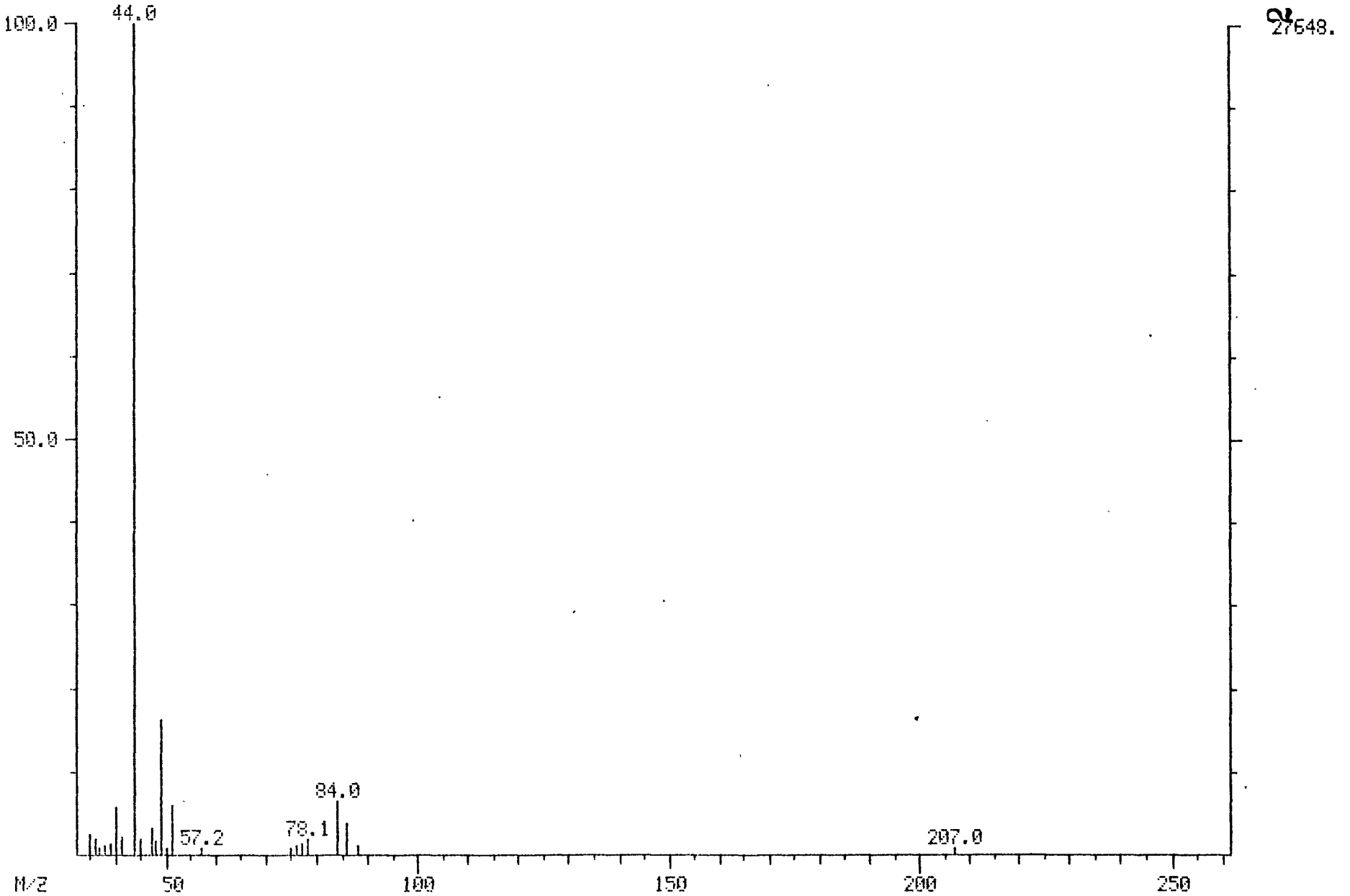
No	Ret(L)	Ratio	RRT(L)	Ratio	Amnt	Amnt(L)	R. Fac	R. Fac(L)	Ratio
1	7:50	1.03	1.000	1.00	50.00	50.00	1.000	1.000	1.00
2	10:01	1.02	1.000	1.00	50.00	50.00	1.000	1.000	1.00
3	18:34	1.00	1.000	1.00	50.00	50.00	1.000	1.000	1.00
4	9:06	1.02	1.162	0.99	47.00	50.00	2.185	2.324	0.94
5	14.01	1.01	0.755	1.01	56.54	50.00	1.104	0.976	1.13
6	22:33	1.00	1.215	1.00	55.38	50.00	0.801	0.723	1.11
7	2:57	1.13	0.377	1.09	2.07	50.00	0.049	1.183	0.04
8	3:25		0.436			50.00		1.822	
9	3:06		0.396			50.00		1.780	
10	3:22		0.430			50.00		1.917	
11	4:50	1.04	0.617	1.01	3.01	50.00	0.131	2.180	0.06
12	4:08	1.07	0.528	1.04	0.95	50.00	0.031	1.628	0.02
13	4:52		0.621			50.00		5.996	
14	4:12		0.536			50.00		1.828	
15	5:56		0.757			50.00		5.135	
16	5:13		0.666			50.00		2.120	
17	7:27		0.951			50.00		3.958	
18	9:19		1.189			50.00		3.576	
19	6:54		0.689			50.00		0.034	
20	8:17		0.827			50.00		0.561	
21	8:51		0.884			50.00		0.498	
22	6:53		0.687			50.00		0.440	
23	11:54		1.188			50.00		0.617	
24	11:17		1.126			50.00		0.643	
25	13:28		1.344			50.00		0.863	
26	10:45		1.073			50.00		0.570	
27	16:03		1.602			50.00		0.437	
28	15:23		1.536			50.00		0.361	
29	9:17		0.927			50.00		1.251	
30	14:59		1.496			50.00		0.379	
31	21:42		2.166			50.00		0.454	
32	12:56	0.99	0.697	0.99	0.22	50.00	0.002	0.372	0.00
33	13:08		0.707			50.00		0.370	
34	16:04		0.865			50.00		0.464	
35	22:29		1.211			50.00		0.399	
36	14:15		0.768			50.00		0.736	
37	18:40		1.005			50.00		0.894	
38	18:55		1.019			50.00		0.453	
39	20:42		1.115			50.00		0.984	
40	20:31		1.105			50.00		0.589	

AD 86652

MASS SPECTRUM
03/03/89 13:08:00 + 5:01
SAMPLE: VOA SOIL, EA#0824, F#TRIP BLANK, WILLOW GROVE, 5GM/5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS-C3
GC TEMP: 41 DEG. C

DATA: AB06852 #301
CALI: AB06852 #2

BASE M/Z: 44
RIC: 45120.



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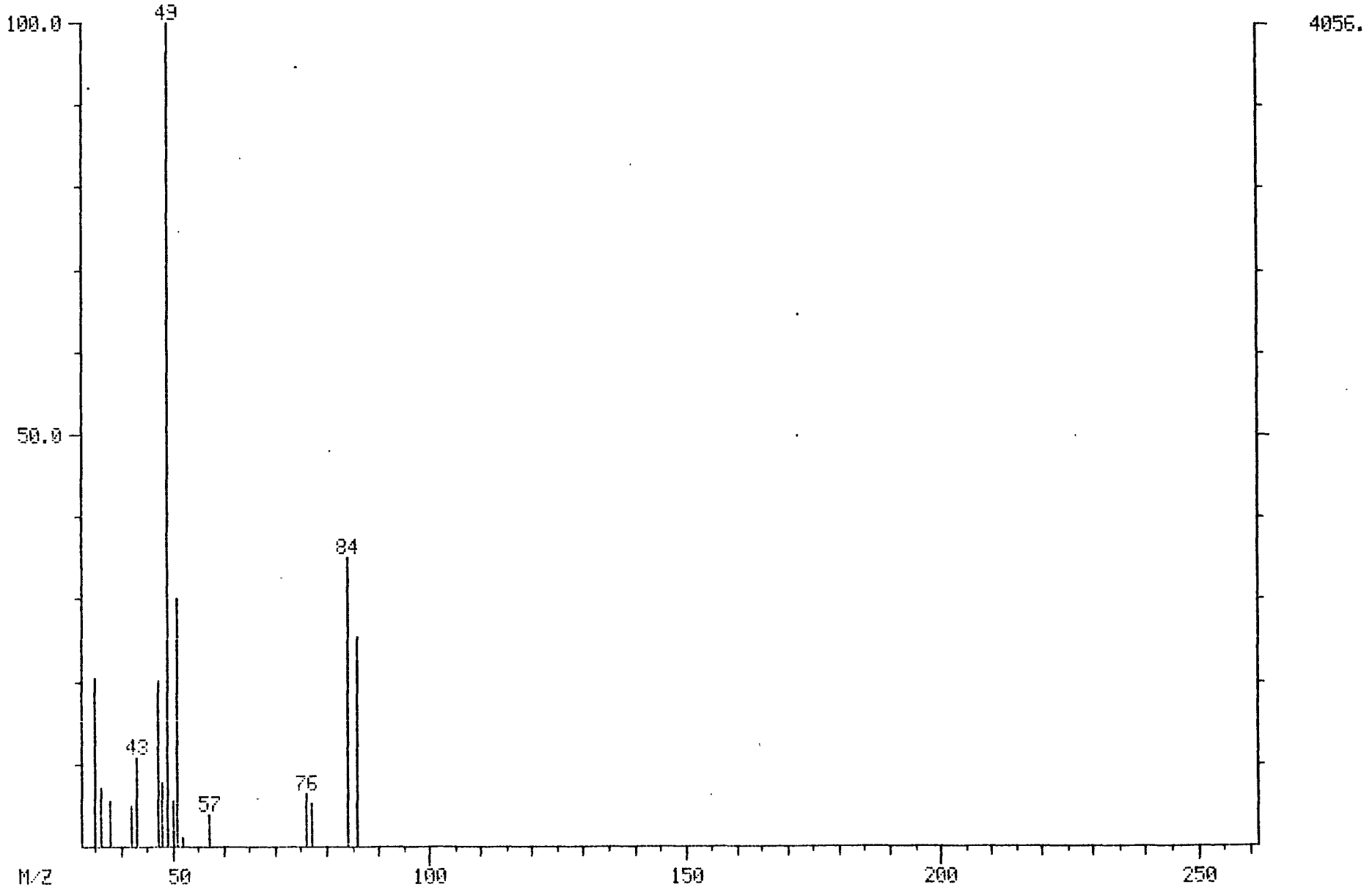
MASS SPECTRUM
03/03/89 13:08:00 + 5:01
SAMPLE: VOA SOIL, EA#0824, F#TRIP BLANK, WILLOW GROVE, 5GM/5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS-C3
GC TEMP: 41 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AB06852 #301
CALI: AB06852 #2

BASE M/Z: 49
RIC: 11776.

2 189

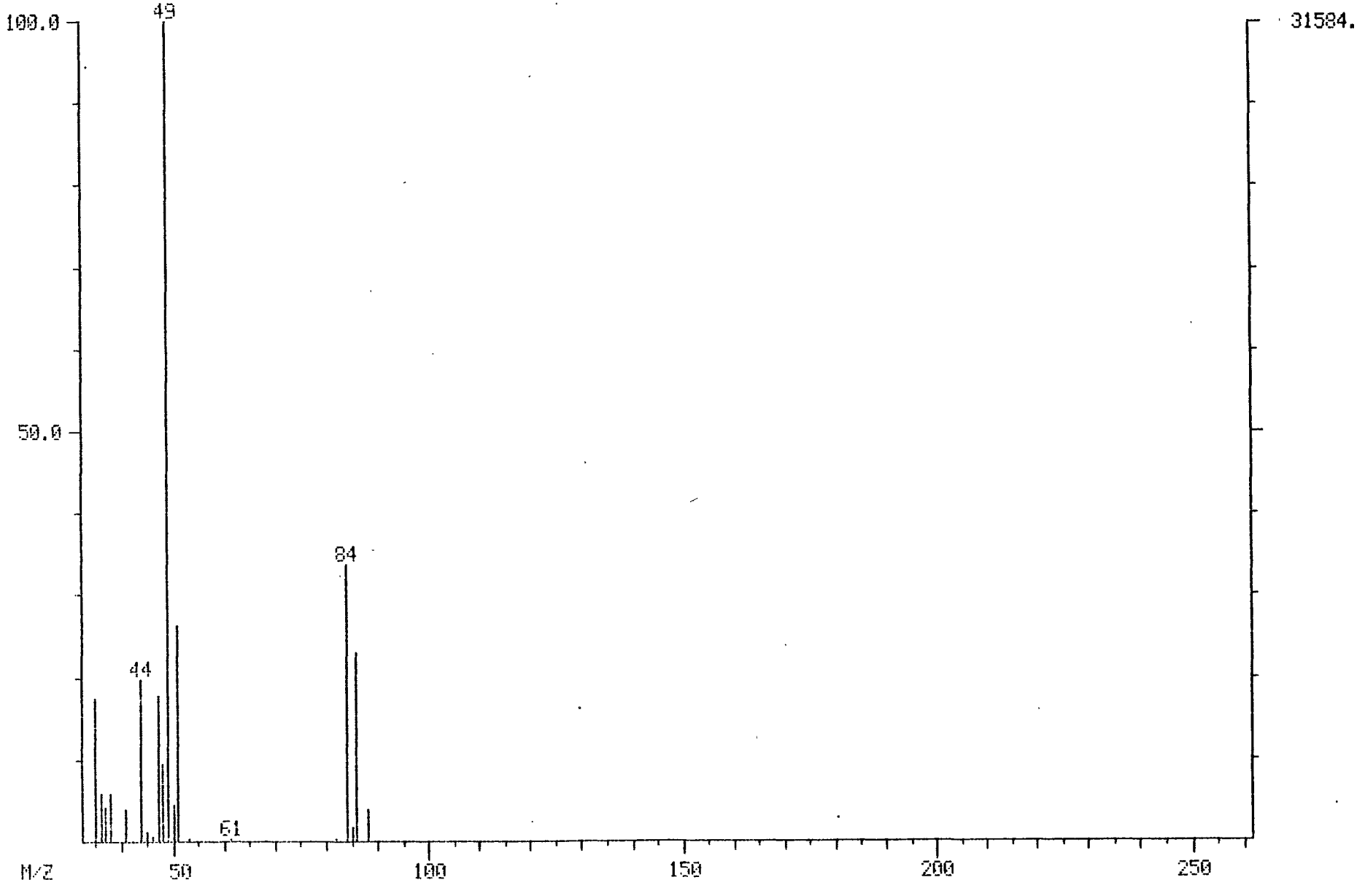


MASS SPECTRUM
03/03/89 10:15:00 + 4:50
SAMPLE: VOA WATER, STD#2771, VSTD50/300, 5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS-C3
GC TEMP: 43 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AB06849 #290
CALI: AB06849 #2

BASE M/Z: 49
RIC: 88320.

2 190



Library Search Data: AB06852 # 128 Base m/z: 40
03/03/89 13:08:00 + 2:08 Cali: AB06852 # 2 RIC: 84223.
Sample: VOA SOIL, EA#0824, F#TRIP BLANK, WILLOW GROVE, 5GM/5ML, CVG
Conds.: EA LABS, COLUMN: VOCOL-30M, DESC: ZZ, INST: GC/MS-C3
Enhanced (S 15B 2N OT)

38761 spectra in LIBRARYNB searched for maximum PURITY
421 matched at least 4 of the 11 largest peaks in the unknown

Rank	In.	Name
1	205	3-BUTYN-1-OL
2	188	ISOXAZOLE
3	22	ACETONITRILE
4	23	METHANE, ISOCYANO-
5	189	OXAZOLE

Rank	Formula	M.Wt	B.Pk	Purity	Fit	RFit
1	C4.H6.O	70	40	442	450	565
2	C3.H3.O.N	69	40	318	320	593
3	C2.H3.N	41	41	281	288	721
4	C2.H3.N	41	41	278	285	618
5	C3.H3.O.N	69	69	238	240	603

Rank	Ret. Time	B.P. Int.	US.Par.1	US.Par.2	C.A.S. #
1	—	—	—	—	927-74-2
2	—	—	—	—	288-14-2
3	—	—	—	—	75-05-8
4	—	—	—	—	593-75-9
5	—	—	—	—	288-42-6

45.4

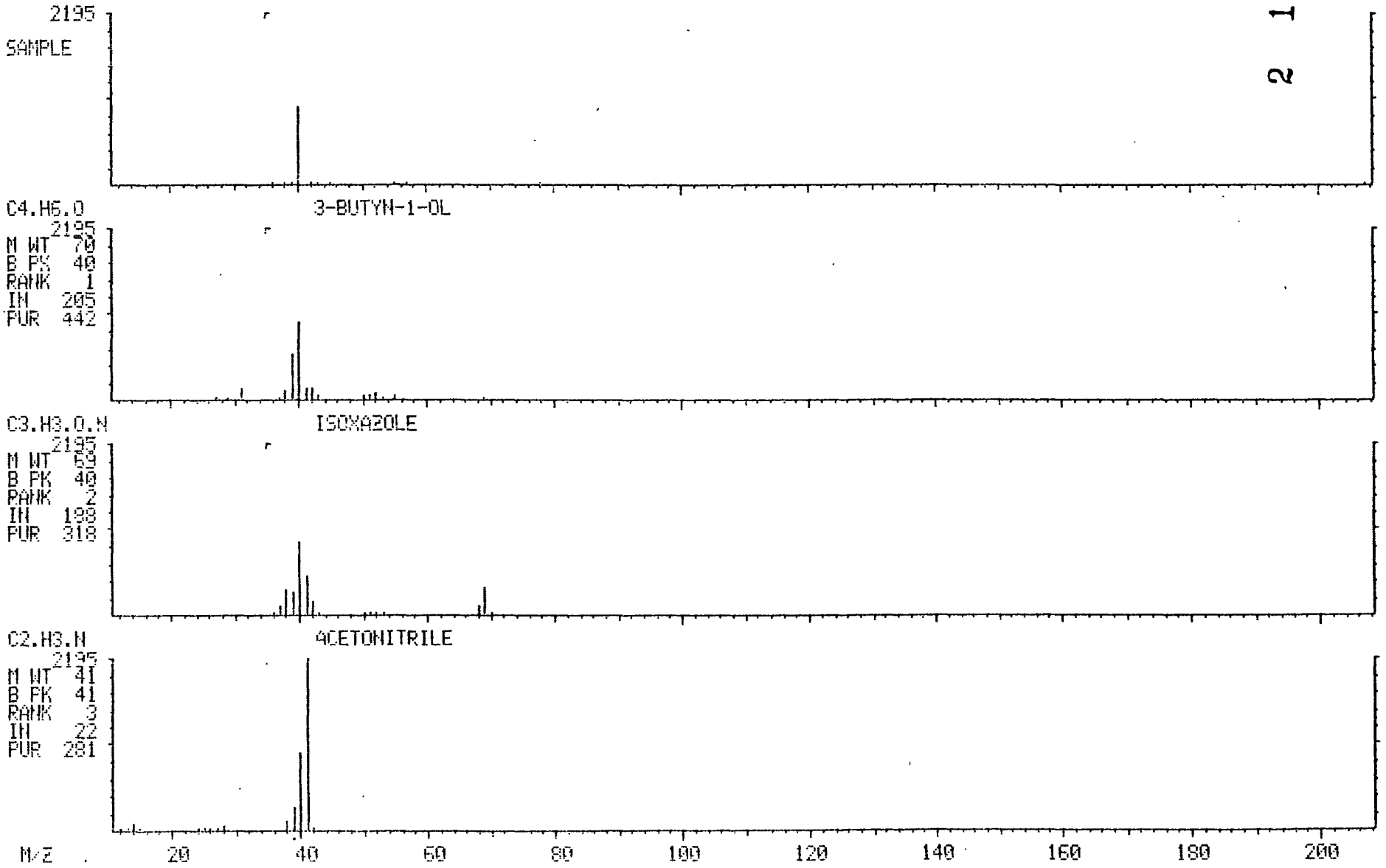
92672

LIBRARY SEARCH
03/03/89 13:08:00 + 2:08
SAMPLE: VOA SOIL, EA#0824, F#TRIP BLANK, WILLOW GROVE, 5GM/5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:22, INST:GC/MS-C3
ENHANCED (S 15B 2N.0T)

DATA: AB06852 # 128
CALI: AB06852 # 2

BASE M/Z: 40
RIC: 84223.

2 102



Library Search Data: AB06852 # 160 Base m/z: 44
03/03/89 13:08:00 + 2:40 Cali: AB06852 # 2 RIC: 29215.
Sample: VOA SOIL, EA#0824, F#TRIP BLANK, WILLOW GROVE, 50M/5ML, CVG
Conds.: EA LABS, COLUMN: VOCOL-30M, DESC: ZZ, INST: GC/MS-C3
Enhanced (S 15B 2N OT)

38761 spectra in LIBRARYNB searched for maximum PURITY
522 matched at least 2 of the 5 largest peaks in the unknown

Rank	In.	Name
1	21989	CYCLOPROPANE, 1,1-DIBROMO-2-CHLORO-2-FLUORO-
2	7258	METHANE, TRINITRO-
3	7324	BENZENEMETHANOL, .ALPHA.-(1-AMINOETHYL)-, [R-(R*,S*)]-
4	7339	BENZENEMETHANOL, .ALPHA.-(1-AMINOETHYL)-, (R*,R*)-
5	258	CYCLOBUTANOL

Rank	Formula	M.Wt	B.Pk	Purity	Fit	RFit
1	C3.H2.CL.BR2.F	250	44	915	939	958
2	C.H.O6.N3	151	30	821	840	967
3	C9.H13.O.N	151	44	718	752	955
4	C9.H13.O.N	151	44	708	742	955
5	C4.H8.O	72	44	593	602	956

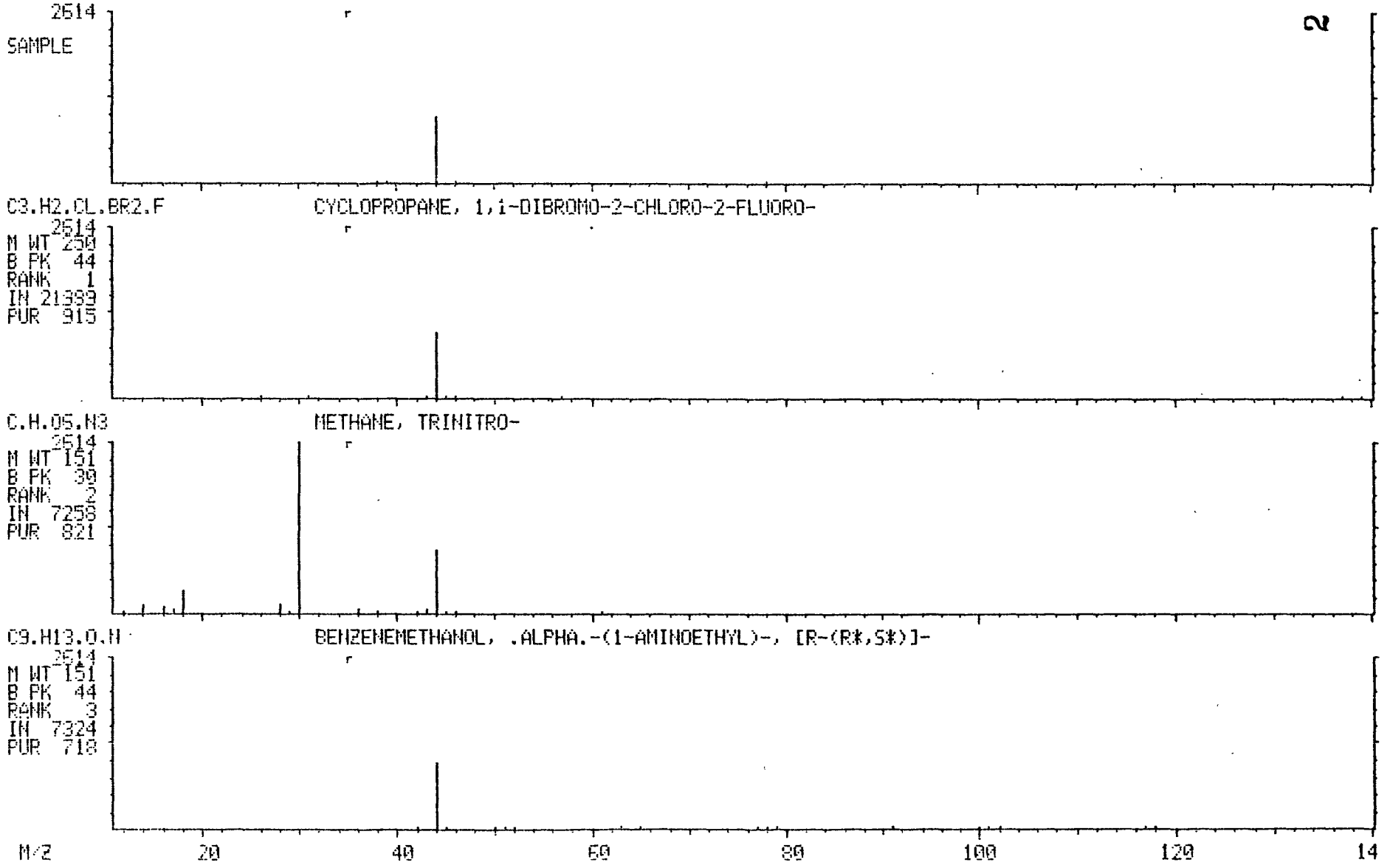
Rank	Ret. Time	B.P. Int.	US. Par. 1	US. Par. 2	C.A.S. #
1	—	—	—	—	24071-57-6
2	—	—	—	—	517-25-9
3	—	—	—	—	492-41-1
4	—	—	—	—	36393-56-3
5	—	—	—	—	2919-23-5

15.8

92672

LIBRARY SEARCH DATA: AB06852 # 160 BASE M/Z: 44
03/03/89 13:08:00 + 2:40 CALI: AB06852 # 2 RIC: 23215.
SAMPLE: VOA SOIL, EA#0824, F#TRIP BLANK, WILLOW GROVE, 5GM/5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS-C3
ENHANCED (S 15B 2N 0T)

2 194



Library Search Data: AB06852 #1270 Base m/z: 44
03/03/89 13:08:00 + 21:10 Cali: AB06852 # 2 RIC: 2287.
Sample: VOA SOIL, EA#0824, F#TRIP BLANK, WILLOW GROVE, 5GM/5ML, CVG
Conds.: EA LABS, COLUMN: VOCOL-30M, DESC: ZZ, INST: GC/MS-C3
Enhanced (S 15B 2N OT)

<107

38761 spectra in LIBRARYNB, searched for maximum PURITY
479 matched at least 3 of the 13 largest peaks in the unknown

Rank	In.	Name
1	23627	1,2-BENZENEDICARBOXYLIC ACID, ETHYL TRIMETHYLSILYL ESTER
2	18675	PHENOL, 4-BUTOXY-2-[(DIMETHYLAMINO)METHYL]-
3	16548	1,4-BENZENEDICARBOXYLIC ACID, ETHYL METHYL ESTER
4	10570	ACETAMIDE, N-(1,1-DIMETHYLETHYL)-2,2,2-TRIFLUORO-
5	317	GLYCINE

Rank	Formula	M.Wt	B.Pk	Purity	Fit	RFit
1	C13.H18.O4.Si	266	149	235	373	525
2	C13.H21.O2.N	223	110	171	327	500
3	C11.H12.O4	208	163	165	386	362
4	C6.H10.O.N.F3	169	44	162	573	269
5	C2.H5.O2.N	75	30	158	761	205

Rank	Ret. Time	B.P. Int.	US.Par.1	US.Par.2	C.A.S. #
1	—	—	—	—	55530-57-9
2	—	—	—	—	55955-89-0
3	—	—	—	—	22163-52-6
4	—	—	—	—	1960-29-8
5	—	—	—	—	56-40-6

0.7

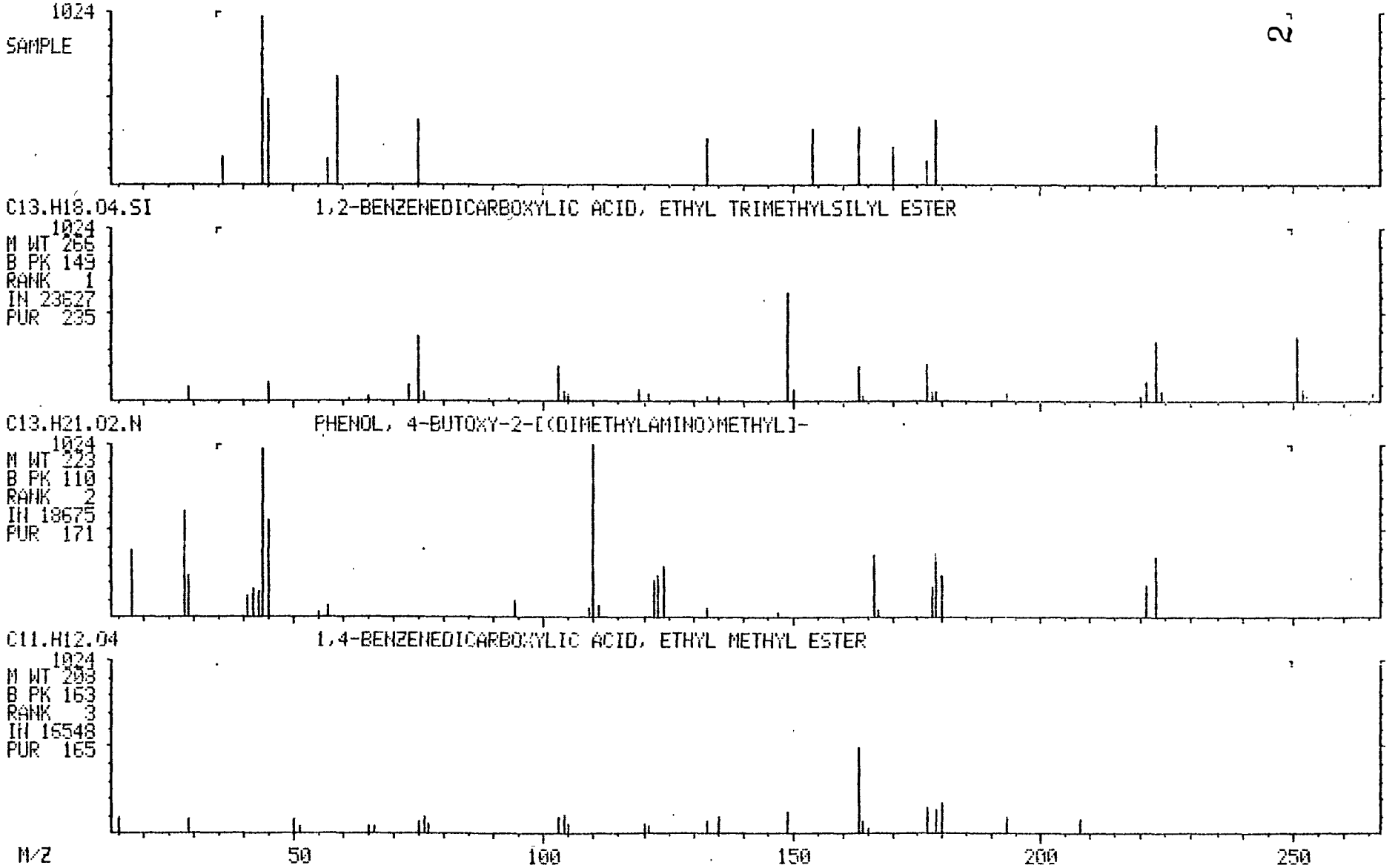
173312

LIBRARY SEARCH
03/03/89 13:08:00 + 21:10
SAMPLE: VOA SOIL, EA#0824, F#TRIP BLANK, WILLOW GROVE, 5GM/5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS-C3
ENHANCED (S 15B 2N 0T)

DATA: AB06852 #1278
CALI: AB06852 # 2

BASE M/Z: 44
RIC: 2287.

2, 196



C. Standards Data

Initial Calibration Data
HSL Compounds

Case No: WILLOW GROVE Instrument ID: A4

Contractor: EAENG Calibration Date: ~~12/29/88~~ 12/27/88

Contract No: AVOA

Minimum $\overline{RF}$ for SPCC is Maximum % RSD for CCC is %

Laboratory ID:	>AC501	>AC497	>AC500	>AC499	>AC498					
	RF	RF	RF	RF	RF					
Compound	20.00	50.00	100.00	150.00	200.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
Chloromethane	.67017	1.10285	.34925	.73221	.93722	.277	.75834	37.674		**
Bromomethane	1.88486	2.06456	.96164	1.74455	2.09812	.374	1.75075	26.482		
Vinyl Chloride	2.02175	2.02317	1.16400	2.33709	2.25390	.443	1.95998	23.794	*	
Chloroethane	1.51548	1.44171	.81042	1.58697	1.54113	.502	1.37914	23.366		
Methylene Chloride	3.89988	2.16953	2.66544	2.46776	2.42268	.695	2.72506	24.956		
Acetone	.77701	.41250	.57387	.52058	.44432	.743	.54566	26.391		
Carbon Disulfide	7.52129	6.91120	7.24019	7.53511	7.46550	.832	7.33466	3.610		
1,1-Dichloroethene	1.87237	1.92794	1.60423	1.56309	2.09969	.947	1.81346	12.483	*	
1,1-Dichloroethane	3.10289	2.92084	3.31373	3.22227	3.34707	1.076	3.18136	5.460		**
1,2-Dichloroethene (total)	1.36388	1.41474	1.58081	1.63206	1.74243	1.146	1.54678	10.098		
Chloroform	2.95723	2.92381	3.26344	3.24100	3.37258	1.210	3.15161	6.326	*	
1,2-Dichloroethane	1.79361	1.66696	1.88146	1.82296	1.84288	1.284	1.80157	4.537		
2-Butanone	.05885	.04127	.05687	.05556	.04944	.614	.05240	13.633		
1,1,1-Trichloroethane	.50475	.46860	.52119	.51335	.52467	.686	.50651	4.450		
Carbon Tetrachloride	.42022	.39180	.46102	.44471	.47491	.705	.43853	7.551		
Vinyl Acetate	.80959	.69596	.90322	.43328	.91518	.711	.75145	26.409		
Bromodichloromethane	.54144	.51654	.60899	.58976	.62134	.733	.57561	7.799		
1,2-Dichloropropane	.45291	.42733	.49663	.48093	.51385	.802	.47433	7.281	*	
cis-1,3-Dichloropropene	.73543	.73101	.85242	.85073	.90595	.815	.81511	9.569		
Trichloroethene	.33104	.35943	.38307	.40169	.45387	.843	.38582	12.009		
Dibromochloromethane	.43717	.46069	.60313	.64035	.72144	.878	.57256	21.129		
1,1,2-Trichloroethane	.32473	.33427	.43766	.46242	.51978	.882	.41577	20.267		
Benzene	.98181	.95559	1.11726	1.11819	1.20025	.867	1.07462	9.567		
trans-1,3-Dichloropropene	.36718	.36610	.45163	.44827	.47548	.881	.42173	12.181		
Bromoform	.30045	.29826	.39459	.42459	.45853	1.019	.37528	19.430		**
4-Methyl-2-Pentanone	1.00660	.51509	.65739	.57668	.49225	.825	.64960	32.261		
2-Hexanone	.73041	.35875	.47591	.41265	.34137	.889	.46382	34.067		
Tetrachloroethene	.25947	.26629	.34932	.37834	.42436	.903	.33556	21.331		
1,1,2,2-Tetrachloroethane	.67311	.42336	.76266	.75372	.70364	.904	.66330	20.964		**
Toluene	.68709	.64772	.71545	.70577	.72434	.956	.69607	4.362	*	

RF - Response Factor (Subscript is amount in ug/L)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Initial Calibration Data
HSL Compounds

Case No: WILLOW GROVE Instrument ID: A1

Contractor: EAENG Calibration Date: ~~12/29/88~~ 12/27/88

Contract No: 68-01-7436

Minimum $\overline{RF}$ for SPCC is Maximum % RSD for CCC is %

Laboratory ID:	>AC501	>AC497	>AC500	>AC499	>AC498						
	RF	RF	RF	RF	RF						
Compound	20.00	50.00	100.00	150.00	200.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC	
Chlorobenzene	.75626	.76594	.83511	.79049	.88021	1.004	.80560	6.412		**	
Ethylbenzene	.34380	.34282	.37335	.36589	.38845	1.089	.36286	5.406	*		
Styrene	.98198	.89290	.90052	.88580	.92649	1.264	.91754	4.269			
Xylene (total)	.53090	.49511	.50417	.50051	.52352	1.319	.51084	3.036			(Conc=60.0,150.0,300.
Toluene-d8	1.30018	1.21962	1.19998	1.13371	1.10063	.948	1.19082	6.541			(Conc=50.0,50.0,50.0,
Bromofluorobenzene	.72346	.69131	.65724	.61832	.59744	1.201	.65755	7.842			(Conc=50.0,50.0,50.0,
1,2-Dichloroethane-d4	1.77884	1.72438	1.97200	2.05857	2.15533	1.274	1.93782	9.441			(Conc=50.0,50.0,50.0,

RF - Response Factor (Subscript is amount in ug/L)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

2 199

Initial Calibration Data
HSL Compounds

Case No: WILLOW GROVE Instrument ID: E5

Contractor: EAENG Calibration Date: ~~01/25/89~~ 01/24/89

Contract No: 68-01-7436

Minimum $\overline{RF}$ for SPCC is Maximum % RSD for CCC is %

Laboratory ID:	>EE677	>EE676	>EE675	>EE674	>EE673					
Compound	RF 20.00	RF 50.00	RF 100.00	RF 150.00	RF 200.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
Chloromethane	.72657	.77204	.75045	.77062	.71495	.220	.74692	3.440		**
Bromomethane	.91872	.80587	.46699	.53311	.46434	.299	.63781	33.017		
Vinyl Chloride	1.05086	1.04828	1.01415	1.02320	.98808	.362	1.02492	2.532	*	
Chloroethane	.60051	.58102	.58868	.60218	.59229	.462	.59293	1.469		
Methylene Chloride	.86087	.79480	.76878	.76272	.73375	.666	.78418	6.127		
Acetone	.47292	.28346	.23217	.21533	.18422	.742	.27762	41.402		
Carbon Disulfide	2.91483	3.03961	3.08202	3.15603	3.09942	.805	3.05838	2.958		
1,1-Dichloroethene	1.05599	1.12005	1.11305	1.12974	1.07865	.937	1.09949	2.821	*	
1,1-Dichloroethane	2.02584	2.06931	2.07418	2.08145	1.97077	1.085	2.04431	2.274		**
1,2-Dichloroethene (total)	1.08463	1.16120	1.16984	1.18027	1.12715	1.158	1.14462	3.408		
Chloroform	2.57633	2.54513	2.51403	2.54543	2.40209	1.229	2.51660	2.690	*	
1,2-Dichloroethane	1.76699	1.76721	1.75436	1.77617	1.64472	1.309	1.74189	3.150		
2-Butanone	.03629	.03418	.03395	.03321	.02738	.608	.03300	10.136		
1,1,1-Trichloroethane	.59612	.62039	.60992	.59556	.54731	.676	.59386	4.715		
Carbon Tetrachloride	.59435	.60346	.59267	.57644	.53629	.695	.58064	4.588		
Vinyl Acetate	.48677	.53501	.57118	.60494	.55714	.704	.55101	7.981		
Bromodichloromethane	.80318	.80948	.79703	.78786	.70912	.727	.78134	5.267		
1,2-Dichloropropane	.39120	.39604	.40296	.39177	.35191	.795	.38678	5.184	*	
cis-1,3-Dichloropropene	.67380	.73893	.74374	.74132	.66891	.810	.71334	5.384		
Trichloroethene	.50665	.51820	.51312	.48943	.44210	.838	.49390	6.262		
Dibromochloromethane	.82537	.81360	.80726	.77720	.69063	.875	.78281	6.964		
1,1,2-Trichloroethane	.42405	.41669	.41371	.39707	.34596	.879	.39950	7.888		
Benzene	.86745	.89376	.89623	.88045	.80376	.862	.86833	4.363		
trans-1,3-Dichloropropene	.31209	.34172	.34873	.34376	.30060	.879	.32938	6.548		
Bromoform	.77844	.77712	.79406	.76399	.67478	1.018	.75768	6.276		**
4-Methyl-2-Pentanone	.36179	.39033	.39820	.40320	.33651	.825	.37801	7.458		
2-Hexanone	.23999	.25320	.27376	.27335	.22741	.890	.25354	8.054		
Tetrachloroethene	.52537	.53716	.52264	.50989	.47001	.904	.51301	5.053		
1,1,2,2-Tetrachloroethane	.75467	.77489	.76234	.76893	.66478	.904	.74512	6.112		**
Toluene	.66427	.69494	.68374	.68007	.61965	.956	.66853	4.405	*	

RF - Response Factor (Subscript is amount in ug/L)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

2 200

Initial Calibration Data
HSL Compounds

Case No: WILLOW GROVE Instrument ID: E5

Contractor: EAENG Calibration Date: ~~01/25/89~~ 01/24/89

Contract No: 68-01-7436

Minimum $\overline{RF}$ for SPCC is Maximum % RSD for CCC is %

Laboratory ID:	>EE677	>EE676	>EE675	>EE674	>EE673						
Compound	RF 20.00	RF 50.00	RF 100.00	RF 150.00	RF 200.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC	
Chlorobenzene	.97443	.98327	.97500	.96678	.87898	1.005	.95569	4.529		**	
Ethylbenzene	.41403	.42365	.42255	.42010	.38537	1.085	.41314	3.864	*		
Styrene	.91209	.93597	.94853	.96656	.86482	1.238	.92559	4.249			
Xylene (total)	.52464	.53144	.52677	.53409	.48562	1.287	.52051	3.815			(Conc=60.0,150.0,300.0
Toluene-d8	1.08044	1.08033	1.07185	1.07876	1.06693	.948	1.07566	.560			(Conc=50.0,50.0,50.0,5
Bromofluorobenzene	.83451	.81777	.82388	.82045	.81031	1.185	.82138	1.081			(Conc=50.0,50.0,50.0,5
1,2-Dichloroethane-d4	1.42467	1.45991	1.51018	1.60269	1.63662	1.300	1.52681	5.949			(Conc=50.0,50.0,50.0,5

RF - Response Factor (Subscript is amount in ug/L)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

INITIAL CALIBRATION DATA - VOLATILE HSL COMPOUNDS

CASE NO: _____ INSTRUMENT ID: 5100
LABORATORY: EA ENG. CALIBRATION DATE: 02/27/89
CONTRACT NO: _____

LABORATORY ID:	AB06836	AB06832	AB06835	AB06834	AB06833		
COMPOUND	RF20	RF50	RF100	RF150	RF200	AVE RRF	%RSD
DICHLORODIFLUOROMETHANE	0.000	0.401	0.343	0.300	0.284	0.266	58
CHLOROMETHANE	1.485	1.430	1.042	1.258	0.763	1.195	25 *
VINYL CHLORIDE	2.262	1.760	1.606	1.600	0.978	1.641	28 *
CHLOROETHANE	1.897	0.535	1.873	1.483	1.036	1.365	40
BROMOMETHANE	1.485	1.699	2.097	1.649	0.985	1.583	25
TRICHLOROFLUOROMETHANE	2.950	3.476	0.384	2.397	1.967	2.235	53
ACROLEIN	0.385	0.362	1.615	0.378	0.299	0.607	93
ACETONE	3.625	4.568	1.717	1.630	1.490	2.606	54
1,1-DICHLOROETHENE	1.620	1.874	1.911	1.904	1.904	1.842	7 *
METHYLENE CHLORIDE	2.097	2.289	2.067	2.133	2.286	2.174	5
ACRYLONITRILE	0.895	0.777	0.773	0.852	0.703	0.800	7
T-BUTYL METHYL ETHER	4.602	3.904	4.834	5.101	4.672	4.623	10
CARBON DISULFIDE	4.970	5.814	5.594	6.122	5.973	5.694	8
TRANS-1,2-DICHLOROETHENE	1.710	2.141	1.714	2.125	2.295	1.997	13
ISOPROPYL ETHER (IPE)	0.275	0.322	1.911	0.263	0.307	0.615	118
1,1-DICHLOROETHANE	4.400	4.638	4.373	4.752	4.521	4.537	4 *
2-BUTANONE	0.037	0.215	0.216	0.234	0.224	0.185	45
VINYL ACETATE	0.697	0.501	0.576	0.459	0.415	0.529	21
CHLOROFORM	3.432	4.204	3.361	3.956	3.970	3.784	10 *
1,1,1-TRICHLOROETHANE	0.505	0.497	0.564	0.460	0.492	0.504	8
CARBON TETRACHLORIDE	0.440	0.460	0.520	0.459	0.465	0.468	6
BENZENE	1.292	1.219	1.226	1.160	1.146	1.208	5
1,2-DICHLOROETHANE	3.012	3.277	3.146	3.321	2.699	3.091	8
TRICHLOROETHENE	0.442	0.460	0.457	0.470	0.417	0.449	5
1,2-DICHLOROPROPANE	0.602	0.630	0.612	0.612	0.565	0.604	4 *
BROMODICHLOROMETHANE	0.515	0.627	0.602	0.620	0.589	0.590	8
2-CHLOROETHYLVINYLETHER	0.277	0.324	0.322	0.313	0.270	0.301	8
2-HEXANONE	0.417	0.456	0.377	0.369	0.325	0.389	13
4-METHYL-2-PENTANONE	1.222	0.989	1.090	1.183	0.998	1.096	10
TRANS-1,3-DICHLOROPROPENE	0.742	0.891	0.860	0.909	0.803	0.841	8
TOLUENE	0.912	0.852	0.716	0.816	0.871	0.833	9 *
CIS-1,3-DICHLOROPROPENE	0.332	0.408	0.395	0.427	0.385	0.389	9
1,1,2-TRICHLOROETHANE	0.350	0.372	0.350	0.377	0.300	0.350	7
TETRACHLOROETHENE	0.470	0.518	0.515	0.529	0.443	0.495	7
DIBROMOCHLOROMETHANE	0.375	0.526	0.530	0.572	0.326	0.466	23
1,2-DIBROMOETHANE(EDB)	0.475	0.508	0.508	0.546	0.437	0.495	8
CHLOROBENZENE	0.835	1.005	0.883	0.959	0.920	0.920	7 *
ETHYLBENZENE	0.440	0.491	0.450	0.476	0.449	0.461	5 *
M & P-XYLENES	0.627	0.718	0.619	0.660	0.636	0.652	6
O-XYLENE	0.565	0.626	0.558	0.629	0.585	0.592	6
STYRENE	0.865	1.033	0.939	1.041	0.985	0.972	7
BROMOFORM	0.482	0.487	0.541	0.578	0.392	0.496	14 *
1,1,2,2-TETRACHLOROETHANE	0.545	0.568	0.548	0.593	0.462	0.543	9 *
1,3-DICHLOROBENZENE(M)	0.850	0.918	0.879	0.918	0.802	0.873	6
1,4-DICHLOROBENZENE(P)	0.902	0.967	0.920	0.952	0.842	0.916	5 *
1,2-DICHLOROBENZENE(O)	0.865	0.913	0.897	0.904	0.792	0.874	6

RF - RELATIVE RESPONSE FACTOR
AVE RRF - AVERAGE RELATIVE RESPONSE FACTOR
%RSD - PERCENT RELATIVE STANDARD DEVIATION
* - CCC - CALIBRATION CHECK COMPOUNDS
** - SPCC - SYSTEM PERFORMANCE CHECK COMPOUNDS
MINIMUM AVE RRF FOR SPCC IS 0.300
MAXIMUM %RSD FOR CCC IS 30%

Initial Calibration Data
HSL Compounds

Case No: WILLOW GROVE Instrument ID: A1

Contractor: EAENG Calibration Date: ~~03/15/89~~ 03/07/89 PM

Contract No: 68-01-7436

Minimum $\overline{RF}$ for SPCC is Maximum % RSD for CCC is %

Laboratory ID:	>AC803	>AC802	>AC801	>AC800	>AC799					
Compound	RF 20.00	RF 50.00	RF 100.00	RF 150.00	RF 200.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
Chloromethane	.99788	.56677	.72738	.40261	.67819	.274	.67457	32.556		**
Bromomethane	1.92920	1.38494	1.75971	.85325	.78418	.376	1.34226	38.553		
Vinyl Chloride	2.18802	2.25730	2.28283	2.03268	2.00182	.449	2.15253	5.981	*	
Chloroethane	1.62991	1.65991	1.59654	1.48366	1.44285	.517	1.56257	6.048		
Methylene Chloride	3.57594	2.59828	2.98572	2.62354	2.55741	.709	2.86818	15.037		
Acetone	1.13708	.59293	.76621	.64175	.63352	.757	.75430	29.641		
Carbon Disulfide	8.08418	7.53882	7.95135	6.97218	6.79183	.849	7.46767	7.697		
1,1-Dichloroethene	2.19042	2.36333	2.48607	2.23611	2.19705	.954	2.29460	5.563	*	
1,1-Dichloroethane	4.45056	3.82676	4.38459	3.93144	3.97456	1.077	4.11358	6.895		**
1,2-Dichloroethene (total)	2.22250	2.07379	2.30634	2.11138	2.08489	1.142	2.15978	4.674		
Chloroform	4.24723	3.62778	4.26993	3.79062	3.82944	1.202	3.95300	7.315	*	
1,2-Dichloroethane	2.54584	1.89832	2.40513	2.09087	2.10445	1.272	2.20892	11.834		
2-Butanone	.07334	.05366	.06682	.06554	.06217	.625	.06431	11.197		
1,1,1-Trichloroethane	.56989	.57379	.56310	.55592	.55939	.696	.56442	1.305		
Carbon Tetrachloride	.45413	.49761	.47327	.47550	.47596	.714	.47529	3.243		
Vinyl Acetate	1.05756	1.03669	1.09681	1.04387	1.40027	.717	1.12704	13.708		
Bromodichloromethane	.70960	.65238	.73250	.73539	.75531	.739	.71704	5.525		
1,2-Dichloropropane	.59850	.56340	.62175	.64053	.66655	.807	.61815	6.389	*	
cis-1,3-Dichloropropene	.97099	.91124	1.04830	1.09029	1.13506	.819	1.03118	8.753		
Trichloroethene	.45282	.46407	.48507	.51798	.54165	.846	.49232	7.534		
Dibromochloromethane	.57785	.53934	.66422	.71457	.75080	.879	.64935	13.770		
1,1,2-Trichloroethane	.45634	.41611	.52052	.56876	.60306	.883	.51296	15.061		
Benzene	1.36259	1.38886	1.47115	1.55933	1.63951	.871	1.48429	7.814		
trans-1,3-Dichloropropene	.47982	.44832	.53589	.55148	.58349	.883	.51980	10.549		
Bromoform	.43956	.38682	.48576	.50496	.52223	1.015	.46787	11.717		**
4-Methyl-2-Pentanone	.87184	.64562	.74667	.66906	.62634	.827	.71190	14.106		
2-Hexanone	.59845	.46216	.51973	.46081	.43268	.890	.49476	13.348		
Tetrachloroethene	.35385	.41552	.40753	.44233	.46107	.903	.41606	9.806		
1,1,2,2-Tetrachloroethane	.87950	.82430	.95502	.96065	.96604	.903	.91710	6.843		**
Toluene	.85946	.90363	.88892	.88378	.90177	.956	.88751	2.004	*	

RF - Response Factor (Subscript is amount in ug/L)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Initial Calibration Data
HSL Compounds

Case No: WILLOW GROVE Instrument ID: A1

Contractor: EAENG Calibration Date: ~~03/15/89~~ 03/07/89

Contract No: 68-01-7436

Minimum $\overline{RF}$ for SPCC is Maximum % RSD for CCC is %

Laboratory ID:	>AC803	>AC802	>AC801	>AC800	>AC799						
Compound	RF 20.00	RF 50.00	RF 100.00	RF 150.00	RF 200.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC	
Chlorobenzene	.99638	1.00534	1.02779	1.03207	1.05839	1.005	1.02399	2.379		**	
Ethylbenzene	.45844	.47329	.47188	.46819	.48158	1.098	.47068	1.787	*		
Styrene	1.10450	1.05482	1.11150	1.09538	1.13280	1.290	1.09980	2.608			
Xylene (total)	.62120	.61685	.62283	.62308	.64720	1.352	.62623	1.914			(Conc=60.0,150.0,300.0
Toluene-d8	1.06064	1.09191	1.04503	1.00811	.97107	.948	1.03535	4.532			(Conc=50.0,50.0,50.0,5
Bromofluorobenzene	.74053	.67709	.69432	.68337	.67081	1.220	.69322	4.015			(Conc=50.0,50.0,50.0,5
1,2-Dichloroethane-d4	1.65126	1.30750	1.77138	1.70389	1.82948	1.263	1.65270	12.368			(Conc=50.0,50.0,50.0,5

RF - Response Factor (Subscript is amount in ug/L)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: WILLOW GROVE

Calibration Date: 02/22/89

Contractor: EA LABS

Time: 19:34

Contract No: 68-01-7436

Laboratory ID: >AC692

Instrument ID: A1

Initial Calibration Date: 12/29/88

Minimum $\overline{RF}$ for SPCC is .30

Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
Chloromethane	.76432	1.36182	78.17		**	
Bromomethane	1.75054	.72837	58.39			
Dichlorodifluoromethane	.64755	-	-			
Vinyl Chloride	1.95999	1.94025	1.01	*		
Chloroethane	1.37914	1.24626	9.63			
Methylene Chloride	2.72506	2.11514	22.38			
Acetone	.54566	.61917	13.47			
Acrolein	.44673	.34129	23.60			(Conc=300.00)
Acrylonitrile	.89968	.72203	19.75			(Conc=300.00)
Trichlorofluoromethane	3.07439	2.17025	29.41			
1,1-Dichloroethene	1.81346	1.61209	11.10	*		
1,1-Dichloroethane	3.18136	3.07861	3.23		**	
Trans-1,2-Dichloroethene	1.54678	1.58653	2.57			
Chloroform	3.15161	2.91396	7.54	*		
1,2-Dichloroethane-d4	1.93782	1.29932	32.95			
1,2-Dichloroethane	1.80157	1.54389	14.30			
2-Butanone	.05240	.05595	6.77			
1,1,1-Trichloroethane	.50651	.40197	20.64			
Carbon Tetrachloride	.43853	.35891	18.16			
Bromodichloromethane	.57561	.51556	10.43			
1,2-Dichloropropane	.47433	.47734	.63	*		
cis-1,3-Dichloropropene	.81511	.78139	4.14			
Trichloroethene	.38582	.37473	2.88			
Dibromochloromethane	.57256	.49164	14.13			
1,1,2-Trichloroethane	.41577	.39446	5.13			
Benzene	1.07462	1.07705	.23			
Trans-1,3-Dichloropropene	.42173	.38025	9.84			
2-Chloroethylvinylether	.27685	.26270	5.11			
Bromoform	.37528	.37297	.62		**	
4-Methyl-2-Pentanone	.64960	.71716	10.40			
Tetrachloroethene	.33556	.36585	9.03			
1,1,2,2-Tetrachloroethane	.66330	.88102	32.82		**	

RF - Response Factor from daily standard file at 50.00 UG/L

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: WILLOW GROVE

Calibration Date: 02/22/89

Contractor: EAENG

Time: 19:34

Contract No: 68-01-7436

Laboratory ID: >AC692

Instrument ID: A1

Initial Calibration Date: 12/29/88

Minimum $\overline{RF}$ for SPCC is .30

Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
Toluene	.69607	.80100	15.07	*	
Toluene-d8	1.19082	1.20589	1.27		
Chlorobenzene	.80560	.99251	23.20		**
Ethylbenzene	.36286	.43105	18.79	*	
m-Xylene	.46373	.58328	25.78		
o&p-Xylenes	1.02375	1.18073	15.33		
1,3-Dichlorobenzene	.60401	.36139	40.17		
1,2-Dichlorobenzene	.65606	.31814	51.51		
1,4-Dichlorobenzene	.60694	.31814	47.58		
Bromofluorobenzene	.65755	.65869	.17		

RF - Response Factor from daily standard file at 50.00 UG/L

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: Calibration Date: 02/24/89

Contractor: EAEN6 Time: 10:31

Contract No: 68-01-7436 Laboratory ID: >EE940

Instrument ID: 7002E5 Initial Calibration Date: 01/25/89

Minimum $\overline{RF}$ for SPCC is .30 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
Chloromethane	.74692	.91850	22.97		**
Bromomethane	.63781	.65567	2.80		
Vinyl Chloride	1.02492	1.00302	2.14	*	
Chloroethane	.59293	.62588	5.56		
Methylene Chloride	.78418	.86567	10.39		
Acetone	.27762	.57273	106.30		
Carbon Disulfide	3.05838	3.80239	24.33		
1,1-Dichloroethene	1.09949	1.30467	18.66	*	
1,1-Dichloroethane	2.04431	2.41556	18.16		**
1,2-Dichloroethene (total)	1.14462	1.36646	19.38		
Chloroform	2.51660	2.96544	17.83	*	
1,2-Dichloroethane	1.74189	2.18343	25.35		
2-Butanone	.03300	.04973	50.67		
1,1,1-Trichloroethane	.59386	.62473	5.20		
Carbon Tetrachloride	.58064	.61866	6.55		
Vinyl Acetate	.55101	.76648	39.11		
Bromodichloromethane	.78134	.84094	7.63		
1,2-Dichloropropane	.38678	.40297	4.19	*	
cis-1,3-Dichloropropene	.71334	.76858	7.74		
Trichloroethene	.49390	.52326	5.94		
Dibromochloromethane	.78281	.85007	8.59		
1,1,2-Trichloroethane	.39950	.44127	10.46		
Benzene	.86833	.90986	4.78		
trans-1,3-Dichloropropene	.32938	.36651	11.27		
Bromoform	.75768	.93921	23.96		**
4-Methyl-2-Pentanone	.37801	.48966	29.54		
2-Hexanone	.25354	.35676	40.71		
Tetrachloroethene	.51301	.52846	3.01		
1,1,2,2-Tetrachloroethane	.74512	.82486	10.70		**
Toluene	.66853	.64603	3.37	*	
Chlorobenzene	.95569	.90437	5.37		**
Ethylbenzene	.41314	.39388	4.66	*	

RF - Response Factor from daily standard file at 50.00 ug/L

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: Calibration Date: 02/24/89

Contractor: EAENG Time: 10:31

Contract No: 68-01-7436 Laboratory ID: >EE940

Instrument ID: 7002E5 Initial Calibration Date: 01/25/89

Minimum $\overline{RF}$ for SPCC is .30 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
Styrene	.92559	.90441	2.29			
Xylene (total)	.52051	.51023	1.97			(Conc=150.00)
Toluene-d8	1.07566	.97740	9.14			
Bromofluorobenzene	.82138	.87205	6.17			
1,2-Dichloroethane-d4	1.52681	1.63420	7.03			

RF - Response factor from daily standard file at 50.00 ug/L

$\overline{RF}$ - Average Response factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: _____ Calibration Date: 02/27/89

Contractor: EAENG Time: 11:44

Contract No: 68-01-7436 Laboratory ID: >EE956

Instrument ID: 7002E5 Initial Calibration Date: 01/25/89

Minimum $\overline{RF}$ for SPCC is .30 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
Chloromethane	.74692	.84188	12.71		**
Bromomethane	.63781	.64699	1.44		
Vinyl Chloride	1.02492	.98179	4.21	*	
Chloroethane	.59293	.61155	3.14		
Methylene Chloride	.78418	.82946	5.77		
Acetone	.27762	.39010	40.51		
Carbon Disulfide	3.05838	3.73604	22.16		
1,1-Dichloroethene	1.09949	1.29150	17.46	*	
1,1-Dichloroethane	2.04431	2.44939	19.81		**
1,2-Dichloroethene (total)	1.14462	1.37676	20.28		
Chloroform	2.51660	2.98432	18.59	*	
1,2-Dichloroethane	1.74189	2.14358	23.06		
2-Butanone	.03300	.04261	29.10		
1,1,1-Trichloroethane	.59386	.61427	3.44		
Carbon Tetrachloride	.58064	.60020	3.37		
Vinyl Acetate	.55101	.66753	21.15		
Bromodichloromethane	.78134	.83721	7.15		
1,2-Dichloropropane	.38678	.40662	5.13	*	
cis-1,3-Dichloropropene	.71334	.76127	6.72		
Trichloroethene	.49390	.50527	2.30		
Dibromochloromethane	.78281	.80129	2.36		
1,1,2-Trichloroethane	.39950	.42608	6.65		
Benzene	.86833	.87958	1.30		
trans-1,3-Dichloropropene	.32938	.34275	4.06		
Bromoform	.75768	.83474	10.17		**
4-Methyl-2-Pentanone	.37801	.43869	16.05		
2-Hexanone	.25354	.30005	18.34		
Tetrachloroethene	.51301	.47801	6.82		
1,1,2,2-Tetrachloroethane	.74512	.73476	1.39		**
Toluene	.66853	.61835	7.51	*	
Chlorobenzene	.95569	.85995	10.02		**
Ethylbenzene	.41314	.36836	10.84	*	

RF - Response factor from daily standard file at 50.00 ug/L

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: Calibration Date: 02/27/89

Contractor: EAENG Time: 11:44

Contract No: 68-01-7436 Laboratory ID: >EE956

Instrument ID: 7002E5 Initial Calibration Date: 01/25/89

Minimum $\overline{RF}$ for SPCC is .30 Maximum % Diff for CCC is 25%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
Styrene	.92559	.86334	6.73			
Xylene (total)	.52051	.47804	8.16			(Conc=150.00)
Toluene-d8	1.07566	.97123	9.71			
Bromofluorobenzene	.82138	.85113	3.62			
1,2-Dichloroethane-d4	1.52681	1.64982	8.06			

RF - Response Factor from daily standard file at 50.00 ug/L

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: WILLOW GROVE

Calibration Date: 03/01/89

Contractor: EAENG

Time: 13:18

Contract No: 68-01-7436

Laboratory ID: >AC762

Instrument ID: A1

Initial Calibration Date: 12/29/88

Minimum $\overline{RF}$ for SPCC is

Maximum % Diff for CCC is %

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
Chloromethane	.75834	1.31008	72.76		**
Bromomethane	1.75075	.39187	77.62		
Vinyl Chloride	1.95998	2.40124	22.51	*	
Chloroethane	1.37914	1.58769	15.12		
Methylene Chloride	2.72506	3.22280	18.27		
Acetone	.54566	.84038	54.01		
Carbon Disulfide	7.33466	7.55715	3.03		
1,1-Dichloroethene	1.81346	2.16925	19.62	*	
1,1-Dichloroethane	3.18136	4.14883	30.41		**
1,2-Dichloroethene (total)	1.54678	2.03952	31.86		
Chloroform	3.15161	3.78056	19.96	*	
1,2-Dichloroethane	1.80157	2.40794	33.66		
2-Butanone	.05240	.05646	7.75		
1,1,1-Trichloroethane	.50651	.55264	9.11		
Carbon Tetrachloride	.43853	.45934	4.74		
Vinyl Acetate	.75145	1.23126	63.85		
Bromodichloromethane	.57561	.66794	16.04		
1,2-Dichloropropane	.47433	.56768	19.68	*	
cis-1,3-Dichloropropene	.81511	.94522	15.96		
Trichloroethene	.38582	.41116	6.57		
Dibromochloromethane	.57256	.53073	7.30		
1,1,2-Trichloroethane	.41577	.41594	.04		
Benzene	1.07462	1.30867	21.78		
trans-1,3-Dichloropropene	.42173	.47811	13.37		
Bromoform	.37528	.38087	1.49		**
4-Methyl-2-Pentanone	.64960	.73220	12.71		
2-Hexanone	.46382	.50676	9.26		
Tetrachloroethene	.33556	.36181	7.82		
1,1,2,2-Tetrachloroethane	.66330	.84069	26.74		**
Toluene	.69607	.86949	24.91	*	
Chlorobenzene	.80560	1.00560	24.83		**
Ethylbenzene	.36286	.45417	25.16	*	

RF - Response Factor from daily standard file at 50.00 ug/L

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: Calibration Date: 03/01/89

Contractor: Time: 13:18

Contract No: Laboratory ID: >AC762

Instrument ID: Initial Calibration Date: 12/29/88

Minimum $\overline{RF}$ for SPCC is Maximum % Diff for CCC is %

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
Styrene	.91754	1.13667	23.88			
Xylene (total)	.51084	.65794	28.80			(Conc=150.00)
Toluene-d8	1.19082	1.12613	5.43			
Bromofluorobenzene	.65755	.74389	13.13			
1,2-Dichloroethane-d4	1.93782	1.75765	9.30			

RF - Response Factor from daily standard file at 50.00 ug/L

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

CONTINUING CALIBRATION CHECK - VOLATILE HSL COMPOUNDS

CASE NO:
LABORATORY ID: EA ENG.
CONTRACT NO: 10249.05
INSTRUMENT ID: 5100
SENSITIVITY ID: AB06848

STANDARD DATE: 03/03/89
TIME: 10:15:00
STANDARD ID: AB06849
CALIBRATION DATE: 02/27/89

* MAXIMUM %D FOR CCC IS 25%
** MINIMUM AVE RRF FOR SPCC IS 0.300

COMPOUND	AVE RRF	RF50	%D	
CHLOROMETHANE	1.237	1.183	4	**
BROMOMETHANE	1.457	1.822	-24	
VINYL CHLORIDE	1.545	1.780	-14	*
CHLOROETHANE	1.396	1.917	-36	
METHYLENE CHLORIDE	2.143	2.180	-1	
ACETONE	2.585	1.628	37	
CARBON DISULFIDE	5.576	5.996	-6	
1,1-DICHLOROETHENE	1.772	1.828	-2	*
1,1-DICHLOROETHANE	4.846	5.135	-5	**
TRANS-1,2-DICHLOROETHENE	2.036	2.120	-3	
CHLOROFORM	3.660	3.958	-7	*
1,2-DICHLOROETHANE	3.089	3.576	-15	
2-BUTANONE	0.035	0.034	3	
1,1,1-TRICHLOROETHANE	0.570	0.561	2	
CARBON TETRACHLORIDE	0.513	0.498	3	
VINYL ACETATE	0.583	0.440	25	
BROMODICHLOROMETHANE	0.625	0.617	1	
1,2-DICHLOROPROPANE	0.643	0.643	0	*
TRANS-1,3-DICHLOROPROPENE	0.859	0.863	0	
TRICHLOROETHENE	0.477	0.570	-18	
DIBROMOCHLOROMETHANE	0.382	0.437	-13	
1,1,2-TRICHLOROETHANE	0.354	0.361	-1	
BENZENE	1.295	1.251	3	
CIS-1,3-DICHLOROPROPENE	0.389	0.379	3	
2-CHLOROETHYL VINYL ETHER	0.312	0.287	8	
BROMOFORM	0.496	0.454	9	**
2-HEXANONE	0.370	0.372	0	
4-METHYL-2-PENTANONE	1.152	0.870	25	
TETRACHLOROETHENE	0.496	0.464	7	
1,1,2,2-TETRACHLOROETHANE	0.545	0.399	27	**
TOLUENE	0.854	0.736	14	*
CHLOROBENZENE	0.911	0.894	2	**
ETHYLBENZENE	0.457	0.453	1	*
STYRENE	0.972	0.984	0	
M & P-XYLENES	0.646	0.308	52	
O-XYLENES	0.587	0.589	0	
ACROLEIN	0.361	0.055	85	
ACRYLONITRILE	0.814	0.133	84	
DICHLORODIFLUOROMETHANE	0.254	0.137	46	
TRICHLOROFLUOROMETHANE	2.477	3.901	-56	
T-BUTYL METHYL ETHER	4.243	4.849	-13	
ISOPROPYL ETHER (IPE)	0.305	0.308	0	
1,2-DIBROMOETHANE	0.495	0.486	2	
1,2-DICHLOROBENZENE(O)	0.866	0.845	2	
1,3-DICHLOROBENZENE(M)	0.867	0.895	-2	
1,4-DICHLOROBENZENE(P)	0.914	0.911	0	*

AVERAGE %D FOR CCC IS: -1.1

AVE RRF - AVERAGE RESPONSE FACTOR FROM INITIAL CALIBRATION
RF - RESPONSE FACTOR FROM DAILY CALIBRATION
%D - PERCENT DIFFERENCE
** - SPCC - SYSTEM PERFORMANCE CHECK COMPOUNDS
* - CCC - CALIBRATION CHECK COMPOUNDS

FORM VII

CONTINUING CALIBRATION CHECK - VOLATILE HSL COMPOUNDS

CASE NO:
LABORATORY ID: EA ENG.
CONTRACT NO: 10249.05
INSTRUMENT ID: 5100
SENSITIVITY ID: AB06880

STANDARD DATE: 03/07/89
TIME: 10:41:00
STANDARD ID: AB06881
CALIBRATION DATE: 02/27/89

* MAXIMUM %D FOR CCC IS 25%
** MINIMUM AVE RRF FOR SPCC IS 0.300

COMPOUND	AVE RRF	RF50	%D	
CHLOROMETHANE	1.237	1.720	-38	**
BROMOMETHANE	1.457	1.809	-23	
VINYL CHLORIDE	1.545	1.376	11	*
CHLOROETHANE	1.396	1.922	-37	
METHYLENE CHLORIDE	2.143	2.416	-12	
ACETONE	2.585	1.257	51	
CARBON DISULFIDE	5.576	5.506	1	
1,1-DICHLOROETHENE	1.772	1.956	-9	*
1,1-DICHLOROETHANE	4.846	4.756	2	**
TRANS-1,2-DICHLOROETHENE	2.036	2.148	-4	
CHLOROFORM	3.660	3.986	-8	*
1,2-DICHLOROETHANE	3.089	3.039	2	
2-BUTANONE	0.035	0.038	-7	
1,1,1-TRICHLOROETHANE	0.570	0.546	4	
CARBON TETRACHLORIDE	0.513	0.491	4	
VINYL ACETATE	0.583	0.502	14	
BROMODICHLOROMETHANE	0.625	0.577	8	
1,2-DICHLOROPROPANE	0.643	0.633	2	*
TRANS-1,3-DICHLOROPROPENE	0.859	0.809	6	
TRICHLOROETHENE	0.477	0.563	-17	
DIBROMOCHLOROMETHANE	0.382	0.430	-12	
1,1,2-TRICHLOROETHANE	0.354	0.374	-5	
BENZENE	1.295	1.193	8	
CIS-1,3-DICHLOROPROPENE	0.389	0.345	11	
2-CHLOROETHYL VINYL ETHER	0.312	0.302	3	
BROMOFORM	0.496	0.536	-7	**
2-HEXANONE	0.370	0.339	8	
4-METHYL-2-PENTANONE	1.152	0.919	20	
TETRACHLOROETHENE	0.496	0.498	0	
1,1,2,2-TETRACHLOROETHANE	0.545	0.454	17	**
TOLUENE	0.854	0.680	20	*
CHLOROBENZENE	0.911	0.866	5	**
ETHYLBENZENE	0.457	0.410	10	*
STYRENE	0.972	0.922	5	
M & P-XYLENES	0.646	0.299	54	
O-XYLENES	0.587	0.540	8	
ACROLEIN	0.361	0.061	83	
ACRYLONITRILE	0.814	0.142	82	
DICHLORODIFLUOROMETHANE	0.254	0.387	-51	
TRICHLOROFLUOROMETHANE	2.477	3.441	-38	
T-BUTYL METHYL ETHER	4.243	4.896	-14	
ISOPROPYL ETHER (IPE)	0.305	0.324	-5	
1,2-DIBROMOETHANE	0.495	0.513	-3	
1,2-DICHLOROBENZENE(O)	0.866	0.883	-1	
1,3-DICHLOROBENZENE(M)	0.867	0.910	-4	
1,4-DICHLOROBENZENE(P)	0.914	0.965	-5	*

AVERAGE %D FOR CCC IS: 3.0

AVE RRF - AVERAGE RESPONSE FACTOR FROM INITIAL CALIBRATION
RF - RESPONSE FACTOR FROM DAILY CALIBRATION
%D - PERCENT DIFFERENCE
** - SPCC - SYSTEM PERFORMANCE CHECK COMPOUNDS
* - CCC - CALIBRATION CHECK COMPOUNDS

FORM VII

Continuing Calibration Check
HSL Compounds

Case No: WILLOW GROVE

Calibration Date: 03/13/89

Contractor: EAENG

Time: 12:10

Contract No: 68-01-7436

Laboratory ID: >AC812

Instrument ID: A1

Initial Calibration Date: 03/15/89

Minimum $\overline{RF}$ for SPCC is

Maximum % Diff for CCC is %

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
Chloromethane	.67457	1.22803	82.05		**
Bromomethane	1.34226	.78564	41.47		
Vinyl Chloride	2.15253	2.08016	3.36	*	
Chloroethane	1.56257	1.50638	3.60		
Methylene Chloride	2.86818	3.01097	4.98		
Acetone	.75430	1.74027	130.71		
Carbon Disulfide	7.46767	7.56292	1.28		
1,1-Dichloroethene	2.29460	2.24630	2.10	*	
1,1-Dichloroethane	4.11358	4.22892	2.80		**
1,2-Dichloroethene (total)	2.15978	2.14967	.47		
Chloroform	3.95300	4.02735	1.88	*	
1,2-Dichloroethane	2.20892	2.25616	2.14		
2-Butanone	.06431	.06606	2.72		
1,1,1-Trichloroethane	.56442	.58669	3.95		
Carbon Tetrachloride	.47529	.47999	.99		
Vinyl Acetate	1.12704	1.31229	16.44		
Bromodichloromethane	.71704	.72316	.85		
1,2-Dichloropropane	.61815	.63784	3.19	*	
cis-1,3-Dichloropropene	1.03118	1.03554	.42		
Trichloroethene	.49232	.47607	3.30		
Dibromochloromethane	.64935	.58306	10.21		
1,1,2-Trichloroethane	.51296	.46704	8.95		
Benzene	1.48429	1.48420	.01		
trans-1,3-Dichloropropene	.51980	.51198	1.50		
Bromoform	.46787	.42498	9.17		**
4-Methyl-2-Pentanone	.71190	.69544	2.31		
2-Hexanone	.49476	.49345	.26		
Tetrachloroethene	.41606	.35414	14.88		
1,1,2,2-Tetrachloroethane	.91710	.81309	11.34		**
Toluene	.88751	.84190	5.14	*	
Chlorobenzene	1.02399	.96371	5.89		**
Ethylbenzene	.47068	.44652	5.13	*	

RF - Response Factor from daily standard file at 50.00 ug/L

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: WILLOW GROVE

Calibration Date: 03/13/89

Contractor: EAENG

Time: 12:10

Contract No: 68-01-7436

Laboratory ID: >AC812

Instrument ID: A1

Initial Calibration Date: 03/15/89

Minimum $\overline{RF}$ for SPCC is

Maximum % Diff for CCC is %

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
Styrene	1.09980	1.05639	3.95			
Xylene (total)	.62623	.60925	2.71			(Conc=150.00)
Toluene-d8	1.03535	.99576	3.82			
Bromofluorobenzene	.69322	.74283	7.16			
1,2-Dichloroethane-d4	1.65270	1.45312	12.08			

RF - Response Factor from daily standard file at 50.00 ug/L

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

8A
VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PRW-2,S-6

Lab File ID (Standard): AC762 Date Analyzed: 3/ 1/89

Instrument ID: A1 Time Analyzed: 13:18

Matrix:(soil/water) SOIL Level:(low/med) LOW Column:(pack/cap) PACK

		IS1(BCM) AREA #	RT	IS2(DFB) AREA #	RT	IS3(CBZ) AREA #	RT
	12 HOUR STD	63722.	9.91	344278.	19.95	331815.	25.06
	UPPER LIMIT	127444.	10.41	688556.	20.45	663630.	25.56
	LOWER LIMIT	31861.	9.41	172139.	19.45	165908.	24.56
	EPA SAMPLE NO.						
01	VBLK	127050.	9.91	673094.	19.95	634518.	25.05
02	DUP-1MS	51328.	9.90	283326.	19.95	270173.	25.05
03	DUP-1MSD	87271.	9.88	416930.	19.95	404224.	25.05
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IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

UPPER LIMIT = + 100%
of internal stansard area.
LOWER LIMIT = - 50%
of internal standard area.

Column used to flag internal standard area values with an asterisk

8A

VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PR~~-3~~ W-1, S-8 RSB

Lab File ID (Standard): EE940 Date Analyzed: 2/24/89

Instrument ID: E5 Time Analyzed: 10:31

Matrix:(soil/water) SOIL Level:(low/med) LOW Column:(pack/cap) PACK

		IS1(BCM) AREA #	RT	IS2(DFB) AREA #	RT	IS3(CBZ) AREA #	RT
	12 HOUR STD	46638.	8.65	171438.	18.61	167148.	23.46
	UPPER LIMIT	93276.	9.12	342876.	19.11	334296.	23.96
	LOWER LIMIT	23319.	8.12	85719.	18.11	83574.	22.96
	EPA SAMPLE NO.						
01	VBLK1	49358.	8.65	186481.	18.61	185964.	23.46
02	PR~~-3~~ W-1, S-8	45574.	8.65	175730.	18.57	175644.	23.45
03	PR-SS-1	37035.	8.65	140817.	18.61	131885.	23.46
04	PR-SS-2	38238.	8.65	145467.	18.57	138119.	23.46
05	RINSE BL#2	34873.	8.65	121700.	18.58	109378.	23.46
06	TRIP BLANK	35975.	8.65	125481.	18.61	122312.	23.46
07	TRIP BLANK	35513.	8.64	114995.	18.60	105960.	23.45
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IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

UPPER LIMIT = + 100% of internal stansard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

FORM VIII VOA 1/87 Rev.

8A

VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PRW-2,S-6

Lab File ID (Standard): EE956 Date Analyzed: 2/27/89

Instrument ID: E5 Time Analyzed: 11:44

Matrix:(soil/water) SOIL Level:(low/med) LOW Column:(pack/cap) PACK

		IS1(BCM) AREA #	RT	IS2(DFB) AREA #	RT	IS3(CBZ) AREA #	RT
	12 HOUR STD	45591.	8.65	168441.	18.58	166987.	23.47
	UPPER LIMIT	91182.	9.15	336882.	19.08	333974.	23.97
	LOWER LIMIT	22796.	8.15	84221.	18.08	83494.	22.97
	EPA SAMPLE NO.						
01	VBLK2	45363.	8.66	176446.	18.58	177034.	23.47
02	PRW-2,S-6	41703.	8.64	163922.	18.60	166103.	23.44
03	PR-SS-3	37050.	8.65	141615.	18.57	137741.	23.46
04	DUP-1	41383.	8.65	163350.	18.61	164889.	23.46
05	DUP-3	39627.	8.63	156718.	18.60	149266.	23.44
06	PRW-3,S-6	40605.	8.68	160598.	18.60	159958.	23.48
07	RINSE BL#3	42714.	8.65	169299.	18.57	167285.	23.46
08	TRIP BLANK	43210.	8.63	171089.	18.59	169380.	23.44
09	PRW-3,WATER	42335.	8.64	168417.	18.60	167552.	23.45
10	TRIP BLANK	44792.	8.66	176236.	18.59	175563.	23.43
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IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

UPPER LIMIT = + 100% of internal stansard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

8A

VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: SAS No.: SDG No.: PR-1,S-4

Lab File ID (Standard): AC692 Date Analyzed: 2/22/89

Instrument ID: A 1 Time Analyzed: 19:34

Matrix:(soil/water) WATER Level:(low/med) LOW Column:(pack/cap) PACK

		IS1(BCM) AREA #	RT	IS2(DFB) AREA #	RT	IS3(CBZ) AREA #	RT
	12 HOUR STD	89948.	9.92	438097.	19.97	376391.	25.04
	UPPER LIMIT	179896.	10.22	876194.	20.27	752782.	25.34
	LOWER LIMIT	44974.	9.62	219049.	19.67	188196.	24.74
	EPA SAMPLE NO.						
01	VBLK	46627.	9.91	236735.	19.95	205964.	25.05
02	PR-1,S-4	127146.	9.92	654781.	19.96	569087.	25.06
03	PR-2,S-6	111656.	9.92	560816.	19.96	488896.	25.04
04	TRIP BLANK	137227.	9.92	676658.	19.93	589387.	25.04
05	RINSATE BL	127488.	9.89	632193.	19.96	553973.	25.03
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IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

UPPER LIMIT = + 100% of internal stansard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

8A

VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PR-1,5-4

Lab File ID (Standard): AC812 Date Analyzed: 3/13/89

Instrument ID: A1 Time Analyzed: 12:10

Matrix:(soil/water) SOIL Level:(low/med) LOW Column:(pack/cap) PACK

		IS1(BCM) AREA #	RT	IS2(DFB) AREA #	RT	IS3(CBZ) AREA #	RT
	12 HOUR STD	53853.	9.88	268831.	19.92	298646.	24.99
	UPPER LIMIT	107166.	10.38	537662.	20.42	597292.	25.49
	LOWER LIMIT	26927.	9.38	134416.	19.42	149323.	24.49
	EPA SAMPLE NO.						
01	VBLK	88056.	9.91	429427.	19.95	475413.	24.99
02	TRIP BLANK	82206.	9.90	402254.	19.91	445066.	24.98
03	RINSATE BL	38640.	9.88	185321.	19.92	205140.	24.99
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IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

UPPER LIMIT = + 100% of internal stansard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

8A

VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: RINSE BL#5

Lab File ID (Standard): AC762 Date Analyzed: 3/ 1/89

Instrument ID: A1 Time Analyzed: 13:18

Matrix:(soil/water) SOIL Level:(low/med) LOW Column:(pack/cap) PACK

		IS1(BCM) AREA #	RT	IS2(DFB) AREA #	RT	IS3(CBZ) AREA #	RT
	12 HOUR STD	63722.	9.91	344278.	19.95	331815.	25.06
	UPPER LIMIT	127444.	10.41	688556.	20.45	663630.	25.56
	LOWER LIMIT	31861.	9.41	172139.	19.45	165908.	24.56
	EPA SAMPLE NO.						
01	VBLK	127050.	9.91	673094.	19.95	634518.	25.05
02	RINSE BL#5	112722.	9.91	475467.	19.95	443860.	25.05
03	PRW-4,WATER	114726.	9.91	477001.	19.95	444995.	25.05
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IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

UPPER LIMIT = + 100% of internal stansard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

CASE NUMBER: LABORATORY: EA ENG. CONTRACT: 10388.03

VOLATILE INTERNAL STANDARD AREAS

SMO NUMBER	LAB ID	BRCLME	1,4-FL20	CLO-D5
VSTD50/300	AB06849	43907.	248555.	277371.
VBLK	AB06850	78836.	445105.	442428.
PRW4,S5(0821)	AB06851	62769.	369313.	348021.
TRIP BLNK(0824	AB06852	86474.	468897.	507698.
VSTD50/300	AB06881	61292.	343275.	392615.
VBLK	AB06882	59751.	347018.	388491.
~~FFB-1(0873)~~	~~AB06883~~	~~59162.~~	~~351431.~~	~~415018.~~
~~FFB-2(0883)~~	~~AB06884~~	~~63208.~~	~~347941.~~	~~355876.~~
~~FFB-3(0884)~~	~~AB06885~~	~~71550.~~	~~399511.~~	~~398452.~~
~~FFB-4(0885)~~	~~AB06886~~	~~57506.~~	~~332751.~~	~~377062.~~
~~RINSATE BLNK(0872)~~	~~AB06888~~	~~63571.~~	~~351371.~~	~~399369.~~
~~TRIP BLNK(0874)~~	~~AB06889~~	~~61436.~~	~~353702.~~	~~434049.~~
~~RINSATE BLNK#7(0882)~~	~~AB06890~~	~~73073.~~	~~436995.~~	~~421606.~~
~~TRIP BLNK(0886)~~	~~AB06891~~	~~74250.~~	~~414638.~~	~~392453.~~
WRW-1(0871)	AB06892	73616.	443034.	427994.

D. Raw QC Data

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PR-1,S-4

Matrix: (soil/water) WATER Lab Sample ID: METHOD BLANK

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: AC694

Level: (low/med) LOW Date Received: 02/16/89

% Moisture: not dec. 100. Date Analyzed: 02/22/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK

Lab Name: EA LABORATORIES Contract:

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PR-1,S-4

Matrix: (soil/water) WATER Lab Sample ID: METHOD BLANK

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: AC694

Level: (low/med) LOW Date Received: 02/16/89

% Moisture: not dec. 100. Date Analyzed: 02/22/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Volatiles Detected			
2.				
3.				
4.				
5.				
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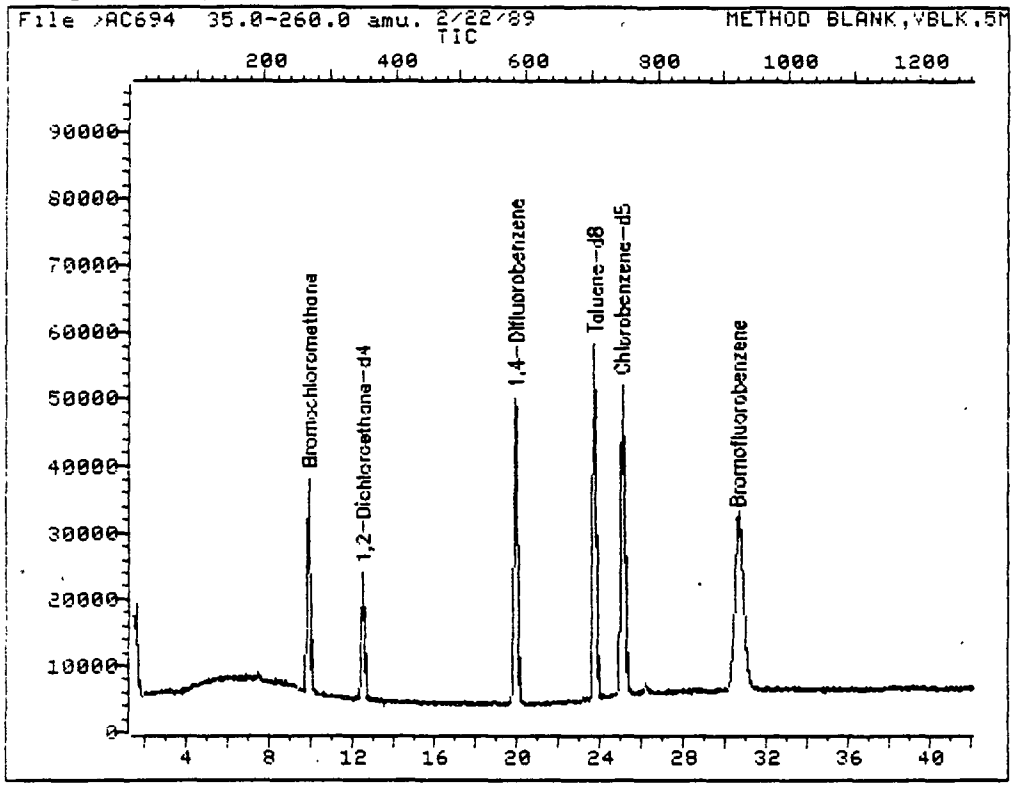
29.				
30.				

TOTAL ION CHROMATOGRAM



Data File: >AC694::D1 Quant Output File: ^AC694::QT
Name: 2/22/89
Misc: METHOD BLANK,VBLK,5ML,GC/MS A1-CVG

Id File: APP::BD
Title: GC/MS A1 PRIORITY POLLUTANTS
Last Calibration: 890222 20:35

Operator ID: TONY
Quant Time: 890222 23:20
Injected at: 890222 22:23

QUANT REPORT

Operator ID: TONY Quant Rev: 6 Quant Time: 890222 23:20
Output File: ^AC694::QT Injected at: 890222 22:23
Data File: ^AC694::D1 Dilution Factor: 1.00000
Name: 2/22/89
Misc: METHOD BLANK,VBLK,5ML,GC/MS A1-CVG

ID File: APP::BD
Title: GC/MS A1 PRIORITY POLLUTANTS
Last Calibration: 890222 20:35

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	9.91	128.0	46627	50.00	UG/L	84
16)	1,2-Dichloroethane-d4	12.50	65.0	61600	50.84	UG/L	83
18)	*1,4-Difluorobenzene	19.95	114.0	236735	50.00	UG/L	90
33)	*Chlorobenzene-d5	25.05	117.0	205964	50.00	UG/L	96
38)	Toluene-d8	23.75	98.0	245637	49.45	UG/L	95
46)	Bromofluorobenzene	30.60	95.0	143089	52.74	UG/L	96

* Compound is ISTD

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK1

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PR~~-3~~ W-1 RSB,S-8

Matrix: (soil/water) SOIL Lab Sample ID: METHOD BLANK

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE941

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 2/24/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

FORM I VOA 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK1

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PR-3,S-8

Matrix: (soil/water) SOIL Lab Sample ID: METHOD BLANK

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE941

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 2/24/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Volatiles Detected			
2.				
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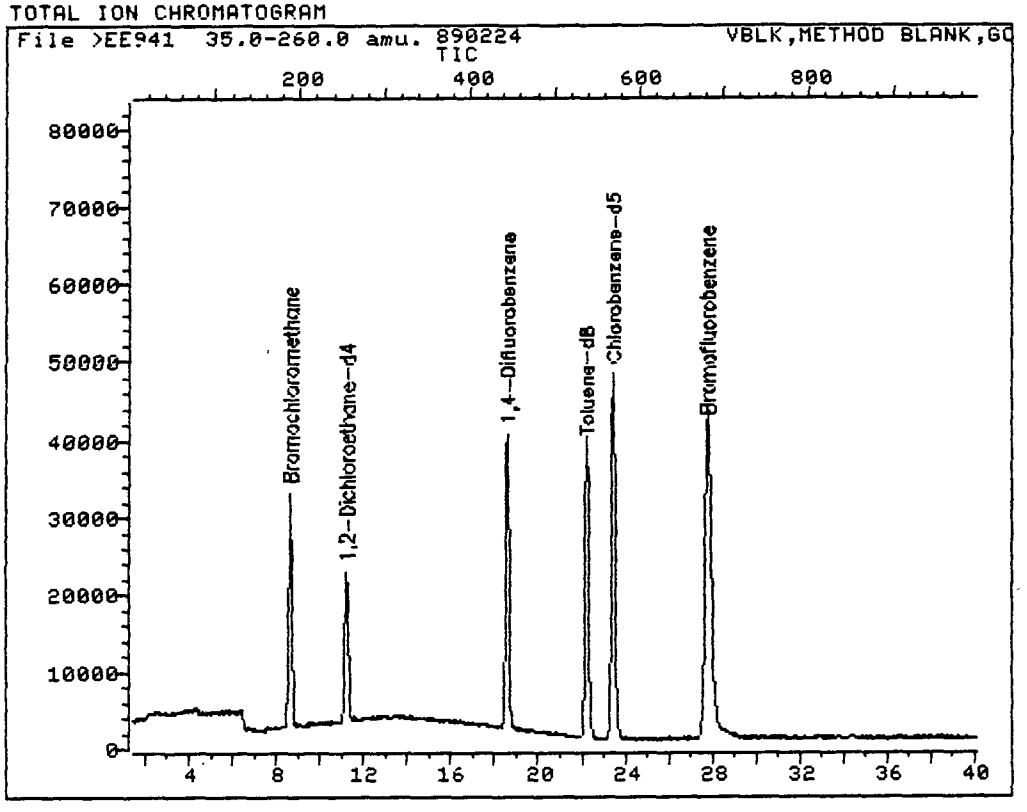
30.				

TOTAL ION CHROMATOGRAM



Data File: >EE941::D2 Quant Output File: ^EE941::QT
Name: 890224
Misc: VBLK,METHOD BLANK,GC/MS E5

Id File: ALL::SC
Title: EA Priority Pollutant IDfile
Last Calibration: 890224 12:11

Operator ID: CARL
Quant Time: 890224 13:04
Injected at: 890224 12:23

QUANT REPORT

Operator ID: CARL Quant Rev: 6 Quant Time: 890224 13:04
Output File: ^EE941::QT Injected at: 890224 12:23
Data File: >EE941::D2 Dilution Factor: 1.00000
Name: 890224
Misc: VBLK,METHOD BLANK,GC/MS E5

ID File: ALL::SC
Title: EA Priority Pollutant IDfile
Last Calibration: 890224 12:11

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.65	128.0	49358	50.00	ug/L	83
18)	1,2-Dichloroethane-d4	11.25	65.0	77108	47.80	ug/L	97
20)	*1,4-Difluorobenzene	18.61	114.0	186481	50.00	ug/L	90
38)	*Chlorobenzene-d5	23.46	117.0	185694	50.00	ug/L	97
44)	Toluene-d8	22.22	98.0	180274	49.66	ug/L	96
53)	Bromofluorobenzene	27.76	95.0	160013	49.41	ug/L	86

* Compound is ISTD

ORGANICS ANALYSIS DATA SHEET SAMPLE #: VBLK

LABORATORY: EA ENG.
LABORATORY ID: AB06882
MATRIX: SOIL

CASE #/SAS #:
QC REPORT #: 2/27/89
CONTRACT #: 10388.03
DATE RECEIVED:

DATA RELEASE AUTHORIZED BY: _____

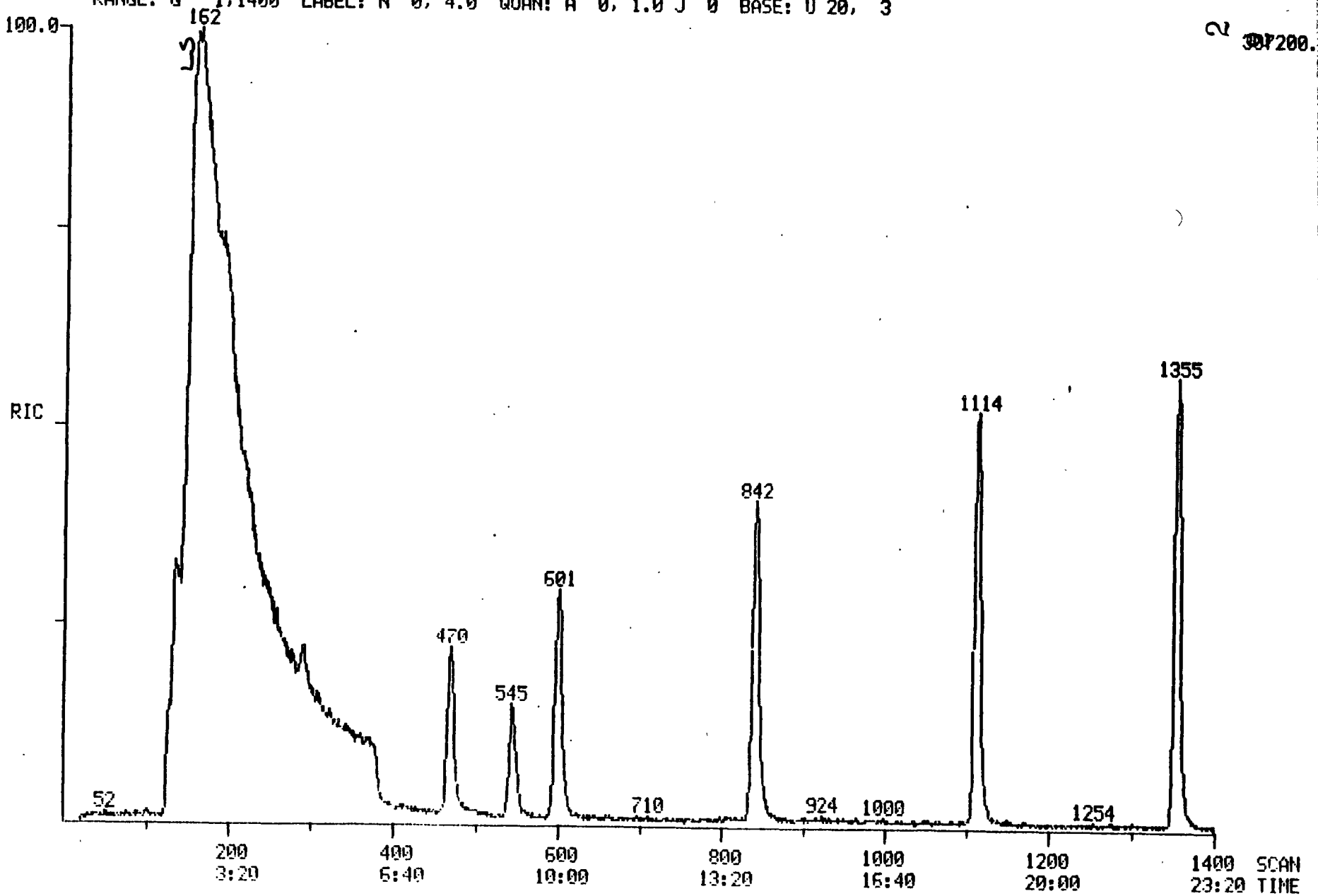
VOLATILE COMPOUNDS

LEVEL:	LOW
DATE EXT/PREP:	3/7/89
DATE ANALYZED:	03/07/89
CONC/DIL FACTOR:	5ML
PH:	N/A
% MOISTURE:	N/A
% MOISTURE (DECANTED):	N/A
STANDARD ID:	AB06881
SENSITIVITY ID:	AB06880

CAS #		UG/KG	
74-87-3	CHLOROMETHANE	10.	U
74-83-9	BROMOMETHANE	10.	U
75-01-4	VINYL CHLORIDE	10.	U
75-00-3	CHLOROETHANE	10.	U
75-09-2	METHYLENE CHLORIDE	4.	J
67-64-1	ACETONE	18.	
75-15-0	CARBON DISULFIDE	5.	U
75-35-4	1,1-DICHLOROETHENE	5.	U
75-34-3	1,1-DICHLOROETHANE	5.	U
156-60-5	TRANS-1,2-DICHLOROETHENE	5.	U
67-66-3	CHLOROFORM	5.	U
107-06-2	1,2-DICHLOROETHANE	5.	U
78-93-3	2-BUTANONE (MEK)	10.	U
71-55-6	1,1,1-TRICHLOROETHANE	5.	U
56-23-5	CARBON TETRACHLORIDE	5.	U
	VINYL ACETATE	10.	U
75-27-4	BROMODICHLOROMETHANE	5.	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	5.	U
78-87-5	1,2-DICHLOROPROPANE	5.	U
10061-02-5	CIS-1,3-DICHLOROPROPENE	5.	U
79-01-6	TRICHLOROETHENE	5.	U
124-48-1	DIBROMOCHLOROETHANE	5.	U
79-00-5	1,1,2-TRICHLOROETHANE	5.	U
71-43-2	BENZENE	5.	U
10061-02-6	TRANS-1,3-DICHLOROPROPENE	5.	U
75-25-2	BROMOFORM	5.	U
	2-HEXANONE	10.	U
108-10-1	4-METHYL-2-PENTANONE (MIBK)	10.	U
127-18-4	TETRACHLOROETHENE	5.	U
108-88-3	TOLUENE	5.	U
108-90-7	CHLOROBENZENE	5.	U
100-41-4	ETHYLBENZENE	5.	U
	STYRENE	5.	U
108-38-3	M&P-XYLENE	5.	U
108-38-3	O-XYLENE	5.	U
~~95-50-1~~	~~1,2-DICHLOROBENZENE~~	~~5.~~	~~U~~
~~541-73-1~~	~~1,3-DICHLOROBENZENE~~	~~5.~~	~~U~~

FORM I

RIC
03/07/89 11:42:00
DATA: AB06882 #1
CALI: AB06882 #2
SCANS 1 TO 1400
SAMPLE: VOA WATER, METHOD BLANK, VBLK, 5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS C3
RANGE: G 1,1400 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



Quantitation Report File: AB06882

Data: AB06882.TI
03/07/89 11:42:00
Sample: VOA WATER, METHOD BLANK, VBLK, 5ML, CVG
Conds.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS C3
Standard ID: AB06881 Instrument: 5100
Sensitivity ID: AB06880 Analyst: CVG Inst Cali: 3/7/89

AMOUNT=AREA * REF AMNT/(REF AREA * RESP FACT)
Resp. fac. from Library Entry

NO	NAME	
1	IS1	BROMOCHLOROMETHANE
2	IS2	1,4-DIFLUOROBENZENE
3	IS3	CHLOROBENZENE-D5
4	SS1	1,2-DICHLOROETHANE-D4
5	SS2	TOLUENE-D8
6	SS3	BROMOFLUOROBENZENE
7	45V	CHLOROMETHANE
8	46V	BROMOMETHANE
9	88V	VINYL CHLORIDE
10	16V	CHLOROETHANE
11	44V	METHYLENE CHLORIDE
12	13H	ACETONE
13	15H	CARBON DISULFIDE
14	29V	1,1-DICHLOROETHENE
15	13V	1,1-DICHLOROETHANE
16	30V	TRANS-1,2-DICHLOROETHENE
17	23V	CHLOROFORM
18	10V	1,2-DICHLOROETHANE
19	14H	2-BUTANONE
20	11V	1,1,1-TRICHLOROETHANE
21	6V	CARBON TETRACHLORIDE
22	19H	VINYL ACETATE
23	48V	BROMODICHLOROMETHANE
24	32V	1,2-DICHLOROPROPANE
25	33VC	TRANS-1,3-DICHLOROPROPENE
26	87V	TRICHLOROETHENE
27	51V	DIBROMOCHLOROMETHANE
28	14V	1,1,2-TRICHLOROETHANE
29	4V	BENZENE
30	33VT	CIS-1,3-DICHLOROPROPENE
31	47V	BROMOFORM
32	16H	2-HEXANONE
33	17H	4-METHYL-2-PENTANONE
34	85V	TETRACHLOROETHENE
35	15V	1,1,2,2-TETRACHLOROETHANE
36	86V	TOLUENE
37	7V	CHLOROBENZENE
38	38V	ETHYLBENZENE
39	18H	STYRENE
40	20H2	O-XYLENES

READY
2HID
I.L.S.

No	m/z	Scan	Time	Ref	RRT	Meth	Area(Hght)	Amount	%Tot
1	128	470	7:50	1	1.000	A BV	59752.	50.000 PPB*	15.30
2	114	601	10:01	2	1.000	A BB	347019.	50.000 PPB*	15.30
3	117	1114	18:34	3	1.000	A BV	388492.	50.000 PPB*	15.30
4	65	545	9:05	1	1.160	A BB	114587.	52.427 PPB**	16.05
5	98	842	14:02	3	0.756	A BB	380361.	49.882 PPB**	15.27
6	95	1355	22:35	3	1.216	A BB	292977.	51.823 PPB**	15.86
7	NOT	FOUND							
8	NOT	FOUND							
9	NOT	FOUND							
10	NOT	FOUND							
11	84	290	4:50	1	0.617	A BB	12744.	4.414 PPB	1.35
12	43	248	4:08	1	0.528	A BB	26430.	17.593 PPB	5.38
13	NOT	FOUND							
14	NOT	FOUND							
15	NOT	FOUND							
16	NOT	FOUND							
17	NOT	FOUND							
18	NOT	FOUND							
19	NOT	FOUND							
20	NOT	FOUND							
21	NOT	FOUND							
22	NOT	FOUND							
23	NOT	FOUND							
24	NOT	FOUND							
25	NOT	FOUND							
26	NOT	FOUND							
27	NOT	FOUND							
28	NOT	FOUND							
29	NOT	FOUND							
30	NOT	FOUND							
31	NOT	FOUND							
32	43	779	12:59	3	0.699	A BB	1080.	~~0.410 PPB~~ ND	0.13
33	NOT	FOUND							
34	NOT	FOUND							
35	NOT	FOUND							
36	92	856	14:16	3	0.768	A BB	1046.	~~0.198 PPB~~ ND	0.06
37	NOT	FOUND							
38	NOT	FOUND							
39	NOT	FOUND							
40	NOT	FOUND							

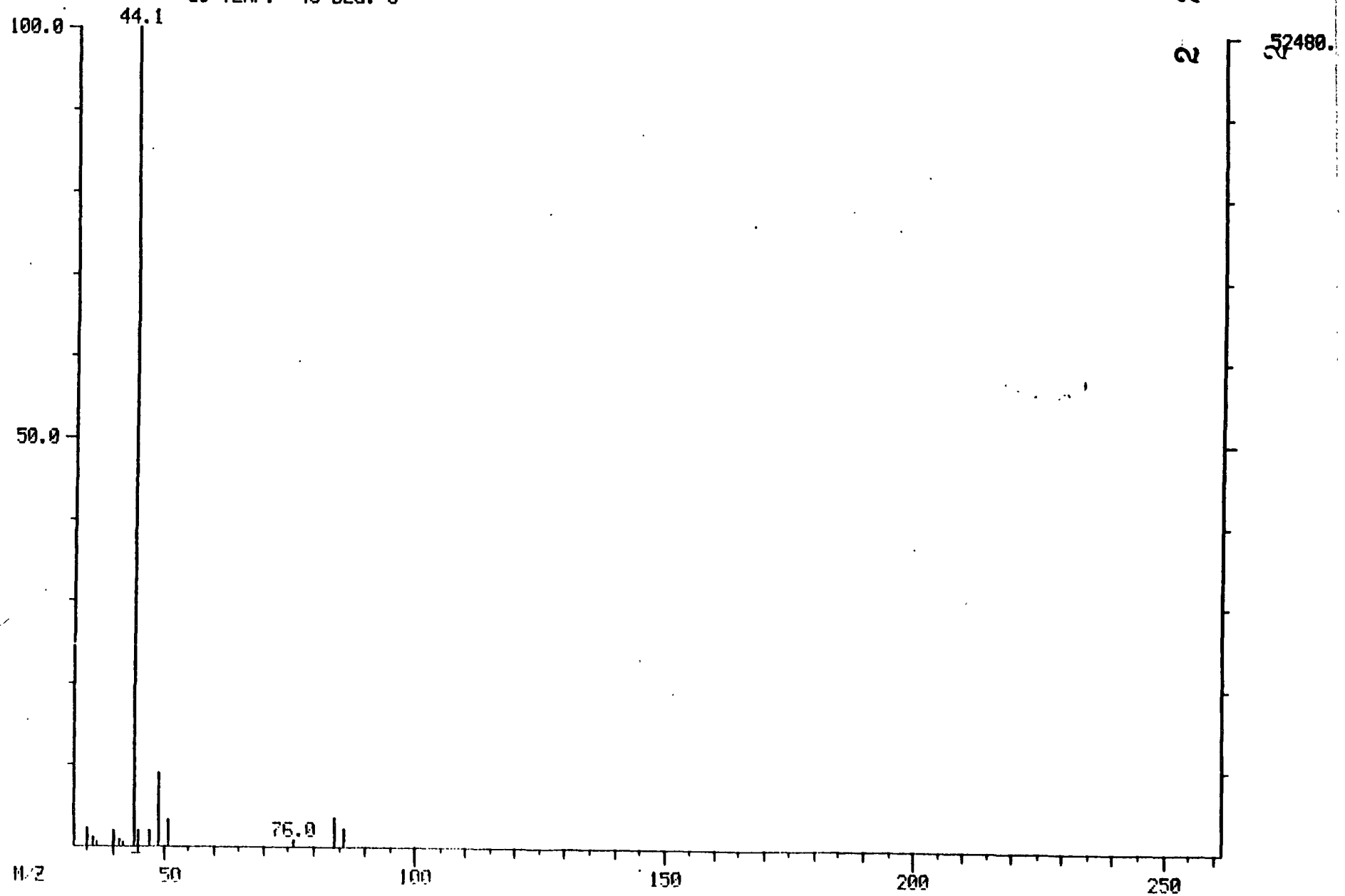
AB06852

No	Ret(L)	Ratio	RRT(L)	Ratio	Amnt	Amnt(L)	R. Fac	R. Fac(L)	Ratio
1	7:57	0.99	1.000	1.00	50.00	50.00	1.000	1.000	1.00
2	10:06	0.99	1.000	1.00	50.00	50.00	1.000	1.000	1.00
3	18:36	1.00	1.000	1.00	50.00	50.00	1.000	1.000	1.00
4	9:10	0.99	1.153	1.01	52.43	50.00	1.918	1.829	1.05
5	14:06	1.00	0.758	1.00	49.88	50.00	0.979	0.981	1.00
6	22:33	1.00	1.212	1.00	51.82	50.00	0.754	0.728	1.04
7	3:00		0.377			50.00		1.720	
8	3:23		0.426			50.00		1.809	
9	3:05		0.388			50.00		1.376	
10	3:22		0.423			50.00		1.922	
11	4:55	0.98	0.618	1.00	4.41	50.00	0.213	2.416	0.09
12	4:11	0.99	0.526	1.00	17.59	50.00	0.442	1.257	0.35
13	4:56		0.621			50.00		5.506	
14	4:15		0.535			50.00		1.956	
15	6:04		0.763			50.00		4.756	
16	5:18		0.667			50.00		2.148	
17	7:34		0.952			50.00		3.986	
18	9:26		1.187			50.00		3.039	
19	6:58		0.690			50.00		0.038	
20	8:26		0.835			50.00		0.546	
21	8:58		0.888			50.00		0.491	
22	6:57		0.688			50.00		0.502	
23	11:59		1.186			50.00		0.577	
24	11:21		1.124			50.00		0.633	
25	13:32		1.340			50.00		0.809	
26	10:51		1.074			50.00		0.563	
27	16:08		1.597			50.00		0.430	
28	15:27		1.530			50.00		0.374	
29	9:22		0.927			50.00		1.193	
30	15:02		1.488			50.00		0.345	
31	21:44		2.152			50.00		0.536	
32	13:01	1.00	0.700	1.00	0.41	50.00	0.003	0.339	0.01
33	13:11		0.709			50.00		0.919	
34	16:06		0.866			50.00		0.498	
35	22:31		1.211			50.00		0.454	
36	14:19	1.00	0.770	1.00	0.20	50.00	0.003	0.680	0.00
37	18:43		1.006			50.00		0.866	
38	18:55		1.017			50.00		0.410	
39	20:44		1.115			50.00		0.922	
40	20:33		1.105			50.00		0.540	

MASS SPECTRUM
03/07/89 11:42:00 + 4:50
SAMPLE: VOA WATER, METHOD BLANK, VBLK, 5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS C3
GC TEMP: 43 DEG. C

DATA: AB06882 #290
CALI: AB06882 #2

BASE M/Z: 44
RIC: 67840.



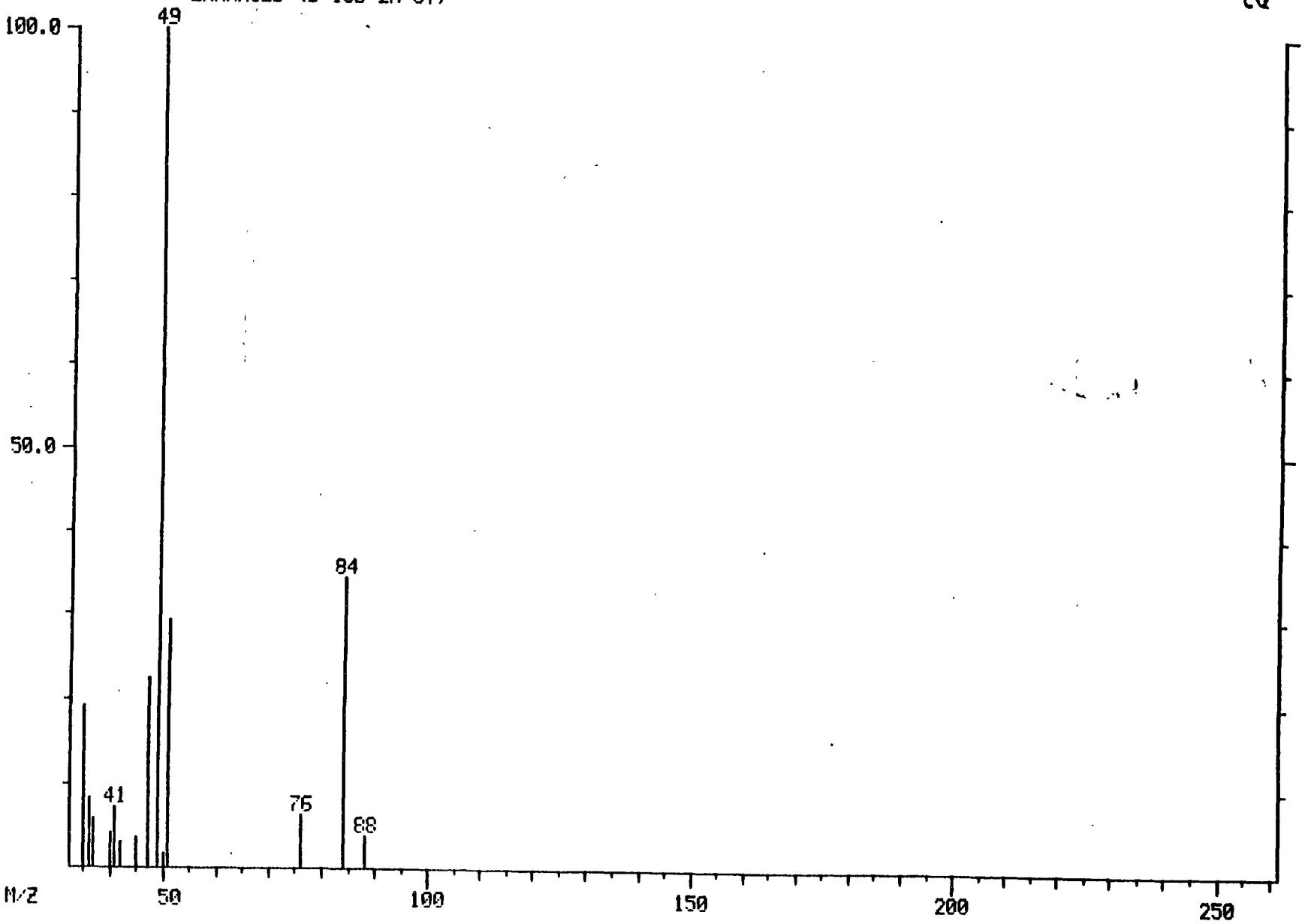
2

MASS SPECTRUM
03/07/89 11:42:00 + 4:50
SAMPLE: VOA WATER, METHOD BLANK, VBLK, 5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS C3
GC TEMP: 43 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AB06882 #290
CALI: AB06882 #2

BASE M/Z: [illegible]
RIC: [illegible]

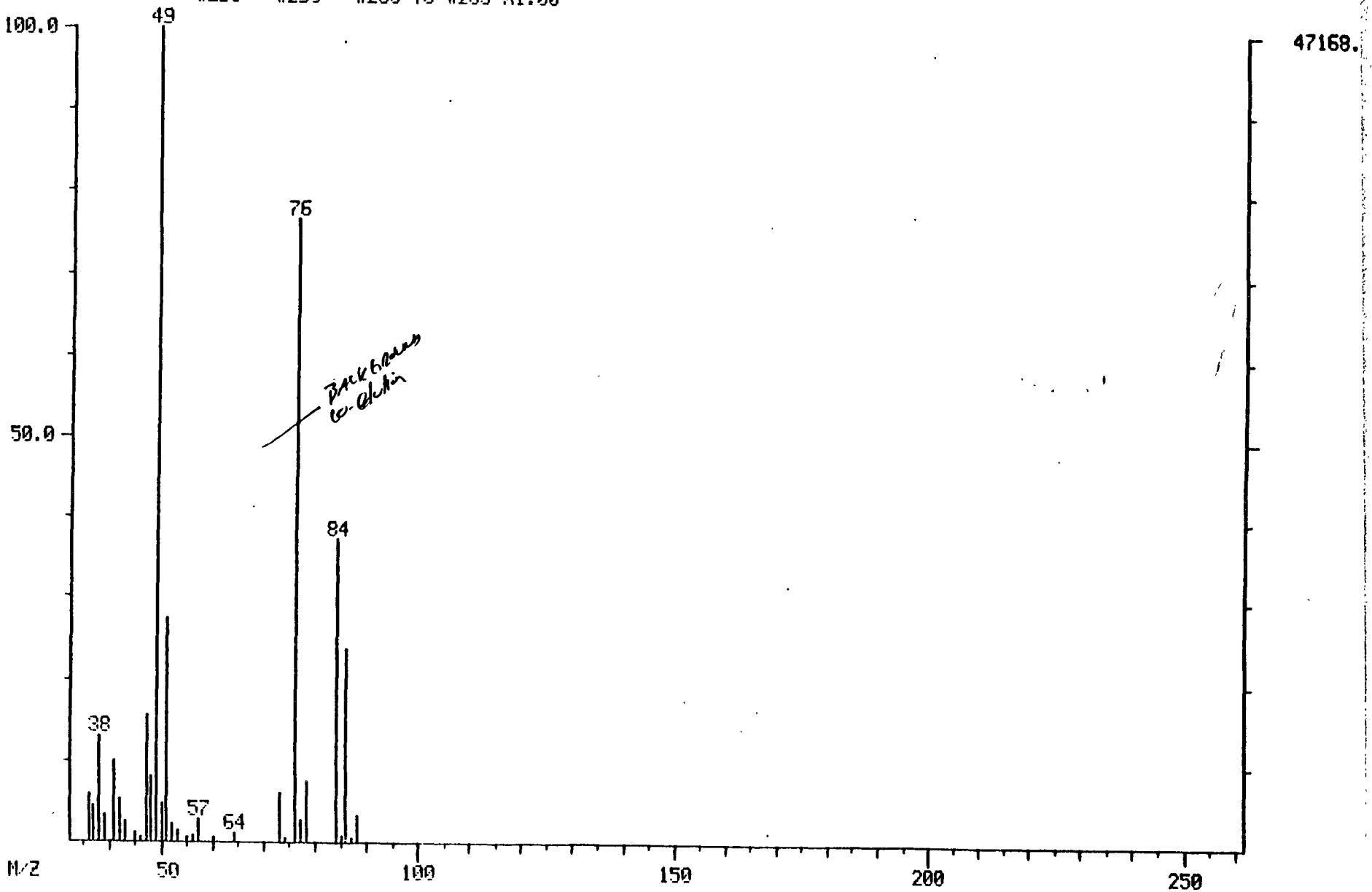
2



MASS SPECTRUM
03/07/89 10:41:00 + 4:55
SAMPLE: VOA WATER, STD#2776, VSTD50/300, 5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS C3
GC TEMP: 42 DEG. C
#295 - #296 - #280 TO #285 X1.00

DATA: AB06881 #295
CALI: AB06881 #2

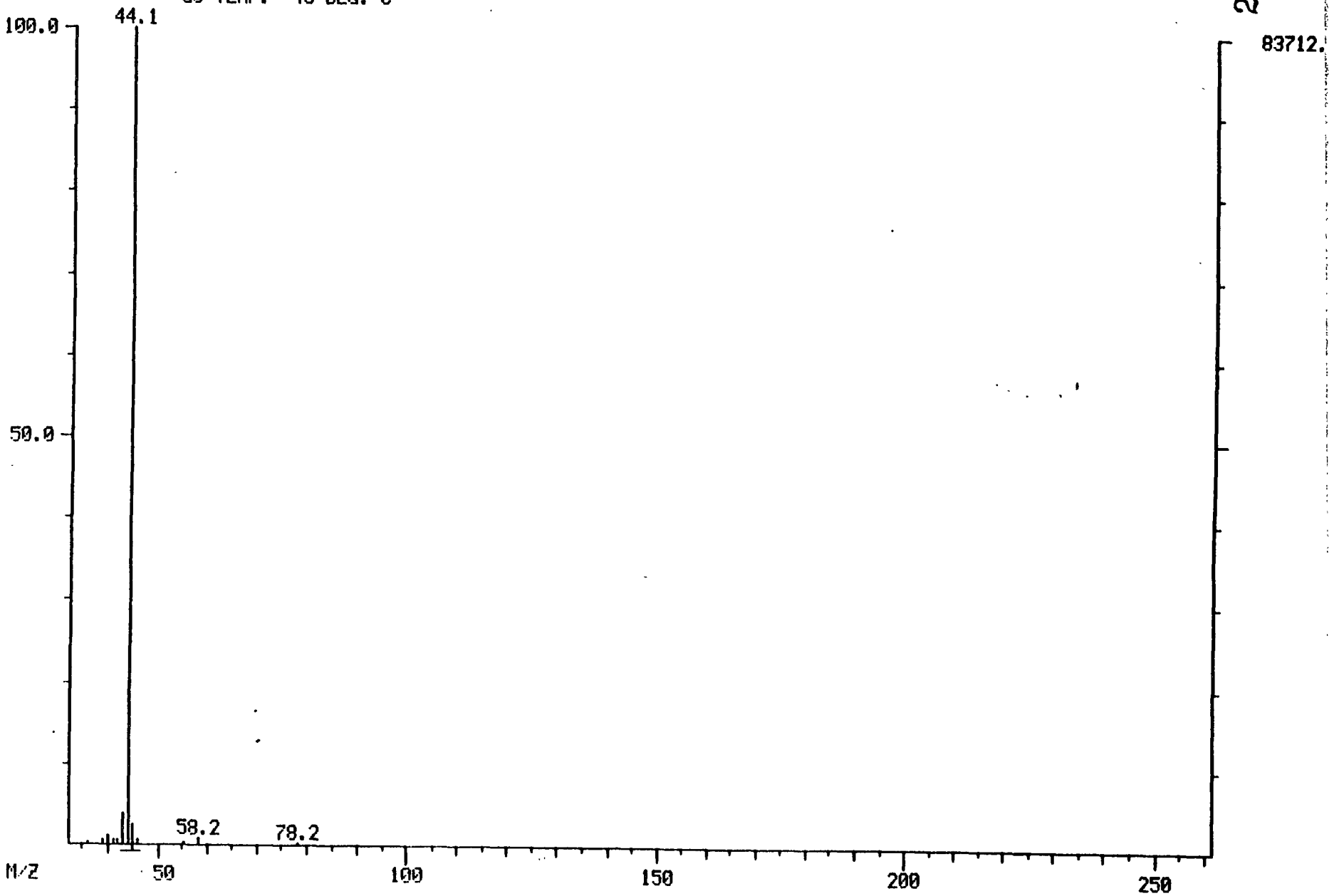
BASE M/Z: 49
RIC: 174848.



MASS SPECTRUM
03/07/89 11:42:00 + 4:08
SAMPLE: VOA WATER, METHOD BLANK, VBLK, 5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS C3
GC TEMP: 43 DEG. C

DATA: AB06882 #248
CALI: AB06882 #2

BASE M/Z: 44
RIC: 92672.

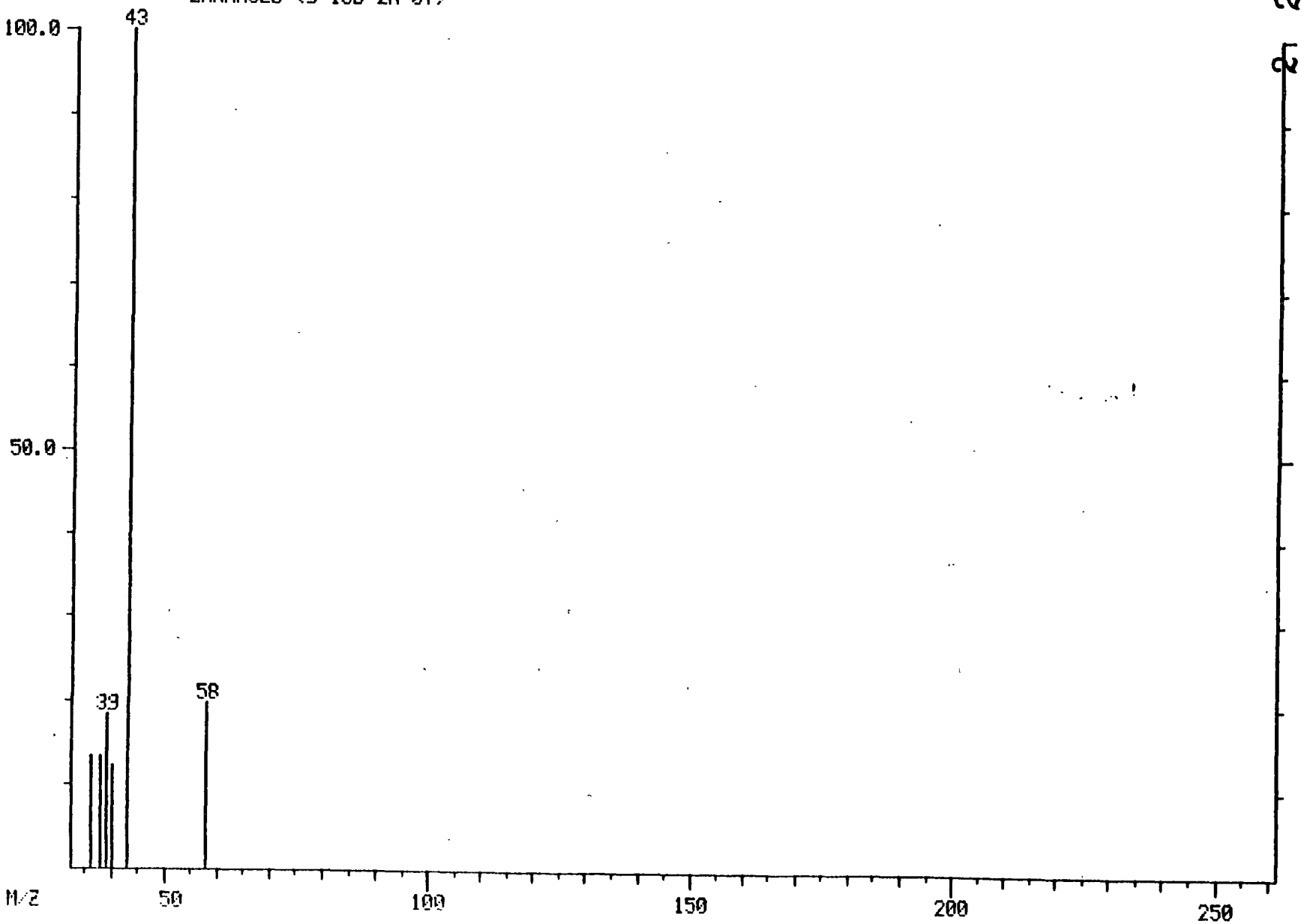


2 241 .5

MASS SPECTRUM
03/07/89 11:42:00 + 4:11
SAMPLE: VOA WATER, METHOD BLANK, VBLK, 5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS C3
GC TEMP: 43 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AB06882 #251
CALI: AB06882 #2

BASE M/Z: 43
RIC: 3108.



242

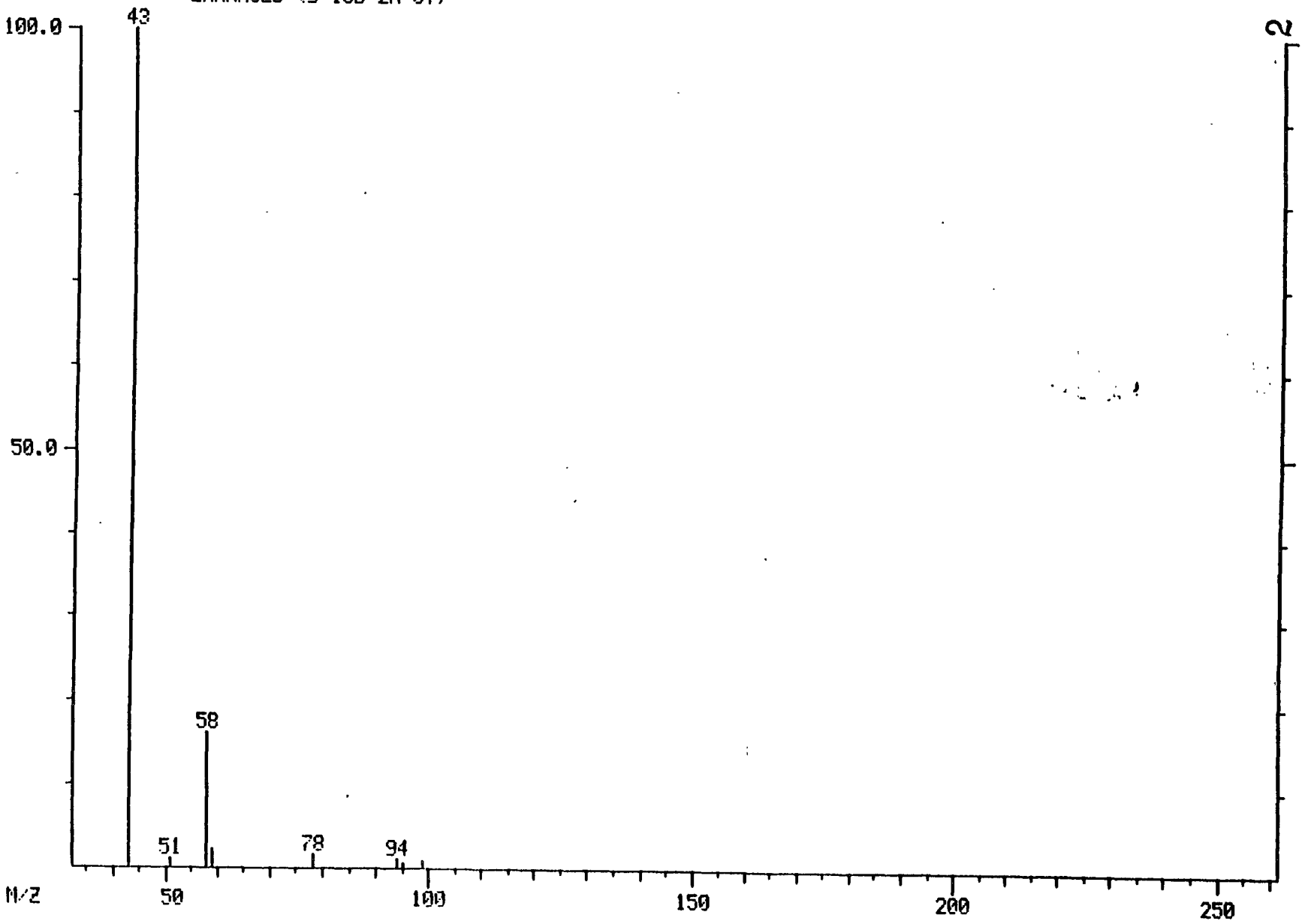
1762.

MASS SPECTRUM
03/07/89 10:41:00 + 4:11
SAMPLE: VOA WATER, STD#2776, VSTD50/300, 5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS C3
GC TEMP: 42 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AB06881 #251
CALI: AB06881 #2

BASE M/Z: 43
RIC: 9600.

243



2

7760.

Library Search Data: AB06882 # 162 Base m/z: 44
03/07/89 11:42:00 + 2:42 Cali: AB06882 # 2 RIC: 18879.
Sample: VOA WATER, METHOD BLANK, VBLK, 5ML, CVG
Conds.: EA LABS, COLUMN: VOCOL-30M, DESC: ZZ, INST: GC/MS C3
Enhanced (S 15B 2N OT)

38761 spectra in LIBRARYNB searched for maximum PURITY
83 matched at least 3 of the 5 largest peaks in the unknown

Rank	In.	Name
1	4864	HYDRAZINE, METHYL-, OXALATE (1:1)
2	31	CARBON DIOXIDE
3	21989	CYCLOPROPANE, 1,1-DIBROMO-2-CHLORO-2-FLUORO-
4	7258	METHANE, TRINITRO-
5	36	NITROGEN OXIDE (N2O)

Rank	Formula	M. Wt	B. Pk	Purity	Fit	RFit
1	C3. H8. O4. N2	136	44	840	851	893
2	C. O2	44	44	809	889	809
3	C3. H2. CL. BR2 F	250	44	808	818	837
4	C. H. O6. N3	151	30	804	806	900
5	O. N2	44	44	797	876	797

Rank	Ret. Time	B. P. Int.	US. Par. 1	US. Par. 2	C. A. S. #
1	—	—	—	—	32064-64-5
2	—	—	—	—	124-38-9
3	—	—	—	—	24071-57-6
4	—	—	—	—	517-25-9
5	—	—	—	—	10024-97-2

51328

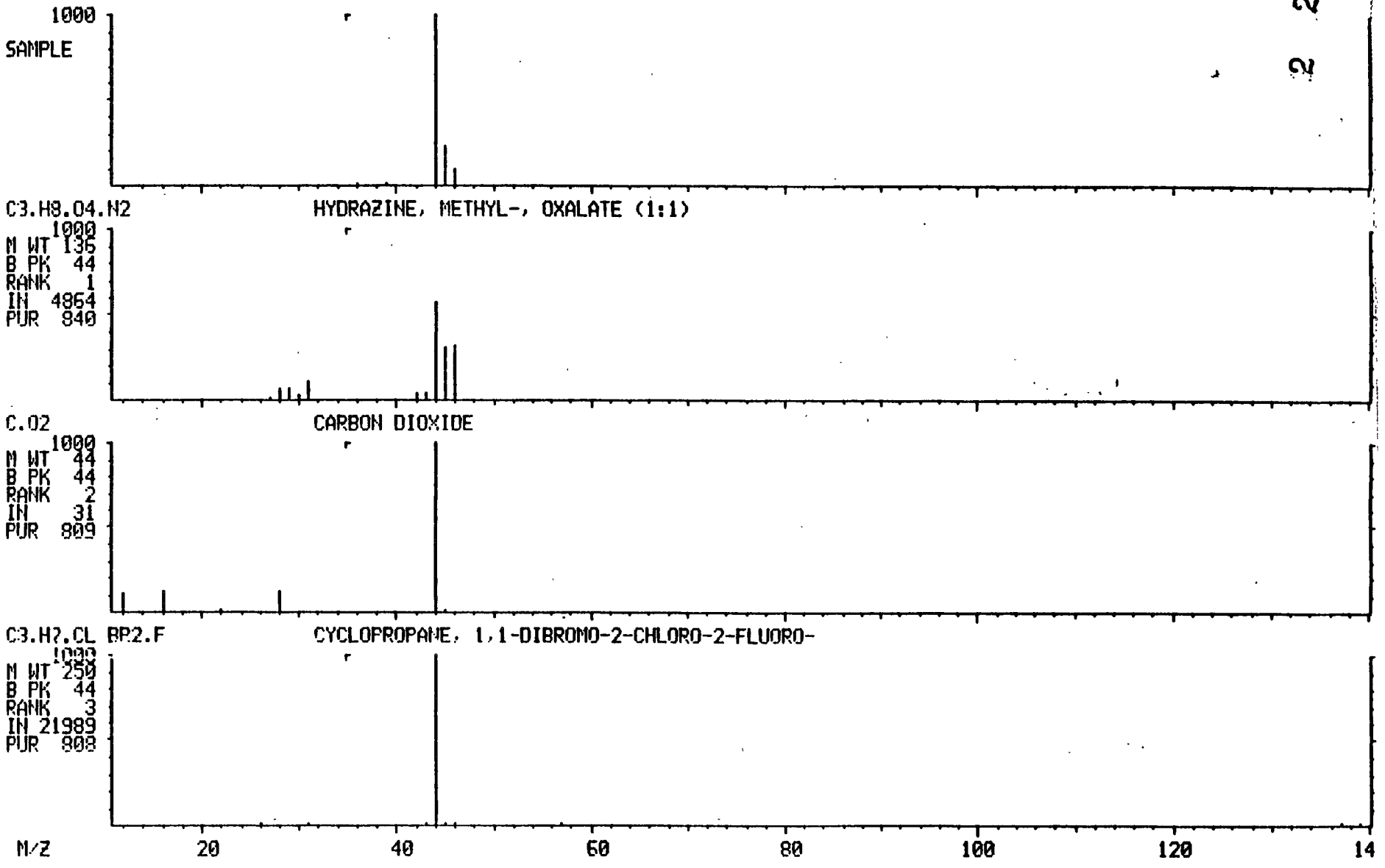
18.4

LIBRARY SEARCH
03/07/89 11:42:00 + 2:42
SAMPLE: VOA WATER, METHOD BLANK, VBLK, 5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS C3
ENHANCED (S 15B 2N 0T)

DATA: AB06882 # 162
CALI: AB06882 # 2

BASE M/Z: 44
RIC: 18879.

2 245



1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK2

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PRW-2,3-6

Matrix: (soil/water) SOIL Lab Sample ID: METHOD BLANK

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE957

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 2/27/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

FORM I VOA 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK2

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PRW-2,S-6

Matrix: (soil/water) SOIL Lab Sample ID: METHOD BLANK

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EE957

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 2/27/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Volatiles Detected			
2.				
3.				
4.				
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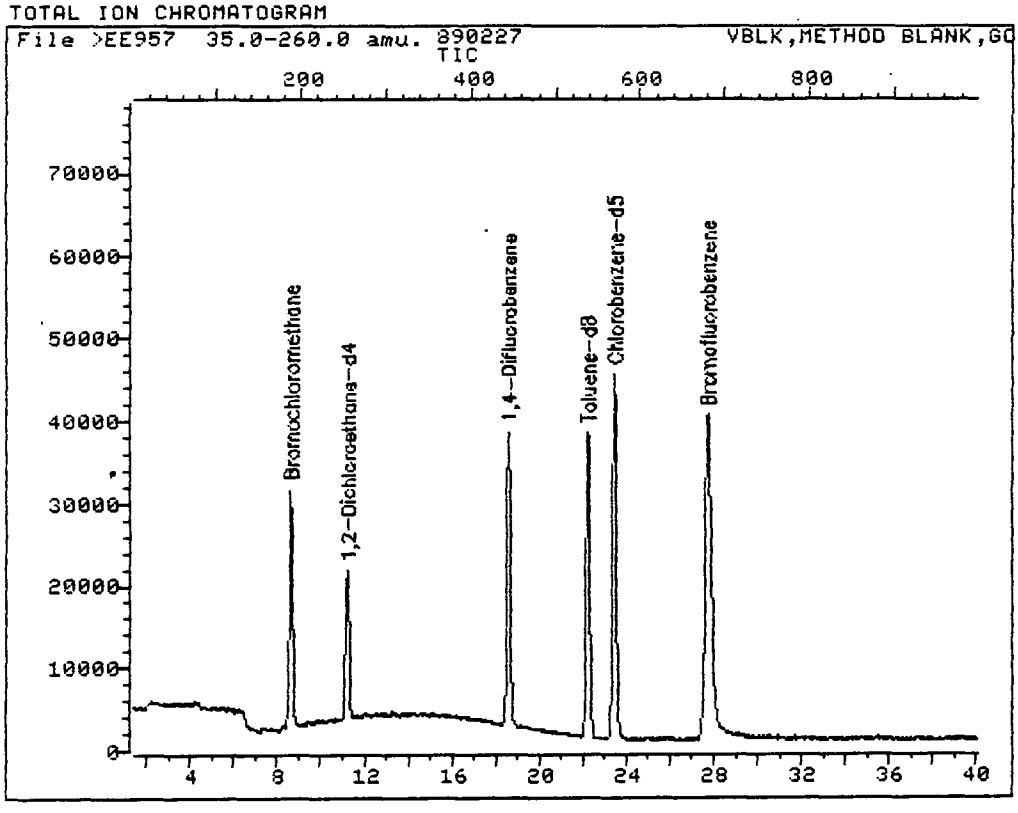
30.				

TOTAL ION CHROMATOGRAM



Data File: >EE957::D2 Quant Output File: ^EE957::QT
Name: 890227
Misc: VBLK,METHOD BLANK,GC/MS E5

Id File: ALL::SC
Title: EA Priority Pollutant IDfile
Last Calibration: 890227 12:35

Operator ID: CARL
Quant Time: 890227 13:28
Injected at: 890227 12:47

QUANT REPORT

Operator ID: CARL Quant Rev: 6 Quant Time: 890227 13:28
Output File: ^EE957::QT Injected at: 890227 12:47
Data File: >EE957::D2 Dilution Factor: 1.00000
Name: 890227
Misc: VBLK,METHOD BLANK,GC/MS E5

ID File: ALL::SC
Title: EA Priority Pollutant IDfile
Last Calibration: 890227 12:35

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.66	128.0	45363	50.00	ug/L	90
18)	1,2-Dichloroethane-d4	11.25	65.0	70193	46.89	ug/L	98
20)	*1,4-Difluorobenzene	18.58	114.0	176446	50.00	ug/L	90
38)	*Chlorobenzene-d5	23.47	117.0	177034	50.00	ug/L	95
44)	Toluene-d8	22.23	98.0	173836	50.55	ug/L	98
53)	Bromofluorobenzene	27.73	95.0	150196	49.84	ug/L	88

* Compound is ISTD

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PRW-2,S-6

Matrix: (soil/water) SOIL Lab Sample ID: METHOD BLANK

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AC764

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 3/ 1/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

FORM I VOA 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PRW-2,S-6

Matrix: (soil/water) SOIL Lab Sample ID: METHOD BLANK

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AC764

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 3/ 1/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 1

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

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	109875	Methane, dimethoxy- (8CI9CI)	9.65	22.	
2.					
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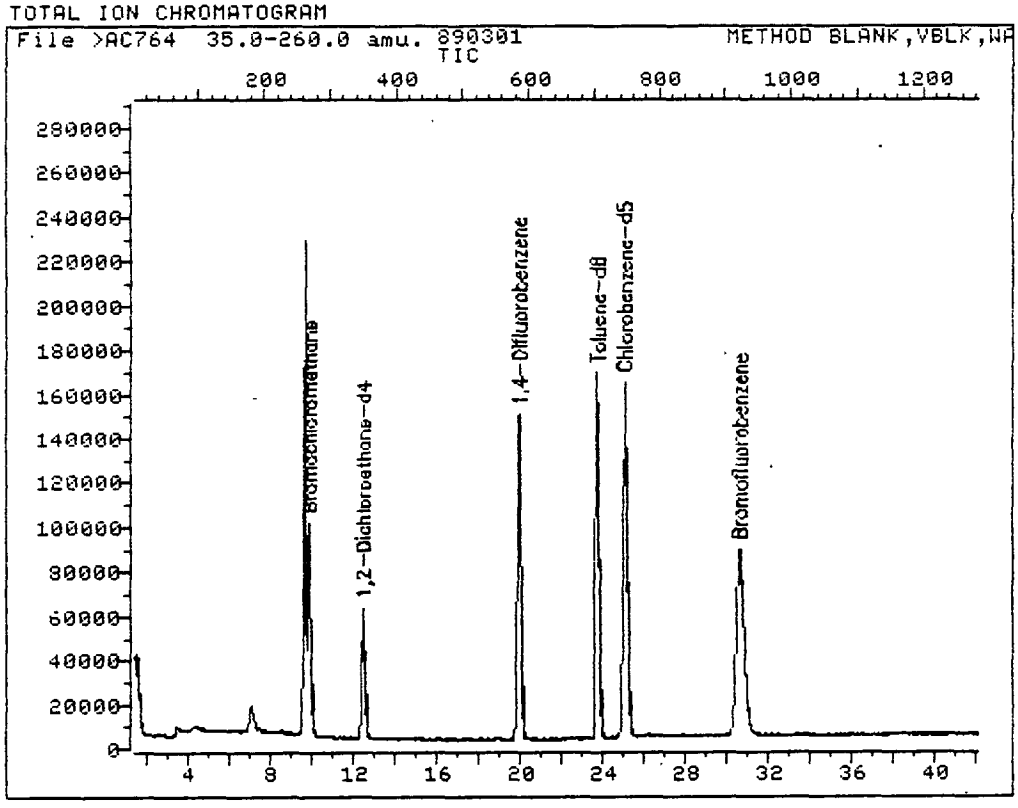
TOTAL ION CHROMATOGRAM



Data File: >AC764::D2 Quant Output File: ^AC764::QT
Name: 890301
Misc: METHOD BLANK,VBLK,WATER,5ML,GC/MS A1-CVG

Id File: AVOA::BD
Title: CLP PROTOCOL 5PT. CALIBRATION, GC/MS A1
Last Calibration: 890301 15:05

Operator ID: TONY
Quant Time: 890301 16:34
Injected at: 890301 15:46

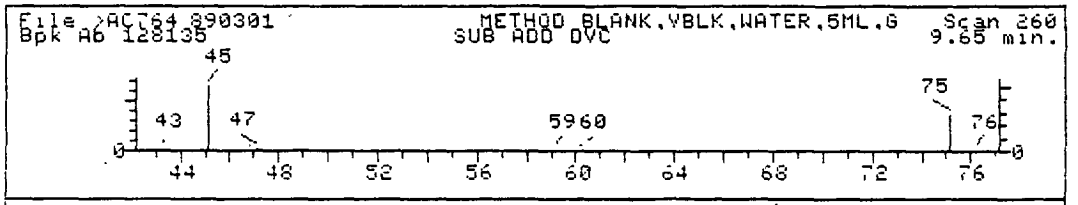
QUANT REPORT

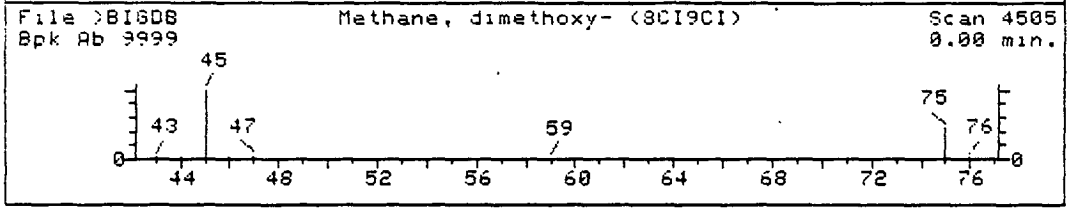
Operator ID: TONY Quant Rev: 6 Quant Time: 890301 16:34
Output File: ^AC764::QT Injected at: 890301 15:46
Data File: >AC764::D2 Dilution Factor: 1.00000
Name: 890301
Misc: METHOD BLANK,VBLK,WATER,5ML,GC/MS A1-CVG

ID File: AVOA::BD
Title: CLP PROTOCOL 5PT. CALIBRATION, GC/MS A1
Last Calibration: 890301 15:05

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	9.91	128.0	127050M	50.00	UG/L	89
13)	1,2-Dichloroethane-d4	12.50	65.0	189787	42.49	UG/L	77
15)	*1,4-Difluorobenzene	19.95	114.0	673094M	50.00	UG/L	91
29)	*Chlorobenzene-d5	25.05	117.0	634518	50.00	UG/L	94
35)	Toluene-d8	23.75	98.0	729383	51.04	UG/L	94
40)	Bromofluorobenzene	30.63	95.0	458444	48.56	UG/L	91

* Compound is ISTD





Retention time = 9.65
Area= 2266227. Tentative Concentration = 22.00

1 Methane, dimethoxy- (8CI9CI) 76 C3H8O2

Sample file: >AC764 Spectrum #: 260
Search speed: 1 Tilting option: S No. of ion ranges searched: 46

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	70*	109875	4505	"BIGDB	37	46	1	0	91	7	42	19

ORGANICS ANALYSIS DATA SHEET SAMPLE #: VBLK

LABORATORY: EA ENG.
LABORATORY ID: AB06850
MATRIX: WATER

CASE #/SAS #:
QC REPORT #: 2/27/89
CONTRACT #: 10388.03
DATE RECEIVED: 3/1/89

DATA RELEASE AUTHORIZED BY: _____

VOLATILE COMPOUNDS

LEVEL:	LOW
DATE EXT/PREP:	3/3/89
DATE ANALYZED:	03/03/89
CONC/DIL FACTOR:	5ML
PH:	N/A
% MOISTURE:	N/A
% MOISTURE (DECANTED):	N/A
STANDARD ID:	AB06849
SENSITIVITY ID:	AB06848

CAS #		UG/L	
74-87-3	CHLOROMETHANE	10.	U
74-83-9	BROMOMETHANE	10.	U
75-01-4	VINYL CHLORIDE	10.	U
75-00-3	CHLOROETHANE	10.	U
75-09-2	METHYLENE CHLORIDE	3.	J
67-64-1	ACETONE	21.	
75-15-0	CARBON DISULFIDE	5.	U
75-35-4	1,1-DICHLOROETHENE	5.	U
75-34-3	1,1-DICHLOROETHANE	5.	U
156-60-5	TRANS-1,2-DICHLOROETHENE	5.	U
67-66-3	CHLOROFORM	5.	U
107-06-2	1,2-DICHLOROETHANE	5.	U
78-93-3	2-BUTANONE (MEK)	10.	U
71-55-6	1,1,1-TRICHLOROETHANE	5.	U
56-23-5	CARBON TETRACHLORIDE	5.	U
	VINYL ACETATE	10.	U
75-27-4	BROMODICHLOROMETHANE	5.	U
79-34-5	1,1,2,2-TETRACHLOROETHANE	5.	U
78-87-5	1,2-DICHLOROPROPANE	5.	U
10061-02-5	CIS-1,3-DICHLOROPROPENE	5.	U
79-01-6	TRICHLOROETHENE	5.	U
124-48-1	DIBROMOCHLOROETHANE	5.	U
79-00-5	1,1,2-TRICHLOROETHANE	5.	U
71-43-2	BENZENE	5.	U
10061-02-6	TRANS-1,3-DICHLOROPROPENE	5.	U
75-25-2	BROMOFORM	5.	U
	2-HEXANONE	10.	U
108-10-1	4-METHYL-2-PENTANONE (MIBK)	10.	U
127-18-4	TETRACHLOROETHENE	5.	U
108-88-3	TOLUENE	5.	U
108-90-7	CHLOROBENZENE	5.	U
100-41-4	ETHYLBENZENE	5.	U
	STYRENE	5.	U
108-38-3	M&P-XYLENE	5.	U
108-38-3	O-XYLENE	5.	U
~~95-50-1~~	~~1,2-DICHLOROBENZENE~~	~~5.~~	~~U~~
~~541-73-1~~	~~1,3-DICHLOROBENZENE~~	~~5.~~	~~U~~

FORM I

ORGANICS ANALYSIS DATA SHEET SAMPLE #: VBLK

LABORATORY: EA ENG.
CASE #/SAS #:

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	Scan	Estimated Conc(J)
1.	124-38-9	CARBON DIOXIDE	SOIL	160	49
2.					
3.					
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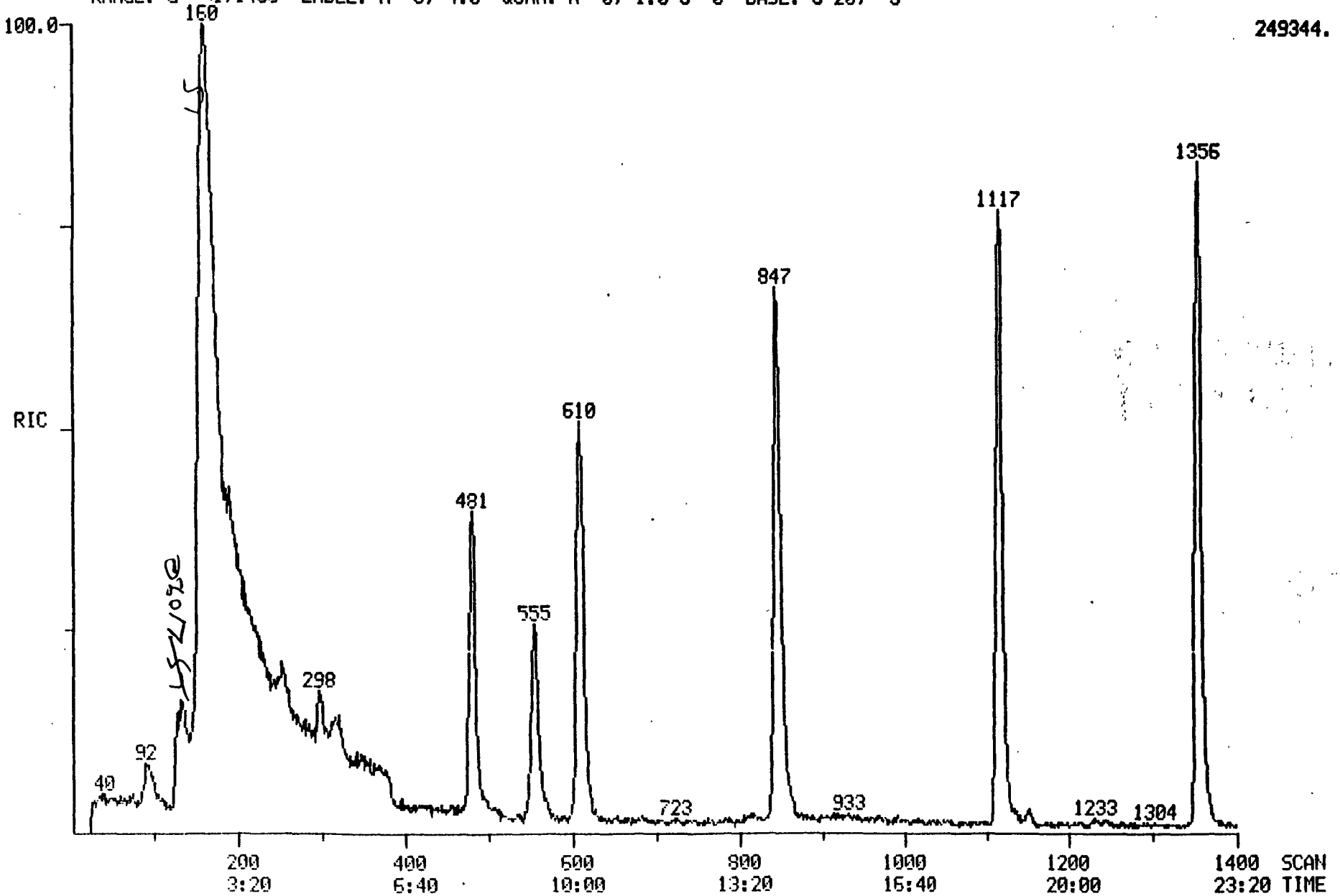
FORM I, PART B

RIC DATA: AB06850 #1 SCANS 1 TO 1400
03/03/89 11:22:00 CALI: AB06850 #2
SAMPLE: VOA WATER, METHOD BLANK, VBLK, 5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS-C3
RANGE: G 1,1400 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

2 257



Quantitation Report File: AB06850

Data: AB06850.TI
03/03/89 11:22:00
Sample: VOA WATER, METHOD BLANK, VBLK, 5ML, CVG
Conds.: EA LABS, COLUMN: VOCOL-30M, DESC: ZZ, INST: GC/MS-C3
Standard ID: AB06849 Instrument: 5100
Sensitivity ID: AB06848 Analyst: CVG Inst Cali: 3/3/89

AMOUNT=AREA * REF AMNT/(REF AREA * RESP FACT)
Resp. fac. from Library Entry

NO	NAME	
1	IS1	BROMOCHLOROMETHANE
2	IS2	1,4-DIFLUOROBENZENE
3	IS3	CHLOROBENZENE-D5
4	SS1	1,2-DICHLOROETHANE-D4
5	SS2	TOLUENE-D8
6	SS3	BROMOFLUOROBENZENE
7	45V	CHLOROMETHANE
8	46V	BROMOMETHANE
9	88V	VINYL CHLORIDE
10	16V	CHLOROETHANE
11	44V	METHYLENE CHLORIDE
12	13H	ACETONE
13	15H	CARBON DISULFIDE
14	29V	1,1-DICHLOROETHENE
15	13V	1,1-DICHLOROETHANE
16	30V	TRANS-1,2-DICHLOROETHENE
17	23V	CHLOROFORM
18	10V	1,2-DICHLOROETHANE
19	14H	2-BUTANONE
20	11V	1,1,1-TRICHLOROETHANE
21	6V	CARBON TETRACHLORIDE
22	19H	VINYL ACETATE
23	48V	BROMODICHLOROMETHANE
24	32V	1,2-DICHLOROPROPANE
25	33VC	TRANS-1,3-DICHLOROPROPENE
26	87V	TRICHLOROETHENE
27	51V	DIBROMOCHLOROMETHANE
28	14V	1,1,2-TRICHLOROETHANE
29	4V	BENZENE
30	33VT	CIS-1,3-DICHLOROPROPENE
31	47V	BROMOFORM
32	16H	2-HEXANONE
33	17H	4-METHYL-2-PENTANONE
34	85V	TETRACHLOROETHENE
35	15V	1,1,2,2-TETRACHLOROETHANE
36	86V	TOLUENE
37	7V	CHLOROBENZENE
38	38V	ETHYLBENZENE
39	18H	STYRENE
40	20H2	O-XYLENES

REAOY
2 HITS
1 2LS

No	m/z	Scan	Time	Ref	RRT	Meth	Area(Hght)	Amount	%Tot
1	128	481	8:01	1	1.000	A BB	78837.	50.000 PPB*	15.27
2	114	610	10:10	2	1.000	A BB	445106.	50.000 PPB*	15.27
3	117	1116	18:36	3	1.000	A BB	442429.	50.000 PPB*	15.27
4	65	555	9:15	1	1.154	A BB	170203.	46.443 PPB**	14.19
5	98	847	14:07	3	0.759	A BB	448315.	51.907 PPB**	15.86
6	95	1356	22:36	3	1.215	A BB	333228.	52.065 PPB**	15.90
7	50	195	3:15	1	0.405	A BB	2941.	~~1.577 PPB~~ ND	0.48
8	NOT	FOUND							
9	NOT	FOUND							
10	NOT	FOUND							
11	84	297	4:57	1	0.617	A BB	10657.	3.100 PPB	0.95
12	43	255	4:15	1	0.530	A BB	54850.	21.362 PPB	6.53
13	NOT	FOUND							
14	NOT	FOUND							
15	NOT	FOUND							
16	NOT	FOUND							
17	NOT	FOUND							
18	NOT	FOUND							
19	NOT	FOUND							
20	NOT	FOUND							
21	NOT	FOUND							
22	NOT	FOUND							
23	NOT	FOUND							
24	NOT	FOUND							
25	NOT	FOUND							
26	NOT	FOUND							
27	NOT	FOUND							
28	NOT	FOUND							
29	NOT	FOUND							
30	NOT	FOUND							
31	NOT	FOUND							
32	43	755	12:35	3	0.677	A BB	932.	~~0.284 PPB~~ ND	0.09
33	NOT	FOUND							
34	164	969	16:09	3	0.868	A BB	583.	~~0.142 PPB~~ ND	0.04
35	NOT	FOUND							
36	NOT	FOUND							
37	NOT	FOUND							
38	NOT	FOUND							
39	104	1244	20:44	3	1.115	A BB	2583.	~~0.297 PPB~~ ND	0.09
40	106	1234	20:34	3	1.106	A BB	1136.	~~0.218 PPB~~ ND	0.07

AB06850

No	Ret(L)	Rati	RRT(L)	Ratio	Amnt	Amnt(L)	R. Fac	R. Fac(L)	Ratio
1	7:50	1.02	1.000	1.00	50.00	50.00	1.000	1.000	1.00
2	10:01	1.01	1.000	1.00	50.00	50.00	1.000	1.000	1.00
3	18:34	1.00	1.000	1.00	50.00	50.00	1.000	1.000	1.00
4	9:06	1.02	1.162	0.99	46.44	50.00	2.159	2.324	0.93
5	14:01	1.01	0.755	1.01	51.91	50.00	1.013	0.976	1.04
6	22:33	1.00	1.215	1.00	52.06	50.00	0.753	0.723	1.04
7	2:57	1.10	0.377	1.08	1.58	50.00	0.037	1.183	0.03
8	3:25		0.436			50.00		1.822	
9	3:06		0.396			50.00		1.780	
10	3:22		0.430			50.00		1.917	
11	4:50	1.02	0.617	1.00	3.10	50.00	0.135	2.180	0.06
12	4:08	1.03	0.528	1.00	21.36	50.00	0.696	1.628	0.43
13	4:52		0.621			50.00		5.996	
14	4:12		0.536			50.00		1.828	
15	5:56		0.757			50.00		5.135	
16	5:13		0.666			50.00		2.120	
17	7:27		0.951			50.00		3.958	
18	9:19		1.189			50.00		3.576	
19	6:54		0.689			50.00		0.034	
20	8:17		0.827			50.00		0.561	
21	8:51		0.884			50.00		0.498	
22	6:53		0.687			50.00		0.440	
23	11:54		1.188			50.00		0.617	
24	11:17		1.126			50.00		0.643	
25	13:28		1.344			50.00		0.863	
26	10:45		1.073			50.00		0.570	
27	16:03		1.602			50.00		0.437	
28	15:23		1.536			50.00		0.361	
29	9:17		0.927			50.00		1.251	
30	14:59		1.496			50.00		0.379	
31	21:42		2.166			50.00		0.454	
32	12:56	0.97	0.697	0.97	0.28	50.00	0.002	0.372	0.01
33	13:08		0.707			50.00		0.870	
34	16:04	1.01	0.865	1.00	0.14	50.00	0.001	0.464	0.00
35	22:29		1.211			50.00		0.399	
36	14:15		0.768			50.00		0.736	
37	18:40		1.005			50.00		0.894	
38	18:55		1.019			50.00		0.453	
39	20:42	1.00	1.115	1.00	0.30	50.00	0.006	0.984	0.01
40	20:31	1.00	1.105	1.00	0.22	50.00	0.003	0.589	0.00

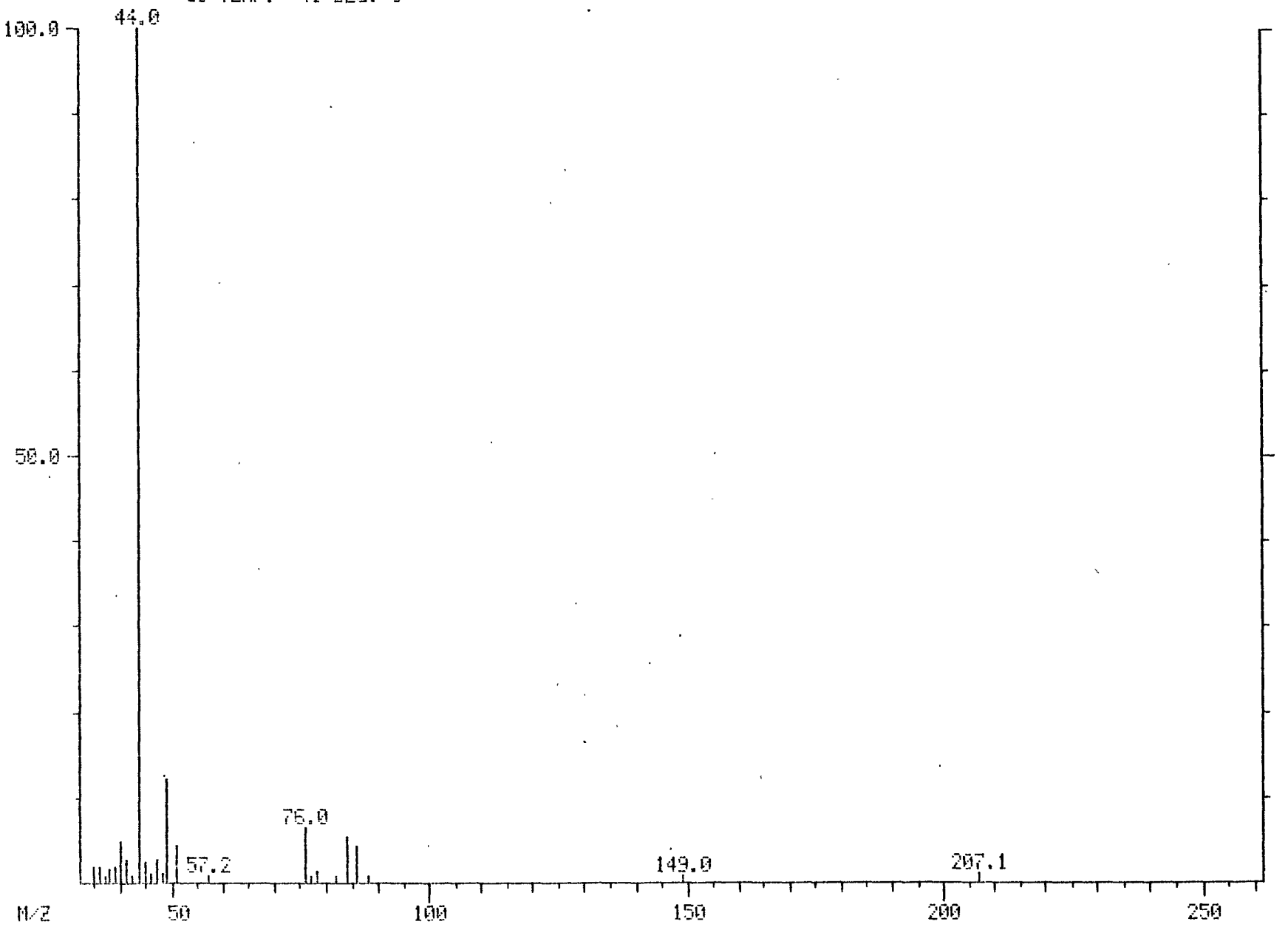
A006650

MASS SPECTRUM
03/03/89 11:22:00 + 4:57
SAMPLE: VOA WATER, METHOD BLANK, VBLK, 5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS-C3
GC TEMP: 41 DEG. C

DATA: AB06850 #237
CALI: AB06850 #2

BASE M/Z: 44
RIC: 43456.

261

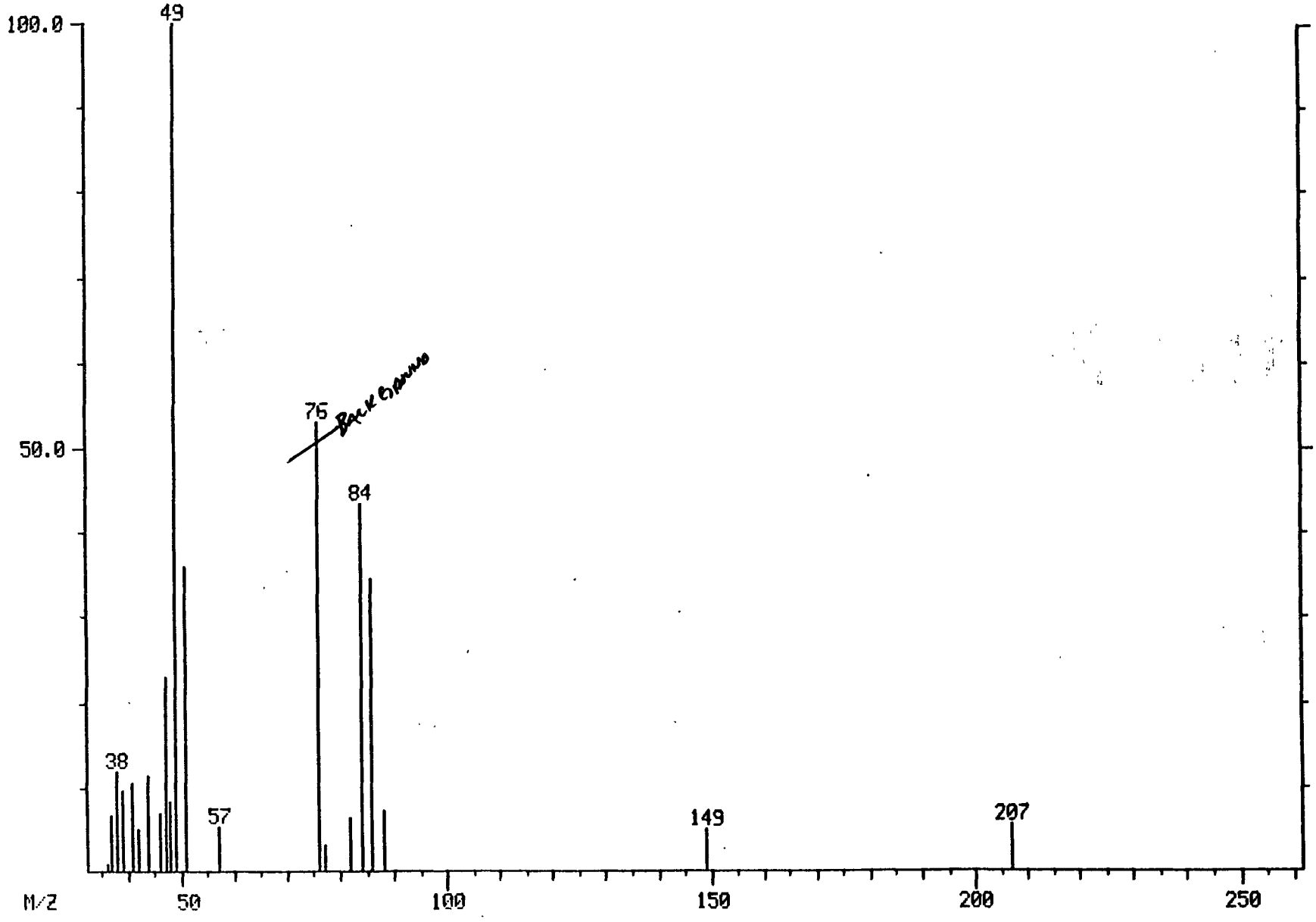


MASS SPECTRUM
03/03/89 11:22:00 + 4:57
SAMPLE: VOA WATER, METHOD BLANK, VBLK, 5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS-C3
GC TEMP: 41 DEG. C
#297 - #287 TO #291 X1.00

DATA: AB06850 #297
CALI: AB06850 #2

BASE M/Z: 49
RIC: 12752.

2 262

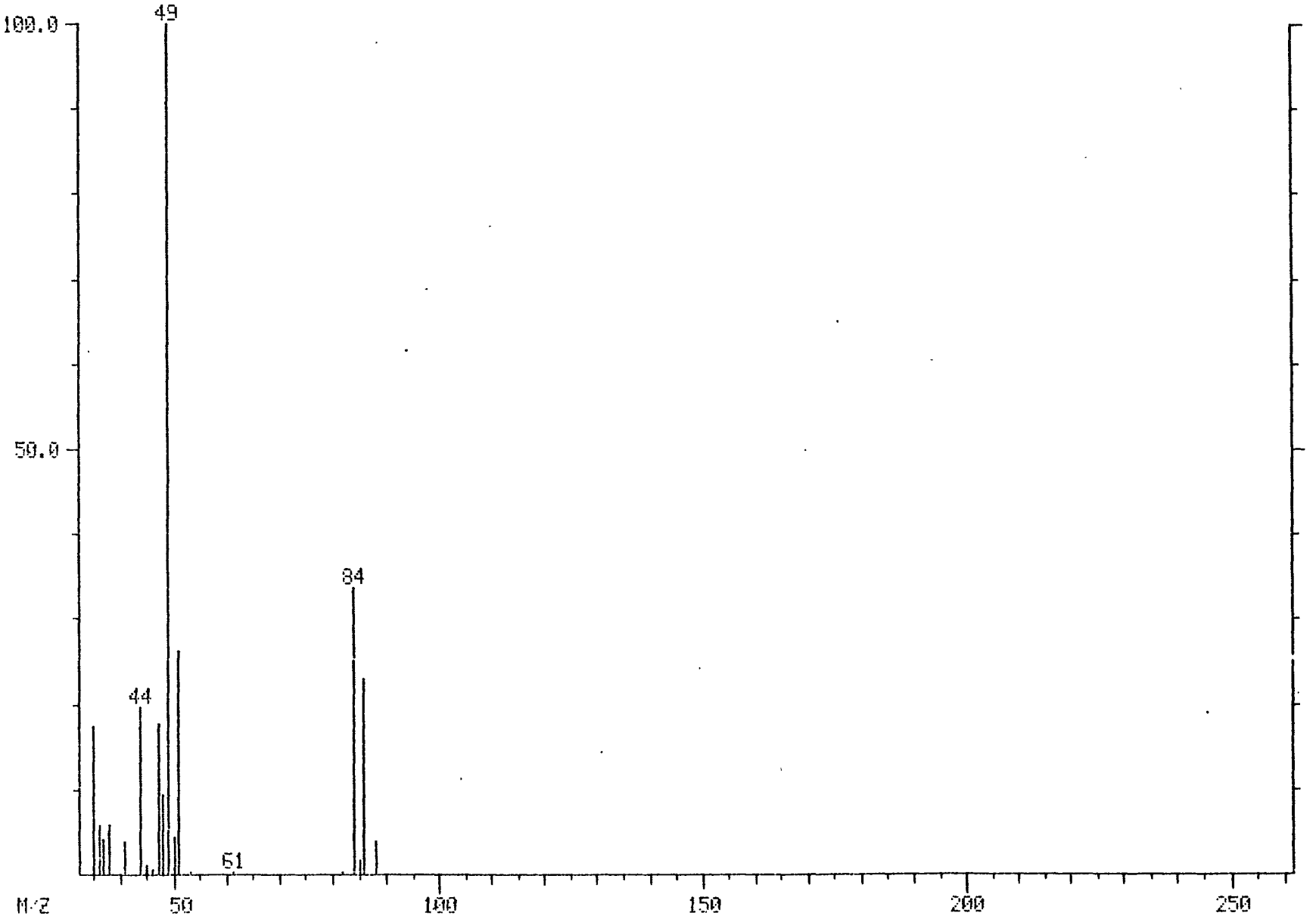


MASS SPECTRUM
03/03/89 10:15:00 + 4:50
SAMPLE: VOA WATER, STD#2771, VSTD50/300, 5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS-C3
GC TEMP: 43 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: A906849 #290
CALI: AB06849 #2

BASE M/Z: 49
RIC: 88320.

2 263

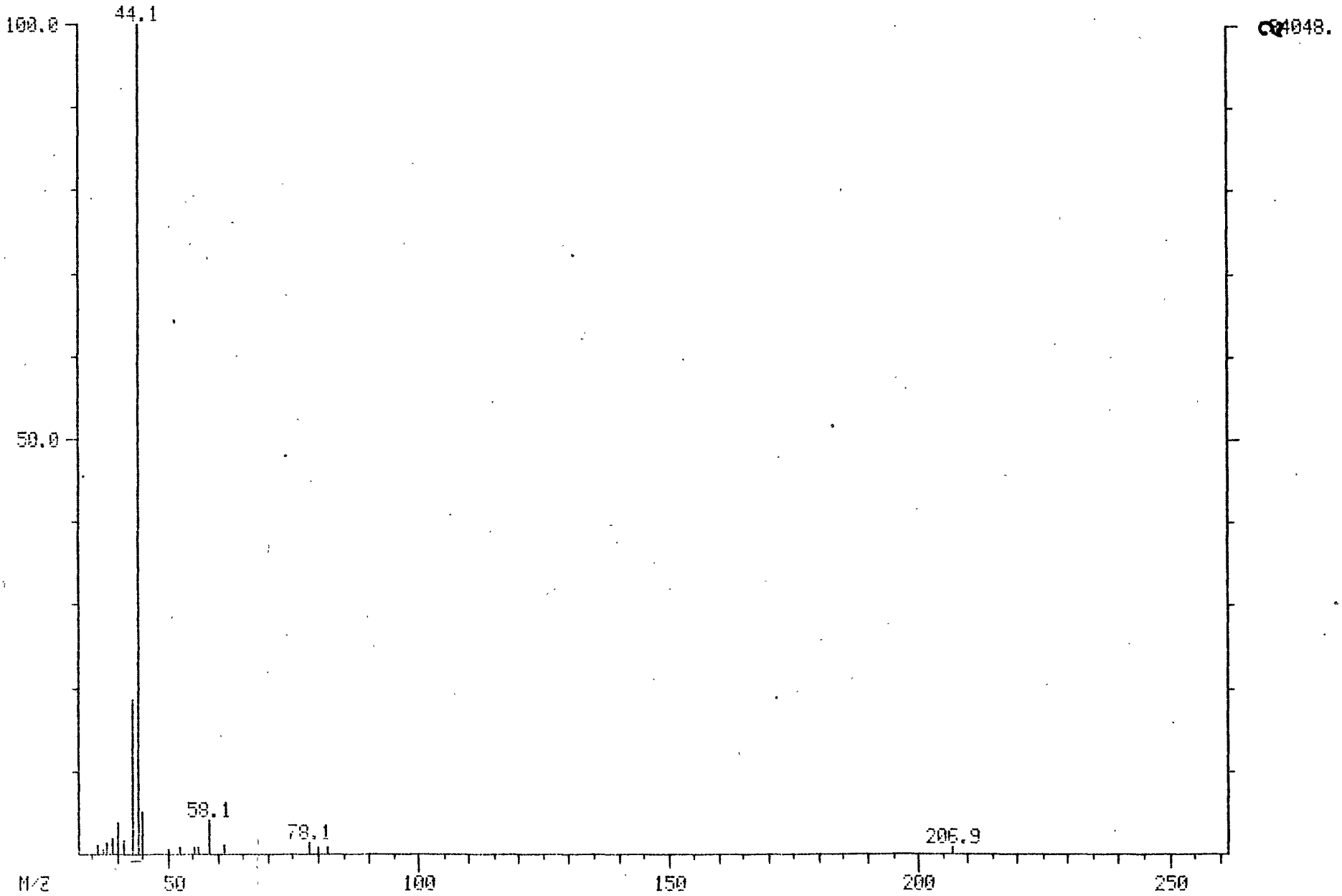


MASS SPECTRUM
03/03/89 11:22:00 + 4:15
SAMPLE: VOA WATER, METHOD BLANK, VBLK, 5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS-C3
GC TEMP: 41 DEG. C

DATA: AB06850 #255
CALI: AB06850 #2

BASE M/Z: 44
RIC: 49536.

264

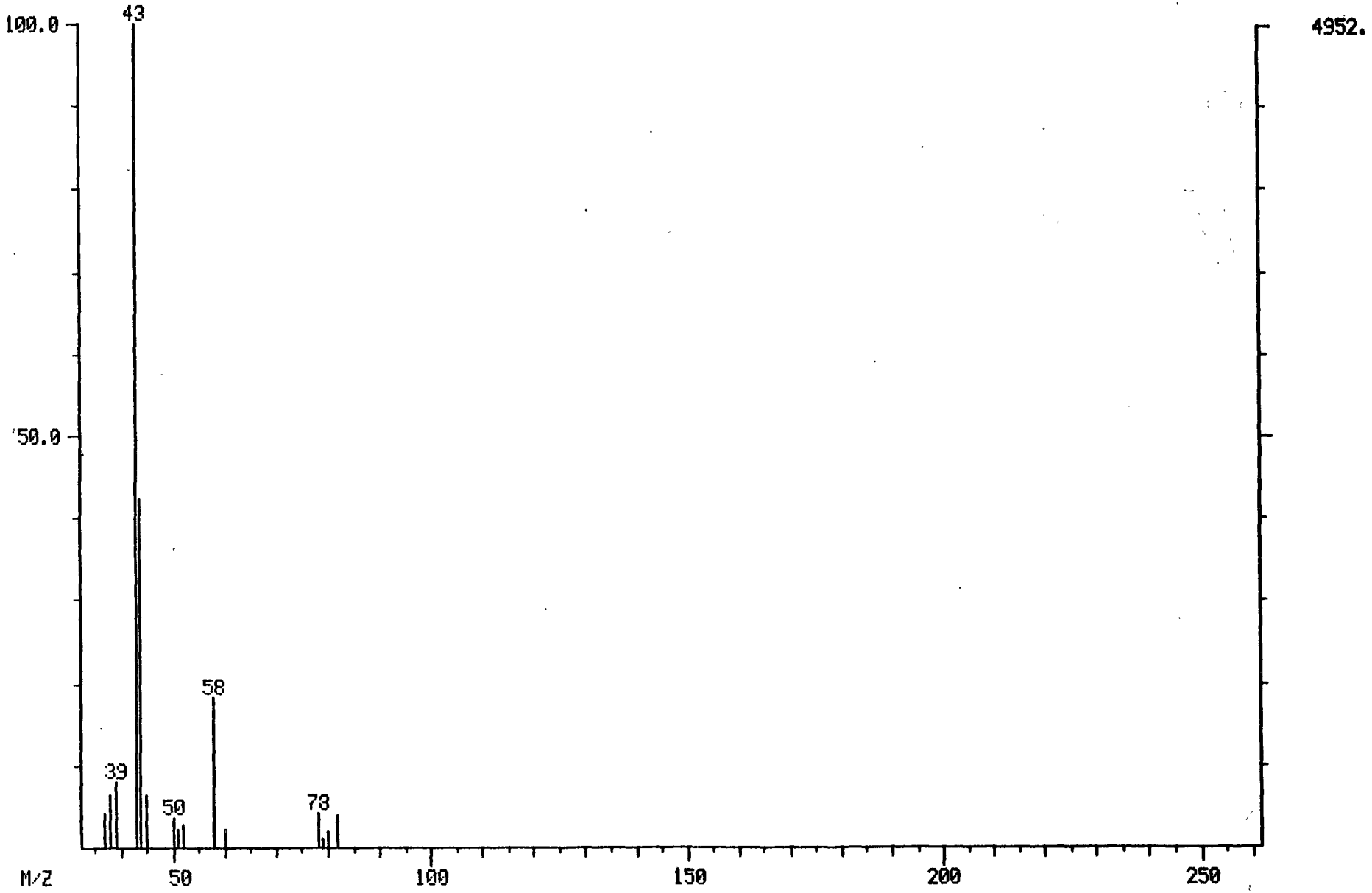


MASS SPECTRUM
03/03/89 11:22:00 + 4:15
SAMPLE: VOA WATER, METHOD BLANK, VBLK, 5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS-C3
GC TEMP: 41 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AB06850 #255
CALI: AB06850 #2

BASE M/Z: 43
RIC: 10256.

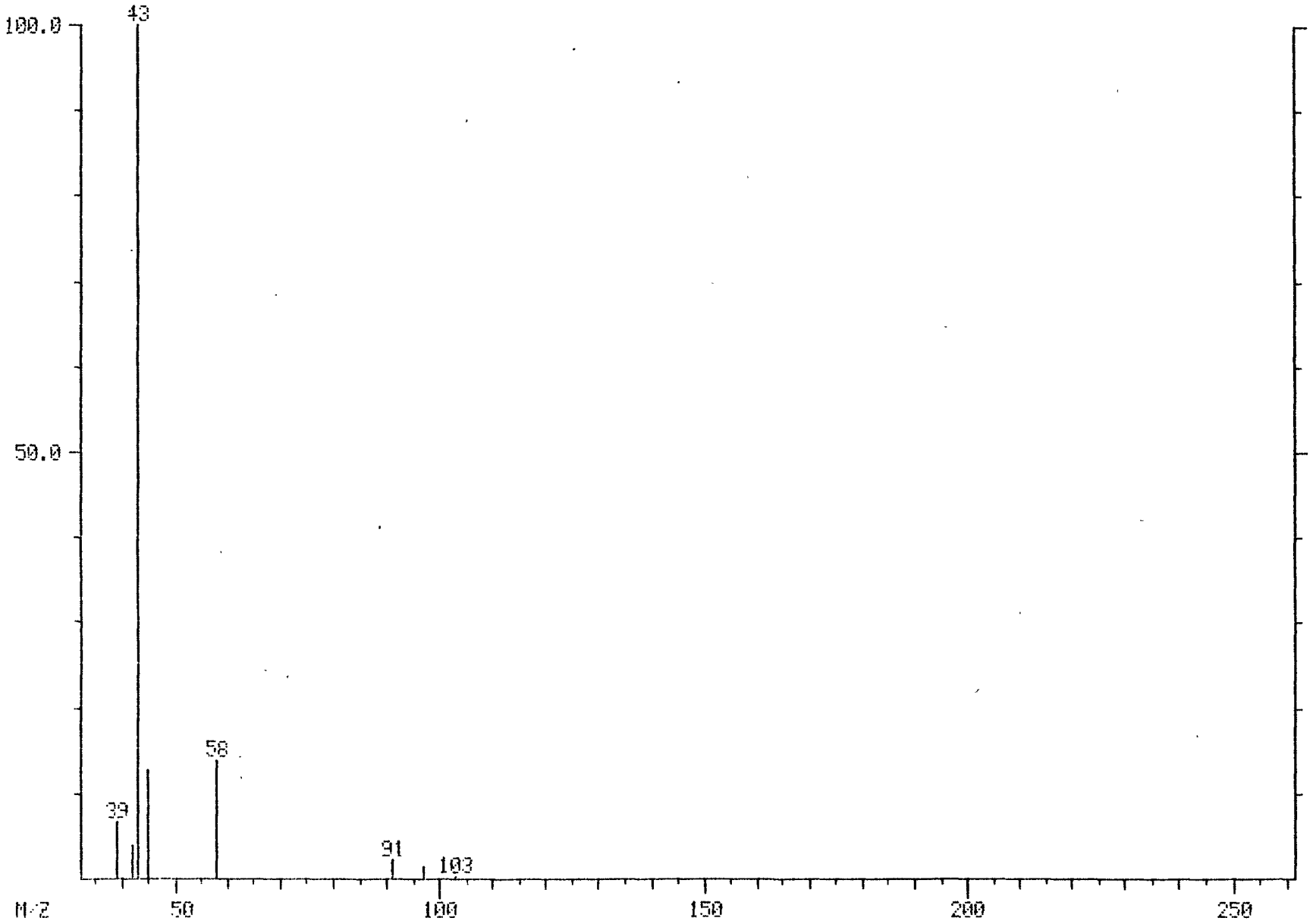
2 265



MASS SPECTRUM
03/03/89 10:15:00 + 4:08
SAMPLE: VOA WATER, STD#2771, VSTD50/300, 5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS-C3
GC TEMP: 43 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AB06849 #248
CALI: AB06849 #2

BASE M/Z: 43
RIC: 6952.



Library Search Data: AB06850 # 160 Base m/z: 44
03/03/89 11:22:00 + 2:40 Cali: AB06850 # 2 RIC: 76031.
Sample: VOA WATER, METHOD BLANK, VBLK, 5ML, CVG
Conds.: EA LABS, COLUMN: VOCOL-30M, DESC: ZZ, INST: GC/MS-C3
Enhanced (S 15B 2N OT)

38761 spectra in LIBRARYNB searched for maximum PURITY
72 matched at least 4 of the 12 largest peaks in the unknown

Rank	In.	Name
1	31	CARBON DIOXIDE
2	36	NITROGEN OXIDE (N2O)
3	7324	BENZENEMETHANOL, .ALPHA.-(1-AMINOETHYL)-, [R-(R*,S*)]-
4	7339	BENZENEMETHANOL, .ALPHA.-(1-AMINOETHYL)-, (R*,R*)-
5	681	2-BUTANAMINE, 3-METHYL-

Rank	Formula	M.Wt	B.Pk	Purity	Fit	RFit
1	C.O2	44	44	956	996	956
2	O.N2	44	44	953	993	953
3	C9.H13.O.N	151	44	767	791	896
4	C9.H13.O.N	151	44	755	778	887
5	C5.H13.N	87	44	739	767	928

Rank	Ret. Time	B.P. Int.	US. Par. 1	US. Par. 2	C.A.S. #
1	—	—	—	—	124-38-9
2	—	—	—	—	10024-97-2
3	—	—	—	—	492-41-1
4	—	—	—	—	36393-56-3
5	—	—	—	—	598-74-3

77312

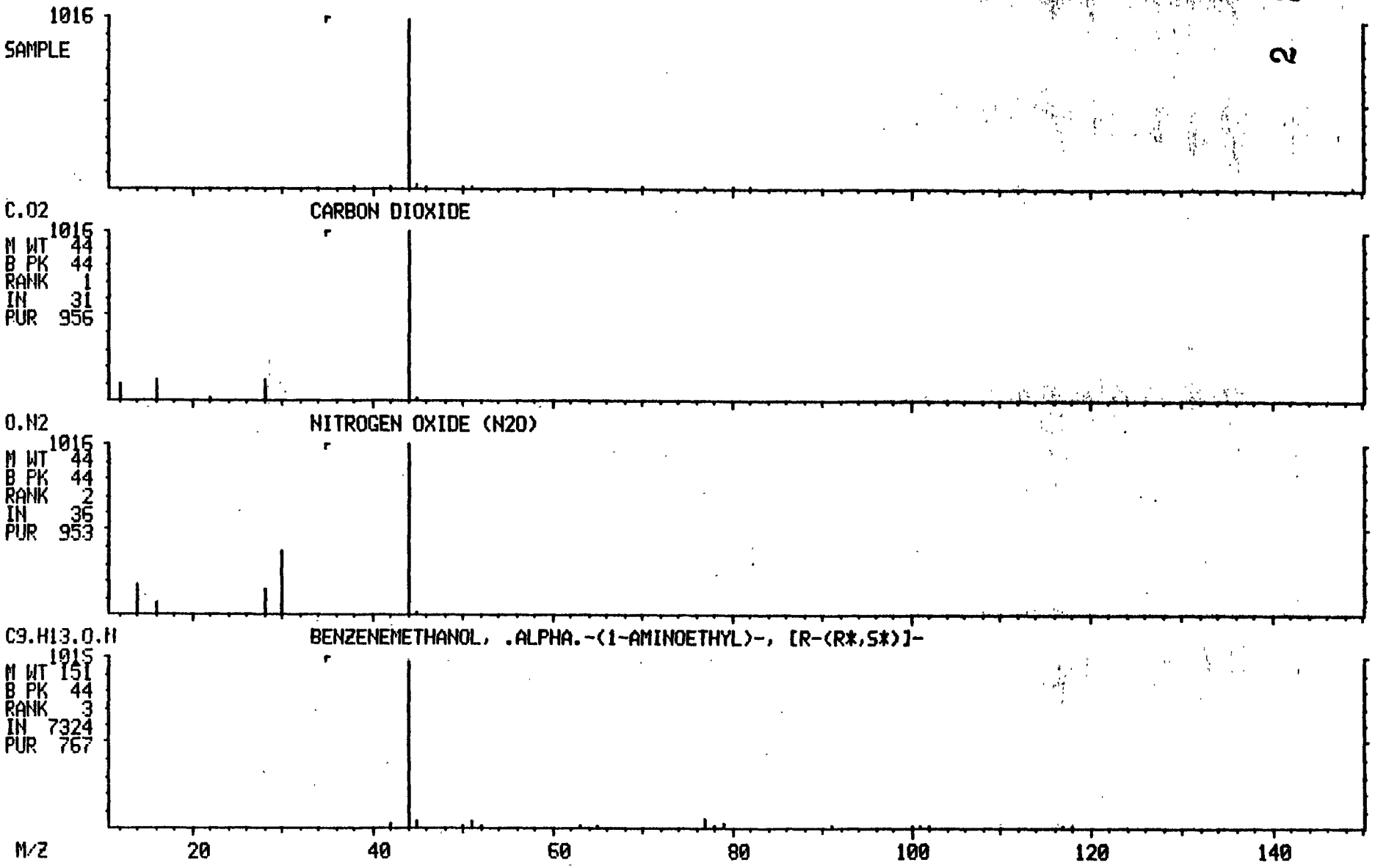
49.2

LIBRARY SEARCH
03/03/89 11:22:00 + 2:40
SAMPLE: VOA WATER, METHOD BLANK, VBLK, 5ML, CVG
CONDS.: EA LABS, COLUMN:VOCOL-30M, DESC:ZZ, INST:GC/MS-C3
ENHANCED (S 15B 2N 0T)

DATA: AB06850 # 160
CALI: AB06850 # 2

BASE M/Z: 44
RIC: 76031.

2 268



1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK1

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PR-1,S-4

Matrix: (soil/water) SOIL Lab Sample ID: METHOD BLANK

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AC813

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 3/13/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	4.	J
67-64-1	Acetone	10.	
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK1

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PR-1,S-4

Matrix: (soil/water) SOIL Lab Sample ID: METHOD BLANK

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AC813

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 3/13/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	No Volatiles Detected			
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
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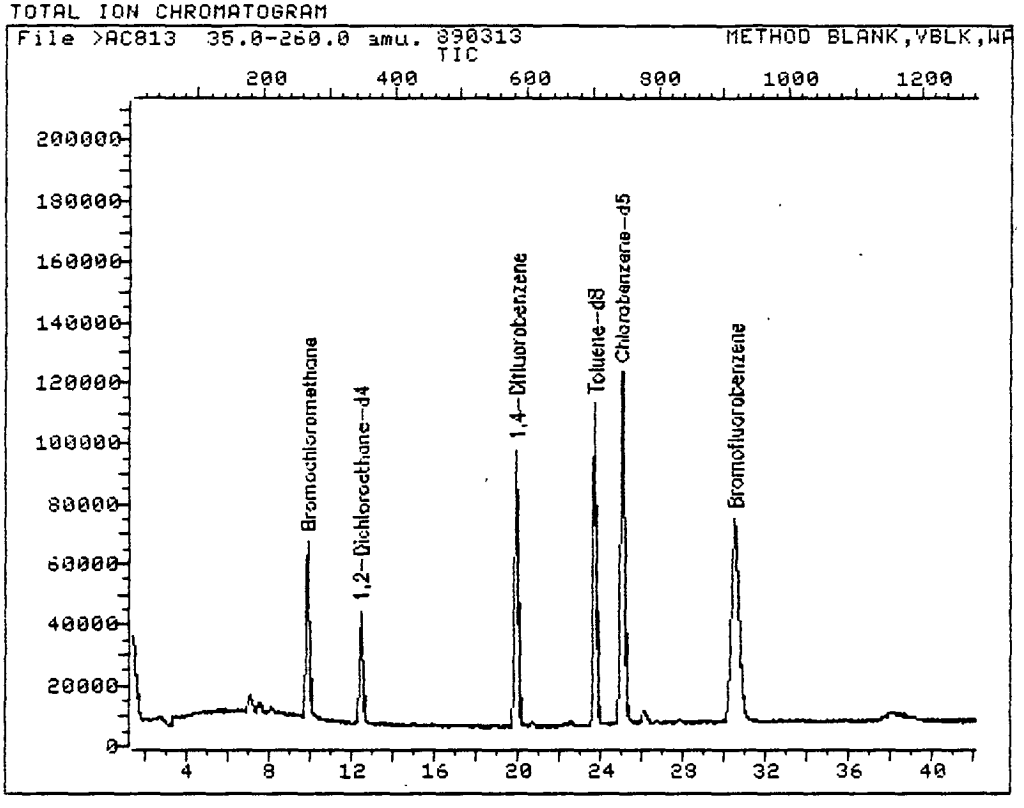
29.				
30.				

TOTAL ION CHROMATOGRAM



Data File: >AC813::D1 Quant Output File: ^AC813::QT
Name: 890313
Misc: METHOD BLANK,VBLK,WATER,5ML,GC/MS A1-CVG

Id File: AVOA::BD
Title: CLP PROTOCOL 5PT. CALIBRATION, GC/MS A1
Last Calibration: 890306 12:45

Operator ID: TONY
Quant Time: 890313 14:03
Injected at: 890313 13:14

QUANT REPORT

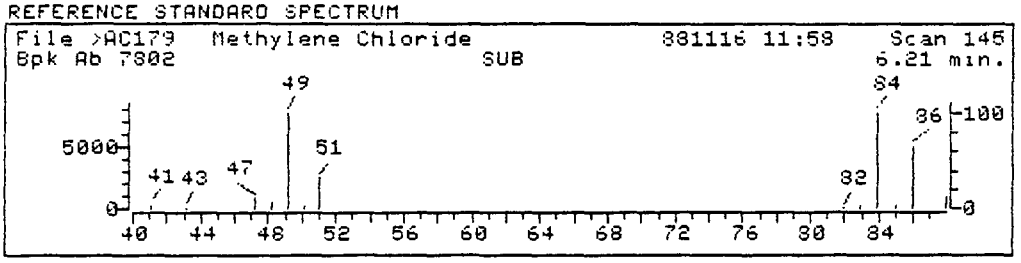
Operator ID: TONY Quant Rev: 6 Quant Time: 890314 10:01
Output File: ^AC813::QT Injected at: 890313 13:14
Data File: ^AC813::D1 Dilution Factor: 1.00000
Name: 890313
Misc: METHOD BLANK,VBLK,WATER,5ML,GC/MS A1-CVG

ID File: AVOA::BD
Title: CLP PROTOCOL 5PT. CALIBRATION, GC/MS A1
Last Calibration: 890313 14:31

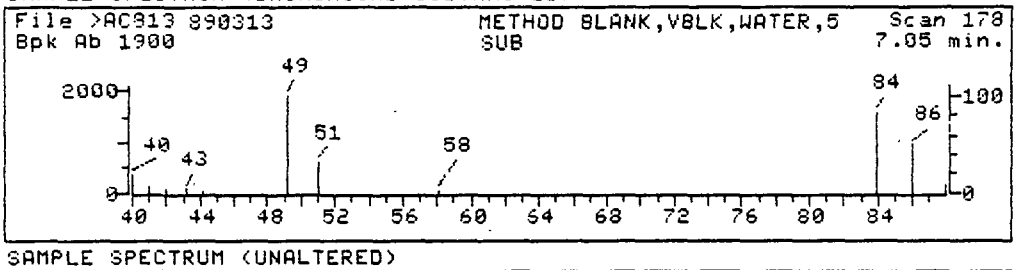
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	9.91	128.0	88056	50.00	UG/L	88
6)	Methylene Chloride	7.05	84.0	21365	4.03	UG/L	80
7)	Acetone	7.50	43.0	31003	10.12	UG/L	88
13)	1,2-Dichloroethane-d4	12.47	65.0	118742	46.40	UG/L	78
15)	*1,4-Difluorobenzene	19.95	114.0	429497	50.00	UG/L	90
29)	*Chlorobenzene-d5	24.99	117.0	475413	50.00	UG/L	94
35)	Toluene-d8	23.72	98.0	474373	50.10	UG/L	96
40)	Bromofluorobenzene	30.50	95.0	362441	51.32	UG/L	92

* Compound is ISTD

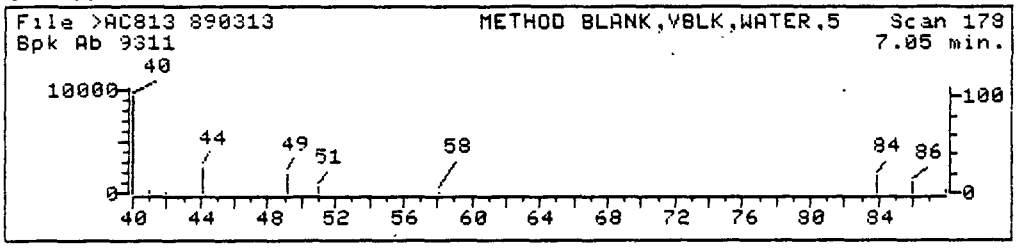
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



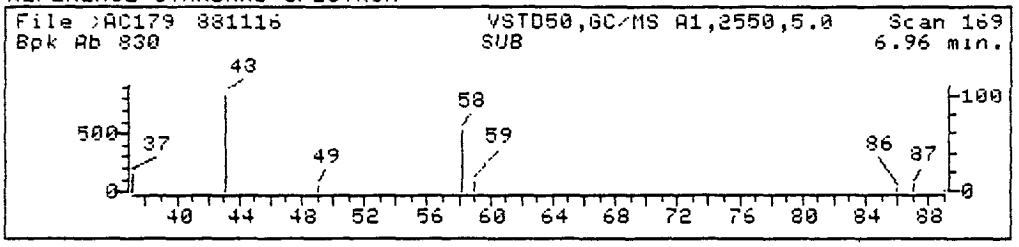
SAMPLE SPECTRUM (UNALTERED)



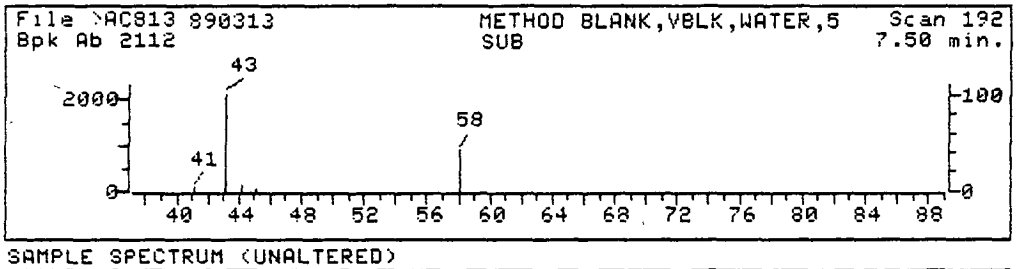
Data File: >AC813::D1 Quant Output File: ^AC813::QT
Name: 890313
Misc: METHOD BLANK,VBLK,WATER,5ML,GC/MS A1-CVG
Quant Time: 890313 14:03 Quant ID File: AVOA::BD
Injected at: 890313 13:14 Last Calibration: 890306 12:45

Compound No: 6
Compound Name: Methylene Chloride
Scan Number: 178
Retention Time: 7.05 min.
Quant Ion: 84.0
Area: 21365
Concentration: 21365.00 NO CALIB
q-value: 80

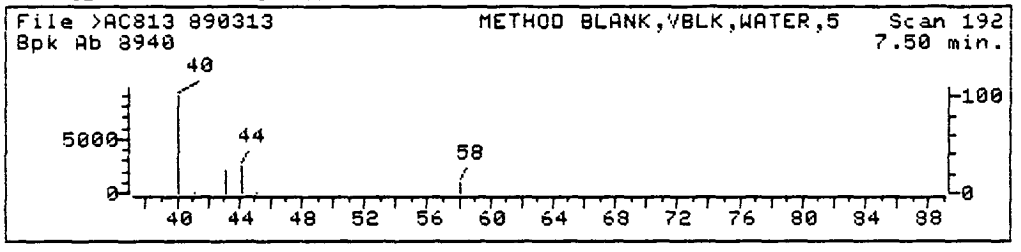
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >AC813::D1 Quant Output File: ^AC813::QT
Name: 890313
Misc: METHOD BLANK,VBLK,WATER,5ML,GC/MS A1-CVG
Quant Time: 890313 14:03 Quant ID File: AVOA::BD
Injected at: 890313 13:14 Last Calibration: 890306 12:45

Compound No: 7
Compound Name: Acetone
Scan Number: 192
Retention Time: 7.50 min.
Quant Ion: 43.0
Area: 31003
Concentration: 24.27 UG/L
q-value: 88

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DUP-1MS

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PRW-2,S-6

Matrix: (soil/water) SOIL Lab Sample ID: EA# 0779

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AC765

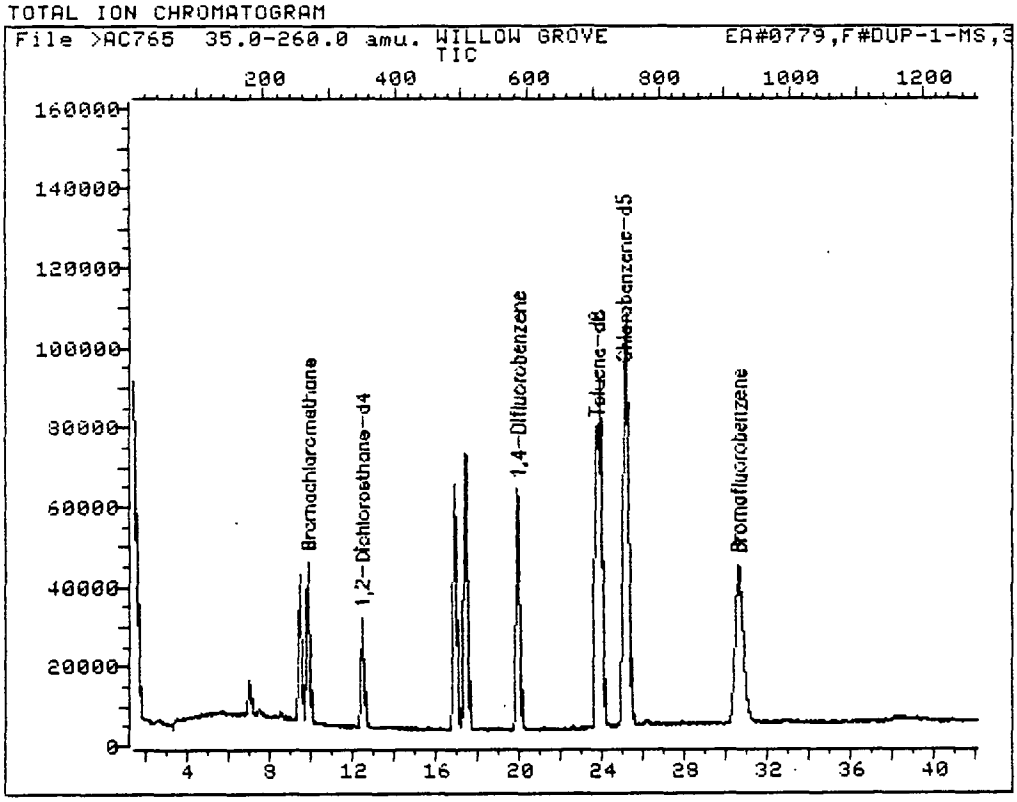
Level: (low/med) LOW Date Received: 02/21/89

% Moisture: not dec. 15. Date Analyzed: 03/ 1/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12.	U
74-83-9	Bromomethane	12.	U
75-01-4	Vinyl Chloride	12.	U
75-00-3	Chloroethane	12.	U
75-09-2	Methylene Chloride	6.	U
67-64-1	Acetone	12.	U
75-15-0	Carbon Disulfide	6.	U
75-35-4	1,1-Dichloroethene	42.	
75-34-3	1,1-Dichloroethane	6.	U
540-59-0	1,2-Dichloroethene (total)	6.	U
67-66-3	Chloroform	6.	U
107-06-2	1,2-Dichloroethane	6.	U
78-93-3	2-Butanone	12.	U
71-55-6	1,1,1-Trichloroethane	6.	U
56-23-5	Carbon Tetrachloride	6.	U
108-05-4	Vinyl Acetate	12.	U
75-27-4	Bromodichloromethane	6.	U
78-87-5	1,2-Dichloropropane	6.	U
10061-01-5	cis-1,3-Dichloropropene	6.	U
79-01-6	Trichloroethene	61.	
124-48-1	Dibromochloromethane	6.	U
79-00-5	1,1,2-Trichloroethane	6.	U
71-43-2	Benzene	69.	
10061-02-6	trans-1,3-Dichloropropene	6.	U
75-25-2	Bromoform	6.	U
108-10-1	4-Methyl-2-pentanone	12.	U
591-78-6	2-Hexanone	12.	U
127-18-4	Tetrachloroethene	6.	U
79-34-5	1,1,2,2-Tetrachloroethane	6.	U
108-88-3	Toluene	59.	
108-90-7	Chlorobenzene	63.	
100-41-4	Ethylbenzene	6.	U
100-42-5	Styrene	6.	U
1330-20-7	Xylene (total)	6.	U

TOTAL ION CHROMATOGRAM



Data File: >AC765::D2 Quant Output File: ^AC765::QT
Name: WILLOW GROVE
Misc: EA#0779,F#DUP-1-MS,SOIL,5GM/5ML,GC/MS A1-CVG

Id File: AVOA::BD
Title: CLP PROTOCOL 5PT. CALIBRATION, GC/MS A1
Last Calibration: 890301 15:05

Operator ID: TONY
Quant Time: 890301 18:40
Injected at: 890301 17:52

QUANT REPORT

Operator ID: TONY Quant Rev: 6 Quant Time: 890301 18:40
Output File: ~AC765::QT Injected at: 890301 17:52
Data File: AC765::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0779,F#DUP-1-MS,SOIL,5GM/5ML,GC/MS A1-CVG

ID File: AVOA::BD
Title: CLP PROTOCOL SPT. CALIBRATION, GC/MS A1
Last Calibration: 890301 15:05

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	9.91	128.0	51328	50.00	UG/L	89
9)	1,1-Dichloroethene	9.43	96.0	78375	35.20	UG/L	78
13)	1,2-Dichloroethane-d4	12.50	65.0	87470	48.48	UG/L	73
15)	*1,4-Difluorobenzene	19.95	114.0	283236	50.00	UG/L	91
23)	Trichloroethene	16.91	130.0	118439	50.85	UG/L	90
26)	Benzene	17.41	78.0	350433	47.27	UG/L	94
29)	*Chlorobenzene-d5	25.05	117.0	270173	50.00	UG/L	96
34)	Toluene	23.94	92.0	230271	49.01	UG/L	97
35)	Toluene-d8	23.75	98.0	306443	50.36	UG/L	97
36)	Chlorobenzene	25.18	112.0	293287	52.14	UG/L	97
40)	Bromofluorobenzene	30.60	95.0	201335	50.09	UG/L	98

* Compound is ISTD

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DUP-1MSD

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILL GR SAS No.: SDG No.: PRW-2,S-6

Matrix: (soil/water) SOIL Lab Sample ID: EA# 0779

Sample wt/vol: 5.0 (g/mL) G Lab File ID: AC766

Level: (low/med) LOW Date Received: 02/21/89

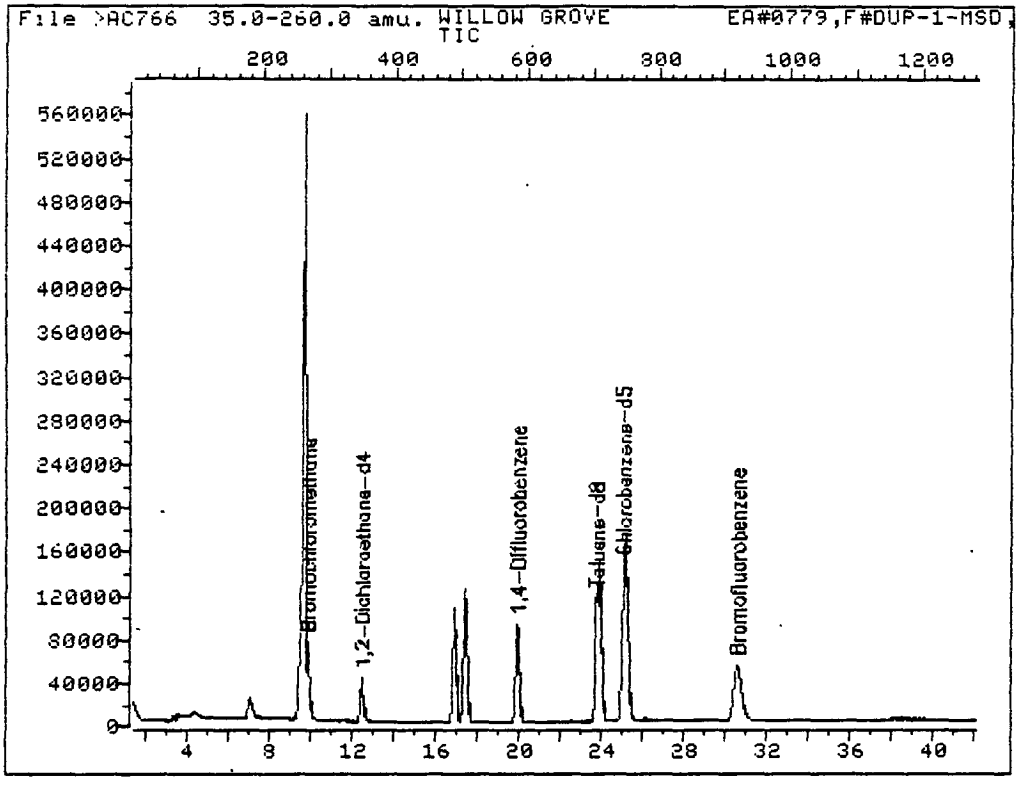
% Moisture: not dec. 15. Date Analyzed: 03/ 1/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12.	U
74-83-9	Bromomethane	12.	U
75-01-4	Vinyl Chloride	12.	U
75-00-3	Chloroethane	12.	U
75-09-2	Methylene Chloride	6.	U
67-64-1	Acetone	12.	U
75-15-0	Carbon Disulfide	6.	U
75-35-4	1,1-Dichloroethene	44.	
75-34-3	1,1-Dichloroethane	6.	U
540-59-0	1,2-Dichloroethene (total)	6.	U
67-66-3	Chloroform	6.	U
107-06-2	1,2-Dichloroethane	6.	U
78-93-3	2-Butanone	12.	U
71-55-6	1,1,1-Trichloroethane	6.	U
56-23-5	Carbon Tetrachloride	6.	U
108-05-4	Vinyl Acetate	12.	U
75-27-4	Bromodichloromethane	6.	U
78-87-5	1,2-Dichloropropane	6.	U
10061-01-5	cis-1,3-Dichloropropene	6.	U
79-01-6	Trichloroethene	70.	
124-48-1	Dibromochloromethane	6.	U
79-00-5	1,1,2-Trichloroethane	6.	U
71-43-2	Benzene	66.	
10061-02-6	trans-1,3-Dichloropropene	6.	U
75-25-2	Bromoform	6.	U
108-10-1	4-Methyl-2-pentanone	12.	U
591-78-6	2-Hexanone	12.	U
127-18-4	Tetrachloroethene	6.	U
79-34-5	1,1,2,2-Tetrachloroethane	6.	U
108-88-3	Toluene	67.	
108-90-7	Chlorobenzene	73.	
100-41-4	Ethylbenzene	6.	U
100-42-5	Styrene	6.	U
1330-20-7	Xylene (total)	6.	U

FORM I VOA 1/87 Rev.

TOTAL ION CHROMATOGRAM



Data File: >AC766::D2 Quant Output File: ^AC766::QT
Name: WILLOW GROVE
Misc: EA#0779,F#DUP-1-MSD,SOIL,5GM/5ML,GC/MS A1-CVG

Id File: AVOA::BD
Title: CLP PROTOCOL 5PT. CALIBRATION, GC/MS A1
Last Calibration: 890301 15:05

Operator ID: TONY
Quant Time: 890301 19:36
Injected at: 890301 18:47

QUANT REPORT

Operator ID: TONY Quant Rev: 6 Quant Time: 890301 19:36
Output File: ^AC766::QT Injected at: 890301 18:47
Data File: ·AC766::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0779,F#DUP-1-MSD,SOIL,5GM/5ML,GC/MS A1-CVG

ID File: AVOA::BD
Title: CLP PROTOCOL 5PT. CALIBRATION, GC/MS A1
Last Calibration: 890301 15:05

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	9.91	128.0	97271	50.00	UG/L	90
9)	1,1-Dichloroethene	9.46	96.0	154631	36.64	UG/L	85
13)	1,2-Dichloroethane-d4	12.51	65.0	130986	38.31	UG/L	72
15)	*1,4-Difluorobenzene	19.95	114.0	416930	50.00	UG/L	89
23)	Trichloroethene	16.91	130.0	201133	58.67	UG/L	97
26)	Benzene	17.39	78.0	598958	54.89	UG/L	95
29)	*Chlorobenzene-d5	25.05	117.0	404224	50.00	UG/L	94
34)	Toluene	23.94	92.0	391580	55.71	UG/L	95
35)	Toluene-d8	23.75	98.0	451831	49.63	UG/L	95
36)	Chlorobenzene	25.18	112.0	491539	60.46	UG/L	97
40)	Bromofluorobenzene	30.60	95.0	289989	48.22	UG/L	95

* Compound is ISTD

E. QUALITY ASSURANCE SUMMARY

EA LABORATORIES

QUALITY ASSURANCE SUMMARY

FOR NAVAL ENERGY AND ENVIRONMENTAL SUPPORT ACTIVITY CONTRACTS

Project: Willow Grove NAS Analysis: TCL volatiles

EA Laboratories Report No. 890094 Method: U.S. EPA-CLP

Reviewed by: M. M. Wheeler Date: 31 May 89

1. The 10-day holding time requirement from sample receipt to analysis was met for all samples.

   ✓ Yes ____ No

2. The 12-hour tuning period for BFB was met for all samples.

   ✓ Yes ____ No

3. Initial calibration criteria were met for all samples: the RSD is ≤30% for all CCC compounds, and the RRF for SPCC compounds is >0.300 (0.250 for bromoform).

   ✓ Yes ____ No

4. Continuing calibration criteria were met for all samples: the response factor percent deviation from the mean initial calibration response factor for all CCC compounds was ≤25%, and the RRF for SPCC compounds is >0.300 (0.250 for bromoform).

   ✓ Yes ____ No

5. Surrogate recovery limits were met for all samples.
   Rinsate blank (EA 890639) and Trip blank (EA 890640) were outside QC limits.

   ____ Yes ✓ No

6. MS and MSD criteria were met for all samples.

   ✓ Yes ____ No

7. Method blank criteria were met for all samples: common laboratory contaminants are ≤5X CRQL, all other compounds are <CRQL.

   ✓ Yes ____ No

EA LABORATORIES

QUALITY ASSURANCE SUMMARY

FOR NAVAL ENERGY AND ENVIRONMENTAL SUPPORT ACTIVITY CONTRACTS

Project: Willow Grove NAS Analysis: TCL volatiles

EA Laboratories Report No. 890094 Method: U.S. EPA-CLP

Reviewed by: [illegible] Date: 31 Mar 89

8. Laboratory control sample criteria were met for all samples.
   No laboratory control sample was run.
   _____ Yes ___✓___ No

9. Field and equipment blanks: no target compounds were detected the samples at concentrations <5X the concentration found in the highest associated blank.
   Samples (EA 8900821, EA 8900871) had acetone concentrations >5X method blanks
   _____ Yes ___✓___ No

Comments: _____

3. SEMIVOLATILE DATA

3 000

A. QC Summary

WATER SURROGATE PERCENT RECOVERY SUMMARY

Case No. Willow Grove Contract Laboratory GA Laboratories Contract No. _____

	VOLATILE			SEMI-VOLATILE								PESTICIDE**
SMO TRAFFIC NO.	TOLUENE-D8 (88-110)	BFB (86-115)	1,2 DICHLORO-ETHANE-D4 (76-114)	NITRO-BENZENE-D5 (35-114)	2-FLUORO-BIPHENYL (43-116)	TERPHENYL-D14 (33-141)			PHENOL-D5 (10-94)	2-FLUORO-PHENOL (21-100)	2,4,6 TRIBROMO-PHENOL (10-123)	DIBUTYL-CHLORENDATE (24-154)
EA#0640 (>FB825)				91%	94%	133%			91%	78%	99%	
EA#0746 (>FB831)				88%	85%	131%			92%	79%	89%	
EA#0774 (> FB934)				76	71	88			102 *	89	109	
BL#448 (>FB 813)				93	92	109			93	88	99	

* VALUES ARE OUTSIDE OF CONTRACT REQUIRED QC LIMITS

**ADVISORY LIMITS ONLY

Volatiles: _____ out of _____ ; outside of QC limits

Semi-Volatiles: 1 out of 24 ; outside of QC limits

Pesticides: _____ out of _____ ; outside of QC limits

Comments: _____

3

002

FORM II

7/85

WATER SURROGATE PERCENT RECOVERY SUMMARY

CASE NUMBER: WILLOW GROVE LABORATORY: EA ENG. CONTRACT: 10388.03

LEVEL: LOW
SEMI-VOLATILE SURROGATES

SMO NUMBER	NITRO-BENZENE-D5 (35-114)	2-FLUORO-BIPHENYL (43-116)	TERPHENYL-D14 (33-141)	PHENOL-D5 (10-94)	2-FLUORO-PHENOL (21-100)	TRIBROMO-PHENOL (10-123)
WATER BLANK #4386	77	99		~~83~~ 34 DKH 4-03-89	90	~~110~~ 109
0820 RINSATE BLANK #5	93	100	106	59	78	64

* - ASTERISKED VALUES ARE OUTSIDE QC LIMITS
RESULTS ARE REPORTED ON A WET WEIGHT BASIS.

SEMI-VOLATILES: 0 OUT OF 12 ; OUTSIDE QC LIMITS

FORM II

SOIL SURROGATE PERCENT RECOVERY SUMMARY

Case No. WILLAN GROUP Contract Laboratory ED LABORATORIES Contract No. _____

Low ✓ Medium _____

SMO TRAFFIC NO.	VOLATILE: TOLUENE-D8 (81-117)	VOLATILE: BFB (74-121)	VOLATILE: 1,2 DICHLORO-ETHANE-D4 (70-121)	SEMI-VOLATILE: NITRO-BENZENE-D5 (23-120)	SEMI-VOLATILE: 2-FLUORO-BIPHENYL (30-115)	SEMI-VOLATILE: TERPHENYL-D14 (18-137)	SEMI-VOLATILE:	SEMI-VOLATILE:	SEMI-VOLATILE: PHENOL-D5 (24-113)	SEMI-VOLATILE: 2-FLUORO-PHENOL (25-121)	SEMI-VOLATILE: 2,4,6 TRIBROMO PHENOL (19-122)	PESTICIDE: DIBUTYL-CHLORENDATE (20-150) **
EA#0745 (>F6830)				76%	62%	98%			74%	58%	77%	
EA#0748 (>F6832)				73%	55%	75%			68%	52%	66%	

* VALUES ARE OUTSIDE OF CONTRACT REQUIRED QC LIMITS

** ADVISORY LIMITS ONLY

Volatiles: _____ out of _____ ; outside of QC limits

Semi-Volatiles: 0 out of 12 ; outside of QC limits

Pesticides: _____ out of _____ ; outside of QC limits

7/85

Comments: _____

004

FORM II

SOIL SURROGATE PERCENT RECOVERY SUMMARY

Cas No. Willow Grove Contract Laboratory EA Laboratories Contract No. _____

Low ✓ M dium _____

	VOLATILE			SEMI-VOLATILE								PESTICIDE
SMO TRAFFIC NO.	TOLUENE-D8 (81-117)	BFB (74-121)	1,2 DICHLORO-ETHANE-D4 (70-121)	NITRO-BENZENE-D5 (23-120)	2-FLUORO-BIPHENYL (30-115)	TERPHENYL-D14 (18-137)			PHENOL-D5 (24-113)	2-FLUORO-PHENOL (25-121)	2,4,6 TRIBROMO PHENOL (19-122)	DIBUTYL-CHLORENDATE ** (20-150)
Blank #440 (SFB812)				81%	65%	80%			72%	66%	77%	
EA#0637 (SFB816)				84%	65%	88%			80%	72%	74%	
EA#0638 (SFB817)				83%	66%	72%			79%	70%	68%	

VALUES ARE OUTSIDE OF CONTRACT REQUIRED QC LIMITS

ADVISORY LIMITS ONLY

Volatiles: _____ out of _____ ; outside of QC limits

Semi-Volatiles: 0 out of 18 ; outside of QC limits

Pesticides: _____ out of _____ ; outside of QC limits

7/85

Comments: _____

05

FORM II

SOIL SURROGATE PERCENT RECOVERY SUMMARY

CASE NUMBER: WILLOW GROVE LABORATORY: EA ENG. CONTRACT: 10388.03

LEVEL: LOW
SEMI-VOLATILE SURROGATES

SMO NUMBER	NITRO-BENZENE-D5 (23-120)	2-FLUORO-BIPHENYL (30-115)	TERPHENYL-D14 (18-137)	PHENOL-D5 (24-113)	2-FLUORO-PHENOL (25-121)	TRIBROMO-PHENOL (19-122)
749 PR-SS-2	134*	165*	152*	140*	125*	133*
749RE PR-SS-2 RE-EXT	87	89	92	126*	101	73
Blank a 491 for Re-ext	64	70	69	68	67	91

* - ASTERISKED VALUES ARE OUTSIDE QC LIMITS
RESULTS ARE REPORTED ON A WET WEIGHT BASIS.

SEMI-VOLATILES: 7 OUT OF ~~12~~ 18 ; OUTSIDE QC LIMITS

FORM II

SOIL SURROGATE PERCENT RECOVERY SUMMARY

Case No. Willow Grove Contract Laboratory EA Laboratories Contract N .

Low ✓ M dium

SMO TRAFFIC NO.	VOLATILE: TOLUENE-D8 (81-117)	VOLATILE: BFB (74-121)	VOLATILE: 1,2 DICHLORO-ETHANE-D4 (70-121)	SEMI-VOLATILE: NITRO-BENZENE-D5 (23-120)	SEMI-VOLATILE: 2-FLUORO-BIPHENYL (30-116)	SEMI-VOLATILE: TERPHENYL-D14 (18-137)	SEMI-VOLATILE:	SEMI-VOLATILE:	SEMI-VOLATILE: PHENOL-D5 (24-113)	SEMI-VOLATILE: 2-FLUORO-PHENOL (25-121)	SEMI-VOLATILE: 2,4,6 TRIBROMO-PHENOL (19-122)	PESTICIDE: DIBUTYL-CHLORENDATE (20-150) **
BL#452 (>FB804)				91%	88%	112%			92%	76%	103%	
EA#0775 (>FB806)				80%	83%	88%			81%	64%	101%	
EA#0780 (>FB808)				84%	83%	103%			83%	65%	105%	wm 5/1/89
EA#0781 (>FB809)				83%	80%	107%			86%	71%	96%	
EA#0777 (>FB807)				172 *	154 *	187 *			147% *	117	194 *	

VALUES ARE OUTSIDE OF CONTRACT REQUIRED QC LIMITS

** ADVISORY LIMITS ONLY

Volatiles: ____ out of ____ ; outside of QC limits

Semi-Volatiles: 5 out of 24 ; outside of QC limits

Pesticides: ____ out of ____ ; outside of QC limits

7/85

Comments: EA#0777 had surrogate recoveries twice as high as would be expected – probably spiked twice. Sample was reextracted & results for surrogate recoveries in the reextraction were all within EPA QC limits.

Wm. Adams

FORM II

SOIL SURROGATE PERCENT RECOVERY SUMMARY

Cas No. Willow Grove Contract Laboratory EA Laboratories Contract No. _____

Low ✓ Medium _____

	VOLATILE			SEMI-VOLATILE								PESTICIDE
SMO TRAFFIC NO.	TOLUENE-D8 (81-117)	BFB (74-121)	1,2 DICHLORO-ETHANE-D4 (70-121)	NITRO-BENZENE-D5 (23-120)	2-FLUORO-BIPHENYL (30-115)	TERPHENYL-D14 (18-137)			PHENOL-D5 (24-113)	2-FLUORO-PHENOL (25-121)	2,4,6 TRIBROMO PHENOL (19-122)	DIBUTYL-CHLORENDATE (20-150) **
EA#0780 (278935)				65%	60%	124%			79%	66%	101%	
EA#0780(MS) (SFG 936)				67%	57%	59%			73%	65%	98%	
EA#0780(MSD) (SFG 937)				60%	54%	55%			72%	64%	99%	

* VALUES ARE OUTSIDE OF CONTRACT REQUIRED QC LIMITS

** ADVISORY LIMITS ONLY

Volatiles: _____ out of _____ ; outside of QC limits

Semi-Volatiles: 0 out of 18 ; outside of QC limits

Pesticides: _____ out of _____ ; outside of QC limits

7/85

Comments: _____

8

FORM II

SOIL SURROGATE PERCENT RECOVERY SUMMARY

CASE NUMBER: WILLOW GROVE LABORATORY: EA ENG. CONTRACT: 10388.03

LEVEL: LOW
SEMI-VOLATILE SURROGATES

SMO NUMBER	NITRO-BENZENE-D5 (23-120)	2-FLUORO-BIPHENYL (30-115)	TERPHENYL-D14 (18-137)	PHENOL-D5 (24-113)	2-FLUORO-PHENOL (25-121)	TRIBROMO-PHENOL (19-122)
777 PR-SS-3 RE-EXT	51	50	~~57~~ 56 SEH 3-31-89	107	95	66
SOIL BLANK #529	52	51	58	108	95	63

* - ASTERISKED VALUES ARE OUTSIDE QC LIMITS
RESULTS ARE REPORTED ON A WET WEIGHT BASIS.

SEMI-VOLATILES: 0 OUT OF 12 ; OUTSIDE QC LIMITS

FORM II

SOIL SURROGATE PERCENT RECOVERY SUMMARY

Cas No. Willow Grove Contract Laboratory EA Laboratories Contract No. _____

Low low Medium _____

		VOLATILE			SEMI-VOLATILE								PESTICIDE
	SMO TRAFFIC NO.	TOLUENE-D8 (81-117)	BFB (74-121)	1,2 DICHLORO-ETHANE-D4 (70-121)	NITRO-BENZENE-D5 (23-120)	2-FLUORO-BIPHENYL (30-115)	TERPHENYL-D14 (18-137)			PHENOL-D5 (24-113)	2-FLUORO-PHENOL (25-121)	2,4,6 TRIBROMO PHENOL (19-122)	DIBUTYL-CHLORENDATE (20-150) **
	Blank # 466	DC 999			56	55	61			59	66	58	
815	PRW-3 comp.	DD 001			93	88	99			108	99	80	

* VALUES ARE OUTSIDE OF CONTRACT REQUIRED QC LIMITS

* ADVISORY LIMITS ONLY

Volatiles: _____ out of _____ ; outside of QC limits

Semi-Volatiles: 0 out of 12 ; outside of QC limits

Pesticides: _____ out of _____ ; outside of QC limits

7/85

Comments: _____

FORM II

SOIL SURROGATE PERCENT RECOVERY SUMMARY

CASE NUMBER: WILLOW GROVE LABORATORY: EA ENG. CONTRACT: 10388.03

LEVEL: LOW
SEMI-VOLATILE SURROGATES

SMO NUMBER	NITRO-BENZENE-D5 (23-120)	2-FLUORO-BIPHENYL (30-115)	TERPHENYL-D14 (18-137)	PHENOL-D5 (24-113)	2-FLUORO-PHENOL (25-121)	TRIBROMO PHENOL (19-122)
0802 PRW-4 COMPOSIT	90	86	90	130*	100	~~67~~ 68
SOIL BLANK #~~40~~	89	~~83~~ 84	97	110	95	65

JEA 4/15/89

* - ASTERISKED VALUES ARE OUTSIDE QC LIMITS
RESULTS ARE REPORTED ON A WET WEIGHT BASIS.

SEMI-VOLATILES: 1 OUT OF 12 ; OUTSIDE QC LIMITS

FORM II

SOIL MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Case No. Willow Grove Contractor EA Laboratories C ntra t No. _____

L w Level ✓ Medium Level _____

FRACTION	COMPOUND	CONC. SPIKE ADDED (ug/Kg)	SAMPLE RESULT	CONC. MS	% REC	CONC. MSD	% REC	RPD	QC LIMITS* RPD	QC LIMITS* RECOVERY
VOA SMO SAMPLE NO.	1,1-Dicholorethene								22	59-172
	Trichloroethene								24	62-137
	Chlorobenzene								21	60-133
	Toluene								21	59-139
	Benzene					184.02	84		21	66-142
B/N SMO SAMPLE NO.	1,2,4-Trichlorobenzene	1000	1.88	91.37	91	~~85.9~~	~~86~~	8	23	38-107
	Acenaphthene		—	95.82	96	93.09	93	3	19	31-137
	2,4 Dinitrotoluene		—	106.77	107*	106.51	107*	0	47	28-89
	Pyrene		—	101.85	102	97.56	98	4	36	35-142
EA #0750	N-Nitrosodi-n-Propylamine		—	102.60	103	104.89	105	1	38	41-126
	1,4-Dichlorobenzene		—	82.47	82	76.25	76	8	27	28-104
ACID SMO SAMPLE NO.	Pentachlorophenol	200	—	221.60	111	218.25	109	2	47	17-109
	Phenol		—	137.29	69	129.06	65	6	35	26-90
	2-Chlorophenol		—	144.75	72	139.54	70	3	50	25-102
	4-Chloro-3-Methylphenol		—	175.22	88	167.90	84	5	33	26-103
EA #0750	4-Nitrophenol		—	—	*	—	*	—*	50	11-114
PEST SMO SAMPLE NO.	Lindane								50	46-127
	Heptachlor								31	35-130
	Aldrin								43	34-132
	Dieldrin								38	31-134
	Endrin								45	42-139
	4,4'-DDT								50	23-134

ASTERISKED VALUES ARE OUTSIDE QC LIMITS.

RPD: VOAs ____ out of ____; outside QC limits
B/N 0 out of 6; outside QC limits
ACID 1 out of 5; outside QC limits
PEST ____ out of ____; outside QC limits

RECOVERY: VOAs ____ out of ____; outside QC limits
B/N 2 out of 12; outside QC limits
ACID 3 out of 10; outside QC limits
PEST ____ out of ____; outside QC limits

Comments: 4-Nitrophenol was not picked up in the original quantitation of these runs — Data files were inadvertantly destroyed without being archived (see non-conformance notice), so it cannot be added in. WMA

3 012

7/85

FORM III

4B
SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: EA LABORATORIES Contract: Willow Grove

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Lab File ID: >FB 812 Lab Sample ID: BL#440

Date Extracted: 2-21-89 Extraction: (SepF/Cont/Sonc) Cont

Date Analyzed: 3-09-89 Time Analyzed: 2004

Matrix: (soil/water) Soil Level: (low/med) Low

Instrument ID: F6

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	EA# 0637	PR-1	>FB 816	3-10-89
02	EA# 0638	PR-2	>FB 817	~~3-10-89~~
03	EA# 0745	~~BL-2~~ PRW-1, Sed	>FB 820	3-11-89
04	EA# 0748	PR-SS-1	>FB 832	3-11-89
05	~~EA# 0749~~ MD			
06				
07				
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COMMENTS: _____

4B
SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: EA LABORATORIES Contract: WILLOW GROVE

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Lab File ID: >FB 813 Lab Sample ID: BLANK #448

Date Extracted: 2-22-89 Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 3-9-89 Time Analyzed: 2105

Matrix: (soil/water) H_2O Level: (low/med) LOW

Instrument ID: F6

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	EA# 0640	RINSATE BLANK	>FB829	3-10-89
02	EA# 0746	RINSATE BLANK #2	>FB 831	3-11-89
03	EA# 0776	RINSATE BLANK #3	>FB 934	3-24-89
04				
05				
06				
07				
08				
09				
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COMMENTS: _____

4B
SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: EA LABORATORIES Contract: WILLOW GROVE

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Lab File ID: >FB 804 Lab Sample ID: BLANK #452

Date Extracted: _____ Extraction: (SepF/Cont/Sonc) Cont

Date Analyzed: 3-9-89 Time Analyzed: 0155

Matrix: (soil/water) Soil Level: (low/med) Low

Instrument ID: F6

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	EA# 0775	PRW-2 Comp	>FB 806	3-9-89
02	~~EA# 0778~~	~~Dup#2~~	~~>FB 808~~	~~3-9-89~~ WMA 5/8/89
03	~~EA# 0781~~	~~Dup#3~~	~~>FB 809~~	~~3-9-89~~
04	EA# 0780	Dup#2	>FB 935	3-25-89
05	EA# 0780 MS	Dup. #2 (MS)	> FB 936	↓
06	EA# 0780 MSD	Dup. #2 (MSD)	> FB 937	↓
07				
08				
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COMMENTS: _____

4B
SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: E A Laboratories Contract: _____

Lab Code: _____ Case No.: Willow Grove SAS No.: _____ SDG No.: _____

Lab File ID: >DC999 Lab Sample ID: Blank (#466)

Date Extracted: 2/27/89 Extraction: (SepF/Cont/Sonc) _____

Date Analyzed: 2/28/89 Time Analyzed: 19:25

Matrix: (soil/water) Soil Level: (low/med) low

Instrument ID: GC/MS #4

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	PRW-3, comp	EA#0815	DD001	2/28/89
02				
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
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COMMENTS: _____

4B
SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: EA Laboratories Contract: _____

Lab Code: EAENG Case No.: willow Grove SAS No.: _____ SDG No.: _____

Lab File ID: AA05976 Lab Sample ID: Blank#481

Date Extracted: 3/1/89 Extraction: (SepF/Cont/Sonc) _____

Date Analyzed: 3/13/89 Time Analyzed: 22:18

Matrix: (soil/water) Soil Level: (low/med) Low

Instrument ID: GC/MS #B2

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	PRW-4 Composite	EA#0822	AA05978	3/14/89
02				
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
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COMMENTS: _____

4B
SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: EA Laboratories Contract: _____

Lab Code: EAENG Case No.: Willow Grove SAS No.: _____ SDG No.: _____

Lab File ID: AA05974 Lab Sample ID: Blank#483

Date Extracted: 3/1/89 Extraction: (SepF/Cont/Sonc) Cont

Date Analyzed: 3/13/89 Time Analyzed: 20:32

Matrix: (soil/water) Water Level: (low/med) Low

Instrument ID: GC/MS#B2

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	Rinsate Blank#5	EA# 0820	AA05977	3/13/89
02				
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
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COMMENTS: _____

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4B

SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: EA Laboratories Contract: 10388.03

Lab Code: EA ENG Case No.: Willow Grove SAS No.: _____ SDG No.: _____

Lab File ID: AA05972 Lab Sample ID: Blank #491

Date Extracted: 03/06/89 Extraction: (Sep/Cont/Sonc) Cont.

Date Analyzed: 03/13/89 Time Analyzed: 18:38

Matrix: (soil/water) Soil Level: (low/med) low

Instrument ID: #2(B)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	PR-SS-2 Re-ext	EA# 0749-RE	AA05979	03/14/89
02				
03				
04				
05				
06				
07				
08				
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COMMENTS:

4B
SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: EA Laboratories Contract: 10385.03

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Lab File ID: AA06038 Lab Sample ID: BL#529

Date Extracted: 03/27/89 Extraction: (SepF/Cont/Sonc) Cont

Date Analyzed: 03/30/89 Time Analyzed: 17:52

Matrix: (soil/water) Soil Level: (low/med) Low

Instrument ID: #2B

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	PR-SS-3 (Reext)	0777 (RE)	AA06040	03/30/89
02				
03				
04				
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COMMENTS: _____

page __ of __

GC/MS PERFORMANCE STANDARD

Decafluorotriphenylphospine (DFTPP)

Cas No.: _____ Contractor: EA Laboratories Contract No.: _____

Instrument ID: #4 (D) Date: 02/27/89 Time: 12:03

Lab ID: >DC984-129 Data Release Authorized By : _____

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	Appropriate Peak	Status
51	30-60% of mass 198	33.55	33.55	Ok
68	Less than 2% of mass 69	0.00	0.00	Ok
69	(reference only)	45.56	45.56	Ok
70	Less than 2% of mass 69	.24	.52	Ok
127	40-60% of mass 198	44.31	44.31	Ok
197	Less than 1% of mass 198	0.00	0.00	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	7.12	7.12	Ok
275	10-30% of mass 198	26.22	26.22	Ok
365	Greater than 1% of mass 198	3.22	3.22	Ok
441	0-100% of mass 443	14.12	88.70	Ok
442	Greater than 40% of mass 198	90.05	90.05	Ok
443	17-23% of mass 442	15.92	17.68	Ok

This performance tune applies to the following samples, blanks and standards:

Sample ID	Lab ID	Date of Analysis	Time of Analysis
BNA 50 PPm std	std # 1256 >DC986	2/27/89	15:56
BNA 160 PPm std.	std # 1253 >DC987		17:29
BNA 120 PPm std.	std # 1254 >DC988		18:15
BNA 80 PPm std.	std # 1255 >DC989		19:01
BNA 20 PPm std.	std # 1257 >DC990		19:47

FORM V

GC/MS PERFORMANCE STANDARD

Decafluorotriphenylphospine (DFTPP)

Case No.: _____ Contractor: EA Laboratories Contract No.: _____

Instrument ID: #4 (D) Date: 02/28/89 Time: 14:57

Lab ID: DC995-127 Data Release Authorized By : _____

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	Appropriate Peak	Status
51	30-60% of mass 198	58.49	58.49	Ok
68	Less than 2% of mass 69	0.00	0.00	Ok
69	(reference only)	72.09	72.09	Ok
70	Less than 2% of mass 69	.23	.32	Ok
127	40-60% of mass 198	52.60	52.60	Ok
197	Less than 1% of mass 198	0.00	0.00	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	6.81	6.81	Ok
275	10-30% of mass 198	23.42	23.42	Ok
365	Greater than 1% of mass 198	2.81	2.81	Ok
441	0-100% of mass 443	13.19	79.30	Ok
442	Greater than 40% of mass 198	86.86	86.86	Ok
443	17-23% of mass 442	16.64	19.15	Ok

This performance tune applies to the following samples, blanks and standards:

	Sample ID	Lab ID	Date of Analysis	Time of Analysis
	BNA 50 PPm std.	std #1256 DC996	2/28/89	15:30
	Blank For EA# 0815	Blank (#466) DC999	↓	19:25
0815	PRW-3 Composite	EA# 0815 DD001	↓	20:57

FORM V

GC/MS PERFORMANCE STANDARD

Decafluorotriphenylphosphine (DFTPP)

Case No.: Willow Grove Contractor: EH Laboratories Contract No.: _____

Instrument ID: #4 (D) Date: 03/08/89 Time: 13:55

Lab ID: FB798-195 Data Release Authorized By :

m/z	Ion Abundance Criteria	% Relative Abuncance Base Peak	Appropriate Peak	Status
51	30-60% of mass 198	56.23	56.23	Ok
68	Less than 2% of mass 69	0.00	0.00	Ok
69	(reference only)	77.45	77.45	Ok
70	Less than 2% of mass 69	0.00	0.00	Ok
127	40-60% of mass 198	46.58	46.58	Ok
197	Less than 1% of mass 198	0.00	0.00	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	6.24	6.24	Ok
275	10-30% of mass 198	19.26	19.26	Ok
365	Greater than 1% of mass 198	1.47	1.47	Ok
441	0-100% of mass 443	8.24	75.64	Ok
442	Greater than 40% of mass 198	57.88	57.88	Ok
443	17-23% of mass 442	10.90	18.83	Ok

This performance tune applies to the following samples, blanks and standards:

Sample ID	Lab ID	Date of Analysis	Time of Analysis
BNA 50 ppm STD Mix	FB799	03-08-89	20:28
BNA 160 ppm STD Mix	FB 800		21:49
BNA 120 ppm STD Mix	FB 801		22:56
BNA 80 ppm STD Mix	FB 802		23:55
BNA 20 ppm STD Mix	FB 803	03-09-89	00:55

FORM V

GC/MS PERFORMANCE STANDARD

Decafluorotriphenylphosphine (DFTPP)

Case No.: Willow Grove Contractor: EA Laboratories Contract No.: _____

Instrument ID: 44 (D) Date: 03/08/89 Time: 19:55

Lab ID: FB795-195 Data Release Authorized By: _____

m/z	Ion Abundance Criteria	% Relative Abuncance Base Peak	% Relative Abuncance Appropriate Peak	Status
51	30-60% of mass 198	56.23	56.23	Ok
68	Less than 2% of mass 69	0.00	0.00	Ok
69	reference only	77.45	77.45	Ok
70	Less than 2% of mass 69	0.00	0.00	Ok
127	40-60% of mass 198	46.58	46.58	Ok
197	Less than 1% of mass 198	0.00	0.00	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	6.24	6.24	Ok
275	10-30% of mass 198	19.26	19.26	Ok
365	Greater than 1% of mass 198	1.47	1.47	Ok
441	0-100% of mass 443	8.24	75.64	Ok
442	Greater than 40% of mass 198	57.88	57.88	Ok
443	17-23% of mass 442	10.90	18.83	Ok

This performance tune applies to the following samples, blanks and standards:

Sample ID	Lab ID	Date of Analysis	Time of Analysis
BNA 50 ppm STD Mix	FB795	03-08-89	20:28
BNA 160 ppm STD Mix	FB800		21:48
BNA 120 ppm STD Mix	FB801		22:52
BNA 80 ppm STD Mix	FB802		23:55
BNA 20 ppm STD Mix	FB803	03-09-89	00:55
Blank #452	FB804	03-09-89	01:55
EA#0775	FB806		03:55
~~EA# 0780~~	~~FB808~~		~~05:54~~ NMA 5/1/89
EA# 0781	FB809		06:54

3 024

FORM V

GC/MS PERFORMANCE STANDARD

Decafluorotriphenylphospine (DFTPP)

Case No.: Willow Grove Contractor: EA Laboratories Contract No.:

Instrument ID: #4 (D) Date: 03/09/89 Time: 18:13

Lab ID: >FB810-194 Data Release Authorized By :

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	Appropriate Peak	Status
51	30-60% of mass 198	52.52	52.52	Ok
68	Less than 2% of mass 69	0.00	0.00	Ok
69	(reference only)	66.37	66.37	Ok
70	Less than 2% of mass 69	.27	.40	Ok
127	40-60% of mass 198	42.52	42.52	Ok
197	Less than 1% of mass 198	0.00	0.00	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	6.69	6.69	Ok
275	10-30% of mass 198	20.31	20.31	Ok
365	Greater than 1% of mass 198	1.74	1.74	Ok
441	0-100% of mass 443	8.62	73.33	Ok
442	Greater than 40% of mass 198	61.43	61.43	Ok
443	17-23% of mass 442	11.76	19.14	Ok

This performance tune applies to the following samples, blanks and standards:

Sample ID	Lab ID	Date of Analysis	Time of Analysis
BNA 50 ppm STD Mix	>FB811	03-09-89	18:53
BLANK #440	>FB812	↓	20:09
BLANK #448	>FB813	↓	21:05
EA# 0637	>FB816	03-10-89	00:16
EA# 0638	>FB817	↓	01:18

GC/MS PERFORMANCE STANDARD

Decafluorotriphenylphospine (DFTPP)

Case No.: Willow Grove Contractor: EA Laboratories Contract No.: _____

Instrument ID: #4 (D) Date: 03/10/89 Time: 16:26

Lab ID: >FB822-195 Data Release Authorized By :

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	Appropriate Peak	Statu
51	30-60% of mass 198	44.79	44.79	Ok
68	Less than 2% of mass 69	0.00	0.00	Ok
69	(reference only)	56.69	56.69	Ok
70	Less than 2% of mass 69	.33	.58	Ok
127	40-60% of mass 198	40.30	40.30	Ok
197	Less than 1% of mass 198	0.00	0.00	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	7.07	7.07	Ok
275	10-30% of mass 198	19.31	19.31	Ok
365	Greater than 1% of mass 198	1.69	1.69	Ok
441	0-100% of mass 443	6.36	73.15	Ok
442	Greater than 40% of mass 198	47.73	47.73	Ok
443	17-23% of mass 442	8.70	18.23	Ok

This performance tune applies to the following samples, blanks and standards:

Sample ID	Lab ID	Date of Analysis	Time of Analy i
		3-10-89	~~18:46~~
BNA 50 ppm STD MIX	>FB 824		~~19:46~~ 18:46
BNA 160 ppm STD MIX	>FB 825		~~20:47~~ 19:46
BNA 120 ppm STD MIX	>FB 826		20:13
BNA 80 ppm STD MIX	>FB 827		21:29
BNA 20 ppm STD MIX	>FB 828		22:29
EA# 0640	>FB 829		23:29
EA# 0745	>FB 830	3-11-89	00:29
EA# 0746	>FB 831		01:29
EA# 0748	>FB 832		02:29

FORM V

GC/MS TUNING AND MASS CALIBRATION
DECAFLUOROTRIPHENYLPHOSPHINE

CASE NUMBER: WILLOW GROVELABORATORY: EA ENG. CONTRACT: 10388.03
INST ID: MS2 SENS DATE: 03/13/89 SENS TIME: 13:19:00
LAB ID: AA05966 CALI DATE: 03/13/89 ANALYST: JEH - EA
DATA RELEASE AUTHORIZED BY:

M/E	ION ABUNDANCE CRITERIA	SPEC # 728	
51	30 TO 60% OF MASS 198	40.82	
68	LESS THAN 2% OF MASS 69	0.00	(0.00) 1
69	MASS 69 RELATIVE ABUNDANCE	41.68	
70	LESS THAN 2% OF MASS 69	0.00	(0.00) 1
127	40 TO 60% OF MASS 198	43.39	
197	LESS THAN 1% OF MASS 198	0.00	
198	BASE PEAK, 100% RELATIVE ABUNDANCE	100.00	
199	5 TO 9% OF MASS 198	7.47	
275	10 TO 30% OF MASS 198	27.57	
365	GREATER THAN 1% OF MASS 198	4.63	
441	LESS THAN MASS 443	7.70	
442	GREATER THAN 40% OF MASS 198	55.91	
443	17 TO 23% OF MASS 442	10.23	(18.29) 2

1 - VALUE IN PARENTHESIS IS % OF MASS 69
2 - VALUE IN PARENTHESIS IS % OF MASS 442

BNA SAMPLE, BLANK AND STANDARD LOG

SAMPLE ID	LAB ID	DATE ANALYZED	TIME ANALYZED	INST ID
20 NG BNA STD	AA05967	03/13/89	13:45:00	MS2
50 NG BNA STD	AA05968	03/13/89	14:40:00	MS2
80 NG BNA STD	AA05969	03/13/89	15:42:00	MS2
120 NG BNA STD	AA05970	03/13/89	16:38:00	MS2
160 NG BNA STD	AA05971	03/13/89	17:36:00	MS2
SOIL BLANK 491	AA05972	03/13/89	18:38:00	MS2
8749 PR-SS-2 RE-EXT	AA05979	03/14/89	0:56:00	MS2

FORM V

GC/MS TUNING AND MASS CALIBRATION
DECAFLUOROTRIPHENYLPHOSPHINE

CASE NUMBER: WILLOW GROVELABORATORY: EA ENG. CONTRACT: 10388.03
INST ID: MS2 SENS DATE: 03/13/89 SENS TIME: 13:19:00
LAB ID: AA05966 CALI DATE: 03/13/89 ANALYST: JEH - EA
DATA RELEASE AUTHORIZED BY:

M/E	ION ABUNDANCE CRITERIA	SPEC # 728	
51	30 TO 60% OF MASS 198	40.82	
68	LESS THAN 2% OF MASS 69	0.00	(0.00) 1
69	MASS 69 RELATIVE ABUNDANCE	41.68	
70	LESS THAN 2% OF MASS 69	0.00	(0.00) 1
127	40 TO 60% OF MASS 198	43.39	
197	LESS THAN 1% OF MASS 198	0.00	
198	BASE PEAK, 100% RELATIVE ABUNDANCE	100.00	
199	5 TO 9% OF MASS 198	7.47	
275	10 TO 30% OF MASS 198	27.57	
365	GREATER THAN 1% OF MASS 198	4.63	
441	LESS THAN MASS 443	7.70	
442	GREATER THAN 40% OF MASS 198	55.91	
443	17 TO 23% OF MASS 442	10.23	(18.29) 2

1 - VALUE IN PARENTHESIS IS % OF MASS 69
2 - VALUE IN PARENTHESIS IS % OF MASS 442

BNA SAMPLE, BLANK AND STANDARD LOG

SAMPLE ID	LAB ID	DATE ANALYZED	TIME ANALYZED	INST ID
20 NG BNA STD	AA05967	03/13/89	13:45:00	MS2
50 NG BNA STD	AA05968	03/13/89	14:40:00	MS2
80 NG BNA STD	AA05969	03/13/89	15:42:00	MS2
120 NG BNA STD	AA05970	03/13/89	16:38:00	MS2
160 NG BNA STD	AA05971	03/13/89	17:36:00	MS2
WATER BLANK #483	AA05974	03/13/89	20:32:00	MS2
SOIL BLANK #481	AA05976	03/13/89	22:18:00	MS2
0820 RINSATE BLANK #5	AA05977	03/13/89	23:11:00	MS2
0822 PRW-4 COMPOSITE	AA05978	03/14/89	0:04:00	MS2

FORM V

GC/MS PERFORMANCE STANDARD

Decafluorotriphenylphospine (DFTPP)

Case No.: _____ Contractor: EA Laboratories Contract No.: _____

Instrument ID: #4 (D) Date: 03/24/89 Time: 20:43

Lab ID: >FB926-175 Data Release Authorized By : _____

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	Appropriate Peak	Status
51	30-60% of mass 198	52.20	52.20	Ok
68	Less than 2% of mass 69	0.00	0.00	Ok
69	(reference only)	64.03	64.03	Ok
70	Less than 2% of mass 69	0.00	0.00	Ok
127	40-60% of mass 198	41.91	41.91	Ok
197	Less than 1% of mass 198	0.00	0.00	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	6.63	6.63	Ok
275	10-30% of mass 198	18.84	18.84	Ok
365	Greater than 1% of mass 198	1.51	1.51	Ok
441	0-100% of mass 443	6.46	73.43	Ok
442	Greater than 40% of mass 198	51.55	51.55	Ok
443	17-23% of mass 442	8.80	17.08	Ok

This performance tune applies to the following samples, blanks and standards:

Sample ID	Lab ID	Date of Analysis	Time of Analysis
BNA 50 ppm STD Mix	>FB928	3-24-89	23:42
BNA 160 ppm STD Mix	>FB929	3-25-89	00:38
BNA 80 ppm STD Mix	>FB930		01:33
BNA 80 ppm STD Mix	>FB931		02:28
BNA 20 ppm STD Mix	>FB932		03:24
EA# 0776	>FB934		05:14
EA# 0780	>FB935		06:09
EA# 0780(MS)	>FB936		07:04
EA# 0780(MSD)	>FB937		07:59

FORM V

GC/MS TUNING AND MASS CALIBRATION
DECAFLUOROTRIPHENYLPHOSPHINE

CASE NUMBER: WILLOW GROVELABORATORY: EA ENG. CONTRACT: 10388.03
INST ID: MS2 SENS DATE: 03/30/89 SENS TIME: 10:57:00
LAB ID: AA06031 CALI DATE: 03/30/89 ANALYST: JEH - EA
DATA RELEASE AUTHORIZED BY:

M/E	ION ABUNDANCE CRITERIA	SPEC # 714	
51	30 TO 60% OF MASS 198	45.32	
68	LESS THAN 2% OF MASS 69	0.00	(0.00) 1
69	MASS 69 RELATIVE ABUNDANCE	36.88	
70	LESS THAN 2% OF MASS 69	0.00	(0.00) 1
127	40 TO 60% OF MASS 198	40.17	
197	LESS THAN 1% OF MASS 198	0.00	
198	BASE PEAK, 100% RELATIVE ABUNDANCE	100.00	
199	5 TO 9% OF MASS 198	8.82	
275	10 TO 30% OF MASS 198	25.82	
365	GREATER THAN 1% OF MASS 198	3.40	
441	LESS THAN MASS 443	5.95	
442	GREATER THAN 40% OF MASS 198	55.69	
443	17 TO 23% OF MASS 442	11.64	(20.90) 2

1 - VALUE IN PARENTHESIS IS % OF MASS 69
2 - VALUE IN PARENTHESIS IS % OF MASS 442

BNA SAMPLE, BLANK AND STANDARD LOG

SAMPLE ID	LAB ID	DATE ANALYZED	TIME ANALYZED	INST ID
160 NG BNA STD	AA06032	03/30/89	12:22:00	MS2
120 NG BNA STD	AA06033	03/30/89	13:17:00	MS2
80 NG BNA STD	AA06034	03/30/89	14:13:00	MS2
50 NG BNA STD	AA06035	03/30/89	15:09:00	MS2
20 NG BNA STD	AA06036	03/30/89	16:03:00	MS2
SOIL BLANK RE-EXT #529	AA06038	03/30/89	17:52:00	MS2
0777 R2 PR-SS-3 RE-EXT	AA06040	03/30/89	19:51:00	MS2

FORM V

B. Sample Data

Data Reporting Qualifiers

Value - If the result is a value greater than or equal to the Contract Required Detection Limit (CRDL), the value is reported.

U - Indicates that the compound was analyzed for but not detected. The minimum CRDL for the sample with the U (e.g. 10U) is reported based on necessary concentration or dilution actions.

J - Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response factor is assumed, or when the mass spectral data indicates the presence of a compound that meets the identification criteria but the result is less than the specified CRDL but greater than zero.

C - This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides greater than or equal to 10ng/ul in the final extract should be confirmed by GC/MS.

B - This flag is used when the analyte is found in the blank as well as in the sample. It indicates a possible blank contamination and warns the user to take appropriate action.

Other - Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

T - Compound is likely to be present; spectra shows evidence of compound although the spectra fails confirmation due to interfering ions

Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
EA#0637,PR-1

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 02/22/89
Date Analyzed: 3/10/89 0:16
Conc/Dil Factor: 1.00000
Percent Moisture (Decanted) N/A

GPC Cleanup Yes No
Separatory Funnel Extraction Yes
Continuous Liquid-Liquid Extraction Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)		C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	1100.	U	83-32-9	Acenaphthene	1100.	U
111-44-4	bis(2-Chloroethyl)ether	1100.	U	51-28-5	2,4-Dinitrophenol	5700.	U
95-57-8	2-Chlorophenol	1100.	U	100-02-7	4-Nitrophenol	5700.	U
541-73-1	1,3-Dichlorobenzene	1100.	U	132-64-9	Dibenzofuran	1100.	U
106-46-7	1,4-Dichlorobenzene	1100.	U	121-14-2	2,4-Dinitrotoluene	1100.	U
100-51-6	Benzyl Alcohol	1100.	U	606-20-2	2,6-Dinitrotoluene	1100.	U
95-50-1	1,2-Dichlorobenzene	1100.	U	84-66-2	Diethylphthalate	1100.	U
95-48-7	2-Methylphenol	1100.	U	7005-72-3	4-Chlorophenyl-phenylether	1100.	U
39638-32-9	bis(2-Chloroisopropyl)ether	1100.	U	86-73-7	Fluorene	1100.	U
106-44-5	4-Methylphenol	1100.	U	100-01-6	4-Nitroaniline	1100.	U
621-64-7	N-Nitroso-Di-n-propylamine	1100.	U	534-52-1	4,6-Dinitro-2-methylphenol	5700.	U
67-72-1	Hexachloroethane	1100.	U	86-30-6	N-Nitrosodiphenylamine (1)	1100.	U
98-95-3	Nitrobenzene	1100.	U	101-55-3	4-Bromophenyl-phenylether	1100.	U
78-59-1	Isophorone	1100.	U	118-74-1	Hexachlorobenzene	1100.	U
88-75-5	2-Nitrophenol	1100.	U	87-86-5	Pentachlorophenol	5700.	U
105-67-9	2,4-Dimethylphenol	1100.	U	85-01-8	Phenanthrene	1100.	U
65-85-0	Benzoic Acid	5700.	U	120-12-7	Anthracene	1100.	U
111-91-1	bis(2-Chloroethoxy)methane	1100.	U	84-74-2	Di-n-Butyl phthalate	1100.	U
120-83-2	2,4-Dichlorophenol	1100.	U	206-44-0	Fluoranthene	1100.	U
120-82-1	1,2,4-Trichlorobenzene	1100.	U	129-00-0	Pyrene	1100.	U
91-20-3	Naphthalene	1100.	U	85-68-7	Butylbenzylphthalate	1100.	U
106-47-8	4-Chloroaniline	1100.	U	91-94-1	3,3'-Dichlorobenzidine	2300.	U
87-68-3	Hexachlorobutadiene	1100.	U	56-55-3	Benzo(a)Anthracene	1100.	U
59-50-7	4-Chloro-3-methylphenol	1100.	U	117-81-7	bis(2-Ethylhexyl)phthalate	1100.	U
91-57-6	2-Methylnaphthalene	1100.	U	218-01-9	Chrysene	1100.	U
77-47-4	Hexachlorocyclopentadiene	1100.	U	117-84-0	Di-n-Octyl phthalate	1100.	U
88-06-2	2,4,6-Trichlorophenol	1100.	U	205-99-2	Benzo(b)Fluoranthene	1100.	U
95-95-4	2,4,5-Trichlorophenol	5700.	U	207-08-9	Benzo(k)Fluoranthene	1100.	U
91-58-7	2-Chloronaphthalene	1100.	U	50-32-8	Benzo(a)Pyrene	1100.	U
88-74-4	2-Nitroaniline	5700.	U	193-39-5	Indeno(1,2,3-cd)Pyrene	1100.	U
131-11-3	Dimethylphthalate	1100.	U	53-70-3	Dibenzo(a,h)Anthracene	1100.	U
208-96-8	Acenaphthylene	1100.	U	191-24-2	Benzo(g,h,i)Perylene	1100.	U
99-09-2	3-Nitroaniline	5700.	U				

(1)-Cannot be separated from diphenylamine

Laboratory Name: EA LABORATORIES
Case No: WILLOW GROVE

Sample Number
EA#0637

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/liter ug/kg)
1. 108883	Methyl Benzene	BNA	4.31	2000.00 J B
2.				
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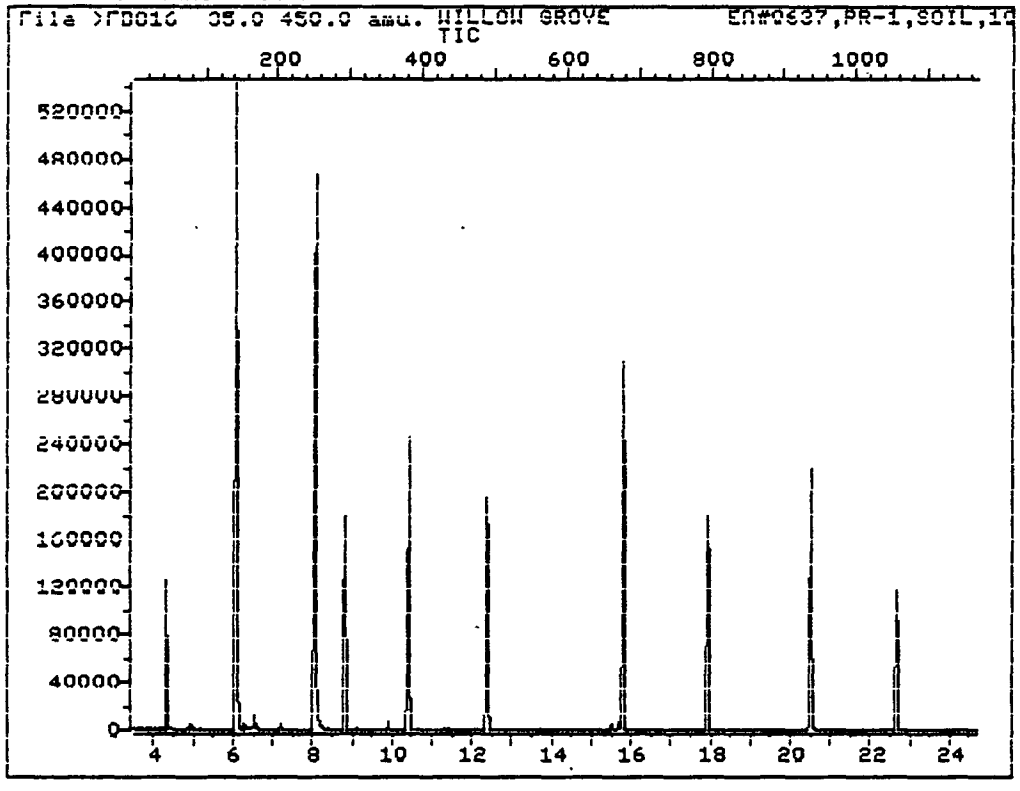
TOTAL ION CHROMATOGRAM



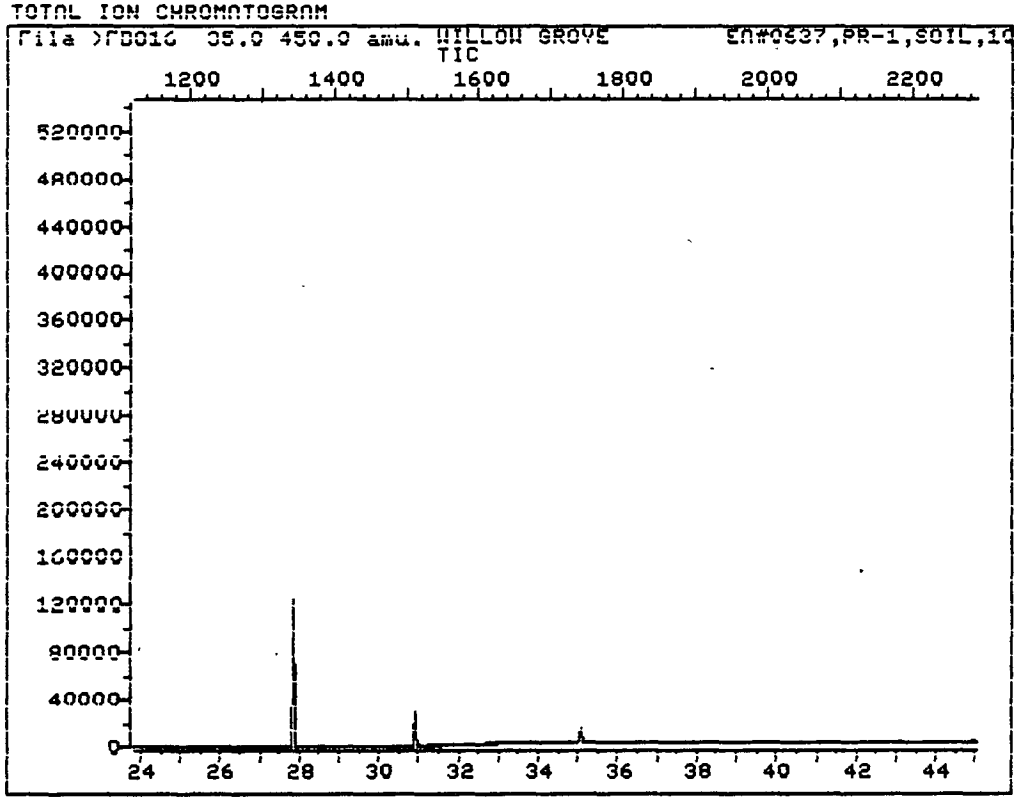
Data File: >FB816::D4 Quant Output File: ^FB816::QT
Name: WILLOW GROVE
Misc: EA#0637,PR-1,SOIL,10.08,1, <113.1> BTL# 5

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890412 20:54

Operator ID: UNCLE
Quant Time: 890412 21:11
Injected at: 890310 00:16

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >FB816::D4 Quant Output File: ^FB816::QT
Name: WILLOW GROVE
Mi c: EA#0637,PR-1,SOIL,10.08,1, <113.1> BTL# 5

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890412 20:54

Operator ID: UNCLE
Quant Time: 890412 21:11
Injected at: 890310 00:16

TIC page 2 of 2

QUANT REPORT

Operator ID: UNCLE Quant Rev: 6 Quant Time: 890412 21:11
Output File: ^FB816::QT Injected at: 890310 00:16
Data File: >FB816::D4 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0637,PR-1,SOIL,10.08,1, <113.1> BTL# 5

ID File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890412 20:54

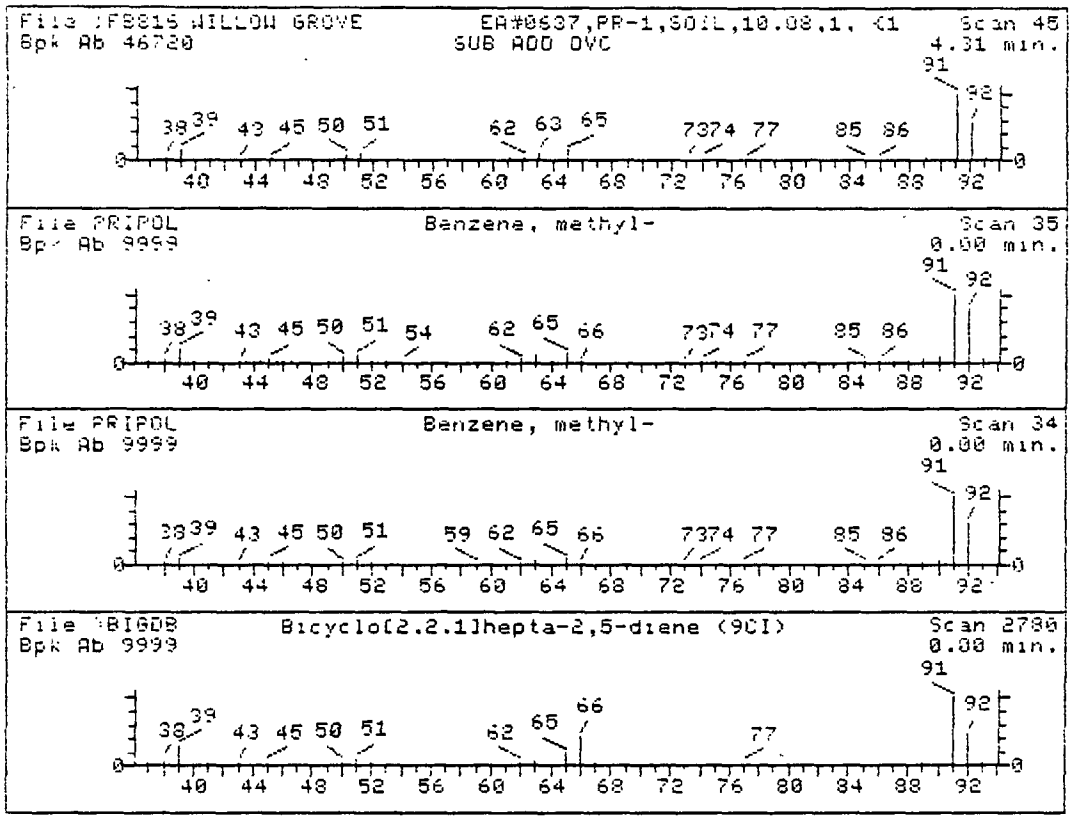
	Compound	R.T.	Q ion	Area	Conc	Unit		q
1)	*d4-1,4-Dichlorobenzene	8.80	152.0	65507	40.00	NG		99
2)	2-Fluorophenol	6.07	112.0	298461	144.90	NG	73%	99
3)	Phenol-d5	8.06	99.0	405484	159.90	NG	80%	94
4)	Phenol	0.00	94.0	0	0.00	NG		
5)	bis(2-Chloroethyl)ether	0.00	93.0	0	0.00	NG		
6)	2-Chlorophenol	0.00	128.0	0	0.00	NG		
7)	1,3-Dichlorobenzene	0.00	146.0	0	0.00	NG		
8)	1,4-Dichlorobenzene	0.00	146.0	0	0.00	NG		
9)	Benzyl Alcohol	0.00	108.0	0	0.00	NG		
10)	1,2-Dichlorobenzene	0.00	146.0	0	0.00	NG		
11)	2-Methylphenol	0.00	108.0	0	0.00	NG		
12)	bis(2-Chloroisopropyl)ether	0.00	45.0	0	0.00	NG		
13)	4-Methylphenol	0.00	108.0	0	0.00	NG		
14)	N-Nitroso-Di-n-propylamine	0.00	70.0	0	0.00	NG		
15)	Hexachloroethane	0.00	117.0	0	0.00	NG		
16)	*d8-Naphthalene	12.38	136.0	236749	40.00	NG		90
17)	Nitrobenzene-d5	10.42	82.0	203239	84.33	NG	84%	90
18)	Nitrobenzene	0.00	77.0	0	0.00	NG		
19)	I ophorone	0.00	82.0	0	0.00	NG		
20)	2-Nitrophenol	0.00	139.0	0	0.00	NG		
21)	2,4-Dimethylphenol	0.00	107.0	0	0.00	NG		
22)	B nzoic Acid	0.00	122.0	0	0.00	NG		
23)	bis(2-Chloroethoxy)methane	0.00	93.0	0	0.00	NG		
24)	2,4-Dichlorophenol	0.00	162.0	0	0.00	NG		
25)	1,2,4-Trichlorobenzene	0.00	180.0	0	0.00	NG		
26)	Naphthalene	0.00	128.0	0	0.00	NG		
27)	4-Chloroaniline	0.00	127.0	0	0.00	NG		
28)	H xachlorobutadiene	0.00	224.7	0	0.00	NG		
29)	4-Chloro-3-methylphenol	0.00	107.0	0	0.00	NG		
30)	2-Methylnaphthalene	0.00	142.0	0	0.00	NG		
31)	*d10-Acenaphthene	17.93	164.0	112505	40.00	NG		92
32)	Hexachlorocyclopentadiene	0.00	237.0	0	0.00	NG		
33)	2,4,6-Trichlorophenol	0.00	196.0	0	0.00	NG		
34)	2,4,5-Trichlorophenol	0.00	196.0	0	0.00	NG		
35)	2-Chloronaphthalene	0.00	162.0	0	0.00	NG		
36)	2-Fluorobiphenyl	15.81	172.0	263090	64.89	NG	65%	95
37)	2-Nitroaniline	0.00	65.0	0	0.00	NG		
38)	Dimethylphthalate	17.93	163.0	19932	~~4.14~~	NG		56
39)	Acenaphthylene	0.00	152.0	0	0.00	NG		
40)	3-Nitroaniline	0.00	138.0	0	0.00	NG		
41)	Acenaphthene	0.00	153.0	0	0.00	NG		
42)	2,4-Dinitrophenol	0.00	184.0	0	0.00	NG		

QUANT REPORT
page 2

Output File:^FB816:: Data File:>FB816::D4

	Compound	R.T.	Q ion	Area	Conc	Units	q
43)	4-Nitrophenol	0.00	109.0	0	0.00	NG	
44)	Dibenzofuran	0.00	168.0	0	0.00	NG	
45)	2,4-Dinitrotoluene	0.00	165.0	0	0.00	NG	
46)	2,6-Dinitrotoluene	0.00	165.0	0	0.00	NG	
47)	Diethylphthalate	0.00	149.0	0	0.00	NG	
48)	4-Chlorophenyl-phenylether	0.00	204.0	0	0.00	NG	
49)	Fluorene	0.00	166.0	0	0.00	NG	
50)	4-Nitroaniline	0.00	138.0	0	0.00	NG	
51)	*d10-Phenanthrene	22.66	188.0	128985	40.00	NG	99
52)	4,6-Dinitro-2-methylphenol	0.00	198.0	0	0.00	NG	
53)	N-Nitrosodiphenylamine	0.00	169.0	0	0.00	NG	
54)	2,4,6-Tribromophenol	20.52	329.9	74669	148.67	NG 74%	94
55)	4-Bromophenyl-phenylether	0.00	248.0	0	0.00	NG	
56)	Hexachlorobenzene	0.00	283.6	0	0.00	NG	
57)	Pentachlorophenol	0.00	266.0	0	0.00	NG	
58)	Phenanthrene	0.00	178.0	0	0.00	NG	
59)	Anthracene	0.00	178.0	0	0.00	NG	
60)	Di-n-Butyl phthalate	0.00	149.0	0	0.00	NG	
61)	Fluoranthene	0.00	202.0	0	0.00	NG	
62)	*d12-Chrysene	30.92	240.0	30341	40.00	NG	95
63)	Pyrene	0.00	202.0	0	0.00	NG	
64)	Terphenyl-d14	27.85	244.0	128655	87.78	NG 88%	85
65)	Butylbenzylphthalate	0.00	149.0	0	0.00	NG	
66)	3,3'-Dichlorobenzidine	0.00	252.0	0	0.00	NG	
67)	Benzo(a)Anthracene	0.00	228.0	0	0.00	NG	
68)	bis(2-Ethylhexyl)phthalate	0.00	149.0	0	0.00	NG	
69)	Chrysene	0.00	228.0	0	0.00	NG	
70)	*d12-Perylene	35.07	264.0	20638	40.00	NG	92
71)	Di-n-Octyl phthalate	0.00	149.0	0	0.00	NG	
72)	Benzo(b)Fluoranthene	0.00	252.0	0	0.00	NG	
73)	B nzo(k)Fluoranthene	0.00	252.0	0	0.00	NG	
74)	Benzo(a)Pyrene	0.00	252.0	0	0.00	NG	
75)	Indeno(1,2,3-cd)Pyrene	0.00	276.0	0	0.00	NG	
76)	Dibenzo(a,h)Anthracene	0.00	278.0	0	0.00	NG	
77)	Benzo(g,h,i)Perylene	0.00	276.0	0	0.00	NG	

* Compound is ISTD



Retention time = 4.31

Area = 195998.0 Tentative Concentration is 2000.00

1.	Benzene, methyl-	92	C7H8
2.	Benzene, methyl-	92	C7H8
3.	Bicyclo[2.2.1]hepta-2,5-diene (9CI)	92	C7H8
4.	Benzene, methyl-	92	C7H8
5.	Benzene, methyl- (9CI)	92	C7H8
6.	Benzene, methyl-	92	C7H8
7.	Benzene, methyl-	92	C7H8

Sample file: >FB816 Spectrum #: 45
Search speed: 2 Tilting option: S No. of ion ranges searched: 45

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	CAL	R_IV
1.	89*	35	131	PRIPOL	78	17	2	2	68	4	66	61
2.	81*	34	130	PRIPOL	62	16	2	4	94	8	53	42

3.	81*	121460	2780	"BIGDB	64	31	2	0	85	6	53	48
4.	79*	33	129	PRIPOL	73	17	1	0	54	29	43	80
5.	79*	108883	7699	"BIGDB	73	17	1	0	54	29	43	80
6.	76*	36	132	PRIPOL	41	43	2	0	88	6	45	21
7.	76*	37	133	PRIPOL	48	48	2	0	78	6	45	25

LIBRARY SEARCH SUMMARY

MS Data File:>FB816::D4 Analyst:UNCLE MS

Name:WILLOW GROVE Date/Time: 3/10/89 0:16
Misc:EA#U637,PR-1,SOIL,10.08,1, ?113.1? BTL# 5

The following hits are >10% of the nearest ISTD.

Peak # in PSM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	4.31	195998	45202
~~2~~	~~8.13~~	~~51165~~	~~45202~~

Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
EA#0638,PR-2

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 02/22/89
Date Analyzed: 3/10/89 1:18
Conc/Dil Factor: 1.00000
Percent Moisture (Decanted) N/A

GPC Cleanup Yes No
Separatory Funnel Extraction Yes
Continuous Liquid-Liquid Extraction Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)		C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	1200.	U	83-32-9	Acenaphthene	1200.	U
111-44-4	bis(2-Chloroethyl)ether	1200.	U	51-28-5	2,4-Dinitrophenol	5900.	U
95-57-8	2-Chlorophenol	1200.	U	100-02-7	4-Nitrophenol	5900.	U
541-73-1	1,3-Dichlorobenzene	1200.	U	132-64-9	Dibenzofuran	1200.	U
106-46-7	1,4-Dichlorobenzene	1200.	U	121-14-2	2,4-Dinitrotoluene	1200.	U
100-51-6	Benzyl Alcohol	1200.	U	606-20-2	2,6-Dinitrotoluene	1200.	U
95-50-1	1,2-Dichlorobenzene	1200.	U	84-66-2	Diethylphthalate	1200.	U
95-48-7	2-Methylphenol	1200.	U	7005-72-3	4-Chlorophenyl-phenylether	1200.	U
39638-32-9	bis(2-Chloroisopropyl)ether	1200.	U	86-73-7	Fluorene	1200.	U
106-44-5	4-Methylphenol	1200.	U	100-01-6	4-Nitroaniline	1200.	U
621-64-7	N-Nitroso-Di-n-propylamine	1200.	U	534-52-1	4,6-Dinitro-2-methylphenol	5900.	U
67-72-1	Hexachloroethane	1200.	U	86-30-6	N-Nitrosodiphenylamine (1)	1200.	U
98-95-3	Nitrobenzene	1200.	U	101-55-3	4-Bromophenyl-phenylether	1200.	U
78-59-1	Isophorone	1200.	U	118-74-1	Hexachlorobenzene	1200.	U
88-75-5	2-Nitrophenol	1200.	U	87-86-5	Pentachlorophenol	5900.	U
105-67-9	2,4-Dimethylphenol	1200.	U	85-01-8	Phenanthrene	1200.	U
65-85-0	Benzoic Acid	5900.	U	120-12-7	Anthracene	1200.	U
111-91-1	bis(2-Chloroethoxy)methane	1200.	U	84-74-2	Di-n-Butyl phthalate	1200.	U
120-83-2	2,4-Dichlorophenol	1200.	U	206-44-0	Fluoranthene	1200.	U
120-82-1	1,2,4-Trichlorobenzene	1200.	U	129-00-0	Pyrene	1200.	U
91-20-3	Naphthalene	1200.	U	85-68-7	Butylbenzylphthalate	1200.	U
106-47-8	4-Chloroaniline	1200.	U	91-94-1	3,3'-Dichlorobenzidine	2400.	U
87-68-3	Hexachlorobutadiene	1200.	U	56-55-3	Benzo(a)Anthracene	1200.	U
59-50-7	4-Chloro-3-methylphenol	1200.	U	117-81-7	bis(2-Ethylhexyl)phthalate	1200.	U
91-57-6	2-Methylnaphthalene	1200.	U	218-01-9	Chrysene	1200.	U
77-47-4	Hexachlorocyclopentadiene	1200.	U	117-84-0	Di-n-Octyl phthalate	1200.	U
88-06-2	2,4,6-Trichlorophenol	1200.	U	205-99-2	Benzo(b)Fluoranthene	1200.	U
95-95-4	2,4,5-Trichlorophenol	5900.	U	207-08-9	Benzo(k)Fluoranthene	1200.	U
91-58-7	2-Chloronaphthalene	1200.	U	50-32-8	Benzo(a)Pyrene	1200.	U
88-74-4	2-Nitroaniline	5900.	U	193-39-5	Indeno(1,2,3-cd)Pyrene	1200.	U
131-11-3	Dimethylphthalate	1200.	U	53-70-3	Dibenzo(a,h)Anthracene	1200.	U
208-96-8	Acenaphthylene	1200.	U	191-24-2	Benzo(g,h,i)Perylene	1200.	U
99-09-2	3-Nitroaniline	5900.	U				

(1)-Cannot be separated from diphenylamine

Laboratory Name: EA LABORATORIES

Case No: Willow Grove

Sample Number: EA# 0638

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT ~~or Scan Number~~	Estimated Concentration (~~ug/l or~~ ug/kg)
1. 556672	Octamethylcyclotetrasiloxane	BNA	8.19	810.00J
2.				
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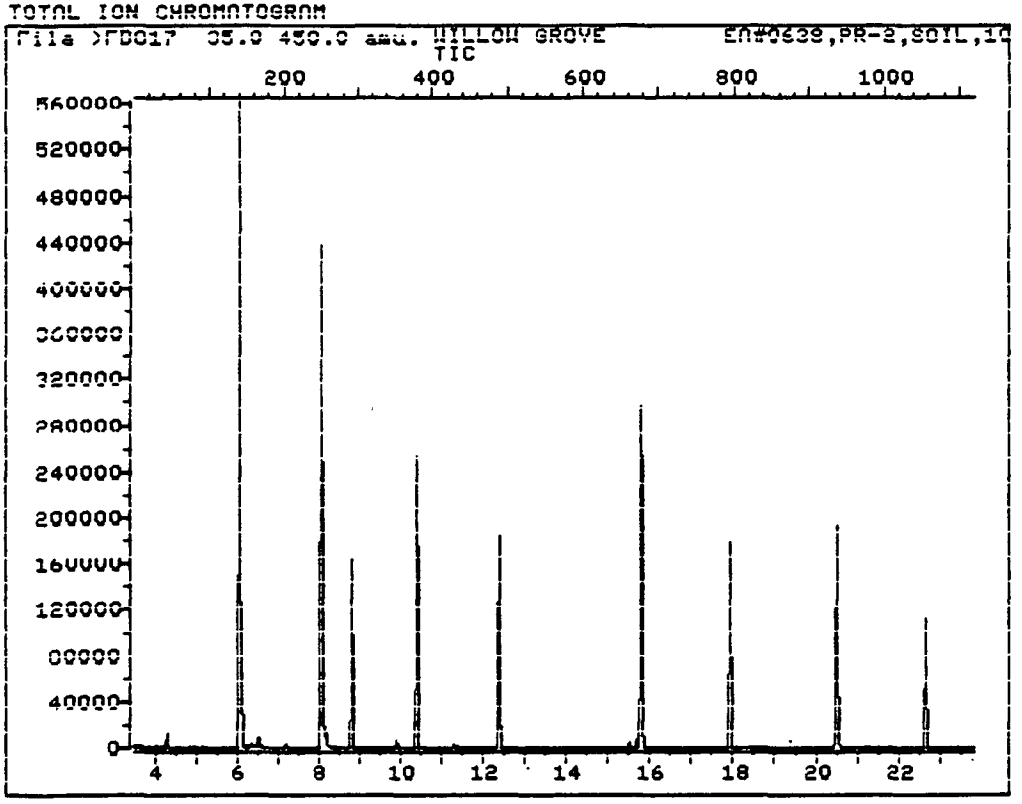
TOTAL ION CHROMATOGRAM



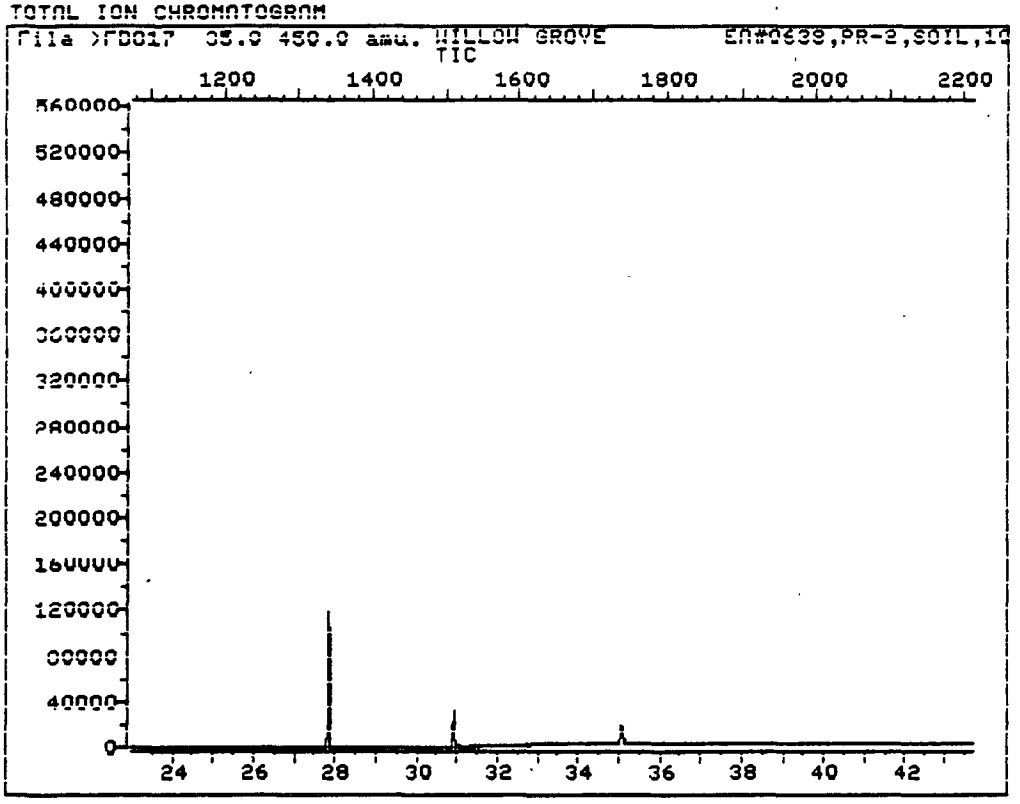
Data File: >FB817::BD Quant Output File: ^FB817::QT
Name: WILLOW GROVE
Misc: EA#0638,PR-2,SOIL,10.15,1, <118.2> BTL# 6

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890412 20:54

Operator ID: UNCLE
Quant Time: 890412 21:41
Injected at: 890310 01:18

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >FB817::BD Quant Output File: ^FB817::QT
Name: WILLOW GROVE
Misc: EA#0638,PR-2,SOIL,10.15,1, <118.2> BTL# 6

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890412 20:54

Op rator ID: UNCLE
Quant Time: 890412 21:41
Injected at: 890310 01:18

TIC page 2 of 2

QUANT REPORT

Operator ID: UNCLE Quant Rev: 6 Quant Time: 890412 21:41
Output File: ^FB817::QT Injected at: 890310 01:18
Data File: >FB817::BD Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0638,PR-2,SOIL,10.15,1, (118.2) BTL# 6

ID File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
La t Calibration: 890412 20:54

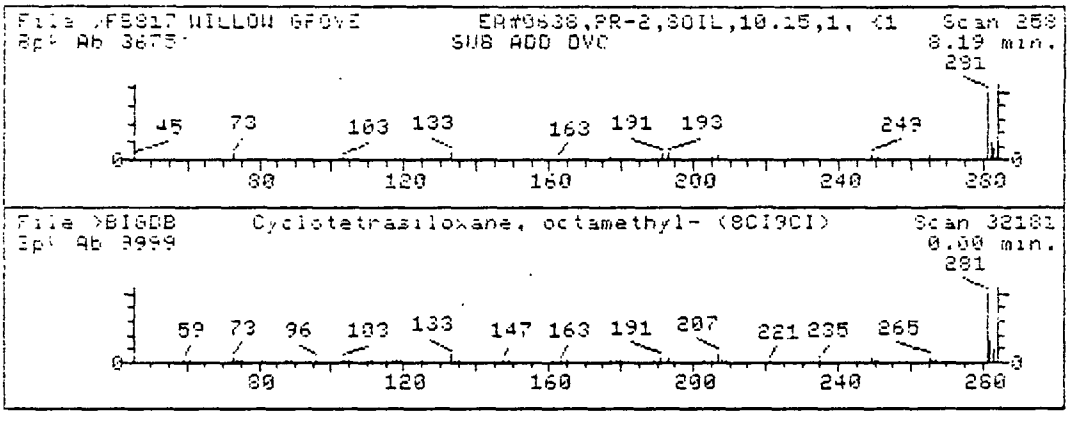
	Compound	R.T.	Q ion	Area	Conc	Units		q
1)	*d4-1,4-Dichlorobenzene	8.80	152.0	67098	40.00	NG		97
2)	2-Fluorophenol	6.06	112.0	295267	139.95	NG	70%	98
3)	Phenol-d5	8.06	99.0	409141	157.51	NG	79%	95
4)	Phenol	0.00	94.0	0	0.00	NG		
5)	bis(2-Chloroethyl)ether	0.00	93.0	0	0.00	NG		
6)	2-Chlorophenol	0.00	128.0	0	0.00	NG		
7)	1,3-Dichlorobenzene	0.00	146.0	0	0.00	NG		
8)	1,4-Dichlorobenzene	0.00	146.0	0	0.00	NG		
9)	B nzyl Alcohol	0.00	108.0	0	0.00	NG		
10)	1,2-Dichlorobenzene	0.00	146.0	0	0.00	NG		
11)	2-Methylphenol	0.00	108.0	0	0.00	NG		
12)	bis(2-Chloroisopropyl)ether	0.00	45.0	0	0.00	NG		
13)	4-Methylphenol	0.00	108.0	0	0.00	NG		
14)	N-Nitroso-Di-n-propylamine	0.00	70.0	0	0.00	NG		
15)	Hexachloroethane	0.00	117.0	0	0.00	NG		
16)	*d8-Naphthalene	12.38	136.0	240768	40.00	NG		90
17)	Nitrobenzene-d5	10.42	82.0	203815	83.16	NG	83%	93
18)	Nitrobenzene	0.00	77.0	0	0.00	NG		
19)	Isophorone	0.00	82.0	0	0.00	NG		
20)	2-Nitrophenol	0.00	139.0	0	0.00	NG		
21)	2,4-Dimethylphenol	0.00	107.0	0	0.00	NG		
22)	Benzoic Acid	0.00	122.0	0	0.00	NG		
23)	bis(2-Chloroethoxy)methane	0.00	93.0	0	0.00	NG		
24)	2,4-Dichlorophenol	0.00	162.0	0	0.00	NG		
25)	1,2,4-Trichlorobenzene	0.00	180.0	0	0.00	NG		
26)	Naphthalene	0.00	128.0	0	0.00	NG		
27)	4-Chloroaniline	0.00	127.0	0	0.00	NG		
28)	H xachlorobutadiene	0.00	224.7	0	0.00	NG		
29)	4-Chloro-3-methylphenol	0.00	107.0	0	0.00	NG		
30)	2-Methylnaphthalene	0.00	142.0	0	0.00	NG		
31)	*d10-Acenaphthene	17.93	164.0	111140	40.00	NG		95
32)	Hexachlorocyclopentadiene	0.00	237.0	0	0.00	NG		
33)	2,4,6-Trichlorophenol	0.00	196.0	0	0.00	NG		
34)	2,4,5-Trichlorophenol	0.00	196.0	0	0.00	NG		
35)	2-Chloronaphthalene	0.00	162.0	0	0.00	NG		
36)	2-Fluorobiphenyl	15.81	172.0	264610	66.07	NG	66%	94
37)	2-Nitroaniline	0.00	65.0	0	0.00	NG		
38)	Dimethylphthalate	17.93	163.0	19934	~~4.19~~	NG		56
39)	Acenaphthylene	0.00	152.0	0	0.00	NG		
40)	3-Nitroaniline	0.00	138.0	0	0.00	NG		
41)	Ac naphthene	0.00	153.0	0	0.00	NG		
42)	2,4-Dinitrophenol	0.00	184.0	0	0.00	NG		

QUANT REPORT
page 2

Output File:^FB817:: Data File:>FB817::BD

	Compound	R.T.	Q ion	Area	Conc	Units	q
43)	4-Nitrophenol	0.00	109.0	0	0.00	NG	
44)	Dibenzofuran	0.00	168.0	0	0.00	NG	
45)	2,4-Dinitrotoluene	0.00	165.0	0	0.00	NG	
46)	2,6-Dinitrotoluene	0.00	165.0	0	0.00	NG	
47)	Diethylphthalate	0.00	149.0	0	0.00	NG	
48)	4-Chlorophenyl-phenylether	0.00	204.0	0	0.00	NG	
49)	Fluorene	0.00	166.0	0	0.00	NG	
50)	4-Nitroaniline	0.00	138.0	0	0.00	NG	
51)	*d10-Phenanthrene	22.67	188.0	122884	40.00	NG	99
52)	4,6-Dinitro-2-methylphenol	0.00	198.0	0	0.00	NG	
53)	N-Nitrosodiphenylamine	0.00	169.0	0	0.00	NG	
54)	2,4,6-Tribromophenol	20.51	329.9	65115	136.09	NG 68%	93
55)	4-Bromophenyl-phenylether	0.00	248.0	0	0.00	NG	
56)	H xachlorobenzene	0.00	283.6	0	0.00	NG	
57)	Pentachlorophenol	0.00	266.0	0	0.00	NG	
58)	Phenanthrene	0.00	178.0	0	0.00	NG	
59)	Anthracene	0.00	178.0	0	0.00	NG	
60)	Di-n-Butyl phthalate	0.00	149.0	0	0.00	NG	
61)	Fluoranthene	0.00	202.0	0	0.00	NG	
62)	*d12-Chrysene	30.92	240.0	33476	40.00	NG	96
63)	Pyrene	0.00	202.0	0	0.00	NG	
64)	Terphenyl-d14	27.86	244.0	116579	72.09	NG 72%	86
65)	Butylbenzylphthalate	0.00	149.0	0	0.00	NG	
66)	3,3'-Dichlorobenzidine	0.00	252.0	0	0.00	NG	
67)	Benzo(a)Anthracene	0.00	228.0	0	0.00	NG	
68)	bi (2-Ethylhexyl)phthalate	31.03	149.0	881	~~.97~~	NG	97
69)	Chrysene	0.00	228.0	0	0.00	NG	
70)	d12-Perylene	35.08	264.0	25727	40.00	NG	95
71)	Di-n-Octyl phthalate	0.00	149.0	0	0.00	NG	
72)	Benzo(b)Fluoranthene	0.00	252.0	0	0.00	NG	
73)	Benzo(k)Fluoranthene	0.00	252.0	0	0.00	NG	
74)	Benzo(a)Pyrene	0.00	252.0	0	0.00	NG	
75)	Indeno(1,2,3-cd)Pyrene	0.00	276.0	0	0.00	NG	
76)	Dibenzo(a,h)Anthracene	0.00	278.0	0	0.00	NG	
77)	Benzo(g,h,i)Perylene	0.00	276.0	0	0.00	NG	

* Compound is ISTD



Retention time = 8.19

Area = 77466.00 Tentative Concentration is 810.00

1. Cyclotetrasiloxane, octamethyl- (8CI9CI) 296 C8H24O4Si4

Sample file: >FB817 Spectrum #: 258
Search speed: 2 Tilting option: S No. of ion ranges searched: 54

	Prob.	CAS #	CON #	ROOT	K	OK	#FLG	TILT	%	CON	C_I	R_IV
1.	78	556672	32181	"BIGDB	78	58	2	0	95	0	55	19

LIBRARY SEARCH SUMMARY

MS Data File:>F8817::80 Analyst:UNCLE MS

Name:WILLOW GROVE Date/Time: 3/10/89 1:18
Misc:EA#0638,PR-2,SOIL,10.15,1, ?118.2? BTL# 6

The following hits are >10% of the nearest ISTD.

Peak # in PSM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	8.19	77466	45330

Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
EA#0745 ~~PR-5~~ PRW-1 ~~S-5~~

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 02/21/89
Date Analyzed: 3/11/89 0:29
Conc/Dil Factor: 1.00000
Percent Moisture (Decanted) N/A

GPC Cleanup Yes No
Separatory Funnel Extraction Yes
Continuous Liquid-Liquid Extraction Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)		C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	1200.	U	83-32-9	Acenaphthene	1200.	U
111-44-4	bis(2-Chloroethyl)ether	1200.	U	51-28-5	2,4-Dinitrophenol	5900.	U
95-57-8	2-Chlorophenol	1200.	U	100-02-7	4-Nitrophenol	5900.	U
541-73-1	1,3-Dichlorobenzene	1200.	U	132-64-9	Dibenzofuran	1200.	U
106-46-7	1,4-Dichlorobenzene	1200.	U	121-14-2	2,4-Dinitrotoluene	1200.	U
100-51-6	Benzyl Alcohol	1200.	U	606-20-2	2,6-Dinitrotoluene	1200.	U
95-50-1	1,2-Dichlorobenzene	1200.	U	84-66-2	Diethylphthalate	1200.	U
95-48-7	2-Methylphenol	1200.	U	7005-72-3	4-Chlorophenyl-phenylether	1200.	U
39638-32-9	bis(2-Chloroisopropyl)ether	1200.	U	86-73-7	Fluorene	1200.	U
106-44-5	4-Methylphenol	1200.	U	100-01-6	4-Nitroaniline	1200.	U
621-64-7	N-Nitroso-Di-n-propylamine	1200.	U	534-52-1	4,6-Dinitro-2-methylphenol	5900.	U
67-72-1	Hexachloroethane	1200.	U	86-30-6	N-Nitrosodiphenylamine (1)	1200.	U
98-95-3	Nitrobenzene	1200.	U	101-55-3	4-Bromophenyl-phenylether	1200.	U
78-59-1	Isophorone	1200.	U	118-74-1	Hexachlorobenzene	1200.	U
88-75-5	2-Nitrophenol	1200.	U	87-86-5	Pentachlorophenol	5900.	U
105-67-9	2,4-Dimethylphenol	1200.	U	85-01-8	Phenanthrene	1200.	U
65-85-0	Benzoic Acid	230.	J	120-12-7	Anthracene	1200.	U
111-91-1	bis(2-Chloroethoxy)methane	1200.	U	84-74-2	Di-n-Butyl phthalate	1200.	U
120-83-2	2,4-Dichlorophenol	1200.	U	206-44-0	Fluoranthene	1200.	U
120-82-1	1,2,4-Trichlorobenzene	1200.	U	129-00-0	Pyrene	130.	J
91-20-3	Naphthalene	1200.	U	85-68-7	Butylbenzylphthalate	1200.	U
106-47-8	4-Chloroaniline	1200.	U	91-94-1	3,3'-Dichlorobenzidine	2300.	U
87-68-3	Hexachlorobutadiene	1200.	U	56-55-3	Benzo(a)Anthracene	1200.	U
59-50-7	4-Chloro-3-methylphenol	1200.	U	117-81-7	bis(2-Ethylhexyl)phthalate	1200.	U
91-57-6	2-Methylnaphthalene	140.	J	218-01-9	Chrysene	1200.	U
77-47-4	Hexachlorocyclopentadiene	1200.	U	117-84-0	Di-n-Octyl phthalate	1200.	U
88-06-2	2,4,6-Trichlorophenol	1200.	U	205-99-2	Benzo(b)Fluoranthene	1200.	U
95-95-4	2,4,5-Trichlorophenol	5900.	U	207-08-9	Benzo(k)Fluoranthene	1200.	U
91-58-7	2-Chloronaphthalene	1200.	U	50-32-8	Benzo(a)Pyrene	1200.	U
88-74-4	2-Nitroaniline	5900.	U	193-39-5	Indeno(1,2,3-cd)Pyrene	1200.	U
131-11-3	Dimethylphthalate	1200.	U	53-70-3	Dibenzo(a,h)Anthracene	1200.	U
208-96-8	Acenaphthylene	1200.	U	191-24-2	Benzo(g,h,i)Perylene	1200.	U
99-09-2	3-Nitroaniline	5900.	U				

(1)-Cannot be separated from diphenylamine

Laboratory Nam: ~~EA#~~ EA Laboratories

Case No: Willow Grove

Sampl Number: EA#0745

PRW-1 ~~S~~ PW

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT ~~or Scan~~ Number	Estimated Concentration (~~ug/L or~~ ug/kg)
1. 57556	1,2 Propanediol	BNA	3.94	950.00 J
2. 108883	Methyl Benzene		4.34	520.00 J,JB
3. 111762	2-Butoxyethanol		6.66	730.00 J
4. 541026	Decamethylcyclopentasiloxane		11.35	570.00 J
5. —	Unknown		29.67	1400.00 J
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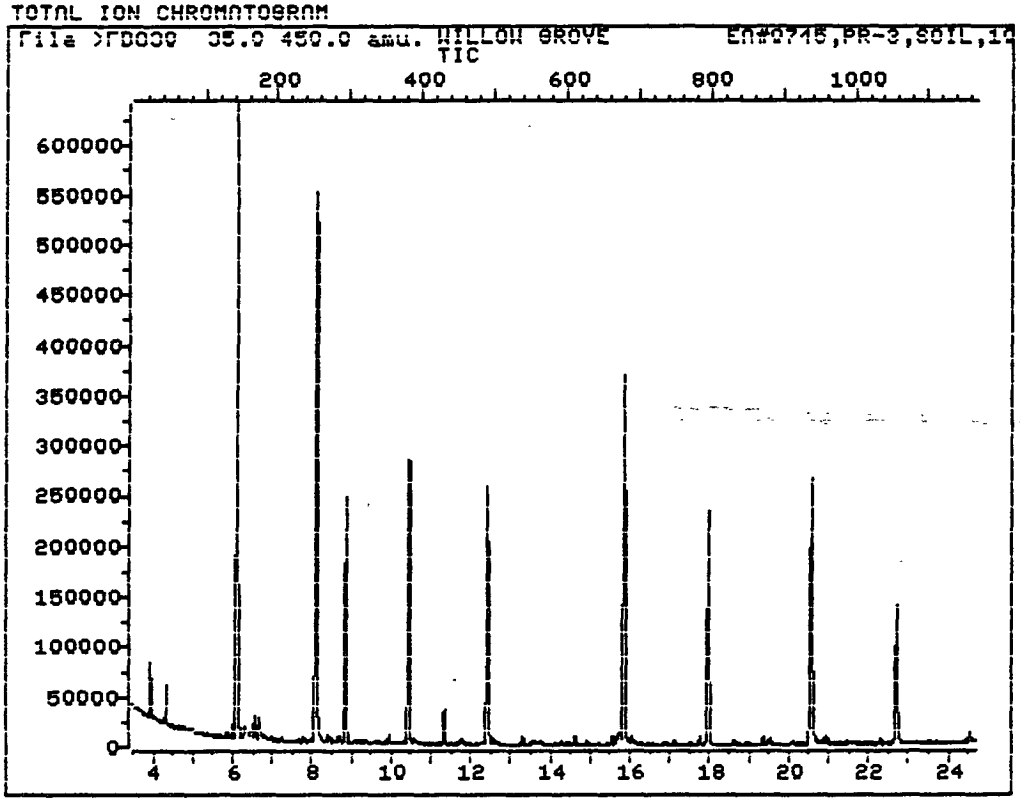
TOTAL ION CHROMATOGRAM

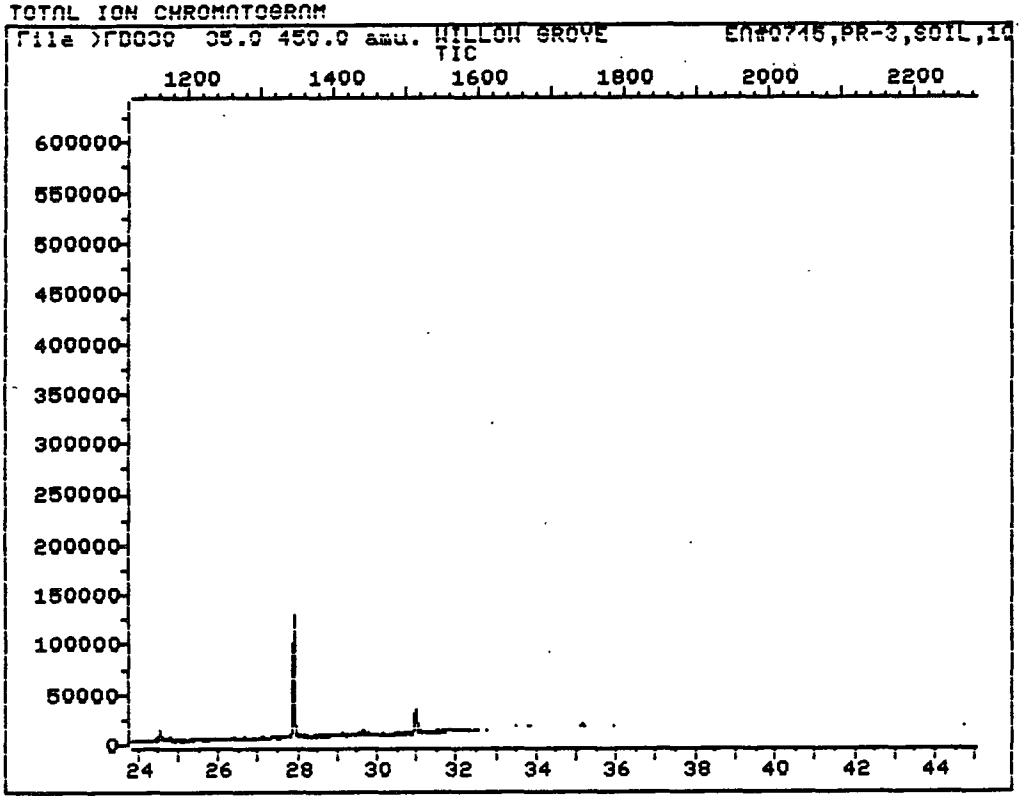


Data File: >FB830::D5 Quant Output File: ^FB830::QT
Nam : WILLOW GROVE
Misc: EA#0745,PR-3,SOIL,10.18,1, <115.9> BTL# 7
W-1 RSB
Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890413 18:29

Op rator ID: UNCLE
Quant Time: 890413 19:15
Injected at: 890311 00:29

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >FB830::D5 Quant Output File: ^FB830::QT
Nam : WILLOW GROVE
Misc: EA#0745,PR-3,SOIL,10.18,1, <115.9> BTL# 7

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890413 18:29

Operator ID: UNCLE
Quant Time: 890413 19:15
Injected at: 890311 00:29

TIC page 2 of 2

QUANT REPORT

Op rator ID: UNCLE Quant Rev: 6 Quant Time: 890413 19:15
Output File: ^FB830::QT Injected at: 890311 00:29
Data File: >FB830::D5 Dilution Factor: 1.00000
Nam : WILLOW GROVE
Misc: EA#0745,PR~~-3~~ W-1 RSB,SOIL,10.18,1, <115.9> BTL# 7
ID File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890413 18:29

	Compound	R.T.	Q ion	Area	Conc	Units		q
1)	*d4-1,4-Dichlorobenzene	8.84	152.0	88350	40.00	NG		98
2)	2-Flu rophenol	6.10	112.0	346239	116.76	NG	58%	99
3)	Ph nol-d5	8.10	99.0	541197	148.51	NG	74%	94
4)	Phenol	0.00	94.0	0	0.00	NG		
5)	bis(2-Chloroethyl)ether	0.00	93.0	0	0.00	NG		
6)	2-Chlorophenol	8.42	128.0	630	~~.21~~	NG		94
7)	1,3-Dichlorobenzene	9.37	146.0	900	~~.29~~	NG		97
8)	1,4-Dichlorobenzene	9.37	146.0	900	~~.29~~	NG		97
9)	B nzyl Alcohol	0.00	108.0	0	0.00	NG		
10)	1,2-Dichlorobenzene	9.37	146.0	900	~~.30~~	NG		98
11)	2-M thylphenol	0.00	108.0	0	0.00	NG		
12)	bis(2-Chloroisopropyl)ether	0.00	45.0	0	0.00	NG		
13)	4-M thylphenol	10.04	108.0	573	~~.21~~	NG		92
14)	N-Nitroso-Di-n-propylamine	0.00	70.0	0	0.00	NG		
15)	Hexachloroethane	0.00	117.0	0	0.00	NG		
16)	*d8-Naphthalene	12.42	136.0	335369	40.00	NG		89
17)	Nitrobenzene-d5	10.44	82.0	283041	76.17	NG	76%	94
18)	Nitrobenzene	0.00	77.0	0	0.00	NG		
19)	I ophorone	0.00	82.0	0	0.00	NG		
20)	2-Nitrophenol	0.00	139.0	0	0.00	NG		
21)	2,4-Dimethylphenol	0.00	107.0	0	0.00	NG		
22)	Benzoic Acid	11.78	122.0	2399	1.99	NG	✓	96
23)	bis(2-Chloroethoxy)methane	0.00	93.0	0	0.00	NG		
24)	2,4-Dichlorophenol	0.00	162.0	0	0.00	NG		
25)	1,2,4-Trichlorobenzene	12.29	180.0	1008	~~.50~~	NG		92
26)	Naphthalene	12.48	128.0	6635	~~.88~~	NG		90
27)	4-Chloroaniline	0.00	127.0	0	0.00	NG		
28)	Hexachlorobutadiene	0.00	224.7	0	0.00	NG		
29)	4-Chloro-3-methylphenol	0.00	107.0	0	0.00	NG		
30)	2-Methylnaphthalene	14.58	142.0	5235	1.23	NG	✓	89
31)	*d10-Acenaphthene	17.98	164.0	161039	40.00	NG		97
32)	Hexachlorocyclopentadiene	0.00	237.0	0	0.00	NG		
33)	2,4,6-Trichlorophenol	0.00	196.0	0	0.00	NG		
34)	2,4,5-Trichlorophenol	0.00	196.0	0	0.00	NG		
35)	2-Chloronaphthalene	0.00	162.0	0	0.00	NG		
36)	2-Fluorobiphenyl	15.85	172.0	382170	61.89	NG	62%	95
37)	2-Nitroaniline	0.00	65.0	0	0.00	NG		
38)	Dimethylphthalate	17.98	163.0	28503	~~4.45~~	NG		57
39)	Acenaphthylene	0.00	152.0	0	0.00	NG		
40)	3-Nitroaniline	0.00	138.0	0	0.00	NG		
41)	Acenaphthene	0.00	153.0	0	0.00	NG		
42)	2,4-Dinitrophenol	0.00	184.0	0	0.00	NG		

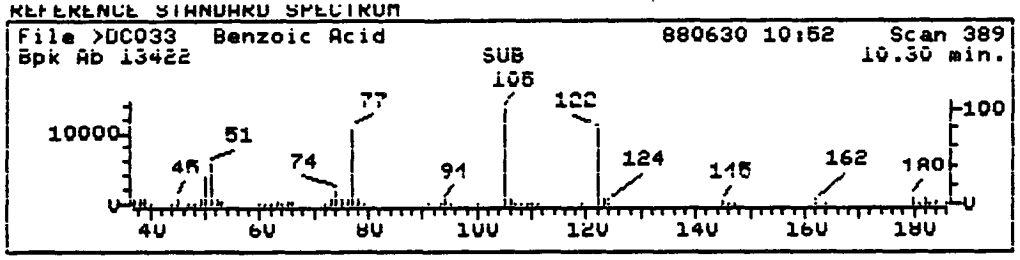
QUANT REPORT
pag 2

Output File:^FB830:: Data File:>FB830::D5

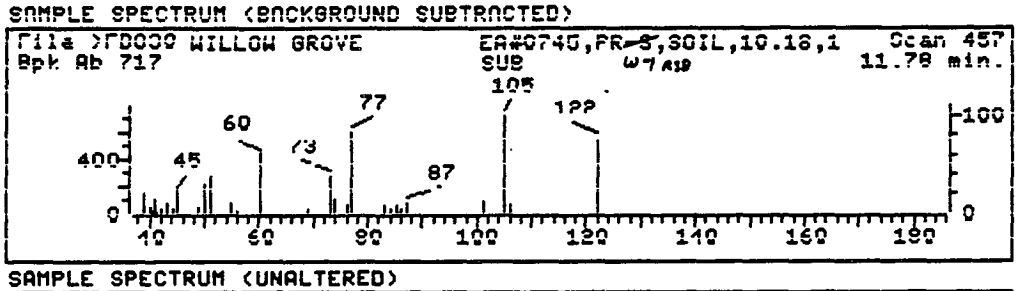
	Compound	R.T.	Q ion	Area	Conc	Units	q
43)	4-Nitrophenol	0.00	109.0	0	0.00	NG	
44)	Dib nzofuran	18.58	168.0	909	~~.15~~	NG	96
45)	2,4-Dinitrotoluene	0.00	165.0	0	0.00	NG	
46)	2,6-Dinitrotoluene	0.00	165.0	0	0.00	NG	
47)	Diethylphthalate	19.58	149.0	2523	~~.41~~	NG	94
48)	4-Chlorophenyl-phenylether	0.00	204.0	0	0.00	NG	
49)	Fluor ne	0.00	166.0	0	0.00	NG	
50)	4-Nitroaniline	0.00	138.0	0	0.00	NG	
51)	*d10-Phenanthrene	22.72	188.0	180229	40.00	NG	98
52)	4,6-Dinitro-2-methylphenol	0.00	198.0	0	0.00	NG	
53)	N-Nitrosodiphenylamine	0.00	169.0	0	0.00	NG	
54)	2,4,6-Tribromophenol	20.56	329.9	113451	153.65	NG 22%	96
55)	4-Bromophenyl-phenylether	0.00	248.0	0	0.00	NG	
56)	Hexachlorobenzene	0.00	283.6	0	0.00	NG	
57)	Pentachlorophenol	0.00	266.0	0	0.00	NG	
58)	Ph nanthrene	22.78	178.0	3077	~~.69~~	NG	95
59)	Anthracene	22.78	178.0	3077	~~.70~~	NG	95
60)	Di-n-Butyl phthalate	24.79	149.0	3290	~~.49~~	NG	96
61)	Fluoranthene	26.65	202.0	1939	~~.64~~	NG	90
62)	*d12-Chrysene	30.98	240.0	20391	40.00	NG	98
63)	Pyr ne	27.37	202.0	1860	1.13	NG ✓	99
64)	Terph nyl-d14	27.90	244.0	126514	97.63	NG 98%	88
65)	Butylbenzylphthalate	0.00	149.0	0	0.00	NG	
66)	3,3'-Dichlorobenzidine	0.00	252.0	0	0.00	NG	
67)	Benzo(a)Anthracene	0.00	228.0	0	0.00	NG	
68)	bis(2-Ethylhexyl)phthalate	31.09	149.0	1005	~~.86~~	NG	92
69)	Chrysene	0.00	228.0	0	0.00	NG	
70)	*d12-P rylene	35.15	264.0	7423	40.00	NG	95
71)	Di-n-Octyl phthalate	0.00	149.0	0	0.00	NG	
72)	Benzo(b)Fluoranthene	0.00	252.0	0	0.00	NG	
73)	Benzo(k)Fluoranthene	0.00	252.0	0	0.00	NG	
74)	Benzo(a)Pyrene	0.00	252.0	0	0.00	NG	
75)	Indeno(1,2,3-cd)Pyrene	0.00	276.0	0	0.00	NG	
76)	Dibenzo(a,h)Anthracene	0.00	278.0	0	0.00	NG	
77)	Benzo(g,h,i)Perylene	0.00	276.0	0	0.00	NG	

* Compound is ISTD

REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



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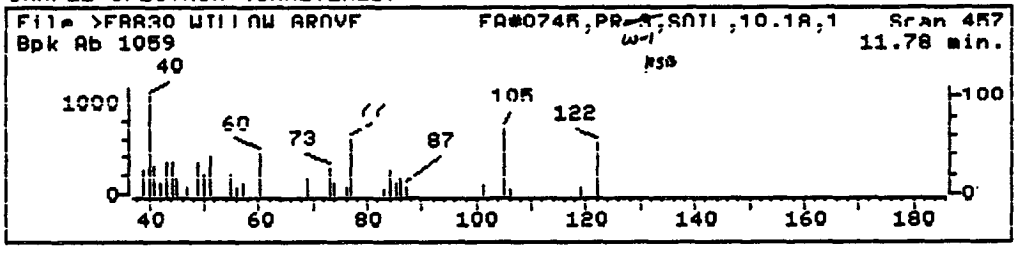
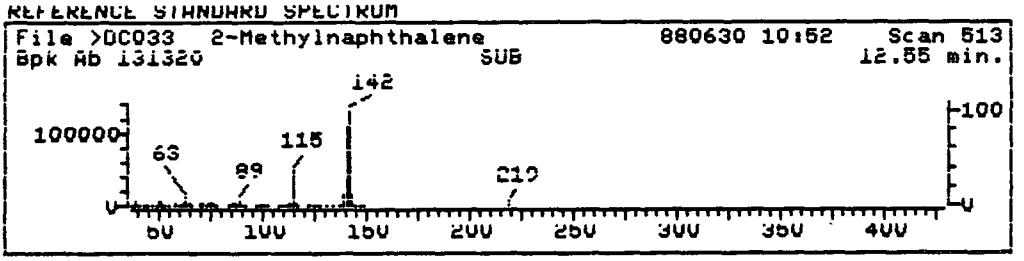


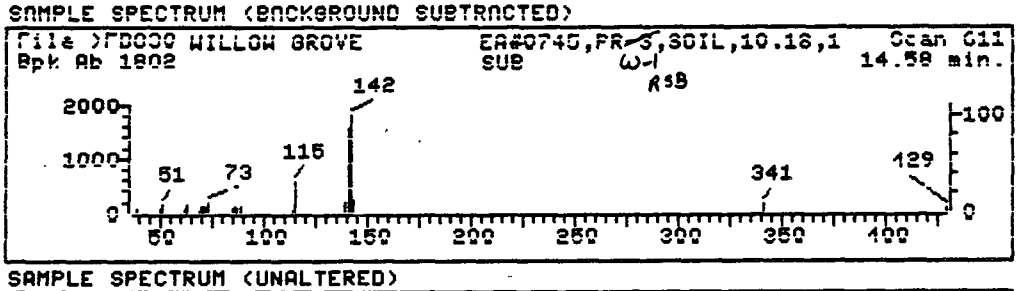
Data File: >FB830::D5 Quant Output File: ^FB830::QT
Nam : WILLOW GROVE
Misc: EA#0745,PR~~S~~,SOIL,10.18,1, (115.9) BTL# 7
Quant Time: 890413 19:15 Quant ID File: IDFCLP::BD
Injected at: 890311 00:29 Last Calibration: 890413 18:29

Compound No: 22
Compound Name: Benzoic Acid
Scan Number: 457
Ret ntion Time: 11.78 min.
Quant Ion: 122.0
Area: 2399
Concentration: 1.99 NG
q-value: 96

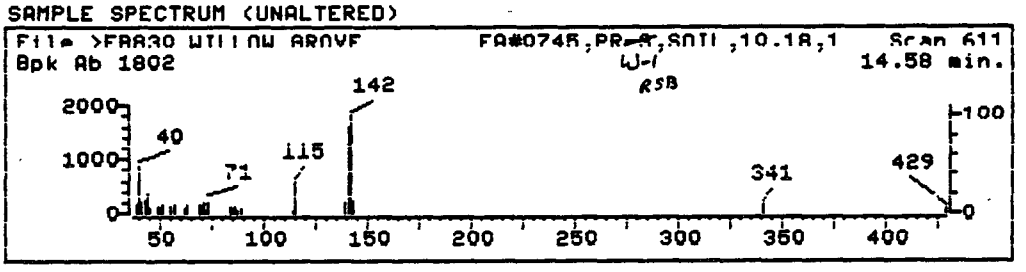
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



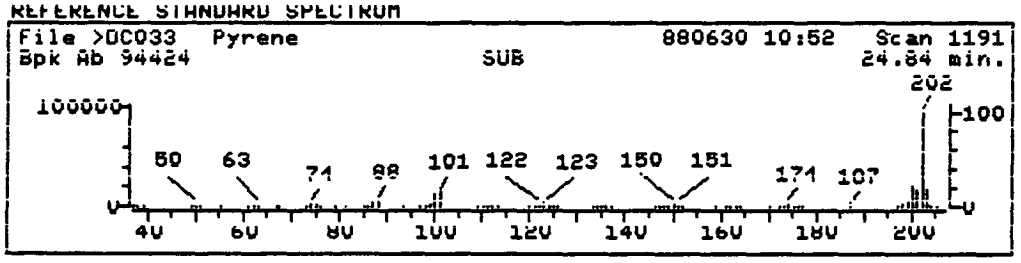
SAMPLE SPECTRUM (UNALTERED)



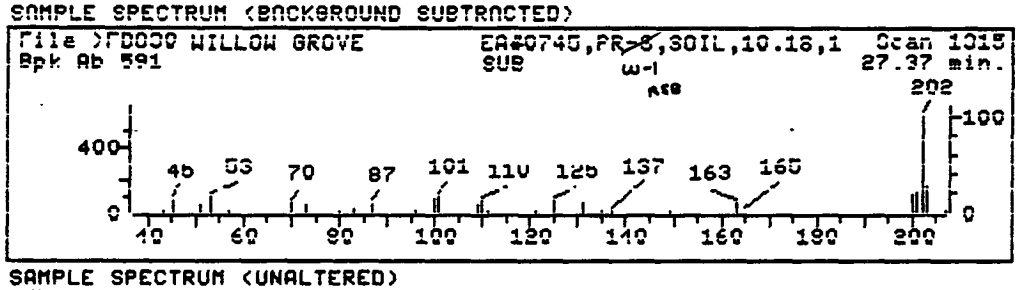
Data File: >FB830::D5 Quant Output File: ^FB830::QT
Name: WILLOW GROVE
Misc: EA#0745,PR-3,SOIL,10.18,1, (115.9) BTL# 7
Quant Time: 890413 19:15 Quant ID File: IDFCLP::BD
Inj cted at: 890311 00:29 Last Calibration: 890413 18:29

Compound No: 30
Comp und Name: 2-Methylnaphthalene
Scan Number: 611
Ret ntion Time: 14.58 min.
Quant Ion: 142.0
Area: 5235
Concentration: 1.23 NG
q-value: 89

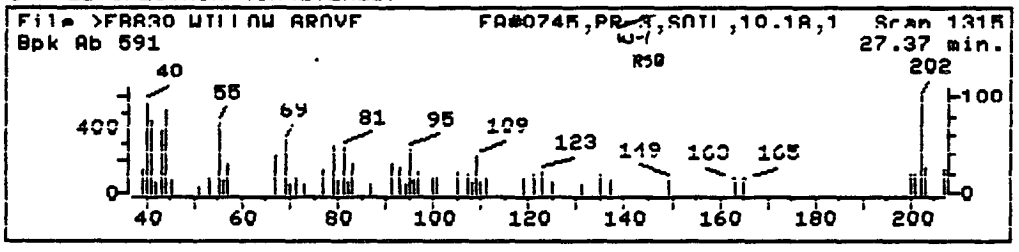
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

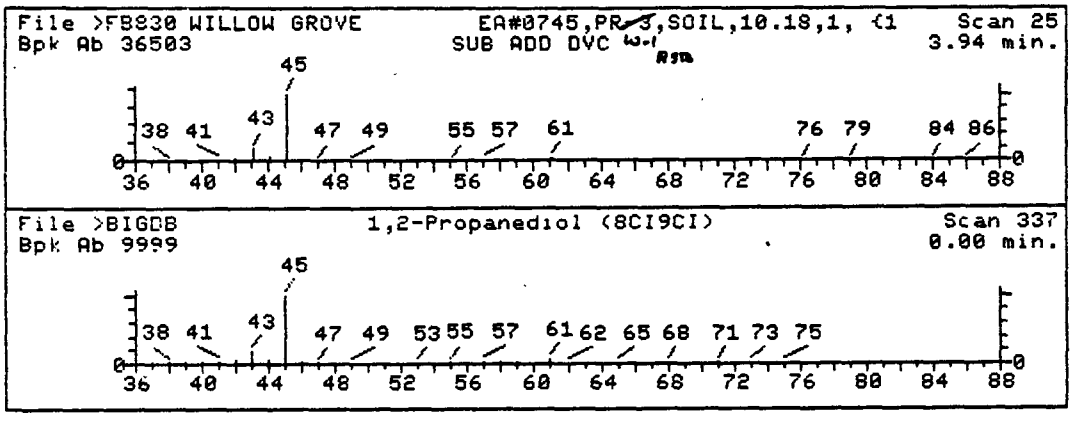


SAMPLE SPECTRUM (UNALTERED)



Data File: >FB830::D5 Quant Output File: ^FB830::QT
Name: WILLOW GROVE
Misc: EA#0745,PR~~8~~ W-1 RSB,SOIL,10.18,1, (115.9) BTL# 7
Quant Time: 890413 19:15 Quant ID File: IDFCLP::BD
Inj cted at: 890311 00:29 Last Calibration: 890413 18:29

Compound No: 63
Compound Name: Pyrene
Scan Number: 1315
R t ntion Time: 27.37 min.
Quant Ion: 202.0
Ar a: 1860
Conc ntration: 1.13 NG
q-value: 99



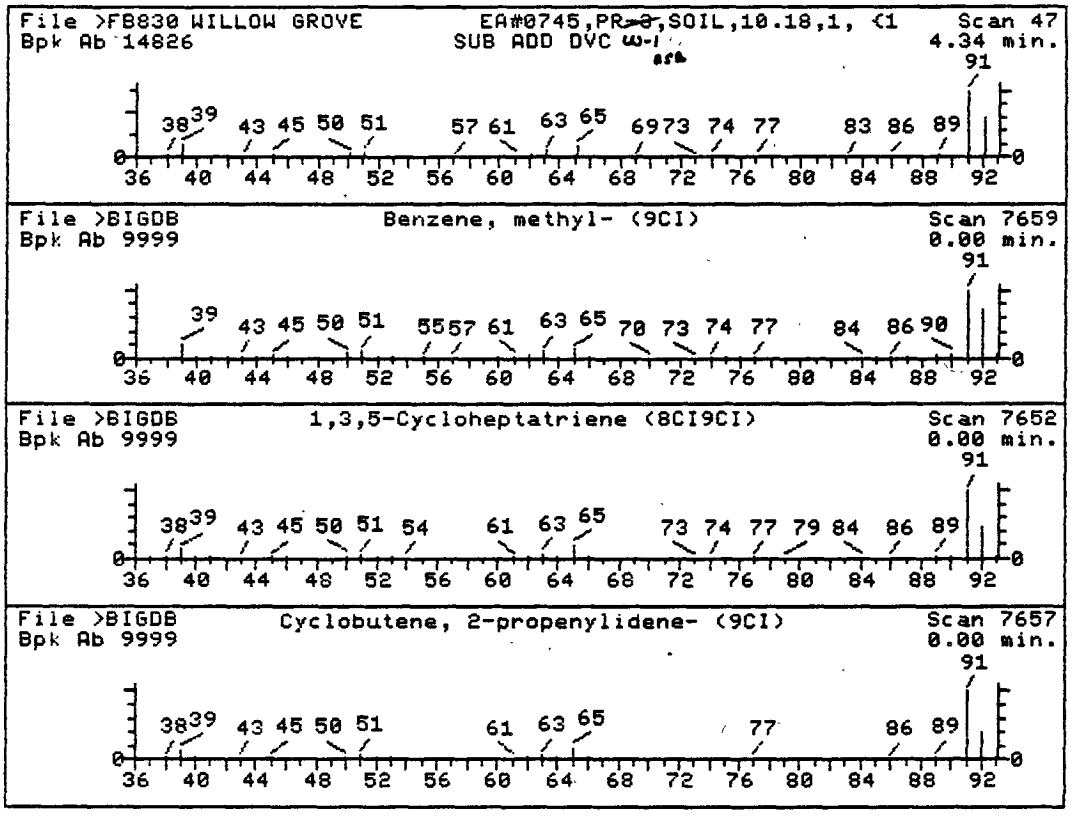
Ret ntion time = 3.94

Area = 120053.0 Tentative Concentration is 950.00

(1) 1,2-Propanediol (8CI9CI) 76 C3H8O2

Sample file: >FB830 Spectrum #: 25
Search speed: 2 Tilting option: S No. of ion ranges searched: 45

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	60	57556	337	"BIGDB—	33	50	1	0	78	13	30	12



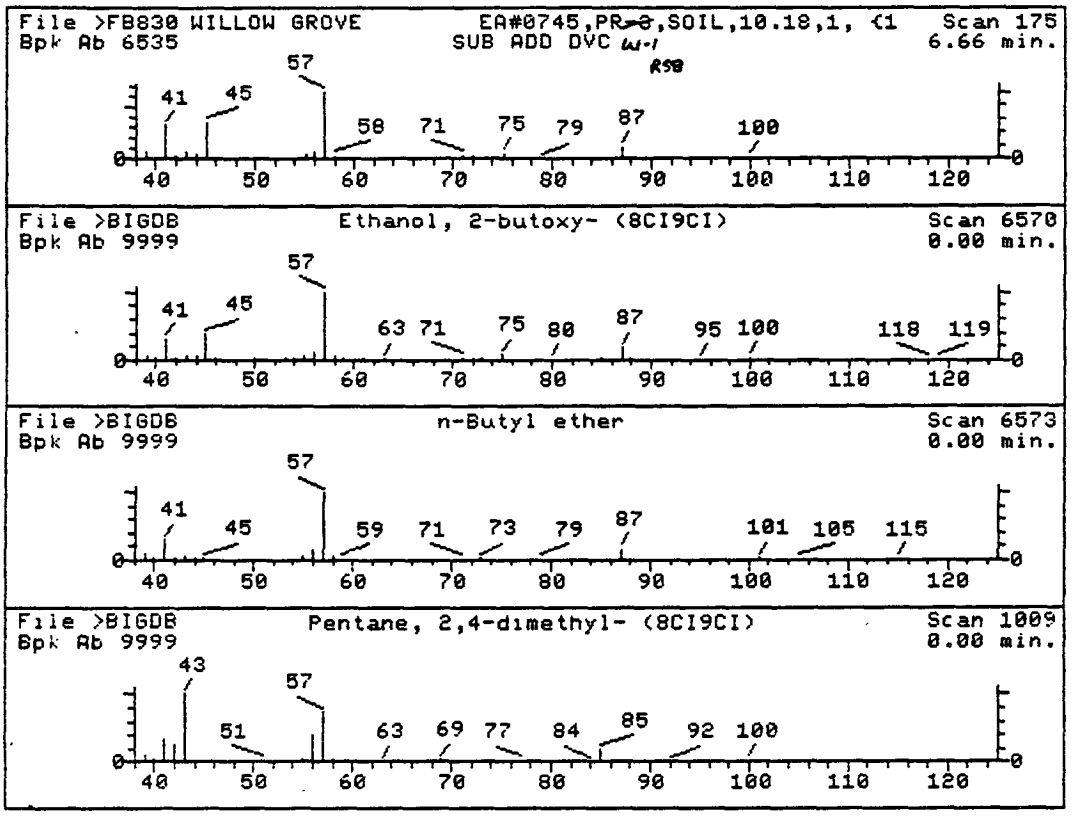
Retention time = 4.34

Area = 65497.00 Tentative Concentration is 520.00

1. Benzene, methyl- (9CI)	92	C7H8
2. 1,3,5-Cycloheptatriene (8CI9CI)	92	C7H8
3. Cyclobutene, 2-propenylidene- (9CI)	92	C7H8
4. Spiro[3.3]hepta-1,5-diene (8CI9CI)	92	C7H8
5. 1,6-Heptadiyne (8CI9CI)	92	C7H8
6. Bicyclo[3.2.0]hepta-2,6-diene (8CI9CI)	92	C7H8
7. 1,5-Heptadien-3-yne (8CI9CI)	92	C7H8

Sample file: >FB830 Spectrum #: 47
Search speed: 2 Tilting option: S No. of ion ranges searched: 45

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	93*	108883	7659	"BIGDB	75	15	1	0	67	3	68	89
2.	89*	544252	7652	"BIGDB	70	15	2	0	88	1	66	61
3.	81*	52097855	7657	"BIGDB	60	19	2	0	100	6	53	46
4.	63*	22635785	7655	"BIGDB	51	30	2	0	97	16	30	33
5.	43*	2396636	7653	"BIGDB	28	68	2	0	100	24	17	14
6.	31*	2422868	7654	"BIGDB	25	29	2	0	100	30	12	14
7.	31*	3511271	7660	"BIGDB	41	63	2	0	65	31	12	14



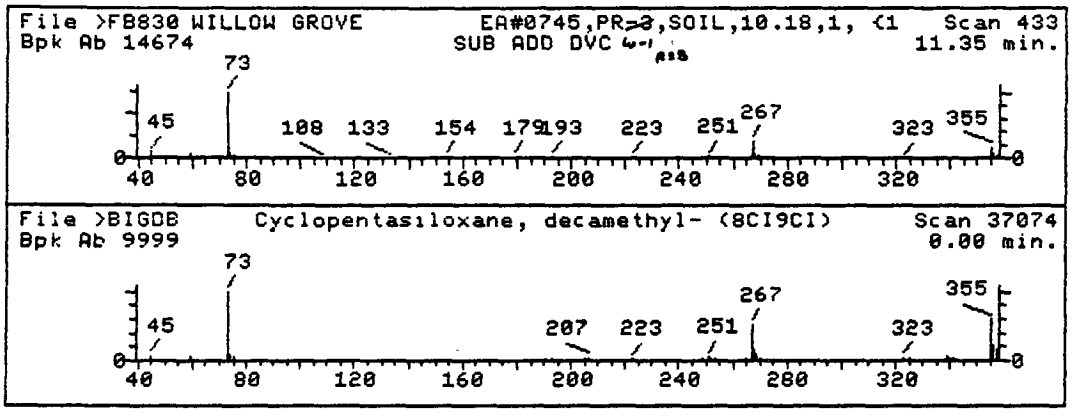
Retention time = 6.66

Area = 92538.00 Tentative Concentration is 730.00

1. Ethanol, 2-butoxy- (8CI9CI)	118	C6H14O2
2. n-Butyl ether	130	C8H18O
3. Pentane, 2,4-dimethyl- (8CI9CI)	100	C7H16
4. 1,3-Dioxolane, 2-methyl- (8CI9CI)	88	C4H8O2

Sample file: >FB830 Spectrum #: 175
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	63	111762	6570	"BIGDB	60	27	0	0	80	16	30	37
2.	31	142961	6573	"BIGDB	43	35	2	0	73	35	12	14
3.	24*	108087	1009	"BIGDB	24	60	3	0	136	43	8	12
4.	11*	497267	1335	"BIGDB	22	66	3	0	101	61	2	12



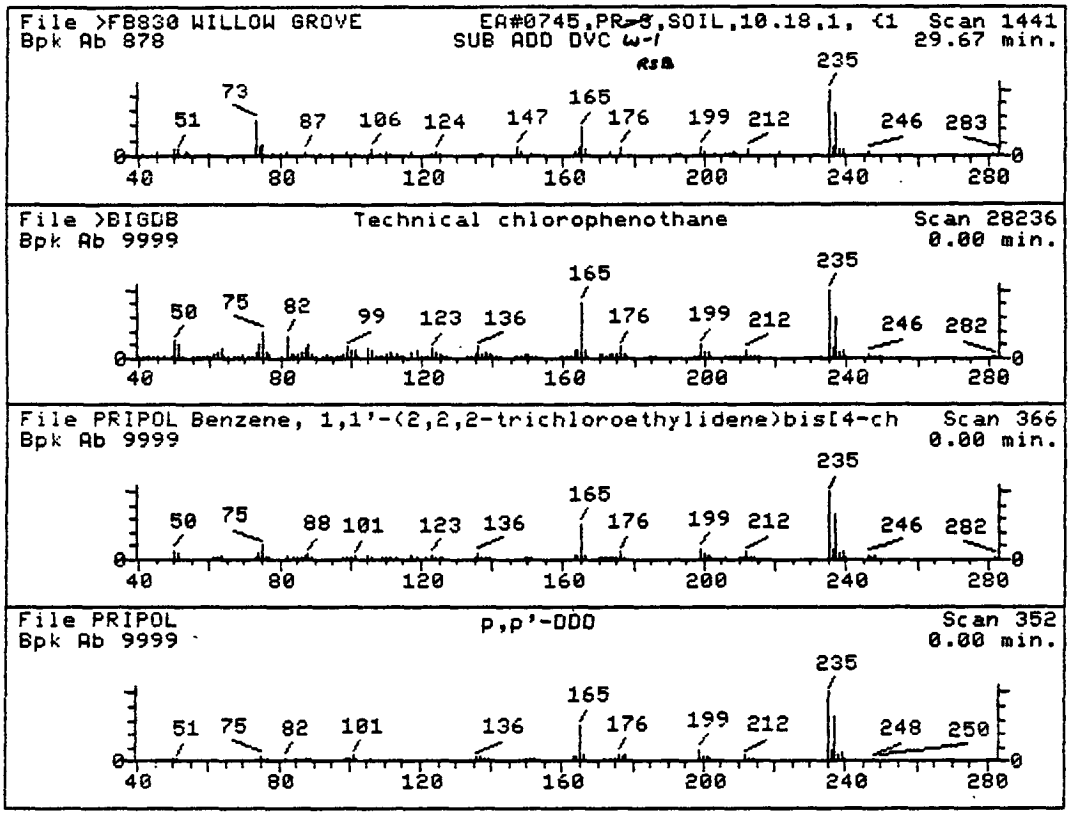
Retention time = 11.35

Area = 94160.00 Tentative Concentration is 570.00

1 Cyclopentasiloxane, decamethyl- (8CI9CI) 370 C10H30O5Si5

Sample file: >FB830 Spectrum #: 433
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	78	541026	37074	"BIGDB	76	79	2	1	77	4	55	12



Retention time = 29.67

Area = 20917.00 Tentative Concentration is 1400.00

1.	Technical chlorophenothane	704	C28H18Cl10
2.	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chlor	352	C14H9Cl5
3.	p,p'-DDD	318	C14H10Cl4
4.	Mitotane (USAN)	318	C14H10Cl4
5.	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chlor	352	C14H9Cl5
6.	1,1-Dichloro-2,2-bis(p-chlorophenyl)ethane	318	C14H10Cl4
7.	p,p'-DDD	318	C14H10Cl4

Sample file: >FB830 Spectrum #: 1441
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	86	8017343	28236	"BIGDB	119	96	3	-1	67	4	60	32
2.	83	366	392	PRIPOL	94	78	2	0	82	3	57	28
3.	83	352	385	PRIPOL	84	76	2	0	83	4	57	23
4.	78	53190	28229	"BIGDB	77	82	3	0	99	4	55	14
5.	78	364	390	PRIPOL	78	93	2	0	86	4	55	19
6.	78	72548	28230	"BIGDB	83	74	3	0	99	4	55	15
7.	78	350	383	PRIPOL	91	89	3	0	73	4	55	19

LIBRARY SEARCH SUMMARY

MS Data File:>FB830::D5 Analyst:UNCLE MS

Name:WILLOW GROVE Date/Time: 3/11/89 0:29
Misc:EA#0745,PR~~3~~ W-1,SOIL,10.18,1, ?115.9? BTL# 7
ASB

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.94	120053	58615
2	4.34	65497	58615
3	6.66	92538	58615
4	11.35	94160	76205
5	29.67	20917	6897

Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
EA#0748,PR-SS-11

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 02/21/89
Date Analyzed: 3/11/89 2:29
Conc/Dil Factor: 1.00000
Percent Moisture (Decanted) N/A

GPC Cleanup Yes No
Separatory Funnel Extraction Yes
Continuous Liquid-Liquid Extraction ~~Yes~~

C.A.S. Number		ug/L or ug/Kg (Circle One)		C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	1400.	U	83-32-9	Acenaphthene	1400.	U
111-44-4	bis(2-Chloroethyl)ether	1400.	U	51-28-5	2,4-Dinitrophenol	7100.	U
95-57-8	2-Chlorophenol	1400.	U	100-02-7	4-Nitrophenol	7100.	U
541-73-1	1,3-Dichlorobenzene	1400.	U	132-64-9	Dibenzofuran	1400.	U
106-46-7	1,4-Dichlorobenzene	1400.	U	121-14-2	2,4-Dinitrotoluene	1400.	U
100-51-6	Benzyl Alcohol	1400.	U	606-20-2	2,6-Dinitrotoluene	1400.	U
95-50-1	1,2-Dichlorobenzene	1400.	U	84-66-2	Diethylphthalate	1400.	U
95-48-7	2-Methylphenol	1400.	U	7005-72-3	4-Chlorophenyl-phenylether	1400.	U
39638-32-9	bis(2-Chloroisopropyl)ether	1400.	U	86-73-7	Fluorene	1400.	U
106-44-5	4-Methylphenol	1400.	U	100-01-6	4-Nitroaniline	1400.	U
621-64-7	N-Nitroso-Di-n-propylamine	1400.	U	534-52-1	4,6-Dinitro-2-methylphenol	7100.	U
67-72-1	Hexachloroethane	1400.	U	86-30-6	N-Nitrososdiphenylamine (1)	1400.	U
98-95-3	Nitrobenzene	1400.	U	101-55-3	4-Bromophenyl-phenylether	1400.	U
78-59-1	Isophorone	1400.	U	118-74-1	Hexachlorobenzene	1400.	U
88-75-5	2-Nitrophenol	1400.	U	87-86-5	Pentachlorophenol	7100.	U
105-67-9	2,4-Dimethylphenol	1400.	U	85-01-8	Phenanthrene	1400.	U
65-85-0	Benzoic Acid	7100.	U	120-12-7	Anthracene	1400.	U
111-91-1	bis(2-Chloroethoxy)methane	1400.	U	84-74-2	Di-n-Butyl phthalate	1400.	U
120-83-2	2,4-Dichlorophenol	1400.	U	206-44-0	Fluoranthene	1400.	U
120-82-1	1,2,4-Trichlorobenzene	1400.	U	129-00-0	Pyrene	1400.	U
91-20-3	Naphthalene	1400.	U	85-68-7	Butylbenzylphthalate	1400.	U
106-47-8	4-Chloroaniline	1400.	U	91-94-1	3,3'-Dichlorobenzidine	2800.	U
87-68-3	Hexachlorobutadiene	1400.	U	56-55-3	Benzo(a)Anthracene	1400.	U
59-50-7	4-Chloro-3-methylphenol	1400.	U	117-81-7	bis(2-Ethylhexyl)phthalate	1400.	U
91-57-6	2-Methylnaphthalene	1400.	U	218-01-9	Chrysene	1400.	U
77-47-4	Hexachlorocyclopentadiene	1400.	U	117-84-0	Di-n-Octyl phthalate	1400.	U
88-06-2	2,4,6-Trichlorophenol	1400.	U	205-99-2	Benzo(b)Fluoranthene	1400.	U
95-95-4	2,4,5-Trichlorophenol	7100.	U	207-08-9	Benzo(k)Fluoranthene	1400.	U
91-58-7	2-Chloronaphthalene	1400.	U	50-32-8	Benzo(a)Pyrene	1400.	U
88-74-4	2-Nitroaniline	7100.	U	193-39-5	Indeno(1,2,3-cd)Pyrene	1400.	U
131-11-3	Dimethylphthalate	1400.	U	53-70-3	Dibenzo(a,h)Anthracene	1400.	U
208-96-8	Acenaphthylene	1400.	U	191-24-2	Benzo(g,h,i)Perylene	1400.	U
99-09-2	3-Nitroaniline	7100.	U				

(1)-Cannot be separated from diphenylamine

Laboratory Name: EA Laboratories

Case No: Willow Grove

Sample Number
EA #0748

PR-SS-1

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (~~ug/l or~~ ug/kg)
1. 541026	Cyclopentasiloxane, decamethyl-	BNA	11.38	820.00 J
2.				
3.				
4.				
5.				
6.				
7.				
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22.				
23.				
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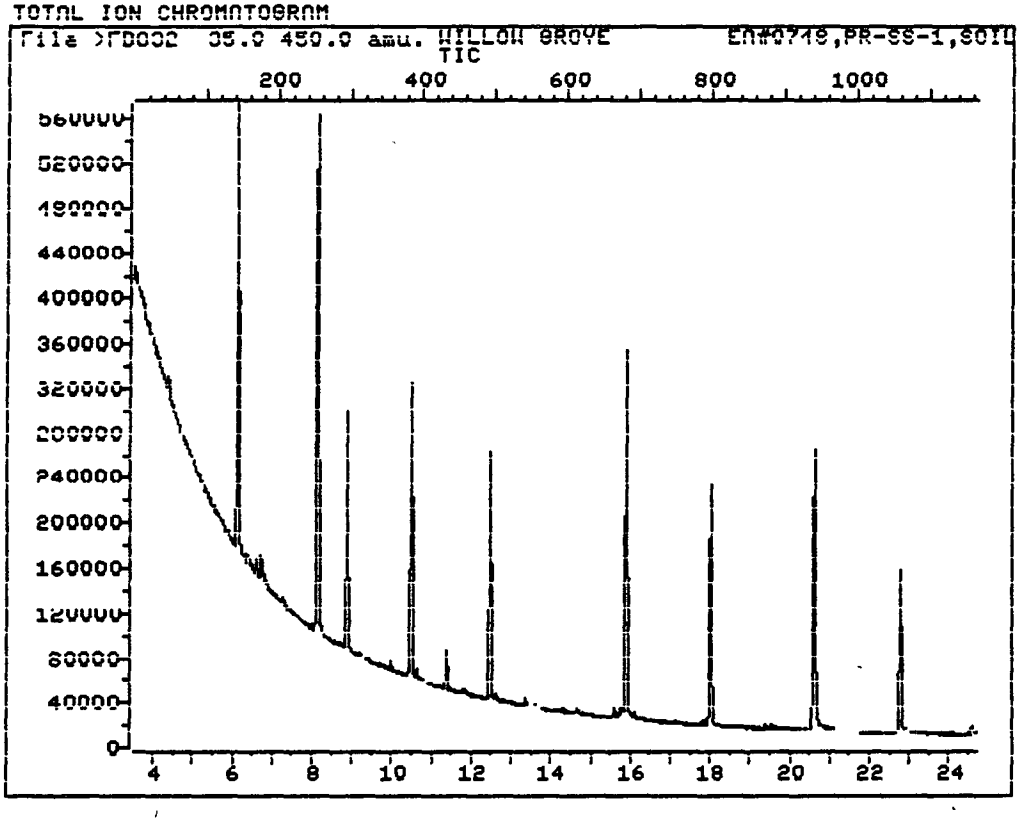
25.				
26.				
27.				
28.				
29.				
30.				

TOTAL ION CHROMATOGRAM



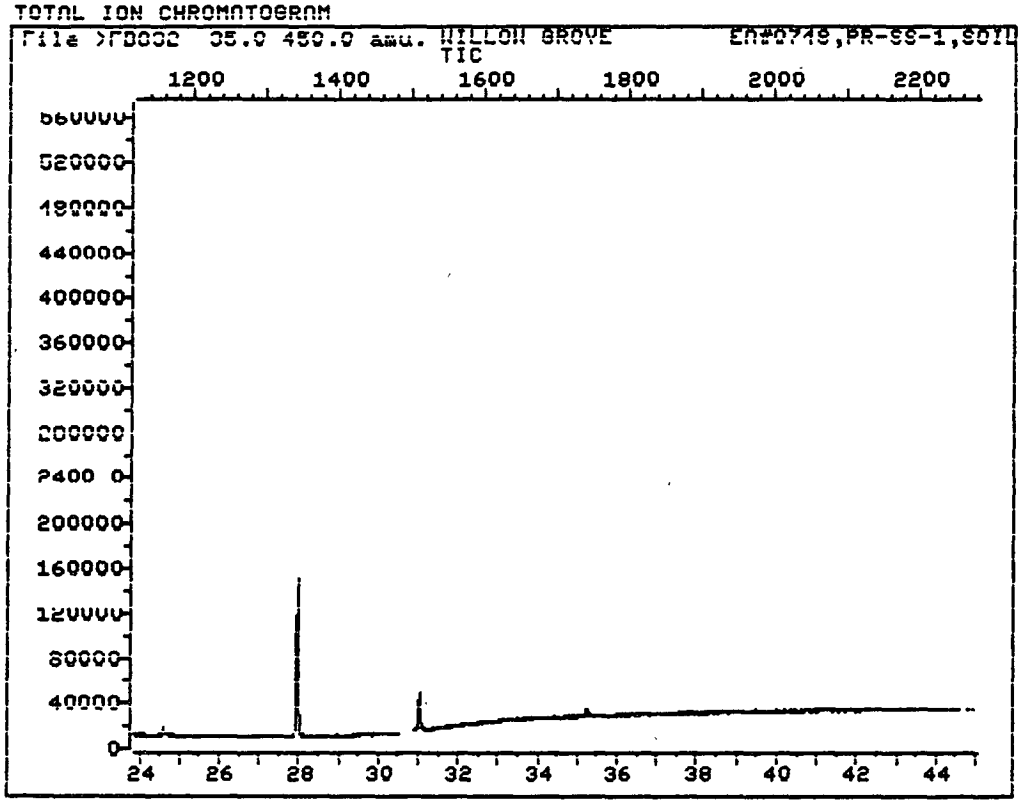
Data File: >FB832::D5 Quant Output File: ^FB832::QT
Name: WILLOW GROVE
Misc: EA#0748,PR-SS-1,SOIL,10.06,1, <141.2> BTL# 9

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
La t Calibration: 890413 18:29

Op rator ID: UNCLE
Quant Time: 890413 19:32
Injected at: 890311 02:29

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >FB832::D5 Quant Output File: ^FB832::QT
Nam : WILLOW GROVE
Misc: EA#0748,PR-SS-1,SOIL,10.06,1, <141.2> BTL# 9

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
La t Calibration: 890413 18:29

Operator ID: UNCLE
Quant Time: 890413 19:32
Inj cted at: 890311 02:29

TIC page 2 of 2

QUANT REPORT

Operat r ID: UNCLE Quant Rev: 6 Quant Tim : 890413 19:32
Output File: ^FB832::QT Injected at: 890311 02:29
Data File: >FB832::D5 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0748,PR-SS-1,SOIL,10.06,1, <141.2> BTL# 9

ID Fil : IDFCLP::BD
Titl : HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890413 18:29

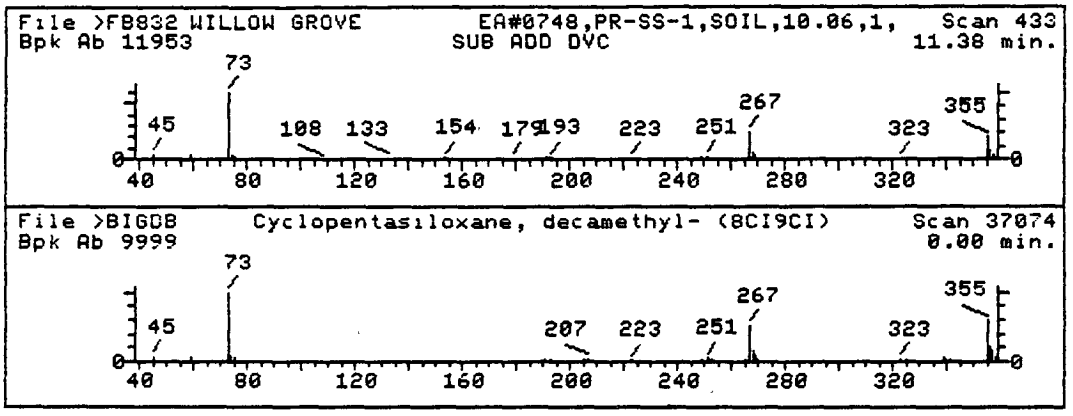
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	8.89	152.0	83971	40.00	NG	98
2)	2-Fluorophenol	6.13	112.0	291191	103.32	NG 52%	97
3)	Ph nol-d5	8.15	99.0	474526	137.01	NG 69%	94
4)	Phenol	0.00	94.0	0	0.00	NG	
5)	bis(2-Chloroethyl)ether	0.00	93.0	0	0.00	NG	
6)	2-Chlorophenol	8.47	128.0	597	~~.21~~	NG	87
7)	1,3-Dichlorobenzene	0.00	146.0	0	0.00	NG	
8)	1,4-Dichlorobenzene	0.00	146.0	0	0.00	NG	
9)	Benzyl Alcohol	0.00	108.0	0	0.00	NG	
10)	1,2-Dichlorobenzene	0.00	146.0	0	0.00	NG	
11)	2-M thylphenol	0.00	108.0	0	0.00	NG	
12)	bi (2-Chloroisopropyl)ether	0.00	45.0	0	0.00	NG	
13)	4-M thylphenol	0.00	108.0	0	0.00	NG	
14)	N-Nitroso-Di-n-propylamine	0.00	70.0	0	0.00	NG	
15)	Hexachloroethane	0.00	117.0	0	0.00	NG	
16)	*d8-Naphthalene	12.47	136.0	323315	40.00	NG	88
17)	Nitrobenzene-d5	10.51	82.0	262597	73.30	NG 73%	92
18)	Nitrobenzene	0.00	77.0	0	0.00	NG	
19)	Isophorone	0.00	82.0	0	0.00	NG	
20)	2-Nitrophenol	0.00	139.0	0	0.00	NG	
21)	2,4-Dimethylphenol	0.00	107.0	0	0.00	NG	
22)	Benzoic Acid	11.82	122.0	648	~~.56~~	NG	90
23)	bis(2-Chloroethoxy)methane	0.00	93.0	0	0.00	NG	
24)	2,4-Dichlorophenol	0.00	162.0	0	0.00	NG	
25)	1,2,4-Trichlorobenzene	0.00	180.0	0	0.00	NG	
26)	Naphthalene	0.00	128.0	0	0.00	NG	
27)	4-Chloroaniline	0.00	127.0	0	0.00	NG	
28)	Hexachlorobutadiene	0.00	224.7	0	0.00	NG	
29)	4-Chloro-3-methylphenol	0.00	107.0	0	0.00	NG	
30)	2-M thylnaphthalene	0.00	142.0	0	0.00	NG	
31)	*d10-Acenaphthene	18.03	164.0	162505	40.00	NG	94
32)	Hexachlorocyclopentadiene	0.00	237.0	0	0.00	NG	
33)	2,4,6-Trichlorophenol	0.00	196.0	0	0.00	NG	
34)	2,4,5-Trichlorophenol	0.00	196.0	0	0.00	NG	
35)	2-Chloronaphthalene	0.00	162.0	0	0.00	NG	
36)	2-Fluorobiphenyl	15.91	172.0	342203	54.92	NG 55%	94
37)	2-Nitroaniline	0.00	65.0	0	0.00	NG	
38)	Dim thylphthalate	18.05	163.0	28545	~~4.41~~	NG	57
39)	Ac naphthylene	0.00	152.0	0	0.00	NG	
40)	3-Nitroaniline	0.00	138.0	0	0.00	NG	
41)	Acenaphthene	0.00	153.0	0	0.00	NG	
42)	2,4-Dinitrophenol	0.00	184.0	0	0.00	NG	

QUANT REPORT
page 2

Output File:^FB832:: Data File:>FB832::D5

	Compound	R.T.	Q ion	Area	Conc	Units	q
43)	4-Nitrophenol	0.00	109.0	0	0.00	NG	
44)	Dibenzofuran	0.00	168.0	0	0.00	NG	
45)	2,4-Dinitrotoluene	0.00	165.0	0	0.00	NG	
46)	2,6-Dinitrotoluene	0.00	165.0	0	0.00	NG	
47)	Diethylphthalate	0.00	149.0	0	0.00	NG	
48)	4-Chlorophenyl-phenylether	0.00	204.0	0	0.00	NG	
49)	Fluor ne	0.00	166.0	0	0.00	NG	
50)	4-Nitroaniline	0.00	138.0	0	0.00	NG	
51)	*d10-Phenanthrene	22.77	188.0	216493	40.00	NG	99
52)	4,6-Dinitro-2-methylphenol	0.00	198.0	0	0.00	NG	
53)	N-Nitrosodiphenylamine	0.00	169.0	0	0.00	NG	
54)	2,4,6-Tribromophenol	20.63	329.9	116496	131.35	NG 66%	95
55)	4-Bromophenyl-phenylether	0.00	248.0	0	0.00	NG	
56)	Hexachlorobenzene	0.00	283.6	0	0.00	NG	
57)	P ntachlorophenol	0.00	266.0	0	0.00	NG	
58)	Ph nanthrene	0.00	178.0	0	0.00	NG	
59)	Anthracene	0.00	178.0	0	0.00	NG	
60)	Di-n-Butyl phthalate	24.86	149.0	1345	~~17~~	NG	98
61)	Flu ranthene	0.00	202.0	0	0.00	NG	
62)	*d12-Chrysene	31.04	240.0	33495	40.00	NG	98
63)	Pyr n	0.00	202.0	0	0.00	NG	
64)	Terphenyl-d14	27.97	244.0	158583	74.50	NG 75%	86
65)	Butylbenzylphthalate	0.00	149.0	0	0.00	NG	
66)	3,3'-Dichlorobenzidine	0.00	252.0	0	0.00	NG	
67)	Benzo(a)Anthracene	0.00	228.0	0	0.00	NG	
68)	bis(2-Ethylhexyl)phthalate	0.00	149.0	0	0.00	NG	
69)	Chrysene	0.00	228.0	0	0.00	NG	
70)	*d12-P rylene	35.25	264.0	13173	40.00	NG	94
71)	Di-n-Octyl phthalate	0.00	149.0	0	0.00	NG	
72)	Benzo(b)Fluoranthene	0.00	252.0	0	0.00	NG	
73)	Benzo(k)Fluoranthene	0.00	252.0	0	0.00	NG	
74)	Benzo(a)Pyrene	0.00	252.0	0	0.00	NG	
75)	Indeno(1,2,3-cd)Pyrene	0.00	276.0	0	0.00	NG	
76)	Dibenzo(a,h)Anthracene	0.00	278.0	0	0.00	NG	
77)	B nzo(g,h,i)Perylene	0.00	276.0	0	0.00	NG	

* Compound is ISTD



Retention time = 11.38

Area = 101643.0 Tentative Concentration is 830.00

1. Cyclopentasiloxane, decamethyl- (8CI9CI) 370 C10H30O5Si5

Sample file: >FB832 Spectrum #: 433
Search sp ed: 2 Tilting option: S No. of ion ranges searched: 47

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	83	541026	37074	"BIGDB	90	65	2	0	56	0	57	27

LIBRARY SEARCH SUMMARY

MS Data File:>FB832::D5 Analyst:UNCLE MS

Name:WILLOW GROVE Date/Time: 3/11/89 2:29
Misc:EA#0748,PR-SS-1,SOIL,10.06,1, ?141.2? BTL# 9

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	11.38	101643	69268

EA ENGINEERING, SCIENCE & TECHNOLOGY, INC.

CLIENT: WILLOW GROVE
SITE: WILLOW GROVE
LAB NO: EA# 0749 RE-EXTRCTION
SAMPLE: PR-SS-2 RE-EXTRACTION
GCMS FILENAME: AA05979
DATE RECEIVED: 02/18/89

ORGANICS ANALYSIS DATA SHEET
SEMIVOLATILE COMPOUNDS (PAGE 1)

LEVEL:	LOW
MATRIX:	SOIL
DATE EXT/PREP:	03/06/89
DATE ANALYZED:	03/14/89
SPL-->EXTRACT:	10.07 GM -> 1 ML
STANDARD ID:	AA05968
SENSITIVITY ID:	AA05966
UNITS:	UG/KG

CAS #		CONC	
108-95-2	PHENOL	1000.	ND
111-44-4	BIS(2-CHLOROETHYL)ETHER	1000.	ND
95-57-8	2-CHLOROPHENOL	1000.	ND
541-73-1	1,3-DICHLOROBENZENE	1000.	ND
106-46-7	1,4-DICHLOROBENZENE	1000.	ND
100-51-6	BENZYL ALCOHOL	1000.	ND
95-50-1	1,2-DICHLOROBENZENE	1000.	ND
95-48-7	2-METHYLPHENOL	1000.	ND
39638-32-9	BIS(2-CHLOROISOPROPYL)ETHER	1000.	ND
106-44-5	4-METHYLPHENOL	1000.	ND
621-64-7	N-NITROSODIPROPYLAMINE	1000.	ND
67-72-1	HEXACHLOROETHANE	1000.	ND
98-95-3	NITROBENZENE	1000.	ND
78-59-1	ISOPHORONE	1000.	ND
88-75-5	2-NITROPHENOL	1000.	ND
105-67-9	2,4-DIMETHYLPHENOL	1000.	ND
65-85-0	BENZOIC ACID	6000.	ND
111-91-1	BIS(2-CHLOROETHOXY)METHANE	1000.	ND
120-33-2	2,4-DICHLOROPHENOL	1000.	ND
120-82-1	1,2,4-TRICHLOROBENZENE	1000.	ND
91-20-3	NAPHTHALENE	1000.	ND
106-47-8	4-CHLOROANILINE	1000.	ND
87-68-3	HEXACHLOROBUTADIENE	1000.	ND
59-50-7	4-CHLORO-3-METHYLPHENOL	1000.	ND
91-57-6	2-METHYLNAPHTHALENE	1000.	ND
77-47-4	HEXACHLOROCYCLOPENTADIENE	1000.	ND
88-06-2	2,4,6-TRICHLOROPHENOL	1000.	ND
95-95-4	2,4,5-TRICHLOROPHENOL	6000.	ND
91-58-7	2-CHLORONAPHTHALENE	1000.	ND
88-74-4	2-NITROANILINE	6000.	ND
131-11-3	DIMETHYL PHTHALATE	1000.	ND
208-96-8	ACENAPHTHYLENE	1000.	ND
99-09-2	3-NITROANILINE	6000.	ND
83-32-9	ACENAPHTHENE	1000.	ND
51-28-5	2,4-DINITROPHENOL	6000.	ND
100-02-7	4-NITROPHENOL	6000.	ND
132-64-9	DIBENZOFURAN	1000.	ND
121-14-2	2,4-DINITROTOLUENE	1000.	ND

EA ENGINEERING, SCIENCE & TECHNOLOGY, INC.

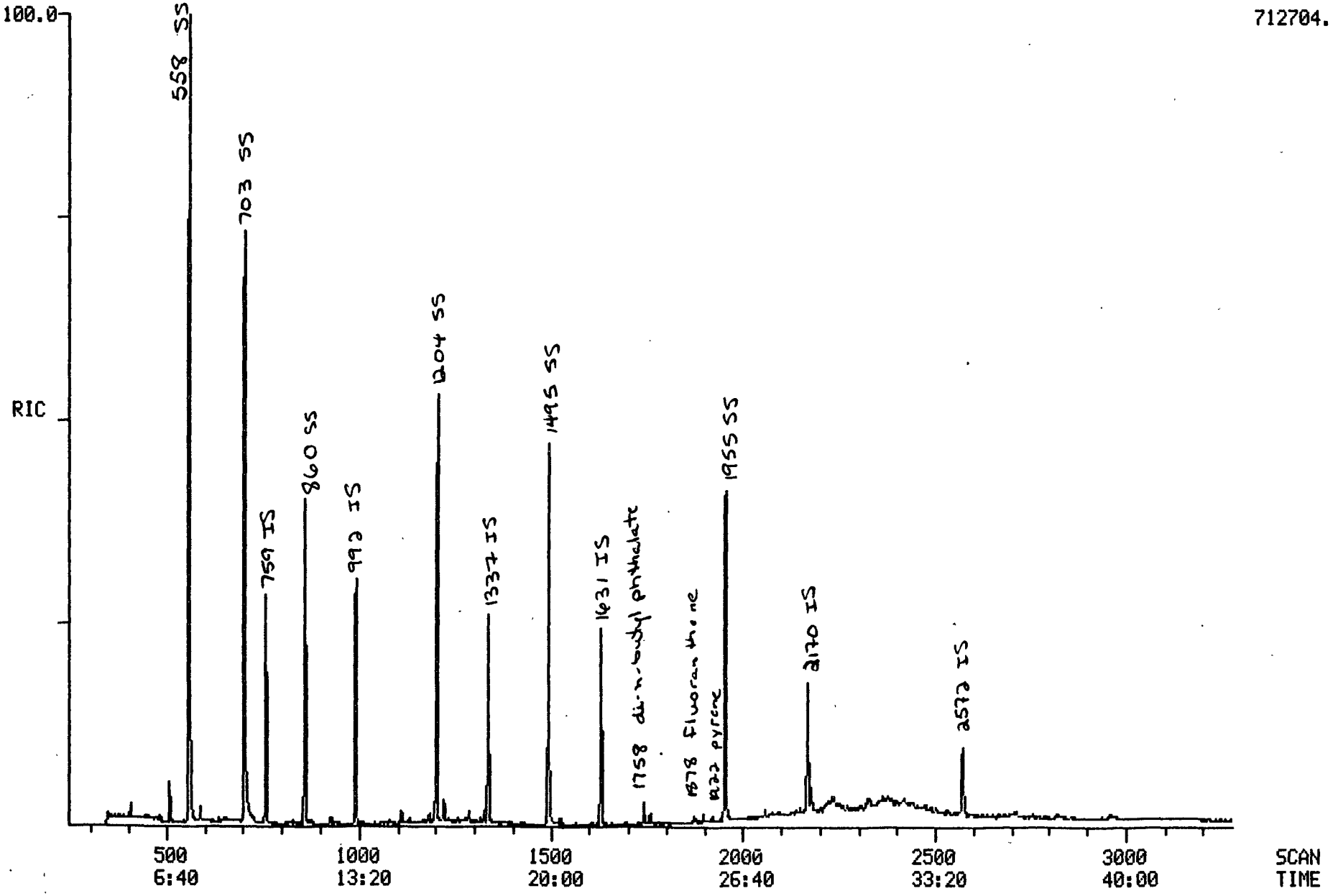
CLIENT: WILLOW GROVE
SITE: WILLOW GROVE
LAB NO: EA# 0749 RE-EXTRCTION
SAMPLE: PR-SS-2 RE-EXTRACTION
GCMS FILENAME: AA05979
DATE RECEIVED: 02/18/89

ORGANICS ANALYSIS DATA SHEET
SEMIVOLATILE COMPOUNDS (PAGE 2)

LEVEL:	LOW
MATRIX:	SOIL
DATE EXT/PREP:	03/06/89
DATE ANALYZED:	03/14/89
SPL-->EXTRACT:	10.07 GM -> 1 ML
STANDARD ID:	AA05968
SENSITIVITY ID:	AA05966
UNITS:	UG/KG

CAS #		CONC	
606-20-2	2,6-DINITROTOLUENE	1000.	ND
84-66-2	DIETHYL PHTHALATE	1000.	ND
7005-72-3	4-CHLOROPHENYL PHENYL ETHER	1000.	ND
86-73-7	FLUORENE	1000.	ND
100-01-6	4-NITROANILINE	5000.	ND
534-52-1	4,6-DINITRO-2-METHYLPHENOL	5000.	ND
86-30-6	N-NITROSODIPHENYLAMINE	1000.	ND
101-55-3	4-BROMOPHENYL PHENYL ETHER	1000.	ND
118-74-1	HEXACHLOROBENZENE	1000.	ND
87-86-5	PENTACHLOROPHENOL	5000.	ND
85-01-8	PHENANTHRENE	1000.	ND
120-12-7	ANTHRACENE	1000.	ND
84-74-2	DI-N-BUTYL PHTHALATE	200.	TR B
206-44-0	FLUORANTHENE	110.	TR B
129-00-0	PYRENE	130.	TR B
85-68-7	BUTYL BENZYL PHTHALATE	1000.	ND
91-94-1	3,3'-DICHLOROBENZIDINE	2000.	ND
56-55-3	BENZO(A)ANTHRACENE	1000.	ND
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	1000.	ND
218-01-9	CHRYSENE	1000.	ND
117-84-0	DI-N-OCTYL PHTHALATE	1000.	ND
205-99-2	BENZO(B)FLUORANTHENE	1000.	ND
207-08-9	BENZO(K)FLUORANTHENE	1000.	ND
50-32-8	BENZO(A)PYRENE	1000.	ND
193-39-5	INDENO(1,2,3-CD)PYRENE	1000.	ND
53-70-3	DIBENZO(A,H)ANTHRACENE	1000.	ND
191-24-2	BENZO(GHI)PERYLENE	1000.	ND

RIC DATA: AA05979 #1 SCANS 240 TO 3275
03/14/89 0:56:00 CALI: AA05979 #4
SAMPLE: BNA SOIL PR-SS-2 RE-EXTRACTION WILLOW GROVE EA#0749 <99.3>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
RANGE: G 1,3275 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



3 075

Quantitation Report File: AA05979

Data: AA05979.TI
03/14/89 0:56:00
Sample: BNA SOIL PR-SS-2 RE-EXTRACTION WILLOW GROVE EA#0749 <99.3>
Conds.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
Standard ID: AA05968 Instrument: MS2
Sensitivity ID: AA05966 Analyst: JEH - EA Inst Cali: 03/13/89

AMOUNT=AREA * REF AMNT/(REF AREA * RESP FACT)
Resp. fac. from Library Entry

NO	NAME	
1	IS1**	1,4-DICHLOROBENZENE-D4
2	IS2**	NAPHTHALENE-D8
3	IS3**	ACENAPHTHENE-D10
4	IS4**	PHENANTHRENE-D10
5	IS5**	CHRYSENE-D12
6	IS6**	PERYLENE-D12
7	65A	PHENOL
8	18B	BIS (2-CHLOROETHYL) ETHER
9	24A	2-CHLOROPHENOL
10	26B	1,3-DICHLOROBENZENE
11	27B	1,4-DICHLOROBENZENE
12	6H	BENZYL ALCOHOL
13	25B	1,2-DICHLOROBENZENE
14	2H	2-METHYLPHENOL
15	42B	BIS (2-CHLOROISOPROPYL) ETHER
16	3H	4-METHYLPHENOL
17	63B	N-NITROSO-DI-N-PROPYLAMINE
18	12B	HEXACHLOROETHANE
19	56B	NITROBENZENE
20	54B	ISOPHORONE
21	57A	2-NITROPHENOL
22	34A	2,4-DIMETHYLPHENOL
23	1H	BENZOIC ACID
24	43B	BIS (2-CHLOROETHOXY) METHANE
25	31A	2,4-DICHLOROPHENOL
26	8B	1,2,4-TRICHLOROBENZENE
27	55B	NAPHTHALENE
28	7H	4-CHLOROANILINE
29	52B	HEXACHLOROBUTADIENE
30	22A	4-CHLORO-3-METHYLPHENOL
31	9H	2-METHYLNAPHTHALENE
32	53B	HEXACHLOROCYCLOPENTADIENE
33	21A	2,4,6-TRICHLOROPHENOL
34	4H	2,4,5-TRICHLOROPHENOL
35	20B	2-CHLORONAPHTHALENE
36	10H	2-NITROANILINE
37	71B	DIMETHYLPHTHALATE
38	77B	ACENAPHTHYLENE
39	11H	3-NITROANILINE
40	1B	ACENAPHTHENE
41	59A	2,4-DINITROPHENOL
42	58A	4-NITROPHENOL
43	8H	DIBENZOFURAN
44	36B	2,6-DINITROTOLUENE
45	35B	2,4-DINITROTOLUENE
46	70B	DIETHYLPHTHALATE
47	40B	4-CHLOROPHENYLPHENYL ETHER
48	80B	FLUORENE
49	12H	4-NITROANILINE
50	60A	4,6-DINITRO-O-CRESOL

AA05979

No	m/z	Scan	Time	R f	RRT	Meth	Area(Hght)	Amount	%Tot
1	152	759	10:07	1	1.000	A BB	98536.	40.000 PPM	16.55
2	136	992	13:14	2	1.000	A VV	340308.	40.000 PPM	16.55
3	164	1337	17:50	3	1.000	A BV	122546.	40.000 PPM	16.55
4	188	1631	21:45	4	1.000	A BV	192274.	40.000 PPM	16.55
5	240	2170	28:56	5	1.000	A BV	107207.	40.000 PPM	16.55
6	264	2572	34:18	6	1.000	A BB	114402.	40.000 PPM	16.55
7	NOT FOUND								
8	NOT FOUND								
9	NOT FOUND								
10	NOT FOUND								
11	NOT FOUND								
12	NOT FOUND								
13	NOT FOUND								
14	NOT FOUND								
15	NOT FOUND								
16	108	834	11:07	1	1.099	A BB	465.	~~0.227 PPM~~	0.09
17	NOT FOUND								
18	NOT FOUND								
19	NOT FOUND								
20	NOT FOUND								
21	NOT FOUND								
22	NOT FOUND								
23	NOT FOUND								
24	NOT FOUND								
25	NOT FOUND								
26	NOT FOUND								
27	128	995	13:16	2	1.003	A BB	1183.	~~0.162 PPM~~	0.07
28	127	995	13:16	2	1.003	A BB	203.	~~0.093 PPM~~	0.04
29	NOT FOUND								
30	NOT FOUND								
31	141	1128	15:02	2	1.137	A BB	789.	~~0.215 PPM~~	0.09
32	NOT FOUND								
33	NOT FOUND								
34	196	1195	15:56	3	0.894	A BB	89.	~~0.067 PPM~~	0.03
35	162	1220	16:16	3	0.912	A BB	254.	~~0.068 PPM~~	0.03
36	NOT FOUND								
37	163	1287	17:10	3	0.963	A BB	476.	~~0.115 PPM~~	0.05
38	152	1304	17:23	3	0.975	A BB	407.	~~0.078 PPM~~	0.03
39	NOT FOUND								
40	NOT FOUND								
41	NOT FOUND								
42	NOT FOUND								
43	168	1373	18:18	3	1.027	A BB	1492.	~~0.302 PPM~~	0.13
44	NOT FOUND								
45	NOT FOUND								
46	149	1430	19:04	3	1.070	A BB	1312.	~~0.280 PPM~~	0.12
47	NOT FOUND								
48	166	1444	19:15	3	1.080	A BB	668.	~~0.181 PPM~~	0.07
49	NOT FOUND								
50	NOT FOUND								

Quantitation Report File: AA05979

Data: AA05979.TI
03/14/89 0:56:00
Sampl : BNA SOIL PR-SS-2 RE-EXTRACTION WILLOW GROVE EA#0749 <99.3>
Conds.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
Standard ID: AA05968 Instrument: MS2
Sensitivity ID: AA05966 Analyst: JEH - EA Inst Cali: 03/13/89

AMOUNT=AREA * REF AMNT/(REF AREA * RESP FACT)
Resp. fac. from Library Entry

NO	NAME	
51	62B	N-NITROSODIPHENYLAMINE
52	41B	4-BROMOPHENYLPHENYL ETHER
53	9B	HEXACHLOROBENZENE
54	64A	PENTACHLOROPHENOL
55	81B	PHENANTHRENE
56	78B	ANTHRACENE
57	68B	DI-N-BUTYLPHTHALATE
58	39B	FLUORANTHENE
59	84B	PYRENE
60	67B	BUTYLBENZYLPHTHALATE
61	28B	3,3'-DICHLOROBENZIDINE
62	72B	BENZO (A) ANTHRACENE
63	66B	BIS (2-ETHYLHEXYL) PHTHALATE
64	76B	CHRYSENE
65	69B	DI-N-OCTYLPHTHALATE
66	74B	BENZO(B)FLUORANTHENE
67	75B	BENZO(K)FLUORANTHENE
68	73B	BENZO (A) PYRENE
69	83B	INDENO-1,2,3 (C,D) PYRENE
70	82B	DIBENZO (A,H) ANTHRACENE
71	79B	BENZO (G,H,I) PERYLENE
72	SS1*	PHENOL-D5
73	SS2*	2-FLUOROPHENOL
74	SS3*	NITROBENZENE-D5
75	SS4*	2-FLUOROBIPHENYL
76	SS5*	2,4,6-TRIBROMOPHENOL
77	SS6*	TERPHENYL-D14
78	61B	N-NITROSO-DIMETHYLAMINE
79	5B	BENZIDINE
80	ANI	ANILINE

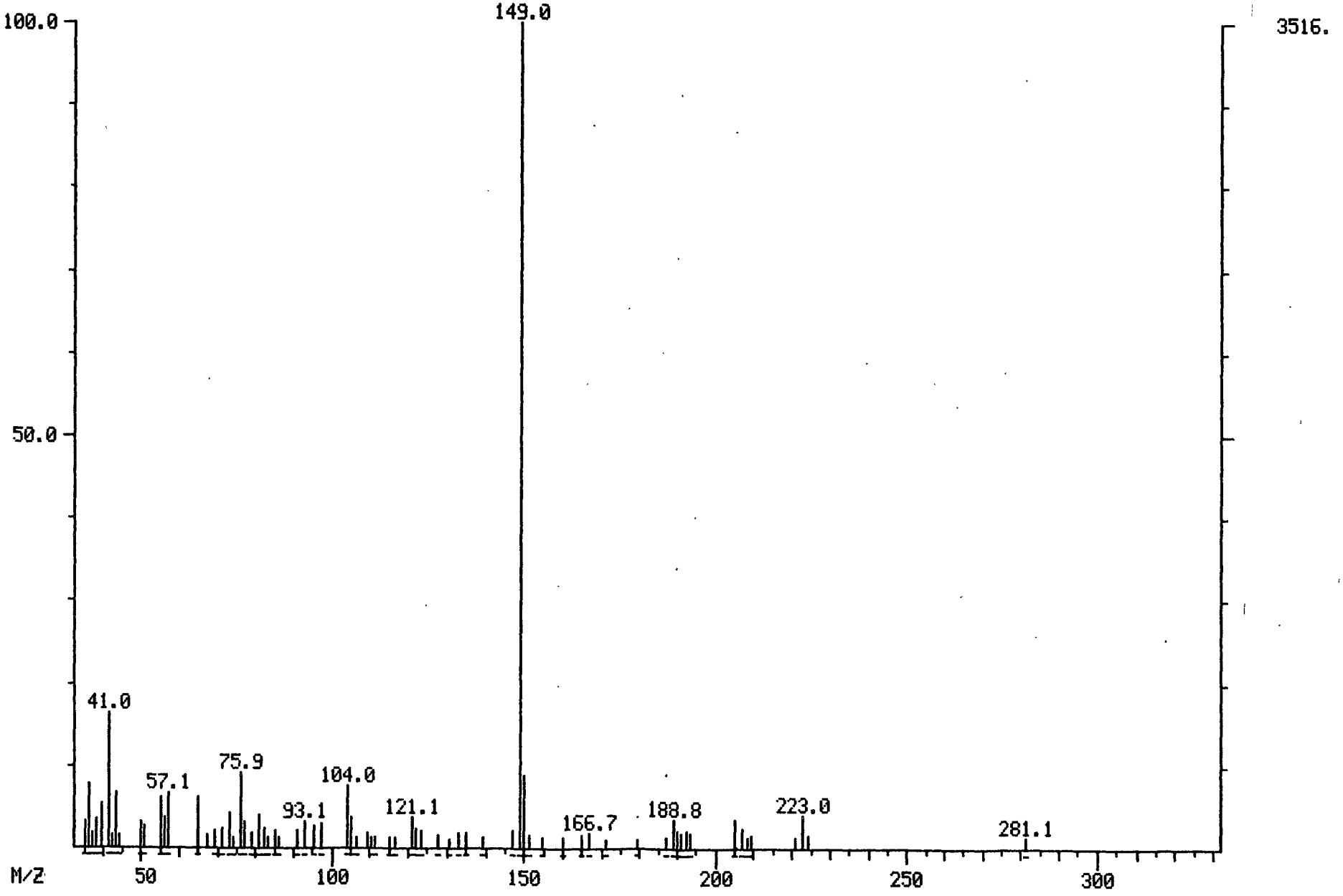
AA05979

No	m/z	Scan	Time	R f	RRT	Meth	Ar a(Hght)	Amount	%Tot	
51	169	1465	19:32	4	0.898	A BV	1200.	~~0.649 PPM~~	0.07	
52	NOT	FOUND								
53	NOT	FOUND								
54	NOT	FOUND								
55	NOT	FOUND								
56	NOT	FOUND								
57	149	1758	23:26	4	1.078	A BB	13924.	1.998 PPM	0.23	
58	202	1878	25:02	4	1.151	A BB	5852.	1.092 PPM	0.13	
59	202	1922	25:38	5	0.886	A BB	5498.	1.316 PPM	0.15	
60	149	2044	27:15	5	0.942	A BB	1291.	~~0.483 PPM~~	0.06	
61	NOT	FOUND								
62	NOT	FOUND								
63	149	2153	28:42	5	0.992	A VV	932.	~~0.243 PPM~~	0.03	
64	228	2166	28:53	5	0.998	A BV	1897.	~~0.670 PPM~~	0.08	
65	149	2304	30:43	6	0.896	A BB	2374.	~~0.376 PPM~~	0.04	
66	NOT	FOUND								
67	252	2445	32:36	6	0.951	A BB	2921.	~~0.927 PPM~~	0.11	
68	252	2534	33:47	6	0.985	A BB	1326.	~~0.451 PPM~~	0.05	
69	276	3056	40:45	6	1.188	A BB	879.	~~0.320 PPM~~	0.04	
70	NOT	FOUND								
71	NOT	FOUND								
72	99	703	9:22	1	0.926	A BB	596834.	250.921 PPM	28.79	125 K
73	112	558	7:26	1	0.735	A BV	502615.	200.474 PPM	23.00	100 ✓
74	82	860	11:28	2	0.867	A BB	297548.	86.590 PPM	9.94	87 ✓
75	172	1204	16:03	3	0.901	A BB	390229.	88.771 PPM	10.19	89 ✓
76	330	1495	19:56	3	1.118	A BV	83716.	145.107 PPM	16.65	73 ✓
77	244	1955	26:04	5	0.901	A BV	309752.	91.150 PPM	10.46	91 ✓
78	NOT	FOUND								
79	NOT	FOUND								
80	NOT	FOUND								

MASS SPECTRUM
03/14/89 0:56:00 + 23:26
SAMPLE: BNA SOIL PR-SS-2 RE-EXTRACTION WILLOW GROVE EA#0749 <99.3>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 247 DEG. C

DATA: AA05979 #1758
CALI: AA05979 #4

BASE M/Z: 149
RIC: 11104.



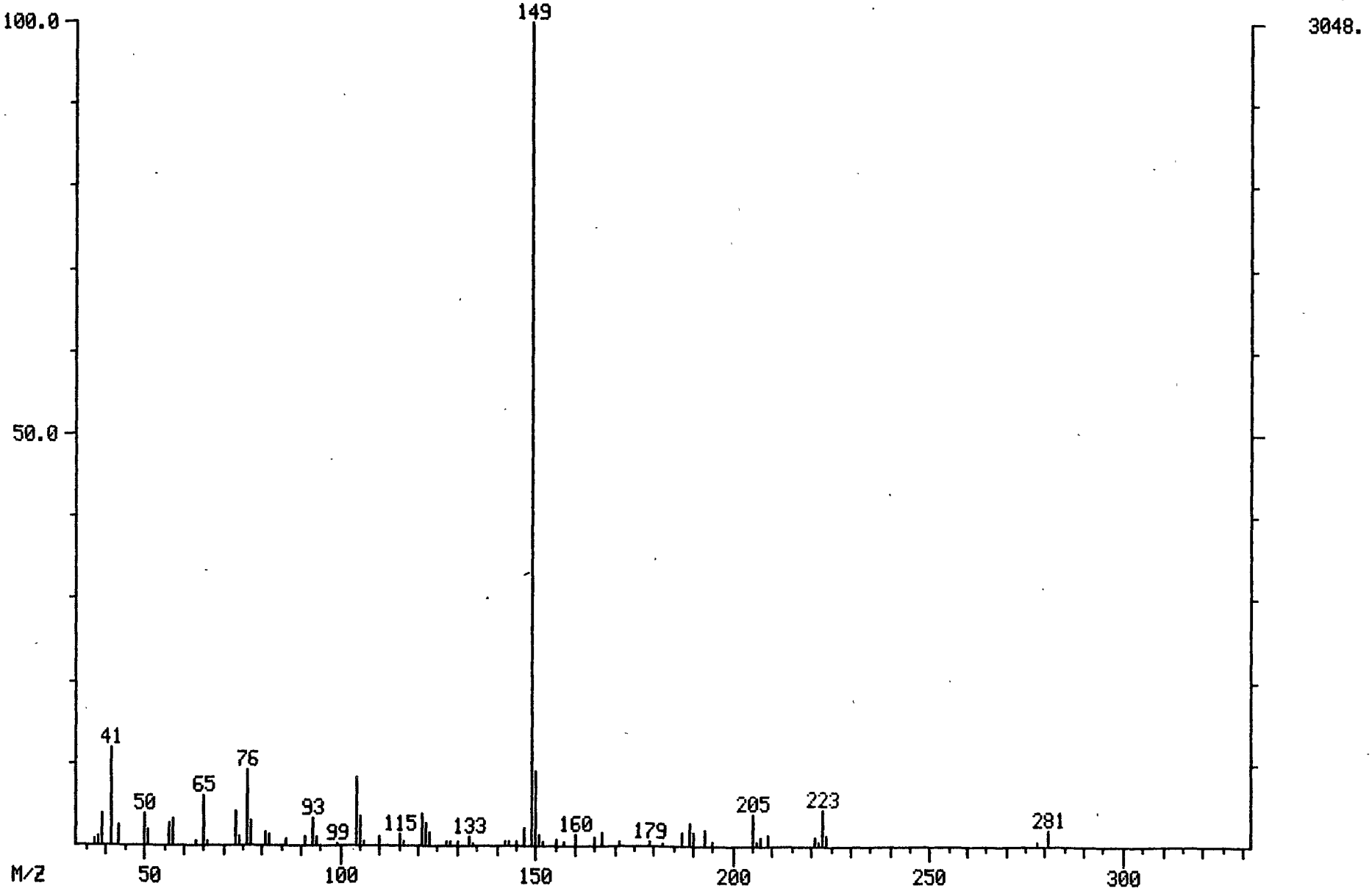
3 - 080

MASS SPECTRUM
03/14/89 0:56:00 + 23:26
SAMPLE: BNA SOIL PR-SS-2 RE-EXTRACTION WILLOW GROVE EA#0749 <99.3>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 247 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05979 #1758
CALI: AA05979 #4

BASE M/Z: 149
RIC: 7352.

3 081

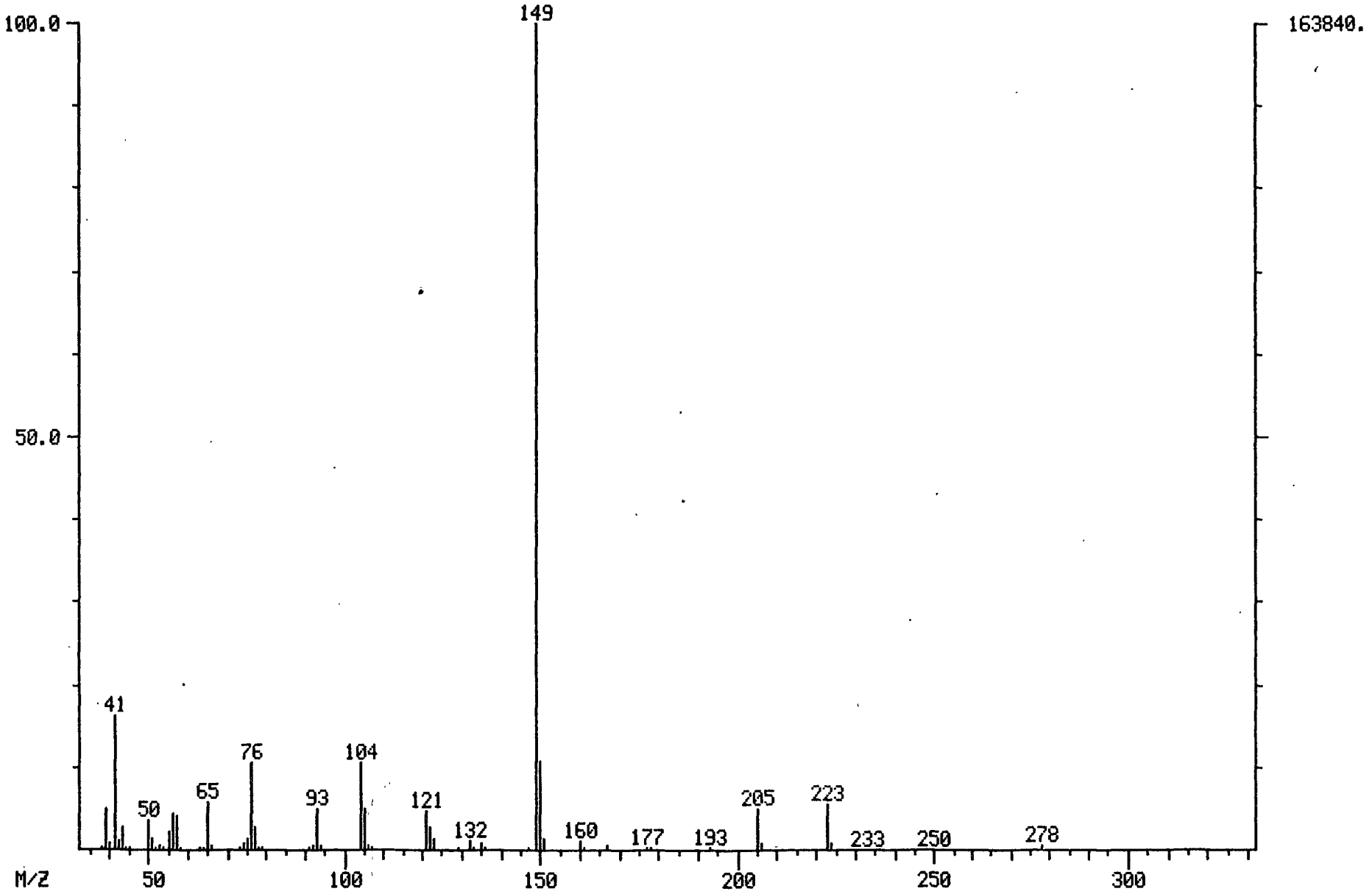


MASS SPECTRUM
03/13/89 15:42:00 + 23:38
SAMPLE: BNA STANDARD #1273 80 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 249 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05969 #1772
CALI: AA05969 #4

BASE M/Z: 149
RIC: 378880.

3 082

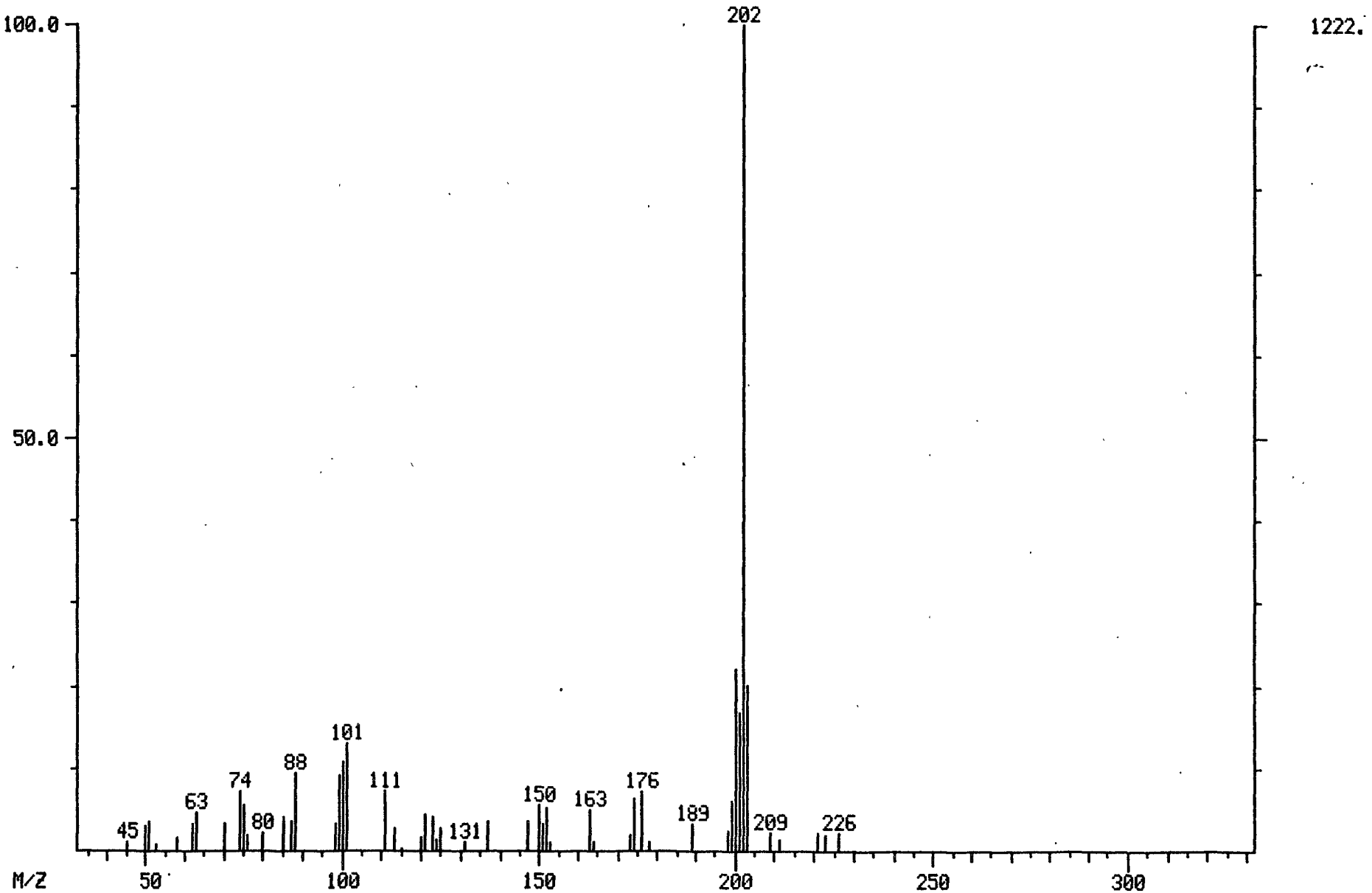


MASS SPECTRUM
03/14/89 0:56:00 + 25:02
SAMPLE: BNA SOIL PR-SS-2 RE-EXTRACTION WILLOW GROVE EA#0749 <99.3>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 263 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05979 #1878
CALI: AA05979 #4

BASE M/Z: 202
RIC: 4216.

3 083

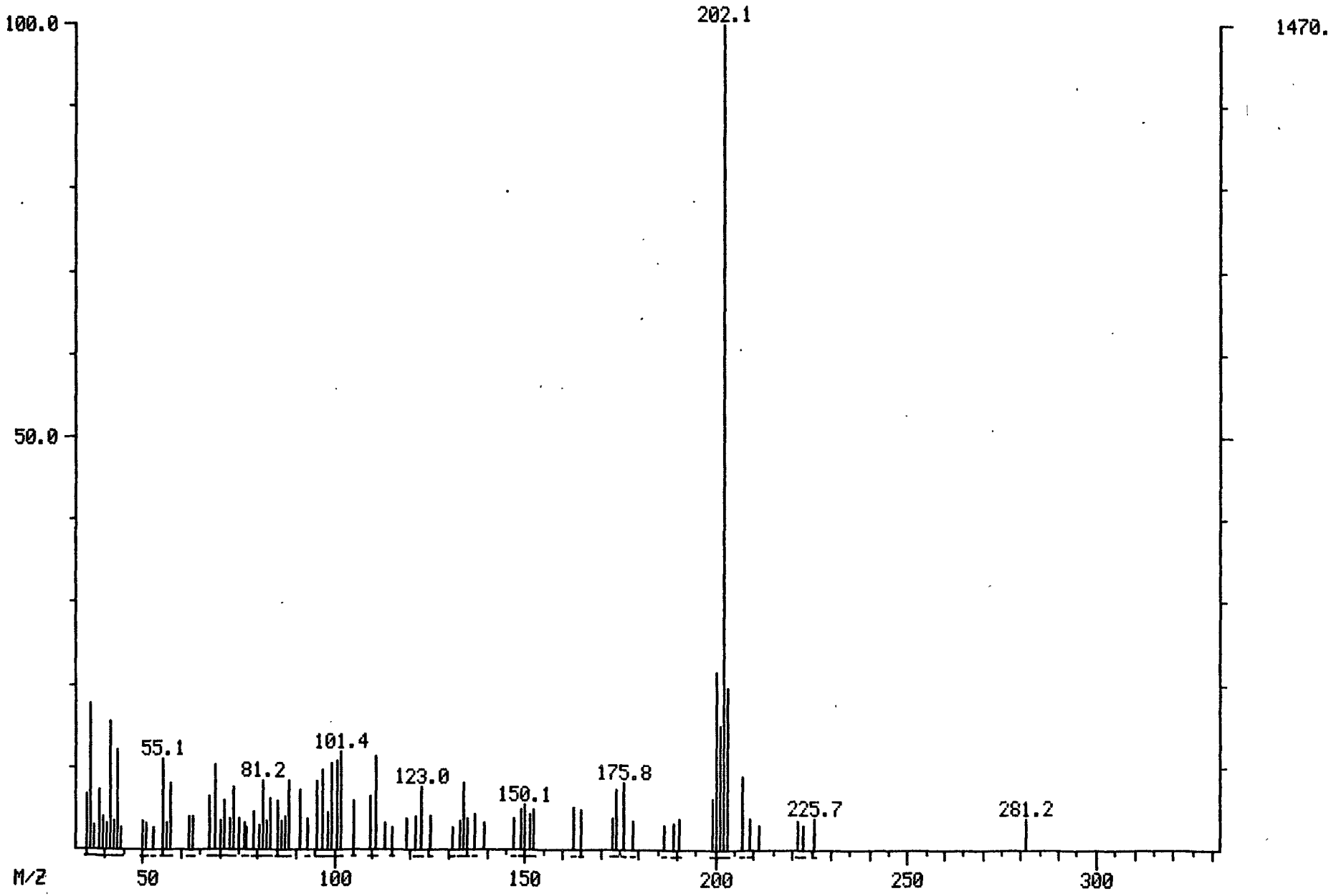


MASS SPECTRUM
03/14/89 0:56:00 + 25:02
SAMPLE: BNA SOIL PR-SS-2 RE-EXTRACTION WILLOW GROVE EA#0749 <99.3>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 263 DEG. C

DATA: AA05979 #1878
CALI: AA05979 #4

BASE M/Z: 202
RIC: 8960.

3 084

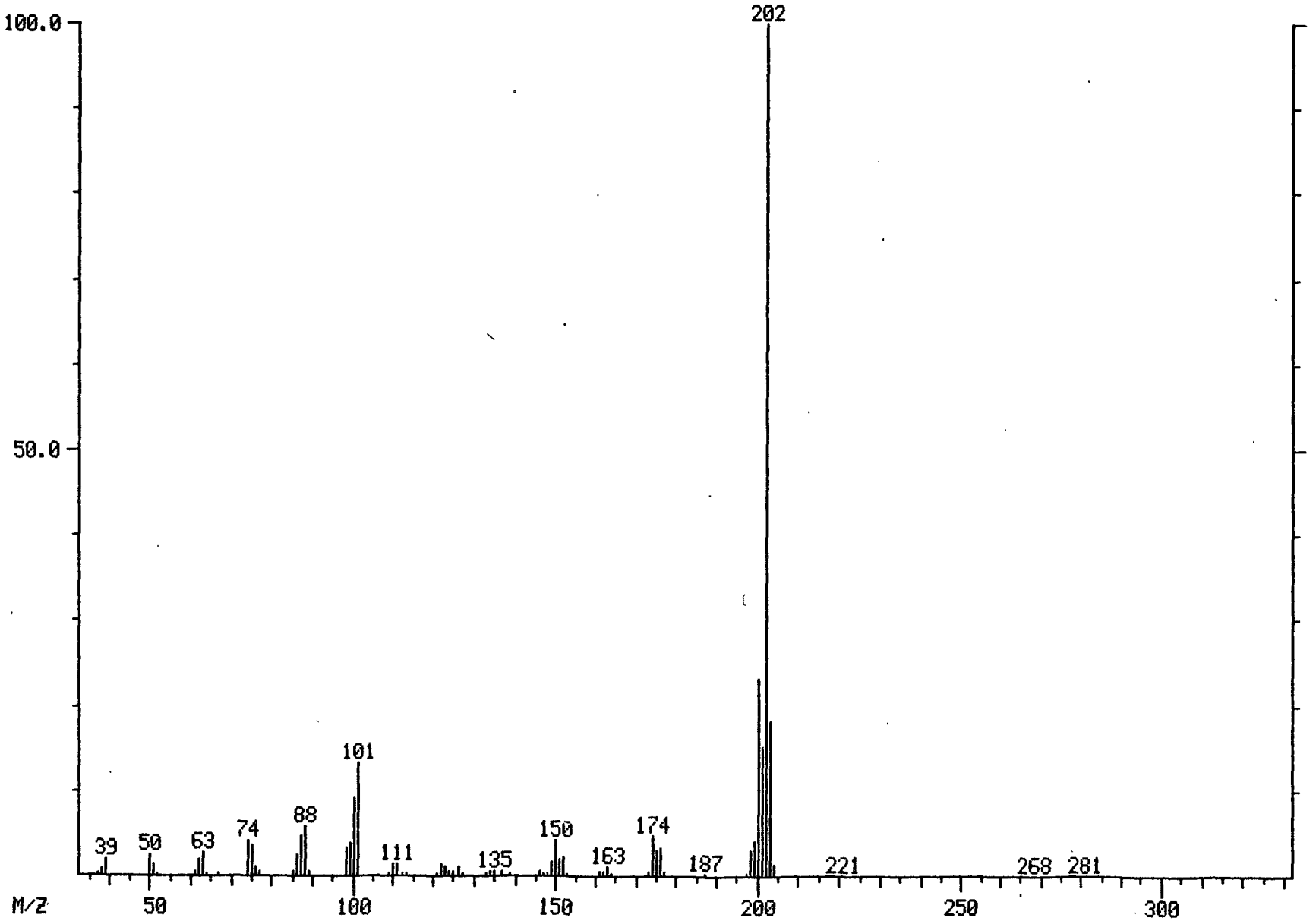


MASS SPECTRUM
03/13/89 15:42:00 + 25:14
SAMPLE: BNA STANDARD #1273 80 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 265 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05969 #1892
CALI: AA05969 #4

BASE M/Z: 202
RIC: 333824.

3 085

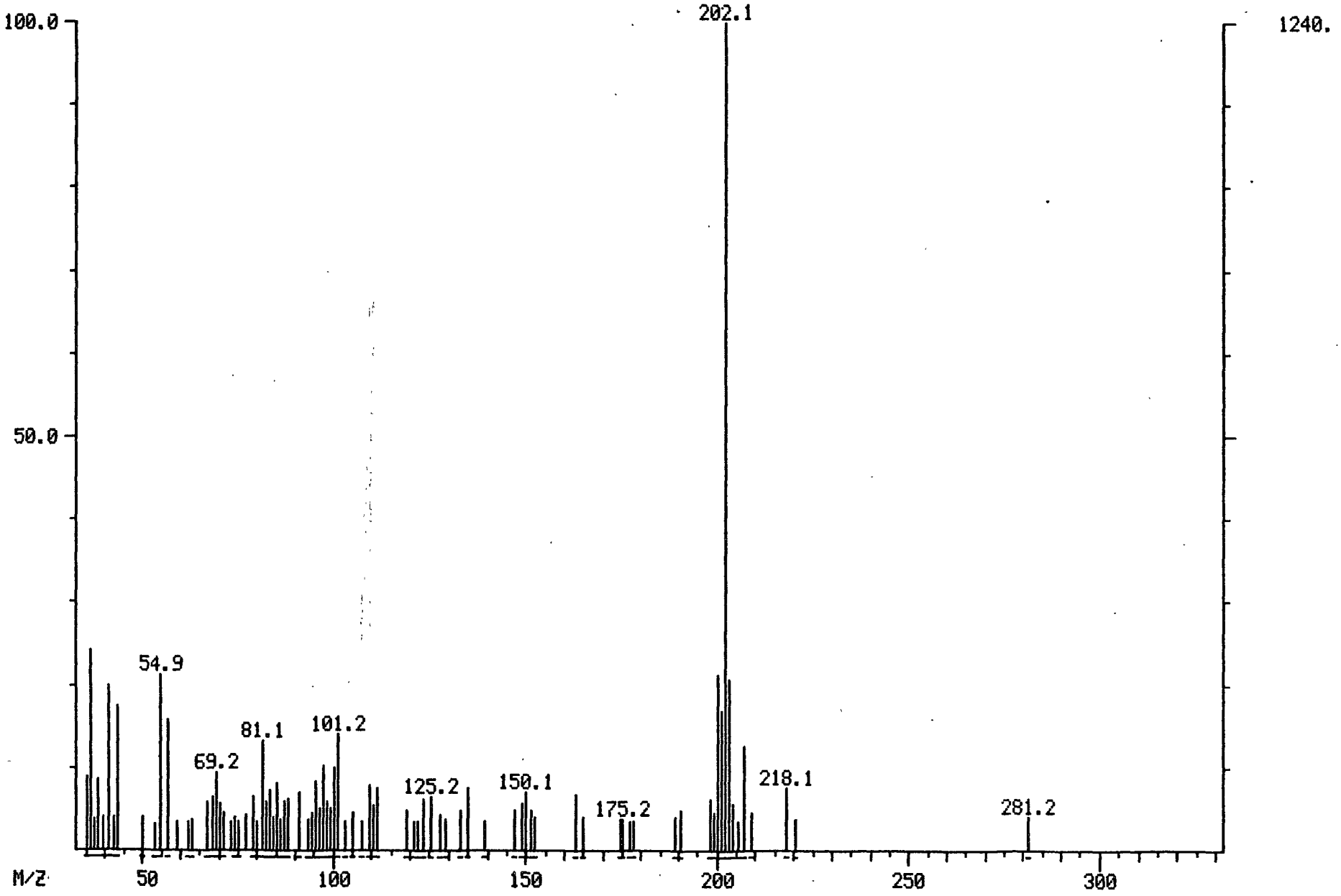


MASS SPECTRUM
03/14/89 0:56:00 + 25:38
SAMPLE: BNA SOIL PR-SS-2 RE-EXTRACTION WILLOW GROVE EA#0749 <99.3>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 269 DEG. C

DATA: AA05979 #1922
CALI: AA05979 #4

BASE M/Z: 202
RIC: 8560.

3 086

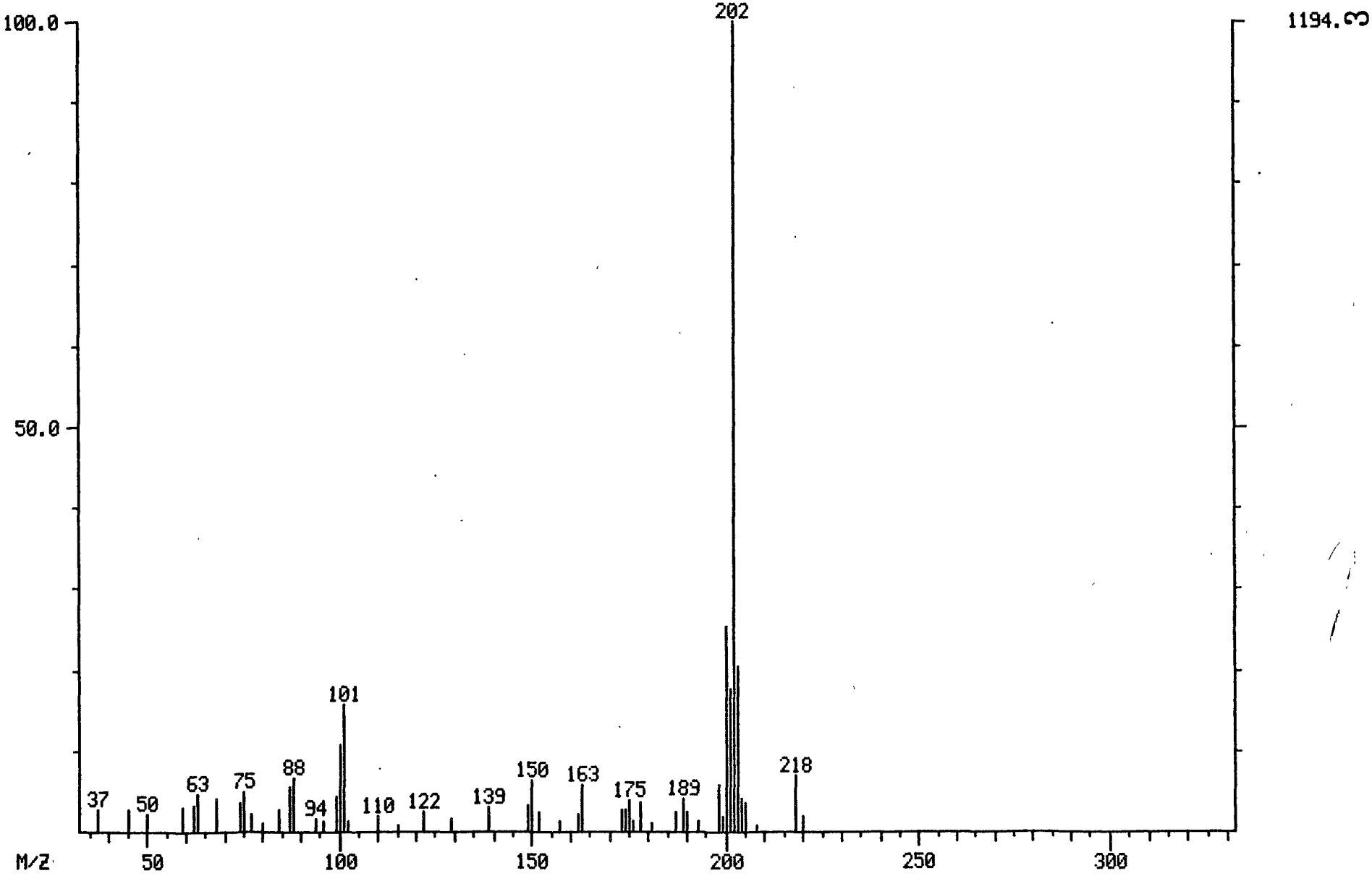


MASS SPECTRUM
03/14/89 0:56:00 + 25:38
SAMPLE: BNA SOIL PR-SS-2 RE-EXTRACTION WILLOW GROVE EA#0749 <99.3>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)->305 DEG C @ 10 DEG/MIN
GC TEMP: 269 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05979 #1922
CALI: AA05979 #4

BASE M/Z: 202
RIC: 3956.

087

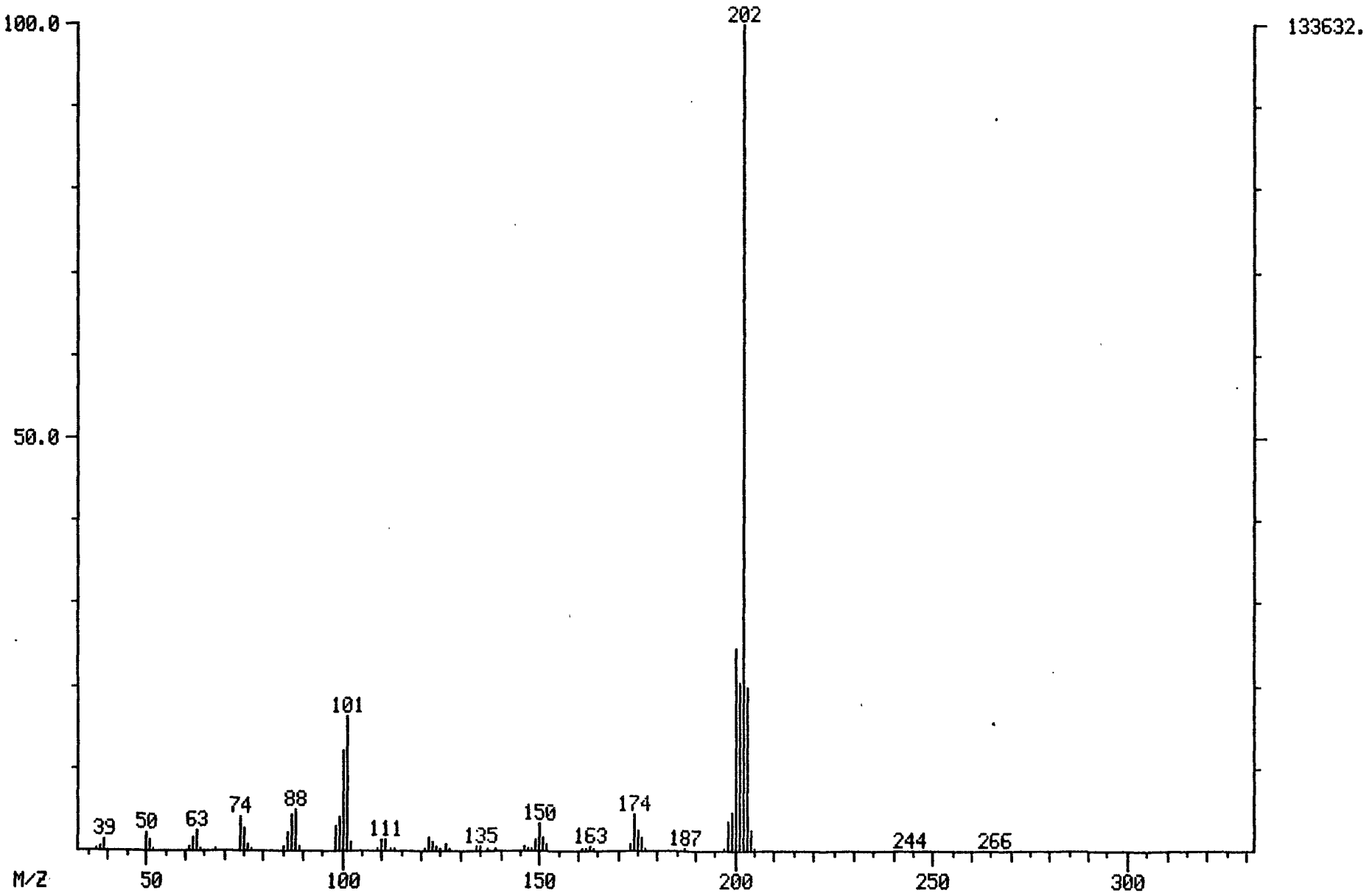


MASS SPECTRUM
03/13/89 15:42:00 + 25:50
SAMPLE: BNA STANDARD #1273 80 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 271 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05969 #1937
CALI: AA05969 #4

BASE M/Z: 202
RIC: 372736.

3 088



Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
EA#0775 PRW-2, Cor-e

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 02/23/89
Date Analyzed: 3/09/89 3:55
Conc/Dil Factor: 1.00000
Percent Moisture (Decanted) N/A

GPC Cleanup __ Yes ✓ No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction ✓ Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	1200.	U
111-44-4	bis(2-Chloroethyl)ether	1200.	U
95-57-8	2-Chlorophenol	1200.	U
541-73-1	1,3-Dichlorobenzene	1200.	U
106-46-7	1,4-Dichlorobenzene	1200.	U
100-51-6	Benzyl Alcohol	1200.	U
95-50-1	1,2-Dichlorobenzene	1200.	U
95-48-7	2-Methylphenol	1200.	U
39638-32-9	bis(2-Chloroisopropyl)ether	1200.	U
106-44-5	4-Methylphenol	1200.	U
621-64-7	N-Nitroso-Di-n-propylamine	1200.	U
67-72-1	Hexachloroethane	1200.	U
98-95-3	Nitrobenzene	1200.	U
78-59-1	Isophorone	1200.	U
88-75-5	2-Nitrophenol	1200.	U
105-67-9	2,4-Dimethylphenol	1200.	U
65-85-0	Benzoic Acid	120.	J
111-91-1	bis(2-Chloroethoxy)methane	1200.	U
120-83-2	2,4-Dichlorophenol	1200.	U
120-82-1	1,2,4-Trichlorobenzene	1200.	U
91-20-3	Naphthalene	1200.	U
106-47-8	4-Chloroaniline	1200.	U
87-68-3	Hexachlorobutadiene	1200.	U
59-50-7	4-Chloro-3-methylphenol	1200.	U
91-57-6	2-Methylnaphthalene	1200.	U
77-47-4	Hexachlorocyclopentadiene	1200.	U
88-06-2	2,4,6-Trichlorophenol	1200.	U
95-95-4	2,4,5-Trichlorophenol	5800.	U
91-58-7	2-Chloronaphthalene	1200.	U
88-74-4	2-Nitroaniline	5800.	U
131-11-3	Dimethylphthalate	1200.	U
208-96-8	Acenaphthylene	1200.	U
99-09-2	3-Nitroaniline	5800.	U

C.A.S. Number		ug/L or ug/Kg (Circle One)	
83-32-9	Acenaphthene	1200.	U
51-28-5	2,4-Dinitrophenol	5800.	U
100-02-7	4-Nitrophenol	5800.	U
132-64-9	Dibenzofuran	1200.	U
121-14-2	2,4-Dinitrotoluene	1200.	U
606-20-2	2,6-Dinitrotoluene	1200.	U
84-66-2	Diethylphthalate	1200.	U
7005-72-3	4-Chlorophenyl-phenylether	1200.	U
86-73-7	Fluorene	1200.	U
100-01-6	4-Nitroaniline	1200.	U
534-52-1	4,6-Dinitro-2-methylphenol	5800.	U
86-30-6	N-Nitrososdiphenylamine (1)	1200.	U
101-55-3	4-Bromophenyl-phenylether	1200.	U
118-74-1	Hexachlorobenzene	1200.	U
87-86-5	Pentachlorophenol	5800.	U
85-01-8	Phenanthrene	1200.	U
120-12-7	Anthracene	1200.	U
84-74-2	Di-n-Butyl phthalate	1200.	U
206-44-0	Fluoranthene	1200.	U
129-00-0	Pyrene	1200.	U
85-68-7	Butylbenzylphthalate	1200.	U
91-94-1	3,3'-Dichlorobenzidine	2300.	U
56-55-3	Benzo(a)Anthracene	1200.	U
117-81-7	bis(2-Ethylhexyl)phthalate	140.	J
218-01-9	Chrysene	1200.	U
117-84-0	Di-n-Octyl phthalate	1200.	U
205-99-2	Benzo(b)Fluoranthene	1200.	U
207-08-9	Benzo(k)Fluoranthene	1200.	U
50-32-8	Benzo(a)Pyrene	1200.	U
193-39-5	Indeno(1,2,3-cd)Pyrene	1200.	U
53-70-3	Dibenzo(a,h)Anthracene	1200.	U
191-24-2	Benzo(g,h,i)Perylene	1200.	U

(1)-Cannot be separated from diphenylamine

Lab ratory Name: EA LABORATORIES
Cas No: Willow Grove

Sample Number
EA# 0772-
PRW-2, Composite

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT ~~or Scan Number~~	Estimated Concentration (~~ug/l or~~ ug/kg)
1. 6624-79-9	1-Dotriacontanol	BNA	31.30	5300.00 J
2.				
3.				
4.				
5.				
6.				
7.				
8.				
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11.				
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17.				
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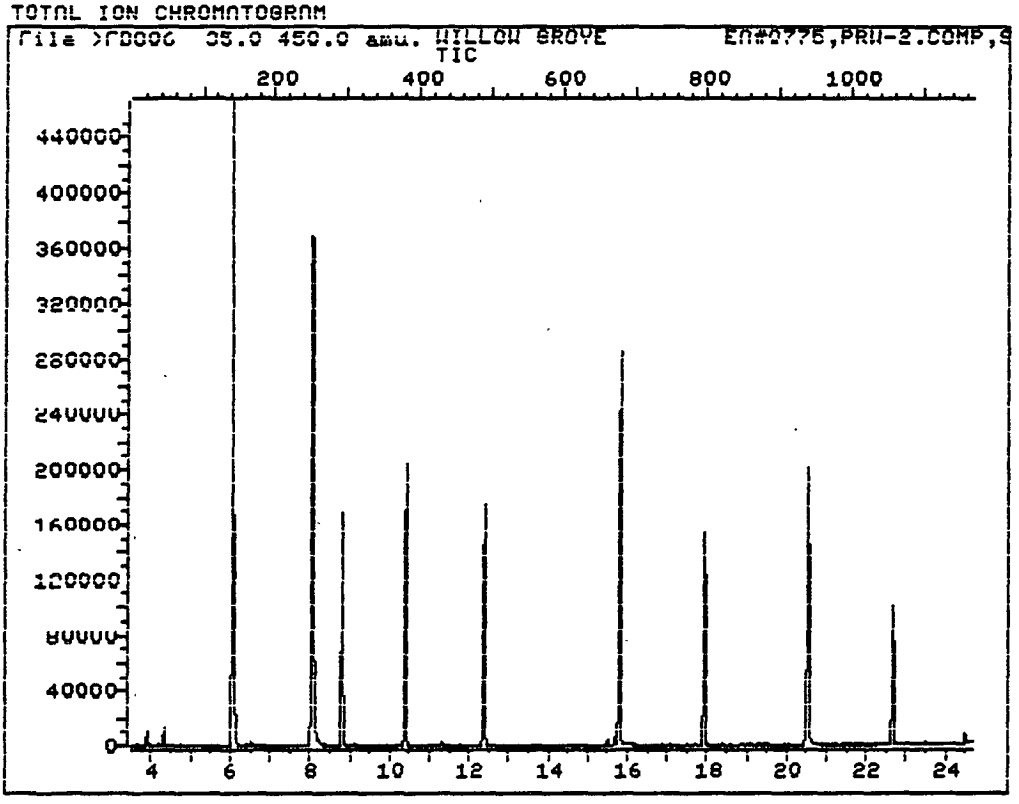
26.				
27.				
28.				
29.				
30.				

3 090

TOTAL ION CHROMATOGRAM



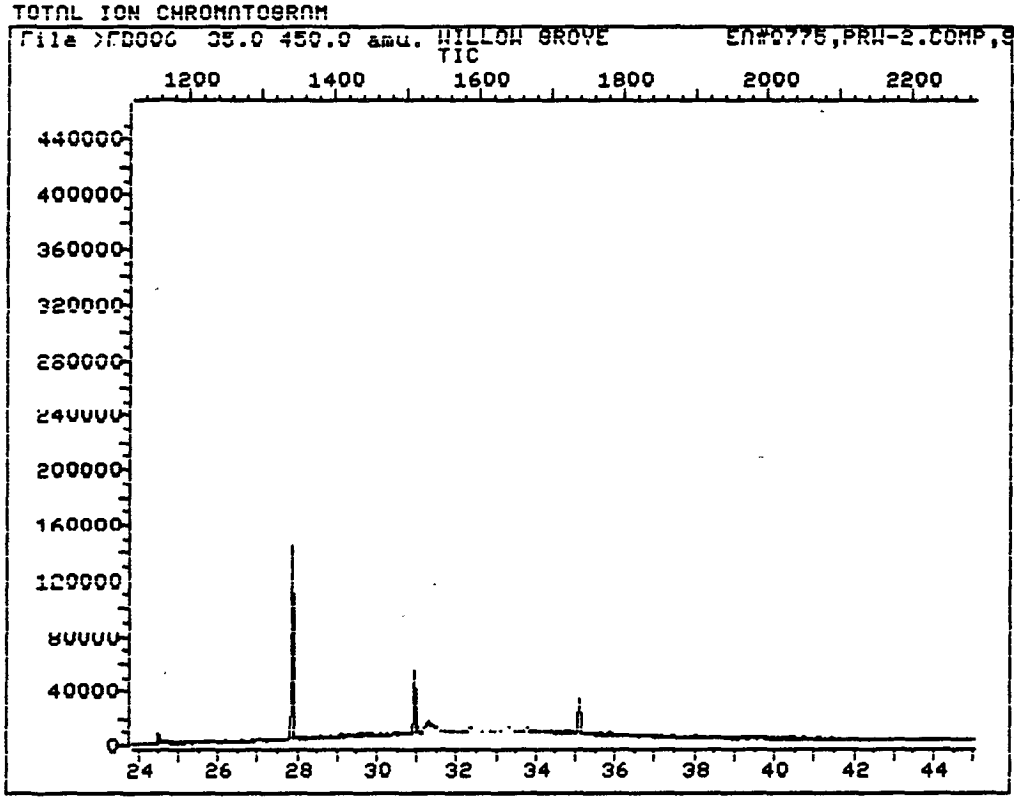
Data File: >FB806::D4 Quant Output File: ^FB806::QT
Name: WILLOW GROVE
Misc: EA#0775,PRW-2.COMP,SOIL,10.25G,1, <116.1> BTL# 7

Id File: IDFCLP::BD
Titl : HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890411 22:32

Operator ID: UNCLE
Quant Time: 890412 00:12
Inj cted at: 890309 03:55

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >FB806::D4 Quant Output File: ^FB806::QT
Name: WILLOW GROVE
Misc: EA#0775,PRW-2.COMP,SOIL,10.25G,1, <116.1> BTL# 7

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
La t Calibration: 890411 22:32

Operator ID: UNCLE
Quant Time: 890412 00:12
Injected at: 890309 03:55

TIC page 2 of 2

QUANT REPORT

Operator ID: UNCLE Quant Rev: 6 Quant Time: 890412 00:12
Output File: ^FB806::QT Injected at: 890309 03:55
Data File: >FB806::D4 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0775,PRW-2.COMP,SOIL,10.25G,1, <116.1> BTL# 7

ID File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890411 22:32

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	8.82	152.0	59933	40.00	NG	98
2)	2-Fluorophenol	6.06	112.0	239440	128.32	NG 64%	94
3)	Phenol-d5	8.06	99.0	357811	162.80	NG 81%	95
4)	Phenol	0.00	94.0	0	0.00	NG	
5)	bis(2-Chloroethyl)ether	0.00	93.0	0	0.00	NG	
6)	2-Chlorophenol	0.00	128.0	0	0.00	NG	
7)	1,3-Dichlorobenzene	0.00	146.0	0	0.00	NG	
8)	1,4-Dichlorobenzene	0.00	146.0	0	0.00	NG	
9)	Benzyl Alcohol	0.00	108.0	0	0.00	NG	
10)	1,2-Dichlorobenzene	0.00	146.0	0	0.00	NG	
11)	2-M thylphenol	0.00	108.0	0	0.00	NG	
12)	bis(2-Chloroisopropyl)ether	0.00	45.0	0	0.00	NG	
13)	4-Methylphenol	0.00	108.0	0	0.00	NG	
14)	N-Nitroso-Di-n-propylamine	0.00	70.0	0	0.00	NG	
15)	Hexachloroethane	0.00	117.0	0	0.00	NG	
16)	*d8-Naphthalene	12.39	136.0	205019	40.00	NG	92
17)	Nitrobenzene-d5	10.42	82.0	164171	80.04	NG 80%	93
18)	Nitrobenzene	0.00	77.0	0	0.00	NG	
19)	Isophorone	0.00	82.0	0	0.00	NG	
20)	2-Nitrophenol	0.00	139.0	0	0.00	NG	
21)	2,4-Dimethylphenol	0.00	107.0	0	0.00	NG	
22)	B nzoic Acid	11.76	122.0	773	1.01	NG ✓	92
23)	bis(2-Chloroethoxy)methane	0.00	93.0	0	0.00	NG	
24)	2,4-Dichlorophenol	0.00	162.0	0	0.00	NG	
25)	1,2,4-Trichlorobenzene	0.00	180.0	0	0.00	NG	
26)	Naphthalene	0.00	128.0	0	0.00	NG	
27)	4-Chloroaniline	0.00	127.0	0	0.00	NG	
28)	H xachlorobutadiene	0.00	224.7	0	0.00	NG	
29)	4-Chloro-3-methylphenol	0.00	107.0	0	0.00	NG	
30)	2-Methylnaphthalene	14.57	142.0	838	~~.32~~	NG	95
31)	*d10-Acenaphthene	17.95	164.0	82521	40.00	NG	97
32)	H xachlorocyclopentadiene	0.00	237.0	0	0.00	NG	
33)	2,4,6-Trichlorophenol	0.00	196.0	0	0.00	NG	
34)	2,4,5-Trichlorophenol	0.00	196.0	0	0.00	NG	
35)	2-Chloronaphthalene	0.00	162.0	0	0.00	NG	
36)	2-Fluorobiphenyl	15.82	172.0	237218	83.14	NG 83%	95
37)	2-Nitroaniline	0.00	65.0	0	0.00	NG	
38)	Dim thylphthalate	17.95	163.0	28027	~~8.41~~	NG	55
39)	Ac naphthylene	0.00	152.0	0	0.00	NG	
40)	3-Nitroaniline	0.00	138.0	0	0.00	NG	
41)	Acenaphthene	0.00	153.0	0	0.00	NG	
42)	2,4-Dinitrophenol	0.00	184.0	0	0.00	NG	

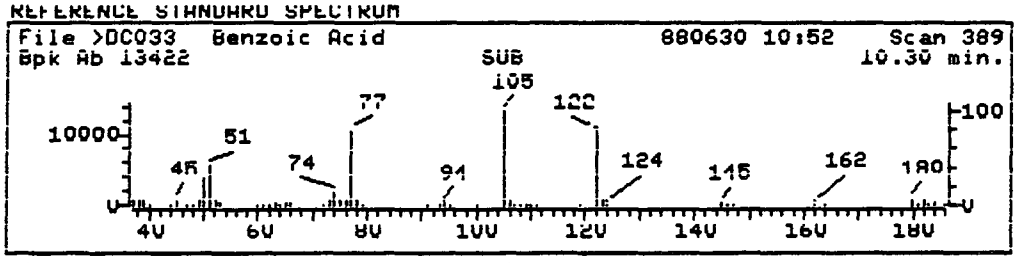
QUANT REPORT
page 2

Output File:^FB806:: Data File:>FB806::D4

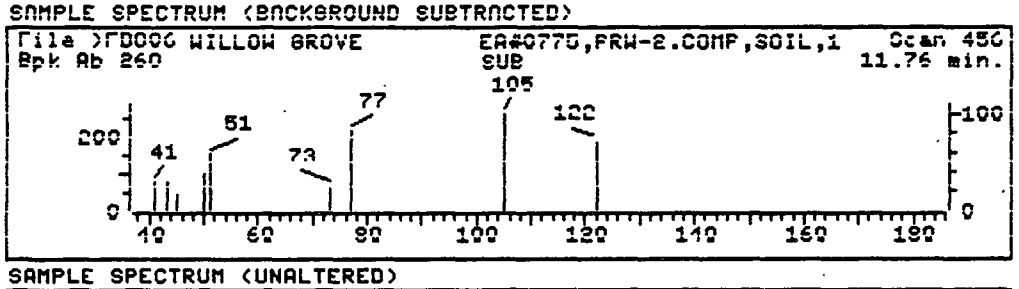
	Compound	R.T.	Q ion	Area	Conc	Units		q
43)	4-Nitrophenol	0.00	109.0	0	0.00	NG		
44)	Dibenzofuran	0.00	168.0	0	0.00	NG		
45)	2,4-Dinitrotoluene	0.00	165.0	0	0.00	NG		
46)	2,6-Dinitrotoluene	0.00	165.0	0	0.00	NG		
47)	Diethylphthalate	0.00	149.0	0	0.00	NG		
48)	4-Chlorophenyl-phenylether	0.00	204.0	0	0.00	NG		
49)	Fluorene	0.00	166.0	0	0.00	NG		
50)	4-Nitroaniline	0.00	138.0	0	0.00	NG		
51)	*d10-Phenanthrene	22.68	188.0	103047	40.00	NG		98
52)	4,6-Dinitro-2-methylphenol	0.00	198.0	0	0.00	NG		
53)	N-Nitrosodiphenylamine	0.00	169.0	0	0.00	NG		
54)	2,4,6-Tribromophenol	20.52	329.9	73473	201.49	NG	10%	96
55)	4-Bromophenyl-phenylether	0.00	248.0	0	0.00	NG		
56)	Hexachlorobenzene	0.00	283.6	0	0.00	NG		
57)	Pentachlorophenol	0.00	266.0	0	0.00	NG		
58)	Phenanthrene	0.00	178.0	0	0.00	NG		
59)	Anthracene	0.00	178.0	0	0.00	NG		
60)	Di-n-Butyl phthalate	24.75	149.0	1525	~~.35~~	NG		97
61)	Fluoranthene	0.00	202.0	0	0.00	NG		
62)	*d12-Chrysene	30.95	240.0	40075	40.00	NG		97
63)	Pyrene	0.00	202.0	0	0.00	NG		
64)	Terphenyl-d14	27.88	244.0	128076	87.89	NG	88%	89
65)	Butylbenzylphthalate	0.00	149.0	0	0.00	NG		
66)	3,3'-Dichlorobenzidine	0.00	252.0	0	0.00	NG		
67)	Benzo(a)Anthracene	0.00	228.0	0	0.00	NG		
68)	bis(2-Ethylhexyl)phthalate	31.04	149.0	1971	1.23	NG	✓	97
69)	Chrysene	0.00	228.0	0	0.00	NG		
70)	*d12-Perylene	35.10	264.0	38924	40.00	NG		95
71)	Di-n-Octyl phthalate	0.00	149.0	0	0.00	NG		
72)	Benzo(b)Fluoranthene	0.00	252.0	0	0.00	NG		
73)	Benzo(k)Fluoranthene	0.00	252.0	0	0.00	NG		
74)	Benzo(a)Pyrene	0.00	252.0	0	0.00	NG		
75)	Indeno(1,2,3-cd)Pyrene	0.00	276.0	0	0.00	NG		
76)	Dibenzo(a,h)Anthracene	0.00	278.0	0	0.00	NG		
77)	Benzo(g,h,i)Perylene	0.00	276.0	0	0.00	NG		

* Compound is ISTD

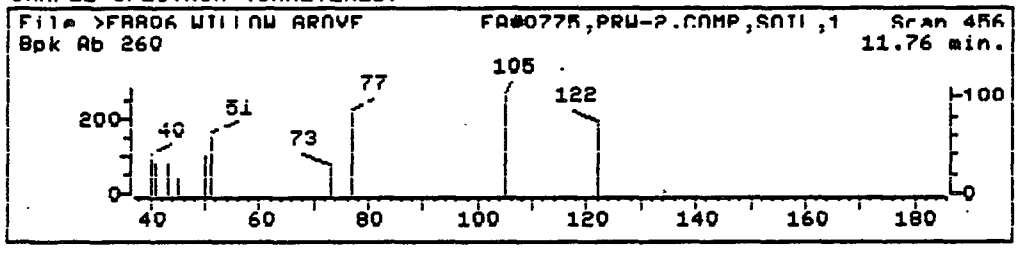
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



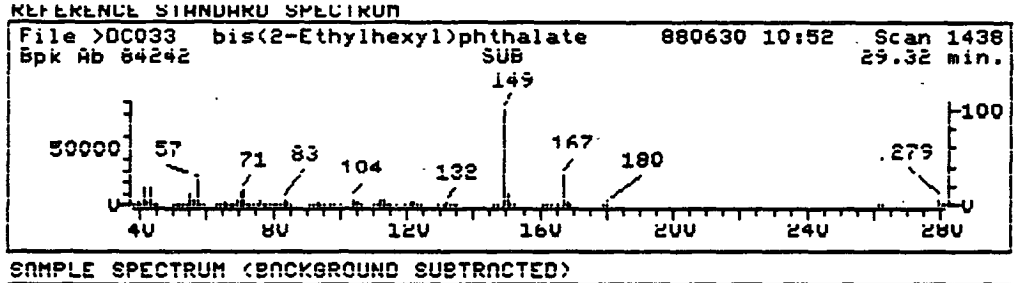
SAMPLE SPECTRUM (UNALTERED)



Data File: >FB806::D4 Quant Output File: ^FB806::QT
Name: WILLOW GROVE
Misc: EA#0775,PRW-2.COMP,SOIL,10.25G,1, (116.1) BTL# 7
Quant Time: 890412 00:12 Quant ID File: IDFCLP::BD
Injected at: 890309 03:55 Last Calibration: 890411 22:32

Compound No: 22
Compound Name: Benzoic Acid
Scan Number: 456
Ret ntion Time: 11.76 min.
Quant Ion: 122.0
Ar a: 773
Concentration: 1.01 NG
q-value: 92

REFERENCE STANDARD SPECTRUM



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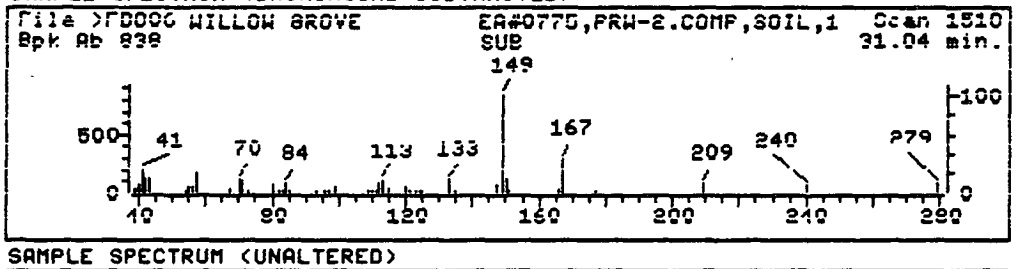
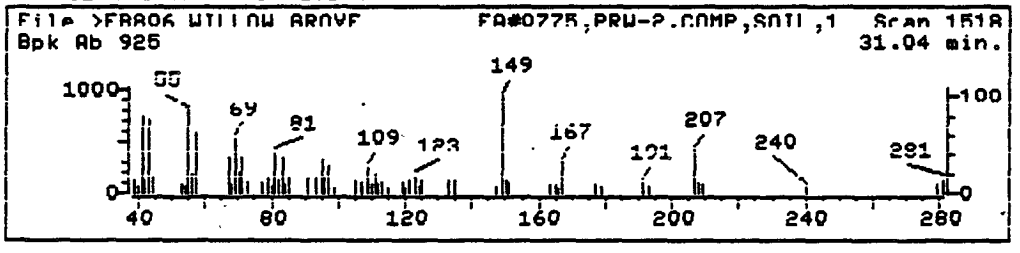
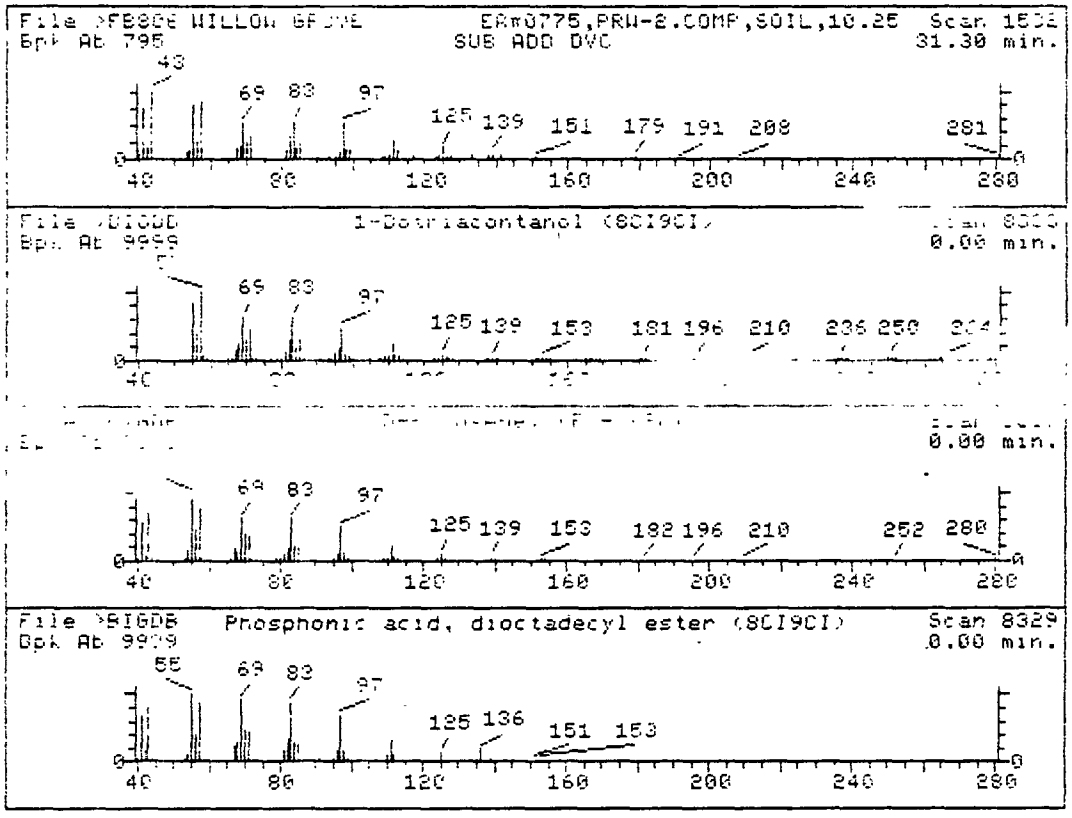


SAMPLE SPECTRUM (UNALTERED)



Data File: >FB806::D4 Quant Output File: ^FB806::QT
Name: WILLOW GROVE
Misc: EA#0775,PRW-2.COMP,SOIL,10.25G,1, (116.1) BTL# 7
Quant Time: 890412 00:12 Quant ID File: IDFCLP::BD
Inj cted at: 890309 03:55 Last Calibration: 890411 22:32

Compound No: 68
Compound Name: bis(2-Ethylhexyl)phthalate
Scan Number: 1518
Ret ntion Time: 31.04 min.
Quant Ion: 149.0
Area: 1971
Concentration: 1.23 NG
q-value: 97



Retention time = 31.30

Area = 153524.0 Tentative Concentration is 5300.00

1.	1-Dotriacontanol (8CI9CI)	466 C32H66O
2.	5-Eicosene, (E)- (9CI)	280 C20H40
3.	Phosphonic acid, dioctadecyl ester (8CI9CI)	586 C36H75O3P
4.	17-Pentatriacontene (8CI)	490 C35H70
5.	1-Hexacosanol (8CI9CI)	382 C26H54O
6.	1-Tetracosanol (8CI9CI)	354 C24H50O
7.	1-Hentetracontanol (9CI)	592 C41H84O

Sample file: >FB806 Spectrum #: 1532
Search speed: 2 Tilting option: 5 No. of ion ranges searched: 67

	Prob.	CAS #	CON #	POOT	%	PK	#FLG	TILT	%	CON	F_I	F_IV
1.	8n	6624799	8333	"BIGDB	123	58	3	-1	74	4	60	38
2.	81	74685306	8337	"BIGDB	118	37	2	-3	50	10	53	46

3.	71	19047859	8329	"BIGDB	104	96	1	0	56	28	29	63
4.	67	6971400	8334	"BIGDB	113	58	2	0	96	27	27	52
5.	62	506525	8292	"BIGDB	114	49	2	-1	83	28	25	44
6.	59	506514	8291	"BIGDB	115	49	2	-1	76	33	22	44
7.	52	40710427	8384	"BIGDB	71	124	3	0	69	19	20	12

LIBRARY SEARCH SUMMARY

MS Data File:>FB80o::D4 Analyst:UNCLE MS

Name:WILLOW GROVE Date/Time: 3/09/89 3:55
Misc:EA#0775,PRW-2.COMP,SOIL,10.25G,1, ?116.1? BTL# 7

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	31.30	153524	13429

ORGANICS ANALYSIS DATA SHEET SAMPLE #: PR-SS-3 RE-EXT
0777 RE

LABORATORY: EA ENG.
LABORATORY ID: AA06040
MATRIX: SOIL

CASE #/SAS #: WILLOW GROVE
QC REPORT #: AA06040
CONTRACT #: 10388.03
DATE RECEIVED: 02/21/89

DATA RELEASE AUTHORIZED BY: _____

SEMIVOLATILE COMPOUNDS (PAGE 1)

LEVEL: LOW
DATE EXT/PREP: 03/27/89
DATE ANALYZED: 03/30/89
CONC/DIL FACTOR: 10.74 G -> 1 ML
PH: N/A
% MOISTURE: 30.7
% MOISTURE (DECANTED): N/A
STANDARD ID: AA06035
SENSITIVITY ID: AA06031

GPC CLEANUP __YES ✓NO
SEPARATORY EXTRACTION __YES
CONTINUOUS EXTRACTION ✓YES

CAS #		UG/KG
108-95-2	PHENOL	1000. U
111-44-4	BIS(2-CHLOROETHYL)ETHER	1000. U
95-57-8	2-CHLOROPHENOL	1000. U
541-73-1	1,3-DICHLOROBENZENE	1000. U
106-46-7	1,4-DICHLOROBENZENE	1000. U
100-51-6	BENZYL ALCOHOL	1000. U
95-50-1	1,2-DICHLOROBENZENE	1000. U
95-48-7	2-METHYLPHENOL	1000. U
39638-32-9	BIS(2-CHLOROISOPROPYL)ETHER	1000. U
106-44-5	4-METHYLPHENOL	1000. U
621-64-7	N-NITROSODIPROPYLAMINE	1000. U
67-72-1	HEXACHLOROETHANE	1000. U
98-95-3	NITROBENZENE	1000. U
78-59-1	ISOPHORONE	1000. U
88-75-5	2-NITROPHENOL	1000. U
105-67-9	2,4-DIMETHYLPHENOL	1000. U
65-85-0	BENZOIC ACID	7000. U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	1000. U
120-33-2	2,4-DICHLOROPHENOL	1000. U
120-82-1	1,2,4-TRICHLOROBENZENE	1000. U
91-20-3	NAPHTHALENE	1000. U
106-47-8	4-CHLOROANILINE	1000. U
87-68-3	HEXACHLOROBUTADIENE	1000. U
59-50-7	4-CHLORO-3-METHYLPHENOL	1000. U
91-57-6	2-METHYLNAPHTHALENE	1000. U
77-47-4	HEXACHLOROCYCLOPENTADIENE	1000. U
88-06-2	2,4,6-TRICHLOROPHENOL	1000. U
95-95-4	2,4,5-TRICHLOROPHENOL	7000. U
91-58-7	2-CHLORONAPHTHALENE	1000. U
88-74-4	2-NITROANILINE	7000. U
131-11-3	DIMETHYL PHTHALATE	1000. U
208-96-8	ACENAPHTHYLENE	1000. U
99-09-2	3-NITROANILINE	7000. U
83-32-9	ACENAPHTHENE	1000. U
51-28-5	2,4-DINITROPHENOL	7000. U
100-02-7	4-NITROPHENOL	7000. U
132-64-9	DIBENZOFURAN	1000. U

FORM I

ORGANICS ANALYSIS DATA SHEET SAMPLE #: PR-SS-3 RE-EXT
0777RE

LABORATORY: EA ENG.
LABORATORY ID: AA06040
MATRIX: SOIL

CASE #/SAS #: WILLOW GROVE
QC REPORT #: AA06040
CONTRACT #: 10388.03
DATE RECEIVED: 02/21/89

DATA RELEASE AUTHORIZED BY: _____

SEMIVOLATILE COMPOUNDS (PAGE 2)

LEVEL:	LOW	GPC CLEANUP	__YES ✓NO
DATE EXT/PREP:	03/27/89	SEPARATORY EXTRACTION	__YES
DATE ANALYZED:	03/30/89	CONTINUOUS EXTRACTION	✓YES
CONC/DIL FACTOR:	10.74 G -> 1 ML		
PH:	N/A		
% MOISTURE:	30.7		
% MOISTURE (DECANTED):	N/A		
STANDARD ID:	AA06035		
SENSITIVITY ID:	AA06031		

CAS #		UG/KG	
121-14-2	2,4-DINITROTOLUENE	1000.	U
606-20-2	2,6-DINITROTOLUENE	1000.	U
84-66-2	DIETHYL PHTHALATE	1000.	U
7005-72-3	4-CHLOROPHENYL PHENYL ETHER	1000.	U
86-73-7	FLUORENE	1000.	U
100-01-6	4-NITROANILINE	7000.	U
534-52-1	4,6-DINITRO-2-METHYLPHENOL	7000.	U
86-30-6	N-NITROSODIPHENYLAMINE	1000.	U
101-55-3	4-BROMOPHENYL PHENYL ETHER	1000.	U
118-74-1	HEXACHLOROBENZENE	1000.	U
87-86-5	PENTACHLOROPHENOL	7000.	U
85-01-8	PHENANTHRENE	1000.	U
120-12-7	ANTHRACENE	1000.	U
84-74-2	DI-N-BUTYL PHTHALATE	260.	J,B
206-44-0	FLUORANTHENE	160.	J,B
129-00-0	PYRENE	220.	J,B
85-68-7	BUTYL BENZYL PHTHALATE	1000.	U
91-94-1	3,3'-DICHLOROBENZIDINE	3000.	U
56-55-3	BENZO(A)ANTHRACENE	1000.	U
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	220.	J,B
218-01-9	CHRYSENE	1000.	U
117-84-0	DI-N-OCTYL PHTHALATE	1000.	U
205-99-2	BENZO(B)FLUORANTHENE	1000.	U
207-08-9	BENZO(K)FLUORANTHENE	1000.	U
50-32-8	BENZO(A)PYRENE	1000.	U
193-39-5	INDENO(1,2,3-CD)PYRENE	1000.	U
53-70-3	DIBENZO(A,H)ANTHRACENE	1000.	U
191-24-2	BENZO(GHI)PERYLENE	1000.	U

RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

FORM I

Laboratory Name: EA Laboratories

Case No: Willow Grove

Sample Number
PR-SS-3 Re-ext

EA# 0777 RE

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

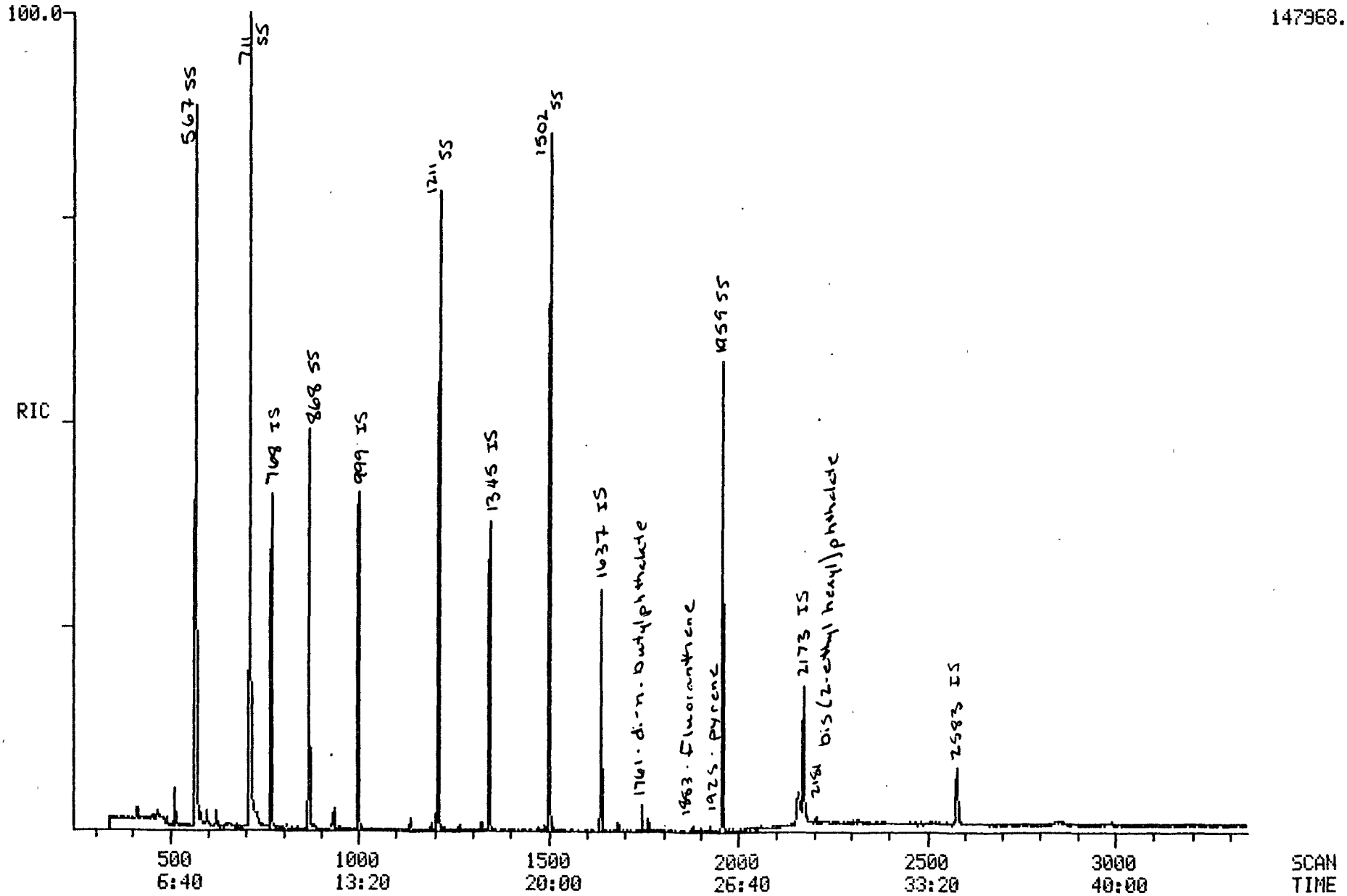
CAS Number	Compound Name	Fraction	~~RT or~~ Scan Number	Estimated Concentration (ug/l ~~or ug/kg~~)
1. —	Unknown	BNA	515	560 J, B
2. —	Unknown hydrocarbon	↓	2159	930 J
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

RIC
03/30/89 19:51:00
SAMPLE: BNA SOIL PR-SS-3 RE-EXTRACT WILLOW GROVE EA#0777 <93.11>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
RANGE: G 1,3345 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, .3

DATA: AA06040 #1 SCANS 240 TO 3345
CALI: AA06040 #4

% moisture = 30.7

3 103



Quantitation R port File: AA06040

Data: AA06040.TI
03/30/89 19:51:00
Sample: BNA SOIL PR-SS-3 RE-EXTRACT WILLOW GROVE EA#0777 <93.11>
Conds.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
Standard ID: AA06035 Instrument: MS2
Sensitivity ID: AA06031 Analyst: JEH - EA Inst Cali: 03/30/89

AMOUNT=AREA * REF AMNT/(REF AREA * RESP FACT)
Resp. fac. from Library Entry

NO	NAME	
1	IS1**	1,4-DICHLOROBENZENE-D4
2	IS2**	NAPHTHALENE-D8
3	IS3**	ACENAPHTHENE-D10
4	IS4**	PHENANTHRENE-D10
5	IS5**	CHRYSENE-D12
6	IS6**	PERYLENE-D12
7	65A	PHENOL
8	18B	BIS (2-CHLOROETHYL) ETHER
9	24A	2-CHLOROPHENOL
10	26B	1,3-DICHLOROBENZENE
11	27B	1,4-DICHLOROBENZENE
12	6H	BENZYL ALCOHOL
13	25B	1,2-DICHLOROBENZENE
14	2H	2-METHYLPHENOL
15	42B	BIS (2-CHLOROISOPROPYL) ETHER
16	3H	4-METHYLPHENOL
17	63B	N-NITROSO-DI-N-PROPYLAMINE
18	12B	HEXACHLOROETHANE
19	56B	NITROBENZENE
20	54B	ISOPHORONE
21	57A	2-NITROPHENOL
22	34A	2,4-DIMETHYLPHENOL
23	1H	BENZOIC ACID
24	43B	BIS (2-CHLOROETHOXY) METHANE
25	31A	2,4-DICHLOROPHENOL
26	8B	1,2,4-TRICHLOROBENZENE
27	55B	NAPHTHALENE
28	7H	4-CHLOROANILINE
29	52B	HEXACHLOROBUTADIENE
30	22A	4-CHLORO-3-METHYLPHENOL
31	9H	2-METHYLNAPHTHALENE
32	53B	HEXACHLOROCYCLOPENTADIENE
33	21A	2,4,6-TRICHLOROPHENOL
34	4H	2,4,5-TRICHLOROPHENOL
35	20B	2-CHLORONAPHTHALENE
36	10H	2-NITROANILINE
37	71B	DIMETHYLPHTHALATE
38	77B	ACENAPHTHYLENE
39	11H	3-NITROANILINE
40	1B	ACENAPHTHENE
41	59A	2,4-DINITROPHENOL
42	58A	4-NITROPHENOL
43	8H	DIBENZOFURAN
44	36B	2,6-DINITROTOLUENE
45	35B	2,4-DINITROTOLUENE
46	70B	DIETHYLPHTHALATE
47	40B	4-CHLOROPHENYLPHENYL ETHER
48	80B	FLUORENE
49	12H	4-NITROANILINE
50	60A	4,6-DINITRO-O-CRESOL

AA06040

No	m/z	Scan	Time	Ref	RRT	M th	Area(Hght)	Amount	%Tot
1	152	768	10:14	1	1.000	A BB	22855.	40.000 PPM	16.54
2	136	999	13:19	2	1.000	A BB	73497.	40.000 PPM	16.54
3	164	1345	17:56	3	1.000	A BB	31459.	40.000 PPM	16.54
4	188	1637	21:50	4	1.000	A BB	44713.	40.000 PPM	16.54
5	240	2173	28:58	5	1.000	A BB	25991.	40.000 PPM	16.54
6	264	2583	34:26	6	1.000	A BB	26141.	40.000 PPM	16.54
7	NOT FOUND								
8	NOT FOUND								
9	NOT FOUND								
10	NOT FOUND								
11	NOT FOUND								
12	NOT FOUND								
13	NOT FOUND								
14	NOT FOUND								
15	NOT FOUND								
16	NOT FOUND								
17	NOT FOUND								
18	NOT FOUND								
19	NOT FOUND								
20	NOT FOUND								
21	NOT FOUND								
22	NOT FOUND								
23	122	949	12:39	2	0.950	A BB	465.	~~1.645 PPM~~	0.68
24	NOT FOUND								
25	NOT FOUND								
26	NOT FOUND								
27	128	1003	13:22	2	1.004	A BB	226.	~~0.123 PPM~~	0.05
28	NOT FOUND								
29	NOT FOUND								
30	NOT FOUND								
31	NOT FOUND								
32	NOT FOUND								
33	NOT FOUND								
34	NOT FOUND								
35	NOT FOUND								
36	NOT FOUND								
37	NOT FOUND								
38	NOT FOUND								
39	NOT FOUND								
40	NOT FOUND								
41	NOT FOUND								
42	NOT FOUND								
43	168	1380	18:24	3	1.026	A BB	197.	~~0.151 PPM~~	0.06
44	NOT FOUND								
45	NOT FOUND								
46	NOT FOUND								
47	NOT FOUND								
48	NOT FOUND								
49	NOT FOUND								
50	NOT FOUND								

Quantitation Report File: AA06040

Data: AA06040.TI
03/30/89 19:51:00
Sample: BNA SOIL PR-SS-3 RE-EXTRACT WILLOW GROVE EA#0777 <93.11>
Conds.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
Standard ID: AA06035 Instrument: MS2
Sensitivity ID: AA06031 Analyst: JEH - EA Inst Cali: 03/30/89

AMOUNT=AREA * REF AMNT/(REF AREA * RESP FACT)
Resp. fac. from Library Entry

NO	NAME	
51	62B	N-NITROSODIPHENYLAMINE
52	41B	4-BROMOPHENYLPHENYL ETHER
53	9B	HEXACHLOROBENZENE
54	64A	PENTACHLOROPHENOL
55	81B	PHENANTHRENE
56	78B	ANTHRACENE
57	68B	DI-N-BUTYLPHTHALATE B
58	39B	FLUORANTHENE B
59	84B	PYRENE B
60	67B	BUTYLBENZYLPHTHALATE
61	28B	3,3'-DICHLOROBENZIDINE
62	72B	BENZO (A) ANTHRACENE
63	66B	BIS (2-ETHYLHEXYL) PHTHALATE B
64	76B	CHRYSENE
65	69B	DI-N-OCTYLPHTHALATE
66	74B	BENZO(B)FLUORANTHENE
67	75B	BENZO(K)FLUORANTHENE
68	73B	BENZO (A) PYRENE
69	83B	INDENO-1,2,3 (C,D) PYRENE
70	82B	DIBENZO (A,H) ANTHRACENE
71	79B	BENZO (G,H,I) PERYLENE
72	SS1*	PHENOL-D5
73	SS2*	2-FLUOROPHENOL
74	SS3*	NITROBENZENE-D5
75	SS4*	2-FLUOROBIPHENYL
76	SS5*	2,4,6-TRIBROMOPHENOL
77	SS6*	TERPHENYL-D14

AA06040

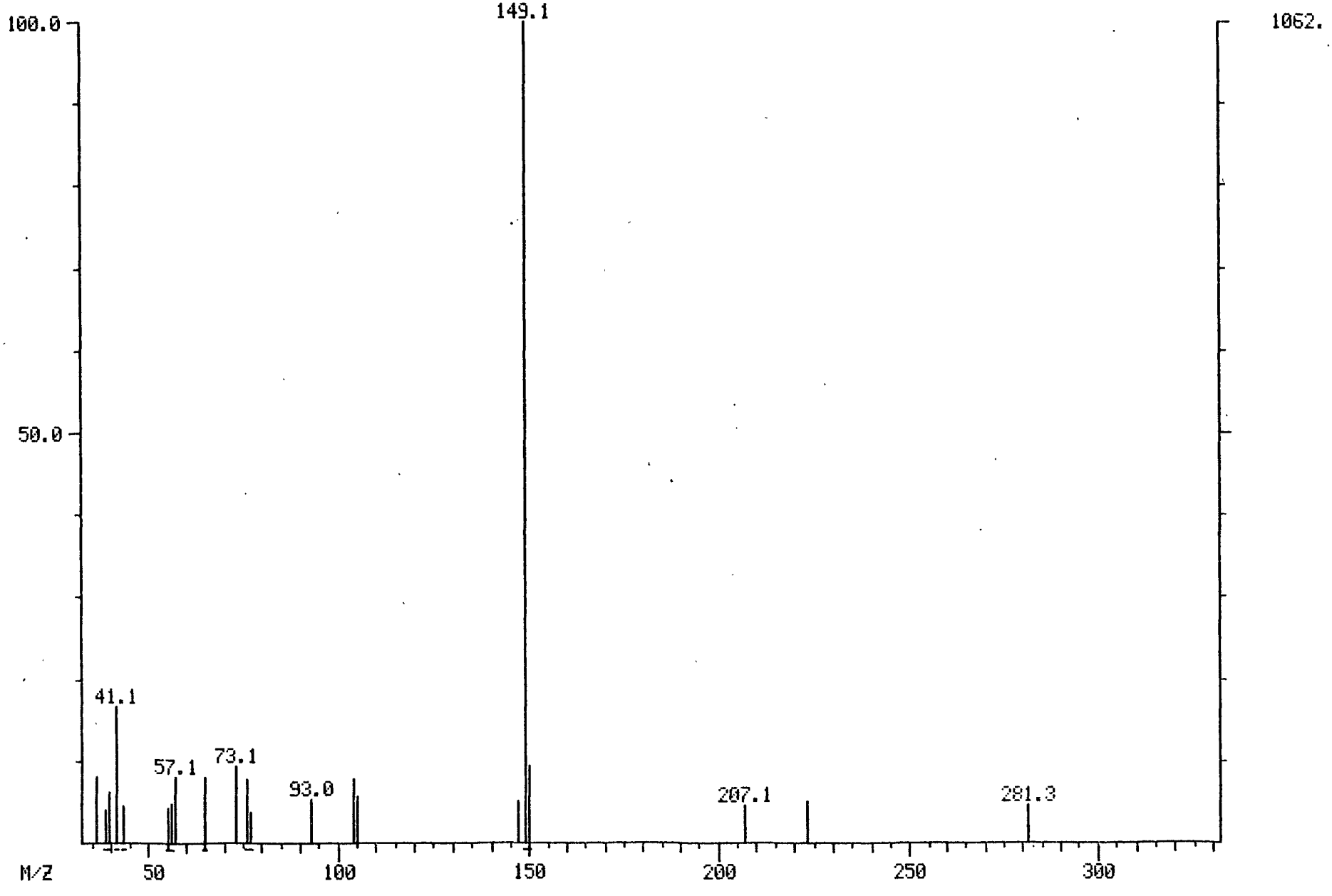
N	m/z	Scan	Time	Ref	RRT	Meth	Area(Hght)	Amount	%Tot	
51	169	1473	19:38	4	0.900	A BB	428.	~~1.384 PPM~~	0.20	
52	NOT FOUND									
53	NOT FOUND									
54	NOT FOUND									
55	178	1642	21:54	4	1.003	A BB	696.	~~0.559 PPM~~	0.08	
56	NOT FOUND									
57	149	1761	23:29	4	1.076	A BB	3021.	b 1.922 PPM	0.27	
58	202	1883	25:06	4	1.150	A BB	1692.	b 1.214 PPM	0.17	
59	202	1928	25:42	5	0.887	A BB	1693.	b 1.570 PPM	0.22	
60	149	2062	27:30	5	0.949	A BB	447.	~~0.958 PPM~~	0.13	
61	NOT FOUND									
62	228	2171	28:57	5	0.999	A BV	956.	~~1.170 PPM~~	0.17	
63	149	2181	29:05	5	1.004	A BB	979.	b 1.614 PPM	0.23	
64	NOT FOUND									
65	NOT FOUND									
66	NOT FOUND									
67	NOT FOUND									
68	NOT FOUND									
69	NOT FOUND									
70	NOT FOUND									
71	NOT FOUND									
72	99	711	9:29	1	0.926	A BV	134136.	213.954 PPM	30.30	107
73	112	567	7:34	1	0.738	A BB	126467.	190.447 PPM	26.97	95
74	82	868	11:34	2	0.869	A BB	63645.	50.993 PPM	7.22	51
75	172	1211	16:09	3	0.900	A BB	93577.	49.501 PPM	7.01	50
76	330	1502	20:02	3	1.117	A BB	32194.	132.390 PPM	18.75	66
77	244	1959	26:07	5	0.902	A BB	77981.	58.429 PPM	8.28	58

MASS SPECTRUM
03/30/89 19:51:00 + 23:29
SAMPLE: BNA SOIL PR-SS-3 RE-EXTRACT WILLOW GROVE EA#0777 <93.11>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 247 DEG. C

DATA: AA06040 #1761
CALI: AA06040 #4

BASE M/Z: 149
RIC: 2480.

3 108

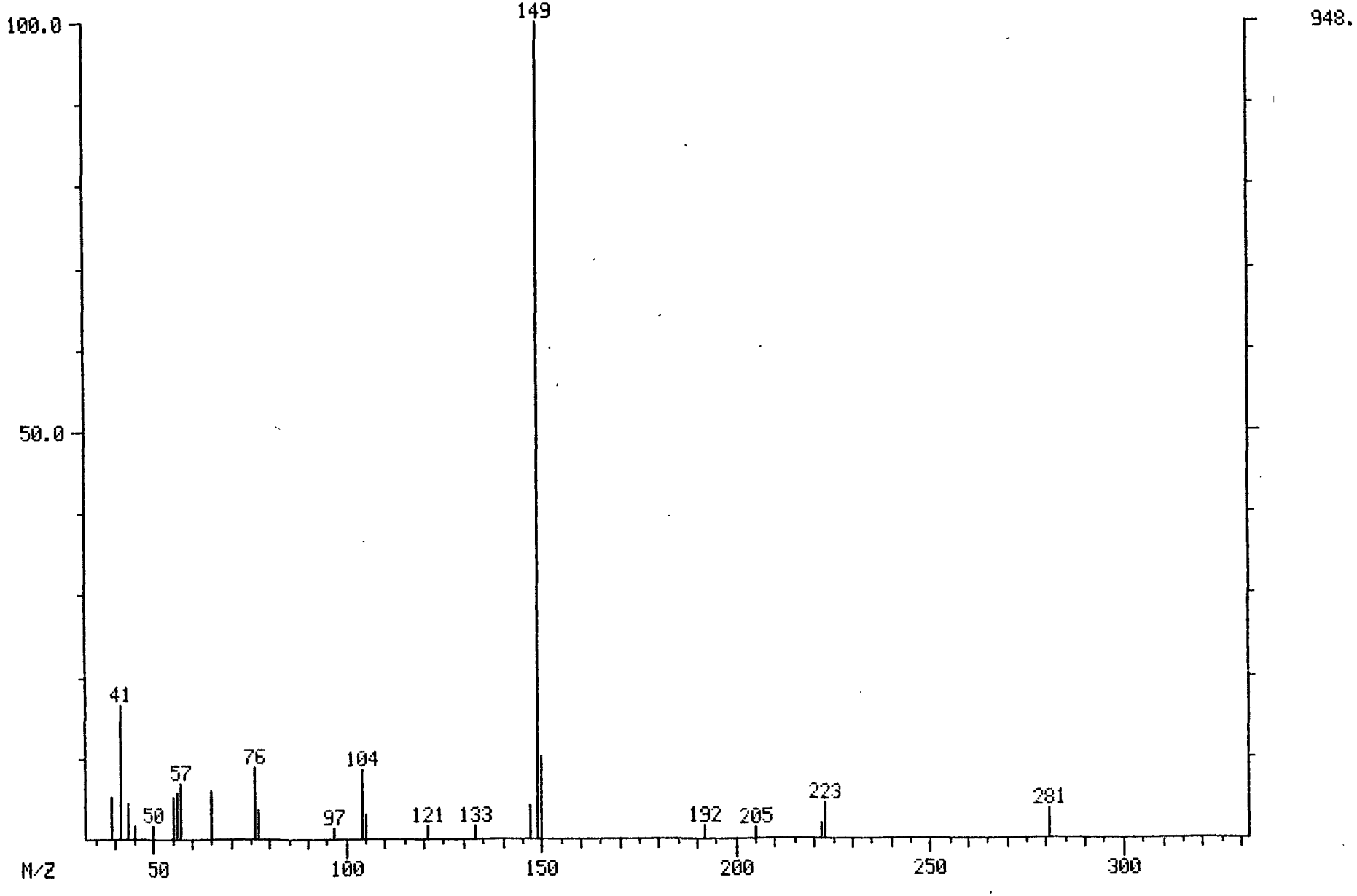


MASS SPECTRUM
03/30/89 19:51:00 + 23:29
SAMPLE: BNA SOIL PR-SS-3 RE-EXTRACT WILLOW GROVE EA#0777 <93.11>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 247 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA06040 #1761
CALI: AA06040 #4

BASE M/Z: 149
RIC: 2004.

3 109

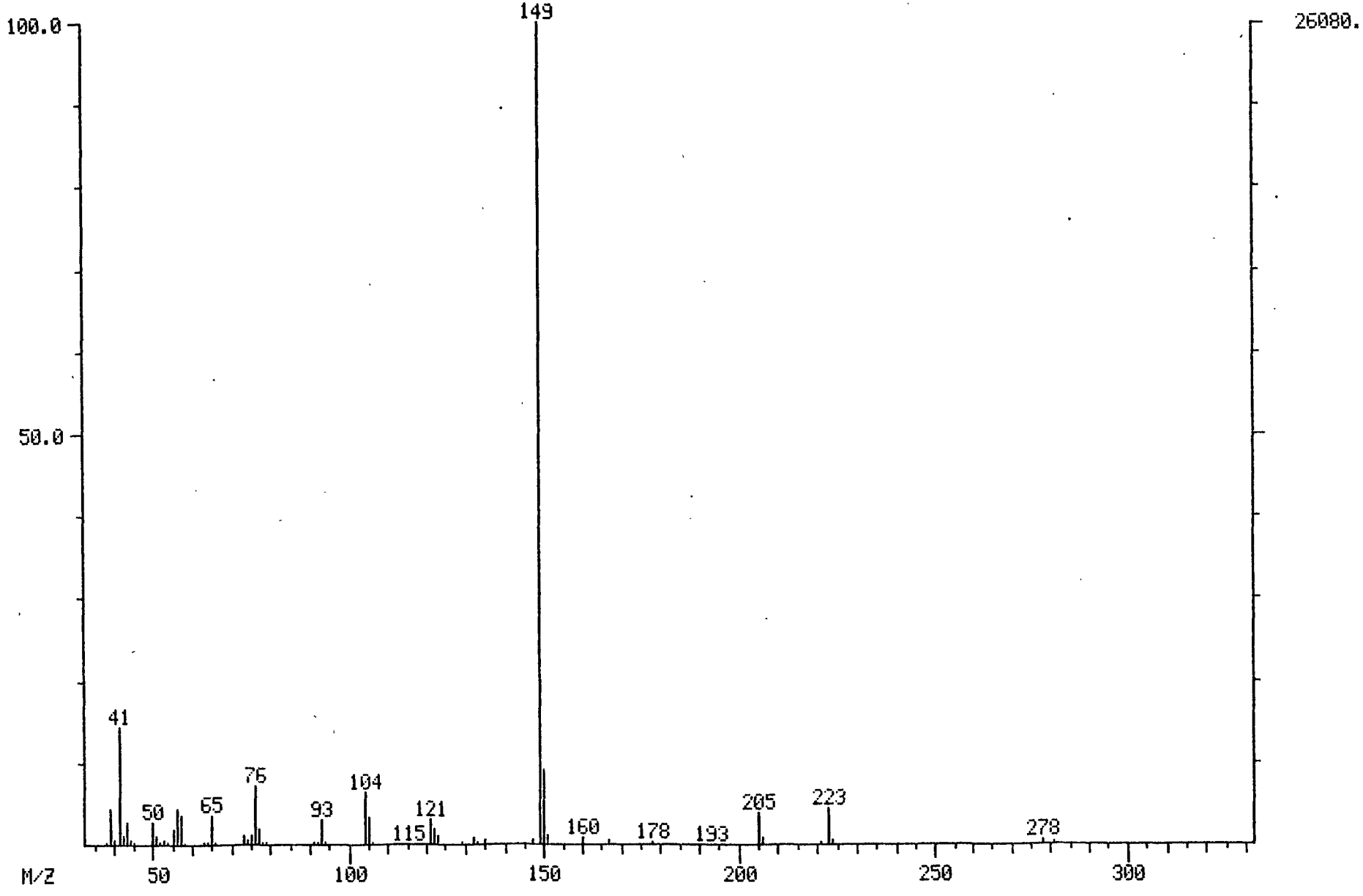


MASS SPECTRUM
03/30/89 15:09:00 + 23:29
SAMPLE: BNA STANDARD #1293 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 248 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA06035 #1761
CALI: AA06035 #4

BASE M/Z: 149
RIC: 52672.

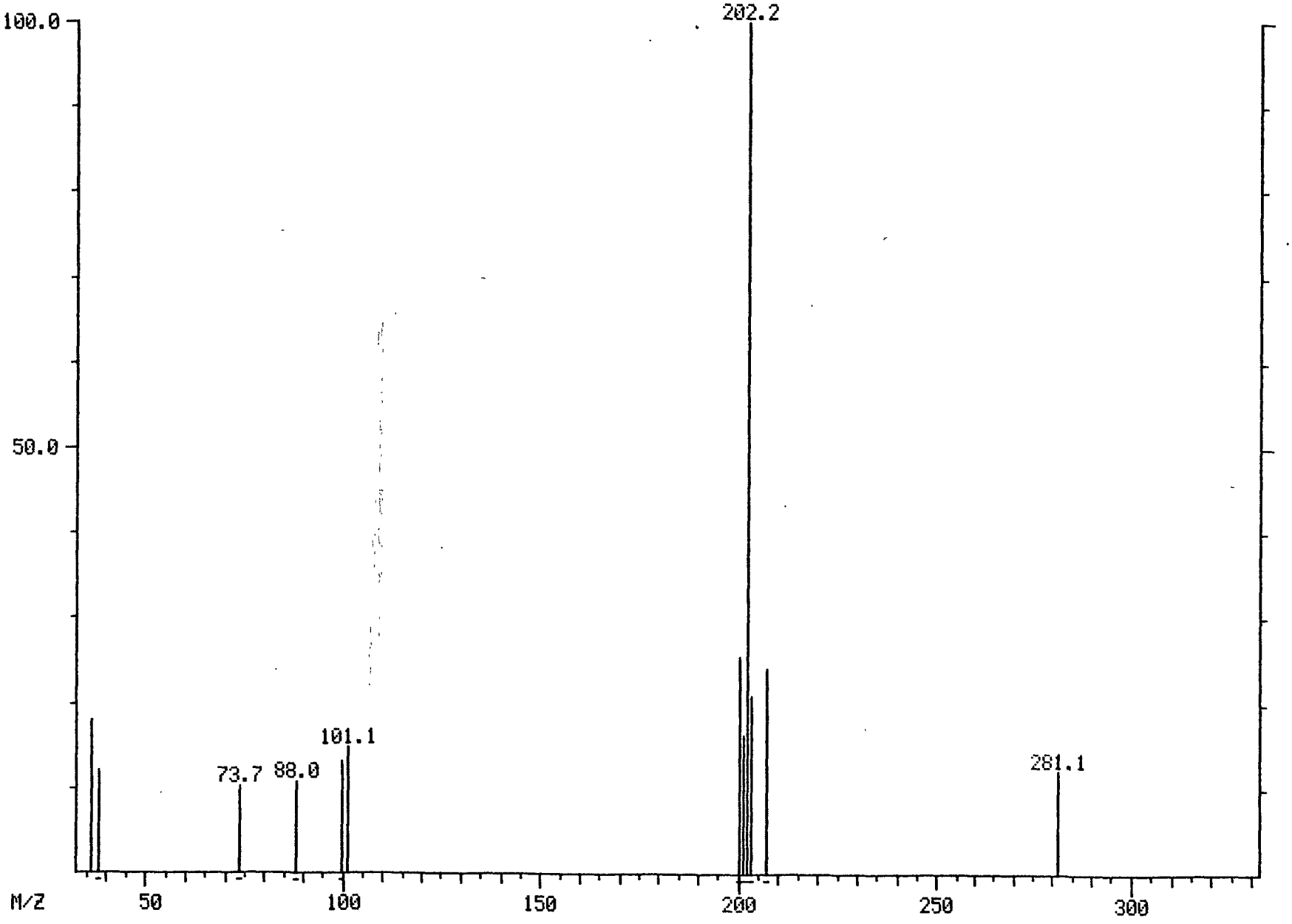
3 110



MASS SPECTRUM
03/30/89 19:51:00 + 25:06
SAMPLE: BNA SOIL PR-SS-3 RE-EXTRACT WILLOW GROVE EA#0777 <93.11>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 264 DEG. C

DATA: AA06040 #1883
CALI: AA06040 #4

BASE M/Z: 202
RIC: 1214.



436.

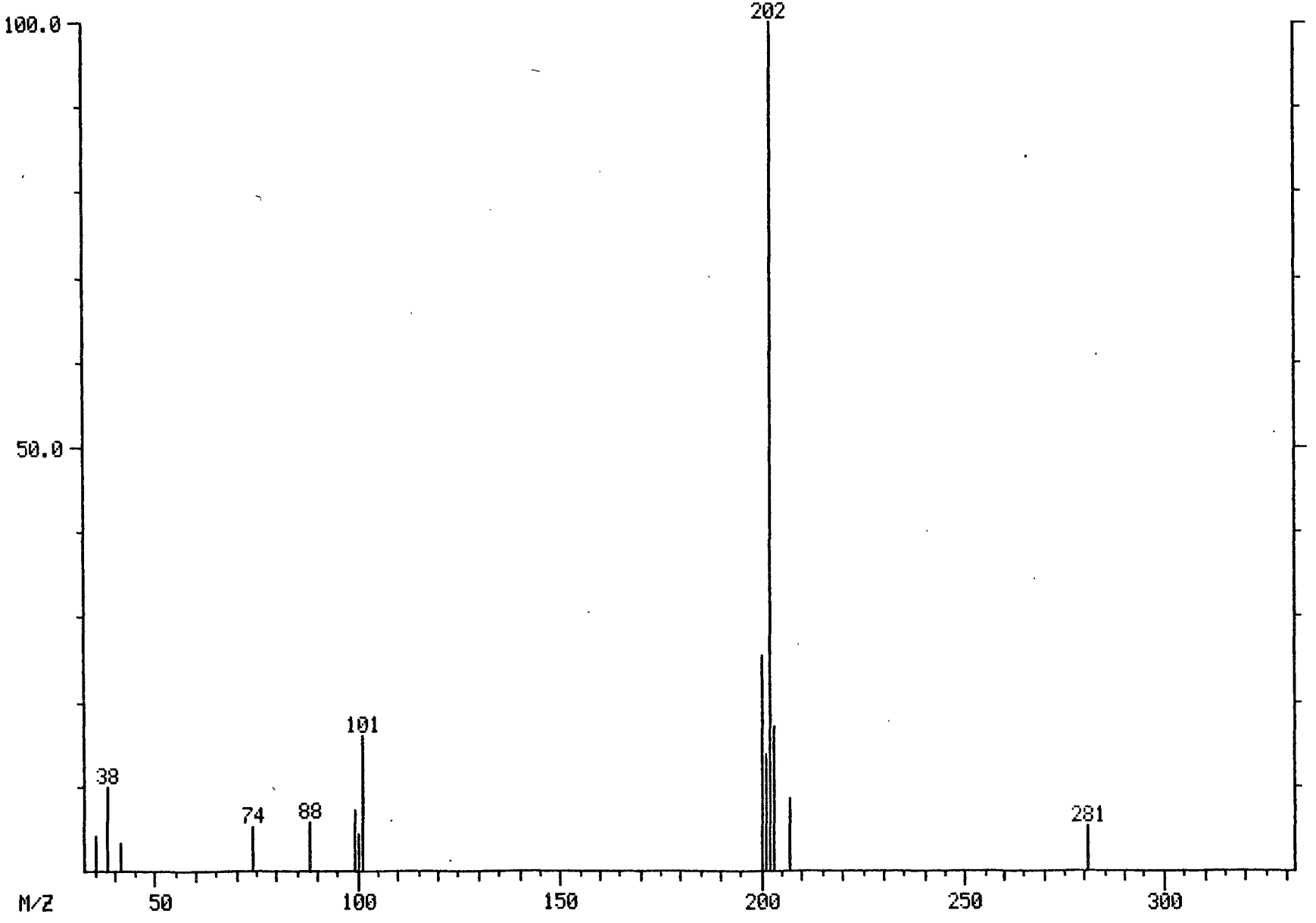
3 111

MASS SPECTRUM
03/30/89 19:51:00 + 25:06
SAMPLE: BNA SOIL PR-SS-3 RE-EXTRACT WILLOW GROVE EA#0777 <93.11>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 264 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA06040 #1883
CALI: AA06040 #4

BASE M/Z: 202
RIC: 927.

3 112

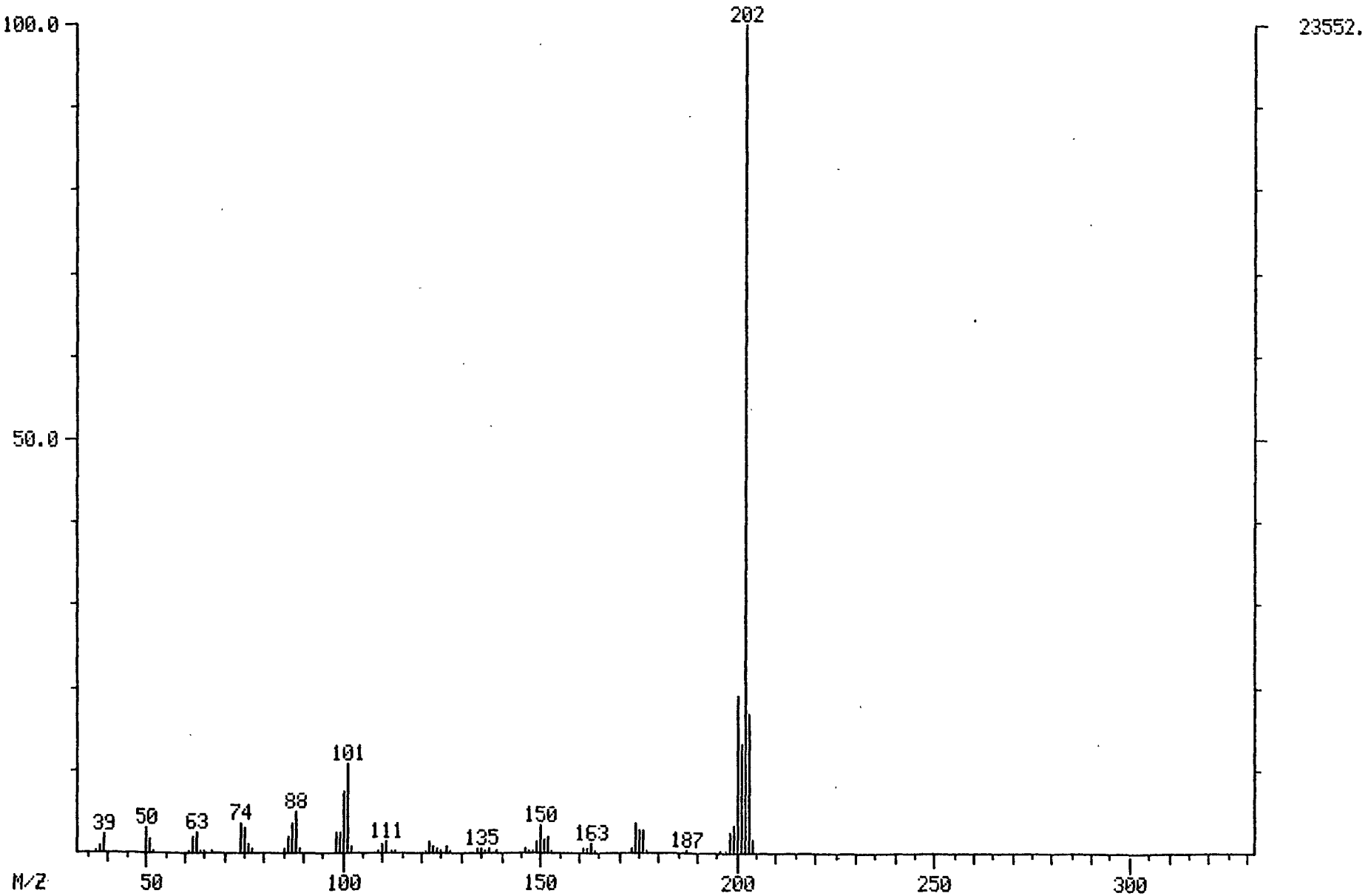


MASS SPECTRUM
03/30/89 15:09:00 + 25:06
SAMPLE: BNA STANDARD #1293 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 264 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA06035 #1883
CALI: AA06035 #4

BASE M/Z: 202
RIC: 58240.

3 113

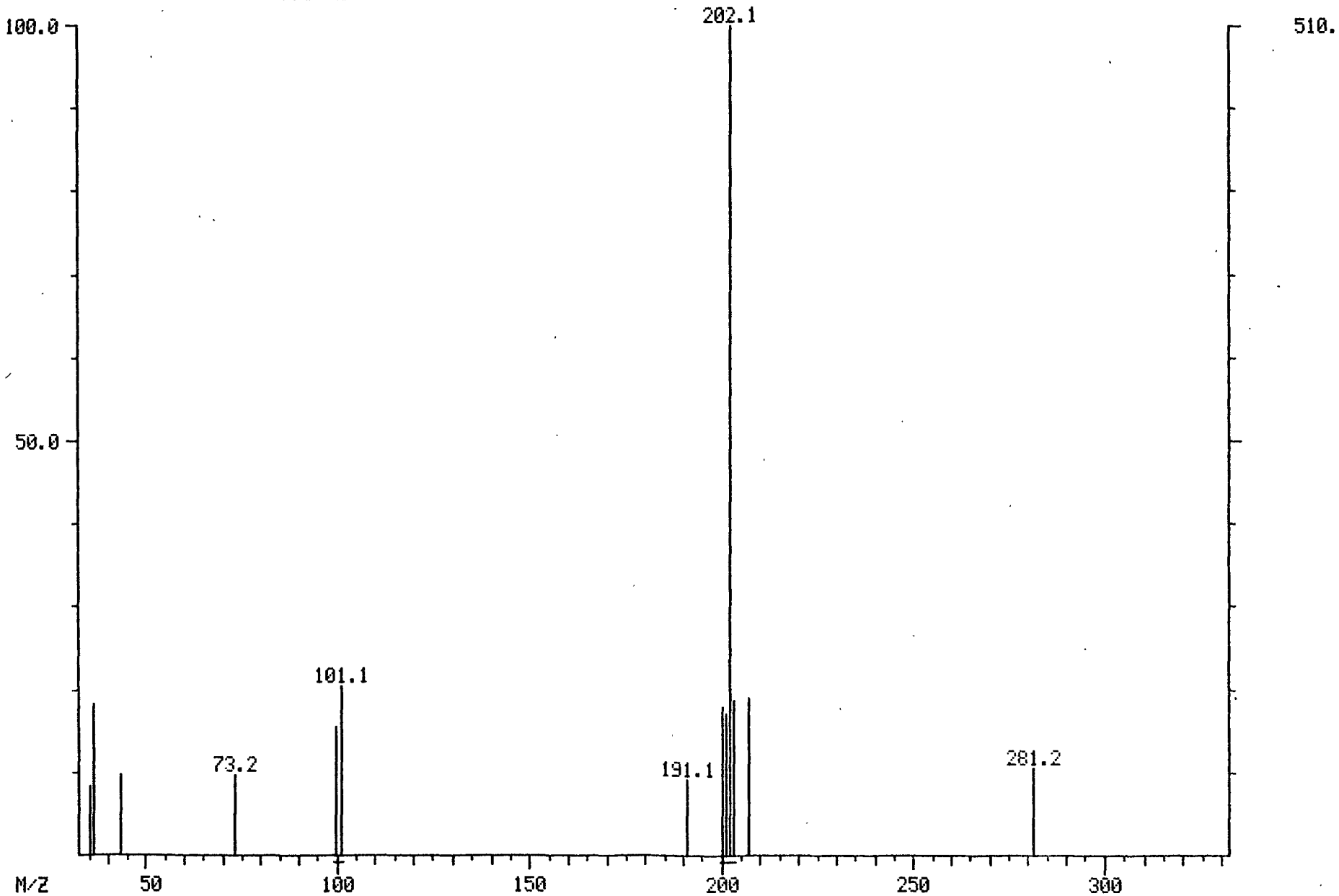


MASS SPECTRUM
03/30/89 19:51:00 + 25:42
SAMPLE: BNA SOIL PR-SS-3 RE-EXTRACT WILLOW GROVE EA#0777 <93.11>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 270 DEG. C

DATA: AA06040 #1928
CALI: AA06040 #4

BASE M/Z: 202
RIC: 1402.

3 114

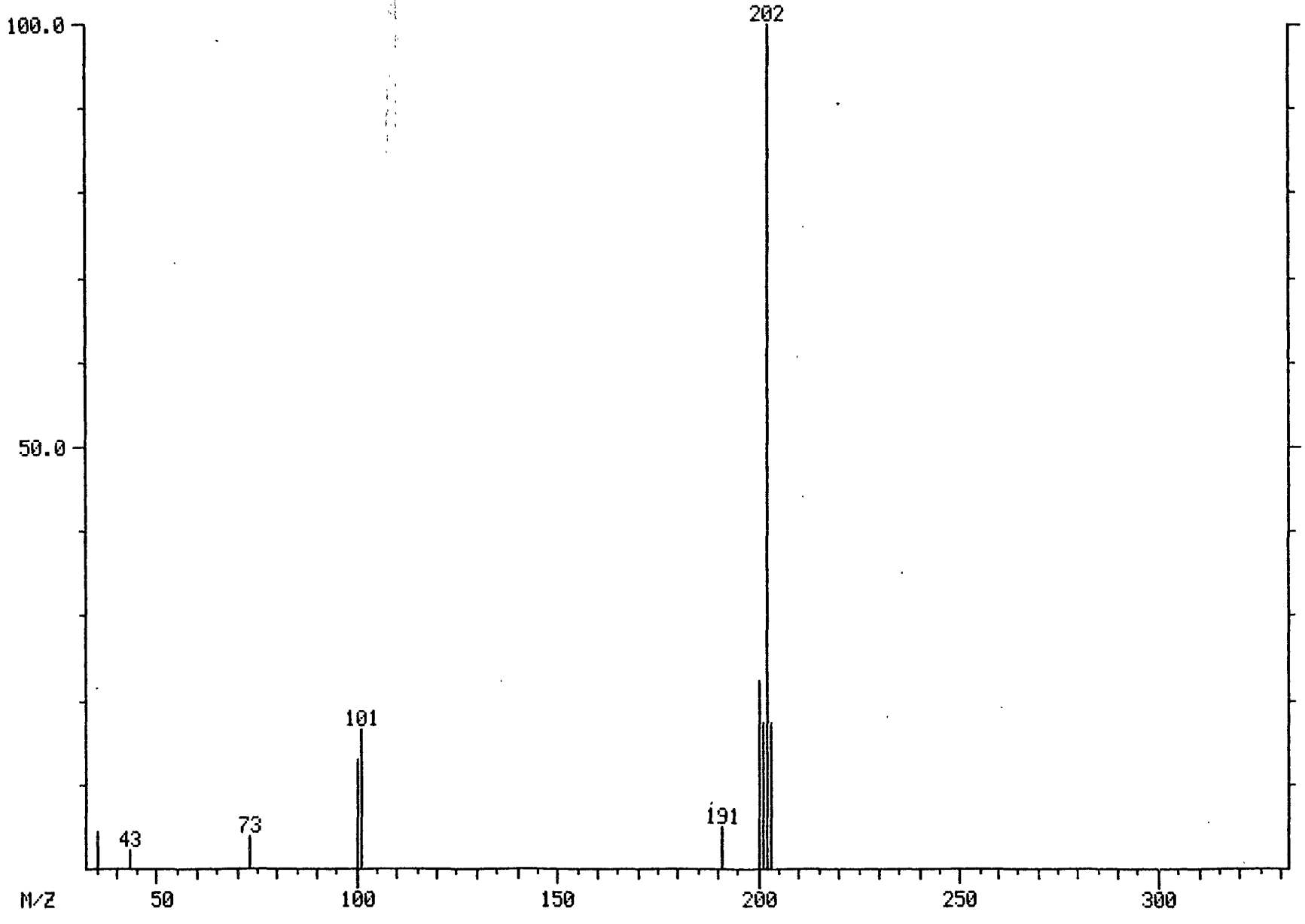


MASS SPECTRUM
03/30/89 19:51:00 + 25:42
SAMPLE: BNA SOIL PR-SS-3 RE-EXTRACT WILLOW GROVE EA#0777 <93.11>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 270 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA06040 #1928
CALI: AA06040 #4

BASE M/Z: 202
RIC: 952.

115
3

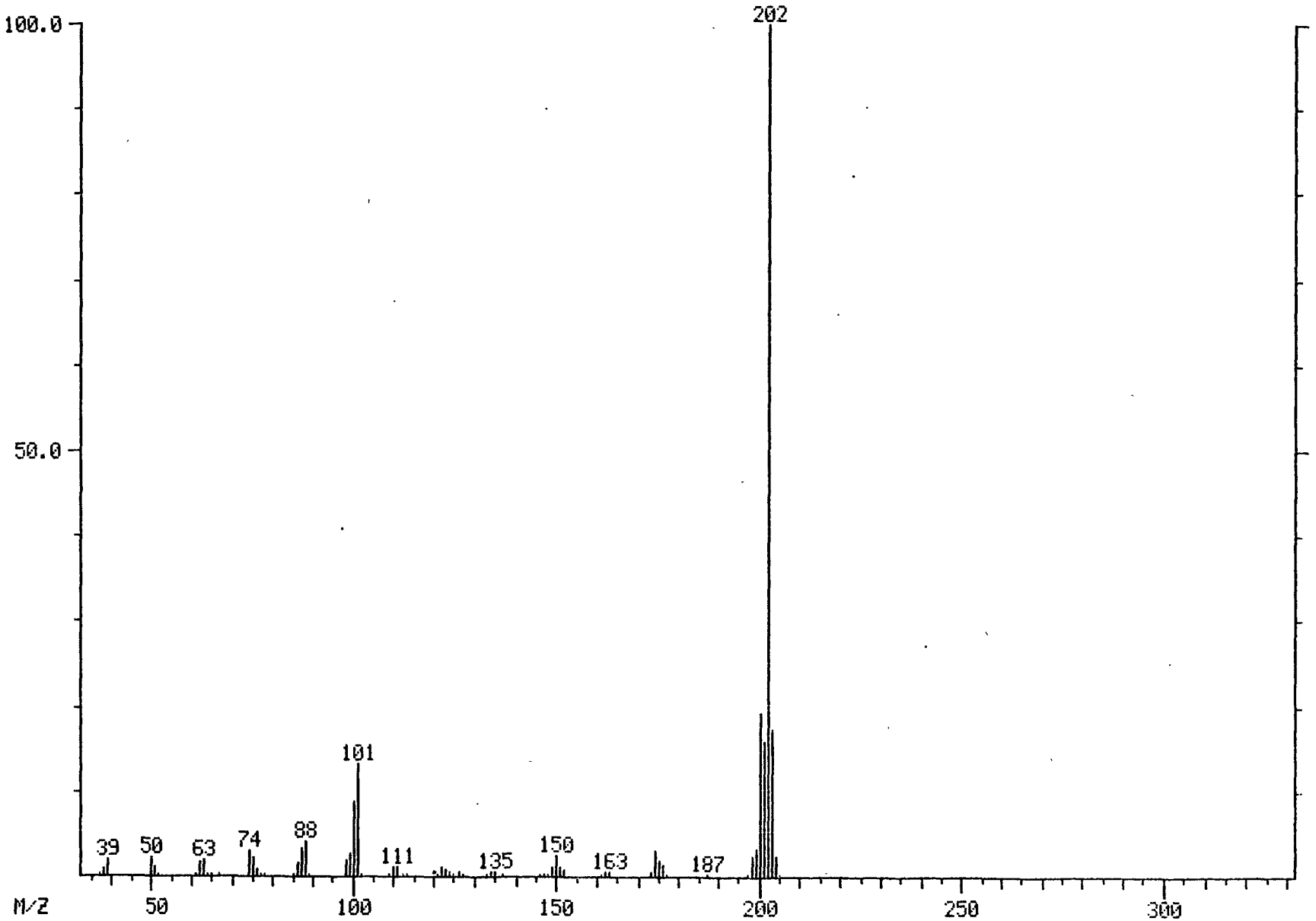


MASS SPECTRUM
03/30/89 15:09:00 + 25:43
SAMPLE: BNA STANDARD #1293 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 270 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA06035 #1929
CALI: AA06035 #4

BASE M/Z: 202
RIC: 55232.

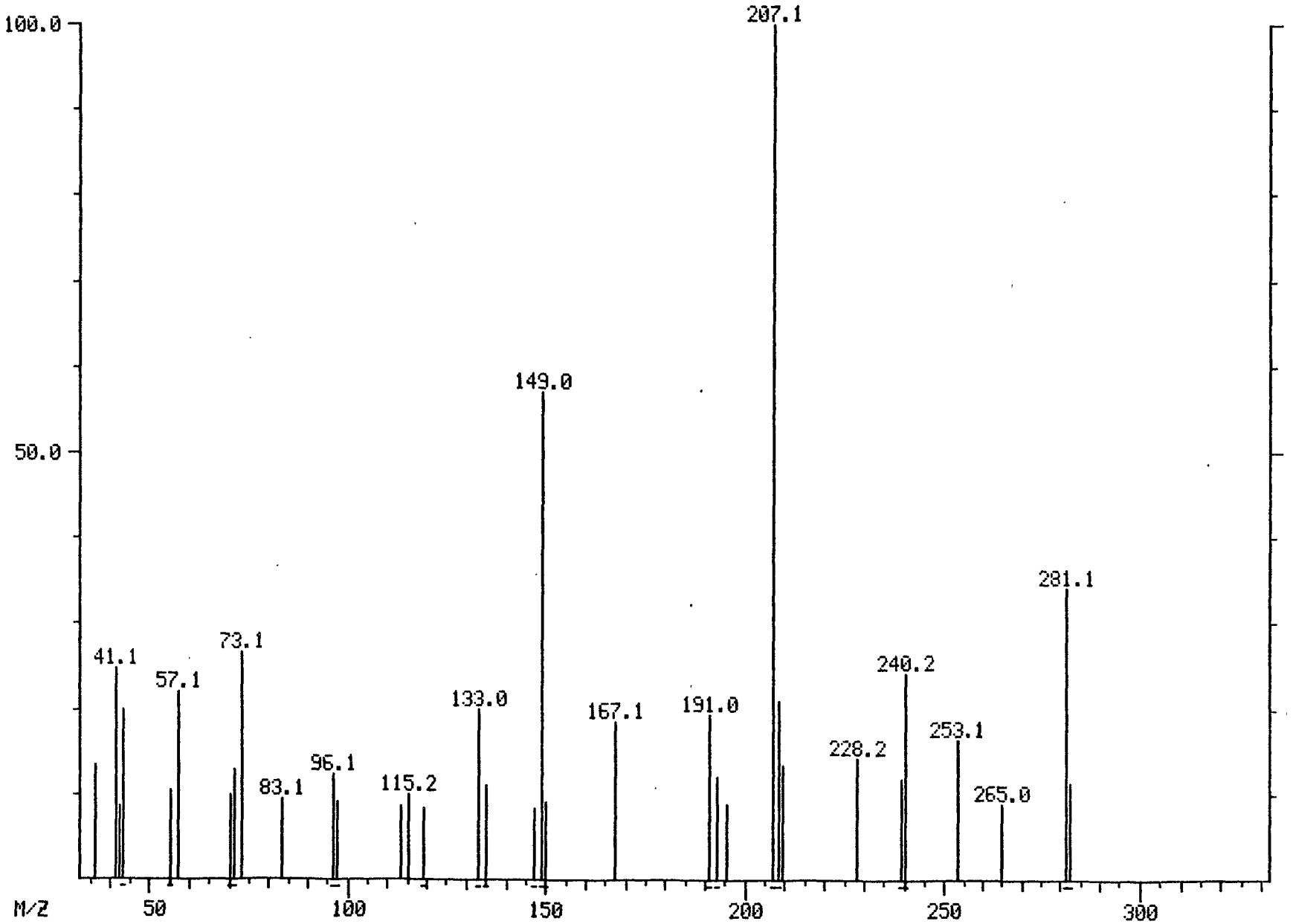
11C



MASS SPECTRUM
03/30/89 19:51:00 + 29:05
SAMPLE: BNA SOIL PR-SS-3 RE-EXTRACT WILLOW GROVE EA#0777 <93.11>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 302 DEG. C

DATA: AA06040 #2181
CALI: AA06040 #4

BASE M/Z: 207
RIC: 3200.



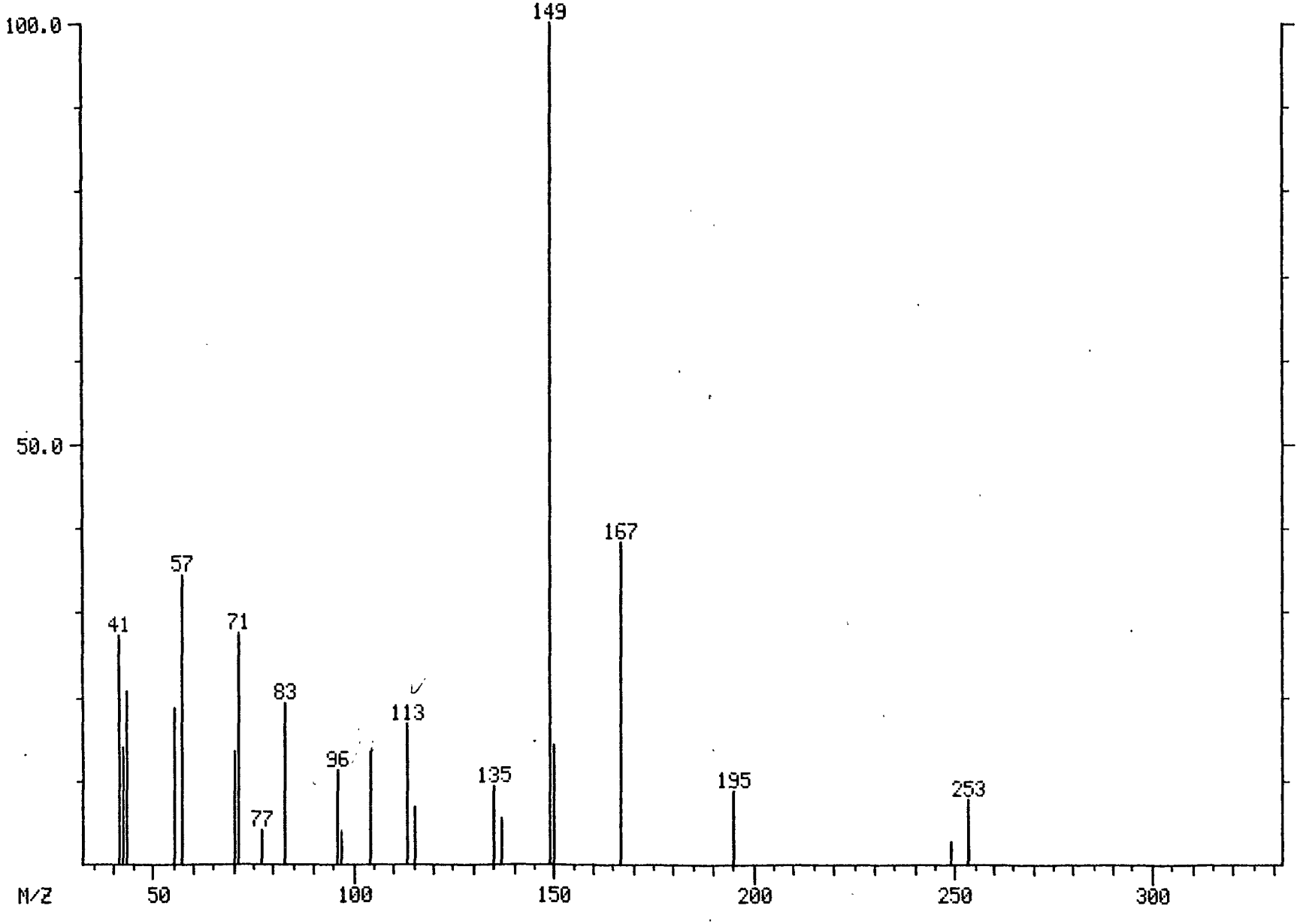
3 117

MASS SPECTRUM
03/30/89 19:51:00 + 29:05
SAMPLE: BNA SOIL PR-SS-3 RE-EXTRACT WILLOW GROVE EA#0777 <93.11>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 302 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA06040 #2181
CALI: AA06040 #4

BASE M/Z: 149
RIC: 1082.

3 118

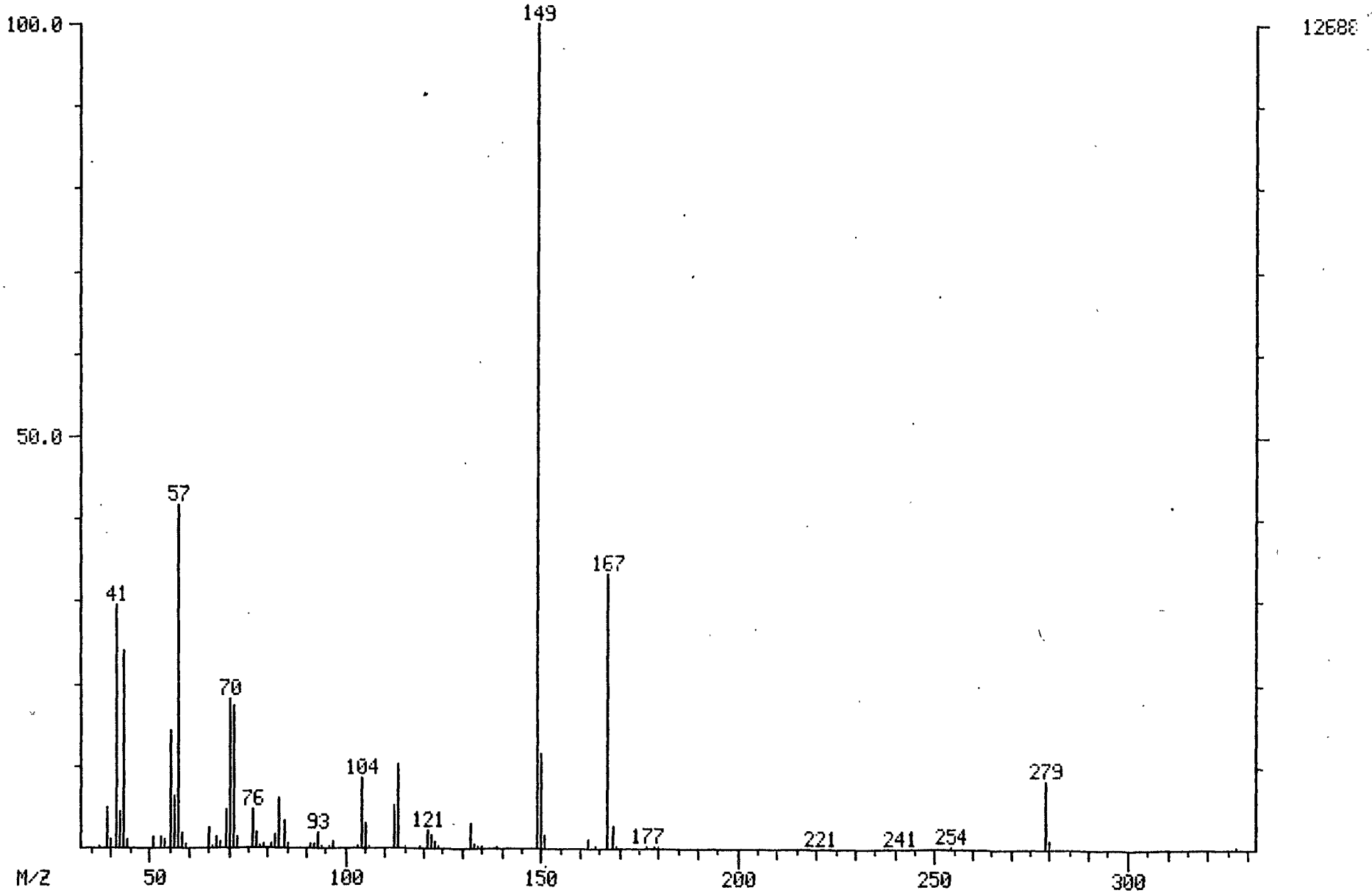


MASS SPECTRUM
03/30/89 15:09:00 + 29:06
SAMPLE: BNA STANDARD #1293 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 303 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA06035 #2183
CALI: AA06035 #4

BASE M/Z: 149
RIC: 51392.

3 119

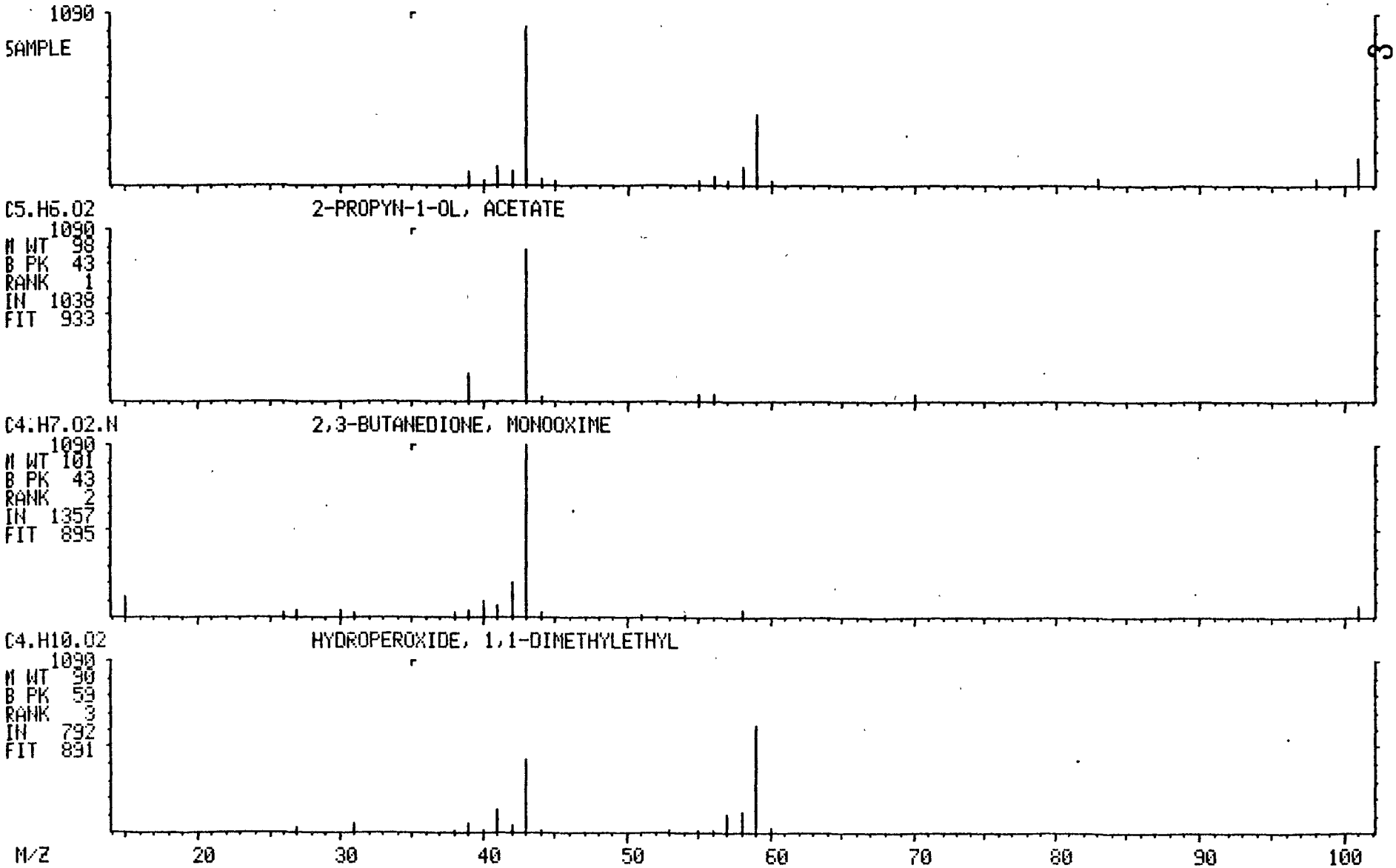


LIBRARY SEARCH
03/30/89 19:51:00 + 6:52
SAMPLE: BNA SOIL PR-SS-3 RE-EXTRACT WILLOW GROVE EA#0777 <93.11>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
ENHANCED (S 15B 2N 0T)

DATA: AA06040 # 515
CALI: AA06040 # 4

BASE M/Z: 43
RIC: 5623.

3 120



Library S arch Data: AA06040 # 515 Base m/z: 43
03/30/89 19:51:00 + 6:52 Cali: AA06040 # 4 RIC: 5623.
Sample: BNA SOIL PR-SS-3 RE-EXTRACT WILLOW GROVE EA#0777 <93.11>
Conds.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
Enhanced (S 15B 2N OT)

38761 spectra in LIBRARYNB searched for maximum FIT
117 matched at least 7 of the 16 largest peaks in the unknown

IS Scan - 768
RIC - 53952

Rank	In.	Name
1	1038	2-PROPYN-1-OL, ACETATE
2	1357	2,3-BUTANEDIONE, MONOOXIME
3	792	HYDROPEROXIDE, 1,1-DIMETHYLETHYL
4	94	PROPANE, 2-METHYL-
5	1080	4-PENTEN-2-ONE, 4-METHYL-

Rank	Formula	M.Wt	B.Pk	Purity	Fit	RFit
1	C5.H6.O2	98	43	429	933	450
2	C4.H7.O2.N	101	43	590	895	609
3	C4.H10.O2	90	59	707	891	714
4	C4.H10	58	43	477	881	486
5	C6.H10.O	98	43	536	868	550

Rank	Ret. Time	B.P. Int.	US.Par.1	US.Par.2	C.A.S. #
1	—	—	—	—	627-09-8
2	—	—	—	—	57-71-6
3	—	—	—	—	75-91-2
4	—	—	—	—	75-28-5
5	—	—	—	—	3744-02-3

Library Search Data: AA06040 #2159 Base m/z: 43
03/30/89 19:51:00 + 28:47 Cali: AA06040 # 4 RIC: 3779.
Sample: BNA SOIL PR-SS-3 RE-EXTRACT WILLOW GROVE EA#0777 <93.11>
Conds.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
Enhanc d (S 15B 2N OT)

TS Scan-2173
RIC-21952

38761 spectra in LIBRARYNB searched for maximum FIT
242 matched at least 8 of the 16 largest peaks in the unknown

hyd

Rank	In.	Name
1	7855	CYCLODECANE, METHYL-
2	10328	CYCLODODECANE
3	36517	17-PENTATRIACONTENE
4	19447	1-PENTADECANOL
5	20594	UNDECANE 5-CYCLOHEXYL-, 5-CYCLOHEXYL-

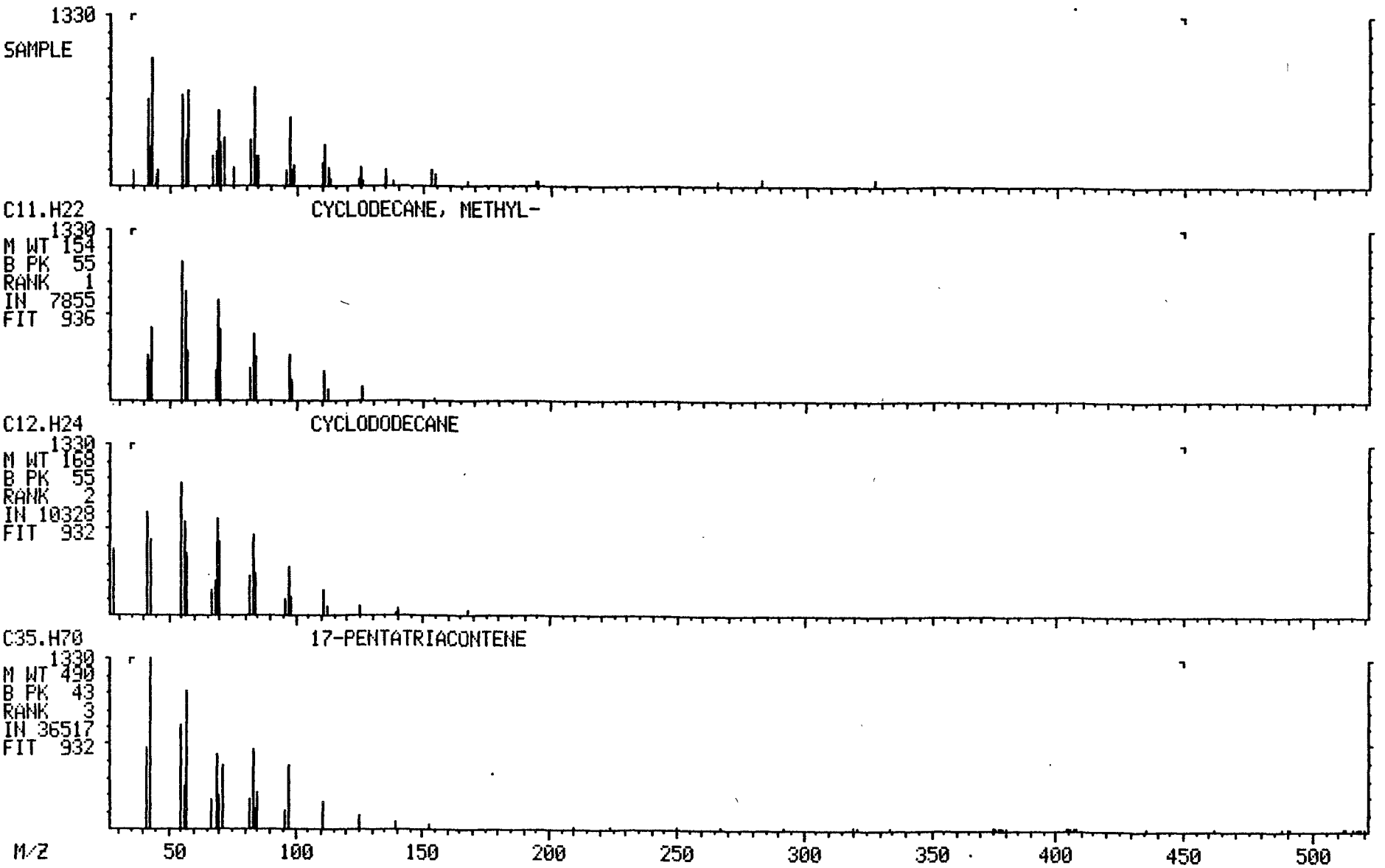
Rank	Formula	M.Wt	B.Pk	Purity	Fit	RFit
1	C11.H22	154	55	611	936	611
2	C12.H24	168	55	624	932	644
3	C35.H70	490	43	645	932	675
4	C15.H32.O	228	83	650	928	686
5	C17.H34	238	57	624	927	648

Rank	Ret.Time	B.P.Int.	US.Par.1	US.Par.2	C.A.S. #
1	—	—	—	—	13151-43-4
2	—	—	—	—	294-62-2
3	—	—	—	—	6971-40-0
4	—	—	—	—	629-76-5
5	—	—	—	—	13151-80-9

LIBRARY SEARCH
03/30/89 19:51:00 + 28:47
SAMPLE: BNA SOIL PR-SS-3 RE-EXTRACT WILLOW GROVE EA#0777 <93.11>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
ENHANCED (S 15B 2N 0T)

DATA: AA06040 #2159
CALI: AA06040 # 4

BASE M/Z: 43
RIC: 3779.



3 123

Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
EA#0780,DUP#2

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 02/23/89
Date Analyzed: 03/25/89 6:09
Conc/Dil Factor: 1.00000
Percent Moisture (Decanted) N/A

GPC Cleanup __ Yes ✓ No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction ✓ Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	1200.	U
111-44-4	bis(2-Chloroethyl)ether	1200.	U
95-57-8	2-Chlorophenol	1200.	U
541-73-1	1,3-Dichlorobenzene	1200.	U
106-46-7	1,4-Dichlorobenzene	1200.	U
100-51-6	Benzyl Alcohol	1200.	U
95-50-1	1,2-Dichlorobenzene	1200.	U
95-48-7	2-Methylphenol	1200.	U
39638-32-9	bis(2-Chloroisopropyl)ether	1200.	U
106-44-5	4-Methylphenol	1200.	U
621-64-7	N-Nitroso-Di-n-propylamine	1200.	U
67-72-1	Hexachloroethane	1200.	U
98-95-3	Nitrobenzene	1200.	U
78-59-1	Isophorone	1200.	U
88-75-5	2-Nitrophenol	1200.	U
105-67-9	2,4-Dimethylphenol	1200.	U
65-85-0	Benzoic Acid	5800.	U
111-91-1	bis(2-Chloroethoxy)methane	1200.	U
120-83-2	2,4-Dichlorophenol	1200.	U
120-82-1	1,2,4-Trichlorobenzene	220.	J
91-20-3	Naphthalene	1200.	U
106-47-8	4-Chloroaniline	1200.	U
87-68-3	Hexachlorobutadiene	1200.	U
59-50-7	4-Chloro-3-methylphenol	1200.	U
91-57-6	2-Methylnaphthalene	1200.	U
77-47-4	Hexachlorocyclopentadiene	1200.	U
88-06-2	2,4,6-Trichlorophenol	1200.	U
95-95-4	2,4,5-Trichlorophenol	5800.	U
91-58-7	2-Chloronaphthalene	1200.	U
88-74-4	2-Nitroaniline	5800.	U
131-11-3	Dimethylphthalate	1200.	U
208-96-8	Acenaphthylene	1200.	U
99-09-2	3-Nitroaniline	5800.	U

C.A.S. Number		ug/L or ug/Kg (Circle One)	
83-32-9	Acenaphthene	1200.	U
51-28-5	2,4-Dinitrophenol	5800.	U
100-02-7	4-Nitrophenol	5800.	U
132-64-9	Dibenzofuran	1200.	U
121-14-2	2,4-Dinitrotoluene	1200.	U
606-20-2	2,6-Dinitrotoluene	1200.	U
84-66-2	Diethylphthalate	1200.	U
7005-72-3	4-Chlorophenyl-phenylether	1200.	U
86-73-7	Fluorene	190.	J
100-01-6	4-Nitroaniline	1200.	U
534-52-1	4,6-Dinitro-2-methylphenol	5800.	U
86-30-6	N-Nitrososdiphenylamine (1)	1200.	U
101-55-3	4-Bromophenyl-phenylether	1200.	U
118-74-1	Hexachlorobenzene	1200.	U
87-86-5	Pentachlorophenol	5800.	U
85-01-8	Phenanthrene	1200.	U
120-12-7	Anthracene	1200.	U
84-74-2	Di-n-Butyl phthalate	250.	J
206-44-0	Fluoranthene	120.	J
129-00-0	Pyrene	1200.	U
85-68-7	Butylbenzylphthalate	1200.	U
91-94-1	3,3'-Dichlorobenzidine	2300.	U
56-55-3	Benzo(a)Anthracene	1200.	U
117-81-7	bis(2-Ethylhexyl)phthalate	1200.	U
218-01-9	Chrysene	1200.	U
117-84-0	Di-n-Octyl phthalate	1200.	U
205-99-2	Benzo(b)Fluoranthene	1200.	U
207-08-9	Benzo(k)Fluoranthene	1200.	U
50-32-8	Benzo(a)Pyrene	1200.	U
193-39-5	Indeno(1,2,3-cd)Pyrene	1200.	U
53-70-3	Dibenzo(a,h)Anthracene	1200.	U
191-24-2	Benzo(g,h,i)Perylene	1200.	U

(1)-Cannot be separated from diphenylamine

Laboratory Name: EA LABORATORIES

Case No:

Sample Number
EA# 0780
Dup #2

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	~~RT or Scan~~ Number	Estimated Concentration (~~ug/l or~~ ug/kg)
1. 57103	Hexadecanoic acid	BNA	24.00	530.00 J
2. —	Unknown		26.54	550.00 J
3. 69782907	1,1'-Biphenyl, 2,3,3',4,4',5'-hexachloro —		28.07	660.00 J
4. —	Unknown PCB isomer		28.59	610.00 J
5. —	Unknown PCB isomer		29.25	570.00 J
6. 506514	1-Tetracosanol		30.77	1000.00 J
7. —	Penokaline		33.22	600.00 J
8. —	Unknown		35.17	560.00 J
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
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24.				
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26.				
27.				
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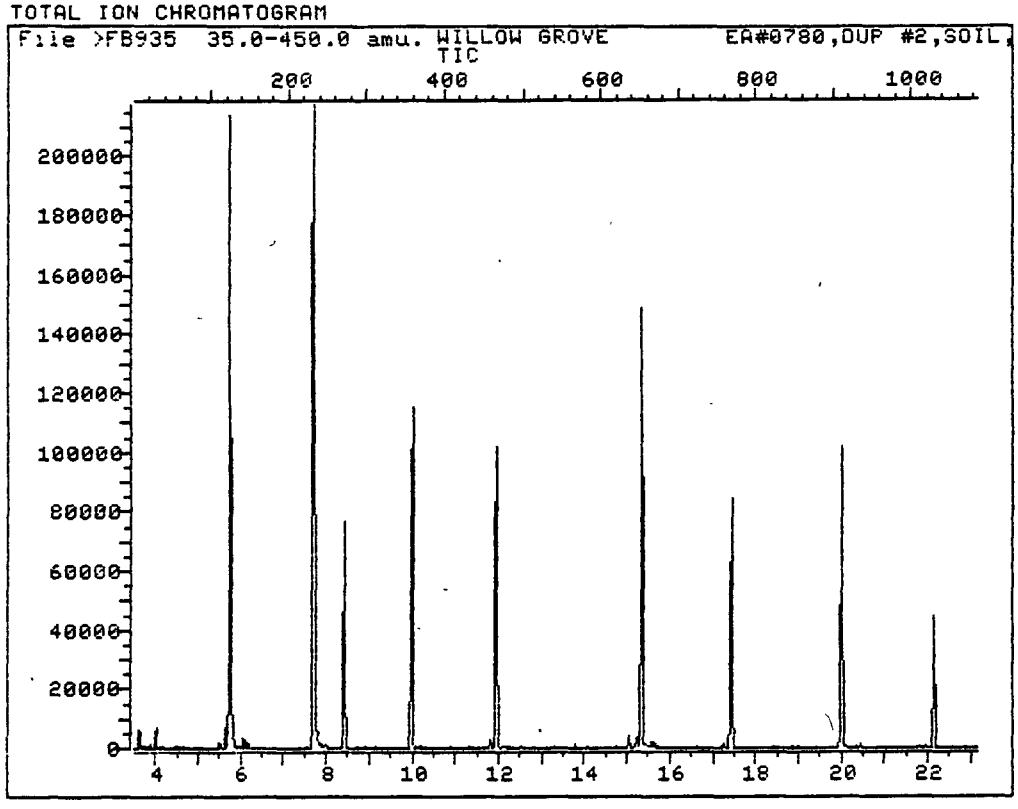
29.				
30.				

TOTAL ION CHROMATOGRAM



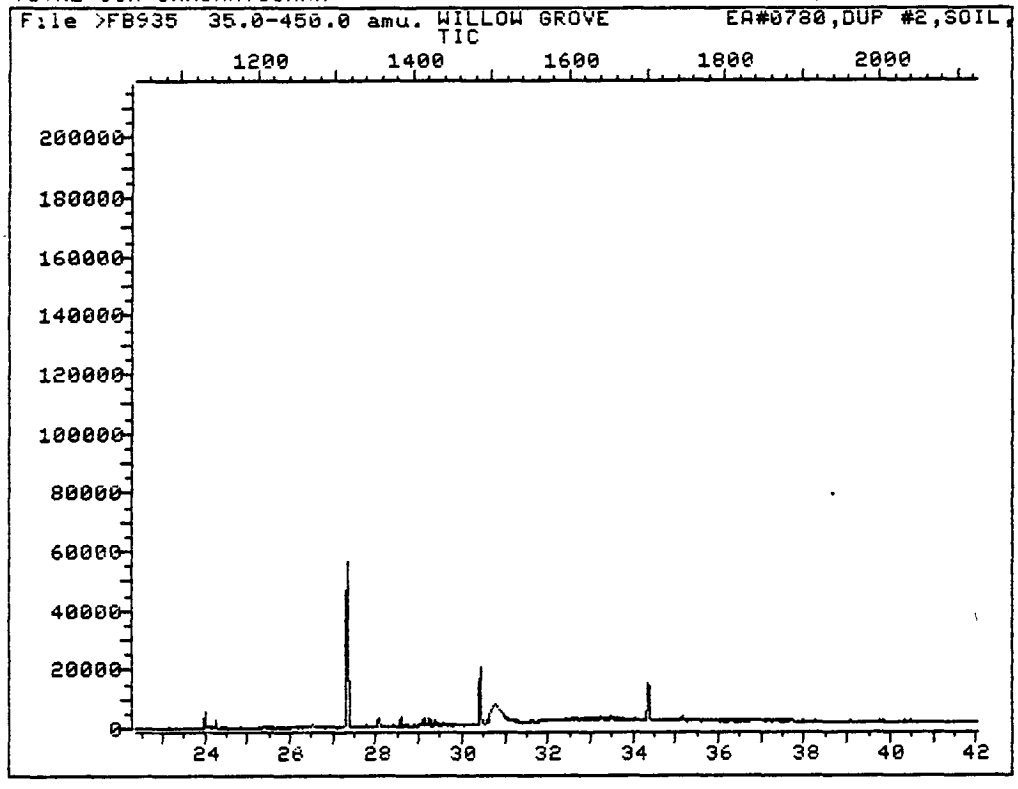
Data File: >FB935::D5 Quant Output File: ^FB935::QT
Name: WILLOW GROVE
Misc: EA#0780,DUP #2,SOIL,10.41,1.0, <96.06> BTL# 8

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890414 00:00

Operator ID: UNCLE
Quant Time: 890414 00:33
Injected at: 890325 06:09

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >FB935::D5 Quant Output File: ^FB935::QT
Name: WILLOW GROVE
Misc: EA#0780,DUP #2,SOIL,10.41,1.0, (96.06) BTL# 8

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890414 00:00

Operator ID: UNCLE
Quant Time: 890414 00:33
Injected at: 890325 06:09

TIC page 2 of 2

QUANT REPORT

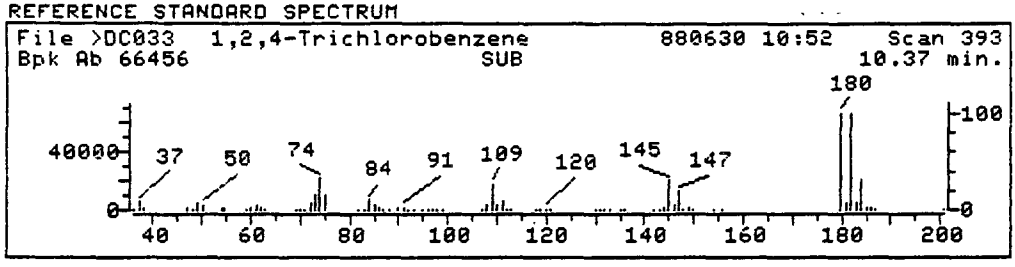
Operator ID: UNCLE Quant Rev: 6 Quant Time: 890414 00:33
Output File: ^FB935::QT Injected at: 890325 06:09
Data File: >FB935::D5 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0780,DUP #2,SOIL,10.41,1.0, <96.06> BTL# 8

ID File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890414 00:00

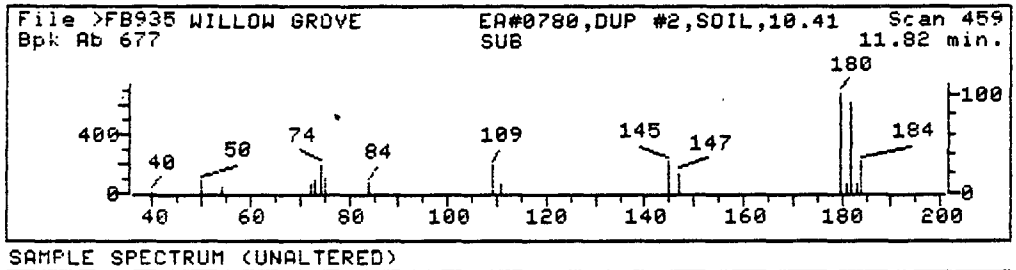
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	8.41	152.0	30171	40.00	NG	96
2)	2-Fluorophenol	5.72	112.0	126055	131.56	NG 66%	93
3)	Phenol-d5	7.70	99.0	183242	157.06	NG 79%	92
7)	1,3-Dichlorobenzene	8.32	146.0	600	~~.58~~	NG	97
8)	1,4-Dichlorobenzene	8.46	146.0	605	~~.59~~	NG	80
16)	*d8-Naphthalene	11.94	136.0	107458	40.00	NG	89
17)	Nitrobenzene-d5	10.00	82.0	87445	65.39	NG 65%	92
25)	1,2,4-Trichlorobenzene	11.82	180.0	1550	1.88	NG ✓	98
30)	2-Methylnaphthalene	14.08	142.0	621	~~.46~~	NG	85
31)	*d10-Acenaphthene	17.44	164.0	45223	40.00	NG	96
36)	2-Fluorobiphenyl	15.35	172.0	128917	60.40	NG 60%	95
38)	Dimethylphthalate	~~17.44~~	163.0	14885	~~9.58~~	NG	54
51)	*d10-Phenanthrene	22.14	188.0	46911	40.00	NG	99
54)	2,4,6-Tribromophenol	20.01	329.9	41257	202.51	NG 101%	96
60)	Di-n-Butyl phthalate	24.26	149.0	3289	2.14	NG ✓	98
61)	Fluoranthene	26.05	202.0	823	1.01	NG ✓	97
62)	*d12-Chrysene	30.43	240.0	17989	40.00	NG	97
63)	Pyrene	26.78	202.0	800	~~.91~~	NG	93
64)	Terphenyl-d14	27.34	244.0	59908	61.88	NG 124%	87
70)	*d12-Perylene	34.37	264.0	18630	40.00	NG	94

* Compound is ISTD

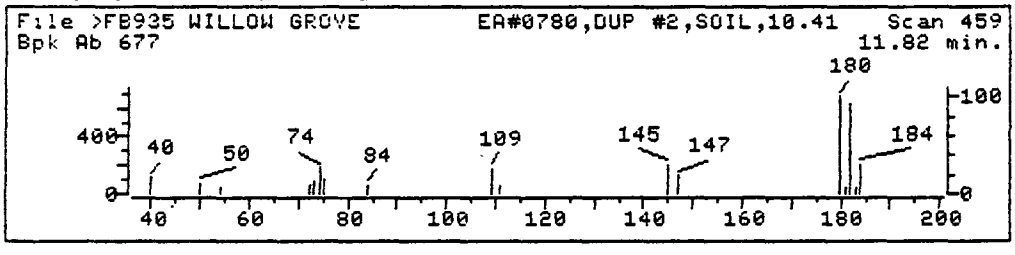
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



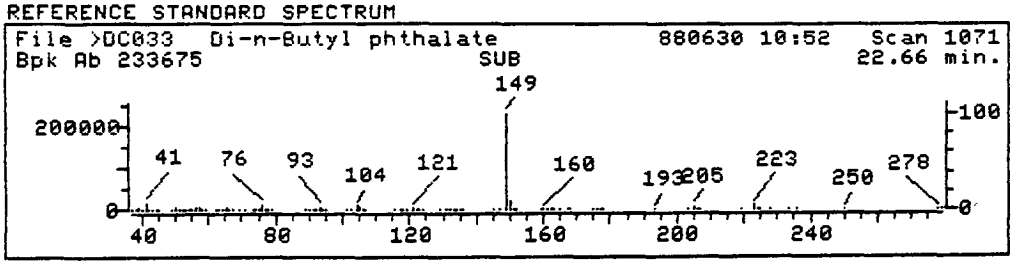
SAMPLE SPECTRUM (UNALTERED)



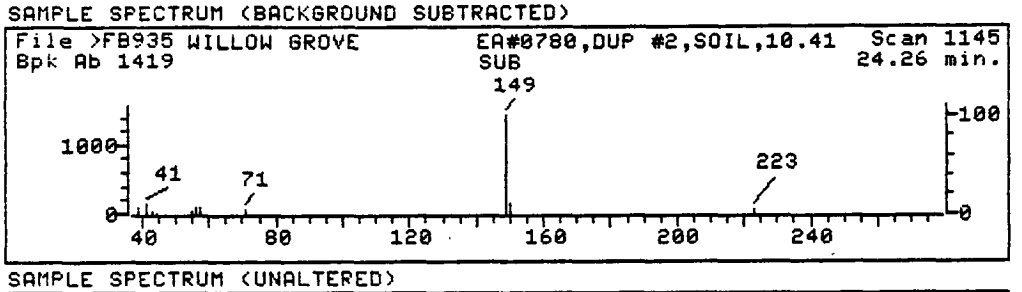
Data File: >FB935::D5 Quant Output File: ^FB935::QT
Name: WILLOW GROVE
Misc: EA#0780,DUP #2,SOIL,10.41,1.0, <96.06> BTL#-8
Quant Time: 890414 00:33 Quant ID File: IDFCLP::BD
Inj cted at: 890325 06:09 Last Calibration: 890414 00:00

Compound No: 25
Compound Name: 1,2,4-Trichlorobenzene
Scan Number: 459
Retention Time: 11.82 min.
Quant Ion: 180.0
Ar a: 1550
Concentration: 1.88 NG
q-value: 98

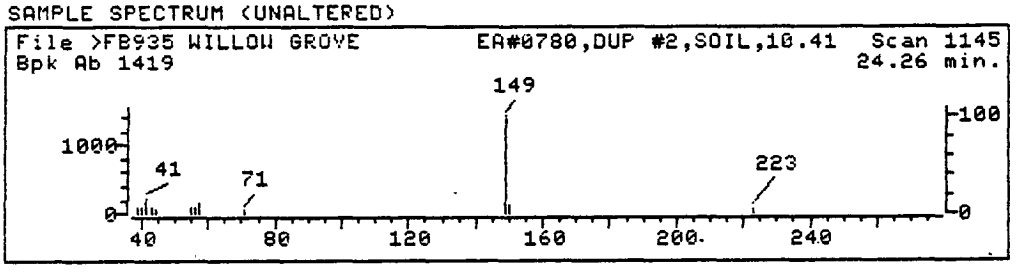
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



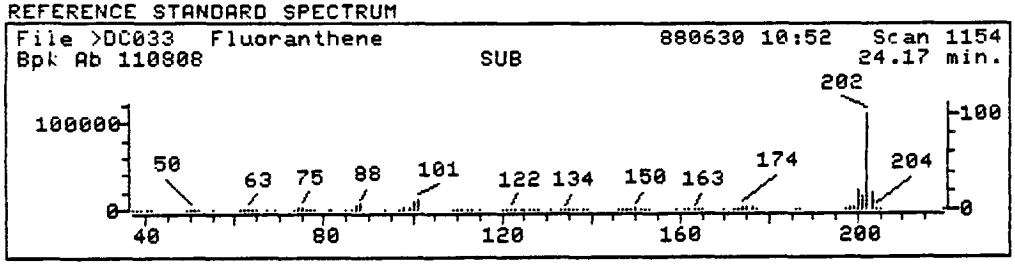
SAMPLE SPECTRUM (UNALTERED)



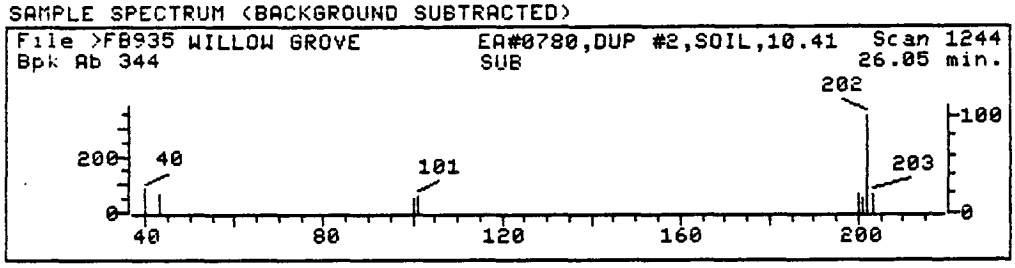
Data File: >FB935::D5 Quant Output File: ^FB935::QT
Name: WILLOW GROVE
Misc: EA#0780,DUP #2,SOIL,10.41,1.0, (96.06) BTL# 8
Quant Time: 890414 00:33 Quant ID File: IDFCLP::BD
Injected at: 890325 06:09 Last Calibration: 890414 00:00

Compound No: 60
Compound Name: Di-n-Butyl phthalate
Scan Number: 1145
Retention Time: 24.26 min.
Quant Ion: 149.0
Area: 3289
Concentration: 2.14 NG
q-value: 98

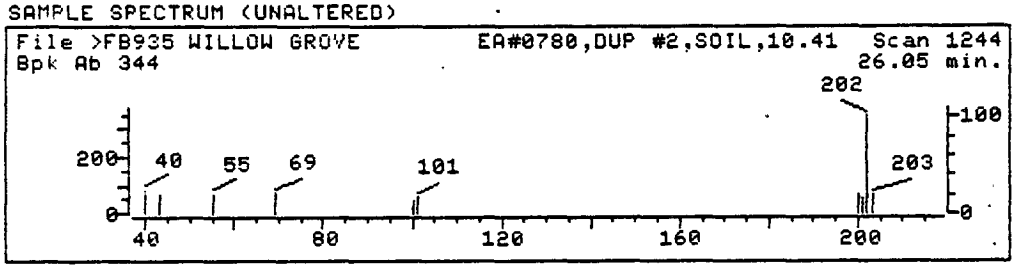
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

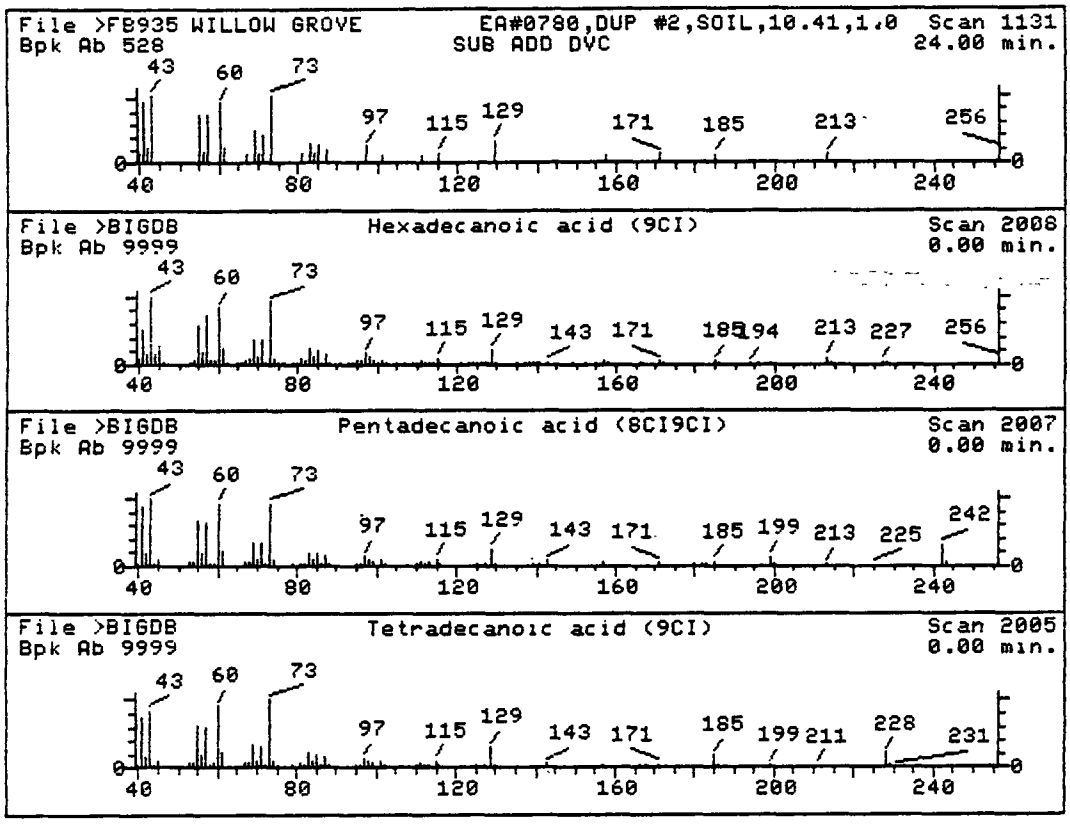


SAMPLE SPECTRUM (UNALTERED)



Data File: >FB935::D5 Quant Output File: ^FB935::QT
Name: WILLOW GROVE
Misc: EA#0780,DUP #2,SOIL,10.41,1.0, (96.06) BTL# 8
Quant Time: 890414 00:33 Quant ID File: IDFCLP::BD
Injected at: 890325 06:09 Last Calibration: 890414 00:00

Compound No: 61
Compound Name: Fluoranthene
Scan Number: 1244
Retention Time: 26.05 min.
Quant Ion: 202.0
Area: 823
Concentration: 1.01 NG
q-value: 97



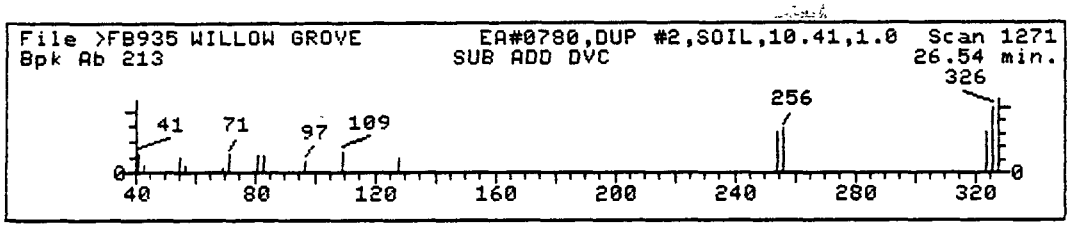
Retention time = 24.00

Area = 14284.00 Tentative Concentration is 530.00

1.	Hexadecanoic acid (9CI)	256 C16H32O2
2.	Pentadecanoic acid (8CI9CI)	242 C15H30O2
3.	Tetradecanoic acid (9CI)	228 C14H28O2

Sample file: >FB935 Spectrum #: 1131
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	89*	57103	2008	"BIGDB	115	36	3	-1	97	2	66	66
2.	52	1002842	2007	"BIGDB	107	43	3	-1	91	17	20	18
3.	44	544638	2005	"BIGDB	83	63	3	0	96	22	17	15

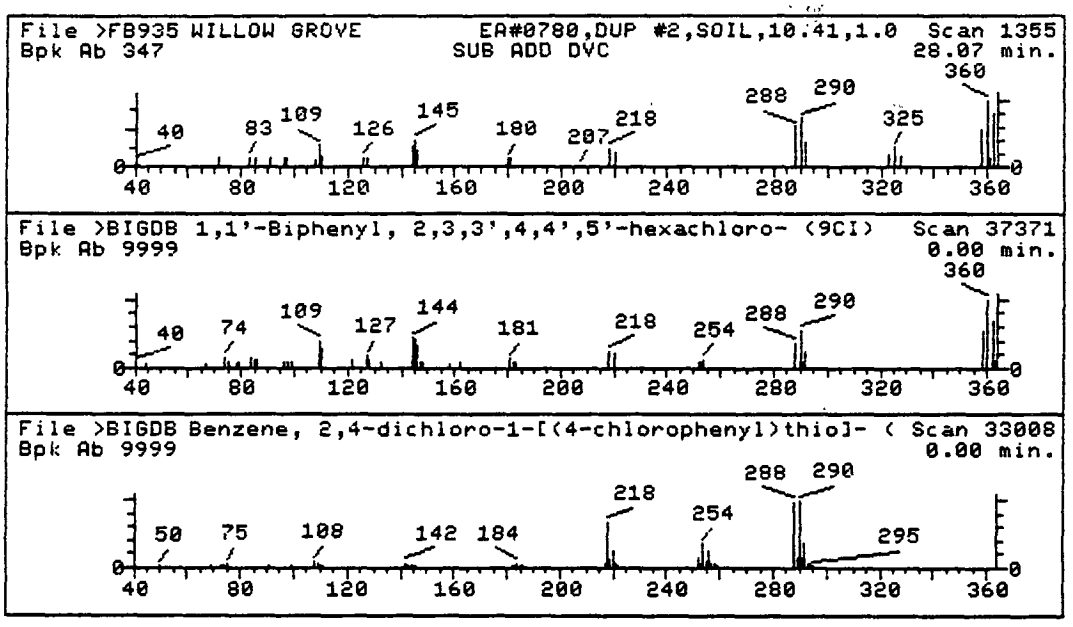


Retention time = 26.54

Area = 6087.00 Tentative Concentration is 550.00

Sample file: >FB935 Spectrum #: 1271

No data base entries were retrieved.



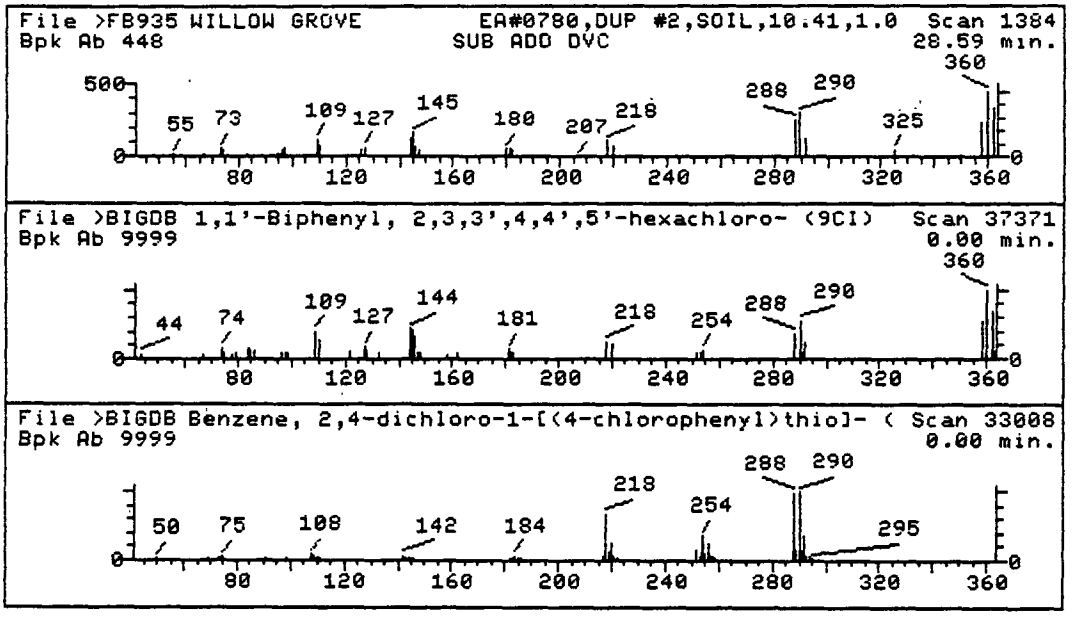
Retention time = 28.07

Area = 7313.00 Tentative Concentration is 660.00

1. 1,1'-Biphenyl, 2,3,3',4,4',5'-hexachloro- (9CI) 358 C12H4Cl6
2. Benzene, 2,4-dichloro-1-[(4-chlorophenyl)thio]- (9CI 288 C12H7Cl3S

Sample file: >FB935 Spectrum #: 1355
Search speed: 2 Tilting option: S No. of ion ranges searched: 49

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	74*	69782907	37371	"BIGDB	81	130	3	0	100	15	39	46
2.	11*	55759881	33008	"BIGDB	31	139	3	0	63	65	2	13



Retention time = 28.59

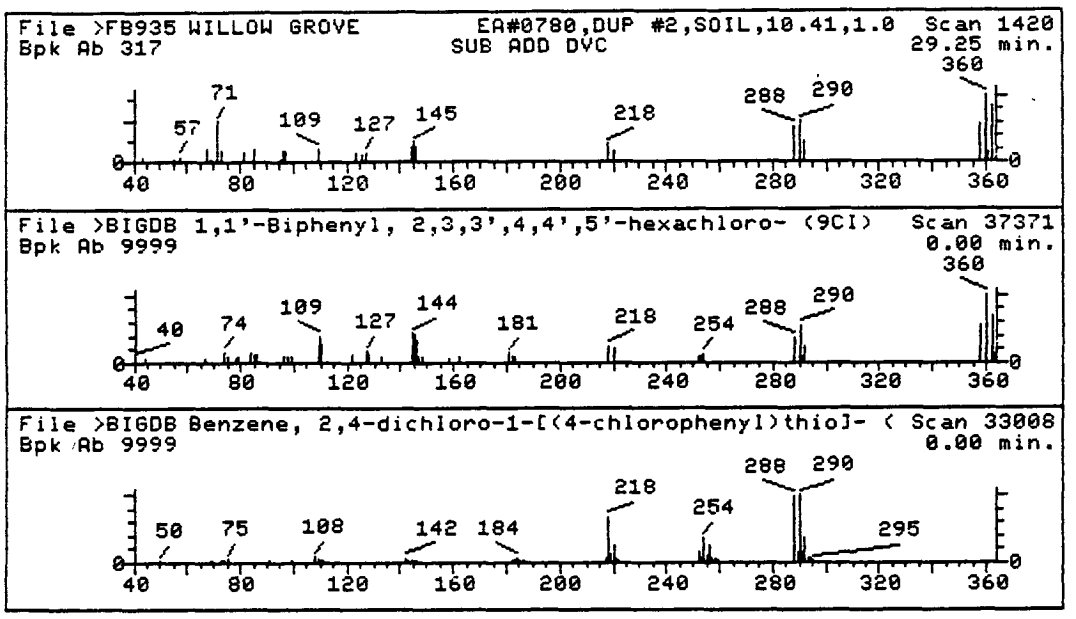
Area = 6730.00 Tentative Concentration is 610.00

1. 1,1'-Biphenyl, 2,3,3',4,4',5'-hexachloro- (9CI) 358 C12H4Cl6
2. Benzene, 2,4-dichloro-1-[(4-chlorophenyl)thio]- (9CI 288 C12H7Cl3S

Unknown

Sample file: >FB935 Spectrum #: 1384
Search speed: 2 Tilting option: S No. of ion ranges searched: 50

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	79*	69782907	37371	"BIGDB	72	139	3	0	100	8	48	37
2.	11*	55759881	33008	"BIGDB	41	129	3	0	57	63	2	13



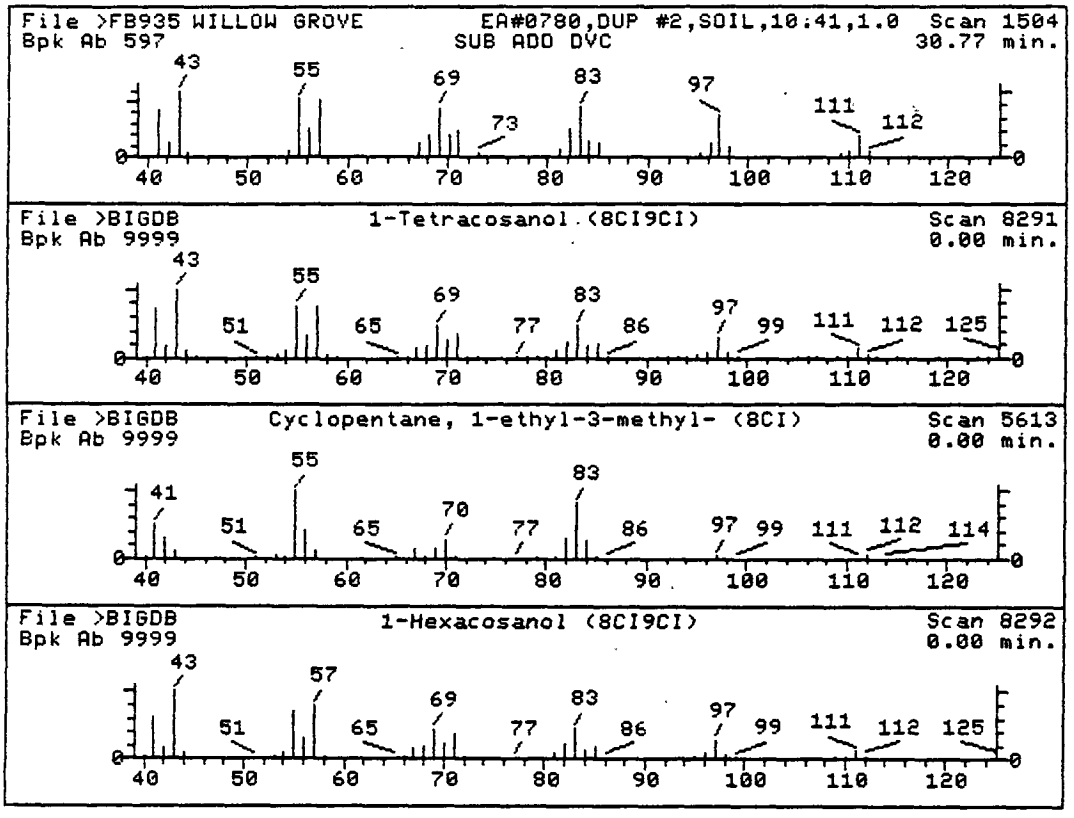
Retention time = 29.25

Area = 6308.00 Tentative Concentration is 570.00

1. 1,1'-Biphenyl, 2,3,3',4,4',5'-hexachloro- (9CI) 358 C12H4Cl6
2. Benzene, 2,4-dichloro-1-[(4-chlorophenyl)thio]- (9CI 288 C12H7Cl3S

Sample file: >FB935 Spectrum #: 1420
Search speed: 2 Tilting option: S No. of ion ranges searched: 49

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	87*	69782907	37371	"BIGDB	82	129	3	0	100	2	63	48
2.	11*	55759881	33008	"BIGDB	31	139	3	0	55	63	2	13



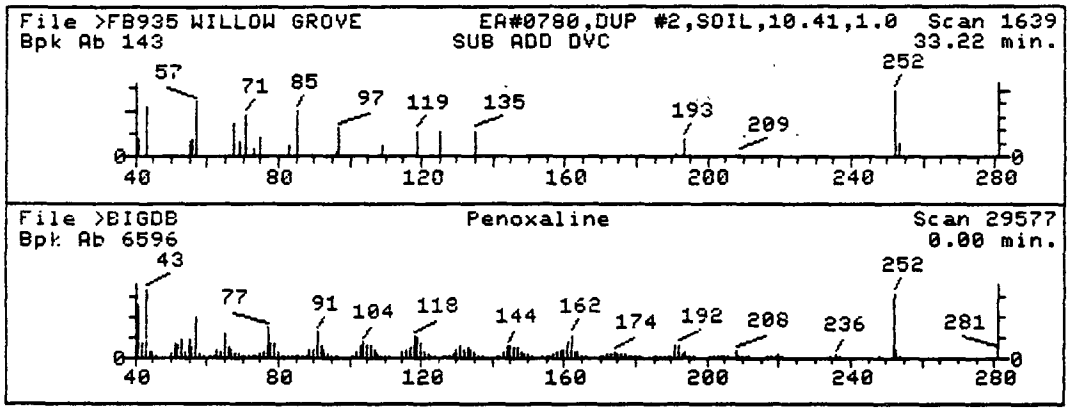
Ret ntion time = 30.77

Area = 125504.0 Tentative Concentration is 11000.00

1. 1-Tetracosanol (8CI9CI)	354	C24H50O
2. Cyclopentane, 1-ethyl-3-methyl- (8CI)	112	C8H16
3. 1-H xacosanol (8CI9CI)	382	C26H54O
4. Cyclopentane, 1-ethyl-3-methyl-, trans- (8CI9CI)	112	C8H16
5. Cyclopentane, 1-ethyl-3-methyl-, cis- (8CI9CI)	112	C8H16
6. Nonadecanol (9CI)	284	C19H40O
7. 1H-Imidazole, 2-ethyl-4,5-dihydro-4-methyl- (9CI)	112	C6H12N2

Sample file: >FB935 Spectrum #: 1504
Search speed: 2 Tilting option: S No. of ion ranges searched: 57

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	74	506514	8291	"BIGDB	115	49	2	-2	90	12	39	44
2.	52*	3726474	5613	"BIGDB	47	60	0	0	78	44	17	55
3.	48	506525	8292	"BIGDB	93	70	2	-1	100	25	17	19
4.	45*	2613652	5611	"BIGDB	47	61	0	0	61	47	13	55
5.	40*	2613663	5612	"BIGDB	41	67	0	0	63	49	12	43
6.	31	52783434	8301	"BIGDB	66	87	2	0	100	35	12	14
7.	29	931351	10829	"BIGDB	70	54	3	0	66	32	12	12



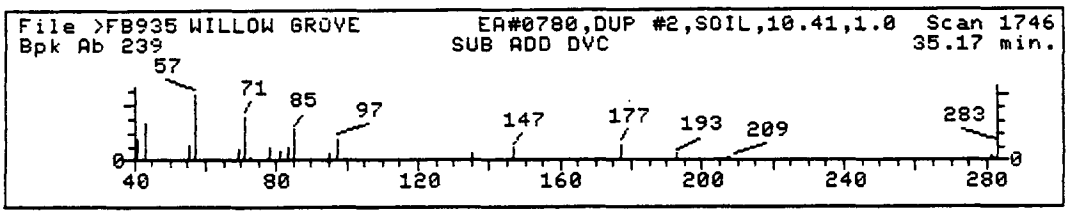
Retention time = 33.22

Area = 6052.00 Tentative Concentration is 600.00

1. Penoxaline 281 C13H19N3O4

Sample file: >FB935 Spectrum #: 1639
Search speed: 2 Tilting option: S No. of ion ranges searched: 49

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	15*	40487421	29577	"BIGDB	24	145	3	0	160	58	3	12



Retention time = 35.17

Area = 5657.00 Tentative Concentration is 560.00

Sample file: >FB935 Spectrum #: 1746

No data base entries were retrieved.

Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
EA#0781 DUP. #3

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 02/23/89
Date Analyzed: 3/09/89 6:54
Conc/Dil Factor: 1.00000
Percent Moisture (Decanted) N/A

GPC Cleanup __ Yes ✓ No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction ✓ Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	1500.	U
111-44-4	bis(2-Chloroethyl)ether	1500.	U
95-57-8	2-Chlorophenol	1500.	U
541-73-1	1,3-Dichlorobenzene	1500.	U
106-46-7	1,4-Dichlorobenzene	1500.	U
100-51-6	Benzyl Alcohol	1500.	U
95-50-1	1,2-Dichlorobenzene	1500.	U
95-48-7	2-Methylphenol	1500.	U
39638-32-9	bis(2-Chloroisopropyl)ether	1500.	U
106-44-5	4-Methylphenol	1500.	U
621-64-7	N-Nitroso-Di-n-propylamine	1500.	U
67-72-1	Hexachloroethane	1500.	U
98-95-3	Nitrobenzene	1500.	U
78-59-1	Isophorone	1500.	U
88-75-5	2-Nitrophenol	1500.	U
105-67-9	2,4-Dimethylphenol	1500.	U
65-85-0	Benzoic Acid	7400.	U
111-91-1	bis(2-Chloroethoxy)methane	1500.	U
120-83-2	2,4-Dichlorophenol	1500.	U
120-82-1	1,2,4-Trichlorobenzene	1500.	U
91-20-3	Naphthalene	1500.	U
106-47-8	4-Chloroaniline	1500.	U
87-68-3	Hexachlorobutadiene	1500.	U
59-50-7	4-Chloro-3-methylphenol	1500.	U
91-57-6	2-Methylnaphthalene	1500.	U
77-47-4	Hexachlorocyclopentadiene	1500.	U
88-06-2	2,4,6-Trichlorophenol	1500.	U
95-95-4	2,4,5-Trichlorophenol	7400.	U
91-58-7	2-Chloronaphthalene	1500.	U
88-74-4	2-Nitroaniline	7400.	U
131-11-3	Dimethylphthalate	1500.	U
208-96-8	Acenaphthylene	1500.	U
99-09-2	3-Nitroaniline	7400.	U

C.A.S. Number		ug/L or ug/Kg (Circle One)	
83-32-9	Acenaphthene	1500.	U
51-28-5	2,4-Dinitrophenol	7400.	U
100-02-7	4-Nitrophenol	7400.	U
132-64-9	Dibenzofuran	1500.	U
121-14-2	2,4-Dinitrotoluene	1500.	U
606-20-2	2,6-Dinitrotoluene	1500.	U
84-66-2	Diethylphthalate	1500.	U
7005-72-3	4-Chlorophenyl-phenylether	1500.	U
86-73-7	Fluorene	1500.	U
100-01-6	4-Nitroaniline	1500.	U
534-52-1	4,6-Dinitro-2-methylphenol	7400.	U
86-30-6	N-Nitrososdiphenylamine (1)	1500.	U
101-55-3	4-Bromophenyl-phenylether	1500.	U
118-74-1	Hexachlorobenzene	1500.	U
87-86-5	Pentachlorophenol	7400.	U
85-01-8	Phenanthrene	1500.	U
120-12-7	Anthracene	1500.	U
84-74-2	Di-n-Butyl phthalate	1500.	U
206-44-0	Fluoranthene	1500.	U
129-00-0	Pyrene	1500.	U
85-68-7	Butylbenzylphthalate	1500.	U
91-94-1	3,3'-Dichlorobenzidine	3000.	U
56-55-3	Benzo(a)Anthracene	1500.	U
117-81-7	bis(2-Ethylhexyl)phthalate	1500.	U
218-01-9	Chrysene	1500.	U
117-84-0	Di-n-Octyl phthalate	1500.	U
205-99-2	Benzo(b)Fluoranthene	1500.	U
207-08-9	Benzo(k)Fluoranthene	1500.	U
50-32-8	Benzo(a)Pyrene	1500.	U
193-39-5	Indeno(1,2,3-cd)Pyrene	1500.	U
53-70-3	Dibenzo(a,h)Anthracene	1500.	U
191-24-2	Benzo(g,h,i)Perylene	1500.	U

(1)-Cannot be separated from diphenylamine

Laboratory Name: EA LABORATORIES
Case No: WILLOW GROVE

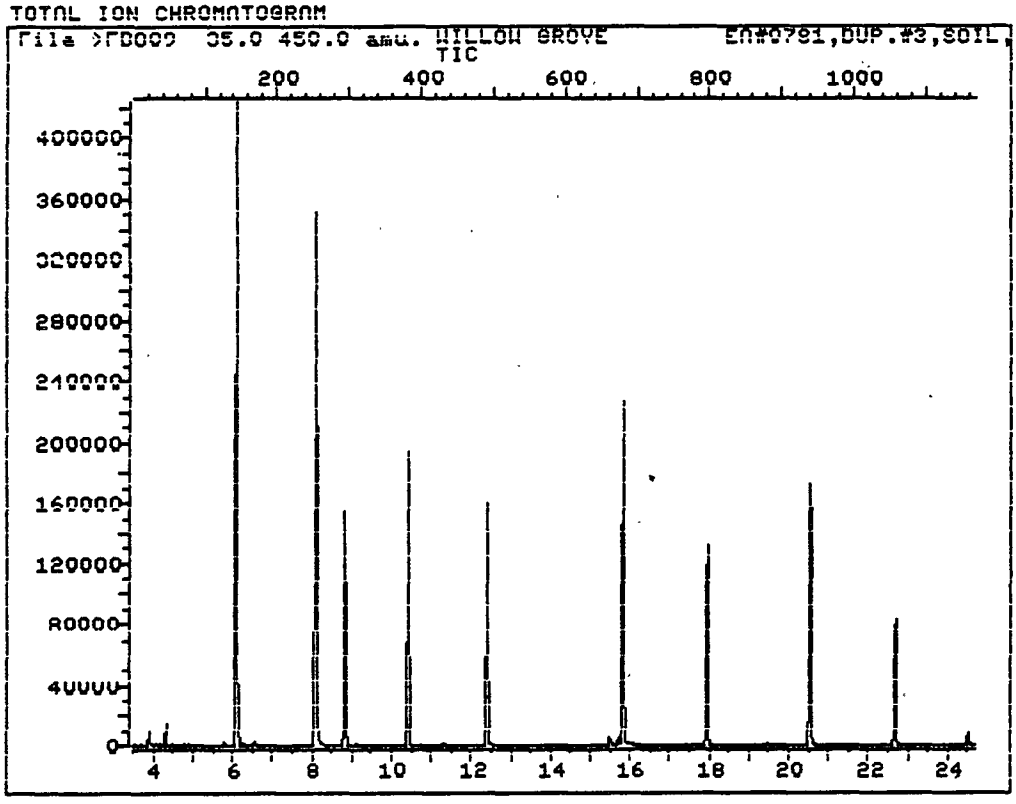
Sample Number
EA# 0781
Dup#3

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT ~~or Scan Number~~	Estimated Concentration (~~ug/l or ug/kg~~)
1. —	Unknown	BNA	31.06	5100.00J
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

TOTAL ION CHROMATOGRAM



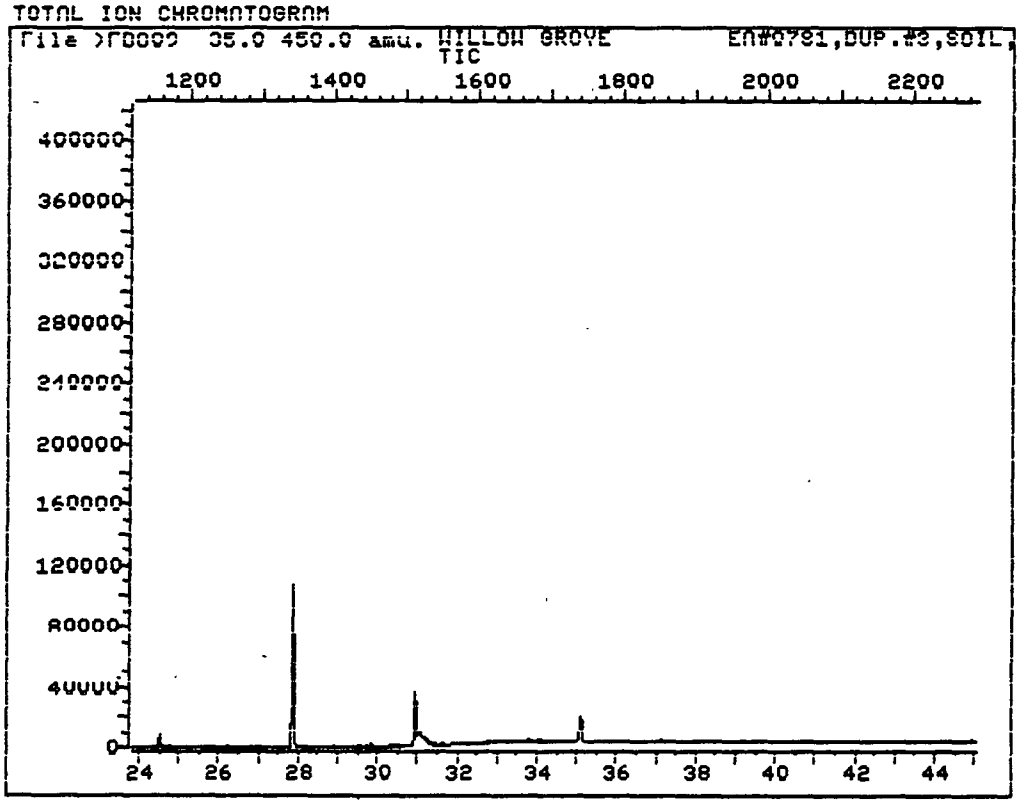
Data File: >FB809::D4 Quant Output File: ^FB809::QT
Name: WILLOW GROVE
Misc: EA#0781,DUP.#3,SOIL,10.23G,1, <147.6> BTL#10

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
La t Calibration: 890411 22:32

Op rator ID: UNCLE
Quant Time: 890412 00:20
Ini cted at: 890309 06:54

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >FB809::D4 Quant Output File: ^FB809::QT
Nam : WILLOW GROVE
Misc: EA#0781,DUP.#3,SOIL,10.23G,1, <147.6> BTL#10

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890411 22:32

Op rator ID: UNCLE
Quant Time: 890412 00:20
Injected at: 890309 06:54

TIC page 2 of 2

QUANT REPORT

Operator ID: UNCLE Quant R v: 6 Quant Time: 890412 00:20
Output File: ^FB809::QT Injected at: 890309 06:54
Data File: >FB809::D4 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0781,DUP.#3,SOIL,10.23G,1, <147.6> BTL#10

ID File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890411 22:32

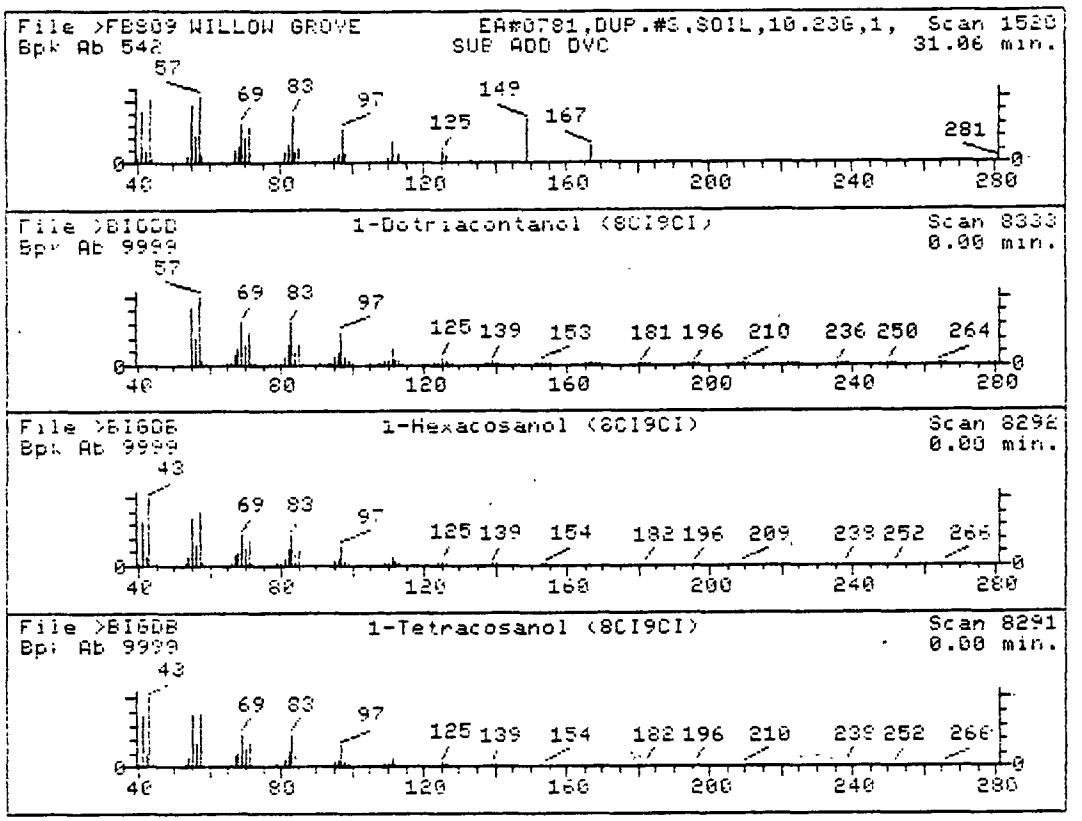
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	8.82	152.0	49664	40.00	NG	98
2)	2-Fluorophenol	6.07	112.0	220264	142.45	NG 71%	91
3)	Phenol-d5	8.06	99.0	311450	171.00	NG 86%	93
4)	Phenol	0.00	94.0	0	0.00	NG	
5)	bis(2-Chloroethyl)ether	0.00	93.0	0	0.00	NG	
6)	2-Chlorophenol	0.00	128.0	0	0.00	NG	
7)	1,3-Dichlorobenzene	0.00	146.0	0	0.00	NG	
8)	1,4-Dichlorobenzene	0.00	146.0	0	0.00	NG	
9)	B nzyl Alcohol	0.00	108.0	0	0.00	NG	
10)	1,2-Dichlorobenzene	0.00	146.0	0	0.00	NG	
11)	2-Methylphenol	0.00	108.0	0	0.00	NG	
12)	bi (2-Chloroisopropyl)ether	0.00	45.0	0	0.00	NG	
13)	4-Methylphenol	0.00	108.0	0	0.00	NG	
14)	N-Nitroso-Di-n-propylamine	0.00	70.0	0	0.00	NG	
15)	Hexachloroethane	0.00	117.0	0	0.00	NG	
16)	*d8-Naphthalene	12.40	136.0	172835	40.00	NG	92
17)	Nitrobenzene-d5	10.42	82.0	144066	83.32	NG 83%	95
18)	Nitrobenzene	0.00	77.0	0	0.00	NG	
19)	Isophorone	0.00	82.0	0	0.00	NG	
20)	2-Nitrophenol	0.00	139.0	0	0.00	NG	
21)	2,4-Dimethylphenol	0.00	107.0	0	0.00	NG	
22)	B nzoic Acid	0.00	122.0	0	0.00	NG	
23)	bis(2-Chloroethoxy)methane	0.00	93.0	0	0.00	NG	
24)	2,4-Dichlorophenol	0.00	162.0	0	0.00	NG	
25)	1,2,4-Trichlorobenzene	0.00	180.0	0	0.00	NG	
26)	Naphthalene	0.00	128.0	0	0.00	NG	
27)	4-Chloroaniline	0.00	127.0	0	0.00	NG	
28)	Hexachlorobutadiene	0.00	224.7	0	0.00	NG	
29)	4-Chloro-3-methylphenol	0.00	107.0	0	0.00	NG	
30)	2-Methylnaphthalene	0.00	142.0	0	0.00	NG	
31)	*d10-Acenaphthene	17.95	164.0	70038	40.00	NG	97
32)	H xachlorocyclopentadiene	0.00	237.0	0	0.00	NG	
33)	2,4,6-Trichlorophenol	0.00	196.0	0	0.00	NG	
34)	2,4,5-Trichlorophenol	0.00	196.0	0	0.00	NG	
35)	2-Chloronaphthalene	0.00	162.0	0	0.00	NG	
36)	2-Fluorobiphenyl	15.83	172.0	193039	79.71	NG 80%	94
37)	2-Nitroaniline	0.00	65.0	0	0.00	NG	
38)	Dimethylphthalate	17.95	163.0	24496	~~8.67~~	NG	54
39)	Ac naphthylene	0.00	152.0	0	0.00	NG	
40)	3-Nitroaniline	0.00	138.0	0	0.00	NG	
41)	Acenaphthene	0.00	153.0	0	0.00	NG	
42)	2,4-Dinitrophenol	0.00	184.0	0	0.00	NG	

QUANT REPORT
page 2

Output File:^FB809:: Data File:>FB809::D4

	Compound	R.T.	Q ion	Area	Conc	Units	q
43)	4-Nitrophenol	0.00	109.0	0	0.00	NG	
44)	Dibenzofuran	0.00	168.0	0	0.00	NG	
45)	2,4-Dinitrotoluene	0.00	165.0	0	0.00	NG	
46)	2,6-Dinitrotoluene	0.00	165.0	0	0.00	NG	
47)	Diethylphthalate	0.00	149.0	0	0.00	NG	
48)	4-Chlorophenyl-phenylether	0.00	204.0	0	0.00	NG	
49)	Fluorene	0.00	166.0	0	0.00	NG	
50)	4-Nitroaniline	0.00	138.0	0	0.00	NG	
51)	*d10-Phenanthrene	22.67	188.0	88785	40.00	NG	98
52)	4,6-Dinitro-2-methylphenol	0.00	198.0	0	0.00	NG	
53)	N-Nitrosodiphenylamine	0.00	169.0	0	0.00	NG	
54)	2,4,6-Tribromophenol	20.53	329.9	60298	191.92	NG 96%	91
55)	4-Bromophenyl-phenylether	0.00	248.0	0	0.00	NG	
56)	Hexachlorobenzene	0.00	283.6	0	0.00	NG	
57)	Pentachlorophenol	0.00	266.0	0	0.00	NG	
58)	Ph nanthrene	0.00	178.0	0	0.00	NG	
59)	Anthracene	0.00	178.0	0	0.00	NG	
60)	Di-n-Butyl phthalate	24.76	149.0	1645	~~.44~~	NG	98
61)	Fluoranthene	0.00	202.0	0	0.00	NG	
62)	*d12-Chrysene	30.95	240.0	28426	40.00	NG	97
63)	Pyrene	0.00	202.0	0	0.00	NG	
64)	Terphenyl-d14	27.88	244.0	104027	100.64	NG 101%	88
65)	Butylbenzylphthalate	0.00	149.0	0	0.00	NG	
66)	3,3'-Dichlorobenzidine	0.00	252.0	0	0.00	NG	
67)	B nzo(a)Anthracene	0.00	228.0	0	0.00	NG	
68)	bis(2-Ethylhexyl)phthalate	0.00	149.0	0	0.00	NG	
69)	Chrysene	0.00	228.0	0	0.00	NG	
70)	*d12-Perylene	35.11	264.0	25806	40.00	NG	94
71)	Di-n-Octyl phthalate	0.00	149.0	0	0.00	NG	
72)	Benzo(b)Fluoranthene	0.00	252.0	0	0.00	NG	
73)	B nzo(k)Fluoranthene	0.00	252.0	0	0.00	NG	
74)	Benz (a)Pyrene	0.00	252.0	0	0.00	NG	
75)	Indeno(1,2,3-cd)Pyrene	0.00	276.0	0	0.00	NG	
76)	Dibenzo(a,h)Anthracene	0.00	278.0	0	0.00	NG	
77)	Benzo(g,h,i)Perylene	0.00	276.0	0	0.00	NG	

* Compound is ISTD



Retention time = 31.06

Area = 99113.00 Tentative Concentration is 5100.00

1.	1-Dotriacontanol (8CI9CI)	466	C32H66O
2.	1-Hexacosanol (8CI9CI)	392	C26H54O
3.	1-Tetracosanol (8CI9CI)	354	C24H50O
4.	Phosphonic acid, dioctadecyl ester (8CI9CI)	586	C36H75O3P
5.	9-Eicosene, (E)- (9CI)	280	C20H40
6.	17-Pentatriacontene (8CI)	490	C35H70
7.	1-Octadecanol (8CI9CI)	270	C18H38O

Unknown

Sample File: >FB809 Spectrum #: 1520

Search speed: 2 Tilting option: S No. of ion ranges searched: 59

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	COV	P_I	P_IU
1.	65	6624799	8333	"BIGDB	118	63	2	0	78	35	24	57
2.	51	506525	8292	"BIGDB	121	42	3	-2	100	34	20	35

3.	50	506514	8291	"BIGDB	125	39	3	-1	100	39	19	41
4.	50	19047859	8329	"BIGDB	120	80	3	-1	62	32	20	34
5.	41	74685293	8336	"BIGDB	109	61	3	0	71	37	14	28
6.	41	6971400	8334	"BIGDB	109	62	2	-1	95	41	14	37
7.	40	112925	8461	"BIGDB	112	58	3	-1	62	32	16	23

LIBRARY SEARCH SUMMARY

MS Data File:>FB809::D4 Analyst:UNCLE MS

Name:WILLOW GROVE Date/Time: 3/09/89 6:54
Misc:EA#0781,DUP.#3,SOIL,10.23G,1, ?147.6? BTL#10

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	31.06	99113	11578

Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
EA#0815 PRW-3

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 02/27/89
Date Analyzed: 2/28/89 20:57
Conc/Dil Factor: 1.0
Percent Moisture (Decanted) N/A

GPC Cleanup __ Yes ✓ No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction ✓ Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	1200.	U
111-44-4	bis(2-Chloroethyl)ether	1200.	U
95-57-8	2-Chlorophenol	1200.	U
541-73-1	1,3-Dichlorobenzene	1200.	U
106-46-7	1,4-Dichlorobenzene	1200.	U
100-51-6	Benzyl Alcohol	1200.	U
95-50-1	1,2-Dichlorobenzene	1200.	U
95-48-7	2-Methylphenol	1200.	U
39638-32-9	bis(2-Chloroisopropyl)ether	1200.	U
106-44-5	4-Methylphenol	1200.	U
621-64-7	N-Nitroso-Di-n-propylamine	1200.	U
67-72-1	Hexachloroethane	1200.	U
98-95-3	Nitrobenzene	1200.	U
78-59-1	Isophorone	1200.	U
88-75-5	2-Nitrophenol	1200.	U
105-67-9	2,4-Dimethylphenol	1200.	U
65-85-0	Benzoic Acid	6000.	U
111-91-1	bis(2-Chloroethoxy)methane	1200.	U
120-83-2	2,4-Dichlorophenol	1200.	U
120-82-1	1,2,4-Trichlorobenzene	1200.	U
91-20-3	Naphthalene	1200.	U
106-47-8	4-Chloroaniline	1200.	U
87-68-3	Hexachlorobutadiene	1200.	U
59-50-7	4-Chloro-3-methylphenol	1200.	U
91-57-6	2-Methylnaphthalene	1200.	U
77-47-4	Hexachlorocyclopentadiene	1200.	U
88-06-2	2,4,6-Trichlorophenol	1200.	U
95-95-4	2,4,5-Trichlorophenol	6000.	U
91-58-7	2-Chloronaphthalene	1200.	U
88-74-4	2-Nitroaniline	6000.	U
131-11-3	Dimethylphthalate	1200.	U
208-96-8	Acenaphthylene	1200.	U
99-09-2	3-Nitroaniline	6000.	U

C.A.S. Number		ug/L or ug/Kg (Circle One)	
83-32-9	Acenaphthene	1200.	U
51-28-5	2,4-Dinitrophenol	6000.	U
100-02-7	4-Nitrophenol	6000.	U
132-64-9	Dibenzofuran	1200.	U
121-14-2	2,4-Dinitrotoluene	1200.	U
606-20-2	2,6-Dinitrotoluene	1200.	U
84-66-2	Diethylphthalate	1200.	U
7005-72-3	4-Chlorophenyl-phenylether	1200.	U
86-73-7	Fluorene	1200.	U
100-01-6	4-Nitroaniline	1200.	U
534-52-1	4,6-Dinitro-2-methylphenol	6000.	U
86-30-6	N-Nitrososdiphenylamine (1)	1200.	U
101-55-3	4-Bromophenyl-phenylether	1200.	U
118-74-1	Hexachlorobenzene	1200.	U
87-86-5	Pentachlorophenol	6000.	U
85-01-8	Phenanthrene	1200.	U
120-12-7	Anthracene	1200.	U
84-74-2	Di-n-Butyl phthalate	1200.	U
206-44-0	Fluoranthene	1200.	U
129-00-0	Pyrene	1200.	U
85-68-7	Butylbenzylphthalate	1200.	U
91-94-1	3,3'-Dichlorobenzidine	2400.	U
56-55-3	Benzo(a)Anthracene	1200.	U
117-81-7	bis(2-Ethylhexyl)phthalate	1200.	U
218-01-9	Chrysene	1200.	U
117-84-0	Di-n-Octyl phthalate	1200.	U
205-99-2	Benzo(b)Fluoranthene	1200.	U
207-08-9	Benzo(k)Fluoranthene	1200.	U
50-32-8	Benzo(a)Pyrene	1200.	U
193-39-5	Indeno(1,2,3-cd)Pyrene	1200.	U
53-70-3	Dibenzo(a,h)Anthracene	1200.	U
191-24-2	Benzo(g,h,i)Perylene	1200.	U

(1)-Cannot be separated from diphenylamine

Laboratory Name: EA Laboratories

Case No: Willow Grove

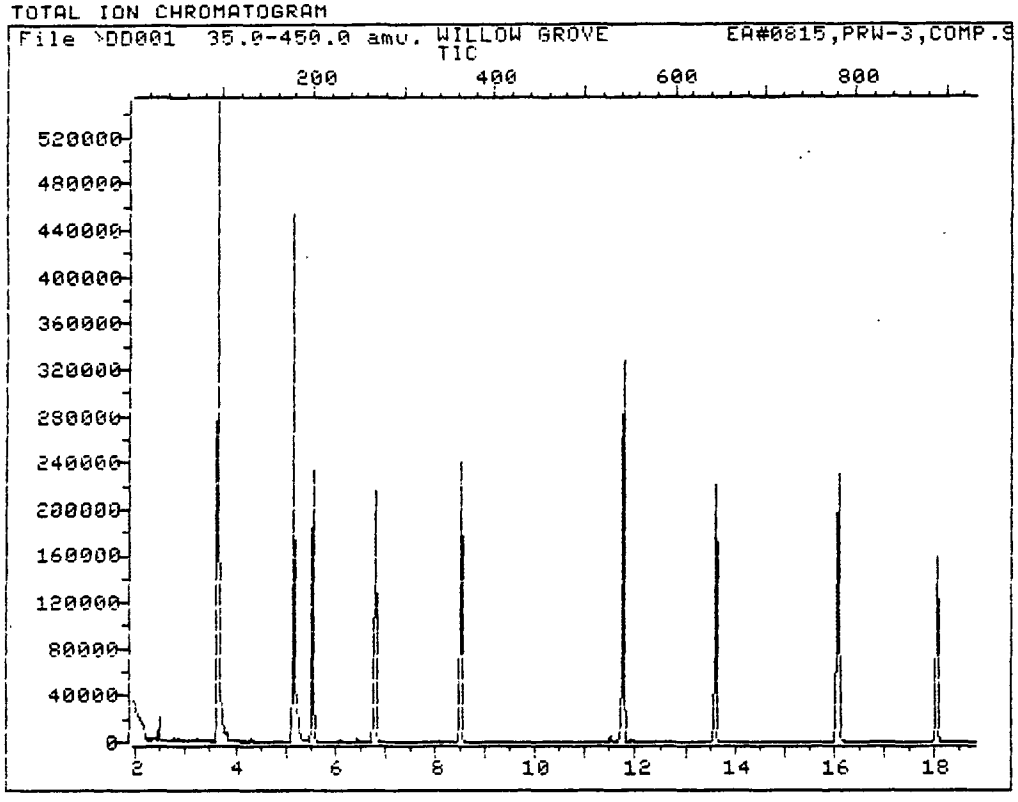
Sample Number
PRW-3 Composite
EA# 0815

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. —	Unknown	BNA	27.19	730.00
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

TOTAL ION CHROMATOGRAM



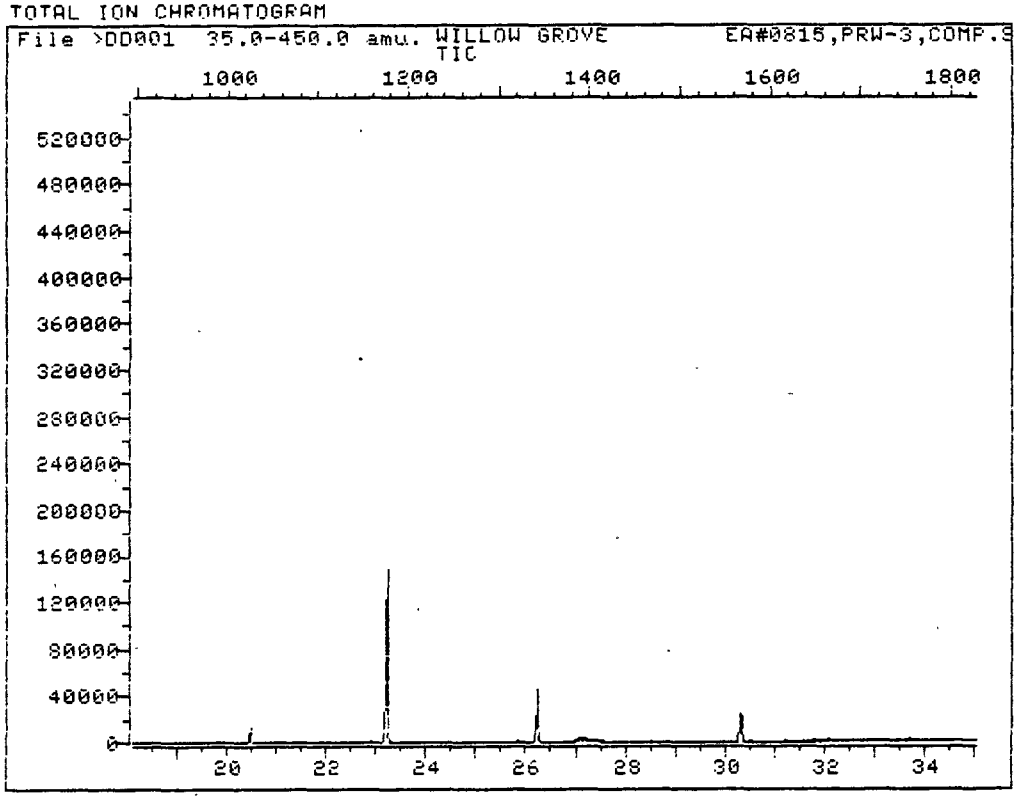
Data File: >DD001::D1 Quant Output File: ^DD001::QT
Name: WILLOW GROVE
Misc: EA#0815,PRW-3,COMP.SOIL,SOIL,10.11G,1 WILLOW GROVE BTL# 5
{98.91}

Id File: IDDCLP::BD
Title: HSL BNA LIST---INSTRUMENT #4(D)
Last Calibration: 890228 16:26

Operator ID: BHADRA
Quant Time: 890301 09:45
Injected at: 890228 20:57

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >DD001::D1 Quant Output File: ^DD001::QT
Name: WILLOW GROVE
Misc: EA#0815,PRW-3,COMP.SOIL,SOIL,10.11G,1 WILLOW GROVE BTL# 5
{98-91}

Id File: IDDCLP::BD
Title: HSL BNA LIST---INSTRUMENT #4(D)
Last Calibration: 890228 16:26

Operator ID: BHADRA
Quant Time: 890301 09:45
Injected at: 890228 20:57

TIC page 2 of 2

QUANT REPORT

Operator ID: BHADRA Quant Rev: 6 Quant Time: 890301 09:45
Output File: ^DD001::QT Injected at: 890228 20:57
Data File: >DD001::D1 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0815,PRW-3,COMP.SOIL,SOIL,10.11G,1 WILLOW GROVE TL# 5
{98.91}

ID File: IDDCLP::BD
Title: HSL BNA LIST---INSTRUMENT #4(D)
Last Calibration: 890228 16:26

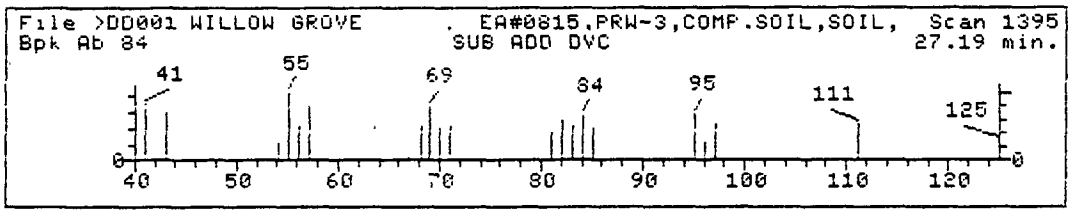
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	5.54	152.0	68623	40.00	NG	95
2)	2-Fluorophenol	3.64	112.0	277135	197.43	NG ✓99%	94
3)	Phenol-d5	5.14	99.0	343397	215.53	NG ✓108%	91
4)	Phenol	0.00	94.0	0	0.00	NG	
5)	bis(2-Chloroethyl)ether	0.00	93.0	0	0.00	NG	
6)	2-Chlorophenol	0.00	128.0	0	0.00	NG	
7)	1,3-Dichlorobenzene	0.00	146.0	0	0.00	NG	
8)	1,4-Dichlorobenzene	0.00	146.0	0	0.00	NG	
9)	Benzyl Alcohol	0.00	108.0	0	0.00	NG	
10)	1,2-Dichlorobenzene	0.00	146.0	0	0.00	NG	
11)	2-Methylphenol	0.00	108.0	0	0.00	NG	
12)	bis(2-Chloroisopropyl)ether	0.00	45.0	0	0.00	NG	
13)	4-Methylphenol	0.00	108.0	0	0.00	NG	
14)	N-Nitroso-Di-n-propylamine	0.00	70.0	0	0.00	NG	
15)	Hexachloroethane	0.00	117.0	0	0.00	NG	
16)	*d8-Naphthalene	8.51	136.0	257082	40.00	NG	89
17)	Nitrobenzene-d5	6.81	82.0	164353	93.45	NG ✓93%	97
18)	Nitrobenzene	0.00	77.0	0	0.00	NG	
19)	Isophorone	0.00	82.0	0	0.00	NG	
20)	2-Nitrophenol	0.00	139.0	0	0.00	NG	
21)	2,4-Dimethylphenol	0.00	107.0	0	0.00	NG	
22)	Benzoic Acid	0.00	122.0	0	0.00	NG	
23)	bis(2-Chloroethoxy)methane	0.00	93.0	0	0.00	NG	
24)	2,4-Dichlorophenol	0.00	162.0	0	0.00	NG	
25)	1,2,4-Trichlorobenzene	0.00	180.0	0	0.00	NG	
26)	Naphthalene	0.00	128.0	0	0.00	NG	
27)	4-Chloroaniline	0.00	127.0	0	0.00	NG	
28)	Hexachlorobutadiene	0.00	224.7	0	0.00	NG	
29)	4-Chloro-3-methylphenol	0.00	107.0	0	0.00	NG	
30)	2-Methylnaphthalene	0.00	142.0	0	0.00	NG	
31)	*d10-Acenaphthene	13.61	164.0	139355	40.00	NG	91
32)	Hexachlorocyclopentadiene	0.00	237.0	0	0.00	NG	
33)	2,4,6-Trichlorophenol	0.00	196.0	0	0.00	NG	
34)	2,4,5-Trichlorophenol	0.00	196.0	0	0.00	NG	
35)	2-Chloronaphthalene	0.00	162.0	0	0.00	NG	
36)	2-Fluorobiphenyl	11.77	172.0	274564	87.99	NG ✓88%	93
37)	2-Nitroaniline	0.00	65.0	0	0.00	NG	
38)	Dimethylphthalate	13.61	163.0	24823	~~0.60~~	~~NG~~	56
39)	Acenaphthylene	0.00	152.0	0	0.00	NG	
40)	3-Nitroaniline	0.00	138.0	0	0.00	NG	
41)	Acenaphthene	0.00	153.0	0	0.00	NG	
42)	2,4-Dinitrophenol	0.00	184.0	0	0.00	NG	

QUANT REPORT
page 2

Output File:^DD001:: Data File:>DD001::D1

	Compound	R.T.	Q ion	Area	Conc	Units	q
43)	4-Nitrophenol	0.00	109.0	0	0.00	NG	
44)	Dibenzofuran	0.00	168.0	0	0.00	NG	
45)	2,4-Dinitrotoluene	0.00	165.0	0	0.00	NG	
46)	2,6-Dinitrotoluene	0.00	165.0	0	0.00	NG	
47)	Diethylphthalate	0.00	149.0	0	0.00	NG	
48)	4-Chlorophenyl-phenylether	0.00	204.0	0	0.00	NG	
49)	Fluorene	0.00	166.0	0	0.00	NG	
50)	4-Nitroaniline	0.00	138.0	0	0.00	NG	
51)	*d10-Phenanthrene	18.05	188.0	178670	40.00	NG	98
52)	4,6-Dinitro-2-methylphenol	0.00	198.0	0	0.00	NG	
53)	N-Nitrosodiphenylamine	0.00	169.0	0	0.00	NG	
54)	2,4,6-Tribromophenol	16.08	329.9	83673	159.74	NG ✓80%	94
55)	4-Bromophenyl-phenylether	0.00	248.0	0	0.00	NG	
56)	Hexachlorobenzene	0.00	283.6	0	0.00	NG	
57)	Pentachlorophenol	0.00	266.0	0	0.00	NG	
58)	Phenanthrene	0.00	178.0	0	0.00	NG	
59)	Anthracene	0.00	178.0	0	0.00	NG	
60)	Di-n-Butyl phthalate	0.00	149.0	0	0.00	NG	
61)	Fluoranthene	0.00	202.0	0	0.00	NG	
62)	*d12-Chrysene	26.23	240.0	46061	40.00	NG	99
63)	Pyrene	0.00	202.0	0	0.00	NG	
64)	Terphenyl-d14	23.23	244.0	154697	98.51	NG ✓99%	86
65)	Butylbenzylphthalate	0.00	149.0	0	0.00	NG	
66)	3,3'-Dichlorobenzidine	0.00	252.0	0	0.00	NG	
67)	Benzo(a)Anthracene	0.00	228.0	0	0.00	NG	
68)	bis(2-Ethylhexyl)phthalate	27.08	149.0	1520	~~.95~~	~~NG~~	97
69)	Chrysene	0.00	228.0	0	0.00	NG	
70)	*d12-Perylene	30.31	264.0	30615	40.00	NG	94
71)	Di-n-Octyl phthalate	0.00	149.0	0	0.00	NG	
72)	Benzo(b)Fluoranthene	0.00	252.0	0	0.00	NG	
73)	Benzo(k)Fluoranthene	0.00	252.0	0	0.00	NG	
74)	Benzo(a)Pyrene	0.00	252.0	0	0.00	NG	
75)	Indeno(1,2,3-cd)Pyrene	0.00	276.0	0	0.00	NG	
76)	Dibenzo(a,h)Anthracene	0.00	278.0	0	0.00	NG	
77)	Benzo(g,h,i)Perylene	0.00	276.0	0	0.00	NG	

* Compound is ISTD



unknown

Retention time = 27.19

Area = 23789.00 Tentative Concentration is 730.00

Sample file: >DD001 Spectrum #: 1395

No data base entries were retrieved.

LIBRARY SEARCH SUMMARY

MS Data File:>DD001::D1 Analyst:BHADRA MS

Name:WILLOW GROVE Date/Time: 2/28/89 20:57
Misc:EA#0815,PRW-3,COMP.SOIL,SOIL,10.11G,1 WILLOW GROVE ?98BTL# 5

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	27.19	23789	12966

ORGANICS ANALYSIS DATA SHEET SAMPLE #: PRW-4 COMPOSITE #0822

LABORATORY: EA ENG.
LABORATORY ID: AA05978
MATRIX: SOIL

CASE #/SAS #: WILLOW GROVE
QC REPORT #: AA05978
CONTRACT #: 10388.03
DATE RECEIVED: 03/01/89

DATA RELEASE AUTHORIZED BY: _____

SEMIVOLATILE COMPOUNDS (PAGE 1)

LEVEL:	LOW	GPC CLEANUP	__YES ✓NO
DATE EXT/PREP:	03/01/89	SEPARATORY EXTRACTION	__YES
DATE ANALYZED:	03/14/89	CONTINUOUS EXTRACTION	✓YES
CONC/DIL FACTOR:	10.23 G -> 1 ML		
PH:	N/A		
% MOISTURE:	18.4		
% MOISTURE (DECANTED):	N/A		
STANDARD ID:	AA05968		
SENSITIVITY ID:	AA05966		

CAS #		UG/KG	
108-95-2	PHENOL	1000.	U
111-44-4	BIS(2-CHLOROETHYL)ETHER	1000.	U
95-57-8	2-CHLOROPHENOL	1000.	U
541-73-1	1,3-DICHLOROBENZENE	1000.	U
106-46-7	1,4-DICHLOROBENZENE	1000.	U
100-51-6	BENZYL ALCOHOL	1000.	U
95-50-1	1,2-DICHLOROBENZENE	1000.	U
95-48-7	2-METHYLPHENOL	1000.	U
39638-32-9	BIS(2-CHLOROISOPROPYL)ETHER	1000.	U
106-44-5	4-METHYLPHENOL	1000.	U
621-64-7	N-NITROSODIPROPYLAMINE	1000.	U
67-72-1	HEXACHLOROETHANE	1000.	U
98-95-3	NITROBENZENE	1000.	U
78-59-1	ISOPHORONE	1000.	U
88-75-5	2-NITROPHENOL	1000.	U
105-67-9	2,4-DIMETHYLPHENOL	1000.	U
65-85-0	BENZOIC ACID	6000.	U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	1000.	U
120-33-2	2,4-DICHLOROPHENOL	1000.	U
120-82-1	1,2,4-TRICHLOROBENZENE	1000.	U
91-20-3	NAPHTHALENE	1000.	U
106-47-8	4-CHLOROANILINE	1000.	U
87-68-3	HEXACHLOROBUTADIENE	1000.	U
59-50-7	4-CHLORO-3-METHYLPHENOL	1000.	U
91-57-6	2-METHYLNAPHTHALENE	1000.	U
77-47-4	HEXACHLOROCYCLOPENTADIENE	1000.	U
88-06-2	2,4,6-TRICHLOROPHENOL	1000.	U
95-95-4	2,4,5-TRICHLOROPHENOL	6000.	U
91-58-7	2-CHLORONAPHTHALENE	1000.	U
88-74-4	2-NITROANILINE	6000.	U
131-11-3	DIMETHYL PHTHALATE	1000.	U
208-96-8	ACENAPHTHYLENE	1000.	U
99-09-2	3-NITROANILINE	6000.	U
83-32-9	ACENAPHTHENE	1000.	U
51-28-5	2,4-DINITROPHENOL	6000.	U
100-02-7	4-NITROPHENOL	6000.	U
132-64-9	DIBENZOFURAN	1000.	U

FORM I

ORGANICS ANALYSIS DATA SHEET SAMPLE #: PRW-4 COMPOSITE

LABORATORY: EA ENG.
LABORATORY ID: AA05978
MATRIX: SOIL

CASE #/SAS #: WILLOW GROVE
QC REPORT #: AA05978
CONTRACT #: 10388.03
DATE RECEIVED: 03/01/89

DATA RELEASE AUTHORIZED BY: _____

SEMIVOLATILE COMPOUNDS (PAGE 2)

LEVEL:	LOW	GPC CLEANUP	__YES ✓NO
DATE EXT/PREP:	03/01/89	SEPARATORY EXTRACTION	__YES
DATE ANALYZED:	03/14/89	CONTINUOUS EXTRACTION	✓YES
CONC/DIL FACTOR:	10.23 G -> 1 ML		
PH:	N/A		
% MOISTURE:	18.4		
% MOISTURE (DECANTED):	N/A		
STANDARD ID:	AA05968		
SENSITIVITY ID:	AA05966		

CAS #		UG/KG	
121-14-2	2,4-DINITROTOLUENE	1000.	U
606-20-2	2,6-DINITROTOLUENE	1000.	U
84-66-2	DIETHYL PHTHALATE	1000.	U
7005-72-3	4-CHLOROPHENYL PHENYL ETHER	1000.	U
86-73-7	FLUORENE	1000.	U
100-01-6	4-NITROANILINE	6000.	U
534-52-1	4,6-DINITRO-2-METHYLPHENOL	6000.	U
86-30-6	N-NITROSODIPHENYLAMINE	1000.	U
101-55-3	4-BROMOPHENYL PHENYL ETHER	1000.	U
118-74-1	HEXACHLOROBENZENE	1000.	U
87-86-5	PENTACHLOROPHENOL	6000.	U
85-01-8	PHENANTHRENE	1000.	U
120-12-7	ANTHRACENE	1000.	U
84-74-2	DI-N-BUTYL PHTHALATE	170.	J B
206-44-0	FLUORANTHENE	170.	J
129-00-0	PYRENE	170.	J
85-68-7	BUTYL BENZYL PHTHALATE	1000.	U
91-94-1	3,3'-DICHLOROBENZIDINE	2000.	U
56-55-3	BENZO(A)ANTHRACENE	1000.	U
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	150.	J
218-01-9	CHRYSENE	160.	J
117-84-0	DI-N-OCTYL PHTHALATE	1000.	U
205-99-2	BENZO(B)FLUORANTHENE	1000.	U
207-08-9	BENZO(K)FLUORANTHENE	1000.	U
50-32-8	BENZO(A)PYRENE	1000.	U
193-39-5	INDENO(1,2,3-CD)PYRENE	1000.	U
53-70-3	DIBENZO(A,H)ANTHRACENE	1000.	U
191-24-2	BENZO(GHI)PERYLENE	1000.	U

RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

FORM I

Laboratory Name: EA Laboratories

Case No: Willow Grove

Sample Number
PRW-4 Composite

EA # 0822

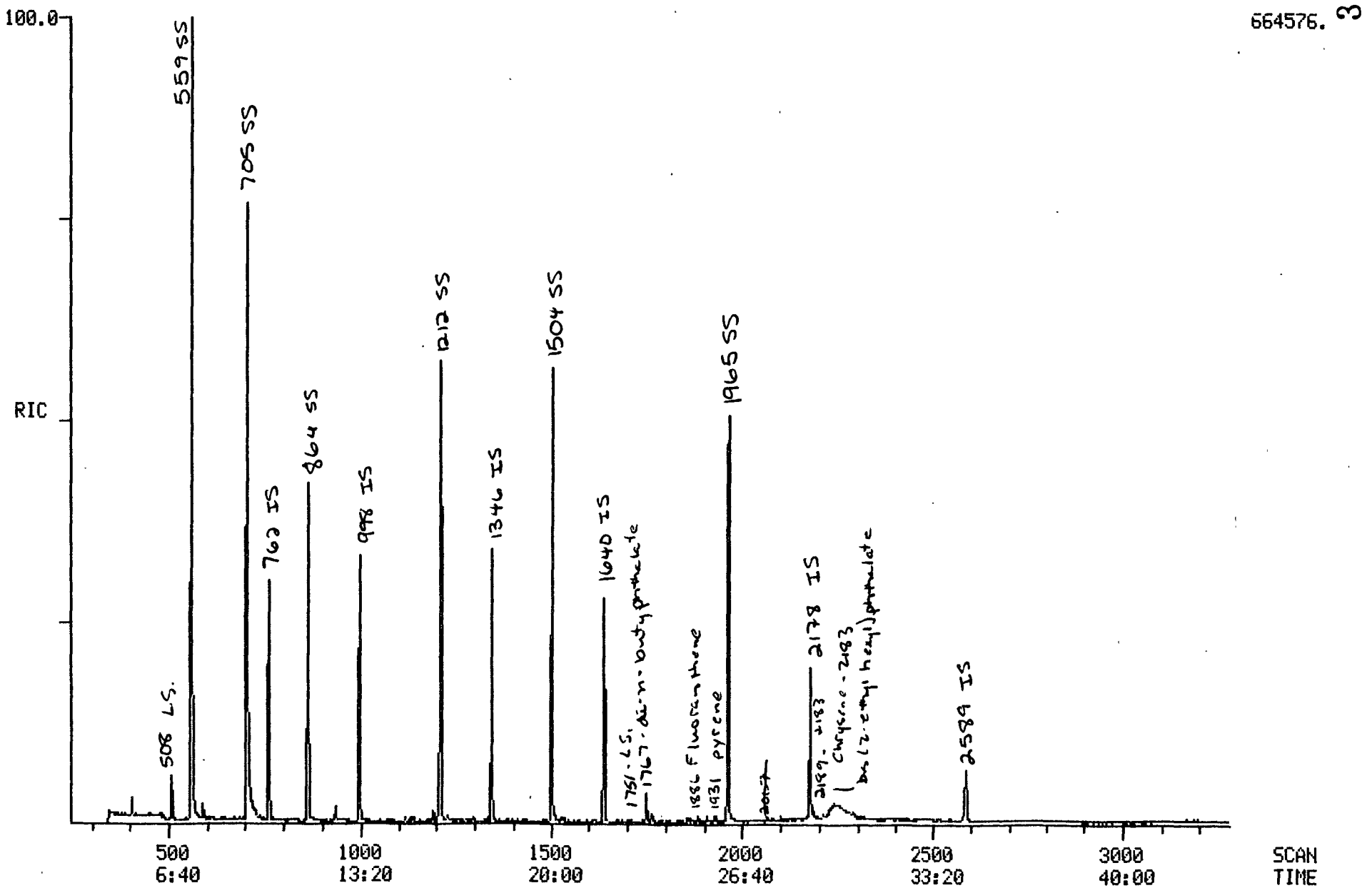
Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	unknown	BNA	508	730 J,B
2.	unknown	↓	1751	493 J
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

RIC DATA: AA05978 #1 SCANS 240 TO 3275
03/14/89 0:04:00 CALI: AA05978 #4
SAMPLE: BNA SOIL PRW-4 COMPOSITE WILLOW GROVE EA#0822 <97.75>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
RANGE: G 1,3275 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

161



3

Quantitation R port File: AA05978

Total Residue = 81.6 %

Percent moisture = 18.4 %

Data: AA05978.TI
03/14/89 0:04:00
Sample: BNA SOIL PRW-4 COMPOSITE WILLOW GROVE EA#0822 <97.75>
Conds.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
Standard ID: AA05968 Instrument: MS2
Sensitivity ID: AA05966 Analyst: JEH - EA Inst Cali: 03/13/89

AMOUNT=AREA * REF AMNT/(REF AREA * RESP FACT)
Resp. fac. from Library Entry

NO	NAME	
1	IS1**	1,4-DICHLOROBENZENE-D4
2	IS2**	NAPHTHALENE-D8
3	IS3**	ACENAPHTHENE-D10
4	IS4**	PHENANTHRENE-D10
5	IS5**	CHRYSENE-D12
6	IS6**	PERYLENE-D12
7	65A	PHENOL
8	18B	BIS (2-CHLOROETHYL) ETHER
9	24A	2-CHLOROPHENOL
10	26B	1,3-DICHLOROBENZENE
11	27B	1,4-DICHLOROBENZENE
12	6H	BENZYL ALCOHOL
13	25B	1,2-DICHLOROBENZENE
14	2H	2-METHYLPHENOL
15	42B	BIS (2-CHLOROISOPROPYL) ETHER
16	3H	4-METHYLPHENOL
17	63B	N-NITROSO-DI-N-PROPYLAMINE
18	12B	HEXACHLOROETHANE
19	56B	NITROBENZENE
20	54B	ISOPHORONE
21	57A	2-NITROPHENOL
22	34A	2,4-DIMETHYLPHENOL
23	1H	BENZOIC ACID
24	43B	BIS (2-CHLOROETHOXY) METHANE
25	31A	2,4-DICHLOROPHENOL
26	8B	1,2,4-TRICHLOROBENZENE
27	55B	NAPHTHALENE
28	7H	4-CHLOROANILINE
29	52B	HEXACHLOROBUTADIENE
30	22A	4-CHLORO-3-METHYLPHENOL
31	9H	2-METHYLNAPHTHALENE
32	53B	HEXACHLOROCYCLOPENTADIENE
33	21A	2,4,6-TRICHLOROPHENOL
34	4H	2,4,5-TRICHLOROPHENOL
35	20B	2-CHLORONAPHTHALENE
36	10H	2-NITROANILINE
37	71B	DIMETHYLPHTHALATE
38	77B	ACENAPHTHYLENE
39	11H	3-NITROANILINE
40	1B	ACENAPHTHENE
41	59A	2,4-DINITROPHENOL
42	58A	4-NITROPHENOL
43	8H	DIBENZOFURAN
44	36B	2,6-DINITROTOLUENE
45	35B	2,4-DINITROTOLUENE
46	70B	DIETHYLPHTHALATE
47	40B	4-CHLOROPHENYLPHENYL ETHER
48	80B	FLUORENE
49	12H	4-NITROANILINE
50	60A	4,6-DINITRO-O-CRESOL

AA05978

No	m/z	Scan	Tim	R f	RRT	M th	Area(Hght)	Amount	%Tot
1	152	762	10:10	1	1.000	A BB	104128.	40.000 PPM	16.50
2	136	998	13:18	2	1.000	A VV	354975.	40.000 PPM	16.50
3	164	1346	17:57	3	1.000	A BB	134658.	40.000 PPM	16.50
4	188	1640	21:52	4	1.000	A BV	201866.	40.000 PPM	16.50
5	240	2178	29:02	5	1.000	A BV	121258.	40.000 PPM	16.50
6	264	2589	34:31	6	1.000	A BV	110024.	40.000 PPM	16.50
7	NOT FOUND								
8	NOT FOUND								
9	NOT FOUND								
10	NOT FOUND								
11	NOT FOUND								
12	NOT FOUND								
13	NOT FOUND								
14	NOT FOUND								
15	NOT FOUND								
16	NOT FOUND								
17	NOT FOUND								
18	NOT FOUND								
19	123	853	11:22	2	0.855	A BB	135.	~~0.093 PPM~~	0.04
20	NOT FOUND								
21	NOT FOUND								
22	NOT FOUND								
23	NOT FOUND								
24	NOT FOUND								
25	NOT FOUND								
26	NOT FOUND								
27	128	1001	13:21	2	1.003	A BB	4429.	~~0.581 PPM~~	0.24
28	127	1001	13:21	2	1.003	A BB	641.	~~0.282 PPM~~	0.12
29	NOT FOUND								
30	NOT FOUND								
31	141	1136	15:09	2	1.138	A BB	2698.	~~0.704 PPM~~	0.29
32	NOT FOUND								
33	NOT FOUND								
34	NOT FOUND								
35	NOT FOUND								
36	NOT FOUND								
37	163	1296	17:17	3	0.963	A BB	430.	~~0.095 PPM~~	0.04
38	NOT FOUND								
39	NOT FOUND								
40	NOT FOUND								
41	NOT FOUND								
42	NOT FOUND								
43	168	1382	18:26	3	1.027	A BB	1486.	~~0.274 PPM~~	0.11
44	NOT FOUND								
45	NOT FOUND								
46	149	1440	19:12	3	1.070	A BB	1317.	~~0.256 PPM~~	0.11
47	NOT FOUND								
48	166	1453	19:22	3	1.079	A BB	443.	0.109 PPM	0.05
49	NOT FOUND								
50	NOT FOUND								

Quantitation Report File: AA05978

Data: AA05978.TI
03/14/89 0:04:00
Sample: BNA SOIL PRW-4 COMPOSITE WILLOW GROVE EA#0822 <97.75>
Conds.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
Standard ID: AA05968 Instrument: MS2
Sensitivity ID: AA05966 Analyst: JEH - EA Inst Cali: 03/13/89

AMOUNT=AREA * REF AMNT/(REF AREA * RESP FACT)
Resp. fac. from Library Entry

NO	NAME	
51	62B	N-NITROSODIPHENYLAMINE
52	41B	4-BROMOPHENYLPHENYL ETHER
53	9B	HEXACHLOROBENZENE
54	64A	PENTACHLOROPHENOL
55	81B	PHENANTHRENE
56	78B	ANTHRACENE
57	68B	DI-N-BUTYLPHTHALATE
58	39B	FLUORANTHENE
59	84B	PYRENE
60	67B	BUTYLBENZYLPHTHALATE
61	28B	3,3'-DICHLOROBENZIDINE
NC ~~62~~	72B	BENZO (A) ANTHRACENE
63	66B	BIS (2-ETHYLHEXYL) PHTHALATE
64	76B	CHRYSENE
65	69B	DI-N-OCTYLPHTHALATE
66	74B	BENZO(B)FLUORANTHENE
67	75B	BENZO(K)FLUORANTHENE
68	73B	BENZO (A) PYRENE
69	83B	INDENO-1,2,3 (C,D) PYRENE
70	82B	DIBENZO (A,H) ANTHRACENE
71	79B	BENZO (G,H,I) PERYLENE
72	SS1*	PHENOL-D5
73	SS2*	2-FLUOROPHENOL
74	SS3*	NITROBENZENE-D5
75	SS4*	2-FLUOROBIPHENYL
76	SS5*	2,4,6-TRIBROMOPHENOL
77	SS6*	TERPHENYL-D14
78	61B	N-NITROSO-DIMETHYLAMINE
79	5B	BENZIDINE
80	ANI	ANILINE

AA05978

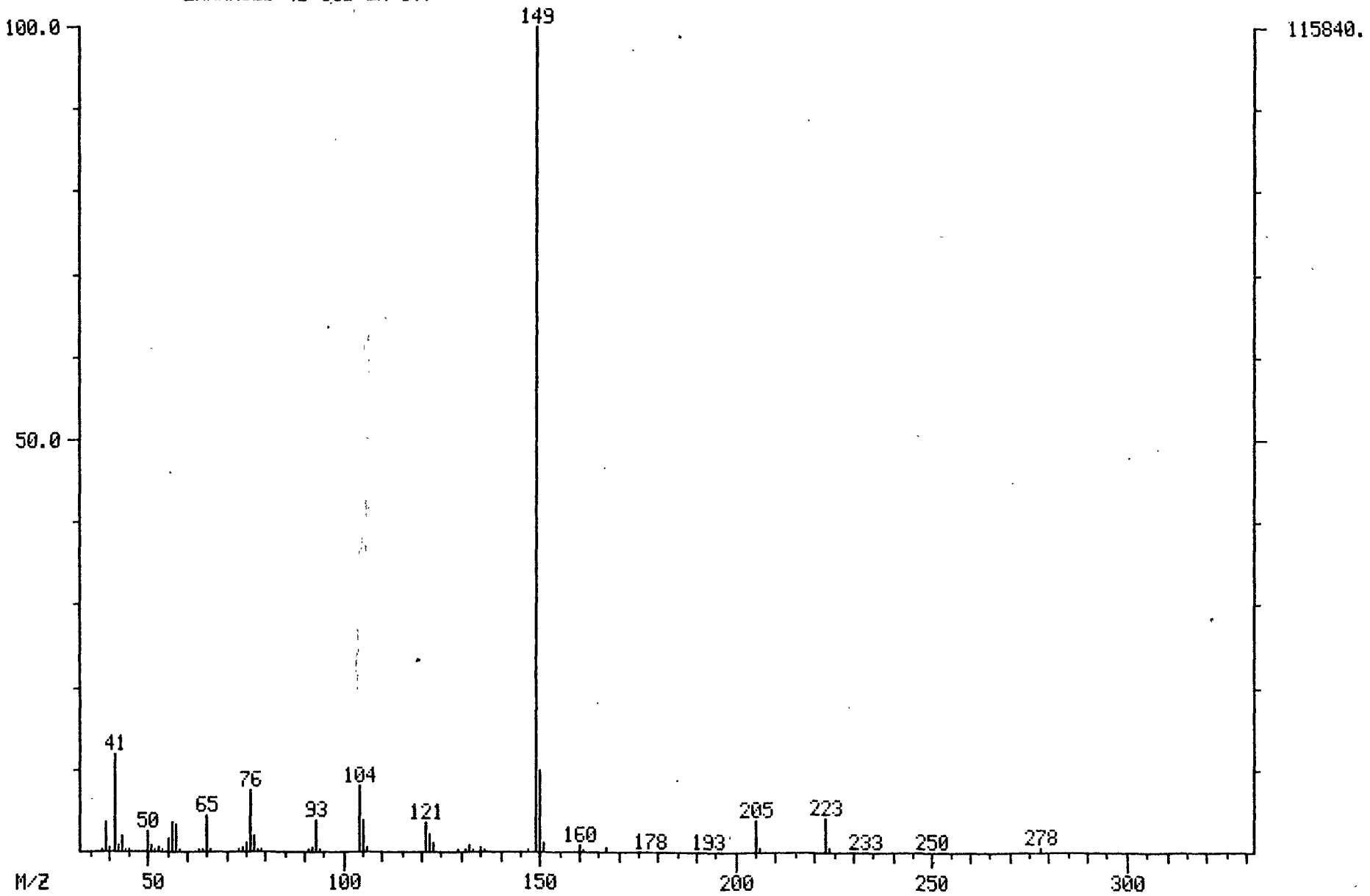
No	m/z	Scan	Time	R f	RRT	M th	Ar a(Hght)	Amount	%Tot	
51	169	1476	19:41	4	0.900	A BV	2014.	~~1.037 PPM~~	0.12	
52	NOT FOUND									
53	NOT FOUND									
54	NOT FOUND									
55	178	1653	22:02	4	1.008	A VB	827.	~~0.162 PPM~~	0.02	
56	NOT FOUND									
57	149	1767	23:34	4	1.077	A BB	10349.	B 1.414 PPM	0.16	
58	202	1886	25:09	4	1.150	A BV	7800.	1.386 PPM	0.16	
59	202	1931	25:45	5	0.887	A BV	6721.	1.423 PPM	0.16	
60	149	2067	27:34	5	0.949	A BB	1289.	~~0.427 PPM~~	0.05	
61	NOT FOUND									
~~62~~	228	2183	29:06	5	1.002	A VV	4414.	~~1.281 PPM~~	0.15	
63	149	2189	29:11	5	1.005	A BV	5413.	1.250 PPM	0.14	
64	228	2183	29:06	5	1.002	A VV	4414.	T 1.379 PPM	0.16	
65	149	2336	31:09	6	0.902	A BB	1522.	~~0.251 PPM~~	0.03	
66	252	2457	32:46	6	0.949	A BB	3494.	~~1.054 PPM~~	0.12	
67	NOT FOUND									
68	NOT FOUND									
69	NOT FOUND									
70	278	3086	41:09	6	1.192	A BB	339.	~~0.170 PPM~~	0.02	
71	NOT FOUND									
72	99	705	9:24	1	0.925	A BB	655326.	260.716 PPM	29.83	130*
73	112	559	7:27	1	0.734	A BV	528650.	199.535 PPM	22.83	100
74	82	864	11:31	2	0.866	A BV	322924.	90.092 PPM	10.31	90
75	172	1212	16:10	3	0.900	A BB	415845.	86.090 PPM	9.85	86
76	330	1504	20:03	3	1.117	A BB	86641.	136.669 PPM	15.64	68
77	244	1965	26:12	5	0.902	A BB	344290.	89.573 PPM	10.25	90
78	NOT FOUND									
79	NOT FOUND									
80	NOT FOUND									

MASS SPECTRUM
03/13/89 14:40:00 + 23:32
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 248 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05968 #1765
CALI: AA05968 #4

BASE M/Z: 149
RIC: 232960.

3 166

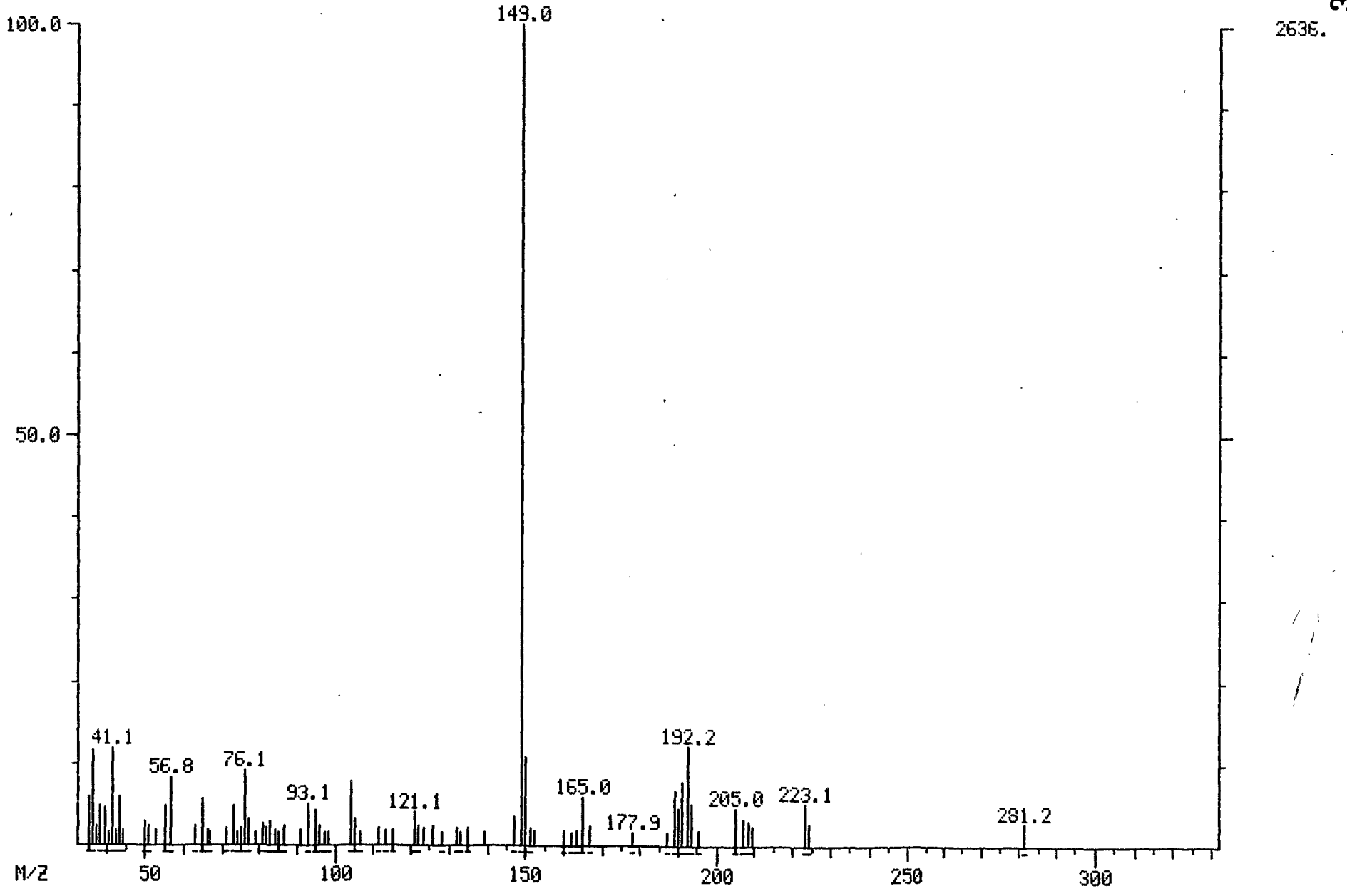


MASS SPECTRUM
03/14/89 0:04:00 + 23:34
SAMPLE: BNA SOIL PRW-4 COMPOSITE WILLOW GROVE EA#0822 <97.75>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 248 DEG. C

DATA: AA05978 #1767
CALI: AA05978 #4

BASE M/Z: 149
RIC: 9968.

3 167

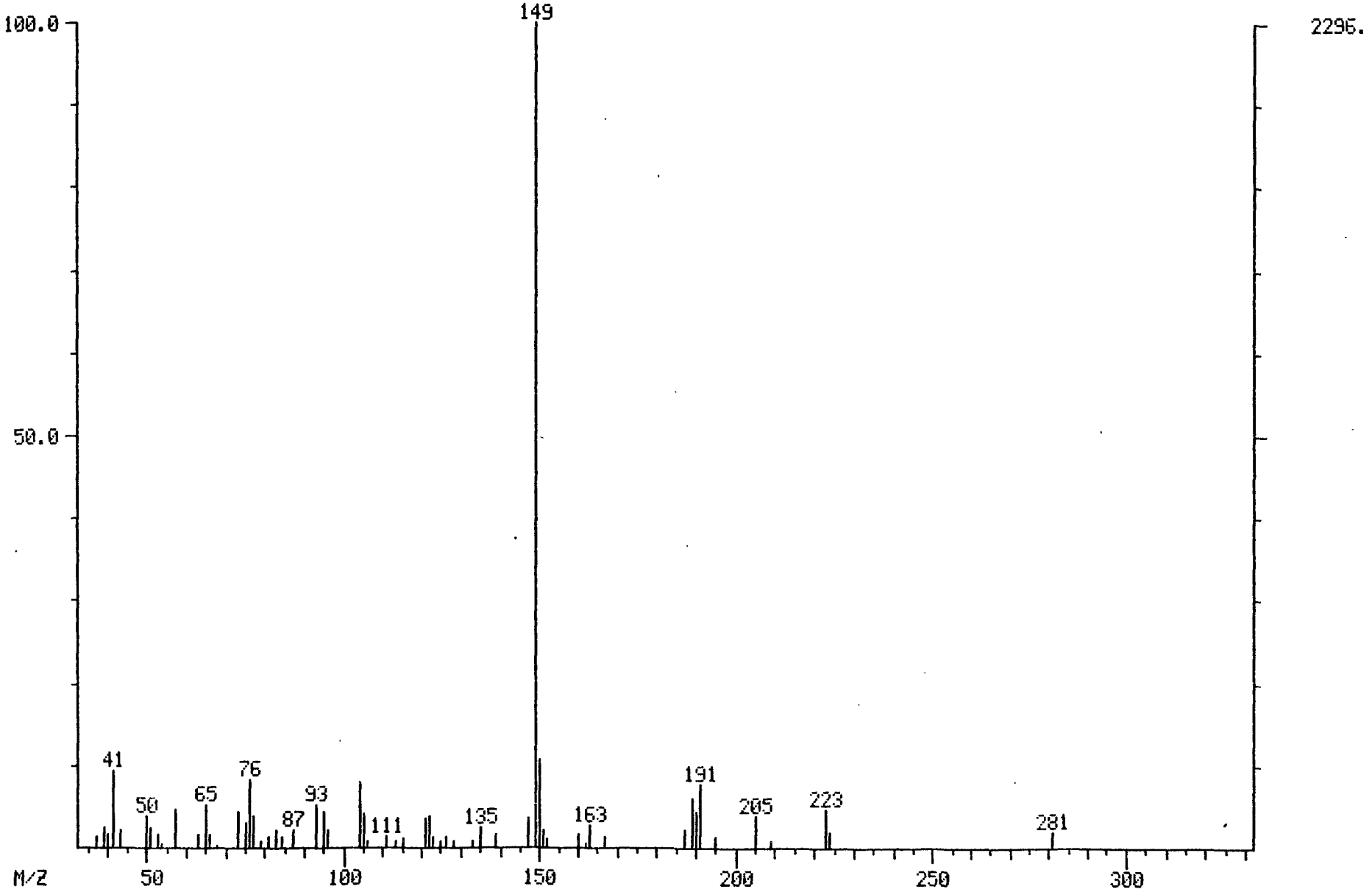


MASS SPECTRUM
03/14/89 0:04:00 + 23:34
SAMPLE: BNA SOIL PRW-4 COMPOSITE WILLOW GROVE EA#0822 <97.75>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 248 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05978 #1767
CALI: AA05978 #4

BASE M/Z: 149
RIC: 6248.

3 168

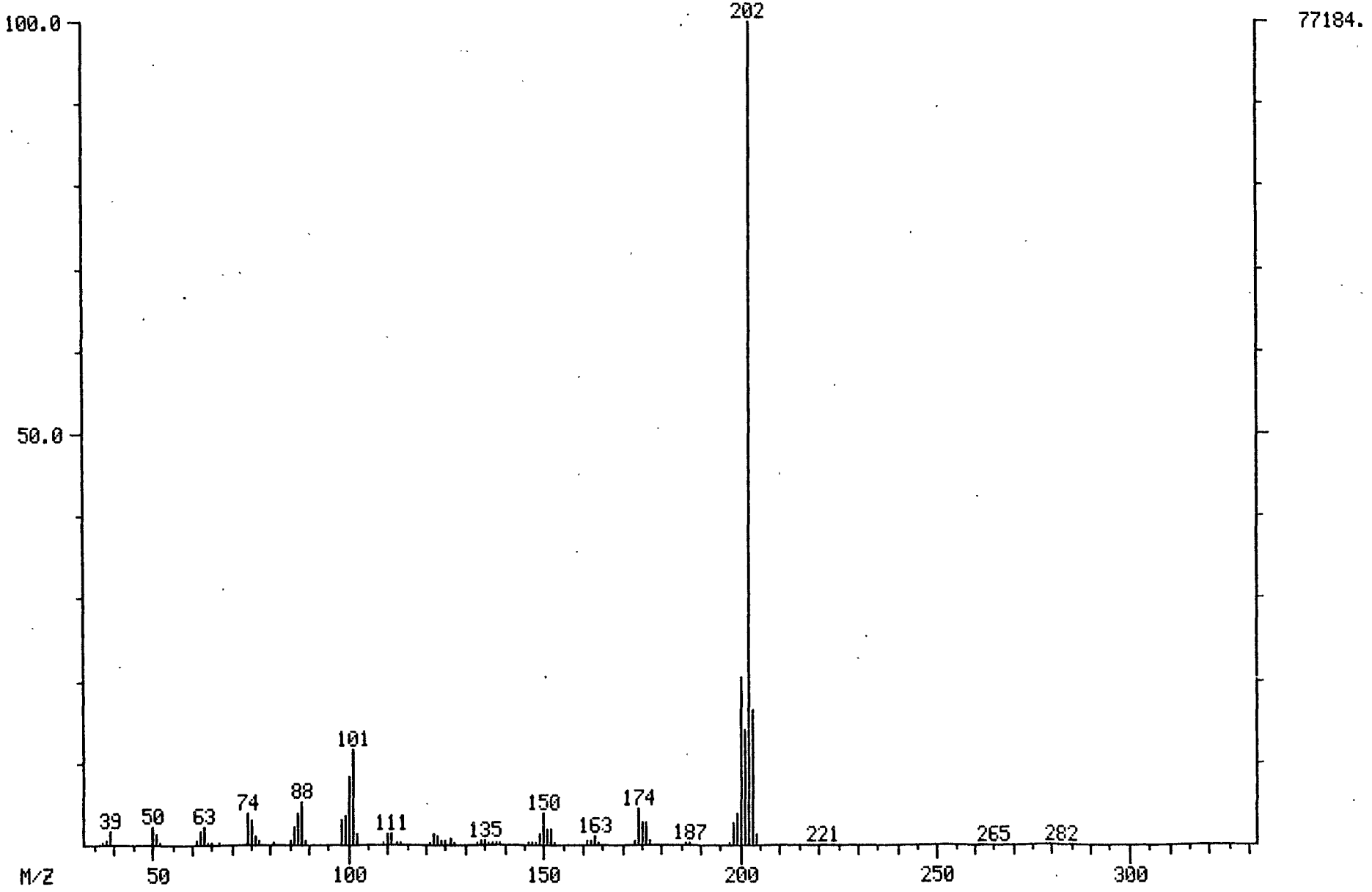


MASS SPECTRUM
03/13/89 14:40:00 + 25:08
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 264 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05968 #1885
CALI: AA05968 #4

BASE M/Z: 202
RIC: 197120.

3 169

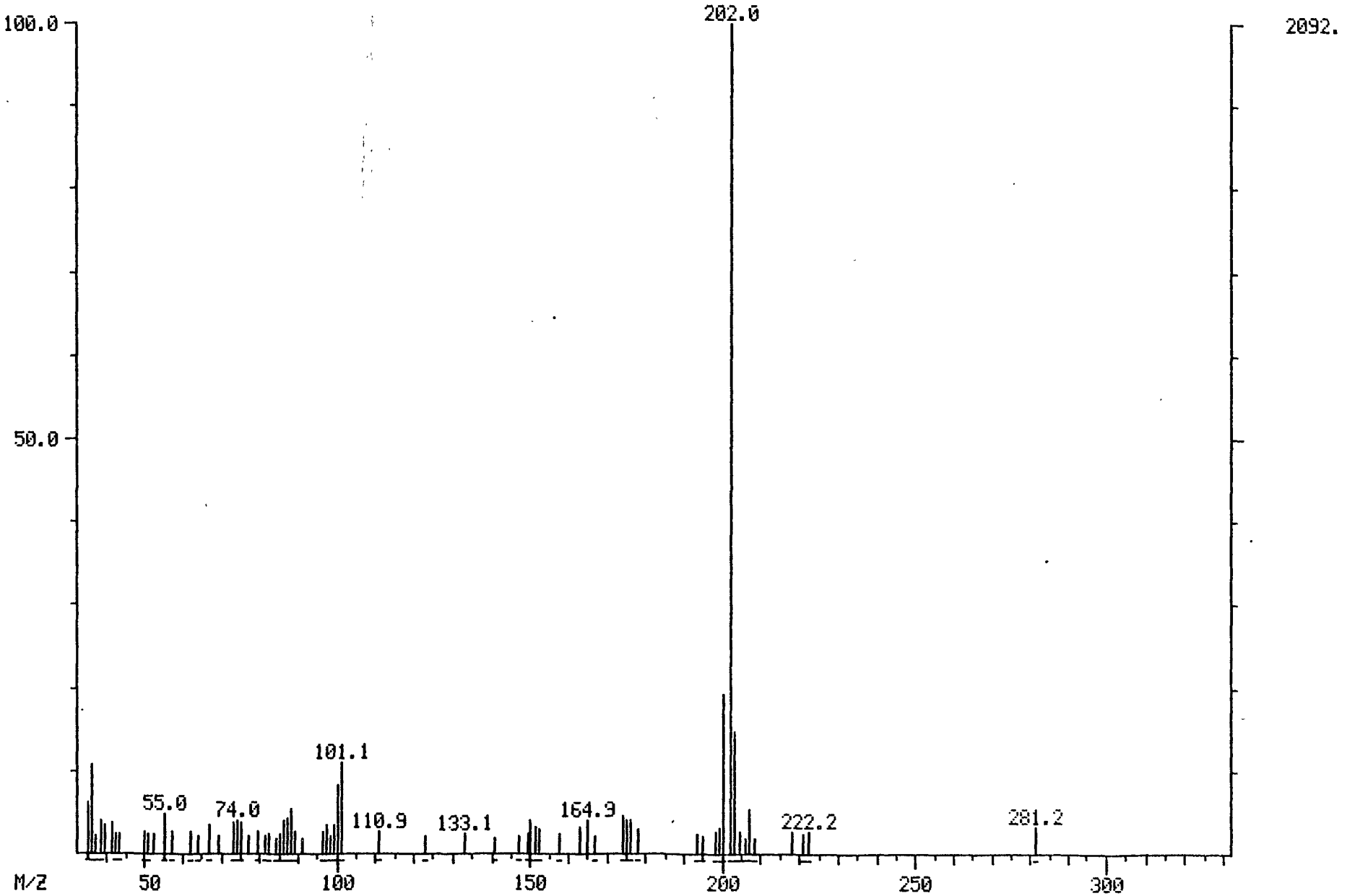


MASS SPECTRUM
03/14/89 0:04:00 + 25:09
SAMPLE: BNA SOIL PRW-4 COMPOSITE WILLOW GROVE EA#0822 <97.75>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 264 DEG. C

DATA: AA05978 #1886
CALI: AA05978 #4

BASE M/Z: 202
RIC: 7440.

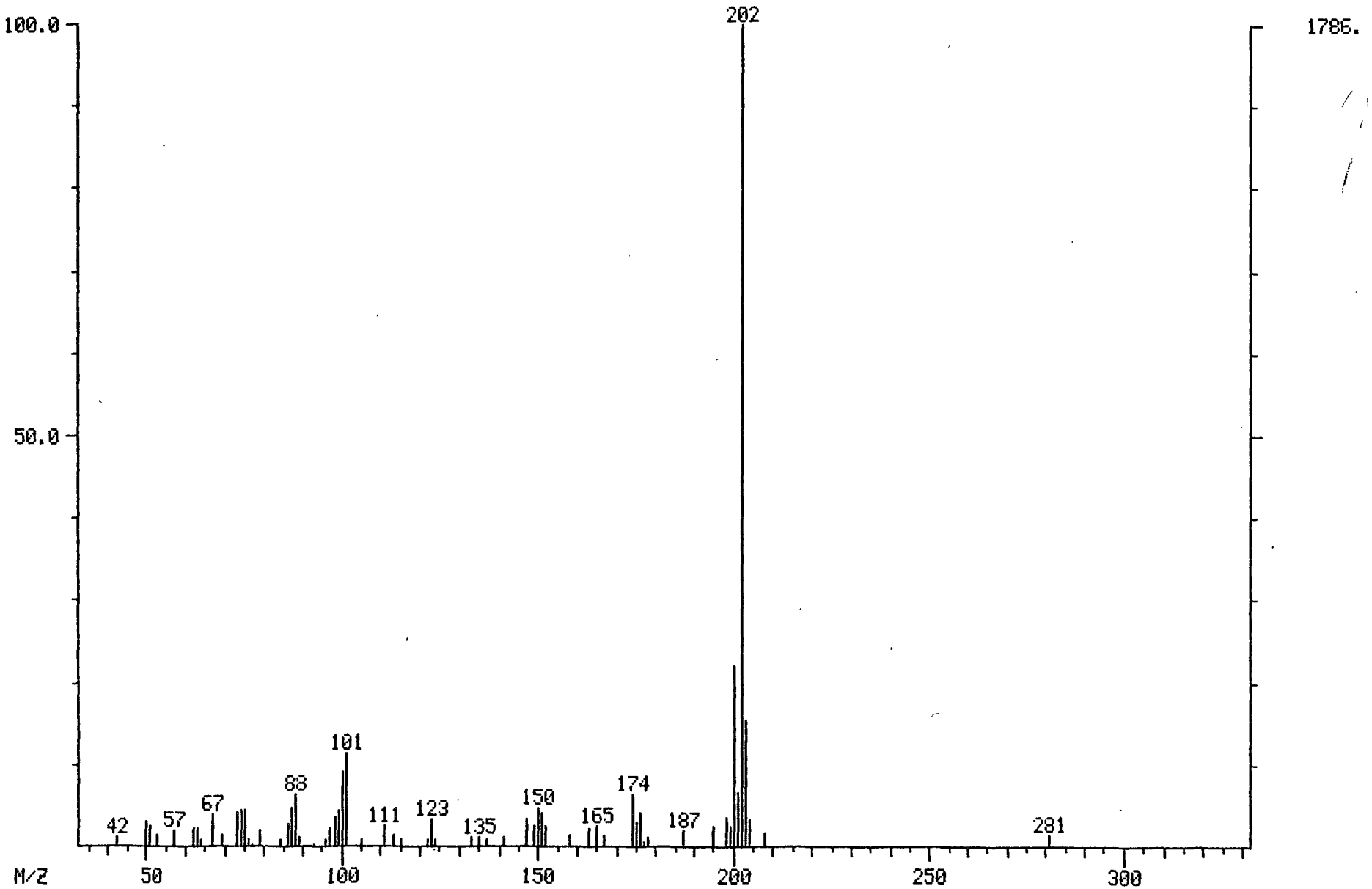
3 1-0



MASS SPECTRUM
03/14/89 0:04:00 + 25:09
SAMPLE: BNA SOIL PRW-4 COMPOSITE WILLOW GROVE EA#0822 <97.75>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 264 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05978 #1886
CALI: AA05978 #4

BASE M/Z: 202
RIC: 5368.

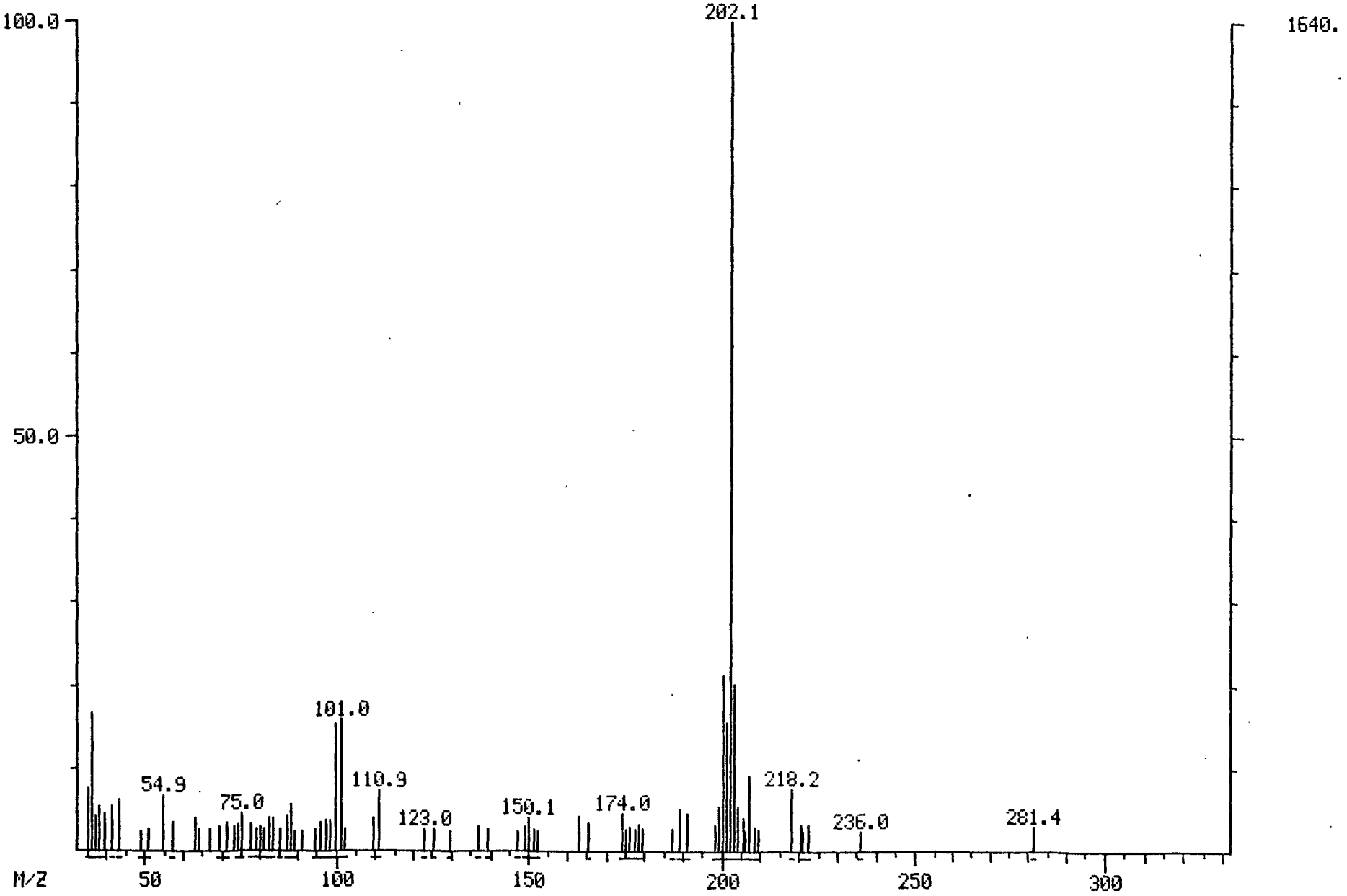


MASS SPECTRUM
03/14/89 0:04:00 + 25:45
SAMPLE: BNA SOIL PRW-4 COMPOSITE WILLOW GROVE EA#0822 <97.75>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 270 DEG. C

DATA: AA05978 #1931
CALI: AA05978 #4

BASE M/Z: 202
RIC: 7720.

3 172

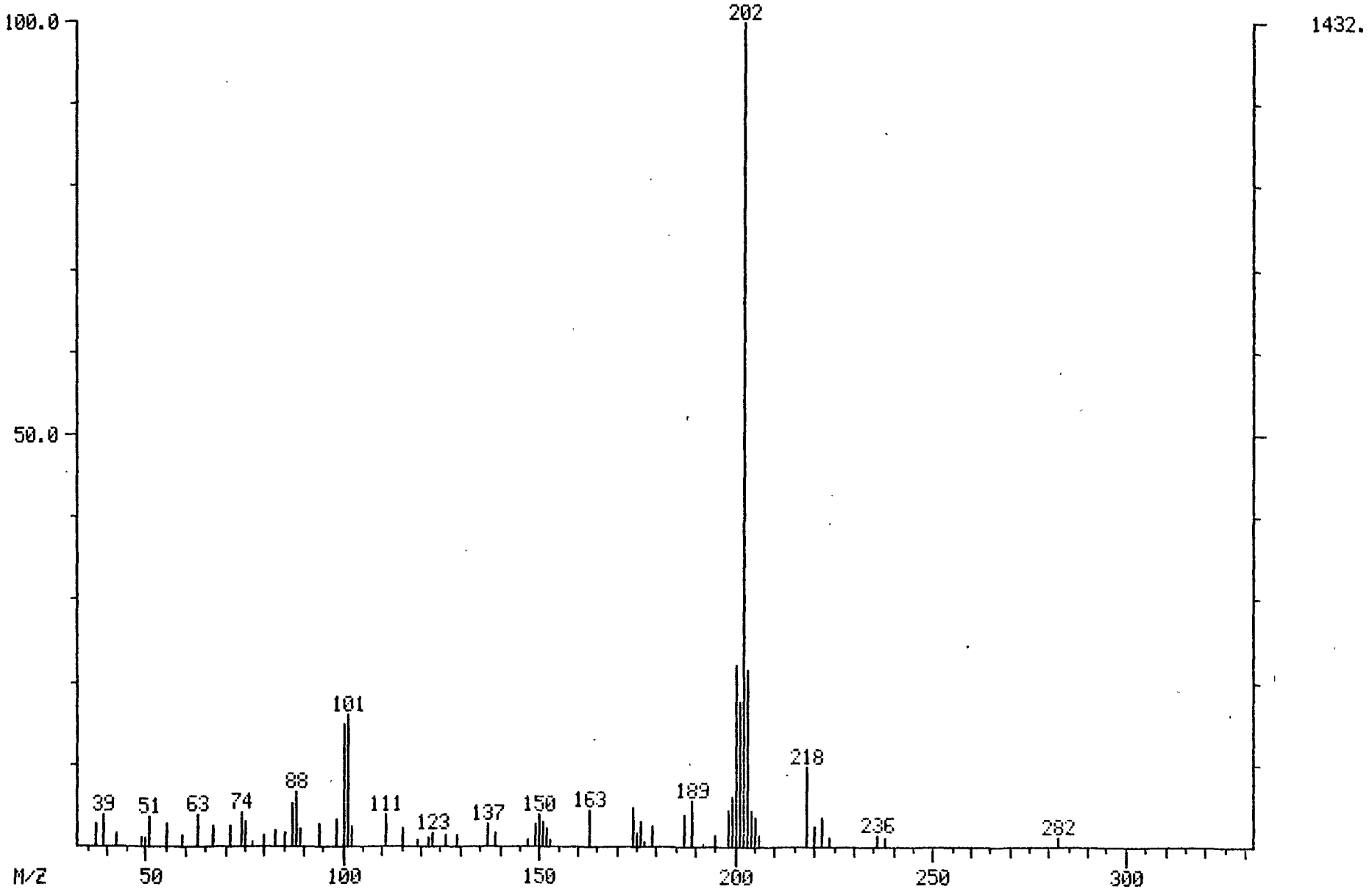


MASS SPECTRUM
03/14/89 0:04:00 + 25:45
SAMPLE: BNA SOIL PRW-4 COMPOSITE WILLOW GROVE EA#0822 <97.75>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 270 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05978 #1931
CALI: AA05978 #4

BASE M/Z: 202
RIC: 5080.

3 173

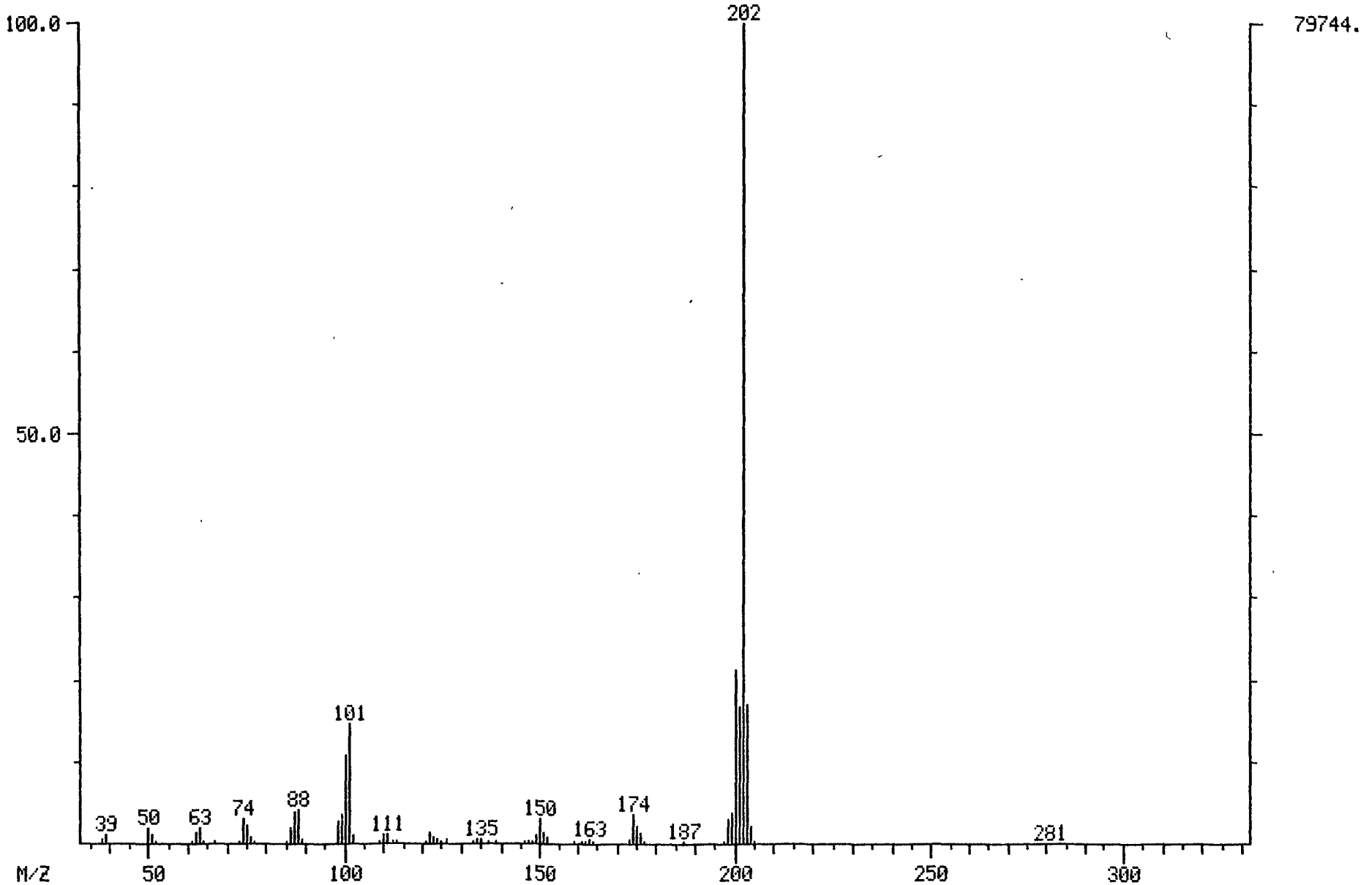


MASS SPECTRUM
03/13/89 14:40:00 + 25:45
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 270 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05968 #1931
CALI: AA05968 #4

BASE M/Z: 202
RIC: 201728.

3 174

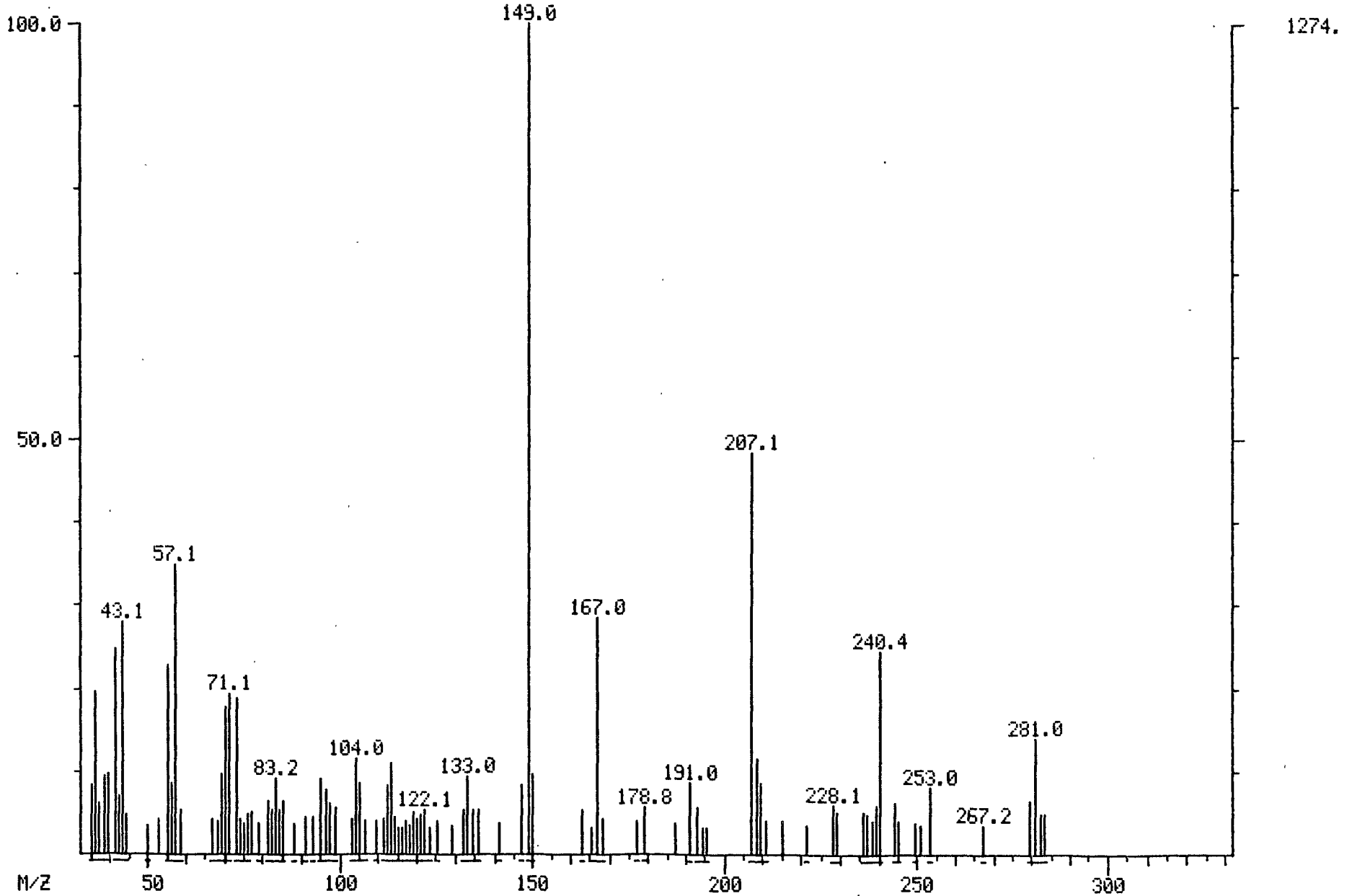


MASS SPECTRUM
03/14/89 0:04:00 + 29:11
SAMPLE: BNA SOIL PRW-4 COMPOSITE WILLOW GROVE EA#0822 <97.75>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 303 DEG. C

DATA: AA05978 #2189
CALI: AA05978 #4

BASE M/Z: 149
RIC: 11424.

3 175

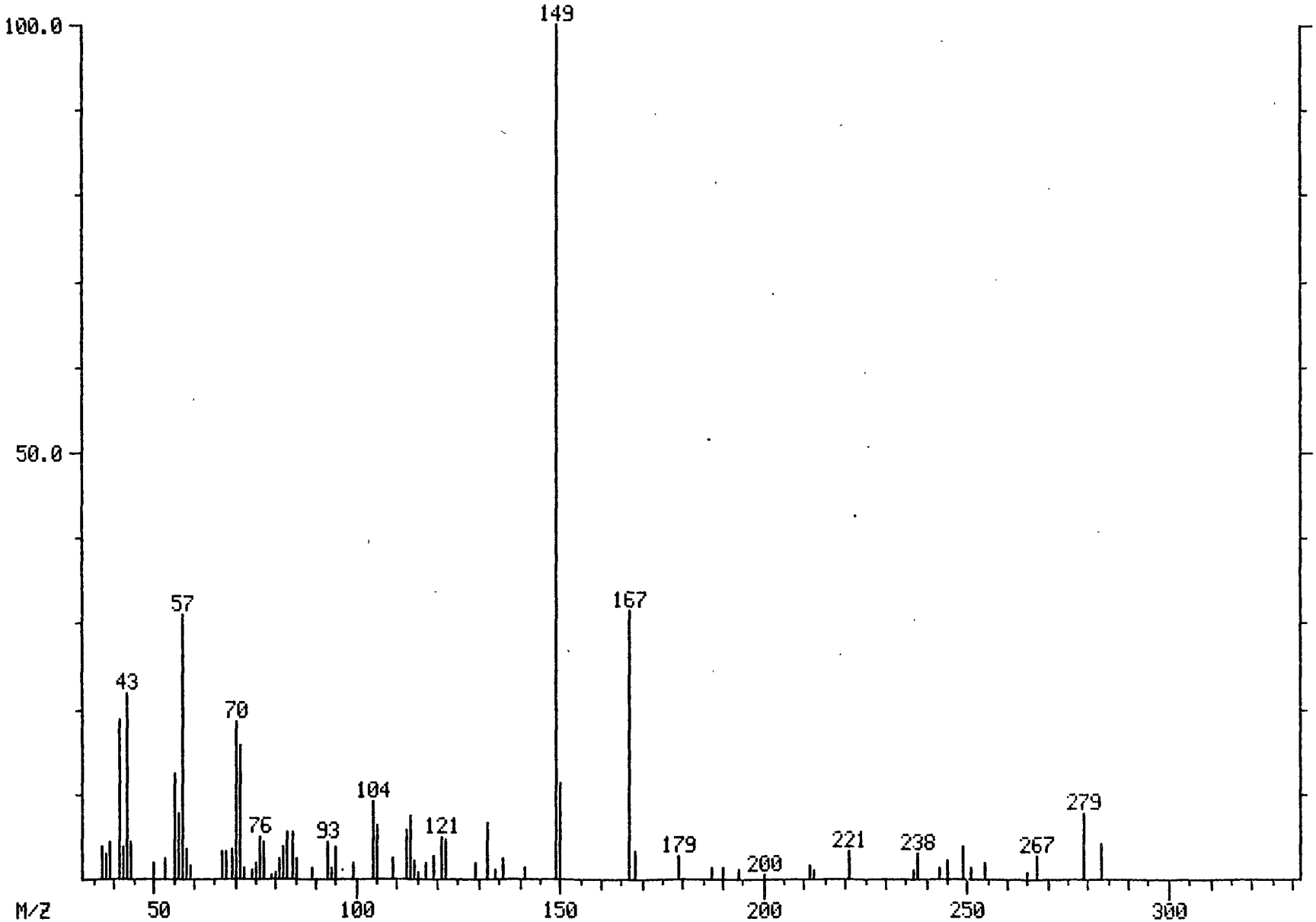


MASS SPECTRUM
03/14/89 0:04:00 + 29:11
SAMPLE: BNA SOIL PRW-4 COMPOSITE WILLOW GROVE EA#0822 <97.75>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 303 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05978 #2189
CALI: AA05978 #4

BASE M/Z: 149
RIC: 5272.

3 17C

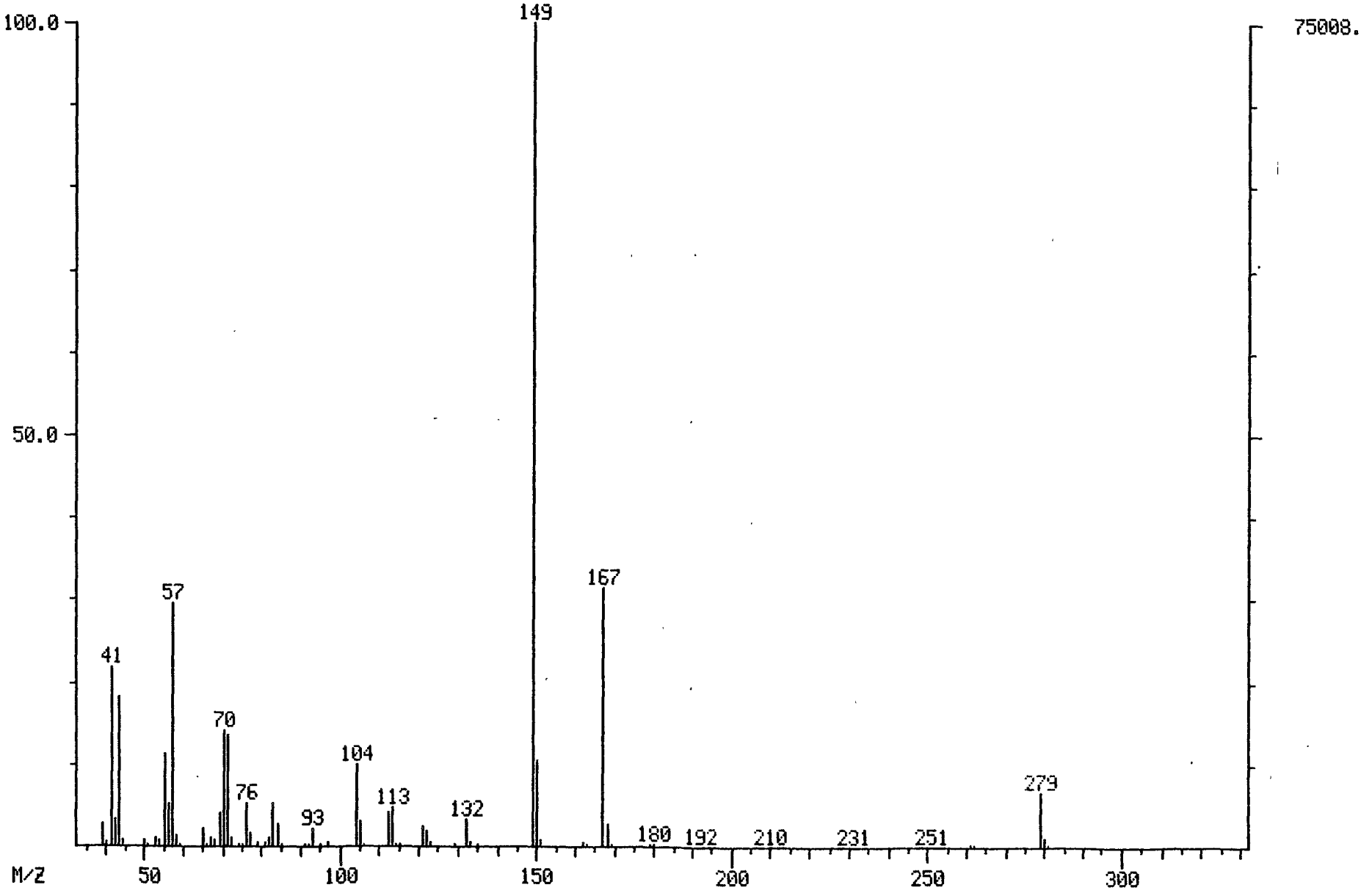


MASS SPECTRUM
03/13/89 14:40:00 + 29:11
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 303 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05968 #2189
CALI: AA05968 #4

BASE M/Z: 149
RIC: 257792.

3 17

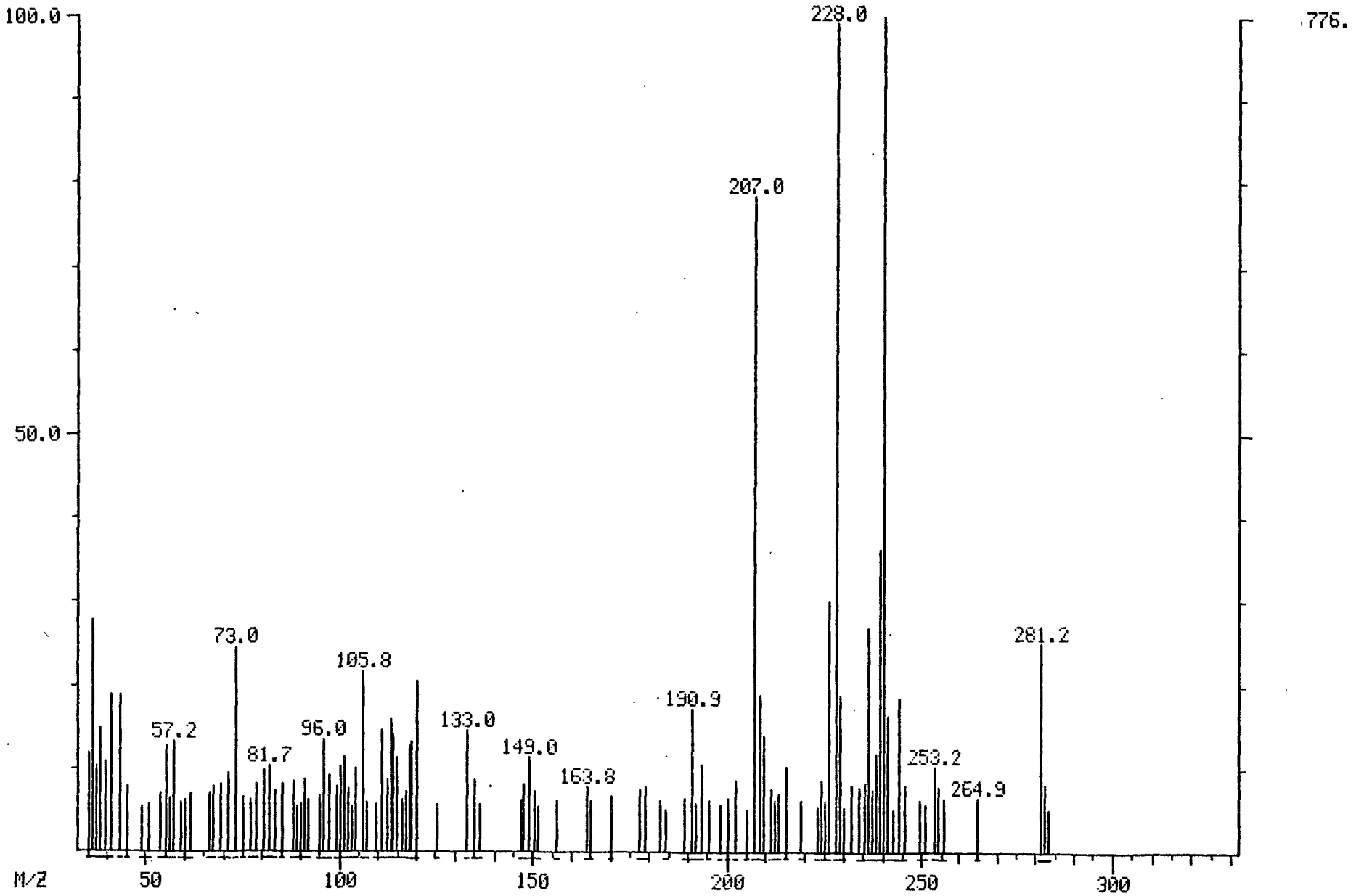


MASS SPECTRUM
03/14/89 0:04:00 + 29:06
SAMPLE: BNA SOIL PRW-4 COMPOSITE WILLOW GROVE EA#0822 <97.75>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 302 DEG. C

DATA: AA05978 #2183
CALI: AA05978 #4

BASE M/Z: 240
RIC: 11232.

3 178

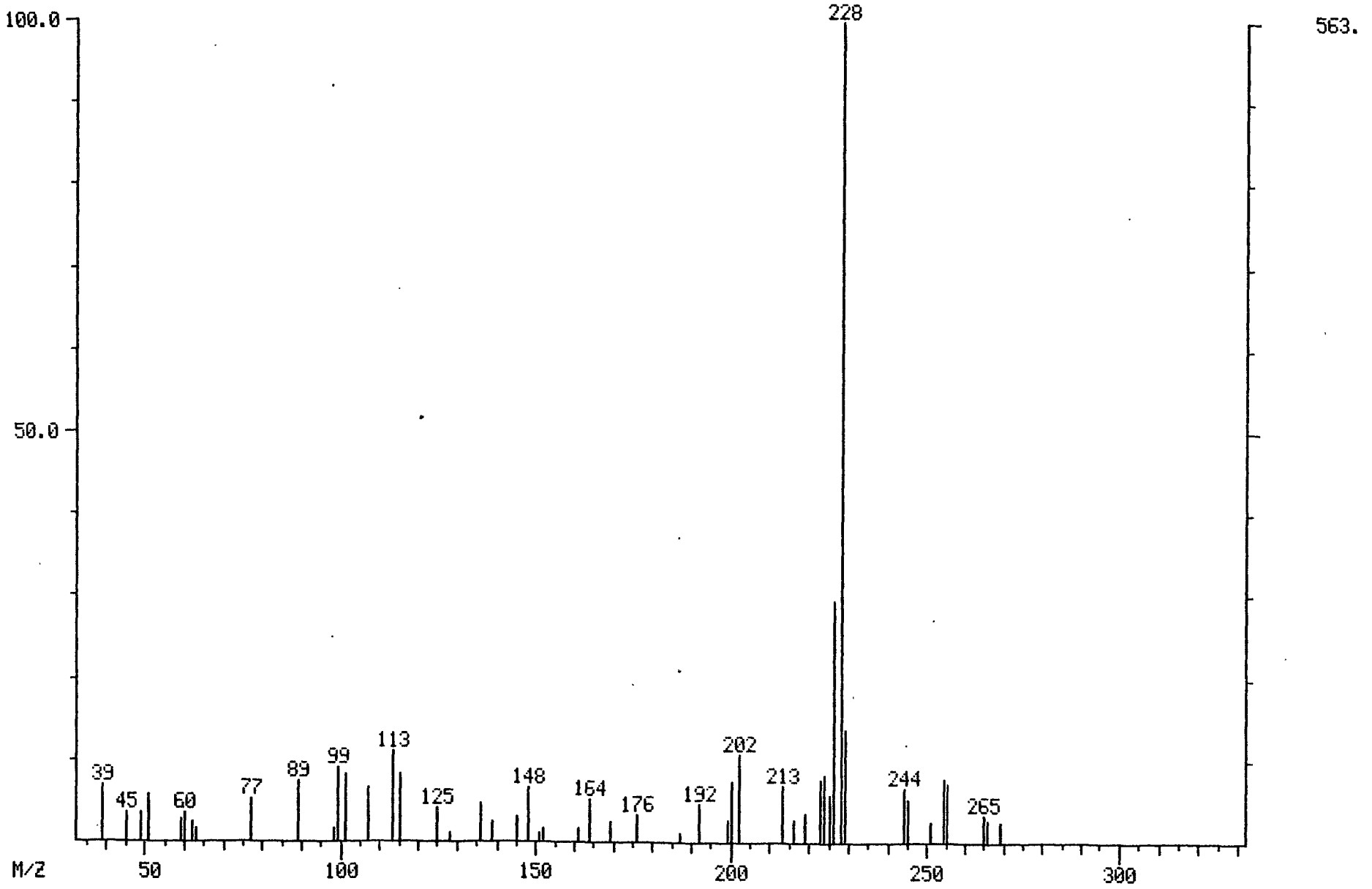


MASS SPECTRUM
03/14/89 0:04:00 + 29:06
SAMPLE: BNA SOIL PRW-4 COMPOSITE WILLOW GROVE EA#0822 <97.75>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 302 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05978 #2183
CALI: AA05978 #4

BASE M/Z: 228
RIC: 2124.

3 179

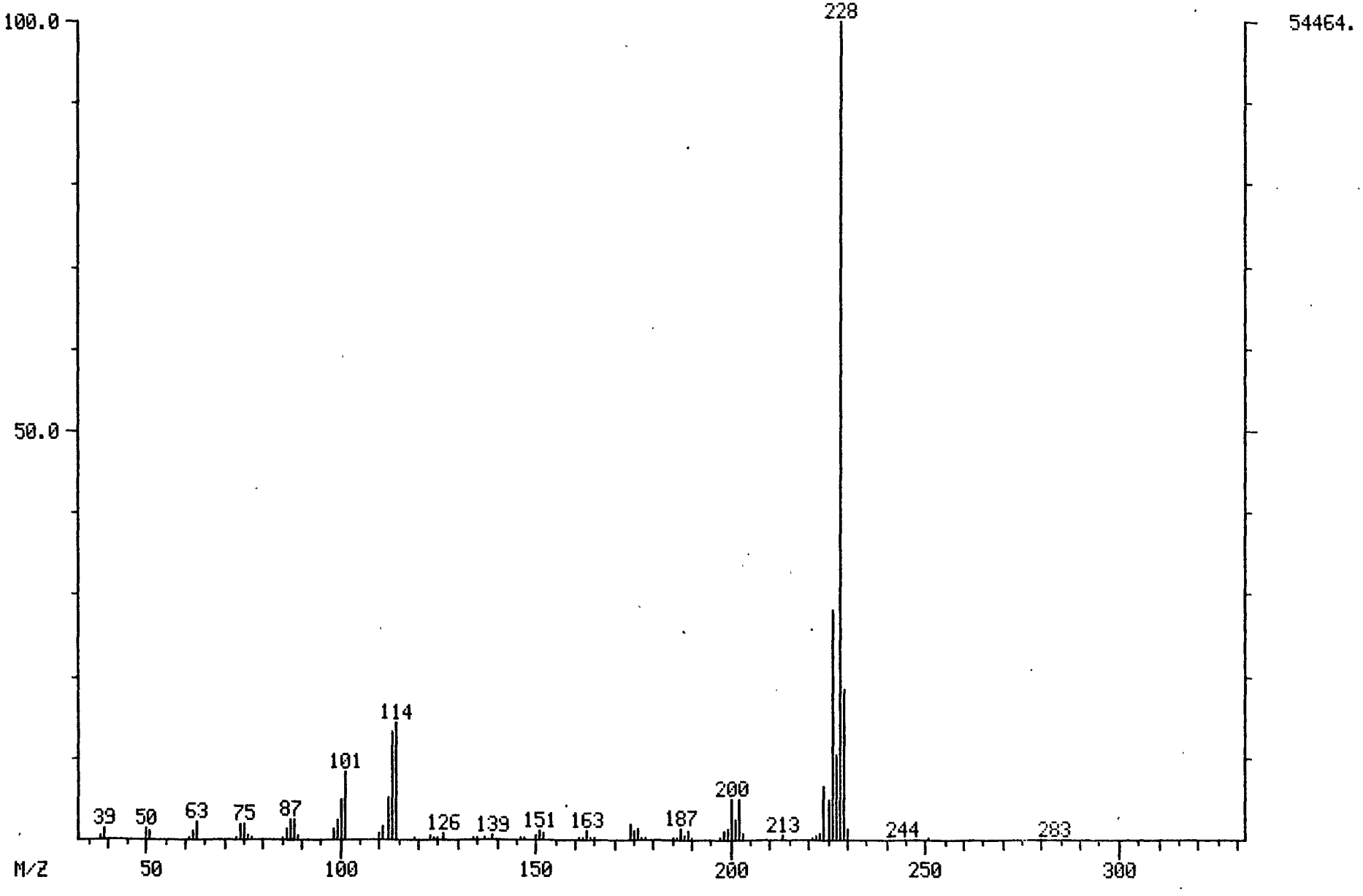


MASS SPECTRUM
03/13/89 14:40:00 + 29:07
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 302 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05968 #2184
CALI: AA05968 #4

BASE M/Z: 228
RIC: 151552.

3 180



Library Search Data: AA05978 # 508 Base m/z: 43
03/14/89 0:04:00 + 6:46 Cali: AA05978 # 4 RIC: 30015.
Sample: BNA SOIL PRW-4 COMPOSITE WILLOW GROVE EA#0822 <97.75>
Conds.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
Enhanced (S 15B 2N OT)

38761 spectra in LIBRARYNB searched for maximum FIT
84 matched at least 7 of the 16 largest peaks in the unknown

Rank	In.	Name
1	1038	2-PROPYN-1-OL, ACETATE
2	792	HYDROPEROXIDE, 1,1-DIMETHYLETHYL
3	1082	2-PROPANONE, 1-CYCLOPROPYL-
4	94	PROPANE, 2-METHYL-
5	1105	CYCLOBUTANONE, 2,3-DIMETHYL-

IS Scan - 762
RIC - 197632

Rank	Formula	M.Wt	B.Pk	Purity	Fit	RFit
1	C5.H6.O2	98	43	419	959	419
2	C4.H10.O2	90	59	697	894	707
3	C6.H10.O	98	43	440	865	465
4	C4.H10	58	43	447	852	460
5	C6.H10.O	98	56	104	844	104

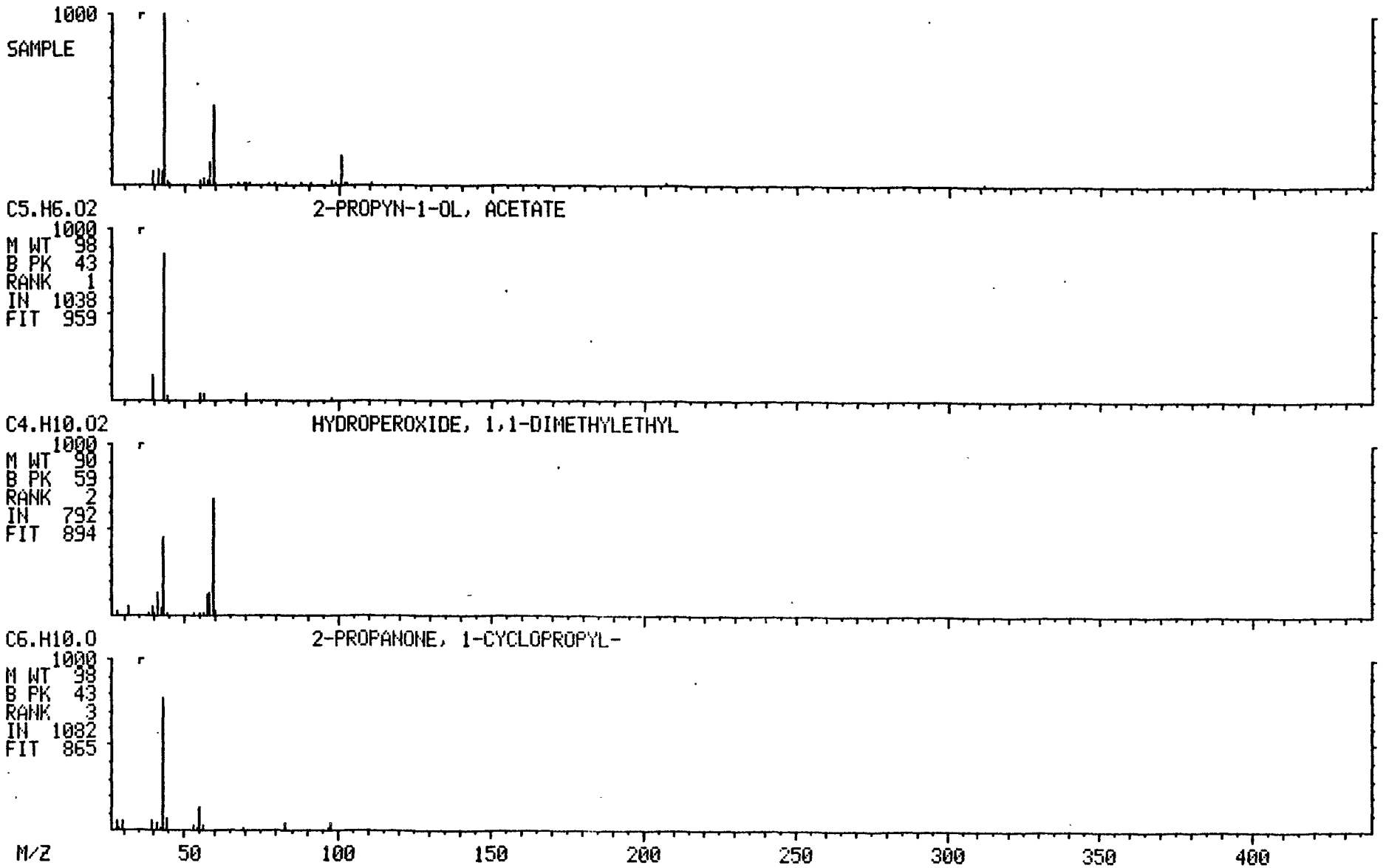
Rank	R t.Time	B.P.Int.	US.Par.1	US.Par.2	C.A.S. #
1	—	—	—	—	627-09-8
2	—	—	—	—	75-91-2
3	—	—	—	—	4160-75-2
4	—	—	—	—	75-28-5
5	—	—	—	—	38559-13-6

LIBRARY SEARCH
03/14/89 0:04:00 + 6:46
SAMPLE: BNA SOIL PRW-4 COMPOSITE WILLOW GROVE EA#0822 <97.75>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
ENHANCED (S 15B 2N 0T)

DATA: AA05978 # 508
CALI: AA05978 # 4

BASE M/Z: 43
RIC: 30015.

3 182



Library Search Data: AA05978 #1751 Base m/z: 73
03/14/89 0:04:00 + 23:21 Cali: AA05978 # 4 RIC: 17023.
Sample: BNA SOIL PRW-4 COMPOSITE WILLOW GROVE EA#0822 <97.75>
Conds.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
Enhanced (S 15B 2N OT)

38761 spectra in LIBRARYNB searched for maximum FIT
254 matched at least 6 of the 16 largest peaks in the unknown

Rank	In.	Name
1	22672	HEXADECANOIC ACID
2	8675	NONANOIC ACID
3	10982	DECANOIC ACID
4	17453	TRIDECANOIC ACID
5	15410	DODECANOIC ACID

IS Scan - 1640
RIC - 165376

Rank	Formula	M.Wt	B.Pk	Purity	Fit	RFit
1	C16.H32.O2	256	43	661	943	662
2	C9.H18.O2	158	60	385	929	396
3	C10.H20.O2	172	60	436	929	451
4	C13.H26.O2	214	73	532	918	545
5	C12.H24.O2	200	60	492	889	540

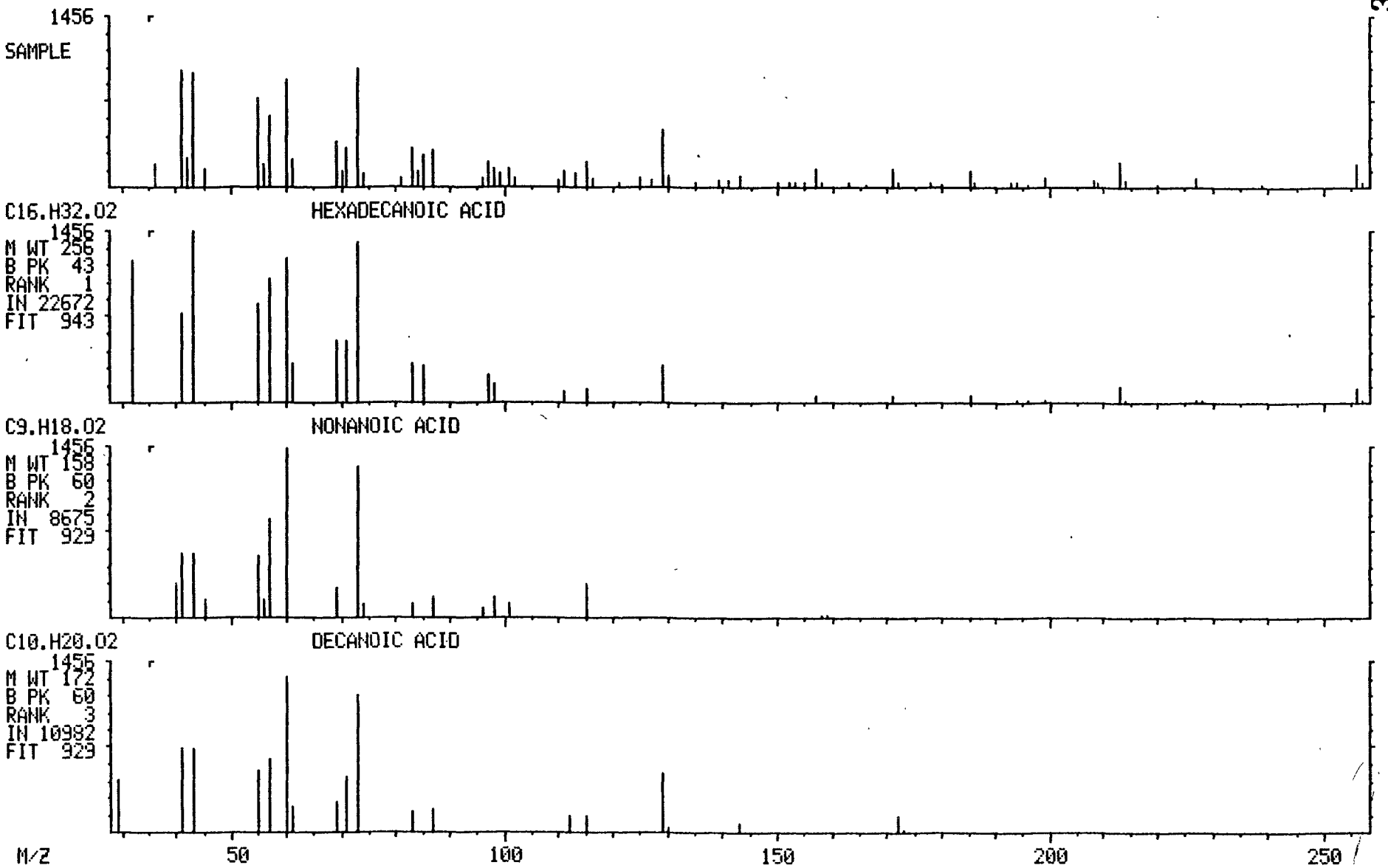
Rank	Ret. Time	B.P. Int.	US. Par. 1	US. Par. 2	C.A.S. #
1	—	—	—	—	57-10-3
2	—	—	—	—	112-05-0
3	—	—	—	—	334-48-5
4	—	—	—	—	638-53-9
5	—	—	—	—	143-07-7

LIBRARY SEARCH
03/14/89 0:04:00 + 23:21
SAMPLE: BNA SOIL PRW-4 COMPOSITE WILLOW GROVE EA#0822 <97.75>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
ENHANCED (S 15B 2N 0T)

DATA: AA05978 #1751
CALI: AA05978 # 4

BASE M/Z: 73
RIC: 17023.

3 184



Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
EA#0640,RINSATE BLANK

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 02/22/89
Date Analyzed: 3/10/89 23:29
Conc/Dil Factor: 1.00000
Percent Moisture (Decanted) N/A

GPC Cleanup __ Yes __ No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction __ Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)		C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	10.	U	83-32-9	Acenaphthene	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U	51-28-5	2,4-Dinitrophenol	50.	U
95-57-8	2-Chlorophenol	10.	U	100-02-7	4-Nitrophenol	50.	U
541-73-1	1,3-Dichlorobenzene	10.	U	132-64-9	Dibenzofuran	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U	121-14-2	2,4-Dinitrotoluene	10.	U
100-51-6	Benzyl Alcohol	10.	U	606-20-2	2,6-Dinitrotoluene	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U	84-66-2	Diethylphthalate	10.	U
95-48-7	2-Methylphenol	10.	U	7005-72-3	4-Chlorophenyl-phenylether	10.	U
39638-32-9	bis(2-chloroisopropyl)ether	10.	U	86-73-7	Fluorene	10.	U
106-44-5	4-Methylphenol	10.	U	100-01-6	4-Nitroaniline	10.	U
621-64-7	N-Nitroso-Di-n-propylamine	10.	U	534-52-1	4,6-Dinitro-2-methylphenol	50.	U
67-72-1	Hexachloroethane	10.	U	86-30-6	N-Nitrososdiphenylamine (1)	10.	U
98-95-3	Nitrobenzene	10.	U	101-55-3	4-Bromophenyl-phenylether	10.	U
78-59-1	Isophorone	10.	U	118-74-1	Hexachlorobenzene	10.	U
88-75-5	2-Nitrophenol	10.	U	87-86-5	Pentachlorophenol	50.	U
105-67-9	2,4-Dimethylphenol	10.	U	85-01-8	Phenanthrene	10.	U
65-85-0	Benzoic Acid	50.	U	120-12-7	Anthracene	10.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U	84-74-2	Di-n-Butyl phthalate	10.	U
120-83-2	2,4-Dichlorophenol	10.	U	206-44-0	Fluoranthene	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U	129-00-0	Pyrene	10.	U
91-20-3	Naphthalene	10.	U	85-68-7	Butylbenzylphthalate	10.	U
106-47-8	4-Chloroaniline	10.	U	91-94-1	3,3'-Dichlorobenzidine	20.	U
87-68-3	Hexachlorobutadiene	10.	U	56-55-3	Benzo(a)Anthracene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U	117-81-7	bis(2-Ethylhexyl)phthalate	10.	U
91-57-6	2-Methylnaphthalene	10.	U	218-01-9	Chrysene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U	117-84-0	Di-n-Octyl phthalate	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U	205-99-2	Benzo(b)Fluoranthene	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U	207-08-9	Benzo(k)Fluoranthene	10.	U
91-58-7	2-Chloronaphthalene	10.	U	50-32-8	Benzo(a)Pyrene	10.	U
88-74-4	2-Nitroaniline	50.	U	193-39-5	Indeno(1,2,3-cd)Pyrene	10.	U
131-11-3	Dimethylphthalate	10.	U	53-70-3	Dibenzo(a,h)Anthracene	10.	U
208-96-8	Acenaphthylene	10.	U	191-24-2	Benzo(g,h,i)Perylene	10.	U
99-09-2	3-Nitroaniline	50.	U				

(1)-Cannot be separated from diphenylamine

Laboratory Name: EA Laboratories

Case No: Willow Grove

Sample Number: EA# 0640

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT ~~or Scan~~ Number	Estimated Concentration (ug/l ~~or ug/kg~~)
1. 108883	Methyl Benzene	BNA	4.32	14.00 J
2. —	Unknown		31.26	16.00 J
3.				
4.				
5.				
6.				
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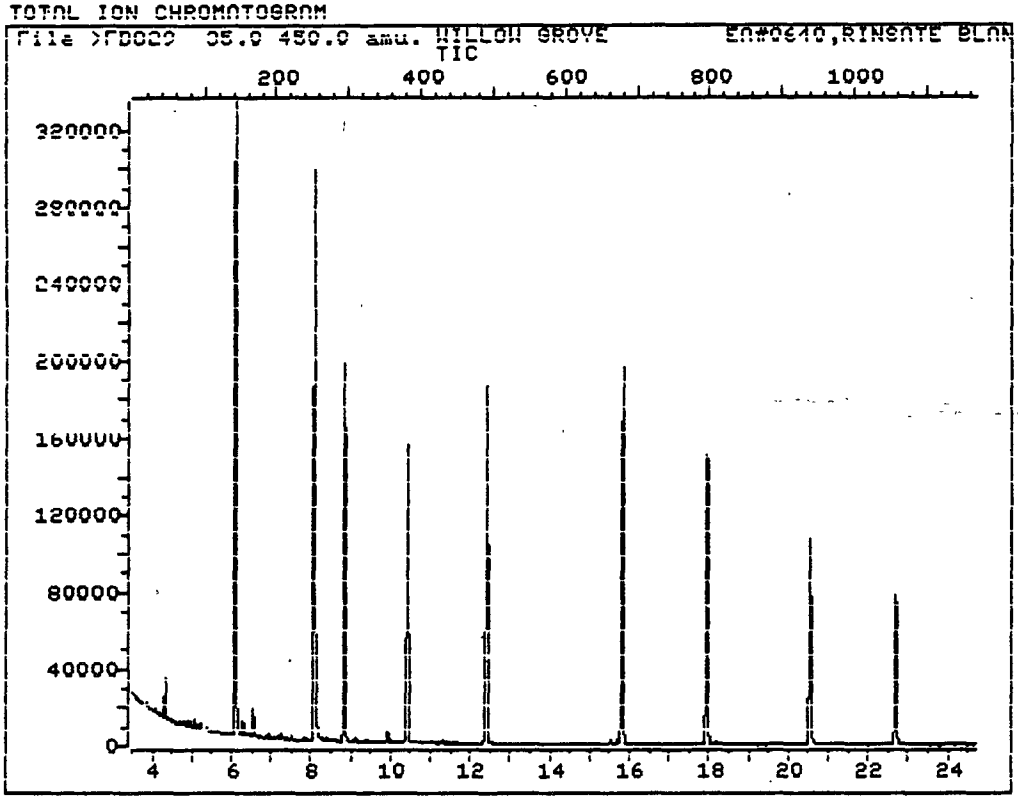
30.				

3 180

TOTAL ION CHROMATOGRAM



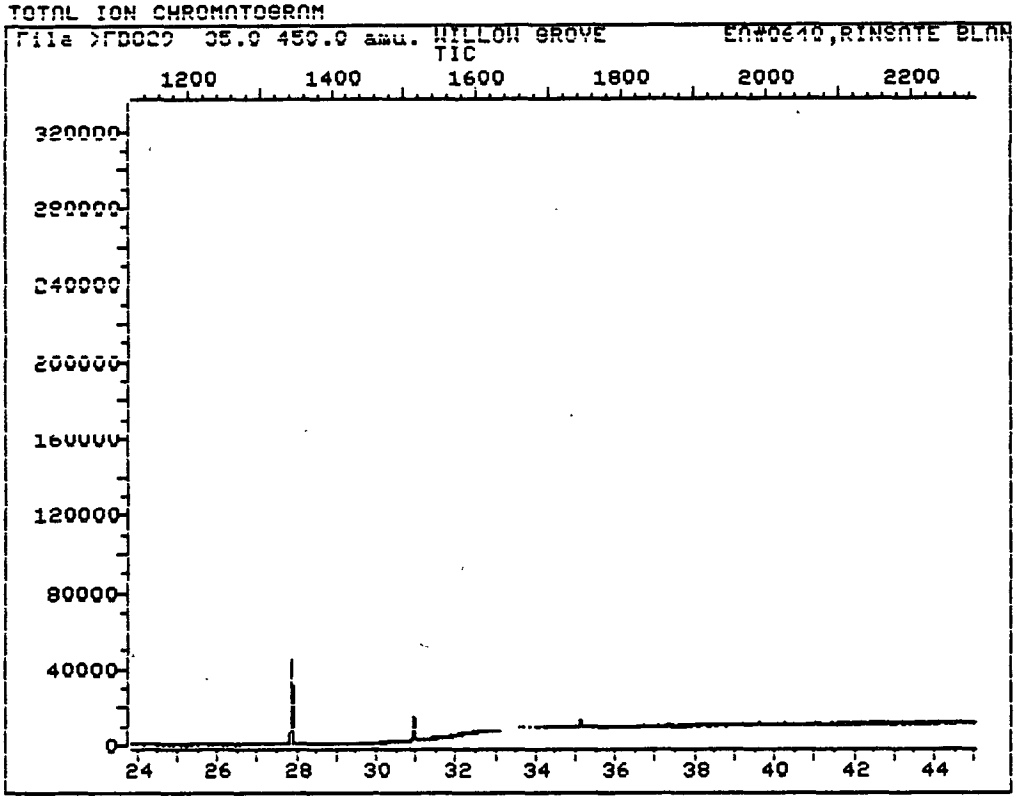
Data File: >FB829::D5 Quant Output File: ^FB829::QT
Nam : WILLOW GROVE
Misc: EA#0640,RINSATE BLANK,WATER,1000,2, <2.00> BTL# 6

Id File: IDFCLP::BD
Titl : HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890413 18:29

Operator ID: UNCLE
Quant Time: 890413 19:09
Inj cted at: 890310 23:29

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >FB829::D5 Quant Output File: ^FB829::QT
Nam : WILLOW GROVE
Misc: EA#0640,RINSATE BLANK,WATER,1000,2, <2.00> BTL# 6

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890413 18:29

Operator ID: UNCLE
Quant Time: 890413 19:09
Injected at: 890310 23:29

TIC page 2 of 2

QUANT REPORT

Op rator ID: UNCLE Quant R v: 6 Quant Time: 890413 19:09
Output Fil : ^FB829::QT Injected at: 890310 23:29
Data File: >FB829::D5 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0640,RINSATE BLANK,WATER,1000,2, <2.00> BTL# 6

ID File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
La t Calibration: 890413 18:29

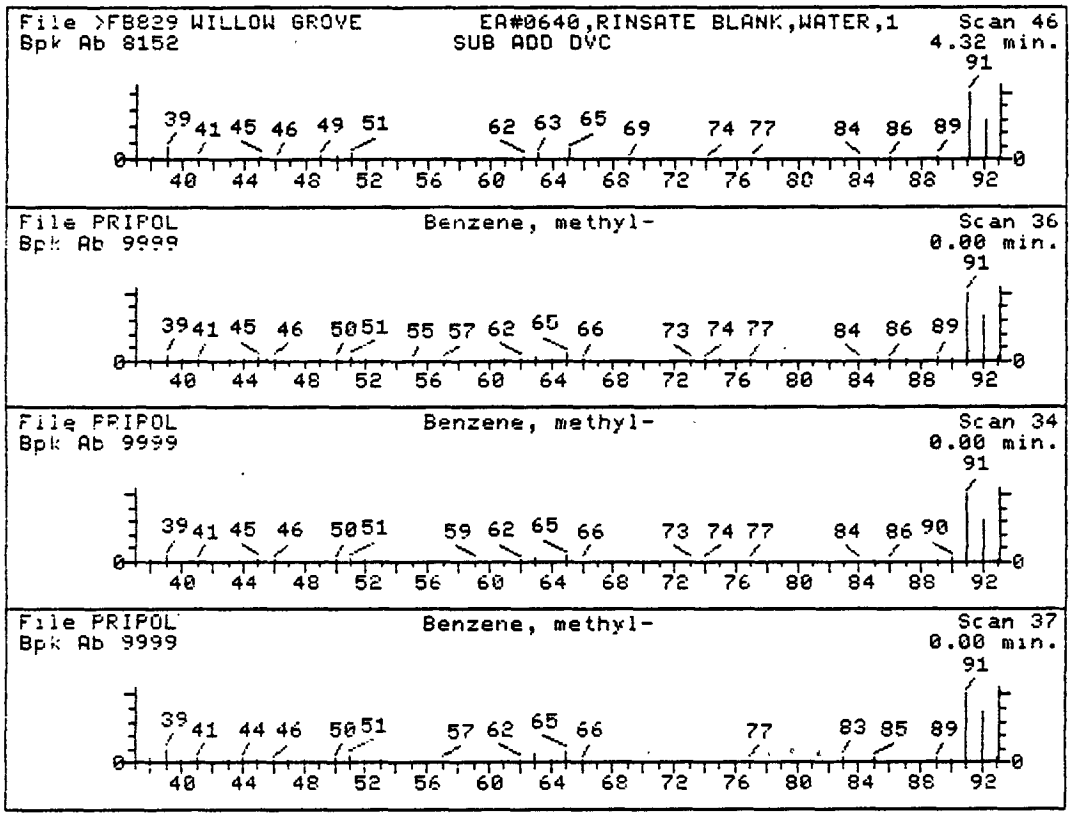
	Compound	R.T.	Q ion	Area	Conc	Units		q
1)	*d4-1,4-Dichlorobenzene	8.82	152.0	71298	40.00	NG		98
2)	2-Fluorophenol	6.06	112.0	187618	78.40	NG	78%	84
3)	Phenol-d5	8.06	99.0	266604	90.66	NG	91%	87
4)	Ph nol	0.00	94.0	0	0.00	NG		
5)	bis(2-Chloroethyl)ether	0.00	93.0	0	0.00	NG		
6)	2-Chlorophenol	0.00	128.0	0	0.00	NG		
7)	1,3-Dichlorobenzene	0.00	146.0	0	0.00	NG		
8)	1,4-Dichlorobenzene	0.00	146.0	0	0.00	NG		
9)	Benzyl Alcohol	0.00	108.0	0	0.00	NG		
10)	1,2-Dichlorobenzene	0.00	146.0	0	0.00	NG		
11)	2-M thylphenol	0.00	108.0	0	0.00	NG		
12)	bis(2-Chloroisopropyl)ether	0.00	45.0	0	0.00	NG		
13)	4-M thylphenol	0.00	108.0	0	0.00	NG		
14)	N-Nitroso-Di-n-propylamine	0.00	70.0	0	0.00	NG		
15)	Hexachloroethane	0.00	117.0	0	0.00	NG		
16)	*d8-Naphthalene	12.39	136.0	253887	40.00	NG		87
17)	Nitrobenzene-d5	10.42	82.0	127371	45.28	NG	91%	97
18)	Nitrobenzene	0.00	77.0	0	0.00	NG		
19)	Isophorone	0.00	82.0	0	0.00	NG		
20)	2-Nitrophenol	0.00	139.0	0	0.00	NG		
21)	2,4-Dimethylphenol	0.00	107.0	0	0.00	NG		
22)	Benzoic Acid	0.00	122.0	0	0.00	NG		
23)	bis(2-Chloroethoxy)methane	0.00	93.0	0	0.00	NG		
24)	2,4-Dichlorophenol	0.00	162.0	0	0.00	NG		
25)	1,2,4-Trichlorobenzene	0.00	180.0	0	0.00	NG		
26)	Naphthalene	0.00	128.0	0	0.00	NG		
27)	4-Chloroaniline	0.00	127.0	0	0.00	NG		
28)	Hexachlorobutadiene	0.00	224.7	0	0.00	NG		
29)	4-Chloro-3-methylphenol	0.00	107.0	0	0.00	NG		
30)	2-Methylnaphthalene	0.00	142.0	0	0.00	NG		
31)	*d10-Acenaphthene	17.94	164.0	97082	40.00	NG		94
32)	Hexachlorocyclopentadiene	0.00	237.0	0	0.00	NG		
33)	2,4,6-Trichlorophenol	0.00	196.0	0	0.00	NG		
34)	2,4,5-Trichlorophenol	0.00	196.0	0	0.00	NG		
35)	2-Chloronaphthalene	0.00	162.0	0	0.00	NG		
36)	2-Fluorobiphenyl	15.82	172.0	174594	46.90	NG	94%	94
37)	2-Nitroaniline	0.00	65.0	0	0.00	NG		
38)	Dimethylphthalate	17.98	163.0	32587	~~8.44~~	NG		54
39)	Acenaphthylene	0.00	152.0	0	0.00	NG		
40)	3-Nitroaniline	0.00	138.0	0	0.00	NG		
41)	Acenaphthene	0.00	153.0	0	0.00	NG		
42)	2,4-Dinitrophenol	0.00	184.0	0	0.00	NG		

QUANT REPORT
page 2

Output File:^FB829:: Data File:>FB829::D5

	Compound	R.T.	Q ion	Area	Conc	Units	q
43)	4-Nitrophenol	0.00	109.0	0	0.00	NG	
44)	Dib nzofuran	0.00	168.0	0	0.00	NG	
45)	2,4-Dinitrotoluene	0.00	165.0	0	0.00	NG	
46)	2,6-Dinitrotoluene	0.00	165.0	0	0.00	NG	
47)	Diethylphthalate	0.00	149.0	0	0.00	NG	
48)	4-Chlorophenyl-phenylether	0.00	204.0	0	0.00	NG	
49)	Fluorene	0.00	166.0	0	0.00	NG	
50)	4-Nitroaniline	0.00	138.0	0	0.00	NG	
51)	*d10-Phenanthrene	22.68	188.0	93968	40.00	NG	99
52)	4,6-Dinitro-2-methylphenol	0.00	198.0	0	0.00	NG	
53)	N-Nitrosodiphenylamine	0.00	169.0	0	0.00	NG	
54)	2,4,6-Tribromophenol	20.52	329.9	38226	99.30	NG 99%	97
55)	4-Bromophenyl-phenylether	0.00	248.0	0	0.00	NG	
56)	Hexachlorobenzene	0.00	283.6	0	0.00	NG	
57)	Pentachlorophenol	0.00	266.0	0	0.00	NG	
58)	Phenanthrene	0.00	178.0	0	0.00	NG	
59)	Anthracene	0.00	178.0	0	0.00	NG	
60)	Di-n-Butyl phthalate	0.00	149.0	0	0.00	NG	
61)	Flu ranthene	0.00	202.0	0	0.00	NG	
62)	d12-Chrysene	30.95	240.0	13076	40.00	NG	98
63)	Pyrene	0.00	202.0	0	0.00	NG	
64)	Terphenyl-d14	27.88	244.0	46894	56.43	NG 113%	89
65)	Butylbenzylphthalate	0.00	149.0	0	0.00	NG	
66)	3,3'-Dichlorobenzidine	0.00	252.0	0	0.00	NG	
67)	Benzo(a)Anthracene	0.00	228.0	0	0.00	NG	
68)	bis(2-Ethylhexyl)phthalate	0.00	149.0	0	0.00	NG	
69)	Chrysene	0.00	228.0	0	0.00	NG	
70)	*d12-P rylene	35.13	264.0	7246	40.00	NG	90
71)	Di-n-Octyl phthalate	0.00	149.0	0	0.00	NG	
72)	Benzo(b)Fluoranthene	0.00	252.0	0	0.00	NG	
73)	Benzo(k)Fluoranthene	0.00	252.0	0	0.00	NG	
74)	Benzo(a)Pyrene	0.00	252.0	0	0.00	NG	
75)	Indeno(1,2,3-cd)Pyrene	0.00	276.0	0	0.00	NG	
76)	Dibenzo(a,h)Anthracene	0.00	278.0	0	0.00	NG	
77)	B nzo(g,h,i)Perylene	0.00	276.0	0	0.00	NG	

* Compound is ISTD



Retention time = 4.32

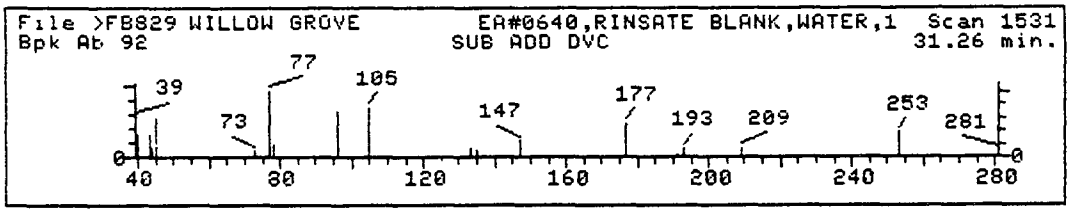
Area = 63915.00 Tentative Concentration is 11.00

1.	Benzene, methyl-	92	C7H8
2.	Benz ne, methyl-	92	C7H8
3.	Benzene, methyl-	92	C7H8
4.	Benzene, methyl- (9CI)	92	C7H8
5.	Benzene, methyl-	92	C7H8
6.	Benzene, methyl-	92	C7H8
7.	Cyclobutene, 2-propenylidene- (9CI)	92	C7H8

Sample file: >FB829 Spectrum #: 46
Search speed: 2 Tilting option: S No. of ion ranges searched: 46

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	86*	36	132	PRIPOL	63	21	1	0	77	3	19	72
2.	81*	34	130	PRIPOL	62	16	2	2	98	6	53	42

3.	76*	37	133	PRIPOL	52	44	2	1	69	6	45	27
4.	71*	108883	7659	"BIGDB	68	22	1	0	63	30	29	69
5.	71*	33	129	PRIPOL	68	22	1	0	63	30	29	69
6.	71*	35	131	PRIPOL	70	25	1	0	55	30	29	69
7.	67*	52097855	7657	"BIGDB	41	38	2	0	97	11	34	21



Retention time = 31.26

Area = 7989.00 Tentative Concentration is 16.00

Unknown

Sample file: >FB829 Spectrum #: 1531

No data base entries were retrieved.

LIBRARY SEARCH SUMMARY

MS Data File:>FB829::D5 Analyst:UNCLE MS

Name:WILLOW GROVE Date/Time: 3/10/89 23:29
Misc:EA#0640,RINSATE BLANK,WATER,1000,2, ?2.00? BTL# 6

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	4.32	63915	48000
2	31.26	7989	3946

Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
EA#0746,RINSATE BLANK#2

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 02/21/89
Date Analyzed: 3/11/89 1:29
Conc/Dil Factor: 1.00000
Percent Moisture (Decanted) N/A

GPC Cleanup __ Yes __ No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction __ Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)		C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	10.	U	83-32-9	Acenaphthene	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U	51-28-5	2,4-Dinitrophenol	50.	U
95-57-8	2-Chlorophenol	10.	U	100-02-7	4-Nitrophenol	50.	U
541-73-1	1,3-Dichlorobenzene	10.	U	132-64-9	Dibenzofuran	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U	121-14-2	2,4-Dinitrotoluene	10.	U
100-51-6	Benzyl Alcohol	10.	U	606-20-2	2,6-Dinitrotoluene	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U	84-66-2	Diethylphthalate	10.	U
95-48-7	2-Methylphenol	10.	U	7005-72-3	4-Chlorophenyl-phenylether	10.	U
39638-32-9	bis(2-chloroisopropyl)ether	10.	U	86-73-7	Fluorene	10.	U
106-44-5	4-Methylphenol	10.	U	100-01-6	4-Nitroaniline	10.	U
621-64-7	N-Nitroso-Di-n-propylamine	10.	U	534-52-1	4,6-Dinitro-2-methylphenol	50.	U
67-72-1	Hexachloroethane	10.	U	86-30-6	N-Nitrososdiphenylamine (1)	10.	U
98-95-3	Nitrobenzene	10.	U	101-55-3	4-Bromophenyl-phenylether	10.	U
78-59-1	Isophorone	10.	U	118-74-1	Hexachlorobenzene	10.	U
88-75-5	2-Nitrophenol	10.	U	87-86-5	Pentachlorophenol	50.	U
105-67-9	2,4-Dimethylphenol	10.	U	85-01-8	Phenanthrene	10.	U
65-85-0	Benzoic Acid	50.	U	120-12-7	Anthracene	10.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U	84-74-2	Di-n-Butyl phthalate	10.	U
120-83-2	2,4-Dichlorophenol	10.	U	206-44-0	Fluoranthene	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U	129-00-0	Pyrene	10.	U
91-20-3	Naphthalene	10.	U	85-68-7	Butylbenzylphthalate	10.	U
106-47-8	4-Chloroaniline	10.	U	91-94-1	3,3'-Dichlorobenzidine	20.	U
87-68-3	Hexachlorobutadiene	10.	U	56-55-3	Benzo(a)Anthracene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U	117-81-7	bis(2-Ethylhexyl)phthalate	10.	U
91-57-6	2-Methylnaphthalene	10.	U	218-01-9	Chrysene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U	117-84-0	Di-n-Octyl phthalate	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U	205-99-2	Benzo(b)Fluoranthene	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U	207-08-9	Benzo(k)Fluoranthene	10.	U
91-58-7	2-Chloronaphthalene	10.	U	50-32-8	Benzo(a)Pyrene	10.	U
88-74-4	2-Nitroaniline	50.	U	193-39-5	Indeno(1,2,3-cd)Pyrene	10.	U
131-11-3	Dimethylphthalate	10.	U	53-70-3	Dibenzo(a,h)Anthracene	10.	U
208-96-8	Acenaphthylene	10.	U	191-24-2	Benzo(g,h,i)Perylene	10.	U
99-09-2	3-Nitroaniline	50.	U				

(1)-Cannot be separated from diphenylamine

Laboratory Name: EA LABORATORIES

Case No: WILLOW GROVE

Sample Number
EA# 0746

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l ~~or ug/kg~~)
1. —	Unidentified	BNA	6.57	19.00 J
2. —	Unknown		31.38	24.00 J
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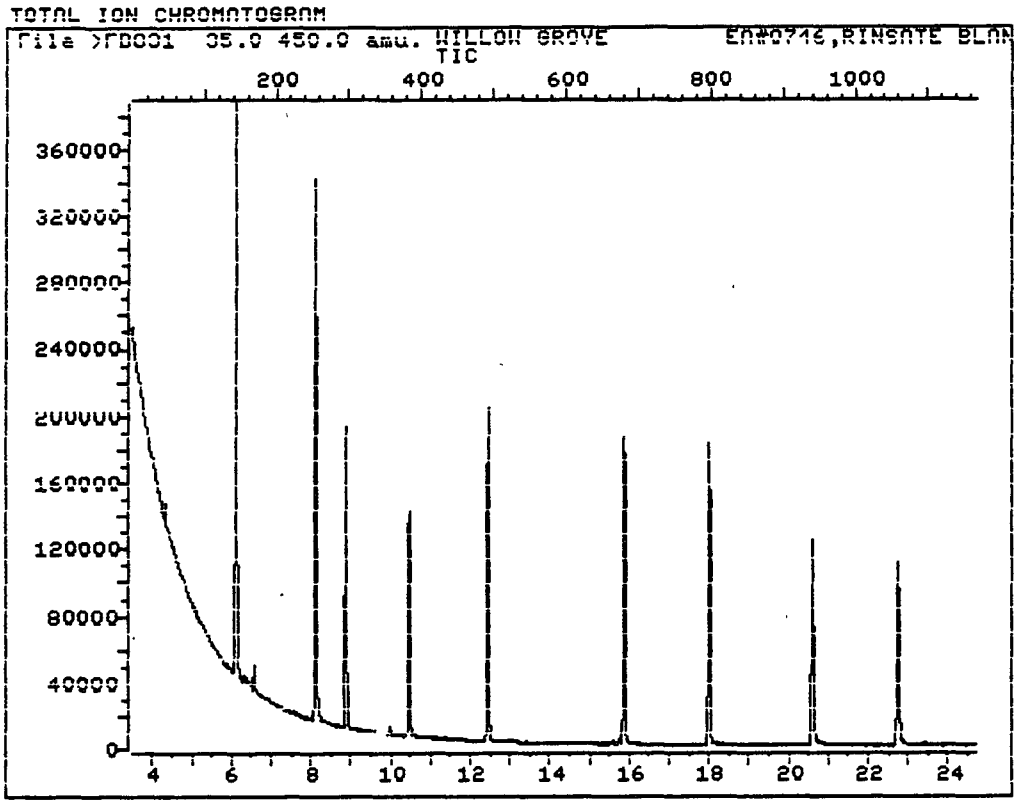
3 196



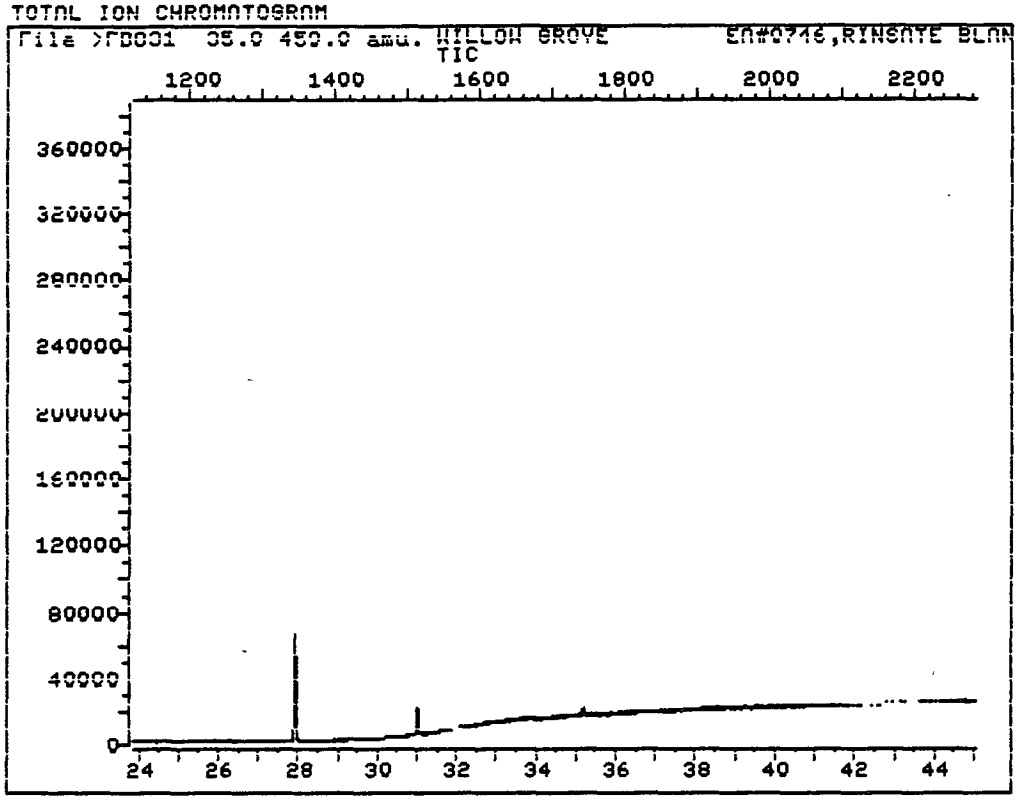
Data File: >FB831::D5 Quant Output File: ^FB831::QT
Name: WILLOW GROVE
Misc: EA#0746,RINSATE BLANK #2,WATER,1000,2, <2.00> BTL# 8

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
La t Calibration: 890413 18:29

Op rator ID: UNCLE
Quant Time: 890413 19:24
Injected at: 890311 01:29

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >FB831::D5 Quant Output File: ^FB831::QT
Name: WILLOW GROVE
Misc: EA#0746,RINSATE BLANK #2,WATER,1000,2, <2.00> BTL# 8

Id. File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890413 18:29

Op rator ID: UNCLE
Quant Time: 890413 19:24
Injected at: 890311 01:29

TIC page 2 of 2

QUANT REPORT

Operator ID: UNCLE Quant Rev: 6 Quant Time: 890413 19:24
Output File: ^FB831::QT Injected at: 890311 01:29
Data Fil : >FB831::D5 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0746,RINSATE BLANK #2,WATER,1000,2, <2.00> BTL# 8

ID File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890413 18:29

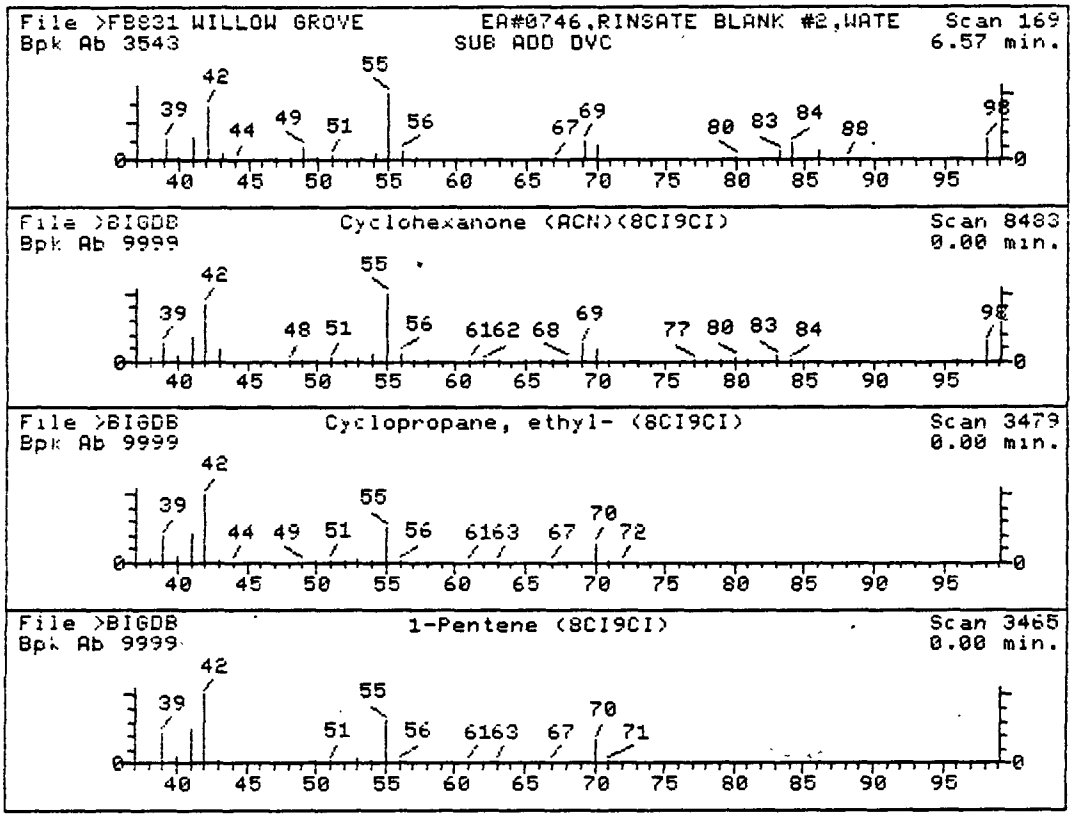
	Compound	R.T.	Q ion	Area	Conc	Unit	q
1)	*d4-1,4-Dichlorobenzene	8.88	152.0	66808	40.00	NG	98
2)	2-Fluorophenol	6.12	112.0	176103	78.54	NG 79%	97
3)	Phenol-d5	8.12	99.0	254342	92.30	NG 92%	93
4)	Phenol	0.00	94.0	0	0.00	NG	
5)	bis(2-Chloroethyl)ether	0.00	93.0	0	0.00	NG	
6)	2-Chlorophenol	0.00	128.0	0	0.00	NG	
7)	1,3-Dichlorobenzene	0.00	146.0	0	0.00	NG	
8)	1,4-Dichlorobenzene	0.00	146.0	0	0.00	NG	
9)	Benzyl Alcohol	0.00	108.0	0	0.00	NG	
10)	1,2-Dichlorobenzene	0.00	146.0	0	0.00	NG	
11)	2-Methylphenol	0.00	108.0	0	0.00	NG	
12)	bi (2-Chloroisopropyl)ether	0.00	45.0	0	0.00	NG	
13)	4-Methylphenol	0.00	108.0	0	0.00	NG	
14)	N-Nitroso-Di-n-propylamine	0.00	70.0	0	0.00	NG	
15)	Hexachloroethane	0.00	117.0	0	0.00	NG	
16)	*d8-Naphthalene	12.46	136.0	250461	40.00	NG	89
17)	Nitrobenzene-d5	10.48	82.0	122247	44.05	NG 88%	94
18)	Nitrobenzene	0.00	77.0	0	0.00	NG	
19)	Isoph rone	0.00	82.0	0	0.00	NG	
20)	2-Nitrophenol	0.00	139.0	0	0.00	NG	
21)	2,4-Dimethylphenol	0.00	107.0	0	0.00	NG	
22)	Benzoic Acid	0.00	122.0	0	0.00	NG	
23)	bis(2-Chloroethoxy)methane	0.00	93.0	0	0.00	NG	
24)	2,4-Dichlorophenol	0.00	162.0	0	0.00	NG	
25)	1,2,4-Trichlorobenzene	0.00	180.0	0	0.00	NG	
26)	Naphthalene	0.00	128.0	0	0.00	NG	
27)	4-Chloroaniline	0.00	127.0	0	0.00	NG	
28)	H xachlorobutadiene	0.00	224.7	0	0.00	NG	
29)	4-Chloro-3-methylphenol	0.00	107.0	0	0.00	NG	
30)	2-Methylnaphthalene	0.00	142.0	0	0.00	NG	
31)	*d10-Acenaphthene	18.01	164.0	111393	40.00	NG	98
32)	Hexachlorocyclopentadiene	0.00	237.0	0	0.00	NG	
33)	2,4,6-Trichlorophenol	0.00	196.0	0	0.00	NG	
34)	2,4,5-Trichlorophenol	0.00	196.0	0	0.00	NG	
35)	2-Chloronaphthalene	0.00	162.0	0	0.00	NG	
36)	2-Flu robiphenyl	15.87	172.0	181815	42.57	NG 85%	94
37)	2-Nitroaniline	0.00	65.0	0	0.00	NG	
38)	Dimethylphthalate	18.01	163.0	36958	~~8.34~~	NG	54
39)	Acenaphthylene	0.00	152.0	0	0.00	NG	
40)	3-Nitroaniline	0.00	138.0	0	0.00	NG	
41)	Acenaphthene	0.00	153.0	0	0.00	NG	
42)	2,4-Dinitrophenol	0.00	184.0	0	0.00	NG	

QUANT REPORT
page 2

Output File:^FB831:: Data File:>FB831::D5

	Compound	R.T.	Q ion	Area	Conc	Units	q
43)	4-Nitrophenol	0.00	109.0	0	0.00	NG	
44)	Dibenzofuran	0.00	168.0	0	0.00	NG	
45)	2,4-Dinitrotoluene	0.00	165.0	0	0.00	NG	
46)	2,6-Dinitrotoluene	0.00	165.0	0	0.00	NG	
47)	Diethylphthalate	0.00	149.0	0	0.00	NG	
48)	4-Chlorophenyl-phenylether	0.00	204.0	0	0.00	NG	
49)	Fluorene	0.00	166.0	0	0.00	NG	
50)	4-Nitroaniline	0.00	138.0	0	0.00	NG	
51)	*d10-Phenanthrene	22.75	188.0	133783	40.00	NG	99
52)	4,6-Dinitro-2-methylphenol	0.00	198.0	0	0.00	NG	
53)	N-Nitrosodiphenylamine	0.00	169.0	0	0.00	NG	
54)	2,4,6-Tribromophenol	20.59	329.9	48646	88.76	NG 84%	96
55)	4-Bromophenyl-phenylether	0.00	248.0	0	0.00	NG	
56)	Hexachlorobenzene	0.00	283.6	0	0.00	NG	
57)	Pentachlorophenol	0.00	266.0	0	0.00	NG	
58)	Phenanthrene	0.00	178.0	0	0.00	NG	
59)	Anthracene	0.00	178.0	0	0.00	NG	
60)	Di-n-Butyl phthalate	0.00	149.0	0	0.00	NG	
61)	Fluoranthene	0.00	202.0	0	0.00	NG	
62)	*d12-Chrysene	31.01	240.0	16783	40.00	NG	99
63)	Pyrene	0.00	202.0	0	0.00	NG	
64)	Terphenyl-d14	27.94	244.0	69798	65.44	NG 131%	88
65)	Butylbenzylphthalate	0.00	149.0	0	0.00	NG	
66)	3,3'-Dichlorobenzidine	0.00	252.0	0	0.00	NG	
67)	Benzo(a)Anthracene	0.00	228.0	0	0.00	NG	
68)	bis(2-Ethylhexyl)phthalate	31.12	149.0	761	~~.80~~	NG	95
69)	Chrysene	0.00	228.0	0	0.00	NG	
70)	*d12-Perylene	35.20	264.0	7395	40.00	NG	91
71)	Di-n-Octyl phthalate	0.00	149.0	0	0.00	NG	
72)	Benzo(b)Fluoranthene	0.00	252.0	0	0.00	NG	
73)	Benzo(k)Fluoranthene	0.00	252.0	0	0.00	NG	
74)	B nzo(a)Pyrene	0.00	252.0	0	0.00	NG	
75)	Indeno(1,2,3-cd)Pyrene	0.00	276.0	0	0.00	NG	
76)	Dibenzo(a,h)Anthracene	0.00	278.0	0	0.00	NG	
77)	B nzo(g,h,i)Perylene	0.00	276.0	0	0.00	NG	

* Comp und is ISTD



Retention time = 6.57

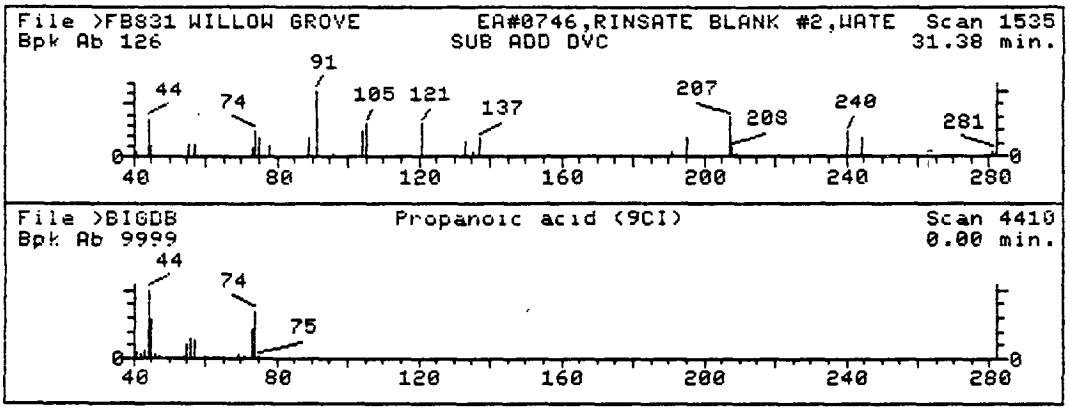
Area = 108129.0 Tentative Concentration is 19.00

1. Cyclohexanone (ACN)(8CI9CI)		98 C6H10O
2. Cyclopropane, ethyl- (8CI9CI)		70 C5H10
3. 1-Pentene (8CI9CI)		70 C5H10
4. Cyclopentanone, 2-methyl- (8CI9CI)	Unidentified	98 C6H10O
5. 2(5H)-Furanone, 5-methyl- (8CI9CI)		98 C5H6O2
6. Cyclopropane, butyl- (9CI)		98 C7H14
7. 2-Hexenal (8CI9CI)		98 C6H10O

Sample file: >FB831 Spectrum #: 169
Search speed: 2 Tilting option: S No. of ion ranges searched: 46

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	53*	108941	8483	"BIGDB	53	49	1	0	78	34	20	37
2.	43*	1191964	3479	"BIGDB	44	42	0	0	60	46	13	53

3.	40*	109671	3465	"BIGDB	38	48	0	0	61	46	12	44
4.	36*	1120725	8545	"BIGDB	51	46	2	0	57	42	12	27
5.	28*	591117	8489	"BIGDB	33	73	2	0	63	36	10	14
6.	27*	930574	3583	"BIGDB	27	81	3	0	86	40	10	13
7.	27*	505577	8487	"BIGDB	25	80	3	0	134	36	10	13



Retention time = 31.38

Area = 16532.00 Tentative Concentration is 24.00

1. Propanoic acid (9CI) Unknown 74 C3H6O2

Sample file: >FB831 Spectrum #: 1535
Search speed: 2 Tilting option: S No. of ion ranges searched: 49

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	11*	79094	4410	"BIGDB	31	74	3	0	56	65	2	13

LIBRARY SEARCH SUMMARY

MS Data File:>FB831::D5 Analyst:UNCLE MS

Name:WILLOW GROVE Date/Time: 3/11/89 1:29
Misc:EA#0746,RINSATE BLANK #2,WATER,1000,2, ?2.00? BTL# 8

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	6.57	108129	45622
2	31.38	16532	5605

Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
EA#0776,RINSATE BL#3

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 02/22/89
Date Analyzed: 3/25/89 05:14
Conc/Dil Factor: 1.00000
Percent Moisture (Decanted) N/A

GPC Cleanup __ Yes ~~No~~
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction ~~No~~ Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl Alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
39638-32-9	bis(2-chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-Di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic Acid	50.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
99-09-2	3-Nitroaniline	50.	U

C.A.S. Number		ug/L or ug/Kg (Circle One)	
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	10.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrososdiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-Butyl phthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)Anthracene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	10.	U
218-01-9	Chrysene	10.	U
117-84-0	Di-n-Octyl phthalate	10.	U
205-99-2	Benzo(b)Fluoranthene	10.	U
207-08-9	Benzo(k)Fluoranthene	10.	U
50-32-8	Benzo(a)Pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10.	U
53-70-3	Dibenzo(a,h)Anthracene	10.	U
191-24-2	Benzo(g,h,i)Perylene	10.	U

(1)-Cannot be separated from diphenylamine

Laboratory Name: EH LABORATORIES

Case No: WILLOW GROVE

Sample Number
EH # 0776

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.				
2.				
3.				
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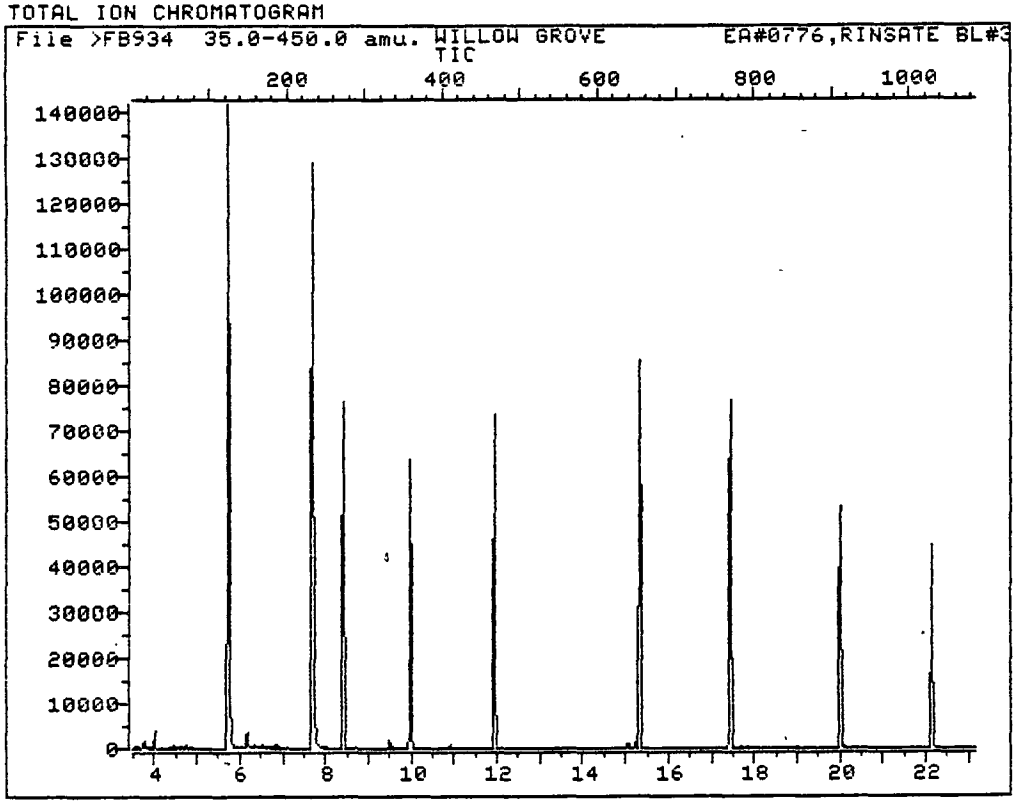
NO PEAKS FOUND

TOTAL ION CHROMATOGRAM



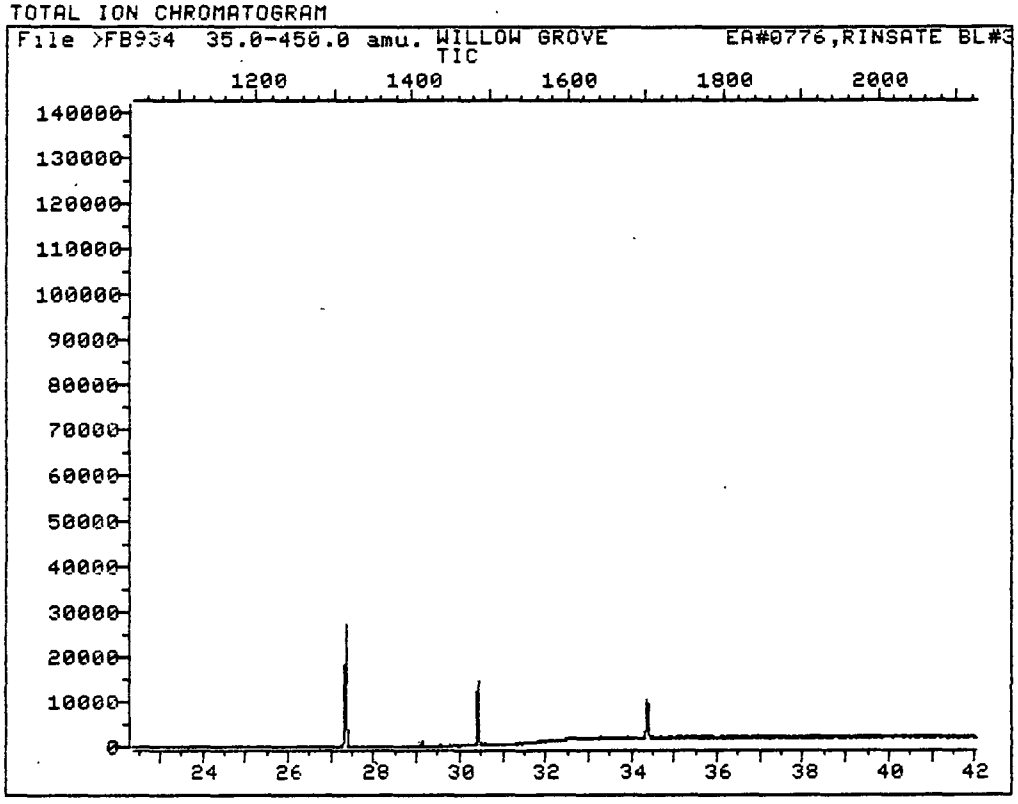
Data File: >FB934::D5 Quant Output File: ^FB934::QT
Name: WILLOW GROVE
Misc: EA#0776,RINSATE BL#3,WATER,1000,2.0, <2.0> BTL# 7

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890414 00:00

Operator ID: UNCLE
Quant Time: 890414 00:28
Injected at: 890325 05:14

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >FB934::D5 Quant Output File: ^FB934::QT
Name: WILLOW GROVE
Misc: EA#0776,RINSATE BL#3,WATER,1000,2.0, <2.0> BTL# 7

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890414 00:00

Operator ID: UNCLE
Quant Time: 890414 00:28
Injected at: 890325 05:14

TIC page 2 of 2

QUANT REPORT

Operator ID: UNCLE Quant Rev: 6 Quant Time: 890414 00:28
Output File: ^FB934::QT Injected at: 890325 05:14
Data File: >FB934::D5 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0776,RINSATE BL#3,WATER,1000,2.0, <2.0> BTL# 7

ID File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890414 00:00

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	8.41	152.0	24896	40.00	NG	97
2)	2-Fluorophenol	5.73	112.0	70415	89.06	NG 89%	97
3)	Phenol-d5	7.69	99.0	97787	101.57	NG 102%x	89
16)	*d8-Naphthalene	11.93	136.0	89186	40.00	NG	87
17)	Nitrobenzene-d5	9.99	82.0	42366	38.17	NG 76%	93
31)	*d10-Acenaphthene	17.45	164.0	38831	40.00	NG	96
36)	2-Fluorobiphenyl	15.34	172.0	64706	35.31	NG 71%	94
38)	Dimethylphthalate	17.45	163.0	13102	~~9.74~~	NG	54
51)	*d10-Phenanthrene	22.14	188.0	44747	40.00	NG	99
54)	2,4,6-Tribromophenol	20.00	329.9	21121	108.69	NG 109%	97
62)	*d12-Chrysene	30.43	240.0	13917	40.00	NG	97
64)	Terphenyl-d14	27.33	244.0	32995	44.05	NG 88%	86
70)	*d12-Perylene	34.37	264.0	12272	40.00	NG	94

* Compound is ISTD

ORGANICS ANALYSIS DATA SHEET SAMPLE #: RINSATE BLANK #5
EA#0820

LABORATORY: EA ENG.
LABORATORY ID: AA05977
MATRIX: WATER

CASE #/SAS #: WILLOW GROVE
QC REPORT #: AA05977
CONTRACT #: 10388.03
DATE RECEIVED: 03/01/89

DATA RELEASE AUTHORIZED BY: _____

SEMIVOLATILE COMPOUNDS (PAGE 1)

LEVEL:	LOW	GPC CLEANUP	__YES ✓NO
DATE EXT/PREP:	03/01/89	SEPARATORY EXTRACTION	__YES
DATE ANALYZED:	03/13/89	CONTINUOUS EXTRACTION	✓YES
CONC/DIL FACTOR:	1000 ML -> 2 ML		
PH:	N/A		
% MOISTURE:	N/A		
% MOISTURE (DECANTED):	N/A		
STANDARD ID:	AA05968		
SENSITIVITY ID:	AA05966		

CAS #		UG/L	
108-95-2	PHENOL	10.	U
111-44-4	BIS(2-CHLOROETHYL)ETHER	10.	U
95-57-8	2-CHLOROPHENOL	10.	U
541-73-1	1,3-DICHLOROBENZENE	10.	U
106-46-7	1,4-DICHLOROBENZENE	10.	U
100-51-6	BENZYL ALCOHOL	10.	U
95-50-1	1,2-DICHLOROBENZENE	10.	U
95-48-7	2-METHYLPHENOL	10.	U
39638-32-9	BIS(2-CHLOROISOPROPYL)ETHER	10.	U
106-44-5	4-METHYLPHENOL	10.	U
621-64-7	N-NITROSODIPROPYLAMINE	10.	U
67-72-1	HEXACHLOROETHANE	10.	U
98-95-3	NITROBENZENE	10.	U
78-59-1	ISOPHORONE	10.	U
88-75-5	2-NITROPHENOL	10.	U
105-67-9	2,4-DIMETHYLPHENOL	10.	U
65-85-0	BENZOIC ACID	50.	U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	10.	U
120-33-2	2,4-DICHLOROPHENOL	10.	U
120-82-1	1,2,4-TRICHLOROBENZENE	10.	U
91-20-3	NAPHTHALENE	10.	U
106-47-8	4-CHLOROANILINE	10.	U
87-68-3	HEXACHLOROBUTADIENE	10.	U
59-50-7	4-CHLORO-3-METHYLPHENOL	10.	U
91-57-6	2-METHYLNAPHTHALENE	10.	U
77-47-4	HEXACHLOROCYCLOPENTADIENE	10.	U
88-06-2	2,4,6-TRICHLOROPHENOL	10.	U
95-95-4	2,4,5-TRICHLOROPHENOL	50.	U
91-58-7	2-CHLORONAPHTHALENE	10.	U
88-74-4	2-NITROANILINE	50.	U
131-11-3	DIMETHYL PHTHALATE	10.	U
208-96-8	ACENAPHTHYLENE	10.	U
99-09-2	3-NITROANILINE	50.	U
83-32-9	ACENAPHTHENE	10.	U
51-28-5	2,4-DINITROPHENOL	50.	U
100-02-7	4-NITROPHENOL	50.	U
132-64-9	DIBENZOFURAN	10.	U

FORM I

ORGANICS ANALYSIS DATA SHEET SAMPLE #: RINSATE BLANK #5
EA# 0820

LABORATORY: EA ENG.
LABORATORY ID: AA05977
MATRIX: WATER

CASE #/SAS #: WILLOW GROVE
QC REPORT #: AA05977
CONTRACT #: 10388.03
DATE RECEIVED: 03/01/89

DATA RELEASE AUTHORIZED BY: _____

SEMIVOLATILE COMPOUNDS (PAGE 2)

LEVEL: LOW
DATE EXT/PREP: 03/01/89
DATE ANALYZED: 03/13/89
CONC/DIL FACTOR: 1000 ML -> 2 ML
PH: N/A
% MOISTURE: N/A
% MOISTURE (DECANTED): N/A
STANDARD ID: AA05968
SENSITIVITY ID: AA05966

GPC CLEANUP __YES ✓NO
SEPARATORY EXTRACTION __YES
CONTINUOUS EXTRACTION ✓YES

CAS #		UG/L	
121-14-2	2,4-DINITROTOLUENE	10.	U
606-20-2	2,6-DINITROTOLUENE	10.	U
84-66-2	DIETHYL PHTHALATE	10.	U
7005-72-3	4-CHLOROPHENYL PHENYL ETHER	10.	U
86-73-7	FLUORENE	10.	U
100-01-6	4-NITROANILINE	50.	U
534-52-1	4,6-DINITRO-2-METHYLPHENOL	50.	U
86-30-6	N-NITROSODIPHENYLAMINE	10.	U
101-55-3	4-BROMOPHENYL PHENYL ETHER	10.	U
118-74-1	HEXACHLOROBENZENE	10.	U
87-86-5	PENTACHLOROPHENOL	50.	U
85-01-8	PHENANTHRENE	10.	U
120-12-7	ANTHRACENE	10.	U
84-74-2	DI-N-BUTYL PHTHALATE	3.	J B
206-44-0	FLUORANTHENE	10.	U
129-00-0	PYRENE	10.	U
85-68-7	BUTYL BENZYL PHTHALATE	10.	U
91-94-1	3,3'-DICHLOROBENZIDINE	20.	U
56-55-3	BENZO(A)ANTHRACENE	10.	U
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	10.	U
218-01-9	CHRYSENE	10.	U
117-84-0	DI-N-OCTYL PHTHALATE	10.	U
205-99-2	BENZO(B)FLUORANTHENE	10.	U
207-08-9	BENZO(K)FLUORANTHENE	10.	U
50-32-8	BENZO(A)PYRENE	10.	U
193-39-5	INDENO(1,2,3-CD)PYRENE	10.	U
53-70-3	DIBENZO(A,H)ANTHRACENE	10.	U
191-24-2	BENZO(GHI)PERYLENE	10.	U

RESULTS ARE REPORTED ON A WET WEIGHT BASIS.

FORM I

Laboratory Name: EA Laboratories

Case No: Willow Grove

Sample Number: Rinsate Blank#5

EA# 0820

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

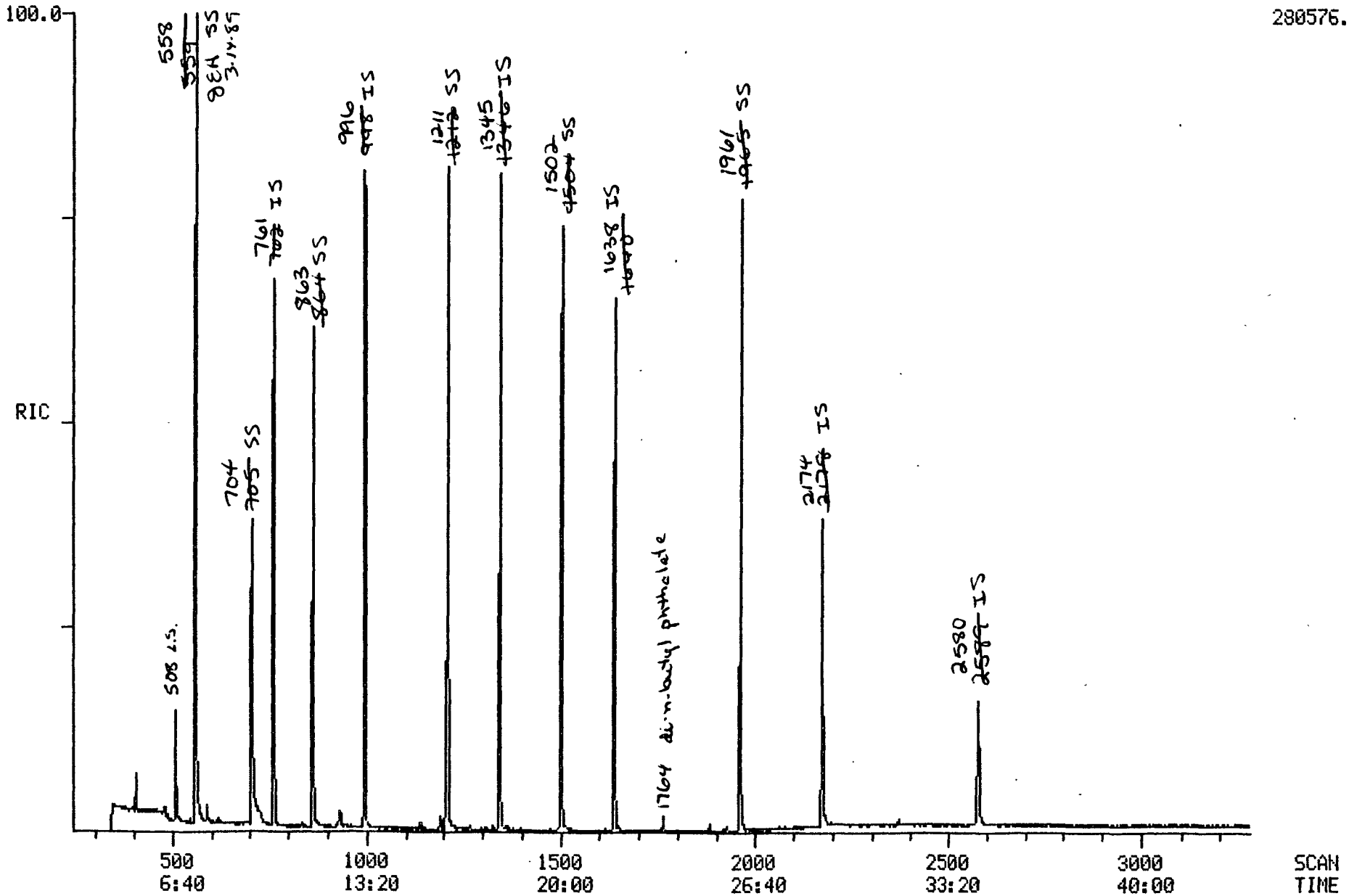
CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. —	unknown	BNA	508	20 J.B
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

RIC
03/13/89 23:11:00
SAMPLE: BNA WATER RINSATE BLANK #5
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
RANGE: G 1,3275 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

DATA: AA05977 #1
CALI: AA05977 #4
WILLOW GROVE EA# 0820 (2)

SCANS 240 TO 3275

280576. 3 213



Quantitation Report File: AA05977

Data: AA05977.TI
03/13/89 23:11:00
Sampl : BNA WATER RINSATE BLANK #5 WILLOW GROVE EA# 0820 <2>
Conds.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
Standard ID: AA05968 Instrument: MS2
Sensitivity ID: AA05966 Analyst: JEH - EA Inst Cali: 03/13/89

AMOUNT=AREA * REF AMNT/(REF AREA * RESP FACT)
Resp. fac. from Library Entry

NO	NAME	
1	IS1**	1,4-DICHLOROBENZENE-D4
2	IS2**	NAPHTHALENE-D8
3	IS3**	ACENAPHTHENE-D10
4	IS4**	PHENANTHRENE-D10
5	IS5**	CHRYSENE-D12
6	IS6**	PERYLENE-D12
7	65A	PHENOL
8	18B	BIS (2-CHLOROETHYL) ETHER
9	24A	2-CHLOROPHENOL
10	26B	1,3-DICHLOROBENZENE
11	27B	1,4-DICHLOROBENZENE
12	6H	BENZYL ALCOHOL
13	25B	1,2-DICHLOROBENZENE
14	2H	2-METHYLPHENOL
15	42B	BIS (2-CHLOROISOPROPYL) ETHER
16	3H	4-METHYLPHENOL
17	63B	N-NITROSO-DI-N-PROPYLAMINE
18	12B	HEXACHLOROETHANE
19	56B	NITROBENZENE
20	54B	ISOPHORONE
21	57A	2-NITROPHENOL
22	34A	2,4-DIMETHYLPHENOL
23	1H	BENZOIC ACID
24	43B	BIS (2-CHLOROETHOXY) METHANE
25	31A	2,4-DICHLOROPHENOL
26	8B	1,2,4-TRICHLOROBENZENE
27	55B	NAPHTHALENE
28	7H	4-CHLOROANILINE
29	52B	HEXACHLOROBUTADIENE
30	22A	4-CHLORO-3-METHYLPHENOL
31	9H	2-METHYLNAPHTHALENE
32	53B	HEXACHLOROCYCLOPENTADIENE
33	21A	2,4,6-TRICHLOROPHENOL
34	4H	2,4,5-TRICHLOROPHENOL
35	20B	2-CHLORONAPHTHALENE
36	10H	2-NITROANILINE
37	71B	DIMETHYLPHTHALATE
38	77B	ACENAPHTHYLENE
39	11H	3-NITROANILINE
40	1B	ACENAPHTHENE
41	59A	2,4-DINITROPHENOL
42	58A	4-NITROPHENOL
43	8H	DIBENZOFURAN
44	36B	2,6-DINITROTOLUENE
45	35B	2,4-DINITROTOLUENE
46	70B	DIETHYLPHTHALATE
47	40B	4-CHLOROPHENYLPHENYL ETHER
48	80B	FLUORENE
49	12H	4-NITROANILINE
50	60A	4,6-DINITRO-O-CRESOL

AA05977

No	m/z	Scan	Time	Ref	RRT	Meth	Area(Hght)	Amount	%Tot
1	152	761	10:09	1	1.000	A BB	104155.	40.000 PPM	16.63
2	136	996	13:17	2	1.000	A VV	372727.	40.000 PPM	16.63
3	164	1345	17:56	3	1.000	A BV	143124.	40.000 PPM	16.63
4	188	1638	21:50	4	1.000	A BB	197225.	40.000 PPM	16.63
5	240	2174	28:59	5	1.000	A BB	112316.	40.000 PPM	16.63
6	264	2580	34:24	6	1.000	A BV	81782.	40.000 PPM	16.63
7	NOT FOUND								
8	NOT FOUND								
9	NOT FOUND								
10	NOT FOUND								
11	NOT FOUND								
12	NOT FOUND								
13	NOT FOUND								
14	NOT FOUND								
15	NOT FOUND								
16	NOT FOUND								
17	NOT FOUND								
18	NOT FOUND								
19	NOT FOUND								
20	NOT FOUND								
21	NOT FOUND								
22	NOT FOUND								
23	122	956	12:45	2	0.960	A BB	88.	~~0.068 PPM~~	0.03
24	NOT FOUND								
25	NOT FOUND								
26	NOT FOUND								
27	128	999	13:19	2	1.003	A BB	476.	~~0.059 PPM~~	0.02
28	NOT FOUND								
29	NOT FOUND								
30	NOT FOUND								
31	NOT FOUND								
32	NOT FOUND								
33	NOT FOUND								
34	NOT FOUND								
35	162	1227	16:22	3	0.912	A BB	263.	~~0.060 PPM~~	0.02
36	NOT FOUND								
37	163	1296	17:17	3	0.964	A BB	457.	~~0.095 PPM~~	0.04
38	NOT FOUND								
39	NOT FOUND								
40	NOT FOUND								
41	NOT FOUND								
42	NOT FOUND								
43	168	1381	18:25	3	1.027	A BB	524.	~~0.091 PPM~~	0.04
44	NOT FOUND								
45	NOT FOUND								
46	149	1436	19:09	3	1.068	A BB	759.	~~0.139 PPM~~	0.06
47	NOT FOUND								
48	166	1450	19:20	3	1.078	A BB	269.	~~0.062 PPM~~	0.03
49	NOT FOUND								
50	NOT FOUND								

Quantitation Report Fil : AA05977

Data: AA05977.TI
03/13/89 23:11:00
Sample: BNA WATER RINSATE BLANK #5 WILLOW GROVE EA# 0820 <2>
C nds.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
Standard ID: AA05968 Instrument: MS2
Sensitivity ID: AA05966 Analyst: JEH - EA Inst Cali: 03/13/89

AMOUNT=AREA * REF AMNT/(REF AREA * RESP FACT)
R sp. fac. from Library Entry

NO	NAME	
51	62B	N-NITROSODIPHENYLAMINE
52	41B	4-BROMOPHENYLPHENYL ETHER
53	9B	HEXACHLOROBENZENE
54	64A	PENTACHLOROPHENOL
55	81B	PHENANTHRENE
56	78B	ANTHRACENE
57	68B	DI-N-BUTYLPHTHALATE
58	39B	FLUORANTHENE
59	84B	PYRENE
60	67B	BUTYLBENZYLPHTHALATE
61	28B	3,3'-DICHLOROBENZIDINE
62	72B	BENZO (A) ANTHRACENE
63	66B	BIS (2-ETHYLHEXYL) PHTHALATE
64	76B	CHRYSENE
65	69B	DI-N-OCTYLPHTHALATE
66	74B	BENZO(B)FLUORANTHENE
67	75B	BENZO(K)FLUORANTHENE
68	73B	BENZO (A) PYRENE
69	83B	INDENO-1,2,3 (C,D) PYRENE
70	82B	DIBENZO (A,H) ANTHRACENE
71	79B	BENZO (G,H,I) PERYLENE
72	SS1*	PHENOL-D5
73	SS2*	2-FLUOROPHENOL
74	SS3*	NITROBENZENE-D5
75	SS4*	2-FLUOROBIPHENYL
76	SS5*	2,4,6-TRIBROMOPHENOL
77	SS6*	TERPHENYL-D14
78	61B	N-NITROSO-DIMETHYLAMINE
79	5B	BENZIDINE
80	ANI	ANILINE

AA05977

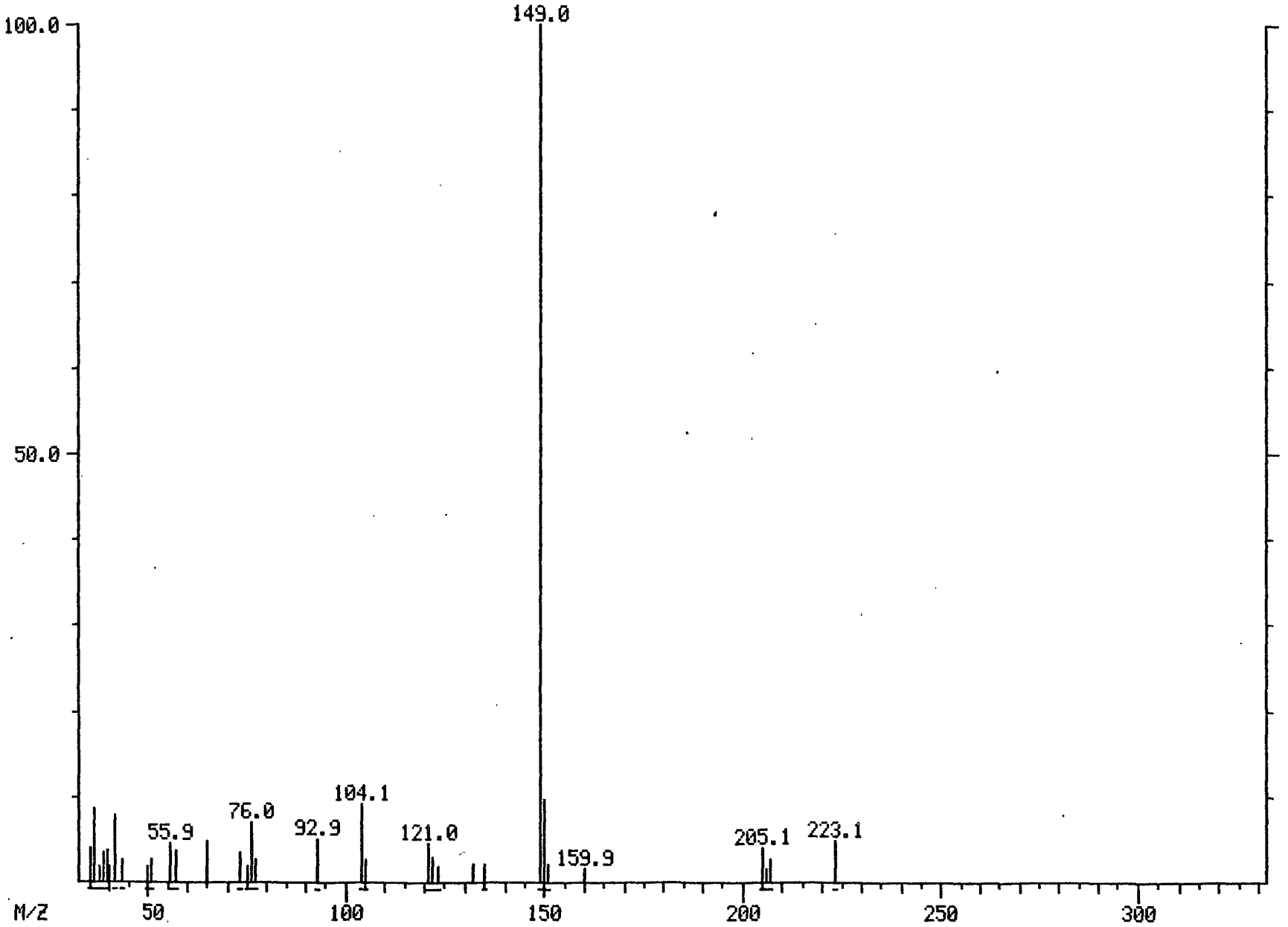
N	m/z	Scan	Tim	Ref	RRT	Meth	Ar a(Hght)	Amount	%Tot	
51	169	1474	19:39	4	0.900	A BB	797.	~~0.420 PPM~~	0.12	
52	NOT FOUND									
53	NOT FOUND									
54	NOT FOUND									
55	NOT FOUND									
56	NOT FOUND									
57	149	1764	23:31	4	1.077	A BB	9215.	1.289 PPM	0.36	
58	202	1884	25:07	4	1.150	A BB	3408.	~~0.620 PPM~~	0.17	
59	202	1929	25:43	5	0.887	A BB	2775.	~~0.634 PPM~~	0.18	
60	149	2064	27:31	5	0.949	A BB	841.	~~0.301 PPM~~	0.08	
61	NOT FOUND									
62	228	2179	29:03	5	1.002	A BB	1852.	~~0.580 PPM~~	0.16	
63	149	2184	29:07	5	1.005	A BB	2014.	~~0.502 PPM~~	0.14	
64	228	2179	29:03	5	1.002	A BB	1852.	~~0.624 PPM~~	0.18	
65	149	2331	31:05	6	0.903	A BB	658.	~~0.146 PPM~~	0.04	
66	NOT FOUND									
67	NOT FOUND									
68	NOT FOUND									
69	NOT FOUND									
70	NOT FOUND									
71	NOT FOUND									
72	99	704	9:23	1	0.925	A BB	148492.	59.061 PPM	16.58	59
73	112	558	7:26	1	0.733	A BB	206327.	77.856 PPM	21.86	78
74	82	863	11:30	2	0.866	A BV	175298.	46.577 PPM	13.08	93
75	172	1211	16:09	3	0.900	A BB	256064.	49.876 PPM	14.00	100
76	330	1502	20:02	3	1.117	A BB	43428.	64.452 PPM	18.10	64
77	244	1961	26:09	5	0.902	A BV	189512.	53.230 PPM	14.95	106
78	NOT FOUND									
79	NOT FOUND									
80	NOT FOUND									

MASS SPECTRUM
03/13/89 23:11:00 + 23:31
SAMPLE: BNA WATER RINSATE BLANK #5 WILLOW GROVE EA# 0820 <2>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 247 DEG. C

DATA: AA05977 #1764
CALI: AA05977 #4

BASE M/Z: 149
RIC: 5776.

3 213

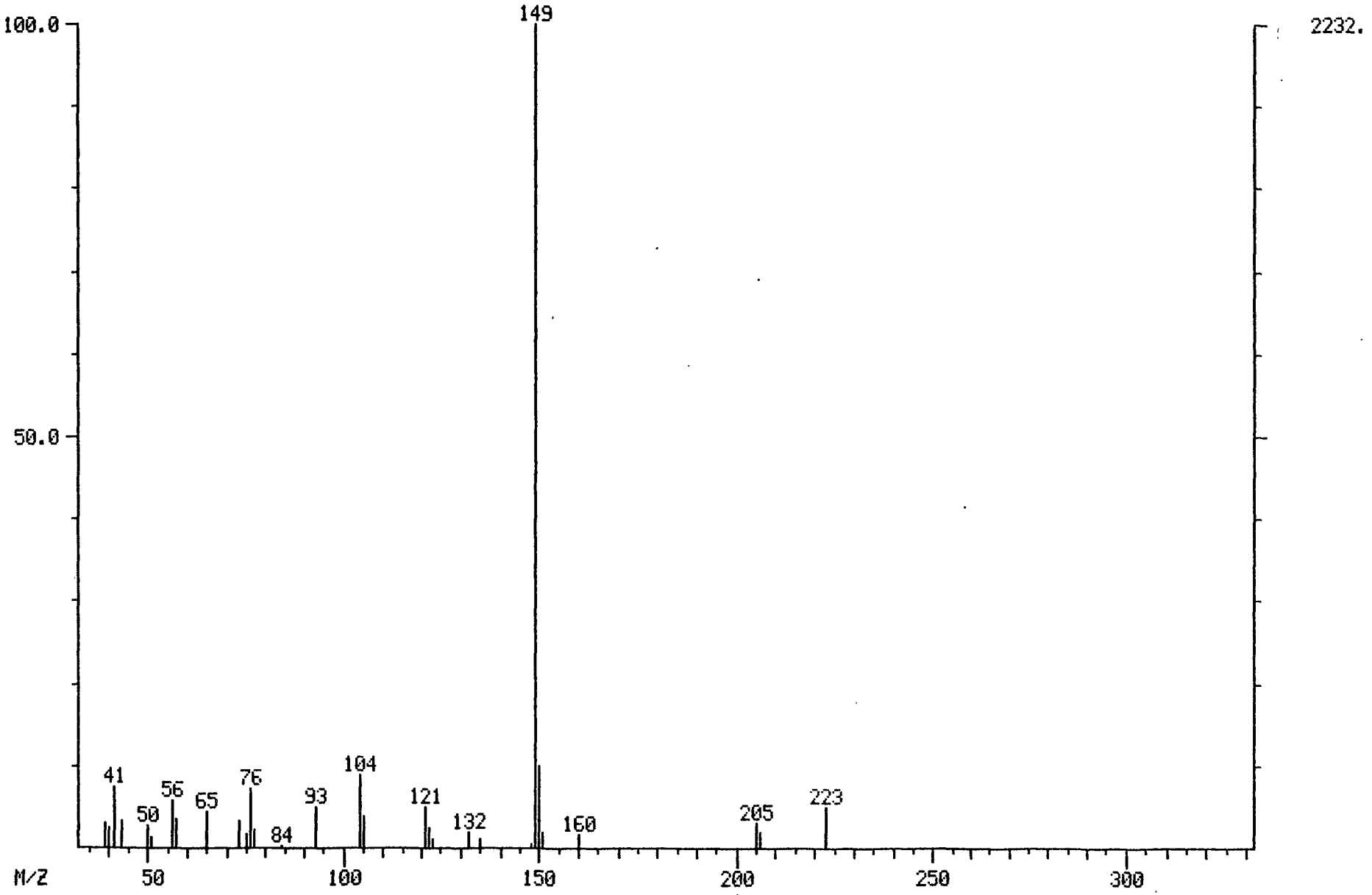


MASS SPECTRUM
03/13/89 23:11:00 + 23:31
SAMPLE: BNA WATER RINSATE BLANK #5 WILLOW GROVE EA# 0820 <2>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 247 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05977 #1764
CALI: AA05977 #4

BASE M/Z: 149
RIC: 4528.

3 219

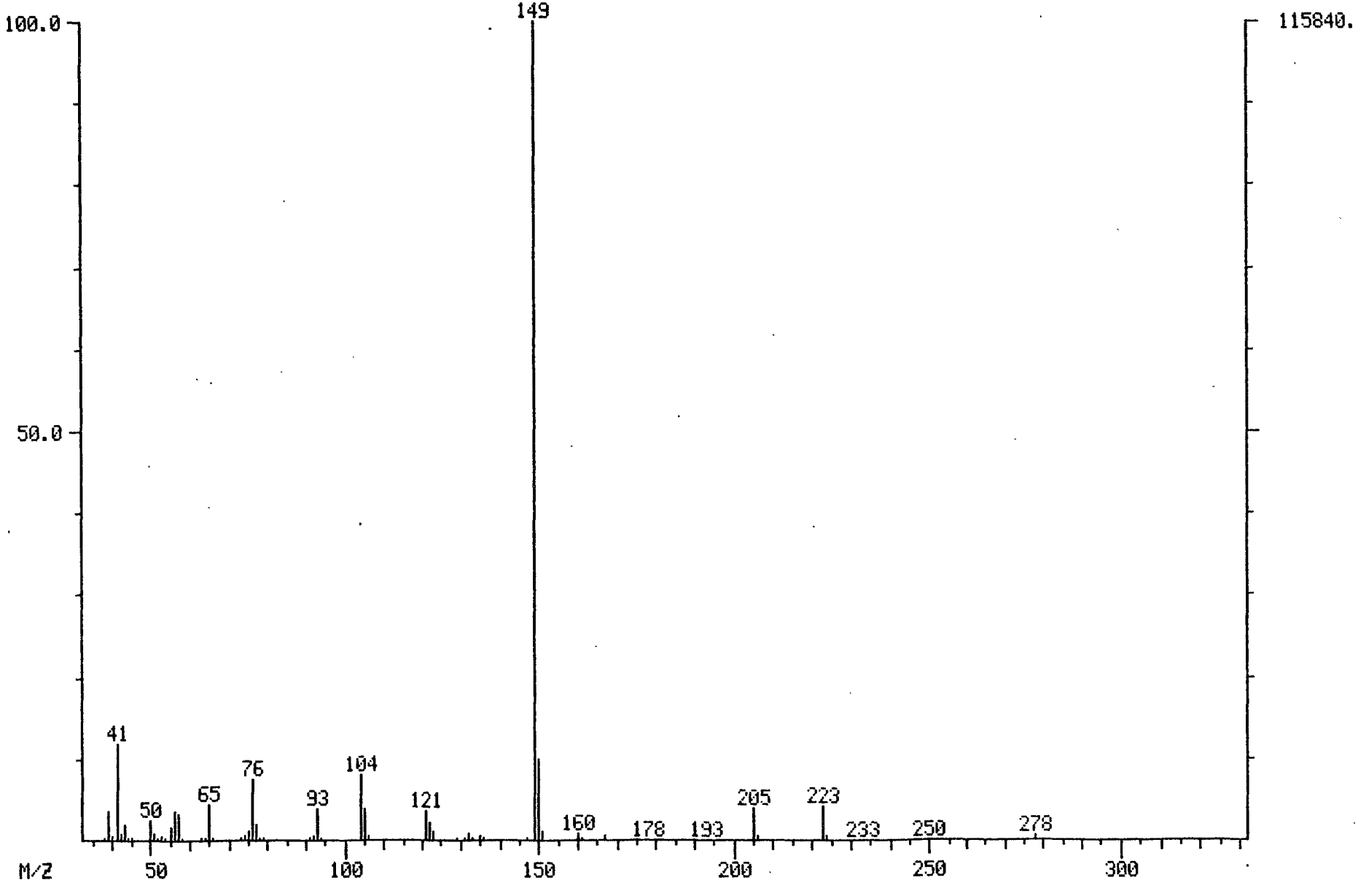


MASS SPECTRUM
03/13/89 14:40:00 + 23:32
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 248 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05968 #1765
CALI: AA05968 #4

BASE M/Z: 149
RIC: 232960.

3 220



Library Search Data: AA05977 # 405 Base m/z: 91
03/13/89 23:11:00 + 5:24 Cali: AA05977 # 4 RIC: 10847.
Sample: BNA WATER RINSATE BLANK #5 WILLOW GROVE EA# 0820 <2>
Conds.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
Enhanced (S 15B 2N OT)

38761 spectra in LIBRARYNB searched for maximum FIT
63 matched at least 6 of the 16 largest peaks in the unknown

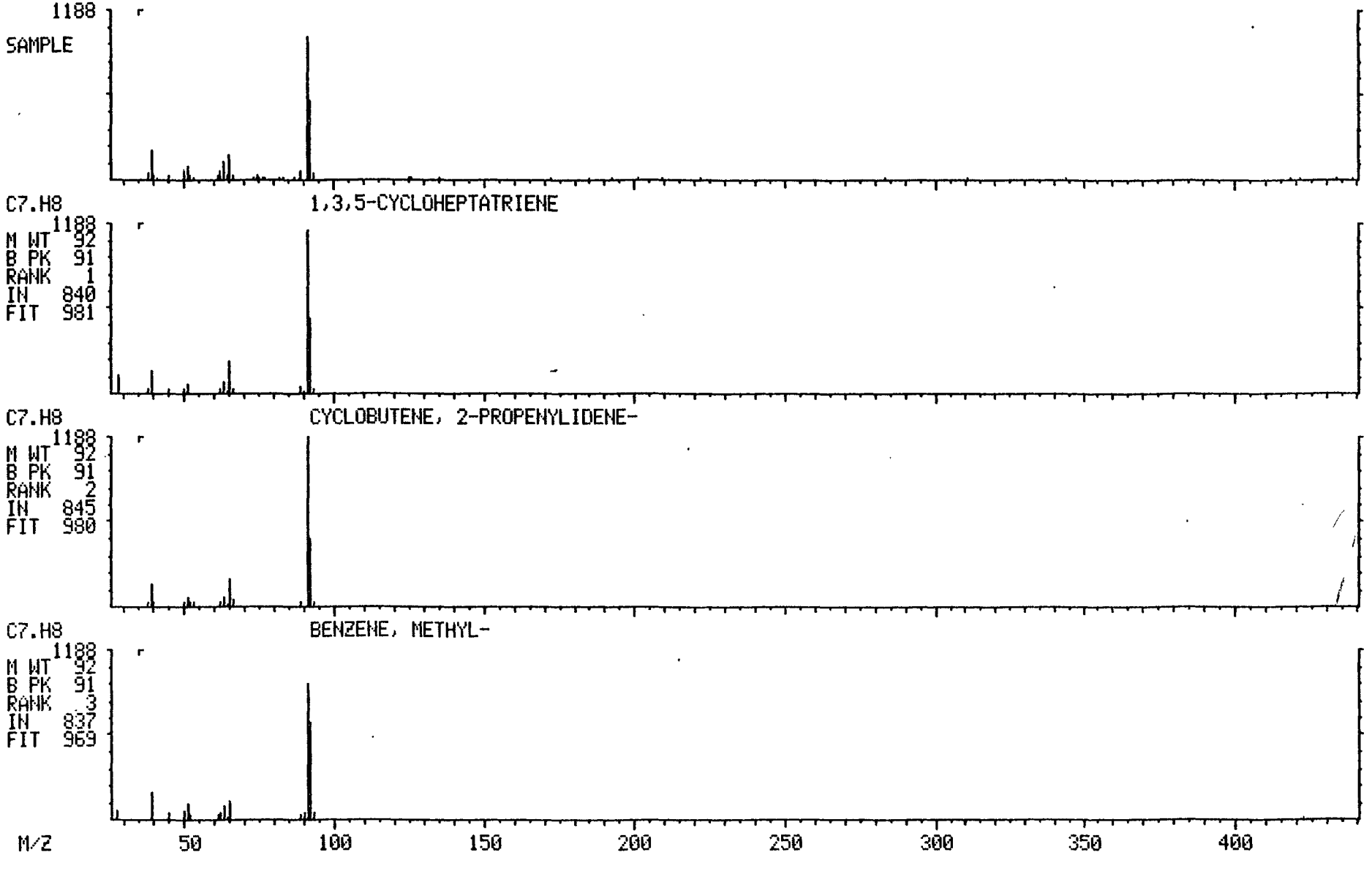
Rank	In.	Name
1	840	1,3,5-CYCLOHEPTATRIENE
2	845	CYCLOBUTENE, 2-PROPENYLIDENE-
3	837	BENZENE, METHYL-
4	842	BICYCLO[3.2.0]HEPTA-2,6-DIENE
5	844	SPIRO[3.3]HEPTA-1,5-DIENE

Rank	Formula	M.Wt	B.Pk	Purity	Fit	RFit
1	C7.H8	92	91	845	981	850
2	C7.H8	92	91	853	980	853
3	C7.H8	92	91	834	969	853
4	C7.H8	92	91	752	962	752
5	C7.H8	92	91	819	960	825

Rank	Ret.Time	B.P.Int.	US.Par.1	US.Par.2	C.A.S. #
1	—	—	—	—	544-25-2
2	—	—	—	—	52097-85-5
3	—	—	—	—	108-88-3
4	—	—	—	—	2422-86-8
5	—	—	—	—	22635-78-5

LIBRARY SEARCH DATA: AA05977 # 405 BASE M/Z: 91
03/13/89 23:11:00 + 5:24 CALI: AA05977 # 4 RIC: 10847.
SAMPLE: BNA WATER RINSATE BLANK #5 WILLOW GROVE EA# 0820 <2>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
ENHANCED (S 15B 2N 0T)

3 22?



Library Search Data: AA05977 # 508 Bas m/z: 43
03/13/89 23:11:00 + 6:46 Cali: AA05977 # 4 RIC: 33919.
Sample: BNA WATER RINSATE BLANK #5 WILLOW GROVE EA# 0820 <2>
Conds.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
Enhanced (S 15B 2N OT)

38761 spectra in LIBRARYNB searched for maximum FIT
92 matched at least 7 of the 16 largest peaks in the unknown

Rank	In.	Name
1	1038	2-PROPYN-1-OL, ACETATE
2	792	HYDROPEROXIDE, 1,1-DIMETHYLETHYL
3	1357	2,3-BUTANEDIONE, MONOOXIME
4	94	PROPANE, 2-METHYL-
5	1082	2-PROPANONE, 1-CYCLOPROPYL-

Rank	Formula	M.Wt	B.Pk	Purity	Fit	RFit
1	C5.H6.O2	98	43	406	938	425
2	C4.H10.O2	90	59	709	902	716
3	C4.H7.O2.N	101	43	570	887	589
4	C4.H10	58	43	457	864	465
5	C6.H10.O	98	43	435	861	458

Rank	Ret. Time	B.P. Int.	US.Par.1	US.Par.2	C.A.S. #
1	—	—	—	—	627-09-8
2	—	—	—	—	75-91-2
3	—	—	—	—	57-71-6
4	—	—	—	—	75-28-5
5	—	—	—	—	4160-75-2

C. Standards Data

Initial Calibration Data
HSL Compounds

Case No: Willow Grove

Instrument ID: GC/MS#4(D)

Contractor: EA LABORATORIES

Calibration Date: ~~03/01/89~~ 02/27/89

Contract No:

Minimum $\overline{RF}$ for SPCC is 0.05 Maximum % RSD for CCC is 30.00%

Laboratory ID:	>DC990	>DC986	>DC989	>DC988	>DC987					
	RF	RF	RF	RF	RF					
Compound	20.00	50.00	80.00	120.00	160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
2-Fluorophenol	1.06821	.93849	1.05208	.99313	1.00198	.659	1.01078	5.098		
Phenol-d5	1.34777	.98943	1.12174	.99898	1.06880	.931	1.10534	13.198		
Phenol	1.42375	1.25214	1.30309	1.17468	1.03415	.936	1.23756	11.745	*	
bis(2-Chloroethyl)ether	1.31475	1.08276	1.15272	1.12988	1.11036	.938	1.15809	7.881		
2-Chlorophenol	1.16065	1.03249	1.01479	.97414	1.01360	.951	1.03913	6.852		
1,3-Dichlorobenzene	1.27809	1.11268	1.11351	1.01298	1.06487	.987	1.11643	8.903		
1,4-Dichlorobenzene	1.28485	1.08964	1.08582	1.02118	1.03637	1.007	1.10357	9.577	*	
Benzyl Alcohol	.35143	.37082	.32353	.35506	.38683	1.081	.35753	6.610		
1,2-Dichlorobenzene	1.23652	1.06309	1.01549	1.01869	.95168	1.072	1.05710	10.205		
2-Methylphenol	.96647	.88191	.96841	.96034	.94191	1.147	.94381	3.830		
bis(2-Chloroisopropyl)ether	1.41002	1.05620	1.36702	1.33425	1.16422	1.137	1.26634	11.844		
4-Methylphenol	.97980	.87638	.94512	.91703	.87628	1.216	.91892	4.874		
N-Nitroso-Di-n-propylamine	.95199	.84277	.96021	.84820	.74395	1.204	.86942	10.282		**
Hexachloroethane	.59487	.52651	.51136	.47963	.47598	1.191	.51767	9.296		
Nitrobenzene-d5	.31420	.26781	.28139	.28040	.27198	.801	.28316	6.451		
Nitrobenzene	.36252	.29865	.32232	.28891	.27897	.807	.31027	10.745		
Isophorone	.68713	.58501	.61906	.60403	.57368	.882	.61378	7.258		
2-Nitrophenol	.17596	.16360	.16060	.16550	.16132	.896	.16539	3.757	*	
2,4-Dimethylphenol	.30946	.28128	.27715	.27666	.27527	.941	.28396	5.081		
Benzoic Acid	-	.13809	-	.16415	.16537	1.029	.15587	9.888		
bis(2-Chloroethoxy)methane	.39342	.33595	.35053	.29670	.31193	.959	.33770	11.097		
2,4-Dichloropnenol	.25906	.23043	.22992	.21713	.21297	.982	.22990	7.843	*	
1,2,4-Trichlorobenzene	.28870	.25308	.24245	.23585	.23531	.991	.25108	8.849		
Naphthalene	.86864	.72652	.72119	.70796	.70979	1.007	.74682	9.178		
4-Chloroaniline	.31209	.26993	.28536	.27543	.25535	1.042	.27963	7.560		
Hexachlorobutadiene	.18087	.15926	.14554	.13353	.14318	1.073	.15248	12.031	*	
4-Chloro-3-methylphenol	.27042	.23186	-	.23093	.22157	1.234	.23869	9.072	*	
2-Methylnaphthalene	.69294	.59684	.59342	.52559	.53646	1.231	.58905	11.282		
Hexachlorocyclopentadiene	.24177	.25732	.22844	.22878	.22911	.825	.23708	5.331		**
2,4,6-Trichlorophenol	.32827	.30445	.29285	.28275	.28209	.849	.29808	6.431	*	

RF - Response Factor (Subscript is amount in NG)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Initial Calibration Data
HSL Compounds

Case No: Willow Glove

Instrument ID: GC/MS#4(D)

Contractor: EA LABORATORIES

Calibration Date: ~~03/01/89~~ 02/27/89

Contract No:

Minimum $\overline{RF}$ for SPCC is 0.05 Maximum % RSD for CCC is 30.00%

Laboratory ID:	>DC990	>DC986	>DC989	>DC988	>DC987					
Compound	RF 20.00	RF 50.00	RF 80.00	RF 120.00	RF 160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
2,4,5-Trichlorophenol	.32615	.30468	.28466	.29356	.28966	.864	.29974	5.505		
2-Chloronaphthalene	.90939	.83957	.79401	.75933	.73944	.876	.80835	8.422		
2-Fluorobiphenyl	1.00633	.91289	.83916	.77713	.77616	.865	.86233	11.379		
2-Nitroaniline	-	.22238	.26546	.25902	.23585	.914	.24567	8.171		
Dimethylphthalate	1.19535	1.07108	1.08389	1.02564	1.00651	.973	1.07649	6.841		
Acenaphthylene	1.43474	1.28531	1.25575	1.16031	1.17591	.965	1.26240	8.693		
3-Nitroaniline	-	.13970	.15502	.15783	.14680	1.008	.14984	5.486		
Acenaphthene	.94517	.83808	.79860	.75357	.73558	1.008	.81420	10.244	*	
2,4-Dinitrophenol	-	.09972	.11331	.12233	.11956	1.030	.11373	8.857		**
4-Nitrophenol	-	.06299	.06754	.08252	.07390	1.091	.07174	11.802		**
Dibenzofuran	1.19967	1.07853	1.09894	1.08709	1.09160	1.044	1.11117	4.502		
2,4-Dinitrotoluene	.28694	.27016	.29861	.29888	.28736	1.065	.28839	4.066		
2,6-Dinitrotoluene	.25841	.23834	.25083	.22581	.22846	.983	.24037	5.856		
Diethylphthalate	1.24373	1.11397	1.10666	1.06363	1.03591	1.135	1.11278	7.177		
4-Chlorophenyl-phenylether	.47387	.43016	.41513	.41319	.42916	1.131	.43230	5.669		
Fluorene	.94117	.84524	.84862	.81284	.83718	1.120	.85701	5.727		
4-Nitroaniline	-	.09114	.10748	.10850	.09531	1.149	.10061	8.652		
4,6-Dinitro-2-methylphenol	-	.13177	.12118	.11880	.11645	.874	.12205	5.541		
N-Nitrosodiphenylamine	.42497	.37092	.33727	.30780	.31320	.878	.35083	13.783	*	
2,4,6-Tribromophenol	.13941	.11805	.12640	.12830	.12611	.890	.12765	6.004		
4-Bromophenyl-phenylether	.21702	.19444	.17504	.17334	.17734	.933	.18744	9.904		
Hexachlorobenzene	.31896	.28184	.24563	.23105	.22987	.951	.26147	14.681		
Pentachlorophenol	-	.12461	.12388	.13004	.13970	.989	.12956	5.632	*	
Phenanthrene	.81441	.75302	.70804	.70216	.71384	1.004	.73829	6.363		
Anthracene	.76679	.72788	.68300	.66459	.65696	1.012	.69984	6.638		
Di-n-Butyl phthalate	1.31056	1.22545	1.14938	1.06283	1.03642	1.134	1.15693	9.830		
Fluoranthene	.69620	.61289	.61868	.63505	.62516	1.205	.63759	5.298	*	
Pyrene	2.01892	1.94435	1.78589	1.59726	1.66682	.855	1.80265	9.915		
Terphenyl-d14	1.34543	1.29184	1.23520	1.15597	1.16125	.885	1.23794	6.645		
Butylbenzylphthalate	.91175	.92279	.91367	.83895	.84880	.955	.88719	4.499		

RF - Response Factor (Subscript is amount in NG)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Initial Calibration Data
HSL Compounds

Case No: Willow Glove

Instrument ID: GC/MS#4(D)

Contractor: EA LABORATORIES

Calibration Date: ~~03/01/89~~ 02/27/89

Contract No:

Minimum $\overline{RF}$ for SPCC is 0.05 Maximum % RSD for CCC is 30.00%

Laboratory ID:	>DC990	>DC986	>DC989	>DC988	>DC987					
Compound	RF 20.00	RF 50.00	RF 80.00	RF 120.00	RF 160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
3,3'-Dichlorobenzidine	.15188	.15278	.20537	.22175	.21679	1.004	.18971	18.259		
Benzo(a)Anthracene	.89077	.83879	.84030	.81982	.81554	.998	.84104	3.557		
bis(2-Ethylhexyl)phthalate	1.32540	1.34584	1.31556	1.18451	1.18007	1.032	1.27028	6.383		
Chrysene	.85318	.78068	.72253	.71285	.71167	1.003	.75618	8.098		
Di-n-Octyl phthalate	1.76026	1.82089	2.04177	1.76672	1.89316	.953	1.85656	6.273	*	
Benzo(b)Fluoranthene	.84230	.83776	.89846	.79153	.90536	.968	.85508	5.520		
Benzo(k)Fluoranthene	.93670	.81838	.79291	.75584	.73413	.970	.80759	9.804		
Benzo(a)Pyrene	.75128	.71663	.72505	.70326	.71480	.995	.72221	2.495	*	
Indeno(1,2,3-cd)Pyrene	.59266	.59713	.55990	.61616	.62276	1.086	.59772	4.118		
Dibenzo(a,h)Anthracene	.53541	.55207	.52308	.55249	.57370	1.088	.54735	3.508		
Benzo(g,h,i)Perylene	.61767	.59344	.55486	.58955	.60114	1.104	.59133	3.900		

RF - Response Factor (Subscript is amount in NG)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Initial Calibration Data
HSL Compounds

Case No: _____ Instrument ID: GC/MS#6(F)

Contractor: EA LABORATORIES Calibration Date: ~~04/11/89~~ 03/08/89

Contract No: _____

Minimum RF for SPCC is 0.05 Maximum % RSD for CCC is 30.00%

Laboratory ID:	>FB803	>FB799	>FB802	>FB801	>FB800					
Compound	RF 20.00	RF 50.00	RF 80.00	RF 120.00	RF 160.00	RRT	RF	% RSD	CCC	SPCC
2-Fluorophenol	1.51028	1.24541	1.47556	1.41761	1.31958	.688	1.39369	7.889		
Phenol-d5	1.78115	1.46692	1.71816	1.71843	1.55879	.916	1.64869	7.929		
Phenol	1.74674	1.83122	1.69106	1.59556	1.42160	.920	1.65724	9.481	*	
bis(2-Chloroethyl)ether	1.49703	1.53213	1.43981	1.45832	1.44303	.939	1.47406	2.689		
2-Chlorophenol	1.36558	1.43077	1.35733	1.32452	1.27485	.953	1.35061	4.240		
1,3-Dichlorobenzene	1.52868	1.46031	1.41095	1.31576	1.20256	.989	1.38365	9.217		
1,4-Dichlorobenzene	1.51856	1.45795	1.38609	1.26915	1.15159	1.005	1.35667	10.873	*	
Benzyl Alcohol	.15956	.26706	.11458	.38175	.52980	1.076	.29055	58.163		
1,2-Dichlorobenzene	1.46134	1.36784	1.35323	1.27070	1.14695	1.060	1.32002	8.943		
2-Methylphenol	1.22781	1.44169	1.14823	1.32955	1.19194	1.091	1.26785	9.308		
bis(2-Chloroisopropyl)ether	2.27994	2.34471	2.35816	2.41704	2.37373	1.094	2.35472	2.118		
4-Methylphenol	1.22073	1.18892	1.20499	1.14132	1.11106	1.138	1.17341	3.904		
N-Nitroso-Di-n-propylamine	1.20108	1.24349	1.21300	1.14757	.90998	1.144	1.14302	11.794		**
Hexachloroethane	.71889	.70302	.66729	.56828	.47295	1.150	.62609	16.564		
Nitrobenzene-d5	.41824	.40018	.40599	.41100	.40661	.841	.40840	1.643		
Nitrobenzene	.42224	.41537	.40119	.39804	.39354	.845	.40608	2.999		
Isophorone	.89347	.85394	.84861	.84860	.84344	.898	.85761	2.377		
2-Nitrophenol	.20295	.21939	.20304	.20984	.20642	.916	.20833	3.267	*	
2,4-Dimethylphenol	.36960	.37527	.35547	.35886	.34234	.929	.36031	3.561		
Benzoic Acid	-	.14911	.15508	.12767	.17855	.967	.15260	13.711		
bis(2-Chloroethoxy)methane	.47367	.46445	.44877	.44595	.43752	.951	.45407	3.229		
2,4-Dichlorophenol	.27058	.28646	.26877	.25399	.23893	.973	.26215	6.797	*	
1,2,4-Trichlorobenzene	.35049	.32800	.31230	.29492	.28476	.989	.31409	8.347		
Naphthalene	1.03871	.92748	.91804	.86663	.79562	1.006	.90930	9.821		
4-Chloroaniline	.35587	.35070	.33653	.34674	.33472	1.028	.34491	2.637		
Hexachlorobutadiene	.21814	.20074	.19107	.17214	.15612	1.046	.18764	12.911	*	
4-Chloro-3-methylphenol	.27715	.30394	.28377	.29919	.27479	1.152	.28777	4.561	*	
2-Methylnaphthalene	.56582	.51454	.50286	.49518	.45868	1.175	.50742	7.638		
Hexachlorocyclopentadiene	.32054	.35085	.33446	.35478	.33309	.850	.33874	4.138		**
2,4,6-Trichlorophenol	.40434	.44901	.40597	.39651	.41243	.868	.41365	4.970	*	

RF - Response Factor (Subscript is amount in NG)

RRT - Average Relative Retention Time (RT Std/RT Istd)

RF - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Initial Calibration Data
HSL Compounds

Case No:

Instrument ID: GC/MS#6(F)

Contractor: EA LABORATORIES

Calibration Date: ~~04/11/89~~ 03/08/89

Contract No:

Minimum RF for SPCC is 0.05 Maximum % RSD for CCC is 30.00%

Laboratory ID:	>FB803	>FB799	>FB802	>FB801	>FB800					
Compound	RF 20.00	RF 50.00	RF 80.00	RF 120.00	RF 160.00	RRT	RF	% RSD	CCC	SPCC
2,4,5-Trichlorophenol	.45083	.45012	.49083	.49649	.44876	.877	.46741	5.147		
2-Chloronaphthalene	1.33286	1.23464	1.22825	1.17541	1.07474	.898	1.20918	7.794		
2-Fluorobiphenyl	1.55538	1.38306	1.43819	1.30265	1.22100	.882	1.38006	9.266		
2-Nitroaniline	-	.41673	.43720	.46988	.44175	.928	.44139	4.959		
Dimethylphthalate	1.65516	1.61445	1.58467	1.51192	1.44054	.965	1.56135	5.472		
Acenaphthylene	1.99765	1.81962	1.90134	1.81953	1.70022	.973	1.84767	5.972		
3-Nitroaniline	-	.24368	.25629	.26342	.24248	1.003	.25147	4.025		
Acenaphthene	1.36156	1.17623	1.24440	1.15432	1.03717	1.007	1.19474	10.000	*	
2,4-Dinitrophenol	-	.13211	.11857	.15391	.15289	1.020	.13937	12.286		**
4-Nitrophenol	-	.11690	.11058	.11368	.11145	1.041	.11315	2.490		**
Dibenzofuran	1.57493	1.46647	1.49856	1.44256	1.36775	1.034	1.47005	5.163		
2,4-Dinitrotoluene	.39276	.40353	.40214	.41097	.38622	1.046	.39912	2.429		
2,6-Dinitrotoluene	.35055	.36646	.36536	.37106	.35544	.979	.36177	2.342		
Diethylphthalate	1.63317	1.64349	1.57472	1.48143	1.37381	1.091	1.54132	7.371		
4-Chlorophenyl-phenylether	.60488	.57383	.53403	.46791	.40067	1.097	.51626	15.968		
Fluorene	1.22693	1.06410	1.06944	.96957	.85469	1.096	1.03695	13.262		
4-Nitroaniline	-	.17296	.19301	.17611	.16022	1.115	.17558	7.689		
4,6-Dinitro-2-methylphenol	-	.18043	.17120	.17095	.17276	.885	.17383	2.573		
N-Nitrosodiphenylamine	.58527	.57484	.56938	.56152	.52584	.888	.56337	4.027	*	
2,4,6-Tribromophenol	.14499	.14155	.16664	.18611	.17848	.905	.16355	12.113		
4-Bromophenyl-phenylether	.26406	.27371	.25941	.26805	.24835	.937	.26272	3.654		
Hexachlorobenzene	.35672	.34953	.34672	.33340	.30474	.956	.33822	6.071		
Pentachlorophenol	-	.15671	.15774	.16602	.16410	.984	.16114	2.862	*	
Phenanthrene	1.11135	.98352	1.03102	.98569	.94093	1.004	1.01050	6.409		
Anthracene	1.05757	.95149	.98310	.94004	.89538	1.010	.96552	6.246		
Di-n-Butyl phthalate	1.70374	1.68363	1.64711	1.47809	1.38212	1.092	1.57894	8.962		
Fluoranthene	.95117	.82710	.88926	.72856	.71832	1.174	.82288	12.261	*	
Pyrene	2.37947	1.87286	1.91668	2.18381	1.89721	.884	2.05000	10.879		
Terphenyl-d14	1.74815	1.45454	1.45102	1.59743	1.35898	.900	1.52203	10.018		
Butylbenzylphthalate	1.28020	1.10733	1.02630	1.13700	1.02939	.952	1.11604	9.293		

RF - Response Factor (Subscript is amount in NG)

RRT - Average Relative Retention Time (RT Std/RT Istd)

RF - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Initial Calibration Data
HSL Compounds

Case No:

Instrument ID: GC/MS#6(F)

Contractor: EA LABORATORIES

Calibration Date: ~~04/11/89~~ 03/08/89

Contract No:

Minimum RF for SPCC is 0.05 Maximum % RSD for CCC is 30.00%

Laboratory ID:	>FB803	>FB799	>FB802	>FB801	>FB800					
Compound	RF 20.00	RF 50.00	RF 80.00	RF 120.00	RF 160.00	RRT	RF	% RSD	CCC	SPCC
3,3'-Dichlorobenzidine	.25779	.28396	.37241	.36988	.37367	.998	.33154	16.941		
Benzo(a)Anthracene	1.27646	1.14235	1.21408	1.22140	1.15065	.998	1.20099	4.609		
bis(2-Ethylhexyl)phthalate	1.92654	1.60167	1.47854	1.57874	1.33971	1.004	1.58504	13.695		
Chrysene	1.20538	1.03270	1.10348	1.05823	1.02868	1.002	1.08570	6.745		
Di-n-Octyl phthalate	2.67338	2.31569	2.28469	2.40232	2.15005	.929	2.36523	8.230	*	
Benzo(b)Fluoranthene	1.23821	1.23977	1.40871	1.28262	1.20922	.965	1.27571	6.179		
Benzo(k)Fluoranthene	1.13925	.97056	.98557	1.10346	1.02245	.967	1.04426	7.083		
Benzo(a)Pyrene	.99274	.96308	1.07752	1.05532	1.03991	.995	1.02571	4.566	*	
Indeno(1,2,3-cd)Pyrene	.84177	.95147	.96836	1.04489	1.07679	1.118	.97665	9.382		
Dibenzo(a,h)Anthracene	.61090	.74123	.75360	.83562	.84821	1.119	.75791	12.534		
Benzo(g,h,i)Perylene	.70908	.78630	.77775	.86700	.89853	1.155	.80773	9.357		

RF - Response Factor (Subscript is amount in NG)

RRT - Average Relative Retention Time (RT Std/RT Istd)

RF - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Initial Calibration Data
HSL Compounds

Case No: Instrument ID: GC/MS#6(F)

Contractor: EA LABORATORIES Calibration Date: ~~04/13/89~~ 03/10/87

Contract No:

Minimum $\overline{RF}$ for SPCC is 0.05 Maximum % RSD for CCC is 30.00%

Laboratory ID:	>FB828	>FB824	>FB827	>FB826	>FB825					
	RF	RF	RF	RF	RF					
Compound	20.00	50.00	80.00	120.00	160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
2-Fluorophenol	1.48964	1.34254	1.23686	1.16156	1.04069	.687	1.25426	13.677		
Phenol-d5	1.91131	1.64985	1.58977	1.50763	1.33636	.916	1.59898	13.176		
Phenol	1.97625	1.83221	1.71974	1.45033	1.37748	.921	1.67120	15.149	*	
bis(2-Chloroethyl)ether	1.62171	1.57788	1.52768	1.35423	1.35160	.940	1.48662	8.510		
2-Chlorophenol	1.45407	1.37152	1.33020	1.22842	1.19203	.953	1.31525	8.099		
1,3-Dichlorobenzene	1.56125	1.42470	1.30002	1.16288	1.06210	.990	1.30219	15.319		
1,4-Dichlorobenzene	1.53620	1.40957	1.27535	1.14357	1.03293	1.005	[illegible]	15.737	*	
Benzyl Alcohol	.28143	.37506	.25215	.24332	.62022	1.055	.35445	44.429		
1,2-Dichlorobenzene	1.50291	1.34962	1.23149	1.06345	.98555	1.060	1.21042	20.407		
2-Methylphenol	1.51250	1.32469	1.28464	1.12567	1.05927	1.090	1.26135	14.120		
bis(2-Chloroisopropyl)ether	2.82372	2.76657	2.86560	2.64061	2.52614	1.095	2.72445	5.120		
4-Methylphenol	1.38905	1.24486	1.21994	[illegible]	[illegible]	1.139	1.21969	9.034		
N-Nitroso-Di-n-[illegible]	[illegible]	[illegible]	1.27984	1.06966	1.02925	1.145	1.20970	12.333		**
Hexa[illegible]	.71355	.65689	.59209	.47682	.40101	1.151	.56807	22.589		
Nitrobenzene-d5	.46320	.44323	.43553	.42572	.40456	.842	.43445	4.983		
Nitrobenzene	.42900	.41597	.40708	.38985	.36425	.845	.40123	6.256		
Isophorone	.88497	.85352	.84096	.83444	.82865	.898	.84643	2.[illegible]		
2-Nitrophenol	.20457	.20981	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4.979		
[illegible]	[illegible]	.27287	.26347	.24387	.22976	.973	.25748	7.826	*	
1,2,4-Trichlorobenzene	.33923	.31590	.29704	.27131	.25324	.989	.29535	11.609		
Naphthalene	.98908	.89787	.84438	.76397	.70442	1.006	.83994	13.278		
4-Chloroaniline	.33687	.36291	.37000	.33257	.33549	1.028	.34757	5.033		
Hexachlorobutadiene	.18767	.17275	.16550	.15225	.13549	1.046	.16273	12.220	*	
4-Chloro-3-methylphenol	.29897	.29086	.30159	.28361	.26924	1.152	.28885	4.516	*	
2-Methylnaphthalene	.54294	.50893	.49811	.44988	.43287	1.176	.48654	9.215		
Hexachlorocyclopentadiene	.29174	.32641	.33410	.31343	.30469	.850	.31407	5.376		**
2,4,6-Trichlorophenol	.43317	.44997	.43280	.39691	.38711	.868	.41999	6.356	*	

RF - Response Factor (Subscript is amount in NG)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Initial Calibration Data
HSL Compounds

Case No:

Instrument ID: GC/MS#6(F)

Contractor: EA LABORATORIES

Calibration Date: ~~04/13/89~~ 03/10/89

Contract No:

Minimum $\overline{RF}$ for SPCC is 0.05 Maximum % RSD for CCC is 30.00%

Laboratory ID:	>FB828	>FB824	>FB827	>FB826	>FB825					
	RF	RF	RF	RF	RF					
Compound	20.00	50.00	80.00	120.00	160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
2,4,5-Trichlorophenol	.43533	.47265	.47978	.42001	.40316	.876	.44218	7.503		
2-Chloronaphthalene	1.32618	1.23891	1.17189	1.05995	1.00533	.898	1.16045	11.229		
2-Fluorobiphenyl	1.73883	1.53383	1.37815	1.26255	1.12628	.832	1.40793	16.909		
2-Nitroaniline	-	.47934	.50179	.46813	.49166	.928	.48523	3.016		
Dimethylphthalate	1.65821	1.59154	1.54422	1.43086	1.37980	.966	1.52093	7.526		
Acenaphthylene	1.96477	1.82884	1.76762	1.61966	1.52681	.973	1.74154	9.908		
3-Nitroaniline	-	.28697	.29756	.26398	.25701	1.003	.27638	6.895		
Acenaphthene	1.30647	1.20344	1.10553	.98791	.90023	1.007	1.10072	14.777	*	
2,4-Dinitrophenol	-	.10870	.12312	.15784	.16466	1.020	.13858	19.464		**
4-Nitrophenol	-	.09286	.10079	.10313	.10898	1.039	.10144	6.580		**
Dibenzofuran	1.52481	1.50875	1.47900	1.31649	1.29627	1.034	1.42490	7.694		
2,4-Dinitrotoluene	.41455	.44747	.44885	.43713	.44175	1.047	.43795	3.172		
2,6-Dinitrotoluene	.38385	.39492	.40289	.37924	.31928	.979	.37603	8.790		
Diethylphthalate	1.55157	1.53699	1.47793	1.34535	1.24691	1.091	1.43175	9.186		
4-Chlorophenyl-phenylether	.61975	.57097	.51099	.42599	.37557	1.097	.50066	20.087		
Fluorene	1.13484	1.01880	.94578	.80250	.70205	1.096	.92079	18.644		
4-Nitroaniline	-	.21183	.22370	.20494	.20219	1.116	.21067	4.551		
4,6-Dinitro-2-methylphenol	-	.16940	.18305	.15531	.14215	.886	.16248	10.870		
N-Nitrosodiphenylamine	.70579	.68784	.63056	.53552	.39984	.888	.59191	21.326	*	
2,4,6-Tribromophenol	.15851	.16367	.16696	.17891	.16122	.905	.16590	4.775		
4-Bromophenyl-phenylether	.30947	.30429	.27256	.24419	.23791	.937	.27368	12.075		
Hexachlorobenzene	.35907	.33195	.32557	.28836	.26999	.956	.31499	11.310		
Pentachlorophenol	-	.12424	.14880	.14723	.15139	.983	.14292	8.794	*	
Phenanthrene	1.05969	.98303	.97351	.87385	.84696	1.003	.94741	9.150		
Anthracene	.93838	.97207	.94043	.84172	.79442	1.010	.89740	8.415		
Di-n-Butyl phthalate	1.50023	1.48627	1.37023	1.23976	1.20341	1.092	1.35998	10.048		
Fluoranthene	.67546	.67459	.66441	.61744	.59845	1.174	.64607	5.527	*	
Pyrene	3.83196	3.22606	3.51576	3.20921	3.24898	.884	3.40639	7.894		
Terphenyl-d14	2.81224	2.54202	2.79457	2.64921	2.60686	.901	2.68098	4.411		
Butylbenzylphthalate	1.87173	1.76225	1.87632	1.74999	1.77755	.952	1.80757	3.401		

RF - Response Factor (Subscript is amount in NG)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Initial Calibration Data
HSL Compounds

Case No: Instrument ID: GC/MS#6(F)

Contractor: EA LABORATORIES Calibration Date: ~~04/13/89~~ 03/10/89

Contract No:

Minimum $\overline{RF}$ for SPCC is 0.05 Maximum % RSD for CCC is 30.00%

Laboratory ID:	>FB828	>FB824	>FB827	>FB826	>FB825					
	RF	RF	RF	RF	RF					
Compound	20.00	50.00	80.00	120.00	160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
3,3'-Dichlorobenzidine	.16772	.24876	.30792	.32210	.33099	.999	.27550	24.775		
Benzo(a)Anthracene	1.17678	1.16129	1.22978	1.16472	1.14117	.998	1.17475	2.837		
bis(2-Ethylhexyl)phthalate	2.73067	2.27965	2.47945	2.19634	2.13297	1.004	2.36382	10.284		
Chrysene	1.10737	1.02236	1.09101	.99935	.98088	1.002	1.04019	5.395		
Di-n-Octyl phthalate	4.98320	4.66260	6.32856	6.14887	6.65594	.929	5.75581	15.257	*	
Benzo(b)Fluoranthene	1.59369	1.63315	1.63260	1.51440	1.74068	.965	1.62290	5.034		
Benzo(k)Fluoranthene	1.14231	1.01822	1.35105	1.39811	1.38272	.967	1.25848	13.457		
Benzo(a)Pyrene	1.04939	1.04173	1.12521	1.07154	1.15111	.994	1.08780	4.426	*	
Indeno(1,2,3-cd)Pyrene	.61354	.84499	.70910	.68490	.69583	1.118	.70967	11.864		
Dibenzo(a,h)Anthracene	.41319	.69008	.55824	.55202	.55296	1.119	.55330	17.701		
Benzo(g,h,i)Perylene	.57612	.72340	.56833	.54435	.52820	1.154	.58808	13.265		

RF - Response Factor (Subscript is amount in NG)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

INITIAL CALIBRATION DATA - SEMIVOLATILE HSL COMPOUNDS

CASE NO: Willow Grove
LABORATORY: EA ENG.
CONTRACT NO: 10388.03

INSTRUMENT ID: MS2
CALIBRATION DATE: 03/13/89

LABORATORY ID: AA05967 AA05968 AA05969 AA05970 AA05971

COMPOUND	RF20	RF50	RF 80	RF120	RF160	AVE RRF	%RSD
PHENOL	1.012	1.100	1.220	1.182	1.058	1.114	8 *
BIS (2-CHLOROETHYL) ETHER	1.115	1.099	1.158	1.112	1.102	1.117	2
2-CHLOROPHENOL	0.970	1.000	1.091	1.091	1.041	1.038	5
1,3-DICHLOROBENZENE	1.395	1.420	1.471	1.382	1.278	1.389	5
1,4-DICHLOROBENZENE	1.445	1.473	1.546	1.395	1.217	1.415	9 *
BENZYL ALCOHOL	0.102	0.351	0.410	0.493	0.497	0.371	44
1,2-DICHLOROBENZENE	1.335	1.349	1.422	1.325	1.175	1.321	7
2-METHYLPHENOL	0.857	0.884	0.970	0.901	0.833	0.889	6
BIS (2-CHLOROISOPROPYL) ETHER	1.097	1.145	1.263	1.220	1.180	1.181	5
4-METHYLPHENOL	0.845	0.831	0.936	0.842	0.791	0.849	6
N-NITROSO-DI-N-PROPYLAMINE	0.647	0.649	0.710	0.744	0.719	0.694	6 **
HEXACHLOROETHANE	0.745	0.765	0.788	0.777	0.764	0.768	2
NITROBENZENE	0.157	0.163	0.166	0.160	0.162	0.162	2
ISOPHORONE	0.627	0.635	0.629	0.572	0.535	0.600	7
2-NITROPHENOL	0.185	0.175	0.173	0.168	0.170	0.174	4 *
2,4-DIMETHYLPHENOL	0.152	0.221	0.225	0.227	0.213	0.207	15
BENZOIC ACID	0.000	0.139	0.146	0.121	0.111	0.129	12
BIS (2-CHLOROETHOXY) METHANE	0.367	0.368	0.376	0.352	0.337	0.360	4
2,4-DICHLOROPHENOL	0.230	0.240	0.261	0.250	0.242	0.245	5 *
1,2,4-TRICHLOROBENZENE	0.317	0.331	0.357	0.342	0.323	0.334	5
NAPHTHALENE	0.860	0.860	0.770	0.632	0.554	0.735	19
4-CHLOROANILINE	0.180	0.256	0.326	0.282	0.288	0.266	20
HEXACHLOROBUTADIENE	0.210	0.232	0.242	0.215	0.218	0.223	6 *
4-CHLORO-3-METHYLPHENOL	0.245	0.255	0.260	0.253	0.240	0.250	3 *
2-METHYLNAPHTHALENE	0.407	0.432	0.453	0.382	0.380	0.411	8
HEXACHLOROCYCLOPENTADIENE	0.280	0.332	0.363	0.373	0.384	0.346	12 **
2,4,6-TRICHLOROPHENOL	0.352	0.347	0.376	0.383	0.419	0.375	8 *
2,4,5-TRICHLOROPHENOL	0.000	0.431	0.452	0.452	0.463	0.449	3 +
2-CHLORONAPHTHALENE	1.215	1.228	1.261	1.101	1.098	1.180	6
2-NITROANILINE	0.000	0.363	0.381	0.362	0.390	0.374	4 +
DIMETHYLPHTHALATE	1.350	1.346	1.395	1.246	1.274	1.322	5
ACENAPHTHYLENE	1.705	1.706	1.589	1.407	1.402	1.562	10
3-NITROANILINE	0.000	0.189	0.291	0.286	0.329	0.274	22 +
ACENAPHTHENE	1.177	1.164	1.198	1.117	1.113	1.154	3 *

RF - RELATIVE RESPONSE FACTOR
AVE RRF - AVERAGE RELATIVE RESPONSE FACTOR
%RSD - PERCENT RELATIVE STANDARD DEVIATION
* - CCC - CALIBRATION CHECK COMPOUNDS
** - SPCC - SYSTEM PERFORMANCE CHECK COMPOUNDS
MINIMUM AVE RRF FOR SPCC IS 0.05
MAXIMUM %RSD FOR CCC IS 30%
+ - NOT DETECTABLE AT 20NG

FORM VI

INITIAL CALIBRATION DATA - SEMIVOLATILE HSL COMPOUNDS
(PAGE 2)

CASE NO: Willow Grove
LABORATORY: EA ENG.
CONTRACT NO: 10388.03

INSTRUMENT ID: MS2
CALIBRATION DATE: 03/13/89

LABORATORY ID: AA05967 AA05968 AA05969 AA05970 AA05971

COMPOUND	RF20	RF50	RF 80	RF120	RF160	AVE RRF	%RSD
2,4-DINITROPHENOL	0.000	0.098	0.115	0.181	0.207	0.150	35+**
4-NITROPHENOL	0.000	0.160	0.186	0.203	0.176	0.181	10+**
DIBENZOFURAN	1.560	1.611	1.523	1.383	1.362	1.488	7
2,6-DINITROTOLUENE	0.295	0.311	0.336	0.338	0.373	0.330	9
2,4-DINITROTOLUENE	0.445	0.448	0.470	0.458	0.492	0.462	4
DIETHYLPHTHALATE	1.472	1.530	1.568	1.466	1.447	1.497	3
4-CHLOROPHENYLPHENYL ETHER	0.600	0.655	0.683	0.606	0.637	0.636	5
FLUORENE	1.220	1.205	1.222	1.000	0.989	1.127	11
4-NITROANILINE	0.000	0.239	0.265	0.245	0.201	0.237	11+
4,6-DINITRO-O-CRESOL	0.000	0.136	0.153	0.164	0.177	0.157	11+
N-NITROSODIPHENYLAMINE	0.370	0.385	0.486	0.481	0.449	0.434	12 *
4-BROMOPHENYLPHENYL ETHER	0.210	0.229	0.235	0.220	0.226	0.224	4
HEXACHLOROBENZENE	0.295	0.294	0.288	0.269	0.250	0.279	7
PENTACHLOROPHENOL	0.000	0.141	0.158	0.156	0.171	0.156	8+*
PHENANTHRENE	1.017	1.013	0.916	0.867	0.851	0.933	8
ANTHRACENE	1.002	0.999	0.932	0.812	0.693	0.888	15
DI-N-BUTYLPHTHALATE	1.497	1.450	1.283	0.998	0.906	1.227	22
FLUORANTHENE	1.067	1.115	1.068	0.868	0.824	0.988	13 *
PYRENE	1.597	1.558	1.427	1.181	1.040	1.361	18
BUTYLBENZYLPHTHALATE	0.952	0.996	0.975	0.805	0.730	0.891	13
3,3'-DICHLOROBENZIDINE	0.240	0.289	0.367	0.397	0.394	0.337	21
BENZO (A) ANTHRACENE	1.112	1.137	1.173	1.064	0.962	1.090	7
BIS (2-ETHYLHEXYL) PHTHALATE	1.297	1.429	1.315	1.039	0.954	1.207	17
CHRYSENE	1.122	1.056	1.095	0.946	0.834	1.010	12
DI-N-OCTYLPHTHALATE	1.952	2.208	2.109	1.540	1.332	1.828	21 *
BENZO(B)FLUORANTHENE	1.045	1.205	1.180	1.166	1.118	1.142	6
BENZO(K)FLUORANTHENE	1.150	1.102	1.142	0.959	0.845	1.040	13
BENZO (A) PYRENE	0.927	1.028	1.064	1.017	1.075	1.022	6 *
INDENO-1,2,3 (C,D) PYRENE	0.837	0.961	1.079	0.995	1.045	0.983	9
DIBENZO (A,H) ANTHRACENE	0.597	0.724	0.822	0.717	0.738	0.720	11
BENZO (G,H,I) PERYLENE	0.762	0.847	0.935	0.875	0.914	0.866	8

RF - RELATIVE RESPONSE FACTOR
AVE RRF - AVERAGE RELATIVE RESPONSE FACTOR
%RSD - PERCENT RELATIVE STANDARD DEVIATION
* - CCC - CALIBRATION CHECK COMPOUNDS
** - SPCC - SYSTEM PERFORMANCE CHECK COMPOUNDS
MINIMUM AVE RRF FOR SPCC IS 0.05
MAXIMUM %RSD FOR CCC IS 30%
+ - NOT DETECTABLE AT 20NG

FORM VI

Initial Calibration Data
HSL Compounds

Case No: Willow Grove

Instrument ID: GC/MS#6(F)

Contractor: EA LABORATORIES

Calibration Date: 3/24/89
0425/87

Contract No:

Minimum RF for SPCC is 0.05 Maximum % RSD for CCC is 30.00%

Laboratory ID:	>FB932	>FB928	>FB931	>FB930	>FB929					
	RF	RF	RF	RF	RF					
Compound	20.00	50.00	80.00	120.00	160.00	RRT	RF	% RSD	CCC	SPCC
2-Fluorophenol	1.13559	1.27026	1.25543	1.18524	2.50427	.681	1.47016	39.495		
Phenol-d5	1.48412	1.54678	1.56670	1.44634	2.20886	.917	1.65056	19.133		
Phenol	1.59439	1.79588	1.72738	1.48613	2.29410	.921	1.77957	17.504	*	
bis(2-Chloroethyl)ether	1.35162	1.48000	1.42506	1.38140	2.67798	.940	1.66321	34.231		
2-Chlorophenol	1.14539	1.37606	1.25259	1.19055	1.43705	.952	1.28033	9.627		
1,3-Dichlorobenzene	1.29024	1.37280	1.26572	1.17501	1.02489	.989	1.22573	10.815		
1,4-Dichlorobenzene	1.28541	1.36500	1.22741	1.14322	1.02489	1.002	1.20919	10.841	*	
Benzyl Alcohol	.20610	.34638	.36147	.46731	.34899	1.061	.34605	26.852		
1,2-Dichlorobenzene	1.22262	1.33012	1.19859	1.11367	.85900	1.062	1.14480	15.500		
2-Methylphenol	.98711	1.21227	1.02894	.94605	1.50445	1.095	1.13576	20.236		
bis(2-Chloroisopropyl)ether	2.76294	3.09265	2.92809	2.74731	6.79155	1.099	3.66451	47.856		
4-Methylphenol	.99980	1.12496	1.11326	.94063	.25344	1.143	.88642	40.863		
N-Nitroso-Di-n-propylamine	1.14720	1.23154	1.18587	1.06913	2.12226	1.152	1.35120	32.203		**
Hexachloroethane	.58398	.61130	.55345	.49529	.48413	1.155	.54563	10.105		
Nitrobenzene-d5	.42248	.49782	.45872	.43122	.74243	.839	.51053	26.035		
Nitrobenzene	.35904	.35924	.36693	.33935	.58344	.843	.40160	25.438		
Isophorone	.76738	.77761	.78986	.73697	1.37051	.896	.88847	30.410		
2-Nitrophenol	.16024	.21713	.18689	.17323	.16449	.916	.18039	12.708	*	
2,4-Dimethylphenol	.26975	.33575	.30984	.29569	.39217	.929	.32064	14.523		
Benzoic Acid	-	.13355	.14685	.13244	.09989	.968	.12818	15.576		
bis(2-Chloroethoxy)methane	.41980	.44258	.42896	.41001	.61211	.952	.46269	18.238		
2,4-Dichlorophenol	.22191	.28011	.24203	.22389	.14664	.974	.22291	21.811	*	
1,2,4-Trichlorobenzene	.28575	.30667	.27302	.25326	.14076	.990	.25189	25.840		
Naphthalene	.85600	.85681	.79498	.73501	.65849	1.005	.78026	10.854		
4-Chloroaniline	.27441	.33790	.31357	.29045	.30966	1.030	.30520	7.899		
Hexachlorobutadiene	.18485	.18166	.17156	.16061	.08325	1.047	.15638	26.837	*	
4-Chloro-3-methylphenol	.21165	.27187	.26314	.25259	.33675	1.158	.26720	16.919	*	
2-Methylnaphthalene	.46744	.50259	.45807	.43711	.33478	1.180	.44000	14.408		
Hexachlorocyclopentadiene	.19431	.32639	.28570	.27600	.15493	.847	.24746	28.497		**
2,4,6-Trichlorophenol	.32617	.43406	.35365	.33589	.26959	.866	.34387	17.280	*	

RF - Response Factor (Subscript is amount in NG)

RRT - Average Relative Retention Time (RT Std/RT Istd)

RF - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Initial Calibration Data
HSL Compounds

Case No: Case No: Instrument ID: GC/MS#6(F)

Contract Contractor: EA LABORATORIES Calibration Date: 04/14/89

Contract Contract No:

Mi Minimum RF for SPCC is 0.05 Maximum % RSD for CCC is 30.00%

Compound	>FB932 RF 20.00	>FB928 RF 50.00	>FB931 RF 80.00	>FB930 RF 120.00	>FB929 RF 160.00	RRT	RF	% RSD	CCC	SPCC
2,4,5-Trichlorophenol	.30936	.38808	.41679	.36872	.25483	.874	.34756	18.724		
2-Chloronaphthalene	1.00514	1.13267	1.03832	.94761	.86158	.896	.99706	10.149		
2-Fluorobiphenyl	1.59694	1.88793	1.44231	1.33770	1.01395	.880	1.45577	22.153		
2-Nitroaniline	-	.33871	.36979	.34740	1.07860	.927	.53363	68.129		
Dimethylphthalate	1.24373	1.38563	1.28344	1.21159	1.10643	.966	1.24616	8.180		
Acenaphthylene	1.58569	1.73687	1.59490	1.50769	1.46669	.972	1.57837	6.563		
3-Nitroaniline	-	.19467	.19224	.17806	.21530	1.004	.19507	7.868		
Acenaphthene	1.07056	1.10843	1.03268	.94607	.84137	1.006	.99982	10.711	*	
2,4-Dinitrophenol	-	.09910	.05386	.07517	.10029	1.021	.08211	26.915		**
4-Nitrophenol	-	.04001	.05155	.05290	.10597	1.043	.06261	47.085		**
Dibenzofuran	1.24271	1.43044	1.32569	1.22797	1.01867	1.035	1.24910	12.164		
2,4-Dinitrotoluene	.24381	.32887	.31466	.31072	.30529	1.049	.30067	10.963		
2,6-Dinitrotoluene	.25005	.32890	.30927	.29133	.29181	.979	.29427	9.899		
Diethylphthalate	1.18943	1.29540	1.24220	1.12128	1.06350	1.094	1.18236	7.828		
4-Chlorophenyl-phenylether	.49310	.55993	.47917	.45065	.23647	1.100	.44386	27.639		
Fluorene	.96493	1.01361	.91733	.84579	.59378	1.098	.86709	19.013		
4-Nitroaniline	-	.10981	.12027	.11247	.16903	1.118	.12789	21.723		
4,6-Dinitro-2-methylphenol	-	.16092	.13842	.13425	.13408	.884	.14192	9.038		
N-Nitrosodiphenylamine	.47738	.53821	.50736	.46493	.43389	.887	.48435	8.260	*	
2,4,6-Tribromophenol	.12298	.17372	.17405	.15826	.10537	.904	.14687	21.211		
4-Bromophenyl-phenylether	.23978	.28124	.24914	.23921	.14515	.936	.23090	22.050		
Hexachlorobenzene	.35856	.38724	.34761	.32986	.17759	.955	.32017	25.730		
Pentachlorophenol	-	.14300	.13851	.13260	.10466	.984	.12969	13.281	*	
Phenanthrene	.85832	.96123	.87228	.84608	.80391	1.003	.86837	6.663		
Anthracene	.78716	.90022	.83176	.79755	.75297	1.010	.81393	6.858		
Di-n-Butyl phthalate	1.24152	1.31308	1.25343	1.14650	1.39075	1.095	1.26905	7.132		
Fluoranthene	.62076	.69518	.69107	.66828	.58084	1.177	.65123	7.559	*	
Pyrene	1.80774	1.95901	1.78436	1.72749	1.78389	.880	1.81250	4.804		
Terphenyl-d14	1.73613	2.15270	1.72935	1.70911	1.33245	.898	1.73195	16.763		
Butylbenzylphthalate	.71526	.84988	.81832	.77226	1.34007	.951	.89916	27.986		

3,3'-Dich
Benzo(a)F
bis(2-Eth
Chrysene
Di-n-Octy
Benzo(b)F
Benzo(k)F
Benzo(a)F
Indeno(1,
Dibenzo(a
Benzo(g,h

RF - I
RRT - I
RF - I
%RSD - F
CCC - I

RF - Response Factor (Subscript is amount in NG)

RRT - Average Relative Retention Time (RT Std/RT Istd)

RF - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

INITIAL CALIBRATION DATA - SEMIVOLATILE HSL COMPOUNDS

CASE NO: Willow Grove
LABORATORY: EA ENG.
CONTRACT NO: 10388.03

INSTRUMENT ID: MS2
CALIBRATION DATE: 03/30/89

LABORATORY ID:	AA06036	AA06035	AA06034	AA06033	AA06032			
COMPOUND	RF20	RF50	RF 80	RF120	RF160	AVE RRF	%RSD	
PHENOL	1.277	1.165	1.389	1.264	1.304	1.280	6	*
BIS (2-CHLOROETHYL) ETHER	1.825	1.637	1.301	1.175	1.374	1.462	18	
2-CHLOROPHENOL	1.110	1.053	1.272	1.217	1.235	1.177	8	
1,3-DICHLOROBENZENE	1.462	1.472	1.405	1.456	1.449	1.449	2	
1,4-DICHLOROBENZENE	1.487	1.521	1.471	1.530	1.490	1.500	2	*
BENZYL ALCOHOL	0.495	0.462	0.626	0.634	0.736	0.590	19	
1,2-DICHLOROBENZENE	1.335	1.334	1.370	1.383	1.346	1.353	2	
2-METHYLPHENOL	1.145	0.900	1.033	0.912	0.908	0.979	11	
BIS (2-CHLOROISOPROPYL) ETHER	1.522	1.369	1.335	1.220	1.228	1.335	9	
4-METHYLPHENOL	0.957	0.730	0.886	0.818	0.852	0.849	10	
N-NITROSO-DI-N-PROPYLAMINE	0.632	0.582	0.671	0.663	0.688	0.647	6	**
HEXACHLOROETHANE	0.685	0.698	0.688	0.733	0.754	0.711	4	
NITROBENZENE	0.177	0.181	0.178	0.176	0.180	0.178	1	
ISOPHORONE	0.645	0.647	0.625	0.575	0.629	0.624	5	
2-NITROPHENOL	0.195	0.193	0.186	0.175	0.185	0.187	4	*
2,4-DIMETHYLPHENOL	0.277	0.263	0.250	0.240	0.250	0.256	6	
BENZOIC ACID	0.000	0.154	0.138	0.120	0.109	0.130	15	+
BIS (2-CHLOROETHOXY) METHANE	0.385	0.377	0.373	0.338	0.370	0.368	5	
2,4-DICHLOROPHENOL	0.265	0.263	0.266	0.239	0.245	0.255	5	*
1,2,4-TRICHLOROBENZENE	0.347	0.366	0.358	0.347	0.341	0.352	3	
NAPHTHALENE	0.960	1.003	0.995	0.941	0.870	0.954	6	
4-CHLOROANILINE	0.125	0.118	0.252	0.223	0.239	0.191	34	
HEXACHLOROBUTADIENE	0.260	0.285	0.237	0.235	0.236	0.250	9	*
4-CHLORO-3-METHYLPHENOL	0.255	0.238	0.241	0.210	0.220	0.233	8	*
2-METHYLNAPHTHALENE	0.427	0.421	0.412	0.375	0.390	0.405	5	
HEXACHLOROCYCLOPENTADIENE	0.305	0.295	0.325	0.313	0.337	0.315	5	**
2,4,6-TRICHLOROPHENOL	0.430	0.406	0.428	0.395	0.390	0.410	5	*
2,4,5-TRICHLOROPHENOL	0.000	0.481	0.491	0.430	0.413	0.454	8	+
2-CHLORONAPHTHALENE	1.235	1.273	1.276	1.245	1.316	1.269	2	
2-NITROANILINE	0.000	0.373	0.408	0.395	0.388	0.391	4	+
DIMETHYLPHTHALATE	1.335	1.317	1.322	1.237	1.176	1.277	5	
ACENAPHTHYLENE	1.810	1.799	1.815	1.812	1.778	1.803	1	
3-NITROANILINE	0.000	0.076	0.157	0.191	0.207	0.158	37	+
ACENAPHTHENE	1.240	1.311	1.273	1.308	1.306	1.287	2	*

RF - RELATIVE RESPONSE FACTOR
AVE RRF - AVERAGE RELATIVE RESPONSE FACTOR
%RSD - PERCENT RELATIVE STANDARD DEVIATION
* - CCC - CALIBRATION CHECK COMPOUNDS
** - SPCC - SYSTEM PERFORMANCE CHECK COMPOUNDS
MINIMUM AVE RRF FOR SPCC IS 0.05
MAXIMUM %RSD FOR CCC IS 30%
+ - NOT DETECTABLE AT 20NG

FORM VI

INITIAL CALIBRATION DATA - SEMIVOLATILE HSL COMPOUNDS
(PAGE 2)

CASE NO: Willow Grove
LABORATORY: EA ENG.
CONTRACT NO: 10388.03

INSTRUMENT ID: MS2
CALIBRATION DATE: 03/30/89

LABORATORY ID: AA06036 AA06035 AA06034 AA06033 AA06032

COMPOUND	RF20	RF50	RF 80	RF120	RF160	AVE RRF	%RSD	
2,4-DINITROPHENOL	0.000	0.135	0.145	0.151	0.156	0.147	6	***
4-NITROPHENOL	0.000	0.169	0.186	0.202	0.208	0.191	9	***
DIBENZOFURAN	1.635	1.658	1.723	1.619	1.583	1.643	3	
2,6-DINITROTOLUENE	0.290	0.302	0.303	0.282	0.281	0.291	4	
2,4-DINITROTOLUENE	0.382	0.395	0.398	0.400	0.384	0.392	2	
DIETHYLPHTHALATE	1.582	1.464	1.522	1.372	1.195	1.427	11	
4-CHLOROPHENYLPHENYL ETHER	0.710	0.661	0.691	0.657	0.649	0.674	4	
FLUORENE	1.265	1.304	1.311	1.247	1.208	1.267	3	
4-NITROANILINE	0.000	0.221	0.218	0.201	0.169	0.202	12	+
4,6-DINITRO-O-CRESOL	0.000	0.134	0.136	0.146	0.160	0.144	8	+
N-NITROSODIPHENYLAMINE	0.375	0.277	0.296	0.325	0.352	0.325	12	*
4-BROMOPHENYLPHENYL ETHER	0.272	0.239	0.245	0.227	0.232	0.243	7	
HEXACHLOROBENZENE	0.385	0.349	0.333	0.326	0.335	0.345	7	
PENTACHLOROPHENOL	0.000	0.194	0.188	0.190	0.198	0.193	2	* +
PHENANTHRENE	1.150	1.113	1.104	1.050	1.049	1.093	4	
ANTHRACENE	1.105	1.107	1.121	1.030	1.055	1.083	4	
DI-N-BUTYLPHTHALATE	1.550	1.406	1.316	1.280	1.306	1.372	8	
FLUORANTHENE	1.305	1.247	1.164	1.132	1.221	1.214	6	*
PYRENE	1.630	1.660	1.627	1.519	1.430	1.573	6	
BUTYLBENZYLPHTHALATE	0.682	0.724	0.699	0.705	0.658	0.693	4	
3,3'-DICHLOROBENZIDINE	0.347	0.337	0.362	0.378	0.382	0.361	5	
BENZO (A) ANTHRACENE	1.272	1.258	1.156	1.139	1.145	1.194	5	
BIS (2-ETHYLHEXYL) PHTHALATE	0.892	0.934	0.945	0.992	0.910	0.935	4	
CHRYSENE	1.220	1.176	1.108	1.091	1.109	1.141	5	
DI-N-OCTYLPHTHALATE	1.192	1.098	1.189	1.069	0.963	1.102	9	*
BENZO(B)FLUORANTHENE	1.030	1.019	1.059	1.015	0.917	1.008	5	
BENZO(K)FLUORANTHENE	1.192	1.070	0.956	0.873	0.770	0.972	17	
BENZO (A) PYRENE	0.987	0.987	0.974	0.938	0.952	0.968	2	*
INDENO-1,2,3 (C,D) PYRENE	1.055	1.032	1.037	1.023	0.964	1.022	3	
DIBENZO (A,H) ANTHRACENE	0.805	0.771	0.815	0.800	0.772	0.793	3	
BENZO (G,H,I) PERYLENE	0.917	0.884	0.890	0.877	0.861	0.886	2	

RF - RELATIVE RESPONSE FACTOR
AVE RRF - AVERAGE RELATIVE RESPONSE FACTOR
%RSD - PERCENT RELATIVE STANDARD DEVIATION
* - CCC - CALIBRATION CHECK COMPOUNDS
** - SPCC - SYSTEM PERFORMANCE CHECK COMPOUNDS
MINIMUM AVE RRF FOR SPCC IS 0.05
MAXIMUM %RSD FOR CCC IS 30%
+ - NOT DETECTABLE AT 20NG

FORM VI

Continuing Calibration Check
HSL Compounds

Case No: Willow Grove

Calibration Date: 02/28/89

Contractor: EA LABORATORIES

Time: 15:30

Contract No:

Laboratory ID: >DC996

Instrument ID: GC/MS#4(D)

Initial Calibration Date: 03/01/89

Minimum $\overline{RF}$ for SPCC is 0.05

Maximum % Diff for CCC is 25.00%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
2-Fluorophenol	1.01078	.81823	19.05		
Phenol-d5	1.10534	.92871	15.98		
Phenol	1.23756	1.16068	6.21	*	
bis(2-Chloroethyl)ether	1.15809	1.01346	12.49		
2-Chlorophenol	1.03913	1.00524	3.26		
1,3-Dichlorobenzene	1.11643	1.13585	1.74		
1,4-Dichlorobenzene	1.10357	1.18184	7.09	*	
Benzyl Alcohol	.35753	.41325	15.58		
1,2-Dichlorobenzene	1.05710	1.06456	.71		
2-Methylphenol	.94381	.83813	11.20		
bis(2-Chloroisopropyl)ether	1.26634	.96286	23.96		
4-Methylphenol	.91892	.85801	6.63		
N-Nitroso-Di-n-propylamine	.86942	.78339	9.90		**
Hexachloroethane	.51767	.57530	11.13		
Nitrobenzene-d5	.28316	.27364	3.36		
Nitrobenzene	.31027	.28179	9.18		
Isophorone	.61378	.56789	7.48		
2-Nitrophenol	.16539	.15927	3.70	*	
2,4-Dimethylphenol	.28396	.26759	5.77		
Benzoic Acid	.15587	.12188	21.81		
bis(2-Chloroethoxy)methane	.33770	.31322	7.25		
2,4-Dichlorophenol	.22990	.22738	1.09	*	
1,2,4-Trichlorobenzene	.25108	.24986	.49		
Naphthalene	.74682	.71920	3.70		
4-Chloroaniline	.27963	.25963	7.15		
Hexachlorobutadiene	.15248	.15954	4.63	*	
4-Chloro-3-methylphenol	.23869	.22621	5.23	*	
2-Methylnaphthalene	.58905	.59007	.17		
Hexachlorocyclopentadiene	.23708	.24386	2.86		**
2,4,6-Trichlorophenol	.29808	.29232	1.93	*	
2,4,5-Trichlorophenol	.29974	.28852	3.74		
2-Chloronaphthalene	.80835	.80235	.74		

RF - Response Factor from daily standard file at 50.00 NG

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: Willow Grove

Calibration Date: 02/28/89

Contractor: EA LABORATORIES

Time: 15:30

Contract No:

Laboratory ID: >DC996

Instrument ID: GC/MS#4(D)

Initial Calibration Date: 03/01/89

Minimum $\overline{RF}$ for SPCC is 0.05

Maximum % Diff for CCC is 25.00%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
2-Fluorobiphenyl	.86233	.89567	3.87		
2-Nitroaniline	.24567	.21835	11.12		
Dimethylphthalate	1.07649	1.07878	.21		
Acenaphthylene	1.26240	1.25801	.35		
3-Nitroaniline	.14984	.13947	6.92		
Acenaphthene	.81420	.83278	2.28	*	
2,4-Dinitrophenol	.11373	.09755	14.22		**
4-Nitrophenol	.07174	.08326	16.07		**
Dibenzofuran	1.11117	1.07440	3.31		
2,4-Dinitrotoluene	.28839	.27014	6.33		
2,6-Dinitrotoluene	.24037	.23716	1.34		
Diethylphthalate	1.11278	1.17534	5.62		
4-Chlorophenyl-phenylether	.43230	.41750	3.42		
Fluorene	.85701	.87556	2.16		
4-Nitroaniline	.10061	.09030	10.24		
4,6-Dinitro-2-methylphenol	.12205	.11880	2.66		
N-Nitrosodiphenylamine	.35083	.37048	5.60	*	
2,4,6-Tribromophenol	.12765	.11727	8.14		
4-Bromophenyl-phenyletner	.18744	.18601	.76		
Hexachlorobenzene	.26147	.26034	.43		
Pentachlorophenol	.12956	.11699	9.70	*	
Phenanthrene	.73829	.73020	1.10		
Anthracene	.69984	.69858	.18		
Di-n-Butyl phthalate	1.15693	1.21999	5.45		
Fluoranthene	.63759	.59073	7.35	*	
Pyrene	1.80265	1.99366	10.60		
Terphenyl-d14	1.23794	1.36373	10.16		
Butylbenzylphthalate	.88719	1.00919	13.75		
3,3'-Dichlorobenzidine	.18971	.13337	29.70		
Benzo(a)Anthracene	.84104	.87410	3.93		
bis(2-Ethylhexyl)phthalate	1.27028	1.39349	9.70		
Chrysene	.75618	.79145	4.66		

RF - Response Factor from daily standard file at 50.00 NG

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: Willow Grove

Calibration Date: 02/28/89

Contractor: EA LABORATORIES

Time: 15:30

Contract No:

Laboratory ID: >DC996

Instrument ID: GC/MS#4(D)

Initial Calibration Date: 03/01/89

Minimum $\overline{RF}$ for SPCC is 0.05

Maximum % Diff for CCC is 25.00%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
Di-n-Octyl phthalate	1.85656	1.98111	6.71	*	
Benzo(b)Fluoranthene	.85508	.87865	2.76		
Benzo(k)Fluoranthene	.80759	.73791	8.63		
Benzo(a)Pyrene	.72221	.67602	6.40	*	
Indeno(1,2,3-cd)Pyrene	.59772	.53711	10.14		
Dibenzo(a,h)Anthracene	.54735	.51443	6.01		
Benzo(g,h,i)Perylene	.59133	.58803	.56		

RF - Response Factor from daily standard file at 50.00 NG

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: Willow Grove

Calibration Date: 03/09/89

Contractor: EA LABORATORIES

Time: 18:53

Contract No:

Laboratory ID: >FB811

Instrument ID: GC/MS#6(F)

Initial Calibration Date: 04/11/89

Minimum RF for SPCC is 0.05

Maximum % Diff for CCC is 25.00%

Compound	RF	RF	%Diff	CCC	SPCC
2-Fluorophenol	1.39369	1.25773	9.76		
Phenol-d5	1.64869	1.54848	6.08		
Phenol	1.65724	1.91518	15.56	*	
bis(2-Chloroethyl)ether	1.47406	1.62415	10.18		
2-Chlorophenol	1.35061	1.47697	9.36		
1,3-Dichlorobenzene	1.38365	1.47327	6.48		
1,4-Dichlorobenzene	1.35667	1.46175	7.75	*	
Benzyl Alcohol	.29055	.30508	5.00		
1,2-Dichlorobenzene	1.32002	1.41231	6.99		
2-Methylphenol	1.26785	1.34227	5.87		
bis(2-Chloroisopropyl)ether	2.35472	2.57377	9.30		
4-Methylphenol	1.17341	1.16370	.83		
N-Nitroso-Di-n-propylamine	1.14302	1.32650	16.05		**
Hexachloroethane	.62609	.71171	13.68		
Nitrobenzene-d5	.40840	.40717	.30		
Nitrobenzene	.40608	.42588	4.88		
Isophorone	.85761	.88503	3.20		
2-Nitrophenol	.20833	.22315	7.12	*	
2,4-Dimethylphenol	.36031	.37116	3.01		
Benzoic Acid	.15260	.14881	2.49		
bis(2-Chloroethoxy)methane	.45407	.48291	6.35		
2,4-Dichlorophenol	.26215	.29661	13.15	*	
1,2,4-Trichlorobenzene	.31409	.33208	5.73		
Naphthalene	.90930	.90477	.50		
4-Chloroaniline	.34491	.35630	3.30		
Hexachlorobutadiene	.18764	.19590	4.40	*	
4-Chloro-3-methylphenol	.28777	.31080	8.00	*	
2-Methylnaphthalene	.50742	.53062	4.57		
Hexachlorocyclopentadiene	.33874	.35849	5.83		**
2,4,6-Trichlorophenol	.41365	.46516	12.45	*	
2,4,5-Trichlorophenol	.46741	.45790	2.03		
2-Chloronaphthalene	1.20918	1.29271	6.91		

RF - Response Factor from daily standard file at 50.00 NG

RF - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: Calibration Date: 03/09/89

Contractor: EA LABORATORIES Time: 18:53

Contract No: Laboratory ID: >FB811

Instrument ID: GC/MS#6(F) Initial Calibration Date: 04/11/89

Minimum RF for SPCC is 0.05 Maximum % Diff for CCC is 25.00%

Compound	RF	RF	%Diff	CCC	SPCC
2-Fluorobiphenyl	1.38006	1.44149	4.45		
2-Nitroaniline	.44139	.42708	3.24		
Dimethylphthalate	1.56135	1.71100	9.58		
Acenaphthylene	1.84767	1.84421	.19		
3-Nitroaniline	.25147	.23924	4.87		
Acenaphthene	1.19474	1.18481	.83	*	
2,4-Dinitrophenol	.13937	.12127	12.99		**
4-Nitrophenol	.11315	.09948	12.08		**
Dibenzofuran	1.47005	1.51249	2.89		
2,4-Dinitrotoluene	.39912	.40342	1.08		
2,6-Dinitrotoluene	.36177	.37391	3.35		
Diethylphthalate	1.54132	1.65708	7.51		
4-Chlorophenyl-phenylether	.51626	.57741	11.84		
Fluorene	1.03695	1.07104	3.29		
4-Nitroaniline	.17558	.14733	16.09		
4,6-Dinitro-2-methylphenol	.17383	.17801	2.40		
N-Nitrosodiphenylamine	.56337	.61828	9.75	*	
2,4,6-Tribromophenol	.16355	.15575	4.77		
4-Bromophenyl-phenylether	.26272	.30011	14.23		
Hexachlorobenzene	.33822	.37093	9.67		
Pentachlorophenol	.16114	.15735	2.35	*	
Phenanthrene	1.01050	.98097	2.92		
Anthracene	.96552	.91466	5.27		
Di-n-Butyl phthalate	1.57894	1.67441	6.05		
Fluoranthene	.82288	.68139	17.19	*	
Pyrene	2.05000	2.57520	25.62		
Terphenyl-d14	1.52203	1.93221	26.95		
Butylbenzylphthalate	1.11604	1.39691	25.17		
3,3'-Dichlorobenzidine	.33154	.26172	21.06		
Benzo(a)Anthracene	1.20099	1.15275	4.02		
bis(2-Ethylhexyl)phthalate	1.58504	1.85928	17.30		
Chrysene	1.08570	1.04801	3.47		

RF - Response Factor from daily standard file at 50.00 NG

RF - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: Calibration Date: 03/09/89

Contractor: EA LABORATORIES Time: 18:53

Contract No: Laboratory ID: >FB811

Instrument ID: GC/MS#6(F) Initial Calibration Date: 04/11/89

Minimum RF for SPCC is 0.05 Maximum % Diff for CCC is 25.00%

Compound	RF	RF	%Diff	CCC	SPCC
Di-n-Octyl phthalate	2.36523	2.65112	12.09	*	
Benzo(b)Fluoranthene	1.27571	1.13945	10.68		
Benzo(k)Fluoranthene	1.04426	1.10142	5.47		
Benzo(a)Pyrene	1.02571	.98040	4.42	*	
Indeno(1,2,3-cd)Pyrene	.97665	.91985	5.82		
Dibenzo(a,h)Anthracene	.75791	.70647	6.79		
Benzo(g,h,i)Perylene	.80773	.74409	7.88		

RF - Response Factor from daily standard file at 50.00 NG

RF - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

8B
SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EAENG Case No.: willow grove SAS No.: . SDG No.: .

Lab File ID (Standard): > DC 996 Date Analyzed: 2/28/89

Instrument ID: GC/MS #4 Time Analyzed: 15:30

		IS1(DCB) AREA #	RT	IS2(NPT) AREA #	RT	IS3(ANT) AREA #	RT
	12 HOUR STD	48271	5.54	183348	8.53	95474	13.64
	UPPER LIMIT	96542	6.04	366696	9.03	190948	14.14
	LOWER LIMIT	24136	5.04	91674	8.03	47737	13.14
	EPA SAMPLE NO.						
01	Blank #466 DC999	95692	5.54	375558 *	8.53	190104	13.64
0815 02	PRW-3 Comp DD001	68623	5.54	257082	8.51	139355	13.61
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IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d8

UPPER LIMIT = + 100% of internal stansard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

FORM VIII SV-1

1987 Rev.

8C
SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EAENG Case No.: Willow Grove SAS No.: . SDG No.: .

Lab Fil ID (Standard): DC 996 Date Analyzed: 2/28/89

Instrument ID: GC/MS #4 Time Analyzed: 15:30

		IS4(PHN) AREA #	RT	IS5(CRY) AREA #	RT	IS6(PRY) AREA #	RT
	12 HOUR STD	130347.	18.06	33416	26.25	23913	30.32
	UPPER LIMIT	260694	18.56	66832	26.75	47826	30.82
	LOWER LIMIT	65174	17.56	16708	25.75	11956	29.82
	EPA SAMPLE NO.						
01	Blank #466 DC999	249660	18.07	66016	26.24	34147	30.31
0815 02	PRW-3 comp. DD00	178670	18.05	46061	26.23	30615	30.31
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IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

UPPER LIMIT = + 100% of internal stansard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

FORM VIII SV-2 1/87 R v.

8B

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: EA LABORATORIES Contract: _____

Lab Code: EAENG Case No.: Willow Grove SAS No.: . SDG No.: .

Lab File ID (Standard): >FB 799 Date Analyzed: 3-8-89

Instrument ID: F6 Time Analyzed: 20:28

		IS1(DCB) AREA #	RT	IS2(NPT) AREA #	RT	IS3(ANT) AREA #	RT	
	12 HOUR STD	52895	8.80	184049	12.38	74053	17.93	
	UPPER LIMIT	105798	9.30	368098	12.88	148106	18.43	
	LOWER LIMIT	26450	8.30	92025	11.88	37027	17.43	
	EPA SAMPLE NO.							
01	~~EA#452 (>FB804)~~	46860	8.82	161919	12.39	66426	17.94	
02	~~EA#453 (>FB805)~~	~~53269~~	~~8.82~~	~~176635~~	~~12.39~~	~~70175~~	~~17.94~~	WMA 5/8/89
03	~~EA#0775 (>FB806)~~	59933	8.82	205019	12.39	82521	17.95	
04	~~EA#0780 (>FB808)~~	~~65073~~	~~8.82~~	~~223914~~	~~12.40~~	~~94032~~	~~17.82~~	WMA 5/8/89
05	~~EA#0781 (>FB809)~~	49664	8.82	172835	12.40	70038	17.95	
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IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d8

UPPER LIMIT = + 100% of internal stansard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

FORM VIII SV-1

1/87 Rev.

8C
SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: EA LABORATORIES Contract: WILLOW GROVE

Lab Cod : EAENG Case No.: SAS No.: . SDG No.: .

Lab File ID (Standard): >FB799 Date Analyzed: 3-8-89

Instrument ID: F6 Time Analyzed: 20:28

	IS4(PHN) AREA #	RT	IS5(CRY) AREA #	RT	IS6(PRY) AREA #	RT
12 HOUR STD	90626	22.67	36321	30.92	31009	35.06
UPPER LIMIT	181252	23.17	72642	31.42	62018	35.56
LOWER LIMIT	45313	22.17	18161	30.42	15505	34.56
EPA SAMPLE NO.						
01 BL#40 (>FB804)	84454	22.67	30027	30.92	23802	35.08
02 ~~BL#43 (>FB805)~~	~~94017~~	~~22.68~~	~~33680~~	~~30.95~~	~~26499~~	~~35.08~~
03 EA#0775 (>FB806)	103047	22.68	40075	30.95	38924	35.10
04 ~~EA#0780 (>FB808)~~	~~111272~~	~~22.69~~	~~35125~~	~~30.95~~	~~30037~~	~~35.10~~
05 EA#0781 (>FB809)	88785	22.67	28426	30.95	25806	35.11
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IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

UPPER LIMIT = + 100% of internal stansard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

8B
SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: EA LABORATORIES Contract: Willow Grove

Lab Code: EAENG Case No.: SAS No.: . SDG No.: .

Lab File ID (Standard): >FB 811 Date Analyzed: 3-9-89

Instrument ID: F6 Time Analyzed: 18:53

		IS1(DCB) AREA #	RT	IS2(NPT) AREA #	RT	IS3(ANT) AREA #	RT
	12 HOUR STD	64473	8.80	230729	12.40	94013	17.93
	UPPER LIMIT	128946	9.30	461458	12.90	188026	18.43
	LOWER LIMIT	32237	8.30	115363	11.90	47007	17.43
	EPA SAMPLE NO.						
01	B.# 440(>FB 812)	74194	8.80	256266	12.38	119432	17.93
02	B.# 448(>FB 813)	58108	8.80	194868	12.38	77257	17.93
PR-1 03	EA# 0637(>FB 816)	65507	8.80	236749	12.38	112505	17.93
PR-2 04	EA# 0638(>FB 817)	67098	8.80	240768	12.38	111140	17.93
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IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d8

UPPER LIMIT = + 100% of internal stansard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

8C
SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: EA LABORATORIES Contract: Willow Grove

Lab Code: EAENG Case No.: SAS No.: . SDG No.: .

Lab File ID (Standard): >FB841 Date Analyzed: 8-9-89

Instrument ID: F6 Time Analyzed: 18:53

		IS4(PHN) AREA #	RT	IS5(CRY) AREA #	RT	IS6(PRY) AREA #	RT
	12 HOUR STD	110870	22.67	26251	30.92	19818	35.06
	UPPER LIMIT	221740	23.17	52502	31.42	39636	35.56
	LOWER LIMIT	55435	22.17	13126	30.42	9909	34.56
	EPA SAMPLE NO.						
01	BL#440(>FB812)	134425	22.66	35298	30.91	24619	35.07
02	BL#441(>FB813)	86502	22.66	21848	30.91	15623	35.07
PE-1 03	EA#6637(>FB816)	128985	22.66	30341	30.92	20638	35.07
PE-2 04	EA#6638(>FB817)	122884	22.67	33476	30.92	25727	35.08
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IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

UPPER LIMIT = + 100% of internal stansard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

FORM VIII SV-2 1/87 R v.

C. Quality Assurance Summary

8B

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: EA LABORATORIES Contract: Willow Grove

Lab Code: EAENG Case No.: SAS No.: . SDG No.: .

Lab File ID (Standard): >FB824 Date Analyzed: 3/10/89

Instrument ID: FC Time Analyzed: 18:16

	IS1(DCB) AREA #	RT	IS2(NPT) AREA #	RT	IS3(ANT) AREA #	RT
12 HOUR STD	76501	8.79	284020	12.37	112784	17.92
UPPER LIMIT	153002	9.29	568040	12.87	225568	18.42
LOWER LIMIT	38257	8.29	142010	11.87	56392	17.42
EPA SAMPLE NO.						
01 EA# 0644 (FB829)	71298	8.82	253887	12.39	97082	17.94
02 EA# 0745 (FB830)	88250	8.84	335365	12.42	161039	17.98
03 EA# 0746 (FB831)	66808	8.88	250461	12.41	111393	18.01
04 EA# 0748 (FB832)	83971	8.89	323312	12.47	162905	18.03
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IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d8

UPPER LIMIT = + 100% of internal stansard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

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8C
SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: EA LABORATORIES Contract: Willow Grove

Lab Code: EAENG Case No.: ISAS No.: . SDG No.: .

Lab File ID (Standard): >F6 824 Date Analyzed: 3/10/89

Instrument ID: F6 Time Analyzed: 18:16

	IS4(PHN) AREA #	RT	IS5(CRY) AREA #	RT	IS3(PRY) AREA #	RT
12 HOUR STD	127880	22.64	23332	30.90	9869	35.04
UPPER LIMIT	255760	23.14	46664	31.40	19738	35.54
LOWER LIMIT	63940	22.14	11666	30.40	4935	34.54
EPA SAMPLE NO.						
instrument Blank 01	EA#0640 (>F6 829)	93968	22.68	13076	30.95	7246	35.13
w-1 comp 02	EA#0745 (>F6 830)	80225	22.72	20351	30.98	7423	35.15
water #2 03	EA#0746 (>F6 831)	133782	22.75	16783	31.01	7385	35.20
2-SS-1 04	EA#0748 (>F6 832)	216493	22.77	33485	31.04	13173	35.25
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IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

UPPER LIMIT = + 100% of internal stansard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

CASE NUMBER: WILLOW GROVE LABORATORY: EA ENG. CONTRACT: 10388.03

SEMI-VOLATILE INTERNAL STANDARD AREAS

SMO NUMBER		LAB ID				
	1,4-CL20	NAPH-D8	ACE-D10	PHEN-D10	CHRY-D12	PERYL-D12
~~upper limit~~	~~164180~~	~~622056~~	~~255388~~	~~404786~~	~~270456~~	~~227018~~
~~lower limit~~	~~46045~~	~~155514~~	~~63847~~	~~101197~~	~~67614~~	~~56755~~
20 NG BNA STD		AA05967				
	92090.	311028.	127694.	202393.	135228.	113509.
50 NG BNA STD		AA05968				
	103459.	326393.	136648.	217393.	152895.	132922.
80 NG BNA STD		AA05969				
	98240.	337128.	146266.	244271.	173465.	156961.
120 NG BNA STD		AA05970				
	116138.	416123.	172399.	286381.	206476.	207330.
160 NG BNA STD		AA05971				
	134796.	457017.	175446.	310883.	228766.	221764.
Soil Blank#491		AA05972				
	76998	230795	92185	161913	131565	116096
PR-SS-2 RE-EXT		AA05979				
749	98535.	340307.	122545.	192273.	107206.	114401.

wwd 5/12/89

CASE NUMBER: WILLOW GROVE LABORATORY: EA ENG. CONTRACT: 10388.03

SEMI-VOLATILE INTERNAL STANDARD RETENTION TIMES

SMO NUMBER		LAB ID				
	1,4-CL20	NAPH-D8	ACE-D10	PHEN-D10	CHRY-D12	PERYL-D12
~~upper limit~~	~~09:40~~	~~12:50~~	~~17:29~~	~~21:22~~	~~28:29~~	~~33:52~~
~~lower limit~~	~~10:40~~	~~13:50~~	~~18:29~~	~~22:22~~	~~29:29~~	~~34:52~~
20 NG BNA STD		AA05967				
	10:10	13:20	17:59	21:52	28:59	34:22
50 NG BNA STD		AA05968				
	10:09	13:16	17:56	21:50	29:02	34:30
80 NG BNA STD		AA05969				
	10:12	13:20	17:59	21:56	29:07	34:37
120 NG BNA STD		AA05970				
	10:10	13:18	17:57	21:52	29:02	34:28
160 NG BNA STD		AA05971				
	10:11	13:21	18:00	21:54	29:00	34:22
Soil Blank 4491		AA05972				
	10:12	13:18	17:55	21:50	28:59	34:24
PR-SS-2 RE-EXT		AA05979				
749	10:07	13:14	17:50	21:45	28:56	34:18

WMA 5/12/89

~~VIII~~ 2

8B

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: EA LABORATORIES Contract: Willow Grove

Lab Code: EAENG Case No.: SAS No.: . SDG No.: .

Lab File ID (Standard): >F6928 Date Analyzed: 3-24-89

Instrument ID: F6 Time Analyzed: 23:43

	IS1(DCB) AREA #	RT	IS2(NPT) AREA #	RT	IS3(ANT) AREA #	RT
12 HOUR STD	38767	8.42	146963	11.96	64488	12.46
UPPER LIMIT	77534	8.92	293926	12.46	128976	12.96
LOWER LIMIT	19384	7.92	73482	11.46	32244	11.96
EPA SAMPLE NO.						
01 EA#0776 (>F6934)	24896	8.42	89186	11.93	38831	12.45
02 EA#078 (>F6935)	30171	8.41	107858	11.94	45223	12.44
03 EA#078(MS) (>F6936)	31042	8.42	112227	11.94	48307	12.44
04 EA#078(MSD) (>F6937)	31228	8.41	119898	11.95	47327	12.45
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IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d8

UPPER LIMIT = + 100% of internal stansard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

8C
SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: EA LABORATORIES Contract: Willow Grove

Lab Code: EAENG Case No.: ISAS No.: . SDG No.: .

Lab Fil ID (Standard): >F6928 Date Analyzed: 3-24-89

Instrument ID: F6 Time Analyzed: 23:43

		IS4(PHN) AREA #	RT	IS5(CRY) AREA #	RT	IS6(PRY) AREA #	RT
	12 HOUR STD	72026	22.16	23081	30.43	20784	34.37
	UPPER LIMIT	144052	22.66	46162	30.93	41568	34.87
	LOWER LIMIT	36013	21.66	11541	29.93	10392	33.87
	EPA SAMPLE NO.						
nscle #3	01 EA#0776(>F6930)	44747	22.14	13917	30.43	12272	34.37
#2	02 EA#0780(>F6935)	46911	22.14	17989	30.43	18620	34.37
2MS	03 EA#0780(MS)(>F6933)	51726	22.14	18694	30.42	18787	34.36
2MSD	04 EA#0780(MSD)(>F6937)	53957	22.15	20346	30.42	20566	34.37
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IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

UPPER LIMIT = + 100% of internal stansard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

FORM VIII SV-2 1/87 Rev.

CASE NUMBER: WILLOW GROVE LABORATORY: EA ENG. CONTRACT: 10388.03

SEMI-VOLATILE INTERNAL STANDARD AREAS

SMO NUMBER		LAB ID				
	1,4-CL20	NAPH-D8	ACE-D10	PHEN-D10	CHRY-D12	PERYL-D12
pper limit	54208	152012	66612	104320	77382	90544
wer limit	13552	38003	16653	26080	19346	22636
50 NG BNA STD		AA06035				
	27104.	76006.	33306.	52160.	38691.	45272.
SOIL BLANK RE-Ext		AA06038				
	29474.	94376.	40370.	56892.	34929.	31255.
PR-SS-3 RE-EXT		AA06040				
7.77Re	22854.	73496.	31458.	44712.	25990.	26140.

CASE NUMBER: WILLOW GROVE LABORATORY: EA ENG. CONTRACT: 10388.03

SEMI-VOLATILE INTERNAL STANDARD RETENTION TIMES

SMO NUMBER		LAB ID				
	1,4-CL20	NAPH-D8	ACE-D10	PHEN-D10	CHRY-D12	PERYL-D12
upper limit	09:46	12:52	17:27	21:20	28:31	33:58
lower limit	10:46	13:52	18:27	22:20	29:31	34:58
50 NG BNA STD		AA06035				
	10:16	13:22	17:57	21:50	29:01	34:28
SOIL BLANK RE-		AA06038				
	10:14	13:20	17:57	21:51	29:01	34:28
PR-SS-3 RE-EXT		AA06040				
7773 RE	10:14	13:19	17:56	21:50	28:58	34:26

CASE NUMBER: WILLOW GROVE LABORATORY: EA ENG. CONTRACT: 10388.03

SEMI-VOLATILE INTERNAL STANDARD AREAS

SMO NUMBER		LAB ID			
1,4-CL20	NAPH-D8	ACE-D10	PHEN-D10	CHRY-D12	PERYL-D12
Upper limit 206918	652786	273296	434786	305790	265844
lower limit 57130	163197	68324	108697	76448	66461
50 NG BNA STD		AA05968			
103459.	326393.	136648.	217393.	152895.	132922.
WATER BLANK #48		AA05974			
62305.	189940.	86846.	137020.	100907.	87116.
SOIL BLANK #48		AA05976			
116889.	409404.	161594.	234651.	137410.	101209.
820 RINSATE BLANK #5		AA05977			
104154.	372726.	143123.	197224.	112315.	81781.
822 PRW-4, Composite					
104128	354975	134658	201866	121258	110024

CASE NUMBER: WILLOW GROVE LABORATORY: EA ENG. CONTRACT: 10388.03

SEMI-VOLATILE INTERNAL STANDARD RETENTION TIMES

SMO NUMBER		LAB ID				
	1,4-CL20	NAPH-D8	ACE-D10	PHEN-D10	CHRY-D12	PERYL-D12
upper limit	10:39	13:46	18:26	22:20	29:32	34:50
lower limit	09:39	12:46	17:26	21:20	28:32	33:50
50 NG BNA STD		AA05968				
	10:09	13:16	17:56	21:50	29:02	34:30
WATER BLANK #483		AA05974				
	10:10	13:18	17:56	21:50	28:58	34:20
SOIL BLANK #481		AA05976				
	10:10	13:18	17:56	21:50	29:00	34:24
120 RINSATE BLANK #5 RSB		AA05977				
	10:09	13:17	17:56	21:50	28:59	34:24
122 PRW-4, Composite						
	10:10	13:18	17:57	21:52	29:02	34:31

VIII 2

D. Raw QC Data

Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
BLANK #440

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 02/23/89
Date Analyzed: 3/09/89 20:04
Conc/Dil Factor: 1.00000
Percent Moisture (Decanted) N/A

GPC Cleanup Yes ✓ No
Separatory Funnel Extraction Yes
Continuous Liquid-Liquid Extraction ✓ Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	970.	U
111-44-4	bis(2-Chloroethyl)ether	970.	U
95-57-8	2-Chlorophenol	970.	U
541-73-1	1,3-Dichlorobenzene	970.	U
106-46-7	1,4-Dichlorobenzene	970.	U
100-51-6	Benzyl Alcohol	970.	U
95-50-1	1,2-Dichlorobenzene	970.	U
95-48-7	2-Methylphenol	970.	U
39638-32-9	bis(2-Chloroisopropyl)ether	970.	U
106-44-5	4-Methylphenol	970.	U
621-64-7	N-Nitroso-Di-n-propylamine	970.	U
67-72-1	Hexachloroethane	970.	U
98-95-3	Nitrobenzene	970.	U
78-59-1	Isophorone	970.	U
88-75-5	2-Nitrophenol	970.	U
105-67-9	2,4-Dimethylphenol	970.	U
65-85-0	Benzoic Acid	4800.	U
111-91-1	bis(2-Chloroethoxy)methane	970.	U
120-83-2	2,4-Dichlorophenol	970.	U
120-82-1	1,2,4-Trichlorobenzene	970.	U
91-20-3	Naphthalene	970.	U
106-47-8	4-Chloroaniline	970.	U
87-68-3	Hexachlorobutadiene	970.	U
59-50-7	4-Chloro-3-methylphenol	970.	U
91-57-6	2-Methylnaphthalene	970.	U
77-47-4	Hexachlorocyclopentadiene	970.	U
88-06-2	2,4,6-Trichlorophenol	970.	U
95-95-4	2,4,5-Trichlorophenol	4800.	U
91-58-7	2-Chloronaphthalene	970.	U
88-74-4	2-Nitroaniline	4800.	U
131-11-3	Dimethylphthalate	970.	U
208-96-8	Acenaphthylene	970.	U
99-09-2	3-Nitroaniline	4800.	U

C.A.S. Number		ug/L or ug/Kg (Circle One)	
83-32-9	Acenaphthene	970.	U
51-28-5	2,4-Dinitrophenol	4800.	U
100-02-7	4-Nitrophenol	4800.	U
132-64-9	Dibenzofuran	970.	U
121-14-2	2,4-Dinitrotoluene	970.	U
606-20-2	2,6-Dinitrotoluene	970.	U
84-66-2	Diethylphthalate	970.	U
7005-72-3	4-Chlorophenyl-phenylether	970.	U
86-73-7	Fluorene	970.	U
100-01-6	4-Nitroaniline	970.	U
534-52-1	4,6-Dinitro-2-methylphenol	4800.	U
86-30-6	N-Nitrosodiphenylamine (1)	970.	U
101-55-3	4-Bromophenyl-phenylether	970.	U
118-74-1	Hexachlorobenzene	970.	U
87-86-5	Pentachlorophenol	4800.	U
85-01-8	Phenanthrene	970.	U
120-12-7	Anthracene	970.	U
84-74-2	Di-n-Butyl phthalate	970.	U
206-44-0	Fluoranthene	970.	U
129-00-0	Pyrene	970.	U
85-68-7	Butylbenzylphthalate	970.	U
91-94-1	3,3'-Dichlorobenzidine	1900.	U
56-55-3	Benzo(a)Anthracene	970.	U
117-81-7	bis(2-Ethylhexyl)phthalate	970.	U
218-01-9	Chrysene	970.	U
117-84-0	Di-n-Octyl phthalate	970.	U
205-99-2	Benzo(b)Fluoranthene	970.	U
207-08-9	Benzo(k)Fluoranthene	970.	U
50-32-8	Benzo(a)Pyrene	970.	U
193-39-5	Indeno(1,2,3-cd)Pyrene	970.	U
53-70-3	Dibenzo(a,h)Anthracene	970.	U
191-24-2	Benzo(g,h,i)Perylene	970.	U

(1)-Cannot be separated from diphenylamine

Laboratory Name: EA LABORATORIES

Case No: WILLOW GROVE

Sample Number: BLANK #440

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT ~~or Scan~~ Number	Estimated Concentration (~~ug/L or~~ ug/kg)
1. 108883	Methyl Benzene	BNA	4.30	840.00 J
2. —	Unknown		8.17	490.00 J
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
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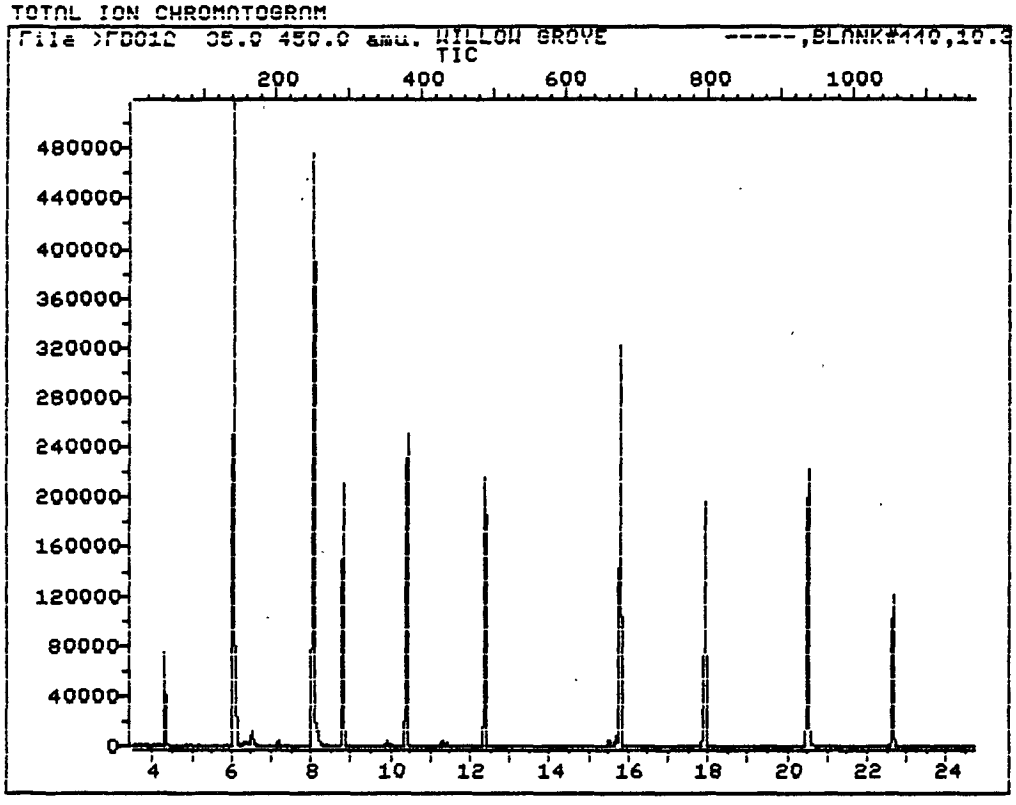
29.				
30.				

TOTAL ION CHROMATOGRAM



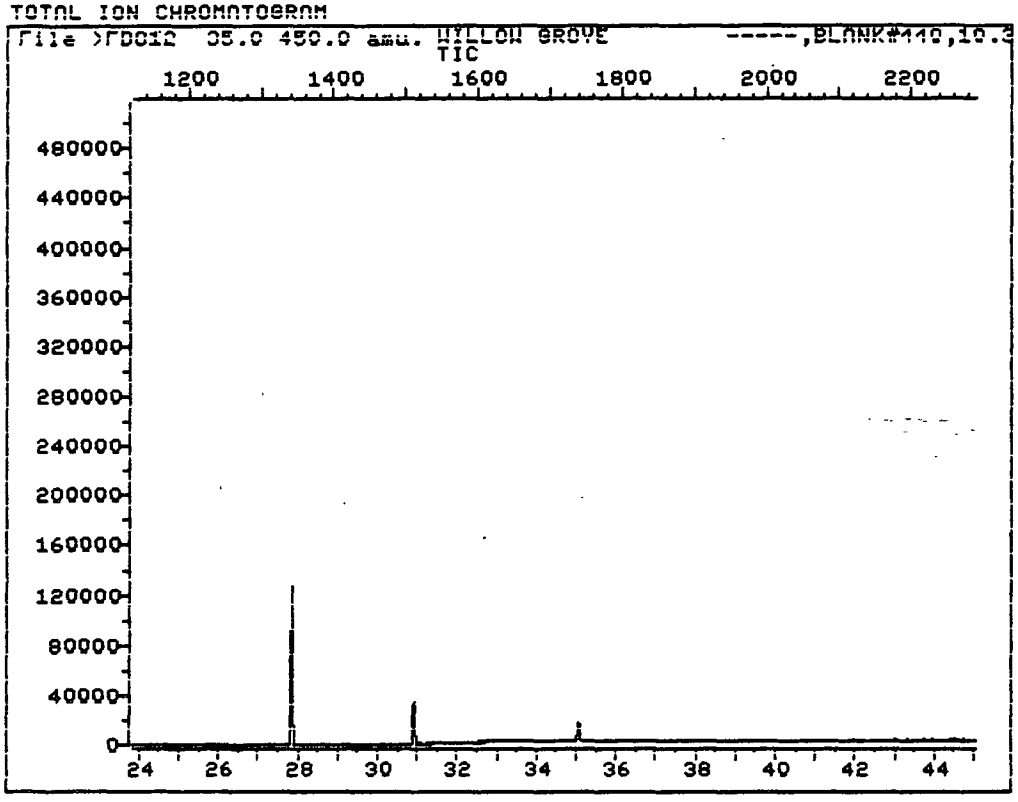
Data File: >FB812::D4 Quant Output File: ^FB812::QT
Name: WILLOW GROVE
Misc: -----,BLANK#440,10.36,1, BL#440FOR637,8,745,8 (96.52) BTL# 1

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890412 20:54

Operator ID: UNCLE
Quant Time: 890412 20:58
Inj cted at: 890309 20:04

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >FB812::D4 Quant Output File: ^FB812::QT
Nam : WILLOW GROVE
Misc: -----,BLANK#440,10.36,1, BL#440FOR637,8,745,8 (96.52) BTL# 1

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890412 20:54

Operator ID: UNCLE
Quant Time: 890412 20:58
Inj cted at: 890309 20:04

TIC page 2 of 2

QUANT REPORT

Op rator ID: UNCLE Quant Rev: 6 Quant Tim : 890412 20:58
Output File: ^FB812::QT Injected at: 890309 20:04
Data File: >FB812::D4 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: -----,BLANK#440,10.36,1, BL#440FOR637,8,745,8 (96.52) BTL# 1

ID Fil : IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890412 20:54

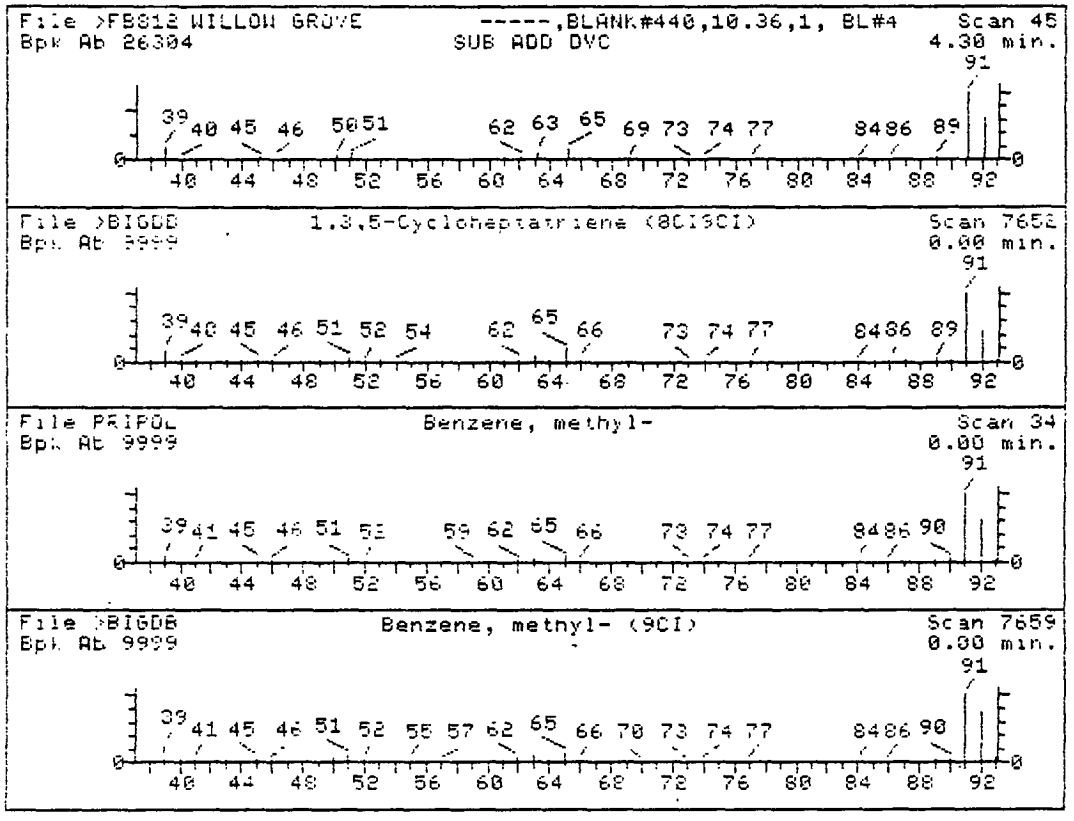
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	8.80	152.0	74194	40.00	NG	98
2)	2-Flu rophenol	6.06	112.0	308432	132.21	NG 66%	98
3)	Phenol-d5	8.06	99.0	412687	143.68	NG 72%	97
4)	Phenol	0.00	94.0	0	0.00	NG	
5)	bis(2-Chloroethyl)ether	0.00	93.0	0	0.00	NG	
6)	2-Chlorophenol	0.00	128.0	0	0.00	NG	
7)	1,3-Dichlorobenzene	0.00	146.0	0	0.00	NG	
8)	1,4-Dichlorobenzene	0.00	146.0	0	0.00	NG	
9)	Benzyl Alcohol	0.00	108.0	0	0.00	NG	
10)	1,2-Dichlorobenzene	0.00	146.0	0	0.00	NG	
11)	2-M thylphenol	0.00	108.0	0	0.00	NG	
12)	bis(2-Chloroisopropyl)ether	0.00	45.0	0	0.00	NG	
13)	4-Methylphenol	0.00	108.0	0	0.00	NG	
14)	N-Nitroso-Di-n-propylamine	0.00	70.0	0	0.00	NG	
15)	Hexachloroethane	0.00	117.0	0	0.00	NG	
16)	*d8-Naphthalene	12.38	136.0	256266	40.00	NG	90
17)	Nitrobenzene-d5	10.42	82.0	211395	81.04	NG 81%	89
18)	Nitrobenzene	0.00	77.0	0	0.00	NG	
19)	Isophorone	0.00	82.0	0	0.00	NG	
20)	2-Nitrophenol	0.00	139.0	0	0.00	NG	
21)	2,4-Dimethylphenol	0.00	107.0	0	0.00	NG	
22)	B nzoic Acid	0.00	122.0	0	0.00	NG	
23)	bis(2-Chloroethoxy)methane	0.00	93.0	0	0.00	NG	
24)	2,4-Dichlorophenol	0.00	162.0	0	0.00	NG	
25)	1,2,4-Trichlorobenzene	0.00	180.0	0	0.00	NG	
26)	Naphthalene	0.00	128.0	0	0.00	NG	
27)	4-Chloroaniline	0.00	127.0	0	0.00	NG	
28)	Hexachlorobutadiene	0.00	224.7	0	0.00	NG	
29)	4-Chloro-3-methylphenol	0.00	107.0	0	0.00	NG	
30)	2-Methylnaphthalene	0.00	142.0	0	0.00	NG	
31)	*d10-Acenaphthene	17.93	164.0	119432	40.00	NG	92
32)	Hexachlorocyclopentadiene	0.00	237.0	0	0.00	NG	
33)	2,4,6-Trichlorophenol	0.00	196.0	0	0.00	NG	
34)	2,4,5-Trichlorophenol	0.00	196.0	0	0.00	NG	
35)	2-Chloronaphthalene	0.00	162.0	0	0.00	NG	
36)	2-Fluorobiphenyl	15.80	172.0	278554	64.72	NG 65%	94
37)	2-Nitroaniline	0.00	65.0	0	0.00	NG	
38)	Dimethylphthalate	17.93	163.0	20931	~~4.18~~	NG	56
39)	Acenaphthylene	0.00	152.0	0	0.00	NG	
40)	3-Nitroaniline	0.00	138.0	0	0.00	NG	
41)	Acenaphthene	0.00	153.0	0	0.00	NG	
42)	2,4-Dinitrophenol	0.00	184.0	0	0.00	NG	

QUANT REPORT
page 2

Output File:^FB812:: Data File:>FB812::D4

	Compound	R.T.	Q ion	Area	Conc	Unit	q
43)	4-Nitrophenol	0.00	109.0	0	0.00	NG	
44)	Dibenzofuran	0.00	168.0	0	0.00	NG	
45)	2,4-Dinitrotoluene	0.00	165.0	0	0.00	NG	
46)	2,6-Dinitrotoluene	0.00	165.0	0	0.00	NG	
47)	Diethylphthalate	0.00	149.0	0	0.00	NG	
48)	4-Chlorophenyl-phenylether	0.00	204.0	0	0.00	NG	
49)	Fluorene	0.00	166.0	0	0.00	NG	
50)	4-Nitroaniline	0.00	138.0	0	0.00	NG	
51)	*d10-Phenanthrene	22.66	188.0	134425	40.00	NG	99
52)	4,6-Dinitro-2-methylphenol	0.00	198.0	0	0.00	NG	
53)	N-Nitrosodiphenylamine	0.00	169.0	0	0.00	NG	
54)	2,4,6-Tribromophenol	20.50	329.9	80215	153.25	NG 772	96
55)	4-Bromophenyl-phenylether	0.00	248.0	0	0.00	NG	
56)	Hexachlorobenzene	0.00	283.6	0	0.00	NG	
57)	Pentachlorophenol	0.00	266.0	0	0.00	NG	
58)	Phenanthrene	0.00	178.0	0	0.00	NG	
59)	Anthracene	0.00	178.0	0	0.00	NG	
60)	Di-n-Butyl phthalate	0.00	149.0	0	0.00	NG	
61)	Fluoranthene	0.00	202.0	0	0.00	NG	
62)	*d12-Chrysene	30.91	240.0	35298	40.00	NG	96
63)	Pyrene	0.00	202.0	0	0.00	NG	
64)	Terphenyl-d14	27.85	244.0	136073	79.80	NG 80%	85
65)	Butylbenzylphthalate	0.00	149.0	0	0.00	NG	
66)	3,3'-Dichlorobenzidine	0.00	252.0	0	0.00	NG	
67)	Benzo(a)Anthracene	0.00	228.0	0	0.00	NG	
68)	bis(2-Ethylhexyl)phthalate	0.00	149.0	0	0.00	NG	
69)	Chrysene	0.00	228.0	0	0.00	NG	
70)	*d12-Perylene	35.07	264.0	24619	40.00	NG	93
71)	Di-n-Octyl phthalate	0.00	149.0	0	0.00	NG	
72)	Benzo(b)Fluoranthene	0.00	252.0	0	0.00	NG	
73)	Benzo(k)Fluoranthene	0.00	252.0	0	0.00	NG	
74)	Benzo(a)Pyrene	0.00	252.0	0	0.00	NG	
75)	Indeno(1,2,3-cd)Pyrene	0.00	276.0	0	0.00	NG	
76)	Dibenzo(a,h)Anthracene	0.00	278.0	0	0.00	NG	
77)	B nzo(g,h,i)Perylene	0.00	276.0	0	0.00	NG	

* Compound is ISTD



Retention time = 4.30

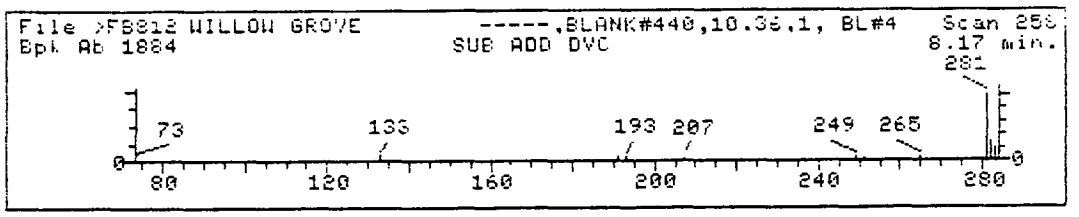
Area = 110-13.0 Tentative Concentration is 840.00

1. 1,3,5-Cycloheptatriene (8CI9CI) 92 C7H8
2. Benzene, methyl- 92 C7H8
3. Benzene, methyl- (9CI) 92 C7H8
4. Benzene, methyl- 92 C7H8
5. Benzene, methyl- 92 C7H8
6. Benzene, methyl- 92 C7H8
7. Benzene, methyl- 92 C7H8

Sample file: >FB812 Spectrum #: 45
Search speed: 2 Tilting option: S No. of ion ranges searched: 46

	Prob.	CAS #	CON #	ROOT	F	DK	#FLG	TILT	%3	CO	I	P_IU
1.	87*	544252	7652	"BIGDB	60	25	— 2	0	89	1	63	46
2.	81*	34	130	PRIPOL	62	16	2	4	99	8	53	42

3.	79*	108883	7659	"BIGDB	73	17	1	0	64	29	43	80
4.	79*	33	129	PRIPOL	73	17	1	0	64	29	43	80
5.	79*	36	132	PRIPOL	48	36	1	0	79	8	48	35
6.	76*	37	133	PRIPOL	48	48	2	0	82	6	45	25
7.	71*	35	131	PRIPOL	64	31	1	0	55	29	29	63



Retention time = 8.17

Area = 65108.00 Tentative Concentration is 490.00

Sample file: >FB812 Spectrum #: 256

No data base entries were retrieved.

LIBRARY SEARCH SUMMARY

MS Data File:>FB812::D4 Analyst:UNCLE MS

Name:WILLOW GROVE Date/Time: 3/09 89 20:04
Misc:-----,BLANK#440,10.36,1, BL#440FOR637,8,745,8 796.52? BTL# 1

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	4.30	110413	50857
2	8.17	65108	50857

Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
BL#448(WATER)

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 02/22/89
Date Analyzed: 3/09/89 21:05
Conc/Dil Factor: 1.00000
Percent Moisture (Decanted) N/A

GPC Cleanup __ Yes __ No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction __ Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl Alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
39638-32-9	bis(2-chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-Di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic Acid	50.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
99-09-2	3-Nitroaniline	50.	U

C.A.S. Number		ug/L or ug/Kg (Circle One)	
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	10.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrososdiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-Butyl phthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)Anthracene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	10.	U
218-01-9	Chrysene	10.	U
117-84-0	Di-n-Octyl phthalate	10.	U
205-99-2	Benzo(b)Fluoranthene	10.	U
207-08-9	Benzo(k)Fluoranthene	10.	U
50-32-8	Benzo(a)Pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10.	U
53-70-3	Dibenzo(a,h)Anthracene	10.	U
191-24-2	Benzo(g,h,i)Perylene	10.	U

(1)-Cannot be separated from diphenylamine

Laboratory Name: EA LABORATORIES

Case No: WILLOW GROVE

Sample Number: BLANK #448

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.				
2.				
3.				
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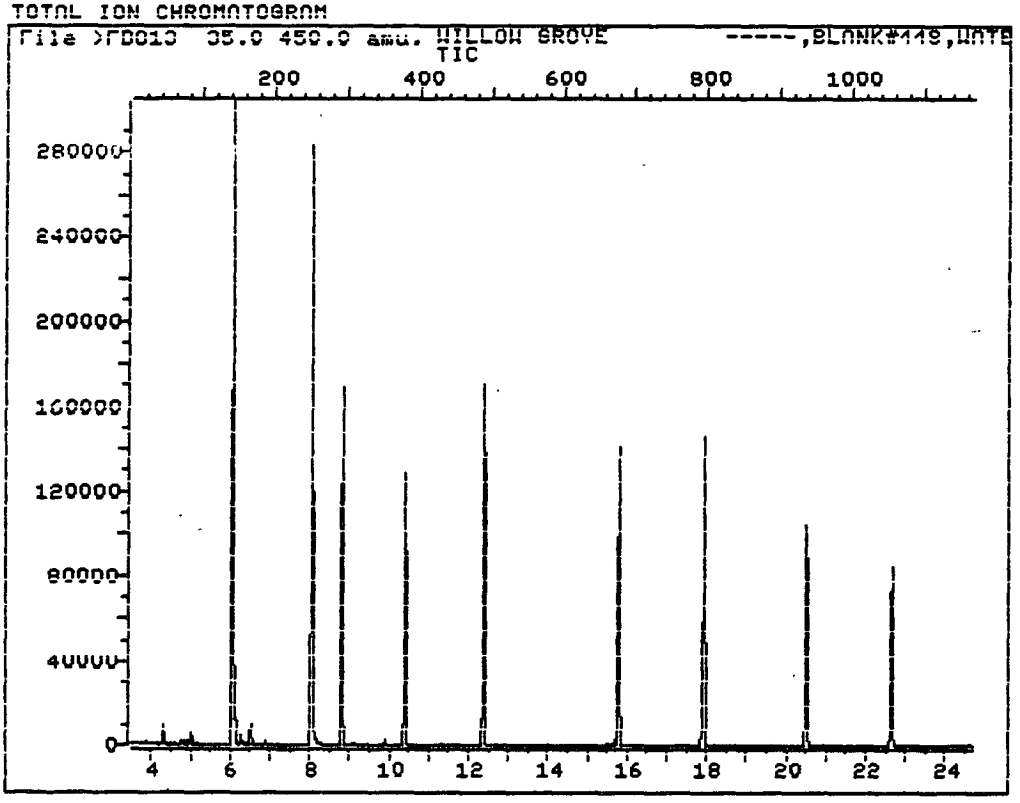
30.				

NO PEAKS FOUND

3 270

TOTAL ION CHROMATOGRAM



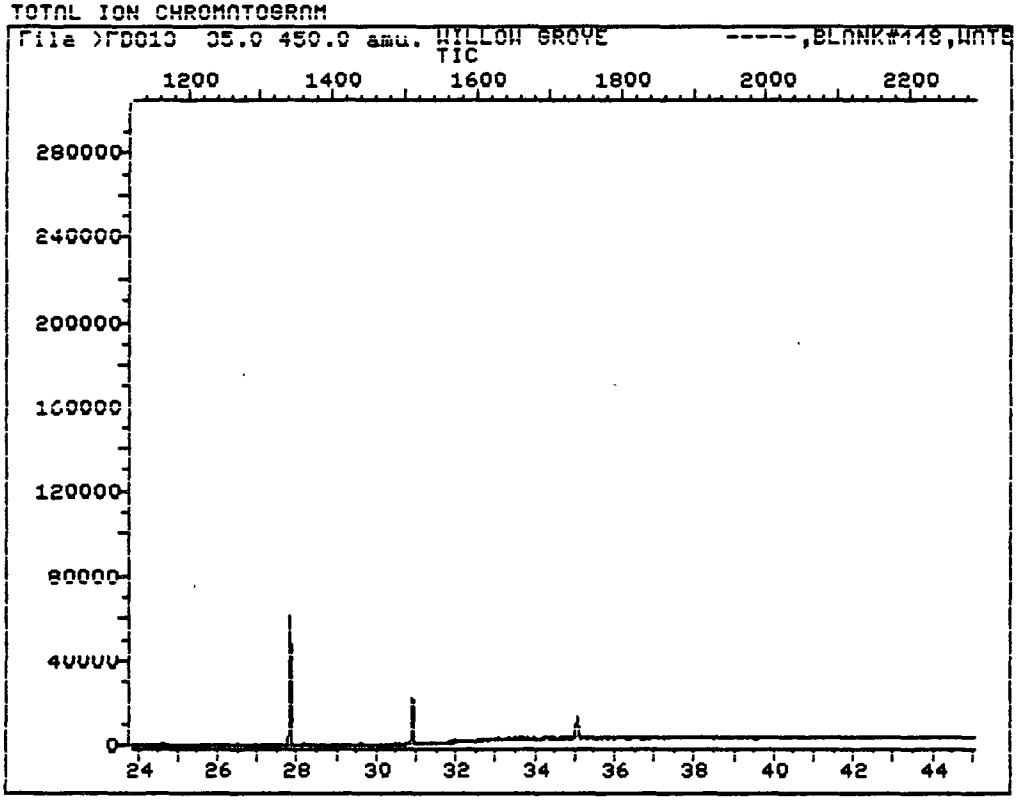
Data File: >FB813::D4 Quant Output File: ^FB813::QT
Name: WILLOW GROVE
Misc: -----,BLANK#448,WATER,1000,2,BL#448FOR640,746 (2.00) BTL# 2

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890412 20:54

Operator ID: UNCLE
Quant Time: 890412 21:02
Injected at: 890309 21:05

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >FB813::D4 Quant Output File: ^FB813::QT
Name: WILLOW GROVE
Mi c: -----,BLANK#448,WATER,1000,2,BL#448FOR640,746 (2.00) BTL# 2

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890412 20:54

Operator ID: UNCLE
Quant Time: 890412 21:02
Injected at: 890309 21:05

TIC page 2 of 2

QUANT REPORT

Operator ID: UNCLE Quant R v: 6 Quant Time: 890412 21:02
Output Fil : ^FB813::QT Injected at: 890309 21:05
Data File: >FB813::D4 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: -----,BLANK#448,WATER,1000,2,BL#448FOR640,746 (2.00) BTL# 2

ID Fil : IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
La t Calibration: 890412 20:54

	Compound	R.T.	Q ion	Area	Conc	Units		q
1)	*d4-1,4-Dichlorobenzene	8.80	152.0	58108	40.00	NG		99
2)	2-Fluorophenol	6.05	112.0	160811	88.01	NG	88%	92
3)	Phenol-d5	8.04	99.0	209329	93.06	NG	93%	96
4)	Phenol	0.00	94.0	0	0.00	NG		
5)	bis(2-Chloroethyl)ether	0.00	93.0	0	0.00	NG		
6)	2-Chlorophenol	0.00	128.0	0	0.00	NG		
7)	1,3-Dichlorobenzene	0.00	146.0	0	0.00	NG		
8)	1,4-Dichlorobenzene	0.00	146.0	0	0.00	NG		
9)	Benzyl Alcohol	0.00	108.0	0	0.00	NG		
10)	1,2-Dichlorobenzene	0.00	146.0	0	0.00	NG		
11)	2-M thylphenol	0.00	108.0	0	0.00	NG		
12)	bis(2-Chloroisopropyl)ether	0.00	45.0	0	0.00	NG		
13)	4-Methylphenol	0.00	108.0	0	0.00	NG		
14)	N-Nitroso-Di-n-propylamine	0.00	70.0	0	0.00	NG		
15)	Hexachloroethane	0.00	117.0	0	0.00	NG		
16)	*d8-Naphthalene	12.38	136.0	194868	40.00	NG		92
17)	Nitrobenzene-d5	10.40	82.0	92524	46.64	NG	93%	93
18)	Nitrobenzene	0.00	77.0	0	0.00	NG		
19)	Isophorone	0.00	82.0	0	0.00	NG		
20)	2-Nitrophenol	0.00	139.0	0	0.00	NG		
21)	2,4-Dimethylphenol	0.00	107.0	0	0.00	NG		
22)	Benzoic Acid	0.00	122.0	0	0.00	NG		
23)	bis(2-Chloroethoxy)methane	0.00	93.0	0	0.00	NG		
24)	2,4-Dichlorophenol	0.00	162.0	0	0.00	NG		
25)	1,2,4-Trichlorobenzene	0.00	180.0	0	0.00	NG		
26)	Naphthalene	0.00	128.0	0	0.00	NG		
27)	4-Chloroaniline	0.00	127.0	0	0.00	NG		
28)	H xachlorobutadiene	0.00	224.7	0	0.00	NG		
29)	4-Chloro-3-methylphenol	0.00	107.0	0	0.00	NG		
30)	2-Methylnaphthalene	0.00	142.0	0	0.00	NG		
31)	*d10-Acenaphthene	17.93	164.0	77251	40.00	NG		95
32)	H xachlorocyclopentadiene	0.00	237.0	0	0.00	NG		
33)	2,4,6-Trichlorophenol	0.00	196.0	0	0.00	NG		
34)	2,4,5-Trichlorophenol	0.00	196.0	0	0.00	NG		
35)	2-Chloronaphthalene	0.00	162.0	0	0.00	NG		
36)	2-Fluorobiphenyl	15.79	172.0	127603	45.84	NG	92%	94
37)	2-Nitroaniline	0.00	65.0	0	0.00	NG		
38)	Dimethylphthalate	17.93	163.0	26012	~~7.87~~	NG		55
39)	Acenaphthylene	0.00	152.0	0	0.00	NG		
40)	3-Nitroaniline	0.00	138.0	0	0.00	NG		
41)	Acenaphthene	0.00	153.0	0	0.00	NG		
42)	2,4-Dinitroph nol	0.00	184.0	0	0.00	NG		

QUANT REPORT
page 2

Output File:^FB813:: Data File:>FB813::D4

	Compound	R.T.	Q ion	Area	Conc	Units	q
43)	4-Nitrophenol	0.00	109.0	0	0.00	NG	
44)	Dib nzofuran	0.00	168.0	0	0.00	NG	
45)	2,4-Dinitrotoluene	0.00	165.0	0	0.00	NG	
46)	2,6-Dinitrotoluene	0.00	165.0	0	0.00	NG	
47)	Di thylphthalate	0.00	149.0	0	0.00	NG	
48)	4-Chlorophenyl-phenylether	0.00	204.0	0	0.00	NG	
49)	Fluor ne	0.00	166.0	0	0.00	NG	
50)	4-Nitroaniline	0.00	138.0	0	0.00	NG	
51)	*d10-Phenanthrene	22.66	188.0	86502	40.00	NG	99
52)	4,6-Dinitro-2-methylphenol	0.00	198.0	0	0.00	NG	
53)	N-Nitrosodiphenylamine	0.00	169.0	0	0.00	NG	
54)	2,4,6-Tribromophenol	20.50	329.9	33457	99.33	NG 9920	92
55)	4-Bromophenyl-phenylether	0.00	248.0	0	0.00	NG	
56)	Hexachlorobenzene	0.00	283.6	0	0.00	NG	
57)	P ntachlorophenol	0.00	266.0	0	0.00	NG	
58)	Phenanthrene	0.00	178.0	0	0.00	NG	
59)	Anthracene	0.00	178.0	0	0.00	NG	
60)	Di-n-Butyl phthalate	0.00	149.0	0	0.00	NG	
61)	Fluoranthene	0.00	202.0	0	0.00	NG	
62)	*d12-Chrysene	30.91	240.0	21848	40.00	NG	95
63)	Pyren	0.00	202.0	0	0.00	NG	
64)	Terphenyl-d14	27.85	244.0	57514	54.50	NG 1092	87
65)	Butylbenzylphthalate	0.00	149.0	0	0.00	NG	
66)	3,3'-Dichlorobenzidine	0.00	252.0	0	0.00	NG	
67)	Benzo(a)Anthracene	0.00	228.0	0	0.00	NG	
68)	bis(2-Ethylhexyl)phthalate	0.00	149.0	0	0.00	NG	
69)	Chrys ne	0.00	228.0	0	0.00	NG	
70)	d12-Perylene	35.07	264.0	15623	40.00	NG	94
71)	Di-n-Octyl phthalate	0.00	149.0	0	0.00	NG	
72)	Benzo(b)Fluoranthene	0.00	252.0	0	0.00	NG	
73)	Benzo(k)Fluoranthene	0.00	252.0	0	0.00	NG	
74)	Benzo(a)Pyrene	0.00	252.0	0	0.00	NG	
75)	Indeno(1,2,3-cd)Pyrene	0.00	276.0	0	0.00	NG	
76)	Dibenzo(a,h)Anthracene	0.00	278.0	0	0.00	NG	
77)	B nzo(g,h,i)Perylene	0.00	276.0	0	0.00	NG	

* Comp und is ISTD

Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
BLANK #452

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 02/23/89
Date Analyzed: 3/09/89 1:55
Conc/Dil Factor: 1.00000
Percent Moisture (Decanted) N/A

GPC Cleanup __ Yes No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	990.	U
111-44-4	bis(2-Chloroethyl)ether	990.	U
95-57-8	2-Chlorophenol	990.	U
541-73-1	1,3-Dichlorobenzene	990.	U
106-46-7	1,4-Dichlorobenzene	990.	U
100-51-6	Benzyl Alcohol	990.	U
95-50-1	1,2-Dichlorobenzene	990.	U
95-48-7	2-Methylphenol	990.	U
39638-32-9	bis(2-Chloroisopropyl)ether	990.	U
106-44-5	4-Methylphenol	990.	U
621-64-7	N-Nitroso-Di-n-propylamine	990.	U
67-72-1	Hexachloroethane	990.	U
98-95-3	Nitrobenzene	990.	U
78-59-1	Isophorone	990.	U
88-75-5	2-Nitrophenol	990.	U
105-67-9	2,4-Dimethylphenol	990.	U
65-85-0	Benzoic Acid	4900.	U
111-91-1	bis(2-Chloroethoxy)methane	990.	U
120-83-2	2,4-Dichlorophenol	990.	U
120-82-1	1,2,4-Trichlorobenzene	990.	U
91-20-3	Naphthalene	990.	U
106-47-8	4-Chloroaniline	990.	U
87-68-3	Hexachlorobutadiene	990.	U
59-50-7	4-Chloro-3-methylphenol	990.	U
91-57-6	2-Methylnaphthalene	990.	U
77-47-4	Hexachlorocyclopentadiene	990.	U
88-06-2	2,4,6-Trichlorophenol	990.	U
95-95-4	2,4,5-Trichlorophenol	4900.	U
91-58-7	2-Chloronaphthalene	990.	U
88-74-4	2-Nitroaniline	4900.	U
131-11-3	Dimethylphthalate	990.	U
208-96-8	Acenaphthylene	990.	U
99-09-2	3-Nitroaniline	4900.	U

C.A.S. Number		ug/L or ug/Kg (Circle One)	
83-32-9	Acenaphthene	990.	U
51-28-5	2,4-Dinitrophenol	4900.	U
100-02-7	4-Nitrophenol	4900.	U
132-64-9	Dibenzofuran	990.	U
121-14-2	2,4-Dinitrotoluene	990.	U
606-20-2	2,6-Dinitrotoluene	990.	U
84-66-2	Diethylphthalate	990.	U
7005-72-3	4-Chlorophenyl-phenylether	990.	U
86-73-7	Fluorene	990.	U
100-01-6	4-Nitroaniline	990.	U
534-52-1	4,6-Dinitro-2-methylphenol	4900.	U
86-30-6	N-Nitrososdiphenylamine (1)	990.	U
101-55-3	4-Bromophenyl-phenylether	990.	U
118-74-1	Hexachlorobenzene	990.	U
87-86-5	Pentachlorophenol	4900.	U
85-01-8	Phenanthrene	990.	U
120-12-7	Anthracene	990.	U
84-74-2	Di-n-Butyl phthalate	990.	U
206-44-0	Fluoranthene	990.	U
129-00-0	Pyrene	990.	U
85-68-7	Butylbenzylphthalate	990.	U
91-94-1	3,3'-Dichlorobenzidine	2000.	U
56-55-3	Benzo(a)Anthracene	990.	U
117-81-7	bis(2-Ethylhexyl)phthalate	990.	U
218-01-9	Chrysene	990.	U
117-84-0	Di-n-Octyl phthalate	990.	U
205-99-2	Benzo(b)Fluoranthene	990.	U
207-08-9	Benzo(k)Fluoranthene	990.	U
50-32-8	Benzo(a)Pyrene	990.	U
193-39-5	Indeno(1,2,3-cd)Pyrene	990.	U
53-70-3	Dibenzo(a,h)Anthracene	990.	U
191-24-2	Benzo(g,h,i)Perylene	990.	U

(1)-Cannot be separated from diphenylamine

Laboratory Name: EA LABORATORIES

Cas No: Willow Grove

Sample Number
BL #452

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (~~ug/l or~~ ug/kg)
1. —	Unknown	BNA	31.82	800.00 J
2.				
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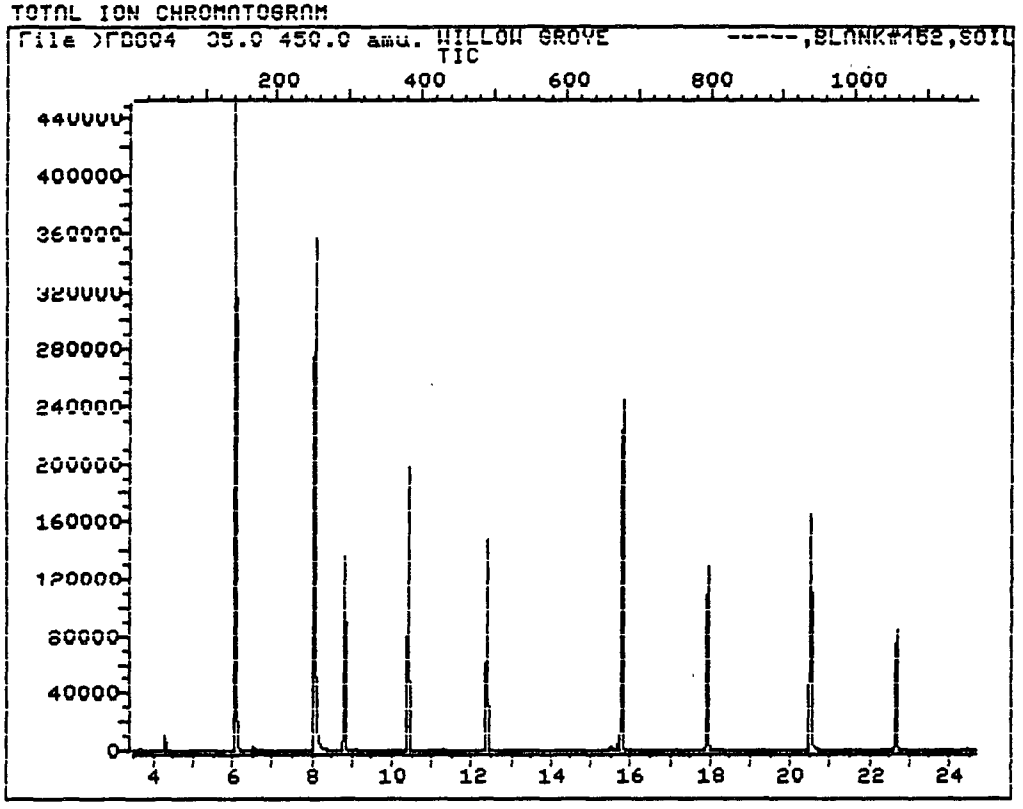
3 282

TOTAL ION CHROMATOGRAM



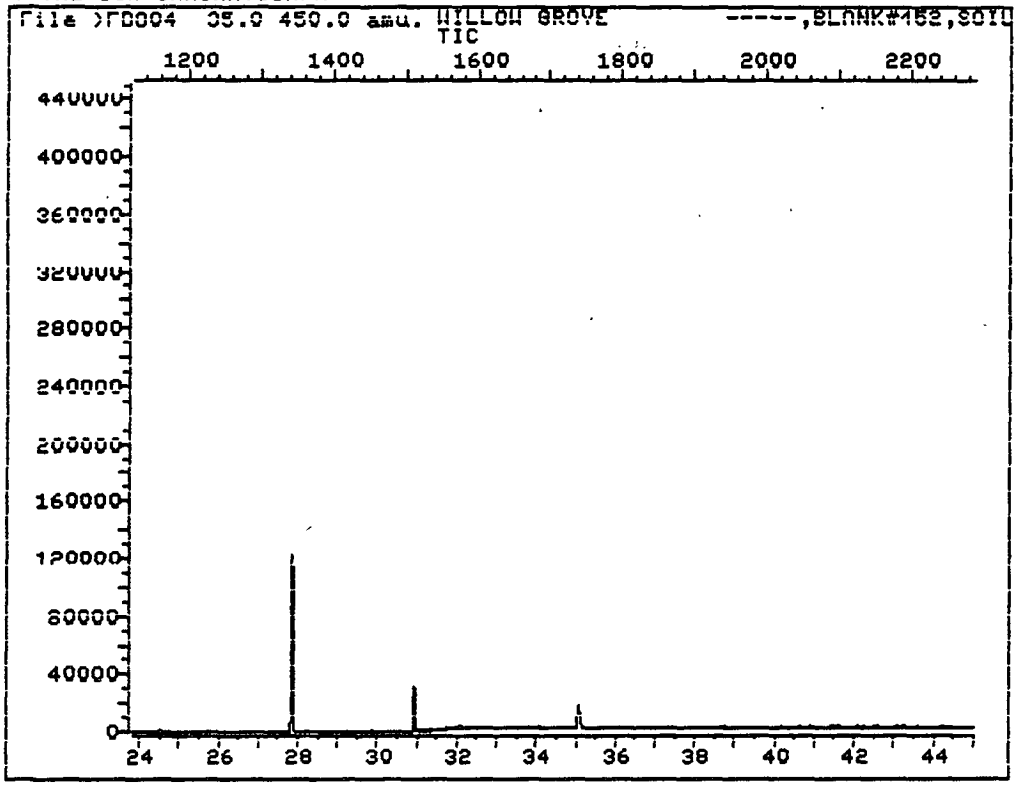
Data File: >FB804::D4 Quant Output File: ^FB804::QT
Name: WILLOW GROVE
Misc: -----,BLANK#452,SOIL,10.13G,1, BL#452 (98.72) BTL# 5

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890411 22:32

Op rator ID: UNCLE
Quant Time: 890412 00:07
Injected at: 890309 01:55

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >FB804::D4 Quant Output File: ^FB804::QT
Nam : WILLOW GROVE
Misc: -----,BLANK#452,SOIL,10.13G,1, BL#452 <98.72> BTL# 5

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890411 22:32

Operator ID: UNCLE
Quant Time: 890412 00:07
Injected at: 890309 01:55

TIC page 2 of 2

QUANT REPORT

Operator ID: UNCLE Quant Rev: 6 Quant Time: 890412 00:07
Output File: ^FB804::QT Injected at: 890309 01:55
Data File: >FB804::D4 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: -----,BLANK#452,SOIL,10.13G,1, BL#452 (98.72) BTL# 5

ID File: IDFCLP::BD
Titl : HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890411 22:32

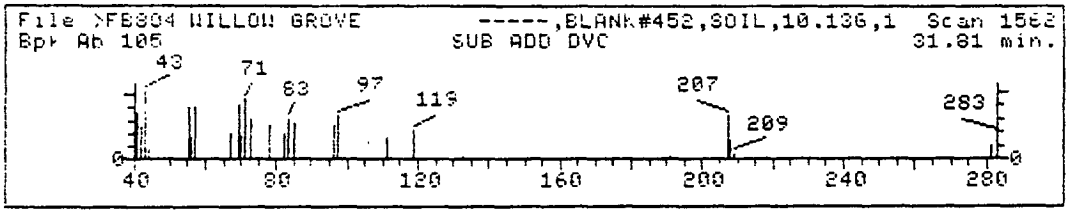
	Compound	R.T.	Q ion	Area	Conc	Unit		q
1)	*d4-1,4-Dichlorobenzene	8.82	152.0	46860	40.00	NG		98
2)	2-Fluorophenol	6.06	112.0	221058	151.51	NG	76%	96
3)	Phenol-d5	8.05	99.0	317274	184.62	NG	92%	97
4)	Ph nol	0.00	94.0	0	0.00	NG		
5)	bis(2-Chloroethyl)ether	0.00	93.0	0	0.00	NG		
6)	2-Chlorophenol	0.00	128.0	0	0.00	NG		
7)	1,3-Dichlorobenzene	0.00	146.0	0	0.00	NG		
8)	1,4-Dichlorobenzene	0.00	146.0	0	0.00	NG		
9)	B nzyl Alcohol	0.00	108.0	0	0.00	NG		
10)	1,2-Dichlorobenzene	0.00	146.0	0	0.00	NG		
11)	2-Methylphenol	0.00	108.0	0	0.00	NG		
12)	bis(2-Chloroisopropyl)ether	0.00	45.0	0	0.00	NG		
13)	4-Methylphenol	0.00	108.0	0	0.00	NG		
14)	N-Nitroso-Di-n-propylamine	0.00	70.0	0	0.00	NG		
15)	Hexachloroethane	0.00	117.0	0	0.00	NG		
16)	*d8-Naphthalene	12.39	136.0	161919	40.00	NG		92
17)	Nitrobenzene-d5	10.41	82.0	148176	91.47	NG	91%	95
18)	Nitrobenzene	0.00	77.0	0	0.00	NG		
19)	Isophorone	0.00	82.0	0	0.00	NG		
20)	2-Nitrophenol	0.00	139.0	0	0.00	NG		
21)	2,4-Dimethylphenol	0.00	107.0	0	0.00	NG		
22)	Benzoic Acid	0.00	122.0	0	0.00	NG		
23)	bis(2-Chloroethoxy)methane	0.00	93.0	0	0.00	NG		
24)	2,4-Dichlorophenol	0.00	162.0	0	0.00	NG		
25)	1,2,4-Trichlorobenzene	0.00	180.0	0	0.00	NG		
26)	Naphthalene	0.00	128.0	0	0.00	NG		
27)	4-Chloroaniline	0.00	127.0	0	0.00	NG		
28)	Hexachlorobutadiene	0.00	224.7	0	0.00	NG		
29)	4-Chloro-3-methylphenol	0.00	107.0	0	0.00	NG		
30)	2-Methylnaphthalene	0.00	142.0	0	0.00	NG		
31)	*d10-Acenaphthene	17.94	164.0	66426	40.00	NG		96
32)	Hexachlorocyclopentadiene	0.00	237.0	0	0.00	NG		
33)	2,4,6-Trichlorophenol	0.00	196.0	0	0.00	NG		
34)	2,4,5-Trichlorophenol	0.00	196.0	0	0.00	NG		
35)	2-Chloronaphthalene	0.00	162.0	0	0.00	NG		
36)	2-Fluorobiphenyl	15.82	172.0	202572	88.20	NG	88%	97
37)	2-Nitroaniline	0.00	65.0	0	0.00	NG		
38)	Dimethylphthalate	17.94	163.0	22547	~~8.41~~	NG		54
39)	Acenaphthylene	0.00	152.0	0	0.00	NG		
40)	3-Nitroaniline	0.00	138.0	0	0.00	NG		
41)	Acenaphthene	0.00	153.0	0	0.00	NG		
42)	2,4-Dinitroph nol	0.00	184.0	0	0.00	NG		

QUANT REPORT

Output File:^FB804:: Data File:>FB804::D4

	Compound	R.T.	Q ion	Area	Conc	Units	q
43)	4-Nitrophenol	0.00	109.0	0	0.00	NG	
44)	Dibenzofuran	0.00	168.0	0	0.00	NG	
45)	2,4-Dinitrotoluene	0.00	165.0	0	0.00	NG	
46)	2,6-Dinitrotoluene	0.00	165.0	0	0.00	NG	
47)	Diethylphthalate	0.00	149.0	0	0.00	NG	
48)	4-Chlorophenyl-phenylether	0.00	204.0	0	0.00	NG	
49)	Fluorene	0.00	166.0	0	0.00	NG	
50)	4-Nitroaniline	0.00	138.0	0	0.00	NG	
51)	*d10-Phenanthrene	22.67	188.0	84454	40.00	NG	99
52)	4,6-Dinitro-2-methylphenol	0.00	198.0	0	0.00	NG	
53)	N-Nitrosodiphenylamine	0.00	169.0	0	0.00	NG	
54)	2,4,6-Tribromophenol	20.51	329.9	61444	205.60	NG /032	98
55)	4-Bromophenyl-phenylether	0.00	248.0	0	0.00	NG	
56)	Hexachlorobenzene	0.00	283.6	0	0.00	NG	
57)	Pentachlorophenol	0.00	266.0	0	0.00	NG	
58)	Phenanthrene	0.00	178.0	0	0.00	NG	
59)	Anthracene	0.00	178.0	0	0.00	NG	
60)	Di-n-Butyl phthalate	0.00	149.0	0	0.00	NG	
61)	Fluoranthene	0.00	202.0	0	0.00	NG	
62)	*d12-Chrysene	30.92	240.0	30027	40.00	NG	96
63)	Pyrene	0.00	202.0	0	0.00	NG	
64)	Terphenyl-d14	27.86	244.0	122193	111.91	NG /1220	85
65)	Butylbenzylphthalate	0.00	149.0	0	0.00	NG	
66)	3,3'-Dichlorobenzidine	0.00	252.0	0	0.00	NG	
67)	Benzo(a)Anthracene	0.00	228.0	0	0.00	NG	
68)	bis(2-Ethylhexyl)phthalate	0.00	149.0	0	0.00	NG	
69)	Chry ene	0.00	228.0	0	0.00	NG	
70)	*d12-Perylene	35.08	264.0	23802	40.00	NG	94
71)	Di-n-Octyl phthalate	0.00	149.0	0	0.00	NG	
72)	Benzo(b)Fluoranthene	0.00	252.0	0	0.00	NG	
73)	Benzo(k)Fluoranthene	0.00	252.0	0	0.00	NG	
74)	Benzo(a)Pyrene	0.00	252.0	0	0.00	NG	
75)	Indeno(1,2,3-cd)Pyrene	0.00	276.0	0	0.00	NG	
76)	Dibenzo(a,h)Anthracene	0.00	278.0	0	0.00	NG	
77)	Benzo(g,h,i)Perylene	0.00	276.0	0	0.00	NG	

* Compound is ISTD



Retention time = 31.81

Area = 18661.00 Tentative Concentration is 800.00

Sample file: >FB804 Spectrum #: 1562

No data base entries were retrieved.

LIBRARY SEARCH SUMMARY

MS Data File:>FB804::D4 Analyst:UNCLE MS

Name:WILLOW GROVE Date/Time: 3/09/89 1:55
Misc:-----,BLANK#452,SOIL,10.13G,1, BL#452 ?98.72? BTL# 5

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	31.91	18661	9154

Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
BLANK(#466) EA # 0815

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 02/27/89
Date Analyzed: 2/28/89 19:25
Conc/Dil Factor: 1.0
Percent Moisture (Decanted) N/A

GPC Cleanup __ Yes ✓ No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction ✓ Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	1000.	U
111-44-4	bis(2-Chloroethyl)ether	1000.	U
95-57-8	2-Chlorophenol	1000.	U
541-73-1	1,3-Dichlorobenzene	1000.	U
106-46-7	1,4-Dichlorobenzene	1000.	U
100-51-6	Benzyl Alcohol	1000.	U
95-50-1	1,2-Dichlorobenzene	1000.	U
95-48-7	2-Methylphenol	1000.	U
39638-32-9	bis(2-Chloroisopropyl)ether	1000.	U
106-44-5	4-Methylphenol	1000.	U
621-64-7	N-Nitroso-Di-n-propylamine	1000.	U
67-72-1	Hexachloroethane	1000.	U
98-95-3	Nitrobenzene	1000.	U
78-59-1	Isophorone	1000.	U
88-75-5	2-Nitrophenol	1000.	U
105-67-9	2,4-Dimethylphenol	1000.	U
65-85-0	Benzoic Acid	130.	J
111-91-1	bis(2-Chloroethoxy)methane	1000.	U
120-83-2	2,4-Dichlorophenol	1000.	U
120-82-1	1,2,4-Trichlorobenzene	1000.	U
91-20-3	Naphthalene	1000.	U
106-47-8	4-Chloroaniline	1000.	U
87-68-3	Hexachlorobutadiene	1000.	U
59-50-7	4-Chloro-3-methylphenol	1000.	U
91-57-6	2-Methylnaphthalene	1000.	U
77-47-4	Hexachlorocyclopentadiene	1000.	U
88-06-2	2,4,6-Trichlorophenol	1000.	U
95-95-4	2,4,5-Trichlorophenol	5000.	U
91-58-7	2-Chloronaphthalene	1000.	U
88-74-4	2-Nitroaniline	5000.	U
131-11-3	Dimethylphthalate	1000.	U
208-96-8	Acenaphthylene	1000.	U
99-09-2	3-Nitroaniline	5000.	U

C.A.S. Number		ug/L or ug/Kg (Circle One)	
83-32-9	Acenaphthene	1000.	U
51-28-5	2,4-Dinitrophenol	5000.	U
100-02-7	4-Nitrophenol	5000.	U
132-64-9	Dibenzofuran	1000.	U
121-14-2	2,4-Dinitrotoluene	1000.	U
606-20-2	2,6-Dinitrotoluene	1000.	U
84-66-2	Diethylphthalate	1000.	U
7005-72-3	4-Chlorophenyl-phenylether	1000.	U
86-73-7	Fluorene	1000.	U
100-01-6	4-Nitroaniline	1000.	U
534-52-1	4,6-Dinitro-2-methylphenol	5000.	U
86-30-6	N-Nitrosodiphenylamine (1)	1000.	U
101-55-3	4-Bromophenyl-phenylether	1000.	U
118-74-1	Hexachlorobenzene	1000.	U
87-86-5	Pentachlorophenol	5000.	U
85-01-8	Phenanthrene	1000.	U
120-12-7	Anthracene	1000.	U
84-74-2	Di-n-Butyl phthalate	1000.	U
206-44-0	Fluoranthene	1000.	U
129-00-0	Pyrene	1000.	U
85-68-7	Butylbenzylphthalate	1000.	U
91-94-1	3,3'-Dichlorobenzidine	2000.	U
56-55-3	Benzo(a)Anthracene	1000.	U
117-81-7	bis(2-Ethylhexyl)phthalate	1000.	U
218-01-9	Chrysene	1000.	U
117-84-0	Di-n-Octyl phthalate	1000.	U
205-99-2	Benzo(b)Fluoranthene	1000.	U
207-08-9	Benzo(k)Fluoranthene	1000.	U
50-32-8	Benzo(a)Pyrene	1000.	U
193-39-5	Indeno(1,2,3-cd)Pyrene	1000.	U
53-70-3	Dibenzo(a,h)Anthracene	1000.	U
191-24-2	Benzo(g,h,i)Perylene	1000.	U

(1)-Cannot be separated from diphenylamine

Laboratory Name: EA Laboratories
Cas No: Willow Grove

Sample Number
Blank # 466
EA # 0815

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. 112618	Octadecanoic acid, methyl ester	BNA	22.51	560.00
2. 5129613	Heptadecanoic acid, 16-methyl-methyl ester	BNA	26.87	610.00
3. —	Unknown	BNA	29.51	410.00
4. —	Unknown	BNA	32.89	750.00
5.				
6.				
7.				
8.				
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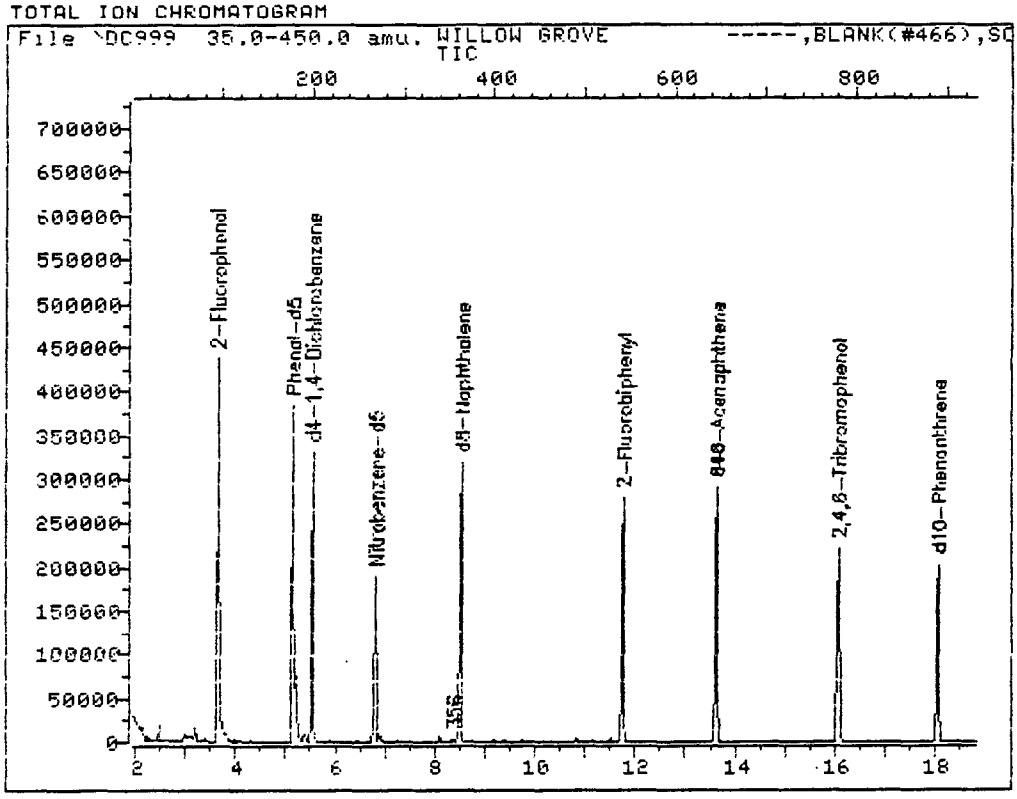
30.				

TOTAL ION CHROMATOGRAM



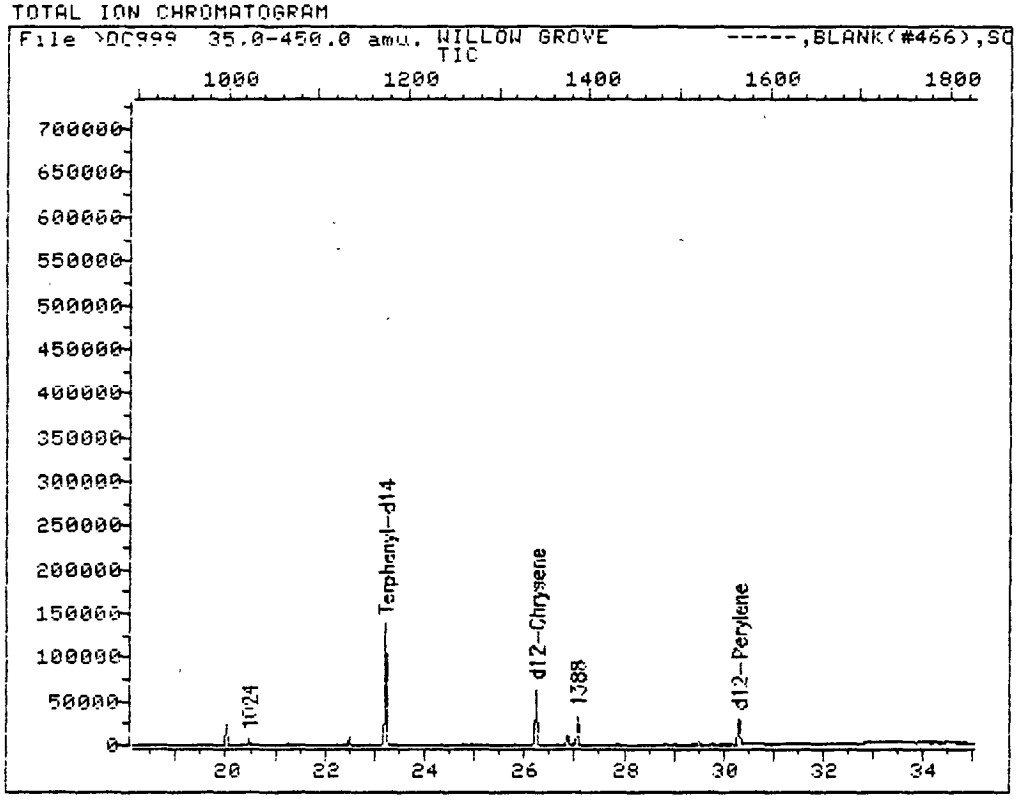
Data File: >DC999::D1 Quant Output File: ^DC999::QT
Name: WILLOW GROVE
Misc: -----,BLANK(#466),SOIL,10.05G,1 EA#0815 (99.50) BTL# 3

Id File: IDDCLP::BD
Title: HSL BNA LIST---INSTRUMENT #4(D)
Last Calibration: 890228 16:26

Operator ID: BHADRA
Quant Time: 890228 20:03
Injected at: 890228 19:25

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >DC999::D1 Quant Output File: ^DC999::QT
Name: WILLOW GROVE
Misc: -----,BLANK(#466),SOIL,10.05G,1 EA#0815 (99.50) BTL# 3

Id File: IDDCLP::BD
Title: HSL BNA LIST---INSTRUMENT #4(D)
Last Calibration: 890228 16:26

Operator ID: BHADRA
Quant Time: 890228 20:03
Injected at: 890228 19:25

TIC page 2 of 2

QUANT REPORT

Operator ID: BHADRA Quant Rev: 6 Quant Time: 890228 20:03
Output File: ^DC999::QT Injected at: 890228 19:25
Data File: >DC999::D1 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: -----,BLANK(#466),SOIL,10.05G,1 EA#0815 (99.50) BTL# 3

ID File: IDDCLP::BD
Title: HSL BNA LIST---INSTRUMENT #4(D)
Last Calibration: 890228 16:26

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	5.54	152.0	95692	40.00	NG	97
2)	2-Fluorophenol	3.64	112.0	258045	131.83	NG ✓66%	88
3)	Phenol-d5	5.14	99.0	262671	118.23	NG ✓59%	91
4)	Phenol	0.00	94.0	0	0.00	NG	
5)	bis(2-Chloroethyl)ether	0.00	93.0	0	0.00	NG	
6)	2-Chlorophenol	0.00	128.0	0	0.00	NG	
7)	1,3-Dichlorobenzene	0.00	146.0	0	0.00	NG	
8)	1,4-Dichlorobenzene	0.00	146.0	0	0.00	NG	
9)	Benzyl Alcohol	0.00	108.0	0	0.00	NG	
10)	1,2-Dichlorobenzene	0.00	146.0	0	0.00	NG	
11)	2-Methylphenol	0.00	108.0	0	0.00	NG	
12)	bis(2-Chloroisopropyl)ether	0.00	45.0	0	0.00	NG	
13)	4-Methylphenol	0.00	108.0	0	0.00	NG	
14)	N-Nitroso-Di-n-propylamine	0.00	70.0	0	0.00	NG	
15)	Hexachloroethane	0.00	117.0	0	0.00	NG	
16)	*d8-Naphthalene	8.53	136.0	375558	40.00	NG	91
17)	Nitrobenzene-d5	6.81	82.0	143820	55.98	NG ✓56%	96
18)	Nitrobenzene	0.00	77.0	0	0.00	NG	
19)	Isophorone	0.00	82.0	0	0.00	NG	
20)	2-Nitrophenol	0.00	139.0	0	0.00	NG	
21)	2,4-Dimethylphenol	0.00	107.0	0	0.00	NG	
22)	Benzoic Acid	8.39	122.0	1479	1.29	NG ✓	98
23)	bis(2-Chloroethoxy)methane	0.00	93.0	0	0.00	NG	
24)	2,4-Dichlorophenol	0.00	162.0	0	0.00	NG	
25)	1,2,4-Trichlorobenzene	0.00	180.0	0	0.00	NG	
26)	Naphthalene	0.00	128.0	0	0.00	NG	
27)	4-Chloroaniline	0.00	127.0	0	0.00	NG	
28)	Hexachlorobutadiene	0.00	224.7	0	0.00	NG	
29)	4-Chloro-3-methylphenol	0.00	107.0	0	0.00	NG	
30)	2-Methylnaphthalene	0.00	142.0	0	0.00	NG	
31)	*d10-Acenaphthene	13.64	164.0	190104	40.00	NG	92
32)	Hexachlorocyclopentadiene	0.00	237.0	0	0.00	NG	
33)	2,4,6-Trichlorophenol	0.00	196.0	0	0.00	NG	
34)	2,4,5-Trichlorophenol	0.00	196.0	0	0.00	NG	
35)	2-Chloronaphthalene	0.00	162.0	0	0.00	NG	
36)	2-Fluorobiphenyl	11.77	172.0	234348	55.05	NG ✓55%	94
37)	2-Nitroaniline	0.00	65.0	0	0.00	NG	
38)	Dimethylphthalate	13.64	163.0	33853	~~0.60~~	~~NG~~	96
39)	Acenaphthylene	0.00	152.0	0	0.00	NG	
40)	3-Nitroaniline	0.00	138.0	0	0.00	NG	
41)	Acenaphthene	0.00	153.0	0	0.00	NG	
42)	2,4-Dinitrophenol	0.00	184.0	0	0.00	NG	

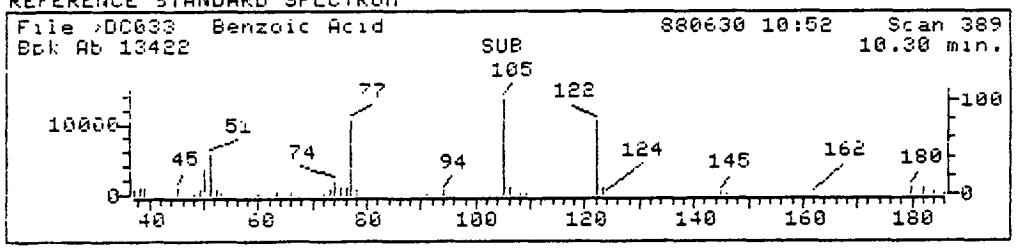
QUANT REPORT
page 2

Output File:^DC999:: Data File:>DC999::D1

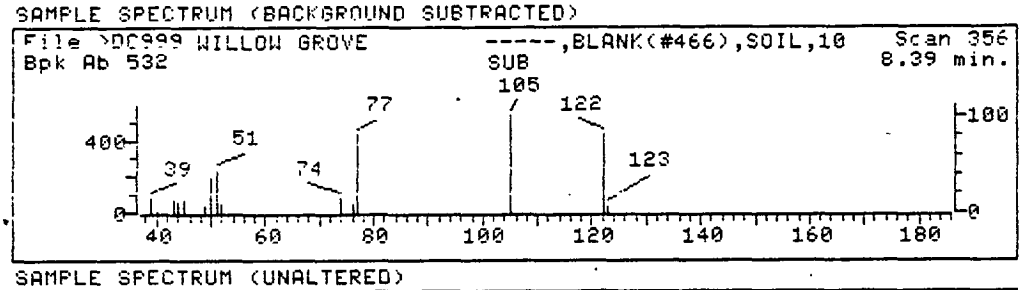
	Compound	R.T.	Q ion	Area	Conc	Units	q
43)	4-Nitrophenol	0.00	109.0	0	0.00	NG	
44)	Dibenzofuran	0.00	168.0	0	0.00	NG	
45)	2,4-Dinitrotoluene	0.00	165.0	0	0.00	NG	
46)	2,6-Dinitrotoluene	0.00	165.0	0	0.00	NG	
47)	Diethylphthalate	0.00	149.0	0	0.00	NG	
48)	4-Chlorophenyl-phenylether	0.00	204.0	0	0.00	NG	
49)	Fluorene	0.00	166.0	0	0.00	NG	
50)	4-Nitroaniline	0.00	138.0	0	0.00	NG	
51)	*d10-Phenanthrene	18.07	188.0	249660	40.00	NG	99
52)	4,6-Dinitro-2-methylphenol	0.00	198.0	0	0.00	NG	
53)	N-Nitrosodiphenylamine	0.00	169.0	0	0.00	NG	
54)	2,4,6-Tribromophenol	16.08	329.9	84640	115.64	NG ✓58%	95
55)	4-Bromophenyl-phenylether	0.00	248.0	0	0.00	NG	
56)	Hexachlorobenzene	0.00	283.6	0	0.00	NG	
57)	Pentachlorophenol	0.00	266.0	0	0.00	NG	
58)	Phenanthrene	0.00	178.0	0	0.00	NG	
59)	Anthracene	0.00	178.0	0	0.00	NG	
60)	Di-n-Butyl phthalate	20.48	149.0	733	~~.10~~ ~~NG~~		96
61)	Fluoranthene	0.00	202.0	0	0.00	NG	
62)	*d12-Chrysene	26.24	240.0	66016	40.00	NG	98
63)	Pyrene	0.00	202.0	0	0.00	NG	
64)	Terphenyl-d14	23.23	244.0	137636	61.15	NG ✓61%	87
65)	Butylbenzylphthalate	0.00	149.0	0	0.00	NG	
66)	3,3'-Dichlorobenzidine	0.00	252.0	0	0.00	NG	
67)	Benzo(a)Anthracene	0.00	228.0	0	0.00	NG	
68)	bis(2-Ethylhexyl)phthalate	27.07	149.0	873	~~.38~~ ~~NG~~		93
69)	Chrysene	0.00	228.0	0	0.00	NG	
70)	*d12-Perylene	30.31	264.0	34147	40.00	NG	94
71)	Di-n-Octyl phthalate	0.00	149.0	0	0.00	NG	
72)	Benzo(b)Fluoranthene	0.00	252.0	0	0.00	NG	
73)	Benzo(k)Fluoranthene	0.00	252.0	0	0.00	NG	
74)	Benzo(a)Pyrene	0.00	252.0	0	0.00	NG	
75)	Indeno(1,2,3-cd)Pyrene	0.00	276.0	0	0.00	NG	
76)	Dibenzo(a,h)Anthracene	0.00	278.0	0	0.00	NG	
77)	Benzo(g,h,i)Perylene	0.00	276.0	0	0.00	NG	

* Compound is ISTD

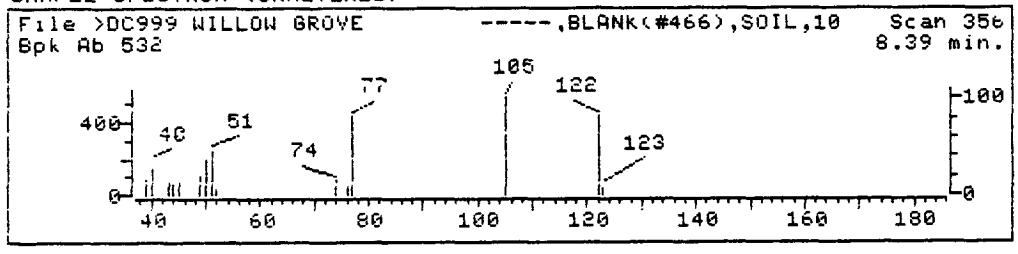
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

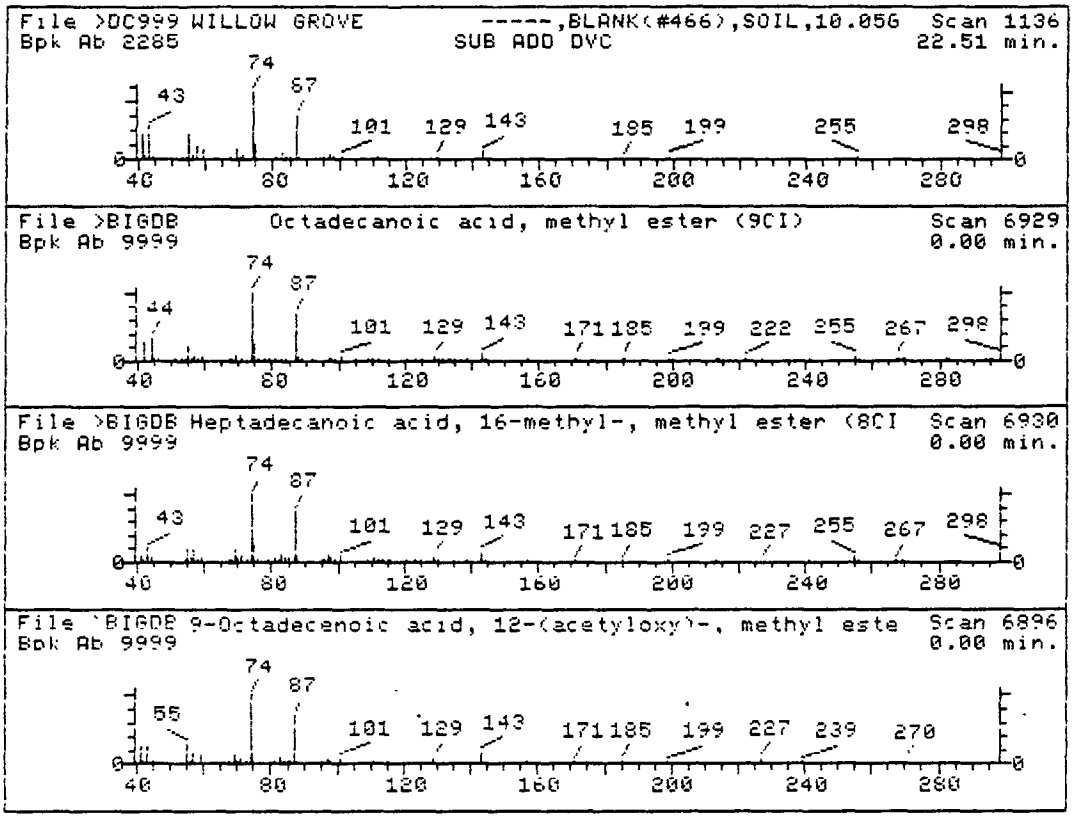


SAMPLE SPECTRUM (UNALTERED)



Data File: >DC999::D1 Quant Output File: ^DC999::QT
Name: WILLOW GROVE
Misc: -----,BLANK(#466),SOIL,10.05G,1 EA#0815 (99.50) BTL# 3
Quant Time: 890228 20:03 Quant ID File: IDDCLP::BD
Injected at: 890228 19:25 Last Calibration: 890228 16:26

Compound No: 22
Compound Name: Benzoic Acid
Scan Number: 356
Retention Time: 8.39 min.
Quant Ion: 122.0
Area: 1479
Concentration: 1.29 NG
q-value: 98



Retention time = 22.51

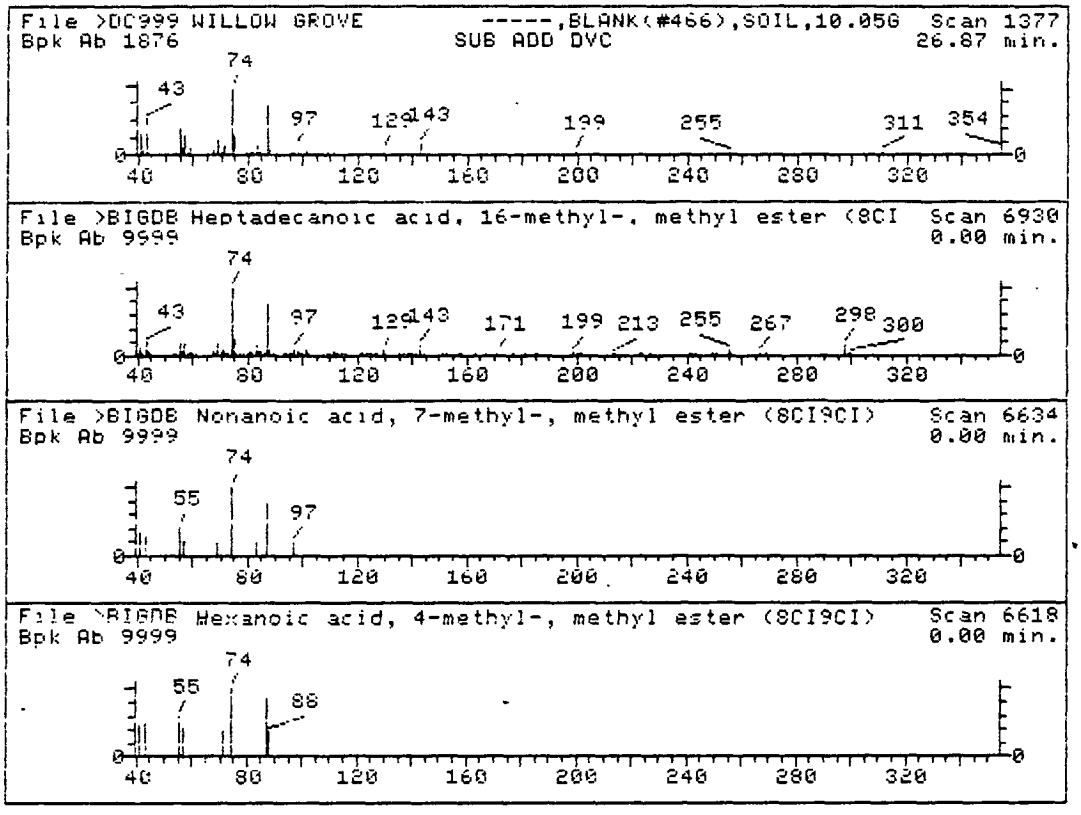
Area = 27032.00 Tentative Concentration is 560.00

✓1.	Octadecanoic acid, methyl ester (9CI)	298	C19H38O2
2.	Heptadecanoic acid, 16-methyl-, methyl ester (8CI9CI	298	C19H38O2
3.	9-Octadecenoic acid, 12-(acetyloxy)-, methyl ester, [R-(Z)]- (9CI)	354	C21H38O4
4.	Nonanoic acid, 7-methyl-, methyl ester (8CI9CI)	186	C11H22O2
5.	Decanoic acid, 8-methyl-, methyl ester (8CI)	200	C12H24O2
6.	Tetradecanoic acid, 12-methyl-, methyl ester (8CI9CI	256	C16H32O2

Sample file: >DC999 Spectrum #: 1136
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	83*	112618	6929	"BIGDB	56	84	2	1	98	4	57	27
2.	75*	5129613	6930	"BIGDB	90	53	1	1	68	3	37	73

3.	60	140034	6896	"BIGDB	68	80	2	0	79	12	30	15
4.	31	5129635	6634	"BIGDB	42	22	2	0	85	32	12	14
5.	29	5129646	6782	"BIGDB	36	20	2	0	76	32	12	12
6.	25	5129668	6915	"BIGDB	71	48	2	0	49	50	7	17



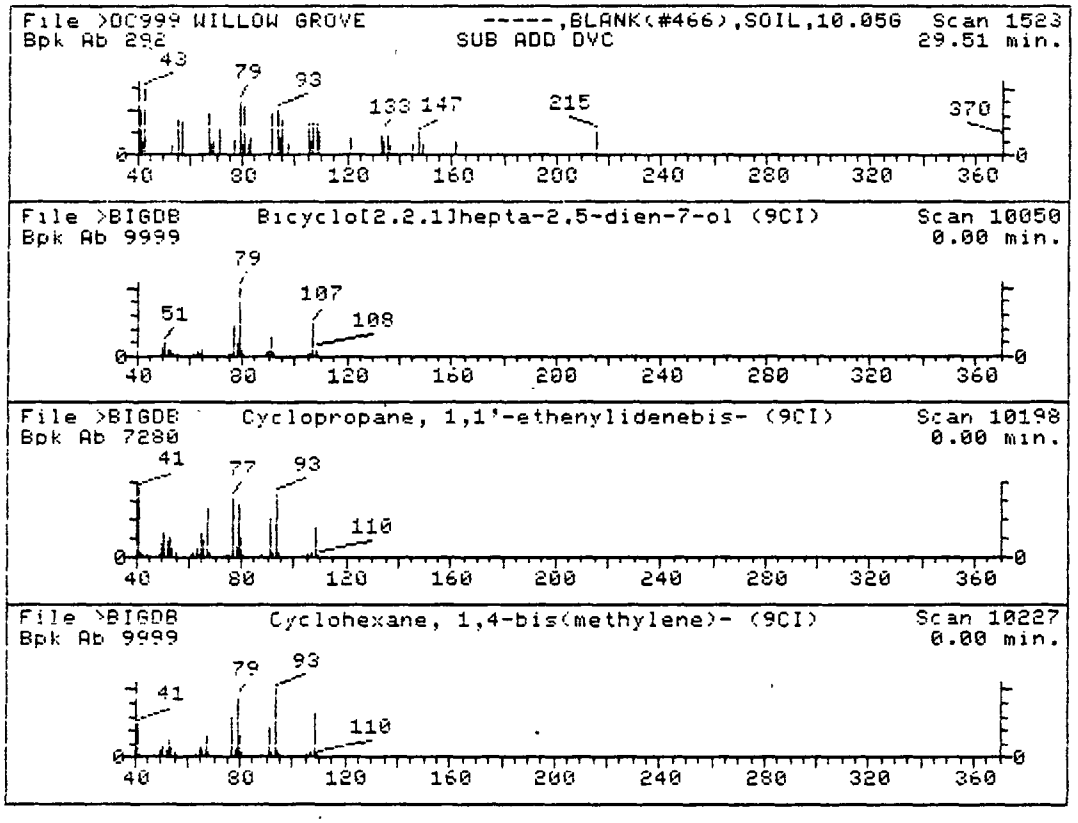
Retention time = 26.87

Area = 29192.00 Tentative Concentration is 610.00

1. Heptadecanoic acid, 16-methyl-, methyl ester (8CI9CI 298 C19H38O2
2. Nonanoic acid, 7-methyl-, methyl ester (8CI9CI) 186 C11H22O2
3. Hexanoic acid, 4-methyl-, methyl ester (8CI9CI) 144 C8H16O2
4. 2-Nonadecanone, O-methyloxime (9CI) 311 C20H41NO
5. Propanamide, N-methyl- (9CI) 87 C4H9NO
6. Hydrazinecarboximidamide (9CI) 74 CH6N4
7. 1,3-Dioxane (9CI) 88 C4H8O2

Sample file: >DC999 Spectrum #: 1377
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
✓ 1.	79	5129613	6930	"BIGDB	104	39	2	0	90	6	48	39
2.	37	5129635	6634	"BIGDB	42	22	2	0	98	28	14	14
3.	36	2177824	6618	"BIGDB	38	23	2	0	68	28	14	13
4.	15*	36379392	6641	"BIGDB	24	102	3	0	75	60	3	12
5.	11*	1187982	6617	"BIGDB	30	55	2	0	85	62	2	15
6.	11*	79174	4411	"BIGDB	24	57	2	0	86	63	2	14
7.	11*	505226	6611	"BIGDB	24	82	3	0	104	62	2	12



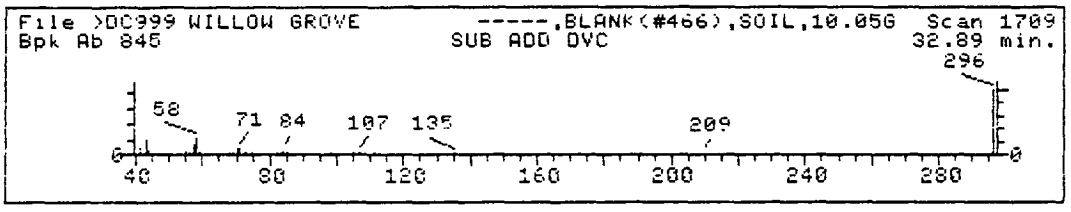
Retention time = 29.51 unknown

Area = 9640.00 Tentative Concentration is 410.00

1. Bicyclo[2.2.1]hepta-2,5-dien-7-ol (9CI) 108 C7H8O
2. Cyclopropane, 1,1'-ethenylidenebis- (9CI) 108 C8H12
3. Cyclohexane, 1,4-bis(methylene)- (9CI) 108 C8H12

Sample file: >DC999 Spectrum #: 1523
Search speed: 2 Tilting option: S No. of ion ranges searched: 49

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	11*	822800	10050	"BIGDB	30	74	3	0	82	63	2	13
2.	11*	822935	10198	"BIGDB	33	88	3	0	104	63	2	13
3.	11*	4982201	10227	"BIGDB	27	92	3	0	70	63	2	13



Retention time = 32.89 unknown

Area = 17487.00 Tentative Concentration is 750.00

Sample file: >DC999 Spectrum #: 1709

No data base entries were retrieved.

LIBRARY SEARCH SUMMARY

MS Data File:>DC999::D1 Analyst:BHADRA MS

Name:WILLOW GROVE Date/Time: 2/28/89 19:25
Misc:-----,BLANK(#466),SOIL,10.05G,1 EA#0815 ?99.50? BTL# 3

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	22.51	27032	19092
2	26.87	29192	19092
3	29.51	9640	9329
4	32.89	17487	9329

ORGANICS ANALYSIS DATA SHEET SAMPLE #: SOIL BLANK #481

LABORATORY: EA ENG.
LABORATORY ID: AA05976
MATRIX: SOIL

CASE #/SAS #: WILLOW GROVE
QC REPORT #: AA05976
CONTRACT #: 10388.03
DATE RECEIVED: 03/01/89

DATA RELEASE AUTHORIZED BY: _____

SEMIVOLATILE COMPOUNDS (PAGE 1)

LEVEL: LOW
DATE EXT/PREP: 03/01/89
DATE ANALYZED: 03/13/89
CONC/DIL FACTOR: 10.03 G -> 1 ML
PH: N/A
% MOISTURE: N/A
% MOISTURE (DECANTED): N/A
STANDARD ID: AA05968
SENSITIVITY ID: AA05966

GPC CLEANUP __YES ✓NO
SEPARATORY EXTRACTION __YES
CONTINUOUS EXTRACTION ✓YES

CAS #		UG/KG	
108-95-2	PHENOL	1000.	U
111-44-4	BIS(2-CHLOROETHYL)ETHER	1000.	U
95-57-8	2-CHLOROPHENOL	1000.	U
541-73-1	1,3-DICHLOROBENZENE	1000.	U
106-46-7	1,4-DICHLOROBENZENE	1000.	U
100-51-6	BENZYL ALCOHOL	1000.	U
95-50-1	1,2-DICHLOROBENZENE	1000.	U
95-48-7	2-METHYLPHENOL	1000.	U
39638-32-9	BIS(2-CHLOROISOPROPYL)ETHER	1000.	U
106-44-5	4-METHYLPHENOL	1000.	U
621-64-7	N-NITROSODIPROPYLAMINE	1000.	U
67-72-1	HEXACHLOROETHANE	1000.	U
98-95-3	NITROBENZENE	1000.	U
78-59-1	ISOPHORONE	1000.	U
88-75-5	2-NITROPHENOL	1000.	U
105-67-9	2,4-DIMETHYLPHENOL	1000.	U
65-85-0	BENZOIC ACID	5000.	U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	1000.	U
120-33-2	2,4-DICHLOROPHENOL	1000.	U
120-82-1	1,2,4-TRICHLOROBENZENE	1000.	U
91-20-3	NAPHTHALENE	1000.	U
106-47-8	4-CHLOROANILINE	1000.	U
87-68-3	HEXACHLOROBUTADIENE	1000.	U
59-50-7	4-CHLORO-3-METHYLPHENOL	1000.	U
91-57-6	2-METHYLNAPHTHALENE	1000.	U
77-47-4	HEXACHLOROCYCLOPENTADIENE	1000.	U
88-06-2	2,4,6-TRICHLOROPHENOL	1000.	U
95-95-4	2,4,5-TRICHLOROPHENOL	5000.	U
91-58-7	2-CHLORONAPHTHALENE	1000.	U
88-74-4	2-NITROANILINE	5000.	U
131-11-3	DIMETHYL PHTHALATE	1000.	U
208-96-8	ACENAPHTHYLENE	1000.	U
99-09-2	3-NITROANILINE	5000.	U
83-32-9	ACENAPHTHENE	1000.	U
51-28-5	2,4-DINITROPHENOL	5000.	U
100-02-7	4-NITROPHENOL	5000.	U
132-64-9	DIBENZOFURAN	1000.	U

FORM I

ORGANICS ANALYSIS DATA SHEET SAMPLE #: SOIL BLANK #481

LABORATORY: EA ENG.
LABORATORY ID: AA05976
MATRIX: SOIL

CASE #/SAS #: WILLOW GROVE
QC REPORT #: AA05976
CONTRACT #: 10388.03
DATE RECEIVED: 03/01/89

DATA RELEASE AUTHORIZED BY: _____

SEMIVOLATILE COMPOUNDS (PAGE 2)

LEVEL:	LOW	GPC CLEANUP	__YES ✓NO
DATE EXT/PREP:	03/01/89	SEPARATORY EXTRACTION	__YES
DATE ANALYZED:	03/13/89	CONTINUOUS EXTRACTION	✓YES
CONC/DIL FACTOR:	10.03 G -> 1 ML		
PH:	N/A		
% MOISTURE:	N/A		
% MOISTURE (DECANTED):	N/A		
STANDARD ID:	AA05968		
SENSITIVITY ID:	AA05966		

CAS #		UG/KG	
121-14-2	2,4-DINITROTOLUENE	1000.	U
606-20-2	2,6-DINITROTOLUENE	1000.	U
84-66-2	DIETHYL PHTHALATE	1000.	U
7005-72-3	4-CHLOROPHENYL PHENYL ETHER	1000.	U
86-73-7	FLUORENE	1000.	U
100-01-6	4-NITROANILINE	5000.	U
534-52-1	4,6-DINITRO-2-METHYLPHENOL	5000.	U
86-30-6	N-NITROSODIPHENYLAMINE	1000.	U
101-55-3	4-BROMOPHENYL PHENYL ETHER	1000.	U
118-74-1	HEXACHLOROBENZENE	1000.	U
87-86-5	PENTACHLOROPHENOL	5000.	U
85-01-8	PHENANTHRENE	1000.	U
120-12-7	ANTHRACENE	1000.	U
84-74-2	DI-N-BUTYL PHTHALATE	180.	J
206-44-0	FLUORANTHENE	1000.	U
129-00-0	PYRENE	1000.	U
85-68-7	BUTYL BENZYL PHTHALATE	1000.	U
91-94-1	3,3'-DICHLOROBENZIDINE	2000.	U
56-55-3	BENZO(A)ANTHRACENE	1000.	U
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	1000.	U
218-01-9	CHRYSENE	1000.	U
117-84-0	DI-N-OCTYL PHTHALATE	1000.	U
205-99-2	BENZO(B)FLUORANTHENE	1000.	U
207-08-9	BENZO(K)FLUORANTHENE	1000.	U
50-32-8	BENZO(A)PYRENE	1000.	U
193-39-5	INDENO(1,2,3-CD)PYRENE	1000.	U
53-70-3	DIBENZO(A,H)ANTHRACENE	1000.	U
191-24-2	BENZO(GHI)PERYLENE	1000.	U

RESULTS ARE REPORTED ON A WET WEIGHT BASIS.

FORM I

Laboratory Nam: EA Laboratories

Case No: Willow Grove

Sample Number
Blank

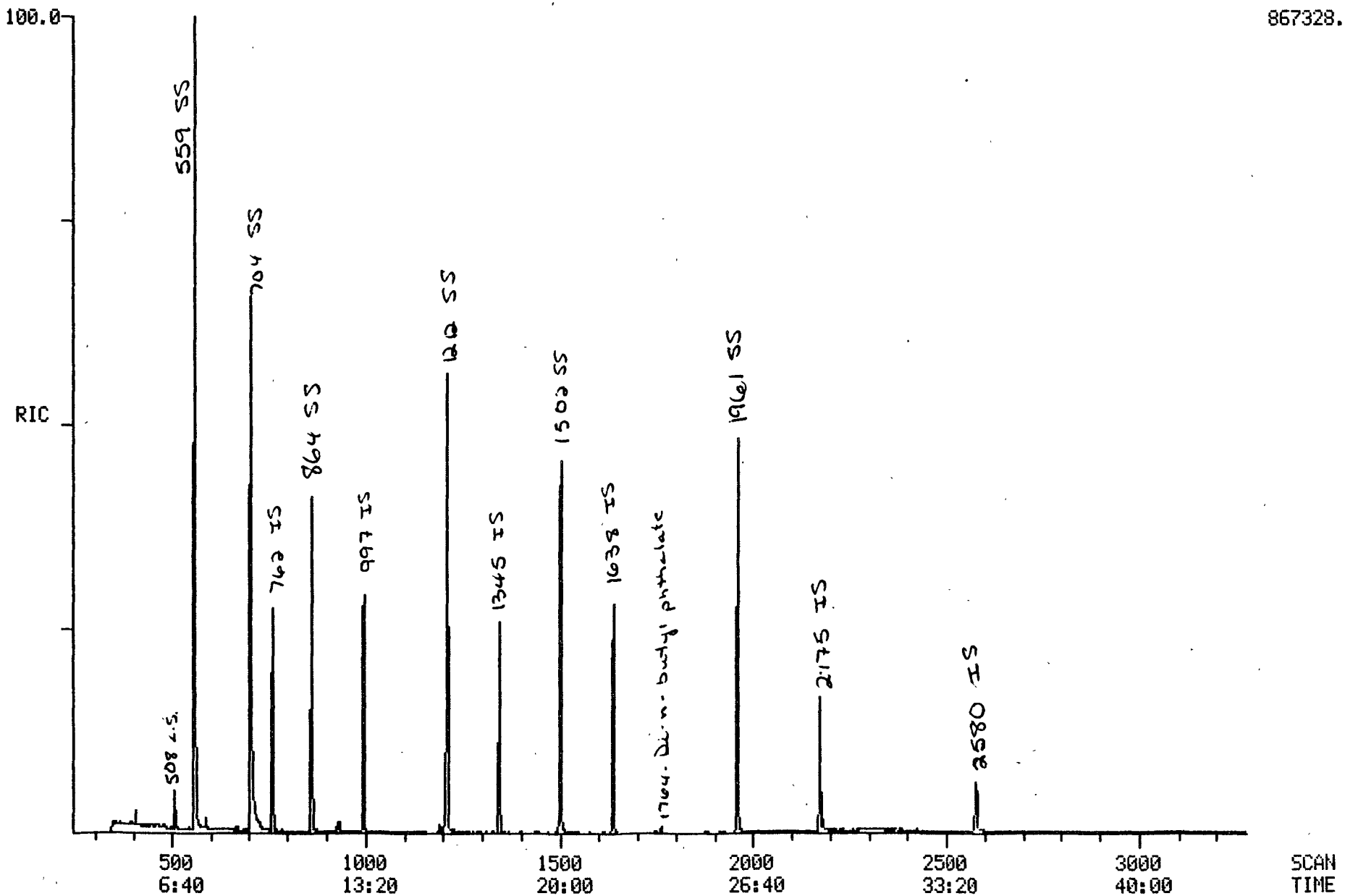
EA # 481

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	unknown	BNA	508	650 J
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

RIC DATA: AA05976 #1 SCANS 240 TO 3275
03/13/89 22:18:00 CALI: AA05976 #4
SAMPLE: BNA SOIL BLANK FOR EA# 0822 WILLOW GROVE BLANK #481 <99.7>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
RANGE: G 1,3275 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



3 305

Quantitation Report File: AA05976

Data: AA05976.TI
03/13/89 22:18:00
Sample: BNA SOIL BLANK FOR EA# 0822 WILLOW GROVE BLANK #481 <99.7>
Conds.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
Standard ID: AA05968 Instrument: MS2
Sensitivity ID: AA05966 Analyst: JEH - EA Inst Cali: 03/13/89

AMOUNT=AREA * REF AMNT/(REF AREA * RESP FACT)
Resp. fac. from Library Entry

NO	NAME	
1	IS1**	1,4-DICHLOROBENZENE-D4
2	IS2**	NAPHTHALENE-D8
3	IS3**	ACENAPHTHENE-D10
4	IS4**	PHENANTHRENE-D10
5	IS5**	CHRYSENE-D12
6	IS6**	PERYLENE-D12
7	65A	PHENOL
8	18B	BIS (2-CHLOROETHYL) ETHER
9	24A	2-CHLOROPHENOL
10	26B	1,3-DICHLOROBENZENE
11	27B	1,4-DICHLOROBENZENE
12	6H	BENZYL ALCOHOL
13	25B	1,2-DICHLOROBENZENE
14	2H	2-METHYLPHENOL
15	42B	BIS (2-CHLOROISOPROPYL) ETHER
16	3H	4-METHYLPHENOL
17	63B	N-NITROSO-DI-N-PROPYLAMINE
18	12B	HEXACHLOROETHANE
19	56B	NITROBENZENE
20	54B	ISOPHORONE
21	57A	2-NITROPHENOL
22	34A	2,4-DIMETHYLPHENOL
23	1H	BENZOIC ACID
24	43B	BIS (2-CHLOROETHOXY) METHANE
25	31A	2,4-DICHLOROPHENOL
26	8B	1,2,4-TRICHLOROBENZENE
27	55B	NAPHTHALENE
28	7H	4-CHLOROANILINE
29	52B	HEXACHLOROBUTADIENE
30	22A	4-CHLORO-3-METHYLPHENOL
31	9H	2-METHYLNAPHTHALENE
32	53B	HEXACHLOROCYCLOPENTADIENE
33	21A	2,4,6-TRICHLOROPHENOL
34	4H	2,4,5-TRICHLOROPHENOL
35	20B	2-CHLORONAPHTHALENE
36	10H	2-NITROANILINE
37	71B	DIMETHYLPHTHALATE
38	77B	ACENAPHTHYLENE
39	11H	3-NITROANILINE
40	1B	ACENAPHTHENE
41	59A	2,4-DINITROPHENOL
42	58A	4-NITROPHENOL
43	8H	DIBENZOFURAN
44	36B	2,6-DINITROTOLUENE
45	35B	2,4-DINITROTOLUENE
46	70B	DIETHYLPHTHALATE
47	40B	4-CHLOROPHENYLPHENYL ETHER
48	80B	FLUORENE
49	12H	4-NITROANILINE
50	60A	4,6-DINITRO-O-CRESOL

AA05976

No	m/z	Scan	Time	Ref	RRT	M th	Ar a(Hght)	Amount	%Tot
1	152	762	10:10	1	1.000	A BB	116890.	40.000 PPM	16.59
2	136	997	13:18	2	1.000	A VV	409405.	40.000 PPM	16.59
3	164	1345	17:56	3	1.000	A BV	161595.	40.000 PPM	16.59
4	188	1638	21:50	4	1.000	A BV	234652.	40.000 PPM	16.59
5	240	2175	29:00	5	1.000	A BB	137411.	40.000 PPM	16.59
6	264	2580	34:24	6	1.000	A BB	101210.	40.000 PPM	16.59
7	NOT FOUND								
8	NOT FOUND								
9	NOT FOUND								
10	NOT FOUND								
11	NOT FOUND								
12	NOT FOUND								
13	NOT FOUND								
14	NOT FOUND								
15	NOT FOUND								
16	NOT FOUND								
17	NOT FOUND								
18	NOT FOUND								
19	NOT FOUND								
20	NOT FOUND								
21	NOT FOUND								
22	NOT FOUND								
23	NOT FOUND								
24	NOT FOUND								
25	NOT FOUND								
26	NOT FOUND								
27	128	1000	13:20	2	1.003	A BB	741.	~~0.084 PPM~~	0.03
28	NOT FOUND								
29	NOT FOUND								
30	NOT FOUND								
31	141	1132	15:06	2	1.135	A BB	309.	~~0.070 PPM~~	0.03
32	NOT FOUND								
33	NOT FOUND								
34	196	1193	15:54	3	0.887	A BB	251.	~~0.144 PPM~~	0.06
35	162	1228	16:22	3	0.913	A BB	373.	~~0.075 PPM~~	0.03
36	NOT FOUND								
37	163	1295	17:16	3	0.963	A BB	660.	~~0.121 PPM~~	0.05
38	152	1311	17:29	3	0.975	A BB	411.	~~0.060 PPM~~	0.02
39	NOT FOUND								
40	NOT FOUND								
41	NOT FOUND								
42	NOT FOUND								
43	168	1380	18:24	3	1.026	A BB	760.	~~0.117 PPM~~	0.05
44	NOT FOUND								
45	NOT FOUND								
46	149	1439	19:11	3	1.070	A BB	1334.	~~0.216 PPM~~	0.09
47	204	1449	19:19	3	1.077	A BB	256.	~~0.097 PPM~~	0.04
48	166	1448	19:18	3	1.077	A BB	404.	~~0.083 PPM~~	0.03
49	NOT FOUND								
50	NOT FOUND								

Quantitation R port File: AA05976

Data: AA05976.TI
03/13/89 22:18:00
Sample: BNA SOIL BLANK FOR EA# 0822 WILLOW GROVE BLANK #481 <99.7>
Conds.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
Standard ID: AA05968 Instrument: MS2
Sensitivity ID: AA05966 Analyst: JEH - EA Inst Cali: 03/13/89

AMOUNT=AREA * REF AMNT/(REF AREA * RESP FACT)
Resp. fac. from Library Entry

NO	NAME	
51	62B	N-NITROSODIPHENYLAMINE
52	41B	4-BROMOPHENYLPHENYL ETHER
53	9B	HEXACHLOROBENZENE
54	64A	PENTACHLOROPHENOL
55	81B	PHENANTHRENE
56	78B	ANTHRACENE
57	68B	DI-N-BUTYLPHTHALATE
58	39B	FLUORANTHENE
59	84B	PYRENE
60	67B	BUTYLBENZYLPHTHALATE
61	28B	3,3'-DICHLOROBENZIDINE
62	72B	BENZO (A) ANTHRACENE
63	66B	BIS (2-ETHYLHEXYL) PHTHALATE
64	76B	CHRYSENE
65	69B	DI-N-OCTYLPHTHALATE
66	74B	BENZO(B)FLUORANTHENE
67	75B	BENZO(K)FLUORANTHENE
68	73B	BENZO (A) PYRENE
69	83B	INDENO-1,2,3 (C,D) PYRENE
70	82B	DIBENZO (A,H) ANTHRACENE
71	79B	BENZO (G,H,I) PERYLENE
72	SS1*	PHENOL-D5
73	SS2*	2-FLUOROPHENOL
74	SS3*	NITROBENZENE-D5
75	SS4*	2-FLUOROBIPHENYL
76	SS5*	2,4,6-TRIBROMOPHENOL
77	SS6*	TERPHENYL-D14

AA05976

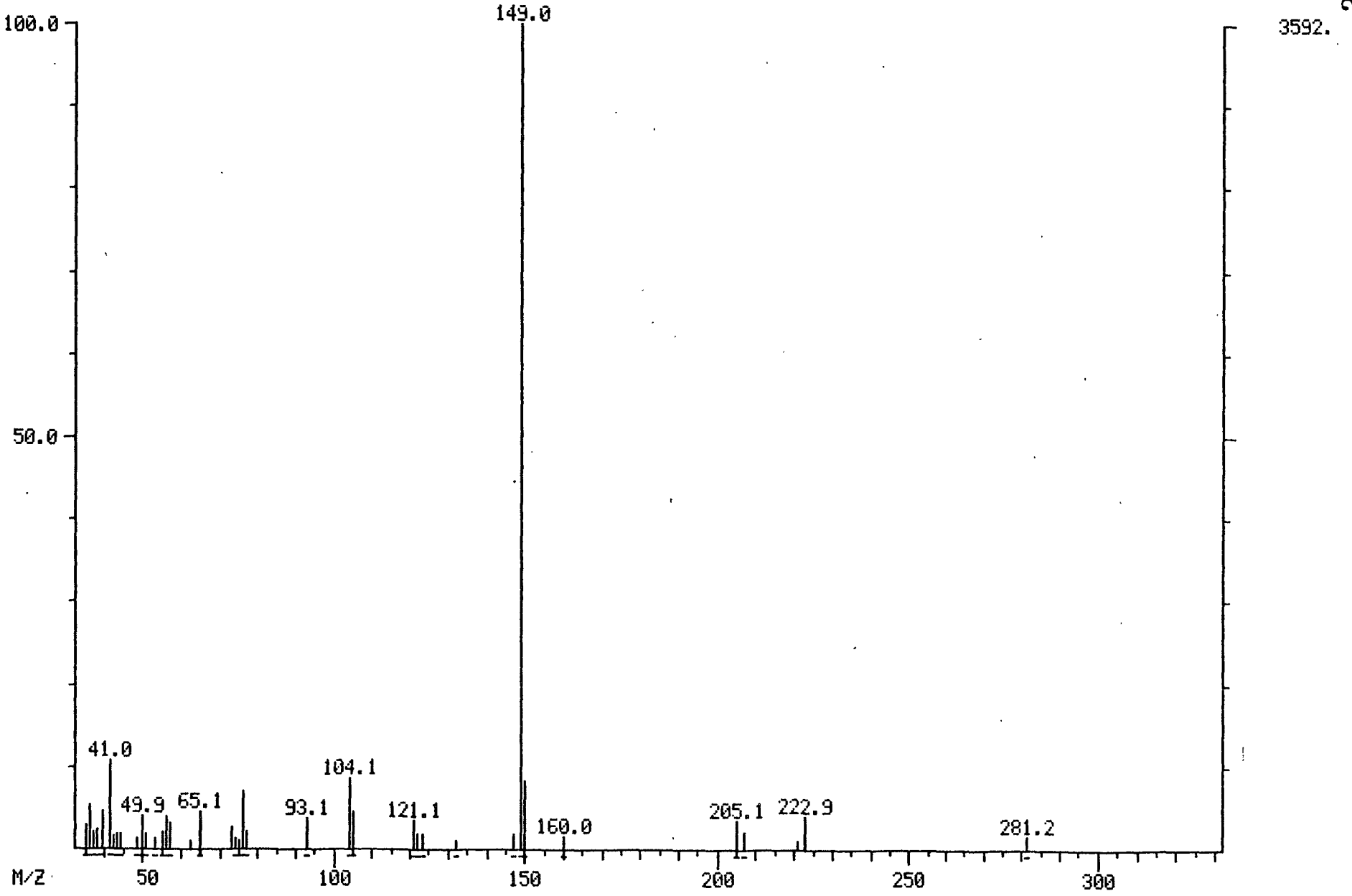
No	m/z	Scan	Time	R f	RRT	M th	Area(Hght)	Amount	%Tot
51	169	1472	19:38	4	0.899	A BB	1015.	~~0.450 PPM~~	0.06
52	NOT FOUND								
53	NOT FOUND								
54	NOT FOUND								
55	NOT FOUND								
56	NOT FOUND								
57	149	1764	23:31	4	1.077	A BB	14979.	1.761 PPM	0.22
58	202	1883	25:06	4	1.150	A BB	5430.	~~0.830 PPM~~	0.10
59	202	1928	25:42	5	0.886	A BB	4560.	~~0.852 PPM~~	0.10
60	149	2063	27:30	5	0.949	A BB	1175.	~~0.343 PPM~~	0.04
61	NOT FOUND								
62	NOT FOUND								
63	149	2184	29:07	5	1.004	A BB	10825.	2.205 PPM	0.27
64	NOT FOUND								
65	149	2331	31:05	6	0.903	A BV	2655.	~~0.475 PPM~~	0.06
66	252	2449	32:39	6	0.949	A BB	380.	~~0.125 PPM~~	0.02
67	252	2458	32:46	6	0.953	A BB	219.	~~0.079 PPM~~	0.01
68	NOT FOUND								
69	NOT FOUND								
70	NOT FOUND								
71	NOT FOUND								
72	99	704	9:23	1	0.924	A BB	622142.	220.490 PPM	26.97 ~~100~~ 110
73	112	559	7:27	1	0.734	A BB	567610.	190.849 PPM	23.34 95
74	82	864	11:31	2	0.867	A BV	369178.	89.303 PPM	10.92 89
75	172	1212	16:10	3	0.901	A BB	484383.	83.563 PPM	10.22 84
76	330	1502	20:02	3	1.117	A BV	98355.	129.285 PPM	15.81 65
77	244	1961	26:09	5	0.902	A BV	422263.	96.945 PPM	11.86 97

MASS SPECTRUM
03/13/89 22:18:00 + 23:31
SAMPLE: BNA SOIL BLANK FOR EA# 0822 WILLOW GROVE BLANK #481 <99.7>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 248 DEG. C

DATA: AA05976 #1764
CALI: AA05976 #4

BASE M/Z: 149
RIC: 7392.

3 310

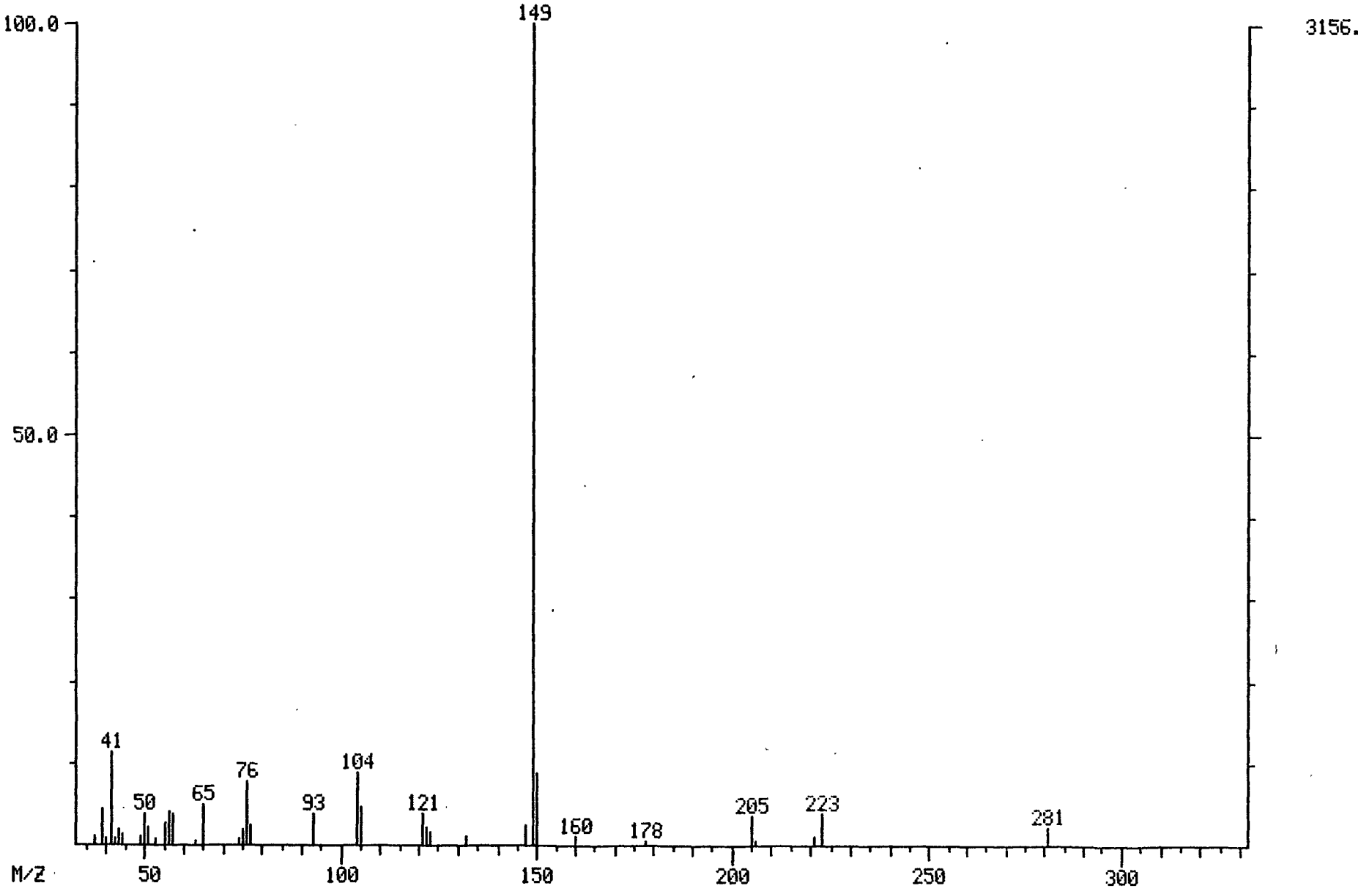


MASS SPECTRUM
03/13/89 22:18:00 + 23:31
SAMPLE: BNA SOIL BLANK FOR EA# 0822 WILLOW GROVE BLANK #481 <99.7>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 248 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05976 #1764
CALI: AA05976 #4

BASE M/Z: 149
RIC: 6624.

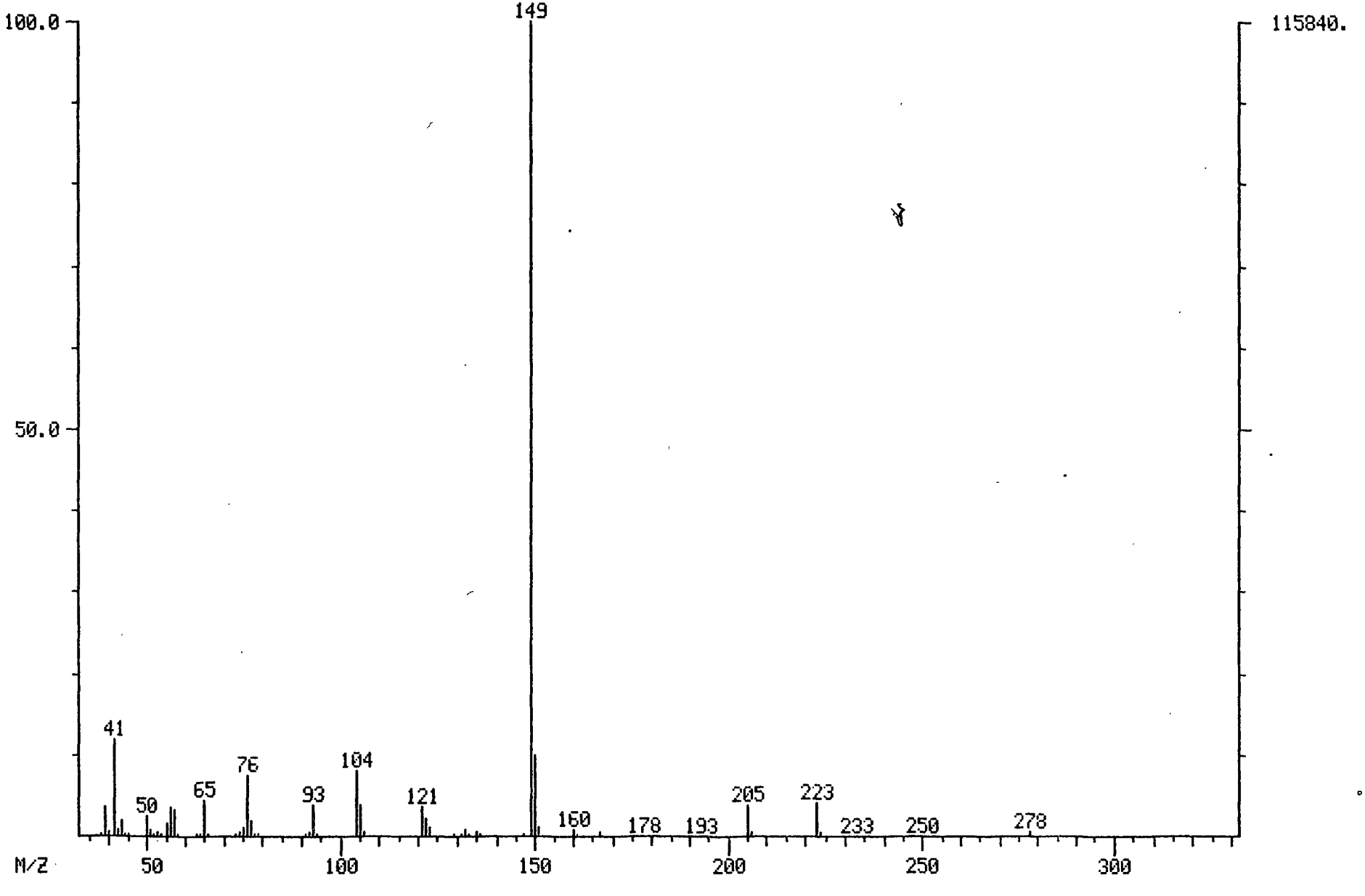
3 311



MASS SPECTRUM
03/13/89 14:40:00 + 23:32
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 248 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05968 #1765
CALI: AA05968 #4

BASE M/Z: 149
RIC: 232960.



Library Search Data: AA05976 # 508 Base m/z: 43
03/13/89 22:18:00 + 6:46 Cali: AA05976 # 4 RIC: 35903.
Sample: BNA SOIL BLANK FOR EA# 0822 WILLOW GROVE BLANK #481 <99.7>
Conds.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
Enhanced (S 15B 2N OT)

38761 spectra in LIBRARYNB searched for maximum FIT
84 matched at least 7 of the 16 largest peaks in the unknown

Rank	In.	Name
1	1038	2-PROPYN-1-OL, ACETATE
2	792	HYDROPEROXIDE, 1,1-DIMETHYLETHYL
3	1082	2-PROPANONE, 1-CYCLOPROPYL-
4	94	PROPANE, 2-METHYL-
5	1311	OXIRANE, TETRAMETHYL-

IS Scan_762
RIC - 219392

Rank	Formula	M.Wt	B.Pk	Purity	Fit	RFit
1	C5.H6.O2	98	43	403	938	423
2	C4.H10.O2	90	59	693	899	699
3	C6.H10.O	98	43	439	868	462
4	C4.H10	58	43	451	859	461
5	C6.H12.O	100	59	631	841	648

Rank	R t.Time	B.P.Int.	US.Par.1	US.Par.2	C.A.S. #
1	—	—	—	—	627-09-8
2	—	—	—	—	75-91-2
3	—	—	—	—	4160-75-2
4	—	—	—	—	75-28-5
5	—	—	—	—	5076-20-0

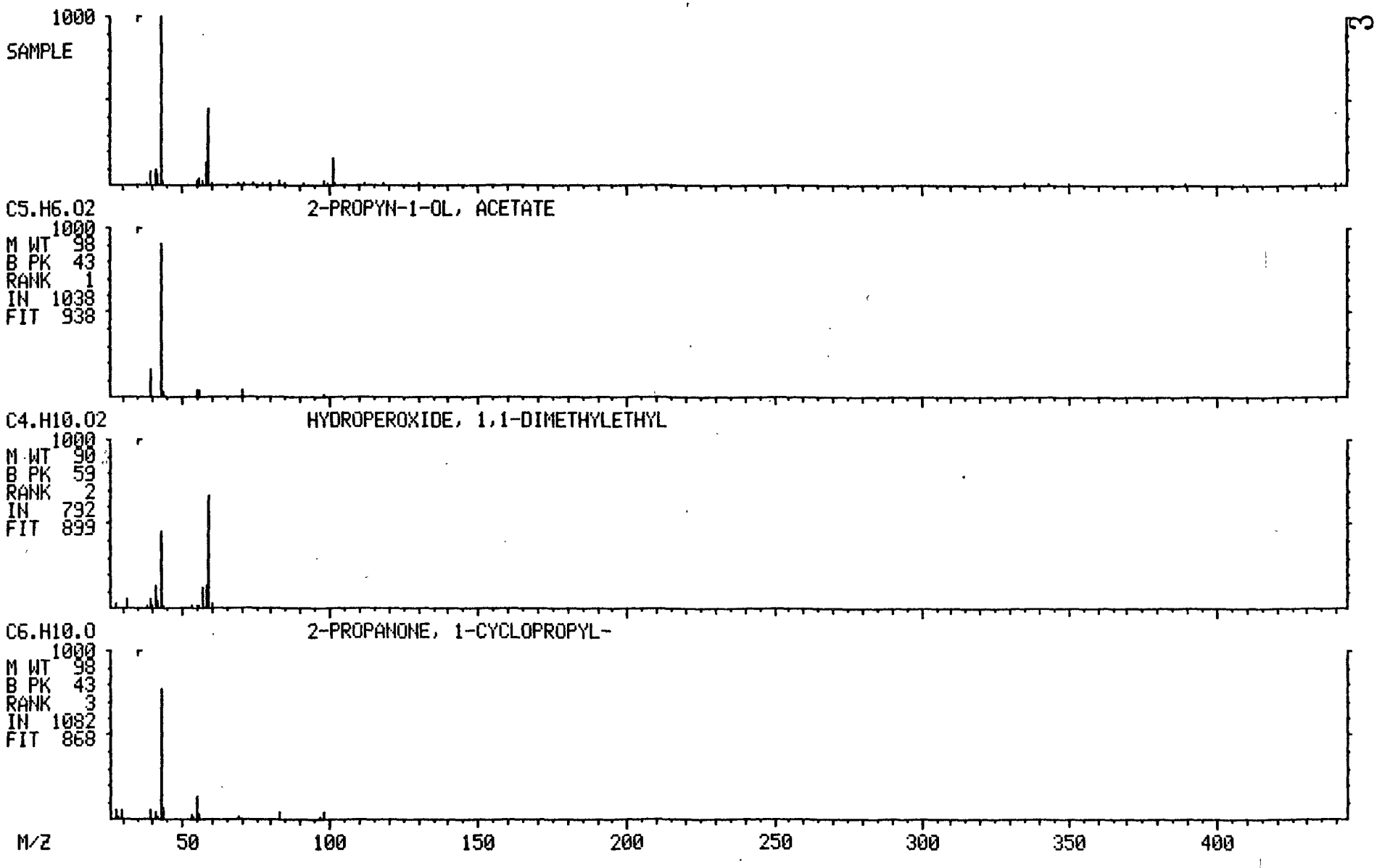
LIBRARY SEARCH
03/13/89 22:18:00 + 6:46
SAMPLE: BNA SOIL BLANK FOR EA# 0822 WILLOW GROVE BLANK #481 <99.7>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
ENHANCED (S 15B 2N 0T)

DATA: AA05976 # 508
CALI: AA05976 # 4

BASE M/Z: 43
RIC: 35903.

314

3



ORGANICS ANALYSIS DATA SHEET SAMPLE #: WATER BLANK #4 43

LABORATORY: EA ENG.
LABORATORY ID: AA05974
MATRIX: WATER

CASE #/SAS #: WILLOW GROVE
QC REPORT #: AA05974
CONTRACT #: 10388.03
DATE RECEIVED: 03/01/89

DATA RELEASE AUTHORIZED BY: _____

SEMIVOLATILE COMPOUNDS (PAGE 1)

LEVEL: LOW
DATE EXT/PREP: 03/01/89
DATE ANALYZED: 03/13/89
CONC/DIL FACTOR: 1000 ML -> 2 ML
PH: N/A
% MOISTURE: N/A
% MOISTURE (DECANTED): N/A
STANDARD ID: AA05968
SENSITIVITY ID: AA05966

GPC CLEANUP __YES ✓NO
SEPARATORY EXTRACTION __YES
CONTINUOUS EXTRACTION ✓YES

CAS #		UG/L	
108-95-2	PHENOL	10.	U
111-44-4	BIS(2-CHLOROETHYL)ETHER	10.	U
95-57-8	2-CHLOROPHENOL	10.	U
541-73-1	1,3-DICHLOROBENZENE	10.	U
106-46-7	1,4-DICHLOROBENZENE	10.	U
100-51-6	BENZYL ALCOHOL	10.	U
95-50-1	1,2-DICHLOROBENZENE	10.	U
95-48-7	2-METHYLPHENOL	10.	U
39638-32-9	BIS(2-CHLOROISOPROPYL)ETHER	10.	U
106-44-5	4-METHYLPHENOL	10.	U
621-64-7	N-NITROSODIPROPYLAMINE	10.	U
67-72-1	HEXACHLOROETHANE	10.	U
98-95-3	NITROBENZENE	10.	U
78-59-1	ISOPHORONE	10.	U
88-75-5	2-NITROPHENOL	10.	U
105-67-9	2,4-DIMETHYLPHENOL	10.	U
65-85-0	BENZOIC ACID	50.	U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	10.	U
120-33-2	2,4-DICHLOROPHENOL	10.	U
120-82-1	1,2,4-TRICHLOROBENZENE	10.	U
91-20-3	NAPHTHALENE	10.	U
106-47-8	4-CHLOROANILINE	10.	U
87-68-3	HEXACHLOROBUTADIENE	10.	U
59-50-7	4-CHLORO-3-METHYLPHENOL	10.	U
91-57-6	2-METHYLNAPHTHALENE	10.	U
77-47-4	HEXACHLOROCYCLOPENTADIENE	10.	U
88-06-2	2,4,6-TRICHLOROPHENOL	10.	U
95-95-4	2,4,5-TRICHLOROPHENOL	50.	U
91-58-7	2-CHLORONAPHTHALENE	10.	U
88-74-4	2-NITROANILINE	50.	U
131-11-3	DIMETHYL PHTHALATE	10.	U
208-96-8	ACENAPHTHYLENE	10.	U
99-09-2	3-NITROANILINE	50.	U
83-32-9	ACENAPHTHENE	10.	U
51-28-5	2,4-DINITROPHENOL	50.	U
100-02-7	4-NITROPHENOL	50.	U
132-64-9	DIBENZOFURAN	10.	U

FORM I

ORGANICS ANALYSIS DATA SHEET SAMPLE #: WATER BLANK #483

LABORATORY: EA ENG.
LABORATORY ID: AA05974
MATRIX: WATER

CASE #/SAS #: WILLOW GROVE
QC REPORT #: AA05974
CONTRACT #: 10388.03
DATE RECEIVED: 03/01/89

DATA RELEASE AUTHORIZED BY: _____

SEMIVOLATILE COMPOUNDS (PAGE 2)

LEVEL: LOW
DATE EXT/PREP: 03/01/89
DATE ANALYZED: 03/13/89
CONC/DIL FACTOR: 1000 ML -> 2 ML
PH: N/A
% MOISTURE: N/A
% MOISTURE (DECANTED): N/A
STANDARD ID: AA05968
SENSITIVITY ID: AA05966

GPC CLEANUP __YES ✓NO
SEPARATORY EXTRACTION __YES
CONTINUOUS EXTRACTION ✓YES

CAS #		UG/L
121-14-2	2,4-DINITROTOLUENE	10. U
606-20-2	2,6-DINITROTOLUENE	10. U
84-66-2	DIETHYL PHTHALATE	10. U
7005-72-3	4-CHLOROPHENYL PHENYL ETHER	10. U
86-73-7	FLUORENE	10. U
100-01-6	4-NITROANILINE	50. U
534-52-1	4,6-DINITRO-2-METHYLPHENOL	50. U
86-30-6	N-NITROSODIPHENYLAMINE	2. J
101-55-3	4-BROMOPHENYL PHENYL ETHER	10. U
118-74-1	HEXACHLOROBENZENE	10. U
87-86-5	PENTACHLOROPHENOL	50. U
85-01-8	PHENANTHRENE	10. U
120-12-7	ANTHRACENE	10. U
84-74-2	DI-N-BUTYL PHTHALATE	10. J
206-44-0	FLUORANTHENE	4. J
129-00-0	PYRENE	3. J
85-68-7	BUTYL BENZYL PHTHALATE	10. U
91-94-1	3,3'-DICHLOROBENZIDINE	20. U
56-55-3	BENZO(A)ANTHRACENE	10. U
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	10. U
218-01-9	CHRYSENE	10. U
117-84-0	DI-N-OCTYL PHTHALATE	10. U
205-99-2	BENZO(B)FLUORANTHENE	10. U
207-08-9	BENZO(K)FLUORANTHENE	10. U
50-32-8	BENZO(A)PYRENE	10. U
193-39-5	INDENO(1,2,3-CD)PYRENE	10. U
53-70-3	DIBENZO(A,H)ANTHRACENE	10. U
191-24-2	BENZO(GHI)PERYLENE	10. U

RESULTS ARE REPORTED ON A WET WEIGHT BASIS.

FORM I

Laboratory Name: EA Laboratories

Case No: Willow Grove

Sample Number: Blank

EA# 483

Organics Analysis Data Sheet
(Page 4)

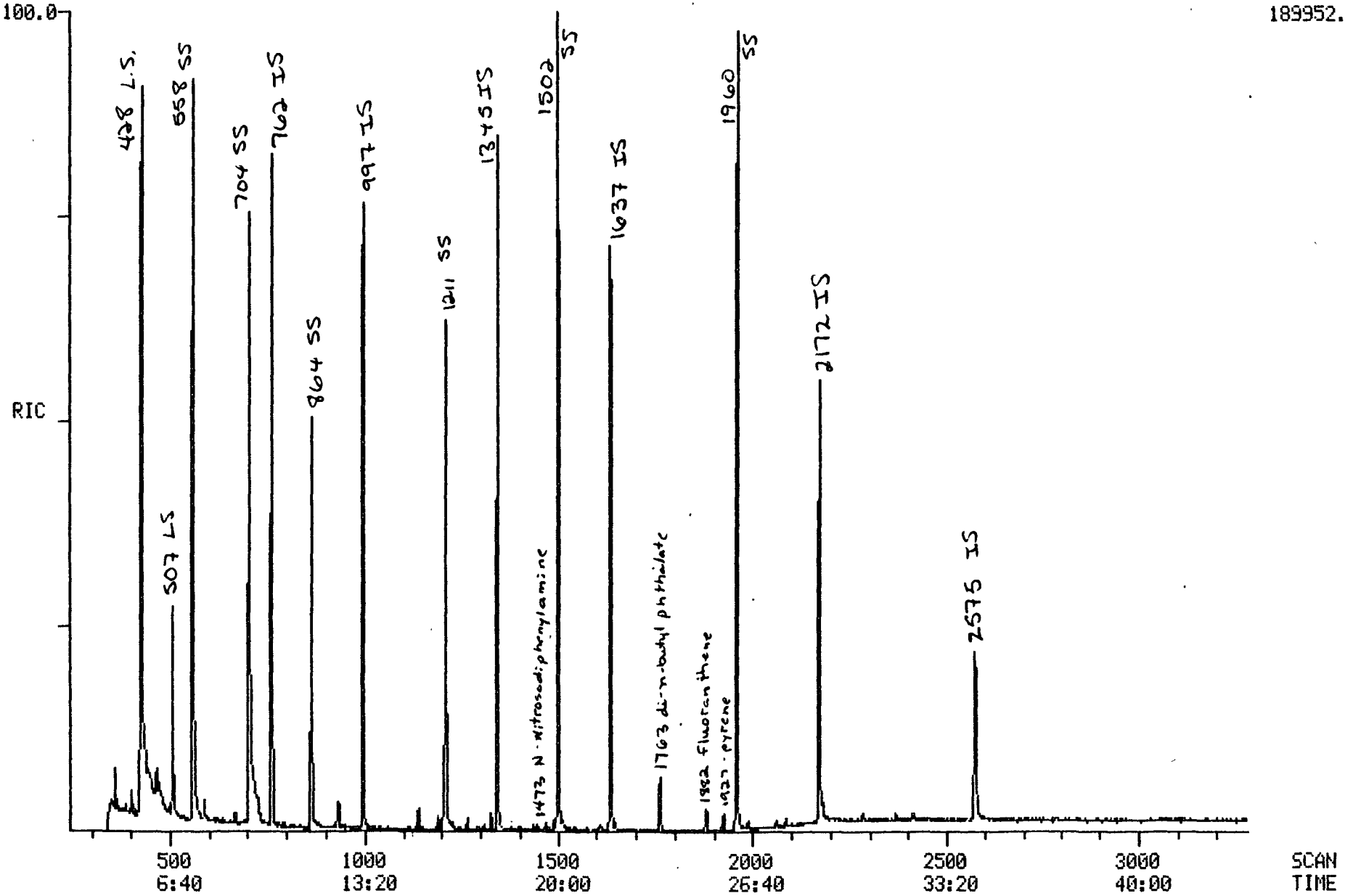
Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	unknown	BNA	428	86 J
2.	unknown	↓	507	78 J
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

RIC
03/13/89 20:32:00
SAMPLE: BNA WATER BLANK FOR EA#0820 WILLOW GROVE BLANK #483 <2>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
RANGE: G 1,3275 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

DATA: AA05974 #1
CALI: AA05974 #4

SCANS 240 TO 3275



3 318

Quantitation Report File: AA05974

Data: AA05974.TI
03/13/89 20:32:00
Sample: BNA WATER BLANK FOR EA#0820 WILLOW GROVE BLANK #483 <2>
Conds.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
Standard ID: AA05968 Instrument: MS2
Sensitivity ID: AA05966 Analyst: JEH - EA Inst Cali: 03/13/89

AMOUNT=AREA * REF AMNT/(REF AREA * RESP FACT)
Resp. fac. from Library Entry

NO	NAME
1	IS1** 1,4-DICHLOROBENZENE-D4
2	IS2** NAPHTHALENE-D8
3	IS3** ACENAPHTHENE-D10
4	IS4** PHENANTHRENE-D10
5	IS5** CHRYSENE-D12
6	IS6** PERYLENE-D12
7	65A PHENOL
8	18B BIS (2-CHLOROETHYL) ETHER
9	24A 2-CHLOROPHENOL
10	26B 1,3-DICHLOROBENZENE
11	27B 1,4-DICHLOROBENZENE
12	6H BENZYL ALCOHOL
13	25B 1,2-DICHLOROBENZENE
14	2H 2-METHYLPHENOL
15	42B BIS (2-CHLOROISOPROPYL) ETHER
16	3H 4-METHYLPHENOL
17	63B N-NITROSO-DI-N-PROPYLAMINE
18	12B HEXACHLOROETHANE
19	56B NITROBENZENE
20	54B ISOPHORONE
21	57A 2-NITROPHENOL
22	34A 2,4-DIMETHYLPHENOL
23	1H BENZOIC ACID
24	43B BIS (2-CHLOROETHOXY) METHANE
25	31A 2,4-DICHLOROPHENOL
26	8B 1,2,4-TRICHLOROBENZENE
27	55B NAPHTHALENE
28	7H 4-CHLOROANILINE
29	52B HEXACHLOROBUTADIENE
30	22A 4-CHLORO-3-METHYLPHENOL
31	9H 2-METHYLNAPHTHALENE
32	53B HEXACHLOROCYCLOPENTADIENE
33	21A 2,4,6-TRICHLOROPHENOL
34	4H 2,4,5-TRICHLOROPHENOL
35	20B 2-CHLORONAPHTHALENE
36	10H 2-NITROANILINE
37	71B DIMETHYLPHTHALATE
38	77B ACENAPHTHYLENE
39	11H 3-NITROANILINE
40	1B ACENAPHTHENE
41	59A 2,4-DINITROPHENOL
42	58A 4-NITROPHENOL
43	8H DIBENZOFURAN
44	36B 2,6-DINITROTOLUENE
45	35B 2,4-DINITROTOLUENE
46	70B DIETHYLPHTHALATE
47	40B 4-CHLOROPHENYLPHENYL ETHER
48	80B FLUORENE
49	12H 4-NITROANILINE
50	60A 4,6-DINITRO-O-CRESOL

AA05974

No	m/z	Scan	Time	Ref	RRT	Meth	Ar a(Hght)	Amount	%Tot
1	152	762	10:10	1	1.000	A BB	62306.	40.000 PPM	16.33
2	136	997	13:18	2	1.000	A VV	189941.	40.000 PPM	16.33
3	164	1345	17:56	3	1.000	A BV	86847.	40.000 PPM	16.33
4	188	1637	21:50	4	1.000	A BV	137021.	40.000 PPM	16.33
5	240	2172	28:58	5	1.000	A BV	100908.	40.000 PPM	16.33
6	264	2575	34:20	6	1.000	A BV	87117.	40.000 PPM	16.33
7	NOT FOUND								
8	NOT FOUND								
9	NOT FOUND								
10	NOT FOUND								
11	NOT FOUND								
12	NOT FOUND								
13	NOT FOUND								
14	NOT FOUND								
15	NOT FOUND								
16	NOT FOUND								
17	NOT FOUND								
18	NOT FOUND								
19	NOT FOUND								
20	NOT FOUND								
21	NOT FOUND								
22	NOT FOUND								
23	122	958	12:46	2	0.961	A BB	263.	~~0.399 PPM~~	0.16
24	NOT FOUND								
25	NOT FOUND								
26	NOT FOUND								
27	128	998	13:18	2	1.001	A BB	340.	~~0.083 PPM~~	0.03
28	NOT FOUND								
29	NOT FOUND								
30	NOT FOUND								
31	141	1133	15:06	2	1.136	A BB	256.	~~0.125 PPM~~	0.05
32	NOT FOUND								
33	196	1193	15:54	3	0.887	A BB	243.	~~0.323 PPM~~	0.13
34	196	1204	16:03	3	0.895	A BB	988.	~~1.057 PPM~~	0.43
35	162	1228	16:22	3	0.913	A BB	547.	~~0.205 PPM~~	0.08
36	NOT FOUND								
37	163	1296	17:17	3	0.964	A BB	853.	~~0.292 PPM~~	0.12
38	152	1312	17:30	3	0.975	A BB	688.	~~0.186 PPM~~	0.08
39	NOT FOUND								
40	NOT FOUND								
41	NOT FOUND								
42	NOT FOUND								
43	168	1381	18:25	3	1.027	A BB	941.	~~0.269 PPM~~	0.11
44	NOT FOUND								
45	NOT FOUND								
46	149	1437	19:10	3	1.068	A BB	1908.	~~0.574 PPM~~	0.23
47	204	1449	19:19	3	1.077	A BB	340.	~~0.239 PPM~~	0.10
48	166	1448	19:18	3	1.077	A BB	410.	~~0.157 PPM~~	0.06
49	NOT FOUND								
50	198	1465	19:32	4	0.895	A BB	486.	~~1.041 PPM~~	0.43

Quantitation Report File: AA05974

Data: AA05974.TI
03/13/89 20:32:00
Sample: BNA WATER BLANK FOR EA#0820 WILLOW GROVE BLANK #483 <2>
Conds.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
Standard ID: AA05968 Instrument: MS2
Sensitivity ID: AA05966 Analyst: JEH - EA Inst Cali: 03/13/89

AMOUNT=AREA * REF AMNT/(REF AREA * RESP FACT)
Resp. fac. from Library Entry

NO	NAME	
51	62B	N-NITROSODIPHENYLAMINE
52	41B	4-BROMOPHENYLPHENYL ETHER
53	9B	HEXACHLOROBENZENE
54	64A	PENTACHLOROPHENOL
55	81B	PHENANTHRENE
56	78B	ANTHRACENE
57	68B	DI-N-BUTYLPHTHALATE
58	39B	FLUORANTHENE
59	84B	PYRENE
60	67B	BUTYLBENZYLPHTHALATE
61	28B	3,3'-DICHLOROBENZIDINE
62	72B	BENZO (A) ANTHRACENE
63	66B	BIS (2-ETHYLHEXYL) PHTHALATE
64	76B	CHRYSENE
65	69B	DI-N-OCTYLPHTHALATE
66	74B	BENZO(B)FLUORANTHENE
67	75B	BENZO(K)FLUORANTHENE
68	73B	BENZO (A) PYRENE
69	83B	INDENO-1,2,3 (C,D) PYRENE
70	82B	DIBENZO (A,H) ANTHRACENE
71	79B	BENZO (G,H,I) PERYLENE
72	SS1*	PHENOL-D5
73	SS2*	2-FLUOROPHENOL
74	SS3*	NITROBENZENE-D5
75	SS4*	2-FLUOROBIPHENYL
76	SS5*	2,4,6-TRIBROMOPHENOL
77	SS6*	TERPHENYL-D14

AA05974

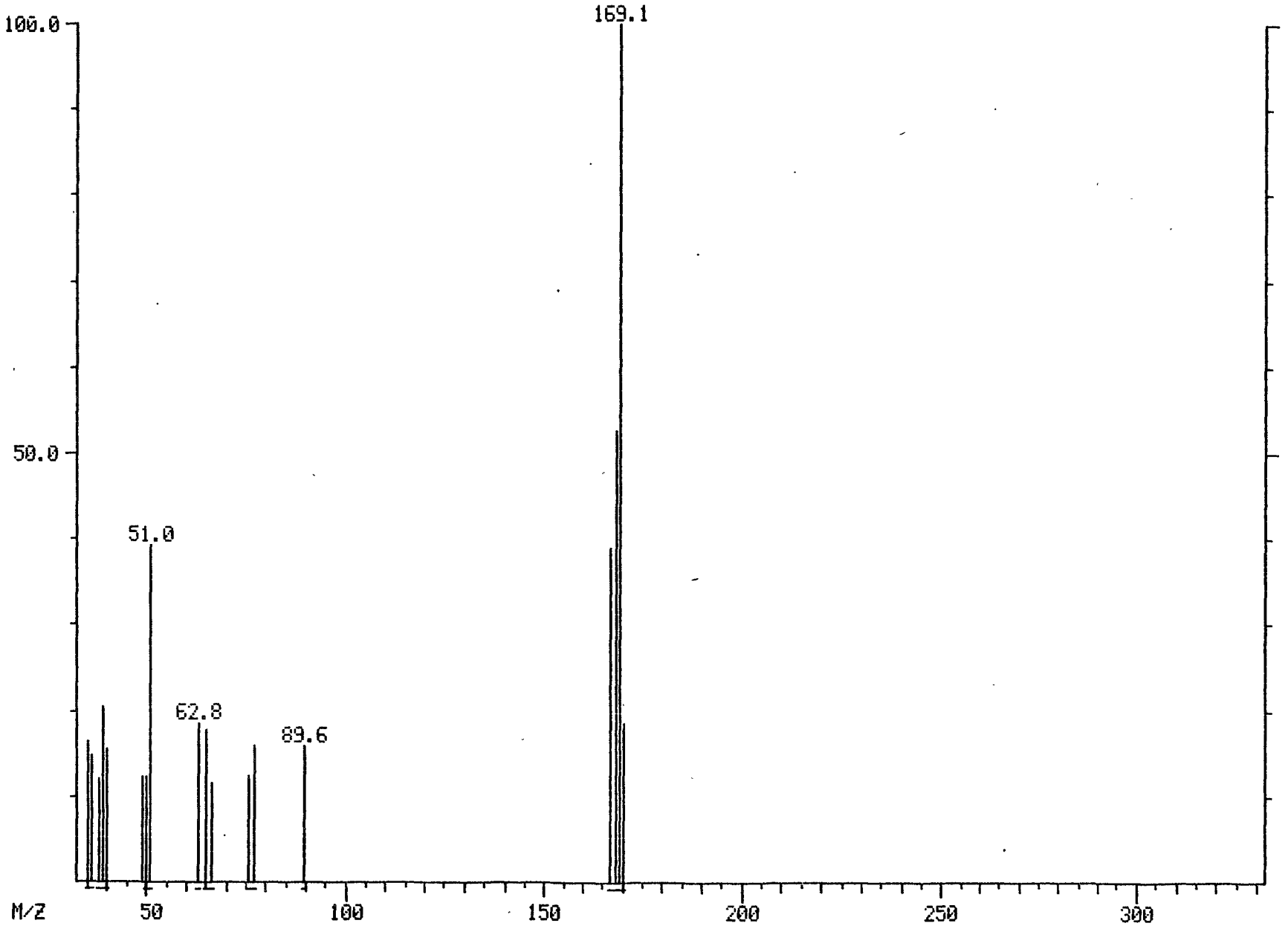
N	m/z	Scan	Time	Ref	RRT	Meth	Area(Hght)	Amount	%Tot	
51	169	1473	19:38	4	0.900	A BB	1540.	1.169 PPM	0.27	
52	248	1546	20:37	4	0.944	A BB	168.	~~0.214 PPM~~	0.05	
53	284	1576	21:01	4	0.963	A BB	378.	~~0.376 PPM~~	0.09	
54	NOT	FOUND								
55	NOT	FOUND								
56	178	1648	21:58	4	1.007	A VB	1667.	~~0.487 PPM~~	0.11	
57	149	1763	23:30	4	1.077	A BB	25956.	5.226 PPM	1.22	
58	202	1882	25:06	4	1.150	A BB	7572.	1.982 PPM	0.46	
59	202	1927	25:42	5	0.887	A BB	6277.	1.597 PPM	0.37	
60	149	2062	27:30	5	0.949	A BB	1484.	~~0.590 PPM~~	0.14	
61	252	2167	28:54	5	0.998	A BB	96.	~~0.132 PPM~~	0.03	
62	228	2177	29:02	5	1.002	A VB	1734.	~~0.605 PPM~~	0.14	
63	149	2182	29:06	5	1.005	A BB	2870.	~~0.796 PPM~~	0.19	
64	228	2177	29:02	5	1.002	A VB	1734.	~~0.651 PPM~~	0.15	
65	149	2329	31:03	6	0.904	A BB	901.	~~0.187 PPM~~	0.04	
66	252	2448	32:38	6	0.951	A BV	647.	~~0.246 PPM~~	0.06	
67	252	2454	32:43	6	0.953	A VB	836.	~~0.348 PPM~~	0.08	
68	NOT	FOUND								
69	NOT	FOUND								
70	NOT	FOUND								
71	NOT	FOUND								
72	99	704	9:23	1	0.924	A BB	125791.	83.637 PPM	19.50	84
73	112	558	7:26	1	0.732	A BB	142781.	90.065 PPM	21.00	90
74	82	864	11:31	2	0.867	A BV	82482.	43.005 PPM	10.03	46
75	172	1211	16:09	3	0.900	A BV	119321.	38.301 PPM	8.93	77
76	330	1502	20:02	3	1.117	A BB	44969.	109.986 PPM	25.64	109
77	244	1960	26:08	5	0.902	A BV	157899.	49.365 PPM	11.51	99

MASS SPECTRUM
03/13/89 20:32:00 + 19:38
SAMPLE: BNA WATER BLANK FOR EA#0820 WILLOW GROVE BLANK #483 <2>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 209 DEG. C

DATA: AA05974 #1473
CALI: AA05974 #4

BASE M/Z: 169
RIC: 1732.

323



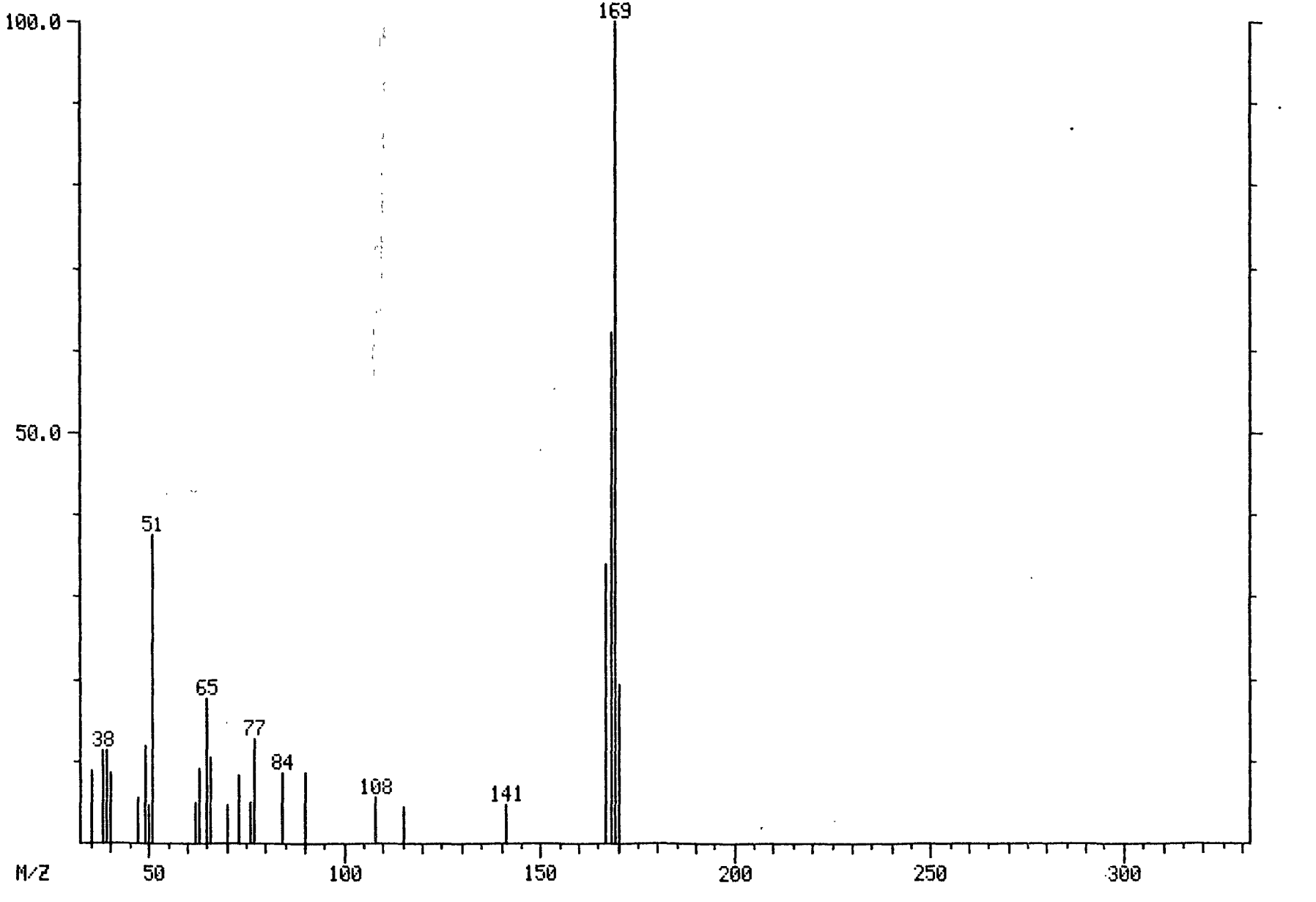
379.3

MASS SPECTRUM
03/13/89 20:32:00 + 19:38
SAMPLE: BNA WATER BLANK FOR EA#0820 WILLOW GROVE BLANK #483 <2>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 209 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05974 #1473
CALI: AA05974 #4

BASE M/Z: 169
RIC: 1482.

324

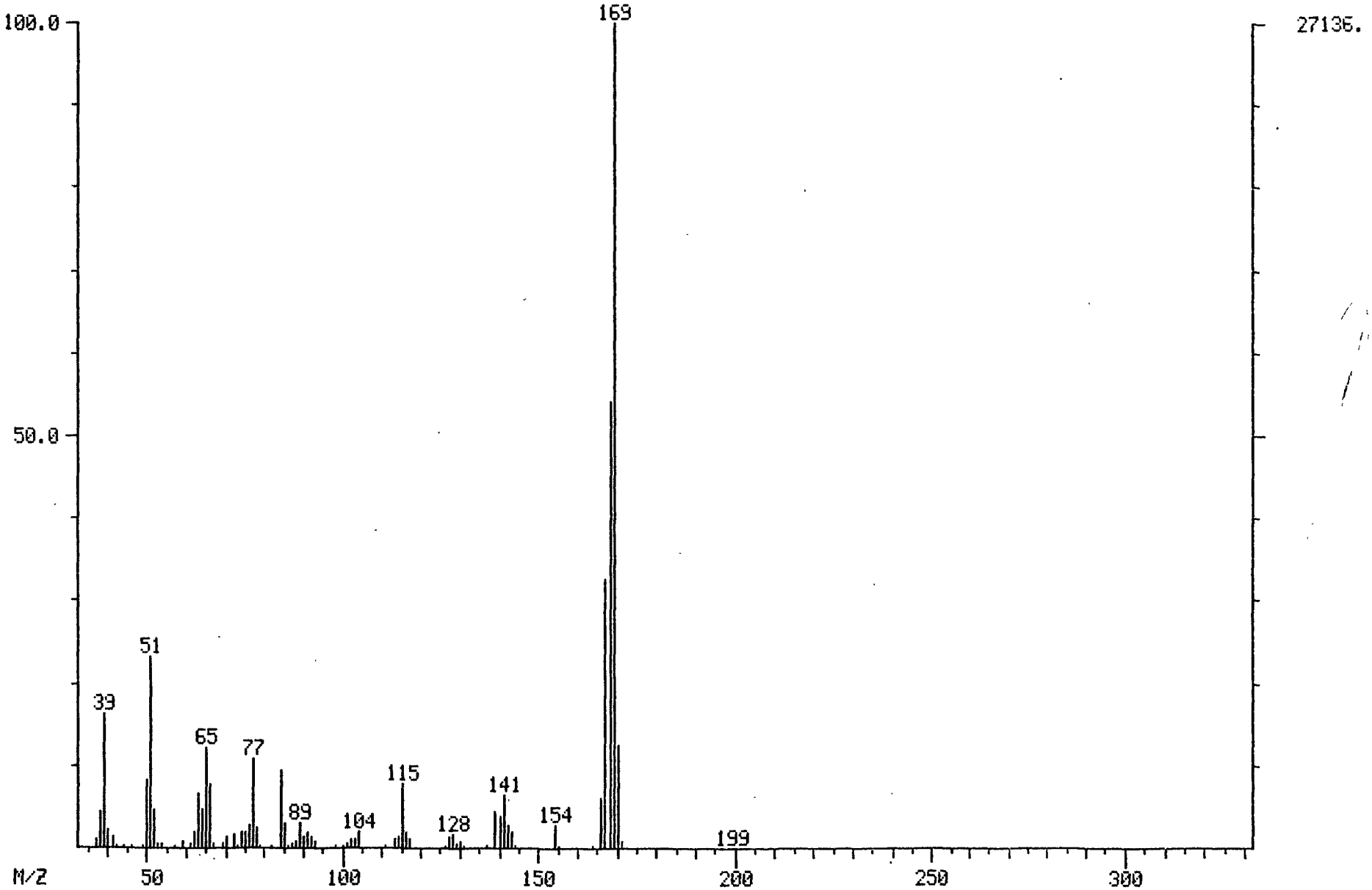


MASS SPECTRUM
03/13/89 14:40:00 + 19:40
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 209 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05968 #1475
CALI: AA05968 #4

BASE M/Z: 169
RIC: 108672.

3 325



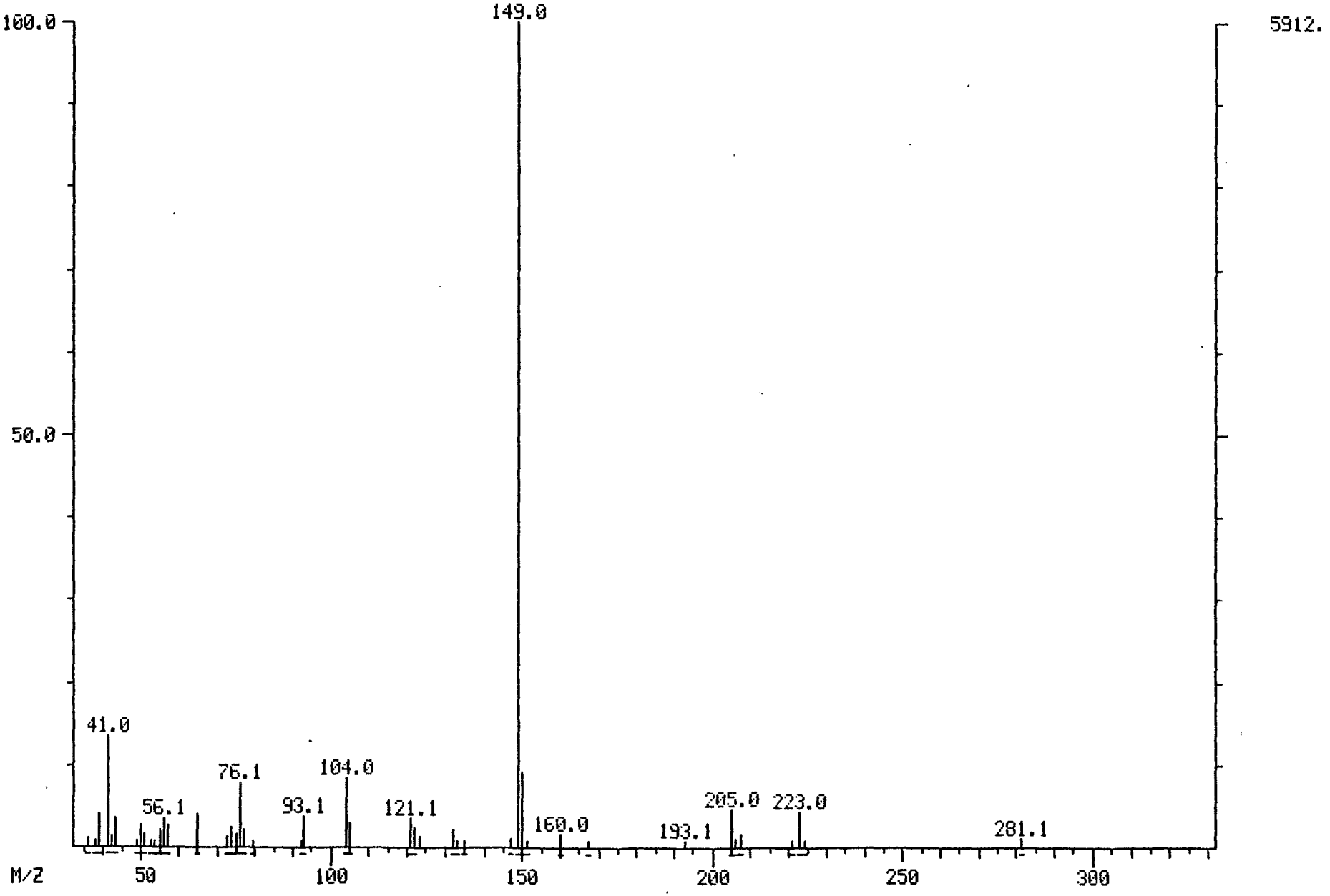
MASS SPECTRUM
03/13/89 20:32:00 + 23:30
SAMPLE: BNA WATER BLANK FOR EA#0820 WILLOW GROVE BLANK #483 <2>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 248 DEG. C

DATA: AA05974 #1763
CALI: AA05974 #4

BASE M/Z: 149
RIC: 12704.

326

3

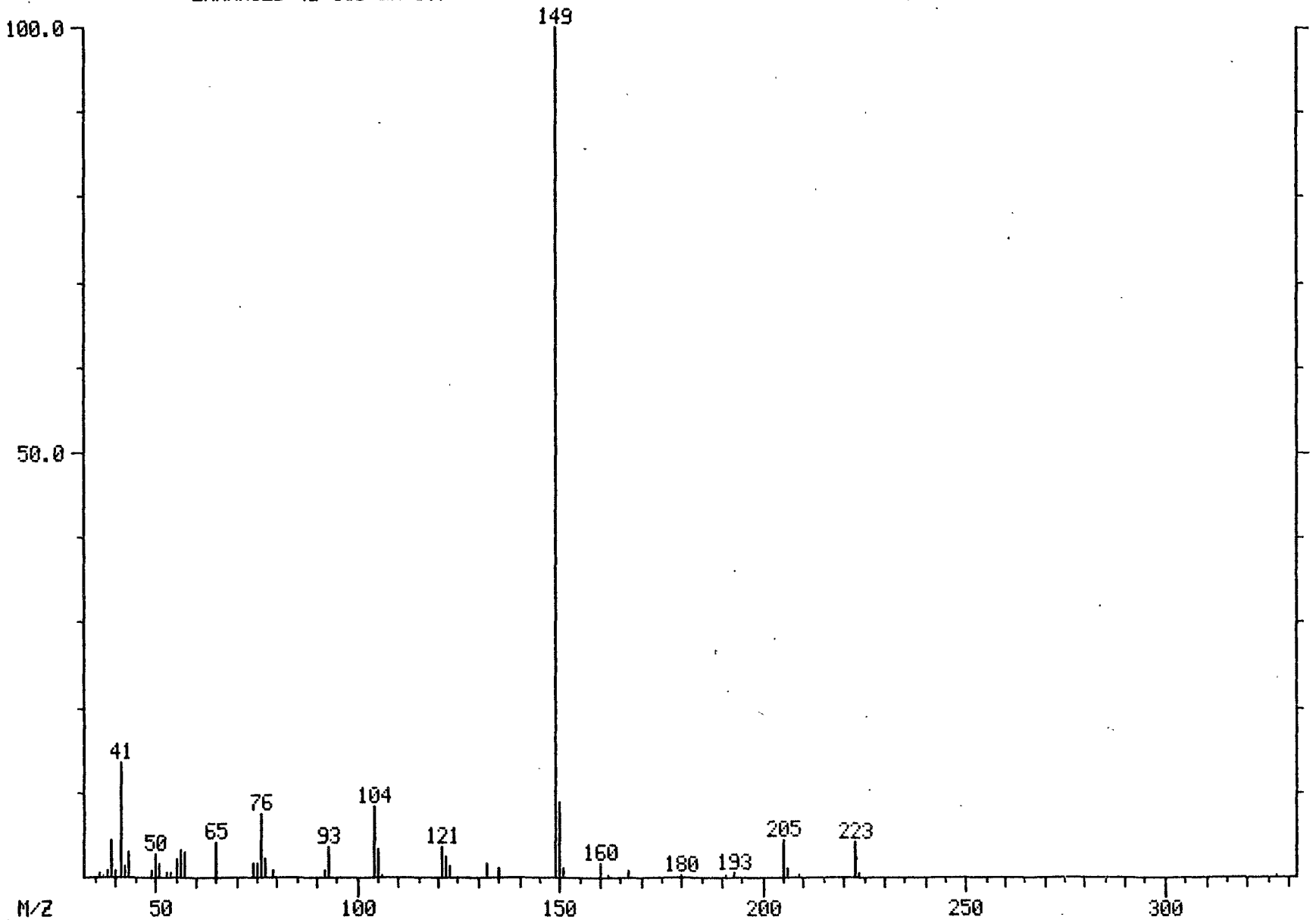


MASS SPECTRUM
03/13/89 20:32:00 + 23:30
SAMPLE: BNA WATER BLANK FOR EA#0820 WILLOW GROVE BLANK #483 <2>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 248 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05974 #1763
CALI: AA05974 #4

BASE M/Z: 149
RIC: 11392.

3 327

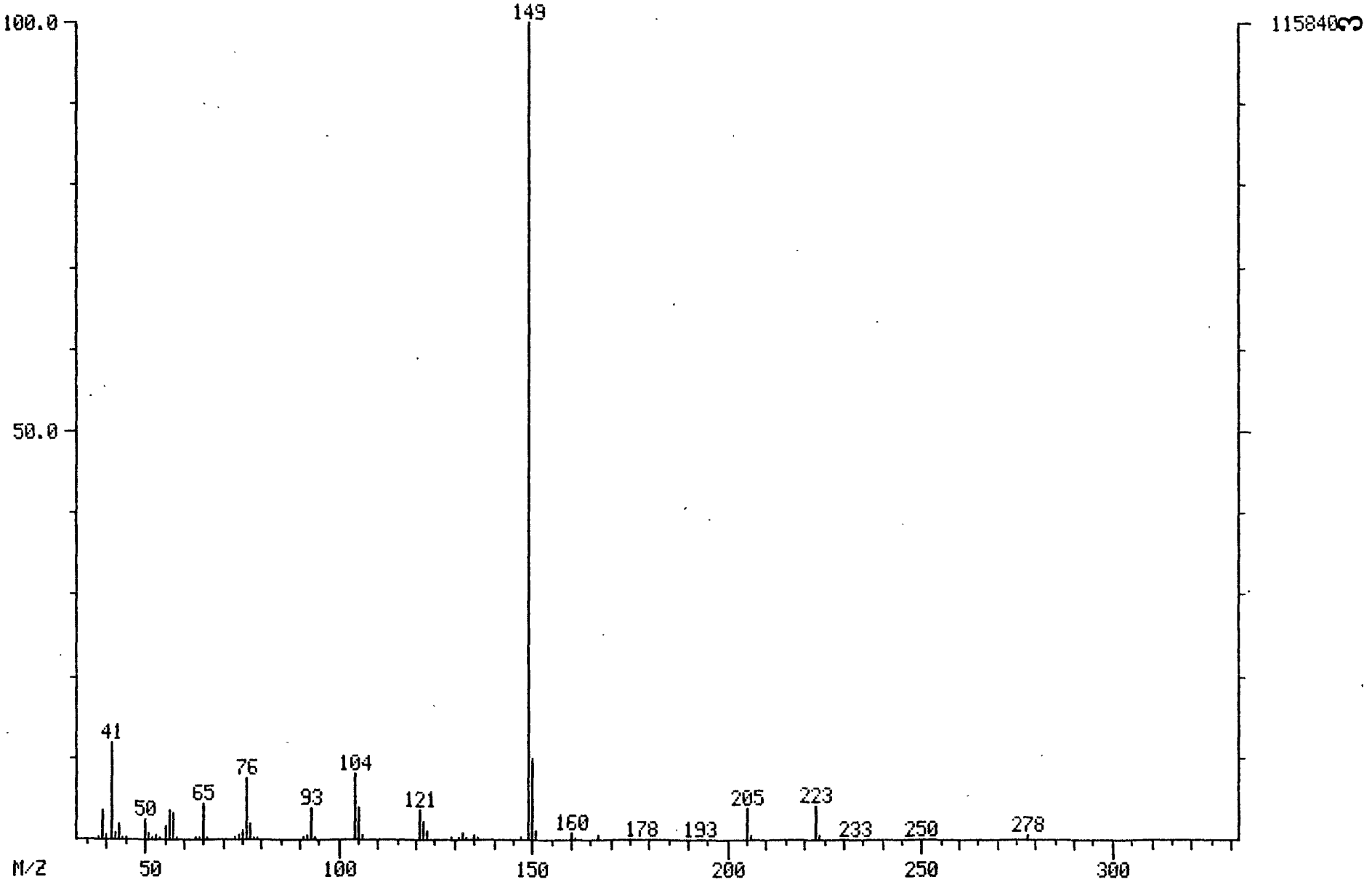


MASS SPECTRUM
03/13/89 14:40:00 + 23:32
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 248 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05968 #1765
CALI: AA05968 #4

BASE M/Z: 149
RIC: 232960.

328

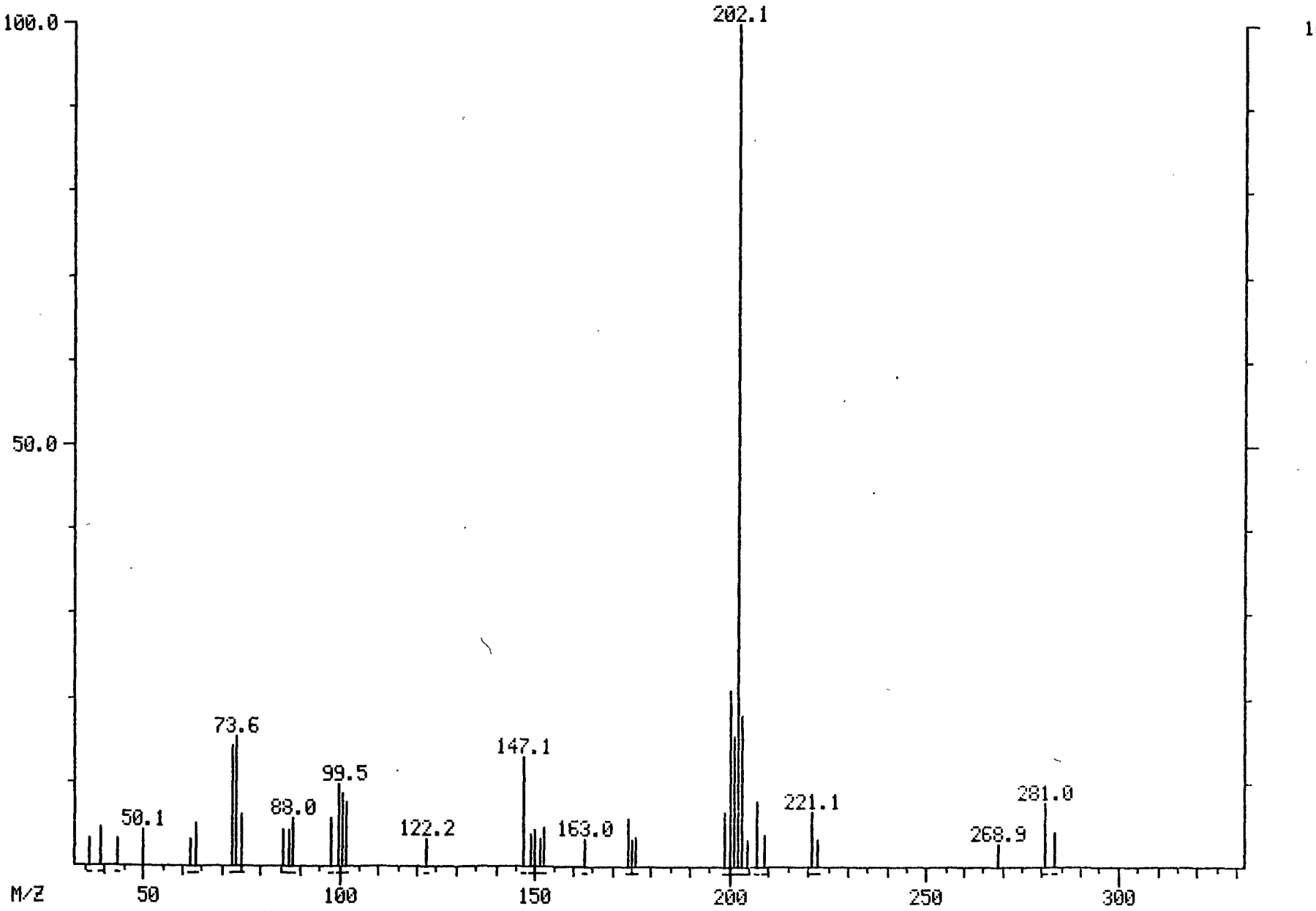


MASS SPECTRUM
03/13/89 20:32:00 + 25:06
SAMPLE: BNA WATER BLANK FOR EA#0820 WILLOW GROVE BLANK #483 <2>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 264 DEG. C

DATA: AA05974 #1882
CALI: AA05974 #4

BASE M/Z: 202
RIC: 5480.

329

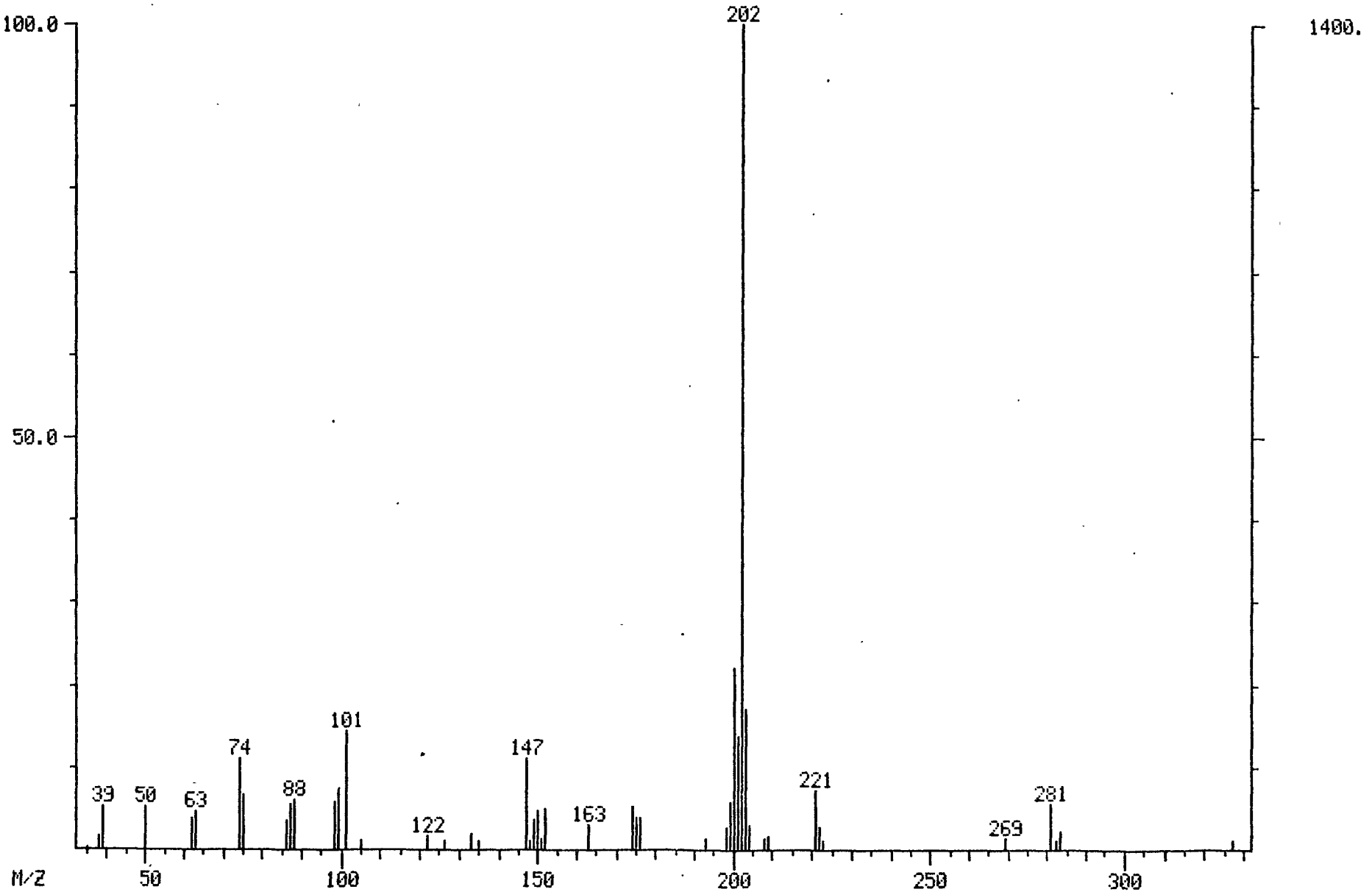


MASS SPECTRUM
03/13/89 20:32:00 + 25:06
SAMPLE: BNA WATER BLANK FOR EA#0820 WILLOW GROVE BLANK #483 <2>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 264 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05974 #1882
CALI: AA05974 #4

BASE M/Z: 202
RIC: 4800.

3 330

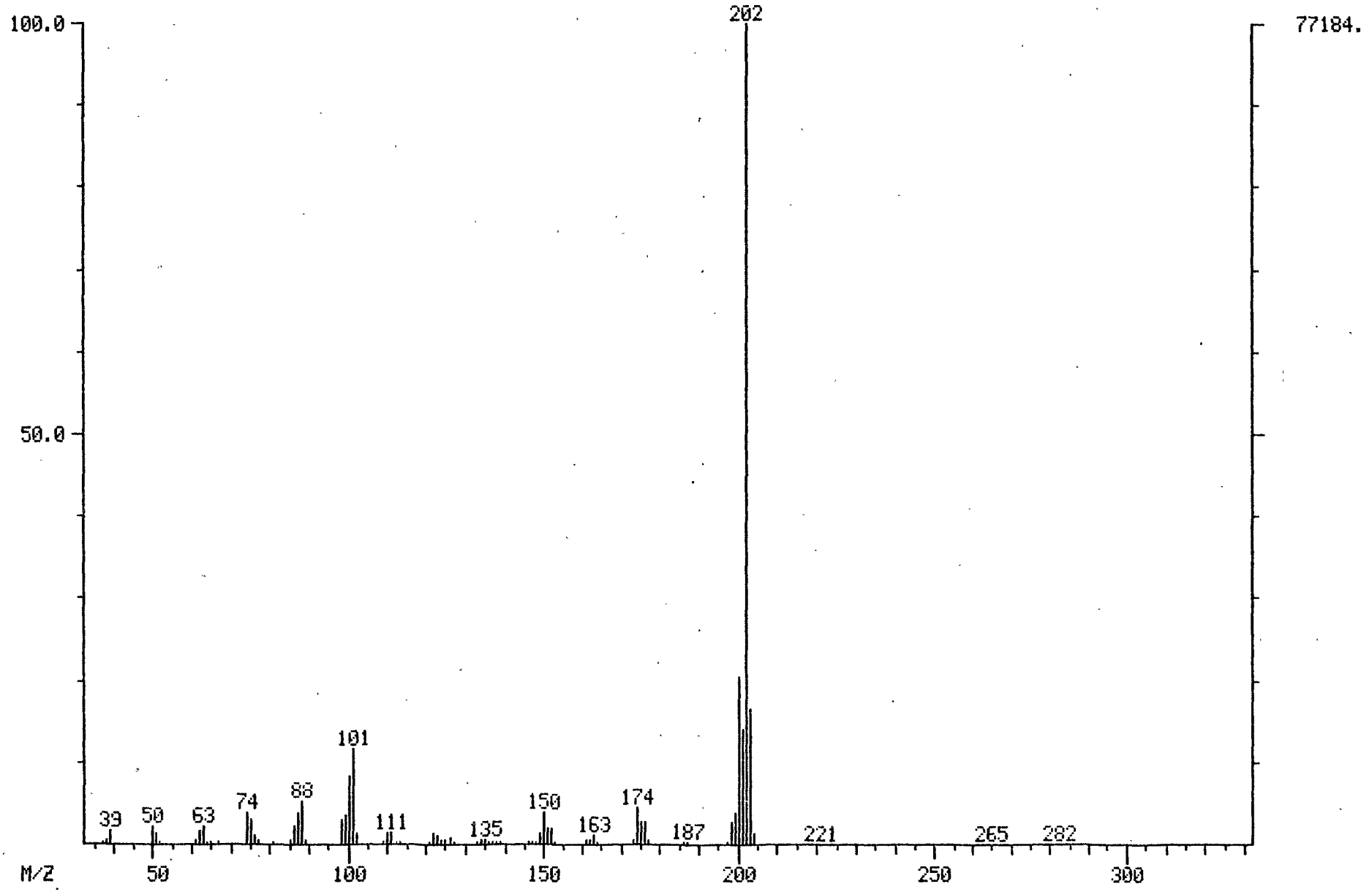


MASS SPECTRUM
03/13/89 14:40:00 + 25:08
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 264 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05968 #1885
CALI: AA05968 #4

BASE M/Z: 202
RIC: 197120.

3 331

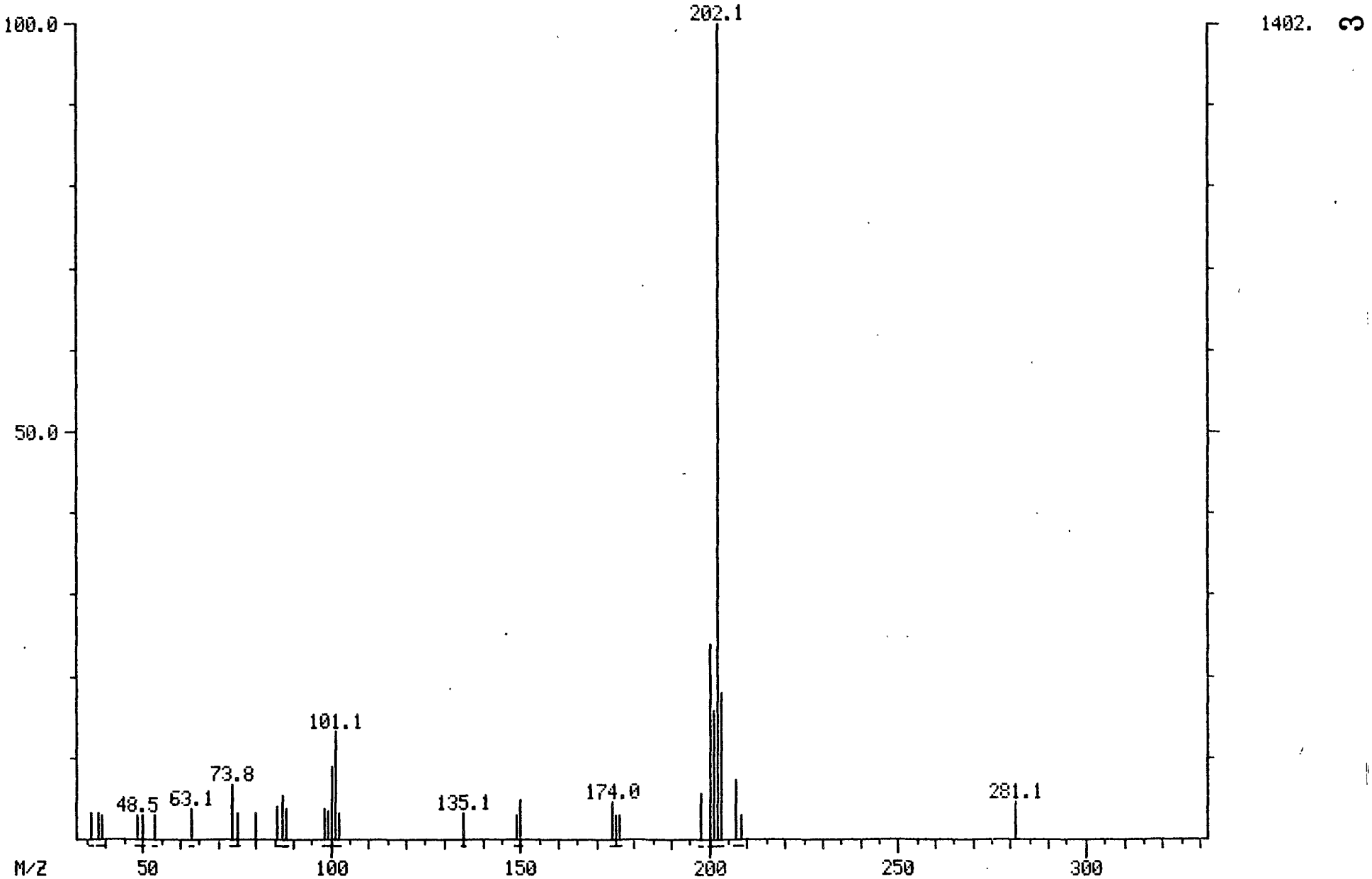


MASS SPECTRUM
03/13/89 20:32:00 + 25:42
SAMPLE: BNA WATER BLANK FOR EA#0820 WILLOW GROVE BLANK #483 <2>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 269 DEG. C

DATA: AA05974 #1927
CALI: AA05974 #4

BASE M/Z: 202
RIC: 3952.

332



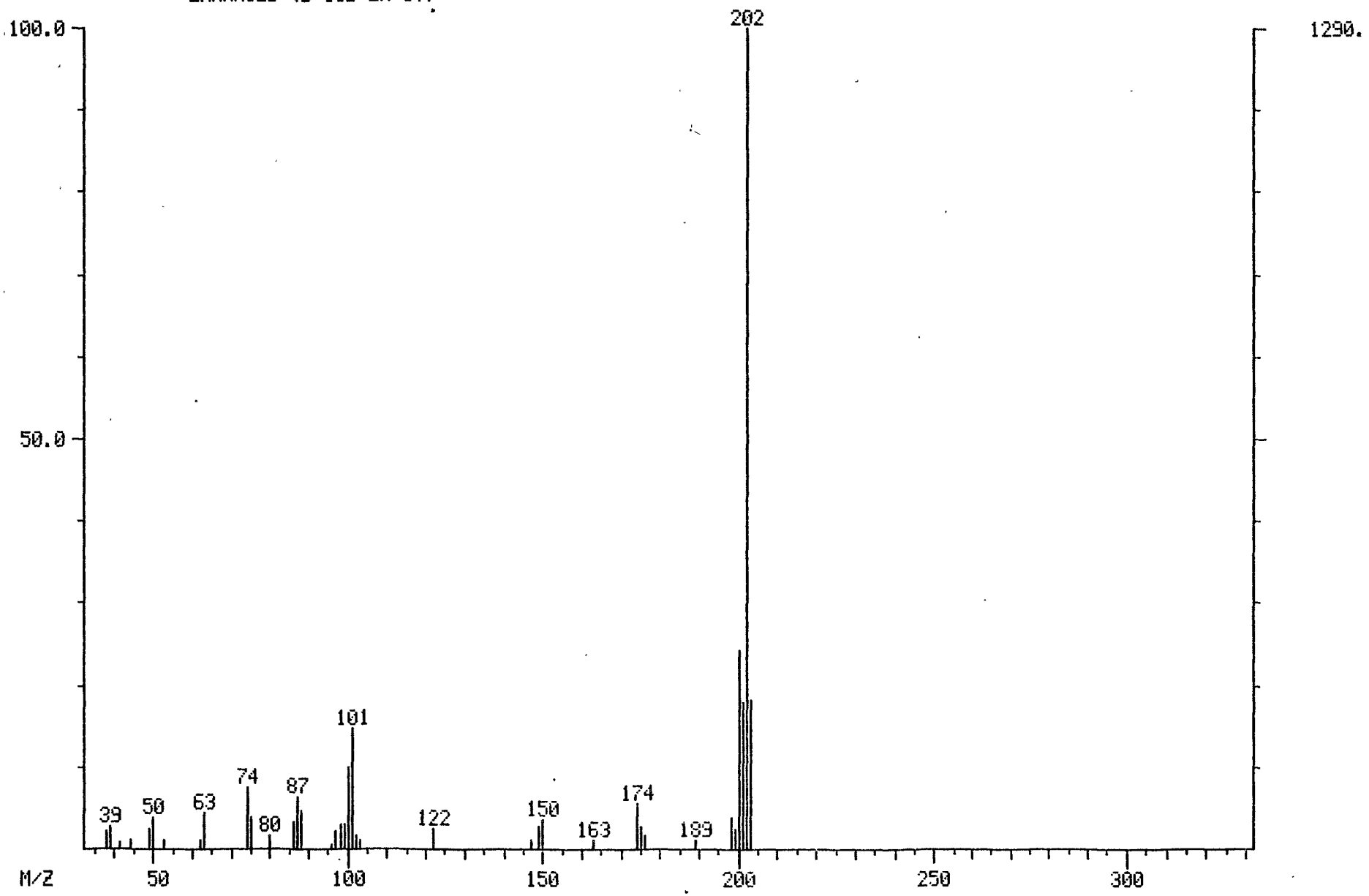
3

MASS SPECTRUM
03/13/89 20:32:00 + 25:42
SAMPLE: BNA WATER BLANK FOR EA#0820 WILLOW GROVE BLANK #483 <2>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 269 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05974 #1927
CALI: AA05974 #4

BASE M/Z: 202
RIC: 3536.

333

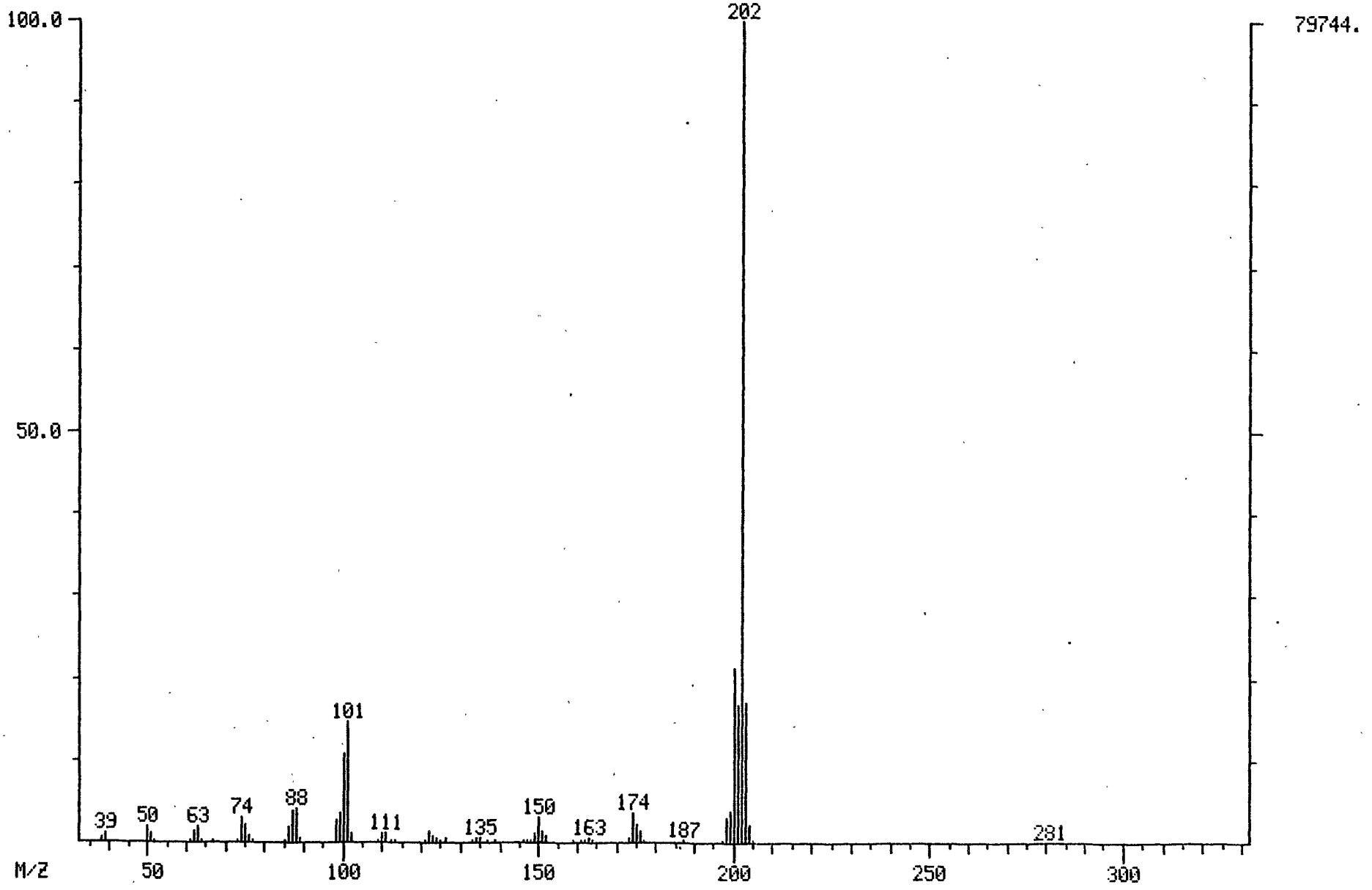


MASS SPECTRUM
03/13/89 14:40:00 + 25:45
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 270 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05968 #1931
CALI: AA05968 #4

BASE M/Z: 202
RIC: 201728.

3 334



Library Search Data: AA05974 428 Base m/z: 43
03/13/89 20:32:00 + 5:42 Cali: AA05974 # 4 RIC: 154623.
Sampl : BNA WATER BLANK FOR EA#0820 WILLOW GROVE BLANK #483 <2>
Conds.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
Enhanced (S 15B 2N OT)

38761 spectra in LIBRARYNB searched for maximum FIT
119 matched at least 7 of the 16 largest peaks in the unknown

Rank	In.	Name
1	94	PROPANE, 2-METHYL-
2	713	PROPANOIC ACID, 2-METHYL-
3	4116	2-BUTANONE, 4-(ACETYLOXY)-
4	4149	1-BUTANOL, 3-METHYL-, ACETATE
5	4158	ACETIC ACID, PENTYL ESTER

Rank	Formula	M.Wt	B.Pk	Purity	Fit	RFit
1	C4.H10	58	43	596	890	603
2	C4.H8.O2	88	43	660	871	660
3	C6.H10.O3	130	43	739	837	747
4	C7.H14.O2	130	43	714	835	727
5	C7.H14.O2	130	43	696	832	703

Rank	Ret.Time	B.P.Int.	US.Par.1	US.Par.2	C.A.S. #
1	—	—	—	—	75-28-5
2	—	—	—	—	79-31-2
3	—	—	—	—	10150-87-5
4	—	—	—	—	123-92-2
5	—	—	—	—	628-63-7

IS Scan - 762

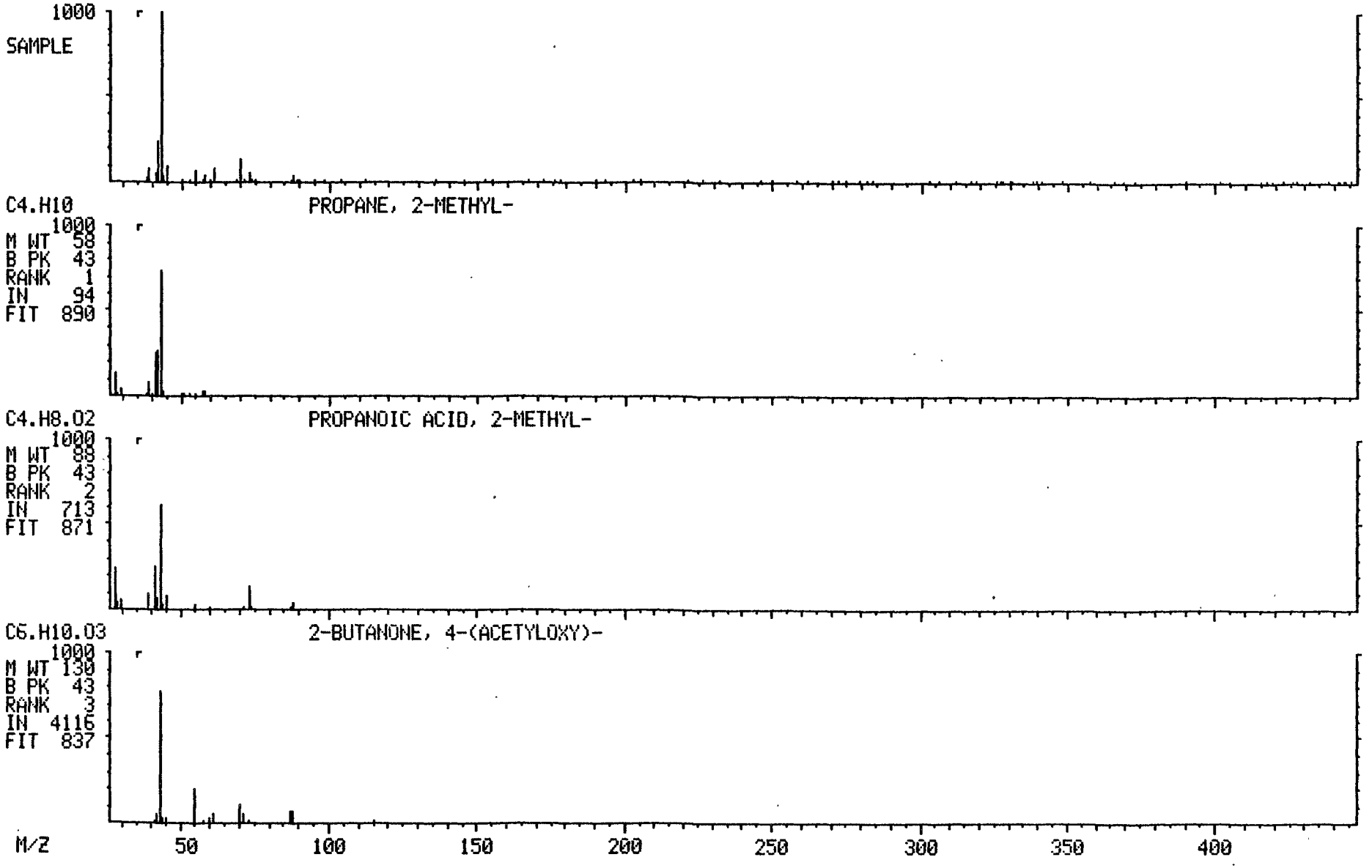
RIC - 143104

LIBRARY SEARCH
03/13/89 20:32:00 + 5:42
SAMPLE: BNA WATER BLANK FOR EA#0820 WILLOW GROVE BLANK #483 <2>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
ENHANCED (S 15B 2N 0T)

DATA: AA05974 # 428
CALI: AA05974 # 4

BASE M/Z: 43
RIC: 154623.

3 336



Library Search Data: AA05974 # 507 Bas m/z: 43
03/13/89 20:32:00 + 6:46 Cali: AA05974 # 4 RIC: 41791.
Sample: BNA WATER BLANK FOR EA#0820 WILLOW GROVE BLANK #483 <2>
Conds.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
Enhanced (S 15B 2N OT)

38761 spectra in LIBRARYNB searched for maximum FIT
88 matched at least 7 of the 16 largest peaks in the unknown

Rank	In:	Name
1	1038	2-PROPYN-1-OL, ACETATE
2	1357	2,3-BUTANEDIONE, MONOOXIME
3	94	PROPANE, 2-METHYL-
4	792	HYDROPEROXIDE, 1,1-DIMETHYLETHYL
5	1082	2-PROPANONE, 1-CYCLOPROPYL-

Rank	Formula	M.Wt	B.Pk	Purity	Fit	RFit
1	C5.H6.O2	98	43	404	947	423
2	C4.H7.O2.N	101	43	589	910	601
3	C4.H10	58	43	485	898	491
4	C4.H10.O2	90	59	645	881	647
5	C6.H10.O	98	43	437	851	461

Rank	Ret.Time	B.P.Int.	US.Par.1	US.Par.2	C.A.S. #
1	—	—	—	—	627-09-8
2	—	—	—	—	57-71-6
3	—	—	—	—	75-28-5
4	—	—	—	—	75-91-2
5	—	—	—	—	4160-75-2

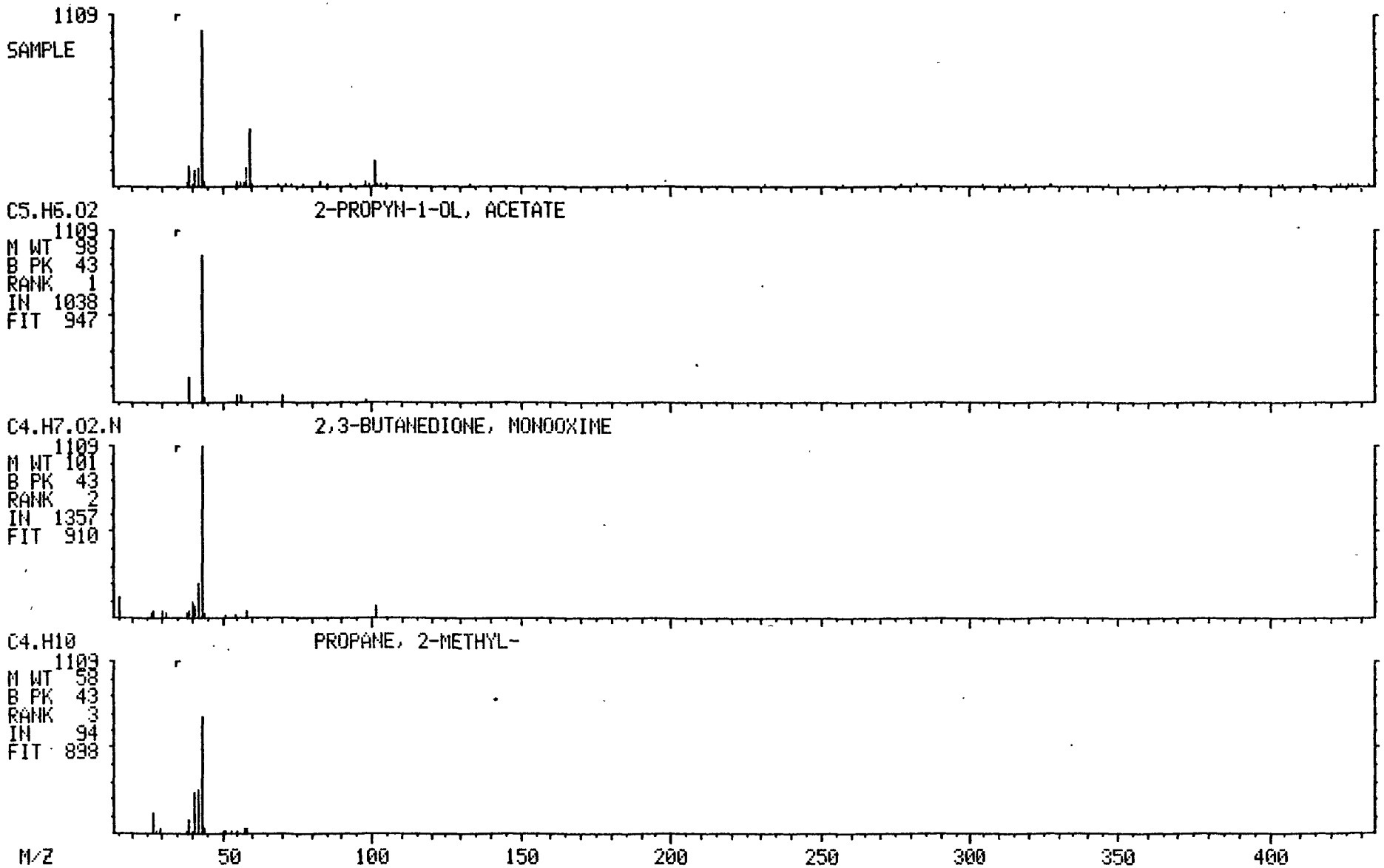
LIBRARY SEARCH
03/13/89 20:32:00 + 6:46
SAMPLE: BNA WATER BLANK FOR EA#0820 WILLOW GROVE BLANK #483 <2>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
ENHANCED (S 15B 2N 0T)

DATA: AA05974 # 507
CALI: AA05974 # 4

BASE M/Z: 43
RIC: 41791.

338

3



EA ENGINEERING, SCIENCE & TECHNOLOGY, INC.

CLIENT: WILLOW GROVE
SITE: WILLOW GROVE
LAB NO: BLANK #491
SAMPLE: SOIL BLANK 491
GCMS FILENAME: AA05972
DATE RECEIVED: 02/18/89

ORGANICS ANALYSIS DATA SHEET
SEMIVOLATILE COMPOUNDS (PAGE 1)

LEVEL:	LOW
MATRIX:	SOIL
DATE EXT/PREP:	03/06/89
DATE ANALYZED:	03/13/89
SPL-->EXTRACT:	10.0 GM -> 1 ML
STANDARD ID:	AA05968
SENSITIVITY ID:	AA05966
UNITS:	UG/KG

CAS #		CONC	
108-95-2	PHENOL	1000.	ND
111-44-4	BIS(2-CHLOROETHYL)ETHER	1000.	ND
95-57-8	2-CHLOROPHENOL	1000.	ND
541-73-1	1,3-DICHLOROBENZENE	1000.	ND
106-46-7	1,4-DICHLOROBENZENE	1000.	ND
100-51-6	BENZYL ALCOHOL	1000.	ND
95-50-1	1,2-DICHLOROBENZENE	1000.	ND
95-48-7	2-METHYLPHENOL	1000.	ND
39638-32-9	BIS(2-CHLOROISOPROPYL)ETHER	1000.	ND
106-44-5	4-METHYLPHENOL	1000.	ND
621-64-7	N-NITROSODIPROPYLAMINE	1000.	ND
67-72-1	HEXACHLOROETHANE	1000.	ND
98-95-3	NITROBENZENE	1000.	ND
78-59-1	ISOPHORONE	1000.	ND
88-75-5	2-NITROPHENOL	1000.	ND
105-67-9	2,4-DIMETHYLPHENOL	1000.	ND
65-85-0	BENZOIC ACID	5000.	ND
111-91-1	BIS(2-CHLOROETHOXY)METHANE	1000.	ND
120-33-2	2,4-DICHLOROPHENOL	1000.	ND
120-82-1	1,2,4-TRICHLOROBENZENE	1000.	ND
91-20-3	NAPHTHALENE	1000.	ND
106-47-8	4-CHLOROANILINE	1000.	ND
87-68-3	HEXACHLOROBUTADIENE	1000.	ND
59-50-7	4-CHLORO-3-METHYLPHENOL	1000.	ND
91-57-6	2-METHYLNAPHTHALENE	100.	TR
77-47-4	HEXACHLOROCYCLOPENTADIENE	1000.	ND
88-06-2	2,4,6-TRICHLOROPHENOL	740.	TR
95-95-4	2,4,5-TRICHLOROPHENOL	1400.	TR
91-58-7	2-CHLORONAPHTHALENE	140.	TR
88-74-4	2-NITROANILINE	290.	TR
131-11-3	DIMETHYL PHTHALATE	820.	TR
208-96-8	ACENAPHTHYLENE	180.	TR
99-09-2	3-NITROANILINE	580.	TR
83-32-9	ACENAPHTHENE	200.	TR
51-28-5	2,4-DINITROPHENOL	5000.	ND
100-02-7	4-NITROPHENOL	5000.	ND
132-64-9	DIBENZOFURAN	1000.	ND
121-14-2	2,4-DINITROTOLUENE	720.	TR

EA ENGINEERING, SCIENCE & TECHNOLOGY, INC.

CLIENT: WILLOW GROVE
SITE: WILLOW GROVE
LAB NO: BLANK #491
SAMPLE: SOIL BLANK 491
GCMS FILENAME: AA05972
DATE RECEIVED: 02/18/89

ORGANICS ANALYSIS DATA SHEET
SEMIVOLATILE COMPOUNDS (PAGE 2)

LEVEL:	LOW
MATRIX:	SOIL
DATE EXT/PREP:	03/06/89
DATE ANALYZED:	03/13/89
SPL-->EXTRACT:	10.0 GM -> 1 ML
STANDARD ID:	AA05968
SENSITIVITY ID:	AA05966
UNITS:	UG/KG

CAS #		CONC	
606-20-2	2,6-DINITROTOLUENE	360.	TR
84-66-2	DIETHYL PHTHALATE	2600.	
7005-72-3	4-CHLOROPHENYL PHENYL ETHER	280.	TR
86-73-7	FLUORENE	160.	TR
100-01-6	4-NITROANILINE	5000.	ND
534-52-1	4,6-DINITRO-2-METHYLPHENOL	320.	TR
86-30-6	N-NITROSODIPHENYLAMINE	1400.	
101-55-3	4-BROMOPHENYL PHENYL ETHER	1000.	ND
118-74-1	HEXACHLOROBENZENE	550.	TR
87-86-5	PENTACHLOROPHENOL	5000.	ND
85-01-8	PHENANTHRENE	1000.	
120-12-7	ANTHRACENE	1000.	ND
84-74-2	DI-N-BUTYL PHTHALATE	730.	TR
206-44-0	FLUORANTHENE	360.	TR
129-00-0	PYRENE	280.	TR
85-68-7	BUTYL BENZYL PHTHALATE	120.	TR
91-94-1	3,3'-DICHLOROBENZIDINE	120.	TR
56-55-3	BENZO(A)ANTHRACENE	150.	TR
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	150.	TR
218-01-9	CHRYSENE	130.	TR
117-84-0	DI-N-OCTYL PHTHALATE	1000.	ND
205-99-2	BENZO(B)FLUORANTHENE	1000.	ND
207-08-9	BENZO(K)FLUORANTHENE	1000.	ND
50-32-8	BENZO(A)PYRENE	1000.	ND
193-39-5	INDENO(1,2,3-CD)PYRENE	1000.	ND
53-70-3	DIBENZO(A,H)ANTHRACENE	1000.	ND
191-24-2	BENZO(GHI)PERYLENE	1000.	ND

Laboratory Name: EA Laboratories

Case No: Willow Grove

Sample Number
Method Blank

EA# BL491

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	unknown	BNA	511	404 J
2.	unknown		1544	507 J
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
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15.				
16.				
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20.				
21.				
22.				
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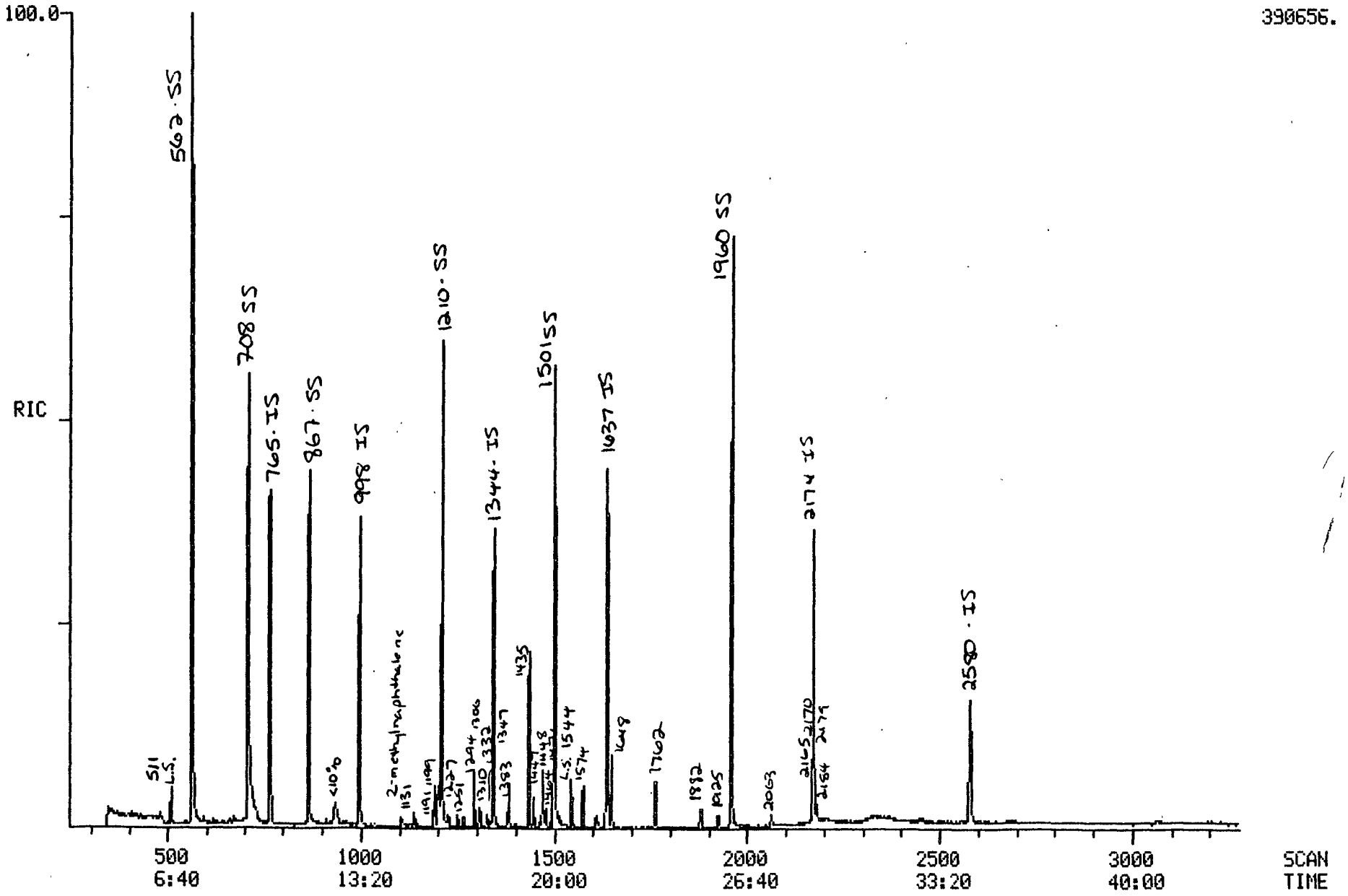
24.				
25.				
26.				
27.				
28.				
29.				
30.				

RIC DATA: AA05972 #1 SCANS 240 TO 3275
03/13/89 18:38:00 CALI: AA05972 #4
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
RANGE: G 1,3275 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



3 342

Quantitation Report File: AA05972

Data: AA05972.TI
03/13/89 18:38:00
Sample: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
Conds.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
Standard ID: AA05968 Instrument: MS2
Sensitivity ID: AA05966 Analyst: JEH - EA Inst Cali: 03/13/89

AMOUNT=AREA * REF AMNT/(REF AREA * RESP FACT)
Resp. fac. from Library Entry

NO	NAME
1	IS1** 1,4-DICHLOROBENZENE-D4
2	IS2** NAPHTHALENE-D8
3	IS3** ACENAPHTHENE-D10
4	IS4** PHENANTHRENE-D10
5	IS5** CHRYSENE-D12
6	IS6** PERYLENE-D12
7	65A PHENOL
8	18B BIS (2-CHLOROETHYL) ETHER
9	24A 2-CHLOROPHENOL
10	26B 1,3-DICHLOROBENZENE
11	27B 1,4-DICHLOROBENZENE
12	6H BENZYL ALCOHOL
13	25B 1,2-DICHLOROBENZENE
14	2H 2-METHYLPHENOL
15	42B BIS (2-CHLOROISOPROPYL) ETHER
16	3H 4-METHYLPHENOL
17	63B N-NITROSO-DI-N-PROPYLAMINE
18	12B HEXACHLOROETHANE
19	56B NITROBENZENE
20	54B ISOPHORONE
21	57A 2-NITROPHENOL
22	34A 2,4-DIMETHYLPHENOL
23	1H BENZOIC ACID
24	43B BIS (2-CHLOROETHOXY) METHANE
25	31A 2,4-DICHLOROPHENOL
26	8B 1,2,4-TRICHLOROBENZENE
27	55B NAPHTHALENE
28	7H 4-CHLOROANILINE
29	52B HEXACHLOROBUTADIENE
30	22A 4-CHLORO-3-METHYLPHENOL
31	9H 2-METHYLNAPHTHALENE
32	53B HEXACHLOROCYCLOPENTADIENE
33	21A 2,4,6-TRICHLOROPHENOL
34	4H 2,4,5-TRICHLOROPHENOL
35	20B 2-CHLORONAPHTHALENE
36	10H 2-NITROANILINE
37	71B DIMETHYLPHTHALATE
38	77B ACENAPHTHYLENE
39	11H 3-NITROANILINE
40	1B ACENAPHTHENE
41	59A 2,4-DINITROPHENOL
42	58A 4-NITROPHENOL
43	8H DIBENZOFURAN
44	36B 2,6-DINITROTOLUENE
45	35B 2,4-DINITROTOLUENE
46	70B DIETHYLPHTHALATE
47	40B 4-CHLOROPHENYLPHENYL ETHER
48	80B FLUORENE
49	12H 4-NITROANILINE
50	60A 4,6-DINITRO-O-CRESOL

AA05972

N	m/z	Scan	Time	Ref	RRT	Meth	Area(Hght)	Amount	%Tot	RIC
1	152	765	10:12	1	1.000	A BB	76999.	40.000 PPM	11.64	147200
2	136	998	13:18	2	1.000	A BV	230796.	40.000 PPM	11.64	
3	164	1344	17:55	3	1.000	A BV	92186.	40.000 PPM	11.64	
4	188	1637	21:50	4	1.000	A BV	161914.	40.000 PPM	11.64	153600
5	240	2174	28:59	5	1.000	A BV	131566.	40.000 PPM	11.64	
6	264	2580	34:24	6	1.000	A BB	116097.	40.000 PPM	11.64	
7	NOT FOUND									
8	NOT FOUND									
9	NOT FOUND									
10	NOT FOUND									
11	NOT FOUND									
12	79	784	10:27	1	1.025	A BB	151.	~~0.224 PPM~~	0.07	
13	NOT FOUND									
14	108	809	10:47	1	1.058	A VV	1374.	~~0.808 PPM~~	0.24	
15	NOT FOUND									
16	108	830	11:04	1	1.085	A BV	287.	~~0.179 PPM~~	0.05	
17	NOT FOUND									
18	117	857	11:26	1	1.120	A BB	433.	~~0.294 PPM~~	0.09	
19	NOT FOUND									
20	82	913	12:10	2	0.915	A BB	1523.	~~0.416 PPM~~	0.12	
21	NOT FOUND									
22	NOT FOUND									
23	NOT FOUND									
24	93	952	12:42	2	0.954	A VB	333.	~~0.157 PPM~~	0.05	
25	162	960	12:48	2	0.962	A BV	2849.	~~2.053 PPM~~	0.60	
26	180	987	13:10	2	0.989	A BB	1574.	~~0.824 PPM~~	0.24	
27	128	999	13:19	2	1.001	A VB	1646.	~~0.332 PPM~~	0.10	
28	NOT FOUND									
29	225	1038	13:50	2	1.040	A VB	1012.	~~0.755 PPM~~	0.22	
30	107	1108	14:46	2	1.110	A BB	7015.	~~4.764 PPM~~ NC	1.39	
31	141	1131	15:05	2	1.133	A BB	2559.	1.027 PPM	0.30	
32	NOT FOUND									
33	196	1191	15:53	3	0.886	A BV	5948.	7.442 PPM	2.17	
34	196	1199	15:59	3	0.892	A VB	13908.	14.017 PPM	4.08	
35	162	1227	16:22	3	0.913	A BB	3851.	1.360 PPM	0.40	
36	65	1251	16:41	3	0.931	A BB	2411.	2.880 PPM	0.84	
37	163	1294	17:15	3	0.963	A BB	25493.	8.215 PPM	2.39	
38	152	1310	17:28	3	0.975	A BB	6896.	1.754 PPM	0.51	
39	138	1332	17:46	3	0.991	A BB	2528.	5.808 PPM	1.69	
40	154	1347	17:58	3	1.002	A BB	5244.	1.955 PPM	0.57	
41	184	1356	18:05	3	1.009	A BB	291.	~~1.286 PPM~~	0.37	
42	NOT FOUND									
43	168	1378	18:22	3	1.025	A BB	6565.	~~1.769 PPM~~	0.51	
44	165	1306	17:25	3	0.972	A BB	2602.	3.635 PPM	1.06	
45	89	1383	18:26	3	1.029	A BB	7394.	7.155 PPM	2.08	
46	149	1435	19:08	3	1.068	A BV	90387.	25.628 PPM	7.46	
47	204	1447	19:18	3	1.077	A BB	4271.	2.829 PPM	0.82	
48	166	1448	19:18	3	1.077	A BB	4545.	1.636 PPM	0.48	
49	138	1461	19:29	3	1.087	A BB	666.	~~1.211 PPM~~	0.35	
50	198	1464	19:31	4	0.894	A BB	1777.	3.221 PPM	0.94	

Quantitation R port File: AA05972

Data: AA05972.TI
03/13/89 18:38:00
Sampl : BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
Conds.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
Standard ID: AA05968 Instrument: MS2
Sensitivity ID: AA05966 Analyst: JEH - EA Inst Cali: 03/13/89

AMOUNT=AREA * REF AMNT/(REF AREA * RESP FACT)
R sp. fac. from Library Entry

NO	NAME	
51	62B	N-NITROSODIPHENYLAMINE
52	41B	4-BROMOPHENYLPHENYL ETHER
53	9B	HEXACHLOROBENZENE
54	64A	PENTACHLOROPHENOL
55	81B	PHENANTHRENE
56	78B	ANTHRACENE
57	68B	DI-N-BUTYLPHTHALATE
58	39B	FLUORANTHENE
59	84B	PYRENE
60	67B	BUTYLBENZYLPHTHALATE
61	28B	3,3'-DICHLOROBENZIDINE
62	72B	BENZO (A) ANTHRACENE
63	66B	BIS (2-ETHYLHEXYL) PHTHALATE
64	76B	CHRYSENE
65	69B	DI-N-OCTYLPHTHALATE
66	74B	BENZO(B)FLUORANTHENE
67	75B	BENZO(K)FLUORANTHENE
68	73B	BENZO (A) PYRENE
69	83B	INDENO-1,2,3 (C,D) PYRENE
70	82B	DIBENZO (A,H) ANTHRACENE
71	79B	BENZO (G,H,I) PERYLENE
72	SS1*	PHENOL-D5
73	SS2*	2-FLUOROPHENOL
74	SS3*	NITROBENZENE-D5
75	SS4*	2-FLUOROBIPHENYL
76	SS5*	2,4,6-TRIBROMOPHENOL
77	SS6*	TERPHENYL-D14
78	61B	N-NITROSO-DIMETHYLAMINE
79	5B	BENZIDINE
80	ANI	ANILINE

AA05972

No	m/z	Scan	Time	R f	RRT	M th	Area(Hght)	Amount	%Tot
51	169	1471	19:37	4	0.899	A BB	22174.	14.240 PPM	1.97
52	248	1544	20:35	4	0.943	A BB	6018.	~~6.488 PPM~~	0.90
53	284	1574	20:59	4	0.962	A BB	6503.	5.471 PPM	0.76
54	NOT	FOUND							
55	178	1648	21:58	4	1.007	A VB	41807.	10.195 PPM	1.41
56	NOT	FOUND							
57	149	1762	23:30	4	1.076	A BV	42810.	7.294 PPM	1.01
58	202	1882	25:06	4	1.150	A BV	16299.	3.610 PPM	0.50
59	202	1925	25:40	5	0.885	A BB	14502.	2.829 PPM	0.39
60	149	2063	27:30	5	0.949	A BB	3809.	1.162 PPM	0.16
61	252	2165	28:52	5	0.996	A BB	1159.	1.220 PPM (T)	0.17
62	228	2170	28:56	5	0.998	A BV	5474.	1.464 PPM	0.20
63	149	2184	29:07	5	1.005	A BV	6891.	1.466 PPM	0.20
64	228	2179	29:03	5	1.002	A VV	4539.	1.307 PPM	0.18
65	149	2332	31:06	6	0.904	A BB	3001.	~~0.468 PPM~~	0.06
66	252	2450	32:40	6	0.950	A BV	3032.	~~0.867 PPM~~	0.12
67	252	2456	32:45	6	0.952	A VB	2568.	~~0.803 PPM~~	0.11
68	252	2559	34:07	6	0.992	A BB	2768.	~~0.928 PPM~~	0.13
69	276	3061	40:49	6	1.186	A BB	3971.	~~1.423 PPM~~	0.20
70	278	3073	40:58	6	1.191	A BB	2737.	~~1.303 PPM~~	0.18
71	NOT	FOUND							
72	99	708	9:26	1	0.925	A BB	252510.	135.854 PPM	18.75 68
73	112	562	7:30	1	0.735	A BB	263571.	134.533 PPM	18.57 67
74	82	867	11:34	2	0.869	A BV	149052.	63.958 PPM	8.83 64
75	172	1210	16:08	3	0.900	A BB	232059.	70.176 PPM	9.69 70
76	330	1501	20:01	3	1.117	A BB	79376.	182.896 PPM	25.24 91
77	244	1960	26:08	5	0.902	A BB	289040.	69.307 PPM	9.57 69
78	NOT	FOUND							
79	184	1356	18:05	5	0.624	A BB	291.	~~5.277 PPM~~	0.73
80	NOT	FOUND							

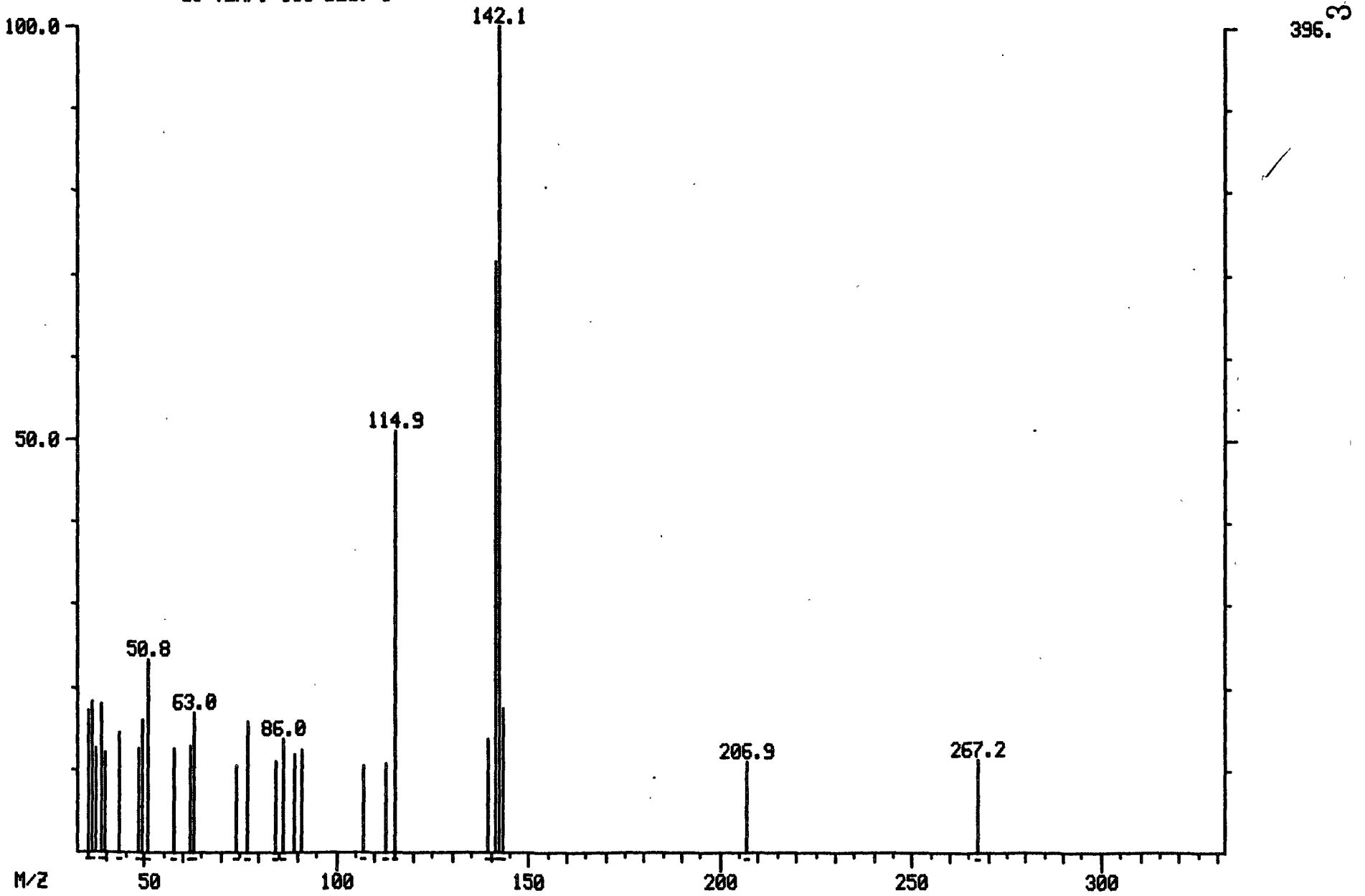
(T) = Spectra fails to meet all confirmation criteria; compound is suspected to be present.

MASS SPECTRUM
03/13/89 18:38:00 + 15:05
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 163 DEG. C

DATA: AA05972 #1131
CALI: AA05972 #4

BASE M/Z: 142
RIC: 2220.

347

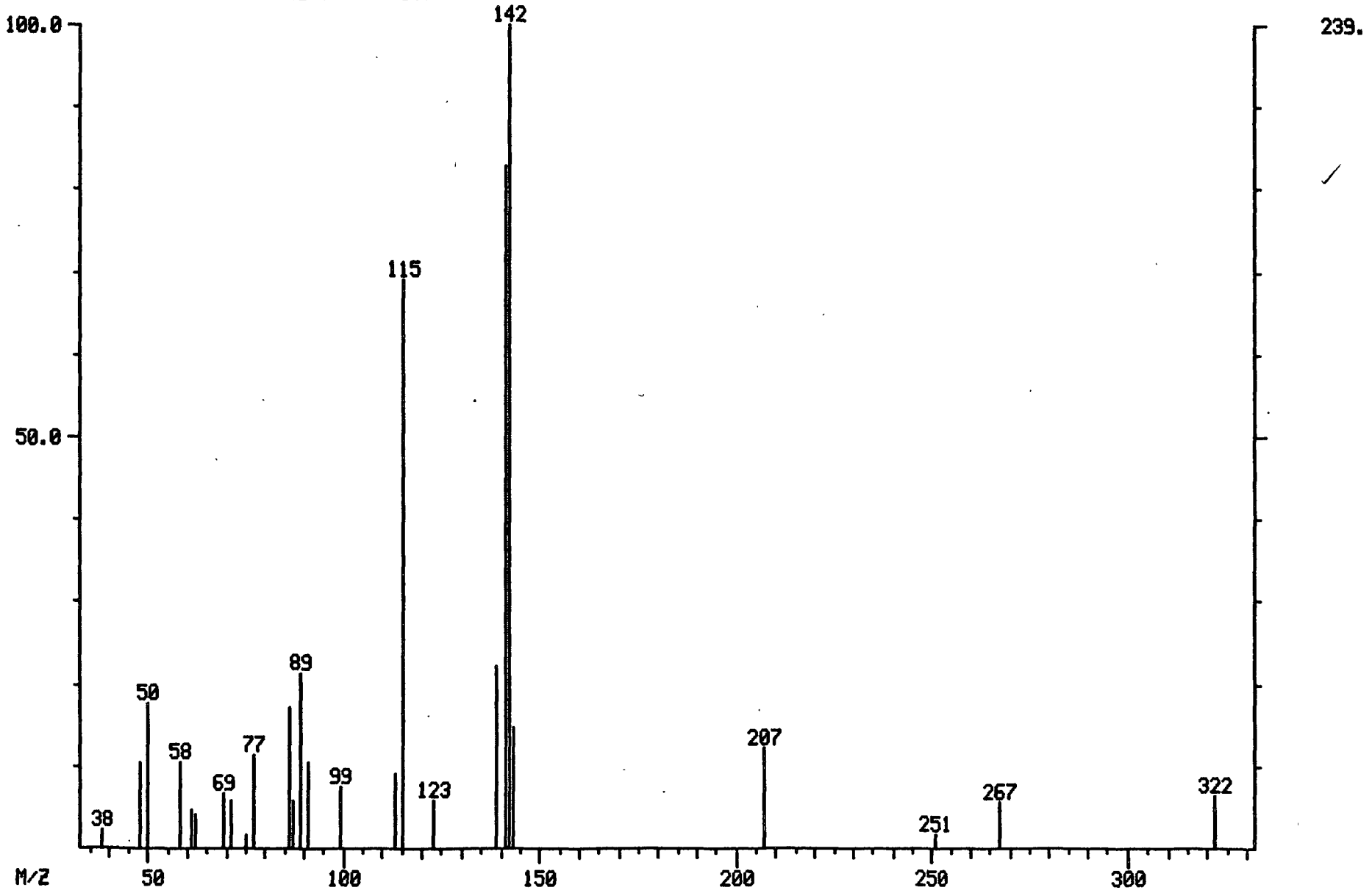


MASS SPECTRUM
03/13/89 18:38:00 + 15:05
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 163 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05972 #1131
CALI: AA05972 #4

BASE M/Z: 142
RIC: 1164.

3 348

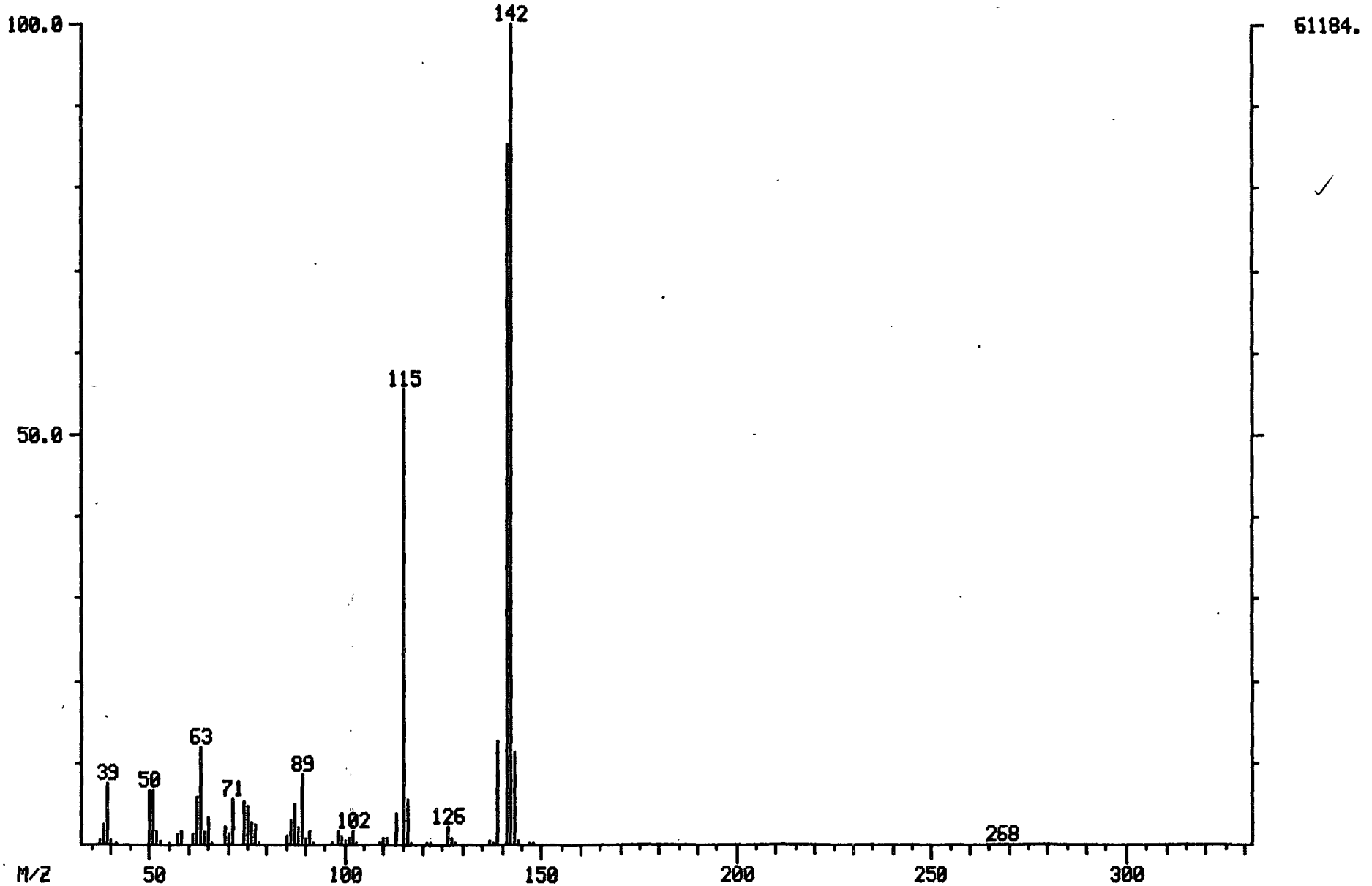


MASS SPECTRUM
03/13/89 14:40:00 + 15:06
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 164 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05968 #1133
CALI: AA05968 #4

BASE M/Z: 142
RIC: 239872.

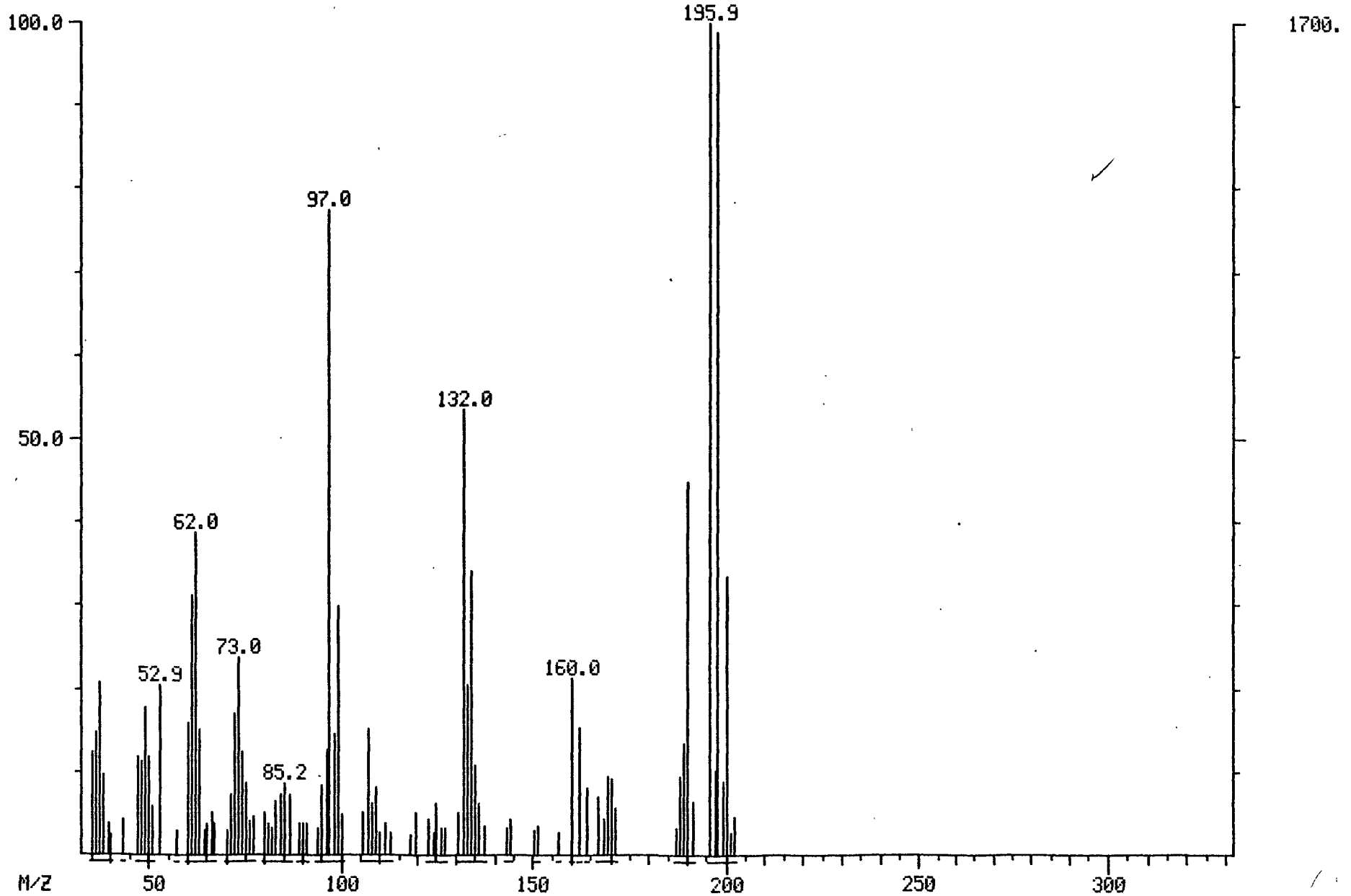
3 349



MASS SPECTRUM
03/13/89 18:38:00 + 15:53
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 171 DEG. C

DATA: AA05972 #1191
CALI: AA05972 #4

BASE M/Z: 196
RIC: 20352.



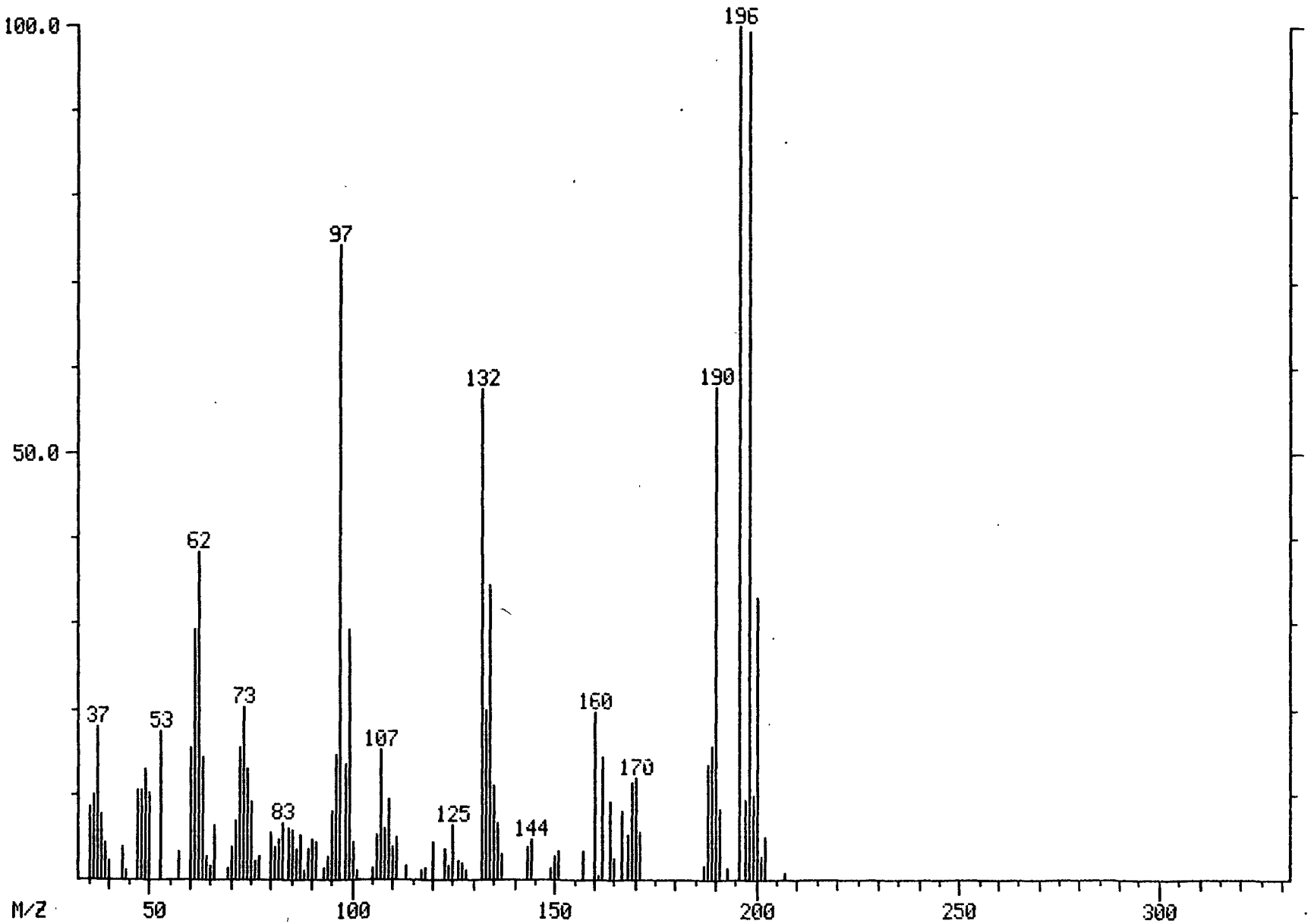
3 350

MASS SPECTRUM
03/13/89 18:38:00 + 15:53
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 171 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05972 #1191
CALI: AA05972 #4

BASE M/Z: 196
RIC: 16704.

351



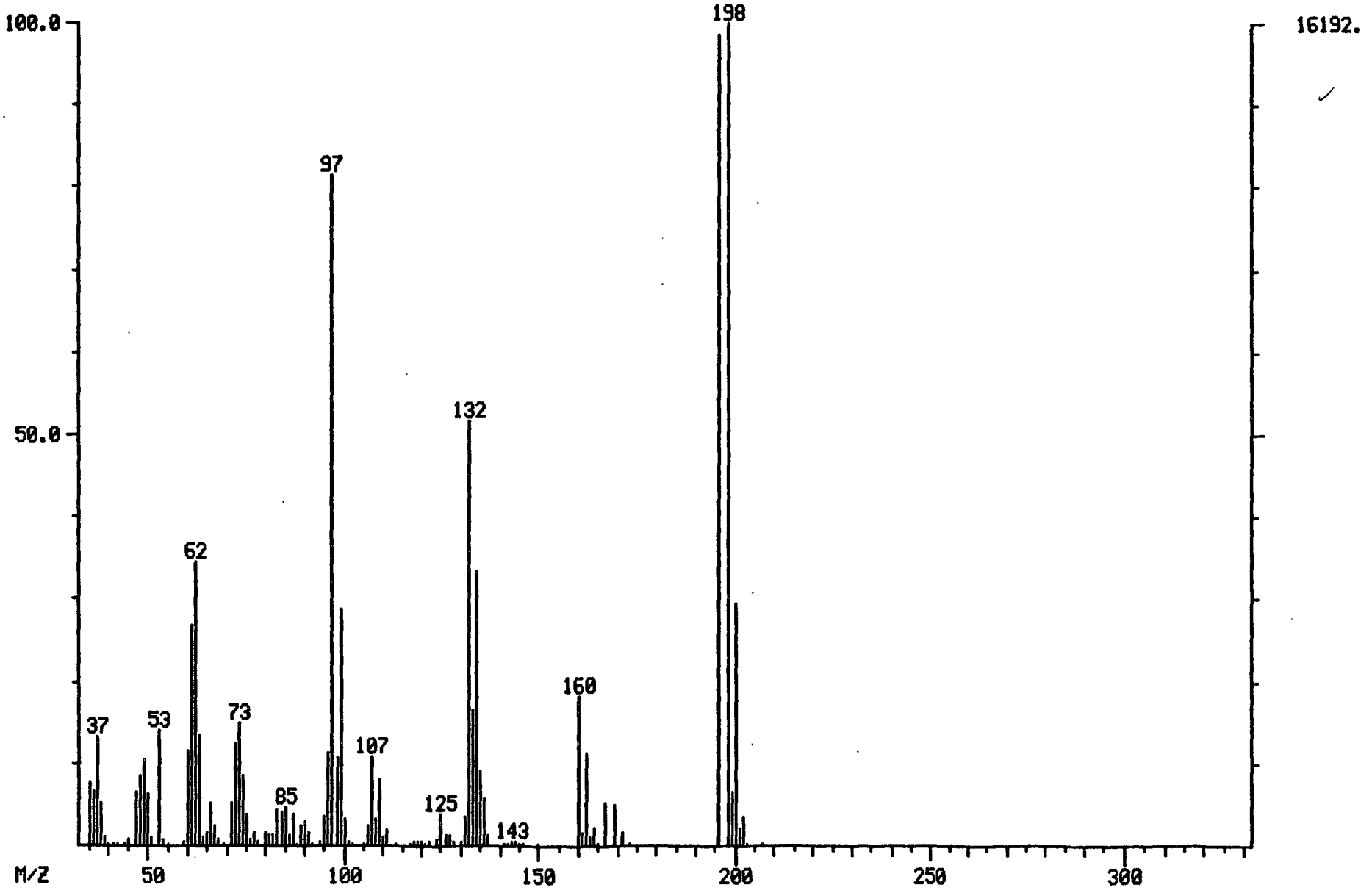
3

MASS SPECTRUM
03/13/89 14:40:00 + 15:54
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 171 DEG. C
ENHANCED (5 15B 2N 0T)

DATA: AA05968 #1193
CALI: AA05968 #4

BASE M/Z: 198
RIC: 137728.

3 352

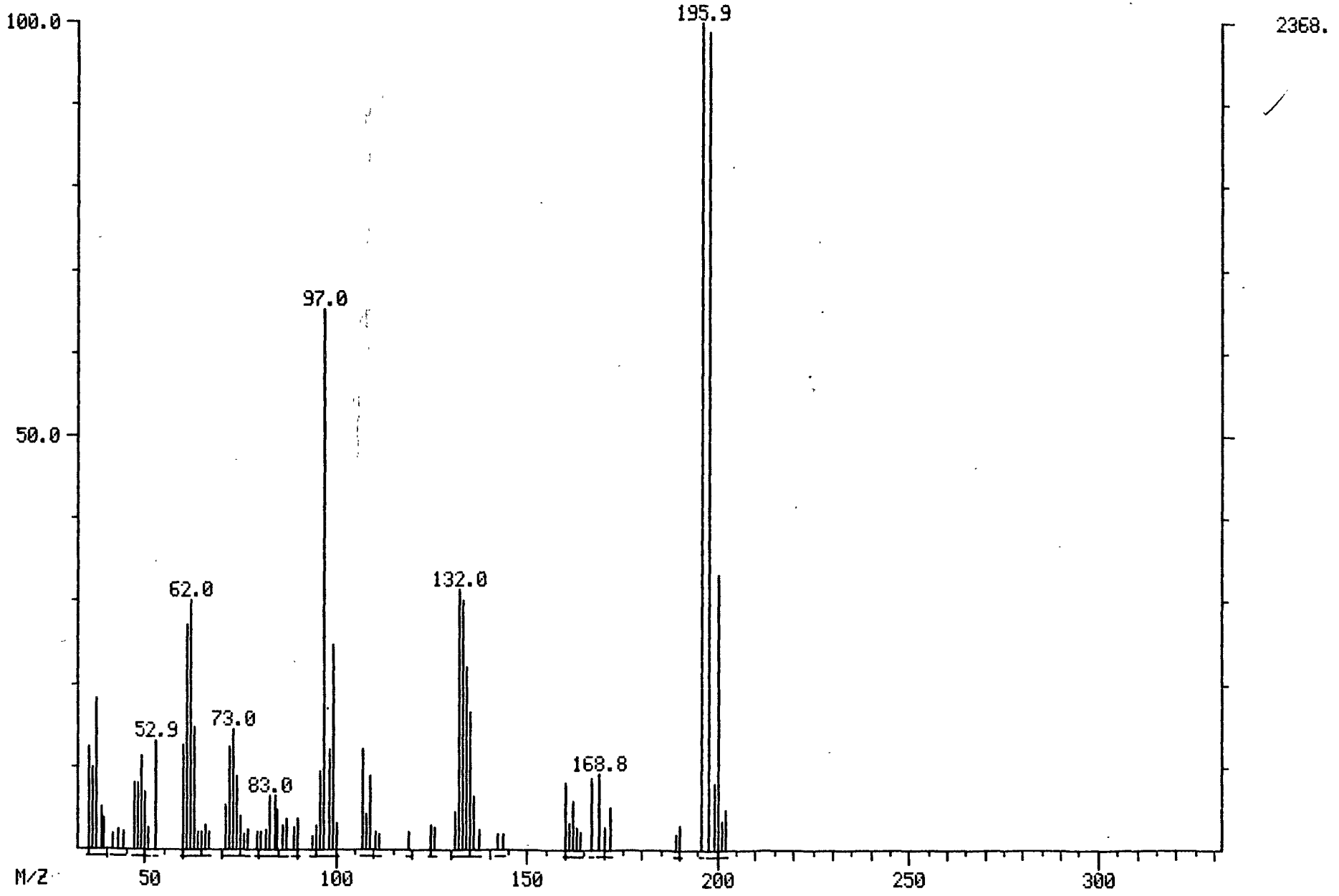


MASS SPECTRUM
03/13/89 18:38:00 + 15:59
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 172 DEG. C

DATA: AA05972 #1199
CALI: AA05972 #4

BASE M/Z: 196
RIC: 20608.

3 353

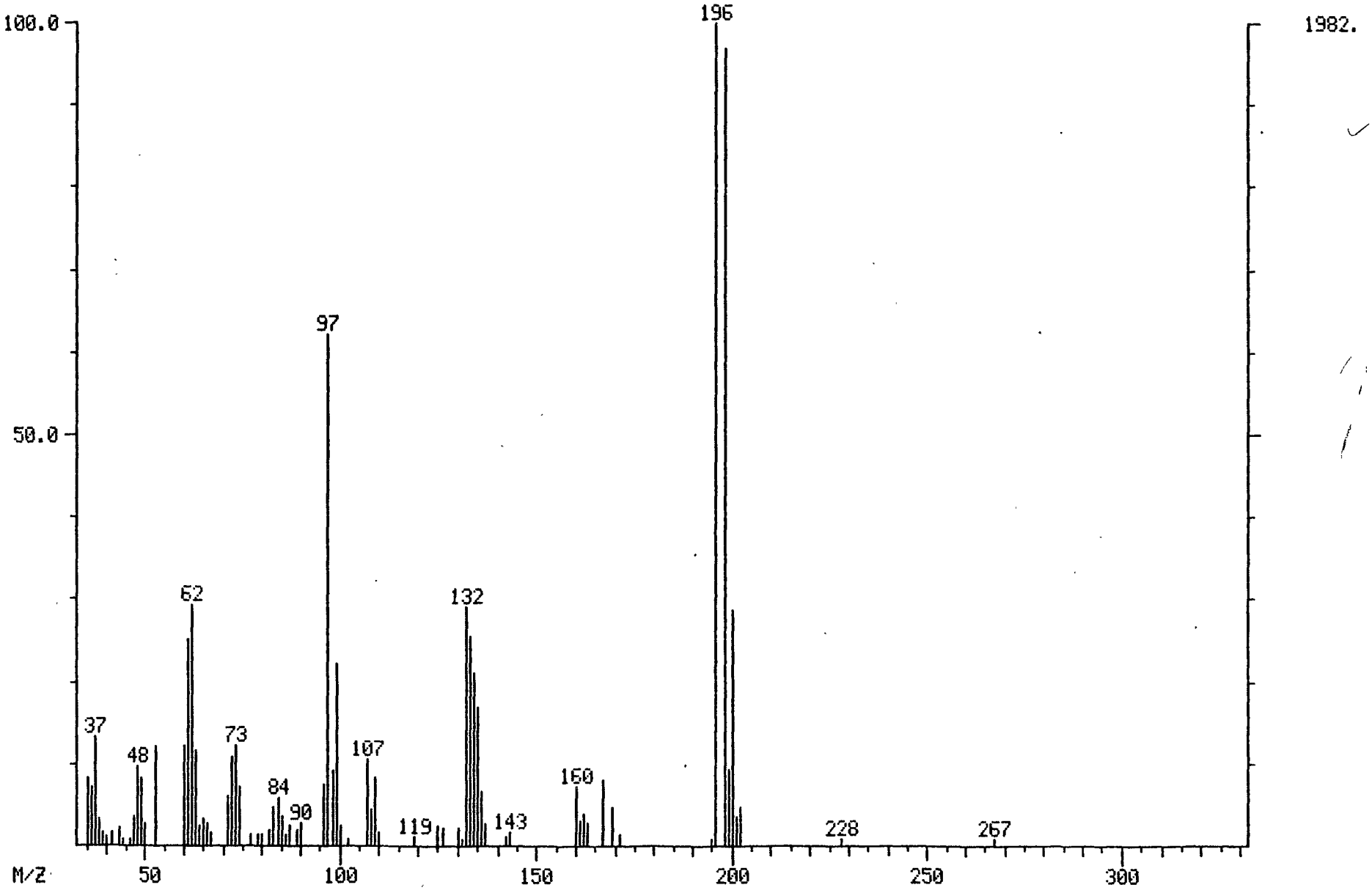


MASS SPECTRUM
03/13/89 18:38:00 + 15:59
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 172 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05972 #1193
CALI: AA05972 #4

BASE M/Z: 196
RIC: 14976.

3 354

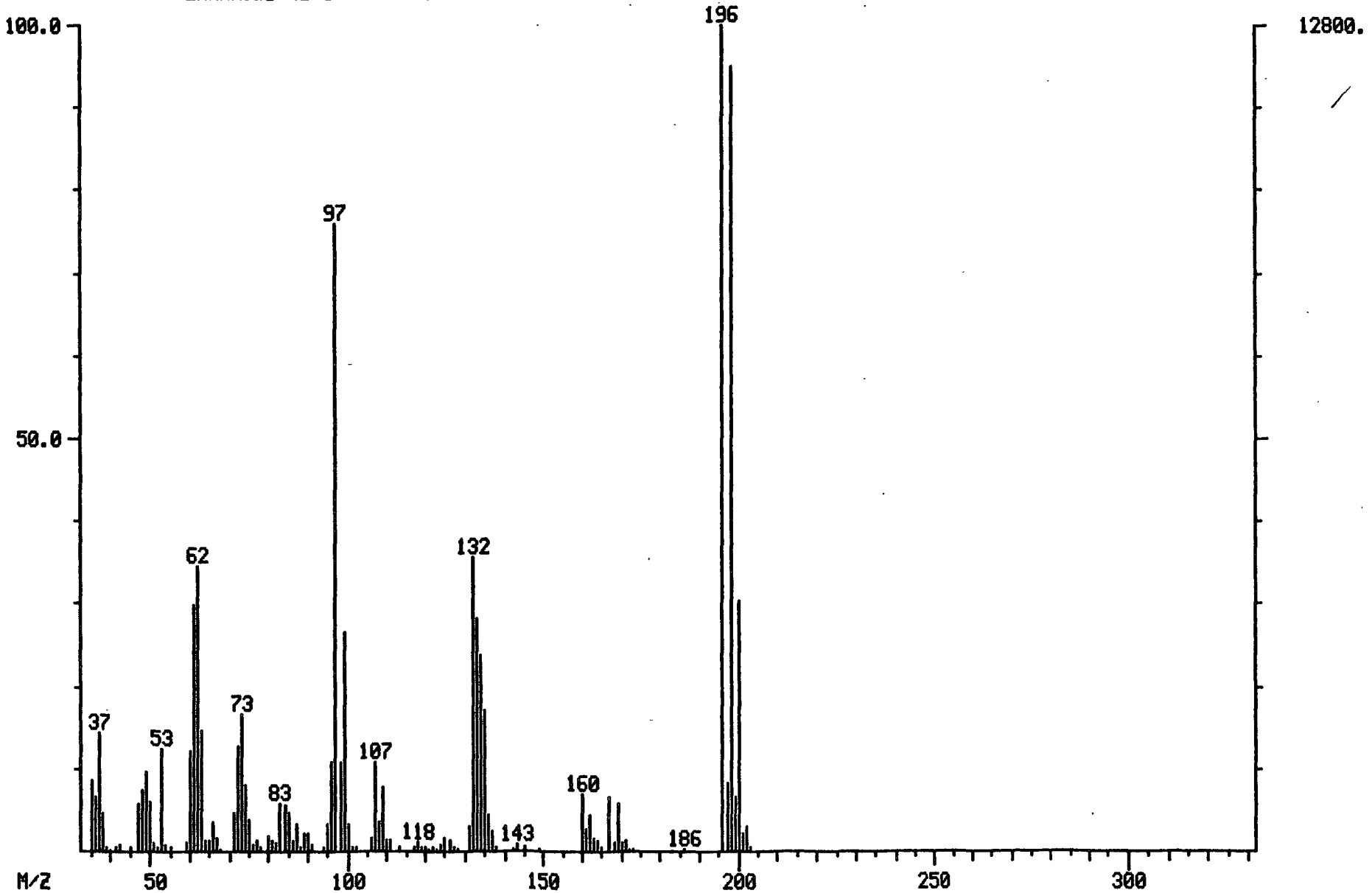


MASS SPECTRUM
03/13/89 14:40:00 + 16:01
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 173 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05968 #1201
CALI: AA05968 #4

BASE M/Z: 196
RIC: 105728.

3 355

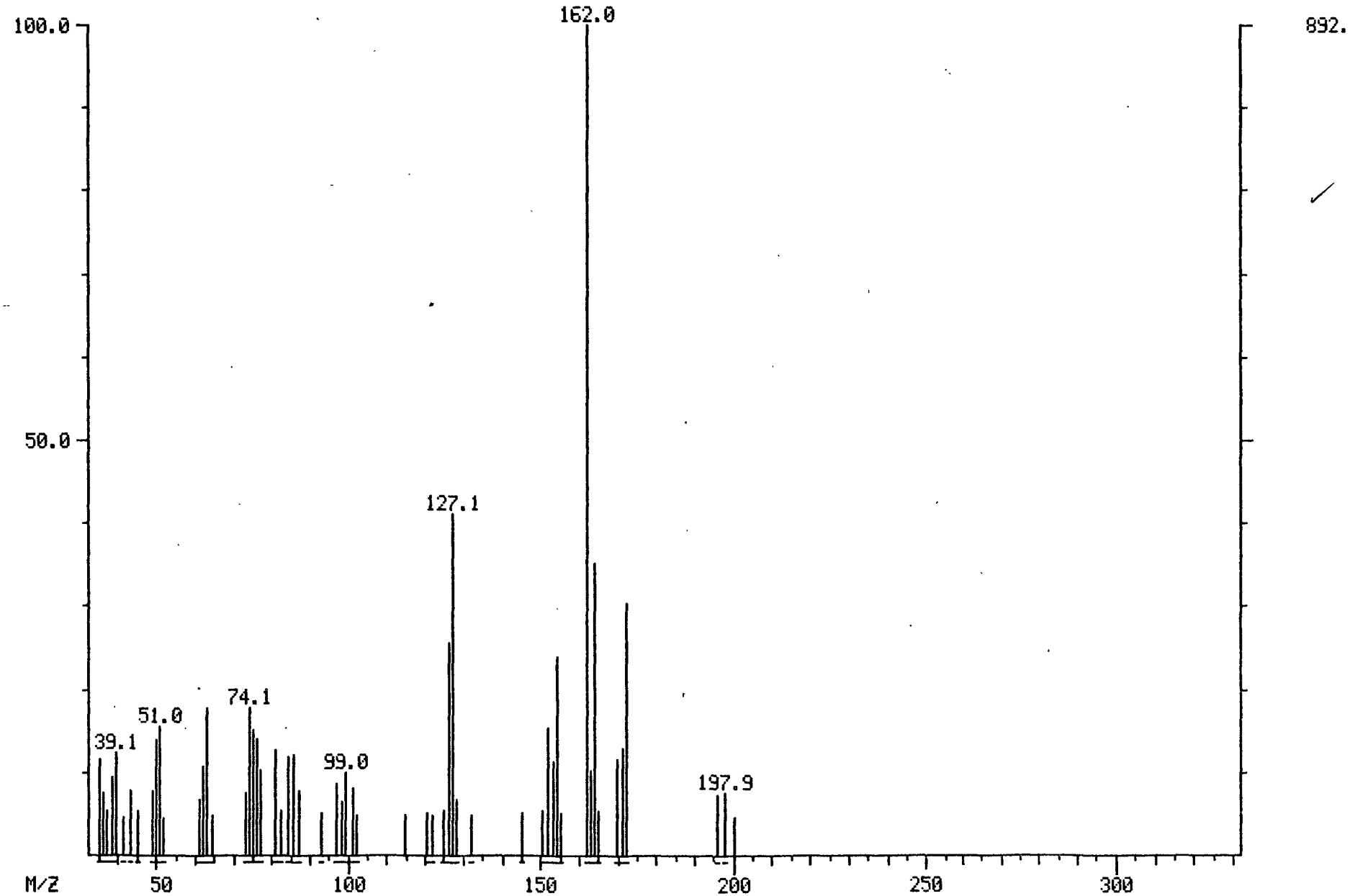


MASS SPECTRUM
03/13/89 18:38:00 + 16:22
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 176 DEG. C

DATA: AA05972 #1227
CALI: AA05972 #4

BASE M/Z: 162
RIC: 6224.

3 356

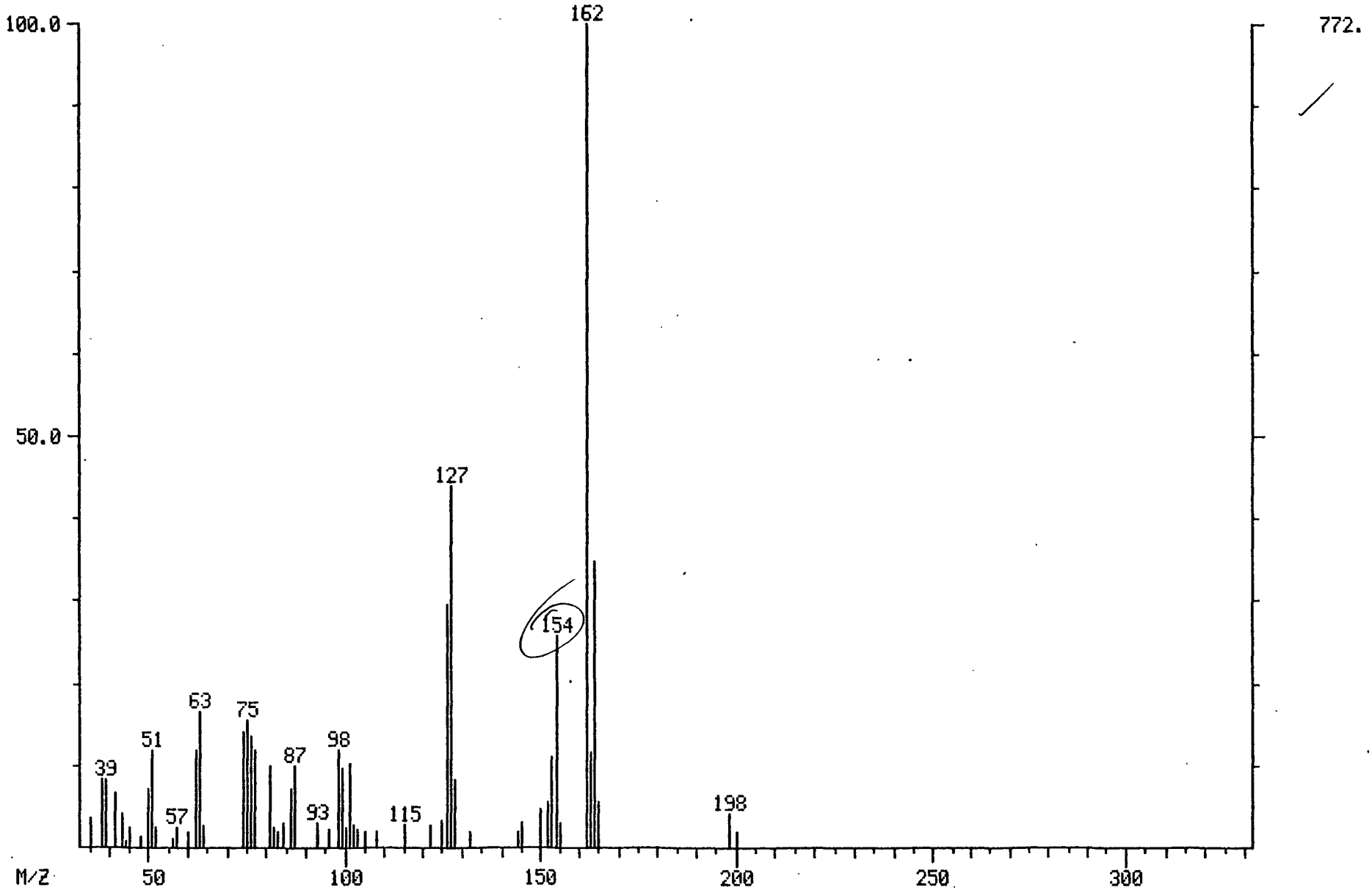


MASS SPECTRUM
03/13/89 18:38:00 + 16:22
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 176 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05972 #1227
CALI: AA05972 #4

BASE M/Z: 162
RIC: 4208.

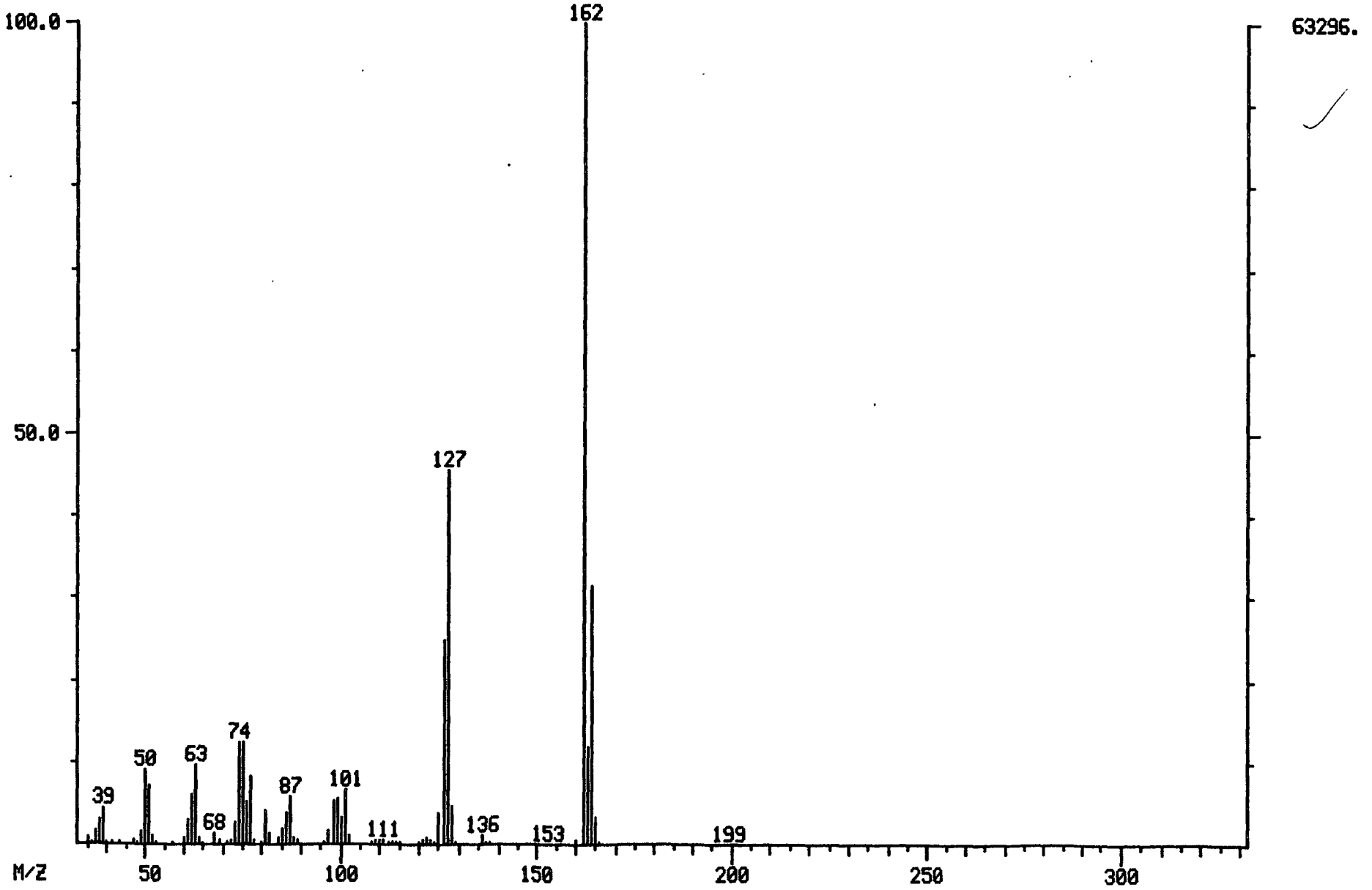
3 357



MASS SPECTRUM
03/13/89 14:40:00 + 16:23
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 176 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05968 #1229
CALI: AA05968 #4

BASE M/Z: 162
RIC: 237568.



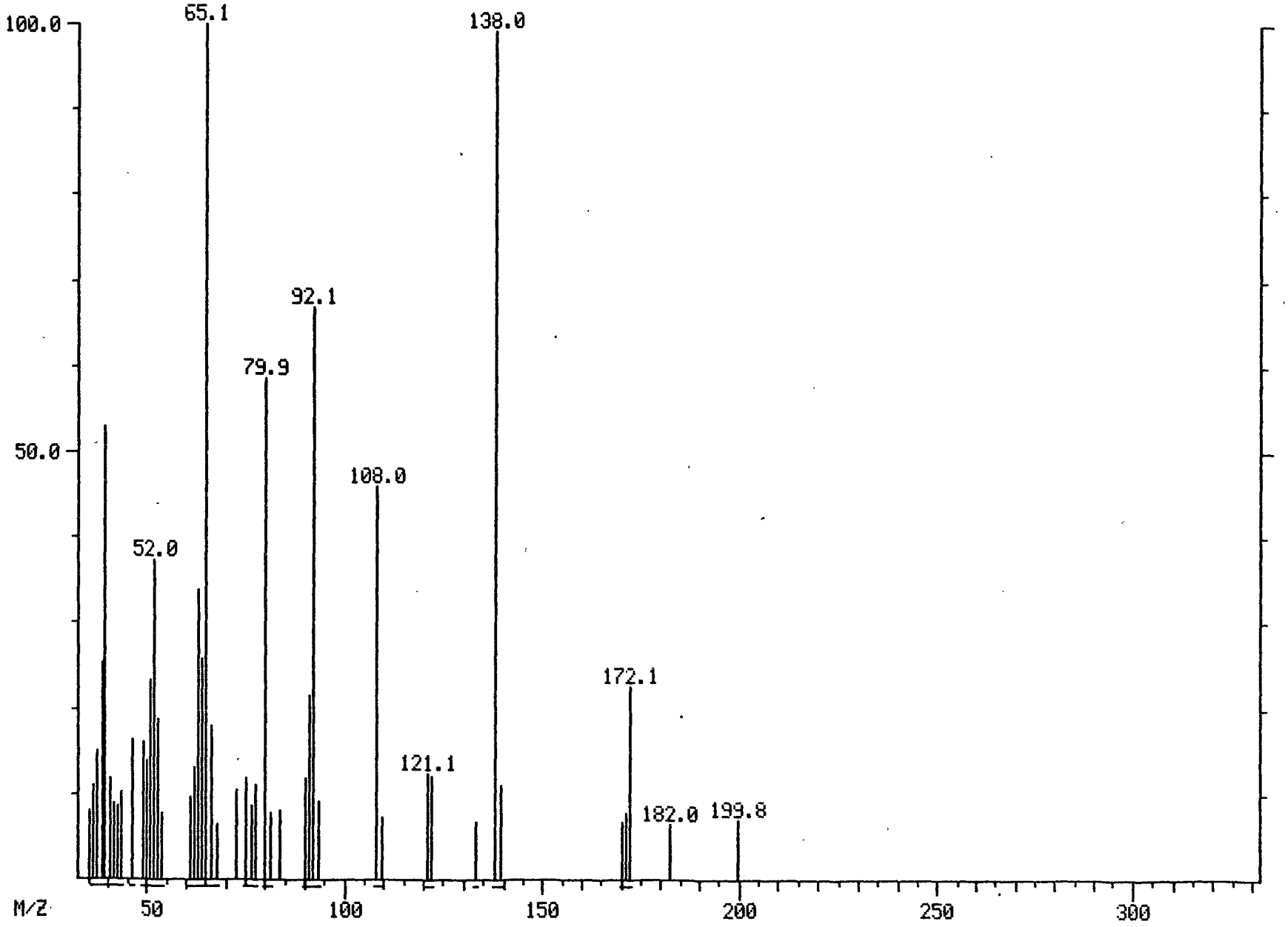
3 358

MASS SPECTRUM
03/13/89 18:38:00 + 16:41
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 179 DEG. C

DATA: AA05972 #1251
CALI: AA05972 #4

BASE M/Z: 65
RIC: 6240.

3 359



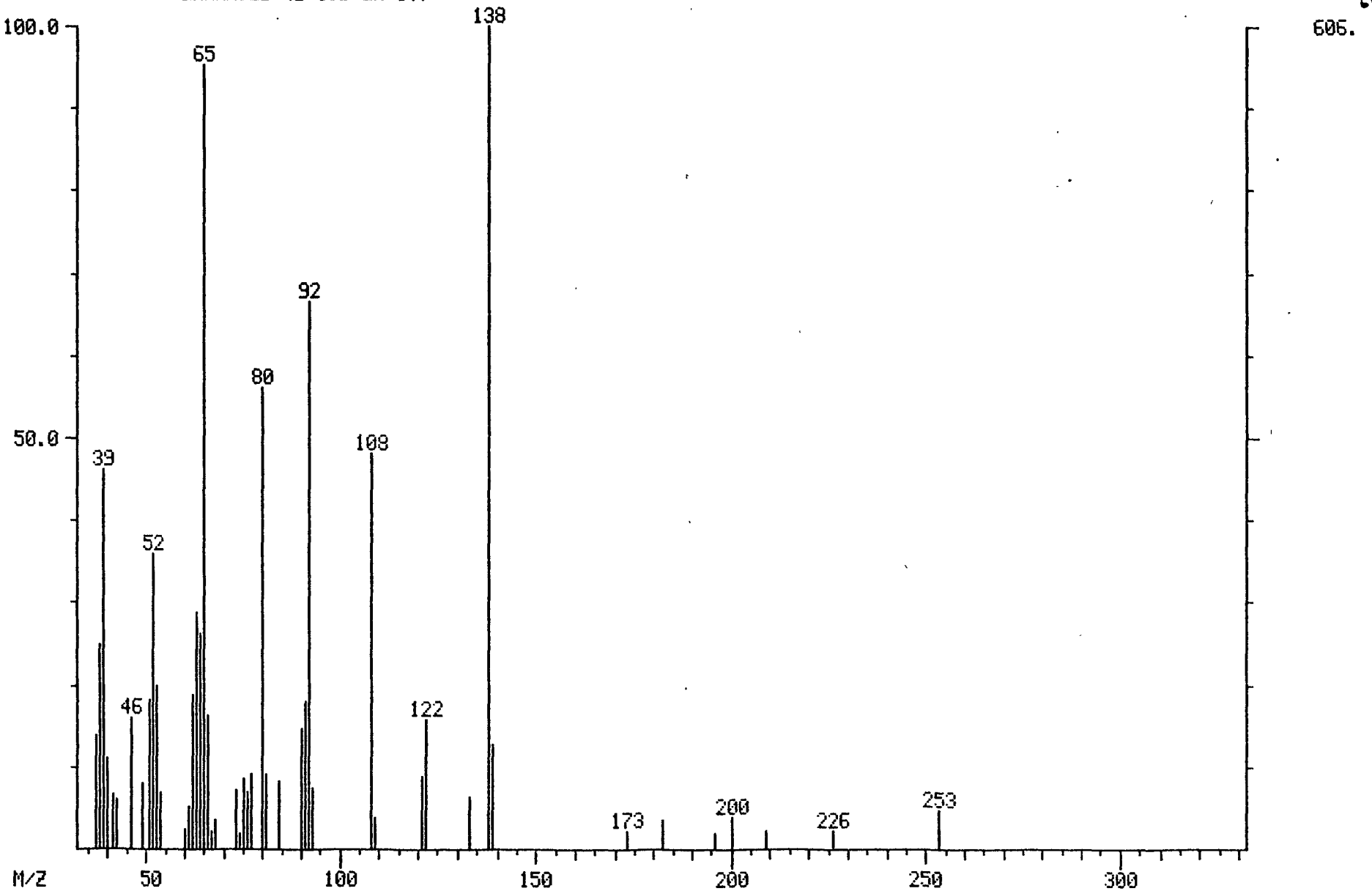
649.

MASS SPECTRUM
03/13/89 18:38:00 + 16:41
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 179 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05972 #1251
CALI: AA05972 #4

BASE M/Z: 138
RIC: 5144.

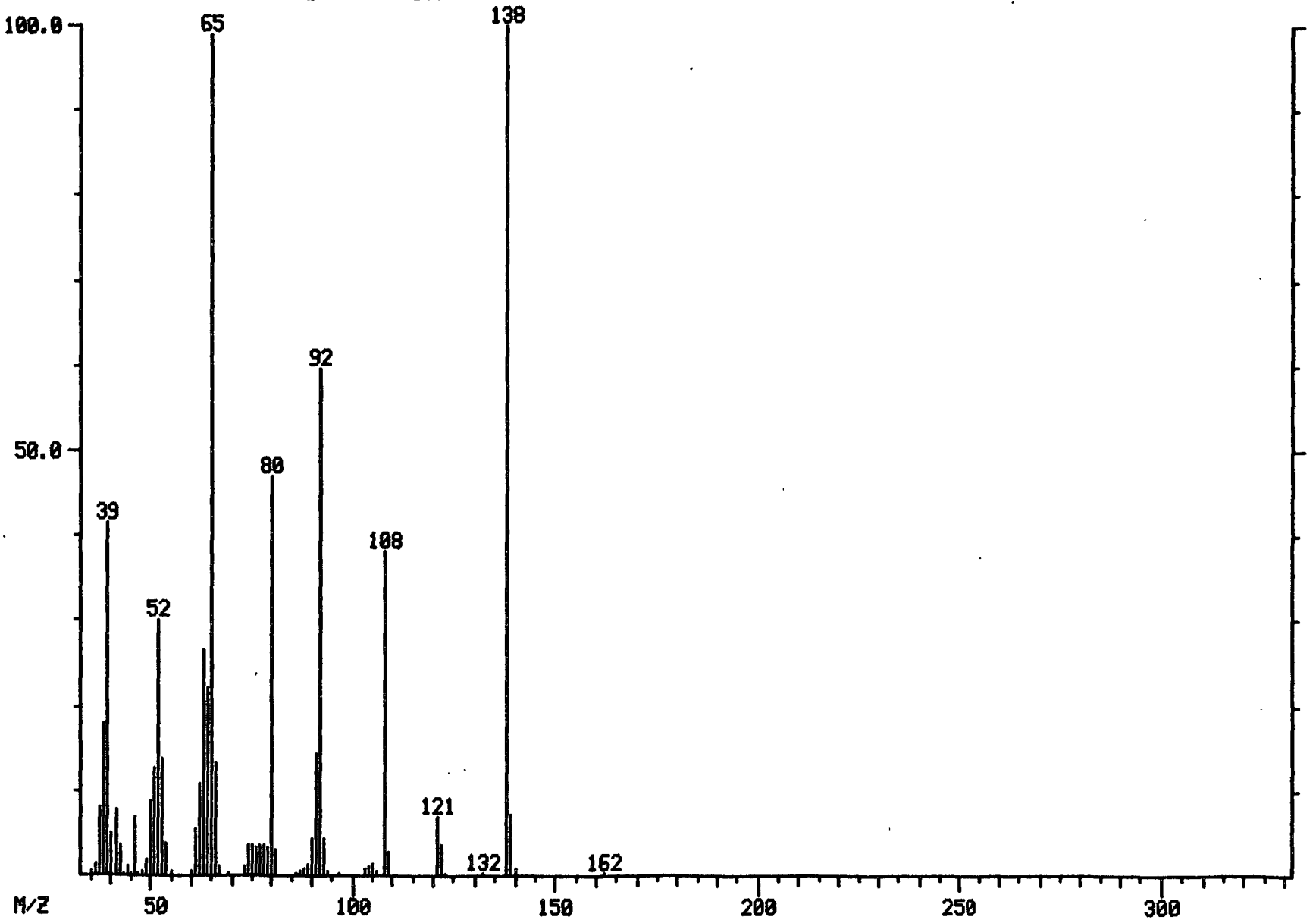
3 360



MASS SPECTRUM
03/13/89 14:40:00 + 16:43
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 180 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05968 #1254
CALI: AA05968 #4

BASE M/Z: 138
RIC: 123008.



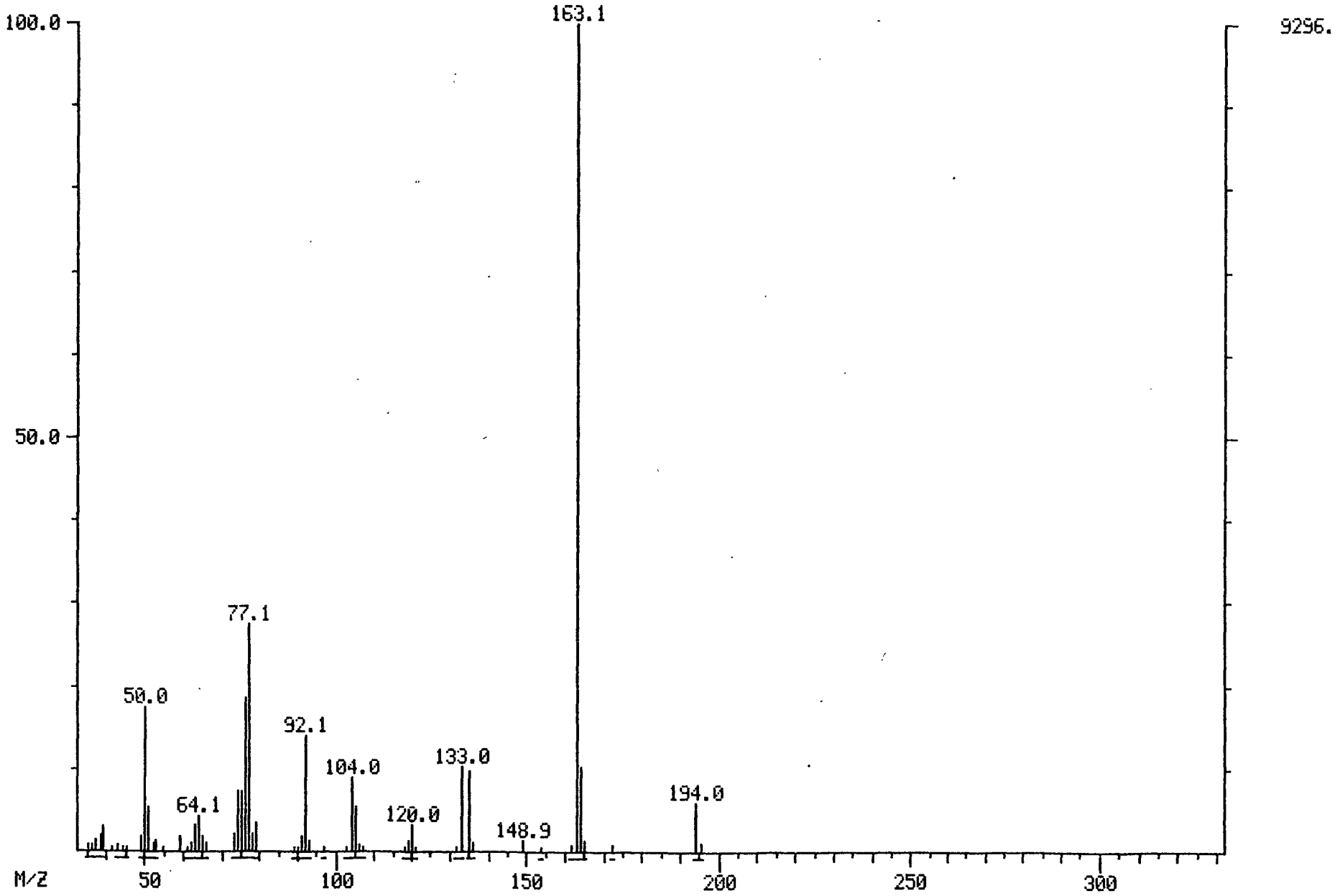
3 361

MASS SPECTRUM
03/13/89 18:38:00 + 17:15
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 185 DEG. C

DATA: AA05972 #1294
CALI: AA05972 #4

BASE M/Z: 163
RIC: 28288.

3 362

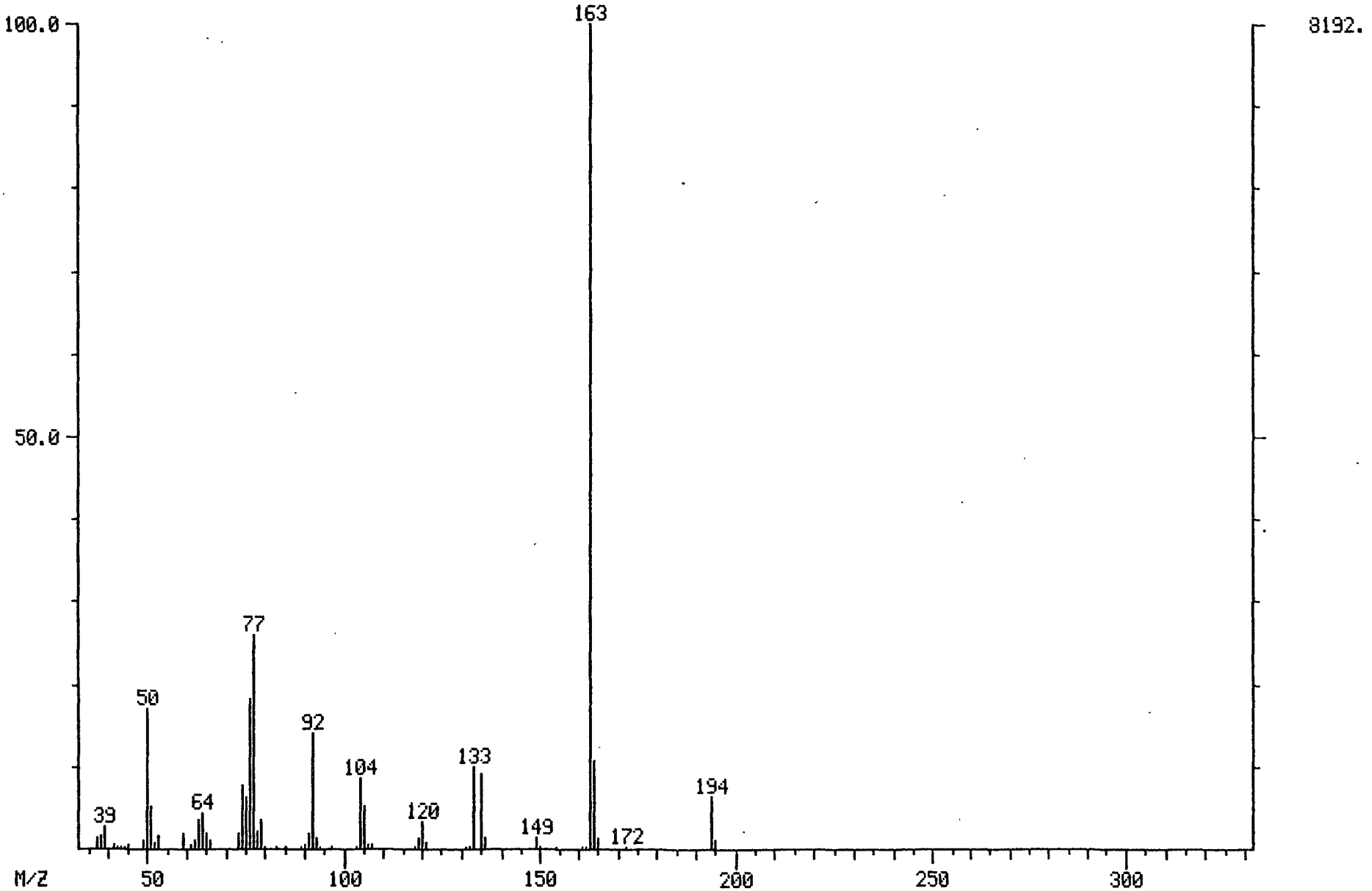


MASS SPECTRUM
03/13/89 18:38:00 + 17:15
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 185 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05972 #1294
CALI: AA05972 #4

BASE M/Z: 163
RIC: 24480.

3 363

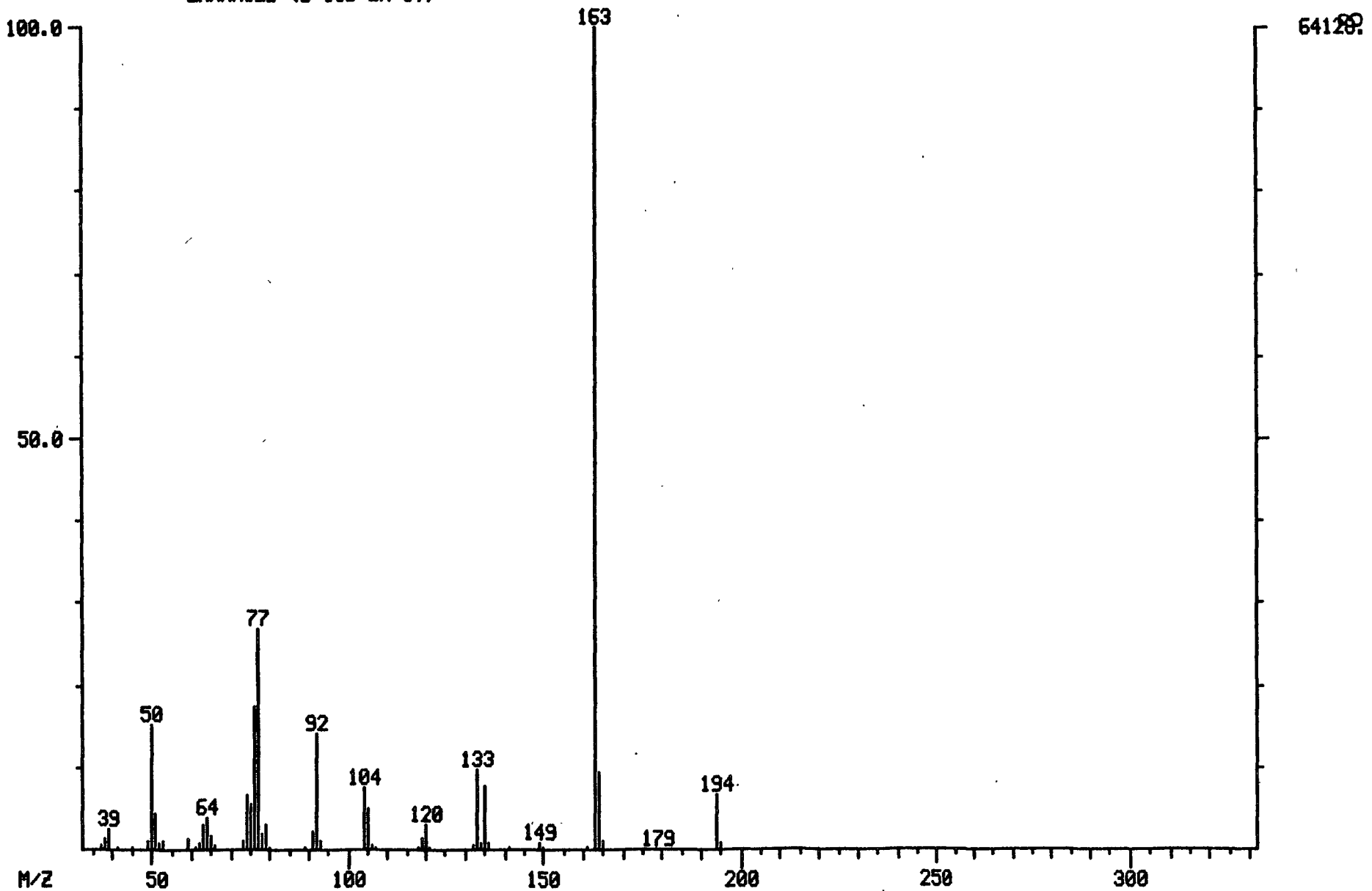


MASS SPECTRUM
03/13/89 14:40:00 + 17:18
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 185 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05968 #1298
CALI: AA05968 #4

BASE M/Z: 163
RIC: 178688.

364

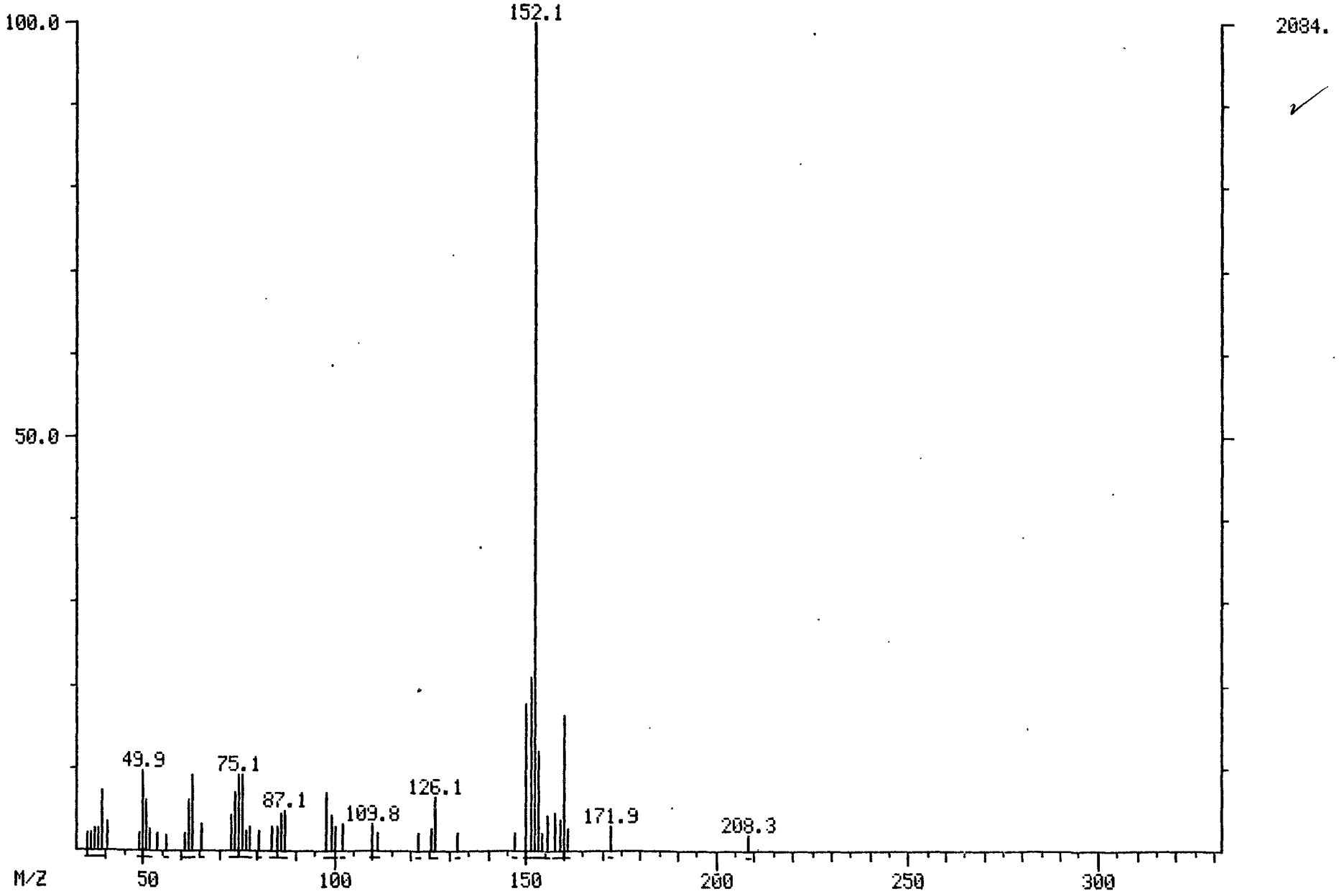


MASS SPECTRUM
03/13/89 18:38:00 + 17:28
SAMPLE: BHA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 187 DEG. C

DATA: AA05972 #1310
CALI: AA05972 #4

BASE M/Z: 152
RIC: 7304.

3 365

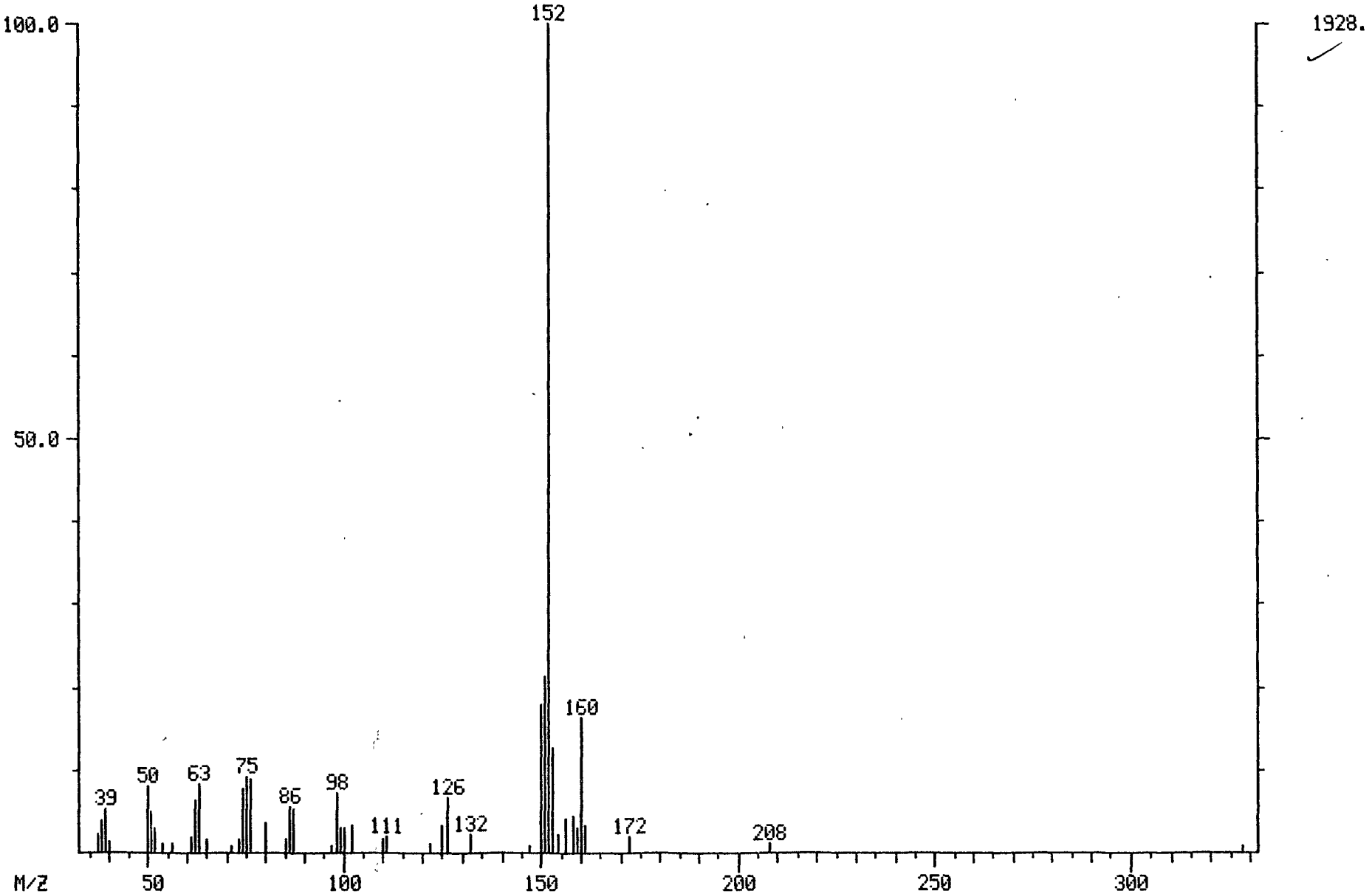


MASS SPECTRUM
03/13/89 18:38:00 + 17:28
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 187 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05972 #1310
CALI: AA05972 #4

BASE M/Z: 152
RIC: 6192.

3 366

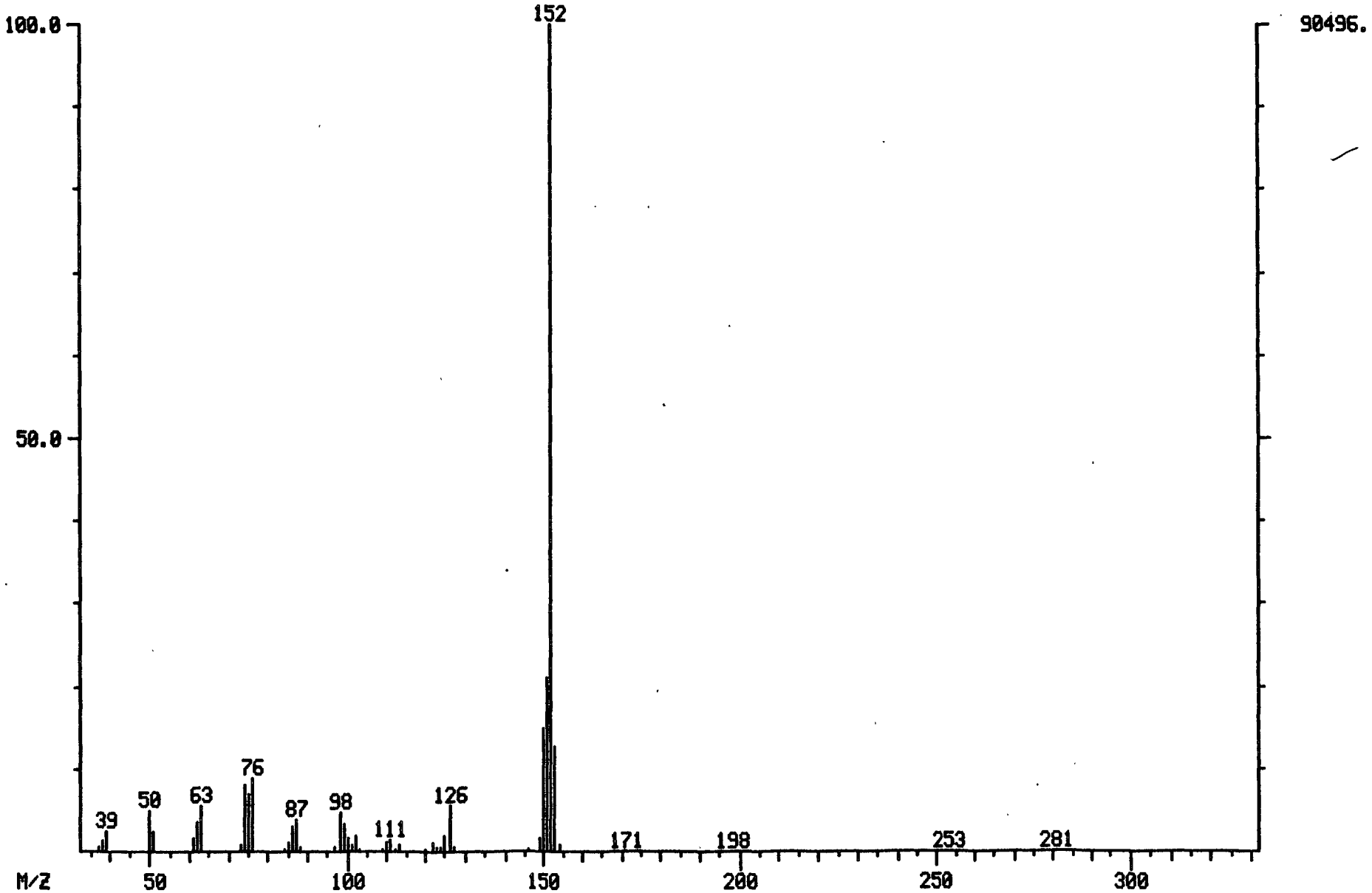


MASS SPECTRUM
03/13/89 14:40:00 + 17:31
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 188 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05968 #1314
CALI: AA05968 #4

BASE M/Z: 152
RIC: 214528.

3 367

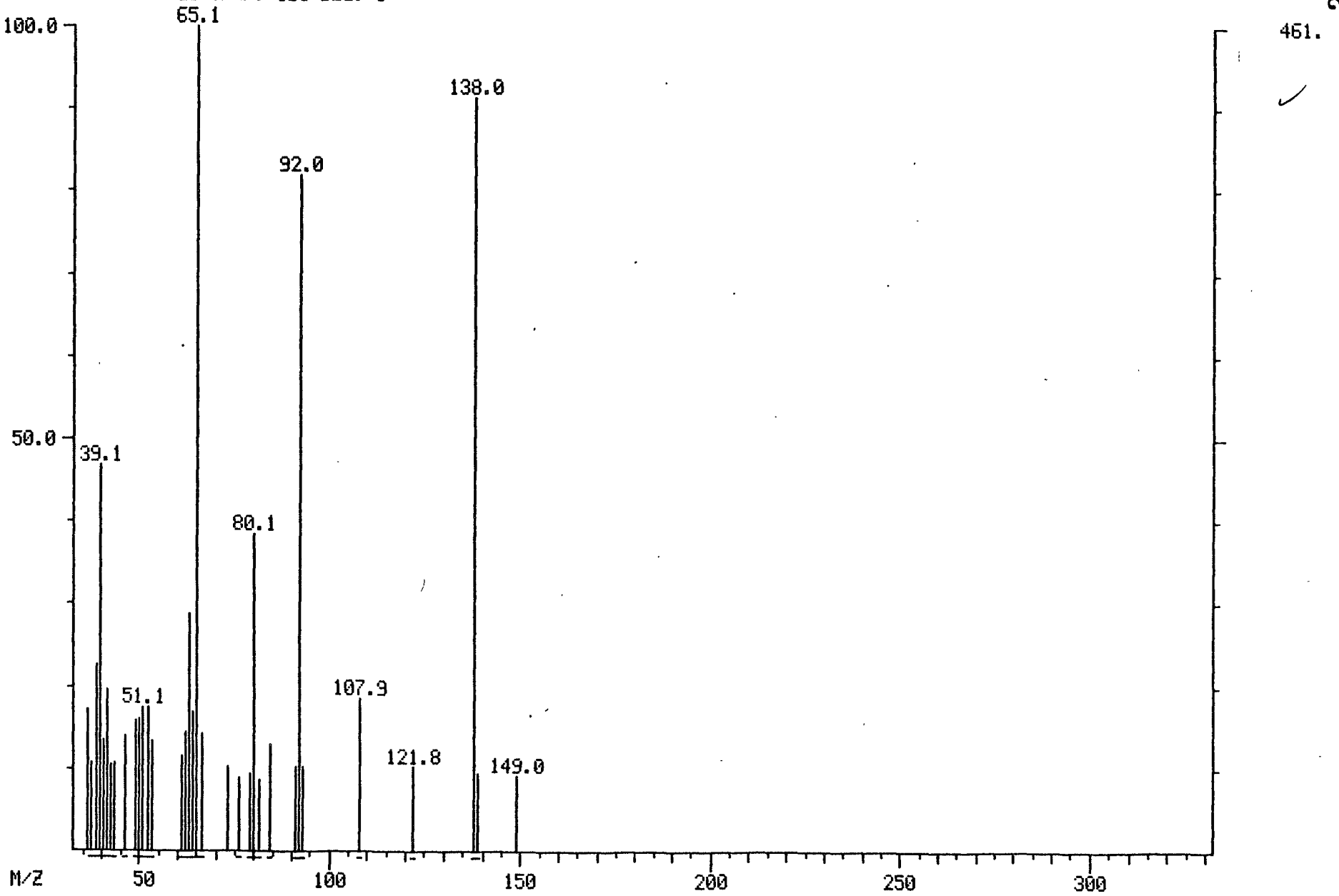


MASS SPECTRUM
03/13/89 18:38:00 + 17:46
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5'FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 190 DEG. C

DATA: AA05972 #1332
CALI: AA05972 #4

BASE M/Z: 65
RIC: 3560.

3 368

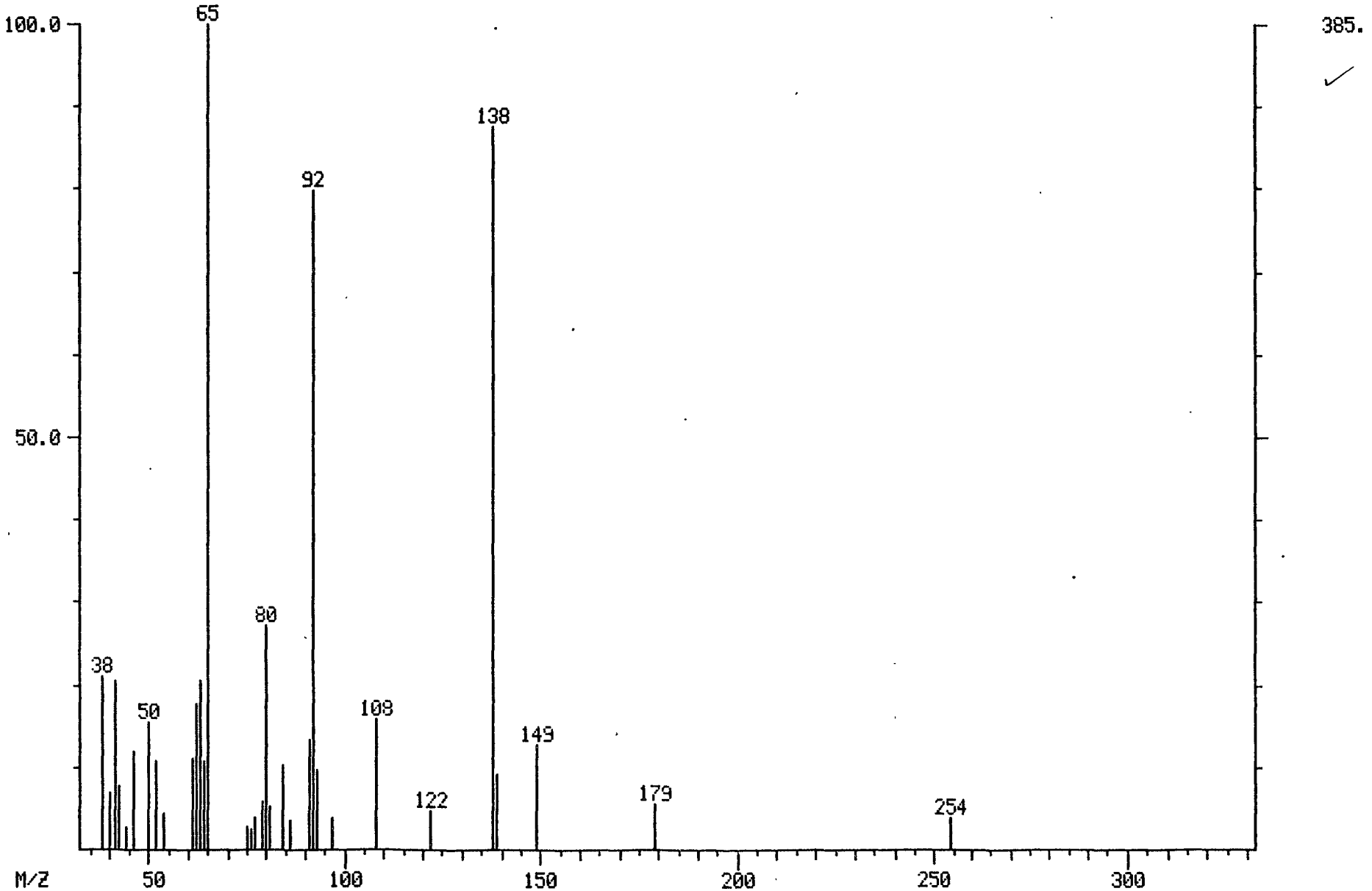


MASS SPECTRUM
03/13/89 18:38:00 + 17:46
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 190 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05972 #1332
CALI: AA05972 #4

BASE M/Z: 65
RIC: 2212.

3 369

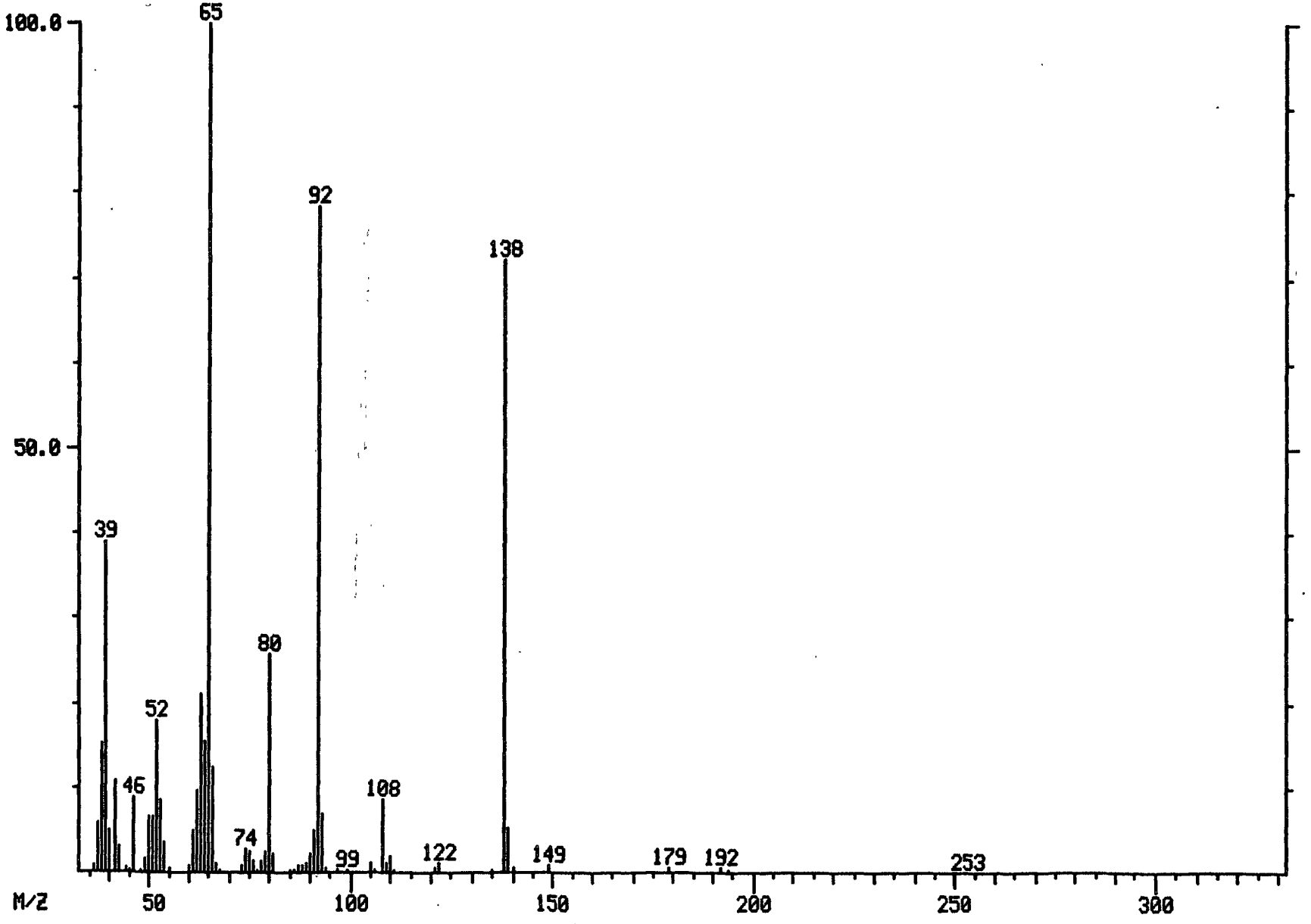


MASS SPECTRUM
03/13/89 14:40:00 + 17:50
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 191 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05968 #1337
CALI: AA05968 #4

BASE M/Z: 65
RIC: 59072.

3 370

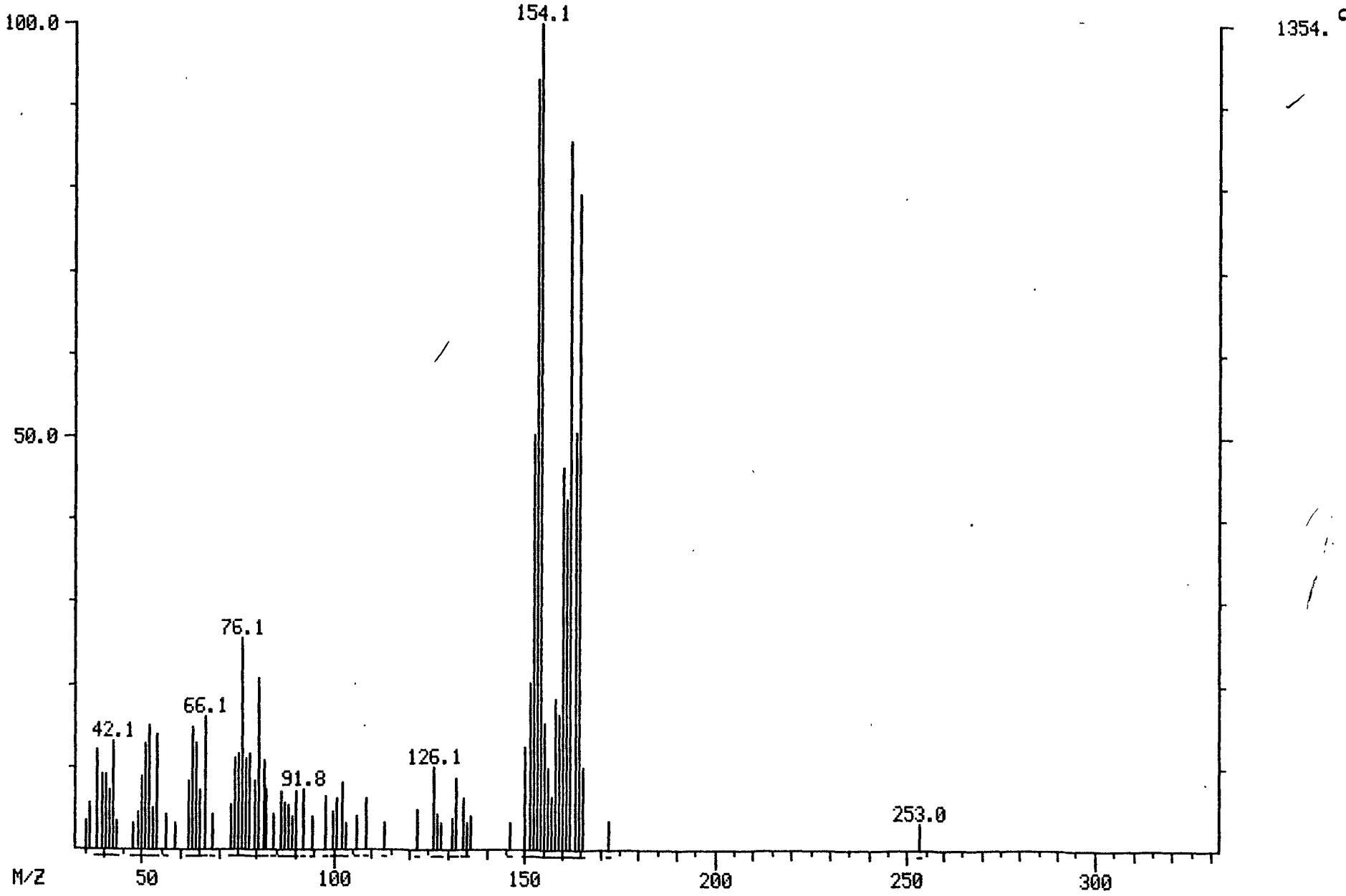


MASS SPECTRUM
03/13/89 18:38:00 + 17:58
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 192 DEG. C

DATA: AA05972 #1347
CALI: AA05972 #4

BASE M/Z: 154
RIC: 15296.

3 371

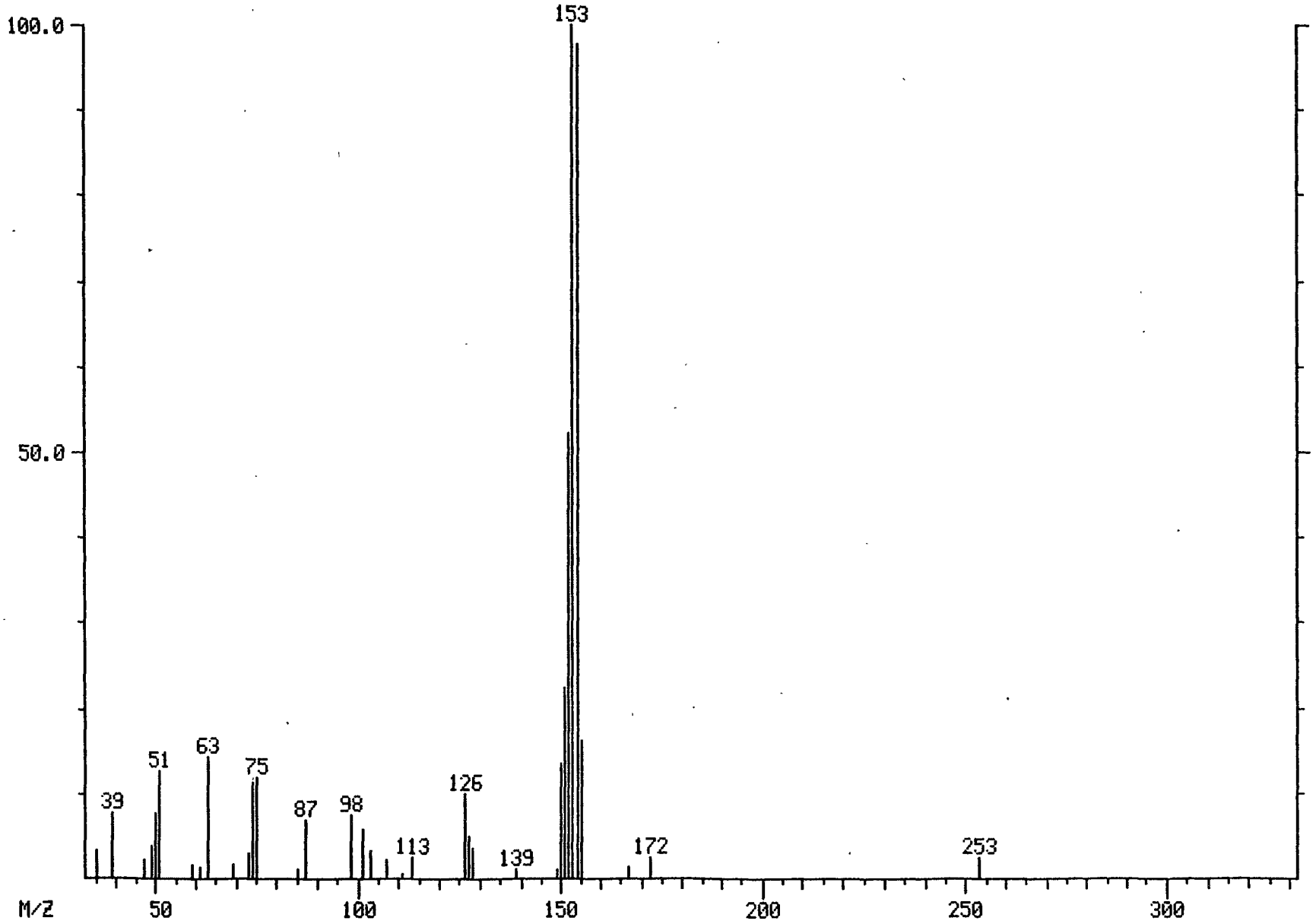


MASS SPECTRUM
03/13/89 18:38:00 + 17:58
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 192 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05972 #1347
CALI: AA05972 #4

BASE M/Z: 153
RIC: 5304.

372

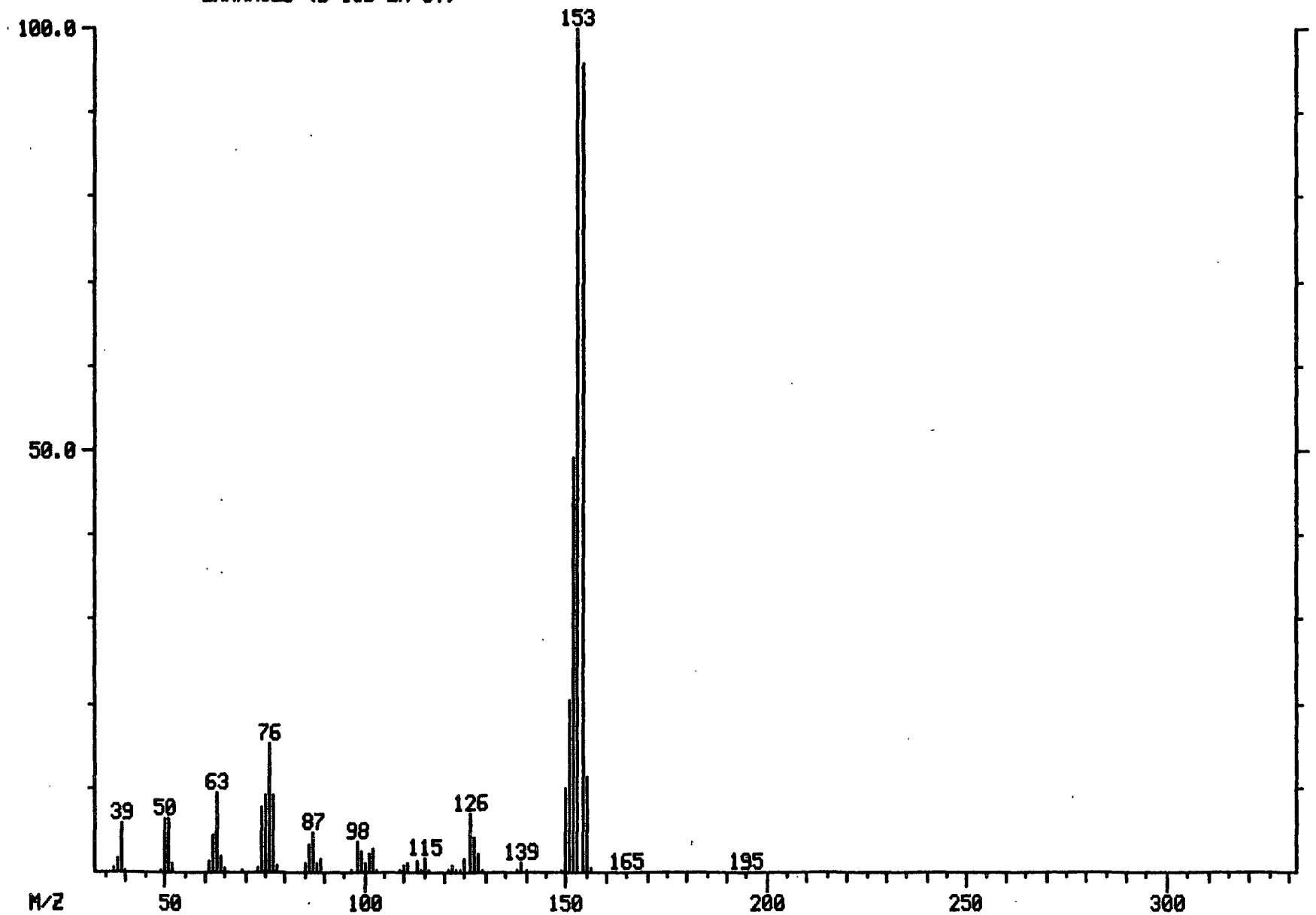


MASS SPECTRUM
03/13/89 14:40:00 + 18:01
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 193 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05968 #1351
CALI: AA05968 #4

BASE M/Z: 153
RIC: 232960.

373



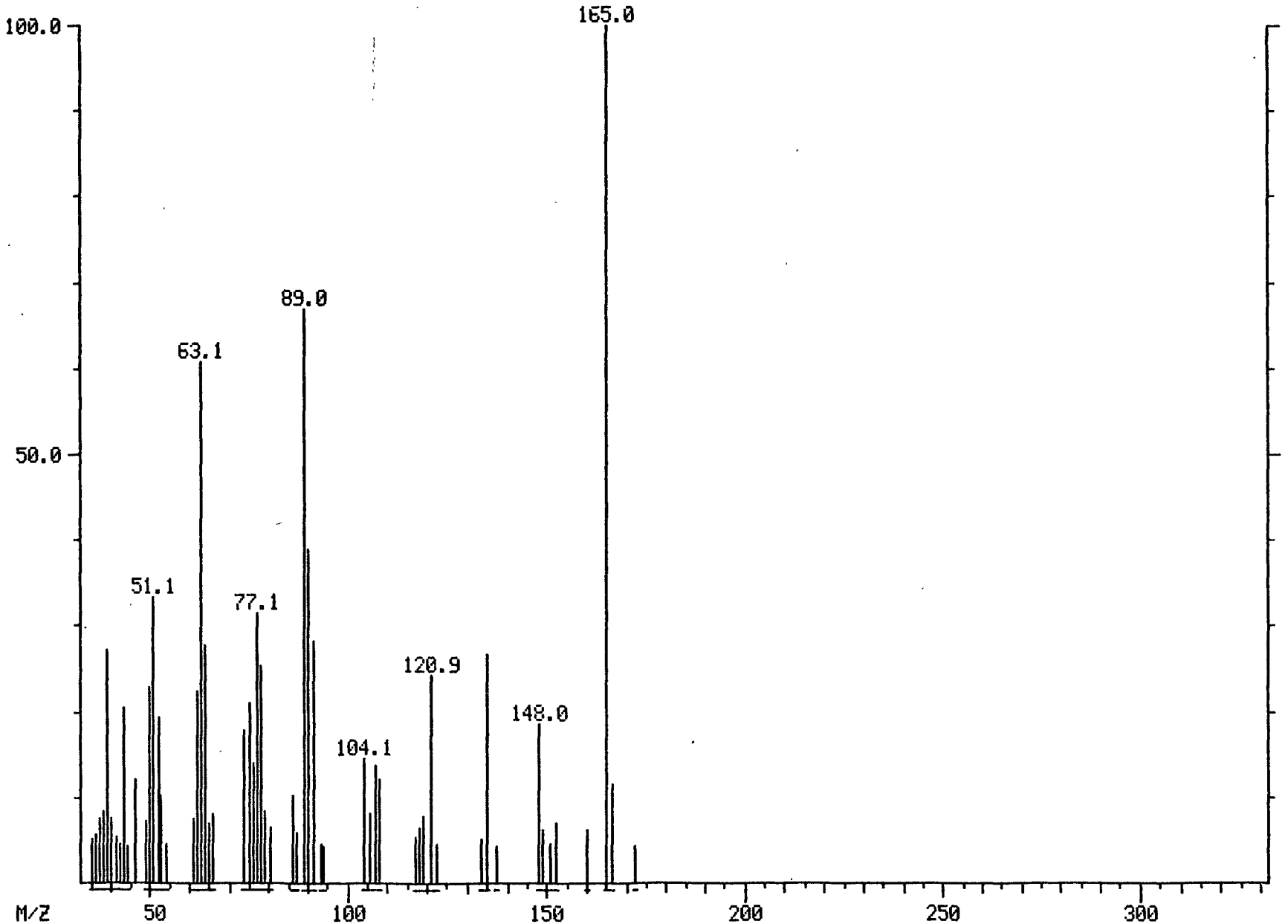
MASS SPECTRUM
03/13/89 18:38:00 + 17:25
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 187 DEG. C

DATA: AA05972 #1306
CALI: AA05972 #4

BASE M/Z: 165
RIC: 8800.

374

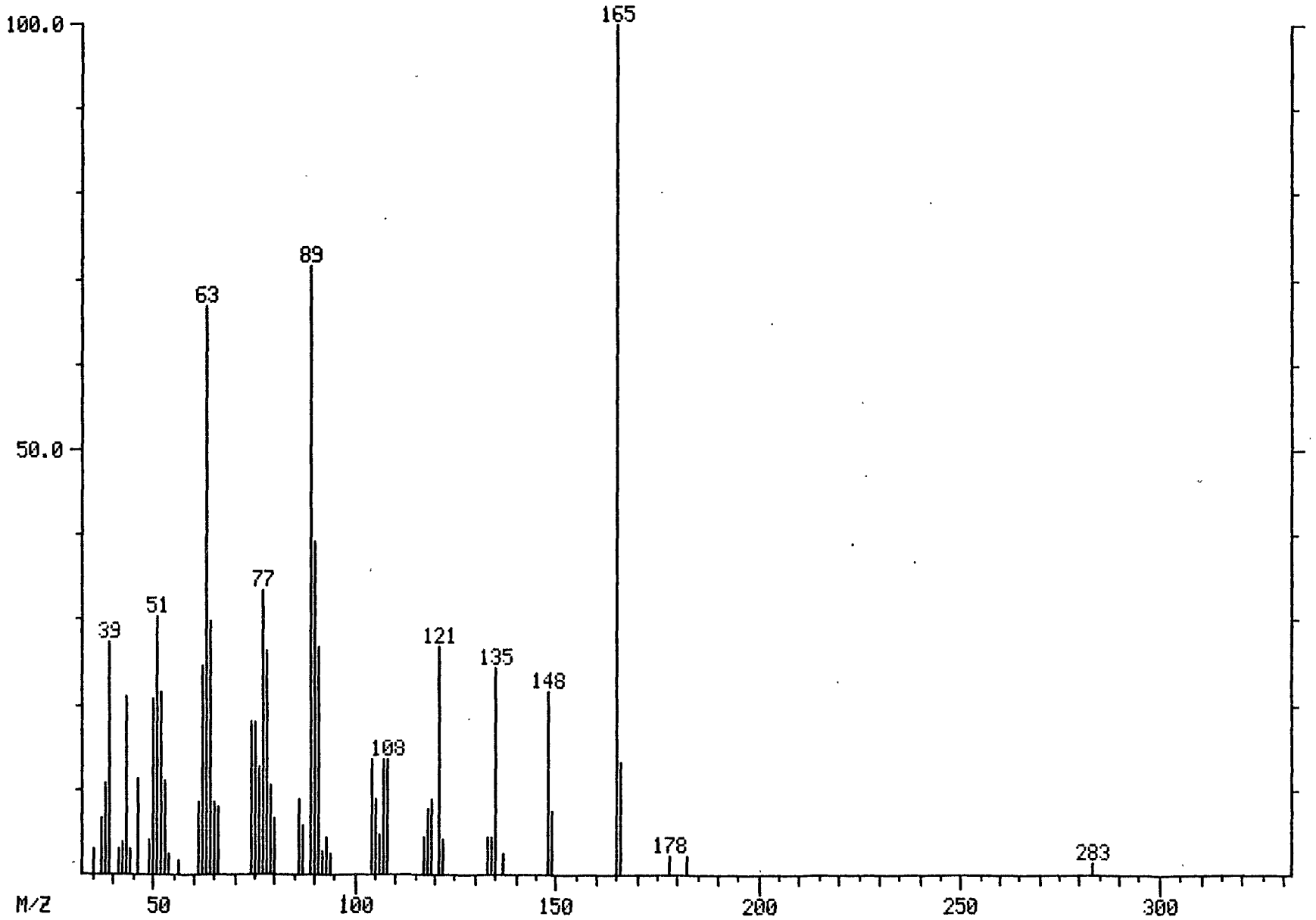
958



MASS SPECTRUM
03/13/89 18:38:00 + 17:25
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 187 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05972 #1306
CALI: AA05972 #4

BASE M/Z: 165
RIC: 7800.



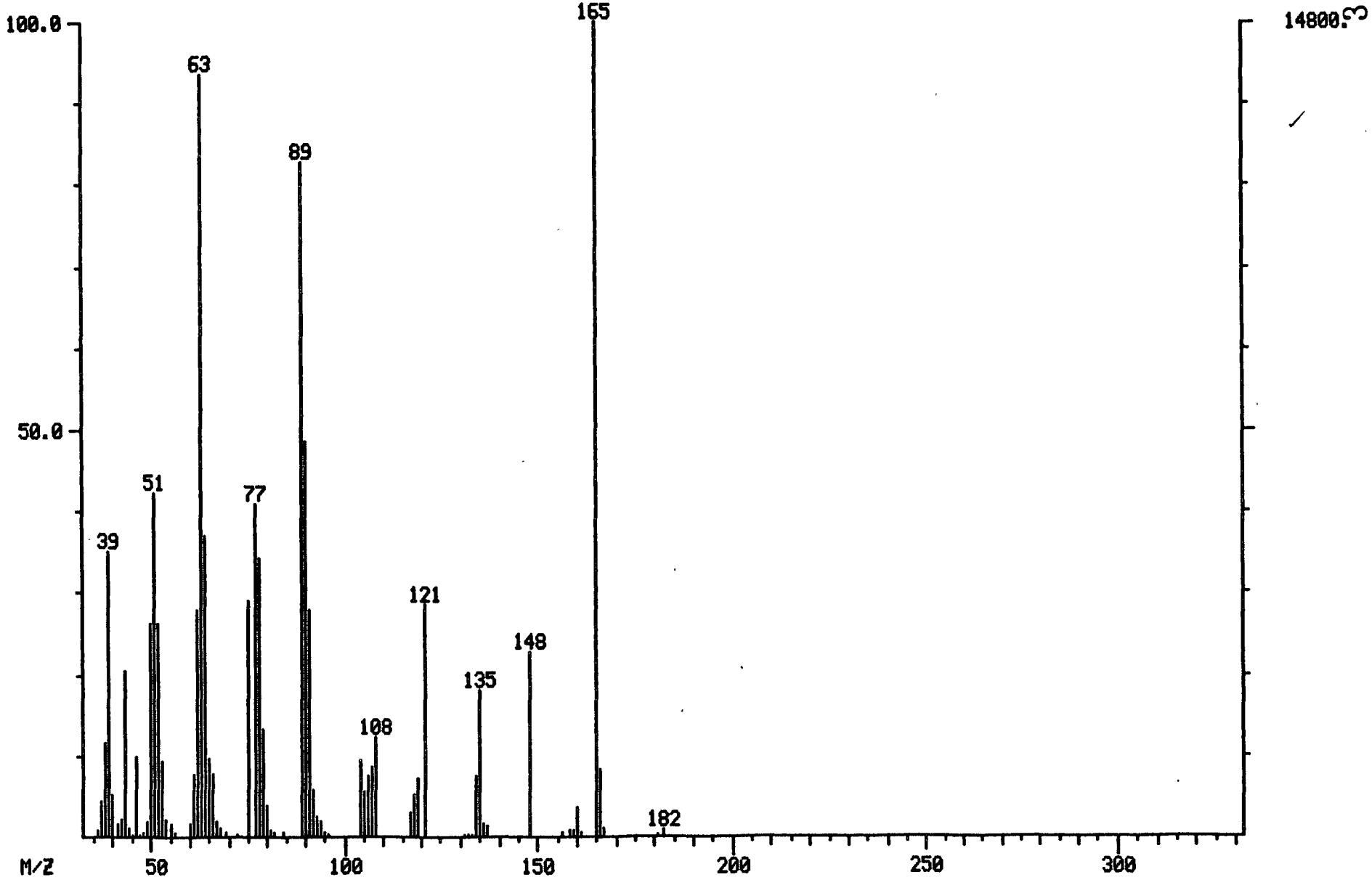
375

MASS SPECTRUM
03/13/89 14:40:00 + 17:29
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 187 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05968 #1311
CALI: AA05968 #4

BASE M/Z: 165
RIC: 139264.

376

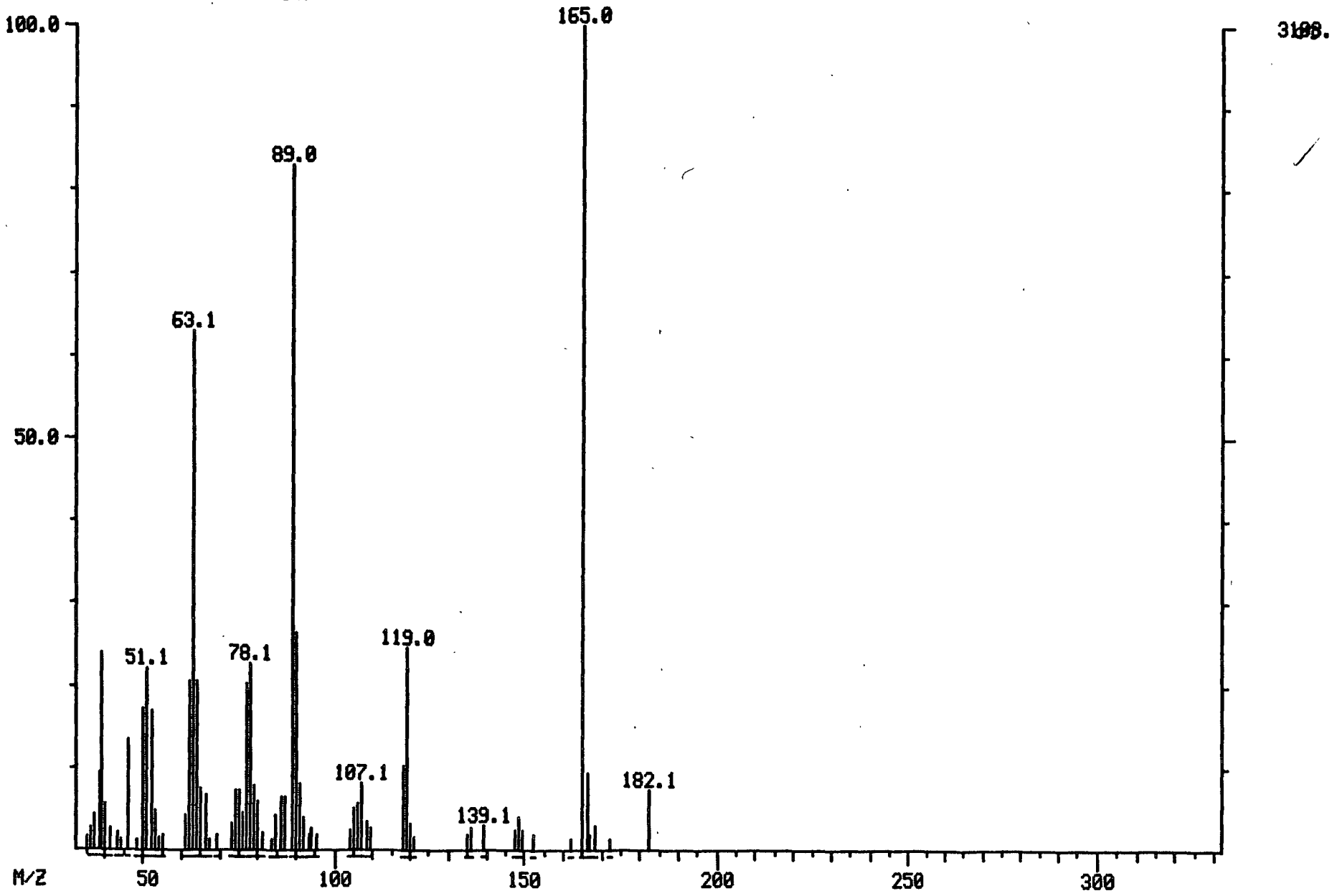


MASS SPECTRUM
03/13/89 18:38:00 + 18:26
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 197 DEG. C

DATA: AA05972 #1383
CALI: AA05972 #4

BASE M/Z: 165
RIC: 21728.

377

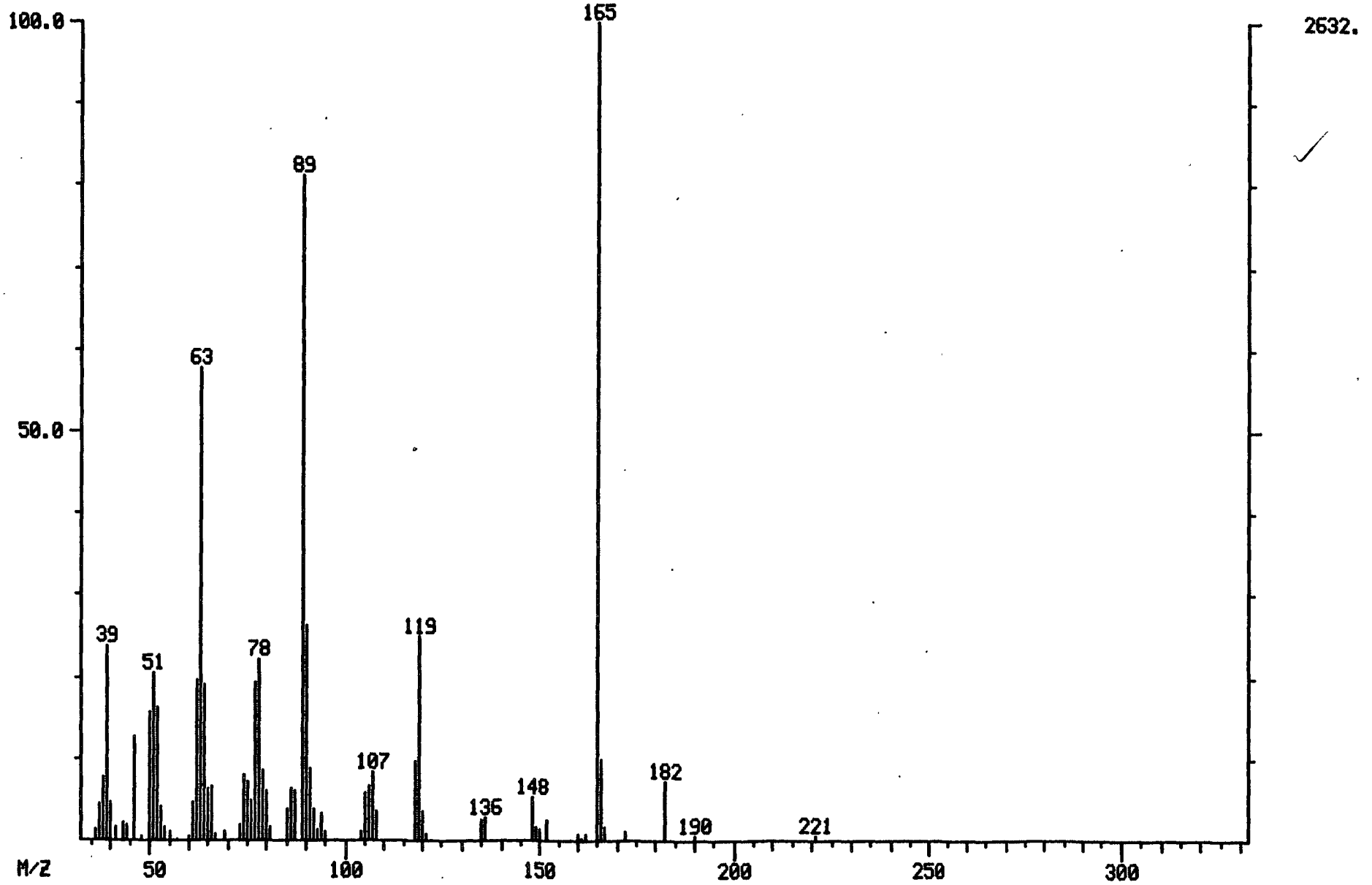


MASS SPECTRUM
03/13/89 18:38:00 + 18:26
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 197 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05972 #1383
CALI: AA05972 #4

BASE M/Z: 165
RIC: 17504.

3 378

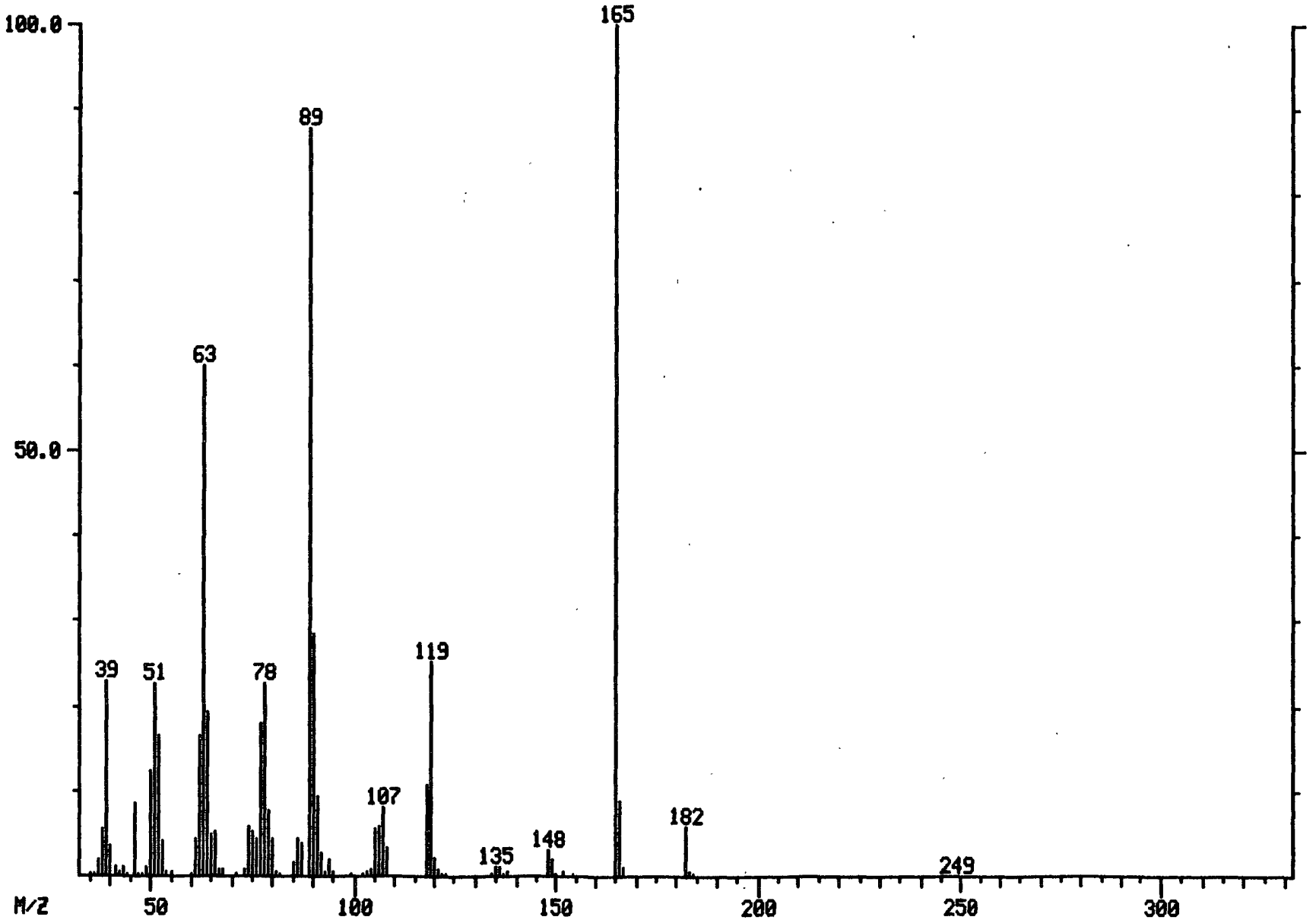


MASS SPECTRUM
03/13/89 14:40:00 + 18:30
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 198 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05968 #1387
CALI: AA05968 #4

BASE M/Z: 165
RIC: 138240.

379

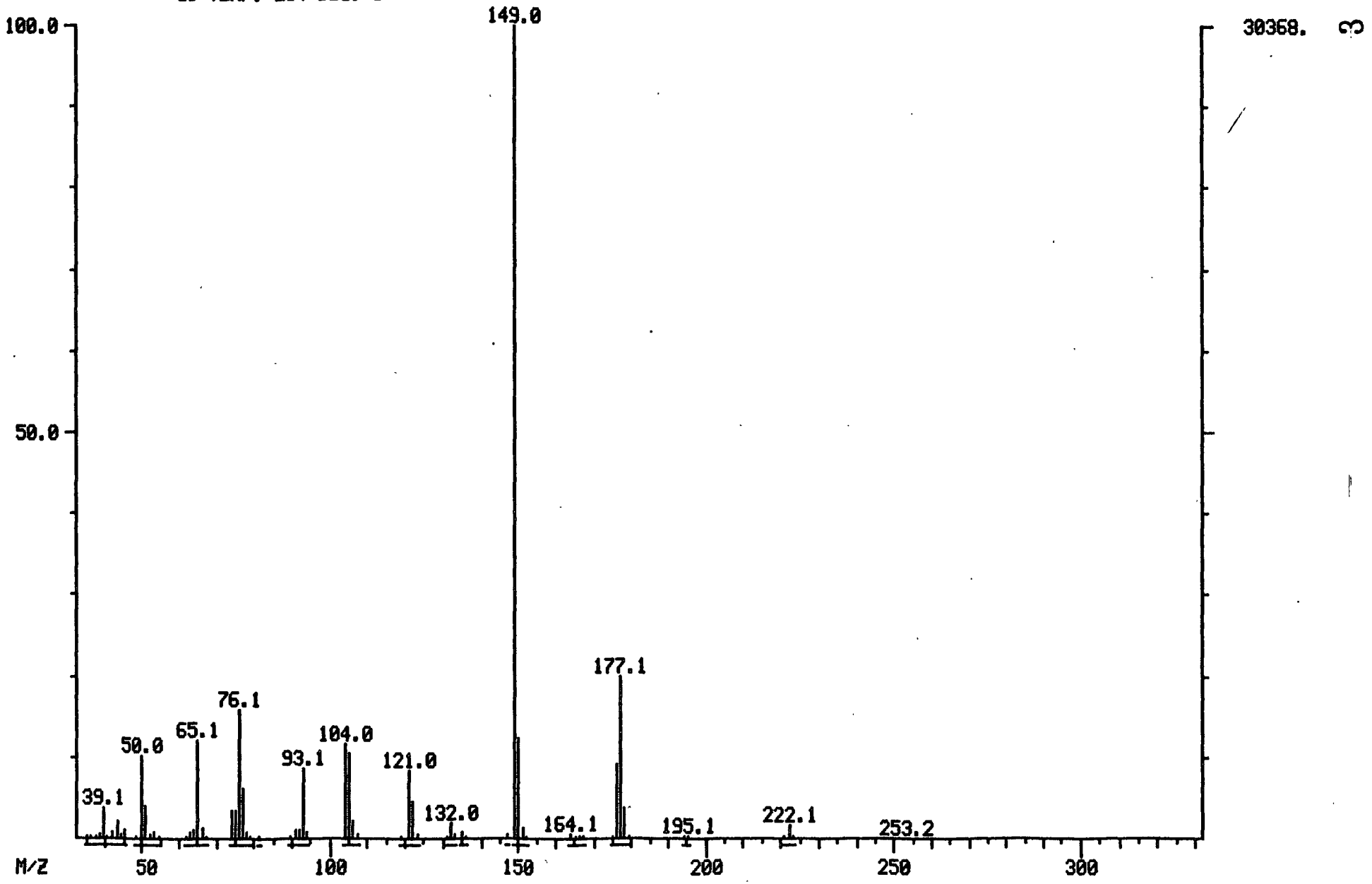


MASS SPECTRUM
03/13/89 18:38:00 + 19:08
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 204 DEG. C

DATA: AA05972 #1435
CALI: AA05972 #4

BASE M/Z: 149
RIC: 84224.

380

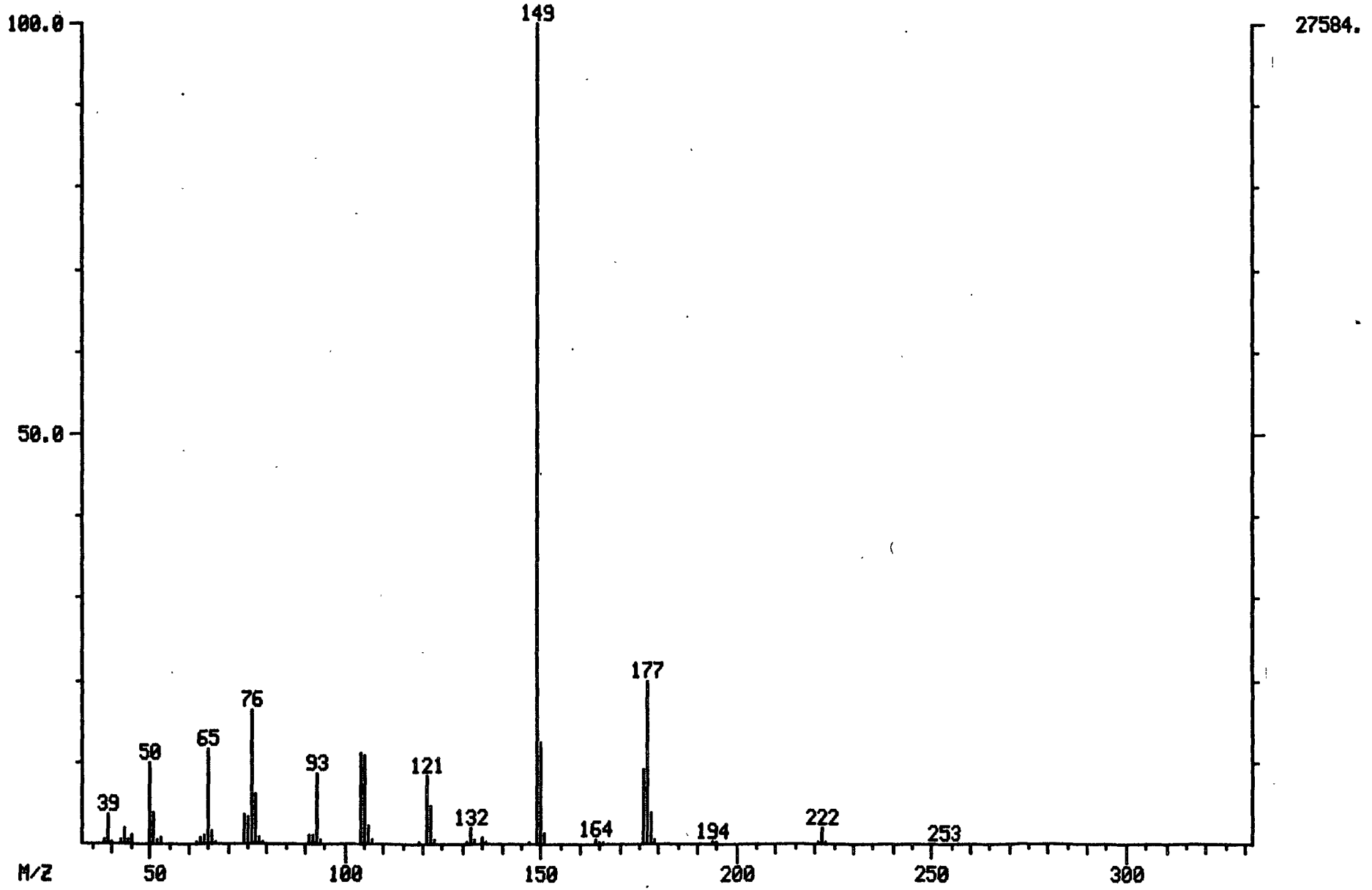


MASS SPECTRUM
03/13/89 18:38:00 + 19:08
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 204 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05972 #1435
CALI: AA05972 #4

BASE M/Z: 149
RIC: 76160.

3 381

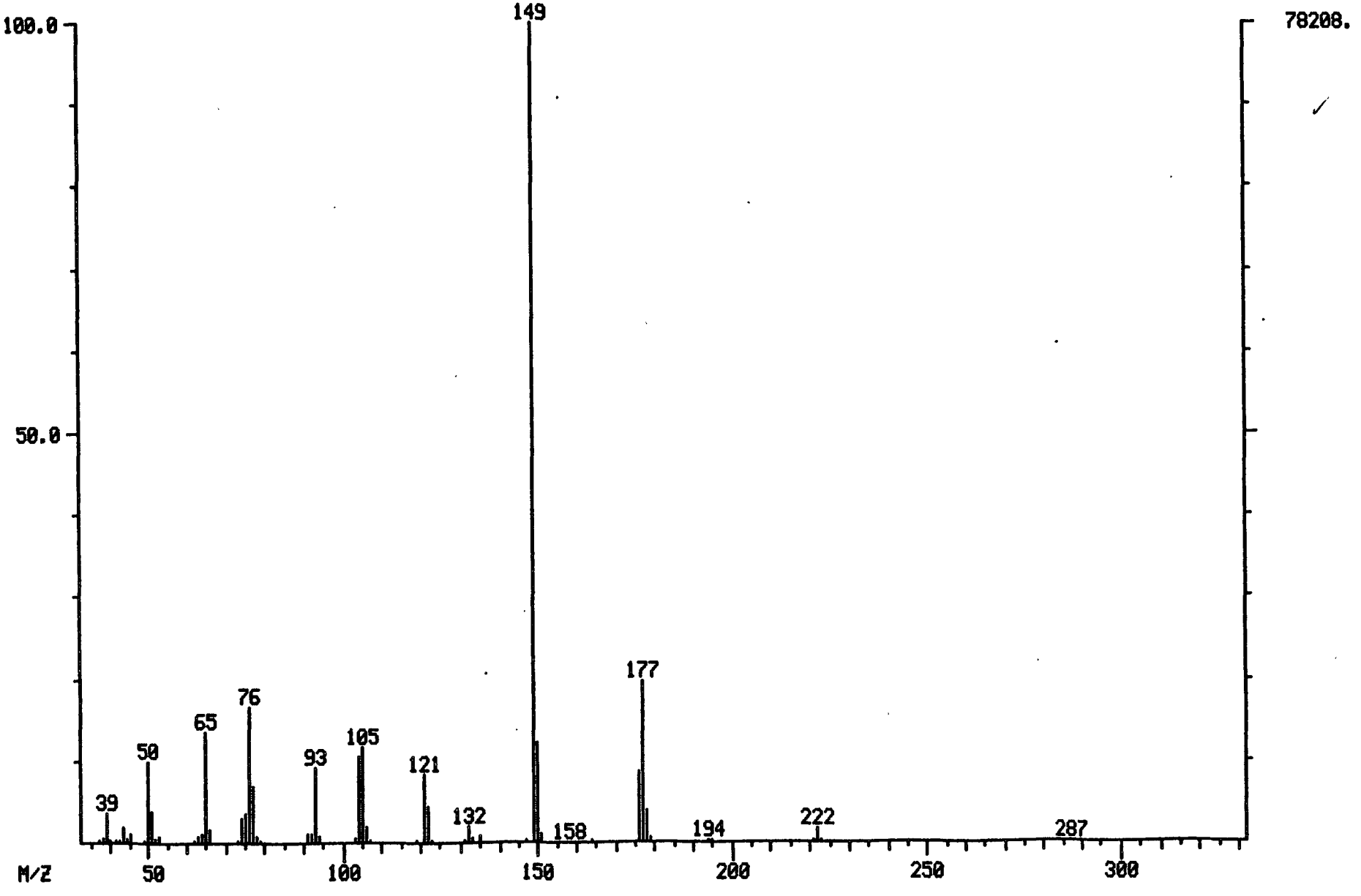


MASS SPECTRUM
03/13/89 14:40:00 + 19:11
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 204 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05968 #1439
CALI: AA05968 #4

BASE M/Z: 149
RIC: 217088.

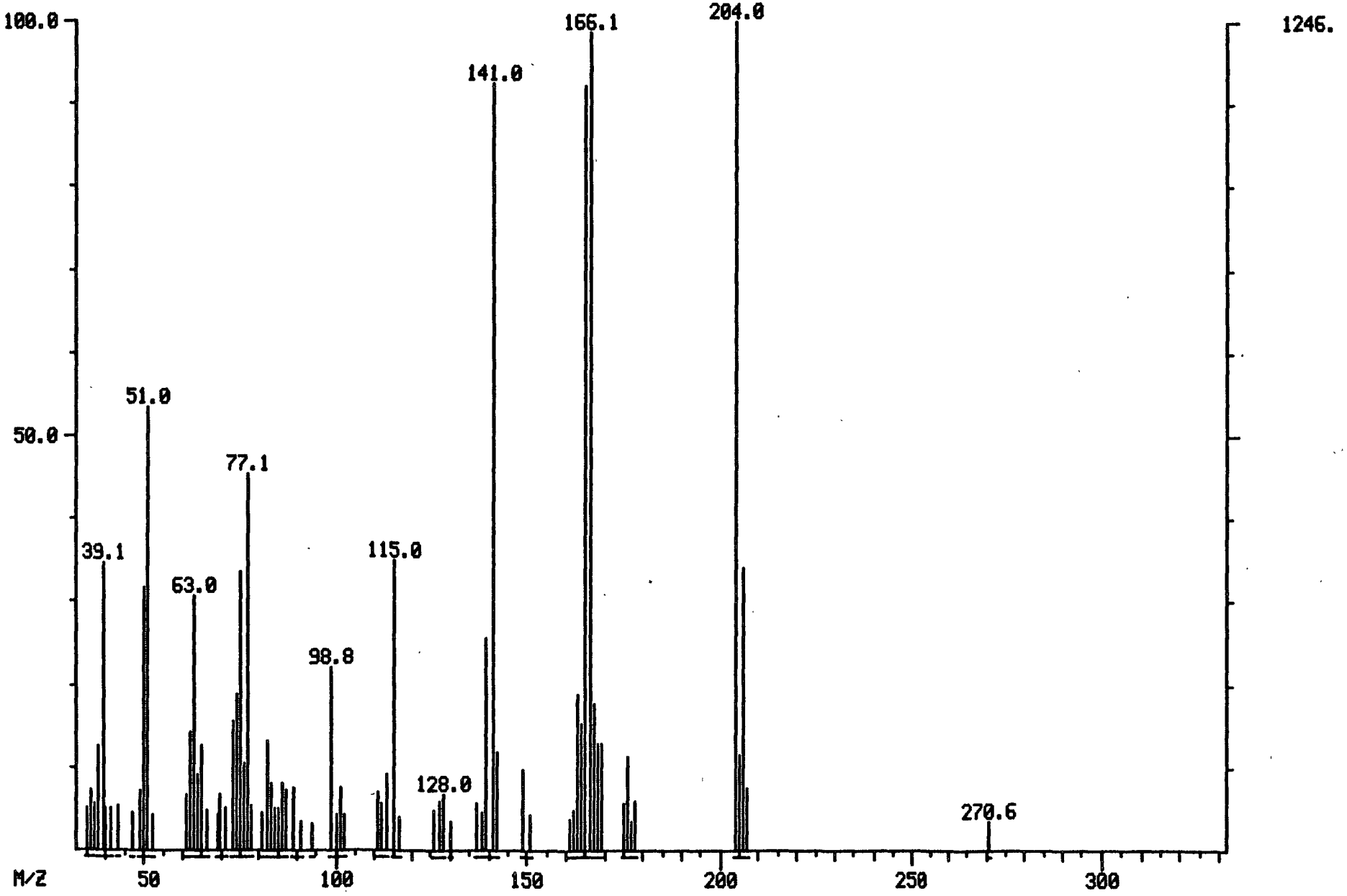
3 382



MASS SPECTRUM
03/13/89 18:38:00 + 19:18
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 205 DEG. C

DATA: AA05972 #1447
CALI: AA05972 #4

BASE M/Z: 204
RIC: 15184.



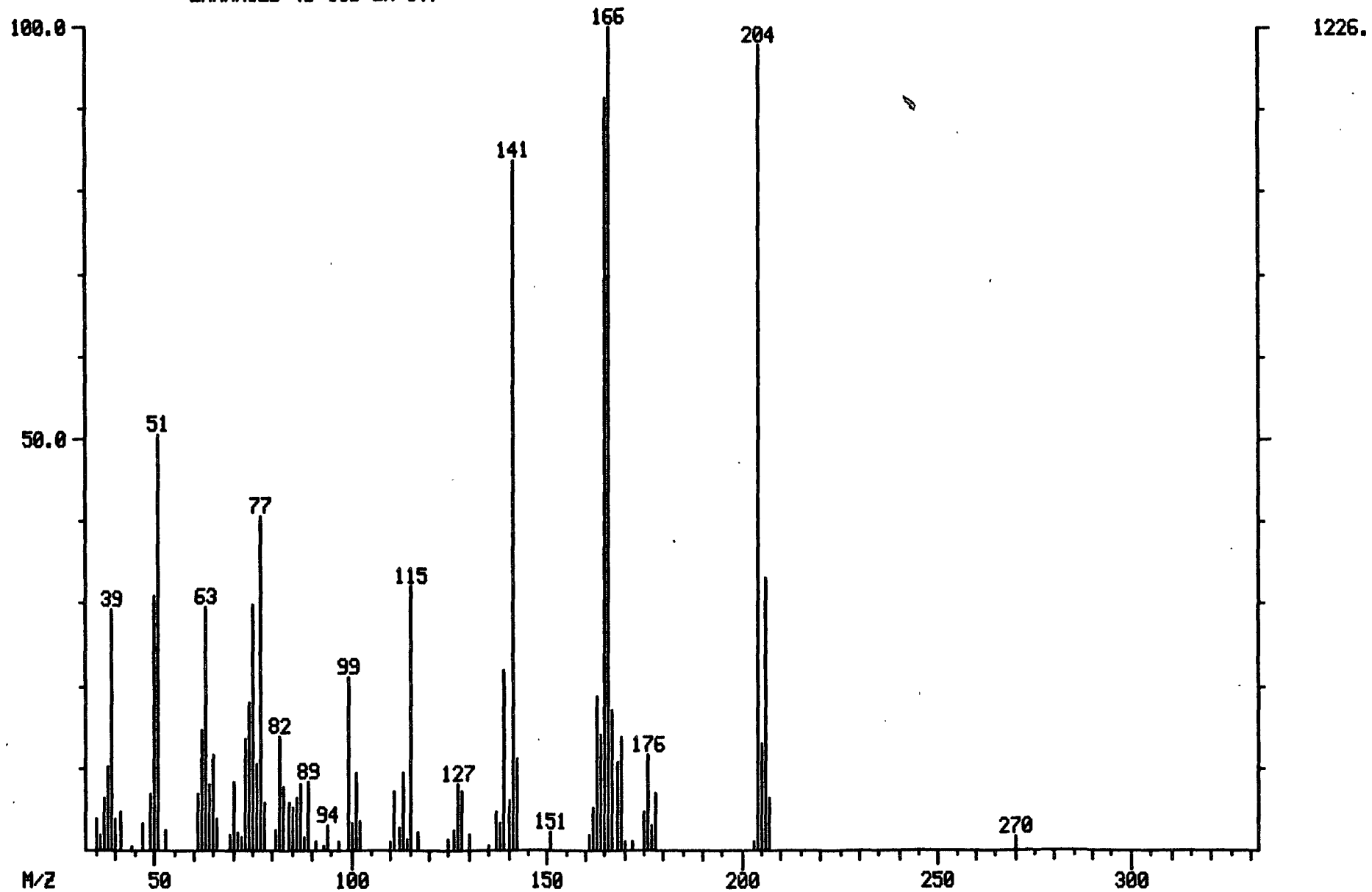
3 383

MASS SPECTRUM
03/13/89 18:38:00 + 19:18
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 205 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05972 #1447
CALI: AA05972 #4

BASE M/Z: 166
RIC: 13872.

3 384

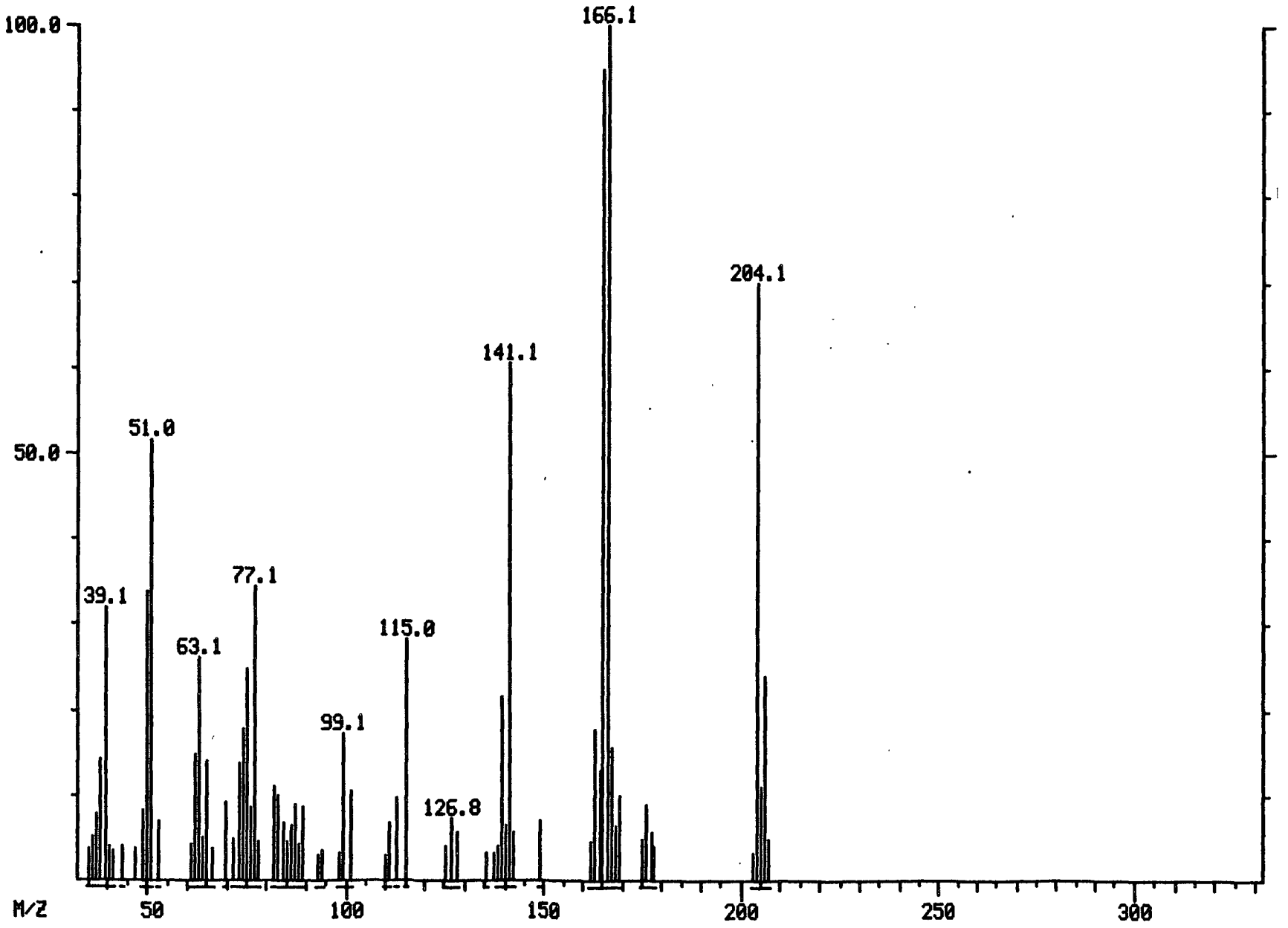


MASS SPECTRUM
03/13/89 18:38:00 + 19:18
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 206 DEG. C

DATA: AA05972 #1448
CALI: AA05972 #4

BASE M/Z: 166
RIC: 14080.

385

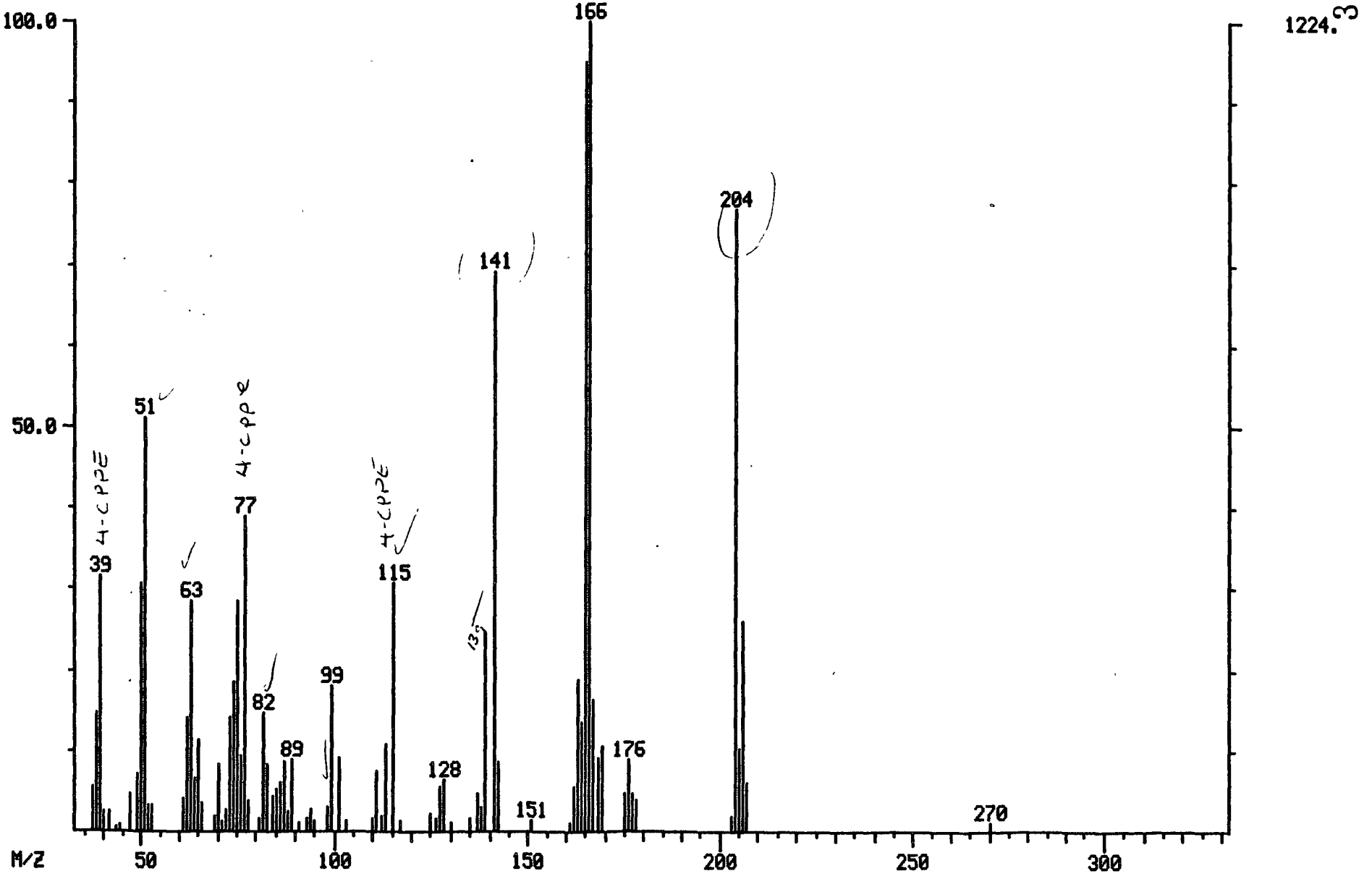


MASS SPECTRUM
03/13/89 18:38:00 + 19:18
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 206 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05972 #1448
CALI: AA05972 #4

BASE M/Z: 166
RIC: 12976.

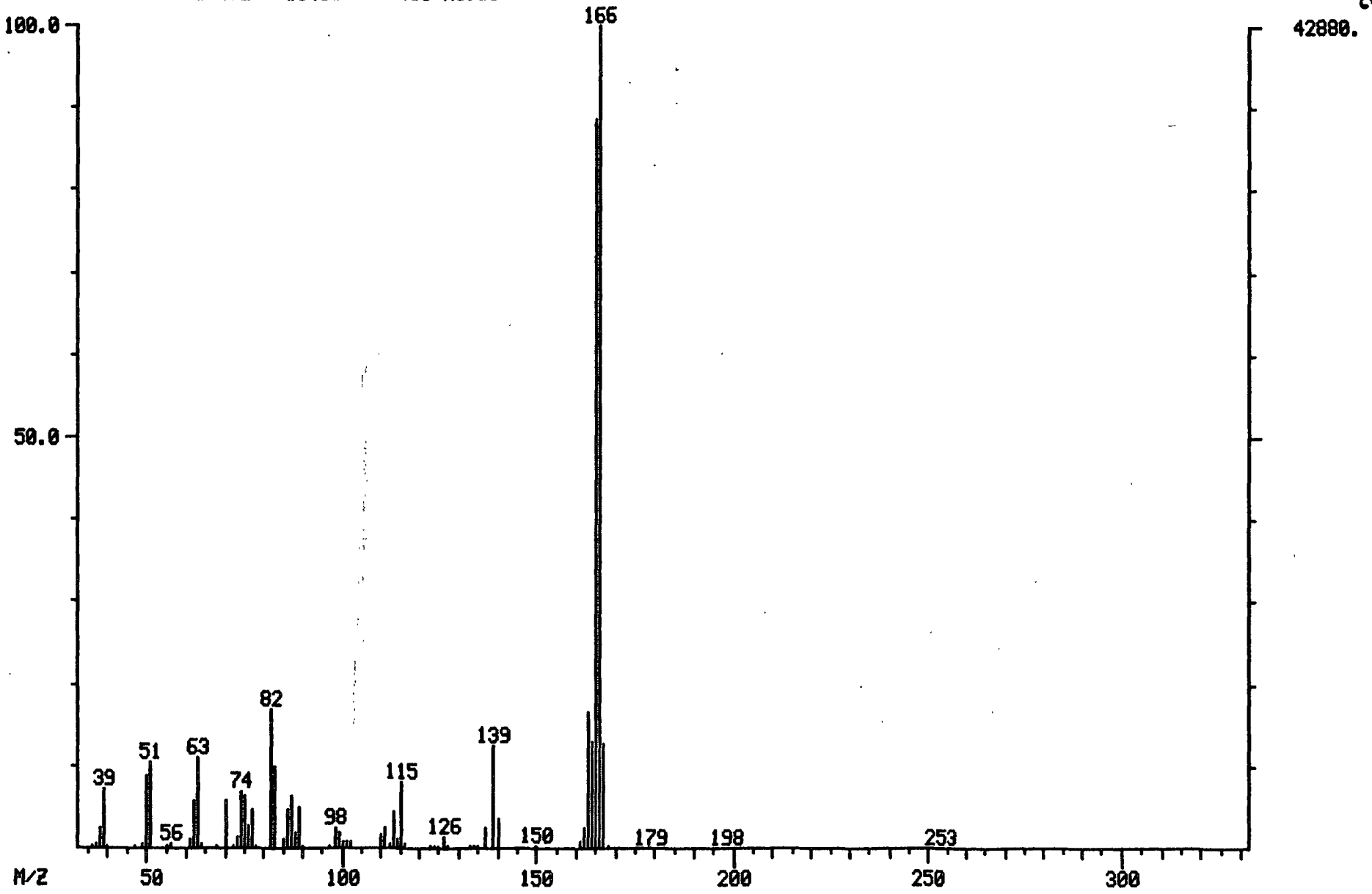
386



MASS SPECTRUM
03/13/89 14:40:00 + 19:22
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 206 DEG. C
#1452 - #1450 - #1458 X1.00

DATA: AA05968 #1452
CALI: AA05968 #4

BASE M/Z: 166
RIC: 175104.



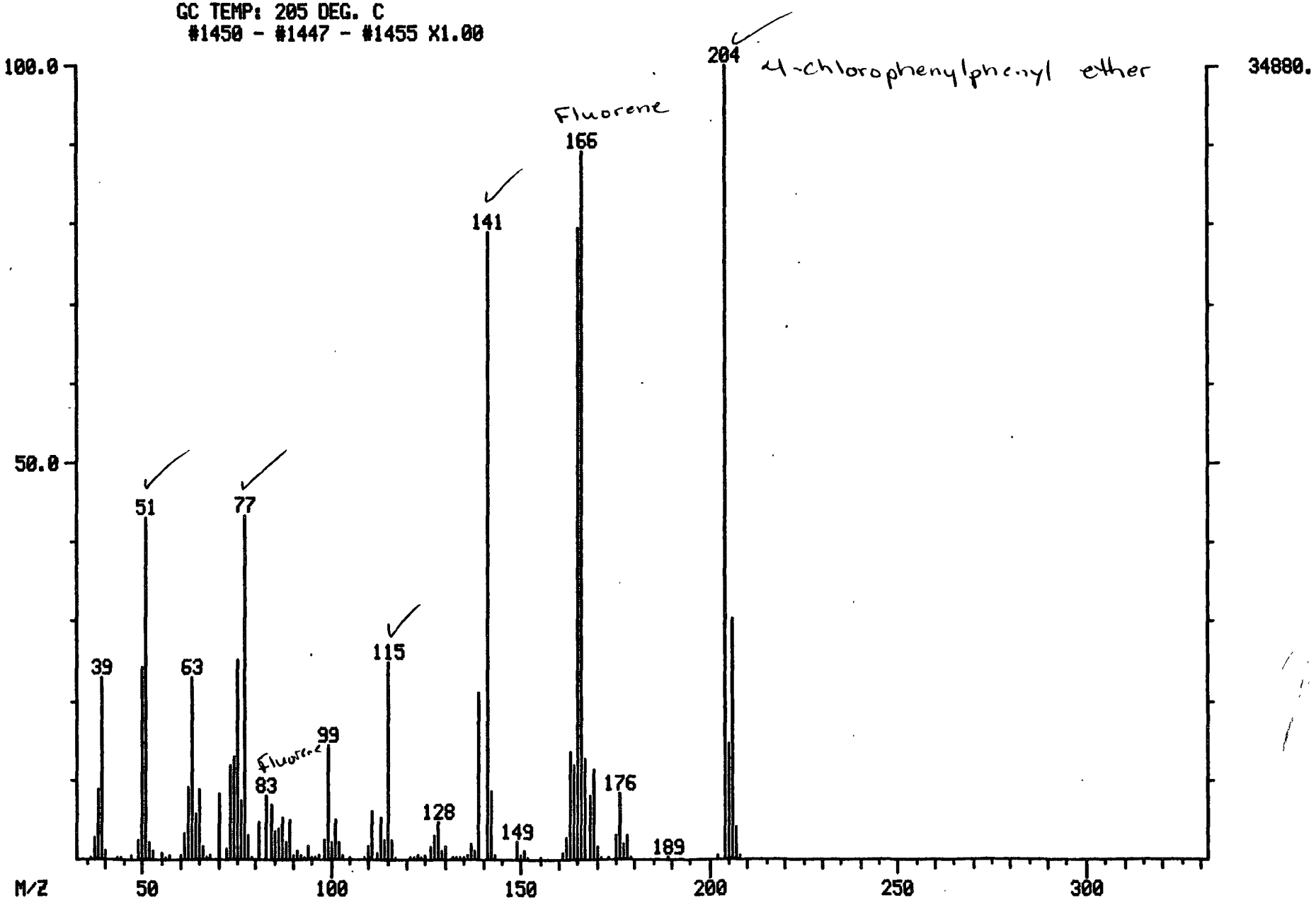
3 387

MASS SPECTRUM
03/13/89 14:40:00 + 19:20
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 205 DEG. C
#1450 - #1447 - #1455 X1.00

DATA: AA05968 #1450
CALI: AA05968 #4

BASE M/Z: 204
RIC: 321536.

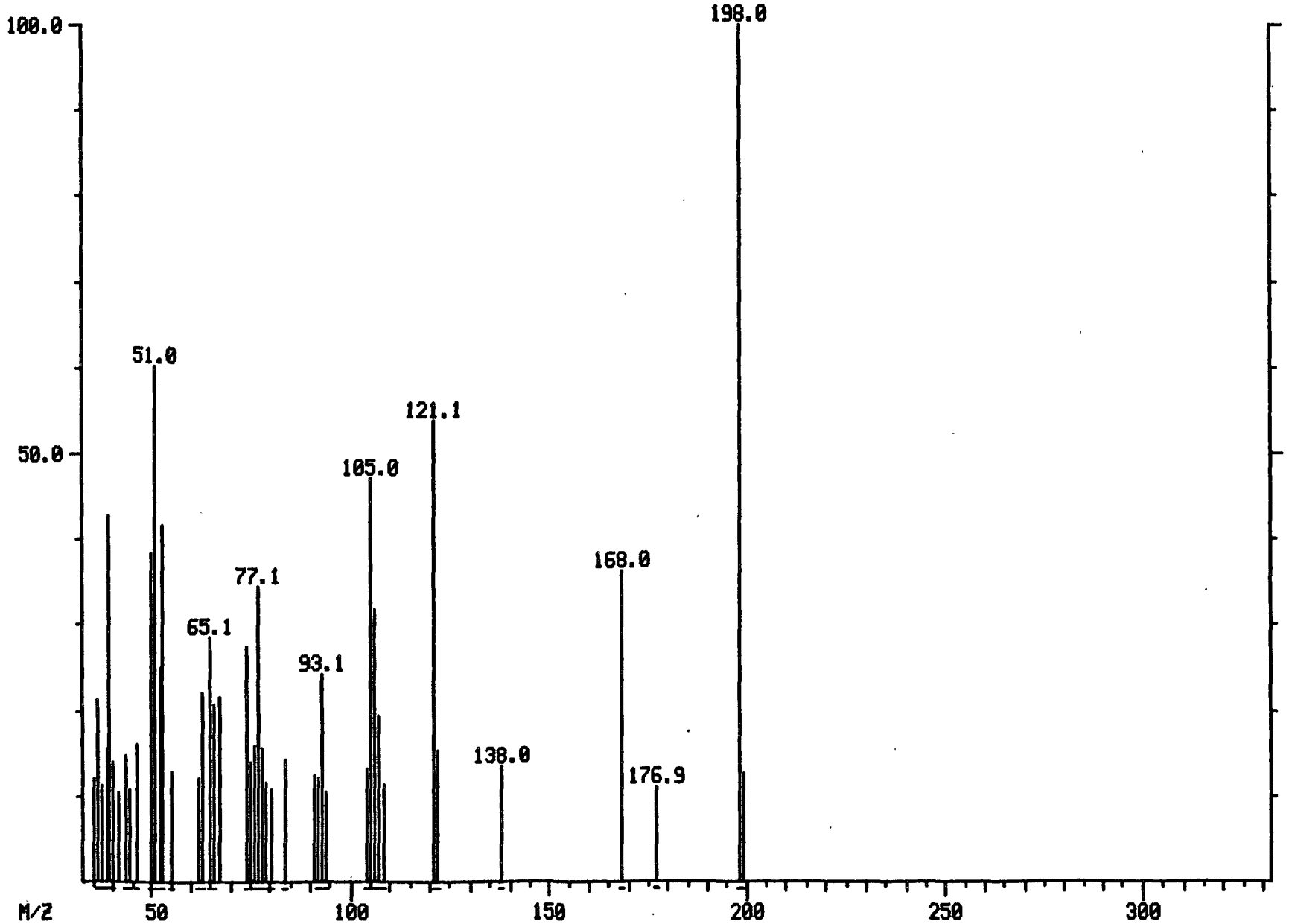
3 388



MASS SPECTRUM
03/13/89 18:38:00 + 19:31
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 208 DEG. C

DATA: AA05972 #1464
CALI: AA05972 #4

BASE M/Z: 198
RIC: 4008.



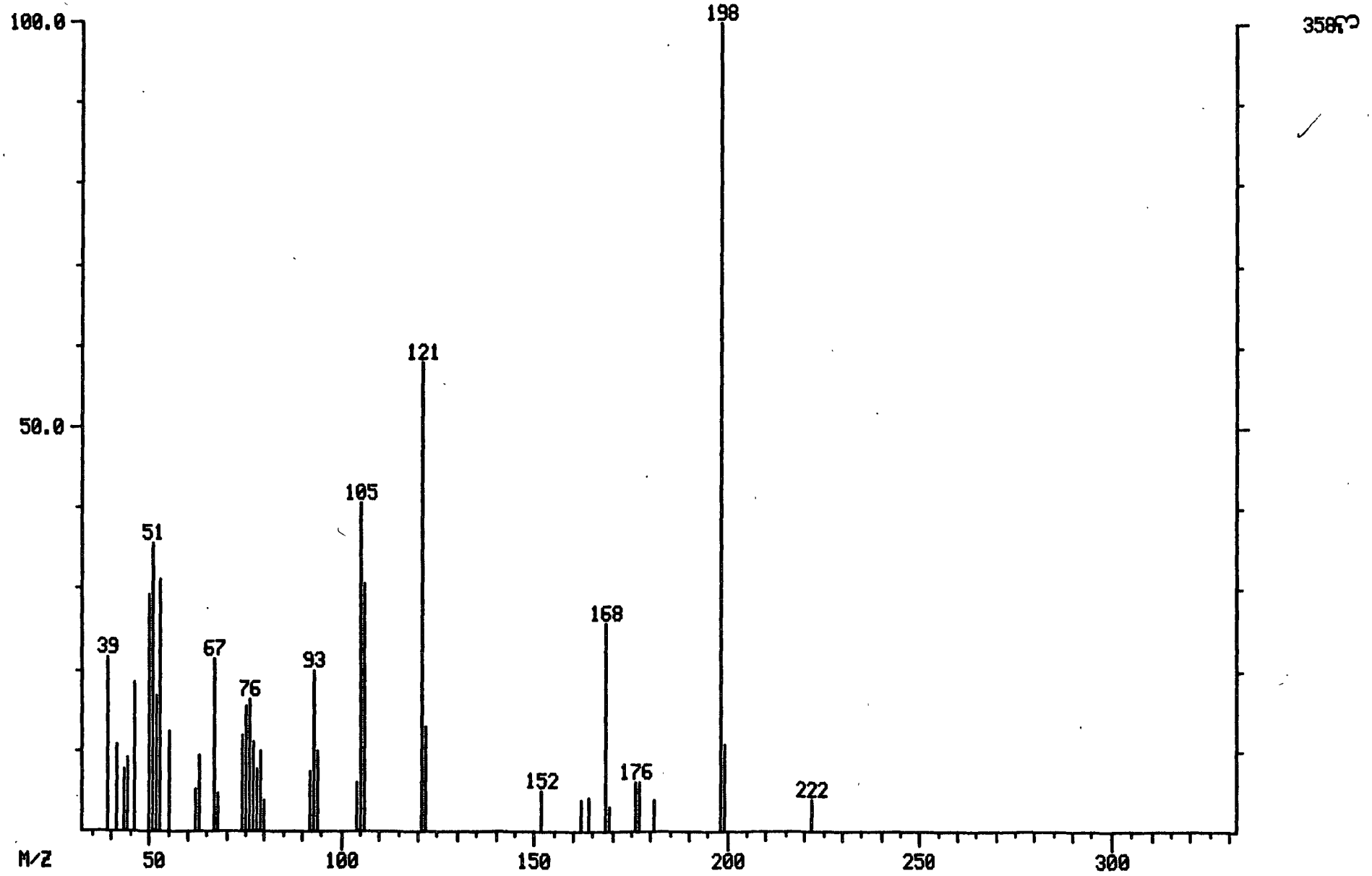
3 389

MASS SPECTRUM
03/13/89 18:38:00 + 19:31
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 208 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05972 #1464
CALI: AA05972 #4

BASE M/Z: 198
RIC: 2424.

390

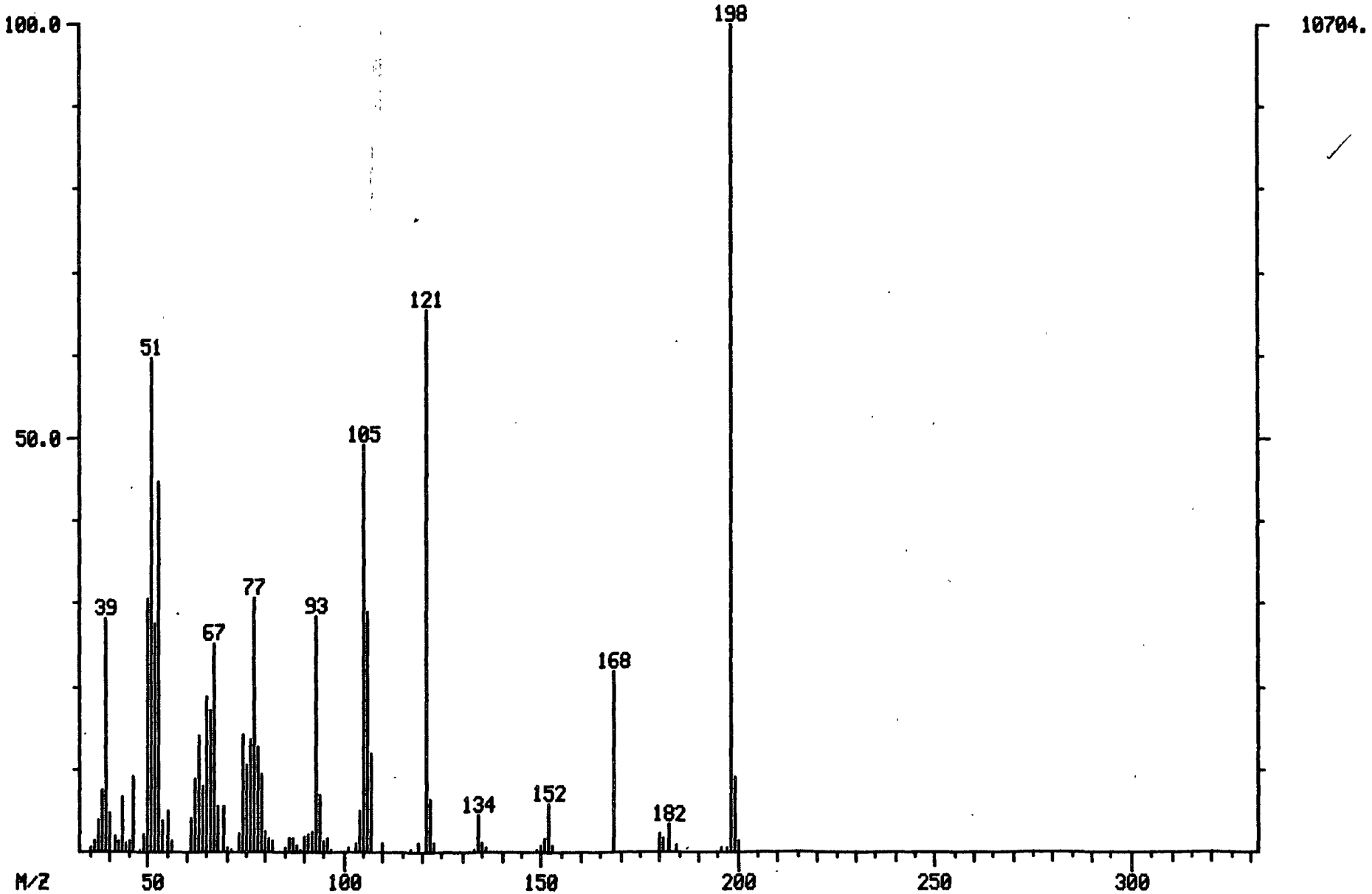


MASS SPECTRUM
03/13/89 14:40:00 + 19:34
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 208 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05968 #1468
CALI: AA05968 #4

BASE M/Z: 198
RIC: 88960.

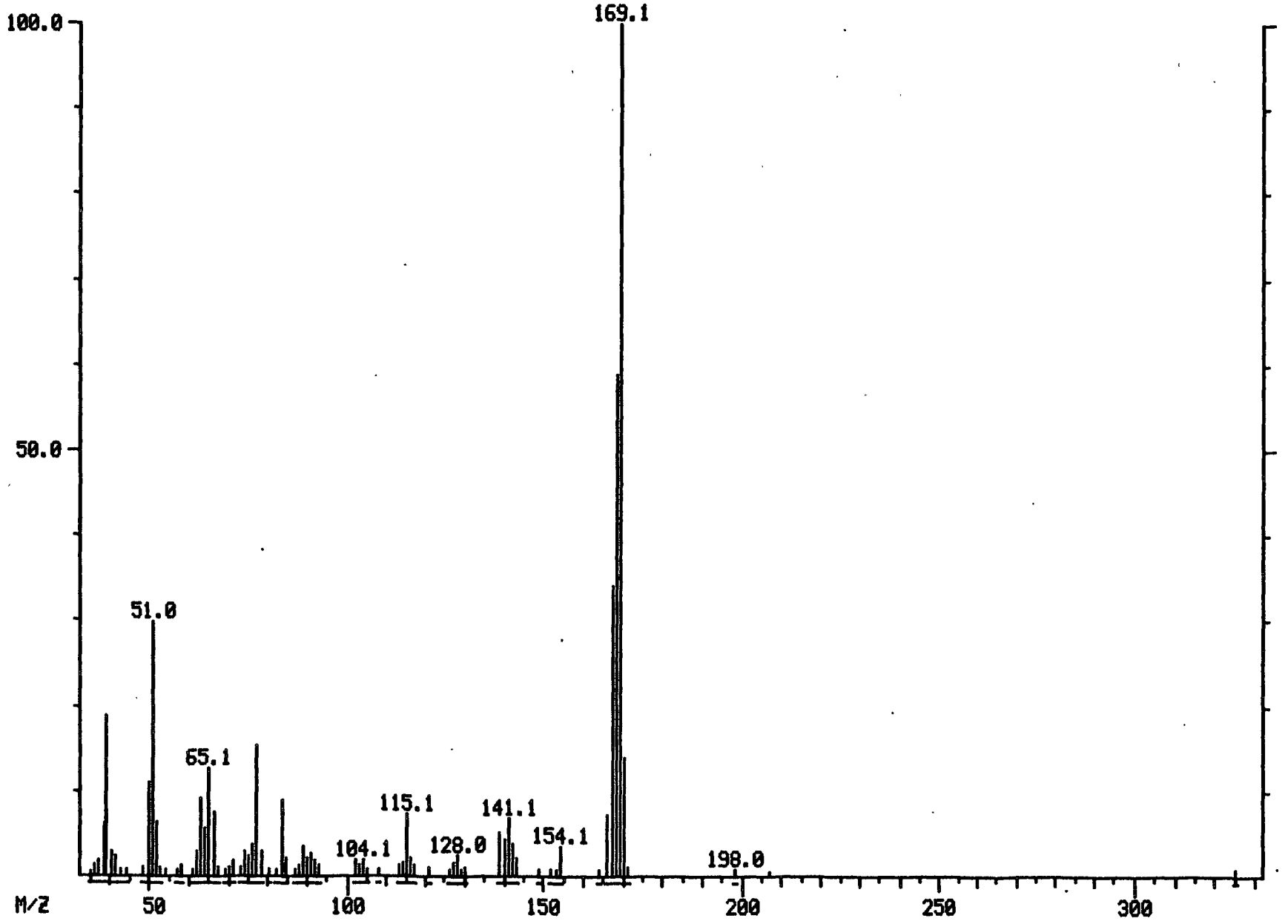
3 391



MASS SPECTRUM
03/13/89 18:38:00 + 19:37
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 209 DEG. C

DATA: AA05972 #1471
CALI: AA05972 #4

BASE M/Z: 169
RIC: 27968.



6056.

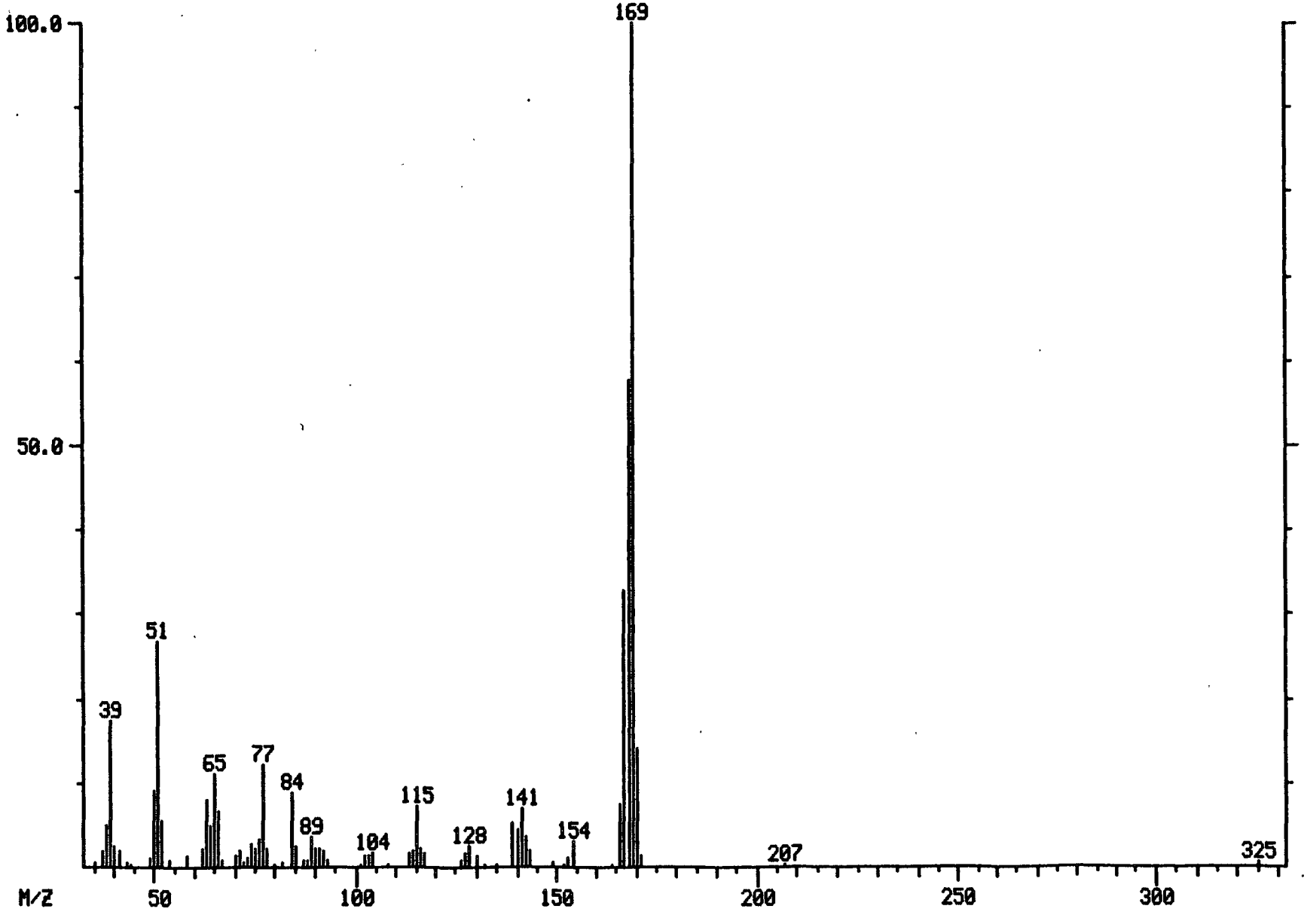
392

MASS SPECTRUM
03/13/89 18:38:00 + 19:37
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 209 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05972 #1471
CALI: AA05972 #4

BASE M/Z: 169
RIC: 24064.

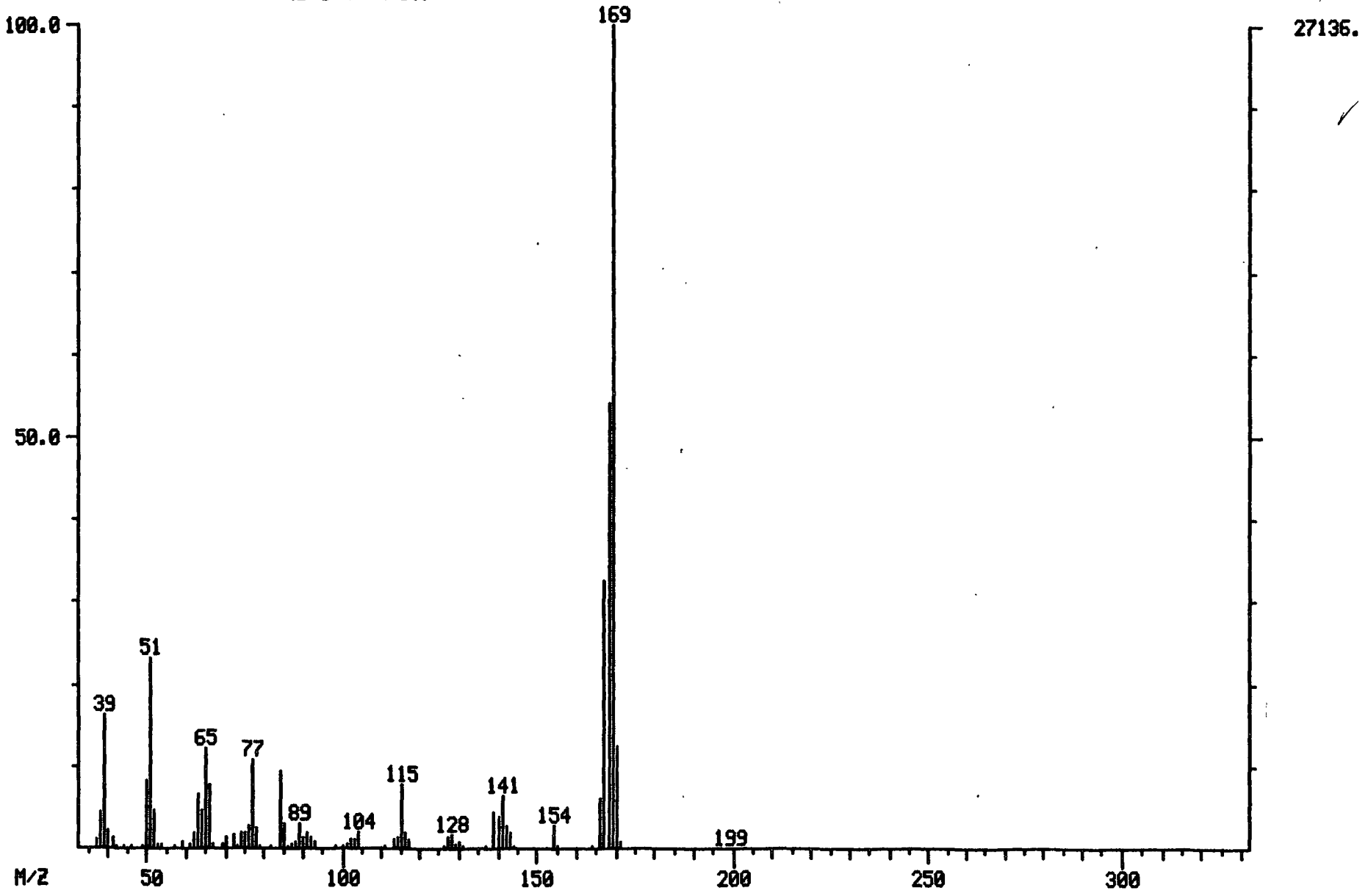
393



MASS SPECTRUM
03/13/89 14:40:00 + 19:40
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 209 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05968 #1475
CALI: AA05968 #4

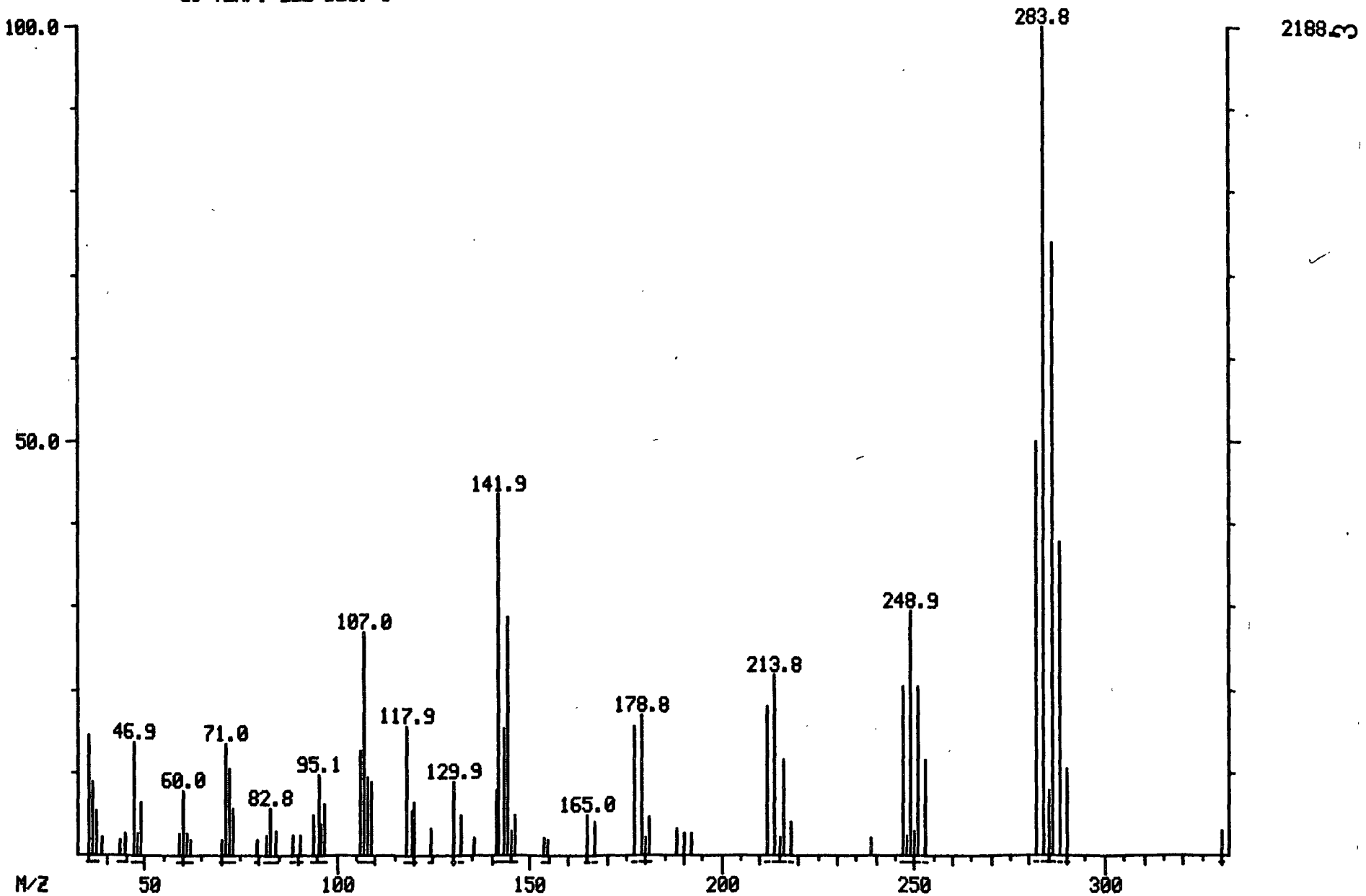
BASE M/Z: 169
RIC: 108672.



MASS SPECTRUM
03/13/89 18:38:00 + 20:59
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 222 DEG. C

DATA: AA05972 #1574
CALI: AA05972 #4

BASE M/Z: 284
RIC: 18592.

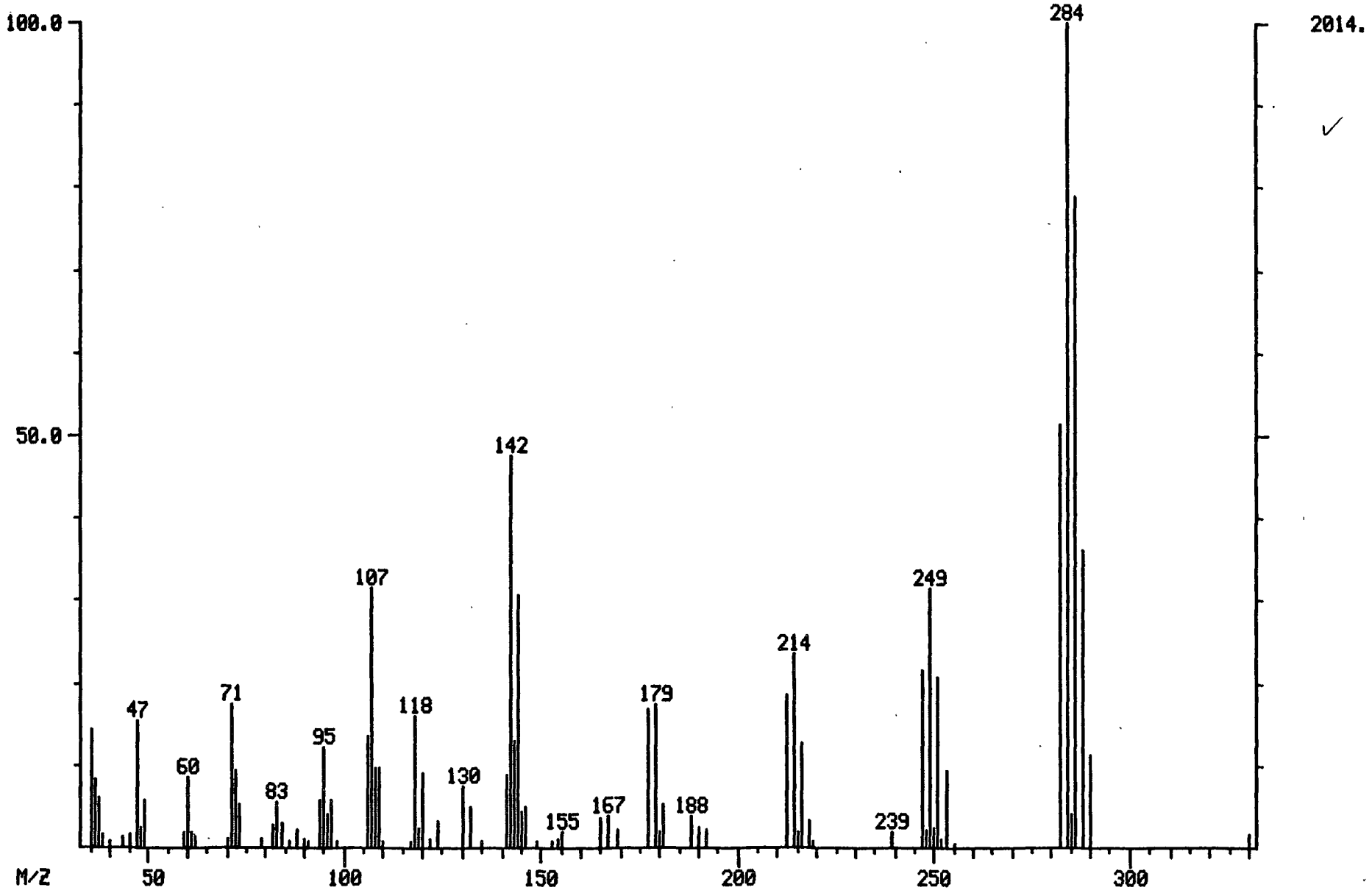


MASS SPECTRUM
03/13/89 18:38:00 + 20:59
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 222 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05972 #1574
CALI: AA05972 #4

BASE M/Z: 284
RIC: 17568.

3 396

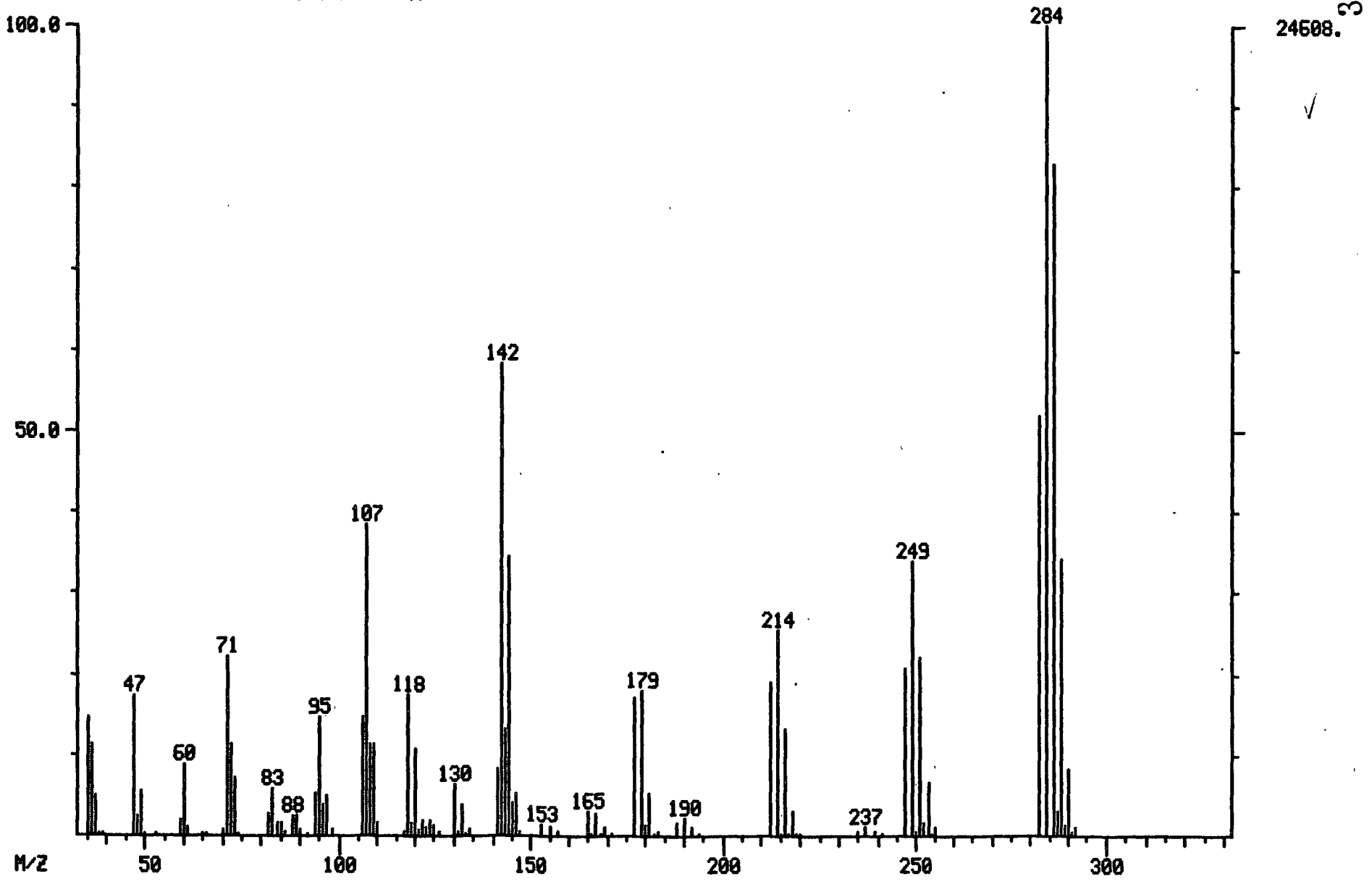


MASS SPECTRUM
03/13/89 14:40:00 + 21:02
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 223 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05968 #1578
CALI: AA05968 #4

BASE M/Z: 284
RIC: 222208.

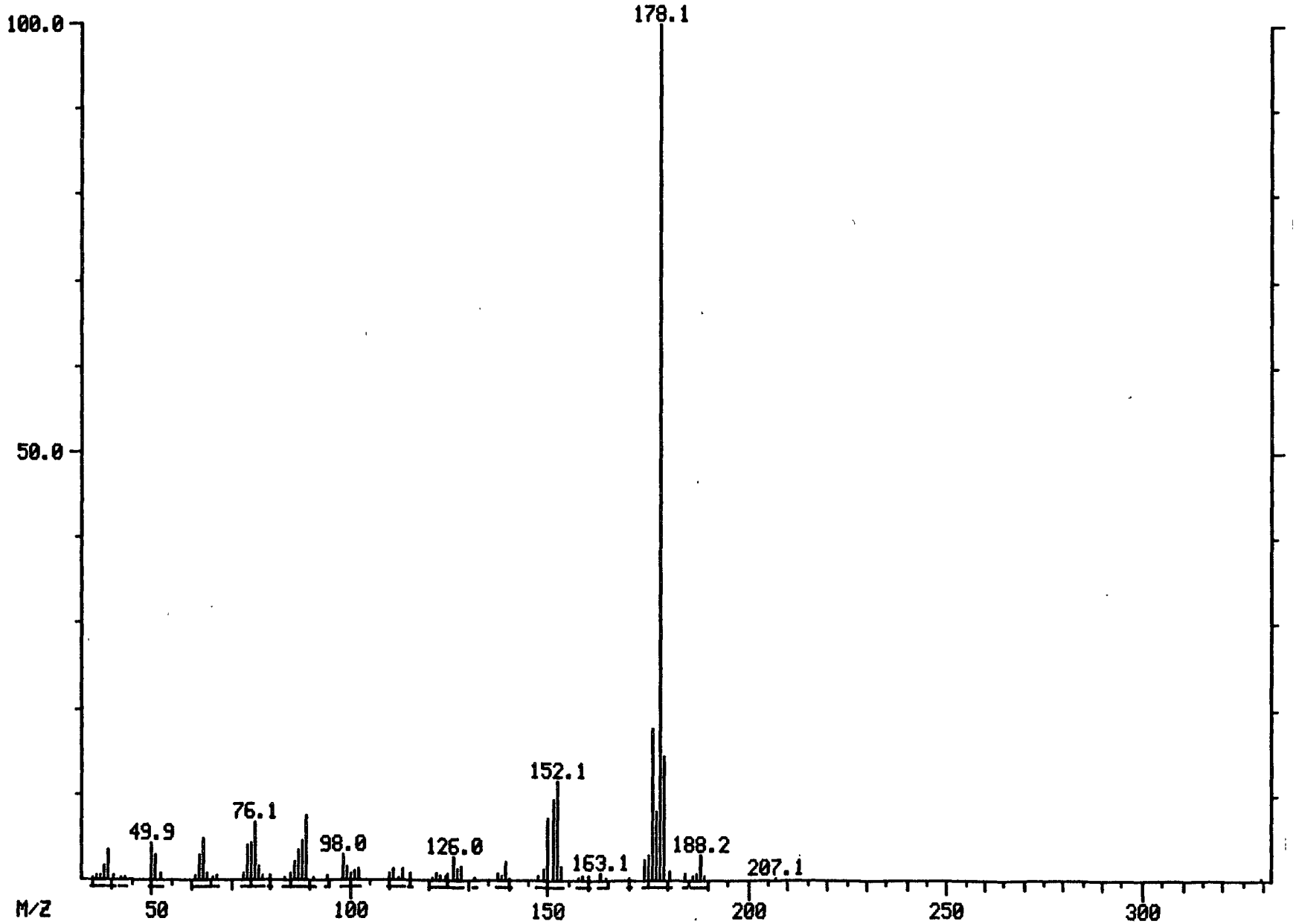
397



MASS SPECTRUM
03/13/89 18:38:00 + 21:58
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 232 DEG. C

DATA: AA05972 #1648
CALI: AA05972 #4

BASE M/Z: 178
RIC: 35200.



398

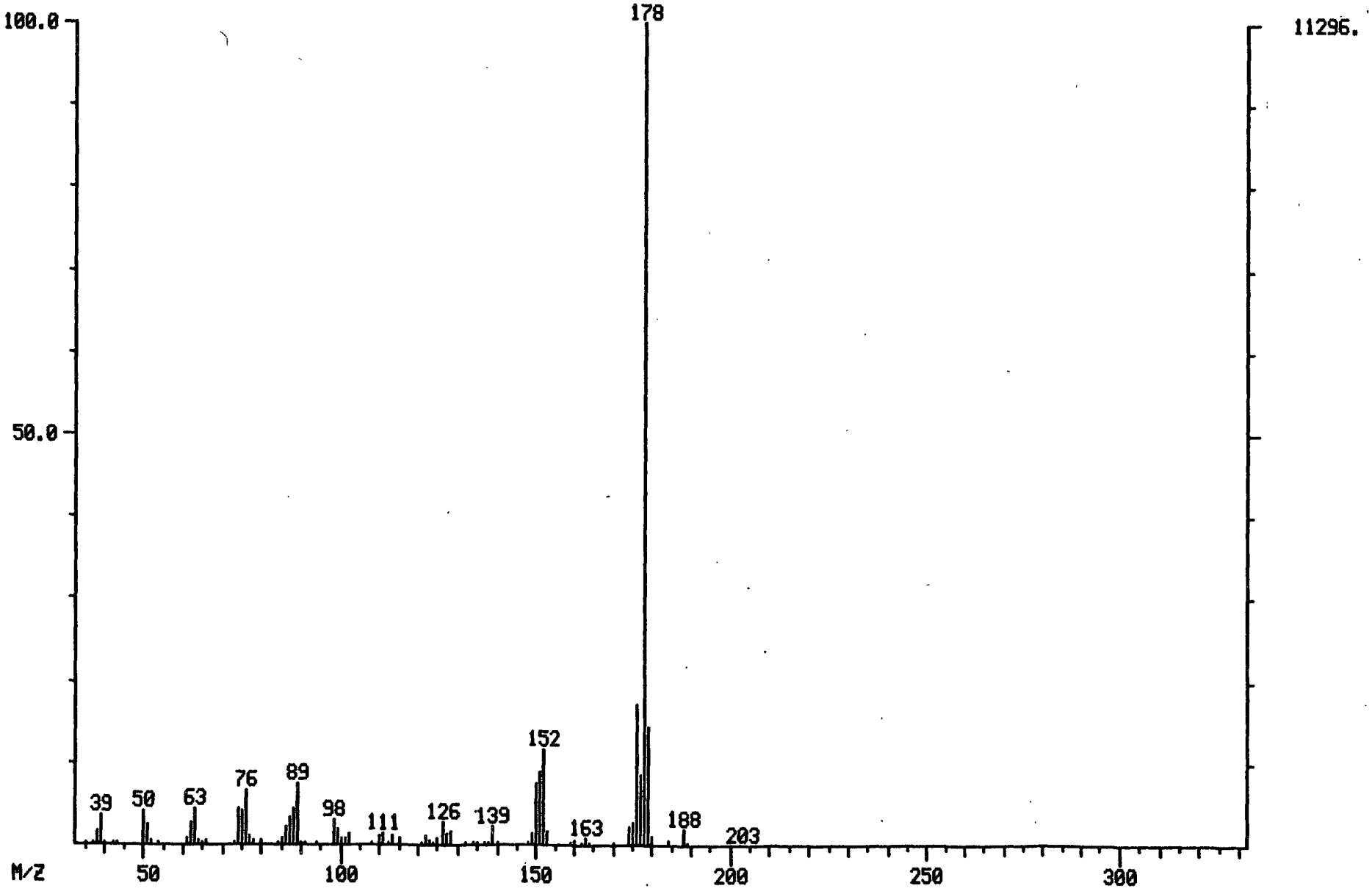
MASS SPECTRUM
03/13/89 18:38:00 + 21:58
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 232 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05972 #1648
CALI: AA05972 #4

BASE M/Z: 178
RIC: 30304.

399

3

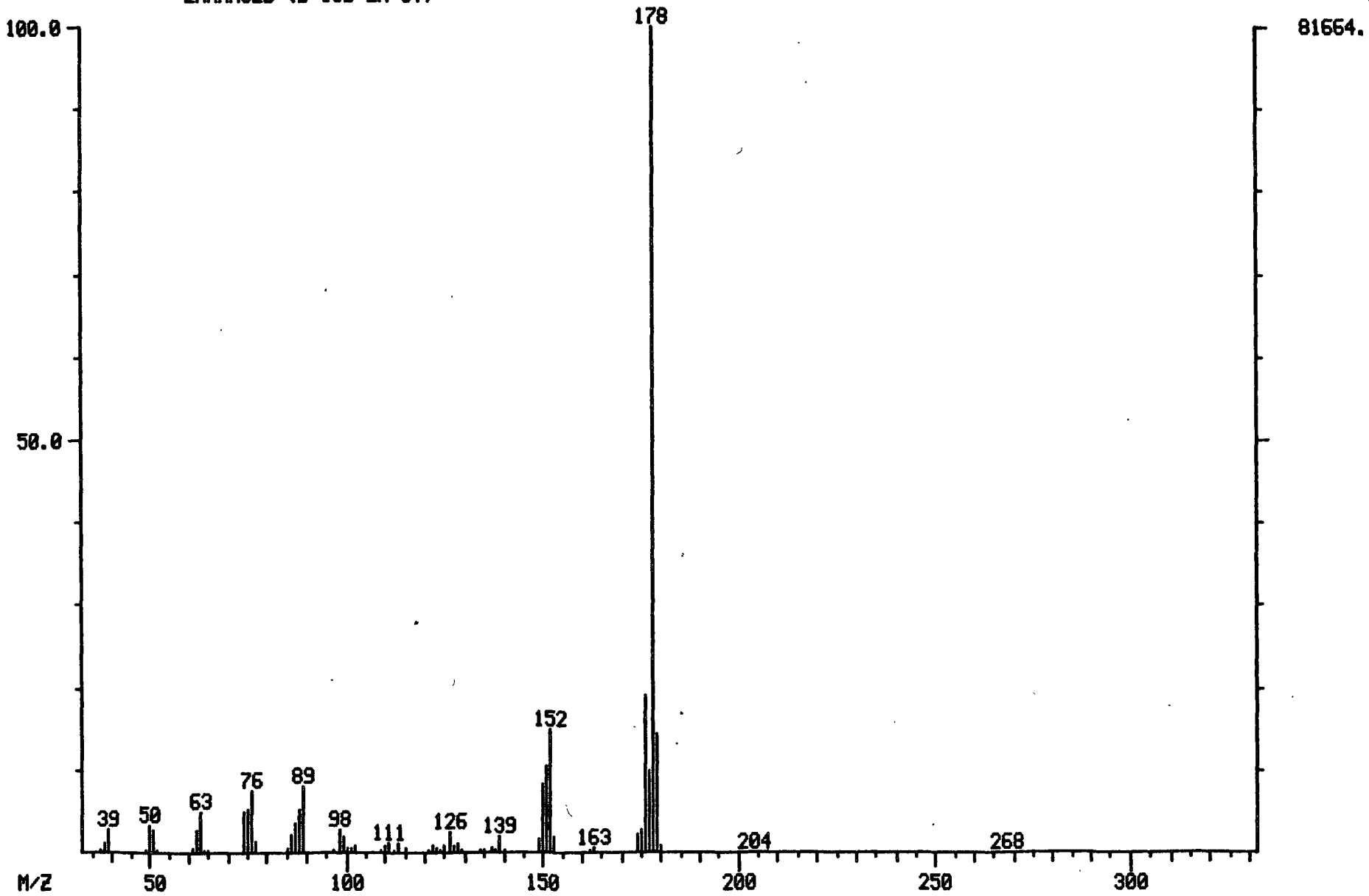


MASS SPECTRUM
03/13/89 14:40:00 + 21:54
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 232 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05968 #1643
CALI: AA05968 #4

BASE M/Z: 178
RIC: 218624.

3 100

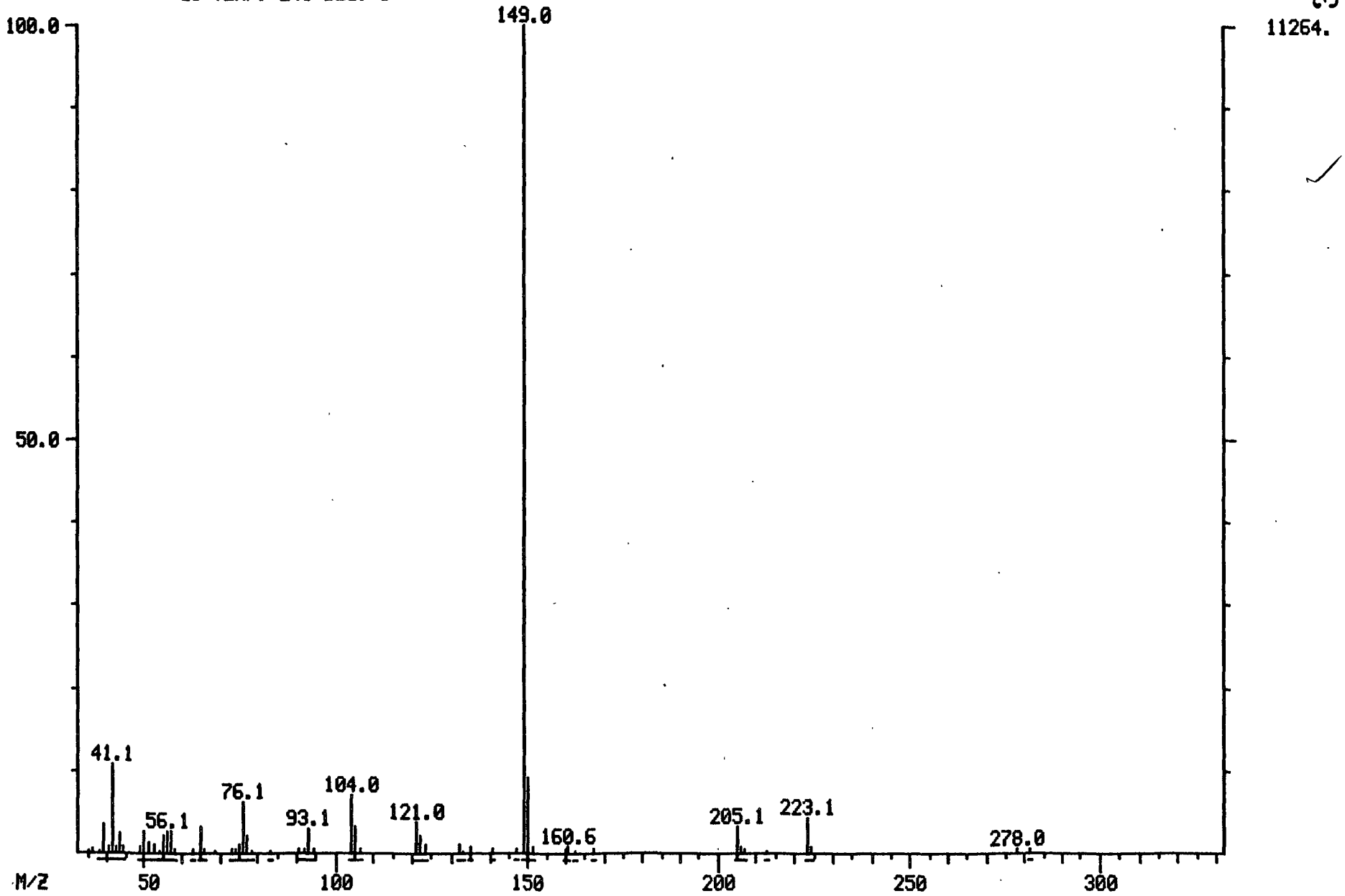


MASS SPECTRUM
03/13/89 18:38:00 + 23:30
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 248 DEG. C

DATA: AA05972 #1762
CALI: AA05972 #4

BASE M/Z: 149
RIC: 22496.

401
3

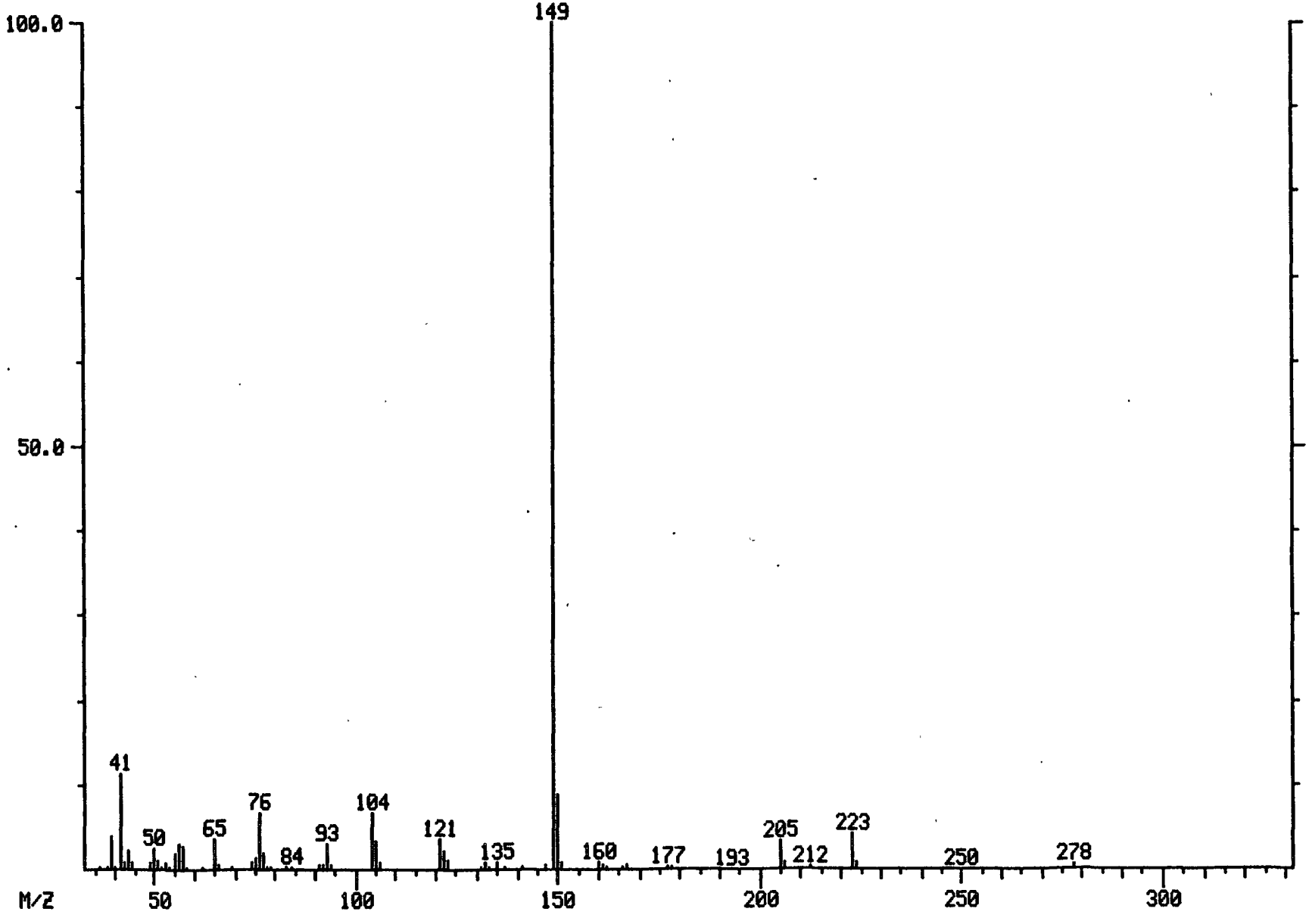


MASS SPECTRUM
03/13/89 18:38:00 + 23:30
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 248 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05972 #1762
CALI: AA05972 #4

BASE M/Z: 149
RIC: 20608.

3 402

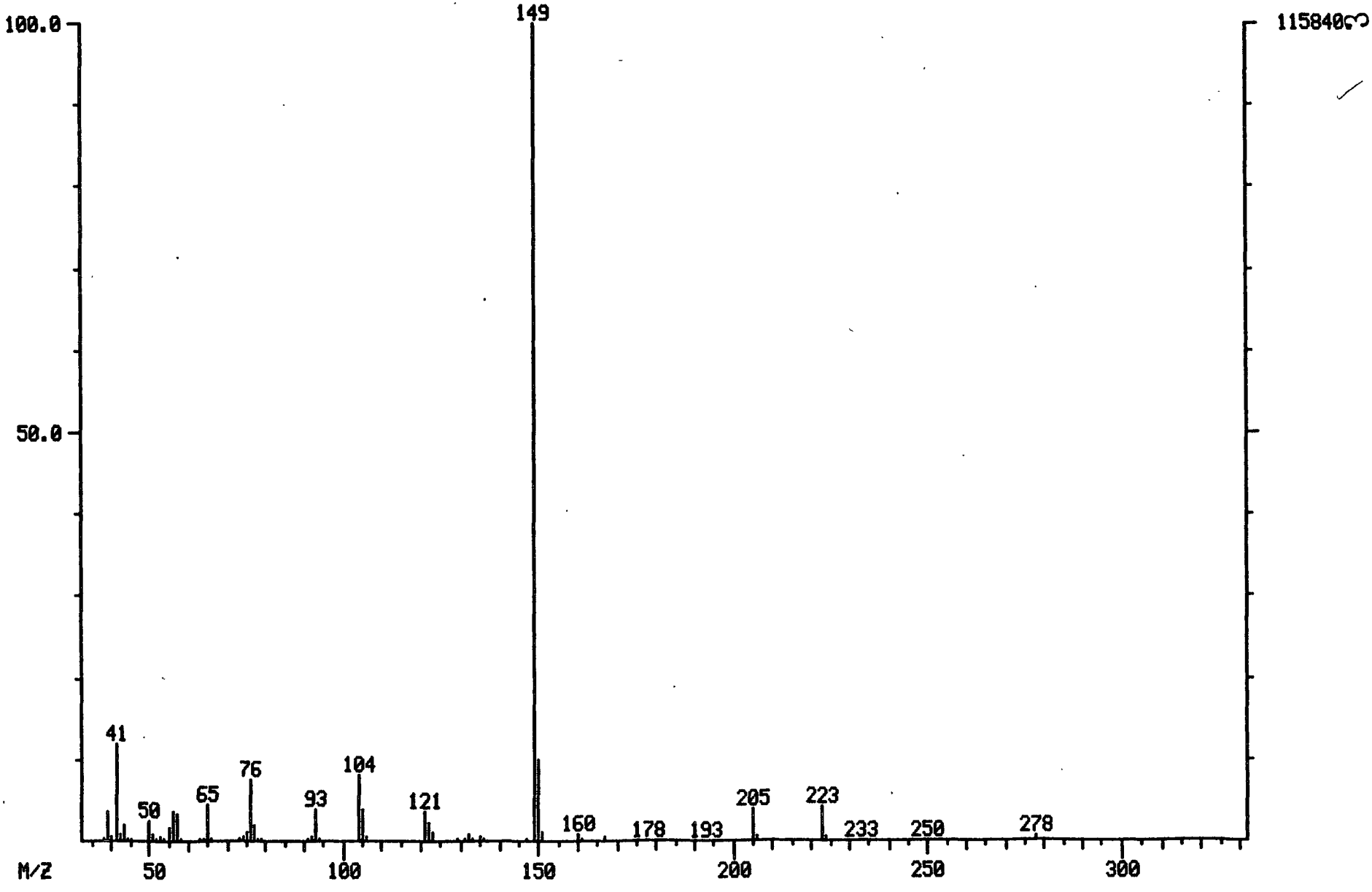


MASS SPECTRUM
03/13/89 14:40:00 + 23:32
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 248 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05968 #1765
CALI: AA05968 #4

BASE M/Z: 149
RIC: 232960.

403



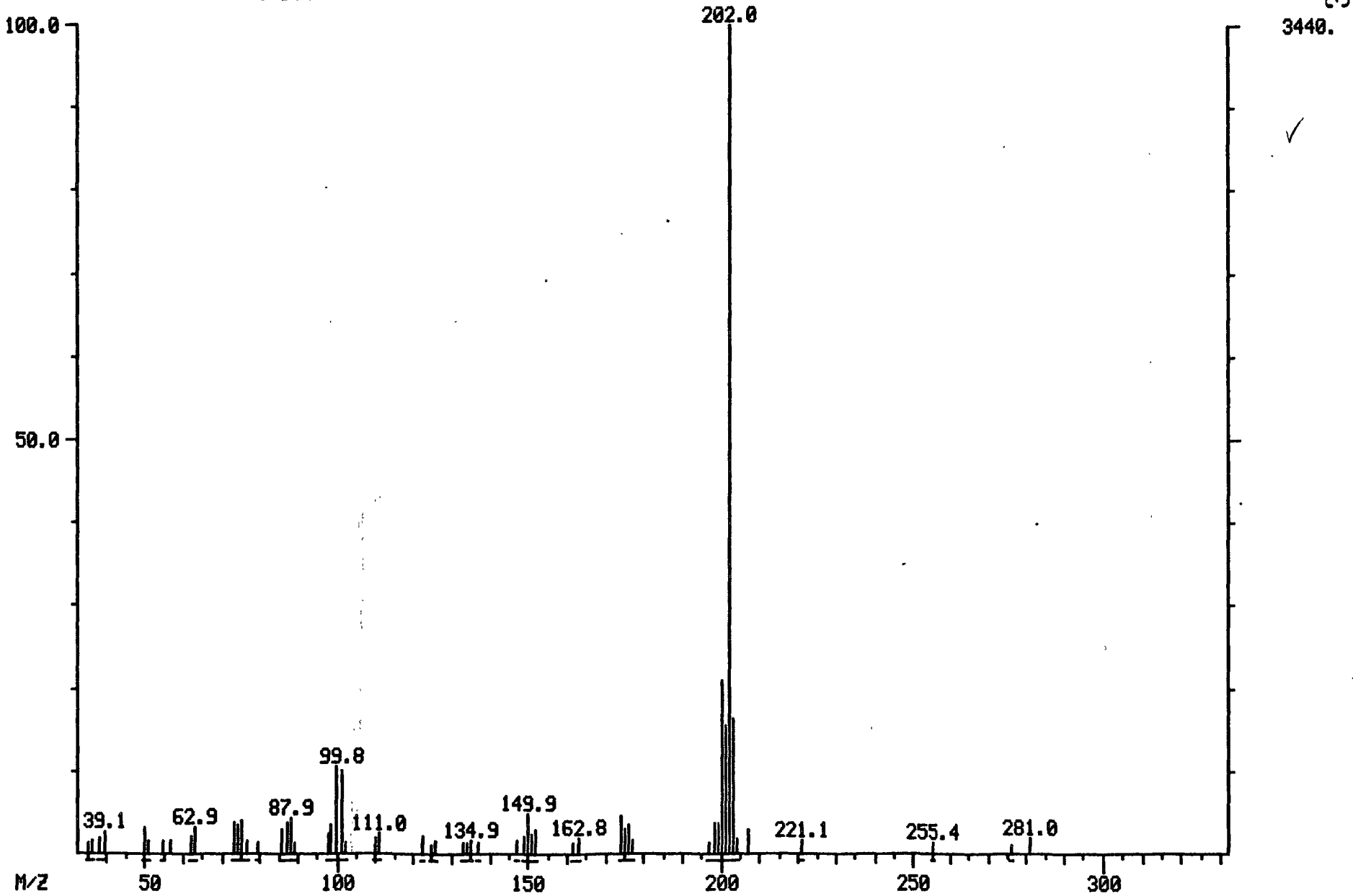
MASS SPECTRUM
03/13/89 18:38:00 + 25:06
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 264 DEG. C

DATA: AA05972 #1882
CALI: AA05972 #4

BASE M/Z: 202
RIC: 10144.

404

3

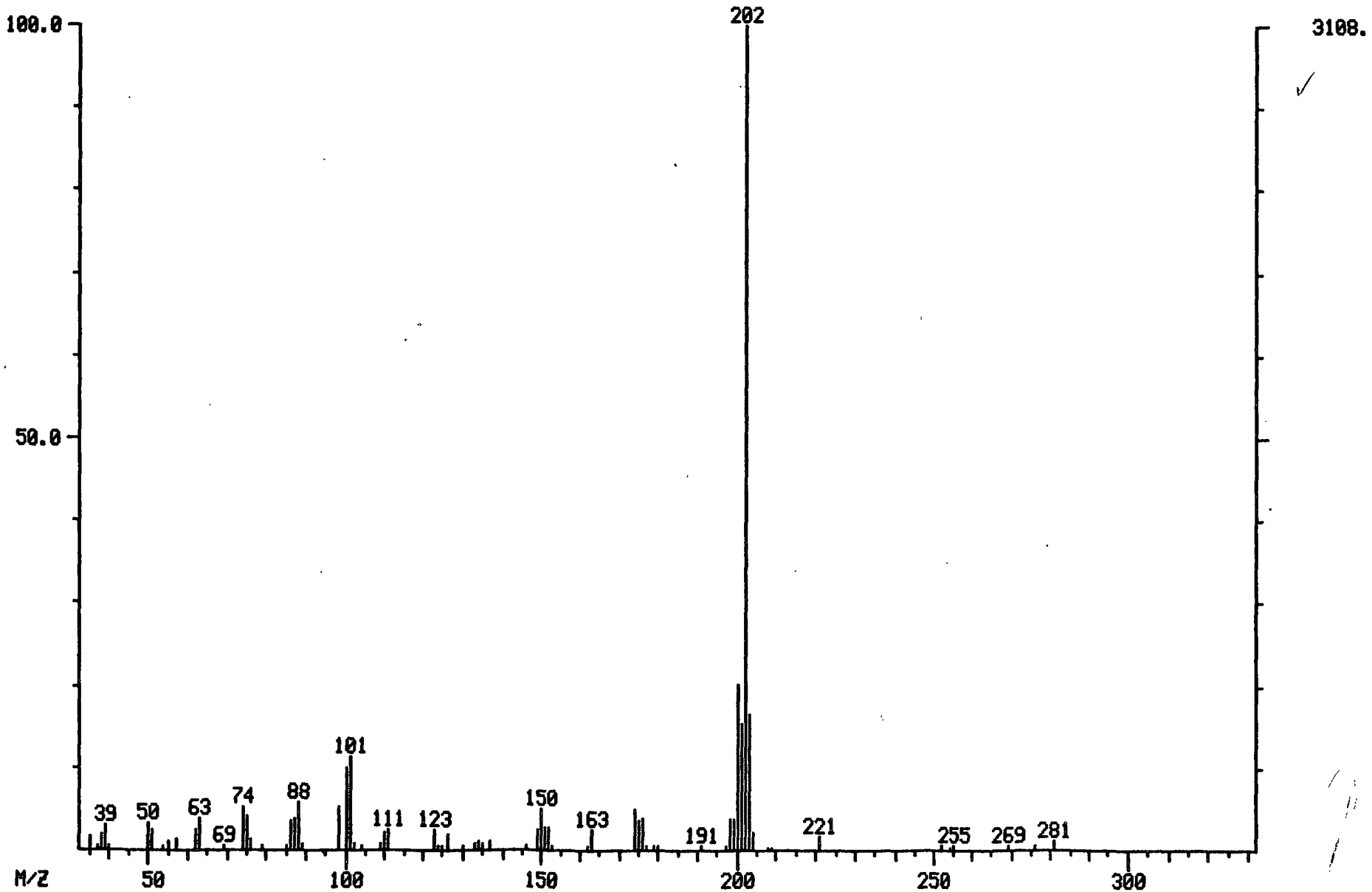


MASS SPECTRUM
03/13/89 18:38:00 + 25:06
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 264 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05972 #1882
CALI: AA05972 #4

BASE M/Z: 202
RIC: 9120.

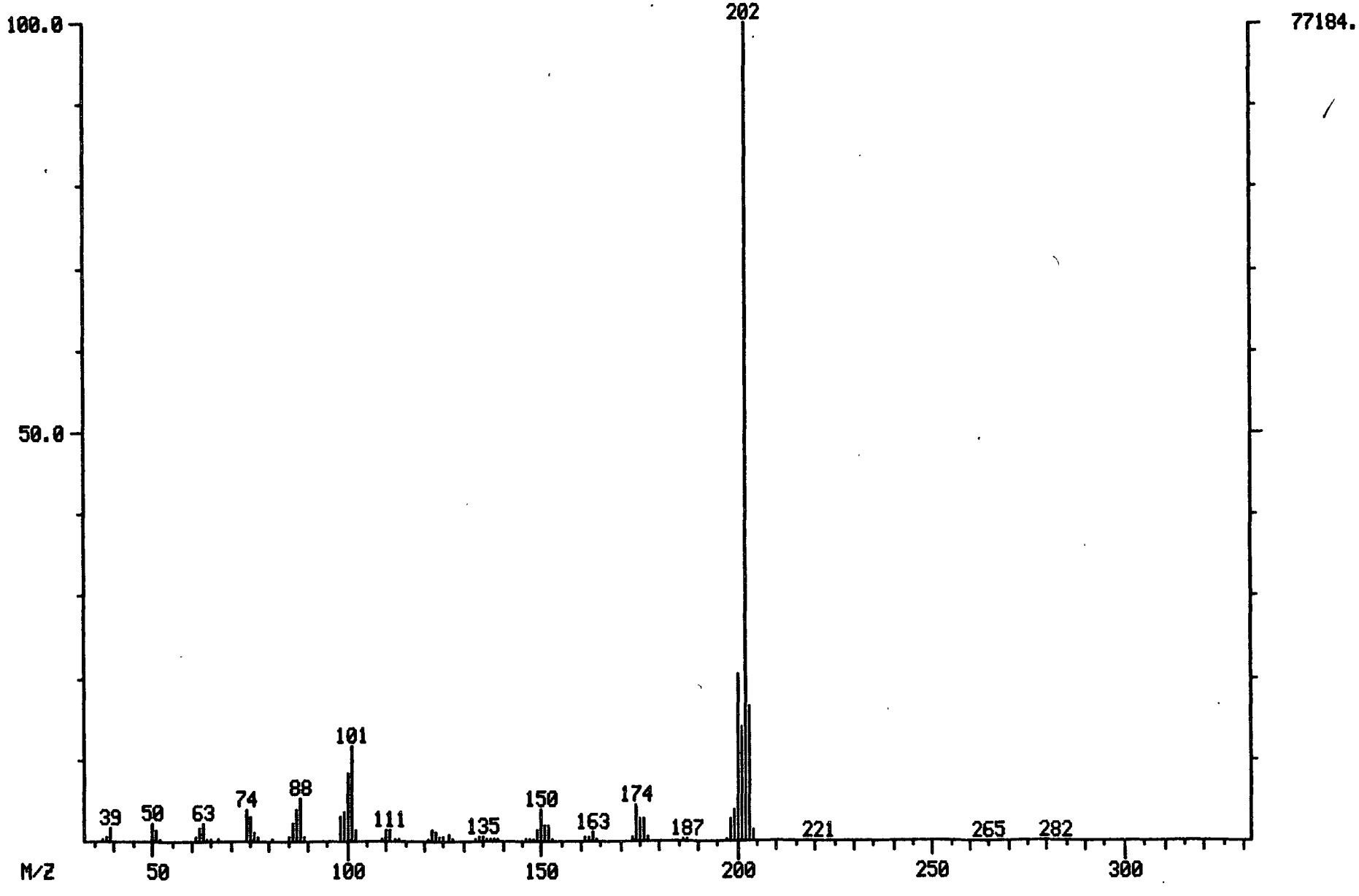
3 405



MASS SPECTRUM
03/13/89 14:40:00 + 25:08
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 264 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05968 #1885
CALI: AA05968 #4

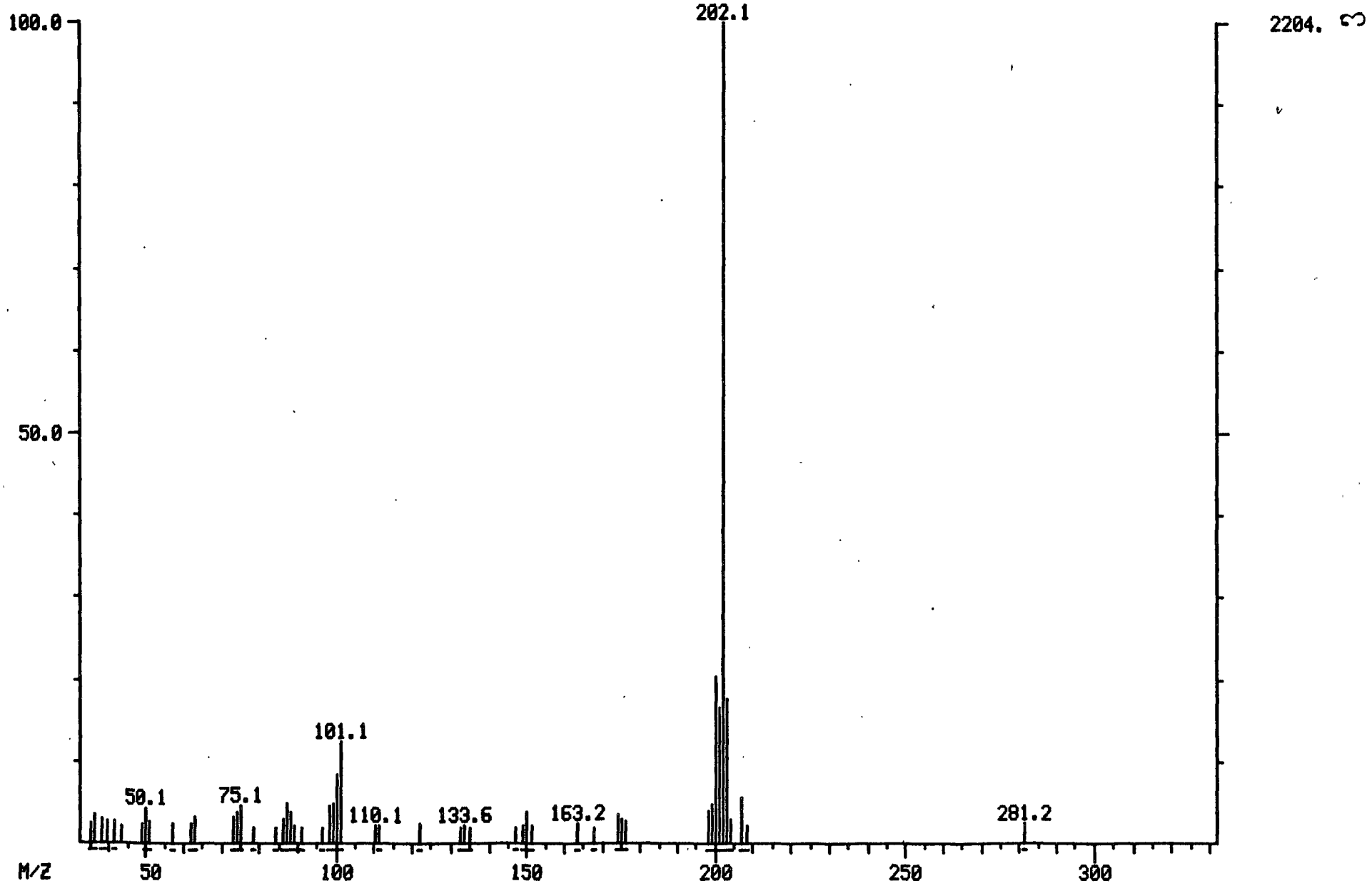
BASE M/Z: 202
RIC: 197120.



MASS SPECTRUM
03/13/89 18:38:00 + 25:40
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 269 DEG. C

DATA: AA05972 #1925
CALI: AA05972 #4

BASE M/Z: 202
RIC: 6864.



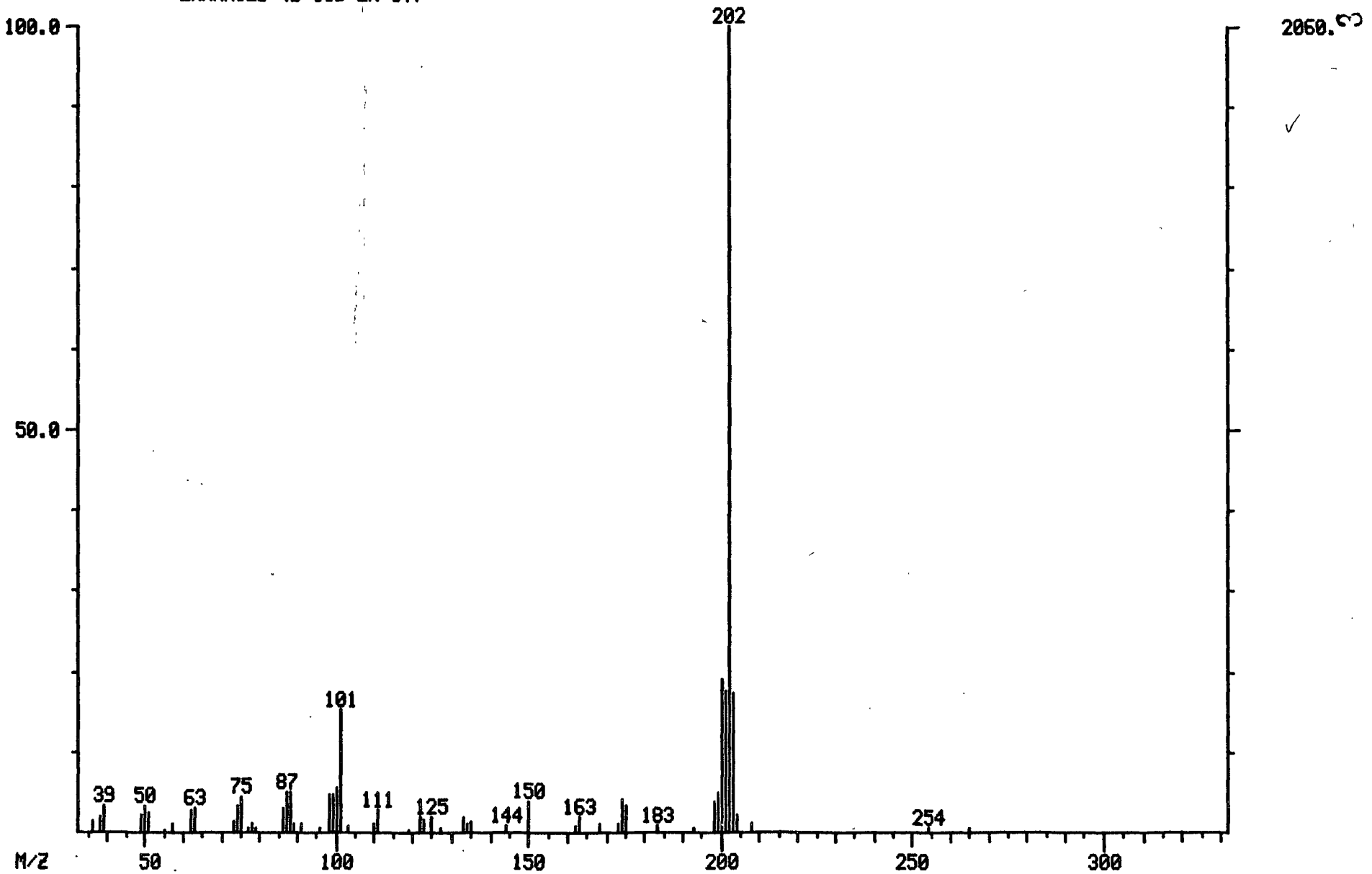
407

MASS SPECTRUM
03/13/89 18:38:00 + 25:40
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 269 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05972 #1925
CALI: AA05972 #4

BASE M/Z: 202
RIC: 5808.

408

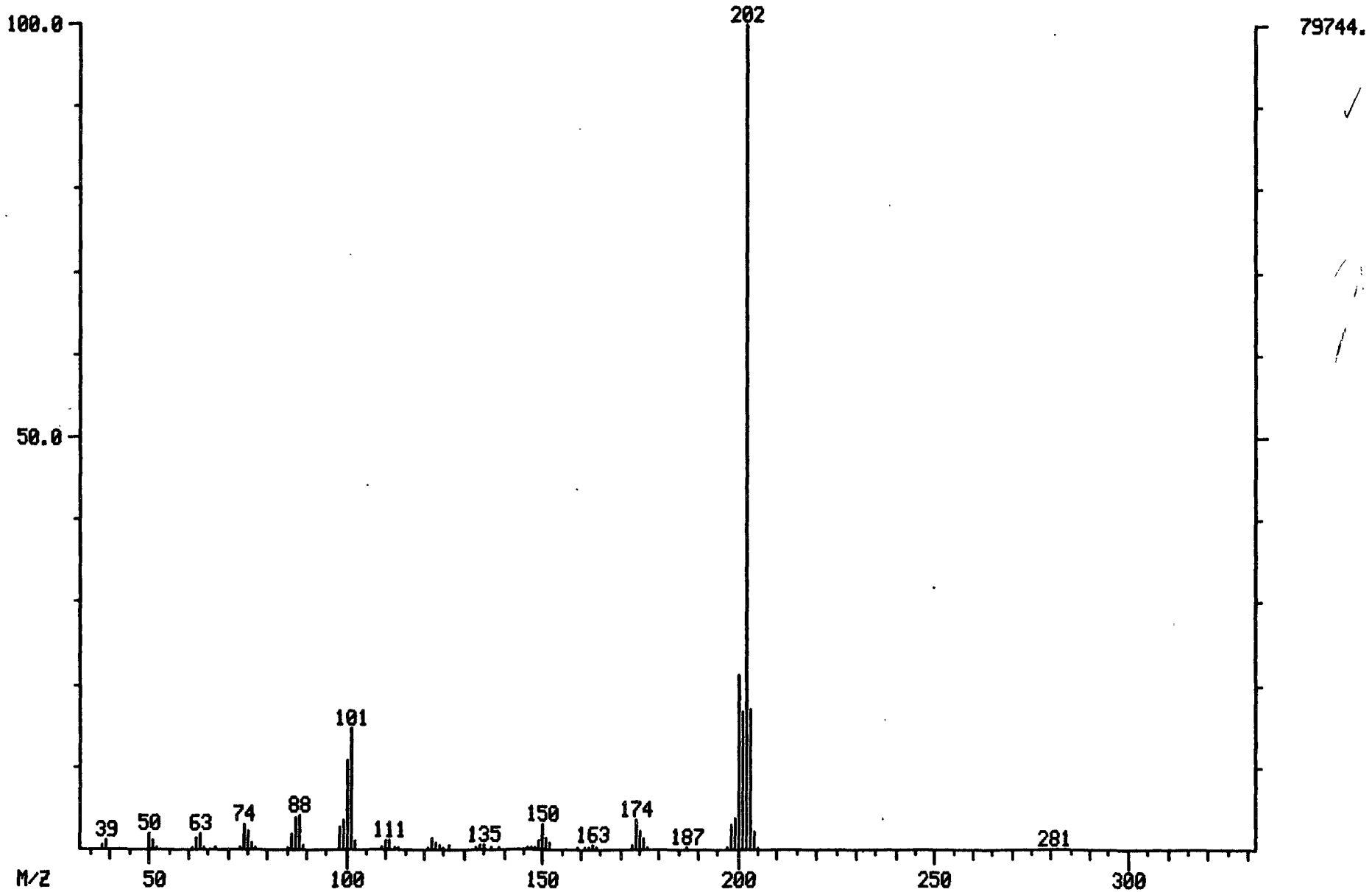


MASS SPECTRUM
03/13/89 14:40:00 + 25:45
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 270 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05968 #1931
CALI: AA05968 #4

BASE M/Z: 202
RIC: 201728.

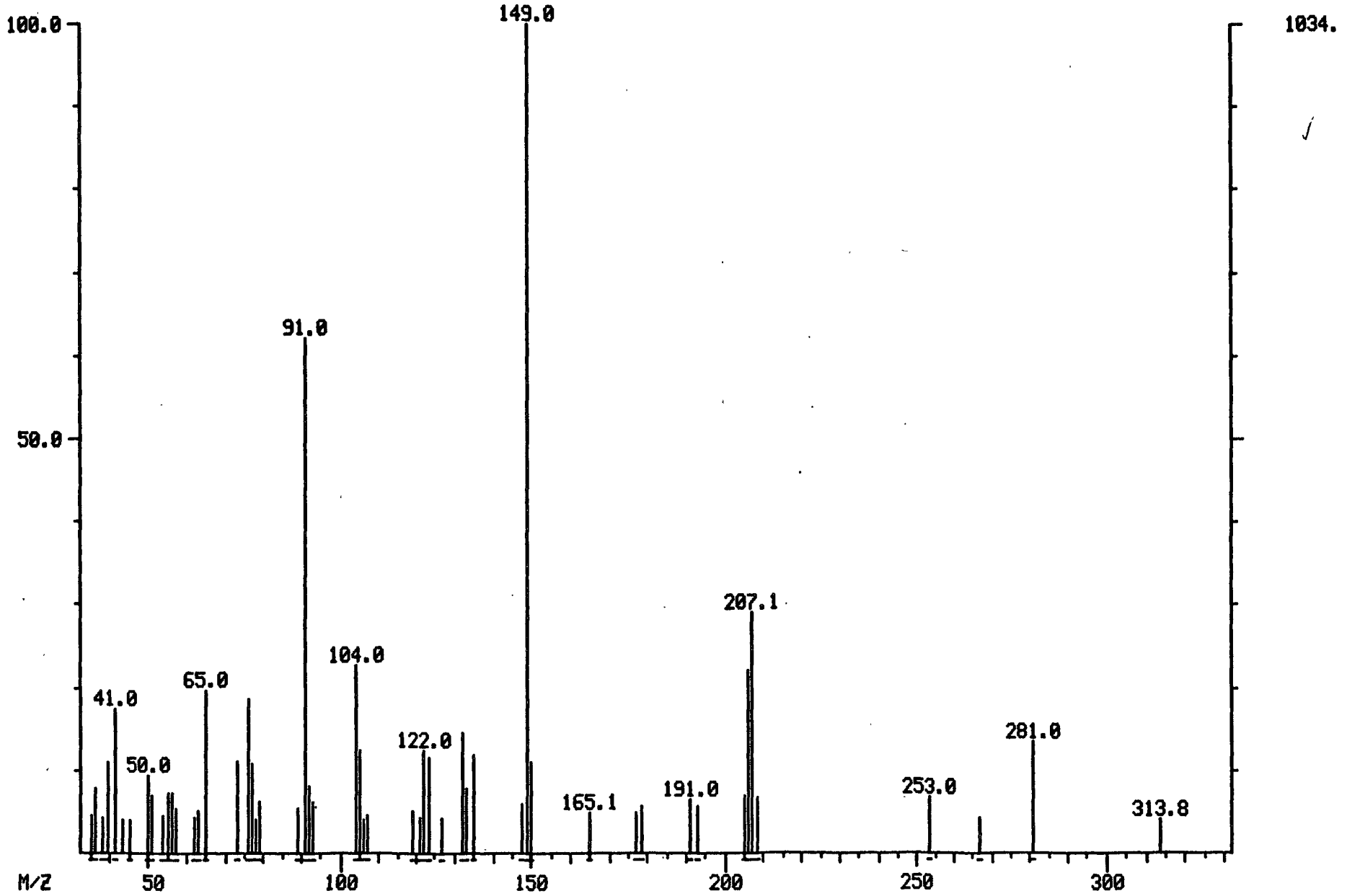
3 409



MASS SPECTRUM
03/13/89 18:38:00 + 27:30
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 288 DEG. C

DATA: AA05972 #2063
CALI: AA05972 #4

BASE M/Z: 149
RIC: 6296.



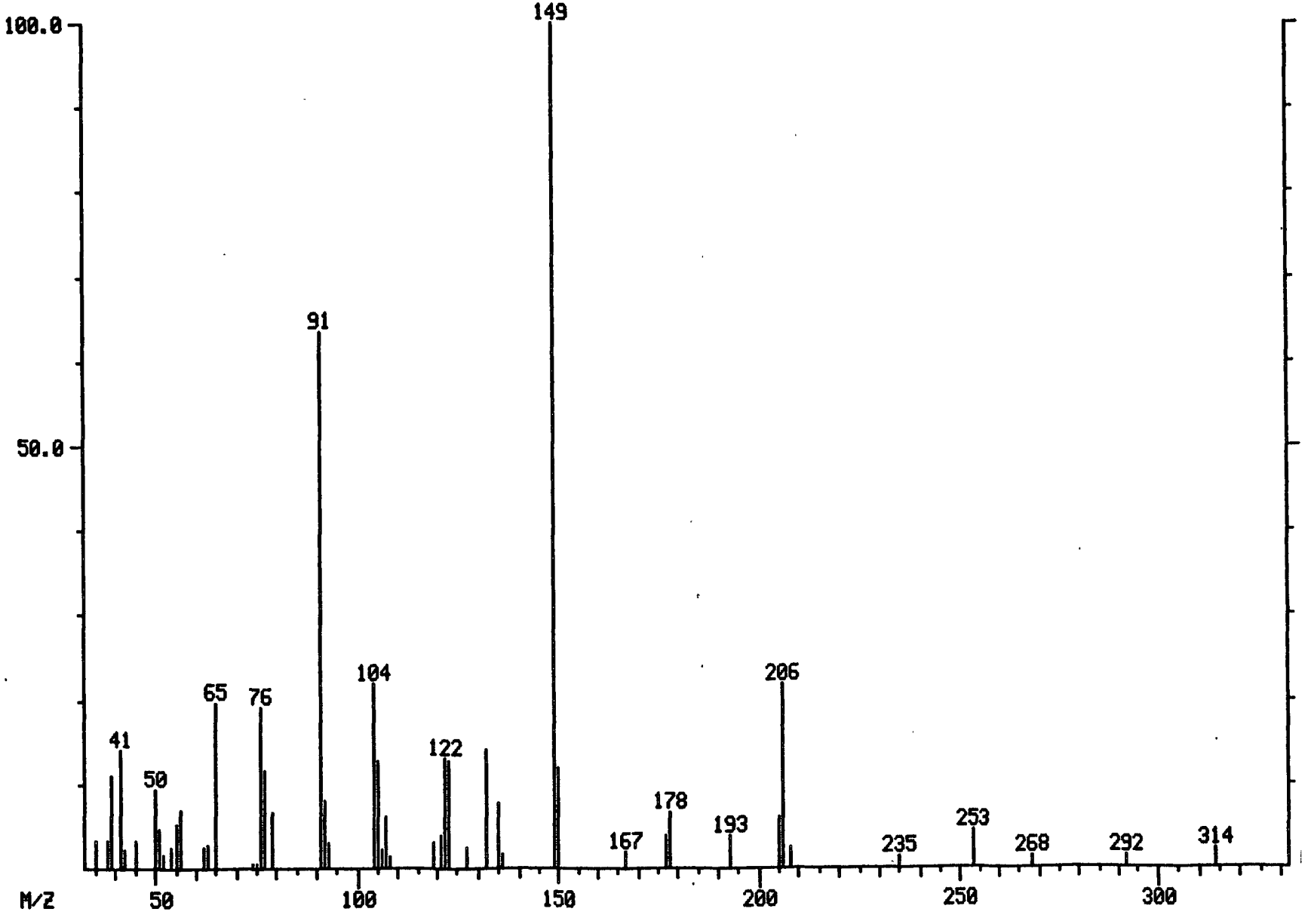
3 410

MASS SPECTRUM
03/13/89 18:38:00 + 27:30
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 288 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05972 #2063
CALI: AA05972 #4

BASE M/Z: 149
RIC: 4472.

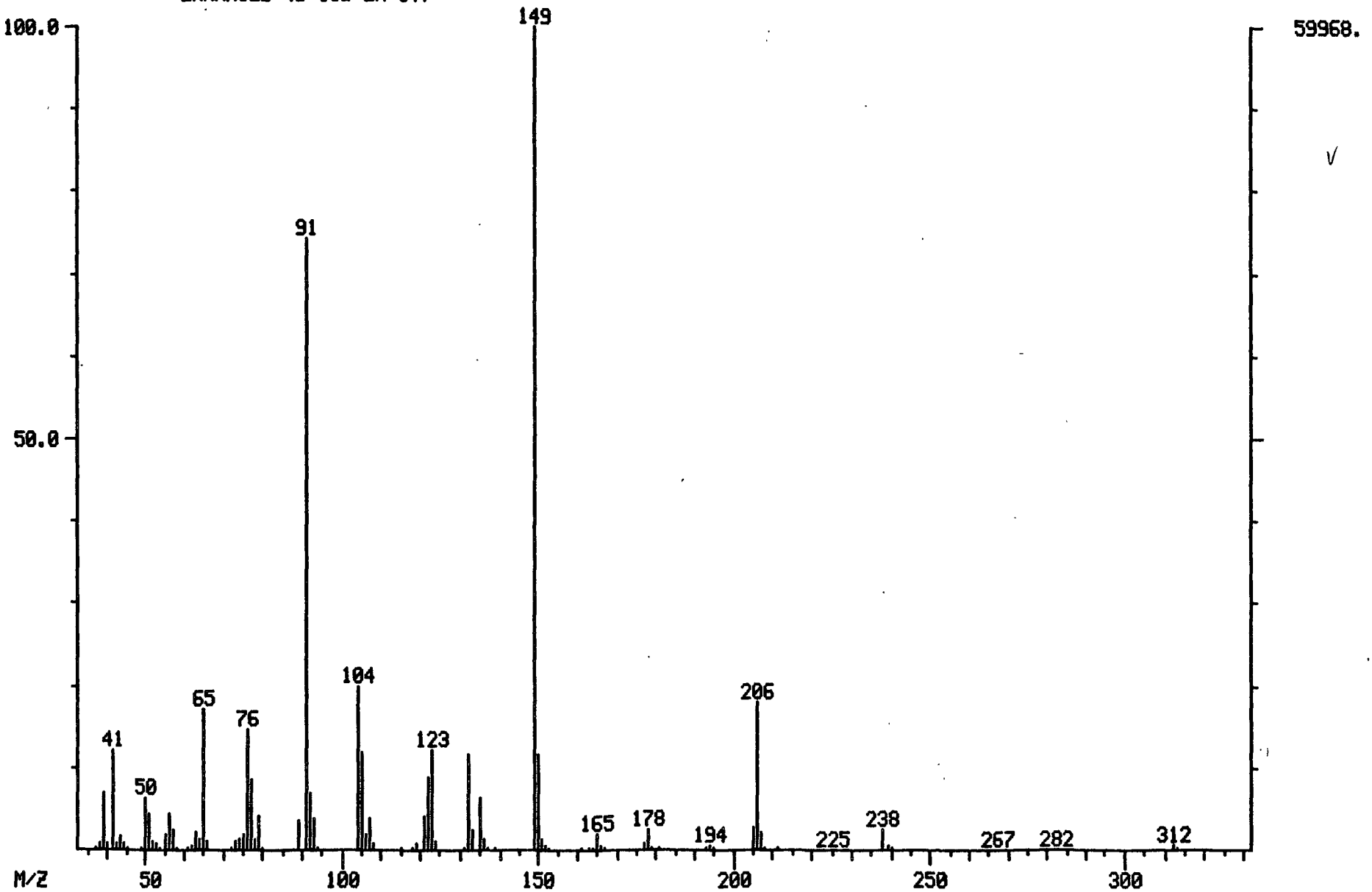
3 411



MASS SPECTRUM
03/13/89 14:40:00 + 27:34
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 288 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05968 #2068
CALI: AA05968 #4

BASE M/Z: 149
RIC: 258560.

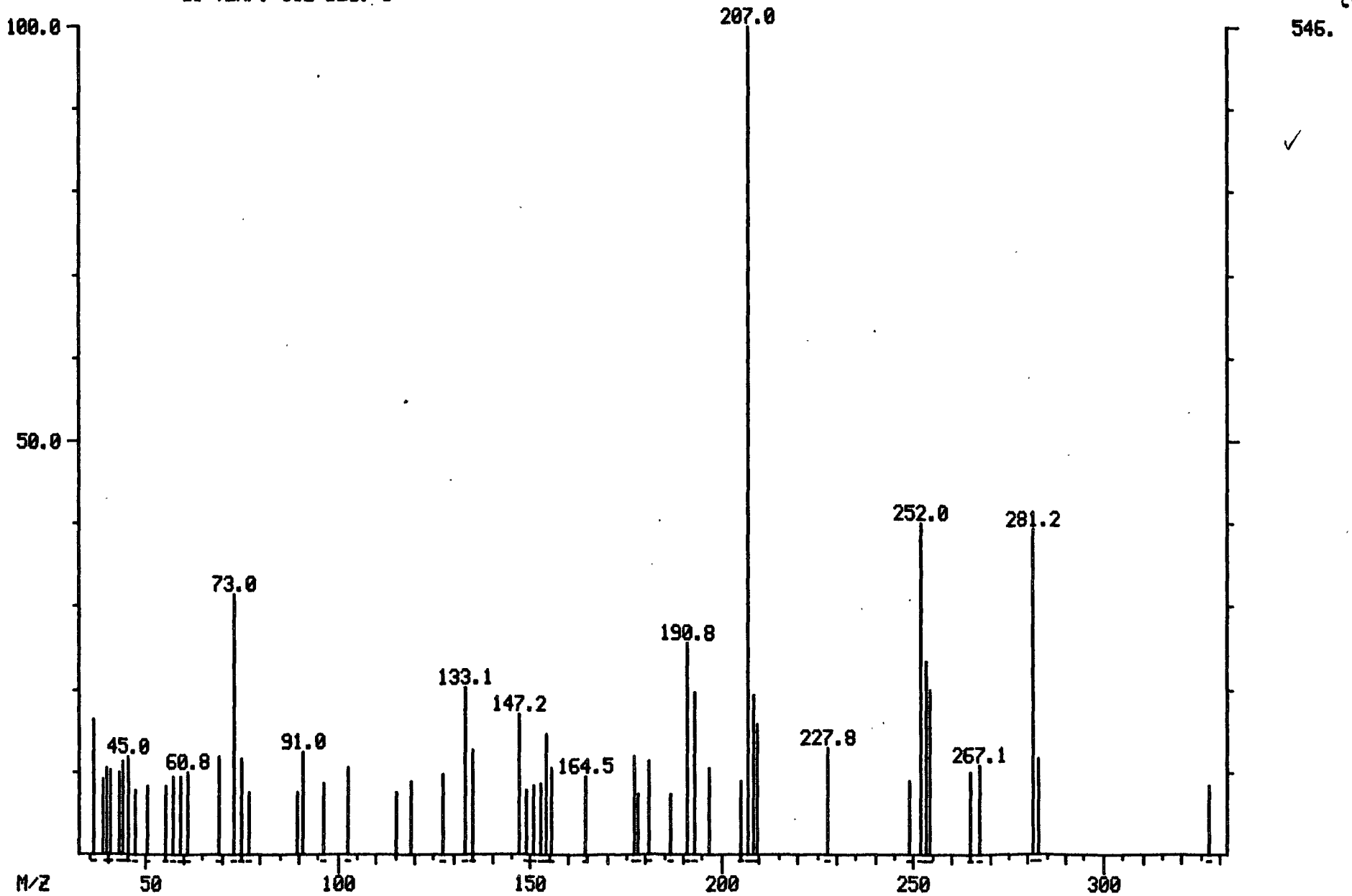


MASS SPECTRUM
03/13/89 18:38:00 + 28:52
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 302 DEG. C

DATA: AA05972 #2165
CALI: AA05972 #4

BASE M/Z: 207
RIC: 4448.

3 413

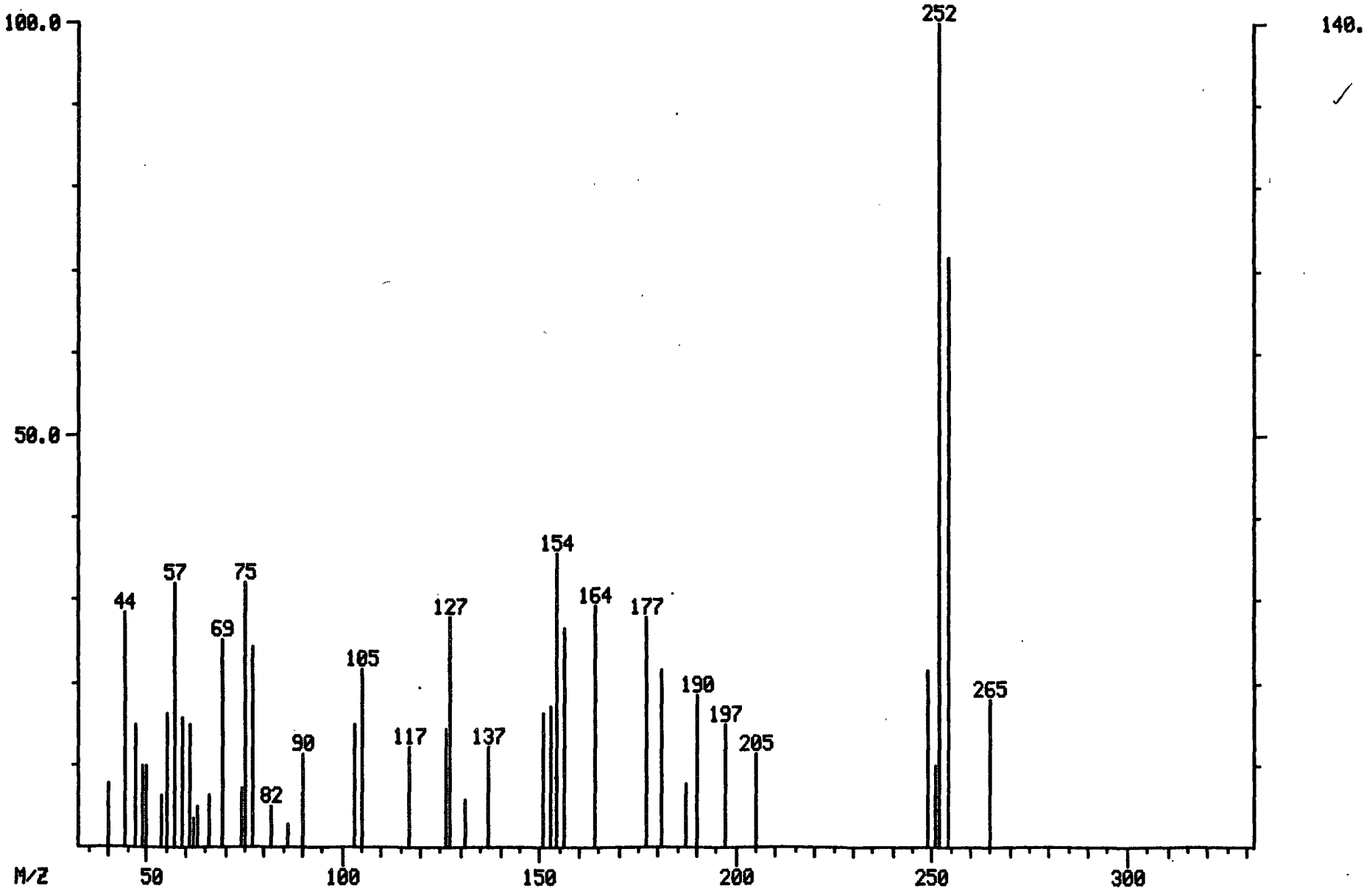


MASS SPECTRUM
03/13/89 18:38:00 + 28:52
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C <2 MIN>-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 302 DEG. C
ENHANCED <S 15B 2N 0T>

DATA: AA05972 #2165
CALI: AA05972 #4

BASE M/Z: 252
RIC: 1246.

3 414

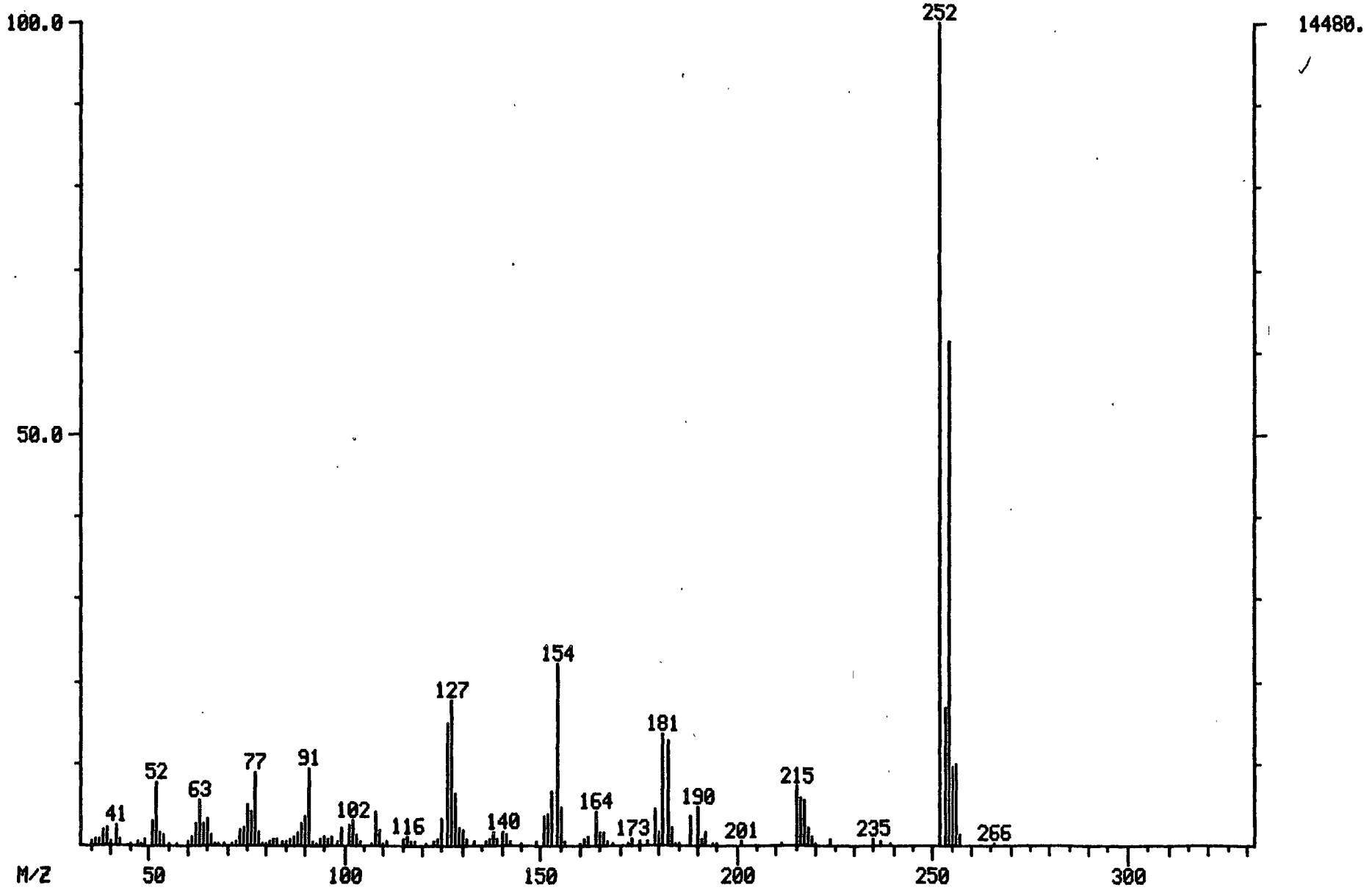


MASS SPECTRUM
03/13/89 14:40:00 + 28:55
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 302 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05968 #2169
CALI: AA05968 #4

BASE M/Z: 252
RIC: 72832.

3 4:5

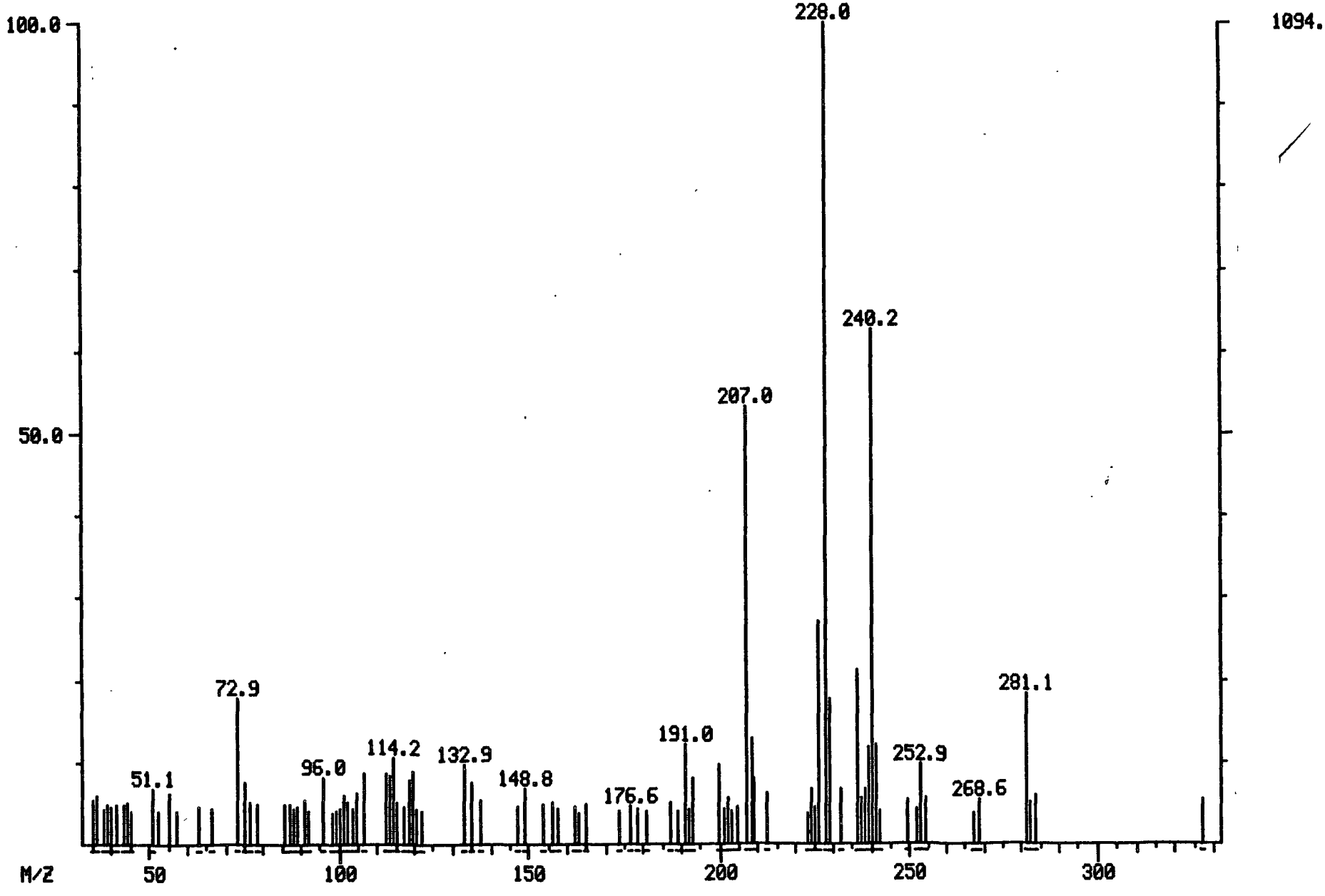


MASS SPECTRUM
03/13/89 18:38:00 + 28:56
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 302 DEG. C

DATA: AA05972 #2170
CALI: AA05972 #4

BASE M/Z: 228
RIC: 9312.

3 416

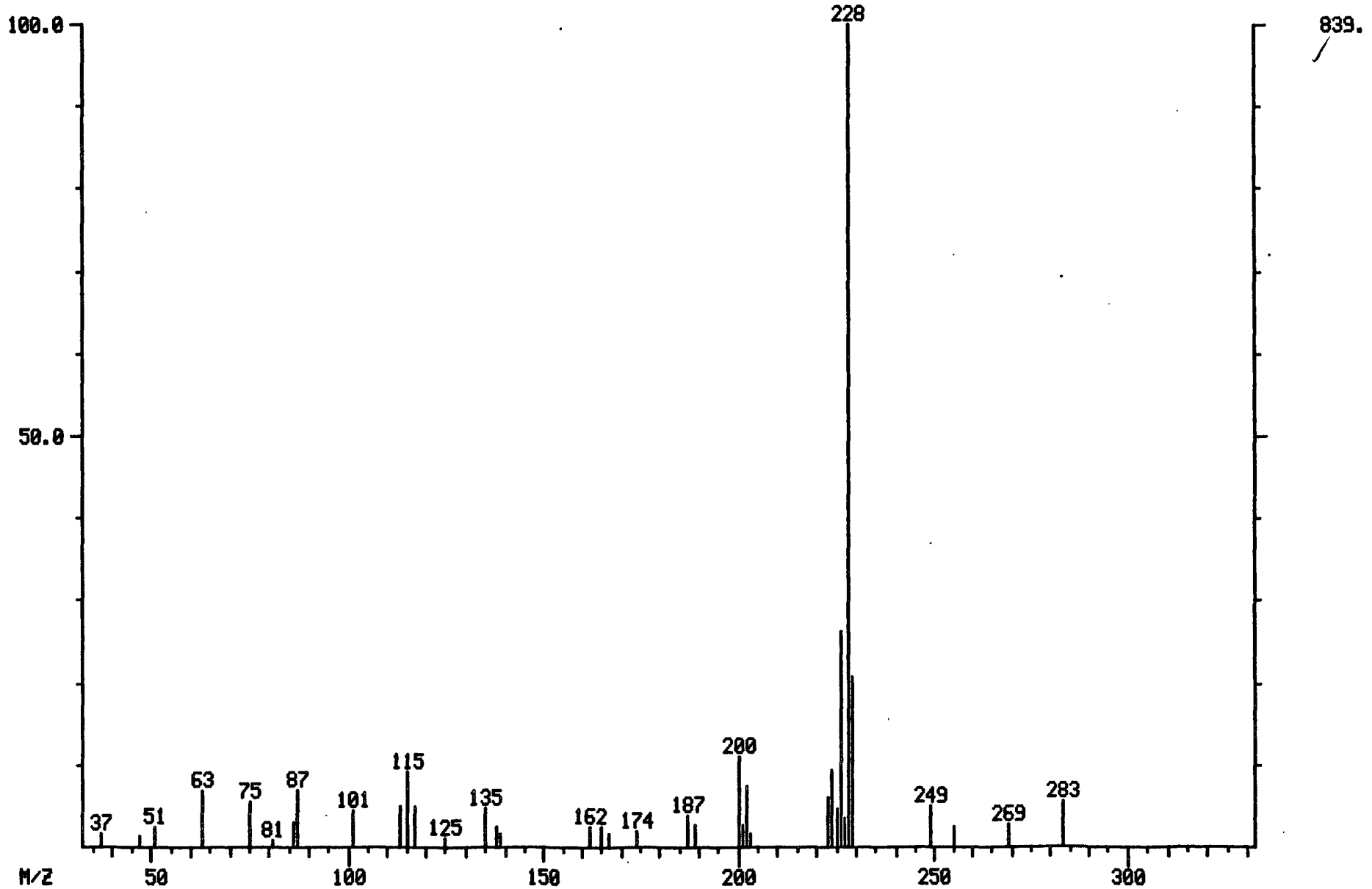


MASS SPECTRUM
03/13/89 18:38:00 + 28:56
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 302 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05972 #2170
CALI: AA05972 #4

BASE M/Z: 228
RIC: 2516.

3 417

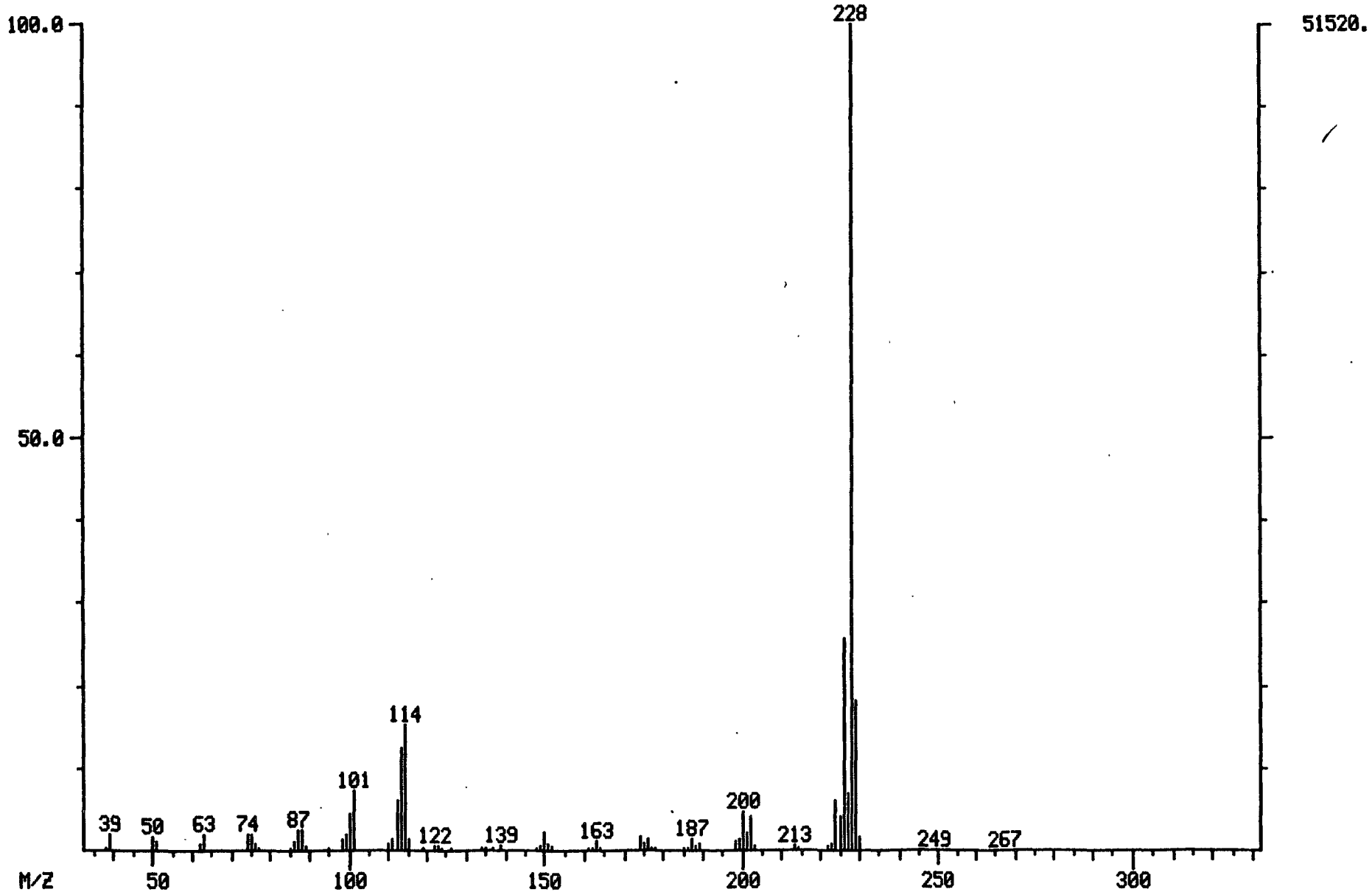


MASS SPECTRUM
03/13/89 14:40:00 + 29:00
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 302 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05968 #2175
CALI: AA05968 #4

BASE M/Z: 228
RIC: 139008.

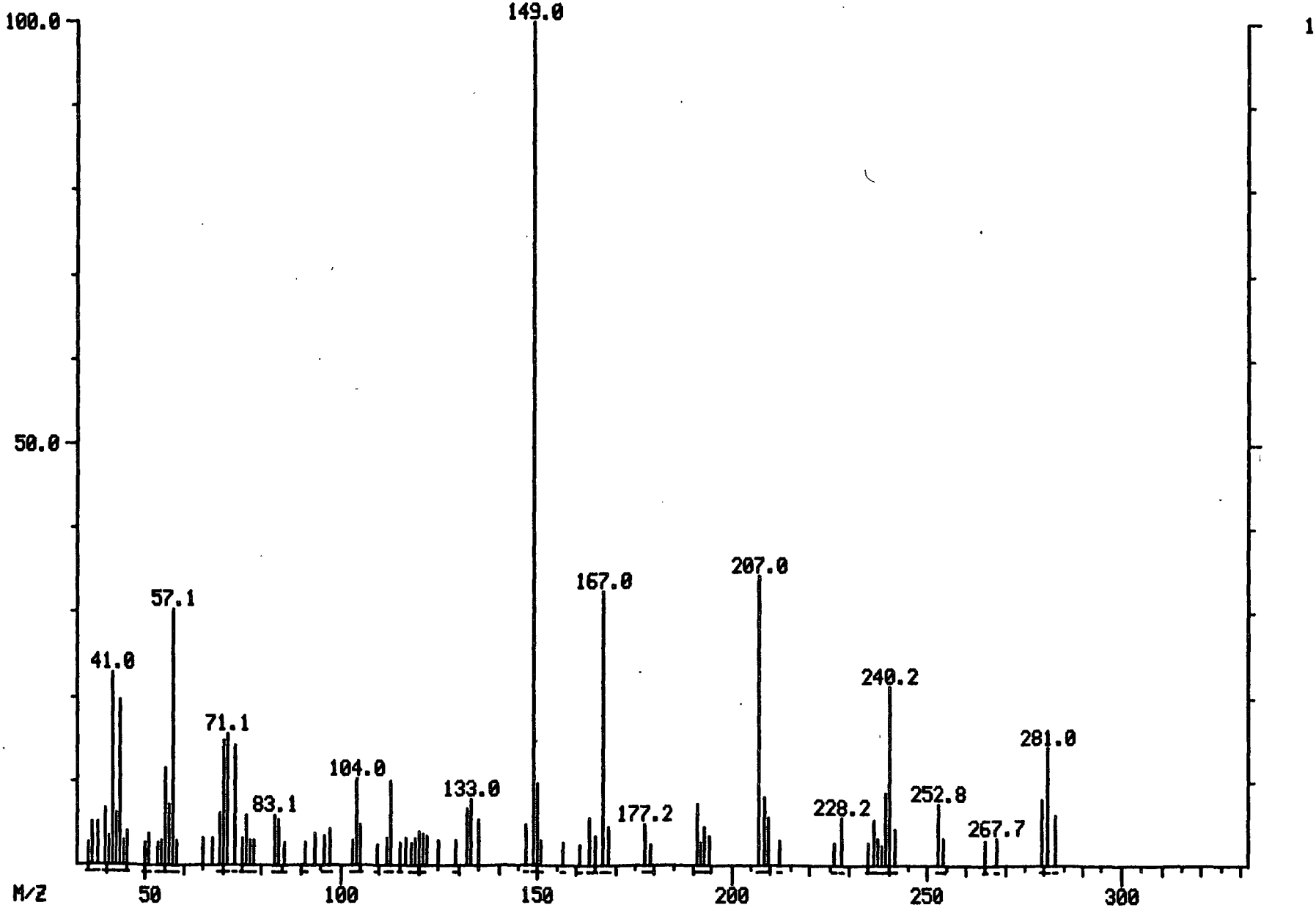
3 418



MASS SPECTRUM
03/13/89 18:38:00 + 29:07
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 302 DEG. C

DATA: AA05972 #2184
CALI: AA05972 #4

BASE M/Z: 149
RIC: 11632.



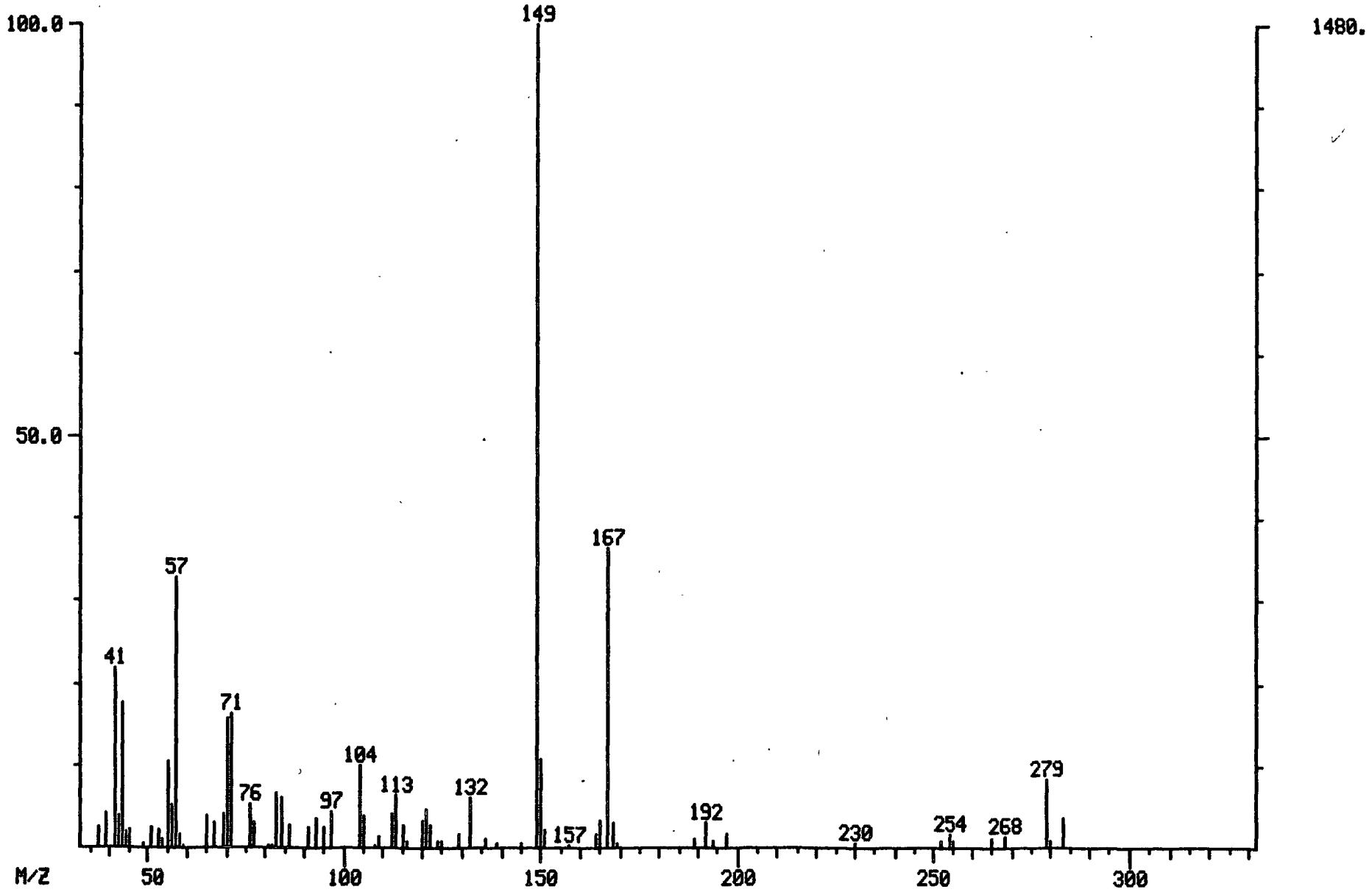
3 419

MASS SPECTRUM
03/13/89 18:38:00 + 29:07
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 302 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05972 #2184
CALI: AA05972 #4

BASE M/Z: 149
RIC: 6384.

3 420

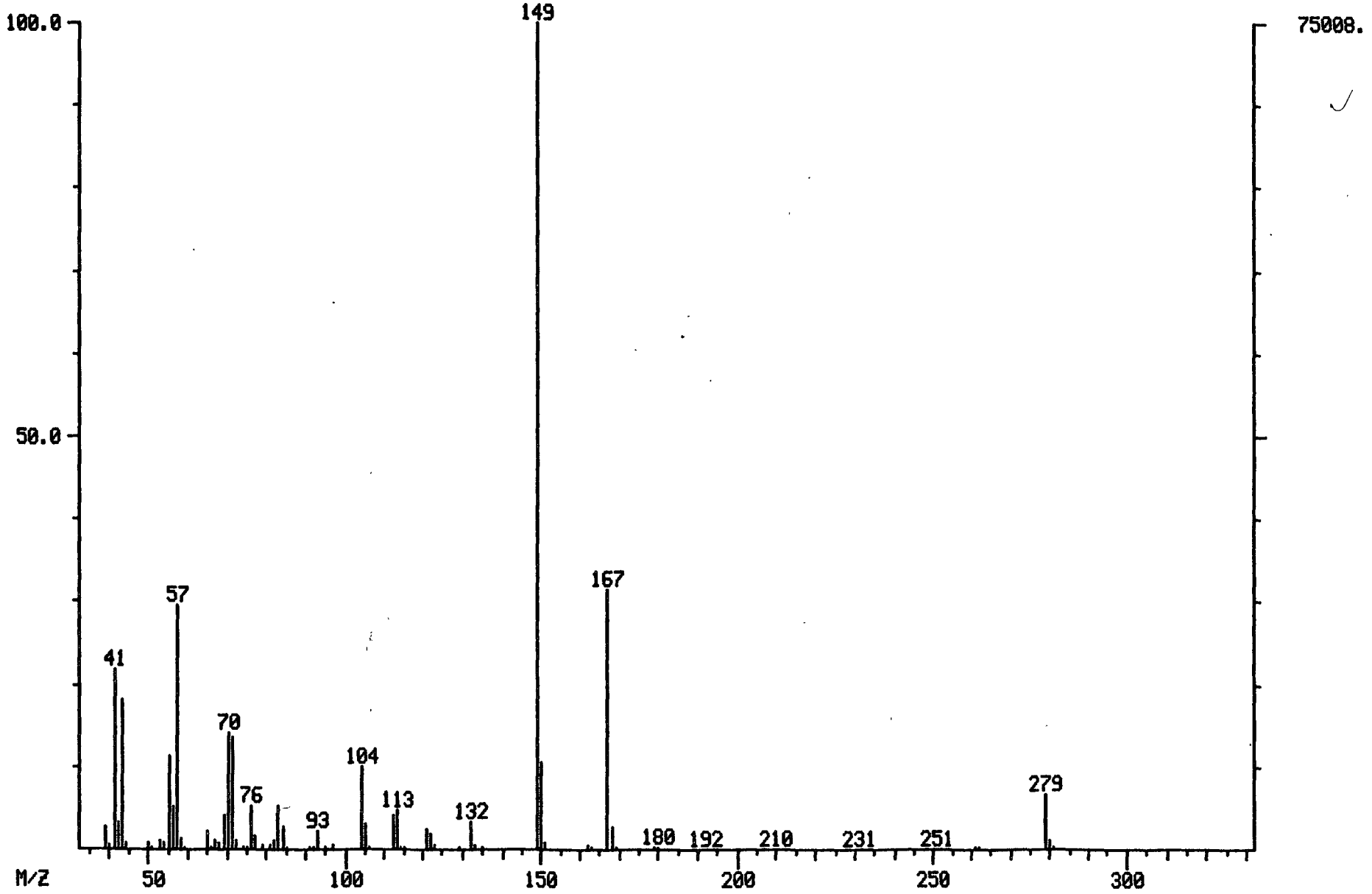


MASS SPECTRUM
03/13/89 14:40:00 + 29:11
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 303 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05968 #2189
CALI: AA05968 #4

BASE M/Z: 149
RIC: 257792.

3 421

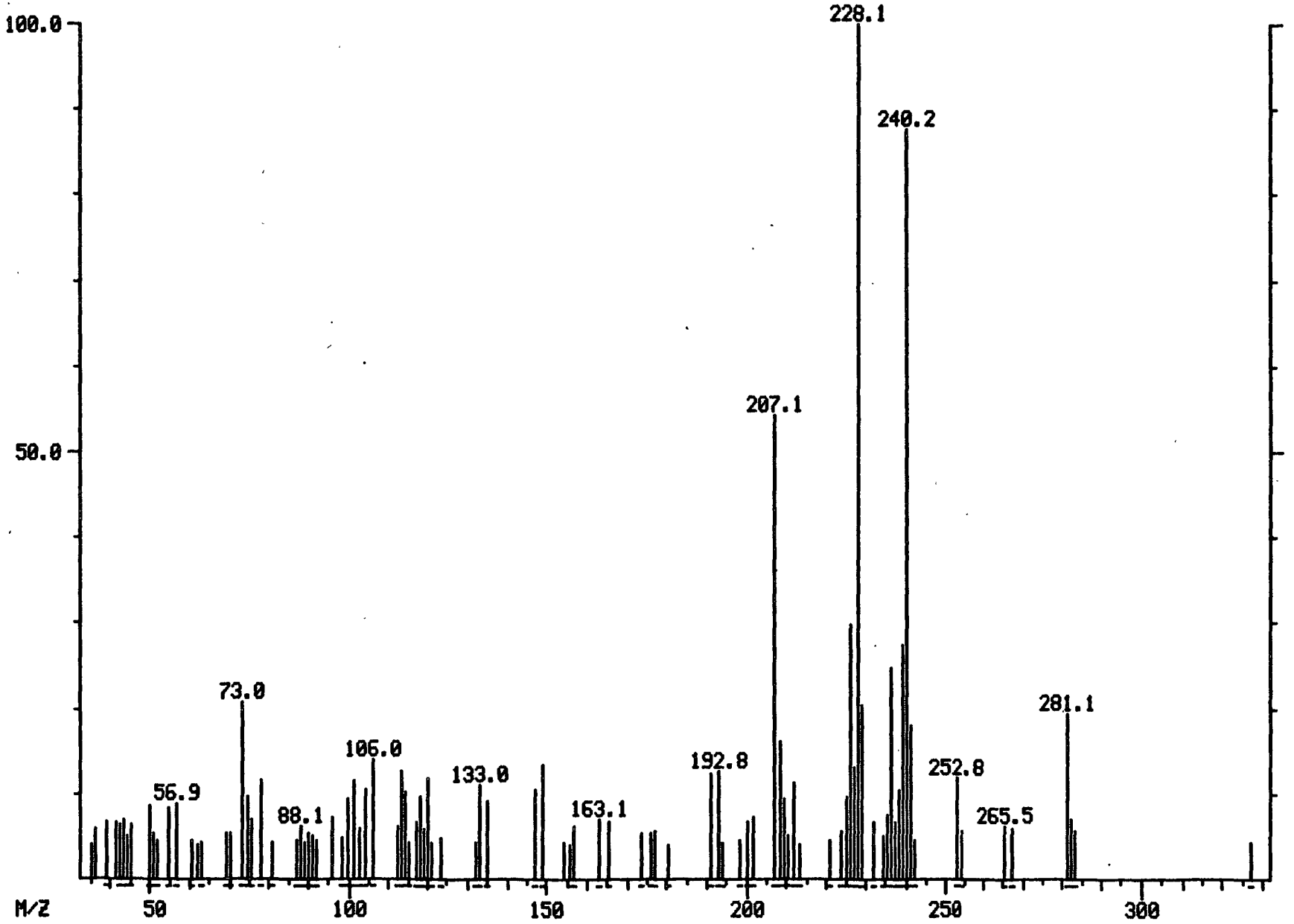


MASS SPECTRUM
03/13/89 18:38:00 + 29:03
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 302 DEG. C

DATA: AA05972 #2179
CALI: AA05972 #4

BASE M/Z: 228
RIC: 10416.

3 4:22

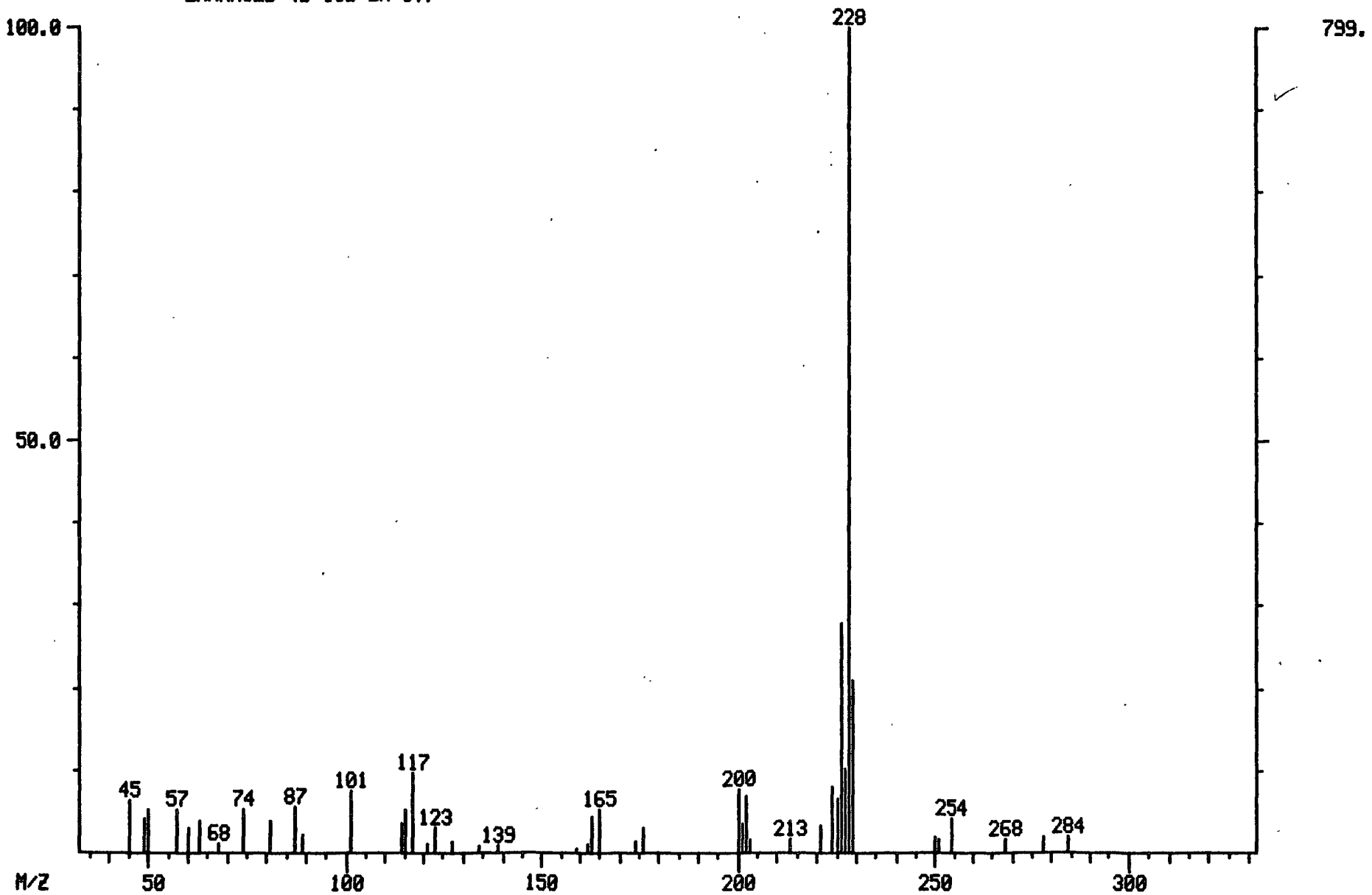


MASS SPECTRUM
03/13/89 18:38:00 + 29:03
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 302 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05972 #2179
CALI: AA05972 #4

BASE M/Z: 228
RIC: 2560.

423
3

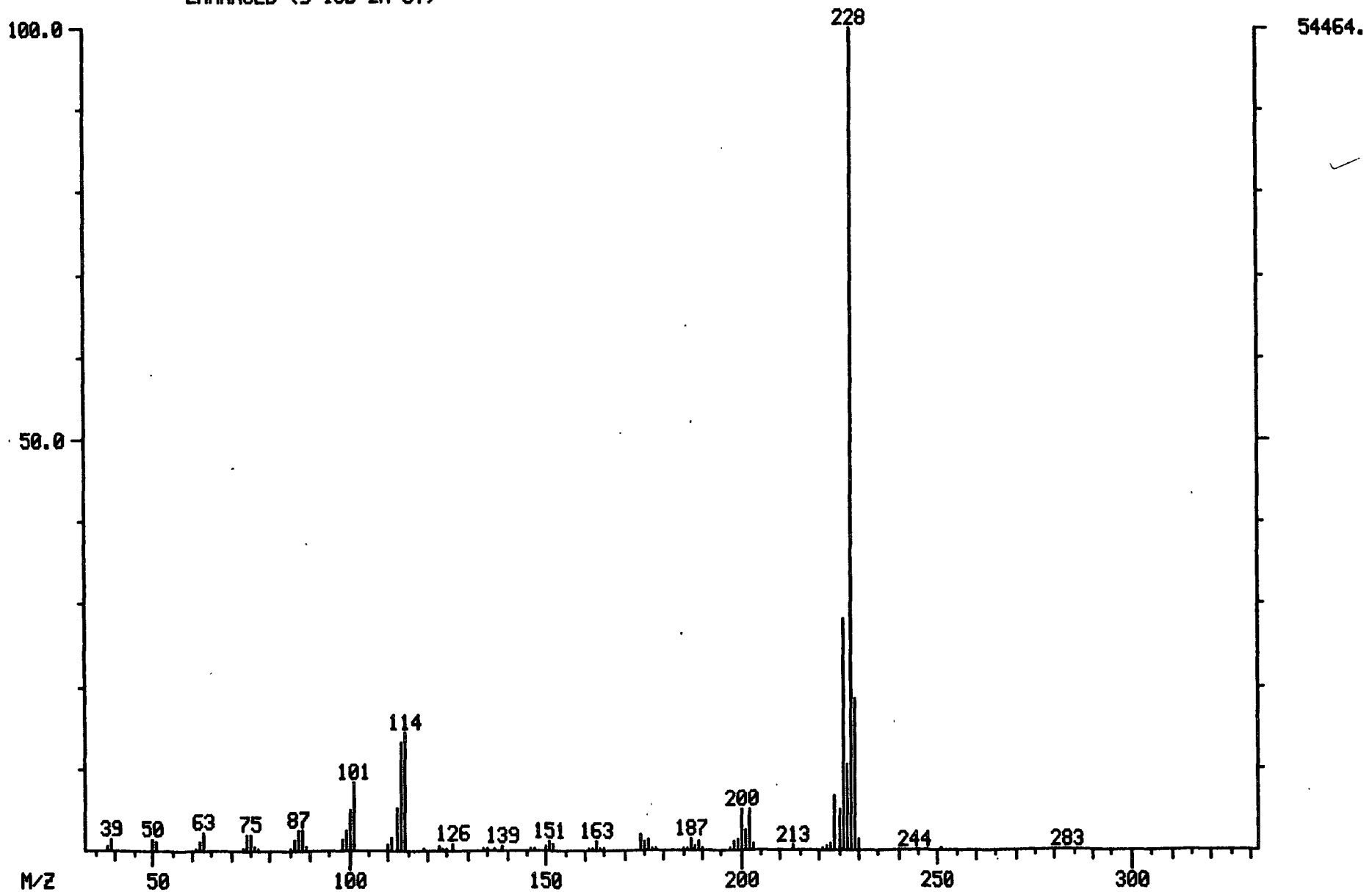


MASS SPECTRUM
03/13/89 14:40:00 + 29:07
SAMPLE: BNA STANDARD #1274 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 302 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA05968 #2184
CALI: AA05968 #4

BASE M/Z: 228
RIC: 151552.

3 424



Library Search Data: AA05972 # 511 Base m/z: 43
03/13/89 18:38:00 + 6:49 Cali: AA05972 # 4 RIC: 14879.
Sampl : BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
Conds.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
Enhanc d (S 15B 2N OT)

38761 sp ctra in LIBRARYNB searched for maximum FIT
176 matched at least 6 of the 16 largest peaks in the unknown

Rank	In.	Name
1	1038	2-PROPYN-1-OL, ACETATE
2	792	HYDROPEROXIDE, 1,1-DIMETHYLETHYL
3	4280	2-PROPANOL, 2-NITROSO-, ACETATE (ESTER)
4	1082	2-PROPANONE, 1-CYCLOPROPYL-
5	1357	2,3-BUTANEDIONE, MONOOXIME

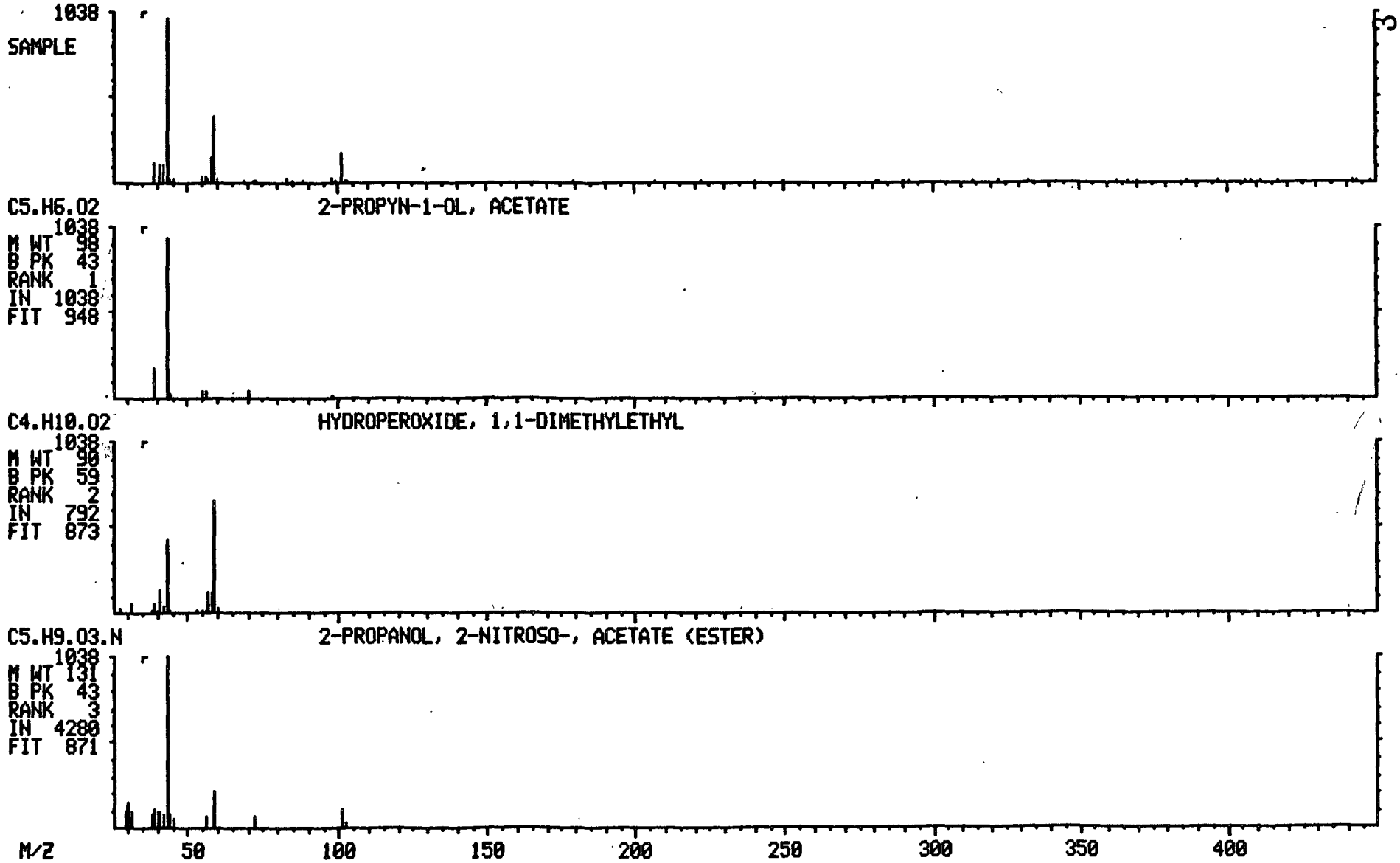
Rank	Formula	M.Wt	B.Pk	Purity	Fit	RFit
1	C5.H6.O2	98	43	358	948	375
2	C4.H10.O2	90	59	567	873	575
3	C5.H9.O3.N	131	43	612	871	654
4	C6.H10.O	98	43	396	862	418
5	C4.H7.O2.N	101	43	486	855	529

Rank	R t.Time	B.P.Int.	US.Par.1	US.Par.2	C.A.S. #
1	—	—	—	—	627-09-8
2	—	—	—	—	75-91-2
3	—	—	—	—	6931-04-0
4	—	—	—	—	4160-75-2
5	—	—	—	—	57-71-6

LIBRARY SEARCH DATA: AA05972 # 511 BASE M/Z: 43
03/13/89 18:38:00 + 6:49 CALI: AA05972 # 4 RIC: 14879.
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 (100)
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
ENHANCED (S 15B 2N 0T)

426

3



Library Search Data: AA05972 #1544 Bas m/z: 141
03/13/89 18:38:00 + 20:35 Cali: AA05972 # 4 RIC: 19455.
Sampl : BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
Conds.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
Enhanced (S 15B 2N OT)

38761 sp ctra in LIBRARYNB searched for maximum FIT
58 matched at least 5 of the 16 largest peaks in the unknown

Rank	In.	Name
1	21637	BENZENE, BROMOPHENOXY-
2	21636	BENZENE, 1-BROMO-4-PHENOXY-
3	21678	1H-PYRAZOLE, 1-PHENYL-4-(PHENYLAZO)-
4	5811	1H-INDENE, 1-ETHYLIDENE-
5	5812	1,4-METHANONAPHTHALENE, 1,4-DIHYDRO-

Rank	Formula	M.Wt	B.Pk	Purity	Fit	RFit
1	C12.H9.O.BR	248	248	742	917	753
2	C12.H9.O.BR	248	51	707	897	719
3	C15.H12.N4	248	171	257	801	257
4	C11.H10	142	141	238	791	250
5	C11.H10	142	141	250	771	263

Rank	Ret. Time	B.P. Int.	US. Par. 1	US. Par. 2	C.A.S. #
1	—	—	—	—	36563-47-0
2	—	—	—	—	101-55-3
3	—	—	—	—	25503-12-2
4	—	—	—	—	2471-83-2
5	—	—	—	—	4453-90-1

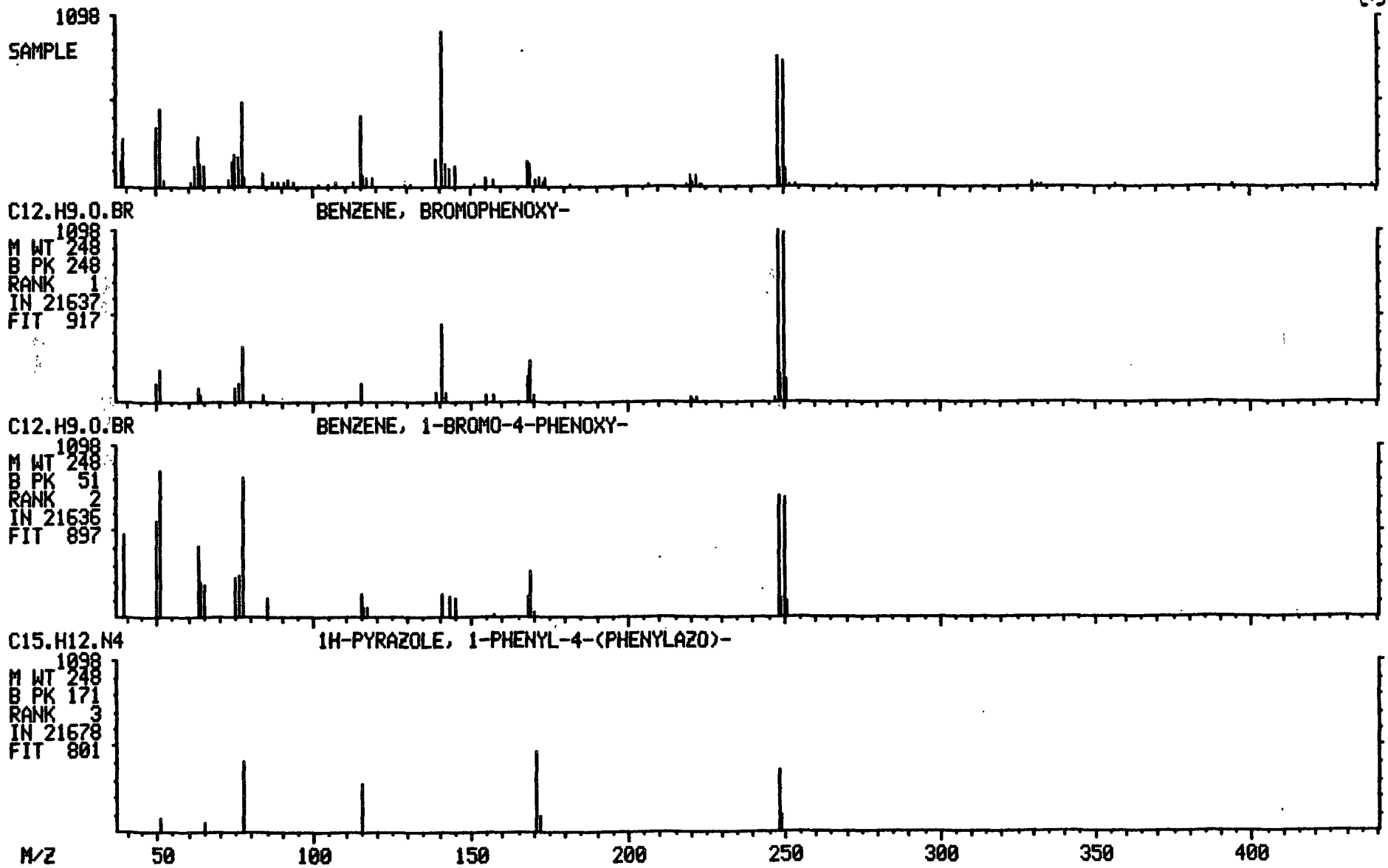
LIBRARY SEARCH
03/13/89 18:38:00 + 20:35
SAMPLE: BNA SOIL BLANK FOR #0749 RE-EXT WILLOW GROVE BLANK#491 <100>
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
ENHANCED (S 15B 2N 0T)

DATA: AA05972 #1544
CALI: AA05972 # 4

BASE M/Z: 141
RIC: 19455.

428

3



ORGANICS ANALYSIS DATA SHEET SAMPLE #: SOIL BLANK #52'

LABORATORY: EA ENG.
LABORATORY ID: AA06038
MATRIX: SOIL

CASE #/SAS #: WILLOW GROVE
QC REPORT #: AA06038
CONTRACT #: 10388.03
DATE RECEIVED: 02/21/89

DATA RELEASE AUTHORIZED BY: _____

SEMIVOLATILE COMPOUNDS (PAGE 1)

LEVEL:	LOW	GPC CLEANUP	__YES ✓NO
DATE EXT/PREP:	03/27/89	SEPARATORY EXTRACTION	__YES
DATE ANALYZED:	03/30/89	CONTINUOUS EXTRACTION	✓YES
CONC/DIL FACTOR:	10.24 G -> 1 ML		
PH:	N/A		
% MOISTURE:	N/A		
% MOISTURE (DECANTED):	N/A		
STANDARD ID:	AA06035		
SENSITIVITY ID:	AA06031		

CAS #		UG/KG	
108-95-2	PHENOL	1000.	U
111-44-4	BIS(2-CHLOROETHYL)ETHER	1000.	U
95-57-8	2-CHLOROPHENOL	1000.	U
541-73-1	1,3-DICHLOROBENZENE	1000.	U
106-46-7	1,4-DICHLOROBENZENE	1000.	U
100-51-6	BENZYL ALCOHOL	1000.	U
95-50-1	1,2-DICHLOROBENZENE	1000.	U
95-48-7	2-METHYLPHENOL	1000.	U
39638-32-9	BIS(2-CHLOROISOPROPYL)ETHER	1000.	U
106-44-5	4-METHYLPHENOL	1000.	U
621-64-7	N-NITROSODIPROPYLAMINE	1000.	U
67-72-1	HEXACHLOROETHANE	1000.	U
98-95-3	NITROBENZENE	1000.	U
78-59-1	ISOPHORONE	1000.	U
88-75-5	2-NITROPHENOL	1000.	U
105-67-9	2,4-DIMETHYLPHENOL	1000.	U
65-85-0	BENZOIC ACID	5000.	U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	1000.	U
120-33-2	2,4-DICHLOROPHENOL	1000.	U
120-82-1	1,2,4-TRICHLOROBENZENE	1000.	U
91-20-3	NAPHTHALENE	1000.	U
106-47-8	4-CHLOROANILINE	1000.	U
87-68-3	HEXACHLOROBUTADIENE	1000.	U
59-50-7	4-CHLORO-3-METHYLPHENOL	1000.	U
91-57-6	2-METHYLNAPHTHALENE	1000.	U
77-47-4	HEXACHLOROCYCLOPENTADIENE	1000.	U
88-06-2	2,4,6-TRICHLOROPHENOL	1000.	U
95-95-4	2,4,5-TRICHLOROPHENOL	5000.	U
91-58-7	2-CHLORONAPHTHALENE	1000.	U
88-74-4	2-NITROANILINE	5000.	U
131-11-3	DIMETHYL PHTHALATE	1000.	U
208-96-8	ACENAPHTHYLENE	1000.	U
99-09-2	3-NITROANILINE	5000.	U
83-32-9	ACENAPHTHENE	1000.	U
51-28-5	2,4-DINITROPHENOL	5000.	U
100-02-7	4-NITROPHENOL	5000.	U
132-64-9	DIBENZOFURAN	1000.	U

FORM I

ORGANICS ANALYSIS DATA SHEET SAMPLE #: SOIL BLANK #529

LABORATORY: EA ENG.
LABORATORY ID: AA06038
MATRIX: SOIL

CASE #/SAS #: WILLOW GROVE
QC REPORT #: AA06038
CONTRACT #: 10388.03
DATE RECEIVED: 02/21/89

DATA RELEASE AUTHORIZED BY: _____

SEMIVOLATILE COMPOUNDS (PAGE 2)

LEVEL: LOW
DATE EXT/PREP: 03/27/89
DATE ANALYZED: 03/30/89
CONC/DIL FACTOR: 10.24 G -> 1 ML
PH: N/A
% MOISTURE: N/A
% MOISTURE (DECANTED): N/A
STANDARD ID: AA06035
SENSITIVITY ID: AA06031

GPC CLEANUP __YES ✓NO
SEPARATORY EXTRACTION __YES
CONTINUOUS EXTRACTION ✓YES

CAS #		UG/KG
121-14-2	2,4-DINITROTOLUENE	1000. U
606-20-2	2,6-DINITROTOLUENE	1000. U
84-66-2	DIETHYL PHTHALATE	1000. U
7005-72-3	4-CHLOROPHENYL PHENYL ETHER	1000. U
86-73-7	FLUORENE	1000. U
100-01-6	4-NITROANILINE	5000. U
534-52-1	4,6-DINITRO-2-METHYLPHENOL	5000. U
86-30-6	N-NITROSODIPHENYLAMINE	1000. U
101-55-3	4-BROMOPHENYL PHENYL ETHER	1000. U
118-74-1	HEXACHLOROBENZENE	1000. U
87-86-5	PENTACHLOROPHENOL	5000. U
85-01-8	PHENANTHRENE	1000. U
120-12-7	ANTHRACENE	1000. U
84-74-2	DI-N-BUTYL PHTHALATE	210. J
206-44-0	FLUORANTHENE	100. J
129-00-0	PYRENE	110. J
85-68-7	BUTYL BENZYL PHTHALATE	1000. U
91-94-1	3,3'-DICHLOROBENZIDINE	2000. U
56-55-3	BENZO(A)ANTHRACENE	1000. U
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	110. J,T
218-01-9	CHRYSENE	1000. U
117-84-0	DI-N-OCTYL PHTHALATE	1000. U
205-99-2	BENZO(B)FLUORANTHENE	1000. U
207-08-9	BENZO(K)FLUORANTHENE	1000. U
50-32-8	BENZO(A)PYRENE	1000. U
193-39-5	INDENO(1,2,3-CD)PYRENE	1000. U
53-70-3	DIBENZO(A,H)ANTHRACENE	1000. U
191-24-2	BENZO(GHI)PERYLENE	1000. U

RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

FORM I

Laboratory Name: EA Laboratories

Case No: Willow Grove

Sample Number
Method Blank

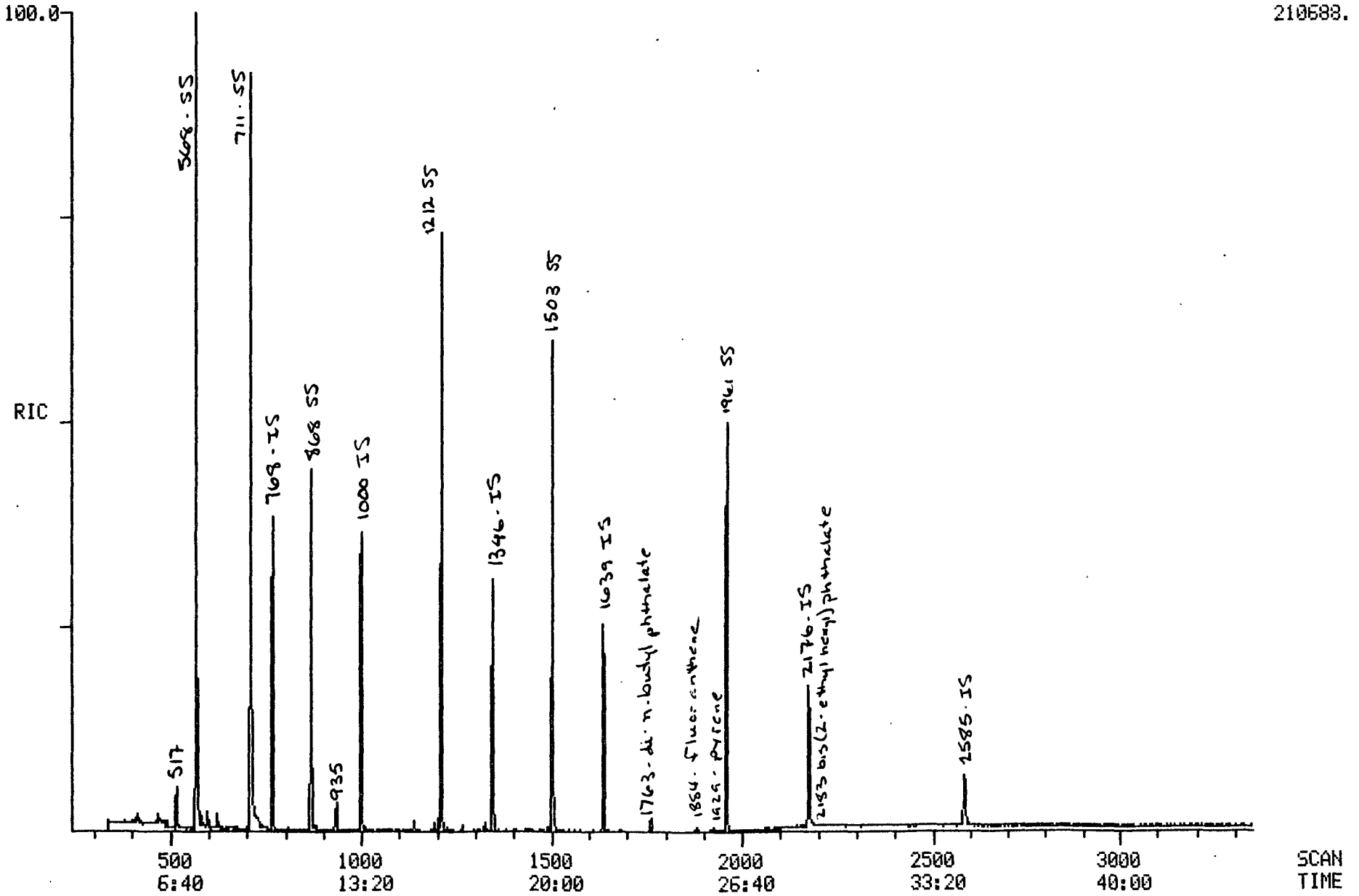
EA# BL 529

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	unknown	BNA	517	490 J
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

RIC DATA: AA06038 #1 SCANS 240 TO 3345
03/30/89 17:52:00 CALI: AA06038 #4
SAMPLE: BNA SOIL BLANK FOR EA#0777 RE-EXT WILLOW GROVE BLANK #529 <97.66
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
RANGE: G 1,3345 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3



3 432

Quantitation Report File: AA06038

Data: AA06038.TI
03/30/89 17:52:00
Sample: BNA SOIL BLANK FOR EA#0777 RE-EXT WILLOW GROVE BLANK #529 <97.66
Conds.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
Standard ID: AA06035 Instrument: MS2
Sensitivity ID: AA06031 Analyst: JEH - EA Inst Cali: 03/30/89

AMOUNT=AREA * REF AMNT/(REF AREA * RESP FACT)
Resp. fac. from Library Entry

NO	NAME
1	IS1** 1,4-DICHLOROBENZENE-D4
2	IS2** NAPHTHALENE-D8
3	IS3** ACENAPHTHENE-D10
4	IS4** PHENANTHRENE-D10
5	IS5** CHRYSENE-D12
6	IS6** PERYLENE-D12
7	65A PHENOL
8	18B BIS (2-CHLOROETHYL) ETHER
9	24A 2-CHLOROPHENOL
10	26B 1,3-DICHLOROBENZENE
11	27B 1,4-DICHLOROBENZENE
12	6H BENZYL ALCOHOL
13	25B 1,2-DICHLOROBENZENE
14	2H 2-METHYLPHENOL
15	42B BIS (2-CHLOROISOPROPYL) ETHER
16	3H 4-METHYLPHENOL
17	63B N-NITROSO-DI-N-PROPYLAMINE
18	12B HEXACHLOROETHANE
19	56B NITROBENZENE
20	54B ISOPHORONE
21	57A 2-NITROPHENOL
22	34A 2,4-DIMETHYLPHENOL
23	1H BENZOIC ACID
24	43B BIS (2-CHLOROETHOXY) METHANE
25	31A 2,4-DICHLOROPHENOL
26	8B 1,2,4-TRICHLOROBENZENE
27	55B NAPHTHALENE
28	7H 4-CHLOROANILINE
29	52B HEXACHLOROBUTADIENE
30	22A 4-CHLORO-3-METHYLPHENOL
31	9H 2-METHYLNAPHTHALENE
32	53B HEXACHLOROCYCLOPENTADIENE
33	21A 2,4,6-TRICHLOROPHENOL
34	4H 2,4,5-TRICHLOROPHENOL
35	20B 2-CHLORONAPHTHALENE
36	10H 2-NITROANILINE
37	71B DIMETHYLPHTHALATE
38	77B ACENAPHTHYLENE
39	11H 3-NITROANILINE
40	1B ACENAPHTHENE
41	59A 2,4-DINITROPHENOL
42	58A 4-NITROPHENOL
43	8H DIBENZOFURAN
44	36B 2,6-DINITROTOLUENE
45	35B 2,4-DINITROTOLUENE
46	70B DIETHYLPHTHALATE
47	40B 4-CHLOROPHENYLPHENYL ETHER
48	80B FLUORENE
49	12H 4-NITROANILINE
50	60A 4,6-DINITRO-O-CRESOL

AA06038

No	m/z	Scan	Tim	Ref	RRT	M th	Ar a(Hght)	Am unt	%Tot
1	152	768	10:14	1	1.000	A BB	29475.	40.000 PPM	16.56
2	136	1000	13:20	2	1.000	A BB	94377.	40.000 PPM	16.56
3	164	1346	17:57	3	1.000	A BB	40371.	40.000 PPM	16.56
4	188	1639	21:51	4	1.000	A BB	56893.	40.000 PPM	16.56
5	240	2176	29:01	5	1.000	A BB	34930.	40.000 PPM	16.56
6	264	2585	34:28	6	1.000	A BB	31256.	40.000 PPM	16.56
7	NOT FOUND								
8	NOT FOUND								
9	NOT FOUND								
10	NOT FOUND								
11	NOT FOUND								
12	NOT FOUND								
13	NOT FOUND								
14	NOT FOUND								
15	NOT FOUND								
16	NOT FOUND								
17	NOT FOUND								
18	NOT FOUND								
19	NOT FOUND								
20	NOT FOUND								
21	NOT FOUND								
22	NOT FOUND								
23	122	955	12:44	2	0.955	A BB	185.	~~0.510 PPM~~	0.21
24	NOT FOUND								
25	NOT FOUND								
26	NOT FOUND								
27	128	1001	13:21	2	1.001	A BB	248.	~~0.105 PPM~~	0.04
28	NOT FOUND								
29	NOT FOUND								
30	NOT FOUND								
31	NOT FOUND								
32	NOT FOUND								
33	NOT FOUND								
34	196	1194	15:55	3	0.887	A BB	99.	~~0.284 PPM~~	0.08
35	NOT FOUND								
36	NOT FOUND								
37	NOT FOUND								
38	NOT FOUND								
39	NOT FOUND								
40	NOT FOUND								
41	NOT FOUND								
42	NOT FOUND								
43	168	1381	18:25	3	1.026	A BB	348.	~~0.208 PPM~~	0.09
44	NOT FOUND								
45	NOT FOUND								
46	149	1437	19:10	3	1.068	A BB	823.	~~0.557 PPM~~	0.23
47	NOT FOUND								
48	166	1451	19:21	3	1.078	A BB	147.	~~0.112 PPM~~	0.05
49	NOT FOUND								
50	NOT FOUND								

Quantitation Report File: AA06038

Data: AA06038.TI
03/30/89 17:52:00
Sample: BNA SOIL BLANK FOR EA#0777 RE-EXT WILLOW GROVE BLANK #529 <97.66
Conds.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
Standard ID: AA06035 Instrument: MS2
S nsitivity ID: AA06031 Analyst: JEH - EA Inst Cali: 03/30/89

AMOUNT=AREA * REF AMNT/(REF AREA * RESP FACT)
Resp. fac. from Library Entry

NO	NAME	
51	62B	N-NITROSODIPHENYLAMINE
52	41B	4-BROMOPHENYLPHENYL ETHER
53	9B	HEXACHLOROBENZENE
54	64A	PENTACHLOROPHENOL
55	81B	PHENANTHRENE
56	78B	ANTHRACENE
57	68B	DI-N-BUTYLPHTHALATE
58	39B	FLUORANTHENE
59	84B	PYRENE
60	67B	BUTYLBENZYLPHTHALATE
61	28B	3,3'-DICHLOROBENZIDINE
62	72B	BENZO (A) ANTHRACENE
63	66B	BIS (2-ETHYLHEXYL) PHTHALATE
64	76B	CHRYSENE
65	69B	DI-N-OCTYLPHTHALATE
66	74B	BENZO(B)FLUORANTHENE
67	75B	BENZO(K)FLUORANTHENE
68	73B	BENZO (A) PYRENE
69	83B	INDENO-1,2,3 (C,D) PYRENE
70	82B	DIBENZO (A,H) ANTHRACENE
71	79B	BENZO (G,H,I) PERYLENE
72	SS1*	PHENOL-D5
73	SS2*	2-FLUOROPHENOL
74	SS3*	NITROBENZENE-D5
75	SS4*	2-FLUOROBIPHENYL
76	SS5*	2,4,6-TRIBROMOPHENOL
77	SS6*	TERPHENYL-D14

AA06038

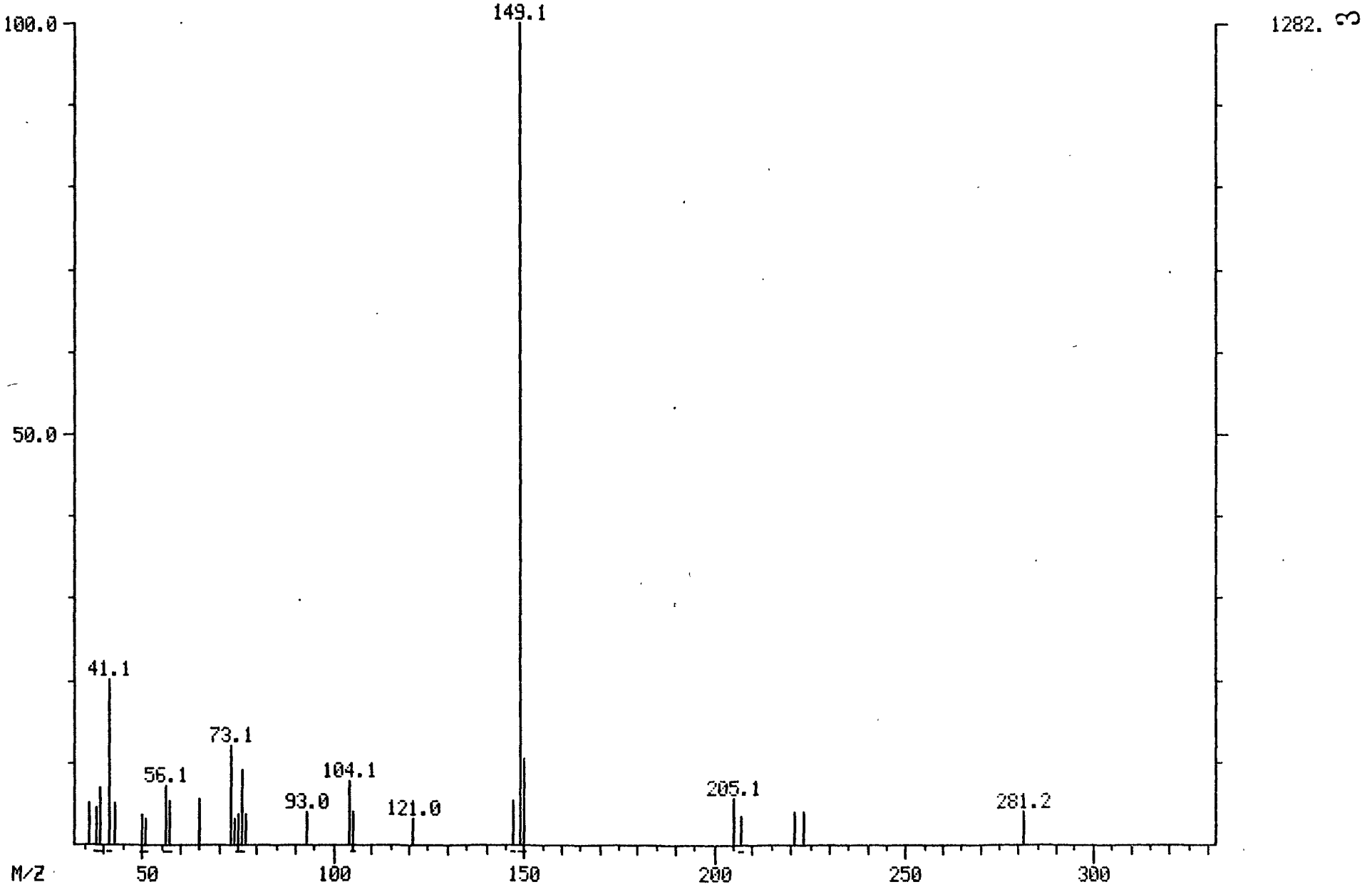
No	m/z	Scan	Time	R f	RRT	Meth	Area(Hght)	Amount	%Tot	
51	169	1474	19:39	4	0.899	A BB	500.	~~1.270 PPM~~	0.18	
52	NOT FOUND									
53	NOT FOUND									
54	NOT FOUND									
55	NOT FOUND									
56	NOT FOUND									
57	149	1763	23:30	4	1.076	A BB	4261.	2.131 PPM	0.30	
58	202	1884	25:07	4	1.149	A BB	1856.	1.046 PPM	0.15	
59	202	1929	25:43	5	0.886	A BB	1573.	1.085 PPM	0.15	
60	149	2063	27:30	5	0.948	A BB	448.	~~0.708 PPM~~	0.10	
61	NOT FOUND									
62	228	2180	29:04	5	1.002	A VB	731.	~~0.665 PPM~~	0.10	
63	149	2183	29:06	5	1.003	A BB	894.	T 1.097 PPM	0.16	
64	NOT FOUND									
65	149	2333	31:06	6	0.903	A BB	365.	~~0.425 PPM~~	0.06	
66	NOT FOUND									
67	NOT FOUND									
68	NOT FOUND									
69	NOT FOUND									
70	NOT FOUND									
71	NOT FOUND									
72	99	711	9:29	1	0.926	A BB	175144.	216.620 PPM	30.93	108
73	112	568	7:34	1	0.740	A BB	162236.	189.440 PPM	27.05	95
74	82	868	11:34	2	0.868	A BB	82860.	51.700 PPM	7.38	52
75	172	1212	16:10	3	0.900	A BB	122820.	50.628 PPM	7.23	51
76	330	1503	20:02	3	1.117	A BB	39195.	125.599 PPM	17.93	63
77	244	1961	26:09	5	0.901	A BV	103945.	57.952 PPM	8.27	56

MASS SPECTRUM
03/30/89 17:52:00 + 23:30
SAMPLE: BNA SOIL BLANK FOR EA#0777 RE-EXT WILLOW GROVE BLANK #529 <97.66
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 248 DEG. C

DATA: AA06038 #1763
CALI: AA06038 #4

BASE M/Z: 149
RIC: 3284.

437



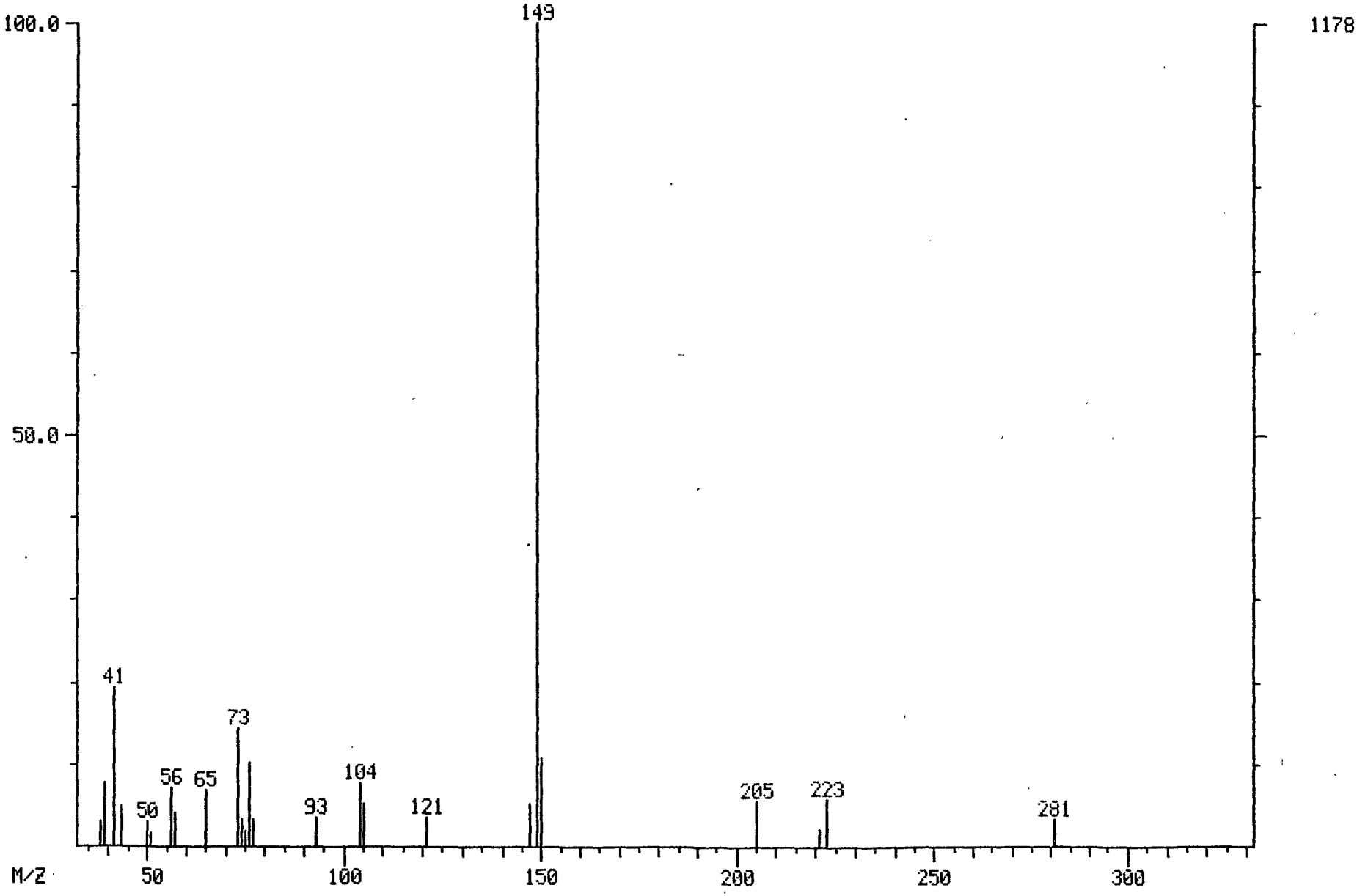
3

MASS SPECTRUM
03/30/89 17:52:00 + 23:30
SAMPLE: BNA SOIL BLANK FOR EA#0777 RE-EXT WILLOW GROVE BLANK #529 <97.66
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 248 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA06038 #1763
CALI: AA06038 #4

BASE M/Z: 149
RIC: 2884.

3 438

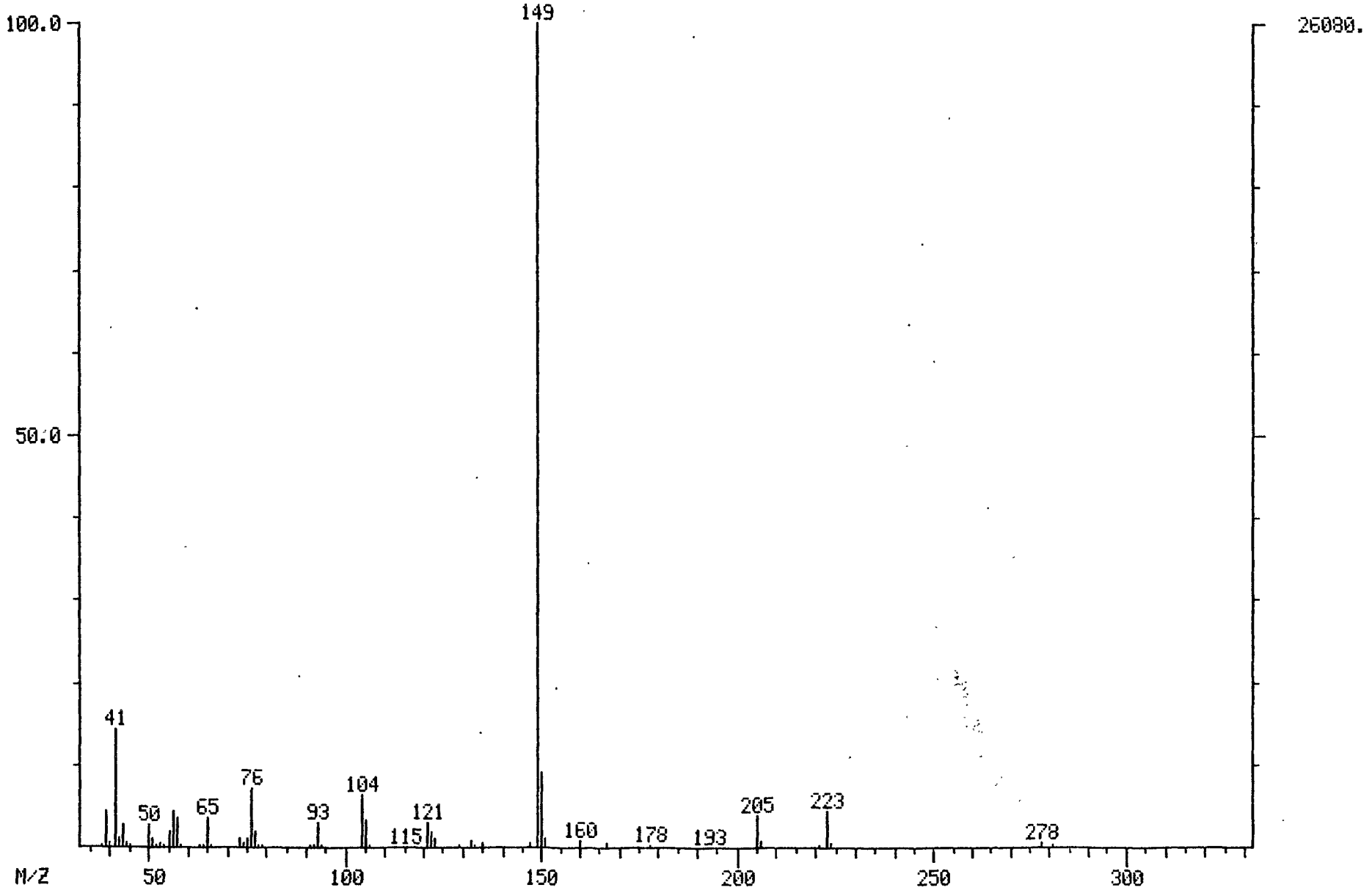


MASS SPECTRUM
03/30/89 15:09:00 + 23:29
SAMPLE: BNA STANDARD #1293 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 248 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA06035 #1761
CALI: AA06035 #4

BASE M/Z: 149
RIC: 52672.

3 439



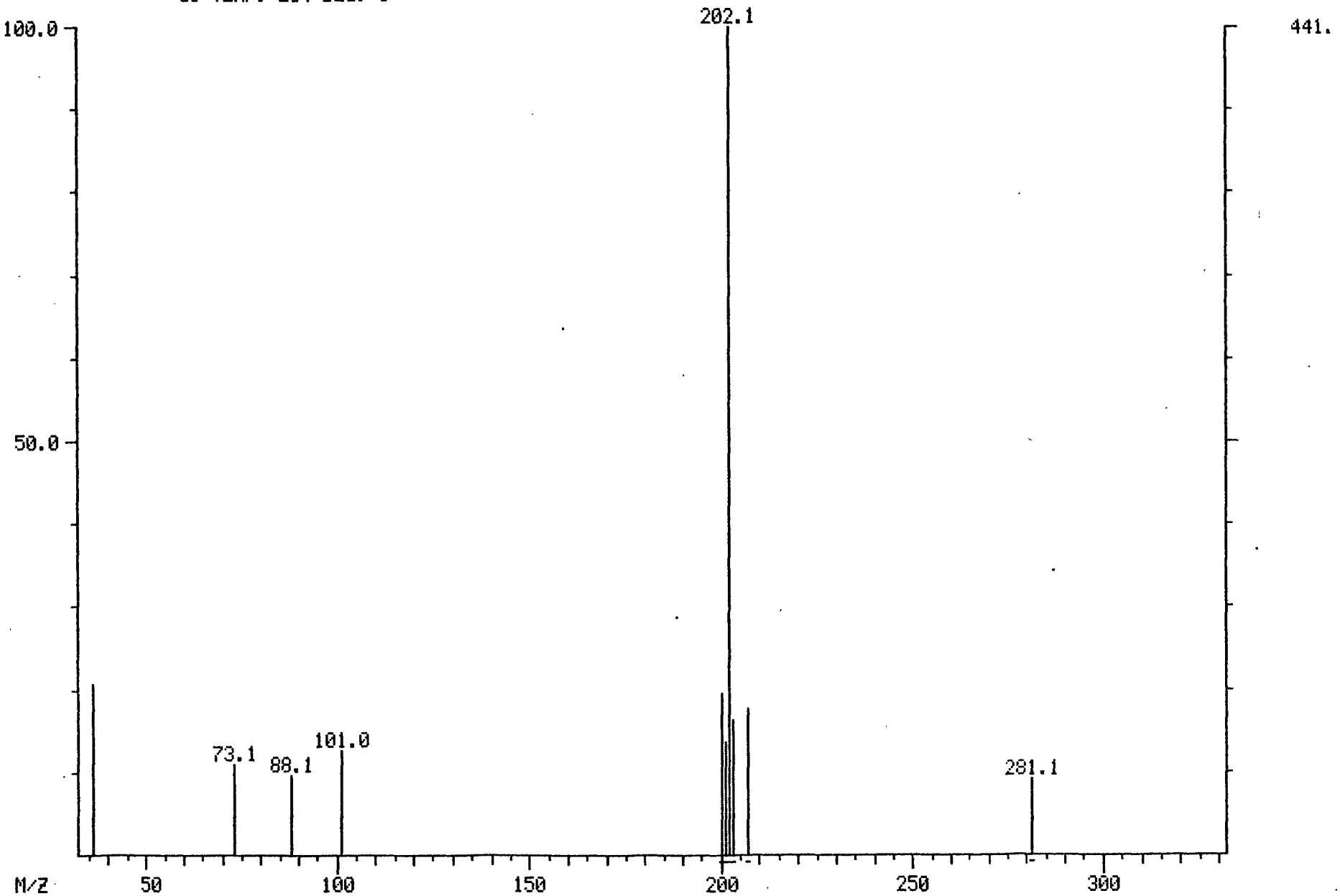
MASS SPECTRUM
03/30/89 17:52:00 + 25:07
SAMPLE: BNA SOIL BLANK FOR EA#0777 RE-EXT WILLOW GROVE BLANK #529 <97.66
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 264 DEG. C

DATA: AA06038 #1884
CALI: AA06038 #4

BASE M/Z: 202
RIC: 1016.

440

3

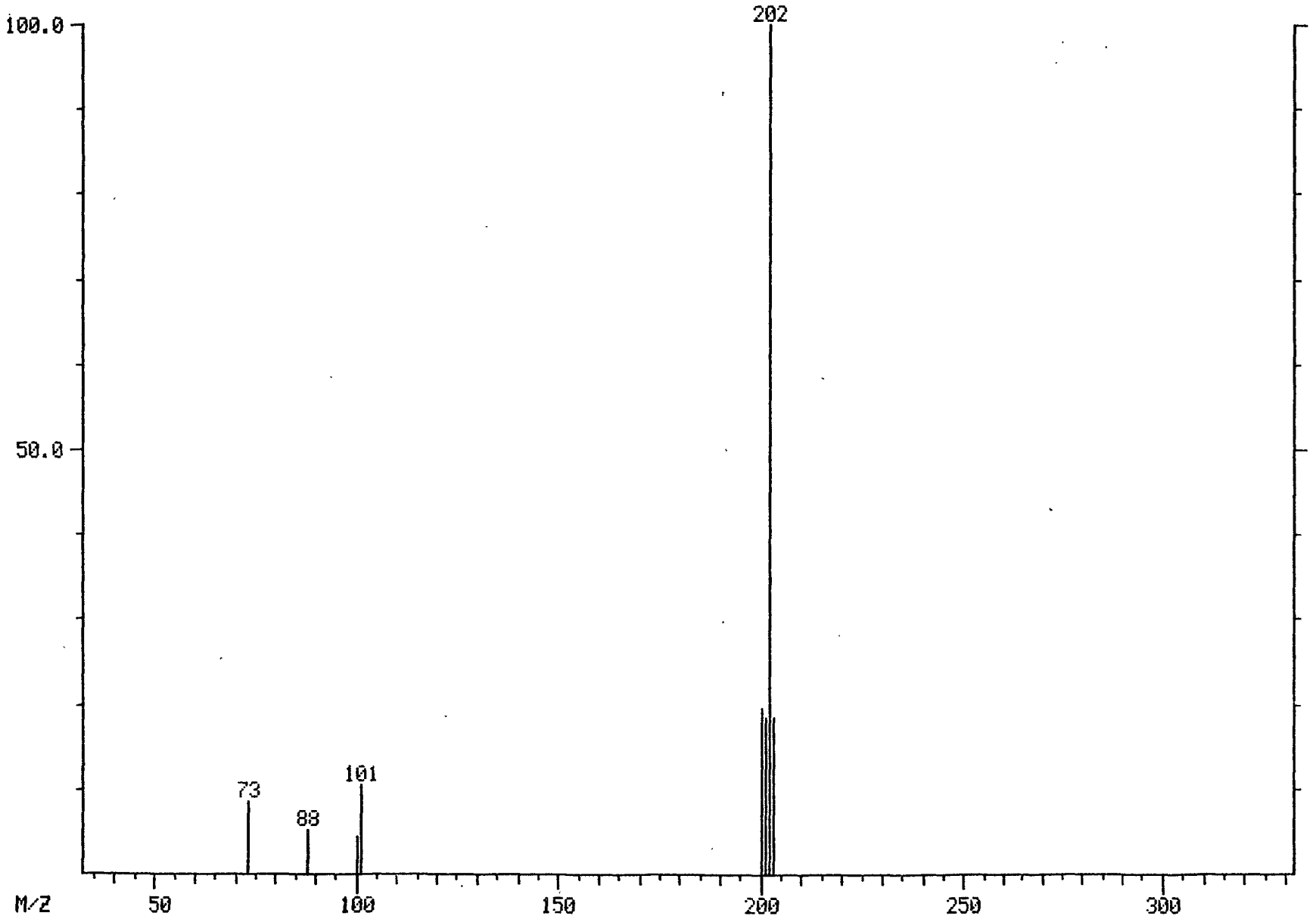


MASS SPECTRUM
03/30/89 17:52:00 + 25:07
SAMPLE: BNA SOIL BLANK FOR EA#0777 RE-EXT WILLOW GROVE BLANK #529 <97.66
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 264 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA06038 #1884
CALI: AA06038 #4

BASE M/Z: 202
RIC: 762.

3 441

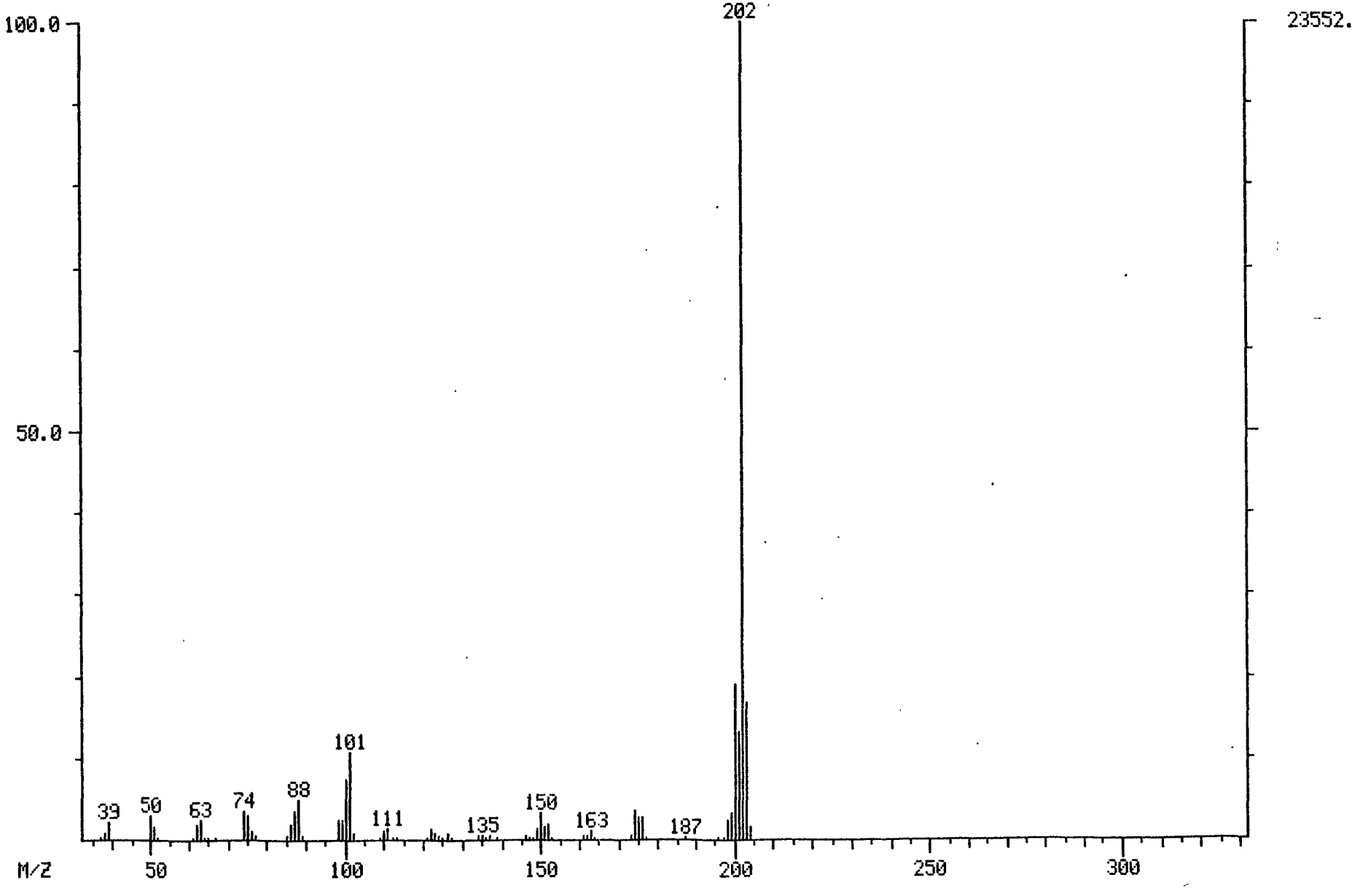


MASS SPECTRUM
03/30/89 15:09:00 + 25:06
SAMPLE: BNA STANDARD #1293 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 264 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA06035 #1883
CALI: AA06035 #4

BASE M/Z: 202
RIC: 58240.

3 442

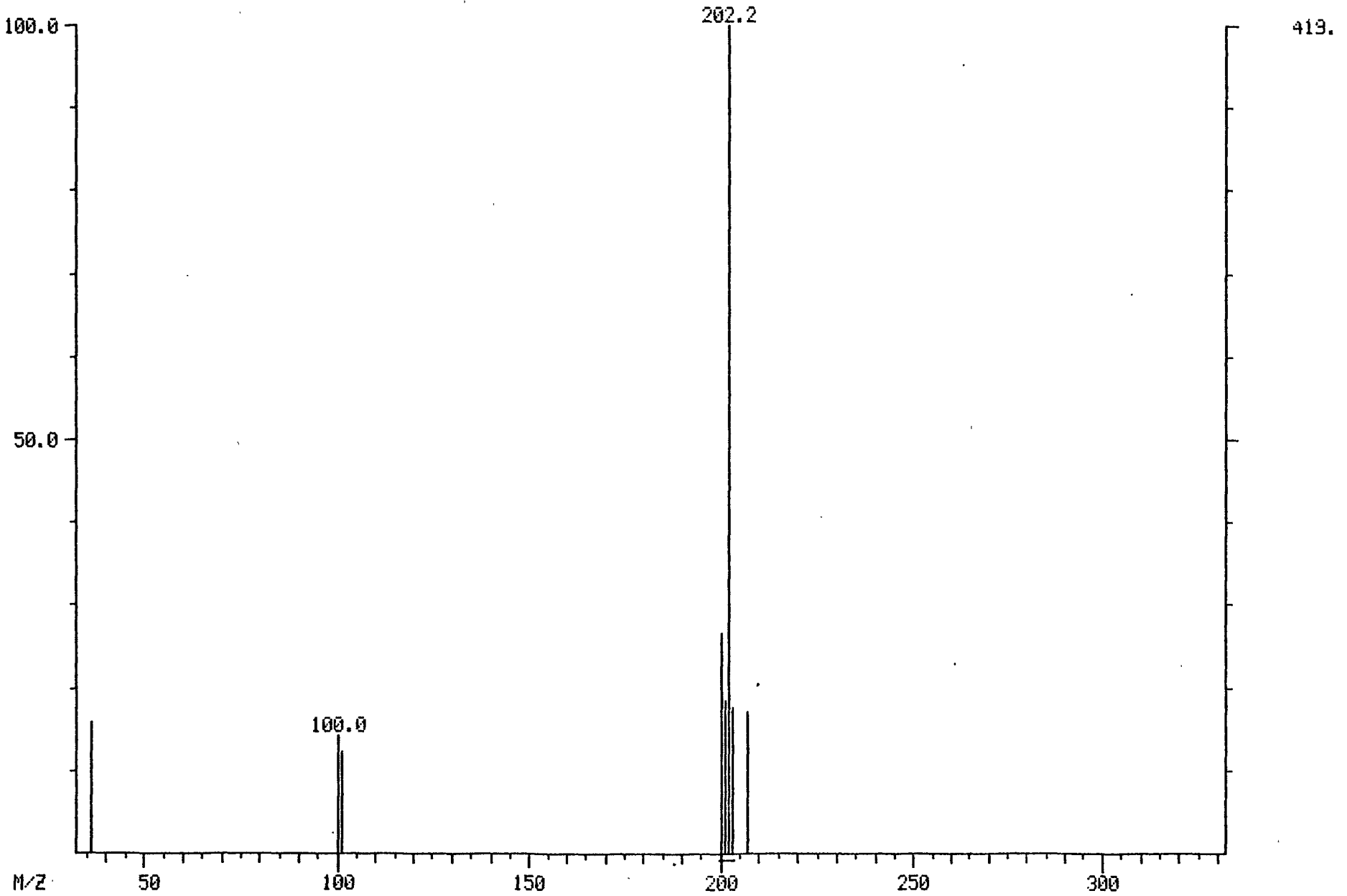


MASS SPECTRUM
03/30/89 17:52:00 + 25:43
SAMPLE: BNA SOIL BLANK FOR EA#0777 RE-EXT WILLOW GROVE BLANK #529 <97.66
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 270 DEG. C

DATA: AA06038 #1929
CALI: AA06038 #4

BASE M/Z: 202
RIC: 934.

3 443

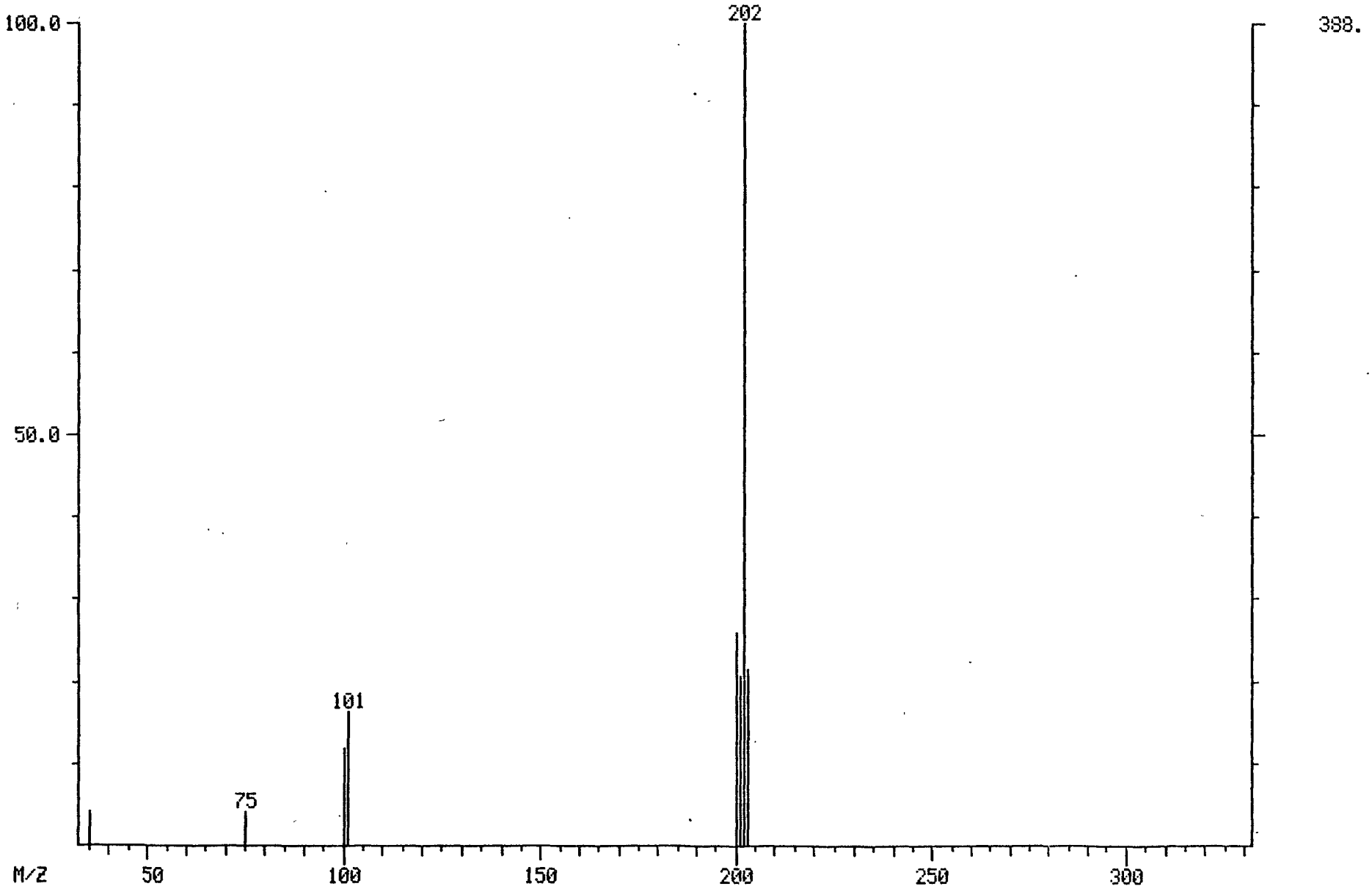


MASS SPECTRUM
03/30/89 17:52:00 + 25:43
SAMPLE: BNA SOIL BLANK FOR EA#0777 RE-EXT WILLOW GROVE BLANK #529 <97.66
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 270 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA06038 #1929
CALI: AA06038 #4

BASE M/Z: 202
RIC: 794.

3 444

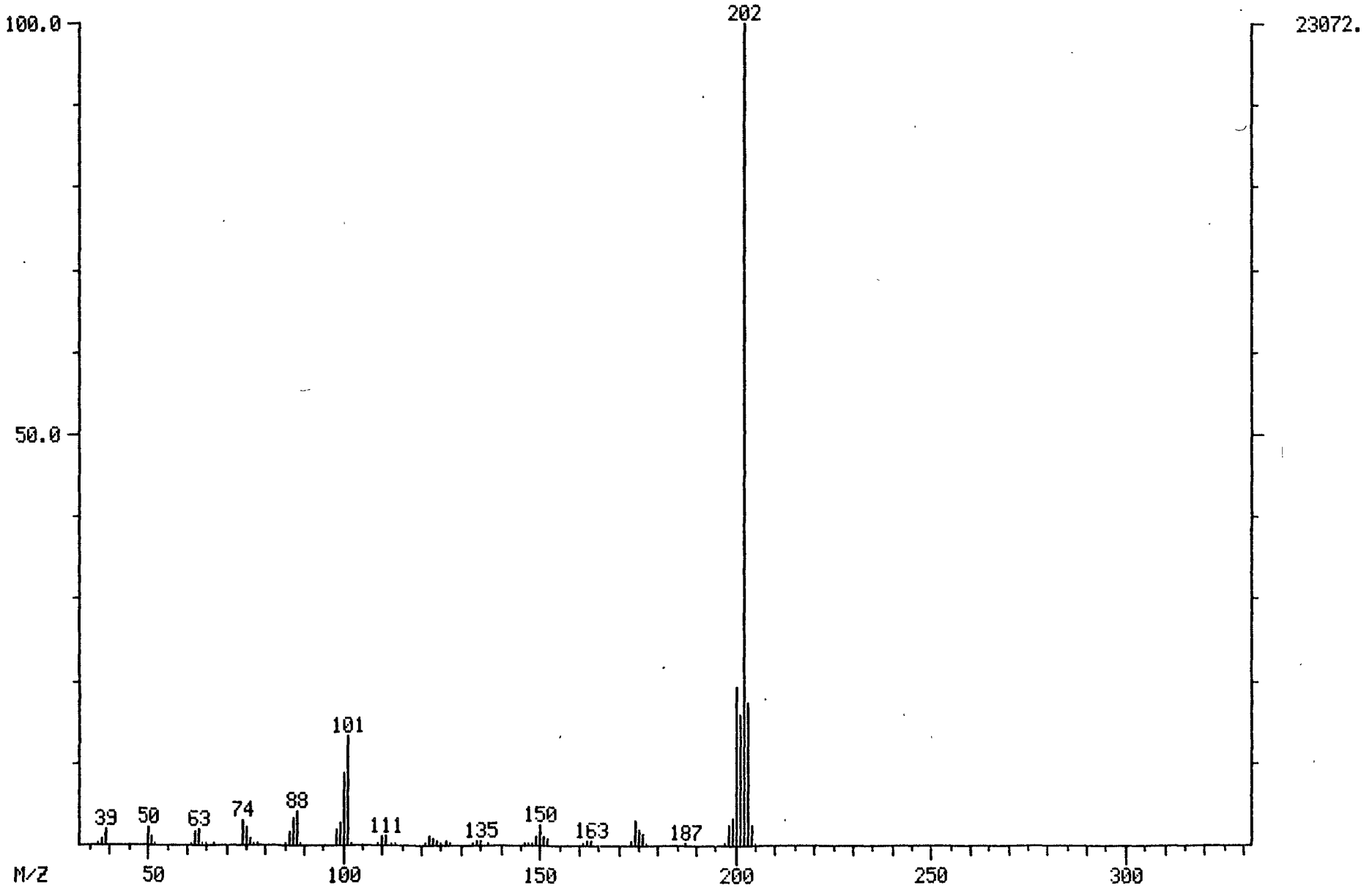


MASS SPECTRUM
03/30/89 15:09:00 + 25:43
SAMPLE: BNA STANDARD #1293 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 270 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA06035 #1929
CALI: AA06035 #4

BASE M/Z: 202
RIC: 55232.

3 445

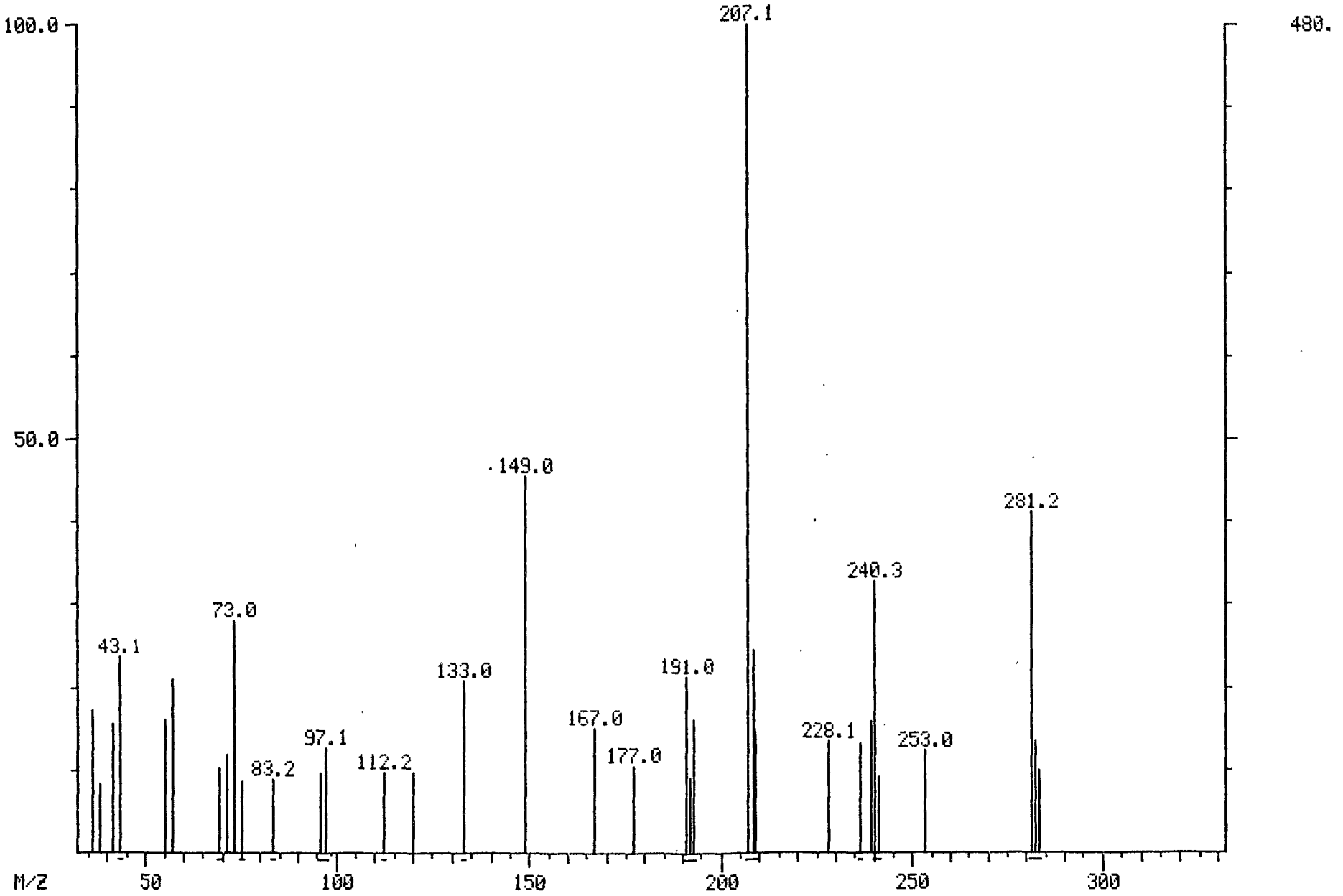


MASS SPECTRUM
03/30/89 17:52:00 + 29:06
SAMPLE: BNA SOIL BLANK FOR EA#0777 RE-EXT WILLOW GROVE BLANK #529 <97.66
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 302 DEG. C

DATA: AA06038 #2183
CALI: AA06038 #4

BASE M/Z: 207
RIC: 3120.

3 446

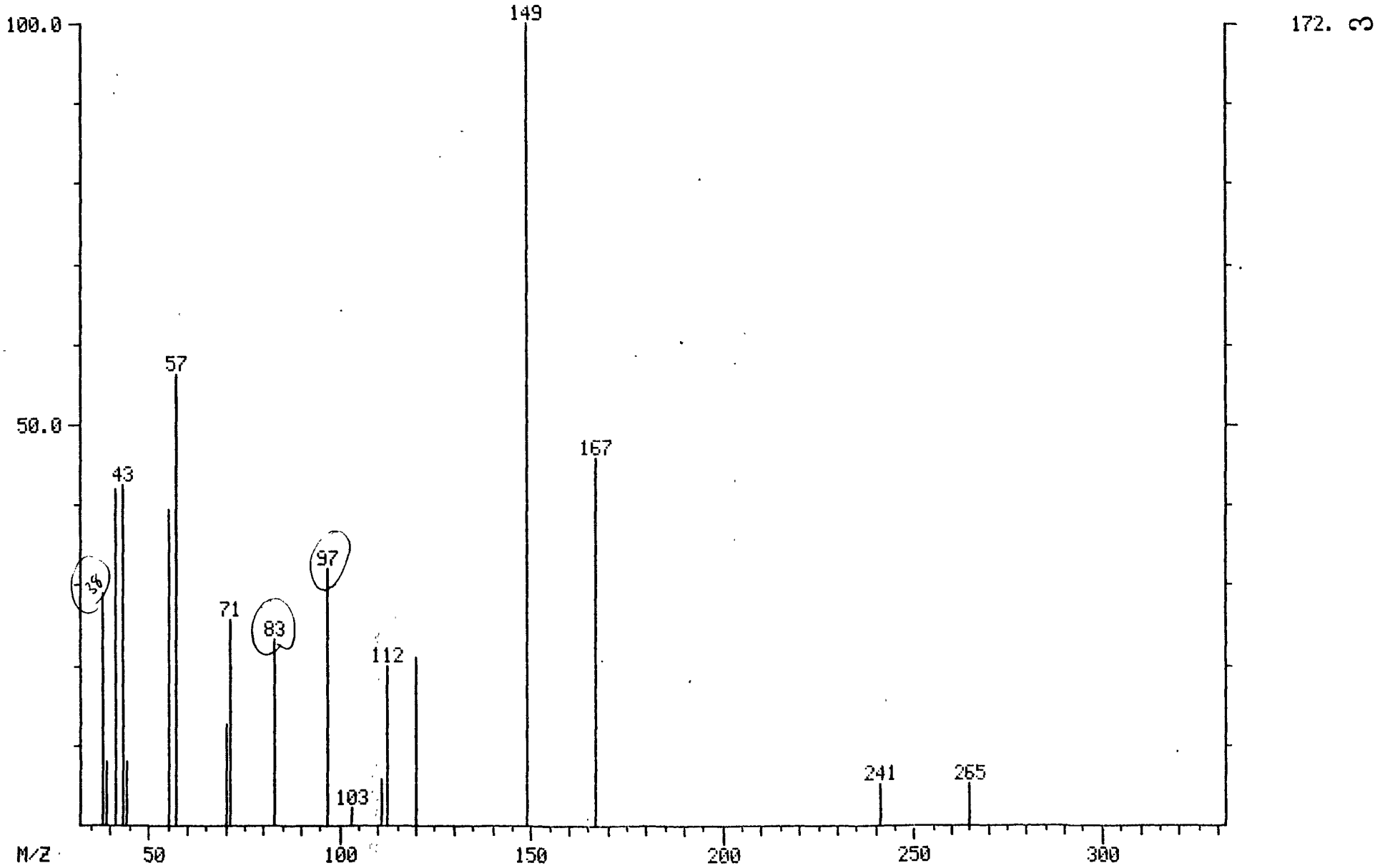


MASS SPECTRUM
03/30/89 17:52:00 + 29:06
SAMPLE: BNA SOIL BLANK FOR EA#0777 RE-EXT WILLOW GROVE BLANK #529 <97.66
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 302 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA06038 #2183
CALI: AA06038 #4

BASE M/Z: 149
RIC: 902.

447

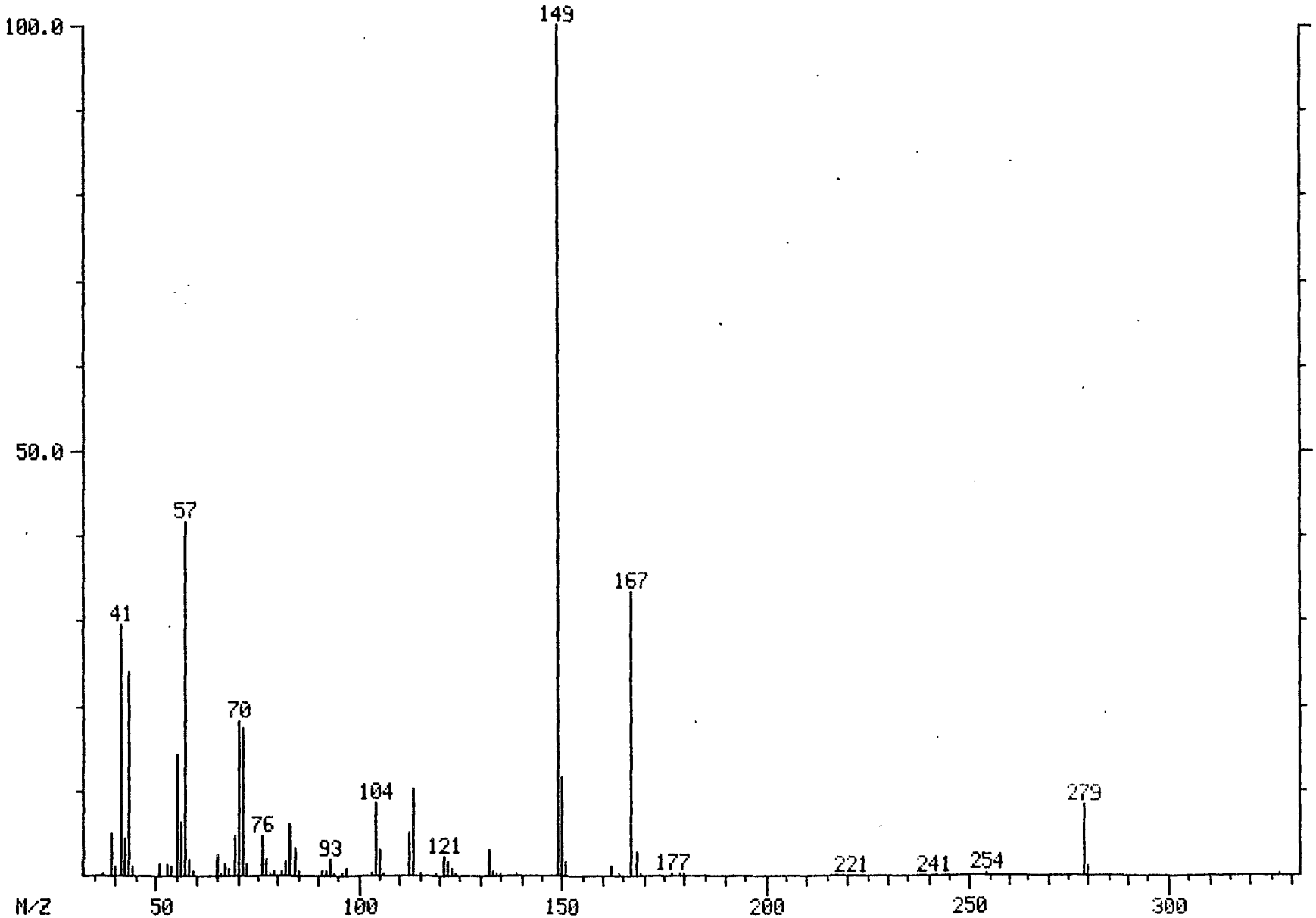


MASS SPECTRUM
03/30/89 15:09:00 + 29:06
SAMPLE: BNA STANDARD #1293 50 NG BNA STANDARDS MIX 2UL JEH
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
GC TEMP: 303 DEG. C
ENHANCED (S 15B 2N 0T)

DATA: AA06035 #2183
CALI: AA06035 #4

BASE M/Z: 149
RIC: 51392.

3 446



Library Search Data: AA06038 # 517 Base m/z: 43
03/30/89 17:52:00 + 6:54 Cali: AA06038 # 4 RIC: 8991.
Sample: BNA SOIL BLANK FOR EA#0777 RE-EXT WILLOW GROVE BLANK #529 <97.66
Conds.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
Enhanced (S 15B 2N OT)

38761 spectra in LIBRARYNB searched for maximum FIT
113 matched at least 7 of the 16 largest peaks in the unknown

IS Scan - 768
RIC - ~~14896~~ 71296

Rank	In.	Name
1	1038	2-PROPYN-1-OL, ACETATE
2	792	HYDROPEROXIDE, 1,1-DIMETHYLETHYL
3	94	PROPANE, 2-METHYL-
4	1082	2-PROPANONE, 1-CYCLOPROPYL-
5	1080	4-PENTEN-2-ONE, 4-METHYL-

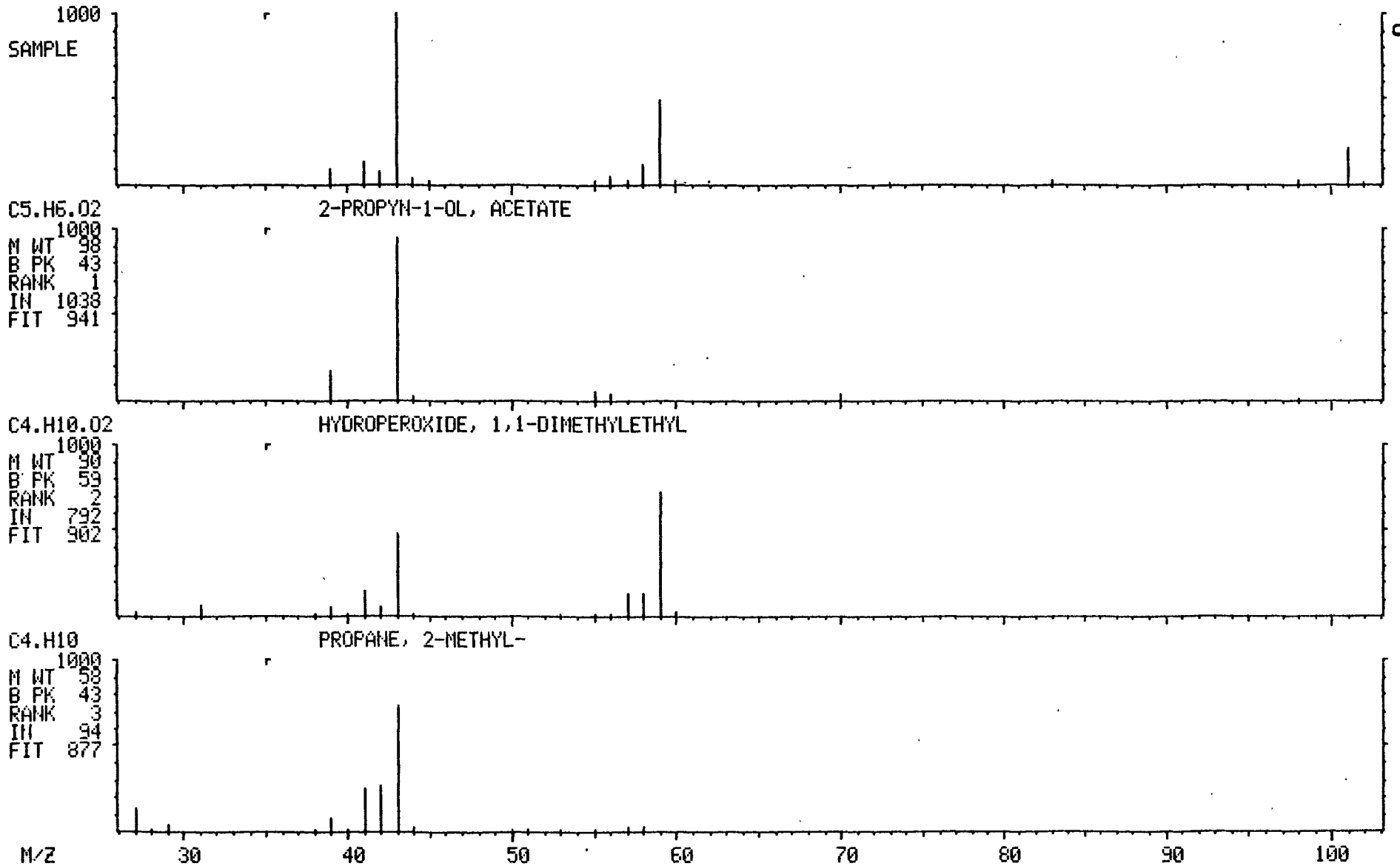
Rank	Formula	M.Wt	B.Pk	Purity	Fit	RFit
1	C5.H6.O2	98	43	399	941	418
2	C4.H10.O2	90	59	694	902	703
3	C4.H10	58	43	452	877	464
4	C6.H10.O	98	43	440	860	468
5	C6.H10.O	98	43	492	849	504

Rank	Ret.Time	B.P.Int.	US.Par.1	US.Par.2	C.A.S. #
1	—	—	—	—	627-09-8
2	—	—	—	—	75-91-2
3	—	—	—	—	75-28-5
4	—	—	—	—	4160-75-2
5	—	—	—	—	3744-02-3

LIBRARY SEARCH DATA: AA06038 # 517 BASE M/Z: 43
03/30/89 17:52:00 + 6:54 CALI: AA06038 # 4 RIC: 8931.
SAMPLE: BNA SOIL BLANK FOR EA#0777 RE-EXT WILLOW GROVE BLANK #529 <97.66
CONDS.: MS#2 30M DB-5 FSCC 35 DEG C (2 MIN)-> 305 DEG C @ 10 DEG/MIN
ENHANCED (S 15B 2N 0T)

450

3



Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
EA#0780MS,DUP#2(MS)

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 02/23/89
Date Analyzed: 3/25/89 7:04
Conc/Dil Factor: 1.00000
Percent Moisture (Decanted) N/A

GPC Cleanup __ Yes ✓ No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction ✓ Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)		C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	16000.		83-32-9	Acenaphthene	11000.	
111-44-4	bis(2-Chloroethyl)ether	1200.	U	51-28-5	2,4-Dinitrophenol	5800.	U
95-57-8	2-Chlorophenol	17000.		100-02-7	4-Nitrophenol	5800.	U
541-73-1	1,3-Dichlorobenzene	1200.	U	132-64-9	Dibenzofuran	1200.	U
106-46-7	1,4-Dichlorobenzene	9600.		121-14-2	2,4-Dinitrotoluene	12000.	
100-51-6	Benzyl Alcohol	1200.	U	606-20-2	2,6-Dinitrotoluene	1200.	U
95-50-1	1,2-Dichlorobenzene	1200.	U	84-66-2	Diethylphthalate	1200.	U
95-48-7	2-Methylphenol	1200.	U	7005-72-3	4-Chlorophenyl-phenylether	1200.	U
39638-32-9	bis(2-Chloroisopropyl)ether	1200.	U	86-73-7	Fluorene	1200.	U
106-44-5	4-Methylphenol	1200.	U	100-01-6	4-Nitroaniline	1200.	U
621-64-7	N-Nitroso-Di-n-propylamine	12000.		534-52-1	4,6-Dinitro-2-methylphenol	5800.	U
67-72-1	Hexachloroethane	1200.	U	86-30-6	N-Nitrosodiphenylamine (1)	1200.	U
98-95-3	Nitrobenzene	1200.	U	101-55-3	4-Bromophenyl-phenylether	1200.	U
78-59-1	Isophorone	1200.	U	118-74-1	Hexachlorobenzene	1200.	U
88-75-5	2-Nitrophenol	1200.	U	87-86-5	Pentachlorophenol	26000.	
105-67-9	2,4-Dimethylphenol	1200.	U	85-01-8	Phenanthrene	1200.	U
65-85-0	Benzoic Acid	5800.	U	120-12-7	Anthracene	1200.	U
111-91-1	bis(2-Chloroethoxy)methane	1200.	U	84-74-2	Di-n-Butyl phthalate	1200.	U
120-83-2	2,4-Dichlorophenol	1200.	U	206-44-0	Fluoranthene	1200.	U
120-82-1	1,2,4-Trichlorobenzene	11000.		129-00-0	Pyrene	12000.	
91-20-3	Naphthalene	1200.	U	85-68-7	Butylbenzylphthalate	1200.	U
106-47-8	4-Chloroaniline	1200.	U	91-94-1	3,3'-Dichlorobenzidine	2300.	U
87-68-3	Hexachlorobutadiene	1200.	U	56-55-3	Benzo(a)Anthracene	1200.	U
59-50-7	4-Chloro-3-methylphenol	20000.		117-81-7	bis(2-Ethylhexyl)phthalate	220.	J
91-57-6	2-Methylnaphthalene	120.	J	218-01-9	Chrysene	1200.	U
77-47-4	Hexachlorocyclopentadiene	1200.	U	117-84-0	Di-n-Octyl phthalate	1200.	U
88-06-2	2,4,6-Trichlorophenol	1200.	U	205-99-2	Benzo(b)Fluoranthene	1200.	U
95-95-4	2,4,5-Trichlorophenol	5800.	U	207-08-9	Benzo(k)Fluoranthene	1200.	U
91-58-7	2-Chloronaphthalene	1200.	U	50-32-8	Benzo(a)Pyrene	1200.	U
88-74-4	2-Nitroaniline	5800.	U	193-39-5	Indeno(1,2,3-cd)Pyrene	1200.	U
131-11-3	Dimethylphthalate	1200.	U	53-70-3	Dibenzo(a,h)Anthracene	1200.	U
208-96-8	Acenaphthylene	1200.	U	191-24-2	Benzo(g,h,i)Perylene	1200.	U
99-09-2	3-Nitroaniline	5800.	U				

(1)-Cannot be separated from diphenylamine

Laboratory Nam: EA LABORATORIES
Case No: WILLOW GROVE

Sample Number
EA# 0780 (MS)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.				
2.				
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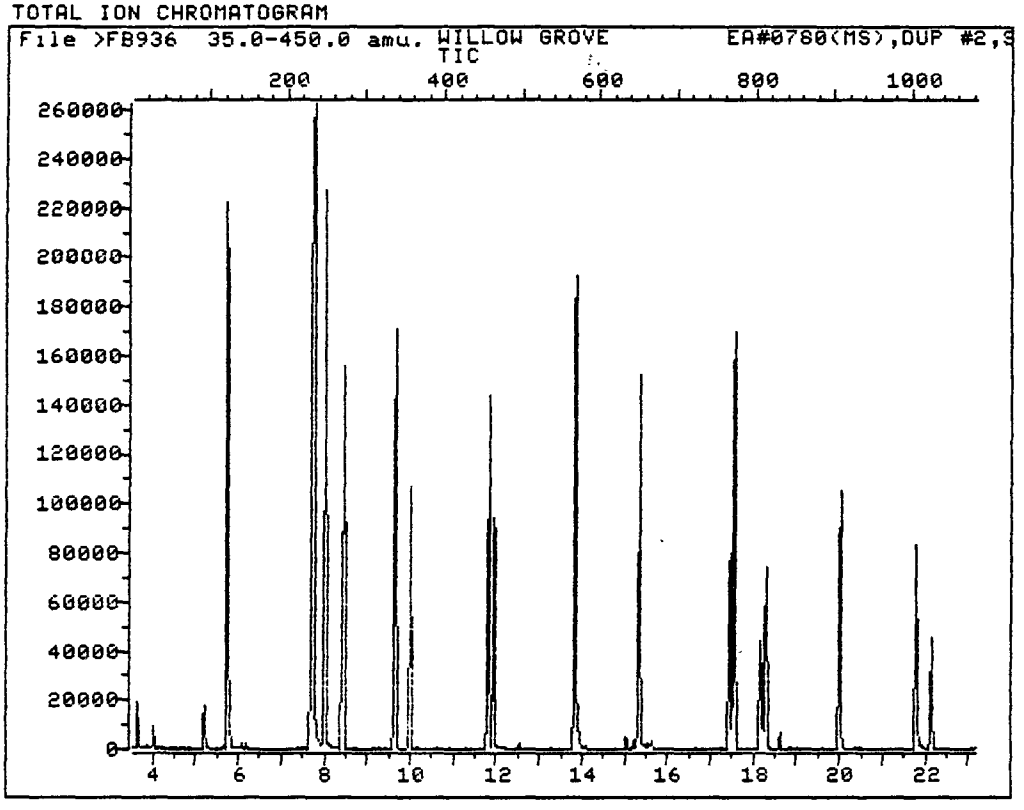
NOT REQUIRED

TOTAL ION CHROMATOGRAM



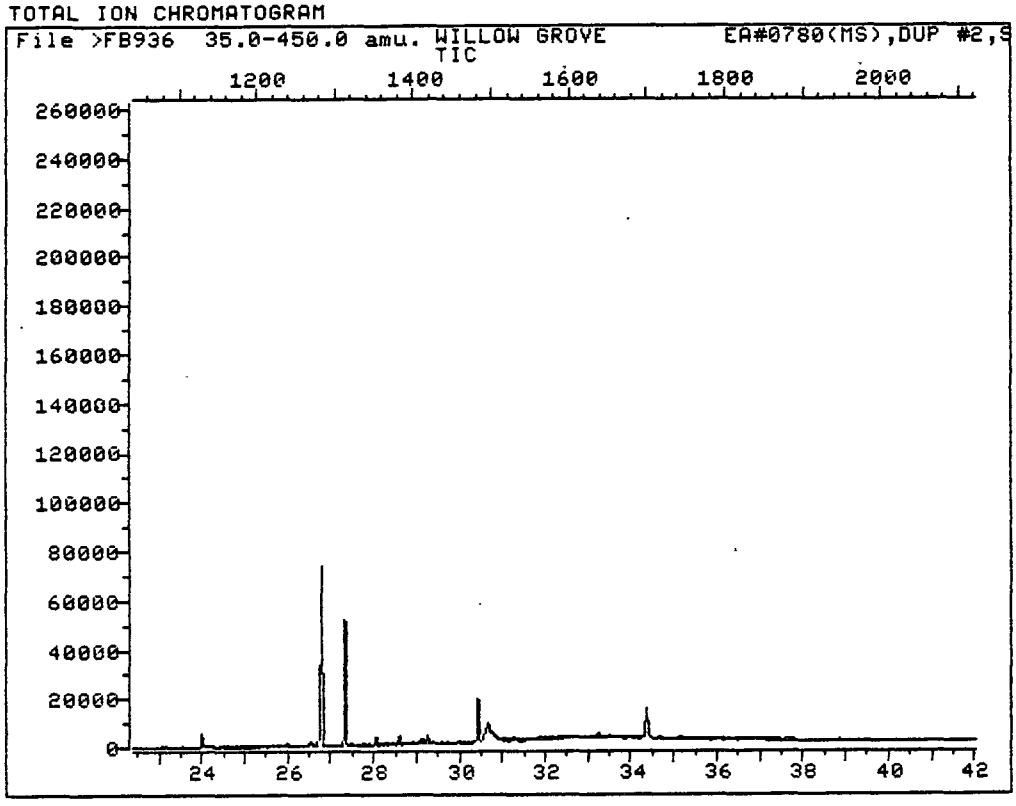
Data File: >FB936::D5 Quant Output File: ^FB936::QT
Name: WILLOW GROVE
Misc: EA#0780(MS),DUP #2,SOIL,10.38,1.0, <96.34> BTL# 9

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890414 00:00

Operator ID: UNCLE
Quant Time: 890414 00:39
Inj cted at: 890325 07:04

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >FB936::D5 Quant Output File: ^FB936::QT
Name: WILLOW GROVE
Misc: EA#0780(MS),DUP #2,SOIL,10.38,1.0, <96.34> BTL# 9

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890414 00:00

Operator ID: UNCLE
Quant Time: 890414 00:39
Injected at: 890325 07:04

TIC page 2 of 2

QUANT REPORT

Operator ID: UNCLE Quant Rev: 6 Quant Time: 890414 00:39
Output File: ^FB936::QT Injected at: 890325 07:04
Data Fil : >FB936::D5 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0780(MS),DUP #2,SOIL,10.38,1.0, (96.34) BTL# 9

ID Fil : IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890414 00:00

	Compound	R.T.	Q ion	Area	Conc	Units		q
1)	*d4-1,4-Dichlorobenzene	8.42	152.0	31042	40.00	NG		98
2)	2-Fluorophenol	5.73	112.0	128088	129.94	NG	65%	96
3)	Phenol-d5	7.73	99.0	174906	145.71	NG	73%	91
4)	Phenol	7.76	94.0	191339	137.29	NG		94
6)	2-Chlorophenol	8.02	128.0	154573	144.75	NG		97
7)	1,3-Dichlorobenzene	8.47	146.0	87360	~~82.00~~	NG		97
8)	1,4-Dichlorobenzene	8.47	146.0	87360	82.47	NG		98
14)	N-Nitroso-Di-n-propylamine	9.65	70.0	98062	102.60	NG		94
16)	*d8-Naphthalene	11.94	136.0	112222	40.00	NG		87
17)	Nitrobenzene-d5	10.00	82.0	93090	66.65	NG	67%	95
25)	1,2,4-Trichlorobenzene	11.81	180.0	80230	93.25	NG		96
29)	4-Chloro-3-methylphenol	13.85	107.0	133649	175.22	NG		89
30)	2-Methylnaphthalene	14.10	142.0	1510	1.07	NG		83
31)	*d10-Acenaphthene	17.44	164.0	48307	40.00	NG		95
36)	2-Fluorobiphenyl	15.35	172.0	129602	56.84	NG	57%	95
39)	Acenaphthylene	17.55	152.0	59750	~~28.49~~	NG		70
41)	Acenaphthene	17.57	153.0	128271	95.82	NG		94
45)	2,4-Dinitrotoluene	18.29	165.0	42407	106.77	NG		76
51)	*d10-Phenanthrene	22.14	188.0	51726	40.00	NG		99
54)	2,4,6-Tribromophenol	20.02	329.9	44134	196.47	NG	98%	96
57)	Pentachlorophenol	21.78	266.0	40979	221.60	NG		96
62)	*d12-Chrysene	30.42	240.0	18694	40.00	NG		97
63)	Pyrene	26.79	202.0	93244	101.85	NG		96
64)	Terphenyl-d14	27.33	244.0	59669	59.31	NG	59%	85
68)	bis(2-Ethylhexyl)phthalate	30.58	149.0	1098	1.91	NG		96
70)	*d12-Perylene	34.36	264.0	18787	40.00	NG		93

* Compound is ISTD

Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
EA#0780MSD,DUP#2(MSD)

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 02/23/89
Date Analyzed: 3/25/89 7:59
Conc/Dil Factor: 1.00000
Percent Moisture (Decanted) N/A

GPC Cleanup __ Yes ~~No~~
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction ~~Yes~~

C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	15000.	
111-44-4	bis(2-Chloroethyl)ether	1200.	U
95-57-8	2-Chlorophenol	17000.	
541-73-1	1,3-Dichlorobenzene	1200.	U
106-46-7	1,4-Dichlorobenzene	9100.	
100-51-6	Benzyl Alcohol	1200.	U
95-50-1	1,2-Dichlorobenzene	1200.	U
95-48-7	2-Methylphenol	1200.	U
39638-32-9	bis(2-Chloroisopropyl)ether	1200.	U
106-44-5	4-Methylphenol	1200.	U
621-64-7	N-Nitroso-Di-n-propylamine	13000.	
67-72-1	Hexachloroethane	1200.	U
98-95-3	Nitrobenzene	1200.	U
78-59-1	Isophorone	1200.	U
88-75-5	2-Nitrophenol	1200.	U
105-67-9	2,4-Dimethylphenol	1200.	U
65-85-0	Benzoic Acid	6000.	U
111-91-1	bis(2-Chloroethoxy)methane	1200.	U
120-83-2	2,4-Dichlorophenol	1200.	U
120-82-1	1,2,4-Trichlorobenzene	10000.	
91-20-3	Naphthalene	1200.	U
106-47-8	4-Chloroaniline	1200.	U
87-68-3	Hexachlorobutadiene	1200.	U
59-50-7	4-Chloro-3-methylphenol	20000.	
91-57-6	2-Methylnaphthalene	1200.	U
77-47-4	Hexachlorocyclopentadiene	1200.	U
88-06-2	2,4,6-Trichlorophenol	1200.	U
95-95-4	2,4,5-Trichlorophenol	6000.	U
91-58-7	2-Chloronaphthalene	1200.	U
88-74-4	2-Nitroaniline	6000.	U
131-11-3	Dimethylphthalate	1200.	U
208-96-8	Acenaphthylene	1200.	U
99-09-2	3-Nitroaniline	6000.	U

C.A.S. Number		ug/L or ug/Kg (Circle One)	
83-32-9	Acenaphthene	11000.	
51-28-5	2,4-Dinitrophenol	6000.	U
100-02-7	4-Nitrophenol	6000.	U
132-64-9	Dibenzofuran	1200.	U
121-14-2	2,4-Dinitrotoluene	13000.	
606-20-2	2,6-Dinitrotoluene	1200.	U
84-66-2	Diethylphthalate	1200.	U
7005-72-3	4-Chlorophenyl-phenylether	1200.	U
86-73-7	Fluorene	1200.	U
100-01-6	4-Nitroaniline	1200.	U
534-52-1	4,6-Dinitro-2-methylphenol	6000.	U
86-30-6	N-Nitrososdiphenylamine (1)	1200.	U
101-55-3	4-Bromophenyl-phenylether	1200.	U
118-74-1	Hexachlorobenzene	1200.	U
87-86-5	Pentachlorophenol	26000.	
85-01-8	Phenanthrene	1200.	U
120-12-7	Anthracene	1200.	U
84-74-2	Di-n-Butyl phthalate	1200.	U
206-44-0	Fluoranthene	1200.	U
129-00-0	Pyrene	12000.	
85-68-7	Butylbenzylphthalate	1200.	U
91-94-1	3,3'-Dichlorobenzidine	2400.	U
56-55-3	Benzo(a)Anthracene	1200.	U
117-81-7	bis(2-Ethylhexyl)phthalate	280.	J
218-01-9	Chrysene	1200.	U
117-84-0	Di-n-Octyl phthalate	1200.	U
205-99-2	Benzo(b)Fluoranthene	1200.	U
207-08-9	Benzo(k)Fluoranthene	1200.	U
50-32-8	Benzo(a)Pyrene	1200.	U
193-39-5	Indeno(1,2,3-cd)Pyrene	1200.	U
53-70-3	Dibenzo(a,h)Anthracene	1200.	U
191-24-2	Benzo(g,h,i)Perylene	1200.	U

(1)-Cannot be separated from diphenylamine

Laboratory Name: EA LABORATORIES

Case No: WILLOW GROVE

Sample Number: EA# 0780 (MSD)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.				
2.				
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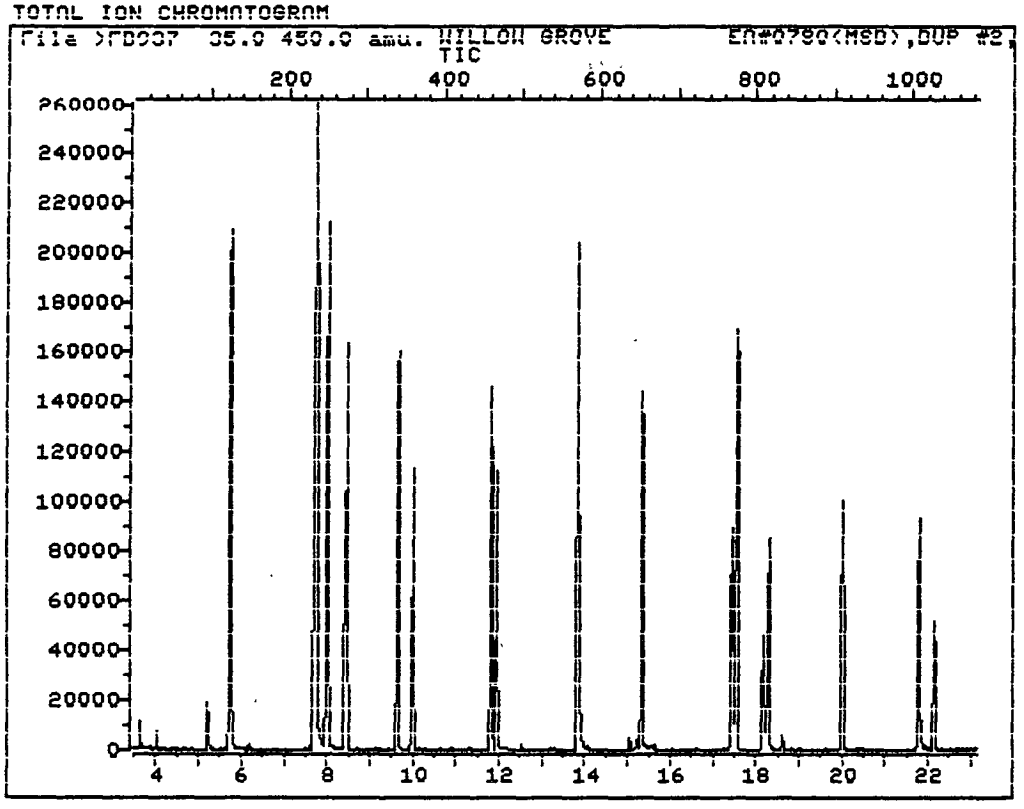
Not Required

TOTAL ION CHROMATOGRAM



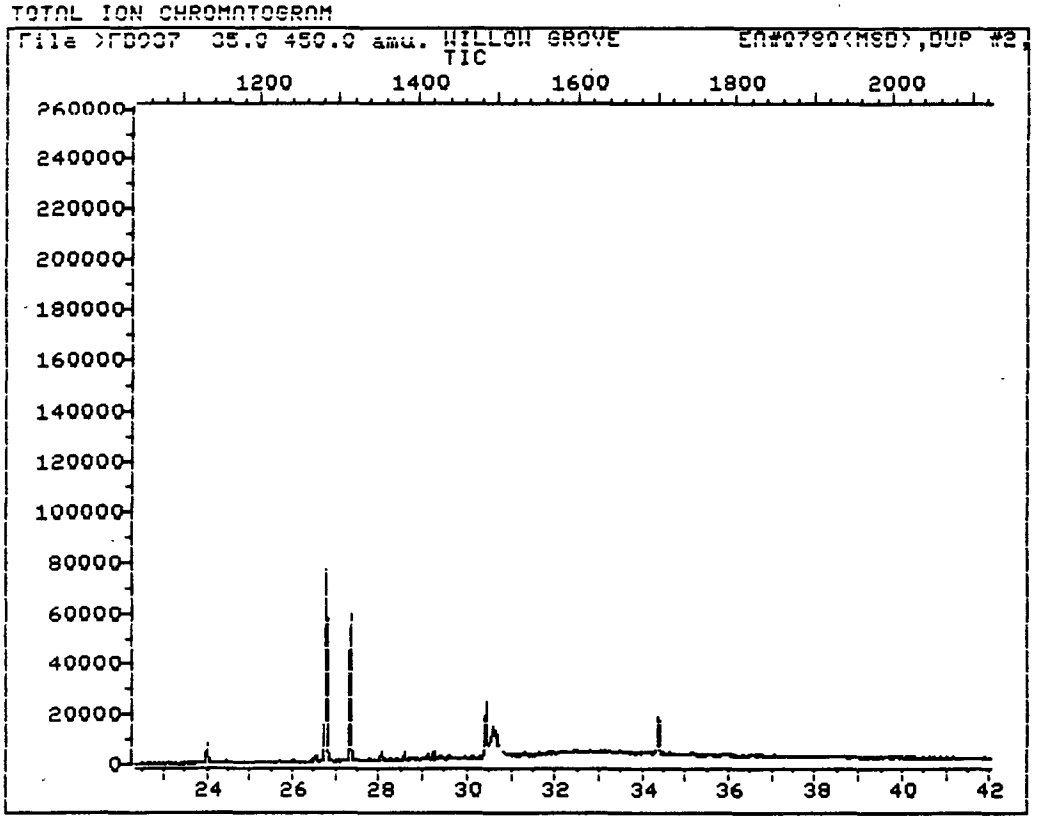
Data File: >FB937::D5 Quant Output File: ^FB937::QT
Nam : WILLOW GROVE
Misc: EA#0780(MSD),DUP #2,SOIL,10.05,1.0, <99.50> BTL#10

Id File: IDFCLP::BD
Titl : HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890414 00:00

Op rator ID: UNCLE
Quant Time: 890414 00:44
Injected at: 890325 07:59

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >FB937::D5 Quant Output File: ^FB937::QT
Name: WILLOW GROVE
Misc: EA#0780(MSD),DUP #2,SOIL,10.05,1.0, <99.50> BTL#10

Id Fil : IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890414 00:00

Operator ID: UNCLE
Quant Time: 890414 00:44
Injected at: 890325 07:59

TIC page 2 of 2

QUANT REPORT

Operator ID: UNCLE Quant Rev: 6 Quant Time: 890414 00:44
Output Fil : ^FB937::QT Inj cted at: 890325 07:59
Data File: >FB937::D5 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#0780(MSD),DUP #2,SOIL,10.05,1.0, <99.50> BTL#10

ID File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890414 00:00

	Compound	R.T.	Q ion	Area	Conc	Units		q
1)	*d4-1,4-Dichlorobenzene	8.41	152.0	31228	40.00	NG		97
2)	2-Fluorophenol	5.73	112.0	126158	127.22	NG	64%	91
3)	Ph n l-d5	7.72	99.0	173583	143.75	NG	72%	93
4)	Phenol	7.76	94.0	180941	129.06	NG		95
6)	2-Chlorophenol	8.02	128.0	149910	139.54	NG		98
7)	1,3-Dichlorobenzene	8.43	146.0	81257	~~75.82~~	NG		98
8)	1,4-Dichlorobenzene	8.47	146.0	81257	76.25	NG		98
14)	N-Nitroso-Di-n-propylamine	9.67	70.0	100847	104.89	NG		91
16)	*d8-Naphthalene	11.95	136.0	119898	40.00	NG		89
17)	Nitrobenzene-d5	10.01	82.0	89303	59.85	NG	60%	91
25)	1,2,4-Trichlorobenzene	11.82	180.0	78962	85.90	NG		93
29)	4-Chloro-3-methylphenol	13.84	107.0	136821	167.90	NG		85
30)	2-M thylnaphthalene	14.09	142.0	1454	~~.97~~	NG		89
31)	*d10-Acenaphthene	17.45	164.0	51327	40.00	NG		95
36)	2-Fluorobiphenyl	15.34	172.0	131786	54.40	NG	54%	94
39)	Acenaphthylene	17.56	152.0	60837	~~27.30~~	NG		69
41)	Ac naphthene	17.56	153.0	132396	93.09	NG		93
45)	2,4-Dinitrotoluene	18.30	165.0	44947	106.51	NG		77
51)	*d10-Phenanthrene	22.15	188.0	53957	40.00	NG		99
54)	2,4,6-Tribromophenol	20.01	329.9	46371	197.89	NG	99%	98
57)	Pentachlorophenol	21.78	266.0	42109	218.29	NG		97
60)	Di-n-Butyl phthalate	24.25	149.0	766	~~.43~~	NG		96
62)	*d12-Chrysene	30.42	240.0	20346	40.00	NG		99
63)	Pyrene	26.79	202.0	97216	97.56	NG		96
64)	Terph nyl-d14	27.34	244.0	59986	54.78	NG	55%	87
68)	bis(2-Ethylhexyl)phthalate	30.59	149.0	1468	2.35	NG		96
70)	*d12-Perylene	34.37	264.0	20566	40.00	NG		93

* Compound is ISTD

E. QUALITY ASSURANCE SUMMARY

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EA LABORATORIES

QUALITY ASSURANCE SUMMARY

FOR NAVAL ENERGY AND ENVIRONMENTAL SUPPORT ACTIVITY CONTRACTS

Project: Willow Grove NAS Analysis: TCL semivolatiles

EA Laboratories Report No. 890094 Method: U.S. EPA-CLP

Reviewed by: M.M. Wheffelder Date: 1 Jun 89

1. Water samples were extracted within 5 days of sample collection (soils samples within 10 days) and analyzed within 40 days of extraction.

   ✓ Yes ____ No

2. The 12-hour tuning period for DFPP was met for all samples.

   ✓ Yes ____ No

3. Initial calibration criteria were met for all samples: a five-point calibration curve was run, the RSD is <30% for all CCC compounds, the maximum percent difference for CCC compounds is 25%, and the RRF for SPCC compounds is >0.050.

   ✓ Yes ____ No

4. Continuing calibration criteria were met for all samples: the response factor percent deviation from the mean initial calibration response factor for all CCC compounds was ≤25%, and the RRF for SPCC compounds is >0.050.

   ✓ Yes ____ No

5. Surrogate recovery limits were met for all samples.
   Phenol-D5 recovery for Rinsate blank #3 (EA890776) was 102% (QC limit is 94%). Five of six surrogates out for PR-SS-3 (EA8900777). Phenol-D5 130% for PRW-4 COMP (EA890822). QC limit is 113%

   ____ Yes ✓ No

6. MS and MSD criteria were met for all samples.
   1 out of 11 outside RPD QC limits, 5 out of 22 outside recovery limits.

   ____ Yes ✓ No

7. Method blank criteria were met for all samples: phthalates are ≤5X CRQL, all other compounds are <CRQL.

   ✓ Yes ____ No

(Revised 31 May 1989)

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EA LABORATORIES

QUALITY ASSURANCE SUMMARY

FOR NAVAL ENERGY AND ENVIRONMENTAL SUPPORT ACTIVITY CONTRACTS

Project: Willow Grove NAS Analysis: TCL semivolatiles

EA Laboratories Report No. 890094 Method: U.S. EPA-CLP

Reviewed by: M.M. Wheelden Date: 1 JUN 89

8. Laboratory control sample criteria were met for all samples.
   NO LCS RUN.

   ____ Yes ✓ No

9. Field and equipment blanks: no target compounds were detected in the samples at concentrations <5X the concentration found in the highest associated blank.

   ✓ Yes ____ No

Comments:

(Revised 31 May 1989)

1
7
3

4. PESTICIDE DATA

4000

A. QC Summary

2E
WATER PESTICIDE SURROGATE RECOVERY

Lab Name: VERSAR ESMO C ntract: _____

Lab Code: VERESM Case No.: WILLOW SAS No.: _____ SDG No.: _____

	EPA SAMPLE NO.	S1 (DBC)#	OTHER
01	WG640	0 *	0
02	WG746	0 *	0
03	WG776	0 *	0
04	WG820	0 *	0
05	PBLK24	0 *	0
06	PBLK01	0 *	0

ADVISORY
QC LIMITS
(24-154)

S1 (DBC) = Dibutlychlorendate

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

FORM II PEST-1

1/87 Rev.

2F
SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: VERSAR ESMO Contract: _____

Lab Code: VERESM Case No.: WILLOW SAS No.: _____ SDG No.: _____

Level: (low/med) LOW

	EPA SAMPLE NO.	S1 (DBC)	#	OTHER
01	WG637	0	*	0
02	WG638	0	*	0
03	WG745	0	D	0
04	WG748	0	D	0
05	WG749	0	*	0
06	WG775	0	D	0
07	WG777	0	*	0
08	WG780	0	D	0
09	WG781	0	*	0
10	WG815	0	*	0
11	WG822	0	*	0
12	WG780MS	0	D	0
13	WG780MSD	0	D	0
14	PBLK23	0	*	0
15	PBLK27	0	*	0
16	PBLK01	0	*	0

ADVISORY
QC LIMITS
(20-150)

S1 (DBC) = Dibutlychlorendate

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

FORM II PEST-2 1/87 R v.

~~9 004~~

3F

SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: VERSAR ESMO Contract: _____

Lab Code: VERESM Case No.: WILLOW SAS No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No.: WG780 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC	#	QC LIMITS REC.
gamma-BHC (Lindane)	16.0	0	0	0	*	46-127
Heptachlor	16.0	0	0	0	*	35-130
Aldrin	16.0	0	0	0	*	34-132
Dieldrin	40.1	0	0	0	*	31-134
Endrin	40.1	0	0	0	*	42-139
4,4'-DDT	40.1	0	0	0	*	23-134

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC	#	% RPD	#	QC LIMITS RPD	QC LIMITS REC.
gamma-BHC (Lindane)	16.0	0	0	*	0		50	46-127
Heptachlor	16.0	0	0	*	0		31	35-130
Aldrin	16.0	0	0	*	0		43	34-132
Dieldrin	40.1	0	0	*	0		38	31-134
Endrin	40.1	0	0	*	0		45	42-139
4,4'-DDT	40.1	0	0	*	0		50	23-134

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 6 outside limits
Spike Recovery: 12 out of 12 outside limits

COMMENTS:

4C

PESTICIDE METHOD BLANK SUMMARY

Lab Nam : VERSAR ESMO C ntract: _____

Lab Code: VERESM Case No.: WILLOW SAS No.: _____ SDG No.: _____

Lab Sample ID: PBLK456 Lab File ID: _____

Matrix: (soil/water) WATER Level: (low/med) LOW

Date Extracted: 02/24/89 Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed (1): 03/15/89 Date Analyzed (2): _____

Time Analyzed (1): 2241 Time Analyzed (2): _____

Instrument ID (1): GC-C Instrument ID (2): _____

GC Column ID (1): MIXED GC Column ID (2): _____

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	WG640	RINSATEBLK	03/15/89	
02	WG746	RINSATEBLK2	03/16/89	
03	WG776	RINSATEBLK2	03/16/89	

COMMENTS:

4C

PESTICIDE METHOD BLANK SUMMARY

Lab Nam : VERSAR ESMO Contract: _____

Lab Code: VERESM Case No.: WILLOW SAS No.: _____ SDG No.: _____

Lab Sample ID: PBLK451 Lab File ID: _____

Matrix: (soil/water) SOIL Level: (low/med) LOW

Dat Extracted: 02/23/89 Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed (1): 03/16/89 Date Analyzed (2): _____

Time Analyzed (1): 0322 Time Analyzed (2): _____

Instrument ID (1): GC-C Instrument ID (2): _____

GC Column ID (1): MIXED GC Column ID (2): _____

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	WG637	PRB1COMP	03/16/89	
02	WG638	PRD2COMP	03/16/89	
03	WG745	PRW1COMP	03/17/89	03/20/89
04	WG748	PRSS1SOIL	03/16/89	03/20/89
05	WG749	PRSS2SOIL	03/17/89	03/20/89
06	WG775	PRW2COMP	03/17/89	03/20/89
07	WG777	PRSS3SOIL	03/16/89	03/20/89
08	WG780	DUP2	03/17/89	03/20/89
09	WG781	DUP3	03/17/89	03/20/89
10	WG780MS	DUP2MS	03/17/89	03/21/89
11	WG780MSD	DUP2MSD	03/17/89	03/21/89

COMMENTS:

4C

PESTICIDE METHOD BLANK SUMMARY

Lab Name: VERSAR ESMO Contract: _____

Lab Code: VERESM Case No.: WILLOW SAS No.: _____ SDG No.: _____

Lab Sample ID: PBLK464 Lab File ID: _____

Matrix: (soil/water) SOIL Level: (low/med) LOW

Dat Extracted: 02/27/89 Extraction: (SepF/Cont/Sonc) SONC

Date Analyzed (1): 03/16/89 Date Analyzed (2): _____

Time Analyzed (1): 0409 Time Analyzed (2): _____

Instrument ID (1): GC-C Instrument ID (2): _____

GC Column ID (1): MIXED9 GC Column ID (2): _____

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	WG815	PRW3COMP	03/17/89	03/21/89

COMMENTS:

FORM IV PEST

~~3 003~~ 1/87 Rev.

4C

PESTICIDE METHOD BLANK SUMMARY

Lab Name: VERSAR ESMO Contract: _____

Lab Code: VERESM Case No.: WILLOW SAS No.: _____ SDG No.: _____

Lab Sample ID: PBLK476 Lab File ID: _____

Matrix: (soil/water) SOIL Level: (low/med) LOW

Dat Extracted: 03/01/89 Extraction: (SepF/Cont/Sonc) SONC

Dat Analyzed (1): 03/16/89 Date Analyzed (2): _____

Time Analyzed (1): 0455 Time Analyzed (2): _____

Instrument ID (1): GC-C Instrument ID (2): _____

GC Column ID (1): MIXED9 GC Column ID (2): _____

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	WG822	PRW3COMP	03/17/89	03/21/89

COMMENTS:

FORM IV PEST

1/87 Rev.

4C

PESTICIDE METHOD BLANK SUMMARY

Lab Name: VERSAR ESMO Contract: _____

Lab Code: VERESM Case No.: WILLOW SAS No.: _____ SDG No.: _____

Lab Sample ID: PBLK479 Lab File ID: _____

Matrix: (soil/water) WATER Level: (low/med) LOW

Date Extracted: 03/01/89 Extraction: (SepF/Cont/Sonc) SEPF

Date Analyzed (1): 03/16/89 Date Analyzed (2): _____

Time Analyzed (1): 0542 Time Analyzed (2): _____

Instrument ID (1): GC-C Instrument ID (2): _____

GC Column ID (1): MIXED9 GC Column ID (2): _____

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	WG820	RINSATE5	03/16/89	

COMMENTS:

FORM IV PEST 1/87 R v.

~~2 010~~ Jm

4 009

B. Sample Data

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG637

Lab Name: VERSAR ESMO Contract: _____

Lab Code: _____ Case No.: WILLOW SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: PRB1COMP

Sample wt/vol: 10.0 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 02/16/89

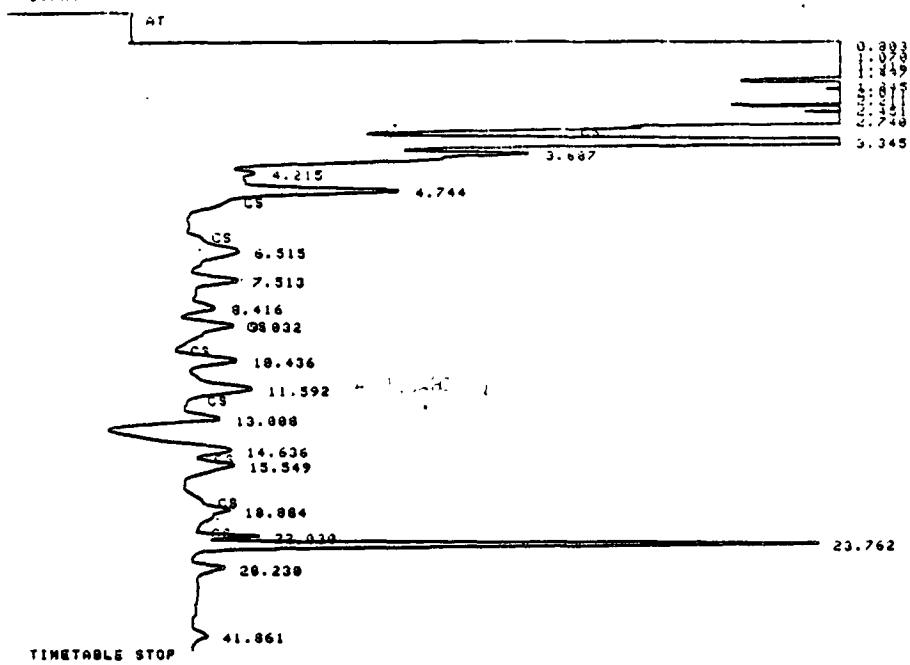
% Moisture: not dec. 12 dec. ____ Date Extracted: 02/23/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/16/89

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 0.100

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.7	U
319-85-7	beta-BHC	2.7	U
319-86-8	delta-BHC	2.7	U
58-89-9	gamma-BHC (Lindane)	2.7	U
76-44-8	Heptachlor	2.7	U
309-00-2	Aldrin	2.7	U
1024-57-3	Heptachlor epoxide	2.7	U
959-98-8	Endosulfan I	2.7	U
60-57-1	Dieldrin	5.5	U
72-55-9	4,4'-DDE	5.5	U
72-20-8	Endrin	5.5	U
33213-65-9	Endosulfan II	5.5	U
72-54-8	4,4'-DDD	5.5	U
1031-07-8	Endosulfan sulfate	5.5	U
50-29-3	4,4'-DDT	5.5	U
72-43-5	Methoxychlor	27	U
53494-70-5	Endrin ketone	5.5	U
5103-71-9	alpha-Chlordane	27	U
5103-74-2	gamma-Chlordane	27	U
8001-35-2	Toxaphene	55	U
12674-11-2	Aroclor-1016	27	U
11104-28-2	Aroclor-1221	27	U
11141-16-5	Aroclor-1232	27	U
53469-21-9	Aroclor-1242	27	U
12672-29-6	Aroclor-1248	27	U
11097-69-1	Aroclor-1254	55	U
11096-82-5	Aroclor-1260	55	U

RUN # 937 MAR 16, 1989 06:29:33
START



TIMETABLE STOP

RUN# 937 MAR 16, 1989 06:29:33

SAMPLE NAME: WG637 SAMPLE# 24

PCB/PEST ON 1.5SP2250-1.95SP2401

COLUMN: 1.95% SP2250 / 1.5% SP2401

INSTRUMENT ID: GC-C

SAMPLE ID: WG637

AMOUNT INJECTED: 5 UL

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.803	1030843	VV	.105	55.40750
1.070	87164	VV	.163	4.68060
1.316	79229	VV	.131	4.26184
1.497	103563	VV	.205	5.57080
1.845	67417	VV	.141	3.62646
2.011	32937	VV	.099	1.77173
2.211	87874	VV	.204	4.72687
2.451	49438	VV	.126	2.65891
2.740	132167	VV	.236	7.10945
3.345	71449	VV	.209	3.84334
3.687	17342	VV	.352	.93285
4.215	5674	VV	.237	.30521
4.744	11856	VV	.545	.63775
6.515	5119	VV	1.010	.27536
7.513	5152	VV	.482	.27713
8.416	4255	VV	.516	.22888
9.032	5108	VV	.932	.27477
10.436	(5340)	VV	.639	.28725
11.592	(6079)	VV	1.115	.32708
13.000	4811)	VP	.665	.25879
14.636	5010)	PV	.833	.26950
15.549	4842	VV	1.260	.26046
18.884	3683	VV	2.998	.19811
22.830	3970	VV	1.038	.21355
23.762	27462	VB	1.008	1.47722
28.230	1381	BV	1.634	.07429
41.861	675	I PP	1.922	.03631

TOTAL HEIGHT=1859032
MUL FACTOR=1.0000E+00

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG638

Lab Name: VERSAR ESMO Contract: _____

Lab Code: _____ Case No.: WILLOW SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: PRD2COMP

Sample wt/vol: 10.0 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 02/16/89

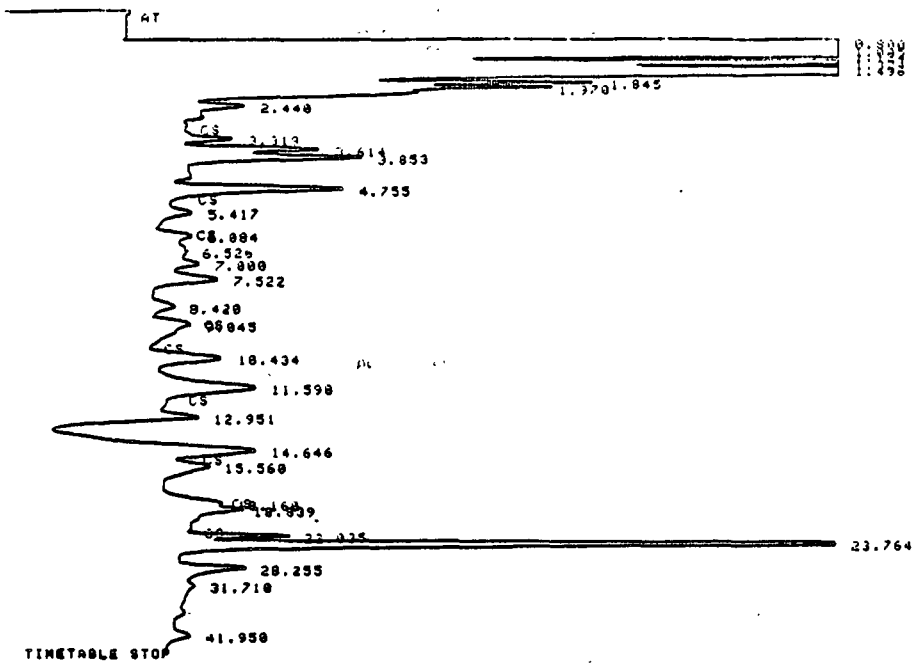
% Moisture: not dec. 16 dec. _____ Date Extracted: 02/23/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/16/89

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 0.100

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.9	U
319-85-7	beta-BHC	2.9	U
319-86-8	delta-BHC	2.9	U
58-89-9	gamma-BHC (Lindane)	2.9	U
76-44-8	Heptachlor	2.9	U
309-00-2	Aldrin	2.9	U
1024-57-3	Heptachlor epoxide	2.9	U
959-98-8	Endosulfan I	2.9	U
60-57-1	Dieldrin	5.7	U
72-55-9	4,4'-DDE	5.7	U
72-20-8	Endrin	5.7	U
33213-65-9	Endosulfan II	5.7	U
72-54-8	4,4'-DDD	5.7	U
1031-07-8	Endosulfan sulfate	5.7	U
50-29-3	4,4'-DDT	5.7	U
72-43-5	Methoxychlor	29	U
53494-70-5	Endrin ketone	5.7	U
5103-71-9	alpha-Chlordane	29	U
5103-74-2	gamma-Chlordane	29	U
8001-35-2	Toxaphene	57	U
12674-11-2	Aroclor-1016	29	U
11104-28-2	Aroclor-1221	29	U
11141-16-5	Aroclor-1232	29	U
53469-21-9	Aroclor-1242	29	U
12672-29-6	Aroclor-1248	29	U
11097-69-1	Aroclor-1254	57	U
11096-82-5	Aroclor-1260	57	U

RUN # 939 MAR 16, 1989 08:03:12
START



TIMETABLE STOP

RUN# 939 MAR 16, 1989 08:03:12

SAMPLE NAME: WG638 SAMPLE# 26

PCB/PEST ON 1.5SP2250-1.95SP2401

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.000	922500	VV	.104	53.03614
1.005	87986	VV	.070	5.06181
1.124	208440	VV	.080	12.16376
1.324	116650	VV	.089	6.80698
1.496	173314	VV	.119	10.11355
1.845	20405	VV	.111	1.19071
1.970	18402	VV	.240	1.07850
2.440	5547	VV	.234	.32369
3.319	5247	VV	.329	.30618
3.614	9064	VV	.198	.52892
3.853	10902	VV	.232	.63617
4.755	10286	VV	.319	.60023
5.417	4000	VV	.541	.23342
6.084	4155	VV	.401	.24246
6.526	4023	VV	.472	.23476
7.000	4660	VV	.399	.27193
7.522	5582	VV	.590	.32573
8.420	3961	VV	.554	.23114
9.045	4906	VV	1.073	.28620
10.434	6542	VV	.659	.38175
11.598	8269	VV	1.096	.48253
12.951	6127	VP	.571	.35753
14.646	8231	PV	.809	.48031
15.560	5802	VV	1.258	.34324
18.160	5296	VV	1.278	.30904
18.839	5751	VV	1.421	.33559
22.035	6527	VV	1.883	.38088
23.764	37506	VB	1.849	2.18862
28.255	2800	VV	1.517	.16339
31.710	552	VV	1.987	.03221
41.950	900	I PP	1.727	.05252

TOTAL HEIGHT=1713681
MUL FACTOR=1.0000E+00

COLUMN: 1.95% SP2250 / 1.5% SP2401

INSTRUMENT ID: GC-C

SAMPLE ID: WG638

AMOUNT INJECTED: 5 UL

~~2 015~~ pm

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG745

Lab Name: VERSAR ESMO C ntract: _____

Lab Code: _____ Case No.: WILLOW SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: PRW1COMP

Sampl wt/vol: 10.0 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 02/16/89

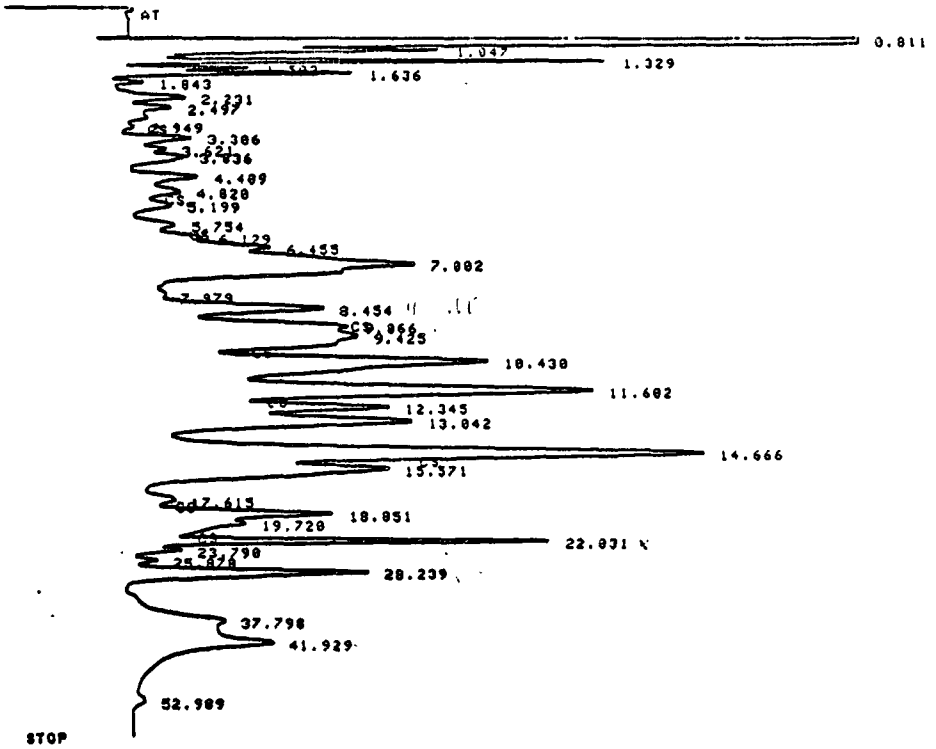
% M isture: not dec. 15 dec. ____ Date Extracted: 02/23/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/17/89

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 4.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	110	U
319-85-7	beta-BHC	110	U
319-86-8	delta-BHC	110	U
58-89-9	gamma-BHC (Lindane)	110	U
76-44-8	Heptachlor	110	U
309-00-2	Aldrin	110	U
1024-57-3	Heptachlor epoxide	110	U
959-98-8	Endosulfan I	110	U
60-57-1	Dieldrin	230	U
72-55-9	4,4'-DDE	230	U
72-20-8	Endrin	230	U
33213-65-9	Endosulfan II	230	U
72-54-8	4,4'-DDD	230	U
1031-07-8	Endosulfan sulfate	230	U
50-29-3	4,4'-DDT	230	U
72-43-5	Methoxychlor	1100	U
53494-70-5	Endrin ketone	230	U
5103-71-9	alpha-Chlordane	1100	U
5103-74-2	gamma-Chlordane	1100	U
8001-35-2	Toxaphene	2300	U
12674-11-2	Aroclor-1016	1100	U
11104-28-2	Aroclor-1221	1100	U
11141-16-5	Aroclor-1232	1100	U
53469-21-9	Aroclor-1242	1100	U
12672-29-6	Aroclor-1248	1100	U
11097-69-1	Aroclor-1254	2300	U
11096-82-5	Aroclor-1260	2700	

RUN # 949 MAR 17, 1989 10:46:29
START



STOP

RUN# 949 MAR 17, 1989 10:46:29

SAMPLE NAME: WG745 SAMPLE# 35
1-40

PCB/PEST ON 1.5SP2250-1.95SP2401

COLUMN: 1.95% SP2250 / 1.5% SP2401

INSTRUMENT ID: GC-C

SAMPLE ID: WG745

AMOUNT INJECTED: 5 UL

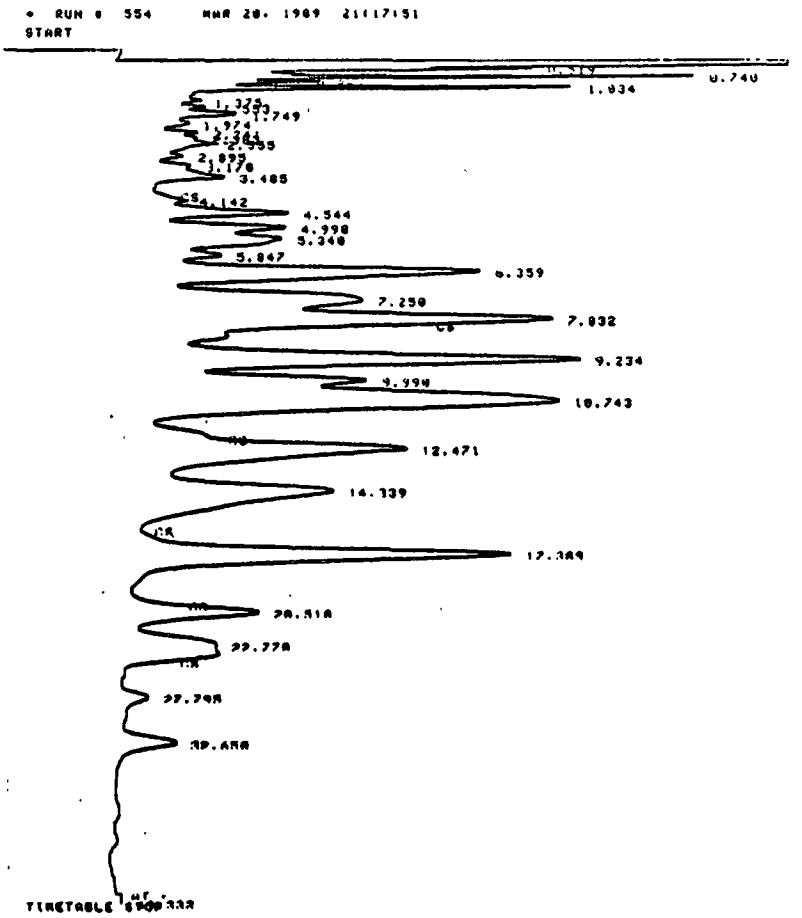
HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.811	230066	PV	.097	43.52702
1.047	14044	VV	.137	2.65704
1.329	21047	VV	.079	3.98196
1.502	6094	VV	.086	1.15295
1.636	10444	VV	.092	1.97594
1.843	1686	VV	.104	.31898
2.231	3414	VV	.213	.64591
2.497	2830	VV	.179	.53542
2.949	1262	VV	.214	.23876
3.306	3660	VV	.240	.69245
3.621	2586	VV	.171	.48925
3.836	3319	VV	.316	.62793
4.409	3917	VV	.293	.74107
4.820	3188	VV	.310	.60315
5.199	2793	VV	.342	.52842
5.754	2924	VV	.322	.55320
6.129	4042	VV	.267	.76472
6.455	6890	VV	.298	1.30354
7.002	12904	VV	.463	2.44136
7.979	2515	VV	.316	.47582
8.454	9098	VV	.400	1.71977
9.066	10102	VV	.363	1.91123
9.425	10479	VV	.738	1.98256
10.430	15915	VV	.680	3.01102
11.602	20281	VV	.547	3.83704
12.345	11741	VV	.493	2.22132
13.042	12688	VV	.673	2.40049
14.666	24888	VV	.714	4.70865
15.571	11652	VV	.989	2.20448
17.615	2710	VV	.853	.51271
18.851	9238	VV	.893	1.74777
19.720	5688	VV	1.261	1.05948
22.031	18188	VV	.995	3.44186
23.790	2835	VV	1.275	.53636
25.878	1745	VV	1.241	.33014
28.239	10532	VV	1.721	1.99259
37.798	4342	VV	3.196	.82148
41.929	6268	VV	4.716	1.18587
52.989	648	VV	2.495	.12188

TOTAL HEIGHT= 528559
MUL FACTOR=1.0000E+00

~~0 010~~ pm

4 016



RUN# 554 MAR 28, 1989 21:17:51

WG 745 1-40 dil SAMPLE# 17

1-40 dil

PCB/PEST ON 3%SP2100

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.519	55004	BP	.047	2.99460
.740	161632	PV	.052	8.66123
.862	31140	VV	.077	1.66067
1.934	131466	VP	.069	7.04475
1.375	6859	VP	.084	.36755
1.553	10505	PV	.092	.56292
1.749	23370	VV	.146	1.25231
1.974	8322	VP	.152	.44594
2.241	13086	PV	.101	.70123
2.383	13063	VV	.111	.70000
2.555	18624	VV	.228	.99799
2.895	8935	VV	.135	.47879
3.170	12541	VV	.143	.67202
3.485	25610	VP	.250	1.37277
4.142	12015	PV	.223	.64384
4.544	49964	VV	.271	2.67738
4.998	49170	VV	.253	2.63586
5.348	47746	VV	.399	2.55852
5.847	26092	VV	.256	1.39817
6.359	120810	VV	.390	6.47373
7.250	78521	VV	.523	4.20764
7.832	147803	VV	.485	7.92019
9.234	150796	VV	.485	8.08028
9.998	81337	VV	.487	4.35853
10.743	152061	VV	.725	8.14835
12.471	97314	VV	.884	5.21468
14.339	71383	VV	1.028	3.82514
17.389	137717	VB	.796	7.37972
20.510	47864	BV	.959	2.56484
22.770	33744	VV	.886	1.80821
27.795	10477	PV	1.398	.56142
32.650	21792	VB	1.584	1.16775
49.333	497	I PM	4.284	.02663

TOTAL HEIGHT=1866156
NUL FACTOR=1.00000E+00

COLUMN: 3% SP2100

INSTRUMENT ID: GC-C

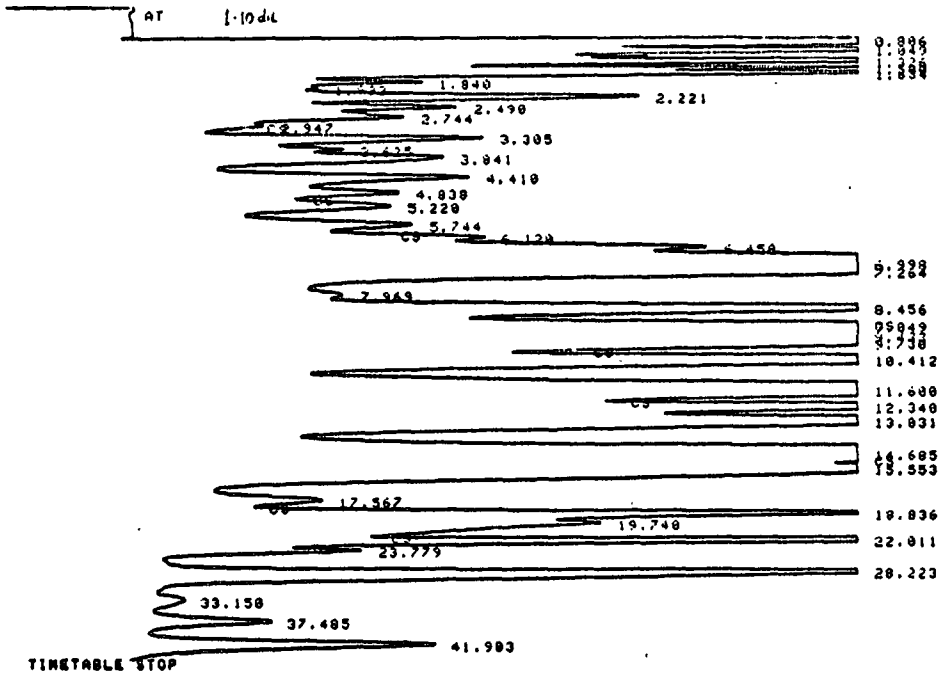
SAMPLE ID: WG 745

AMOUNT INJECTED: 5 UL

~~3 020~~

4 017

RUN # 940 MAR 16, 1989 08:50:00
START



TIMETABLE STOP

NEEDS DILUTION

INCLUDED AS SUPPORTING DATA

RUN# 940 MAR 16, 1989 08:50:00

SAMPLE NAME: WG745 SAMPLE# 27

1-10dil

PCB/PEST ON 1.58P2250-1.95SP2401

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.806	395470	VV	.899	24.73243
1.849	46622	VV	.131	2.91565
1.326	86272	VV	.111	5.39520
1.580	32146	VV	.101	2.01035
1.634	48245	VV	.110	3.01715
1.840	12343	VV	.146	.77191
1.993	7882	VV	.099	.49293
2.221	21315	VV	.210	1.33300
2.490	13720	VV	.170	.85802
2.744	11515	VV	.237	.72013
2.947	5651	VV	.193	.35340
3.305	14829	VV	.246	.92738
3.625	8972	VV	.164	.56109
3.941	13192	VV	.319	.82500
4.410	14234	VV	.311	.89017
4.838	11290	VV	.287	.70606
5.220	10961	VV	.358	.68548
5.744	11862	VV	.315	.74183
6.120	14896	VV	.268	.93157
6.458	24205	VV	.287	1.51373
6.990	46433	VV	.469	2.90303
7.264	38431	VV	.314	2.40240
7.969	8956	VV	.320	.56009
8.456	39415	VV	.381	2.46494
9.049	40657	VV	.404	2.54261
9.433	35628	VV	.371	2.22811
9.738	33964	VV	.342	2.12404
10.412	50552	VV	.470	3.16142
11.600	69674	VV	.576	4.35720
12.340	42711	VV	.476	2.67106
13.031	42863	VV	.656	2.68057
14.605	109107	VV	.689	6.82334
15.553	39322	VV	.933	2.45912
17.567	8080	VV	.885	.50531
18.836	32220	VV	.882	2.01498
19.740	19736	VV	1.290	1.23425
22.011	66011	VV	.995	4.12820
23.779	9608	VV	1.273	.60587
28.223	38901	VV	1.790	2.43279
33.150	2337	VV	2.562	.14615
37.485	5911	VV	1.923	.36966
41.983	12799	I VP	1.909	.80042

TOTAL HEIGHT=1599026
MUL FACTOR=1.0000E+00

COLUMN: 1.95% SP2250 / 1.5% SP2401

INSTRUMENT ID: GC-C

SAMPLE ID: WG745

AMOUNT INJECTED: 5 UL

~~2 001~~ pm

4018

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG748

Lab Nam : VERSAR ESMO Contract: _____

Lab Code: _____ Case No.: WILLOW SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: PRSS1SOIL

Sample wt/vol: 10.0 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 02/16/89

% Moisture: not dec. 29 dec. ____ Date Extracted: 02/23/89

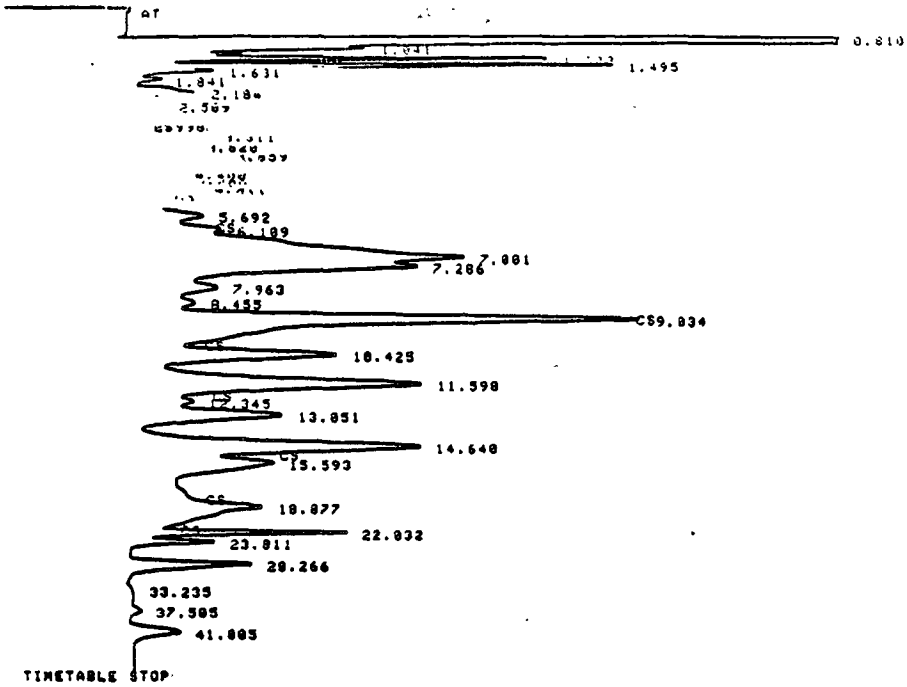
Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/16/89

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	34	U
319-85-7	beta-BHC	34	U
319-86-8	delta-BHC	34	U
58-89-9	gamma-BHC (Lindane)	34	U
76-44-8	Heptachlor	34	U
309-00-2	Aldrin	34	U
1024-57-3	Heptachlor epoxide	34	U
959-98-8	Endosulfan I	34	U
60-57-1	Dieldrin	68	U
72-55-9	4,4'-DDE	68	U
72-20-8	Endrin	68	U
33213-65-9	Endosulfan II	68	U
72-54-8	4,4'-DDD	68	U
1031-07-8	Endosulfan sulfate	68	U
50-29-3	4,4'-DDT	68	U
72-43-5	Methoxychlor	340	U
53494-70-5	Endrin ketone	68	U
5103-71-9	alpha-Chlordane	340	U
5103-74-2	gamma-Chlordane	340	U
8001-35-2	Toxaphene	680	U
12674-11-2	Aroclor-1016	340	U
11104-28-2	Aroclor-1221	340	U
11141-16-5	Aroclor-1232	340	U
53469-21-9	Aroclor-1242	340	U
12672-29-6	Aroclor-1248	340	U
11097-69-1	Aroclor-1254	680	U
11096-82-5	Aroclor-1260	500	J

* SEQ START

RUN # 942 MAR 16, 1989 10:12:16
START



TIMETABLE STOP

RUN# 942 MAR 16, 1989 10:12:16

SAMPLE NAME: WG748 SAMPLE# 28

1:10 dil

PCB/PEST ON 1.5SP2250-1.95SP2401

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.810	287595	PV	.899	52.06555
1.841	11014	VV	.122	1.99395
1.322	19149	VV	.188	3.46669
1.495	22180	VV	.890	4.01542
1.631	4905	VV	.127	.88799
1.841	2848	VV	.161	.51560
2.184	4447	VV	.247	.80587
2.589	3296	VP	.344	.59678
2.990	2369	PV	.258	.42888
3.311	5366	VV	.252	.97145
3.628	4602	VV	.187	.83314
3.859	5827	VV	.373	1.05491
4.488	4085	VV	.282	.73954
4.811	4918	VV	.323	.88898
5.268	4106	VV	.388	.74334
5.692	5031	VV	.342	.91088
6.109	5800	VV	.312	1.05002
7.001	16196	VV	.636	2.93209
7.286	14185	VV	.373	2.56802
7.963	5560	VV	.443	1.00802
8.455	4570	VV	.360	.82734
9.034	23639	VV	.596	4.27955
10.425	10542	VV	.522	1.90858
11.598	14116	VV	.664	2.55553
12.345	4345	VV	.454	.78661
13.051	8069	VV	.721	1.46079
14.640	13953	VV	.771	2.52602
15.593	7598	VV	1.171	1.37488
18.877	6952	VV	2.726	1.25857
22.032	10424	VV	1.848	1.88714
23.811	4662	VV	1.311	.84488
28.266	6072	VV	1.952	1.09926
33.235	734	VV	1.311	.13288
37.585	868	VV	2.316	.15714
41.805	2356	VV	2.245	.42652

TOTAL HEIGHT= 552371
MUL FACTOR=1.0000E+00

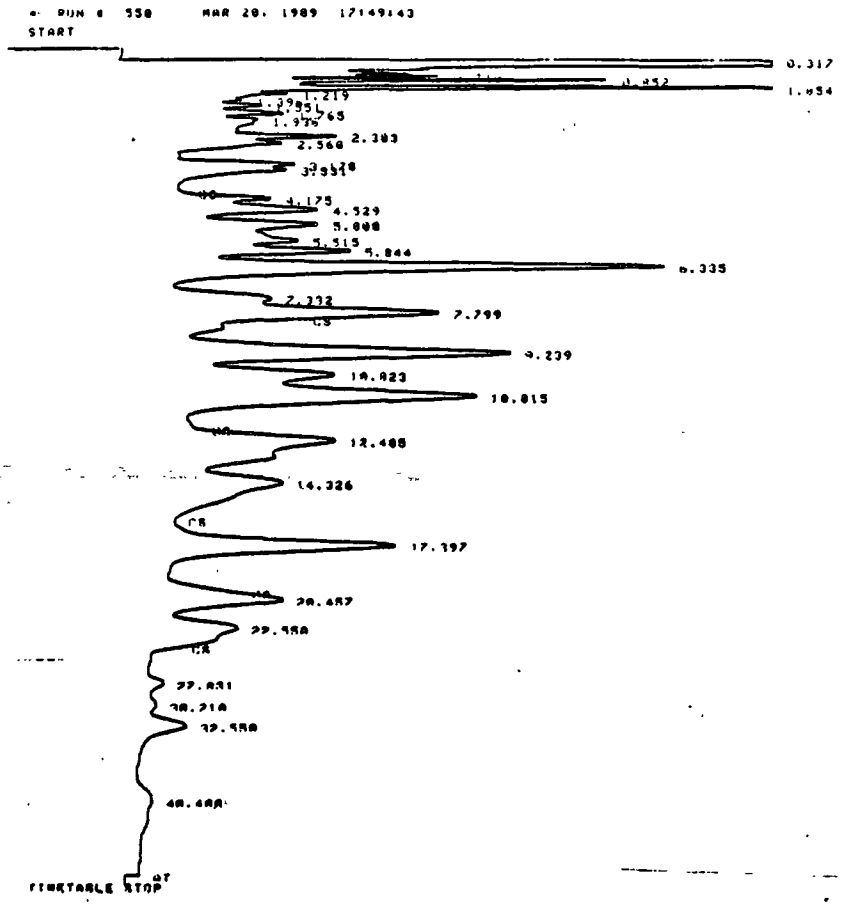
COLUMN: 1.95% SP2250 / 1.5% SP2401

INSTRUMENT ID: GC-C

SAMPLE ID: WG748

AMOUNT INJECTED: 5 UL

~~3 025~~ µm



RUN6 550 MAR 20, 1989 17149:43

WG 748
1:10 dil

SAMPLES 13

1:10 dil

PCG/PEST ON 3%SP2100

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.317	2400422	SPB	.313	56.20821
.740	52501	TBP	.004	1.23111
.852	127431	TPV	.058	2.98017
1.054	228400	TVV	.072	5.35601
1.219	16013	TVV	.060	.37549
1.396	4963	TVP	.064	.11630
1.551	15265	TPV	.096	.35795
1.765	26572	TVV	.120	.62309
1.936	18944	TVV	.270	.44422
2.303	54093	TVV	.136	1.26844
2.568	35660	TVP	.289	.83639
3.178	43990	TVV	.146	1.03153
3.331	41028	TVV	.213	.96200
4.175	35770	TVV	.203	.83878
4.529	53603	TVV	.306	1.25695
5.000	53800	TVV	.293	1.26174
5.515	46620	TVV	.354	1.09321
5.844	66344	TVV	.261	1.55572
6.335	184455	TVV	.309	4.32534
7.332	37352	TVV	.317	.87580
7.799	100830	TVV	.412	2.36439
9.239	128108	TVV	.486	3.00404
10.023	62587	TVV	.487	1.46762
10.815	116050	TVV	.616	2.72129
12.485	64052	TVV	.771	1.50197
14.326	44939	TVV	1.198	1.05379
17.397	88920	TVV	.888	2.08511
20.457	48266	TVV	1.259	1.13188
22.558	32320	TVV	1.753	.75788
27.031	7082	TPV	1.311	.16607
30.210	5103	TVV	1.453	.11966
32.558	17105	TVV	1.748	.40118
40.488	5908	TPV	2.488	.13854

TOTAL HEIGHT=4264522
MUL FACTOR=1.0000E+00

COLUMN: 3% SP2100

INSTRUMENT ID: GC-C

SAMPLE ID: WG 748

AMOUNT INJECTED: 5 UL

~~0 020~~ µm

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG749

Lab Name: VERSAR ESMO Contract: _____

Lab Code: _____ Case No.: WILLOW SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: PRSS2SOIL

Sample wt/vol: 10.0 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 02/16/89

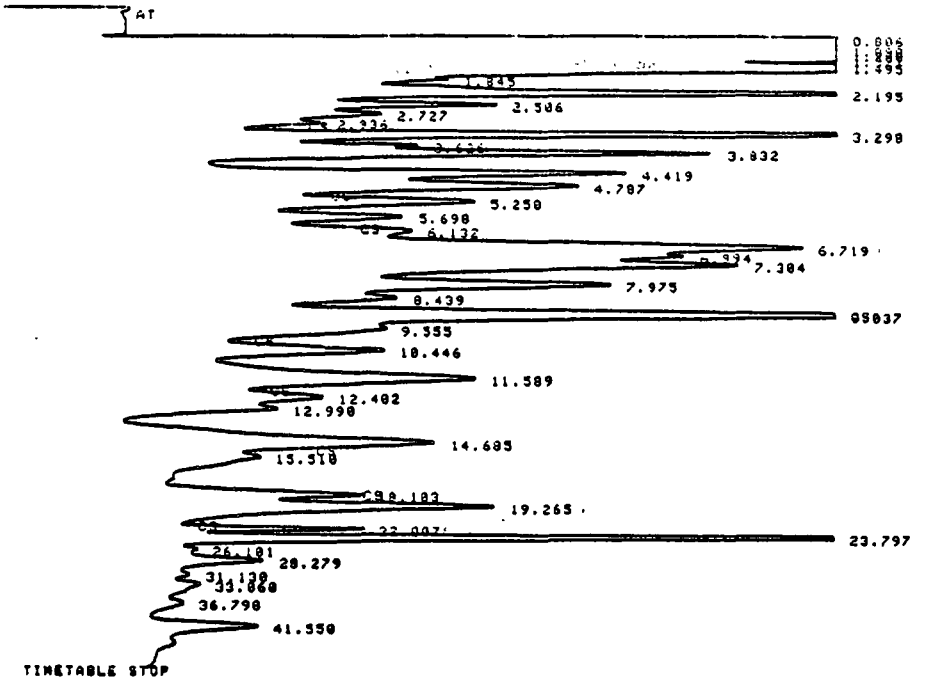
% Moisture: not dec. 15 dec. ____ Date Extracted: 02/23/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/17/89

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 0.100

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.8	U
319-85-7	beta-BHC	2.8	U
319-86-8	delta-BHC	2.8	U
58-89-9	gamma-BHC (Lindane)	2.8	U
76-44-8	Heptachlor	2.8	U
309-00-2	Aldrin	2.8	U
1024-57-3	Heptachlor epoxide	2.8	U
959-98-8	Endosulfan I	2.8	U
60-57-1	Dieldrin	8.9	
72-55-9	4,4'-DDE	5.6	U
72-20-8	Endrin	5.6	U
33213-65-9	Endosulfan II	5.6	U
72-54-8	4,4'-DDD	5.6	U
1031-07-8	Endosulfan sulfate	5.6	U
50-29-3	4,4'-DDT	5.6	U
72-43-5	Methoxychlor	28	U
53494-70-5	Endrin ketone	5.6	U
5103-71-9	alpha-Chlordane	4.8	J
5103-74-2	gamma-Chlordane	5.4	J
8001-35-2	Toxaphene	56	U
12674-11-2	Aroclor-1016	28	U
11104-28-2	Aroclor-1221	28	U
11141-16-5	Aroclor-1232	28	U
53469-21-9	Aroclor-1242	28	U
12672-29-6	Aroclor-1248	28	U
11097-69-1	Aroclor-1254	56	U
11096-82-5	Aroclor-1260	41	J

RUN # 947 MAR 17, 1989 08:41:33
START



RUN# 947 MAR 17, 1989 08:41:33

SAMPLE NAME: WG749 SAMPLE#: 33

PCB/PEST ON 1.95SP2250-1.95SP2401

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.806	967581	PV	.104	50.69645
1.090	47367	VV	.105	2.48189
1.200	37812	VV	.080	1.98124
1.321	124373	VV	.089	6.51679
1.495	155155	VV	.126	8.12967
1.845	14175	VV	.137	.74273
2.195	41147	VV	.203	2.15590
2.506	16276	VV	.194	.85202
2.727	11265	VV	.211	.59025
2.936	8676	VV	.210	.45460
3.298	41083	VV	.189	2.15263
3.626	12860	VV	.163	.67383
3.832	25468	VV	.225	1.33445
4.419	21776	VV	.276	1.14100
4.787	19745	VV	.320	1.03458
5.250	15293	VV	.352	.80131
5.698	12179	VV	.312	.63814
6.132	12611	VV	.376	.66078
6.719	29394	VV	.431	1.54016
6.994	24292	VV	.223	1.27283
7.304	26658	VV	.416	1.39638
7.975	21136	VV	.426	1.10747
8.439	11959	VV	.351	.62662
9.037	36262	VV	.415	1.90002
9.555	11517	VV	.500	.60346
10.446	11410	VV	.526	.59785
11.589	15318	VV	.706	.80262
12.402	8782	VV	.605	.46015
12.990	6833	VV	.449	.35803
14.685	13584	VV	.809	.71176
15.510	6123	VV	1.276	.32083
18.103	10461	VV	.842	.54813
19.265	16127	VV	1.246	.84501
22.007	10524	VV	1.863	.55143
23.797	38536	VV	1.133	2.01918
26.101	3485	VV	1.224	.17841
28.279	6183	VV	2.290	.32397
31.130	3027	VV	1.723	.15861
33.060	3467	VV	2.897	.18166
36.790	2756	VV	2.853	.14441
41.550	5914	VV	2.589	.30988

TOTAL HEIGHT=1908502
MUL FACTOR=1.0000E+00

COLUMN: 1.95% SP2250 / 1.5% SP2401

INSTRUMENT ID: GC-C

SAMPLE ID: WG749

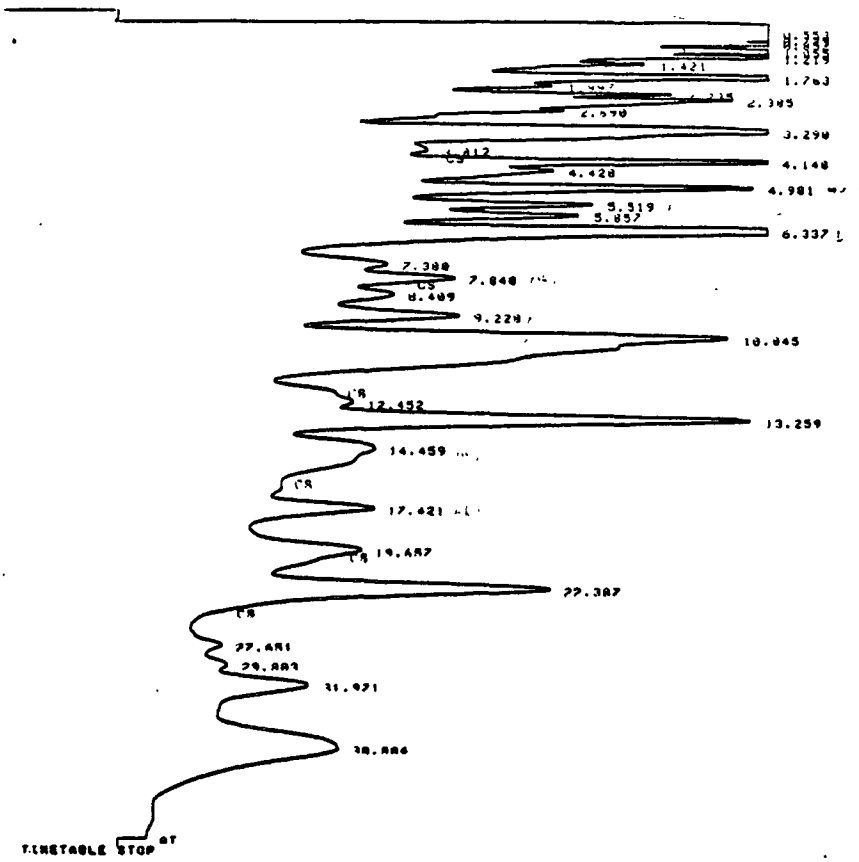
AMOUNT INJECTED: 5 UL

~~2 028~~

4 023

RUN # 552 MAR 20, 1989 19:33:51

START



RUN# 552 MAR 20, 1989 19:33:51

WG749

SAMPLE# 15

PCG/PEST ON 3%SP2100

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.553	108190	BP	.049	2.11057
.729	81623	PP	.086	1.59822
.852	826202	BPB	.052	16.17746
1.055	1179016	BPB	.067	23.08574
1.219	174123	TBB	.056	3.40942
1.421	33896	BP	.088	.66370
1.763	281188	PV	.115	5.50565
1.997	36781	VV	.130	.72019
2.239	89923	VV	.187	1.76074
2.385	118843	VV	.241	2.31124
2.690	65716	VV	.139	1.28675
3.290	194678	PV	.329	3.81190
3.812	30655	VV	.263	.60024
4.140	176638	VV	.212	3.45866
4.428	80656	VV	.342	1.57929
4.981	158287	VV	.284	3.09934
5.319	101328	VV	.266	1.98405
5.857	98186	VV	.268	1.92097
6.337	273874	VP	.319	5.36268
7.388	33705	PV	.357	.65996
7.848	59985	VV	.407	1.17454
8.489	38389	VV	.518	.75111
9.228	64759	VV	.455	1.26802
10.845	166904	VV	.472	3.26807
12.452	32469	VV	.746	.63576
13.259	182465	VV	.571	3.57276
14.459	44968	VV	1.413	.88050
17.421	50935	VV	.838	.99733
19.657	51288	VV	1.587	1.00409
22.387	127783	VP	1.262	2.50049
27.651	13458	PV	1.486	.26351
29.883	17090	VV	1.455	.33463
31.971	49028	VV	2.752	.95999
38.884	65136	VP	4.536	1.27540

TOTAL HEIGHT=5107117

MUL FACTOR=1.0000E+00

COLUMN: 3% SP2100

INSTRUMENT ID: GC-C

SAMPLE ID: WG749

AMOUNT INJECTED: 5 UL

~~8 020~~ fun

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG775

Lab Name: VERSAR ESMO Contract: _____

Lab Code: _____ Case No.: WILLOW SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: PRW2COMP

Sample wt/vol: 10.0 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 02/16/89

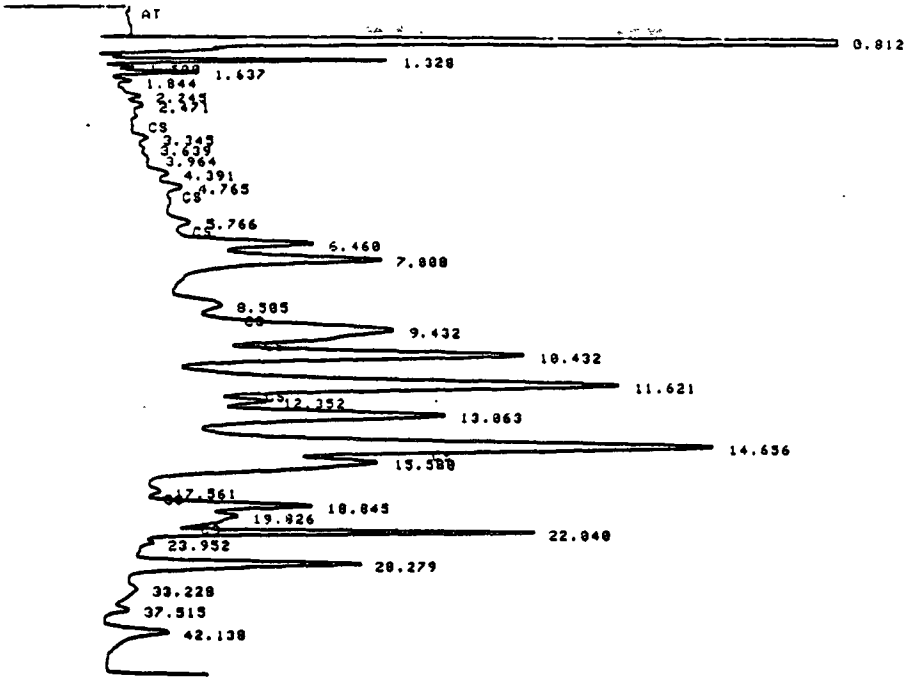
% Moisture: not dec. 16 dec. _____ Date Extracted: 02/23/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/17/89

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 10.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	290	U
319-85-7	beta-BHC	290	U
319-86-8	delta-BHC	290	U
58-89-9	gamma-BHC (Lindane)	290	U
76-44-8	Heptachlor	290	U
309-00-2	Aldrin	290	U
1024-57-3	Heptachlor epoxide	290	U
959-98-8	Endosulfan I	290	U
60-57-1	Dieldrin	570	U
72-55-9	4,4'-DDE	570	U
72-20-8	Endrin	570	U
33213-65-9	Endosulfan II	570	U
72-54-8	4,4'-DDD	570	U
1031-07-8	Endosulfan sulfate	570	U
50-29-3	4,4'-DDT	570	U
72-43-5	Methoxychlor	2900	U
53494-70-5	Endrin ketone	570	U
5103-71-9	alpha-Chlordane	2900	U
5103-74-2	gamma-Chlordane	2900	U
8001-35-2	Toxaphene	5700	U
12674-11-2	Aroclor-1016	2900	U
11104-28-2	Aroclor-1221	2900	U
11141-16-5	Aroclor-1232	2900	U
53469-21-9	Aroclor-1242	2900	U
12672-29-6	Aroclor-1248	2900	U
11097-69-1	Aroclor-1254	5700	U
11096-82-5	Aroclor-1260	7500	

RUN # 940 MAR 17, 1989 09:37:03
START



TIMETABLE STOP

RUN# 940 MAR 17, 1989 09:37:03

SAMPLE NAME: WG775 SAMPLE# 34
1-100

PCB/PEST ON 1.5SP2250-1.95SP2401

COLUMN: 1.95% SP2250 / 1.5% SP2401

INSTRUMENT ID: GC-C

SAMPLE ID: WG775

AMOUNT INJECTED: 5 UL

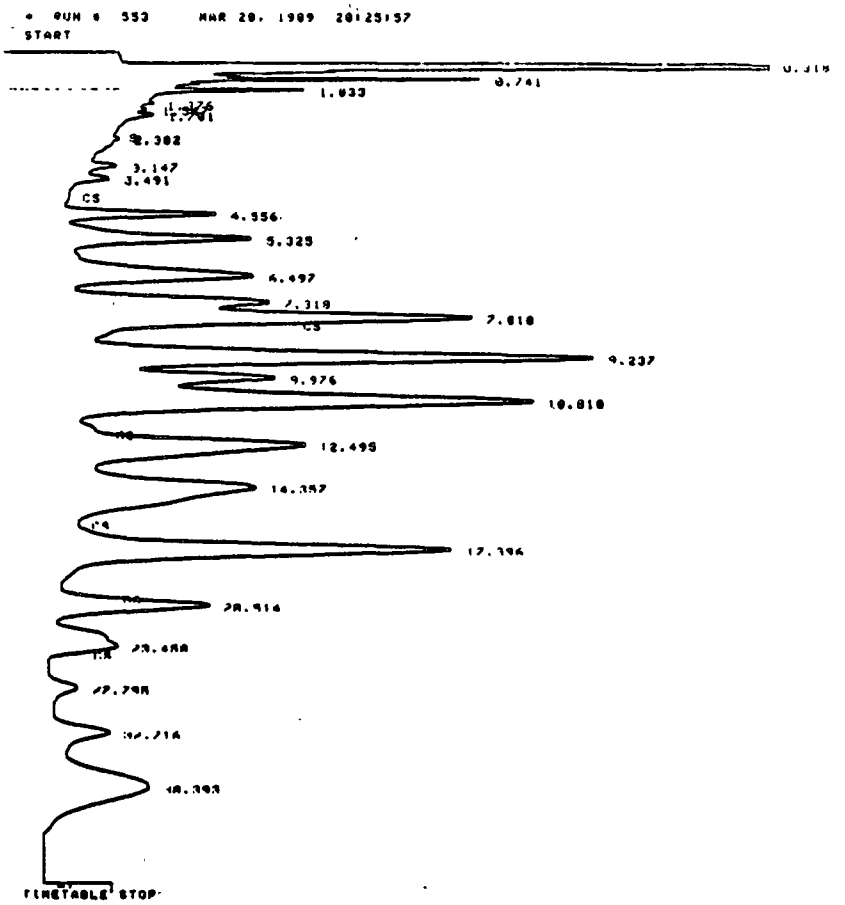
HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.812	191843	PB	.099	33.87822
1.328	12367	PV	.879	2.19308
1.588	1511	VV	.861	.26795
1.637	4307	VV	.896	.76377
1.844	1399	VV	.135	.24809
2.245	1787	VV	.281	.31689
2.471	1899	VV	.228	.33676
3.345	2058	VV	.335	.36495
3.639	1939	VV	.214	.34385
3.964	2145	VV	.342	.38038
4.391	2955	VV	.386	.52402
4.765	3553	VV	.368	.63006
5.766	3887	VV	.505	.68929
6.460	9288	VV	.441	1.63288
7.088	12101	VV	.649	2.14591
8.585	5274	VV	.622	.93525
9.432	12621	VV	.898	2.23812
10.432	18234	VV	.498	3.23349
11.621	22316	VV	.602	3.95736
12.352	7192	VV	.454	1.27538
13.063	14857	VV	.702	2.63464
14.656	26398	VV	.777	4.67982
15.588	11957	VV	1.078	2.12037
17.561	2609	VV	.782	.46266
18.845	9108	VV	.923	1.61515
19.826	5938	VV	1.455	1.05308
22.040	18629	VV	1.833	3.30354
23.952	2285	VV	2.482	.40521
28.279	11176	VV	1.834	1.98187
33.228	1499	VV	4.870	.26582
37.515	1126	VP	1.546	.19968
42.138	2794	PV	2.341	.49547
57.214	137747	PV	5.835	24.42708

TOTAL HEIGHT= 563911

~~8 021~~ µm

4 026



RUN# 553 MAR 20, 1989 20:25:57

WG775

1-100 dil

SAMPLE# 16

1-100 dil

PCB/PEST ON 3%SP2100

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.318	1494950	SBB	.101	49.15830
.741	105987	TBV	.054	3.48458
1.033	51891	TPB	.063	1.67974
1.376	3268	TBP	.066	.10744
1.547	3541	TPV	.082	.11642
1.701	8205	TVB	.112	.26976
2.382	3468	BB	.220	.11376
3.147	10438	BV	.163	.34975
3.491	10732	VB	.131	.35284
4.556	56828	PV	.208	1.86810
5.325	70816	VV	.316	2.30195
6.497	70806	VV	.465	2.32792
7.318	76924	VV	.358	2.52906
7.818	153041	VV	.452	5.03160
9.237	198441	VV	.494	6.52423
9.976	79337	VV	.446	2.60840
10.818	176078	VV	.584	5.78900
12.495	90917	VV	.853	2.98912
14.357	72446	VV	1.175	2.38184
17.396	145966	VB	.844	4.79899
20.514	57039	BV	.917	1.87538
23.458	25132	VP	1.544	.82628
27.795	11195	BV	1.659	.36806
32.716	24504	VV	2.288	.80563
38.393	41057	VP	4.292	1.34905

TOTAL HEIGHT=3041590

MUL FACTOR=1.0000E+00

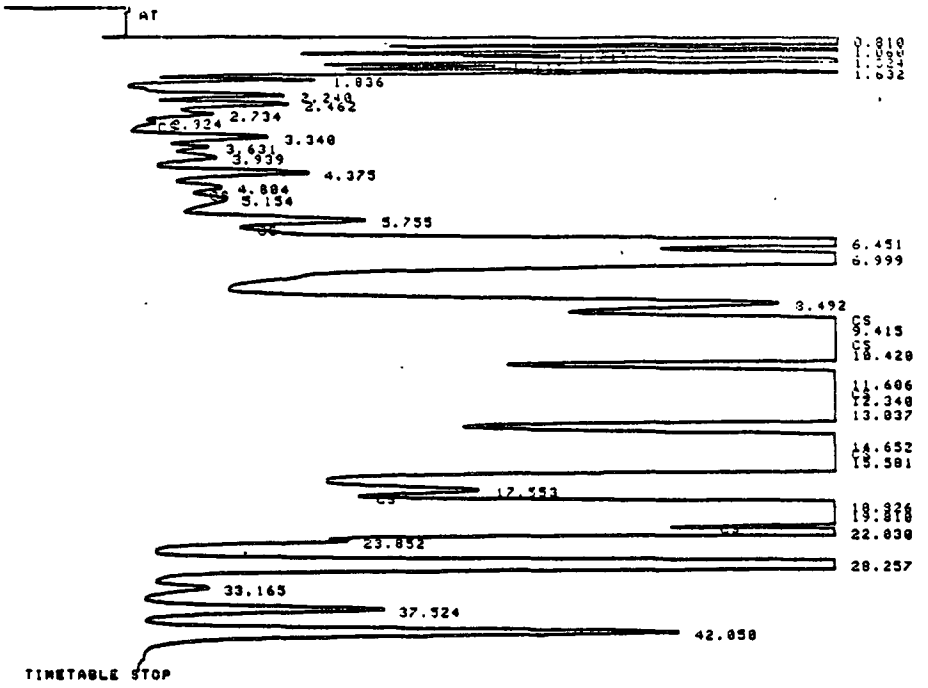
COLUMN: 3% SP2100

INSTRUMENT ID: GC-C

SAMPLE ID: WG775

AMOUNT INJECTED: 5 UL

RUN # 944 MAR 16, 1989 11:55:49
START



TIMETABLE STOP

RUN# 944 MAR 16, 1989 11:55:49

SAMPLE NAME: WG775 SAMPLE# 30

1-10

PCB/PEST ON 1.95SP2250-1.95SP2401

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.810	273332	PV	.098	14.52491
1.060	34751	VV	.120	1.84667
1.213	19469	VV	.068	1.03459
1.324	112038	VV	.083	5.95372
1.492	16536	VV	.091	.87873
1.632	40565	VV	.094	2.15563
1.836	8704	VV	.108	.46253
2.240	7366	VV	.158	.39143
2.462	7478	VV	.172	.39738
2.734	4296	VV	.188	.22829
2.924	1796	VV	.193	.09544
3.340	6598	VV	.227	.35062
3.631	4097	VV	.188	.21772
3.939	4378	VV	.209	.23265
4.375	8317	VV	.268	.44197
4.884	4608	VV	.292	.24444
5.154	4755	VV	.448	.25268
5.755	10687	VV	.305	.56791
6.451	48932	VV	.337	2.60825
6.999	69713	VV	.476	3.70456
8.492	28415	VV	.478	1.50998
9.415	78302	VV	.898	4.16098
10.420	115631	VV	.467	6.14465
11.606	148319	VV	.576	7.88178
12.340	59576	VV	.447	3.16588
13.037	98756	VV	.638	5.24791
14.652	194919	VV	.708	10.35803
15.581	74096	VV	.998	3.93747
17.553	15258	VV	.799	.81081
18.826	63942	VV	.886	3.39789
19.810	39811	VV	1.468	2.11556
22.030	144918	VV	.997	7.70097
23.852	9433	VV	1.198	.50127
28.257	85083	VV	1.602	4.52132
33.165	3212	VV	1.868	.17069
37.524	10595	VV	1.580	.56302
42.050	23142	VB	1.816	1.22977

TOTAL HEIGHT=1881816
MUL FACTOR=1.0000E+00

COLUMN: 1.95% SP2250 / 1.5% SP2401

INSTRUMENT ID: GC-C

SAMPLE ID: WG775

AMOUNT INJECTED: 5 UL

~~3 033~~

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG777

Lab Name: VERSAR ESMO Contract: _____

Lab Code: _____ Case No.: WILLOW SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: PRSS3SOIL

Sample wt/vol: 10.0 (g/mL) G Lab File ID: _____

Lev l: (low/med) LOW Date Received: 02/16/89

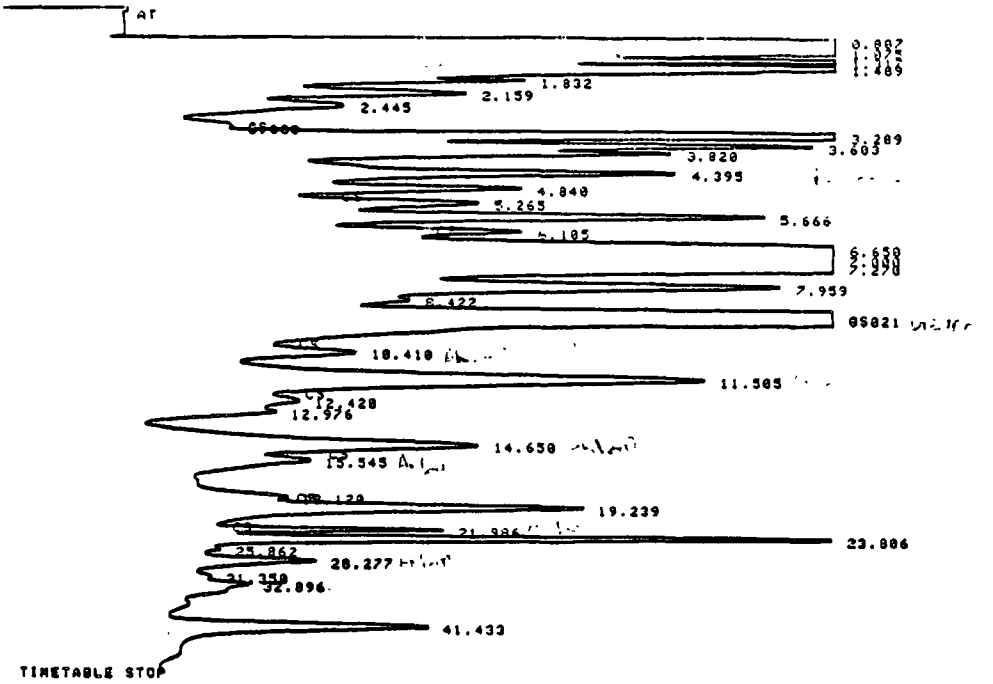
% Moisture: not dec. 33 dec. ____ Date Extracted: 02/23/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/16/89

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 0.100

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	3.6	U
319-85-7	beta-BHC	3.6	U
319-86-8	delta-BHC	3.6	U
58-89-9	gamma-BHC (Lindane)	3.6	U
76-44-8	Heptachlor	3.6	U
309-00-2	Aldrin	3.6	U
1024-57-3	Heptachlor epoxide	3.6	U
959-98-8	Endosulfan I	3.6	U
60-57-1	Dieldrin	55	
72-55-9	4,4'-DDE	7.2	U
72-20-8	Endrin	7.2	U
33213-65-9	Endosulfan II	7.2	U
72-54-8	4,4'-DDD	7.2	U
1031-07-8	Endosulfan sulfate	7.2	U
50-29-3	4,4'-DDT	7.2	U
72-43-5	Methoxychlor	36	U
53494-70-5	Endrin ketone	7.2	U
5103-71-9	alpha-Chlordane	10	J
5103-74-2	gamma-Chlordane	4.9	J
8001-35-2	Toxaphene	72	U
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	72	U
11096-82-5	Aroclor-1260	54	J

RUN # 946 MAR 16, 1989 13:39:28
START



TIMETABLE STOP

RUN# 946 MAR 16, 1989 13:39:28

SAMPLE NAME: SAMPLE# 32

WG 777

PCB/PEST ON 1.5SP2250-1.95SP2401

COLUMN: 1.95% SP2250 / 1.5% SP2401

INSTRUMENT ID: GC-C

SAMPLE ID: WG 777

AMOUNT INJECTED: 5 UL

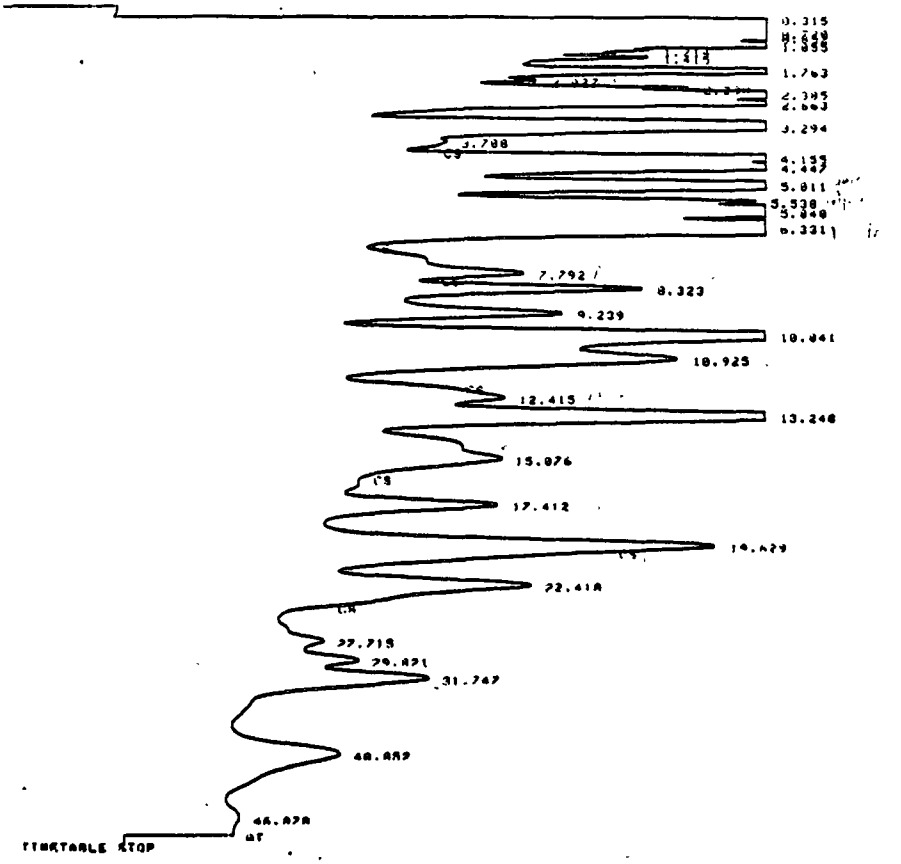
HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.807	902150	PV	.103	47.33646
1.075	50101	VV	.171	2.62884
1.317	83139	VV	.088	4.36236
1.469	147577	VV	.113	7.74347
1.832	16175	VV	.143	.84871
2.159	13264	VV	.236	.69597
2.445	7633	VV	.294	.40051
3.030	2130	VV	.223	.11218
3.289	82121	VV	.161	4.30895
3.603	26319	VV	.197	1.38098
3.820	19921	VV	.196	1.04527
4.395	19374	VV	.293	1.01657
4.840	12184	VV	.244	.63930
5.265	9780	VV	.274	.51358
5.666	21601	VV	.240	1.13342
6.185	10555	VV	.273	.55383
6.650	28462	VV	.383	1.49342
7.080	70662	VV	.328	3.70760
7.270	44399	VV	.270	2.32965
7.959	19306	VV	.345	1.01300
8.422	2780	VV	.211	.14587
9.021	176145	VB	.340	9.24246
10.410	4187	BP	.320	.21969
11.505	21036	PV	.573	1.10377
12.420	4943	VV	.569	.25936
12.976	4740	VP	.433	.24871
14.650	13603	PV	.737	.71376
15.545	5844	VV	.799	.30664
18.120	3867	BV	.644	.20290
19.239	16605	VV	1.061	.87128
21.986	10767	VV	.927	.56495
23.806	31625	VV	1.869	1.65939
25.862	1441	VV	1.057	.07561
28.277	5684	VV	1.651	.29824
31.350	1372	VV	1.253	.07199
32.896	3054	VV	1.523	.16025
41.433	11263	PV	2.053	.59098

TOTAL HEIGHT=1905825
MUL FACTOR=1.0000E+00

~~3 037~~

* RUN # 551 MAR 20, 1989 10:41:46
START



RUN# 551 MAR 20, 1989 10:41:46

WG777 SAMPLE# 14

PCB/PEST ON 3%SP2100

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.315	6988509	SPM	.093	45.14357
.720	122861	TBB	.077	.79363
.852	840950	SMM	.083	5.40389
1.055	1479272	SMB	.065	9.55552
1.214	10411	TBB	.017	.06725
1.415	36131	PP	.074	.23339
1.763	618836	SPB	.096	3.99744
2.027	15881	BP	.070	.10259
2.230	84189	PV	.095	.54383
2.385	361769	VV	.167	2.33689
2.663	181452	VP	.190	1.17211
3.294	346364	PV	.250	2.23738
3.708	18897	VV	.217	.12207
4.155	264469	VV	.187	1.70837
4.447	227322	VV	.260	1.46841
5.011	174008	VP	.330	1.12402
5.330	107056	PV	.171	.69154
5.840	503809	VM	.249	3.24976
6.331	1636956	SMB	.260	10.57410
7.792	61331	BV	.512	.39617
8.323	107779	VV	.380	.69621
9.239	80740	VP	.442	.52155
10.041	222953	PV	.523	1.44019
10.925	127127	VV	.647	.82119
12.415	64606	VV	.753	.41733
13.248	236243	VV	.591	1.52604
15.076	67001	VV	1.523	.43797
17.412	70806	VV	.798	.45721
19.629	154963	VV	1.263	1.00100
22.418	90370	VP	1.584	.58381
27.715	20853	PV	1.698	.13470
29.821	37144	VV	1.448	.23994
31.747	66306	VP	1.985	.42831
40.852	41642	PP	3.046	.26899
46.878	4448	I PP	2.138	.02873

TOTAL HEIGHT=1.5481E+07
MUL FACTOR=1.0000E+00

COLUMN: 3% SP2100

INSTRUMENT ID: GC-C

SAMPLE ID: WG777

AMOUNT INJECTED: 5 UL

~~3 028~~

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG780

Lab Nam : VERSAR ESMO Contract: _____

Lab Code: _____ Case No.: WILLOW SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: DUP2

Sample wt/vol: 10.0 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 02/16/89

% M isture: not dec. 16 dec. ____ Date Extracted: 02/23/89

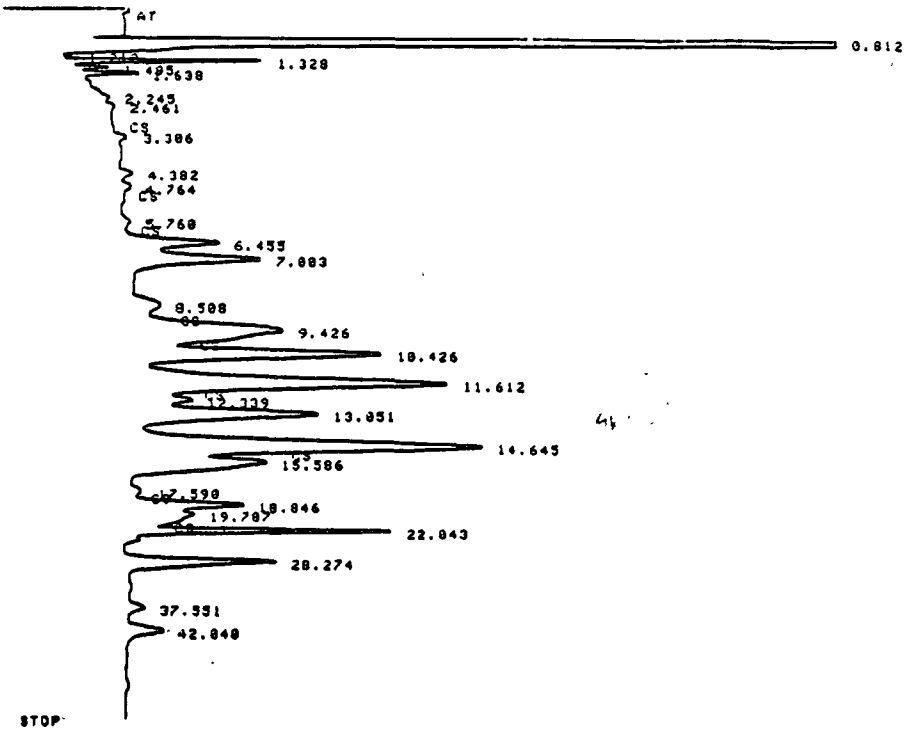
Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/17/89

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 10.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	290	U
319-85-7	beta-BHC	290	U
319-86-8	delta-BHC	290	U
58-89-9	gamma-BHC (Lindane)	290	U
76-44-8	Heptachlor	290	U
309-00-2	Aldrin	290	U
1024-57-3	Heptachlor epoxide	290	U
959-98-8	Endosulfan I	290	U
60-57-1	Dieldrin	570	U
72-55-9	4,4'-DDE	570	U
72-20-8	Endrin	570	U
33213-65-9	Endosulfan II	570	U
72-54-8	4,4'-DDD	570	U
1031-07-8	Endosulfan sulfate	570	U
50-29-3	4,4'-DDT	570	U
72-43-5	Methoxychlor	2900	U
53494-70-5	Endrin ketone	570	U
5103-71-9	alpha-Chlordane	2900	U
5103-74-2	gamma-Chlordane	2900	U
8001-35-2	Toxaphene	5700	U
12674-11-2	Aroclor-1016	2900	U
11104-28-2	Aroclor-1221	2900	U
11141-16-5	Aroclor-1232	2900	U
53469-21-9	Aroclor-1242	2900	U
12672-29-6	Aroclor-1248	2900	U
11097-69-1	Aroclor-1254	5700	U
11096-82-5	Aroclor-1260	5000	J

RUN # 958 MAR 17, 1989 11:48:44

START



STOP

RUN# 958 MAR 17, 1989 11:48:44

SAMPLE NAME: WG780 SAMPLE# 36

1-100 dil

PCB/PEST ON 1.58P2250-1.95SP2401

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.812	191576	PB	.897	55.56891
1.212	394	BV	.043	.11428
1.328	8520	VV	.074	2.47133
1.495	1929	VV	.085	.55953
1.638	3162	VV	.106	.91718
2.245	1903	VV	.422	.55199
2.461	2110	VV	.250	.61203
3.306	2551	VV	.574	.73995
4.382	2685	VV	.481	.77882
4.764	2590	VV	.380	.75350
5.760	2425	VV	.523	.70340
6.455	6194	VV	.451	1.79664
7.803	7926	VV	.551	2.29903
8.508	3485	VV	.580	1.01087
9.426	8668	VV	.867	2.51426
10.426	12733	VV	.495	3.69336
11.612	15484	VV	.612	4.49132
12.339	4483	VV	.446	1.30035
13.051	9780	VV	.686	2.83913
14.645	16671	VV	.731	4.83562
15.586	7312	VV	1.054	2.12093
17.590	1744	VV	.849	.50587
18.846	5965	VV	.930	1.73022
19.787	3750	VV	1.484	1.08773
22.043	11934	VV	.990	3.46168
28.274	6468	BV	1.491	1.87380
37.551	713	VV	1.595	.20681
42.848	1591	VP	1.764	.46149

TOTAL HEIGHT= 344754

NUL FACTOR=1.0000E+00

COLUMN: 1.95% SP2250 / 1.5% SP2401

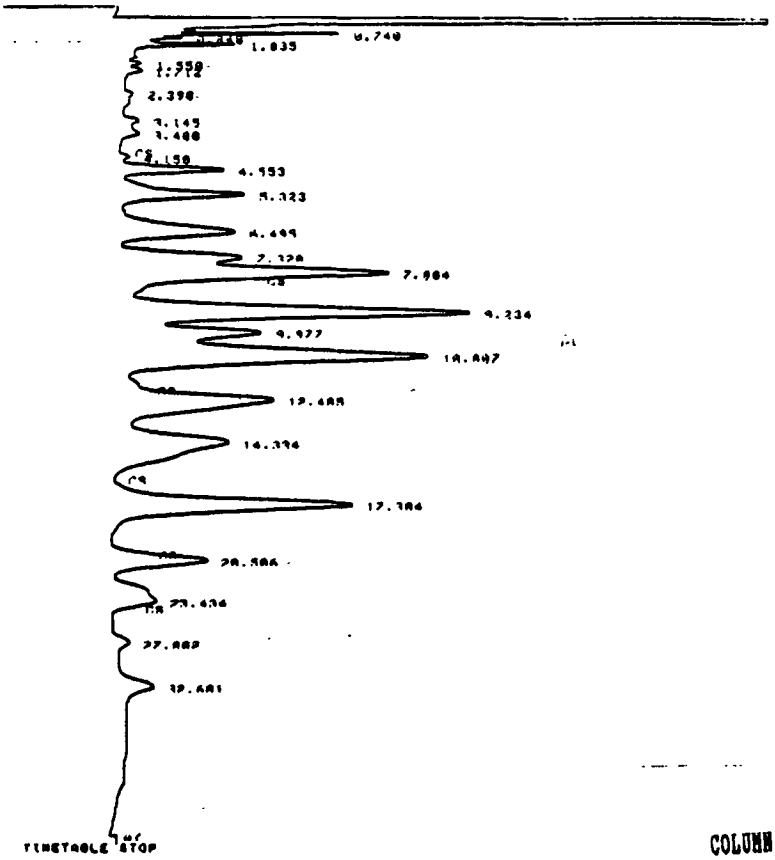
INSTRUMENT ID: GC-C

SAMPLE ID: WG780

AMOUNT INJECTED: 5 UL

~~8 040~~

* RUN # 556 MAR 28, 1989 23:01:34
START



TIMETABLE STOP

COLUMN: 3% SP2100

INSTRUMENT ID: GC-C

SAMPLE ID: WG 780

AMOUNT INJECTED: 5 UL

RUN# 556 MAR 28, 1989 23:01:34

WG 780 SAMPLE# 19

1-100 dil 1-100 dil

PCB/PEST ON 3%SP2100

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.740	64112	BV	.052	6.50097
.848	9667	VP	.044	.98024
1.035	34235	PB	.071	3.47143
1.550	4740	PV	.065	.48066
1.712	5017	VB	.187	.50872
2.390	3550	BV	.140	.35997
3.145	6650	VV	.169	.67412
3.400	6835	VP	.239	.69247
4.150	3561	PV	.171	.36109
4.553	39294	VV	.256	3.98443
5.323	46054	VV	.306	4.75108
6.498	43782	VV	.443	4.43958
7.320	46486	VV	.346	4.71369
7.884	101953	VV	.437	10.33686
9.234	132742	VV	.487	13.46005
9.977	54372	VV	.450	5.51333
10.887	117300	VV	.389	11.89423
12.485	59639	VV	.846	6.04740
14.334	43254	VV	1.006	4.38596
17.384	90302	VB	.806	9.15663
20.506	36326	BV	.938	3.68346
23.434	17036	VV	1.609	1.72745
27.882	5828	PV	1.258	.59096
32.681	12629	VV	1.919	1.28058

TOTAL HEIGHT= 986192
NUL FACTOR=1.00000E+00

~~2 044~~

4 034

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG781

Lab Name: VERSAR ESMO Contract: _____

Lab Code: _____ Case No.: WILLOW SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: DUP3

Sample wt/vol: 10.0 (g/mL) G Lab File ID: _____

L vel: (low/med) LOW Date Received: 02/16/89

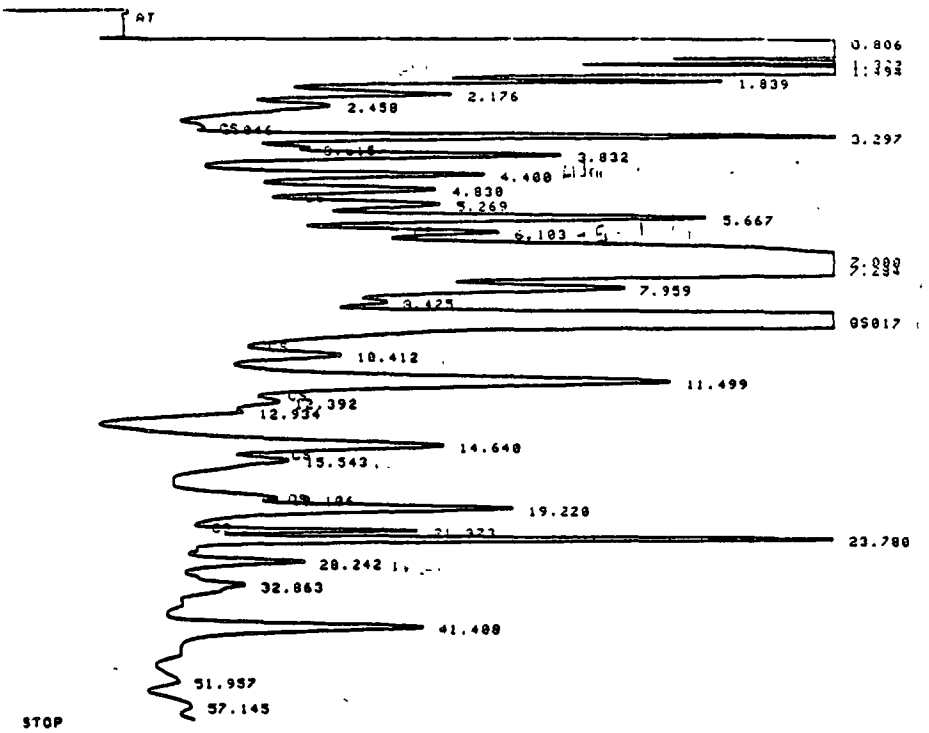
% Moisture: not dec. 28 dec. ____ Date Extracted: 02/23/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/17/89

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 0.100

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	3.3	U
319-85-7	beta-BHC	3.3	U
319-86-8	delta-BHC	3.3	U
58-89-9	gamma-BHC (Lindane)	3.3	U
76-44-8	Heptachlor	3.3	U
309-00-2	Aldrin	3.3	U
1024-57-3	Heptachlor epoxide	3.3	U
959-98-8	Endosulfan I	3.3	U
60-57-1	Dieldrin	61	
72-55-9	4,4'-DDE	6.7	U
72-20-8	Endrin	6.7	U
33213-65-9	Endosulfan II	6.7	U
72-54-8	4,4'-DDD	6.7	U
1031-07-8	Endosulfan sulfate	6.7	U
50-29-3	4,4'-DDT	6.7	U
72-43-5	Methoxychlor	33	U
53494-70-5	Endrin ketone	6.7	U
5103-71-9	alpha-Chlordane	9.7	J
5103-74-2	gamma-Chlordane	3.6	J
8001-35-2	Toxaphene	67	U
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	33	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	67	U
11096-82-5	Aroclor-1260	65	J

RUN # 952 MAR 17, 1989 14:50:15
START



STOP

RUN# 952 MAR 17, 1989 14:50:15

SAMPLE NAME: WG781 SAMPLE# 38

PCB/PEST ON 1.5SP2250-1.95SP2401

COLUMN: 1.95% SP2250 / 1.5% SP2401

INSTRUMENT ID: GC-C

SAMPLE ID: W6781

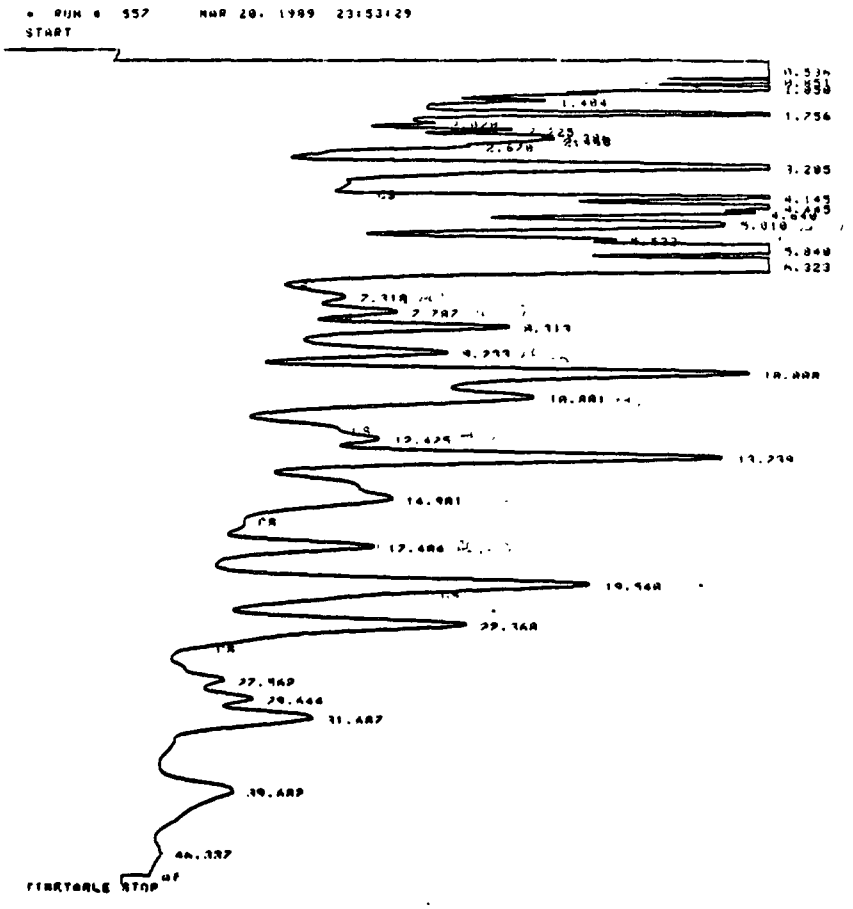
AMOUNT INJECTED: 5 UL

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.806	1925523	PB	.104	55.51965
1.322	40469	BP	.063	2.19091
1.494	137123	PV	.092	7.42355
1.839	15497	VP	.088	.83898
2.176	7950	PV	.153	.43083
2.458	4301	VP	.264	.23285
3.046	963	PV	.190	.05213
3.297	29079	VV	.166	1.57428
3.615	5023	VV	.141	.27193
3.832	15562	VP	.203	.84249
4.400	11819	PV	.201	.63986
4.830	9328	VV	.254	.50500
5.269	9089	VV	.275	.49206
5.667	20204	VV	.239	1.09380
6.103	10056	VV	.274	.58772
7.000	71313	VV	.425	3.86074
7.284	45130	VV	.348	2.44324
7.959	14560	VV	.340	.78825
8.425	3951	VV	.249	.21398
9.017	209872	VB	.346	11.36203
10.412	4681	BV	.370	.25342
11.499	20792	VV	.597	1.12564
12.392	5651	VV	.597	.30593
12.934	5106	VP	.392	.27643
14.640	14757	PV	.765	.79891
15.543	8073	VV	1.238	.43706
18.106	7446	VV	.926	.40311
19.220	17454	VV	1.302	.94492
21.973	13248	VV	1.129	.71722
23.780	34000	VV	1.202	1.84069
28.242	8080	VV	2.261	.43743
32.863	5283	VV	3.795	.28601
41.408	12478	VV	2.626	.67553
51.957	1498	VP	3.265	.08110
57.145	968	PP	2.636	.05241

TOTAL HEIGHT=1847135
MUL FACTOR=1.000RE+00

~~3 043~~
4 036



RUN6 557 MAR. 20, 1989 23:53:29

WG 781

SAMPLE6 20

PCG/PEST ON 3%SP2100

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.536	44876	BB	.043	.65706
.851	398273	SBB	.057	5.87061
1.656	1363723	SPB	.065	20.10152
1.484	34968	BP	.069	.51543
1.756	217389	PV	.102	3.20435
2.020	20528	VP	.107	.30259
2.225	57389	PV	.105	.84674
2.384	74074	VV	.094	1.12137
2.460	81040	VV	.191	1.19454
2.670	56990	VP	.128	.83951
3.285	228314	PV	.261	3.36539
4.148	183076	VV	.189	2.69857
4.445	189212	VV	.229	2.79049
4.640	154400	VV	.188	2.27913
5.018	138493	VP	.245	2.04541
5.532	83863	PV	.165	1.23636
5.840	440255	VH	.242	6.48944
6.328	1760365	SHB	.258	25.94889
7.310	23966	BV	.360	.35317
7.787	44806	VV	.338	.66045
8.312	87913	VV	.371	1.29585
9.233	67798	VP	.489	.99935
10.000	102458	PV	.516	2.60935
10.881	106563	VP	.682	1.56128
12.425	50238	PV	.757	.74167
13.239	188604	VV	.573	2.66213
14.981	61080	VV	1.319	.90033
17.484	59269	VV	.714	.87334
19.548	166655	VV	1.164	2.13224
22.366	104718	VP	1.320	1.54356
27.562	20946	PV	1.622	.30866
29.644	32458	VV	1.662	.47832
31.607	55611	VP	2.132	.81972
39.482	29286	PV	3.297	.43168
46.337	4632	VP	2.772	.06828

TOTAL HEIGHT=6784179
NUL FACTOR=1.0000E+00

COLUMN: 3% SP2100

INSTRUMENT ID: GC-C

SAMPLE ID: WG781

AMOUNT INJECTED: 5 UL

~~2 044~~

4 037

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG815

Lab Name: VERSAR ESMO Contract: _____

Lab Code: _____ Case No.: WILLOW SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: PRW3COMP

Sample wt/vol: 10.0 (g/mL) G Lab File ID: _____

Lev l: (low/med) LOW Date Received: 02/23/89

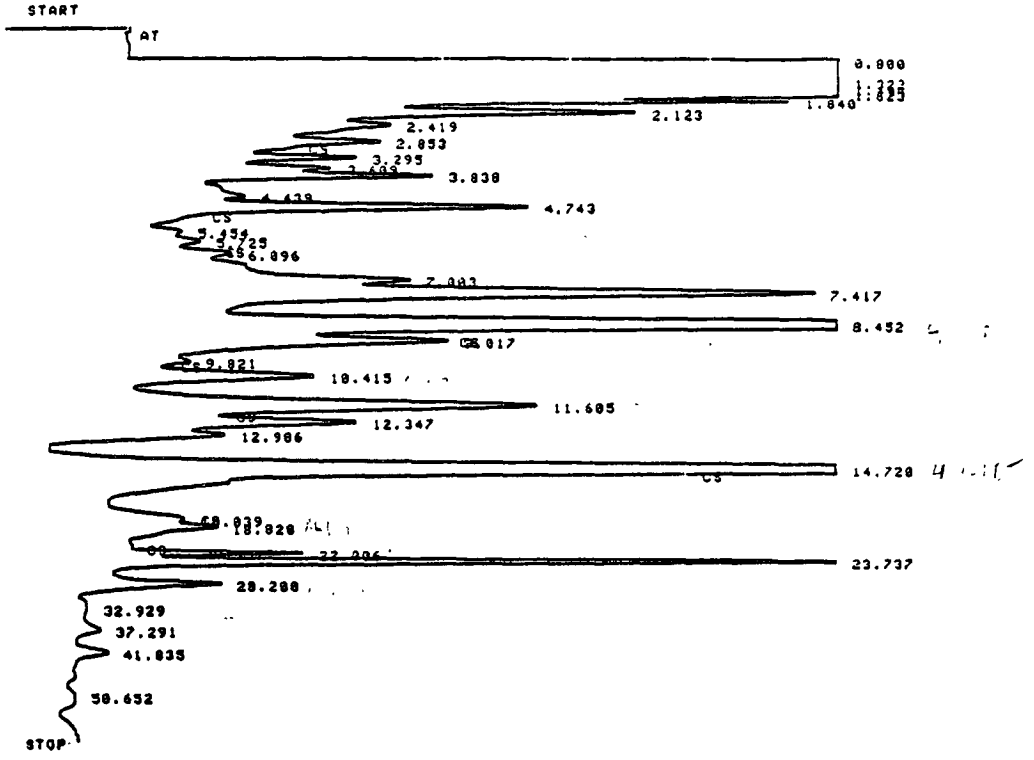
% Moisture: not dec. 17 dec. _____ Date Extracted: 02/27/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/17/89

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 0.100

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.9	U
319-85-7	beta-BHC	2.9	U
319-86-8	delta-BHC	2.9	U
58-89-9	gamma-BHC (Lindane)	2.9	U
76-44-8	Heptachlor	2.9	U
309-00-2	Aldrin	2.9	U
1024-57-3	Heptachlor epoxide	2.9	U
959-98-8	Endosulfan I	2.9	U
60-57-1	Dieldrin	3.8	J
72-55-9	4,4'-DDE	17	
72-20-8	Endrin	5.8	U
33213-65-9	Endosulfan II	5.8	U
72-54-8	4,4'-DDD	5.8	U
1031-07-8	Endosulfan sulfate	5.8	U
50-29-3	4,4'-DDT	31	
72-43-5	Methoxychlor	29	U
53494-70-5	Endrin ketone	5.8	U
5103-71-9	alpha-Chlordane	29	U
5103-74-2	gamma-Chlordane	29	U
8001-35-2	Toxaphene	58	U
12674-11-2	Aroclor-1016	29	U
11104-28-2	Aroclor-1221	29	U
11141-16-5	Aroclor-1232	29	U
53469-21-9	Aroclor-1242	29	U
12672-29-6	Aroclor-1248	29	U
11097-69-1	Aroclor-1254	58	U
11096-82-5	Aroclor-1260	39	J

RUN # 953 MAR 17, 1989 15:52:14



RUN# 953 MAR 17, 1989 15:52:14

SAMPLE NAME: WG815 SAMPLE# 39

PCB/PEST ON 1.5SP2250-1.95SP2401

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.000	356079	PB	.126	29.64778
1.322	217936	BV	.071	18.14574
1.494	202694	VV	.080	16.87667
1.623	56224	VV	.108	4.68131
1.840	13182	VP	.080	1.09756
2.123	11044	PP	.143	.91954
2.419	2520	PP	.199	.20982
2.853	4341	PP	.174	.36144
3.295	4770	PV	.147	.39716
3.609	4383	VV	.159	.36494
3.838	9325	VP	.182	.77642
4.439	2524	PV	.202	.21015
4.743	15222	VP	.240	1.26741
5.454	1487	PV	.183	.12381
5.725	2450	VV	.250	.20399
6.096	4015	VV	.309	.33430
7.003	12289	VV	.492	1.01654
7.417	29853	VV	.419	2.48561
8.452	62821	VV	.352	5.23059
9.017	15027	VV	.507	1.25110
9.821	4407	VV	.367	.36693
10.415	10004	VV	.498	.83961
11.605	20327	VV	.588	1.69246
12.347	13037	VV	.541	1.08548
12.986	7785	VP	.486	.64819
14.720	53336	PV	.633	4.44085
18.039	5278	VV	1.045	.43946
18.828	6484	VV	1.311	.53987
22.006	9265	VV	.991	.77142
23.737	33593	VB	1.032	2.79701
28.288	5386	BP	1.543	.44845
32.929	483	PV	2.202	.04022
37.291	1164	VV	2.660	.09692
41.835	1683	VV	2.305	.14013
50.652	613	VP	3.857	.05104

TOTAL HEIGHT=1201031

COLUMN: 1.95% SP2250 / 1.5% SP2401

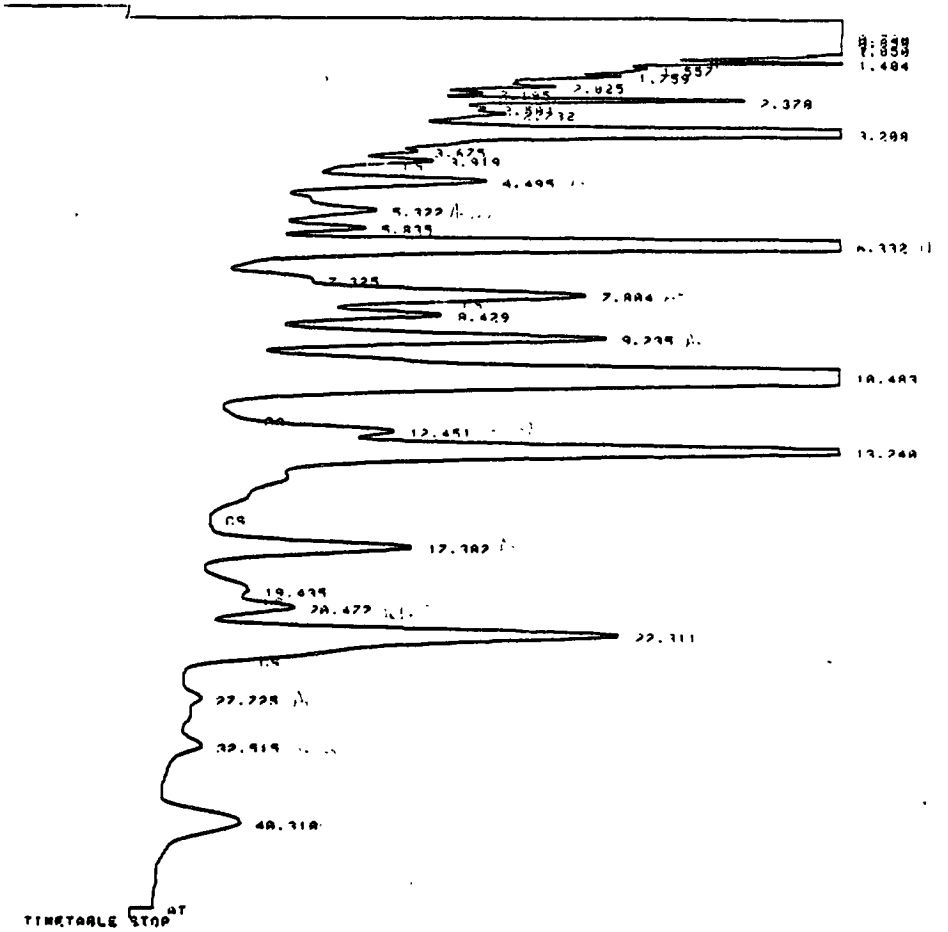
INSTRUMENT ID: GC-C

SAMPLE ID: WG815

AMOUNT INJECTED: 5 UL

~~S 046~~

* RUN # 558 MAR 21, 1989 08:29:59
START



RUN# 558 MAR 21, 1989 08:29:59
WG815
SAMPLE# 21

PCG/PEST ON 3%SP2100

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.730	76859	BM	.069	1.02185
.850	2062591	SMB	.053	27.42244
1.050	2201485	SPB	.060	30.33162
1.404	79679	BV	.067	1.06405
1.557	12223	VV	.172	.16251
1.759	24805	VP	.075	.33085
2.025	28633	VP	.081	.38060
2.195	13692	PV	.093	.18204
2.378	106748	VV	.109	1.41923
2.581	22640	VV	.120	.30111
2.732	32714	VV	.190	.43494
3.208	384285	VV	.212	5.10913
3.675	22037	VV	.143	.29299
3.919	32350	VP	.165	.43020
4.495	61588	PP	.289	.81882
5.322	34383	PV	.380	.45713
5.835	35328	VV	.229	.46969
6.332	676285	VB	.264	8.99131
7.325	28265	BV	.219	.37579
7.884	122286	VV	.472	1.62475
8.429	73582	VV	.381	.97828
9.235	130304	VV	.465	1.73241
10.483	566298	VV	.545	7.52981
12.451	60757	VV	.535	.80777
13.248	238906	VV	.648	3.17629
17.382	71018	VV	.734	.94419
19.435	16985	VV	.864	.22582
20.472	33280	VV	.944	.44257
22.311	145997	VB	1.343	1.94105
27.725	7386	BV	1.551	.09820
32.515	10923	VP	1.901	.14522
40.310	28287	PV	2.765	.37608

TOTAL HEIGHT=[illegible]

COLUMN: 3% SP2100

INSTRUMENT ID: GC-C

SAMPLE ID: WG815

AMOUNT INJECTED: 5 UL

~~3 047~~

4 040

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG822

Lab Name: VERSAR ESMO Contract: _____

Lab Code: _____ Case No.: WILLOW SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: PRW3COMP

Sample wt/vol: 10.0 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 03/01/89

% Moisture: not dec. 81 dec. ____ Date Extracted: 03/01/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/17/89

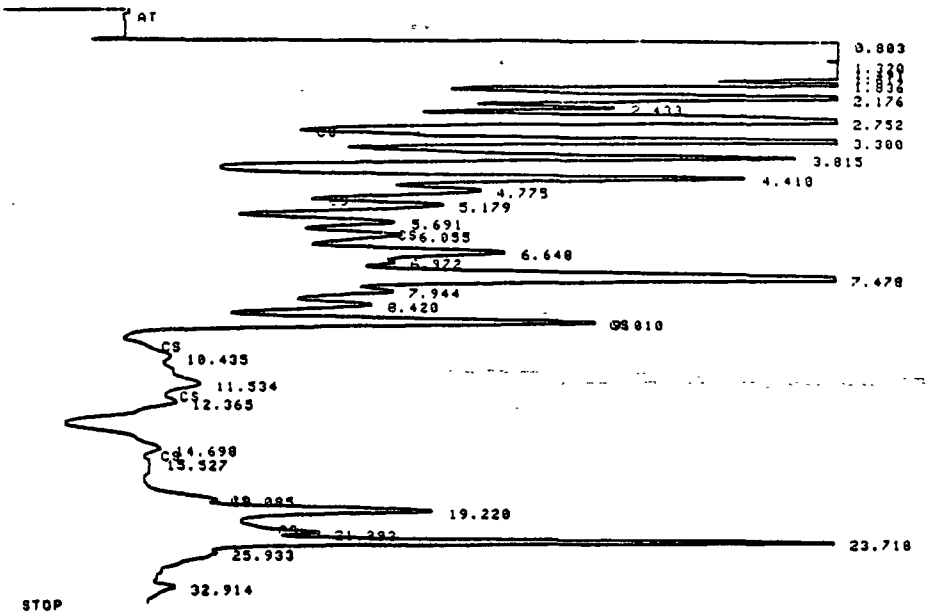
GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 0.100

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	13	U
319-85-7	beta-BHC	13	U
319-86-8	delta-BHC	13	U
58-89-9	gamma-BHC (Lindane)	13	U
76-44-8	Heptachlor	13	U
309-00-2	Aldrin	13	U
1024-57-3	Heptachlor epoxide	13	U
959-98-8	Endosulfan I	13	U
60-57-1	Dieldrin	22	U
72-55-9	4,4'-DDE	25	U
72-20-8	Endrin	25	U
33213-65-9	Endosulfan II	25	U
72-54-8	4,4'-DDD	25	U
1031-07-8	Endosulfan sulfate	25	U
50-29-3	4,4'-DDT	25	U
72-43-5	Methoxychlor	130	U
53494-70-5	Endrin ketone	25	U
5103-71-9	alpha-Chlordane	130	U
5103-74-2	gamma-Chlordane	130	U
8001-35-2	Toxaphene	250	U
12674-11-2	Aroclor-1016	130	U
11104-28-2	Aroclor-1221	130	U
11141-16-5	Aroclor-1232	130	U
53469-21-9	Aroclor-1242	130	U
12672-29-6	Aroclor-1248	130	U
11097-69-1	Aroclor-1254	250	U
11096-82-5	Aroclor-1260	250	U

MUL FACTOR=1.0000E+00

RUN # 954 MAR 17, 1989 16:54:13

START



STOP

RUN# 954 MAR 17, 1989 16:54:13

SAMPLE NAME: WG822 SAMPLE# 40

PCB/PEST ON 1.5SP2250-1.95SP2401

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.803	1595372	PB	.097	68.62454
1.320	100056	PV	.072	4.30389
1.491	185806	VV	.085	7.99585
1.614	45932	VV	.091	1.97575
1.836	26940	VP	.094	1.15882
2.176	24085	PV	.162	1.03601
2.433	10016	VV	.120	.43084
2.752	31869	VP	.195	1.37084
3.300	33854	PV	.195	1.45622
3.815	23878	VP	.245	1.02711
4.410	22779	PV	.233	.97983
4.775	11715	VV	.300	.50392
5.179	10402	VV	.305	.44744
5.691	8693	VV	.288	.37393
6.055	9294	VV	.396	.39978
6.640	14102	VV	.387	.60659
6.972	9659	VV	.222	.41548
7.478	32239	VV	.407	1.38675
7.944	10298	VV	.337	.44297
8.420	9738	VV	.371	.41853
9.010	19763	VP	.370	.85010
10.435	2570	PV	.658	.11055
11.534	4527	VV	1.023	.19473
12.365	4067	VP	.981	.17494
14.698	3913	PV	1.894	.16832
15.527	3357	VV	.693	.14440
18.085	5830	VV	1.243	.25078
19.220	14893	VV	1.201	.64062
21.893	9603	VV	1.955	.41307
23.718	33217	VV	1.336	1.42882
25.933	4582	VV	2.825	.19709
32.914	1662	VP	2.836	.07149

TOTAL HEIGHT=2324782

MUL FACTOR=1.0000E+00

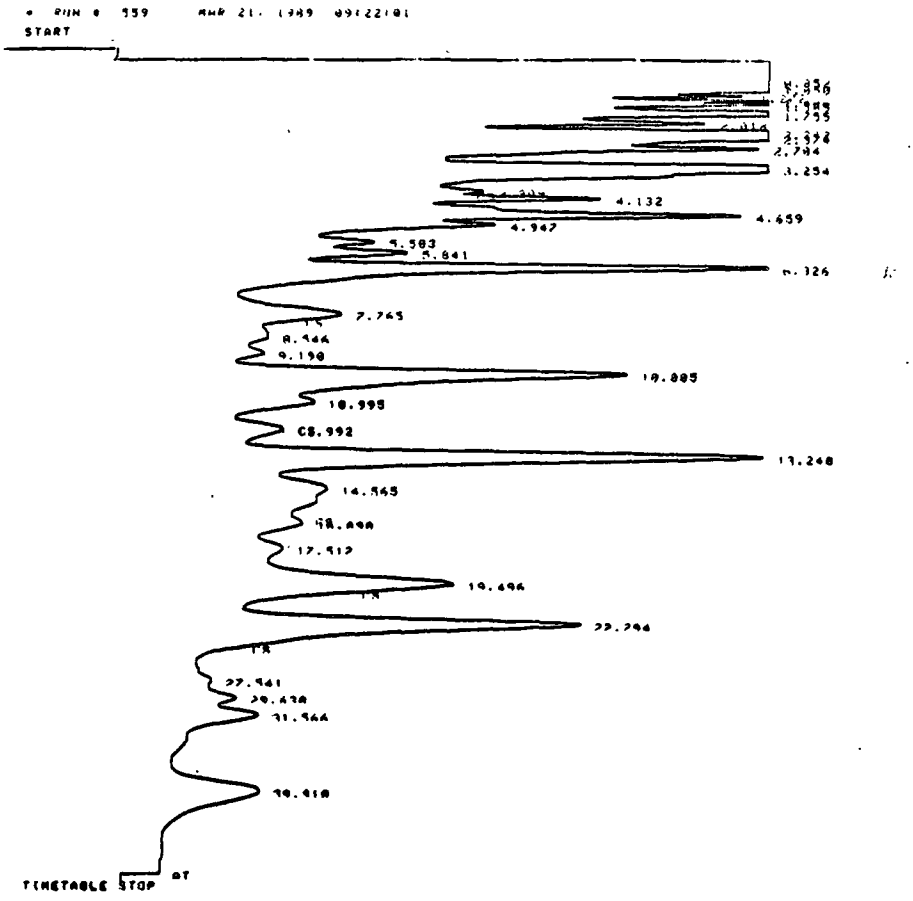
COLUMN: 1.95% SP2250 / 1.5% SP2401

INSTRUMENT ID: GC-C

SAMPLE ID: WG822

AMOUNT INJECTED: 5 UL

~~8 051~~



RUN# 559 MAR 21, 1989 09:22:01

WG822

SAMPLE# 22

PCB/PEST ON 3%SP2100

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.852	945881	SBB	.054	14.44011
1.050	2128755	SPB	.064	36.27728
1.272	35938	BP	.060	.61244
1.406	70384	PV	.069	1.19945
1.585	87464	VV	.094	1.49393
1.755	289857	VV	.113	4.93961
2.010	76064	VP	.120	1.29625
2.242	162730	PV	.105	2.77331
2.374	197873	VV	.191	3.37206
2.794	113680	VV	.146	1.93728
3.254	267603	VV	.207	4.56173
3.909	34627	VV	.175	.59010
4.132	83201	VV	.192	1.41787
4.659	145590	VV	.260	2.48108
4.947	59593	VP	.229	1.01556
5.583	24822	PV	.212	.42301
5.841	42680	VV	.242	.72747
6.326	191853	VP	.307	3.25504
7.765	39731	PV	.501	.67708
8.546	13110	VV	.606	.22355
9.190	11640	VV	.381	.19836
10.885	148319	VV	.567	2.52759
10.995	32592	VV	.511	.55542
11.992	21557	VV	.627	.36736
13.248	202025	VV	.594	3.44202
14.565	40370	VV	1.410	.68797
16.890	32289	VV	.984	.55025
17.512	25839	VV	1.139	.44034
19.496	91515	VV	1.345	1.55956
22.294	141376	VV	1.337	2.40927
27.541	7921	VV	1.403	.13499
29.638	18604	VV	1.603	.31704
31.566	28344	VP	2.121	.48303
39.910	34679	PP	2.952	.59090

TOTAL HEIGHT=5868010
MUL FACTOR=1.0000E+00

COLUMN: 3% SP2100

INSTRUMENT ID: GC-C

SAMPLE ID: WG822

AMOUNT INJECTED: 5 UL

~~2 052~~

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG640

Lab Name: VERSAR ESMO Contract: _____

Lab Code: _____ Case No.: WILLOW SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: RINSATEBLK

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

Level: (low/med) LOW Date Received: 02/16/89

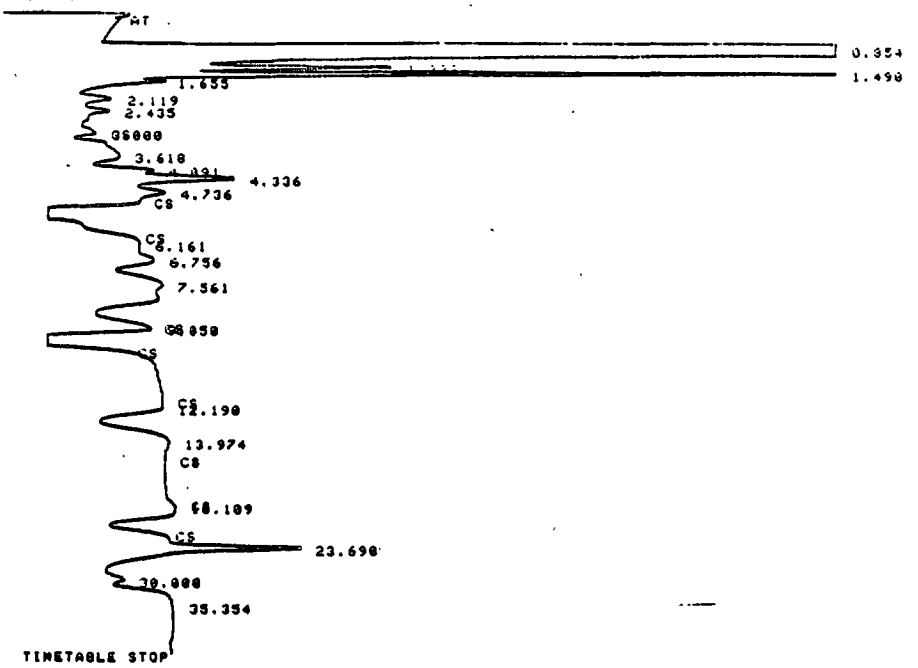
% Moisture: not dec. 0 dec. _____ Date Extracted: 02/24/89

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 03/15/89

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

RUN # 928 MAR 15, 1989 23:28:11
START



TIMETABLE STOP

RUN# 928 MAR 15, 1989 23:28:11

SAMPLE NAME: WG640 SAMPLE# 15

PCB/PEST ON 1.5SP2250-1.95SP2401

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.854	3742312	PB	.145	96.92982
1.322	8633	BV	.003	.22360
1.490	29116	VP	.076	.75414
1.655	1419	PP	.062	.03675
2.119	1553	PV	.105	.04022
2.435	1908	VV	.203	.04942
3.000	2088	VV	.282	.05408
3.618	3958	VV	.639	.10252
4.091	6095	VV	.211	.15787
4.336	9901	VV	.301	.25645
4.736	7476	VP	.552	.19364
6.161	7006	PV	.721	.18146
6.756	7522	VV	.695	.19483
7.561	7709	VV	.662	.19967
9.050	6870	VP	.691	.17794
12.190	3959	PV	3.501	.10254
13.974	1974	VB	1.242	.05113
18.109	1914	BP	2.786	.04957
23.698	8349	PP	2.348	.21625
30.000	623	PP	1.216	.01614
35.354	462	PV	8.250	.01197

TOTAL HEIGHT=3860846
MUL FACTOR=1.0000E+00

COLUMN: 1.95% SP2250 / 1.5% SP2401

INSTRUMENT ID: GC-C

SAMPLE ID: WG640

AMOUNT INJECTED: 5 UL

~~2 017~~

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG746

Lab Name: VERSAR ESMO Contract: _____

Lab Code: _____ Case No.: WILLOW SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: RINSATEBLK2 RSB

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

Level: (low/med) LOW Date Received: 02/17/89

% Moisture: not dec. 0 dec. ____ Date Extracted: 02/24/89

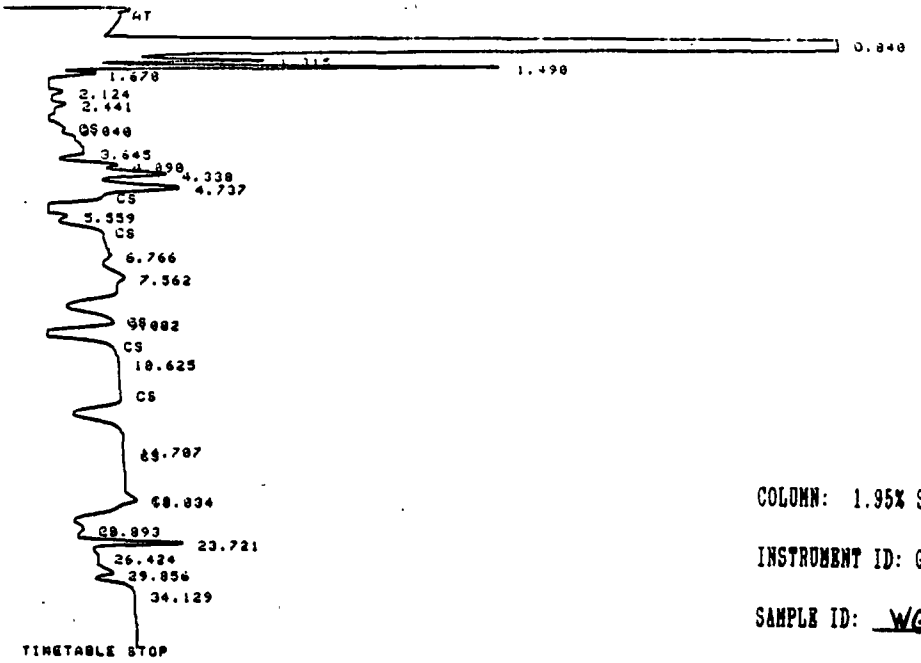
Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 03/16/89

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM I PEST 1/87 Rev.

RUN # 929 MAR 16, 1989 00:15:00
START



COLUMN: 1.95% SP2250 / 1.5% SP2401

INSTRUMENT ID: GC-C

SAMPLE ID: WG746

AMOUNT INJECTED: 5 UL

RUN# 929 MAR 16, 1989 00:15:00

SAMPLE NAME: WG746 SAMPLE# 16

PCB/PEST ON 1.5%P2250-1.95%P2401

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.840	3605888	BB	.139	97:62093
1.315	6323	BP	.077	.16747
1.490	18057	PP	.076	.47824
1.670	1646	PP	.098	.04359
2.124	1350	PV	.168	.03575
2.441	1608	VV	.384	.04259
3.040	1794	VV	.292	.04751
3.645	2801	VV	.660	.07630
4.090	4503	VV	.209	.11926
4.330	6718	VV	.260	.17793
4.737	7425	VP	.467	.19665
5.559	2833	PV	.243	.07503
6.766	4489	VV	1.282	.11889
7.562	4991	VV	.719	.13219
9.002	4297	VV	.743	.11381
10.625	4279	VV	1.813	.11333
14.707	3862	VV	1.654	.10229
18.034	3863	VV	2.158	.10231
20.893	1126	VV	1.797	.02982
23.721	4909	VV	1.138	.13002
26.424	886	VV	2.456	.02347
29.856	971	VP	2.302	.02572
34.129	1015	PV	2.700	.02688

TOTAL HEIGHT=3775714
MUL FACTOR=1.0000E+00

~~2-023~~

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG776

Lab Name: VERSAR ESMO Contract: _____

Lab Code: _____ Case No.: WILLOW SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: RINSATEBLK3 RSB

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

Level: (low/med) LOW Date Received: 02/17/89

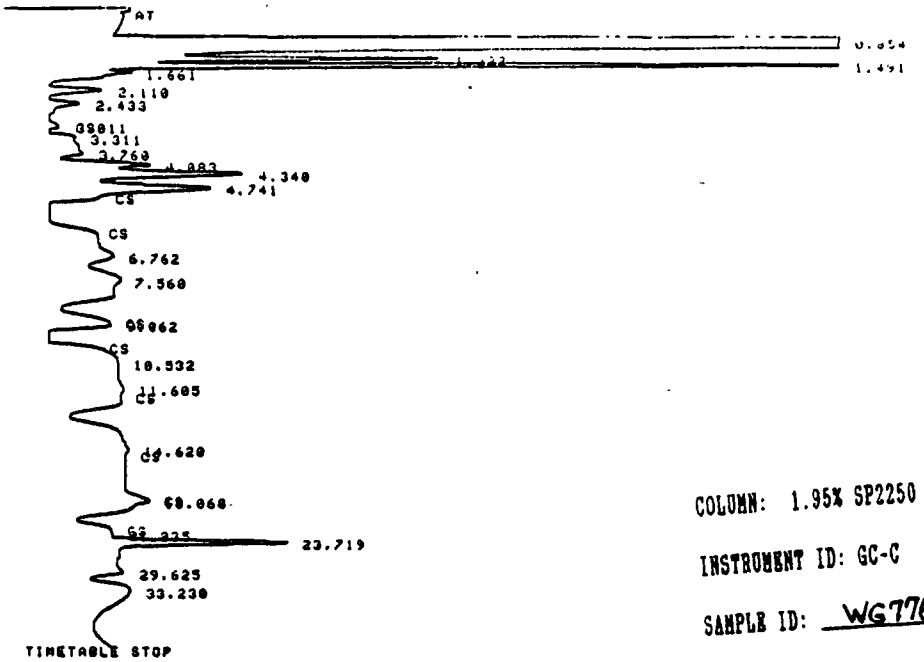
% Moisture: not dec. 0 dec. ____ Date Extracted: 02/24/89

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 03/16/89

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

RUN # 930 MAR 16, 1989 01:01:49
START



TIMETABLE STOP

COLUMN: 1.95% SP2250 / 1.5% SP2401

INSTRUMENT ID: GC-C

SAMPLE ID: WG776

AMOUNT INJECTED: 5 UL

RUN# 930 MAR 16, 1989 01:01:49

SAMPLE NAME: WG776 SAMPLE# 17

PCB/PEST ON 1.5SP2250-1.95SP2401

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.854	3678142	PB	.154	96.37178
1.322	11926	PV	.070	.31240
1.491	42122	VP	.075	1.10365
1.661	1442	PP	.133	.03778
2.110	2432	PV	.139	.06372
2.433	1869	VV	.260	.04897
3.011	1727	VV	.270	.04525
3.311	2760	VV	.192	.07232
3.760	3636	VV	.465	.09527
4.083	6958	VV	.210	.18231
4.340	11201	VV	.255	.29346
4.741	10378	VP	.443	.27192
6.762	6400	PV	1.409	.16769
7.560	6494	VV	.680	.17015
9.062	5533	VP	.709	.14497
10.532	4750	PV	1.003	.12446
11.605	3940	VV	1.161	.10323
14.620	1340	VV	1.975	.03511
18.060	1956	BP	1.796	.05125
21.835	1043	PV	2.024	.02733
23.719	7885	VB	1.057	.20660
29.625	961	BP	1.680	.02518
33.230	1715	PP	4.618	.04494

TOTAL HEIGHT=3816610
NUL FACTOR=1.0000E+00

~~3 035~~

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG820

Lab Name: VERSAR ESMO Contract: _____

Lab Code: _____ Case No.: WILLOW SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: RINSATE5

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

Level: (low/med) LOW Date Received: 03/01/89

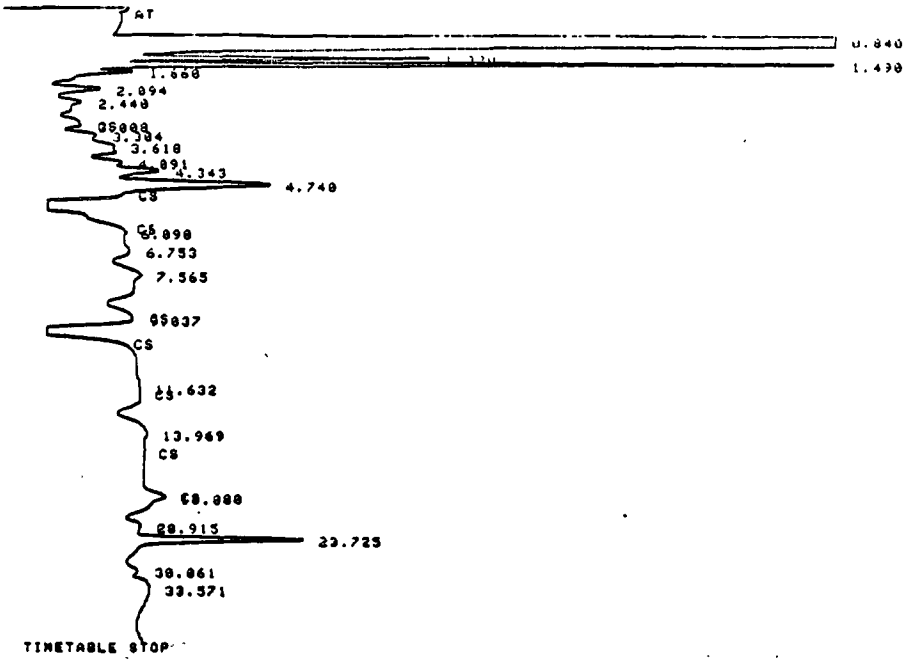
% Moisture: not dec. 0 dec. ____ Date Extracted: 03/01/89

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 03/16/89

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

RUN # 931 MAR 16, 1989 01:48:38
START



TIMETABLE STOP

RUN# 931 MAR 16, 1989 01:48:38

SAMPLE NAME: WG820 SAMPLE# 18

PCB/PEST ON 1.5SP2250-1.95SP2401

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.040	3673506	PB	.143	96.80083
1.320	13150	BV	.077	.34652
1.490	31009	VP	.076	.83020
1.660	2017	PP	.105	.05315
2.094	2214	PV	.138	.05834
2.440	1726	VV	.365	.04548
3.000	2271	VV	.315	.05984
3.304	3190	VV	.221	.08427
3.618	4295	VV	.260	.11318
4.091	5046	VV	.219	.13297
4.343	6870	VV	.296	.18124
4.740	11992	VP	.426	.31600
6.090	6055	PV	.753	.15956
6.753	5971	VV	.739	.15734
7.565	6117	VV	.702	.16119
9.037	5232	VP	.767	.13787
11.632	833	PB	5.740	.02195
13.969	1251	PV	1.602	.03297
18.000	1847	VP	1.781	.04867
20.915	613	PV	1.494	.01615
23.725	7367	VB	1.036	.19413
30.061	517	BV	1.643	.01362
33.571	1006	VV	6.994	.02651

TOTAL HEIGHT=3794910
MUL FACTOR=1.0000E+00

COLUMN: 1.95% SP2250 / 1.5% SP2401

INSTRUMENT ID: GC-C

SAMPLE ID: WG820

AMOUNT INJECTED: 5 UL

~~3 049~~

C. Standards Data

PESTICIDE/PCB STANDARDS SUMMARY

Lab Name: VERSAR ESMO Contract: _____

Lab Code: VERESM Case No.: WILLOW SAS No.: _____ SDG No.: _____

Instrument ID: GC-C GC Column ID: MIXED

DATE(S) OF ANALYSIS FROM: 03/15/89 TO: 03/15/89	DATE OF ANALYSIS 03/16/89
TIME(S) OF ANALYSIS FROM: 1536 TO: 2154	TIME OF ANALYSIS 0716
	EPA SAMPLE NO. (STANDARD) INDA

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR	RT	CALIBRATION FACTOR	QNT Y/N	%D
alpha-BHC	2.54	2.51	2.57	612000				
beta-BHC	3.36	3.33	3.39	278000				
delta-BHC	3.87	3.83	3.91	376000				
gamma-BHC	3.07	3.04	3.10	548000	3.08	576000	Y	-5.1
Heptachlor	3.69	3.65	3.73	514000	3.71	540000	Y	-5.1
Aldrin	4.37	4.33	4.41	408000	4.40	438000	Y	-7.4
Hept. epoxide	6.10	6.04	6.16	288000	6.13	306000	Y	-6.3
Endosulfan I	7.52	7.44	7.60	228000	7.56	232000	Y	-1.8
Dieldrin	8.98	8.89	9.07	191000	9.03	208000	Y	-8.9
4,4'-DDE	8.42	8.34	8.50	180000				
Endrin	10.77	10.66	10.88	110000				
Endosulfan II	12.71	12.58	12.84	136000	12.76	140000	Y	-2.9
4,4'-DDD	12.28	12.16	12.40	104000				
Endo. sulfate	18.76	18.57	18.95	71500				
4,4'-DDT	14.69	14.54	14.84	82800	14.76	89000	Y	-7.5
M thoxychlor	26.50	26.24	26.76	32400	26.61	34800	Y	-7.4
Endrin ketone	25.74	25.48	26.00	73500				
a. Chlordane	7.28	7.21	7.35	258000				
g. Chlordane	6.74	6.67	6.81	256000				
Toxaphene	12.97	12.84	13.10	2200				
Aroclor-1016	3.62	3.58	3.66	35400				
Aroclor-1221	2.40	2.38	2.42	17700				
Aroclor-1232	3.62	3.58	3.66	18200				
Aroclor-1242	3.62	3.58	3.66	30300				
Aroclor-1248	6.22	6.16	6.28	21600				
Aroclor-1254	10.40	10.30	10.50	16200				
Aroclor-1260	21.96	21.74	22.18	63800				

Under QNT Y/N: enter Y if quantitation was performed, N if not performed. %D must be less than or equal to 15.0% for quantitiation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRDL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria.

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

PESTICIDE/PCB STANDARDS SUMMARY

Lab Name: VERSAR ESMO Contract: _____

Lab Code: VERESM Case No.: WILLOW SAS No.: _____ SDG No.: _____

Instrument ID: GC-C GC Column ID: MIXED

DATE(S) OF ANALYSIS	FROM: 03/15/89	DATE OF ANALYSIS	03/17/89
	TO: 03/15/89	TIME OF ANALYSIS	1250
TIME(S) OF ANALYSIS	FROM: 1536	EPA SAMPLE NO. (STANDARD)	INDB
	TO: 2154		

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR	RT	CALIBRATION FACTOR	QNT Y/N	%D
alpha-BHC	2.54	2.51	2.57	612000	2.55	640000	Y	-4.6
beta-BHC	3.36	3.33	3.39	278000	3.38	286000	Y	-2.9
delta-BHC	3.87	3.83	3.91	376000	3.89	398000	Y	-5.9
gamma-BHC	3.07	3.04	3.10	548000				
Heptachlor	3.69	3.65	3.73	514000				
Aldrin	4.37	4.33	4.41	408000	4.40	408000	Y	0.0
Hept. epoxide	6.10	6.04	6.16	288000				
Endosulfan I	7.52	7.44	7.60	228000				
Dieldrin	8.98	8.89	9.07	191000				
4,4'-DDE	8.42	8.34	8.50	180000	8.46	187000	Y	-3.9
Endrin	10.77	10.66	10.88	110000	10.82	119000	Y	-8.2
Endosulfan II	12.71	12.58	12.84	136000				
4,4'-DDD	12.28	12.16	12.40	104000	12.34	109000	Y	-4.8
Endo. sulfate	18.76	18.57	18.95	71500	18.84	74700	Y	-4.5
4,4'-DDT	14.69	14.54	14.84	82800				
Methoxychlor	26.50	26.24	26.76	32400				
Endrin ketone	25.74	25.48	26.00	73500	25.85	75800	Y	-3.1
a. Chlordane	7.28	7.21	7.35	258000	7.32	266000	Y	-3.1
g. Chlordane	6.74	6.67	6.81	256000	6.77	266000	Y	-3.9
Toxaphene	12.97	12.84	13.10	2200				
Aroclor-1016	3.62	3.58	3.66	35400				
Aroclor-1221	2.40	2.38	2.42	17700				
Aroclor-1232	3.62	3.58	3.66	18200				
Aroclor-1242	3.62	3.58	3.66	30300				
Aroclor-1248	6.22	6.16	6.28	21600				
Aroclor-1254	10.40	10.30	10.50	16200				
Aroclor-1260	21.96	21.74	22.18	63800				

Under QNT Y/N: enter Y if quantitation was performed, N if not performed.
%D must be less than or equal to 15.0% for quantitiation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRDL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria.

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

PESTICIDE/PCB STANDARDS SUMMARY

Lab Nam : VERSAR ESMO Contract: _____

Lab Code: VERESM Case No.: WILLOW SAS No.: _____ SDG No.: _____

Instrument ID: GC-C GC Column ID: MIXED

DATE(S) OF ANALYSIS FROM: 03/15/89 TO: 03/15/89		DATE OF ANALYSIS 03/17/89
TIME(S) OF ANALYSIS FROM: 1536 TO: 2154		TIME OF ANALYSIS 1937
		EPA SAMPLE NO. (STANDARD) INDA

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR	RT	CALIBRATION FACTOR	QNT Y/N	%D
alpha-BHC	2.54	2.51	2.57	612000				
beta-BHC	3.36	3.33	3.39	278000				
delta-BHC	3.87	3.83	3.91	376000				
gamma-BHC	3.07	3.04	3.10	548000	3.08	624000	Y	-13.9
Heptachlor	3.69	3.65	3.73	514000	3.70	580000	Y	-12.8
Aldrin	4.37	4.33	4.41	408000	4.39	472000	Y	-15.7
Hept. epoxide	6.10	6.04	6.16	288000	6.12	328000	Y	-13.9
Endosulfan I	7.52	7.44	7.60	228000	7.54	250000	Y	-9.6
Dieldrin	8.98	8.89	9.07	191000	9.01	220000	Y	-15.2
4,4'-DDE	8.42	8.34	8.50	180000				
Endrin	10.77	10.66	10.88	110000				
Endosulfan II	12.71	12.58	12.84	136000	12.74	148000	Y	-8.8
4,4'-DDD	12.28	12.16	12.40	104000				
Endo. sulfate	18.76	18.57	18.95	71500				
4,4'-DDT	14.69	14.54	14.84	82800	14.73	81000	Y	2.2
Methoxychlor	26.50	26.24	26.76	32400	26.57	32800	Y	-1.2
Endrin ketone	25.74	25.48	26.00	73500				
a. Chlordane	7.28	7.21	7.35	258000				
g. Chlordane	6.74	6.67	6.81	256000				
Toxaphene	12.97	12.84	13.10	2200				
Aroclor-1016	3.62	3.58	3.66	35400				
Aroclor-1221	2.40	2.38	2.42	17700				
Aroclor-1232	3.62	3.58	3.66	18200				
Aroclor-1242	3.62	3.58	3.66	30300				
Aroclor-1248	6.22	6.16	6.28	21600				
Aroclor-1254	10.40	10.30	10.50	16200				
Aroclor-1260	21.96	21.74	22.18	63800				

Under QNT Y/N: enter Y if quantitation was performed, N if not performed. %D must be less than or equal to 15.0% for quantitiation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRDL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria.

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

PESTICIDE/PCB STANDARDS SUMMARY

Lab Name: VERSAR ESMO Contract: _____

Lab Code: VERESM Case No.: WILLOW SAS No.: _____ SDG No.: _____

Instrument ID: GC-C GC Column ID: MIXED

DATE(S) OF ANALYSIS	FROM: 03/15/89	DATE OF ANALYSIS 03/17/89
	TO: 03/15/89	TIME OF ANALYSIS 2039
TIME(S) OF ANALYSIS	FROM: 1536	EPA SAMPLE NO.
	TO: 2154	(STANDARD) INDB

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR	RT	CALIBRATION FACTOR	QNT Y/N	%D
alpha-BHC	2.54	2.51	2.57	612000	2.55	648000	Y	-5.9
beta-BHC	3.36	3.33	3.39	278000	3.38	288000	Y	-3.6
delta-BHC	3.87	3.83	3.91	376000	3.89	400000	Y	-6.4
gamma-BHC	3.07	3.04	3.10	548000				
Heptachlor	3.69	3.65	3.73	514000				
Aldrin	4.37	4.33	4.41	408000	4.39	412000	Y	-1.0
Hept. epoxide	6.10	6.04	6.16	288000				
Endosulfan I	7.52	7.44	7.60	228000				
Dieldrin	8.98	8.89	9.07	191000				
4,4'-DDE	8.42	8.34	8.50	180000	8.45	185000	Y	-2.8
Endrin	10.77	10.66	10.88	110000	10.80	121000	Y	-10.0
Endosulfan II	12.71	12.58	12.84	136000				
4,4'-DDD	12.28	12.16	12.40	104000	12.32	108000	Y	-3.8
Endo. sulfate	18.76	18.57	18.95	71500	18.81	76500	Y	-7.0
4,4'-DDT	14.69	14.54	14.84	82800				
Methoxychlor	26.50	26.24	26.76	32400				
Endrin ketone	25.74	25.48	26.00	73500	25.80	76900	Y	-4.6
a. Chlordane	7.28	7.21	7.35	258000	7.30	268000	Y	-3.9
g. Chlordane	6.74	6.67	6.81	256000	6.76	266000	Y	-3.9
Toxaphene	12.97	12.84	13.10	2200				
Aroclor-1016	3.62	3.58	3.66	35400				
Aroclor-1221	2.40	2.38	2.42	17700				
Aroclor-1232	3.62	3.58	3.66	18200				
Aroclor-1242	3.62	3.58	3.66	30300				
Aroclor-1248	6.22	6.16	6.28	21600				
Aroclor-1254	10.40	10.30	10.50	16200				
Aroclor-1260	21.96	21.74	22.18	63800				

Under QNT Y/N: enter Y if quantitation was performed, N if not performed.
%D must be less than or equal to 15.0% for quantitiation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRDL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria.

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

PESTICIDE/PCB STANDARDS SUMMARY

Lab Name: VERSAR ESMO Contract: _____

Lab Code: VERESM Case No.: WILLOW SAS No.: _____ SDG No.: _____

Instrument ID: GC-C GC Column ID: OV-1-4

DATE(S) OF ANALYSIS FROM: 03/20/89 TO: 03/20/89		DATE OF ANALYSIS 03/20/89
TIME(S) OF ANALYSIS FROM: 1015 TO: 1129		TIME OF ANALYSIS 2207
		EPA SAMPLE NO. (STANDARD) AR1260

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR	RT	CALIBRATION FACTOR	QNT Y/N	%D
alpha-BHC	1.53	1.51	1.55	3920000				
beta-BHC	1.64	1.62	1.66	3320000				
delta-BHC	1.85	1.83	1.87	2960000				
gamma-BHC	1.79	1.77	1.81	4480000				
Heptachlor	2.88	2.85	2.91	3960000				
Aldrin	3.57	3.53	3.61	2440000				
Hept. epoxide	4.35	4.31	4.39	2180000				
Endosulfan I	5.42	5.37	5.47	1730000				
Dieldrin	6.34	6.28	6.40	1360000				
4,4'-DDE	6.34	6.28	6.40	1260000				
Endrin	7.06	6.99	7.13	954000				
Endosulfan II	7.22	7.15	7.29	1260000				
4,4'-DDD	8.00	7.92	8.08	626000				
Endo. sulfate	9.29	9.20	9.38	613000				
4,4'-DDT	10.49	10.39	10.59	659000				
M thoxychlor	15.69	15.53	15.85	318000				
Endrin ketone	11.94	11.82	12.06	753000				
a. Chlordane	5.53	5.47	5.59	2020000				
g. Chlordane	4.98	4.93	5.03	2140000				
Toxaphene		0.00	0.00					
Aroclor-1016		0.00	0.00					
Aroclor-1221		0.00	0.00					
Aroclor-1232		0.00	0.00					
Aroclor-1242		0.00	0.00					
Aroclor-1248		0.00	0.00					
Aroclor-1254		0.00	0.00					
Aroclor-1260	10.84	10.73	10.95	114000	10.82	92800	N	18.6

Under QNT Y/N: enter Y if quantitation was performed, N if not performed.
%D must be less than or equal to 15.0% for quantitiation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRDL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria.

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

PESTICIDE/PCB STANDARDS SUMMARY

Lab Nam : VERSAR ESMO Contract: _____

Lab Code: VERESM Case No.: WILLOW SAS No.: _____ SDG No.: _____

Instrument ID: GC-C GC Column ID: OV-1-4

DATE(S) OF ANALYSIS FROM: 03/20/89 TO: 03/20/89	DATE OF ANALYSIS 03/21/89
TIME(S) OF ANALYSIS FROM: 1015 TO: 1129	TIME OF ANALYSIS 1233
	EPA SAMPLE NO. (STANDARD) INDA

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR	RT	CALIBRATION FACTOR	QNT Y/N	%D
alpha-BHC	1.53	1.51	1.55	3920000				
beta-BHC	1.64	1.62	1.66	3320000				
delta-BHC	1.85	1.83	1.87	2960000				
gamma-BHC	1.79	1.77	1.81	4480000	1.79	5840000	N	-30.4
Heptachlor	2.88	2.85	2.91	3960000	2.88	4340000	N	-9.6
Aldrin	3.57	3.53	3.61	2440000	3.56	2680000	N	-9.8
Hept. epoxide	4.35	4.31	4.39	2180000	4.36	2700000	N	-23.9
Endosulfan I	5.42	5.37	5.47	1730000	5.42	1820000	N	-5.2
Dieldrin	6.34	6.28	6.40	1360000	6.32	1340000	N	1.5
4,4'-DDE	6.34	6.28	6.40	1260000				
Endrin	7.06	6.99	7.13	954000				
Endosulfan II	7.22	7.15	7.29	1260000	7.20	1050000	N	16.7
4,4'-DDD	8.00	7.92	8.08	626000				
Endo. sulfate	9.29	9.20	9.38	613000				
4,4'-DDT	10.49	10.39	10.59	659000	10.48	726000	N	-10.2
Methoxychlor	15.69	15.53	15.85	318000	15.66	408000	N	-28.3
Endrin ketone	11.94	11.82	12.06	753000				
a. Chlordane	5.53	5.47	5.59	2020000				
g. Chlordane	4.98	4.93	5.03	2140000				
Toxaphene		0.00	0.00					
Aroclor-1016		0.00	0.00					
Aroclor-1221		0.00	0.00					
Aroclor-1232		0.00	0.00					
Aroclor-1242		0.00	0.00					
Aroclor-1248		0.00	0.00					
Aroclor-1254		0.00	0.00					
Aroclor-1260	10.84	10.73	10.95	114000				

Under QNT Y/N: enter Y if quantitation was performed, N if not performed. %D must be less than or equal to 15.0% for quantitiation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRDL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria.

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

PESTICIDE/PCB STANDARDS SUMMARY

Lab Name: VERSAR ESMO Contract: _____

Lab Code: VERESM Case No.: WILLOW SAS No.: _____ SDG No.: _____

Instrument ID: GC-C GC Column ID: OV-1-4

DATE(S) OF ANALYSIS FROM: 03/20/89 TO: 03/20/89		DATE OF ANALYSIS 03/21/89
TIME(S) OF ANALYSIS FROM: 1015 TO: 1129		TIME OF ANALYSIS 1325
		EPA SAMPLE NO. (STANDARD) INDB

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR	RT	CALIBRATION FACTOR	QNT Y/N	%D
alpha-BHC	1.53	1.51	1.55	3920000	1.53	3750000	N	4.3
beta-BHC	1.64	1.62	1.66	3320000	1.63	2680000	N	19.3
delta-BHC	1.85	1.83	1.87	2960000	1.84	3040000	N	-2.7
gamma-BHC	1.79	1.77	1.81	4480000				
Heptachlor	2.88	2.85	2.91	3960000				
Aldrin	3.57	3.53	3.61	2440000	3.56	1870000	N	23.4
Hept. epoxide	4.35	4.31	4.39	2180000				
Endosulfan I	5.42	5.37	5.47	1730000				
Dieldrin	6.34	6.28	6.40	1360000				
4,4'-DDE	6.34	6.28	6.40	1260000	6.33	1030000	N	18.3
Endrin	7.06	6.99	7.13	954000	7.05	798000	N	16.4
Endosulfan II	7.22	7.15	7.29	1260000				
4,4'-DDD	8.00	7.92	8.08	626000	7.98	562000	N	10.2
Endo. sulfate	9.29	9.20	9.38	613000	9.28	588000	N	4.1
4,4'-DDT	10.49	10.39	10.59	659000				
Methoxychlor	15.69	15.53	15.85	318000				
Endrin ketone	11.94	11.82	12.06	753000	11.91	626000	N	16.9
a. Chlordane	5.53	5.47	5.59	2020000	5.52	1480000	N	26.7
g. Chlordane	4.98	4.93	5.03	2140000	4.98	1590000	N	25.7
Toxaphene		0.00	0.00					
Aroclor-1016		0.00	0.00					
Aroclor-1221		0.00	0.00					
Aroclor-1232		0.00	0.00					
Aroclor-1242		0.00	0.00					
Aroclor-1248		0.00	0.00					
Aroclor-1254		0.00	0.00					
Aroclor-1260	10.84	10.73	10.95	114000				

Under QNT Y/N: enter Y if quantitation was performed, N if not performed. %D must be less than or equal to 15.0% for quantitiation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRDL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria.

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

PESTICIDE/PCB STANDARDS SUMMARY

Lab Name: VERSAR ESMO Contract: _____

Lab Code: VERESM Case No.: WILLOW SAS No.: _____ SDG No.: _____

Instrument ID: GC-C GC Column ID: OV-1-4

DATE(S) OF ANALYSIS FROM: 03/20/89 TO: 03/20/89		DATE OF ANALYSIS 03/21/89
TIME(S) OF ANALYSIS FROM: 1015 TO: 1129		TIME OF ANALYSIS 1354
		EPA SAMPLE NO. (STANDARD) AR1260

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR	RT	CALIBRATION FACTOR	QNT Y/N	%D
alpha-BHC	1.53	1.51	1.55	3920000				
beta-BHC	1.64	1.62	1.66	3320000				
delta-BHC	1.85	1.83	1.87	2960000				
gamma-BHC	1.79	1.77	1.81	4480000				
Heptachlor	2.88	2.85	2.91	3960000				
Aldrin	3.57	3.53	3.61	2440000				
H pt. epoxide	4.35	4.31	4.39	2180000				
Endosulfan I	5.42	5.37	5.47	1730000				
Dieldrin	6.34	6.28	6.40	1360000				
4,4'-DDE	6.34	6.28	6.40	1260000				
Endrin	7.06	6.99	7.13	954000				
Endosulfan II	7.22	7.15	7.29	1260000				
4,4'-DDD	8.00	7.92	8.08	626000				
Endo. sulfate	9.29	9.20	9.38	613000				
4,4'-DDT	10.49	10.39	10.59	659000				
Methoxychlor	15.69	15.53	15.85	318000				
Endrin ketone	11.94	11.82	12.06	753000				
a. Chlordane	5.53	5.47	5.59	2020000				
g. Chlordane	4.98	4.93	5.03	2140000				
Toxaphene		0.00	0.00					
Aroclor-1016		0.00	0.00					
Aroclor-1221		0.00	0.00					
Aroclor-1232		0.00	0.00					
Aroclor-1242		0.00	0.00					
Aroclor-1248		0.00	0.00					
Aroclor-1254		0.00	0.00					
Aroclor-1260	10.84	10.73	10.95	114000	10.82	92000	N	19.3

Under QNT Y/N: enter Y if quantitation was performed, N if not performed.
%D must be less than or equal to 15.0% for quantitiation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRDL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria.

For multicomponent analytes, the single largest peak that is characteristic f the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

D. Raw QC Data

Reagent Blank Data

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLK23

Lab Name: VERSAR ESMO Contract: _____

Lab Code: _____ Case No.: WILLOW SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: PBLK451

Sample wt/vol: 10.0 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: _____

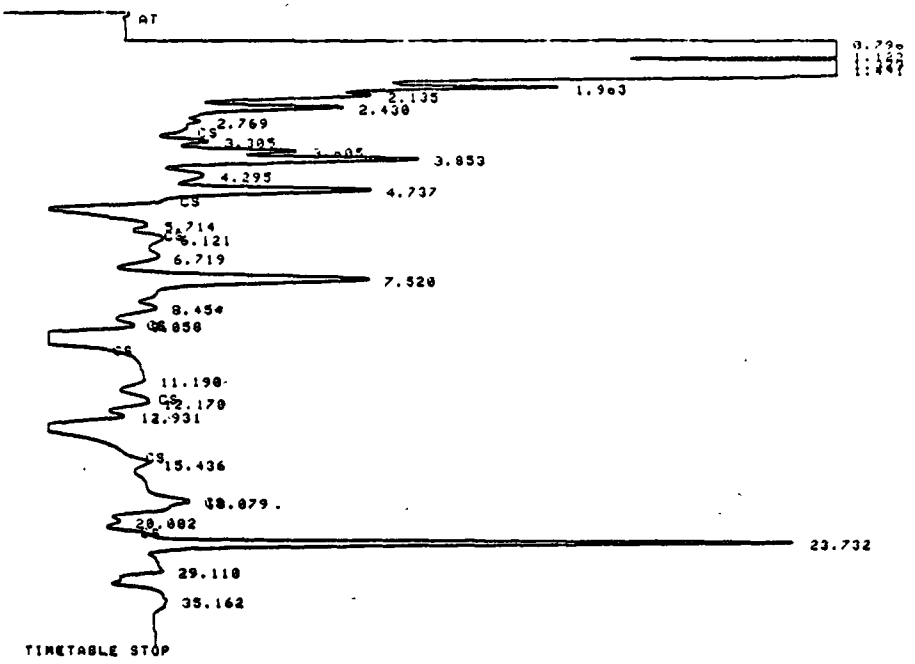
% Moisture: not dec. 0 dec. _____ Date Extracted: 02/23/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/16/89

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 0.100

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.4	U
319-85-7	beta-BHC	2.4	U
319-86-8	delta-BHC	2.4	U
58-89-9	gamma-BHC (Lindane)	2.4	U
76-44-8	Heptachlor	2.4	U
309-00-2	Aldrin	2.4	U
1024-57-3	Heptachlor epoxide	2.4	U
959-98-8	Endosulfan I	2.4	U
60-57-1	Dieldrin	4.8	U
72-55-9	4,4'-DDE	4.8	U
72-20-8	Endrin	4.8	U
33213-65-9	Endosulfan II	4.8	U
72-54-8	4,4'-DDD	4.8	U
1031-07-8	Endosulfan sulfate	4.8	U
50-29-3	4,4'-DDT	4.8	U
72-43-5	Methoxychlor	24	U
53494-70-5	Endrin ketone	4.8	U
5103-71-9	alpha-Chlordane	24	U
5103-74-2	gamma-Chlordane	24	U
8001-35-2	Toxaphene	48	U
12674-11-2	Aroclor-1016	24	U
11104-28-2	Aroclor-1221	24	U
11141-16-5	Aroclor-1232	24	U
53469-21-9	Aroclor-1242	24	U
12672-29-6	Aroclor-1248	24	U
11097-69-1	Aroclor-1254	48	U
11096-82-5	Aroclor-1260	48	U

RUN # 933 MAR 16, 1989 03:22:05
START



TIMETABLE STOP

RUN# 933 MAR 16, 1989 03:22:05

SAMPLE NAME: PBLK451 SAMPLE# 20

PCB/PEST ON 1.5SP2250-1.95SP2401

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.796	2966270	PV	.898	81.49283
1.122	168011	VV	.886	4.61580
1.329	99449	VV	.885	2.73218
1.491	230073	VB	.091	6.32084
1.963	9611	BV	.099	.26404
2.135	4537	VP	.129	.12465
2.430	6352	PV	.143	.17451
2.769	976	VV	.136	.02681
3.385	2570	VV	.186	.07061
3.605	7036	VV	.181	.19330
3.853	12886	VV	.223	.35402
4.295	4468	VV	.394	.12824
4.737	12826	VP	.346	.35237
5.714	4740	PV	.406	.13022
6.121	5646	VV	.536	.15511
6.719	5742	VV	.578	.15775
7.520	15152	VV	.614	.41627
8.454	6523	VV	.493	.17921
9.058	5878	VP	.477	.16149
11.190	6284	PV	1.689	.17264
12.170	6278	VV	.876	.17248
12.931	5028	VV	.595	.13814
15.436	5562	VV	1.855	.15281
18.079	6848	VV	2.796	.18814
20.002	3416	VV	.931	.09385
23.732	31665	VV	1.519	.86994
29.110	3466	VV	4.481	.09522
35.162	2422	VV	5.244	.06654

TOTAL HEIGHT=3639915

COLUMN: 1.95% SP2250 / 1.5% SP2401

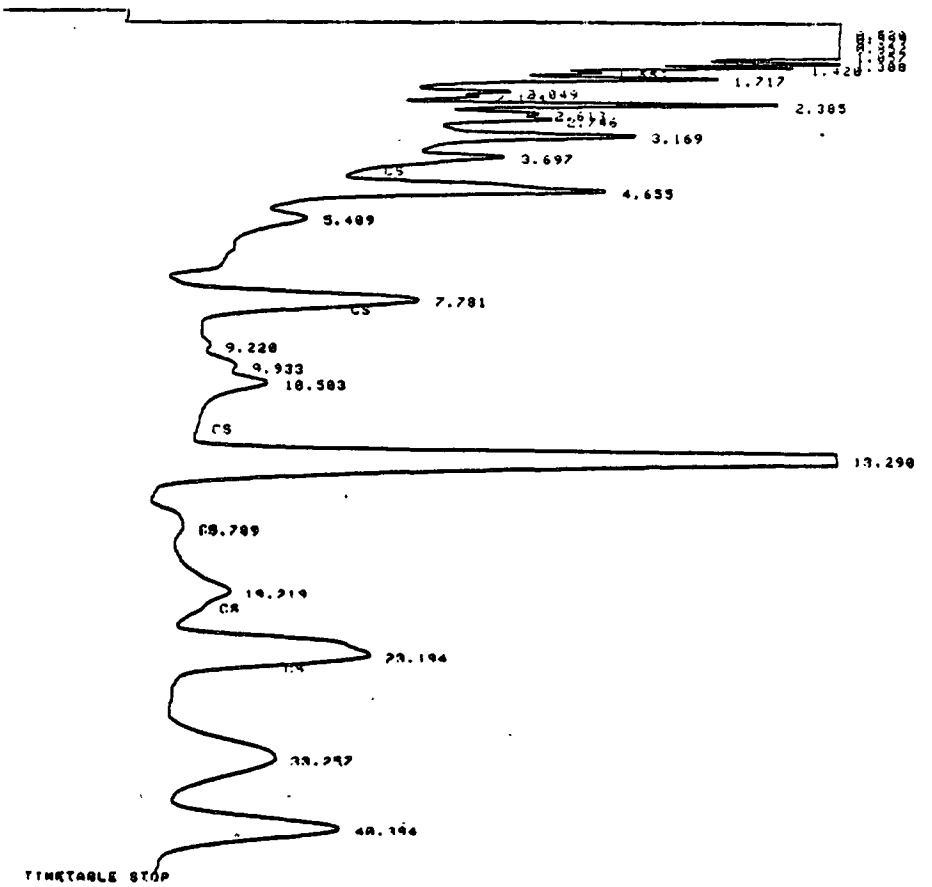
INSTRUMENT ID: GC-C

SAMPLE ID: PBLK 23

AMOUNT INJECTED: 5 UL

~~3 110~~

* .TIME 45 STOP
* RUN # 545 MAR 20. 1989 13:58:49
START



TIMETABLE STOP

RUN# 545 MAR 20. 1989 13:58:49

PGLK451 SAMPLE# 0

PCG/PEST ON 3%SP2100

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.520	610516	SPB	.071	9.51988
.595	1275679	TBB	.037	19.89189
.852	733250	SPH	.095	11.43382
1.057	2228546	SHB	.066	34.75013
1.300	102233	BV	.058	1.59414
1.420	61727	VP	.060	.96252
1.552	17608	PV	.072	.27456
1.717	77622	VP	.106	1.21037
2.049	33390	PV	.103	.52066
2.171	24984	VV	.101	.38933
2.385	131571	VV	.113	2.05161
2.613	52645	VV	.140	.82090
2.746	59040	VV	.160	.92075
3.169	94776	VV	.313	1.47786
3.697	58732	VV	.350	.91582
4.655	109435	VV	.375	1.70644
5.409	19299	VP	.999	.30093
7.781	86444	PV	.608	1.34794
9.220	16248	VV	.672	.25336
9.933	25407	VV	.580	.39610
10.503	36758	VV	1.234	.57305
13.290	350552	VP	.606	5.46622
15.789	10416	PV	1.365	.16242
19.219	24879	VV	2.392	.38794
23.194	70673	VB	2.101	1.10202
33.257	38432	BV	4.251	.59928
40.394	62270	VP	2.649	.97099

TOTAL HEIGHT=6413059
MUL FACTOR=1.0000E+00

COLUMN: 3% SP2100

INSTRUMENT ID: GC-C

SAMPLE ID: PGLK23

AMOUNT INJECTED: 5 UL

~~8 114~~

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLK24

Lab Name: VERSAR ESMO Contract: _____

Lab Code: _____ Case No.: WILLOW SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: PBLK456

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

Level: (low/med) LOW Date Received: _____

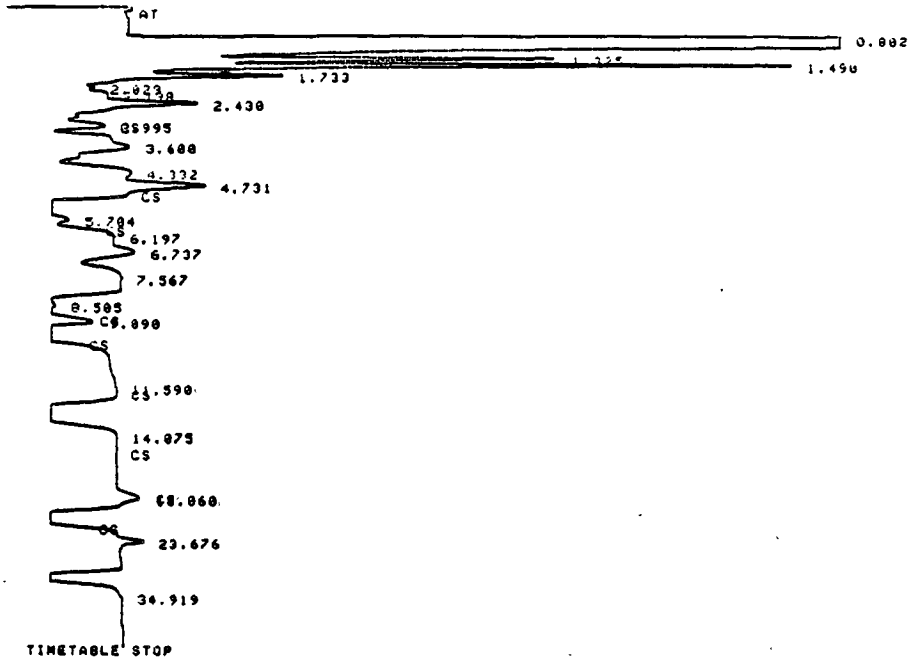
% Moisture: not dec. 0 dec. _____ Date Extracted: 02/24/89

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 03/15/89

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

RUN # 927 MAR 15, 1989 22:41:23
START



TIMETABLE STOP

RUN# 927 MAR 15, 1989 22:41:23

SAMPLE NAME: PBLK456 SAMPLE# 14

PCB/PEST ON 1.5SP2250-1.95SP2401

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.002	2077107	PB	.106	93.94557
1.325	15016	PV	.085	.67916
1.490	26717	VV	.078	1.20838
1.733	6694	VP	.097	.30276
2.029	353	PP	.061	.01597
2.190	374	PB	.117	.01692
2.430	4514	BP	.150	.20416
2.995	2042	VV	.102	.09236
3.600	4570	VV	.401	.20670
4.332	6432	VV	.423	.29091
4.731	10563	VP	.500	.47775
5.704	6126	PV	.346	.27707
6.197	8041	VV	.502	.36369
6.737	8890	VV	.576	.40209
7.567	8327	VV	.659	.37662
8.505	5409	VV	.387	.24464
9.090	6991	VP	.521	.31620
11.590	1282	PB	5.245	.05798
14.075	1701	PV	.699	.08055
18.060	3066	VP	1.898	.13867
23.676	4385	PV	3.783	.19833
34.919	2289	PV	2.909	.10353

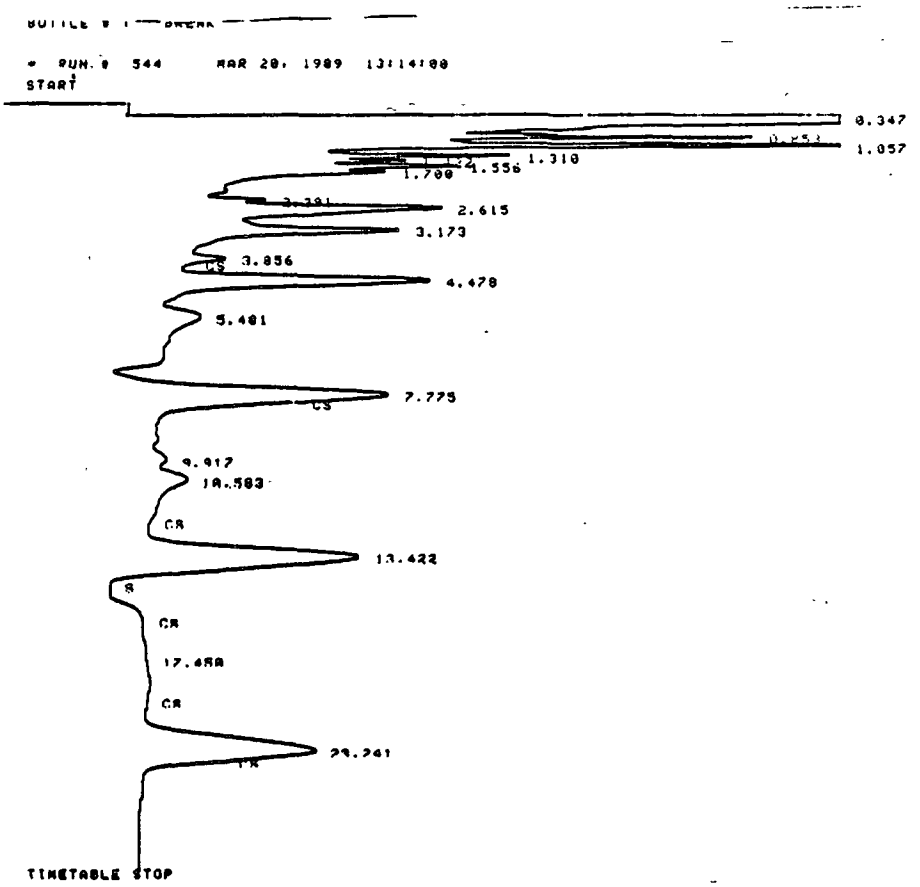
TOTAL HEIGHT=2210970
MUL FACTOR=1.0000E+00

COLUMN: 1.95% SP2250 / 1.5% SP2401

INSTRUMENT ID: GC-C

SAMPLE ID: PBLK24

AMOUNT INJECTED: 5 UL



RUN0 544 MAR 20, 1989 13:14:00

PBLK 456

SAMPLE0 7

PCG/PEST ON 3%SP2100

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.347	7037395	SPB	.148	86.85170
.853	113463	TBV	.066	1.25736
1.057	264986	TVP	.077	2.93650
1.310	68237	TPV	.075	.75618
1.422	36370	TVV	.070	.40313
1.556	58609	TVV	.111	.64949
1.700	41124	TVP	.127	.45572
2.391	20987	TPV	.104	.23257
2.615	83140	TVV	.252	.92133
3.173	72313	TVV	.239	.80135
3.856	16980	TVV	.190	.18826
4.478	91357	TVV	.347	1.01239
5.401	19552	TVV	.937	.21667
7.775	94846	TPV	.682	1.05100
9.917	18950	TVV	.627	.21009
10.503	26359	TVV	1.373	.29210
13.422	85736	TVB	1.000	.95010
17.458	10433	BV	2.520	.11562
23.241	63017	VB	1.861	.69834

TOTAL HEIGHT=9.0239E+06
MUL FACTOR=1.0000E+00

COLUMN: 3% SP2100

INSTRUMENT ID: GC-C

SAMPLE ID: PBLK24

AMOUNT INJECTED: 5 UL

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLK27

Lab Name: VERSAR ESMO Contract: _____

Lab Code: _____ Case No.: WILLOW SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: PBLK464

Sample wt/vol: 10.0 (g/mL) G Lab File ID: _____

L vel: (low/med) LOW Date Received: _____

% Moisture: not dec. 0 dec. _____ Date Extracted: 02/27/89

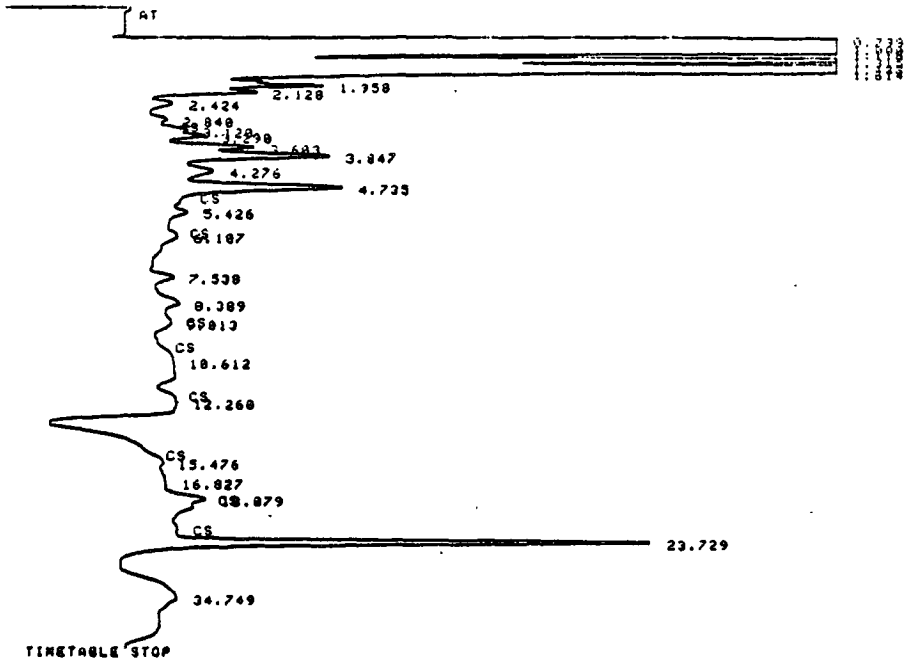
Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/16/89

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 0.100

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.4	U
319-85-7	beta-BHC	2.4	U
319-86-8	delta-BHC	2.4	U
58-89-9	gamma-BHC (Lindane)	2.4	U
76-44-8	Heptachlor	2.4	U
309-00-2	Aldrin	2.4	U
1024-57-3	Heptachlor epoxide	2.4	U
959-98-8	Endosulfan I	2.4	U
60-57-1	Dieldrin	4.8	U
72-55-9	4,4'-DDE	4.8	U
72-20-8	Endrin	4.8	U
33213-65-9	Endosulfan II	4.8	U
72-54-8	4,4'-DDD	4.8	U
1031-07-8	Endosulfan sulfate	4.8	U
50-29-3	4,4'-DDT	4.8	U
72-43-5	Methoxychlor	24	U
53494-70-5	Endrin ketone	4.8	U
5103-71-9	alpha-Chlordane	24	U
5103-74-2	gamma-Chlordane	24	U
8001-35-2	Toxaphene	48	U
12674-11-2	Aroclor-1016	24	U
11104-28-2	Aroclor-1221	24	U
11141-16-5	Aroclor-1232	24	U
53469-21-9	Aroclor-1242	24	U
12672-29-6	Aroclor-1248	24	U
11097-69-1	Aroclor-1254	48	U
11096-82-5	Aroclor-1260	48	U

MUL FACTOR=1.0000E+00

RUN # 934 MAR 16, 1989 04:09:00
START



TIMETABLE STOP

RUN# 934 MAR 16, 1989 04:09:00

SAMPLE NAME: PBLK464 SAMPLE# 21

PCB/PEST ON 1.5SP2250-1.95SP2401

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.799	253612	BV	.103	28.52406
1.000	98436	VV	.079	11.07122
1.116	118156	VV	.082	13.28916
1.315	136324	VV	.079	15.33254
1.488	146106	VV	.086	16.43272
1.614	45400	VV	.102	5.11519
1.958	7428	VV	.167	.83544
2.128	4583	VV	.145	.51546
2.424	982	VP	.179	.11045
2.840	702	PV	.161	.08795
3.120	1667	VV	.170	.18749
3.290	2397	VV	.175	.26959
3.603	4495	VV	.176	.50556
3.847	7741	VV	.213	.87064
4.276	2754	VV	.356	.30975
4.735	8284	VV	.292	.93171
5.426	1610	VV	.300	.18108
6.107	1215	VP	.605	.13665
7.538	1007	PV	.267	.11326
8.389	1169	VV	.467	.13148
9.813	797	VP	.583	.08964
10.612	153	PB	.090	.01721
12.260	3231	VP	1.442	.36339
15.476	4532	PV	1.757	.50972
16.827	4359	VV	1.390	.49026
18.079	5743	VV	1.132	.64592
23.729	23583	VB	1.377	2.65241
34.749	2490	PV	6.200	.28005

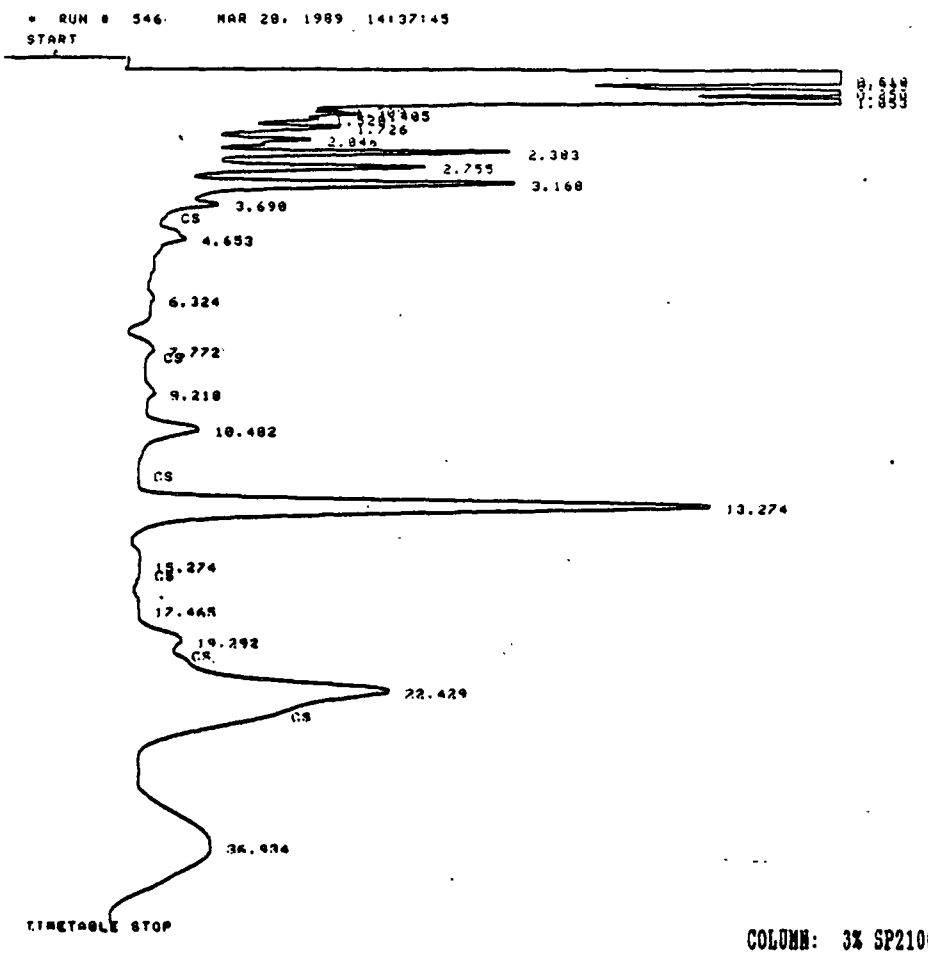
TOTAL HEIGHT= 889116
MUL FACTOR=1.0000E+00

COLUMN: 1.95% SP2250 / 1.5% SP2401

INSTRUMENT ID: GC-C

SAMPLE ID: PBLK27

AMOUNT INJECTED: 5 UL



COLUMN: 3% SP2100

INSTRUMENT ID: GC-C

SAMPLE ID: PBLK27

AMOUNT INJECTED: 5 UL

RUN# 546 MAR 28, 1989 14:37:45

PBLK 464 SAMPLE# 9

PCB/PEST ON 3%SP2100

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.519	844435	BV	.040	15.67471
.595	1154202	VP	.045	21.42472
.838	1137720	SPH	.061	21.11870
1.853	1437602	SHB	.071	26.68530
1.389	10558	BV	.053	.19583
1.405	23825	VV	.077	.44225
1.520	14986	VP	.096	.27818
1.726	32315	PP	.132	.59984
2.046	32033	PV	.107	.59461
2.383	103771	VV	.121	1.92624
2.755	77912	VV	.153	1.44623
3.168	112423	VV	.183	2.08684
3.690	15734	VP	.190	.29206
4.653	18134	PV	.413	.18811
6.324	2112	PB	.276	.03920
7.772	6411	BB	.514	.11900
9.218	3226	BB	.384	.05988
10.482	19235	BB	.496	.35705
13.274	197524	BP	.577	3.66651
15.274	3803	PV	1.464	.07208
17.465	4051	VV	1.803	.07520
19.292	18820	VV	1.147	.34949
22.429	90752	VV	3.347	1.68457
36.934	33500	VP	7.578	.62332

TOTAL HEIGHT=5387245
MUL FACTOR=1.0000E+00

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLK01

Lab Name: VERSAR ESMO Contract: _____

Lab Code: _____ Case No.: WILLOW SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: PBLK476

Sample wt/vol: 10.0 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: _____

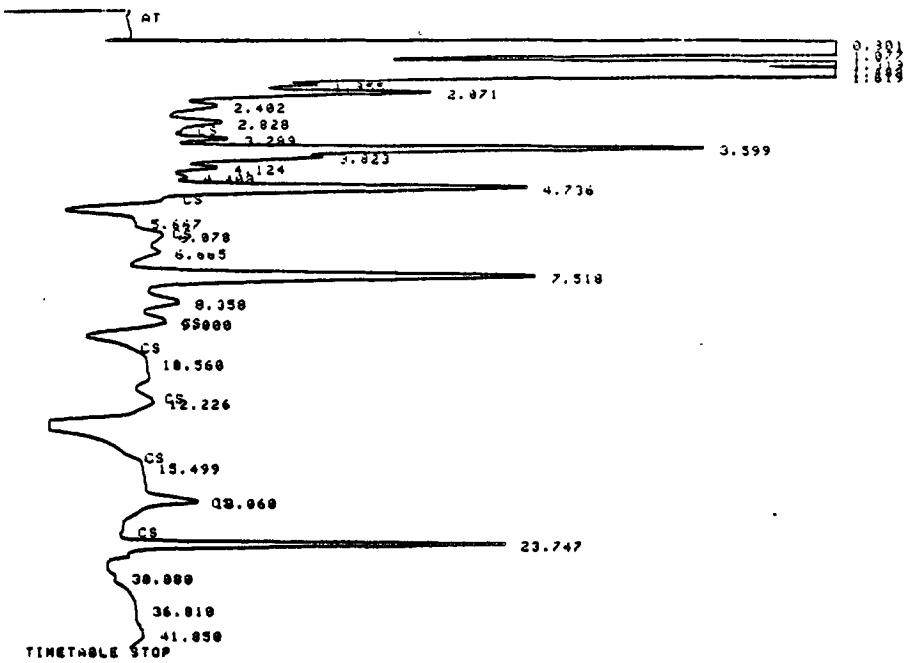
% Moisture: not dec. 0 dec. _____ Date Extracted: 03/01/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/16/89

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 0.100

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.4	U
319-85-7	beta-BHC	2.4	U
319-86-8	delta-BHC	2.4	U
58-89-9	gamma-BHC (Lindane)	2.4	U
76-44-8	Heptachlor	2.4	U
309-00-2	Aldrin	2.4	U
1024-57-3	Heptachlor epoxide	2.4	U
959-98-8	Endosulfan I	2.4	U
60-57-1	Dieldrin	4.8	U
72-55-9	4,4'-DDE	4.8	U
72-20-8	Endrin	4.8	U
33213-65-9	Endosulfan II	4.8	U
72-54-8	4,4'-DDD	4.8	U
1031-07-8	Endosulfan sulfate	4.8	U
50-29-3	4,4'-DDT	4.8	U
72-43-5	Methoxychlor	24	U
53494-70-5	Endrin ketone	4.8	U
5103-71-9	alpha-Chlordane	24	U
5103-74-2	gamma-Chlordane	24	U
8001-35-2	Toxaphene	48	U
12674-11-2	Aroclor-1016	24	U
11104-28-2	Aroclor-1221	24	U
11141-16-5	Aroclor-1232	24	U
53469-21-9	Aroclor-1242	24	U
12672-29-6	Aroclor-1248	24	U
11097-69-1	Aroclor-1254	48	U
11096-82-5	Aroclor-1260	48	U

RUN # 935 MAR 16, 1989 04:55:55
START



TIMETABLE STOP

RUN# 935 MAR 16, 1989 04:55:55

SAMPLE NAME: PBLK476 SAMPLE# 22

PCB/PEST ON 1.5SP2250-1.95SP2401

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.001	1950440	PV	.087	75.27958
1.077	38794	VV	.125	1.49730
1.319	162240	VV	.086	6.26184
1.480	188337	VV	.089	7.26909
1.619	55525	VV	.117	2.14305
1.855	9336	VV	.120	.36033
2.071	14260	VV	.219	.55069
2.402	5262	VV	.312	.20309
2.820	5655	VV	.373	.21826
3.289	6124	VV	.208	.23636
3.599	26702	VV	.206	1.03368
3.823	10430	VV	.190	.40256
4.124	6039	VV	.223	.23308
4.480	4894	VV	.219	.18889
4.736	19624	VP	.319	.75741
5.667	3122	PV	.274	.12050
6.070	4420	VV	.623	.17060
6.665	4349	VV	.574	.16785
7.518	20658	VV	.397	.79701
8.358	5513	VV	.604	.21278
9.000	5062	VV	.703	.19537
10.560	4493	VV	.955	.17341
12.226	5085	VP	1.302	.19626
15.499	4560	PV	1.611	.17631
18.060	6627	VV	3.074	.25578
23.747	19074	VV	1.401	.73618
30.000	1501	VV	2.738	.05793
36.810	1529	VV	7.173	.05901
41.850	1186 I	VH	5.843	.04578

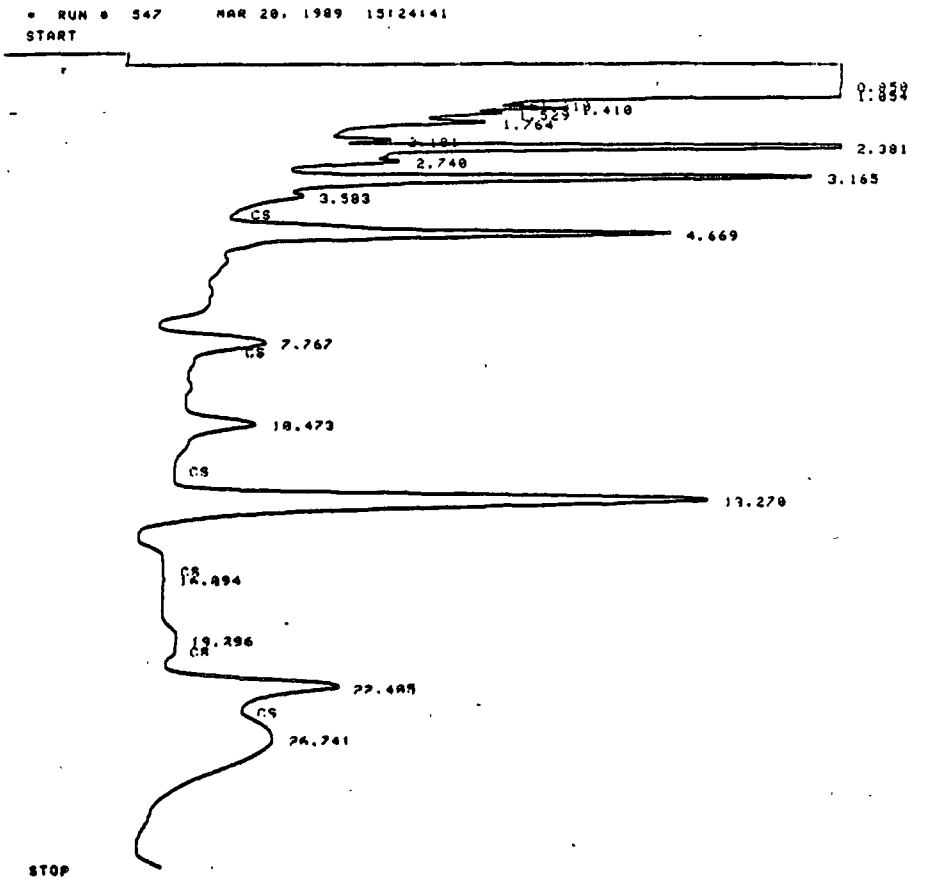
TOTAL HEIGHT=2590930
MUL FACTOR=1.0000E+00

COLUMN: 1.95% SP2250 / 1.5% SP2401

INSTRUMENT ID: GC-C

SAMPLE ID: PBLK01

AMOUNT INJECTED: 5 UL



RUN# 547 MAR 28, 1989 15:24:41

PBLK 476

SAMPLE# 10

COLUMN: 3% SP2100

INSTRUMENT ID: GC-C

SAMPLE ID: PBLK01

AMOUNT INJECTED: 5 UL

PCG/PEST ON 3%SP2100

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.858	1067033	SBH	.071	28.11833
1.854	1581333	SHB	.069	41.67110
1.318	7348	BV	.040	.19342
1.410	29186	VV	.069	.76911
1.529	16529	VV	.094	.43557
1.764	28806	VP	.067	.75909
2.181	21796	PV	.102	.57437
2.381	289932	VV	.138	7.61390
2.740	34129	VV	.136	.89936
3.165	182234	VV	.185	4.80221
3.583	15627	VP	.206	.41180
4.669	155169	PV	.381	4.08900
7.767	34395	PV	.615	.90637
10.473	26226	BV	.694	.69110
13.270	190794	VP	.649	5.02770
16.894	4723	PB	1.820	.12446
19.296	5888	BV	1.795	.15495
22.485	62651	VV	1.689	1.65097
26.741	42813	VP	6.436	1.18712

TOTAL HEIGHT=3794797
MUL FACTOR=1.0000E+00

~~8 120~~

4 074

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PBLK01

Lab Nam : VERSAR ESMO Contract: _____

Lab Code: _____ Case No.: WILLOW SAS No.: _____ SDG No.: _____

Matrix: (soil/water) WATER Lab Sample ID: PBLK479

Sample wt/vol: 1000 (g/mL) ML Lab File ID: _____

Lev l: (low/med) LOW Date Received: _____

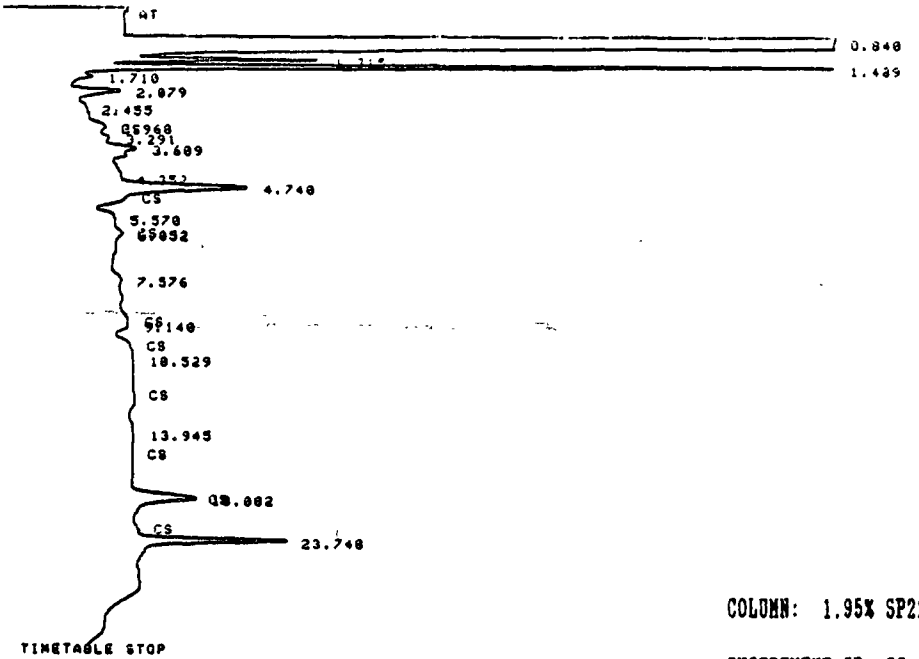
% Moisture: not dec. 0 dec. _____ Date Extracted: 03/01/89

Extraction: (SepF/Cont/Sonc) SEPF Date Analyzed: 03/16/89

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

RUN # 936 MAR 16, 1989 05:42:48
START



TIMETABLE STOP

COLUMN: 1.95% SP2250 / 1.5% SP2401

INSTRUMENT ID: GC-C

SAMPLE ID: PBLK01

AMOUNT INJECTED: 5 UL

RUN# 936 MAR 16, 1989 05:42:48

SAMPLE NAME: PBLK479 SAMPLE# 23

PCB/PEST ON 1.5SP2250-1.95SP2401

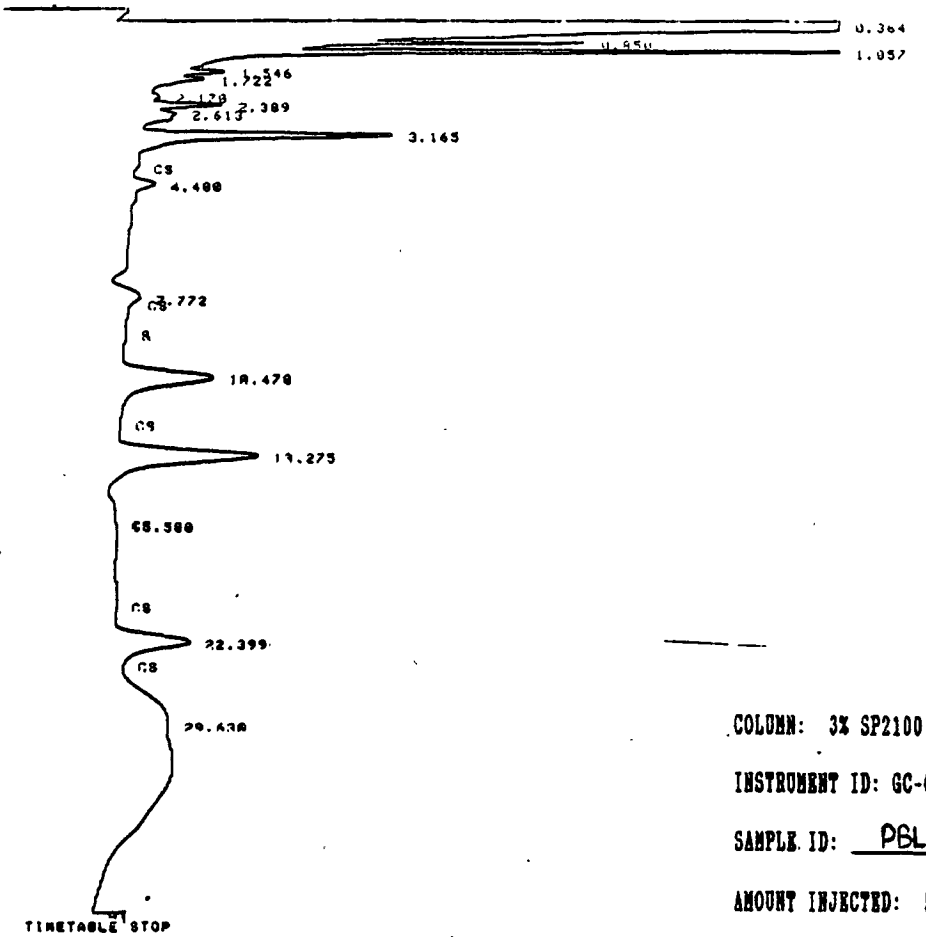
HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.840	3686046	PB	.137	98.16282
1.315	8334	BP	.070	.22194
1.489	32385	PP	.076	.86244
1.710	522	PP	.085	.01390
2.079	2128	PV	.152	.05667
2.455	544	VV	.191	.01449
2.968	1194	VV	.294	.03180
3.291	1258	VV	.241	.03350
3.609	2309	VV	.247	.06149
4.352	1456	VV	.484	.03877
4.740	6737	VP	.315	.17941
5.570	397	PB	.224	.01057
6.052	370	BB	.295	.00985
7.576	451	BV	.375	.01201
9.140	646	VP	.737	.01720
10.529	719	PV	.992	.01915
13.945	378	VV	1.890	.01007
18.082	2797	PP	.817	.07449
23.748	6362	PB	1.853	.16943

TOTAL HEIGHT=3755034
NUL FACTOR=1.0000E+00

~~5 422~~

* TIME 50 STOP
* RUN # 540 MAR 20, 1989 16:06:17
START



TIMETABLE STOP

COLUMN: 3% SP2100

INSTRUMENT ID: GC-C

SAMPLE ID: PBLK01

AMOUNT INJECTED: 5 UL

RUN# 540 MAR 20, 1989 16:06:17

PBLK479 SAMPLE# 11

PCB/PEST ON 3%SP2100

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.364	7030890	SPB	.159	92.44336
.850	88419	TBV	.050	.94837
1.057	263699	TPB	.066	3.10978
1.546	14072	TBV	.100	.16595
1.722	11386	TVP	.129	.13427
2.170	3160	TPV	.136	.03727
2.389	25321	TVV	.122	.29861
2.613	10356	TVV	.143	.12213
3.165	86409	TPV	.181	1.01996
4.480	8436	TPV	.288	.09949
7.772	8449	TPB	.640	.09964
10.470	31957	PB	.542	.37687
13.275	49350	BP	.618	.58207
15.500	1376	PB	1.106	.01623
22.399	26127	BV	1.233	.30811
29.630	20175	VV	3.843	.23792

TOTAL HEIGHT=0.4797E+06
MUL FACTOR=1.0000E+00

Matrix Spike Data

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG780MS

Lab Name: VERSAR ESMO Contract: _____

Lab Code: _____ Case No.: WILLOW SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: DUP2MS

Sample wt/vol: 10.0 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 02/16/89

% Moisture: not dec. 16 dec. ____ Date Extracted: 02/23/89

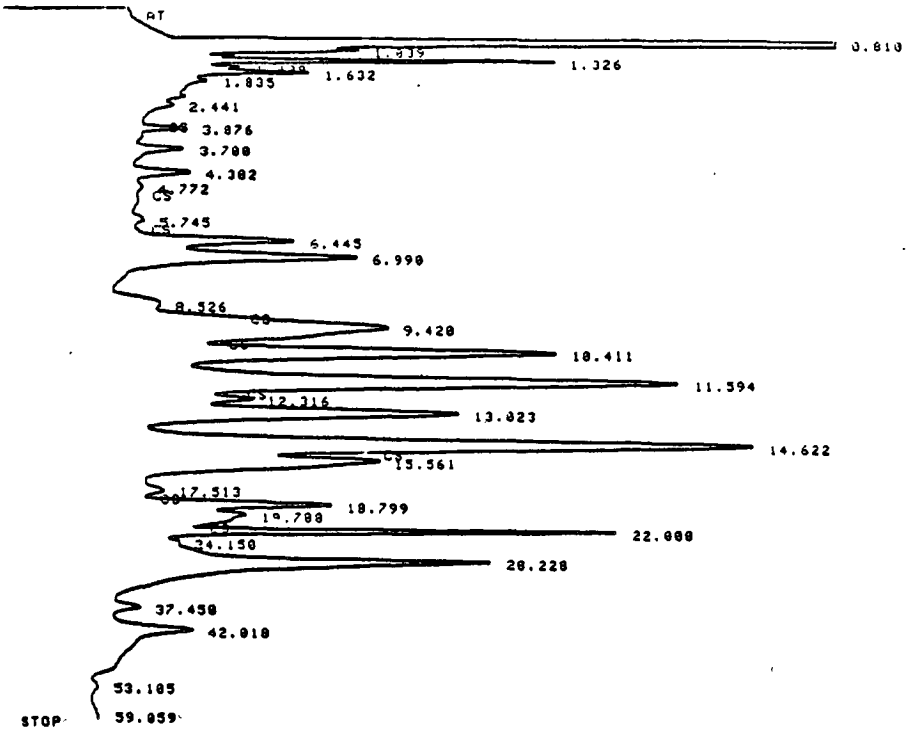
Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/17/89

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 10.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	290	U
319-85-7	beta-BHC	290	U
319-86-8	delta-BHC	290	U
58-89-9	gamma-BHC (Lindane)	290	U
76-44-8	Heptachlor	290	U
309-00-2	Aldrin	290	U
1024-57-3	Heptachlor epoxide	290	U
959-98-8	Endosulfan I	290	U
60-57-1	Dieldrin	570	U
72-55-9	4,4'-DDE	570	U
72-20-8	Endrin	570	U
33213-65-9	Endosulfan II	570	U
72-54-8	4,4'-DDD	570	U
1031-07-8	Endosulfan sulfate	570	U
50-29-3	4,4'-DDT	570	U
72-43-5	Methoxychlor	2900	U
53494-70-5	Endrin ketone	570	U
5103-71-9	alpha-Chlordane	2900	U
5103-74-2	gamma-Chlordane	2900	U
8001-35-2	Toxaphene	5700	U
12674-11-2	Aroclor-1016	2900	U
11104-28-2	Aroclor-1221	2900	U
11141-16-5	Aroclor-1232	2900	U
53469-21-9	Aroclor-1242	2900	U
12672-29-6	Aroclor-1248	2900	U
11097-69-1	Aroclor-1254	5700	U
11096-82-5	Aroclor-1260	8100	

RUN # 955 MAR 17, 1989 17:34:03

START



STOP

RUN# 955 MAR 17, 1989 17:34:03

SAMPLE NAME: WG780MS SAMPLE# 41
1-100

PCB/PEST ON 1.5SP2250-1.95SP2401

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.810	191142	BV	.103	42.34002
1.039	10016	VV	.129	2.21907
1.326	18359	VV	.115	4.06740
1.499	4907	VV	.105	1.08716
1.632	7873	VV	.139	1.74428
1.835	3519	VV	.307	.77964
2.441	2149	VV	.330	.47612
3.076	2720	VV	.192	.60440
3.700	2676	VV	.202	.59287
4.302	3045	VV	.246	.67463
4.772	1014	VV	.309	.22465
5.745	1157	VV	.343	.25634
6.445	7679	VV	.329	1.70130
6.990	10423	VB	.391	2.30924
8.526	2113	BV	.391	.46814
9.420	11906	VV	.839	2.63337
10.411	19134	VV	.475	4.23919
11.594	24434	VV	.571	5.41342
12.316	6131	VV	.429	1.35834
13.023	15043	VV	.622	3.33282
14.622	27754	VV	.679	6.14897
15.561	11680	VV	1.009	2.58951
17.513	2460	VV	.825	.54502
18.799	9675	VV	.867	2.14352
19.700	6041	VV	1.467	1.33840
22.000	21996	VV	1.042	4.87327
24.150	3297	VV	1.177	.73046
28.228	16697	VV	3.420	3.69926
37.450	1788	VV	2.065	.39614
42.010	4145	VP	4.553	.91834
53.105	299	PP	1.697	.06624
59.059	92 I	PP	1.758	.02038

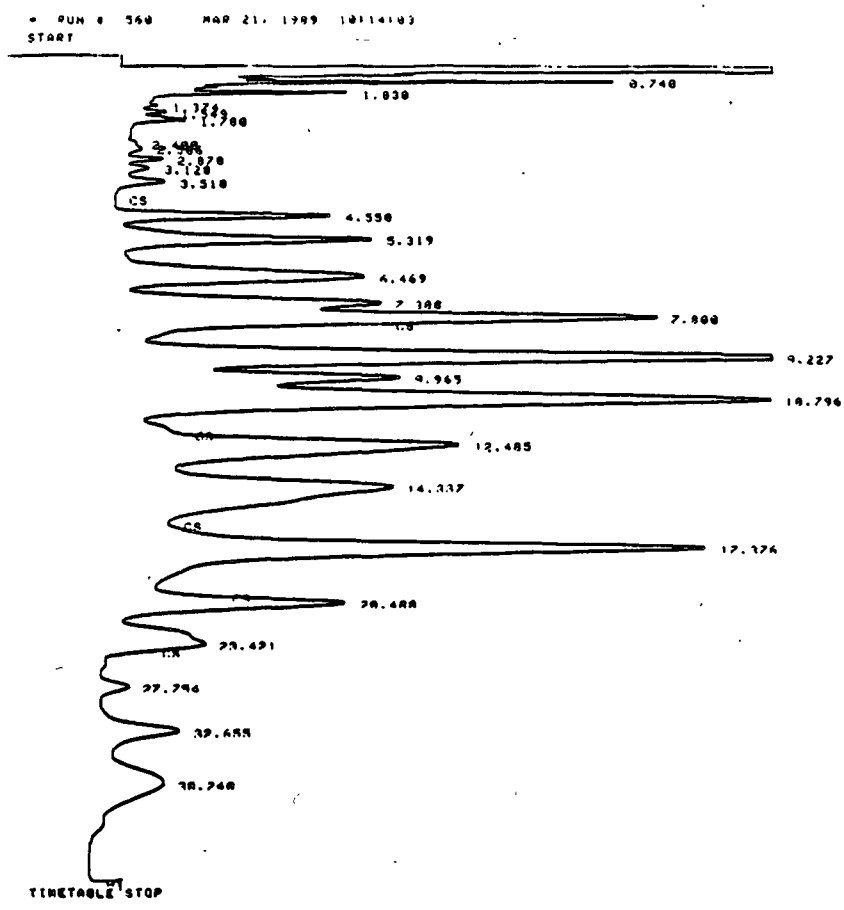
TOTAL HEIGHT= 451360
MUL FACTOR=1.0000E+00

COLUMN: 1.95% SP2250 / 1.5% SP2401

INSTRUMENT ID: GC-C

SAMPLE ID: WG780MS

AMOUNT INJECTED: 5 UL



RUN# 560 MAR 21, 1989 10:14:03

SAMPLE# 23

1:100 dil

PCB/PEST ON 3%SP2100

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.740	148281	BV	.054	6.85281
1.030	64695	VP	.063	2.99912
1.374	4490	VP	.065	.20751
1.549	9423	PV	.080	.43548
1.780	17948	VP	.114	.82947
2.400	3460	PV	.100	.16027
2.566	5875	VV	.190	.27151
2.070	14509	VV	.129	.67053
3.128	10040	VV	.179	.46437
3.510	17257	VB	.197	.79753
4.550	81287	PV	.215	3.75660
5.319	96860	VV	.311	4.47639
6.469	94473	VV	.469	4.36687
7.388	100911	VV	.381	4.66360
7.800	204455	VV	.440	9.44889
9.227	270865	VV	.493	12.51526
9.965	108500	VV	.443	5.01433
10.796	247729	VV	.590	11.44888
12.485	131435	VV	.915	6.07427
14.337	107054	VV	1.326	4.94758
17.376	224509	VV	1.102	10.37938
20.488	90718	VV	1.091	4.19253
23.421	39099	VV	1.692	1.80696
27.756	11557	PV	1.107	.53411
32.655	31323	VV	2.084	1.44759
38.240	26810	VP	4.278	1.23902

TOTAL HEIGHT=2163790

NUL FACTOR=1.0000E+00

COLUMN: 3% SP2100

INSTRUMENT ID: GC-C

SAMPLE ID: WG780MS

AMOUNT INJECTED: 5 UL

~~2 127~~

Matrix Spike Duplicate Data

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WG780MSD

Lab Nam : VERSAR ESMO Contract: _____

Lab Code: _____ Case No.: WILLOW SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: DUP2MSD

Sample wt/vol: 10.0 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 02/16/89

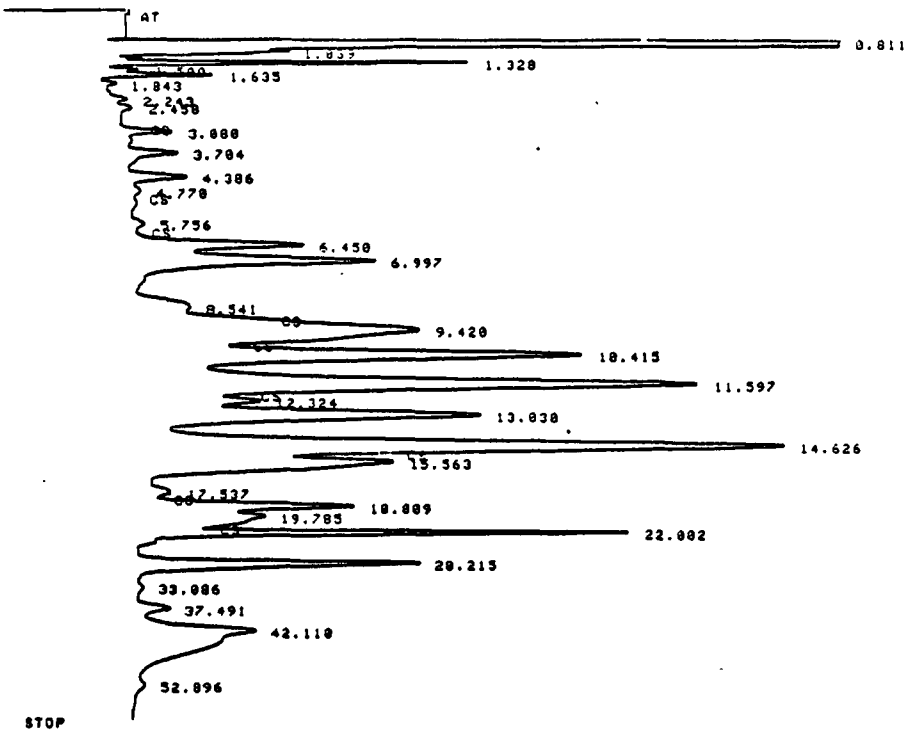
% M isture: not dec. 16 dec. ____ Date Extracted: 02/23/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 03/17/89

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 10.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	290	U
319-85-7	beta-BHC	290	U
319-86-8	delta-BHC	290	U
58-89-9	gamma-BHC (Lindane)	290	U
76-44-8	Heptachlor	290	U
309-00-2	Aldrin	290	U
1024-57-3	Heptachlor epoxide	290	U
959-98-8	Endosulfan I	290	U
60-57-1	Dieldrin	570	U
72-55-9	4,4'-DDE	570	U
72-20-8	Endrin	570	U
33213-65-9	Endosulfan II	570	U
72-54-8	4,4'-DDD	570	U
1031-07-8	Endosulfan sulfate	570	U
50-29-3	4,4'-DDT	570	U
72-43-5	Methoxychlor	2900	U
53494-70-5	Endrin ketone	570	U
5103-71-9	alpha-Chlordane	2900	U
5103-74-2	gamma-Chlordane	2900	U
8001-35-2	Toxaphene	5700	U
12674-11-2	Aroclor-1016	2900	U
11104-28-2	Aroclor-1221	2900	U
11141-16-5	Aroclor-1232	2900	U
53469-21-9	Aroclor-1242	2900	U
12672-29-6	Aroclor-1248	2900	U
11097-69-1	Aroclor-1254	5700	U
11096-82-5	Aroclor-1260	8000	

RUN # 956 MAR 17, 1989 18:36:00
START



STOP

RUN# 956 MAR 17, 1989 18:36:00

SAMPLE NAME: WG780MSD SAMPLE# 42
1-100

PCB/PEST ON 1.5%P2250-1.95%P2401

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.811	186338	BV	.893	44.59714
1.039	5143	VP	.107	1.23090
1.328	15304	PP	.877	3.66278
1.500	1402	PV	.073	.33555
1.635	4710	VP	.087	1.12727
1.843	682	PV	.095	.16323
2.243	1008	VV	.200	.24125
2.458	1154	VV	.213	.27619
3.080	2697	VV	.232	.64549
3.704	2762	VV	.204	.66104
4.386	2999	VV	.237	.71776
4.770	910	VV	.291	.21779
5.756	779	VV	.296	.18644
6.450	7412	VV	.301	1.77395
6.997	10310	VB	.368	2.46754
8.541	2319	PV	.399	.55502
9.420	12152	VV	.838	2.90840
10.415	19092	VV	.468	4.56930
11.597	24088	VV	.555	5.76509
12.324	5352	VV	.414	1.28092
13.030	14702	VV	.609	3.53785
14.626	27927	VV	.670	6.65996
15.563	11075	VV	.930	2.65063
17.537	1580	VV	.742	.37815
18.809	9386	VV	.833	2.24640
19.785	5599	VV	1.398	1.34004
22.002	21141	VV	.964	5.85977
28.215	12286	VV	1.563	2.92132
33.086	376	VV	1.906	.08999
37.491	1524	VV	1.827	.36475
42.110	5224	VV	5.195	1.25028
52.896	492	VP	2.373	.11775

TOTAL HEIGHT= 417825
MUL FACTOR=1.0000E+00

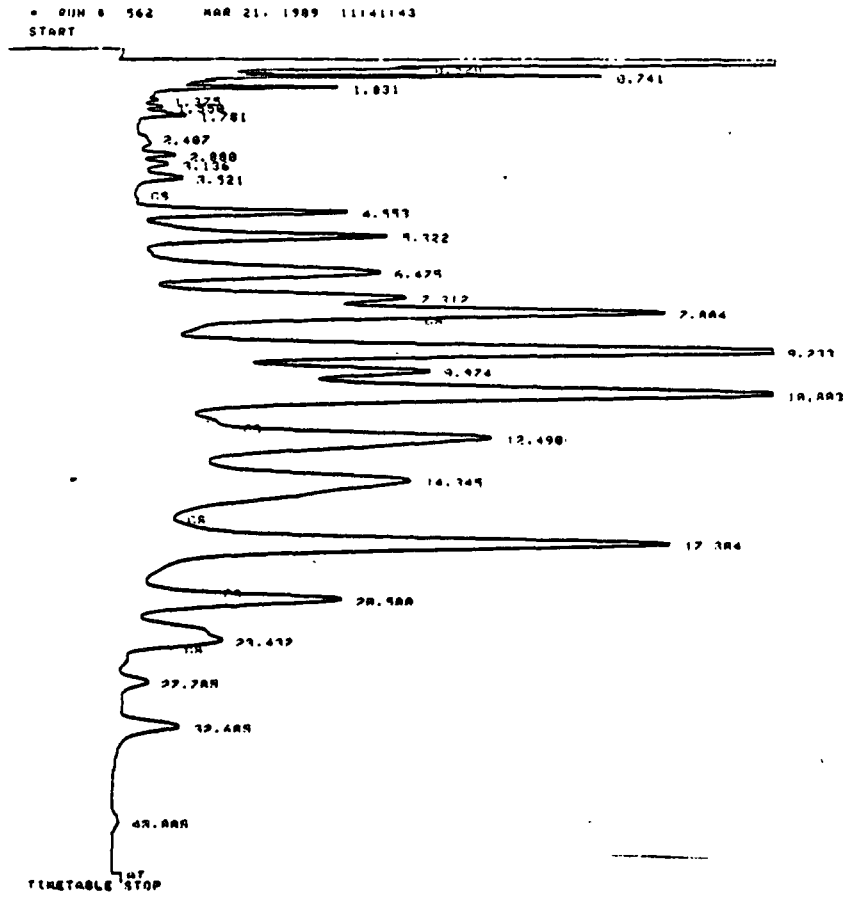
COLUMN: 1.95% SP2250 / 1.5% SP2401

INSTRUMENT ID: GC-C

SAMPLE ID: WG780 MSD

AMOUNT INJECTED: 5 UL

[redacted]



RUN8 562 MAR 21, 1989 11141143

SAMPLES 25

1-100 dil

PCB/PEST ON 3%SP2100

HEIGHT%

RT	HEIGHT	TYPE	WIDTH	HEIGHT%
.520	21337	PP	.053	1.04190
.741	144196	PB	.053	7.04120
1.031	58524	BB	.049	2.85777
1.375	4205	BP	.043	.20533
1.550	7192	PV	.087	.35119
1.781	16981	VB	.129	.82920
2.407	3944	BV	.130	.19259
2.880	14481	VV	.135	.70712
3.136	11794	VV	.105	.57591
3.521	17439	VB	.215	.85156
4.553	78988	VV	.216	3.85784
5.322	93078	VV	.311	4.54413
6.475	91062	VV	.472	4.44663
7.312	188568	VV	.384	4.91081
7.804	197066	VV	.450	9.62289
9.233	261299	VV	.504	12.75943
9.974	108680	VV	.451	5.30693
10.803	241595	VV	.624	11.79727
12.490	130929	VV	.961	6.39336
14.345	188425	VV	1.247	4.90383
17.384	196488	VB	.869	9.59836
20.508	74885	BV	.916	3.65669
23.432	34198	VV	1.557	1.66952
27.785	10995	PV	1.244	.53689
32.685	24031	VB	1.624	1.17345
43.885	2885	BV	1.696	.13697

TOTAL HEIGHT=2047989
NUL FACTOR=1.0000E+00

COLUMN: 3% SP2100

INSTRUMENT ID: GC-C

SAMPLE ID: WG790MSD

AMOUNT INJECTED: 5 UL

~~2-101~~

E. QUALITY ASSURANCE SUMMARY

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EA LABORATORIES

QUALITY ASSURANCE SUMMARY

FOR NAVAL ENERGY AND ENVIRONMENTAL SUPPORT ACTIVITY CONTRACTS

Project: Willow Grove /NAS Analysis: TCL pesticide/PCBs

EA Laboratories Report No. 890094 Method: U.S. EPA-CLP

Reviewed by: M.M. Uhlfelder, R.S. Bowskamp Date: 2 Jun 89

1. Water samples were extracted within 5 days of sample ~~collection~~ receipt (soils samples within 10 days) and analyzed within 40 days of extraction.

   ✓ Yes ____ No

2. Three-point calibration curve prepared and used to establish standard deviations for retention time windows. Unknown, this sample was sent to an outside laboratory.

   ____ Yes ____ No

3. The 72-hour calibration period was met for all samples.

   ✓ Yes ____ No

4. Initial calibration criteria were met for all samples: a three-point calibration curve was run, the RSD is <10% for all compounds, ~~the maximum percent difference for compounds is 25%~~. On the ~~confirmation~~ quantitation RSB column.

   ✓ Yes ____ No

5. Instrument performance evaluation criteria were met for each 72-hour analytical sequence: DDT retention time >12 min.; DDT/endrin breakdown <20%; linearity as %RSD for aldrin, endrin, 4,4'-DDT, and DBC <10%; retention time windows established.

   ✓ Yes ____ No

6. Continuing calibration criteria were met for all samples: the response factor percent difference from the initial calibration response factor for all compounds was ≤15%.

   ✓ Yes ____ No

7. Surrogate recoveries were within advisory limits for all samples. HBB was used as the surrogate and was not determined by the subcontractor.

   ____ Yes ✓ No

(Revised 31 May 1989)

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EA LABORATORIES

QUALITY ASSURANCE SUMMARY

FOR NAVAL ENERGY AND ENVIRONMENTAL SUPPORT ACTIVITY CONTRACTS

Project: Willow Grove NAS Analysis: TCL pesticide/PCBs

EA Laboratories Report No. 890094 Method: U.S. EPA-CLP

Reviewed by: mm uhlfelder Date: 2 Jun 89

8. MS and MSD criteria were met for all samples.

✓* Yes ✗ RSB No

9. Method blank criteria were met for all samples: the method blank must contain ≤CRQL of any single pesticide/PCB target compound.

✓ Yes ____ No

10. Laboratory control sample criteria were met for all samples.

✓ Yes ____ No

11. All tentatively identified compounds were confirmed on a second column.

✓ Yes ____ No

12. Field and equipment blanks: no target compounds were detected in the samples at concentrations <5X the concentration found in the highest associated blank.

✓ Yes ____ No

Comments: (7.) HEXABROMOBENZENE WAS USED AS THE SURROGATE (8.) MS/MSD RECOVERIES FOR DUP2 (EA8900780) COULD NOT BE DETERMINED, SPIKE COMPOUNDS diluted out (1:100).

(Revised 31 May 1989)

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5. INORGANIC DATA

5000

U.S. EPA CLP INORGANIC ANALYSIS DATA QUALIFIERS

1. C (concentration) qualifier -- Enter "B" if the reported value is less than the Contract Required Detection Limit (CRDL) but greater that the Instrument Detection Limit (IDL). If the analyte was analyzed for but not detected, a "U" must be entered.

2. Q qualifier -- Specified entries and their meanings are as follows:

   2.1 E -- The reported value is estimated because of the presence of interference.

   2.2 M -- Duplicate injection precision was not met.

   2.3 N -- Spiked sample recovery was not within control limits.

   2.4 S -- The reported value was determined by the Method of Standard Additions (MSA).

   2.5 W -- Post-digestion spike for furnace AA analysis is out of control limits (85-115%), while the sample absorbance is less than 50% of the spike absorbance.

   2.5 * -- Duplicate analyses were not within control limits.

   2.6 + -- Correlation coefficient for MSA is less than 0.995.

3. M (Method) qualifier -- Enter:

   3.1 "P" for ICP

   3.2 "A" for Flame AA

   3.3 "F" for Furnace AA

   3.4 "CV" for Cold Vapor AA

   3.5 "AV" for Automated Cold Vapor AA

   3.6 "AS" for Semi-automated Spectrophotometric

   3.7 "C" for Manual Spectrophotometric

   3.8 "T" for Titrimetric

   3.9 "NR" for an analyte not required to be determined.

(U.S. EPA CLP SOW 12/87)

A. Sample Data

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0637

SOW No.: 7/87

EPA Sample No.	Lab Sample ID.
ET0637	PR-1
ET0637D	PR-1D
ET0638	PR-2
ET0638S	PR-2S
ET0640	Rinsate
ET0745	PRW-1 Comp
ET0746	Rinsate #2
ET0748	PR-SS-1
ET0749	PR-SS-2

Were ICP interelement corrections applied? Yes/No NO

Were ICP background corrections applied? Yes/No YES
If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Lab Manager: _____

Date: _____

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

SOW No.: 7/87

EPA Sample No.	Lab Sample ID.
~~ET0751 Comp~~	
~~ET0752~~	
~~ET0753~~	
ET0775	PRW-2, Comp
ET0775D	PRW-2, Comp D
ET0775S	PRW-2, Comp S
ET0776	Rinsate #3
ET0777	PR-SS-3
ET0780	Dup #2
ET0781	Dup #3
ET0815	PRW-3, Comp
ET0820	Rinsate #5
ET0822	PRW-4, Comp

Were ICP interelement corrections applied? Yes/No NO

Were ICP background corrections applied? Yes/No YES
If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Lab Manager: _____

Date: _____

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

SOW No.: 7/87

EPA Sample No.	Lab Sample ID.
ET0775	PRW-2, Comp
ET0775D	PRW-2, Comp D
ET0775S	PRW-2, Comp S
ET0780	Dup # 2
ET0780D	Dup # 2 D
ET0780S	Dup # 2 S

W r ICP interelement corrections applied? Yes/No NO

Wer ICP background corrections applied? Yes/No YES
If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

Release of the data contained in this hardcopy data package and in th c mputer-readable data submitted on floppy diskette has been authoriz d by th Laboratory Manager or the Manager's designee, as verified by th following signatur .

Lab Manag r: Stephen E Shelley

Dat : 12 May 89

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

ET0637
PR-1

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0637

Matrix (soil/water): SOIL Lab Sample ID:

Level (low/med): LOW Date Received: 02/16/89

% Solids: 83.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	16400			P
7440-36-0	Antimony	7.6	U	N	P
7440-38-2	Arsenic	19.5		N	F
7440-39-3	Barium	99.1		N	P
7440-41-7	Beryllium	1.2			P
7440-43-9	Cadmium	11.0		N*	P
7440-70-2	Calcium	867		*	P
7440-47-3	Chromium	581			P
7440-48-4	Cobalt	10.8			P
7440-50-8	Copper	33.6		*	P
7439-89-6	Iron	24100			P
7439-92-1	Lead	7.7		N	F
7439-95-4	Magnesium	2270	B	*	P
7439-96-5	Manganese	616		N	P
7439-97-6	Mercury	0.02		N*	CV
7440-02-0	Nickel	13.0			P
7440-09-7	Potassium	10800		*	P
7782-49-2	Selenium	0.29	U		F
7440-22-4	Silver	8.3	U	N	P
7440-23-5	Sodium	58.9	B		P
7440-28-0	Thallium	33.6	U		P
7440-62-2	Vanadium	21.8			P
7440-66-6	Zinc	46.6		E	P
	Cyanide				

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

ET0637
PB-1

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Matrix (soil/water): SOIL Lab Sample ID:

Level (low/med): LOW Date Received: 02/~~20~~ 16 pm/89

% Solids: 83.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium				
7440-70-2	Calcium				
7440-47-3	Chromium				
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead				
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	0.02		*	CV
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide				

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

FORM I - IN

7/87
Rev. IFB Amendment One

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

ET0638
PR-2

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0637

Matrix (soil/water): SOIL Lab Sample ID:

Level (low/med): LOW Date Received: 02/16/89

% Solids: 82.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15000			P
7440-36-0	Antimony	8.5	U	N	P
7440-38-2	Arsenic	22.1		N	F
7440-39-3	Barium	51.8		N	P
7440-41-7	Beryllium	0.87			P
7440-43-9	Cadmium	0.65		N*	P
7440-70-2	Calcium	772		*	P
7440-47-3	Chromium	626			P
7440-48-4	Cobalt	10.9			P
7440-50-8	Copper	10.4		*	P
7439-89-6	Iron	33900			P
7439-92-1	Lead	6.4		NS	F
7439-95-4	Magnesium	2690	B	*	P
7439-96-5	Manganese	626		N	P
7439-97-6	Mercury	0.01		N*	CV
7440-02-0	Nickel	13.4			P
7440-09-7	Potassium	10100		*	P
7782-49-2	Selenium	0.26	U		F
7440-22-4	Silver	8.8	U	N	P
7440-23-5	Sodium	178	B		P
7440-28-0	Thallium	37.7	U		P
7440-62-2	Vanadium	28.9			P
7440-66-6	Zinc	39.6		E	P
	Cyanide				

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

ET0638
PR-2

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Matrix (soil/water): SOIL Lab Sample ID:

Level (low/med): LOW Date Received: 02/~~20~~ 16/89

% Solids: 82.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium				
7440-70-2	Calcium				
7440-47-3	Chromium				
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead				
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	0.01		*	CV
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide				

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

ET0745
PRW-1

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0637

Matrix (soil/water): SOIL Lab Sample ID:

Level (low/med): LOW Date Received: 02/17/89

% Solids: 83.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11000			P
7440-36-0	Antimony	7.3	U	N	P
7440-38-2	Arsenic	19.5		N	F
7440-39-3	Barium	128		N	P
7440-41-7	Beryllium	0.93			P
7440-43-9	Cadmium	0.51		N*	P
7440-70-2	Calcium	2270		*	P
7440-47-3	Chromium	604			P
7440-48-4	Cobalt	11.6			P
7440-50-8	Copper	11.2		*	P
7439-89-6	Iron	31900			P
7439-92-1	Lead	108		NS	F
7439-95-4	Magnesium	3130	B	*	P
7439-96-5	Manganese	604		N	P
7439-97-6	Mercury	0.20		N*	CV
7440-02-0	Nickel	14.2			P
7440-09-7	Potassium	16000		*	P
7782-49-2	Selenium	0.32	U		F
7440-22-4	Silver	7.5	U	N	P
7440-23-5	Sodium	90.5	B		P
7440-28-0	Thallium	32.1	U		P
7440-62-2	Vanadium	22.8			P
7440-66-6	Zinc	71.8		E	P
	Cyanide				

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PR-SS-1
ET0748
Resubm

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0637

Matrix (soil/water): SOIL Lab Sample ID:

Level (low/med): LOW Date Received: 02/18/89

% Solids: 68.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	12900			P
7440-36-0	Antimony	11.3	U	N	P
7440-38-2	Arsenic	13.9		N	F
7440-39-3	Barium	68.2		N	P
7440-41-7	Beryllium	0.75			P
7440-43-9	Cadmium	0.61	U	N*	P
7440-70-2	Calcium	1500		*	P
7440-47-3	Chromium	415			P
7440-48-4	Cobalt	8.4			P
7440-50-8	Copper	11.0		*	P
7439-89-6	Iron	32700			P
7439-92-1	Lead	19.6		NS	F
7439-95-4	Magnesium	1950		*	P
7439-96-5	Manganese	415		N	P
7439-97-6	Mercury	0.04		N*	CV
7440-02-0	Nickel	10.0			P
7440-09-7	Potassium	4970		*	P
7782-49-2	Selenium	0.38	U		F
7440-22-4	Silver	11.7	U	N	P
7440-23-5	Sodium	67.1	B		P
7440-28-0	Thallium	49.9	U		P
7440-62-2	Vanadium	27.7			P
7440-66-6	Zinc	51.3		E	P
	Cyanide				

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PR-SS-2
ET0749

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0637

Matrix (soil/water): SOIL Lab Sample ID:

Level (low/med): LOW Date Received: 02/18/89

% Solids: 82.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4100			P
7440-36-0	Antimony	6.3	U	N	P
7440-38-2	Arsenic	17.8		NS	F
7440-39-3	Barium	35.7		N	P
7440-41-7	Beryllium	0.38	B		P
7440-43-9	Cadmium	0.34	U	N*	P
7440-70-2	Calcium	12400	B	*	P
7440-47-3	Chromium	259			P
7440-48-4	Cobalt	4.9			P
7440-50-8	Copper	8.8		*	P
7439-89-6	Iron	15700			P
7439-92-1	Lead	16.6		N	F
7439-95-4	Magnesium	4960		*	P
7439-96-5	Manganese	259		N	P
7439-97-6	Mercury	0.01	U	N*	CV
7440-02-0	Nickel	6.3			P
7440-09-7	Potassium	6490		*	P
7782-49-2	Selenium	0.99	U		F
7440-22-4	Silver	6.5	U	N	P
7440-23-5	Sodium	78.4	B		P
7440-28-0	Thallium	27.7	U		P
7440-62-2	Vanadium	13.2			P
7440-66-6	Zinc	41.0		E	P
	Cyanide				

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PRW-2, Comp.
ET0775

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Matrix (soil/water): SOIL Lab Sample ID:

Level (low/med): LOW Date Received: 02/21/89

% Solids: 83.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	20200			P
7440-36-0	Antimony	0.72	U	N	F
7440-38-2	Arsenic	15.9			F
7440-39-3	Barium	176		EN	P
7440-41-7	Beryllium	1.2			P
7440-43-9	Cadmium	0.69			P
7440-70-2	Calcium	1570			P
7440-47-3	Chromium	21.5			P
7440-48-4	Cobalt	9.4			P
7440-50-8	Copper	25.3			P
7439-89-6	Iron	22700			P
7439-92-1	Lead	57.6			F
7439-95-4	Magnesium	1830		E	P
7439-96-5	Manganese	1000			P
7439-97-6	Mercury	0.34		*	CV
7440-02-0	Nickel	12.9			P
7440-09-7	Potassium	1330			P
7782-49-2	Selenium	0.28	U	N	F
7440-22-4	Silver	3.5		*	F
7440-23-5	Sodium	92.5	B		P
7440-28-0	Thallium	0.04	U		F
7440-62-2	Vanadium	37.1			P
7440-66-6	Zinc	57.2		N	P
	Cyanide				

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

ET0775

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Matrix (soil/water): SOIL Lab Sample ID:

L v l (low/med): LOW Date Received: 02/21/89

% Solids: 83.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium				
7440-70-2	Calcium				
7440-47-3	Chromium				
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead				
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	1.2		N	CV
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide				

C lor Before: Clarity Before: Texture:

Col r After: Clarity After: Artifacts:

Comm nts:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PR-SS-3
ET0777

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Matrix (soil/water): SOIL Lab Sample ID:

Level (low/med): LOW Date Received: 02/21/89

% Solids: 69.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	22600			P
7440-36-0	Antimony	1.0	U	N	F
7440-38-2	Arsenic	19.7			F
7440-39-3	Barium	76.1		EN	P
7440-41-7	Beryllium	0.94			P
7440-43-9	Cadmium	0.45	U		P
7440-70-2	Calcium	1440			P
7440-47-3	Chromium	26.0			P
7440-48-4	Cobalt	8.8			P
7440-50-8	Copper	16.1			P
7439-89-6	Iron	25200			P
7439-92-1	Lead	31.2			F
7439-95-4	Magnesium	2640		E	P
7439-96-5	Manganese	569			P
7439-97-6	Mercury	0.05		*	CV
7440-02-0	Nickel	13.4			P
7440-09-7	Potassium	1170			P
7782-49-2	Selenium	0.37	U	N	F
7440-22-4	Silver	0.04	U	*	F
7440-23-5	Sodium	73.6	B		P
7440-28-0	Thallium	0.05	U		F
7440-62-2	Vanadium	41.7			P
7440-66-6	Zinc	59.7		N	P
	Cyanide				

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

Dup #2
ET0780

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Matrix (soil/water): SOIL Lab Sample ID:

Level (low/med): LOW Date Received: 02/21/89

% Solids: 83.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	21000			P
7440-36-0	Antimony	1.0	U	N	F
7440-38-2	Arsenic	16.9			F
7440-39-3	Barium	161		EN	P
7440-41-7	Beryllium	1.2			P
7440-43-9	Cadmium	0.44	U		P
7440-70-2	Calcium	1200			P
7440-47-3	Chromium	24.3			P
7440-48-4	Cobalt	14.6			P
7440-50-8	Copper	33.1			P
7439-89-6	Iron	25000			P
7439-92-1	Lead	39.8			F
7439-95-4	Magnesium	1520		E	P
7439-96-5	Manganese	1280			P
7439-97-6	Mercury	0.30		*	CV
7440-02-0	Nickel	11.4			P
7440-09-7	Potassium	1290			P
7782-49-2	Selenium	0.28	U	N	F
7440-22-4	Silver	3.5		*	F
7440-23-5	Sodium	103	B		P
7440-28-0	Thallium	0.04	U		F
7440-62-2	Vanadium	40.8			P
7440-66-6	Zinc	68.7		N	P
	Cyanide				

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

ET0780

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Matrix (soil/water): SOIL Lab Sample ID:

L v l (low/med): LOW Date Received: 02/21/89

% S lids: 83.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium				
7440-70-2	Calcium				
7440-47-3	Chromium				
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead				
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury	0.32		N	CV
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide				

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

Dup #3
ET0781

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Matrix (soil/water): SOIL Lab Sample ID:

Level (low/med): LOW Date Received: 02/21/89

% Solids: 66.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	22800			P
7440-36-0	Antimony	1.2	U	N	F
7440-38-2	Arsenic	1.7		+	F
7440-39-3	Barium	78.7		EN	P
7440-41-7	Beryllium	0.97			P
7440-43-9	Cadmium	0.52	U		P
7440-70-2	Calcium	3610			P
7440-47-3	Chromium	27.8			P
7440-48-4	Cobalt	8.8			P
7440-50-8	Copper	17.9			P
7439-89-6	Iron	28100			P
7439-92-1	Lead	24.9			F
7439-95-4	Magnesium	4420		E	P
7439-96-5	Manganese	652			P
7439-97-6	Mercury	0.04		*	CV
7440-02-0	Nickel	11.9			P
7440-09-7	Potassium	1090			P
7782-49-2	Selenium	1.9	U	N	F
7440-22-4	Silver	0.19	U	*	F
7440-23-5	Sodium	67.3	B		P
7440-28-0	Thallium	0.05	U		F
7440-62-2	Vanadium	46.7			P
7440-66-6	Zinc	57.8		N	P
	Cyanide				

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PRW-3, Comp
ET0815

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Matrix (soil/water): SOIL Lab Sample ID:

Level (low/med): LOW Date Received: 02/21/89

% Solids: 82.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	21400			P
7440-36-0	Antimony	1.2	U	N	F
7440-38-2	Arsenic	20.2			F
7440-39-3	Barium	135		EN	P
7440-41-7	Beryllium	1.2			P
7440-43-9	Cadmium	0.86			P
7440-70-2	Calcium	6340			P
7440-47-3	Chromium	24.3			P
7440-48-4	Cobalt	10.4			P
7440-50-8	Copper	36.0			P
7439-89-6	Iron	24400			P
7439-92-1	Lead	51.4			F
7439-95-4	Magnesium	5510		E	P
7439-96-5	Manganese	816			P
7439-97-6	Mercury	0.14		*	CV
7440-02-0	Nickel	11.4			P
7440-09-7	Potassium	1380			P
7782-49-2	Selenium	0.34	U	N	F
7440-22-4	Silver	7.2		*	F
7440-23-5	Sodium	98.9	B		P
7440-28-0	Thallium	0.04	U		F
7440-62-2	Vanadium	43.2			P
7440-66-6	Zinc	66.8		N	P
	Cyanide				

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

PRW-4, Comp
ET0822

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Matrix (soil/water): SOIL Lab Sample ID:

Level (low/med): LOW Date Received: 03/01/89

% Solids: 81.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	30800			P
7440-36-0	Antimony	1.0	U	N	F
7440-38-2	Arsenic	2.2		S	F
7440-39-3	Barium	119		EN	P
7440-41-7	Beryllium	1.4			P
7440-43-9	Cadmium	0.43	U		P
7440-70-2	Calcium	945			P
7440-47-3	Chromium	20.2			P
7440-48-4	Cobalt	9.6			P
7440-50-8	Copper	22.4			P
7439-89-6	Iron	21200			P
7439-92-1	Lead	12.0			F
7439-95-4	Magnesium	1700		E	P
7439-96-5	Manganese	810			P
7439-97-6	Mercury	0.03		*	CV
7440-02-0	Nickel	13.4			P
7440-09-7	Potassium	824			P
7782-49-2	Selenium	0.32	U	N	F
7440-22-4	Silver	0.16	U	*	F
7440-23-5	Sodium	91.6	B		P
7440-28-0	Thallium	0.04	U		F
7440-62-2	Vanadium	34.2			P
7440-66-6	Zinc	42.9		N	P
	Cyanide				

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

Rinsate (2/14/89)
ET0640

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0637

Matrix (soil/water): WATER Lab Sample ID:

Level (low/med): LOW Date Received: 02/16/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	123	B		P
7440-36-0	Antimony	79.9	U		P
7440-38-2	Arsenic	5.0	U		F
7440-39-3	Barium	2.1	U		P
7440-41-7	Beryllium	0.60	U		P
7440-43-9	Cadmium	4.3	U		P
7440-70-2	Calcium	126	B		P
7440-47-3	Chromium	9.0	U		P
7440-48-4	Cobalt	10.2	U		P
7440-50-8	Copper	9.4	U		P
7439-89-6	Iron	51.0	B		P
7439-92-1	Lead	97.0			F
7439-95-4	Magnesium	25.6	U	*	P
7439-96-5	Manganese	5.8	U	N	P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	18.1	U		P
7440-09-7	Potassium	4660	B		P
7782-49-2	Selenium	3.0	U		F
7440-22-4	Silver	82.7	U		P
7440-23-5	Sodium	175	B		P
7440-28-0	Thallium	353	U		P
7440-62-2	Vanadium	30.9	U		P
7440-66-6	Zinc	24.3			P
	Cyanide				

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

Rinsate Blank #2
ET0746

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0637 mmc

Matrix (soil/water): WATER Lab Sample ID:

Level (low/med): LOW Date Received: 02/17/89 mmc

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	128	B		P
7440-36-0	Antimony	79.9	U		P
7440-38-2	Arsenic	5.0	U		F
7440-39-3	Barium	2.1	U		P
7440-41-7	Beryllium	0.60	U		P
7440-43-9	Cadmium	4.3	U		P
7440-70-2	Calcium	177	B		P
7440-47-3	Chromium	9.0	U		P
7440-48-4	Cobalt	10.2	U		P
7440-50-8	Copper	14.9	B		P
7439-89-6	Iron	306			P
7439-92-1	Lead	2.1	B	S	F
7439-95-4	Magnesium	59.0	B	*	P
7439-96-5	Manganese	5.8	U	N	P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	18.1	U		P
7440-09-7	Potassium	5000	B		P
7782-49-2	Selenium	3.0	U		F
7440-22-4	Silver	82.7	U		P
7440-23-5	Sodium	180	B		P
7440-28-0	Thallium	353	U		P
7440-62-2	Vanadium	30.9	U		P
7440-66-6	Zinc	37.4			P
	Cyanide				

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

Rinsate Blank ET0776 #3

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Matrix (soil/water): WATER Lab Sample ID:

Level (low/med): LOW Date Received: 02/21/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	103	U		P
7440-36-0	Antimony	10.0	U		F
7440-38-2	Arsenic	1.9	U		F
7440-39-3	Barium	2.1	U		P
7440-41-7	Beryllium	0.60	U		P
7440-43-9	Cadmium	4.3	U		P
7440-70-2	Calcium	115	B		P
7440-47-3	Chromium	24.4			P
7440-48-4	Cobalt	10.2	U		P
7440-50-8	Copper	9.4	U		P
7439-89-6	Iron	137			P
7439-92-1	Lead	0.50	U		F
7439-95-4	Magnesium	25.6	U		P
7439-96-5	Manganese	5.8	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	18.1	U		P
7440-09-7	Potassium	383	B		P
7782-49-2	Selenium	3.0	U		F
7440-22-4	Silver	0.30	U		F
7440-23-5	Sodium	159	B		P
7440-28-0	Thallium	0.40	U		F
7440-62-2	Vanadium	30.9	U		P
7440-66-6	Zinc	10.9	B		P
	Cyanide				

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

Rinsate #5
ET0820

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Matrix (soil/water): WATER Lab Sample ID:

Level (low/med): LOW Date Received: 03/01/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	103	U		P
7440-36-0	Antimony	10.0	U		F
7440-38-2	Arsenic	1.9	U		F
7440-39-3	Barium	2.1	U		P
7440-41-7	Beryllium	0.60	U		P
7440-43-9	Cadmium	4.3	U		P
7440-70-2	Calcium	122	B		P
7440-47-3	Chromium	9.0	U		P
7440-48-4	Cobalt	10.2	U		P
7440-50-8	Copper	17.9	B		P
7439-89-6	Iron	112			P
7439-92-1	Lead	0.50	U		F
7439-95-4	Magnesium	25.6	U		P
7439-96-5	Manganese	6.5	B		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	18.1	U		P
7440-09-7	Potassium	355	U		P
7782-49-2	Selenium	3.0	U		F
7440-22-4	Silver	1.5	U		F
7440-23-5	Sodium	267	B		P
7440-28-0	Thallium	0.40	U		F
7440-62-2	Vanadium	30.9	U		P
7440-66-6	Zinc	11.7	B		P
	Cyanide				

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

B. Quality Control Data

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0637

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	10000.0	10082.00	100.8	10000.0	10948.00	109.5	11014.00	110.1	P
Antimony	5000.0	5073.00	101.5	5000.0	5184.00	103.7	5446.00	108.9	P
Arsenic	40.0	42.00	105.0	40.0	41.90	104.8	43.60	109.0	F
Barium	1000.0	1010.39	101.0	1000.0	1005.92	100.6	958.07	95.8	P
Beryllium	500.0	488.20	97.6	500.0	528.40	105.7	541.40	108.3	P
Cadmium	1000.0	1025.90	102.6	1000.0	1043.90	104.4	1099.40	109.9	P
Calcium	10000.0	9034.00	90.3	10000.0	9138.00	91.4			P
Chromium	1000.0	986.50	98.6	1000.0	976.40	97.6	1000.20	100.0	P
Cobalt	1000.0	1044.25	104.4	1000.0	1047.02	104.7	951.54	95.2	P
Copper	1000.0	965.00	96.5	1000.0	1004.00	100.4	1015.90	101.6	P
Iron	10000.0	9766.00	97.7	10000.0	9841.00	98.4	9679.00	96.8	P
Lead	50.0	52.00	104.0	50.0	52.00	104.0	49.80	99.6	F
Magnesium	10000.0	10570.00	105.7	10000.0	10673.00	106.7			P
Manganese	1000.0	986.50	98.6	1000.0	976.40	97.6	1000.20	100.0	
Mercury	6.0	5.22	87.0	6.0	5.55	92.5	6.11	101.8	CV
Nickel	1000.0	992.60	99.3	1000.0	958.40	95.8	1075.20	107.5	P
Potassium	50000.0	49659.00	99.3	50000.0	47947.00	95.9	50640.00	101.3	P
Selenium	40.0	41.40	103.5	40.0	40.80	102.0	40.20	100.5	F
Silver	500.0	509.60	101.9	500.0	512.60	102.5	508.50	101.7	P
Sodium	10000.0	10411.00	104.1	10000.0	10738.00	107.4	10250.00	102.5	P
Thallium	5000.0	4843.51	96.9	5000.0	5013.64	100.3	5124.60	102.5	P
Vanadium	1000.0	1036.85	103.7	1000.0	1047.03	104.7	965.16	96.5	P
Zinc	1000.0	980.00	98.0	1000.0	1000.80	100.1	959.10	95.9	P
Cyanide	561.0			561.0					

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0637

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	10000.0			10000.0	10617.00	106.2	10483.00	104.8	P
Antimony	5000.0			5000.0	5390.00	107.8	5227.00	104.5	P
Arsenic	40.0			40.0	41.80	104.5	43.00	107.5	F
Barium	1000.0			1000.0	939.55	94.0	923.95	92.4	P
Beryllium	500.0			500.0	548.20	109.6	522.50	104.5	P
Cadmium	1000.0			1000.0	1059.60	106.0	1075.00	107.5	P
Calcium	10000.0			10000.0	9739.00	97.4	9588.00	95.9	P
Chromium	1000.0			1000.0	969.00	96.9	1007.90	100.8	P
Cobalt	1000.0			1000.0	992.22	99.2	974.52	97.5	P
Copper	1000.0			1000.0	913.00	91.3			P
Iron	10000.0			10000.0	10535.00	105.4	10449.00	104.5	P
Lead	50.0	52.60	105.2	50.0	51.10	102.2	50.40	100.8	F
Magnesium	10000.0	9651.00	96.5	10000.0			10263.00	102.6	P
Manganese	1000.0			1000.0	969.00	96.9	1007.90	100.8	
Mercury	6.0	6.70	111.7	6.0	6.67	111.2	6.20	103.3	CV
Nickel	1000.0			1000.0	1004.70	100.5	1035.30	103.5	P
Potassium	50000.0			50000.0	54152.00	108.3	54214.00	108.4	P
Selenium	40.0	42.65	106.6	40.0	40.00	100.0	37.40	93.5	F
Silver	500.0			500.0	498.40	99.7			P
Sodium	10000.0			10000.0	10373.00	103.7			P
Thallium	5000.0	5111.90	102.2	5000.0	5218.84	104.4	5105.44	102.1	P
Vanadium	1000.0			1000.0	988.02	98.8	981.26	98.1	P
Zinc	1000.0			1000.0	935.10	93.5	1045.40	104.5	P
Cyanide	561.0			561.0					

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0637

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	10000.0			10000.0	10967.00	109.7			P
Antimony	5000.0			5000.0					
Arsenic	40.0			40.0	40.70	101.8	41.70	104.2	F
Barium	1000.0			1000.0					
Beryllium	500.0			500.0					
Cadmium	1000.0			1000.0					
Calcium	10000.0			10000.0	9848.00	98.5			P
Chromium	1000.0			1000.0					
Cobalt	1000.0			1000.0					
Copper	1000.0			1000.0					
Iron	10000.0			10000.0	10581.00	105.8			P
Lead	50.0	54.23	108.5	50.0	52.00	104.0	45.60	91.2	F
Magnesium	10000.0	9286.00	92.9	10000.0	10486.00	104.9	9588.00	95.9	P
Manganese	1000.0			1000.0					
Mercury	6.0			6.0	6.07	101.2			CV
Nickel	1000.0			1000.0					
Potassium	10000.0			10000.0					
Selenium	40.0	40.60	101.5	40.0	38.70	96.8	36.60	91.5	F
Silver	500.0			500.0					
Sodium	10000.0			10000.0					
Thallium	5000.0			5000.0	5011.32	100.2			P
Vanadium	1000.0			1000.0					
Zinc	1000.0			1000.0					
Cyanide	561.0			561.0					

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0637

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	10000.0			10000.0					
Antimony	5000.0			5000.0					
Arsenic	40.0			40.0	39.10	97.8	39.10	97.8	F
Barium	1000.0			1000.0					
Beryllium	500.0			500.0					
Cadmium	1000.0			1000.0					
Calcium	10000.0			10000.0					
Chromium	1000.0			1000.0					
Cobalt	1000.0			1000.0					
Copper	1000.0			1000.0					
Iron	10000.0			10000.0					
Lead	50.0	52.60	105.2	50.0	46.50	93.0	55.00	110.0	F
Magnesium	10000.0			10000.0	10276.00	102.8	9077.00	90.8	P
Manganese	1000.0			1000.0					
Mercury	3.0			3.0					
Nickel	1000.0			1000.0					
Potassium	10000.0			10000.0					
Selenium	40.0			40.0	42.86	107.2	40.22	100.6	F
Silver	500.0			500.0					
Sodium	10000.0			10000.0					
Thallium	5000.0			5000.0					
Vanadium	1000.0			1000.0					
Zinc	1000.0			1000.0					
Cyanide	561.0			561.0					

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0637

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	10000.0			10000.0					
Antimony	5000.0			5000.0					
Arsenic	40.0			40.0	39.80	99.5			F
Barium	1000.0			1000.0					
Beryllium	500.0			500.0					
Cadmium	1000.0			1000.0					
Calcium	10000.0			10000.0					
Chromium	1000.0			1000.0					
Cobalt	1000.0			1000.0					
Copper	1000.0			1000.0					
Iron	10000.0			10000.0					
Lead	50.0	53.80	107.6	50.0	53.83	107.7	50.80	101.6	F
Magnesium	10000.0			10000.0	9124.00	91.2			
Manganese	1000.0			1000.0					
Mercury	3.0			3.0					
Nickel	1000.0			1000.0					
Potassium	10000.0			10000.0					
Selenium	40.0			40.0	38.04	95.1	39.62	99.0	F
Silver	500.0			500.0					
Sodium	10000.0			10000.0					
Thallium	5000.0			5000.0					
Vanadium	1000.0			1000.0					
Zinc	1000.0			1000.0					
Cyanide	561.0			561.0					

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0637

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	10000.0			10000.0					
Antimony	5000.0			5000.0					
Arsenic	40.0			40.0					
Barium	1000.0			1000.0					
Beryllium	500.0			500.0					
Cadmium	1000.0			1000.0					
Calcium	10000.0			10000.0					
Chromium	1000.0			1000.0					
Cobalt	1000.0			1000.0					
Copper	1000.0			1000.0					
Iron	10000.0			10000.0					
Lead	50.0			50.0	50.90	101.8	50.60	101.2	F
Magnesium	10000.0			10000.0					
Manganese	1000.0			1000.0					
Mercury	3.0			3.0					
Nickel	1000.0			1000.0					
Potassium	10000.0			10000.0					
Selenium	40.0			40.0	39.90	99.8	37.40	93.5	F
Silver	500.0			500.0					
Sodium	10000.0			10000.0					
Thallium	5000.0			5000.0					
Vanadium	1000.0			1000.0					
Zinc	1000.0			1000.0					
Cyanide	561.0			561.0					

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0637

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Aluminum	10000.0			10000.0					
Antimony	5000.0			5000.0					
Arsenic	40.0			40.0					
Barium	1000.0			1000.0					
Beryllium	500.0			500.0					
Cadmium	1000.0			1000.0					
Calcium	10000.0			10000.0					
Chromium	1000.0			1000.0					
Cobalt	1000.0			1000.0					
Copper	1000.0			1000.0					
Iron	10000.0			10000.0					
Lead	50.0			50.0	48.40	96.8	51.90	103.8	F
Magnesium	10000.0			10000.0					
Manganese	1000.0			1000.0					
Mercury	3.0			3.0					
Nickel	1000.0			1000.0					
Potassium	10000.0			10000.0					
Selenium	40.0			40.0					
Silver	500.0			500.0					
Sodium	10000.0			10000.0					
Thallium	5000.0			5000.0					
Vanadium	1000.0			1000.0					
Zinc	1000.0			1000.0					
Cyanide	561.0			561.0					

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0637

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	10000.0			10000.0					
Antimony	5000.0			5000.0					
Arsenic	40.0			40.0					
Barium	1000.0			1000.0					
Beryllium	500.0			500.0					
Cadmium	1000.0			1000.0					
Calcium	10000.0			10000.0					
Chromium	1000.0			1000.0					
Cobalt	1000.0			1000.0					
Copper	1000.0			1000.0					
Iron	10000.0			10000.0					
Lead	50.0			50.0	53.40	106.8	53.50	107.0	F
Magnesium	10000.0			10000.0					
Manganese	1000.0			1000.0					
Mercury	3.0			3.0					
Nickel	1000.0			1000.0					
Potassium	10000.0			10000.0					
Selenium	40.0			40.0					
Silver	500.0			500.0					
Sodium	10000.0			10000.0					
Thallium	5000.0			5000.0					
Vanadium	1000.0			1000.0					
Zinc	1000.0			1000.0					
Cyanide	561.0			561.0					

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	10000.0	10282.30	102.8	10000.0	10423.70	104.2	10087.60	100.9	P
Antimony	100.0	98.63	98.6	100.0	96.47	96.5	94.45	94.4	F
Arsenic	40.0	42.00	105.0	40.0	41.90	104.8	41.80	104.5	F
Barium	1000.0	953.96	95.4	1000.0	986.81	98.7	990.45	99.0	P
Beryllium	500.0	482.81	96.6	500.0	510.36	102.1	519.54	103.9	P
Cadmium	1000.0	1021.66	102.2	1000.0	1102.72	110.3	1067.47	106.7	P
Calcium	25000.0	25719.00	102.9	25000.0	26283.00	105.1	27288.00	109.2	P
Chromium	1000.0	1028.35	102.8	1000.0	1021.39	102.1	1051.40	105.1	P
Cobalt	1000.0	976.58	97.7	1000.0	1024.47	102.4	1038.83	103.9	P
Copper	1000.0	938.48	93.8	1000.0	981.32	98.1	985.34	98.5	P
Iron	10000.0	10506.80	105.1	10000.0	10347.50	103.5	10077.00	100.8	P
Lead	50.0	52.20	104.4	50.0	52.90	105.8	50.30	100.6	F
Magnesium	10000.0	9338.85	93.4	10000.0	9332.59	93.3	10298.00	103.0	P
Manganese	1000.0	1000.62	100.1	1000.0	1007.47	100.7	1035.09	103.5	P
Mercury	6.0	5.91	98.5	6.0	5.30	88.3	5.60	93.3	CV
Nickel	1000.0	1021.93	102.2	1000.0	999.31	99.9	1023.00	102.3	P
Potassium	10000.0	10535.00	105.4	10000.0	10639.00	106.4	10964.00	109.6	P
Selenium	40.0	40.80	102.0	40.0	42.70	106.8	43.30	108.2	F
Silver	40.0	39.43	98.6	40.0	36.10	90.2	38.30	95.8	F
Sodium	10000.0	10024.70	100.2	10000.0	10229.60	102.3	10673.50	106.7	P
Thallium	40.0	42.50	106.2	40.0	41.07	102.7	39.88	99.7	F
Vanadium	1000.0	1052.84	105.3	1000.0	1063.84	106.4	1073.19	107.3	P
Zinc	1000.0	917.16	91.7	1000.0	993.31	99.3	964.79	96.5	P
Cyanide	561.0			561.0					

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	10000.0			10000.0	10172.70	101.7			P
Antimony	100.0			100.0	94.76	94.8	100.68	100.7	F
Arsenic	40.0	41.91	104.8	40.0	43.00	107.5	42.33	105.8	F
Barium	1000.0			1000.0	1003.34	100.3	1019.78	102.0	P
Beryllium	500.0			500.0	508.36	101.7			P
Cadmium	1000.0			1000.0	1053.08	105.3			P
Calcium	25000.0	25702.00	102.8	25000.0	24814.00	99.3	22837.00	91.3	P
Chromium	1000.0	998.65	99.9	1000.0	1035.67	103.6	1044.12	104.4	P
Cobalt	1000.0			1000.0	991.40	99.1			P
Copper	1000.0			1000.0	930.27	93.0			P
Iron	10000.0			10000.0	10069.40	100.7	10006.70	100.1	P
Lead	50.0	52.60	105.2	50.0	48.30	96.6	48.30	96.6	F
Magnesium	10000.0			10000.0	10673.80	106.7			P
Manganese	1000.0	981.65	98.2	1000.0	1038.29	103.8	1027.82	102.8	P
Mercury	6.0	6.70	111.7	6.0	6.20	103.3	6.07	101.2	CV
Nickel	1000.0	1015.17	101.5	1000.0	1010.92	101.1	1032.62	103.3	P
Potassium	10000.0			10000.0	11005.00	110.0			P
Selenium	40.0	40.60	101.5	40.0	41.10	102.8	40.70	101.8	F
Silver	40.0	40.79	102.0	40.0	43.90	109.8	40.61	101.5	F
Sodium	10000.0			10000.0	10650.70	106.5			P
Thallium	40.0	37.93	94.8	40.0	42.64	106.6	39.70	99.2	F
Vanadium	1000.0			1000.0	1070.58	107.1	1083.98	108.4	P
Zinc	1000.0			1000.0	951.41	95.1	974.02	97.4	P
Cyanide	561.0			561.0					

SES 2MAY89

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	10000.0			10000.0					
Antimony	100.0			100.0	97.43	97.4			F
Arsenic	40.0	39.20	98.0	40.0	40.25	100.6	43.97	109.9	F
Barium	1000.0			1000.0					
Beryllium	500.0			500.0					
Cadmium	1000.0			1000.0					
Calcium	25000.0			25000.0	23790.00	95.2			P
Chromium	1000.0			1000.0	1051.86	105.2			P
Cobalt	1000.0			1000.0					
Copper	1000.0			1000.0					
Iron	10000.0			10000.0					
Lead	50.0	53.80	107.6	50.0	51.40	102.8	51.40	102.8	F
Magnesium	10000.0			10000.0					
Manganese	1000.0			1000.0	959.67	96.0			P
Mercury	6.0			6.0	6.10	101.7			CV
Nickel	1000.0			1000.0	1070.72	107.1			P
Potassium	10000.0			10000.0					
Selenium	40.0	43.70	109.2	40.0	39.90	99.8	37.40	93.5	F
Silver	40.0			40.0	42.49	106.2	42.13	105.3	F
Sodium	10000.0			10000.0					
Thallium	40.0			40.0	40.87	102.2			F
Vanadium	1000.0			1000.0					
Zinc	1000.0			1000.0					
Cyanide	561.0			561.0					

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	10000.0			10000.0					
Antimony	100.0			100.0					
Arsenic	40.0	39.20	98.0	40.0	39.76	99.4	41.73	104.3	F
Barium	1000.0			1000.0					
Beryllium	500.0			500.0					
Cadmium	1000.0			1000.0					
Calcium	25000.0			25000.0					
Chromium	1000.0			1000.0					
Cobalt	1000.0			1000.0					
Copper	1000.0			1000.0					
Iron	10000.0			10000.0					
Lead	50.0	52.60	105.2	50.0	50.80	101.6	50.90	101.8	F
Magnesium	10000.0			10000.0					
Manganese	1000.0			1000.0					
Mercury	2.5			2.5					
Nickel	1000.0			1000.0					
Potassium	10000.0			10000.0					
Selenium	40.0			40.0	36.70	91.8	37.50	93.8	F
Silver	40.0			40.0					
Sodium	10000.0			10000.0					
Thallium	50.0			50.0					
Vanadium	1000.0			1000.0					
Zinc	1000.0			1000.0					
Cyanide	561.0			561.0					

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	10000.0			10000.0					
Antimony	100.0			100.0					
Arsenic	40.0			40.0	42.02	105.0	39.10	97.8	F
Barium	1000.0			1000.0					
Beryllium	500.0			500.0					
Cadmium	1000.0			1000.0					
Calcium	25000.0			25000.0					
Chromium	1000.0			1000.0					
Cobalt	1000.0			1000.0					
Copper	1000.0			1000.0					
Iron	10000.0			10000.0					
Lead	50.0			50.0	50.60	101.2	53.40	106.8	F
Magnesium	10000.0			10000.0					
Manganese	1000.0			1000.0					
Mercury	2.5			2.5					
Nickel	1000.0			1000.0					
Potassium	10000.0			10000.0					
Selenium	40.0			40.0	43.20	108.0	40.60	101.5	F
Silver	40.0			40.0					
Sodium	10000.0			10000.0					
Thallium	50.0			50.0					
Vanadium	1000.0			1000.0					
Zinc	1000.0			1000.0					
Cyanide	561.0			561.0					

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	10000.0			10000.0					
Antimony	100.0			100.0					
Arsenic	40.0			40.0	35.90	89.8	37.70	94.2	F
Barium	1000.0			1000.0					
Beryllium	500.0			500.0					
Cadmium	1000.0			1000.0					
Calcium	25000.0			25000.0					
Chromium	1000.0			1000.0					
Cobalt	1000.0			1000.0					
Copper	1000.0			1000.0					
Iron	10000.0			10000.0					
Lead	50.0			50.0	51.90	103.8	52.40	104.8	F
Magnesium	10000.0			10000.0					
Manganese	1000.0			1000.0					
Mercury	2.5			2.5					
Nickel	1000.0			1000.0					
Potassium	10000.0			10000.0					
Selenium	40.0			40.0					
Silver	40.0			40.0					
Sodium	10000.0			10000.0					
Thallium	50.0			50.0					
Vanadium	1000.0			1000.0					
Zinc	1000.0			1000.0					
Cyanide	561.0			561.0					

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	10000.0			10000.0					
Antimony	100.0			100.0					
Arsenic	40.0			40.0	39.00	97.5	39.00	97.5	F
Barium	1000.0			1000.0					
Beryllium	500.0			500.0					
Cadmium	1000.0			1000.0					
Calcium	25000.0			25000.0					
Chromium	1000.0			1000.0					
Cobalt	1000.0			1000.0					
Copper	1000.0			1000.0					
Iron	10000.0			10000.0					
Lead	50.0			50.0					
Magnesium	10000.0			10000.0					
Manganese	1000.0			1000.0					
Mercury	2.5			2.5					
Nickel	1000.0			1000.0					
Potassium	10000.0			10000.0					
Selenium	40.0			40.0					
Silver	40.0			40.0					
Sodium	10000.0			10000.0					
Thallium	50.0			50.0					
Vanadium	1000.0			1000.0					
Zinc	1000.0			1000.0					
Cyanide	561.0			561.0					

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	10000.0			10000.0					
Antimony	100.0			100.0					
Arsenic	40.0			40.0	37.90	94.8			F
Barium	1000.0			1000.0					
Beryllium	500.0			500.0					
Cadmium	1000.0			1000.0					
Calcium	25000.0			25000.0					
Chromium	1000.0			1000.0					
Cobalt	1000.0			1000.0					
Copper	1000.0			1000.0					
Iron	10000.0			10000.0					
Lead	50.0			50.0					
Magnesium	10000.0			10000.0					
Manganese	1000.0			1000.0					
Mercury	2.5			2.5					
Nickel	1000.0			1000.0					
Potassium	10000.0			10000.0					
Selenium	40.0			40.0					
Silver	40.0			40.0					
Sodium	10000.0			10000.0					
Thallium	50.0			50.0					
Vanadium	1000.0			1000.0					
Zinc	1000.0			1000.0					
Cyanide	561.0			561.0					

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Initial Calibration Source:

C ntinuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	0.0			0.0					
Antimony	0.0			0.0					
Arsenic	10000.0			10000.0					
Barium	1000.0			1000.0					
Beryllium	0.0			0.0					
Cadmium	1000.0			1000.0					
Calcium	0.0			0.0					
Chromium	1000.0			1000.0					
Cobalt	0.0			0.0					
Copper	0.0			0.0					
Iron	0.0			0.0					
Lead	1000.0			1000.0					
Magnesium	0.0			0.0					
Manganese	0.0			0.0					
Mercury	3.0	2.95	98.3	3.0	2.88	96.0	2.87	95.7	CV
Nickel	0.0			0.0					
Potassium	0.0			0.0					
Selenium	5000.0			5000.0					
Silver	500.0			500.0					
Sodium	0.0			0.0					
Thallium	0.0			0.0					
Vanadium	0.0			0.0					
Zinc	0.0			0.0					
Cyanide	0.0			0.0					

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	0.0			0.0					
Antimony	0.0			0.0					
Arsenic	10000.0			10000.0					
Barium	1000.0			1000.0					
Beryllium	0.0			0.0					
Cadmium	1000.0			1000.0					
Calcium	0.0			0.0					
Chromium	1000.0			1000.0					
Cobalt	0.0			0.0					
Copper	0.0			0.0					
Iron	0.0			0.0					
Lead	1000.0			1000.0					
Magnesium	0.0			0.0					
Manganese	0.0			0.0					
Mercury	3.0			3.0	3.22	107.3	3.31	110.3	CV
Nickel	0.0			0.0					
Potassium	0.0			0.0					
Selenium	5000.0			5000.0					
Silver	500.0			500.0					
Sodium	0.0			0.0					
Thallium	0.0			0.0					
Vanadium	0.0			0.0					
Zinc	0.0			0.0					
Cyanide	0.0			0.0					

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

3
BLANKS

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0637

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			103.0	U	103.0	U	103.0	U	10.300	U	P
Antimony	79.9	U	79.9	U	79.9	U	79.9	U	7.990	U	P
Arsenic	5.0	U	5.0	U	5.0	U	5.0	U	0.500	U	F
Barium	8.7	B	-6.2	B	-16.1	B	-12.2	B	-2.354	B	P
Beryllium	0.6	U	0.6	U	0.6	U	0.6	U	-0.070	B	P
Cadmium	7.5		-7.1		4.3	U	-10.8		0.430	U	P
Calcium	34.0	U	49.0	B			34.0	U	6.600	B	P
Chromium	9.0	U	9.0	U	9.0	U	9.0	U	0.900	U	P
Cobalt	10.2	U	10.2	U	10.2	U	10.2	U	1.020	U	P
Copper	-24.9	B	-23.2	B	9.4	U	21.1	B	0.940	U	P
Iron	37.6	U	37.6	U	37.6	U	37.6	U	3.760	U	P
Lead	2.6	B	1.6	B	1.5	B	3.6	B	0.550		F
Magnesium	25.6	U	90.0	B					7.600	B	P
Manganese	5.8	U	-8.4	B	5.8	U	-7.0	B	0.580	U	P
Mercury	0.2		0.2		0.2		0.2	U	0.100	U	CV
Nickel	18.1	U	18.1	U	18.1	U	18.1	U	1.810	U	P
Potassium	-1554.0	B	-774.0	B	-1146.0	B	3908.0	B	35.500	U	P
Selenium	3.0	U	3.0	U	3.0	U	3.0	U	0.300	U	F
Silver	82.7	U	82.7	U	82.7	U	82.7	U	8.270	U	P
Sodium	84.8	U	84.8	U	84.8	U	-180.0	B	16.000	B	P
Thallium	353.0	U	353.0	U	353.0	U	353.0	U	35.300	U	P
Vanadium	30.9	U	30.9	U	30.9	U	30.9	U	3.090	U	P
Zinc	67.9		6.9	U	48.8				4.630		P
Cyanide											

U.S. EPA - CLP

3
BLANKS

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0637

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			-104.0	B	103.0	U					P
Antimony			79.9	U							P
Arsenic			5.0	U	5.0	U	5.0	U			F
Barium			-11.7	B							P
Beryllium			0.6	U							P
Cadmium			-8.4								P
Calcium			34.0	U	34.0	U					P
Chromium			9.0	U							P
Cobalt			10.2	U							P
Copper											
Iron			37.6	U	37.6	U					P
Lead	4.1	B	2.7	B	4.8	B	2.1	B			F
Magnesium	25.6	U	51.0	B	43.0	B	131.0	B			P
Manganese			-7.1	B							
Mercury	0.2	U	0.2	U	0.2	U					CV
Nickel			18.1	U							P
Potassium			3598.0	B							P
Selenium	3.0	U	3.0	U	3.0	U	3.0	U			F
Silver											
Sodium											
Thallium	353.0	U	353.0	U	353.0	U					P
Vanadium			30.9	U							P
Zinc			-8.2	B							P
Cyanide											

U.S. EPA - CLP

3
BLANKS

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0637

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic			5.0	U	5.0	U	5.0	U			F
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead	0.5	U	1.4	B	0.5	U	-1.0	B			F
Magnesium	402.	B	56.0	B	25.6	U	146	B			P
Manganese											
Mercury											
Nickel											
Potassium											
Selenium	3.0	U	3.0	U	3.0	U	3.0	U			F
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

U.S. EPA - CLP

3
BLANKS

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0637

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead	-3.0	B	-3.6	B	-3.1	B	-3.3	B			F
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium			3.0	U	3.0	U	3.0	U			F
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

U.S. EPA - CLP

3
BLANKS

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0637

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead	0.5	U	-4.0	B			0.5	U			F
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

U.S. EPA - CLP

3
BLANKS

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0637

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead			-1.7	B							F
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

U.S. EPA - CLP

3
BLANKS

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	103.0	U	103.0	U	103.0	U	103.0	U	10.300	U	P
Antimony	10.0	U	10.0	U	10.0	U	10.0	U	1.000	U	F
Arsenic	1.9	U	1.9	U	1.9	U	1.9	B	0.310	B	F
Barium	2.5	B	2.1	U	2.1	U	-6.5	B	-0.808	B	P
Beryllium	0.6	U	0.6	U	0.6	U	0.8	B	0.060	U	P
Cadmium	4.3	U	4.3	U	4.3	U	4.3	U	0.430	U	P
Calcium	34.0	U	68.0	B	34.0	U	34.0	U	42.700	B	P
Chromium	9.0	U	9.0	U	9.0	U	9.0	U	0.900	U	P
Cobalt	10.2	U	10.2	U	10.2	U	10.2	U	1.020	U	P
Copper	9.4	U	9.4	U	9.4	U	9.4	U	0.940	U	P
Iron	40.8	B	56.8	B	61.1	B	39.4	B	26.371		P
Lead	-2.7	B	-1.9	B	-2.2	B	-2.8	B	-0.180	B	F
Magnesium	25.6	U	25.6	U	25.6	U	25.6	U	3.926	B	P
Manganese	5.8	U	5.8	U	5.8	U	5.8	U	0.580	U	P
Mercury	0.2	U	0.2	U	0.2	U	0.2	U	0.100	U	CV
Nickel	-22.0	B	18.1	U	18.1	U	18.1	U	1.810	U	P
Potassium	355.0	U	355.0	U	398.0	B	483.0	B	66.900	B	P
Selenium	3.0	U	3.0	U	3.0	U	3.0	U	0.300	U	F
Silver	-4.7	B	-2.3	B	-3.6	B	-2.7	B	-0.088	B	F
Sodium	84.8	U	84.8	U	84.8	U	168.9	B	24.526	B	P
Thallium	-2.0	B	-1.0	B	-1.3	B	0.4	U	-0.248	B	F
Vanadium	30.9	U	30.9	U	30.9	U	30.9	U	3.090	U	P
Zinc	13.2	B	-17.6	B	6.9	U	-20.9		-2.346		P
Cyanide											

U.S. EPA - CLP

3
BLANKS

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony			10.0	U	10.0	U					F
Arsenic	1.9	U	1.9	U	1.9	U	1.9	U			F
Barium			-10.5	B							P
Beryllium											
Cadmium											
Calcium	34.0	U	34.0	U	34.0	U					P
Chromium	18.3		9.0	U	28.8						P
Cobalt											
Copper											
Iron			37.6	U							P
Lead	-3.0	B	-1.4	B	-2.2	B	-1.5	B			F
Magnesium											
Manganese	5.8	U	5.8	U	5.8	U					P
Mercury	0.2	U	0.2	U	0.2	U					CV
Nickel	35.0	B	-22.3	B	21.4	B					P
Potassium											
Selenium	3.0	U	3.0	U	3.0	U	3.0	U			F
Silver	-4.8	B	-5.3	B	-6.5	B	-5.7	B			F
Sodium											
Thallium	-2.7	B	-3.1	B	-2.7	B					F
Vanadium			30.9	U							P
Zinc			-17.1	B							P
Cyanide											

FORM III - IN

U.S. EPA - CLP

3
BLANKS

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic	1.9	U	1.9	U	1.9	U	1.9	U			F
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead	0.5	U	-3.6	B	-3.1	B	-3.3	B			F
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium	3.0	U	3.0	U	3.0	U	3.0	U			F
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

U.S. EPA - CLP

3
BLANKS

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic	1.9	U	1.9	U	1.9	U	1.9	U			F
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead			0.5	U	0.5	U	0.5	U			F
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium			3.0	U							F
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

U.S. EPA - CLP

3
BLANKS

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic			1.9	U	1.9	U	1.9	U			F
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead											
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

U.S. EPA - CLP

3
BLANKS

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG N .: ET0751

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead											
Magnesium											
Manganese											
Mercury	0.2	U	0.2	U	0.2	U	0.2	U	0.100	U	CV
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

U.S. EPA - CLP

3
BLANKS

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Pr paration Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead											
Magnesium											
Manganese											
Mercury			0.2	U							CV
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

U.S. EPA - CLP

4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0637

ICP ID Number: ICS Source:

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum	500000	500000						
Antimony								
Arsenic								
Barium	0	500	12	478.8	95.8	-15	432.8	86.6
Beryllium	0	500	0	436.7	87.3	-1	483.5	96.7
Cadmium	0	1000	-21	874.6	87.5	-30	945.2	94.5
Calcium	500000	500000						
Chromium	0	500	532	679.8	136.0	515	766.1	153.2
Cobalt	0	500	1	452.9	90.6	-5	401.6	80.3
Copper	0	500	-39	434.6	86.9	39	384.0	76.8
Iron	200000	200000						
Lead	0	1000						
Magnesium	500000	500000						
Manganese	0	500						
Mercury								
Nickel	0	1000	22	815.7	81.6	13	823.3	82.3
Potassium								
Selenium								
Silver			-3	987.5	0.0	-22	941.0	0.0
Sodium								
Thallium								
Vanadium	0	500	24	479.0	95.8	30	441.0	88.2
Zinc	0	1000	78	876.8	87.7	58	57.9	5.8

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

ICP ID Number: ICS Source:

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum	500000	500000						
Antimony								
Arsenic								
Barium	0	500	30	492.7	98.5	-16	474.4	94.9
Beryllium	0	500	0	455.7	91.1	0	441.0	88.2
Cadmium	0	1000	-2	874.4	87.4	-4	823.4	82.3
Calcium	500000	500000						
Chromium	0	500	-1	463.4	92.7	15	467.7	93.5
Cobalt	0	500	-4	420.7	84.1	-7	420.1	84.0
Copper	0	500	3	437.4	87.5	71	433.3	86.7
Iron	200000	200000						
Lead	0	1000						
Magnesium	500000	500000						
Manganese	0	500	-5	457.3	91.5	-5	439.9	88.0
Mercury								
Nickel	0	1000	-26	869.5	87.0	16	835.6	83.6
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Vanadium	0	500	-1	443.6	88.7	-4	29.5	5.9
Zinc	0	1000	-22	843.3	84.3	-19	37.8	3.8

U.S. EPA - CLP

4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

ICP ID Number: ICS Source:

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum	0	0						
Antimony	0	0						
Arsenic	0	0						
Barium	0	500						
Beryllium	0	0						
Cadmium	0	0						
Calcium	0	0						
Chromium	0	500						
Cobalt	0	0						
Copper	0	0						
Iron	0	0						
Lead	0	1000						
Magnesium	0	0						
Manganese	0	0						
Mercury	0	0						
Nickel	0	0						
Potassium	0	0						
Selenium	0	0						
Silver	0	1000						
Sodium	0	0						
Thallium	0	0						
Vanadium	0	0						
Zinc	0	0						

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

ET0638S

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0637

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum		15420.1090		14960.0420		176.6	260.5		P
Antimony	75-125	18.3709		8.5355	U	44.2	41.6	N	P
Arsenic	75-125	24.2777		22.0790		5.5	40.0	N	F
Barium	75-125	159.8369		51.7947		176.6	61.2	N	P
Beryllium	75-125	4.9902		0.8653		4.4	93.7		P
Cadmium	75-125	3.9480		0.6516		4.4	74.9	N	P
Calcium									NR
Chromium		629.5581		626.3263		17.7	18.3		P
Cobalt	75-125	47.1865		10.8716		44.2	82.2		P
Copper	75-125	29.4730		10.3729		22.1	86.4		P
Iron									NR
Lead	75-125	10.7531		6.4033		2.2	197.7	N	F
Magnesium									NR
Manganese	75-125	630.0000		626.0000		177.0	2.3	N	P
Mercury	75-125	0.3238		0.0131		0.2	155.4	N	CV
Nickel	75-125	52.3749		13.4175		44.2	88.1		P
Potassium									NR
Selenium									NR
Silver	75-125	7.3042	U	8.8346	U	4.4	0.0	N	P
Sodium									NR
Thallium	75-125	133.9895		37.7099	U	176.6	75.9		P
Vanadium	75-125	64.3191		28.9475		44.2	80.0		P
Zinc	75-125	73.5103		39.5901		44.2	76.7		P
Cyanide									NR

Comments:

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

ET0638S

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony									NR
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese									NR
Mercury	75-125	0.3238		0.0131		0.3	103.6		CV
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

Comments:

U.S. EPA - CLP

5B
POST DIGEST SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

ET0638A

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0637

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony									NR
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium		8705.00		2521.00	B	5000.0	123.7		P
Manganese									NR
Mercury									NR
Nickel									NR
Potassium		19351.00		18820.00		2000.0	26.6		P
Selenium									NR
Silver									NR
Sodium									NR
Thallium		1316.01		353.00	U	1000.0	131.6		P
Vanadium									NR
Zinc									NR
Cyanide									NR

Comments:

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

ET0775S

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	29.3765		0.7239	U	4.9	599.5	N	F
Arsenic	75-125	21.8718		15.9003		5.4	110.6		F
Barium	75-125	893.1387		175.9143		197.6	363.0	N	P
Beryllium	75-125	6.1053		1.2127		4.9	99.8		P
Cadmium	75-125	4.6886		0.6874		4.9	81.7		P
Calcium									NR
Chromium	75-125	37.8052		21.5392		19.8	82.2		P
Cobalt	75-125	58.8574		9.4028		49.4	100.1		P
Copper	75-125	51.1831		25.3059		24.7	104.8		P
Iron									NR
Lead		66.5006		57.6303		2.2	403.2		F
Magnesium									NR
Manganese		3197.3508		1004.7135		49.4	4438.5		P
Mercury									NR
Nickel	75-125	63.0950		12.8788		49.4	101.7		P
Potassium									NR
Selenium	75-125	0.5830		0.2834	U	1.1	53.0	N	F
Silver		5.7994		3.5353		0.5	452.8		F
Sodium									NR
Thallium	75-125	5.2186		0.0378	U	5.4	96.6		F
Vanadium	75-125	83.1921		37.0525		49.4	93.4		P
Zinc	75-125	91.5216		57.1752		49.4	69.5	N	P
Cyanide									NR

Comments:

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

S

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Matrix (soil/water): Level (low/med):

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony									NR
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

Comments:

U.S. EPA - CLP

5B
POST DIGEST SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

ET0775A

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony									NR
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium		16814.00		6283.00		10000.0	105.3		P
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium		15781.10		5063.88		10000.0	107.2		P
Manganese		2434.19		693.99		2000.0	87.0		P
Mercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium		6414.93		1277.62	B	5000.0	102.7		P
Thallium									NR
Vanadium									NR
Zinc		1315.96		394.93		1000.0	92.1		P
Cyanide									NR

Comments:
ET0775A for Ca run 2x

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5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

ET0775S

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Matrix (soil/water): SOIL Level (low/m d): LOW

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony									NR
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese									NR
Mercury	75-125	3.0555		1.2002		1.3	142.7	N	CV
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

Comm nts:

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

ET0780S

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Matrix (soil/water): SOIL Level (low/m d): LOW

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony									NR
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese									NR
Mercury	75-125	2.5169		0.3235		1.1	199.4	N	CV
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

Comments:

U.S. EPA - CLP

5B
POST DIGEST SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

A

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Matrix (soil/water): Level (low/m d):

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony									NR
Arsenic									NR
Barium									NR
B ryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

C mm nts:

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6
DUPLICATES

EPA SAMPLE NO.

ET0637D

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0637

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 83.8 % Solids for Duplicate: 0.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		16430.3810		15382.5700		6.6		P
Antimony	5.7	7.6112	U	9.3808	U			P
Arsenic	9.5	19.5282		12.5492		43.5		F
Barium	19.1	99.1100		86.4466		13.6		P
Beryllium	0.5	1.2479		1.1388		9.1		P
Cadmium	0.5	11.0311		2.8647		117.5	*	P
Calcium	476.3	867.4342		1453.9594		50.5	*	P
Chromium		581.4648		562.8457		3.3		P
Cobalt	4.8	10.8333		11.7977		8.5		P
Copper		33.5600		59.7833		56.2	*	P
Iron		24100.6870		28271.4320		15.9		P
Lead		7.7160		6.4276		18.2		F
Magnesium		2270.0000		1609.2879		34.1	*	P
Manganese		616.0000		563.0000		9.0		P
Mercury	0.0	0.0231		0.0186		21.6	*	CV
Nickel	3.8	12.9744		12.9617		0.1		P
Potassium	2381.5	10755.7650		15413.0960		35.6	*	P
Selenium	0.5	0.2858	U	0.2296	U			F
Silver	11.9	98.6874	U	9.7095	U			P
Sodium	476.3	58.8705	B	94.9817	B	46.9		P
Thallium		33.6267	U	41.4444	U			P
Vanadium	4.8	21.8222		24.6155		12.0		P
Zinc		46.5724		48.7940		4.7		P
Cyanide								

U.S. EPA - CLP

6
DUPLICATES

EPA SAMPLE NO.

ET0637D

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0~~751~~ 637

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 83.8 % Solids for Duplicate: 83.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury	0.0	0.0231		0.0186		21.6	*	CV
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								
Cyanide								

U.S. EPA - CLP

6
DUPLICATES

EPA SAMPLE NO.

ET0775D

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 83.7 % Solids for Duplicate: 83.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		20180.1560		18660.0820		7.8		P
Antimony	4.3	0.7239	U	1.0860	U			F
Arsenic	9.4	15.9003		16.4508		3.4		F
Barium	72.4	175.9143		153.5029		13.6		P
Beryllium	0.4	1.2127		1.2626		4.0		P
Cadmium	0.4	0.6874		0.6911		0.5		P
Calcium	1809.7	1571.1542		1420.7463		10.1		P
Chromium		21.5392		20.1500		6.7		P
Cobalt	3.6	9.4028		10.0259		6.4		P
Copper		25.3059		28.2437		11.0		P
Iron		22688.8990		23069.3700		1.7		P
Lead		57.6303		64.9909		12.0		F
Magnesium	1809.7	1832.7888		1704.6512	B	7.2		P
Manganese		1004.7135		884.4097		12.7		P
Mercury								CV
Nickel	2.9	12.8788		10.8076		17.5		P
Potassium								P
Selenium	0.5	0.2834	U	0.3207	U			F
Silver	0.9	3.5353		4.4777		23.5	*	F
Sodium	361.9	92.4827	B	93.0680	B	0.6		P
Thallium	0.9	0.0378	U	0.0428	U			F
Vanadium		37.0525		34.8209		6.2		P
Zinc								P
Cyanide								

U.S. EPA - CLP

6
DUPLICATES

EPA SAMPLE NO.

ET0775D

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Matrix (soil/water): SOIL Level (low/m d): LOW

% Solids for Sample: 83.7 % Solids for Duplicate: 83.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury		1.2002		1.0126		17.0		CV
Nickel								
Potassium								
S lenium								
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								
Cyanide								

U.S. EPA - CLP

6
DUPLICATES

EPA SAMPLE NO.

ET0780D

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Matrix (soil/water): SOIL Level (low/m d): LOW

% Solids for Sample: 83.1 % Solids for Duplicat : 83.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury	0.1	0.3235		0.4574		34.3	*	CV
Nickel								
Potassium								
S lenium								
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								
Cyanide								

U.S. EPA - CLP

8
STANDARD ADDITION RESULTS

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0637

Concentration Units: ug/L

EPA Sample No.	An	Dil	0 ADD ABS	1 ADD CON	1 ADD ABS	2 ADD CON	2 ADD ABS	3 ADD CON	3 ADD ABS	Final Conc.	r	Q
ET0749	AS	10	0.113	10	0.161	20	0.198	30	0.242	271.0	0.9989	
ET0638	PB	5	0.049	10	0.083	20	0.120	30	0.150	72.8	0.9992	
ET0745	PB	20	0.153	10	0.185	20	0.214	30	0.246	995.5	0.9998	
ET0746	PB	1	0.004	10	0.048	20	0.080	30	0.113	2.1	0.9970	
ET0748	PB	20	0.027	10	0.068	20	0.101	30	0.138	156.3	0.9992	

U.S. EPA - CLP

8
STANDARD ADDITION RESULTS

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Concentration Units: ug/L

EPA Sample No.	An	Dil	0 ADD ABS	1 ADD CON	1 ADD ABS	2 ADD CON	2 ADD ABS	3 ADD CON	3 ADD ABS	Final Conc.	r	Q
ET0781	AS	1	0.029	10	0.062	20	0.086	30	0.104	13.2	0.9910	+
ET0822	AS	1	0.056	10	0.088	20	0.116	30	0.140	20.6	0.9971	
ET0775	PB	20	0.100	10	0.137	20	0.171	30	0.200	610.0	0.9986	
ET0775D	PB	20	0.130	10	0.178	20	0.219	30	0.261	608.0	0.9994	
ET0777	PB	10	0.071	10	0.101	20	0.127	30	0.156	255.0	0.9997	
ET0781	PB	10	0.056	10	0.088	20	0.113	30	0.144	197.0	0.9990	

U.S. EPA - CLP

8

STANDARD ADDITION RESULTS

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

Concentration Units: ug/L

EPA Sample No.	An	Dil	0 ADD ABS	1 ADD CON	1 ADD ABS	2 ADD CON	2 ADD ABS	3 ADD CON	3 ADD ABS	Final Conc.	r	Q

U.S. EPA - CLP

10
HOLDING TIMES

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0637

EPA Sample No.	Matrix	Date Received	Mercury Prep Date	Mercury Holding Time	Cyanide Prep Date	Cyanide Holding Time
ET0637	SOIL	02/16/89	03/23/89	35		
ET0637D	SOIL	02/16/89	03/23/89	35		
ET0638	SOIL	03/09/89	03/23/89	14		
ET0638S	SOIL	03/09/89	03/23/89	14		
ET0640	WATER	02/16/89	02/28/89	12		
ET0745	SOIL	02/17/89	03/23/89	34		
ET0746	WATER	02/17/89	02/28/89	11		
ET0748	SOIL	02/18/89	03/23/89	33		
ET0749	SOIL	02/18/89	03/23/89	33		

U.S. EPA - CLP

10
HOLDING TIMES

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

EPA Sample No.	Matrix	Date Received	Mercury Prep Date	Mercury Holding Time	Cyanide Prep Date	Cyanide Holding Time
ET0637	SOIL	02/20/89	03/23/89	31		
ET0637D	SOIL	02/20/89	03/23/89	31		
ET0638	SOIL	02/20/89	03/23/89	31		
ET0638S	SOIL	02/20/89	03/23/89	31		
ET0751	SOIL	02/21/89	03/23/89	30		
ET0752	SOIL	02/21/89	03/23/89	30		
ET0753	SOIL	02/21/89	03/23/89	30		
ET0775	SOIL	02/21/89	03/23/89	30		
ET0775D	SOIL	02/21/89	03/23/89	30		
ET0775S	SOIL	02/21/89	03/23/89	30		
ET0776	WATER	02/21/89	03/23/89	30		
ET0777	SOIL	02/21/89	03/23/89	30		
ET0780	SOIL	02/21/89	03/23/89	30		
ET0781	SOIL	02/21/89	03/23/89	30		
ET0815	SOIL	02/21/89	03/23/89	30		
ET0820	WATER	03/01/89	03/23/89	22		
ET0822	SOIL	03/01/89	03/23/89	22		

U.S. EPA - CLP

10
HOLDING TIMES

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET0751

EPA Sample No.	Matrix	Date Received	Mercury Prep Date	Mercury Holding Time	Cyanide Prep Date	Cyanid Holding Tim
ET0775	SOIL	02/21/89	05/04/89	72		
ET0775D	SOIL	02/21/89	05/04/89	72		
ET0775S	SOIL	02/21/89	05/04/89	72		
ET0780	SOIL	02/21/89	05/04/89	72		
ET0780D	SOIL	02/21/89	05/04/89	72		
ET0780S	SOIL	02/21/89	05/04/89	72		

C. Quality Assurance Summary

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EA LABORATORIES

QUALITY ASSURANCE SUMMARY

FOR NAVAL ENERGY AND ENVIRONMENTAL SUPPORT ACTIVITY CONTRACTS

Project: Willow Grove NAS Analysis: TCL metals

EA Laboratories Report No. 890094 Method: U.S. EPA-CLP

Reviewed by: M.M. Mulfeldu Date: 2 JUN 89

1. Samples were analyzed within six months of sample receipt. Mercury was analyzed within 26 days.
   ____ Yes ✓ No

2. ICP initial calibration: A calibration blank and at least one standard were analyzed daily, and the initial calibration verification standard was within 90% to 110% recovery.
   ✓ Yes ____ No

3. AA calibration: A calibration blank and at least three standards were used to establish the curve.
   ✓ Yes ____ No

4. Calibration verification (CV): A CV standard prepared from a source other than that of the initial calibration was used, and the result was within 90 to 110% of the true value for both ICP and AA work. A CV was run at a frequency of 10%, or every two hours, and at the end of the run.
   ✓ Yes ____ No

5. A preparation blank was run with each batch, and all analytes were below the detection limits.
   ____ Yes ✓ No

6. Matrix spike and duplicate criteria were met for all samples.
   ____ Yes ✓ No

7. Laboratory control sample criteria were met for all samples.
   ✓ Yes ____ No

(Revised 2 June 1989)

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3

EA LABORATORIES

QUALITY ASSURANCE SUMMARY

FOR NAVAL ENERGY AND ENVIRONMENTAL SUPPORT ACTIVITY CONTRACTS

Project: WILLOW GROVE NAS Analysis: TCL metals

EA Laboratories Report No. 890094 Method: U.S. EPA-CLP

Reviewed by: M.M. Wheffeder Date: 2 JUN 89

8. Field and equipment blanks: no target analytes were detected in the samples at concentrations <5X the concentration found in the highest associated blank.

____ Yes ✓ No

Comments: (1.) ONLY RINSATE #5 (EA890820) AND PRW-4, COMP (EA890822) WERE ANALYZED WITHIN HOLDING TIME.

(6.) During Hg analysis of SDG ET0751 a spike and duplicate were run on a sample from another client. Samples PRW-2, COMP (EA890775) and Dup #2, soil (EA890780) were reanalyzed. Spikes and duplicates were run on both samples. The data was prepared as a second package and incorporated.

(8.) Rinsate blank (EA890746) contained 306 ug Fe/L, 37.4 ug Zn/L for SDG ET0637; Rinsate blank (EA890776) contained 137 ug Fe/L, 24.4 ug Cr/L; Rinsate blank (EA890640) contained 97 ug Pb/L, 24.3 ug Zn/L.

(Revised 2 June 1989)

6. MISCELLANEOUS WET CHEMISTRY

A. Analytical Results

RESULTS OF ANALYSIS OF 11 SOIL SAMPLES COLLECTED AT WILLOW GROVE BETWEEN 15 AND 28 FEBRUARY 1989

Parameter	Units	PR B-1 Comp.	PR B-2 Comp.	PRW-1 Comp.	PR-SS-1	PR-SS-2	PRW-2 Comp.
General Organics							
Total Organic Carbon	mg/kg (dry)	1,200	1,100	1,800	17,000	2,600	6,700
Total Petroleum Hydrocarbons	mg/kg (dry)	179	158	906	468	695	681
Inorganics							
Cyanide, total	mg/kg (dry)	<0.12	<0.12	0.24	<0.15	<0.12	<0.12
EA Number		0637	0638	0745	0748	0749	0775

RESULTS OF ANALYSIS OF 11 SOIL SAMPLES COLLECTED AT WILLOW GROVE BETWEEN 15 AND 28 FEBRUARY 1989

Parameter	Units	PR-SS-3	Duplicate #2	Duplicate #3	PRW-3 Comp.	PRW-4 Comp.
General Organics						
Total Organic Carbon	mg/kg (dry)	15,600	2,000	9,100	5,300	6,700
Total Petroleum Hydrocarbons	mg/kg (dry)	404	529	287	473	588
Inorganics						
Cyanide, total	mg/kg (dry)	0.14	0.24	0.15	<0.12	<0.12
EA Number		0777	0780	0781	0815	0822

RESULTS OF ANALYSIS OF FOUR RINSATE BLANK SAMPLES COLLECTED AT WILLOW GROVE BETWEEN 15 AND 28 FEBRUARY 1989

Parameter	Units	Rinsate Blank	Rinsate Blank #2	Rinsate Blank #3	Rinsate Blank #5
General Organics					
Total Organic Carbon	mg/L	45.2	29.8	21.7	19.6
Total Petroleum Hydrocarbons	mg/L	<0.1	0.5	0.5	0.2
Inorganics					
Cyanide, total	mg/L	<0.01	<0.01	<0.01	<0.01
EA Number		0640	0746	0776	0820

B. Quality Assurance Summary

EA LABORATORIES QA/QC DATA FOR WET CHEMISTRY DATA

Project name: Willow Grove

Client sample designation PR-1

EA Number 0637

Matrix: Liquid _____ (mg/L)

Soil X (mg/kg) (dry)

Parameter	Sample results (mg/kg)	Method detection limit (mg/kg)	Method blank (mg/kg)	QC check std. recovery (%)	Duplicate (mg/kg)	Matrix spike recovery (%)
General organics						
Total organic carbon	1,200	100.0	----	112	960	66.0
Total petroleum hydrocarbons	179	10.0	----	89.9	585	----
Inorganic nonmetals						
Cyanide, total	<0.12	0.1	----	105	<0.12	----

EA LABORATORIES QA/QC DATA FOR WET CHEMISTRY DATA

Project name: Willow Grove

Client sample designation PR-2

EA Number 0638

Matrix: Liquid _____ (mg/L)

Soil X (mg/kg)(dry)

Parameter	Sample results (mg/kg)	Method detection limit (mg/kg)	Method blank (mg/kg)	QC check std. recovery (%)	Duplicate (mg/kg)	Matrix spike recovery (%)
Inorganic nonmetals						
Cyanide, total	<0.1	0.1	----	105	<0.1	102/106

EA LABORATORIES QA/QC DATA FOR WET CHEMISTRY DATA

Project name: Willow Grove

Client sample designation PRW-1, Composite

EA Number 0745

Matrix: Liquid _____ (mg/L)

Soil X (mg/kg)(dry)

Parameter	Sample results (mg/kg)	Method detection limit (mg/kg)	Method blank (mg/kg)	QC check std. recovery (%)	Duplicate (mg/kg)	Matrix spike recovery (%)
General organics						
Total petroleum hydrocarbons	906	10.0	----	97.7/97.8	989	121

EA LABORATORIES QA/QC DATA FOR WET CHEMISTRY DATA

Project name: Willow Grove

Client sample designation PR-SS-3

EA Number 0777

Matrix: Liquid _____ (mg/L)

Soil X (mg/kg)(dry)

Parameter	Sample results (mg/kg)	Method detection limit (mg/kg)	Method blank (mg/kg)	QC check std. recovery (%)	Duplicate (mg/kg)	Matrix spike recovery (%)
Inorganic nonmetals						
Cyanide, total	0.1	0.1	----	88.5/92.3	<0.1	----

EA LABORATORIES QA/QC DATA FOR WET CHEMISTRY DATA

Project name: Willow Grove

Client sample designation Duplicate #2

EA Number 0780

Matrix: Liquid _____ (mg/L)

Soil X (mg/kg)(dry)

Parameter	Sample results (mg/kg)	Method detection limit (mg/kg)	Method blank (mg/kg)	QC check std. recovery (%)	Duplicate (mg/kg)	Matrix spike recovery (%)
Inorganic nonmetals						
Cyanide, total	0.2	0.1	----	88.5/92.3	----	92.7/94.8

EA LABORATORIES QA/QC DATA FOR WET CHEMISTRY DATA

Project name: Willow Grove

Client sample designation PRW-2, Composite

EA Number 0822

Matrix: Liquid _____ (mg/L)

Soil X (mg/kg)(dry)

Parameter	Sample results (mg/kg)	Method detection limit (mg/kg)	Method blank (mg/kg)	QC check std. recovery (%)	Duplicate (mg/kg)	Matrix spike recovery (%)
General organics						
Total petroleum hydrocarbons	588	10.0	----	89.9	294	147%

7. CHAIN OF CUSTODY RECORDS

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Chain of Custody Record

EA Laboratories
15 Loveton Circle
Sparks, MD 21152
301-771-4950

2148

Company Name: EA-BAL

Project Manager or Contact: Chuck Houlik

Project No.: 10388.03

Project Name: Willow Grove

Special QA Protocols (Circle): EPA-CLP | TIER I (NJ) | OTHER (SPECIFY) Navy Level C | USATHAMA | TIER II (NJ)

Parameters for Analysis

Date	Time	Grab	Comp	Sample Identification (I.D. and Matrix)	No. of Containers	VOA (Air Bag)	Semi-Volatile + Pest/PCB	Total Metals	pH	Cl	Cl	EA Labs Accession Number	Remarks
2/15/89	14:32	X		PR-1, S-4 (Soil)	1	X						0635	Composite & Rinsate Blank
2/15/89	13:20	X		PR-2, S-6 (Soil)	1	X						0636	are Parameter List: Type
2/15/89	19:46		X	PR-1 (Soil)	2	X	X	X	X	X	X	0637	A
4 2/15/89	19:15		X	PR-2 (Soil)	2	X	X	X	X	X	X	0638	
2/15/89				Trip Blank (Water)	1	X						0639	
2 2/19/89	16:42			Rinsate Blank (Water)	8	X	X	X	X	X	X	0640	

Please cancel volatile organics on 0637 and 0638.

Sampled by: (Signature)	Title:	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Gregg T. Campbell	Geologist	2/15/89 2200	Gregg T. Campbell	2/16/89 0830	

Relinquished by: (Signature)	Date/Time	Recieved by: (Signature)	Relinquished by: (Signature)	Date/Time	Rec'd. by Lab: (Signature)
				2/16/89 10:35	Mary Clapp

Sample Custody Notes: 8 Samples iced.

890094 d. 9 March 89

Sample Shipped by: (Circle) Fed. Ex. Puro. UPS

Other (Specify) Hand carried.

Air Bill Number:

1001

EA 0206 6/3/88 White - EA Sample Custody Yellow - EA Lab Manager Pink - Project Manager

Chain f Custody Record

EA Laboratories
15 Loveton Circle
Sparks, MD 21152
301-771-4950

Company Name	Project Manager or Contact
EA	Chuck Hrubik

Project No.	Project Name
10598.03	Willow Grove

Special QA Protocols (Circle)

EPA-CLP TIER I (NJ) OTHER (SPECIFY)

USATHAMA TIER II (NJ) [illegible]

Parameters for Analysis

Date	Time	Grab	Comp	Sample Identification (I.D. and Matrix)	No. of Containers	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				EA Labs Accession Number	Remarks
[illegible]	[illegible]	X		PRX-1B, S-4	1	X											[illegible]
[illegible]	[illegible]	X		PRX-2B, S-6	1	X											[illegible]
[illegible]	[illegible]		X	PRX-1B, Comp	2	~~X~~	X	X	X	X	X	X					[illegible]
[illegible]	[illegible]		X	PRX-2B, Comp	2	~~X~~	X	X	X	X	X	X					MS/MSD on Field
[illegible]				Trip blank	1	X											duplicates (no Field
[illegible]	[illegible]			[illegible]	8	X	X	X	X	X	X	X					dup this shipment)

Sampled by: (Signature)	Title:	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[illegible] T. Campbell	Geologist	[illegible] 2300	[illegible] T. Campbell	[illegible] 0930	

Relinquished by: (Signature)	Date/Time	Recieved by: (Signature)	Relinquished by: (Signature)	Date/Time	Rec'd. by Lab: (Signature)

Sample Custody Notes: _____

Sample Shipped by: (Circle)
Fed. Ex. Puro. UPS
Other (Specify) _____

Air Bill Number:

EA 0396 6/3/88 White — EA Sample Custody Yellow — EA Lab Manager Pink — Project Manager

7008

2PDA

Chain of Custody Record

EA Laboratories
15 Loveton Circle
Sparks, MD 21152
301-771-4950

Company Name: EA

Project Manager or Contact: Chuck Houlik

Project No.: 10388.03

Project Name: Willow Grove

Special QA Protocols (Circle): EPA-CLP | TIER I (NJ) | OTHER (SPECIFY) | USATHAMA | TIER II (NJ) | Navy Level C

Parameters for Analysis

Date	Time	Grab	Comp	Sample Identification (I.D. and Matrix)	No. of Containers	VOA - SQL's	Semi-volatiles	Pesticides + PCB	Cyanide	TPH	TPH	Total Metals				EA Labs Accession Number	Remarks
				PRW-1 S-8													
2/16/89	1245	X		~~PR-2 S-8~~ PRW-1 Soil	1	X	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~				~~0709~~	Parameter List: Type A
2 2/16/89	1308		X	~~PR-3~~ Comp, Soil	2		X	X	X	X	X	X				~~0710~~ 0745	
2/16/89	1109	X		Rinsate Blank # 2	8	X	X	X	X	X	X	X				~~0711~~ 0746	
2 2/16/89	—	X		Trip Blank	1	X										~~0713~~ 0747	Do MS + MSD on field duplicates only.
																	Target Compound List parameters

Sampled by: (Signature)	Title:	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Gregg T. Campbell	Geologist II	2/16/89 15:50	Gregg T. Campbell		

Relinquished by: (Signature)	Date/Time	Recieved by: (Signature)	Relinquished by: (Signature)	Date/Time	Rec'd. by Lab: (Signature)
				17 Feb 89 14:15	David Ellwood

Sample Custody Notes: All samples properly preserved, intact.
d. 10 March 89 890094

Sample Shipped by: (Circle) Fed. Ex. | Puro. | UPS | Other (Specify)

Air Bill Number: 4496461605

EA 0396 6/3/88 White – EA Sample Custody Yellow – EA Lab Manager Pink – Project Manager

7 003

145

Chain f Cust dy Record

EA Laboratories
15 Loveton Circle
Sparks, MD 21152
301-771-4950

1 RLB

C mpany Name: EA

Project Manager or Contact: Chuck Houlik

Project No.: 10388.03

Project Name: Willow Grove

Special QA Protocols (Circle): EPA-CLP | TIER I (NJ) | OTHER (SPECIFY) | USATHAMA | TIER II (NJ) | Navy Level C

Parameters for Analysis

Date	Time	Grab	Comp	Sample Identification (I.D. and Matrix)	No. of Containers	Volatile Org.	Semi-Volatiles	Cyanide	TPH	TOC	Total Metals	Pesticides / PCB				EA Labs Accession Number	Remarks
2/17/89	11:37	X		PR-SS-1, Soil	2	X	X	X	X	X	X	X				0748	Parameter Type List A
2/17/89	11:57	X		PR-SS-2, Soil	2	X	X	X	X	X	X	X				0749	Take Matrix Spike From
2/17/89		X		Trip Blank	1	X										0750	Duplicates

Sampled by: (Signature)	Title:	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Gregg T. Campbell	Geologist II	2/17/89 12:51	Gregg T. Campbell		

Relinquished by: (Signature)	Date/Time	Recieved by: (Signature)	Relinquished by: (Signature)	Date/Time	Rec'd. by Lab: (Signature)
				2/17/89 1:35	Mary Cooper

Sample Custody Notes: 890094 d. 11 March 89

Sample Shipped by: (Circle) Fed. Ex. Puro. UPS Other (Specify) Hand carried

Air Bill Number:

White – EA Sample Custody Yellow – EA Lab Manager Pink – Project Manager

T 004

149

Chain of Custody Record

EA Laboratories
15 Loveton Circle
Sparks, MD 21152
301-771-4950

2RLB

Company Name: EA

Project Manager or Contact: Chuck Houlik

Project No.: 10388.03

Project Name: Willow Grove

Special QA Protocols (Circle): EPA-CLP | TIER I (NJ) | OTHER (SPECIFY) | USATHAMA | TIER II (NJ) | Navy Level C

Date	Time	Grab	Comp	Sample Identification (I.D. and Matrix)	No. of Containers	Volatile Org.	Semi-Volatile Org.	Pesticides/PCB	Cyanide	TOC	TPH	Total Metals				EA Labs Accession Number	Remarks
2/20/89	1124	X		PRW-2, S-6, Soil	1	X										0774	Parameter List: Type A
2/20/89	1142		X	PRW-2, Composite, Soil	2		X	X	X	X	X	X				0775	Taken Matrix ~~Sample~~ Spike
2/20/89	1019	X		Rinsate Blank #3 (W)	8	X	X	X	X	X	X	X				0776	sample from Duplicate
3 2/21/89	1132	X		PR-SS-3, Soil	2	X	X	X	X	X	X	X				0777	#2
2/21/89	—	X		Trip Blank (Water)	1	X										0778	

Sampled by: (Signature)	Title:	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Gregg T. Campbell	Geologist II	2/21/89 16:35	Gregg T. Campbell	2/21/89 16:40	

Relinquished by: (Signature)	Date/Time	Recieved by: (Signature)	Relinquished by: (Signature)	Date/Time	Rec'd. by Lab: (Signature)
				2/21/89 14:55	Mary Elapec

Sample Custody Notes: samples kept

890094 d. 14 March 89

Sample Shipped by: (Circle) Fed. Ex. Puro. UPS Other (Specify) Hand carried

Air Bill Number:

7005

EA 0306 6/2/88 White – EA Sample Custody Yellow – EA Lab Manager Pink – Project Manager