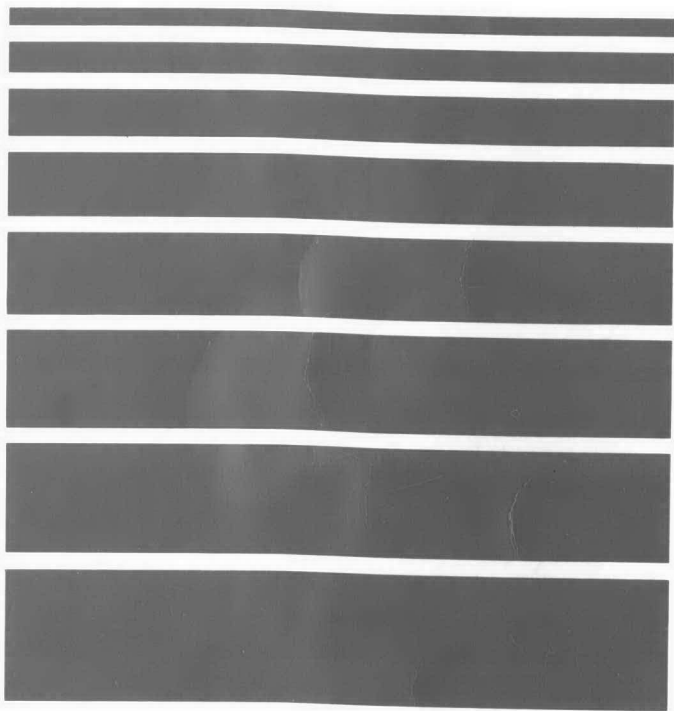


MeadCompuChem



GD-WATER MON'S RESULTS RIFLE RANGE APR-MAY 83

MeadCompuChem



8807 Cary Algonquin Road
Post Office Box 130
Cary, Illinois 60013

Telephone: 312-639-8818
800-334-8525

May 5, 1983

Mr. David Thompson
Centec
2160 Industrial Drive
Salem, VA 24153

Dear Mr. Thompson:

Thank you for selecting Mead CompuChem® for your recent sample analysis. We have completed the analysis that you requested and have enclosed a summary of the CompuChem data for your review. Additional data details are available for purchase if you require them.

As you know, EPA has proposed detection limits for the priority pollutants in the December 3, 1979, Federal Register, and we have reported all priority pollutant concentrations which have exceeded these limits. In addition, we have permanently stored a complete record of your data on magnetic tape. This includes chromatograms, mass spectra, calibration and quality control data for the organics. Therefore, your original data is readily available for future reference. Should you require additional information from your data base, please contact us at 1/800-334-8525.

In order to expedite data to you, we have forwarded the results to all completed analyses. If you submitted more samples than are included in the enclosed results, the data will be forthcoming upon completion of our final review.

Your confidence in our CompuChem service is appreciated. We look forward to a continuing association.

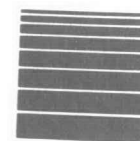
Sincerely,

Customer Service Dept.
Mead CompuChem®

Enclosure:

Report: Sample Identifier Number: 29372
29373
29374
29375
29376
29377

CompuChem Number: 3493
3494
3495
3496
3497
3498



Laboratories: Research Triangle Park, NC; Cary, IL

MeadCompuChem

TABLE OF CONTENTS

1. REPORT OF SAMPLE DATA

COMPUCHEM SAMPLE NUMBER: A. 3493
B. 3494
C. 3495
D. 3496
E. 3497
F. 3498

<u>EXHIBITS</u>	(Exhibits are included for each sample above if they pertain to that sample)	
I	LABORATORY CHRONICLE	
II	COMPOUND LISTS	
III	VOLATILE	RIC
III-1	VOLATILE	SPECTRA (ABOVE DETECTION LIMITS)
III-2	VOLATILE	STANDARD RIC
IV	ACID	RIC
IV-1	ACID	SPECTRA (ABOVE DETECTION LIMITS)
IV-2	ACID	STANDARD RIC
V	BASE-NEUTRAL/PESTICIDE	RIC
V-1	BASE-NEUTRAL/PESTICIDE	SPECTRA (ABOVE DETECTION LIMITS)
V-2	BASE-NEUTRAL/PESTICIDE	STANDARD RIC
* VI	GC PESTICIDE CHROMATOGRAM	(METHOD 608)
* VI-1	PESTICIDE	RIC
* VI-2	PESTICIDE	SPECTRA (ABOVE DETECTION LIMITS)
* VI-3	PESTICIDE	STANDARD CHROMATOGRAMS

* if ordered

MeadCompuChem

TABLE OF CONTENTS

(Page Two)

EXHIBITS (Exhibits are included for each sample above if they pertain to that sample)

* VII 20 PEAK SPECTRAL MATCH DIAGRAM(S)

*VIII CHAIN-OF-CUSTODY

2. ANALYTICAL METHODS, DEFINITIONS AND EXPLANATIONS

3. REPORT OF QUALITY CONTROL DATA *

A. MATRIX SPIKE ANALYSIS

B. DUPLICATE ANALYSIS

C. METHOD BLANK ANALYSIS

D. SURROGATE SPIKE RECOVERIES

EXHIBITS

I	VOA	BLANK RIC **
II	VOA	BFB TUNING
III	ACID	BLANK RIC **
IV	ACID	DFTPP TUNING
V	B/N/P	BLANK RIC **
VI	B/N/P	DFTPP TUNING
VII	PESTICIDE BLANK	(Method 608)

* if ordered

** Spectra and Spectral Match Diagrams included only if compounds in blank are above EPA specified detection limits.

MeadCompuChem

1A. REPORT OF DATA

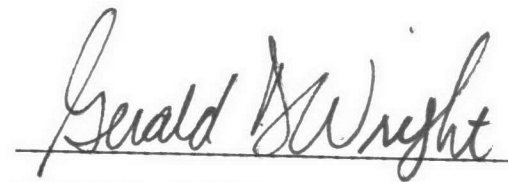
SAMPLE IDENTIFIER NUMBER: 29372

COMPUCHEM SAMPLE NUMBER: 3493

CHEMICAL
LANDFILL

SUBMITTED TO:

Mr. David Thompson
Centec
2160 Industrial Drive
Salem, VA 24153



GERALD D. WRIGHT, CPIM
MANAGER, PRODUCTION PLANNING AND CONTROL

R. L. MYERS, PH.D.
PRESIDENT

PAUL E. MILLS
DIRECTOR OF QUALITY ASSURANCE

JAMES J. ZOLDAK
DIRECTOR OF LABORATORY OPERATIONS

EXHIBIT I - LABORATORY CHRONICLE

SAMPLE IDENTIFIER: 29372
COMPUCHEM SAMPLE NUMBER: 3493

	<u>Date</u>
Received/Refrigerated	04/25/83
Organics	
Extracted	04/28/83
Analyzed	
1. Volatiles	04/28/83
2. Acids	04/29/83
3. Base/Neutrals	Not Requested
4. Pesticides/PCBS	05/02/83
Inorganics	
1. Metals	Not Requested
2. Cyanides	Not Requested
3. Phenols	Not Requested

EXHIBIT II - COMPOUND LIST

SAMPLE IDENTIFIER: 29372
 COMPUCHEM SAMPLE NUMBER: 3493

<u>VOLATILE ORGANICS</u>		<u>CONCENTRATION (UG/L)</u>	<u>DETECTION LIMIT (UG/L)</u>	<u>SCAN NUMBER</u>
1V.	ACROLEIN	BDL	100	
2V.	ACRYLONITRILE	BDL	100	
3V.	BENZENE	BDL	10	
4V.	BIS (CHLOROMETHYL) ETHER	BDL	10	
5V.	BROMOFORM	BDL	10	
6V.	CARBON TETRACHLORIDE	BDL	10	
7V.	CHLOROBENZENE	BDL	10	
8V.	CHLORODIBROMOMETHANE	BDL	10	
9V.	CHLOROETHANE	BDL	10	
10V.	2-CHLOROETHYL VINYL ETHER	BDL	10	
11V.	CHLOROFORM	BDL	10	
12V.	DICHLOROBROMOMETHANE	BDL	10	
13V.	DICHLORODIFLUOROMETHANE	BDL	10	
14V.	1,1-DICHLOROETHANE	BDL	10	
15V.	1,2-DICHLOROETHANE	BDL	10	
16V.	1,1-DICHLOROETHYLENE	BDL	10	
17V.	1,2-DICHLOROPROPANE	BDL	10	
18V.	1,3-DICHLOROPROPYLENE	BDL	10	
19V.	ETHYLBENZENE	BDL	10	
20V.	METHYL BROMIDE	BDL	10	
21V.	METHYL CHLORIDE	BDL	10	
22V.	METHYLENE CHLORIDE	BDL	10	
23V.	1,1,2,2-TETRACHLOROETHANE	BDL	10	
24V.	TETRACHLOROETHYLENE	BDL	10	
25V.	TOLUENE	BDL	10	
26V.	1,2-TRANS-DICHLOROETHYLENE	14	10	
27V.	1,1,1-TRICHLOROETHANE	BDL	10	
28V.	1,1,2-TRICHLOROETHANE	BDL	10	
29V.	TRICHLOROETHYLENE	BDL	10	
30V.	TRICHLOROFLUOROMETHANE	BDL	10	
31V.	VINYL CHLORIDE	BDL	10	

295

BDL = BELOW DETECTION LIMIT

EXHIBIT II - COMPOUND LIST

SAMPLE IDENTIFIER: 29372
COMPUCHEM SAMPLE NUMBER: 3493

<u>ACID EXTRACTABLE ORGANICS</u>		<u>CONCENTRATION</u> <u>(UG/L)</u>	<u>DETECTION</u> <u>LIMIT</u> <u>(UG/L)</u>	<u>SCAN</u> <u>NUMBER</u>
1A.	2-CHLOROPHENOL	BDL	25	
2A.	2,4-DICHLOROPHENOL	BDL	25	
3A.	2,4-DIMETHYLPHENOL	BDL	25	
4A.	4,6-DINITRO-O-CRESOL	BDL	250	
5A.	2,4-DINITROPHENOL	BDL	250	
6A.	2-NITROPHENOL	BDL	25	
7A.	4-NITROPHENOL	BDL	25	
8A.	P-CHLORO-M-CRESOL	BDL	25	
9A.	PENTACHLOROPHENOL	BDL	25	
10A.	PHENOL	BDL	25	
11A.	2,4,6-TRICHLOROPHENOL	BDL	25	

BDL = BELOW DETECTION LIMIT

EXHIBIT 11 -
COMPUCHEM SAMPLE REPORTS
SAMPLE IDENTIFICATION

CompuChem employs Methods 624 and 625 for priority pollutant analysis. These methods were proposed by the U.S. E.P.A. in Volume 44 of the Federal Register on December 3, 1979. As these methods are currently in a "proposed" status, all aspects of the methods may not be validated until the U.S. E.P.A. promulgates the methods in "final" form.

EXHIBIT II - COMPOUND LIST

SAMPLE IDENTIFIER: 29372
COMPUCHEM SAMPLE NUMBER: 3493

<u>PESTICIDES/PCB'S</u>		<u>CONCENTRATION</u> <u>(UG/L)</u>	<u>DETECTION</u> <u>LIMIT</u> <u>(UG/L)</u>
1P.	ALDRIN	BDL	0.1
2P.	ALPHA-BHC	BDL	0.1
3P.	BETA-BHC	BDL	0.1
4P.	GAMMA-BHC	BDL	0.1
5P.	DELTA-BHC	BDL	0.1
6P.	CHLORDANE	BDL	0.1
7P.	4,4'-DDT	BDL	0.1
8P.	4,4'-DDE	BDL	0.1
9P.	4,4'-DDD	BDL	0.1
10P.	DIELDRIN	BDL	0.1
11P.	ALPHA-ENDOSULFAN	BDL	0.1
12P.	BETA-ENDOSULFAN	BDL	0.1
13P.	ENDOSULFAN SULFATE	BDL	0.1
14P.	ENDRIN	BDL	0.1
15P.	ENDRIN ALDEHYDE	BDL	0.1
16P.	HEPTACHLOR	BDL	0.1
17P.	HEPTACHLOR EPOXIDE	BDL	0.1
18P.	PCB-1242	BDL	0.1
19P.	PCB-1254	BDL	0.1
20P.	PCB-1221	BDL	0.1
21P.	PCB-1232	BDL	0.1
22P.	PCB-1248	BDL	0.1
23P.	PCB-1260	BDL	0.1
24P.	PCB-1016	BDL	0.1
25P.	TOXAPHENE	BDL	0.1

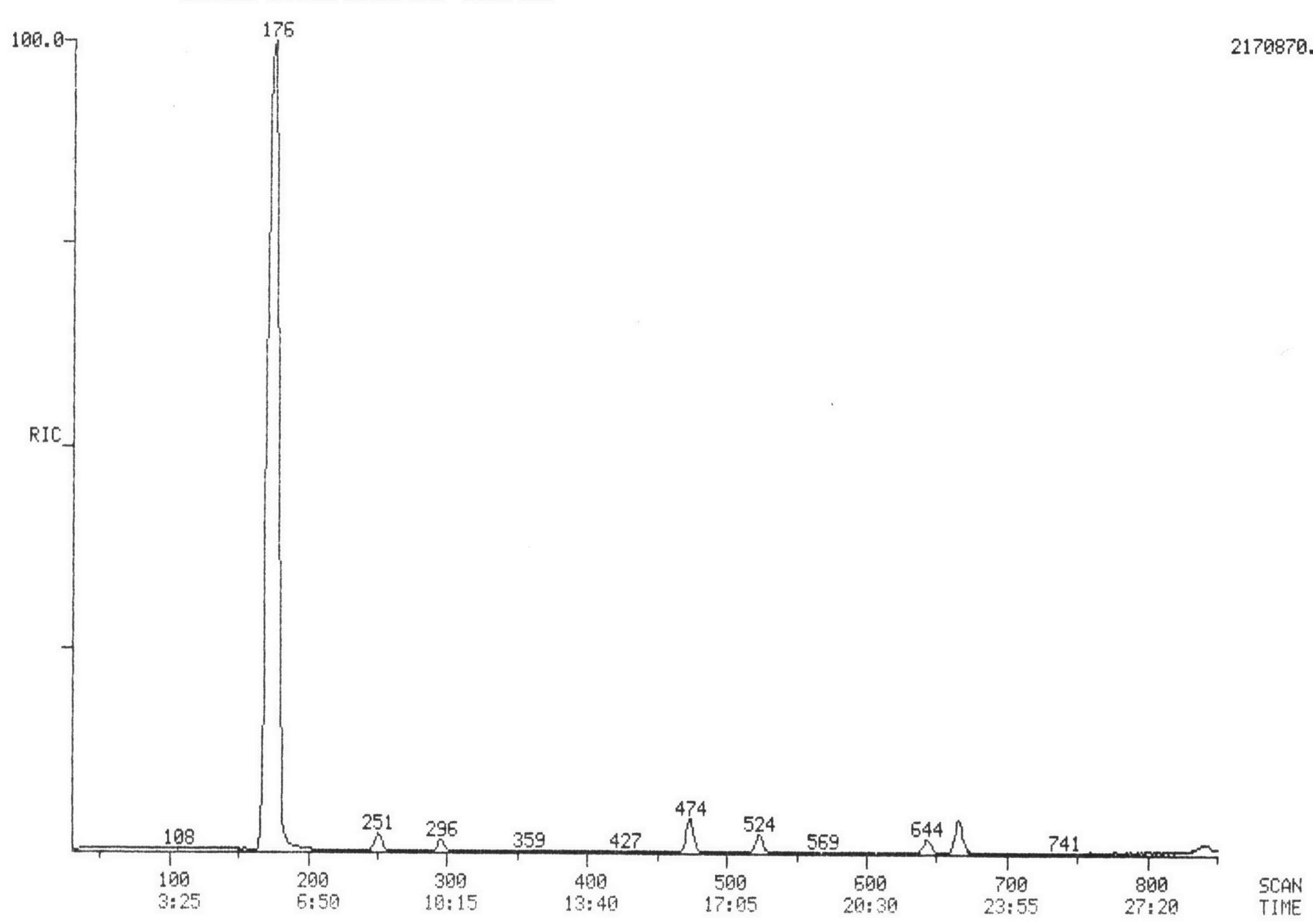
BDL = BELOW DETECTION LIMIT

MEAD COMPUTECH

COMPUTECH 2V110 11/11/83
2V1677 11/11/83

MEAD COMPUTECH DATA: UN003493B06 SCANS 30 TO 850
RIC 04/28/83 18:25:00
SAMPLE: SAMPLE #3493 5ML DISK 602

2170870.



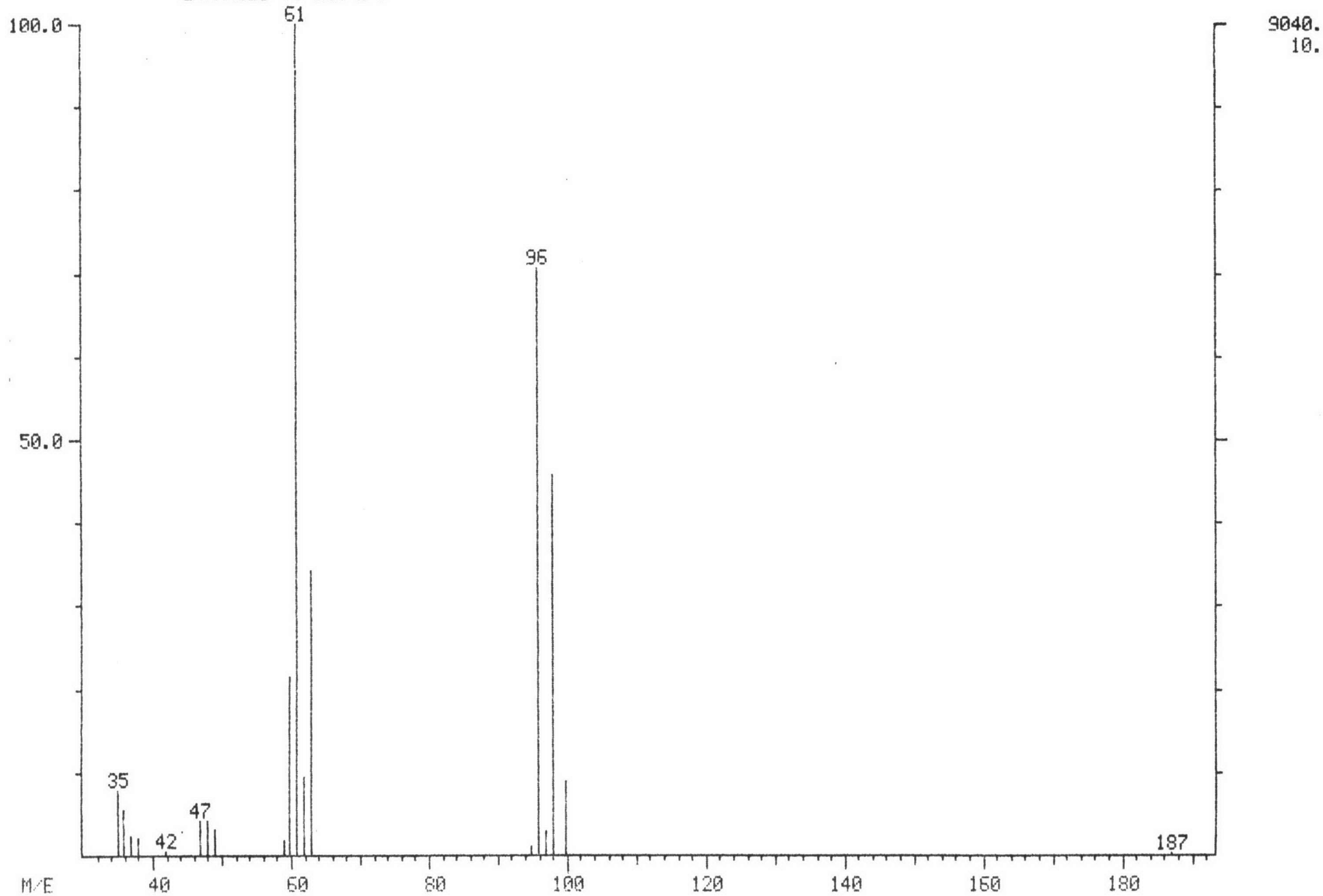
0226

MASS SPECTRUM
04/28/83 18:25:00 + 10:05
SAMPLE: SAMPLE #3493 5ML DISK 602
ENHANCED (S 158 2N)

MEAD COMPUCHEM

DATA: UN003493B06 #295

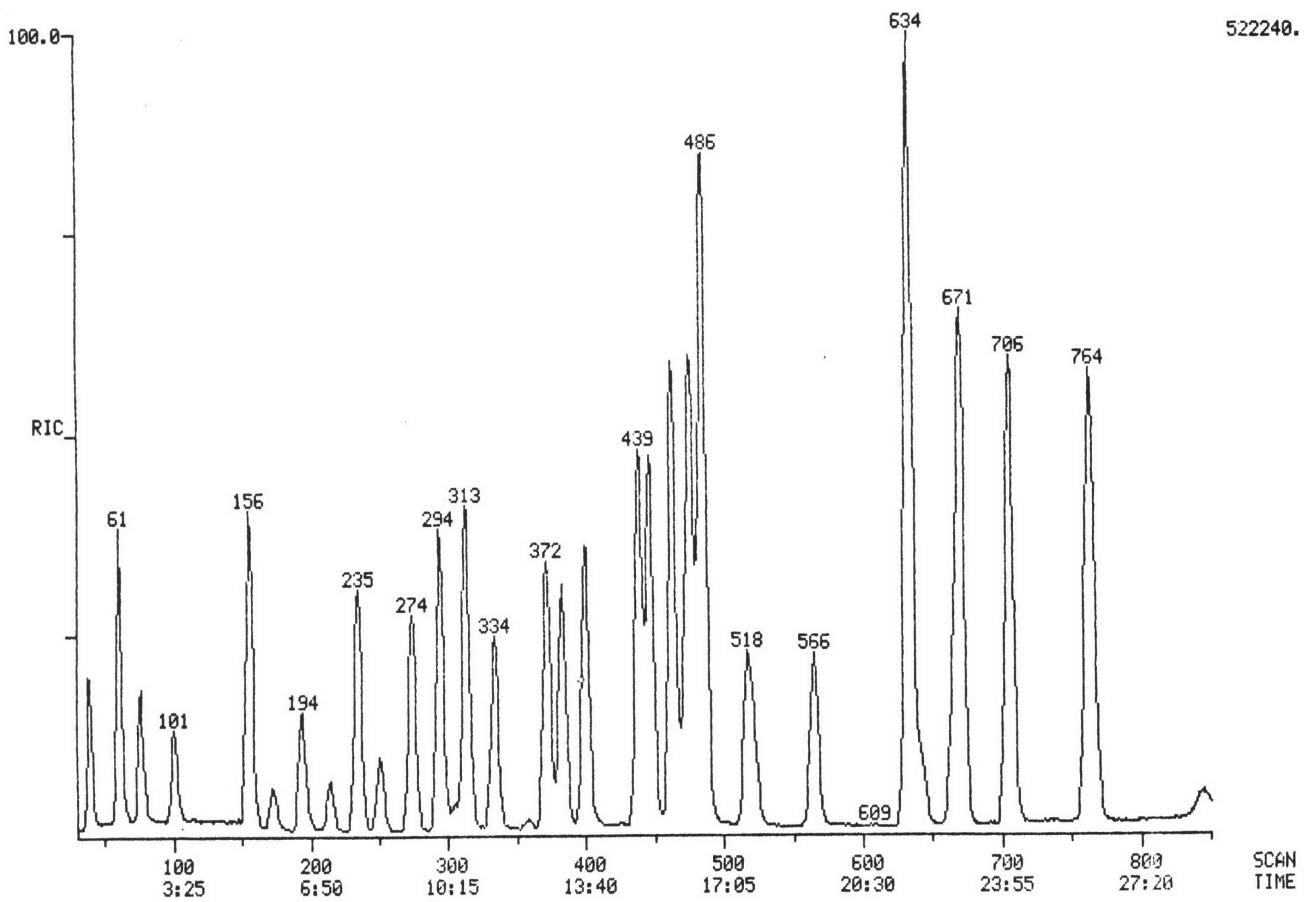
BASE M/E: 61
RIC: 29568.



RIC
04/28/83 17:11:00
SAMPLE: VOA 80NG STD 5ML DISK 602

MEAD COMPUCEM
DATA: US830428B06

SCANS 30 TO 850

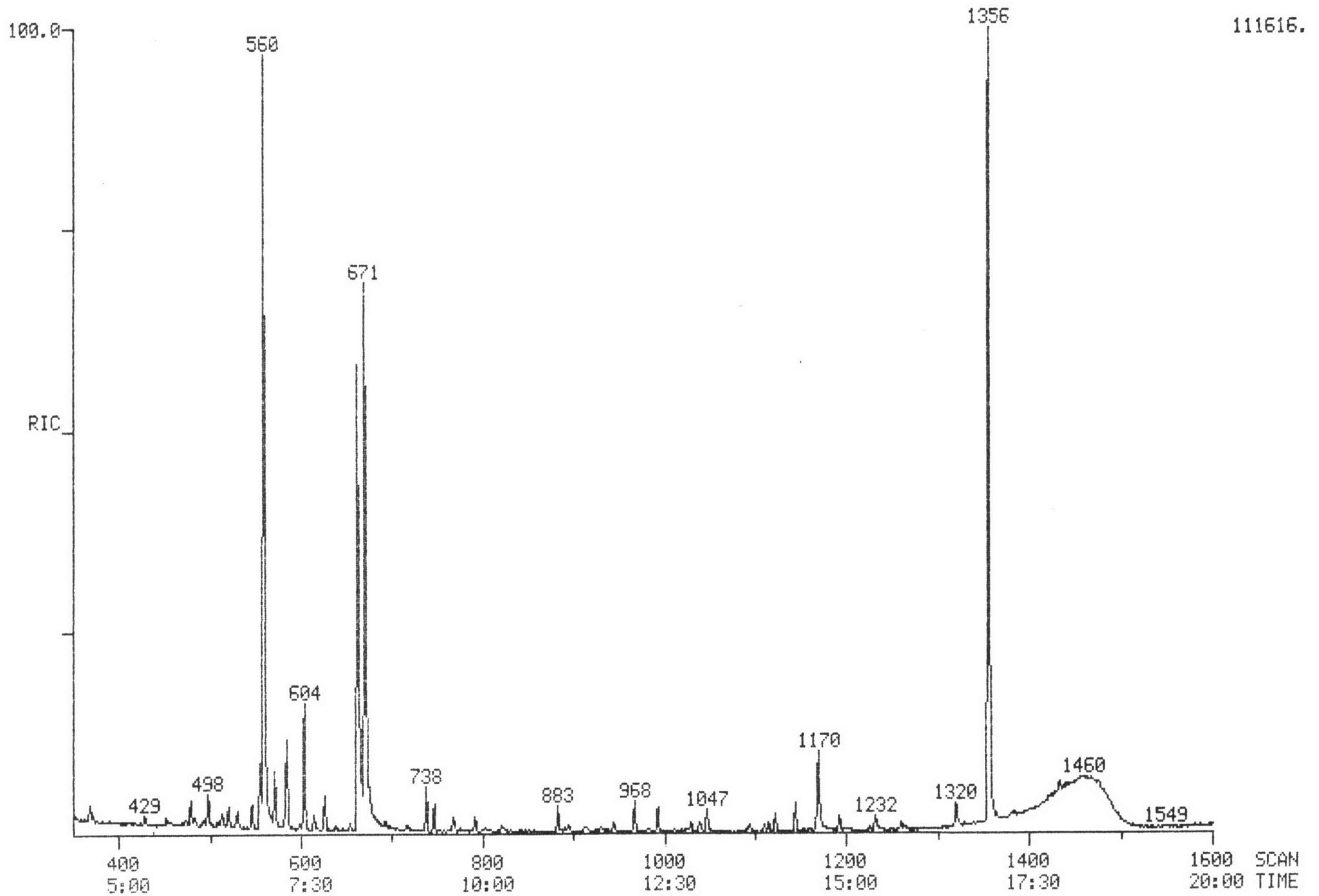


RIC
04/29/83 9:44:00
SAMPLE: ACIFD SAMPLE#3493

MEAD COMPUCHEM

DATA: AC003493A02

SCANS 350 TO 1600



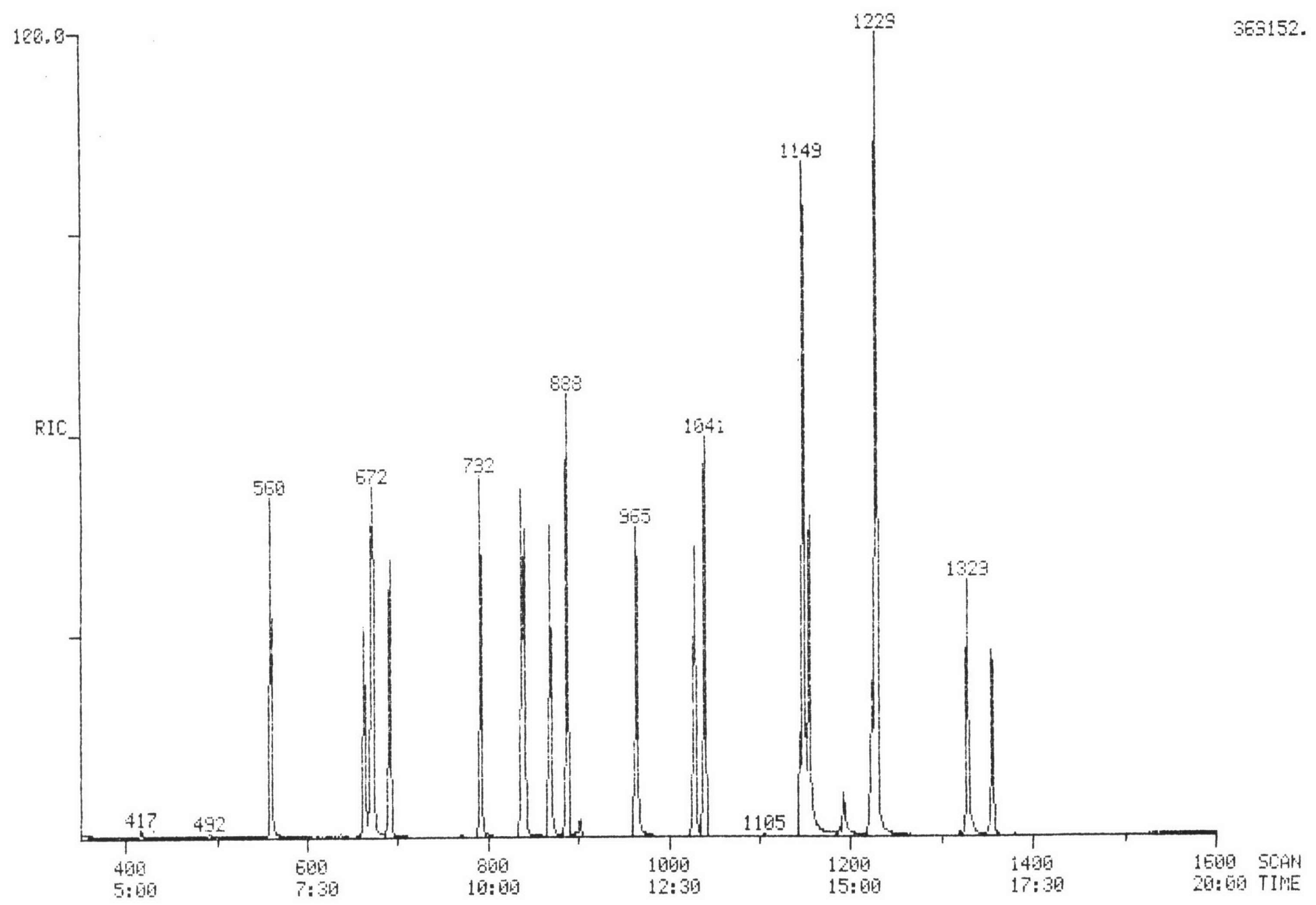
RIC
04/29/83 8:18:00
SAMPLE: ACID STD #3304, 120 NG , EX 4-28

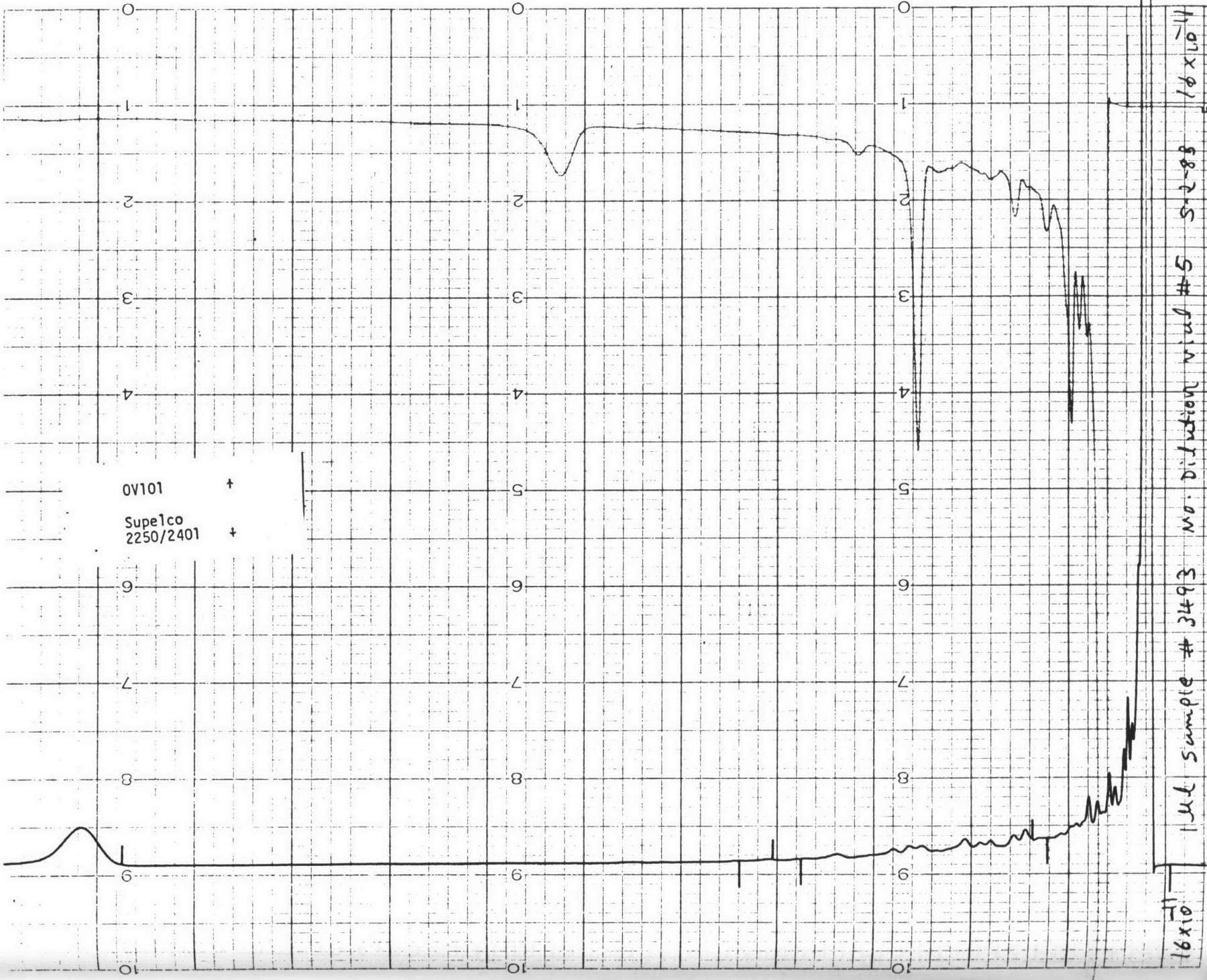
MEAD COMPUCHEM

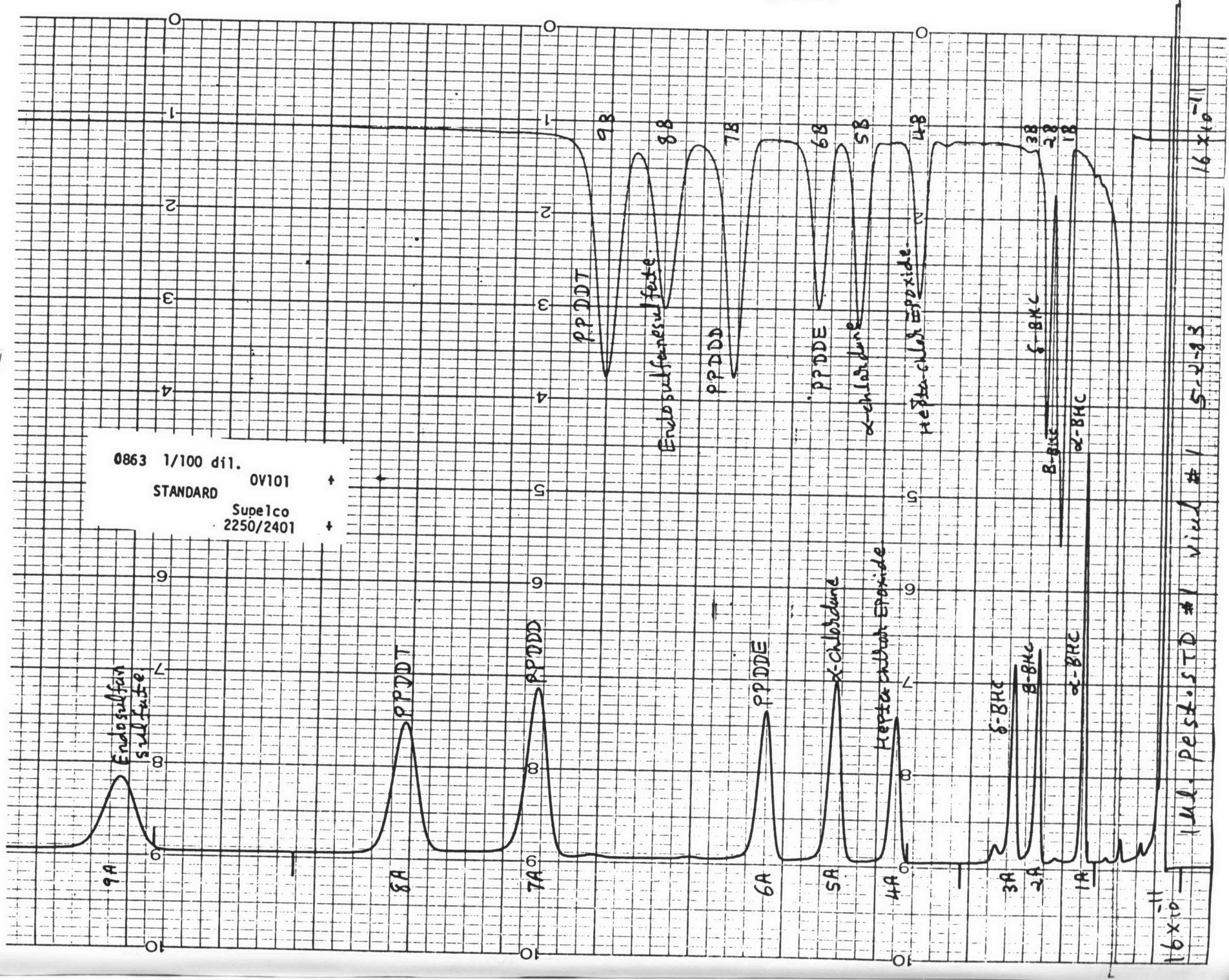
DATA: A5830429A02

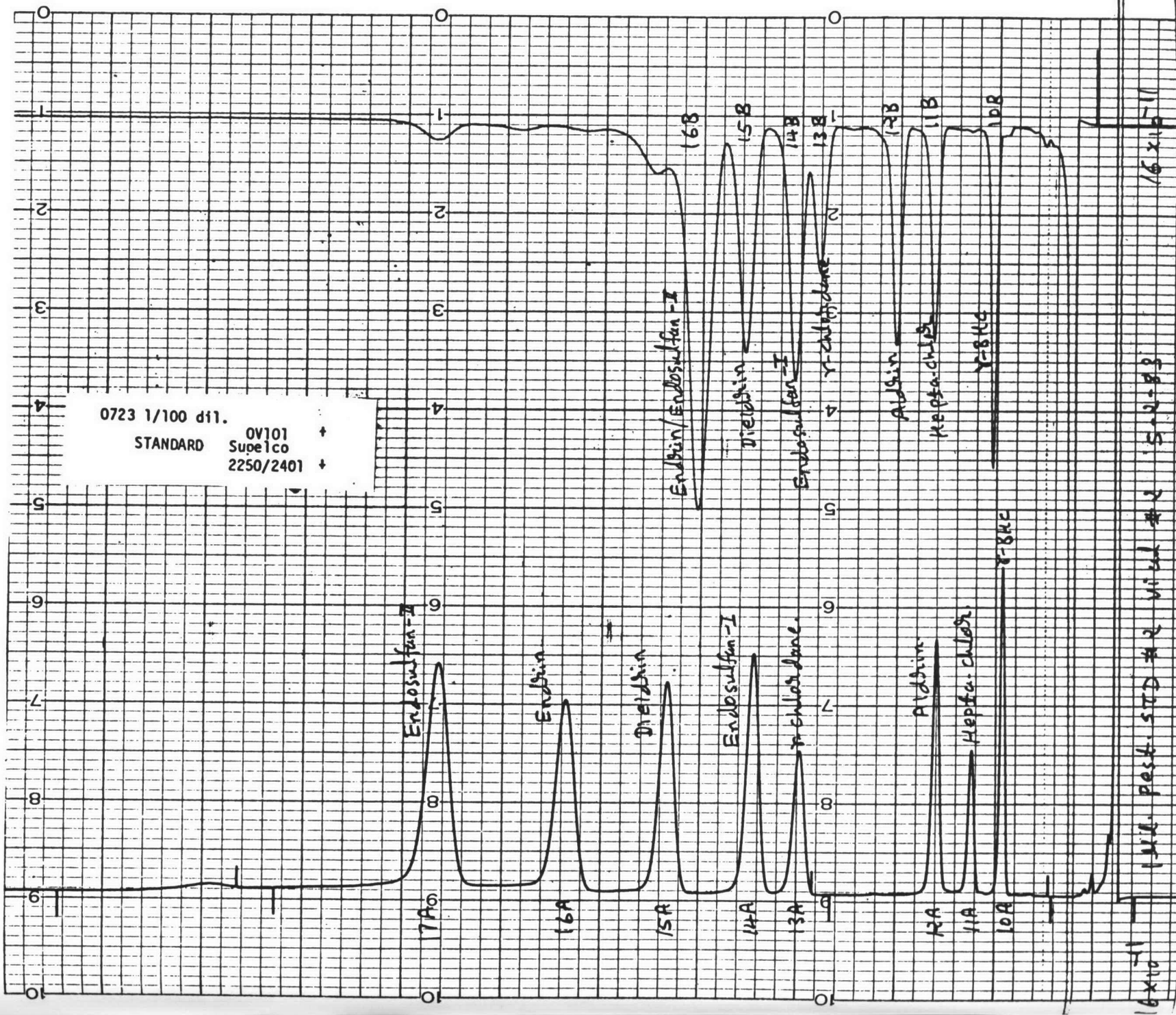
SCANS 350 TO 1600

363152.









MeadCompuChem

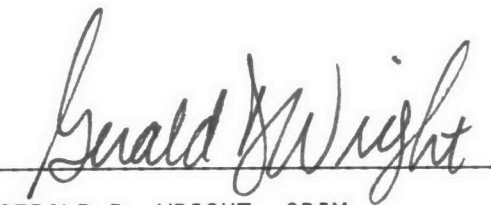
1B. REPORT OF DATA

SAMPLE IDENTIFIER NUMBER: 29373

COMPUCHEM SAMPLE NUMBER: 3494

SUBMITTED TO:

Mr. David Thompson
Centec
2160 Industrial Drive
Salem, VA 24153



GERALD D. WRIGHT, CPIM
MANAGER, PRODUCTION PLANNING AND CONTROL

R. L. MYERS, PH.D.
PRESIDENT

PAUL E. MILLS
DIRECTOR OF QUALITY ASSURANCE

JAMES J. ZOLDAK
DIRECTOR OF LABORATORY OPERATIONS

EXHIBIT I - LABORATORY CHRONICLE

SAMPLE IDENTIFIER: 29373
COMPUCHEM SAMPLE NUMBER: 3494

	<u>Date</u>
Received/Refrigerated	04/25/83
Organics	
Extracted	04/28/83
Analyzed	
1. Volatiles	04/28/83
2. Acids	04/28/83
3. Base/Neutrals	Not Requested
4. Pesticides/PCBS	05/02/83
Inorganics	
1. Metals	Not Requested
2. Cyanides	Not Requested
3. Phenols	Not Requested

EXHIBIT II - COMPOUND LIST

SAMPLE IDENTIFIER: 29373
 COMPUCHEM SAMPLE NUMBER: 3494

<u>VOLATILE ORGANICS</u>		<u>CONCENTRATION (UG/L)</u>	<u>DETECTION LIMIT (UG/L)</u>	<u>SCAN NUMBER</u>
1V.	ACROLEIN	BDL	100	
2V.	ACRYLONITRILE	BDL	100	
3V.	BENZENE	BDL	10	
4V.	BIS (CHLOROMETHYL) ETHER	BDL	10	
5V.	BROMOFORM	BDL	10	
6V.	CARBON TETRACHLORIDE	BDL	10	
7V.	CHLOROBENZENE	BDL	10	
8V.	CHLORODIBROMOMETHANE	BDL	10	
9V.	CHLOROETHANE	BDL	10	
10V.	2-CHLOROETHYL VINYL ETHER	BDL	10	
11V.	CHLOROFORM	BDL	10	
12V.	DICHLOROBROMOMETHANE	BDL	10	
13V.	DICHLORODIFLUOROMETHANE	BDL	10	
14V.	1,1-DICHLOROETHANE	BDL	10	
15V.	1,2-DICHLOROETHANE	BDL	10	
16V.	1,1-DICHLOROETHYLENE	BDL	10	
17V.	1,2-DICHLOROPROPANE	BDL	10	
18V.	1,3-DICHLOROPROPYLENE	BDL	10	
19V.	ETHYLBENZENE	BDL	10	
20V.	METHYL BROMIDE	BDL	10	
21V.	METHYL CHLORIDE	BDL	10	
22V.	METHYLENE CHLORIDE	BDL	10	
23V.	1,1,2,2-TETRACHLOROETHANE	13	10	641
24V.	TETRACHLOROETHYLENE	BDL	10	
25V.	TOLUENE	43	10	677
26V.	1,2-TRANS-DICHLOROETHYLENE	450	10	301
27V.	1,1,1-TRICHLOROETHANE	BDL	10	
28V.	1,1,2-TRICHLOROETHANE	BDL	10	
29V.	TRICHLOROETHYLENE	31	10	470
30V.	TRICHLOROFLUOROMETHANE	BDL	10	
31V.	VINYL CHLORIDE	BDL	10	

BDL = BELOW DETECTION LIMIT

EXHIBIT II - COMPOUND LIST

SAMPLE IDENTIFIER: 29373
COMPUCHEM SAMPLE NUMBER: 3494

<u>ACID EXTRACTABLE ORGANICS</u>		<u>CONCENTRATION (UG/L)</u>	<u>DETECTION LIMIT (UG/L)</u>	<u>SCAN NUMBER</u>
1A.	2-CHLOROPHENOL	BDL	25	
2A.	2,4-DICHLOROPHENOL	BDL	25	
3A.	2,4-DIMETHYLPHENOL	BDL	25	
4A.	4,6-DINITRO-O-CRESOL	BDL	250	
5A.	2,4-DINITROPHENOL	BDL	250	
6A.	2-NITROPHENOL	BDL	25	
7A.	4-NITROPHENOL	BDL	25	
8A.	P-CHLORO-M-CRESOL	BDL	25	
9A.	PENTACHLOROPHENOL	BDL	25	
10A.	PHENOL	BDL	25	
11A.	2,4,6-TRICHLOROPHENOL	BDL	25	

BDL = BELOW DETECTION LIMIT

CompuChem employs Methods 624 and 625 for priority pollutant analysis. These methods were proposed by the U.S. E.P.A. in Volume 44 of the Federal Register on December 3, 1979. As these methods are currently in a "proposed" status, all aspects of the methods may not be validated until the U.S. E.P.A. promulgates the methods in "final" form.

EXHIBIT II - COMPOUND LIST

SAMPLE IDENTIFIER: 29373
COMPUCHEM SAMPLE NUMBER: 3494

		<u>CONCENTRATION</u> <u>(UG/L)</u>	<u>DETECTION</u> <u>LIMIT</u> <u>(UG/L)</u>
<u>PESTICIDES/PCB'S</u>			
1P.	ALDRIN	BDL	0.1
2P.	ALPHA-BHC	BDL	0.1
3P.	BETA-BHC	BDL	0.1
4P.	GAMMA-BHC	BDL	0.1
5P.	DELTA-BHC	BDL	0.1
6P.	CHLORDANE	BDL	0.1
7P.	4,4'-DDT	BDL	0.1
8P.	4,4'-DDE	BDL	0.1
9P.	4,4'-DDD	BDL	0.1
10P.	DIELDRIN	BDL	0.1
11P.	ALPHA-ENDOSULFAN	BDL	0.1
12P.	BETA-ENDOSULFAN	BDL	0.1
13P.	ENDOSULFAN SULFATE	BDL	0.1
14P.	ENDRIN	BDL	0.1
15P.	ENDRIN ALDEHYDE	BDL	0.1
16P.	HEPTACHLOR	BDL	0.1
17P.	HEPTACHLOR EPOXIDE	BDL	0.1
18P.	PCB-1242	BDL	0.1
19P.	PCB-1254	BDL	0.1
20P.	PCB-1221	BDL	0.1
21P.	PCB-1232	BDL	0.1
22P.	PCB-1248	BDL	0.1
23P.	PCB-1260	BDL	0.1
24P.	PCB-1016	BDL	0.1
25P.	TOXAPHENE	BDL	0.1

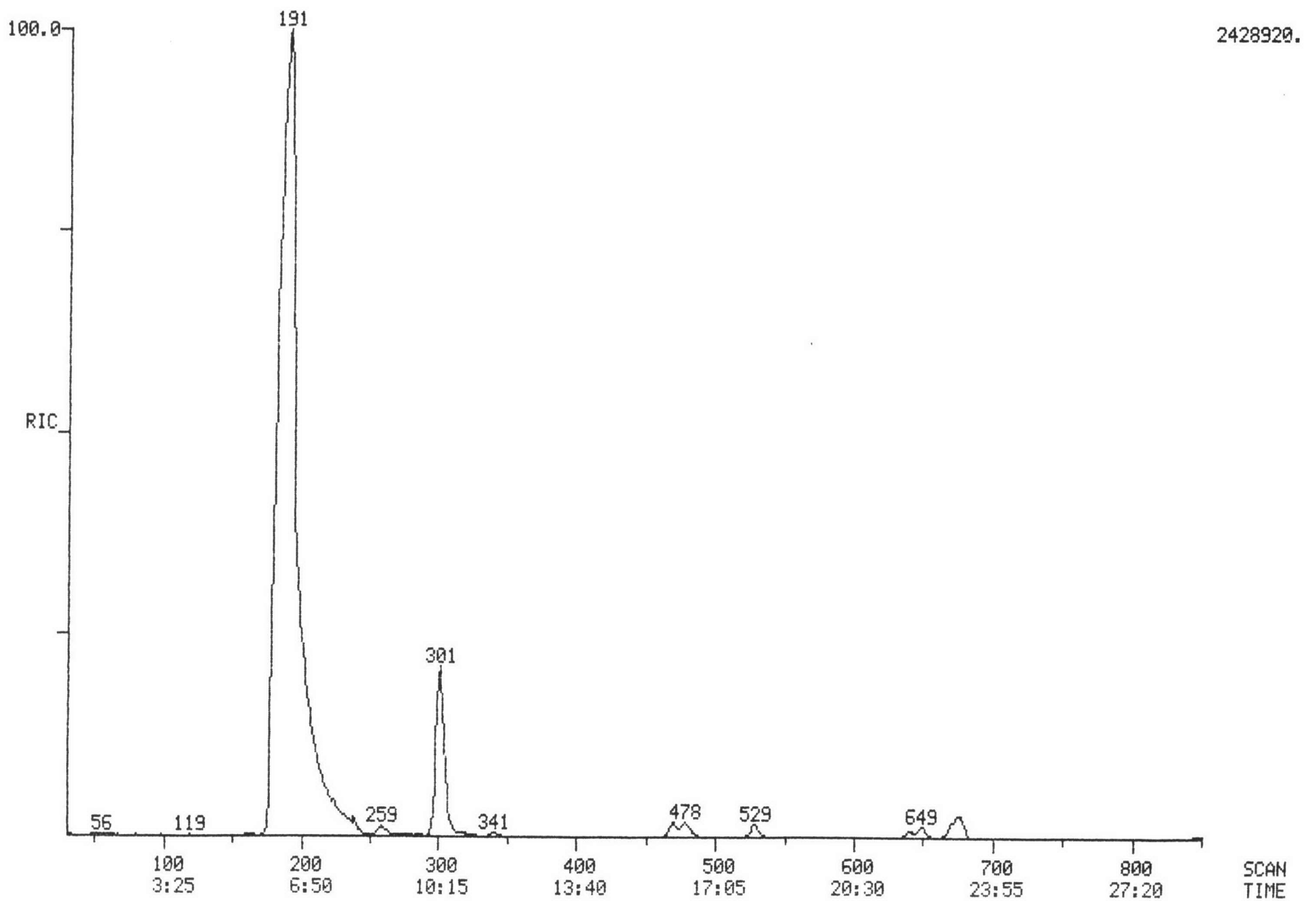
BDL = BELOW DETECTION LIMIT

RIC
04/28/83 18:55:00
SAMPLE: SAMPLE #3494 5ML DISK 507

MEAD COMPUCHEM

DATA: UN003494805

SCANS 30 TO 850



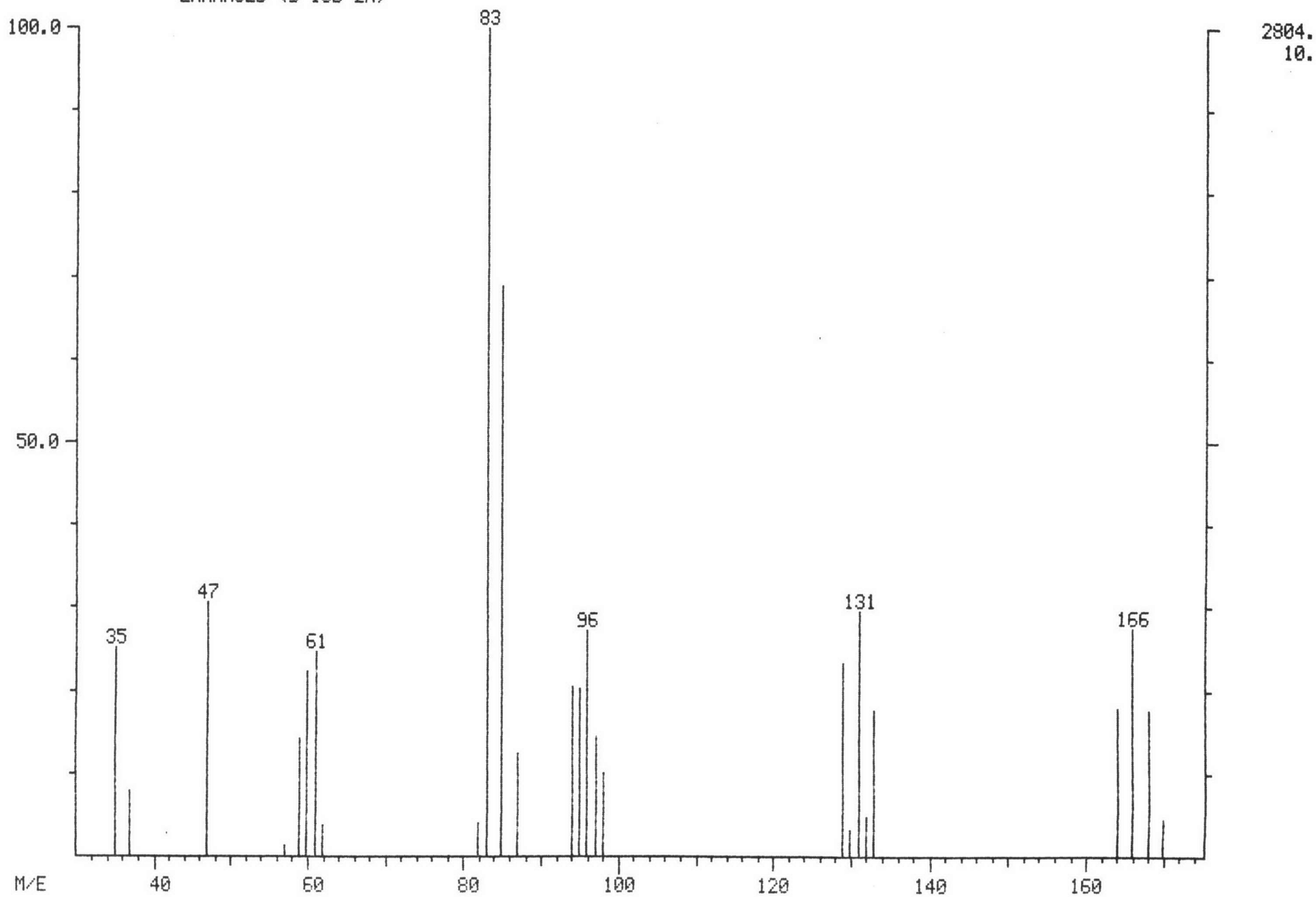
MASS SPECTRUM
04/28/83 18:55:00 + 21:54
SAMPLE: SAMPLE #3494 5ML DISK 507
ENHANCED (S 15B 2N)

MEAD COMPUCHEM

DATA: UN003494B05 #641

BASE M/E: 83
RIC: 15472.

0223



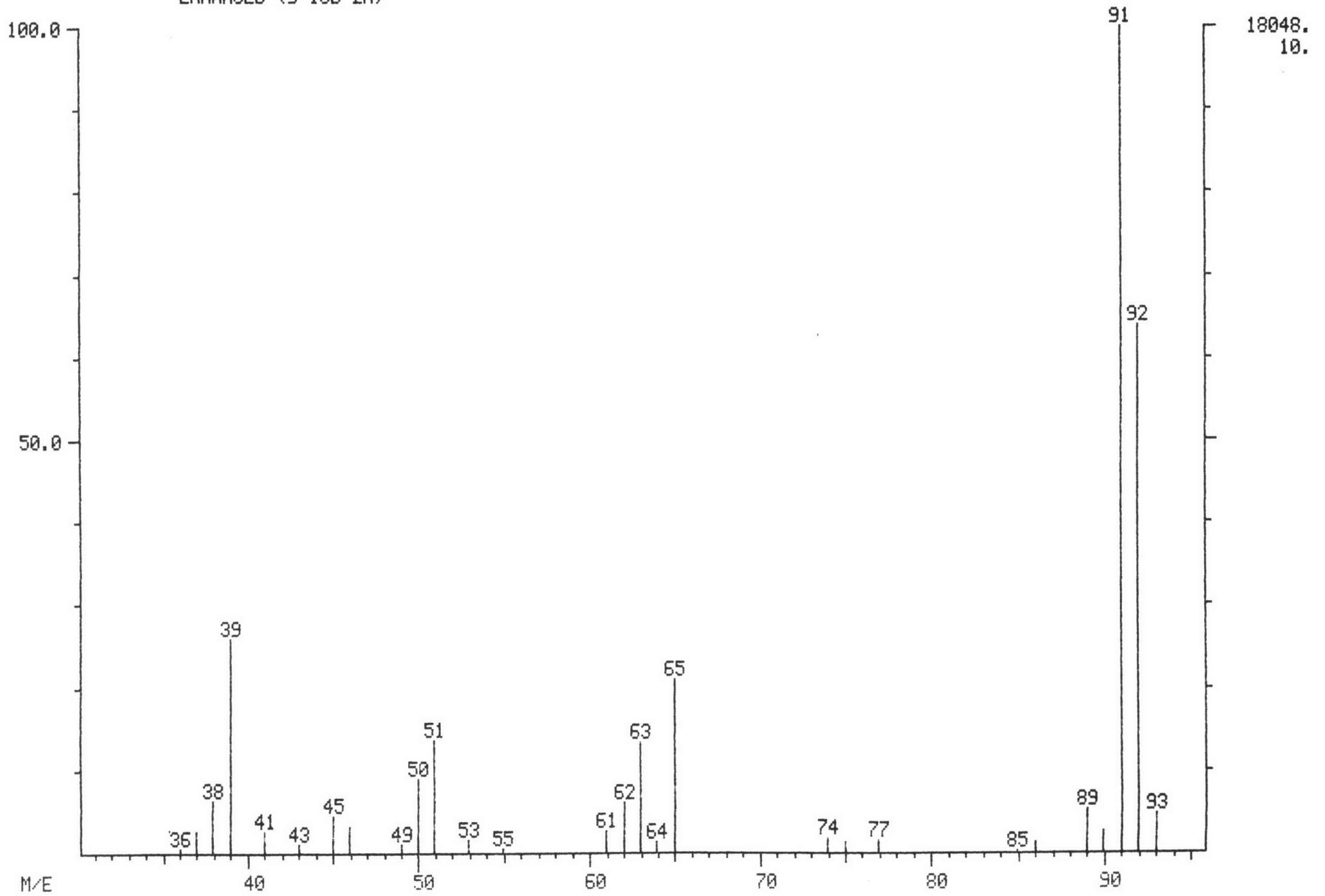
0225

MASS SPECTRUM
04/28/83 18:55:00 + 23:08
SAMPLE: SAMPLE #3494 5ML DISK 507
ENHANCED (S 15B 2N)

MEAD COMPUCHEM

DATA: UN003494B05 #677

BASE M/E: 91
RIC: 54080.



18048.
10.

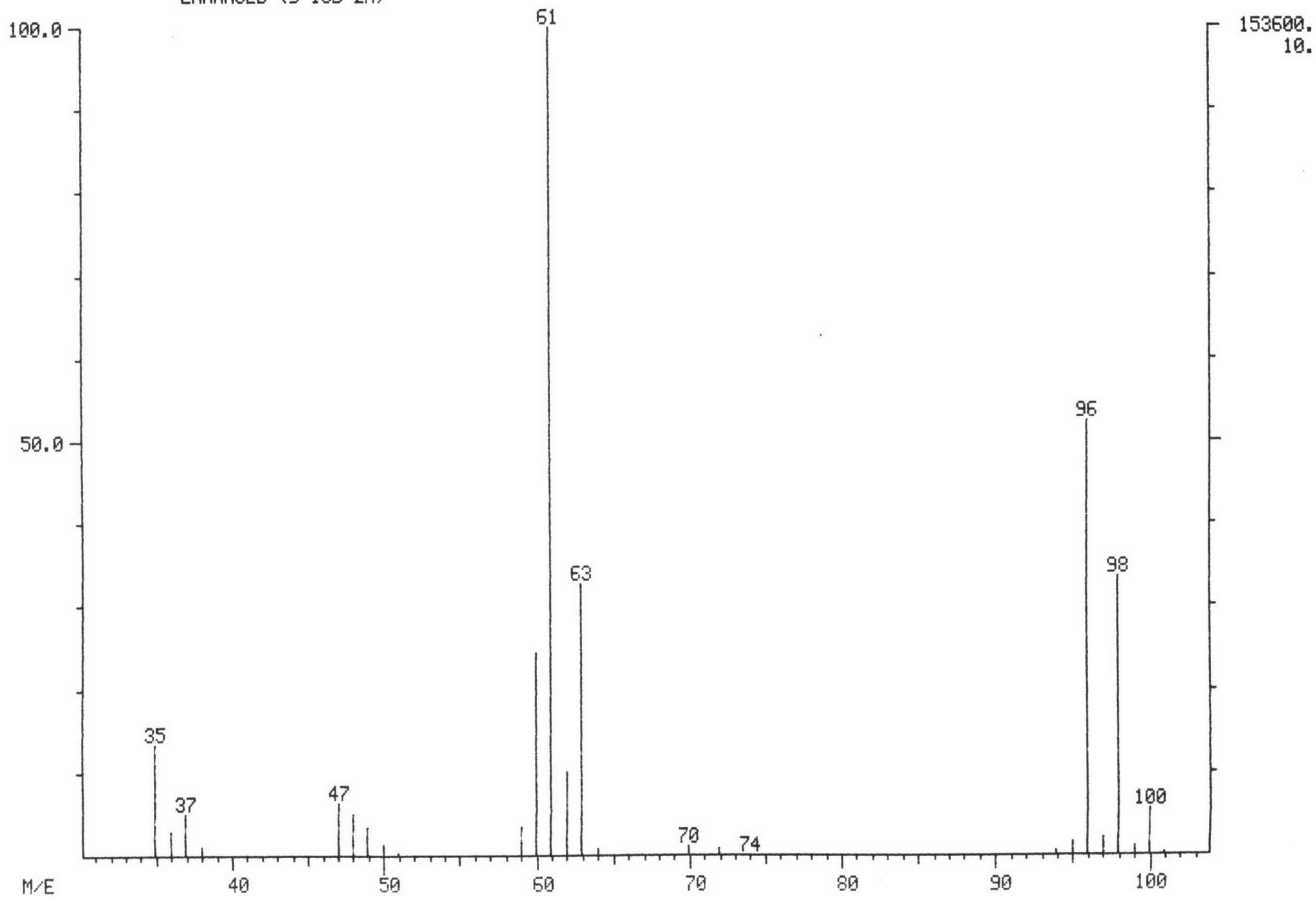
MASS SPECTRUM
04/28/83 18:55:00 + 10:17
SAMPLE: SAMPLE #3494 5ML DISK 507
ENHANCED (S 15B 2N)

MEAD COMPUCHEM

DATA: UN003494B05 #301

BASE M/E: 61
RIC: 474624.

0226



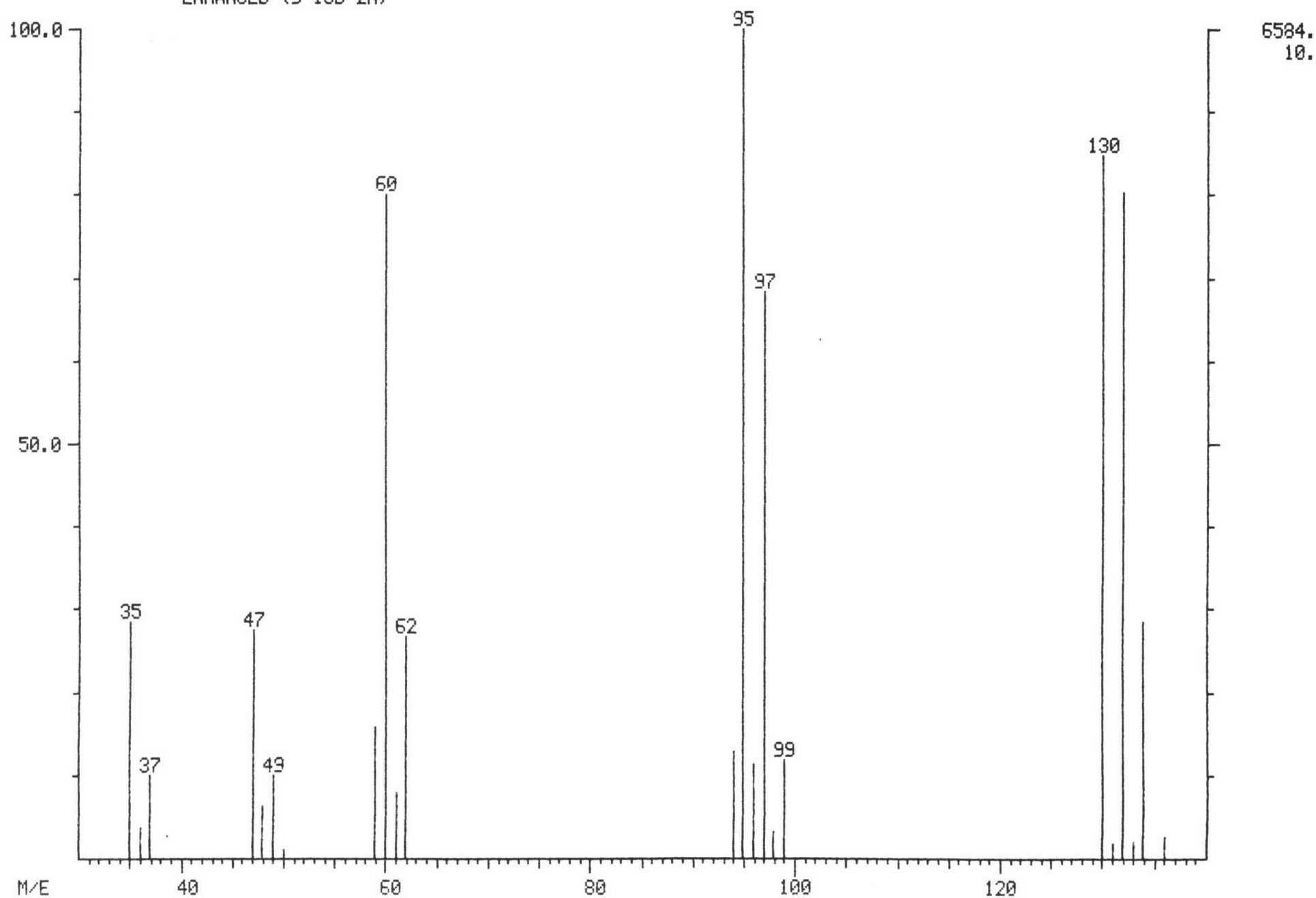
MASS SPECTRUM
04/28/83 18:55:00 + 16:03
SAMPLE: SAMPLE #3494 5ML DISK 507
ENHANCED (S 15B 2N)

MEAD COMPUCHEM

DATA: UN003494B05 #470

BASE M/E: 95
RIC: 41152.

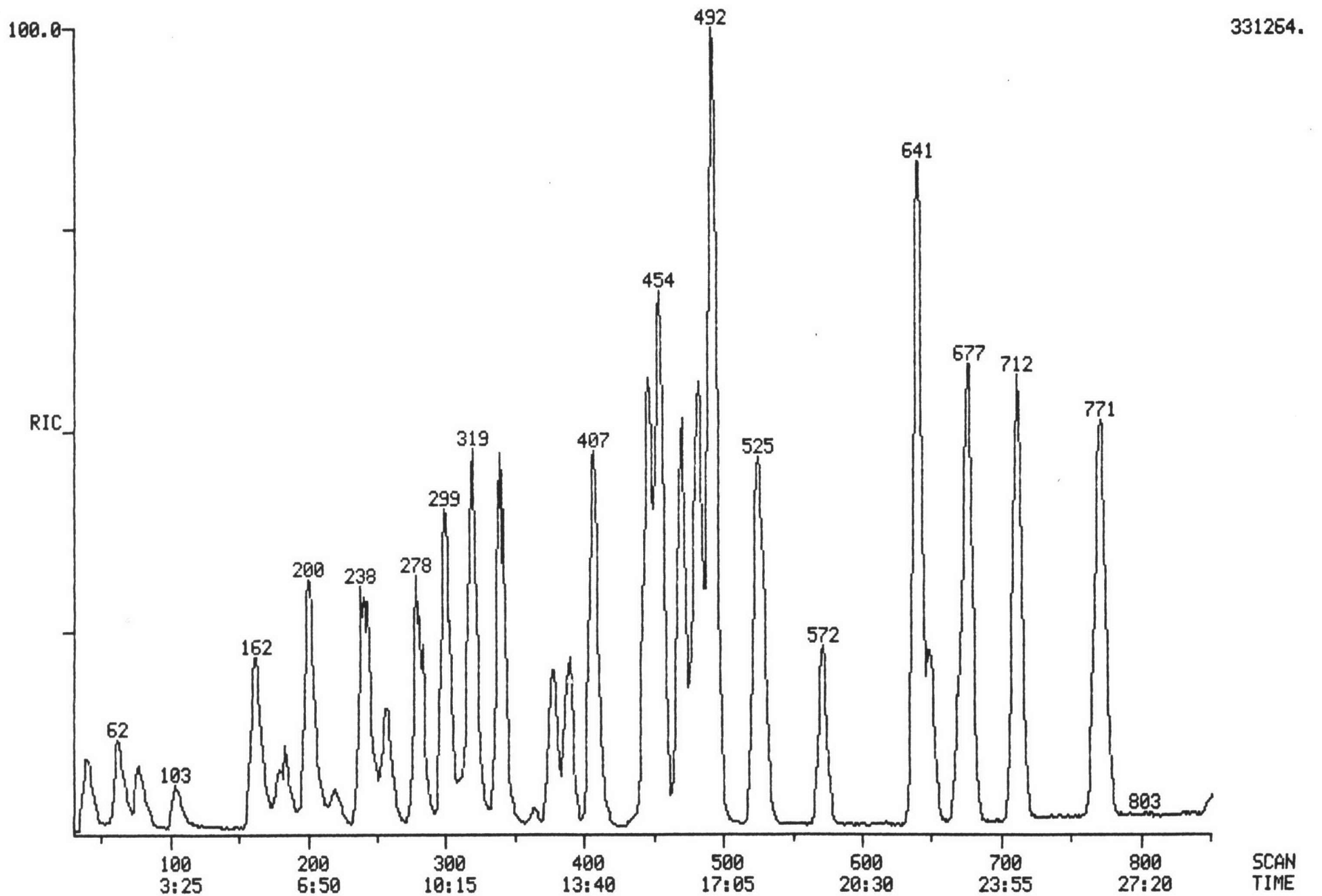
0229



RIC
04/28/83 17:53:00
SAMPLE: UOA 80NG STD 5ML

MEAD COMPUCHEM
DATA: US830428B05

SCANS 30 TO 850

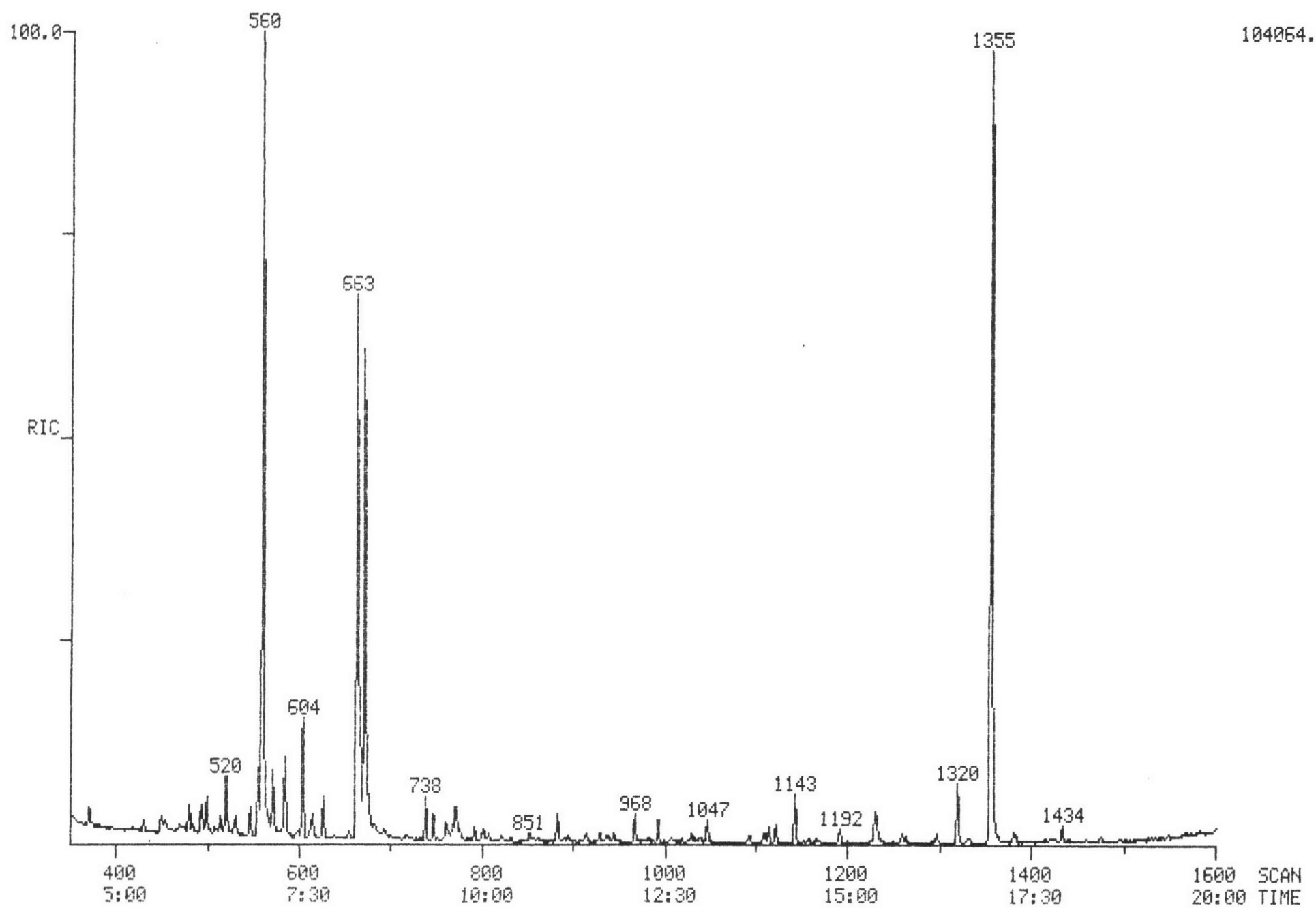


RIC
04/26/83 22:15:00
SAMPLE: ACID SAMPLE#3494

MEAD COMPUCHEM

DATA: AC003494802

SCANS 350 TO 1600

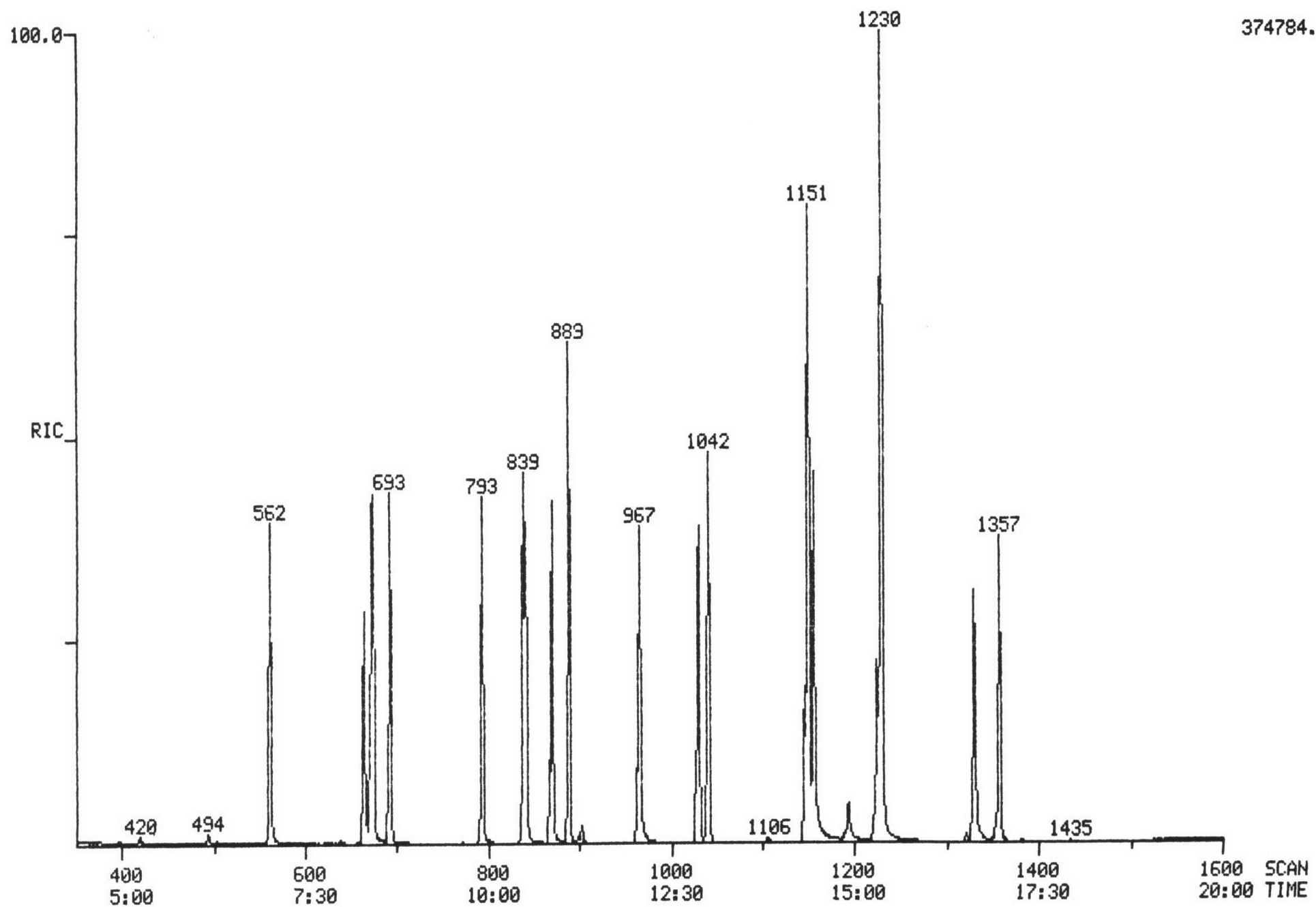


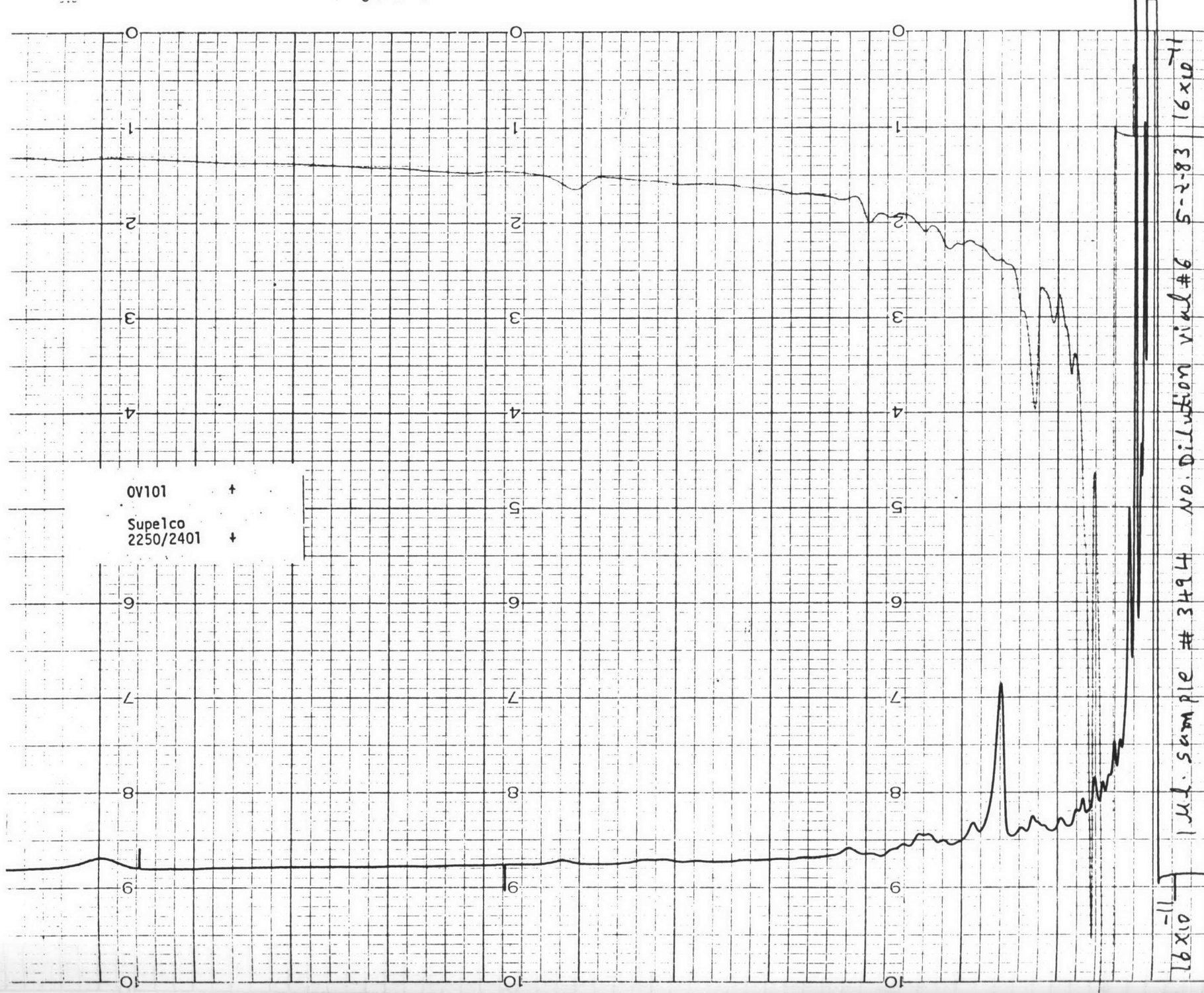
RIC
04/28/83 19:02:00
SAMPLE: ACID STD LOT#21182, #3303, -- 80 NG

MEAD COMPUCHEM

DATA: A5830428B02

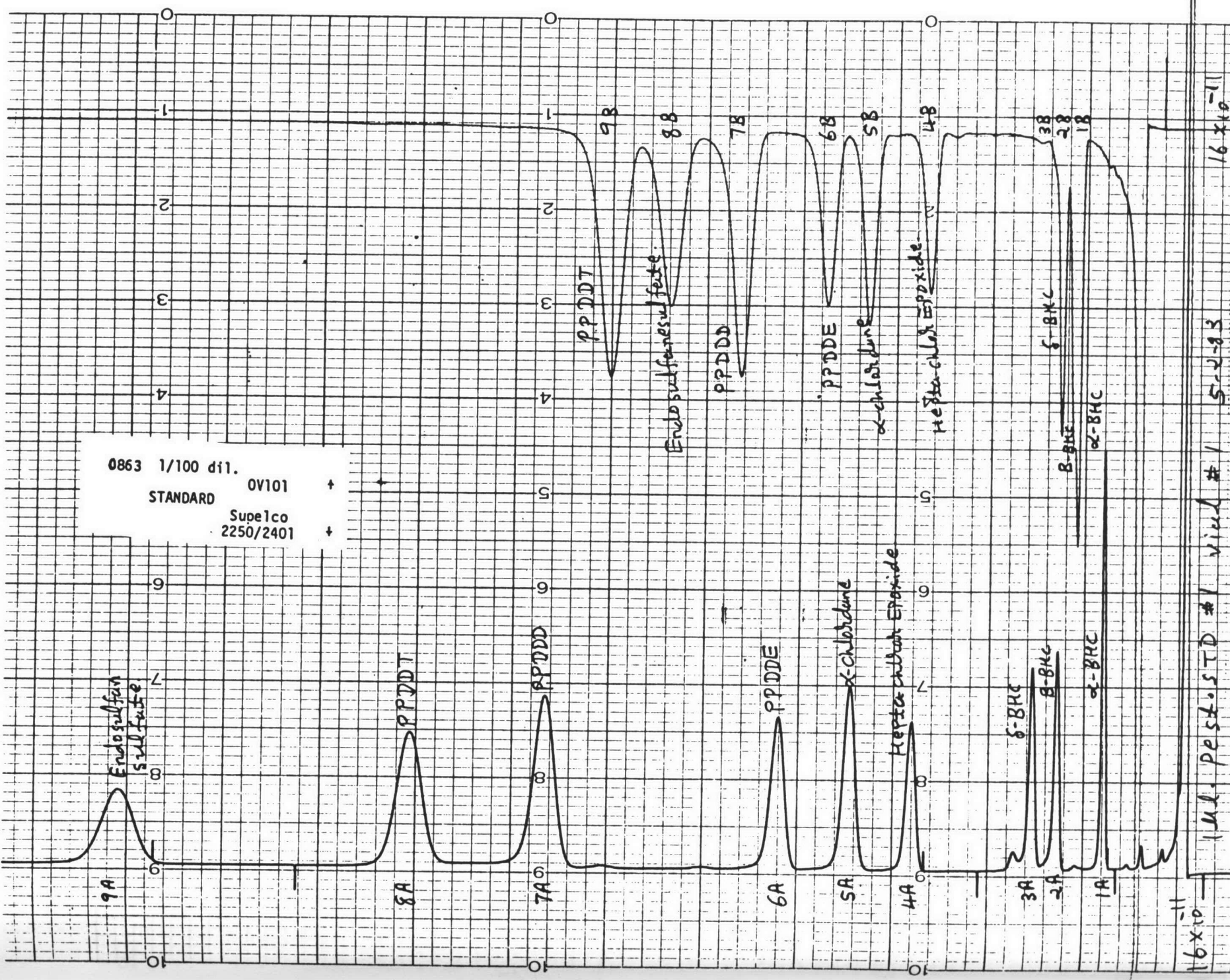
SCANS 350 TO 1600





0V101 +
Supelco 2250/2401 +

16x10⁻¹¹
1 μL sample # 3494
No. Dilution vial # 6
5-2-83
16x10⁻¹¹



0863 1/100 d11.
STANDARD 0V101
Supelco
2250/2401

Endosulfan sulfate

PPDDT

PPDDD

PPDDE

α -Chlorobutene

Heptachlor Epoxide

δ -BHC

β -BHC

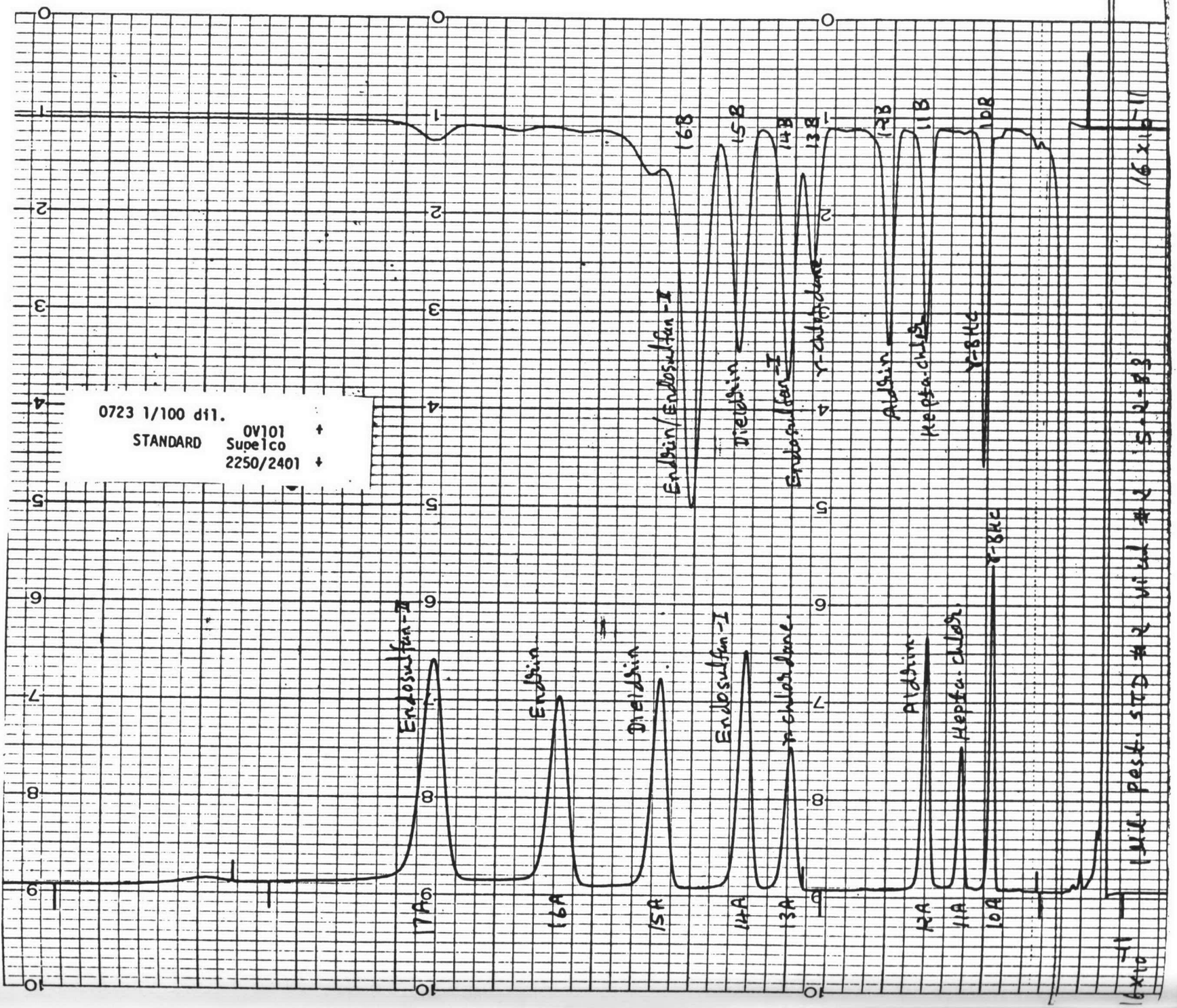
α -BHC

16x10-11

1ml. pest. STD #1

5-2-83

16x10-11



MeadCompuChem

1C. REPORT OF DATA

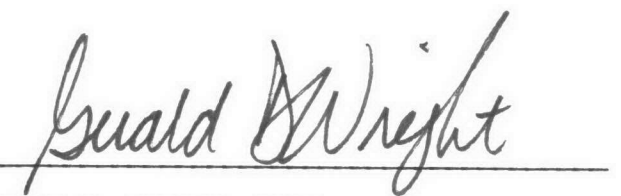
SAMPLE IDENTIFIER NUMBER: 29374

COMPUCHEM SAMPLE NUMBER: 3495

*CHEMICAL
LANDFILL well # 17*

SUBMITTED TO:

Mr. David Thompson
Centec
2160 Industrial Drive
Salem, VA 24153



GERALD D. WRIGHT, CPIM
MANAGER, PRODUCTION PLANNING AND CONTROL

R. L. MYERS, PH.D.
PRESIDENT

PAUL E. MILLS
DIRECTOR OF QUALITY ASSURANCE

JAMES J. ZOLDAK
DIRECTOR OF LABORATORY OPERATIONS

EXHIBIT I - LABORATORY CHRONICLE

SAMPLE IDENTIFIER: 29374
 COMPUCHEM SAMPLE NUMBER: 3495

	<u>Date</u>
Received/Refrigerated	04/25/83
Organics	
Extracted	04/28/83
Analyzed	
1. Volatiles	04/28/83, 05/02/83 ¹
2. Acids	04/29/83
3. Base/Neutrals	Not Requested
4. Pesticides/PCBS	05/02/83
Inorganics	
1. Metals	Not Requested
2. Cyanides	Not Requested
3. Phenols	Not Requested

¹ Volatile fraction run undiluted on 04/28/83, and at a 1:10 dilution on 05/02/83 due to an excessive concentration of 1,2-TRANS-DICHLOROETHYLENE.

EXHIBIT II - COMPOUND LIST

SAMPLE IDENTIFIER: 29374
 COMPUCHEM SAMPLE NUMBER: 3495

<u>VOLATILE ORGANICS</u>		<u>CONCENTRATION</u> <u>(UG/L)</u>	<u>DETECTION</u> <u>LIMIT</u> <u>(UG/L)</u>	<u>SCAN</u> <u>NUMBER</u>
1V.	ACROLEIN	BDL	100	
2V.	ACRYLONITRILE	BDL	100	
3V.	BENZENE	13	10	479
4V.	BIS (CHLOROMETHYL) ETHER	BDL	10	
5V.	BROMOFORM	BDL	10	
6V.	CARBON TETRACHLORIDE	BDL	10	
7V.	CHLOROBENZENE	BDL	10	
8V.	CHLORODIBROMOMETHANE	BDL	10	
9V.	CHLOROETHANE	BDL	10	
10V.	2-CHLOROETHYL VINYL ETHER	BDL	10	
11V.	CHLOROFORM	BDL	10	
12V.	DICHLOROBROMOMETHANE	BDL	10	
13V.	DICHLORODIFLUOROMETHANE	BDL	10	
14V.	1,1-DICHLOROETHANE	BDL	10	
15V.	1,2-DICHLOROETHANE	21	10	335
16V.	1,1-DICHLOROETHYLENE	BDL	10	
17V.	1,2-DICHLOROPROPANE	BDL	10	
18V.	1,3-DICHLOROPROPYLENE	BDL	10	
19V.	ETHYLBENZENE	BDL	10	
20V.	METHYL BROMIDE	BDL	10	
21V.	METHYL CHLORIDE	BDL	10	
22V.	METHYLENE CHLORIDE	BDL	10	
23V.	1,1,2,2-TETRACHLOROETHANE	BDL	10	
24V.	TETRACHLOROETHYLENE	BDL	10	
25V.	TOLUENE	BDL	10	
26V.	1,2-TRANS-DICHLOROETHYLENE	4,700 ¹	10	299
27V.	1,1,1-TRICHLOROETHANE	BDL	10	
28V.	1,1,2-TRICHLOROETHANE	BDL	10	
29V.	TRICHLOROETHYLENE	BDL	10	
30V.	TRICHLOROFLUOROMETHANE	BDL	10	
31V.	VINYL CHLORIDE	28	10	77

¹ Compound calculated from a 1:10 dilution

BDL = BELOW DETECTION LIMIT

EXHIBIT II - COMPOUND LIST

SAMPLE IDENTIFIER: 29374
COMPUCHEM SAMPLE NUMBER: 3495

<u>ACID EXTRACTABLE ORGANICS</u>		<u>CONCENTRATION (UG/L)</u>	<u>DETECTION LIMIT (UG/L)</u>	<u>SCAN NUMBER</u>
1A.	2-CHLOROPHENOL	BDL	25	
2A.	2,4-DICHLOROPHENOL	BDL	25	
3A.	2,4-DIMETHYLPHENOL	BDL	25	
4A.	4,6-DINITRO-O-CRESOL	BDL	250	
5A.	2,4-DINITROPHENOL	BDL	250	
6A.	2-NITROPHENOL	BDL	25	
7A.	4-NITROPHENOL	BDL	25	
8A.	P-CHLORO-M-CRESOL	BDL	25	
9A.	PENTACHLOROPHENOL	BDL	25	
10A.	PHENOL	BDL	25	
11A.	2,4,6-TRICHLOROPHENOL	BDL	25	

BDL = BELOW DETECTION LIMIT

CompuChem employs Methods 624 and 625 for priority pollutant analysis. These methods were proposed by the U.S. E.P.A. in Volume 44 of the Federal Register on December 3, 1979. As these methods are currently in a "proposed" status, all aspects of the methods may not be validated until the U.S. E.P.A. promulgates the methods in "final" form.

EXHIBIT II - COMPOUND LIST

SAMPLE IDENTIFIER: 29374
COMPUCHEM SAMPLE NUMBER: 3495

<u>PESTICIDES/PCB'S</u>	<u>CONCENTRATION (UG/L)</u>	<u>DETECTION LIMIT (UG/L)</u>
1P. ALDRIN	BDL	0.1
2P. ALPHA-BHC	BDL	0.1
3P. BETA-BHC	BDL	0.1
4P. GAMMA-BHC	BDL	0.1
5P. DELTA-BHC	BDL	0.1
6P. CHLORDANE	BDL	0.1
7P. 4,4'-DDT	BDL	0.1
8P. 4,4'-DDE	BDL	0.1
9P. 4,4'-DDD	BDL	0.1
10P. DIELDRIN	BDL	0.1
11P. ALPHA-ENDOSULFAN	BDL	0.1
12P. BETA-ENDOSULFAN	BDL	0.1
13P. ENDOSULFAN SULFATE	BDL	0.1
14P. ENDRIN	BDL	0.1
15P. ENDRIN ALDEHYDE	BDL	0.1
16P. HEPTACHLOR	BDL	0.1
17P. HEPTACHLOR EPOXIDE	BDL	0.1
18P. PCB-1242	BDL	0.1
19P. PCB-1254	BDL	0.1
20P. PCB-1221	BDL	0.1
21P. PCB-1232	BDL	0.1
22P. PCB-1248	BDL	0.1
23P. PCB-1260	BDL	0.1
24P. PCB-1016	BDL	0.1
25P. TOXAPHENE	BDL	0.1

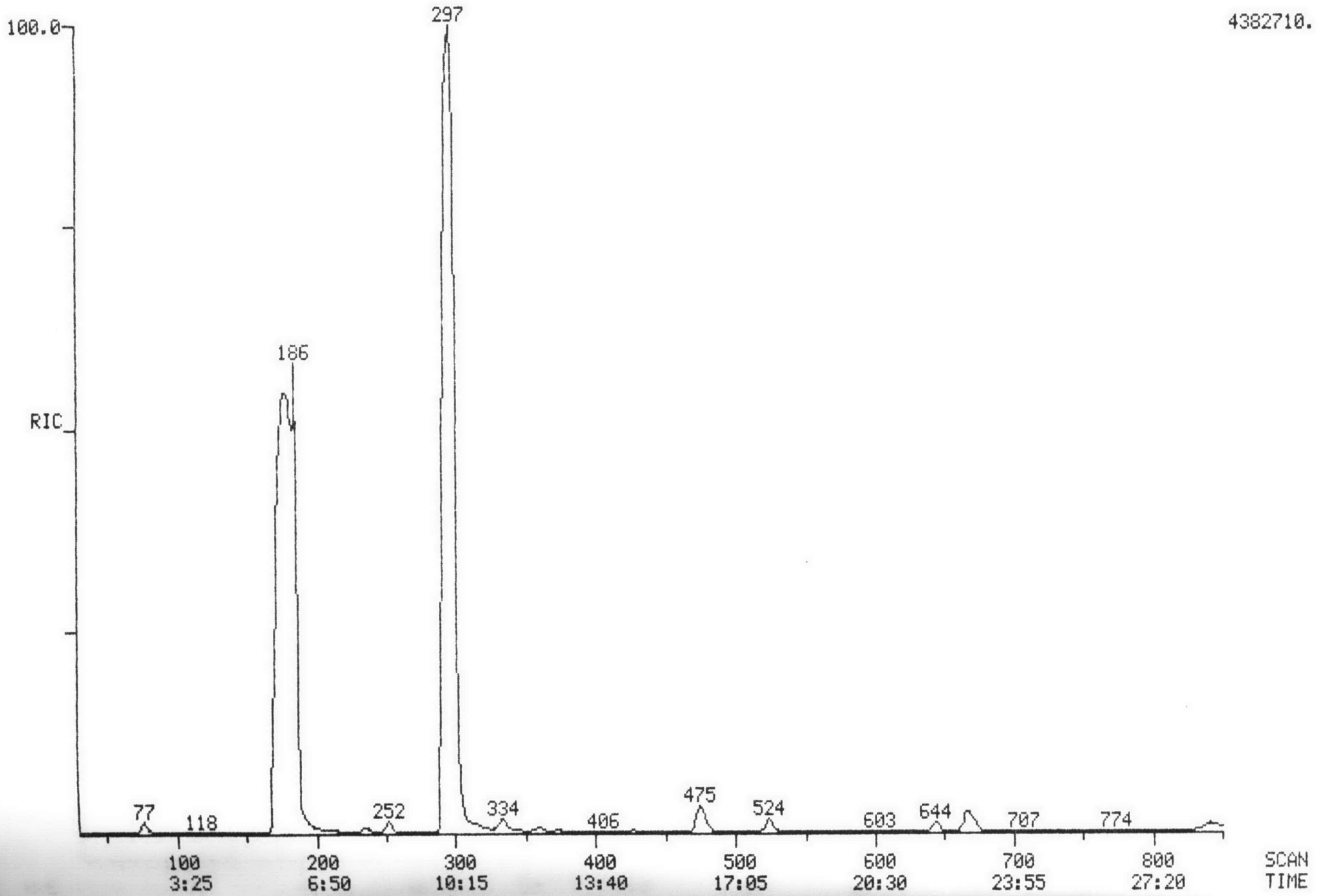
BDL = BELOW DETECTION LIMIT

RIC

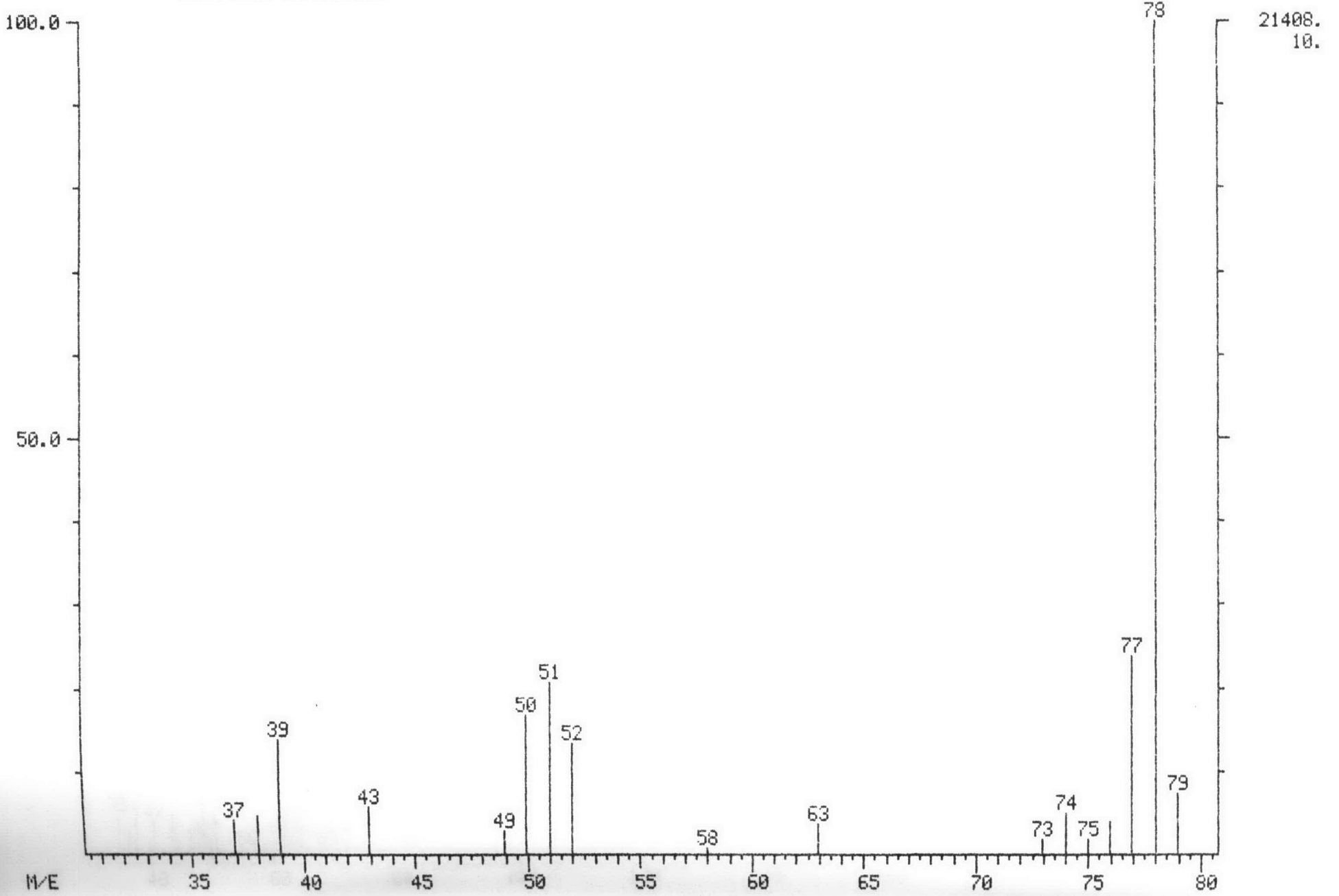
04/28/83 20:39:00

SAMPLE: SAMPLE #3495 5ML DISK 602

4382710.



MASS SPECTRUM
04/28/83 20:39:00 + 15:22
SAMPLE: SAMPLE #3495 5ML DISK 602
ENHANCED (5 15B 2N)



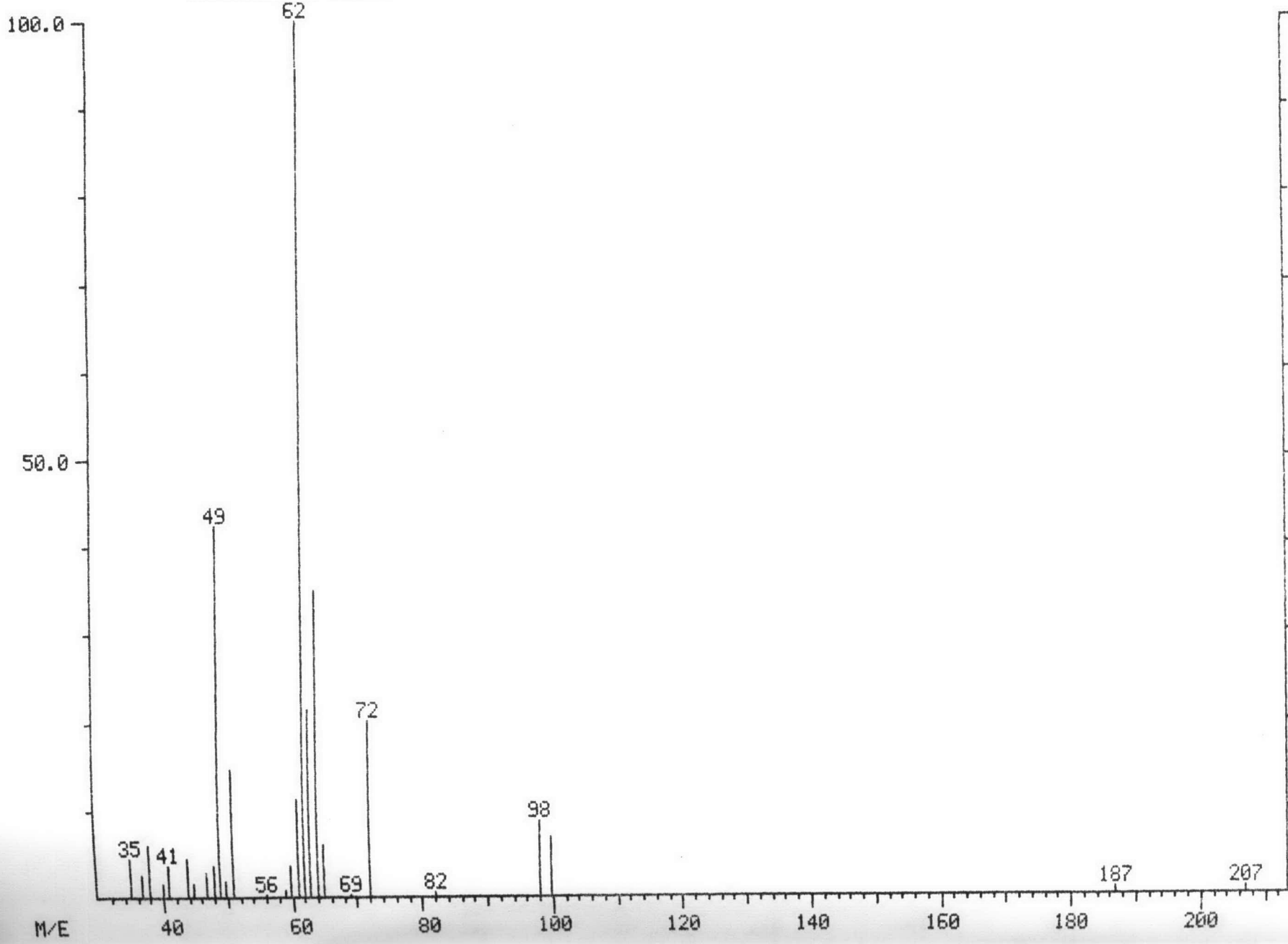
MEAD COMPUCHEM

DATA: UN003495B06 #335

BASE M/E: 62
RIC: 33664.

0215

MASS SPECTRUM
04/28/83 20:39:00 + 11:27
SAMPLE: SAMPLE #3495 5ML DISK 602
ENHANCED (S 158 2N)



10960.
10.

103

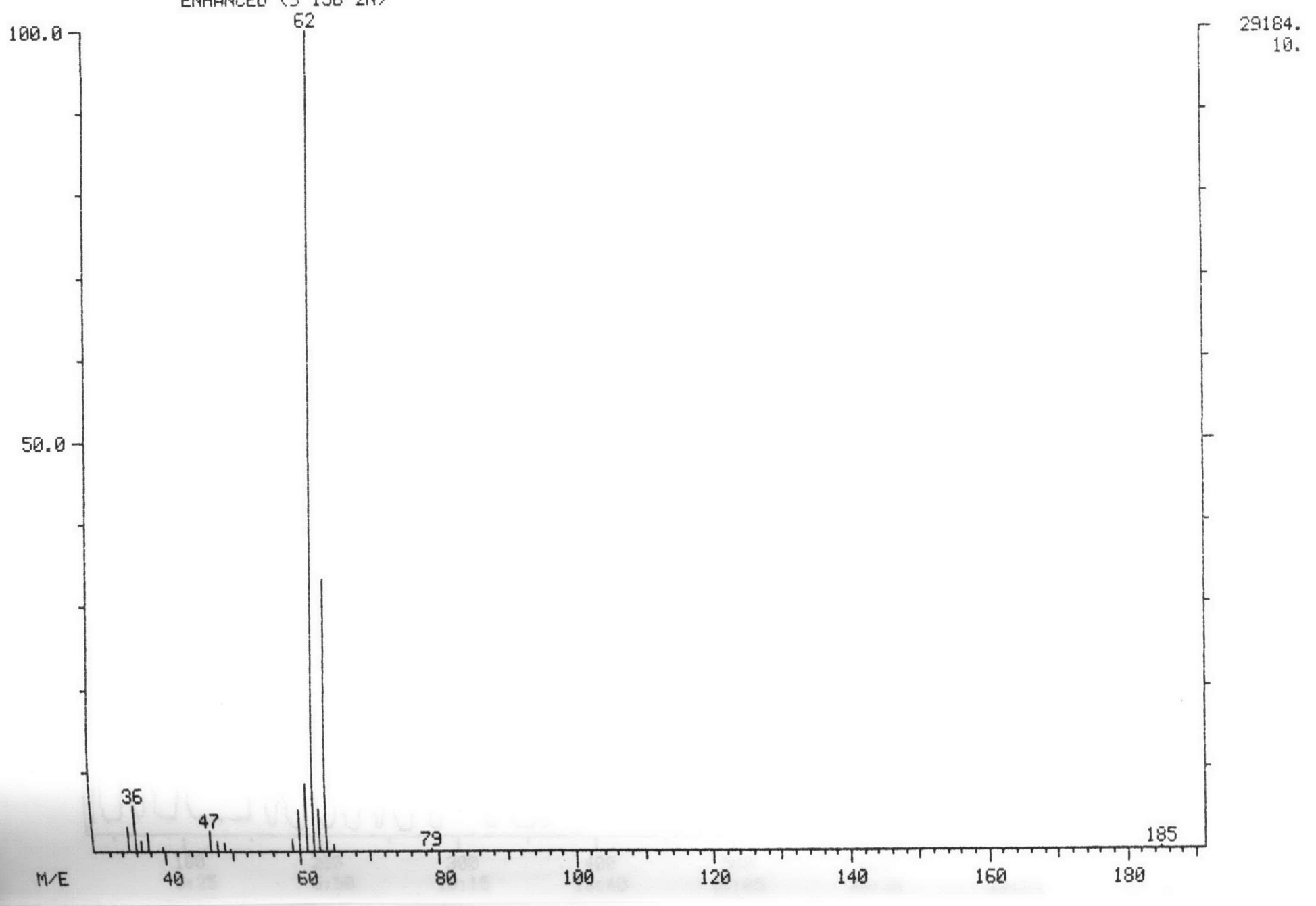
0231

MEAD COMPUCEM

DATA: UN003495B06 #77

BASE M/E: 62
RIC: 50496.

MASS SPECTRUM
04/28/83 20:39:00 + 2:38
SAMPLE: SAMPLE #3495 5ML DISK 602
ENHANCED (S 15B 2N)



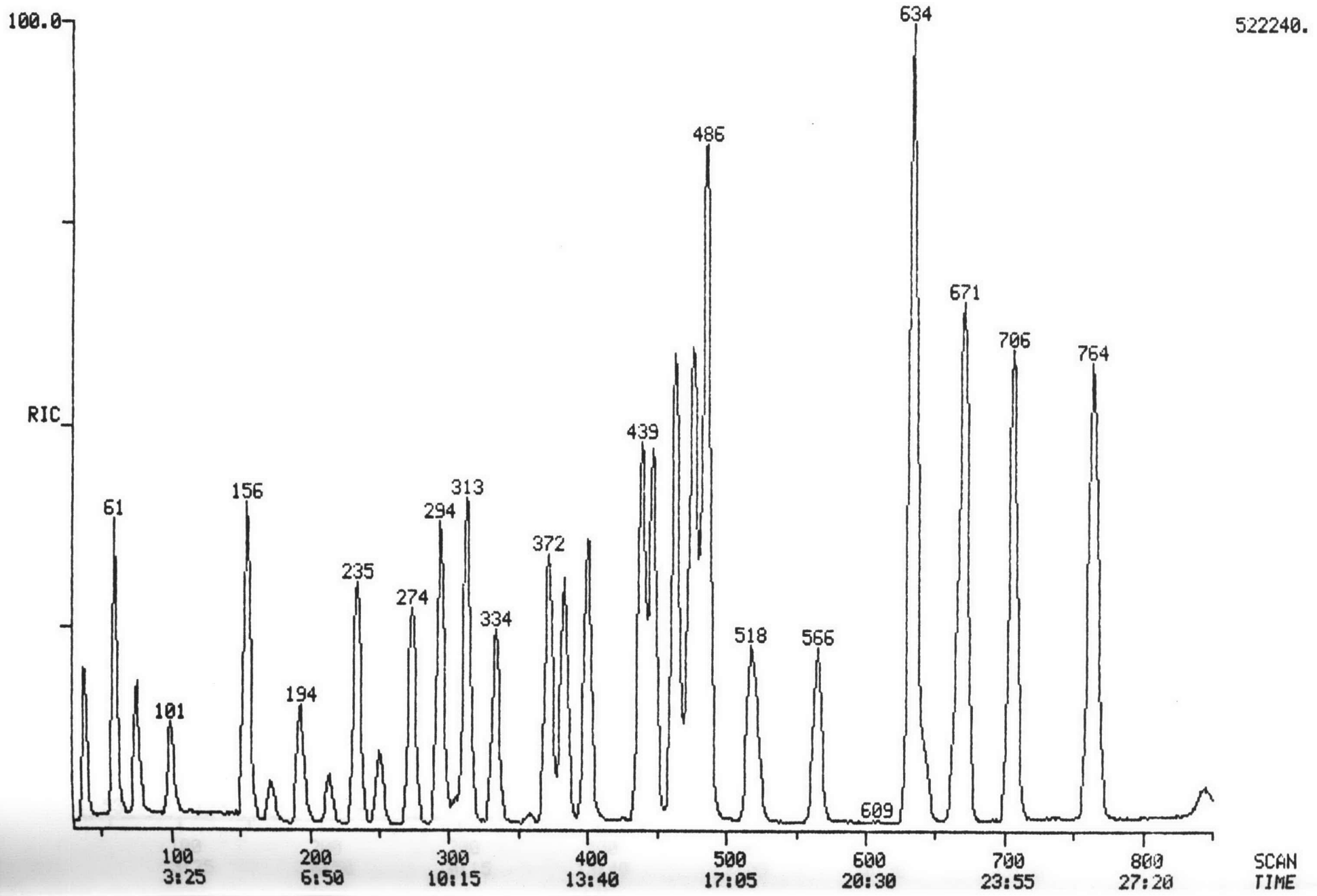
RIC
04/28/83 17:11:00
SAMPLE: VOA 80NG STD 5ML DISK 602

MEAD COMPUCEM

DATA: V5830428B06

SCANS 30 TO 850

522240.

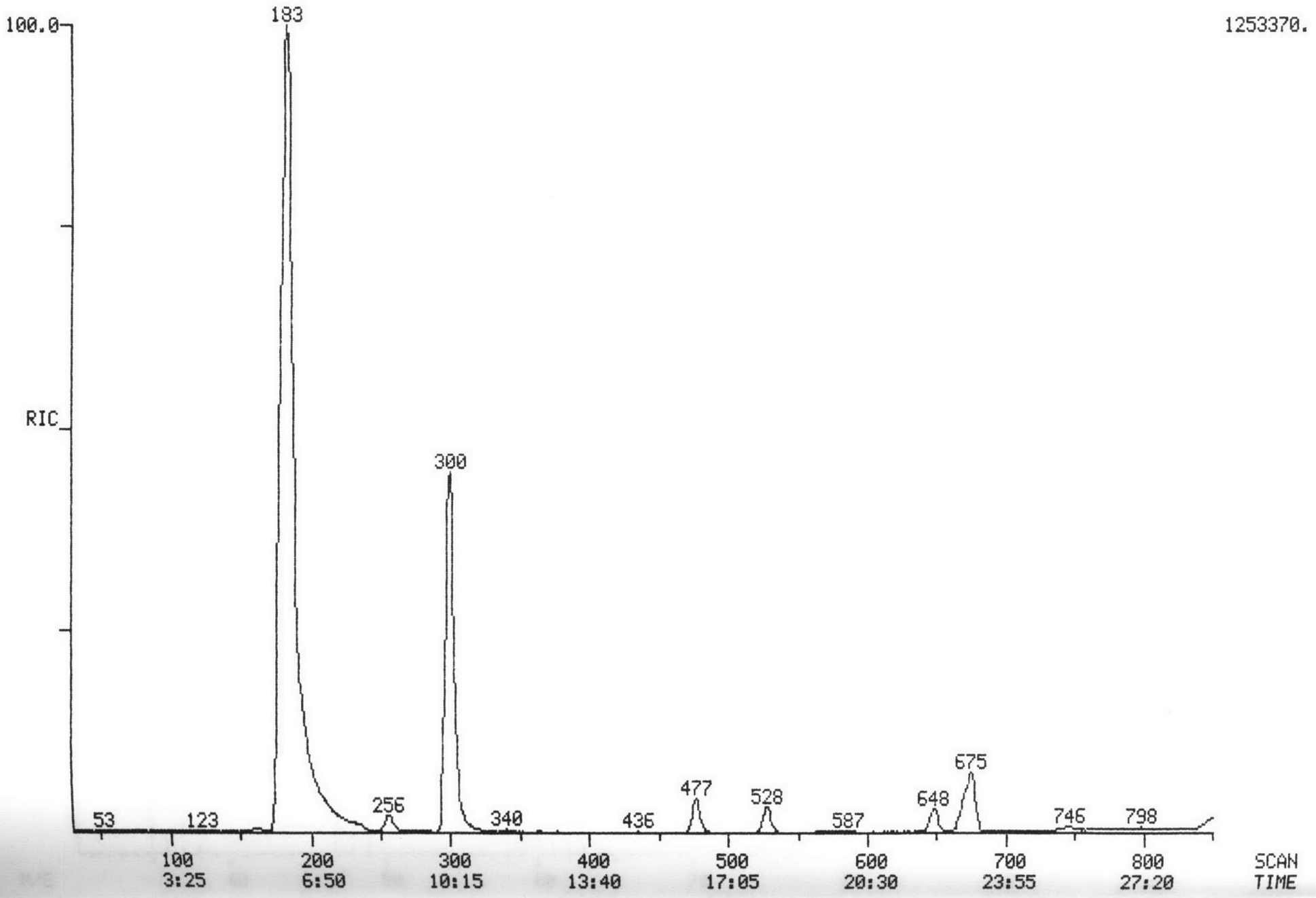


RIC
05/02/83 22:21:00
SAMPLE: SAMPLE #3495R 1:10 DIL 5ML 508

DATA: UR003495B05

SCANS 30 TO 850

1253370.



MEAD COMPUCHEM

0226

MASS SPECTRUM

DATA: UR003495B05 #299

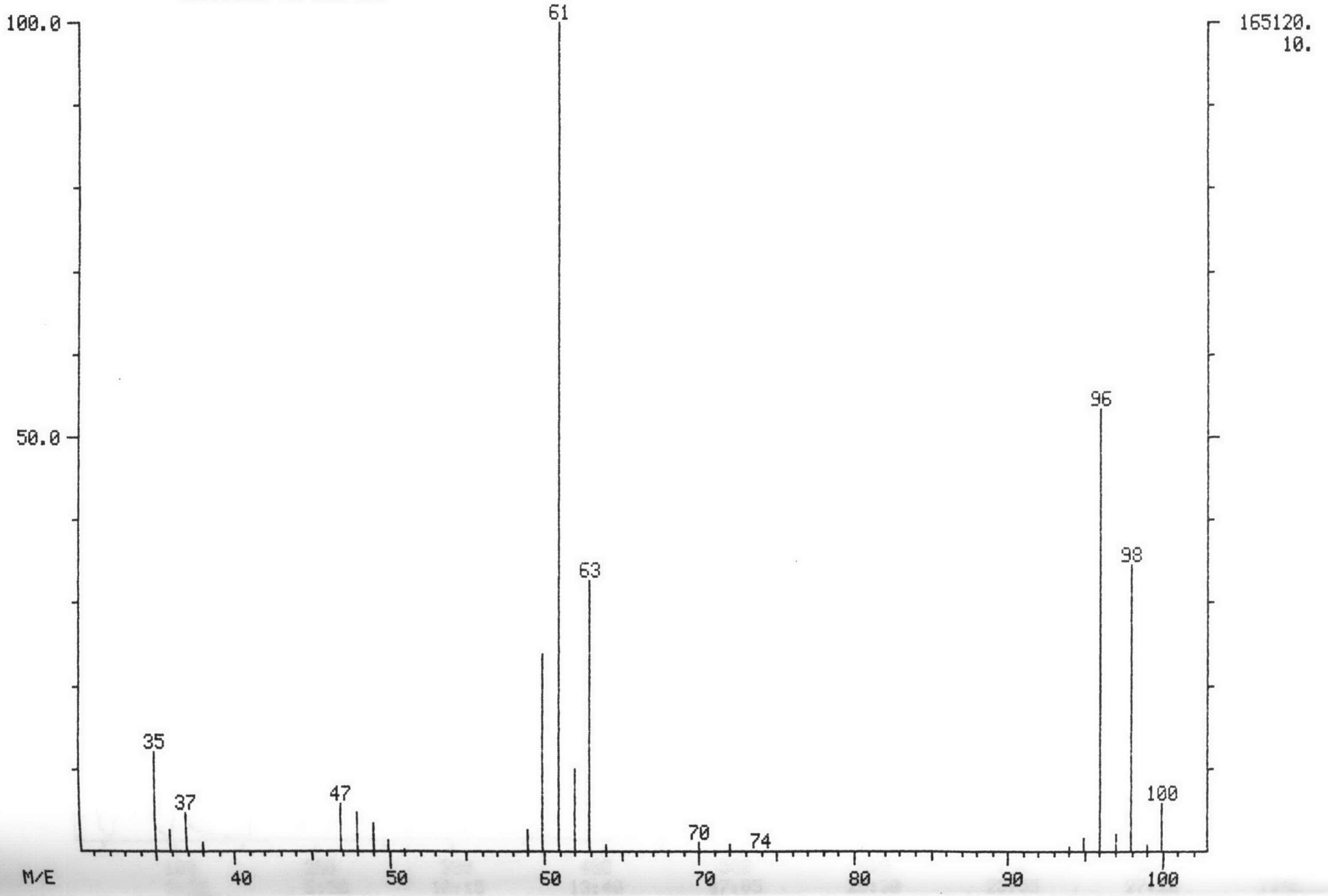
BASE M/E: 61

05/02/83 22:21:00 + 10:13

RIC: 505344.

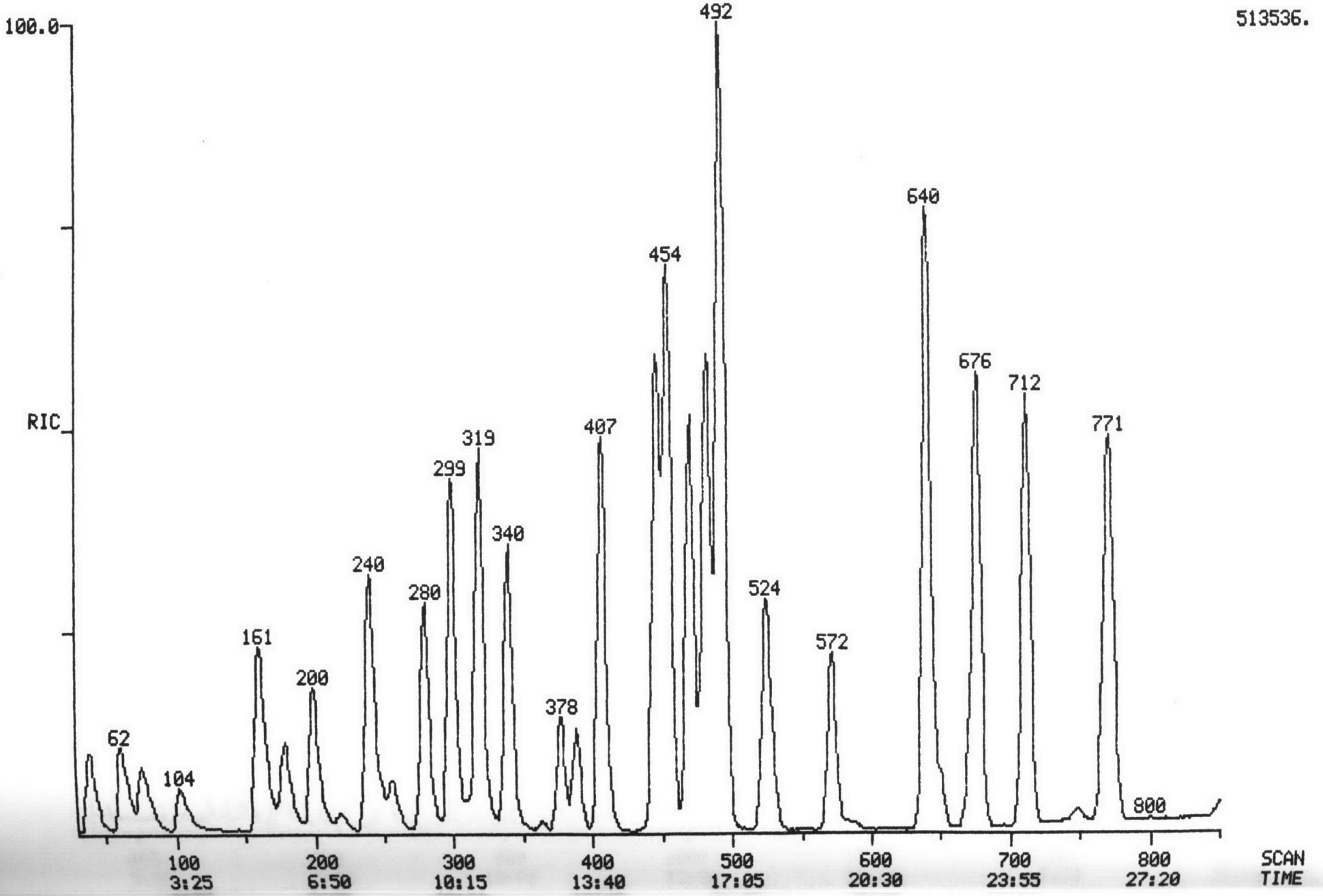
SAMPLE: SAMPLE #3495R 1:10 DIL 5ML 508

ENHANCED (S 15B 2N)

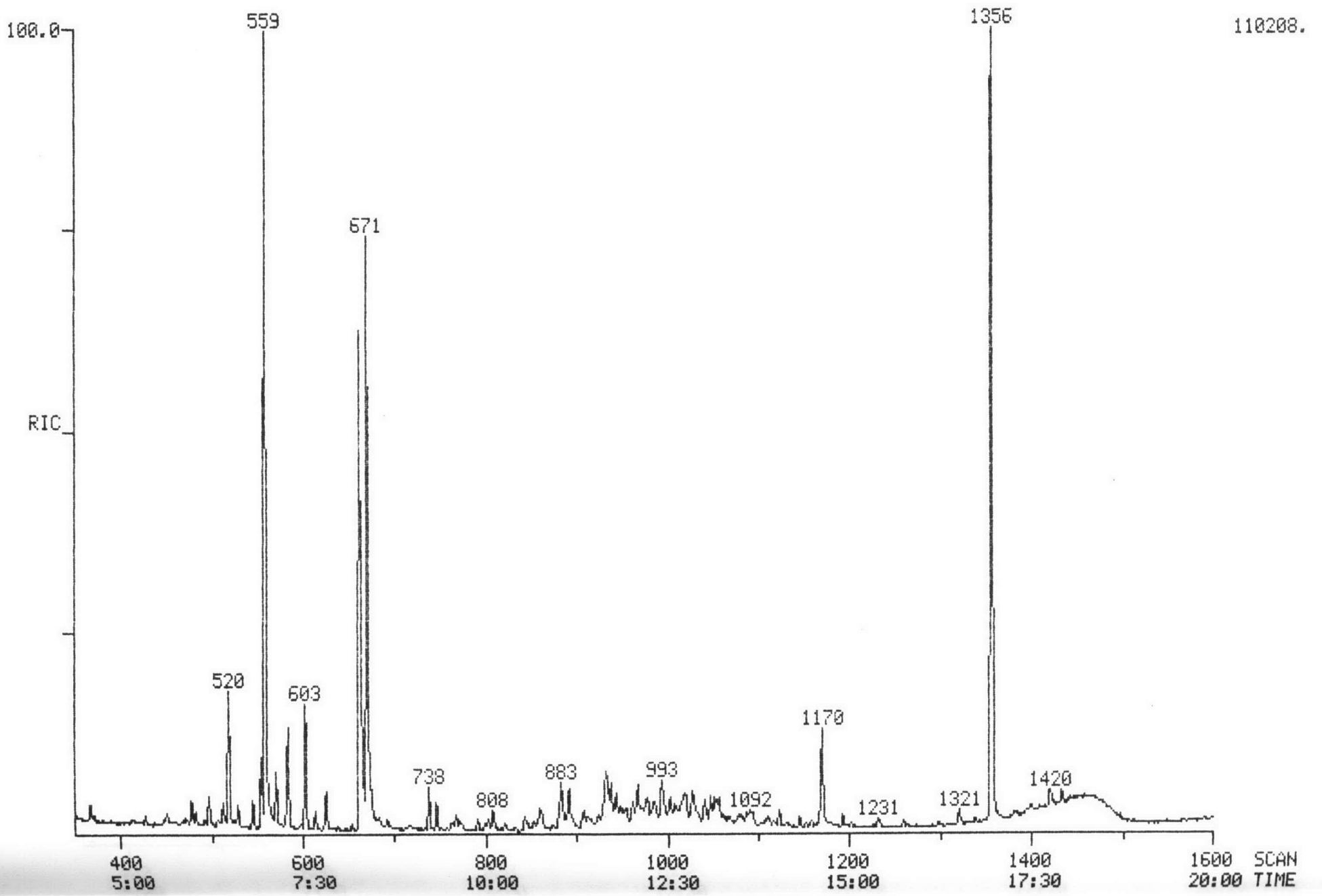


RIC
05/02/83 18:48:00
SAMPLE: 160NG STD 5ML DISK 508

513536.



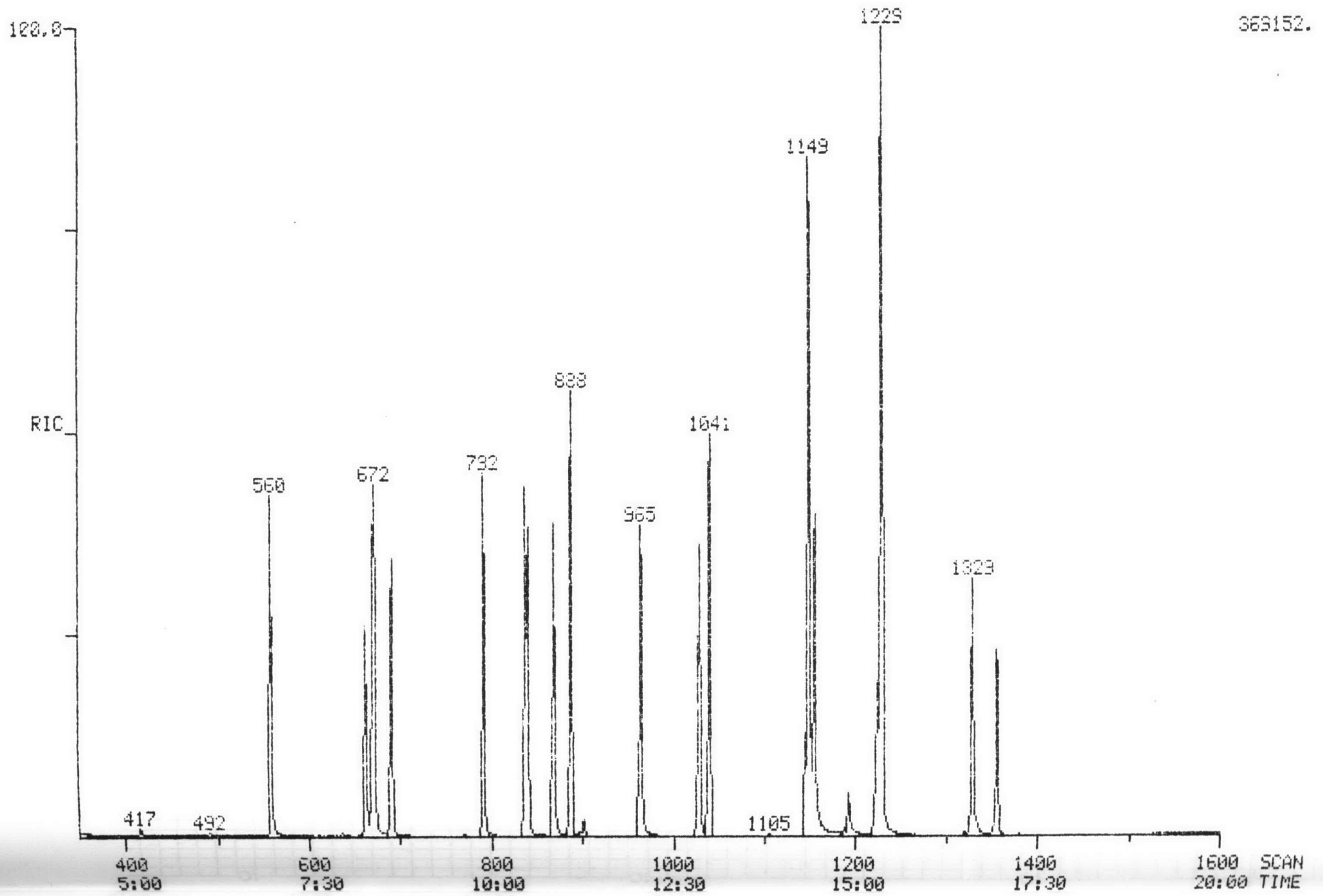
RIC
04/29/83 11:13:00
SAMPLE: ACID #3495

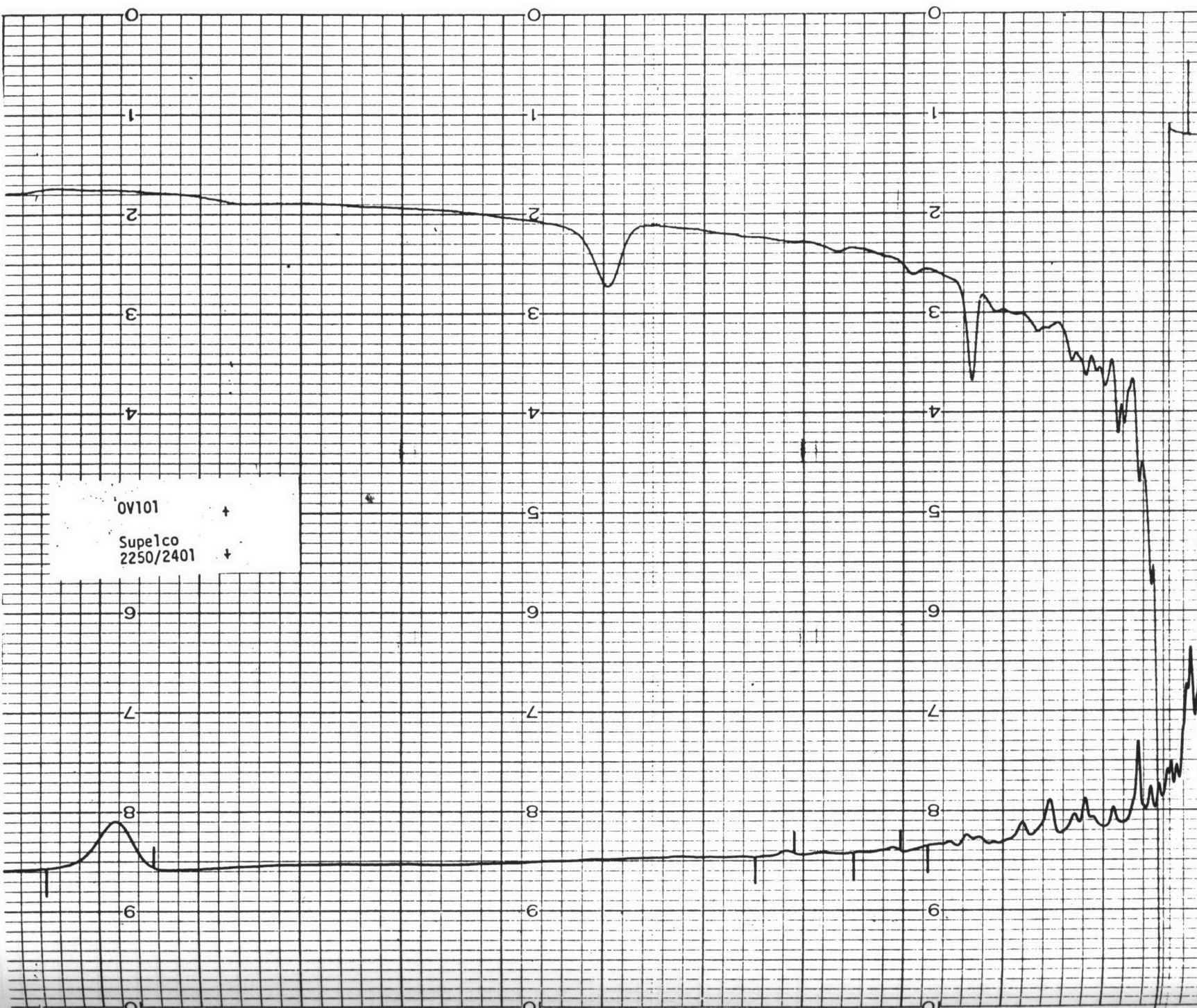


RIC

04/29/83 8:18:00

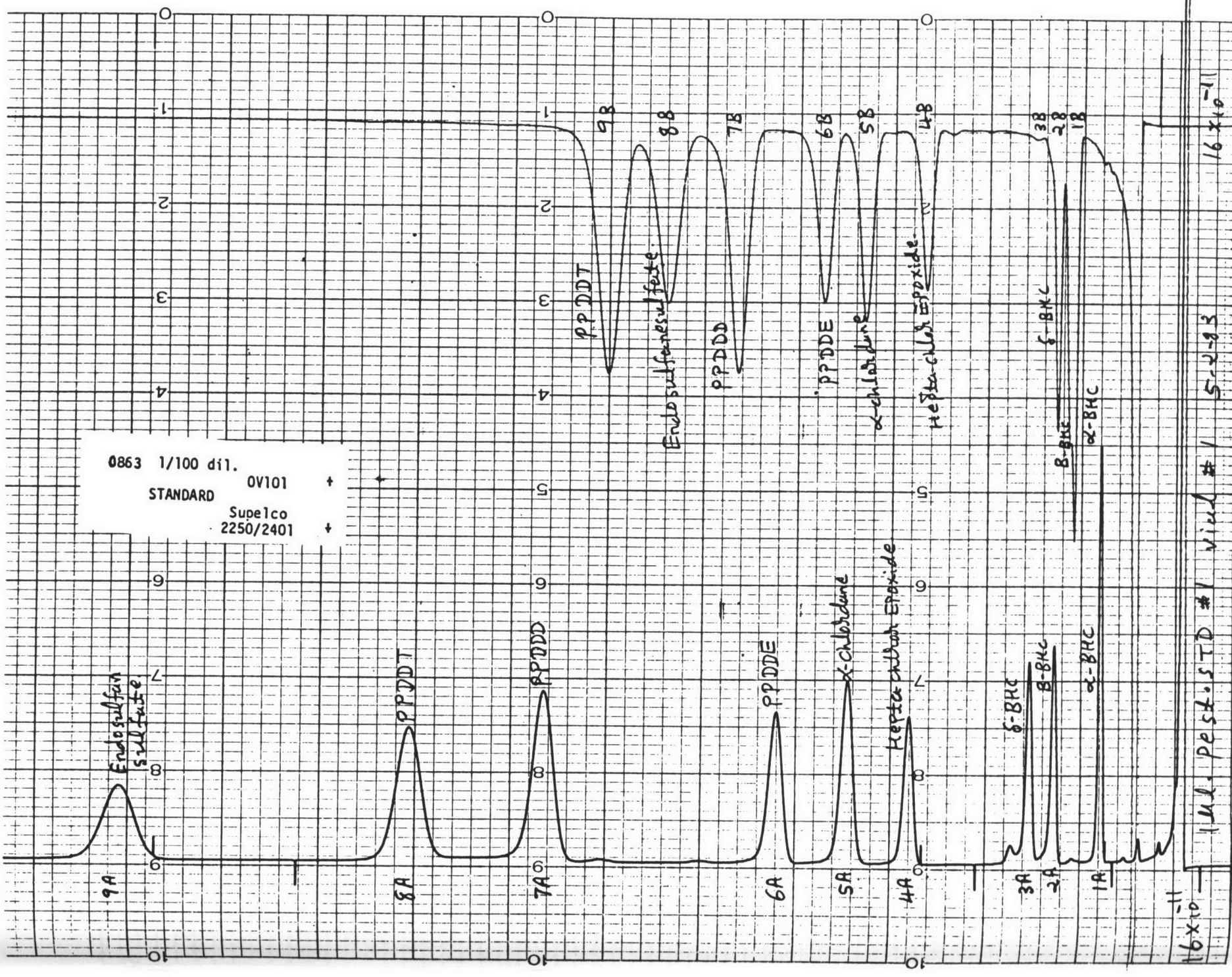
SAMPLE: ACID STD #3304, 120 NG, EX 4-28

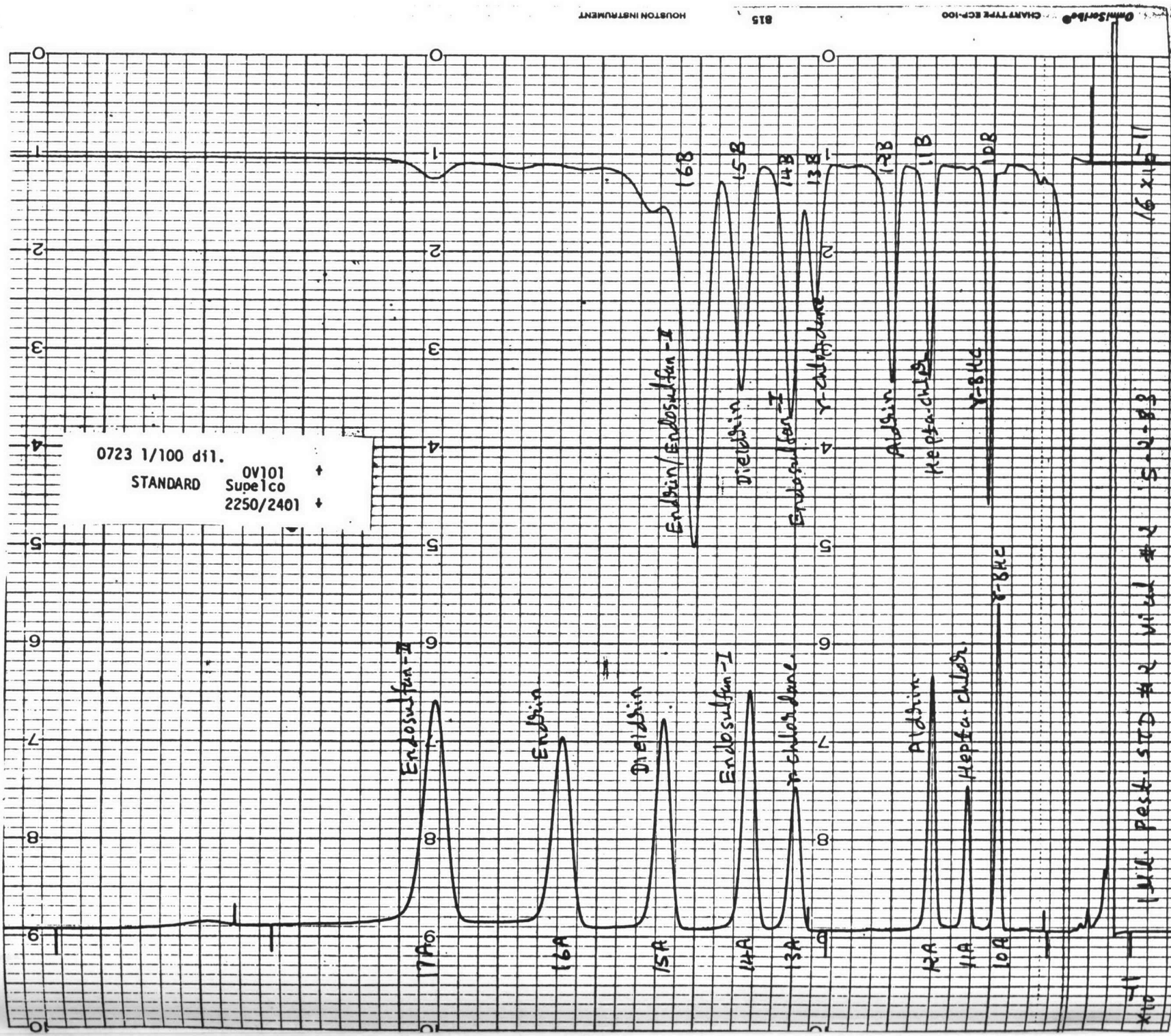




0V101 +
Supelco +
2250/2401

6x10¹¹ 1 ml. sample # 3495 No. Dilution vial # 7 5-2-83 6x10¹¹





16 x 15-11

16 x 15-11

MeadCompuChem

1D. REPORT OF DATA

SAMPLE IDENTIFIER NUMBER: 29375

COMPUCHEM SAMPLE NUMBER: 3496

SUBMITTED TO:

Mr. David Thompson
Centec
2160 Industrial Drive
Salem, VA 24153



GERALD D. WRIGHT, CPIM
MANAGER, PRODUCTION PLANNING AND CONTROL

R. L. MYERS, PH.D.
PRESIDENT

PAUL E. MILLS
DIRECTOR OF QUALITY ASSURANCE

JAMES J. ZOLDAK
DIRECTOR OF LABORATORY OPERATIONS

EXHIBIT I - LABORATORY CHRONICLE

SAMPLE IDENTIFIER: 29375
COMPUCHEM SAMPLE NUMBER: 3496

	<u>Date</u>
Received/Refrigerated	04/25/83
Organics	
Extracted	04/28/83
Analyzed	
1. Volatiles	04/28/83
2. Acids	04/29/83
3. Base/Neutrals	Not Requested
4. Pesticides/PCBS	05/02/83
Inorganics	
1. Metals	Not Requested
2. Cyanides	Not Requested
3. Phenols	Not Requested

EXHIBIT II - COMPOUND LIST

SAMPLE IDENTIFIER: 29375
COMPUCHEM SAMPLE NUMBER: 3496

<u>VOLATILE ORGANICS</u>		<u>CONCENTRATION</u> <u>(UG/L)</u>	<u>DETECTION</u> <u>LIMIT</u> <u>(UG/L)</u>	<u>SCAN</u> <u>NUMBER</u>
1V.	ACROLEIN	BDL	100	
2V.	ACRYLONITRILE	BDL	100	
3V.	BENZENE	BDL	10	
4V.	BIS (CHLOROMETHYL) ETHER	BDL	10	
5V.	BROMOFORM	BDL	10	
6V.	CARBON TETRACHLORIDE	BDL	10	
7V.	CHLOROBENZENE	BDL	10	
8V.	CHLORODIBROMOMETHANE	BDL	10	
9V.	CHLOROETHANE	BDL	10	
10V.	2-CHLOROETHYL VINYL ETHER	BDL	10	
11V.	CHLOROFORM	BDL	10	
12V.	DICHLOROBROMOMETHANE	BDL	10	
13V.	DICHLORODIFLUOROMETHANE	BDL	10	
14V.	1,1-DICHLOROETHANE	BDL	10	
15V.	1,2-DICHLOROETHANE	BDL	10	
16V.	1,1-DICHLOROETHYLENE	BDL	10	
17V.	1,2-DICHLOROPROPANE	BDL	10	
18V.	1,3-DICHLOROPROPYLENE	BDL	10	
19V.	ETHYLBENZENE	BDL	10	
20V.	METHYL BROMIDE	BDL	10	
21V.	METHYL CHLORIDE	BDL	10	
22V.	METHYLENE CHLORIDE	BDL	10	
23V.	1,1,2,2-TETRACHLOROETHANE	BDL	10	
24V.	TETRACHLOROETHYLENE	BDL	10	
25V.	TOLUENE	BDL	10	
26V.	1,2-TRANS-DICHLOROETHYLENE	BDL	10	
27V.	1,1,1-TRICHLOROETHANE	BDL	10	
28V.	1,1,2-TRICHLOROETHANE	BDL	10	
29V.	TRICHLOROETHYLENE	BDL	10	
30V.	TRICHLOROFLUOROMETHANE	BDL	10	
31V.	VINYL CHLORIDE	BDL	10	

BDL = BELOW DETECTION LIMIT

EXHIBIT II - COMPOUND LIST

SAMPLE IDENTIFIER: 29375
COMPUCHEM SAMPLE NUMBER: 3496

<u>ACID EXTRACTABLE ORGANICS</u>		<u>CONCENTRATION (UG/L)</u>	<u>DETECTION LIMIT (UG/L)</u>	<u>SCAN NUMBER</u>
1A.	2-CHLOROPHENOL	BDL	25	
2A.	2,4-DICHLOROPHENOL	BDL	25	
3A.	2,4-DIMETHYLPHENOL	BDL	25	
4A.	4,6-DINITRO-O-CRESOL	BDL	250	
5A.	2,4-DINITROPHENOL	BDL	250	
6A.	2-NITROPHENOL	BDL	25	
7A.	4-NITROPHENOL	BDL	25	
8A.	P-CHLORO-M-CRESOL	BDL	25	
9A.	PENTACHLOROPHENOL	BDL	25	
10A.	PHENOL	BDL	25	
11A.	2,4,6-TRICHLOROPHENOL	BDL	25	

BDL = BELOW DETECTION LIMIT

CompuChem employs Methods 624 and 625 for priority pollutant analysis. These methods were proposed by the U.S. E.P.A. in Volume 44 of the Federal Register on December 3, 1979. As these methods are currently in a "proposed" status, all aspects of the methods may not be validated until the U.S. E.P.A. promulgates the methods in "final" form.

EXHIBIT II - COMPOUND LIST

SAMPLE IDENTIFIER: 29375
COMPUCHEM SAMPLE NUMBER: 3496

<u>PESTICIDES/PCB'S</u>	<u>CONCENTRATION (UG/L)</u>	<u>DETECTION LIMIT (UG/L)</u>
1P. ALDRIN	BDL	0.1
2P. ALPHA-BHC	BDL	0.1
3P. BETA-BHC	BDL	0.1
4P. GAMMA-BHC	BDL	0.1
5P. DELTA-BHC	BDL	0.1
6P. CHLORDANE	BDL	0.1
7P. 4,4'-DDT	BDL	0.1
8P. 4,4'-DDE	BDL	0.1
9P. 4,4'-DDD	BDL	0.1
10P. DIELDRIN	BDL	0.1
11P. ALPHA-ENDOSULFAN	BDL	0.1
12P. BETA-ENDOSULFAN	BDL	0.1
13P. ENDOSULFAN SULFATE	BDL	0.1
14P. ENDRIN	BDL	0.1
15P. ENDRIN ALDEHYDE	BDL	0.1
16P. HEPTACHLOR	BDL	0.1
17P. HEPTACHLOR EPOXIDE	BDL	0.1
18P. PCB-1242	BDL	0.1
19P. PCB-1254	BDL	0.1
20P. PCB-1221	BDL	0.1
21P. PCB-1232	BDL	0.1
22P. PCB-1248	BDL	0.1
23P. PCB-1260	BDL	0.1
24P. PCB-1016	BDL	0.1
25P. TOXAPHENE	BDL	0.1

BDL = BELOW DETECTION LIMIT

DEPARTMENT OF CHEMISTRY

ANALYTICAL CHEMISTRY

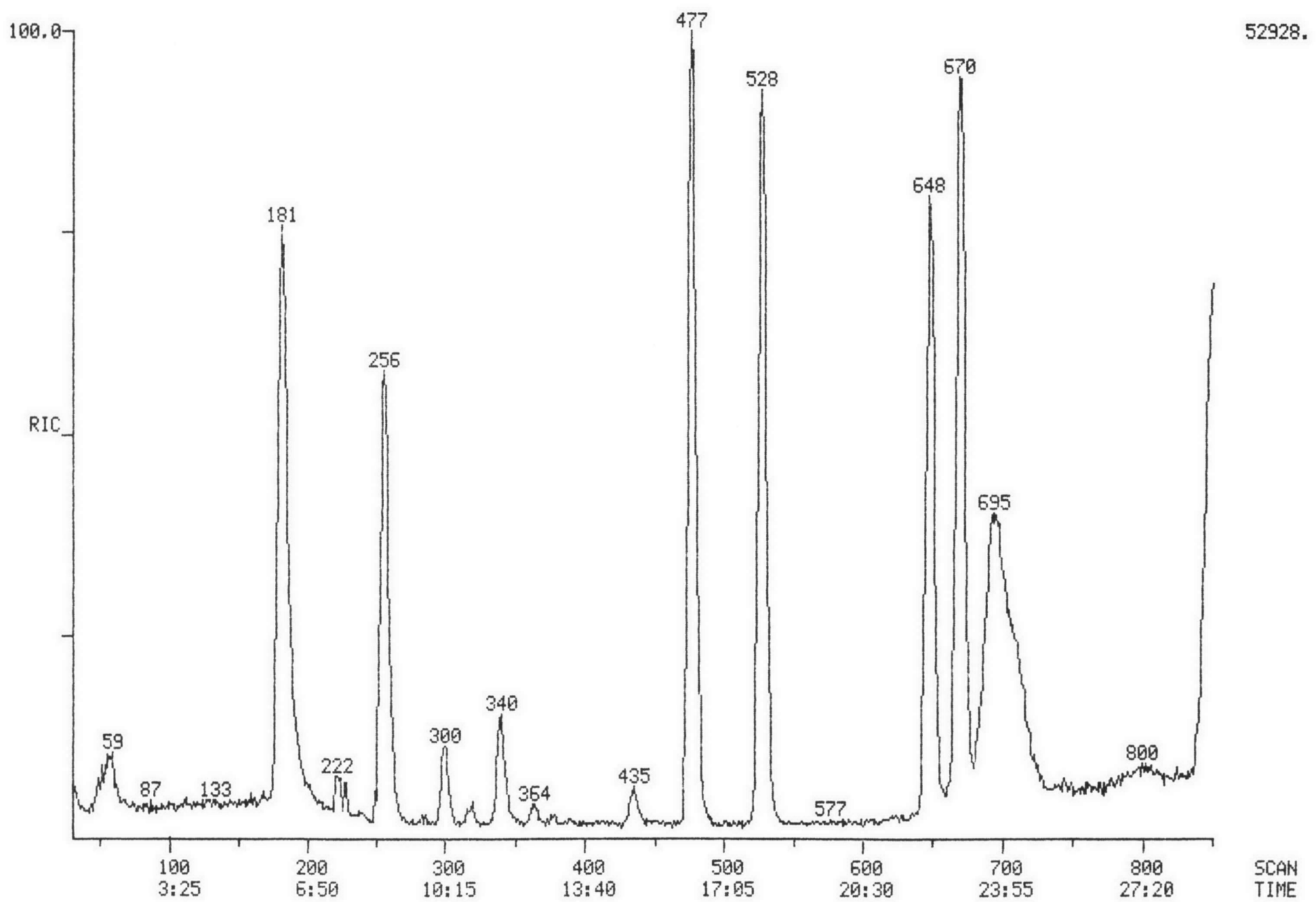
MEAD COMPUCHEM

RIC
04/28/83 21:27:00
SAMPLE: SAMPLE #3496 5ML DISK 508

DATA: UN003496B05

SCANS 30 TO 850

52928.



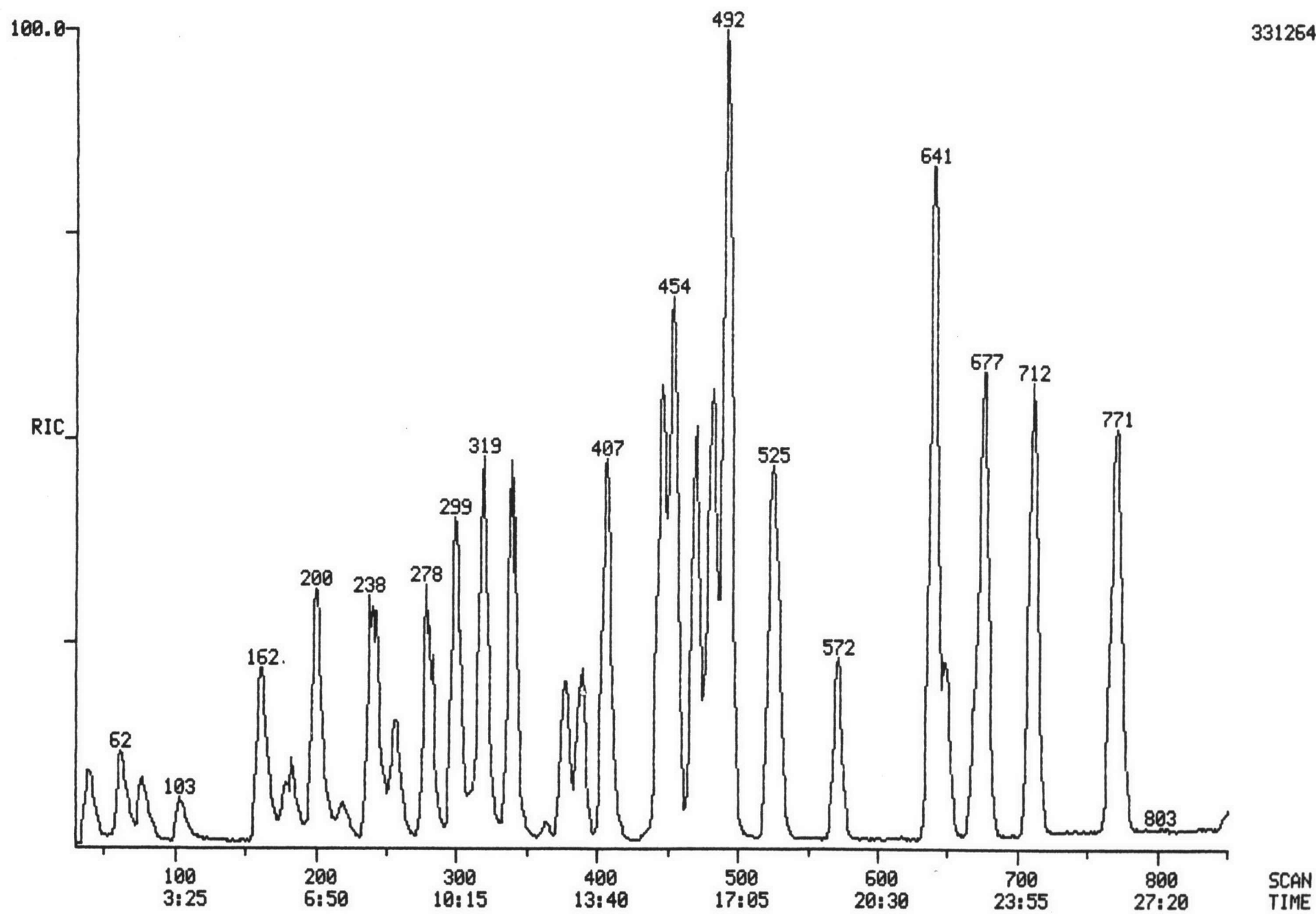
RIC
04/28/83 17:53:00
SAMPLE: UOA 80NG STD 5ML

MEAD COMPUCHEM

DATA: US830428B05

SCANS 30 TO 850

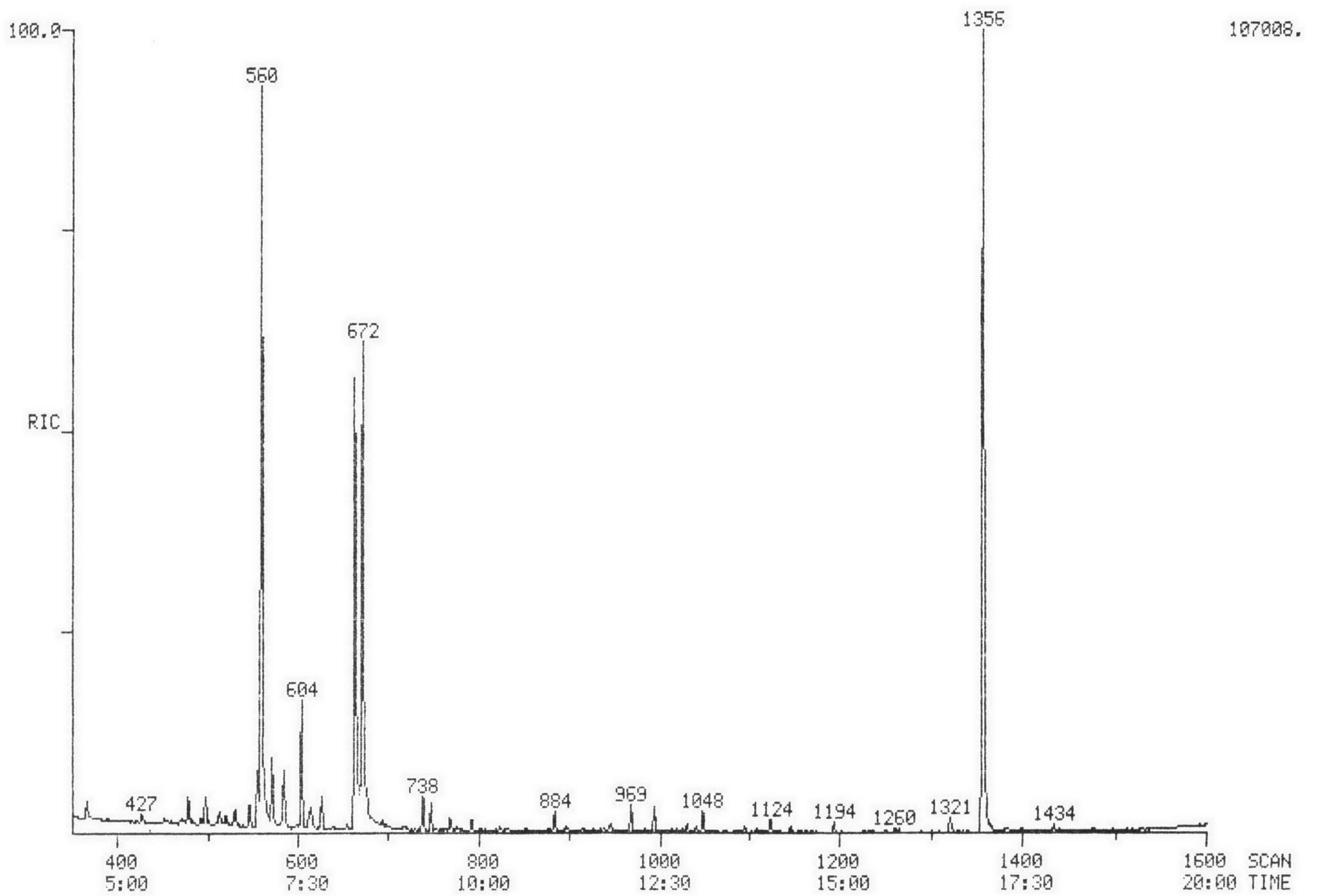
331264.



RIC
04/29/83 11:45:00
SAMPLE: ACID #3496

MEAD COMPUCHEM
DATA: AC003496A02

SCANS 350 TO 1600

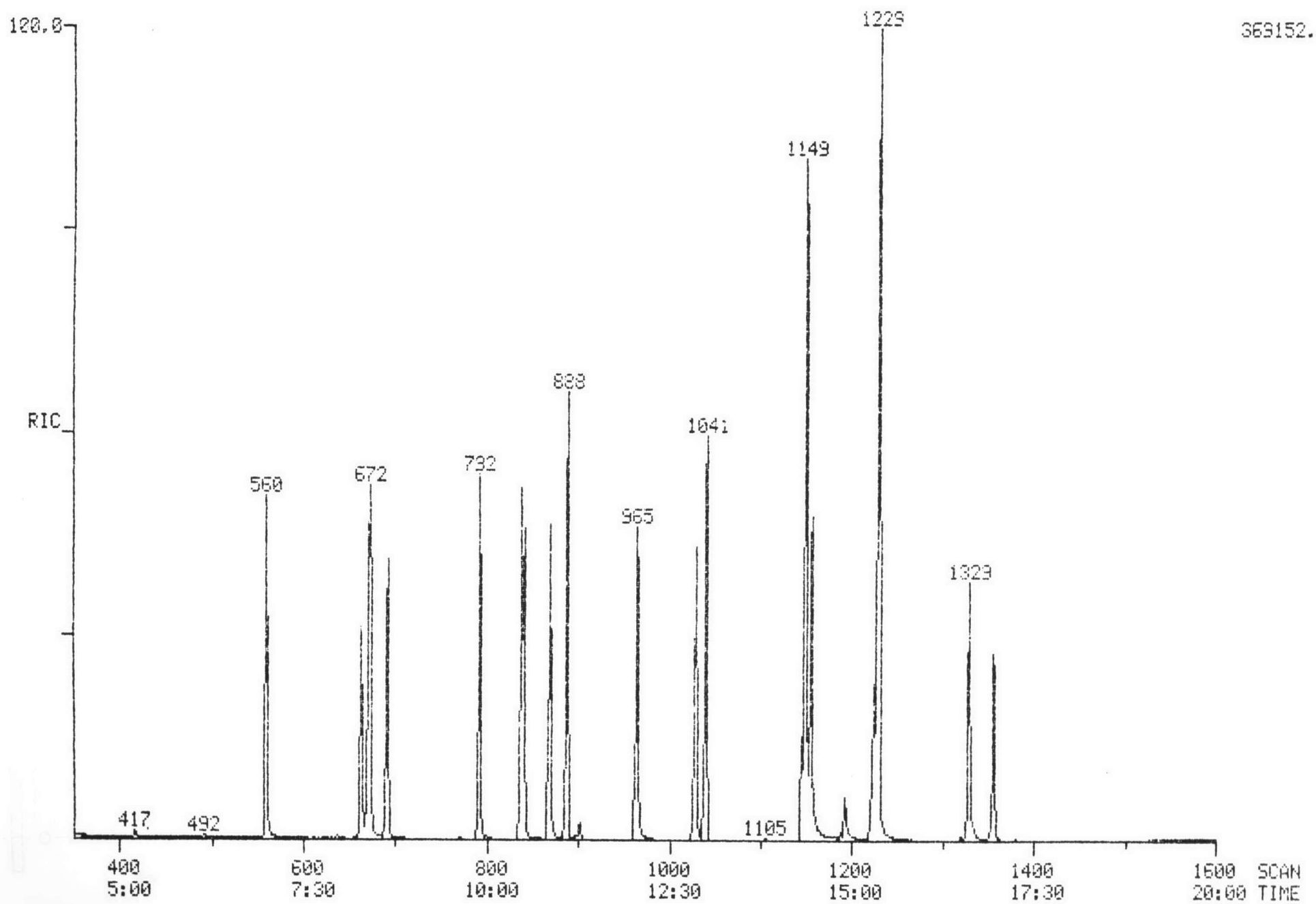


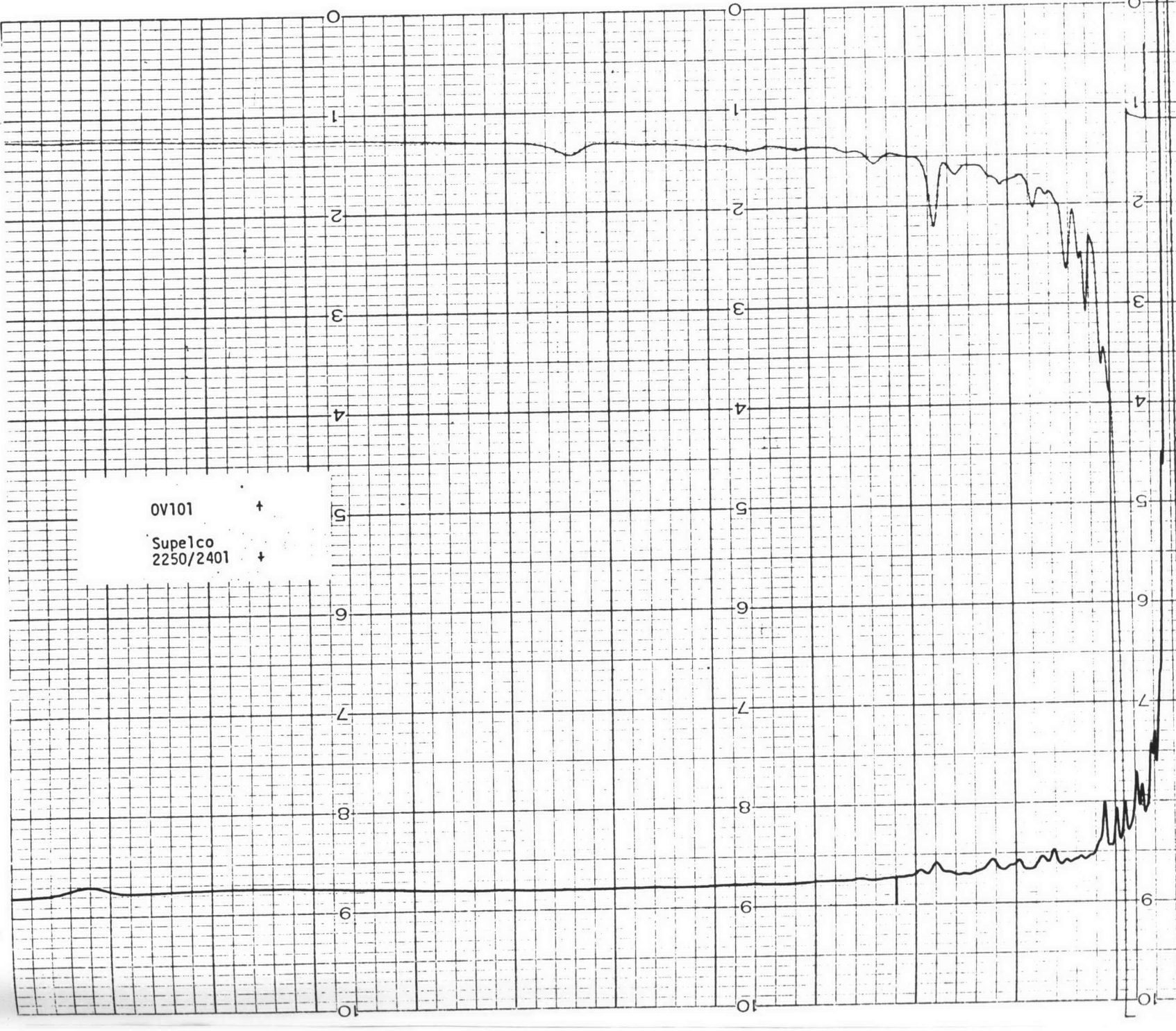
RIC
24/29/83 8:18:20
SAMPLE: ACID STD #3384, 120 NG , EX 4-28

MEAD COMPUCHEM

DATA: A5836429A02

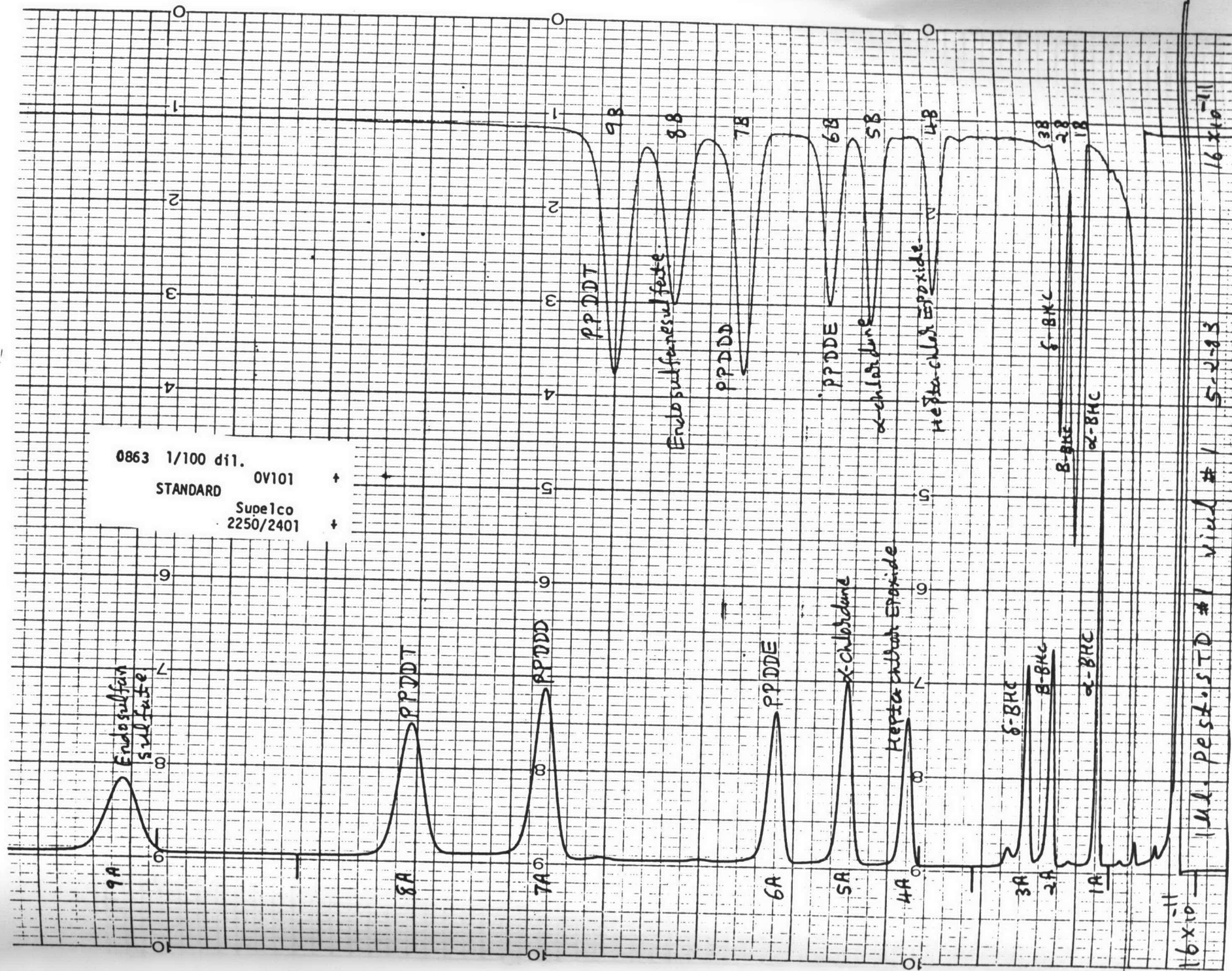
SCANS 350 TO 1580

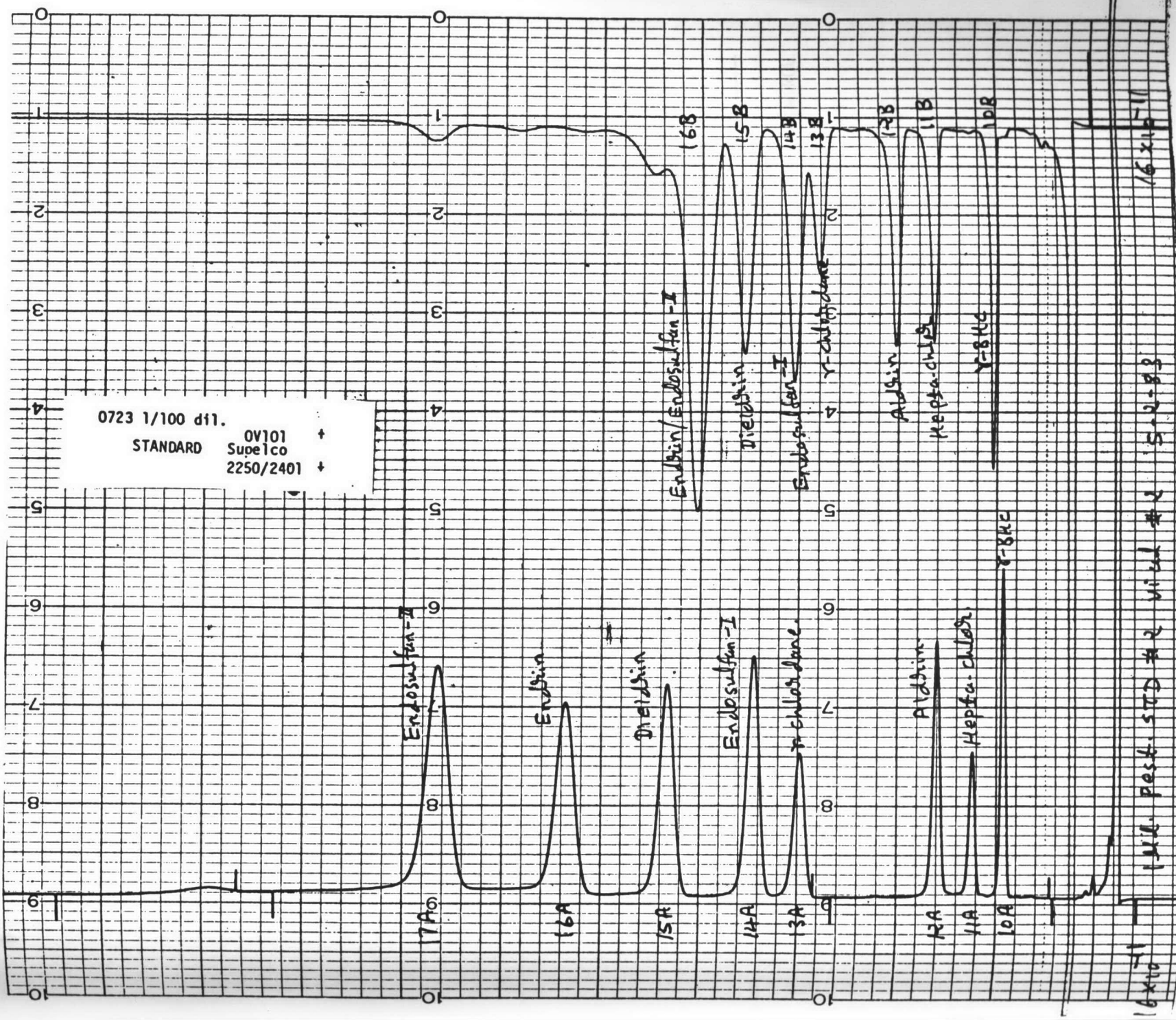




OV101 +
 Supelco
 2250/2401 +

16x10 | 1 ml sample # 3#96 no. D. D. Austin vial # 10 5-2-83 16x10-11





MeadCompuChem

1E. REPORT OF DATA

SAMPLE IDENTIFIER NUMBER: 29376

COMPUCHEM SAMPLE NUMBER: 3497

SUBMITTED TO:

Mr. David Thompson
Centec
2160 Industrial Drive
Salem, VA 24153



GERALD D. WRIGHT, CPIM
MANAGER, PRODUCTION PLANNING AND CONTROL

R. L. MYERS, PH.D.
PRESIDENT

PAUL E. MILLS
DIRECTOR OF QUALITY ASSURANCE

JAMES J. ZOLDAK
DIRECTOR OF LABORATORY OPERATIONS

EXHIBIT I - LABORATORY CHRONICLE

SAMPLE IDENTIFIER: 29376
COMPUCHEM SAMPLE NUMBER: 3497

	<u>Date</u>
Received/Refrigerated	04/25/83
Organics	
Extracted	04/28/83
Analyzed	
1. Volatiles	04/29/83
2. Acids	04/29/83
3. Base/Neutrals	Not Requested
4. Pesticides/PCBS	05/02/83
Inorganics	
1. Metals	Not Requested
2. Cyanides	Not Requested
3. Phenols	Not Requested

EXHIBIT II - COMPOUND LIST

SAMPLE IDENTIFIER: 29376
COMPUCHEM SAMPLE NUMBER: 3497

<u>VOLATILE ORGANICS</u>		<u>CONCENTRATION</u> <u>(UG/L)</u>	<u>DETECTION</u> <u>LIMIT</u> <u>(UG/L)</u>	<u>SCAN</u> <u>NUMBER</u>
1V.	ACROLEIN	BDL	100	
2V.	ACRYLONITRILE	BDL	100	
3V.	BENZENE	BDL	10	
4V.	BIS (CHLOROMETHYL) ETHER	BDL	10	
5V.	BROMOFORM	BDL	10	
6V.	CARBON TETRACHLORIDE	BDL	10	
7V.	CHLOROBENZENE	BDL	10	
8V.	CHLORODIBROMOMETHANE	BDL	10	
9V.	CHLOROETHANE	BDL	10	
10V.	2-CHLOROETHYL VINYL ETHER	BDL	10	
11V.	CHLOROFORM	BDL	10	
12V.	DICHLOROBROMOMETHANE	BDL	10	
13V.	DICHLORODIFLUOROMETHANE	BDL	10	
14V.	1,1-DICHLOROETHANE	BDL	10	
15V.	1,2-DICHLOROETHANE	BDL	10	
16V.	1,1-DICHLOROETHYLENE	BDL	10	
17V.	1,2-DICHLOROPROPANE	BDL	10	
18V.	1,3-DICHLOROPROPYLENE	BDL	10	
19V.	ETHYLBENZENE	BDL	10	
20V.	METHYL BROMIDE	BDL	10	
21V.	METHYL CHLORIDE	BDL	10	
22V.	METHYLENE CHLORIDE	BDL	10	
23V.	1,1,2,2-TETRACHLOROETHANE	BDL	10	
24V.	TETRACHLOROETHYLENE	BDL	10	
25V.	TOLUENE	BDL	10	
26V.	1,2-TRANS-DICHLOROETHYLENE	BDL	10	
27V.	1,1,1-TRICHLOROETHANE	BDL	10	
28V.	1,1,2-TRICHLOROETHANE	BDL	10	
29V.	TRICHLOROETHYLENE	BDL	10	
30V.	TRICHLOROFLUOROMETHANE	BDL	10	
31V.	VINYL CHLORIDE	BDL	10	

BDL = BELOW DETECTION LIMIT

EXHIBIT II - COMPOUND LIST

SAMPLE IDENTIFIER: 29376
COMPUCHEM SAMPLE NUMBER: 3497

<u>ACID EXTRACTABLE ORGANICS</u>		<u>CONCENTRATION (UG/L)</u>	<u>DETECTION LIMIT (UG/L)</u>	<u>SCAN NUMBER</u>
1A.	2-CHLOROPHENOL	BDL	25	
2A.	2,4-DICHLOROPHENOL	BDL	25	
3A.	2,4-DIMETHYLPHENOL	BDL	25	
4A.	4,6-DINITRO-O-CRESOL	BDL	250	
5A.	2,4-DINITROPHENOL	BDL	250	
6A.	2-NITROPHENOL	BDL	25	
7A.	4-NITROPHENOL	BDL	25	
8A.	P-CHLORO-M-CRESOL	BDL	25	
9A.	PENTACHLOROPHENOL	BDL	25	
10A.	PHENOL	BDL	25	
11A.	2,4,6-TRICHLOROPHENOL	BDL	25	

BDL = BELOW DETECTION LIMIT

CompuChem employs Methods 624 and 625 for priority pollutant analysis. These methods were proposed by the U.S. E.P.A. in Volume 44 of the Federal Register on December 3, 1979. As these methods are currently in a "proposed" status, all aspects of the methods may not be validated until the U.S. E.P.A. promulgates the methods in "final" form.

EXHIBIT II - COMPOUND LIST

SAMPLE IDENTIFIER: 29376
COMPUCHEM SAMPLE NUMBER: 3497

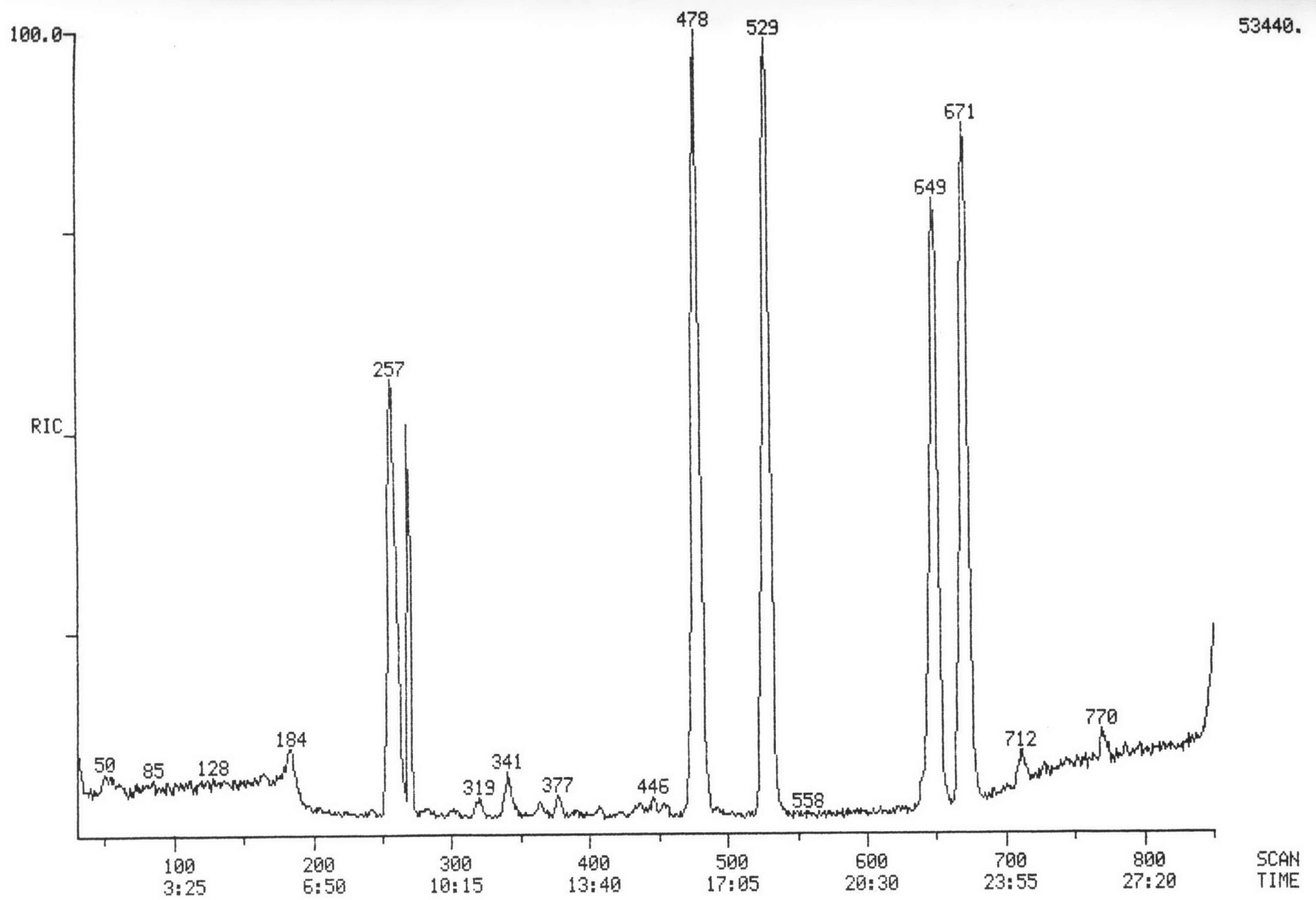
		<u>CONCENTRATION</u> <u>(UG/L)</u>	<u>DETECTION</u> <u>LIMIT</u> <u>(UG/L)</u>
<u>PESTICIDES/PCB'S</u>			
1P.	ALDRIN	BDL	0.1
2P.	ALPHA-BHC	BDL	0.1
3P.	BETA-BHC	BDL	0.1
4P.	GAMMA-BHC	BDL	0.1
5P.	DELTA-BHC	BDL	0.1
6P.	CHLORDANE	BDL	0.1
7P.	4,4'-DDT	BDL	0.1
8P.	4,4'-DDE	BDL	0.1
9P.	4,4'-DDD	BDL	0.1
10P.	DIELDRIN	BDL	0.1
11P.	ALPHA-ENDOSULFAN	BDL	0.1
12P.	BETA-ENDOSULFAN	BDL	0.1
13P.	ENDOSULFAN SULFATE	BDL	0.1
14P.	ENDRIN	BDL	0.1
15P.	ENDRIN ALDEHYDE	BDL	0.1
16P.	HEPTACHLOR	BDL	0.1
17P.	HEPTACHLOR EPOXIDE	BDL	0.1
18P.	PCB-1242	BDL	0.1
19P.	PCB-1254	BDL	0.1
20P.	PCB-1221	BDL	0.1
21P.	PCB-1232	BDL	0.1
22P.	PCB-1248	BDL	0.1
23P.	PCB-1260	BDL	0.1
24P.	PCB-1016	BDL	0.1
25P.	TOXAPHENE	BDL	0.1

BDL = BELOW DETECTION LIMIT

RIC
04/29/83 11:00:00
SAMPLE: VOA SAMPLE #3497

MEAD COMPUCHEM
DATA: UN003497A05

SCANS 30 TO 850



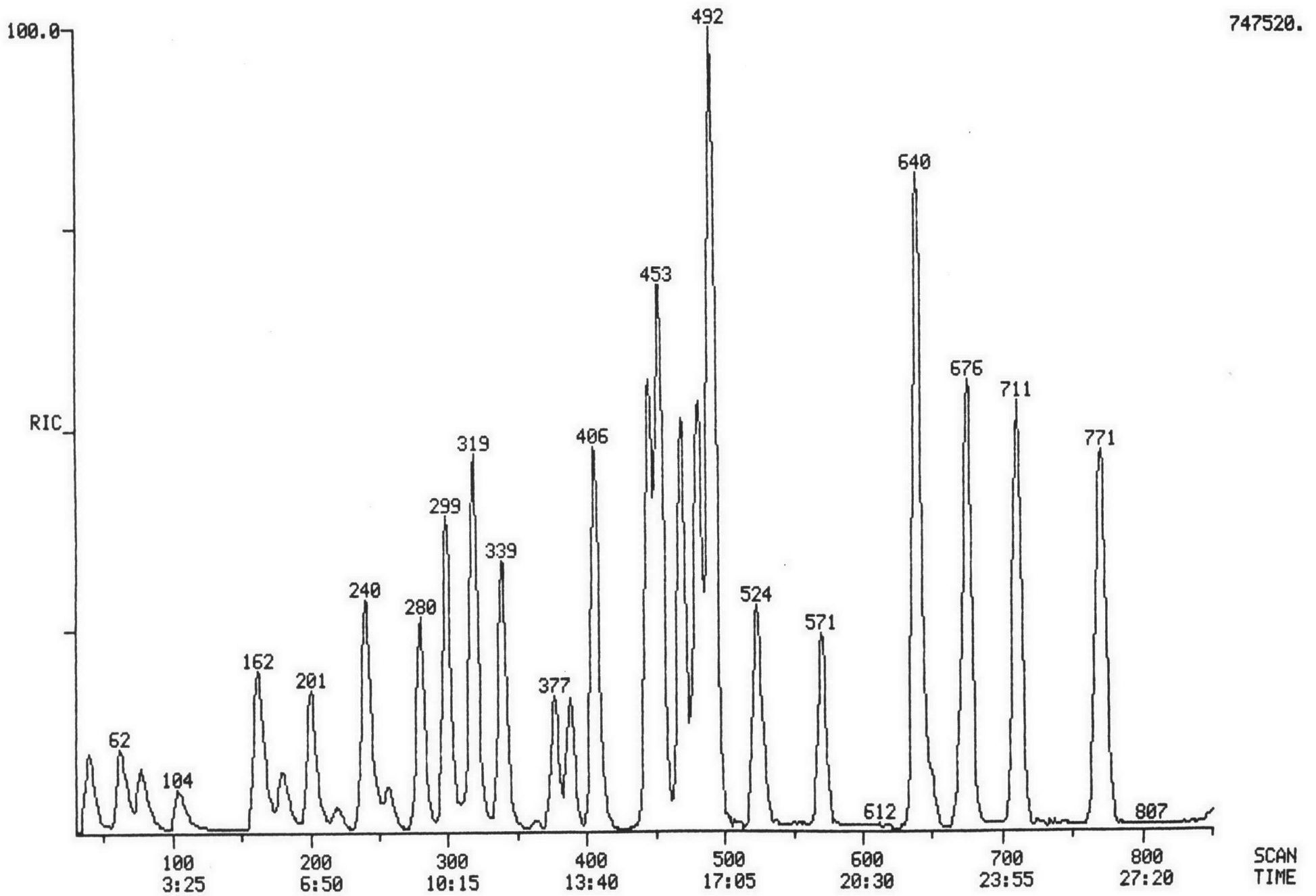
RIC
04/29/83 9:05:00
SAMPLE: 160NG VOA STANDARD

MEAD COMPUCHEM

DATA: US830429A05

SCANS 30 TO 850

747520.



RIC

MEAD COMPUCHEM

DATA: AC003497A02

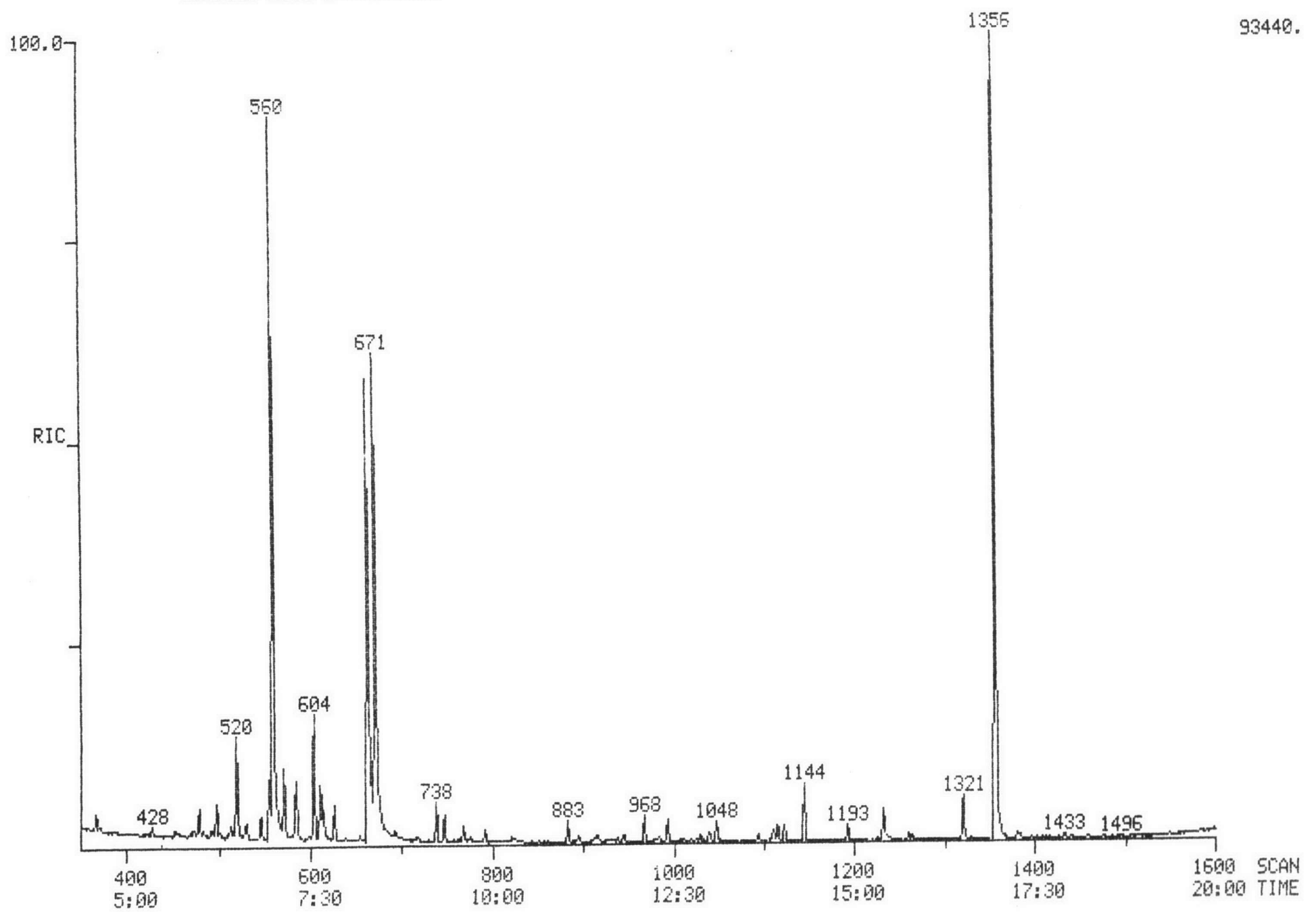
SCANS 350 TO 1600

MEAD COMPUCHEM

DATA: AC003497A02

SCANS 350 TO 1600

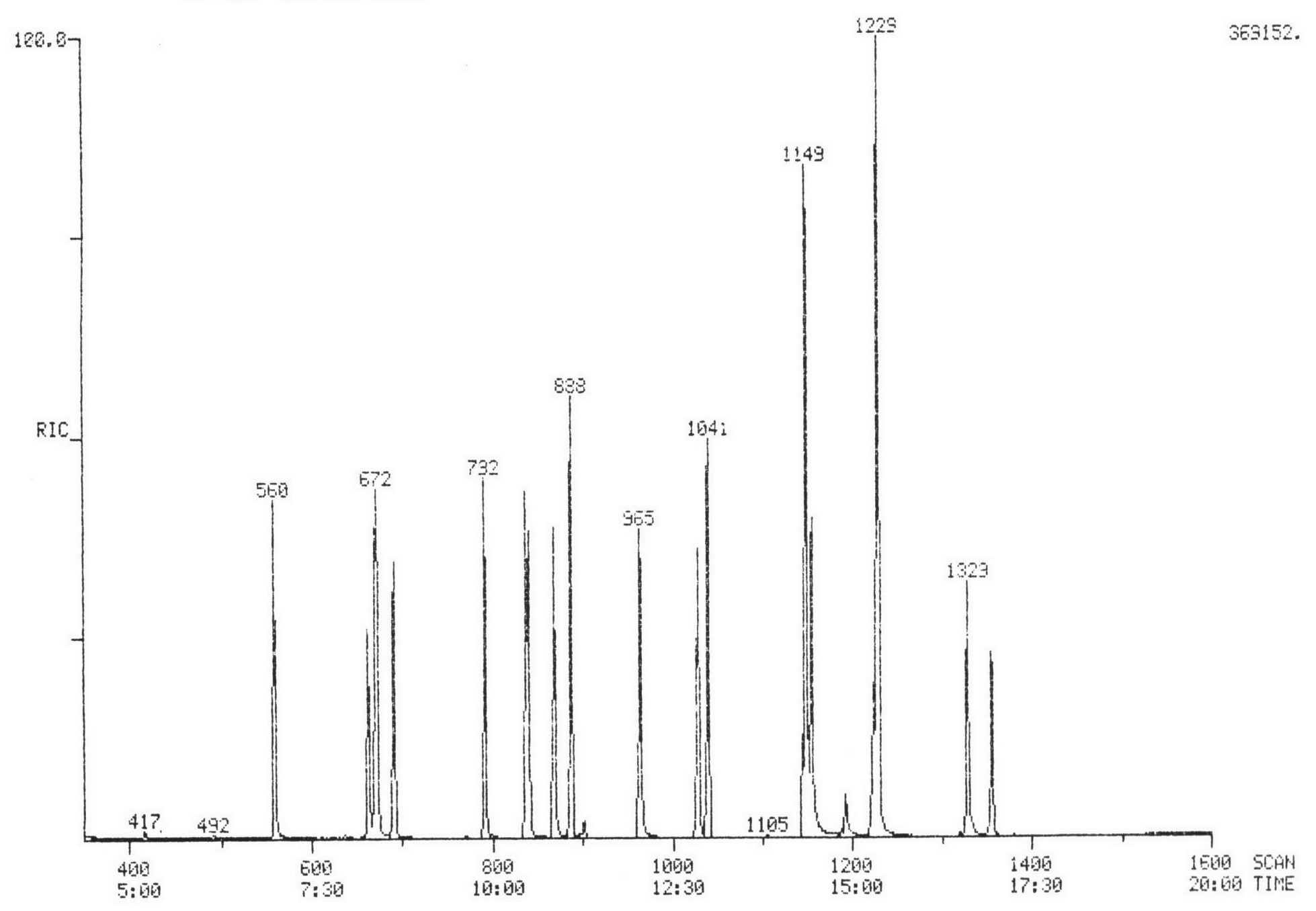
RIC
04/29/83 13:44:00
SAMPLE: ACID SAMPLE#3497

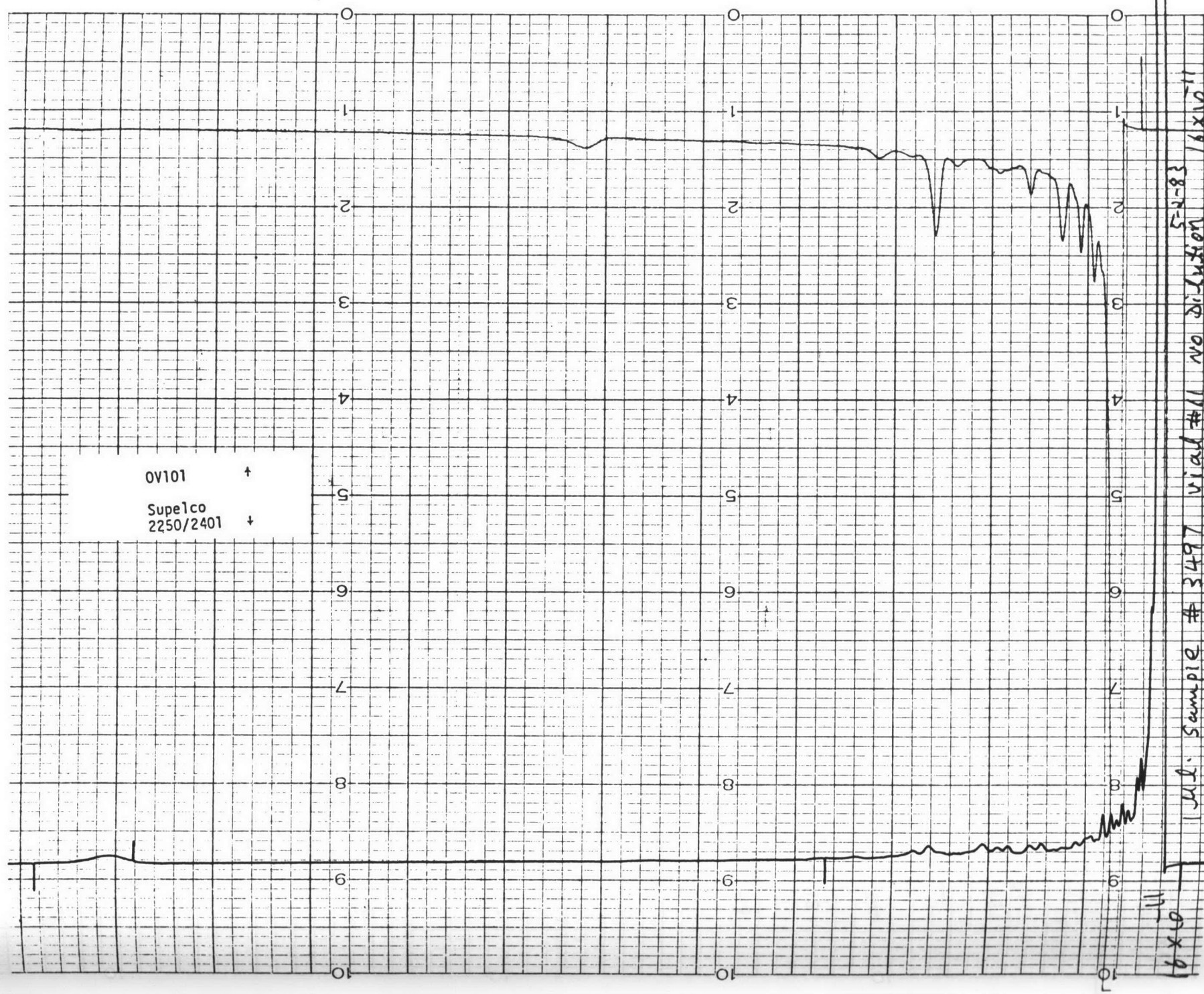


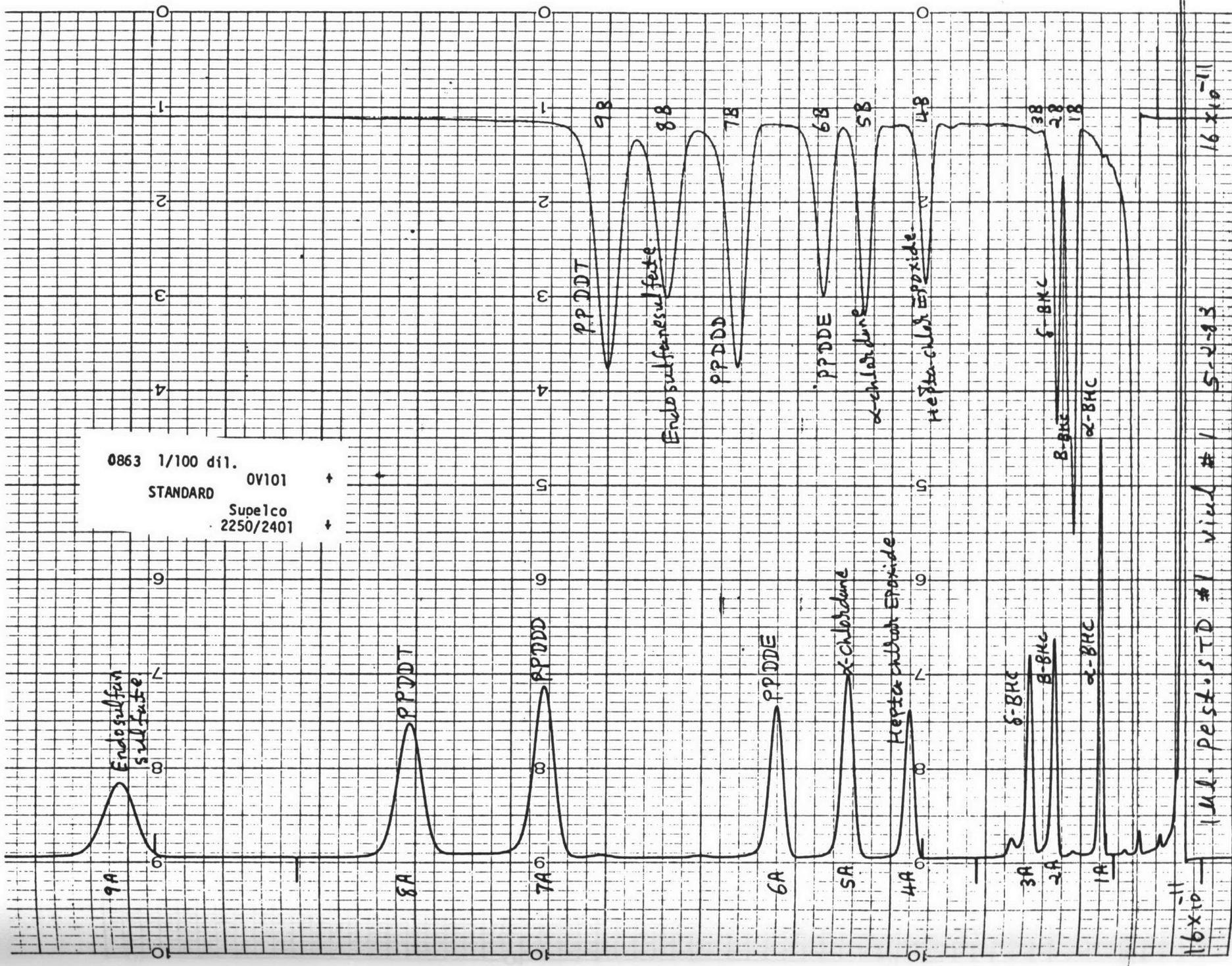
RIC
04/29/83 8:18:00
SAMPLE: ACID STD #3304, 120 NG , EX 4-28

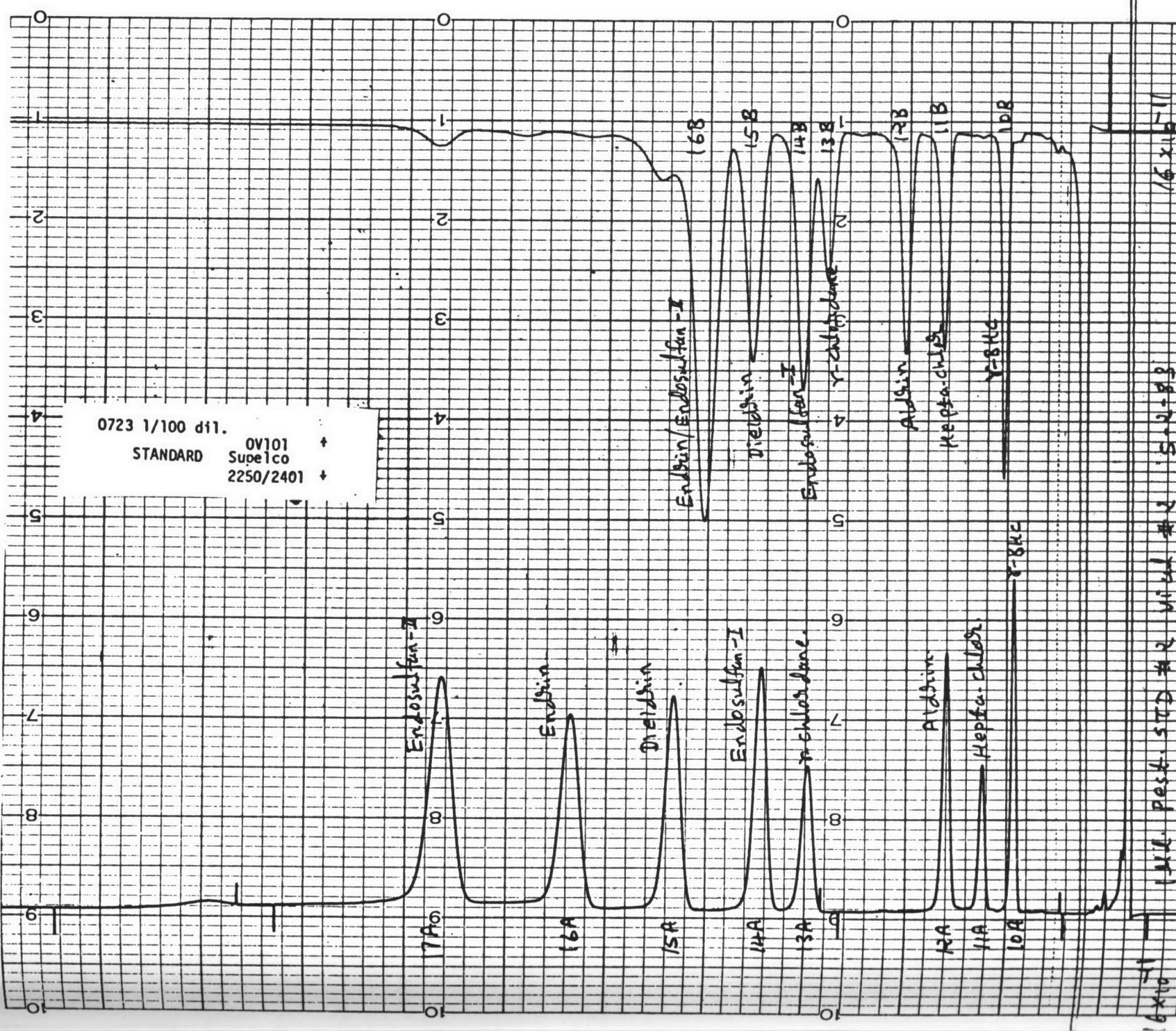
MEAD COMPUCHEM
DATA: A5830423A02

SCANS 350 TO 1600









0723 1/100 d11.
STANDARD 0V101
Supelco
2250/2401

16 x 10
16 x 11
16L Pest. STD #2 Vitul #2 S-2-B3

MeadCompuChem

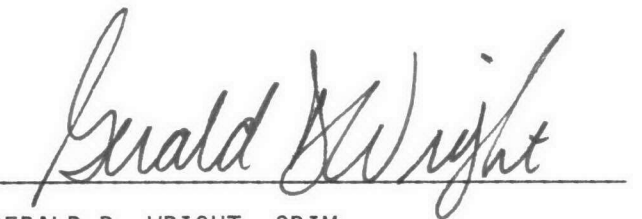
1F. REPORT OF DATA

SAMPLE IDENTIFIER NUMBER: 29377

COMPUCHEM SAMPLE NUMBER: 3498

SUBMITTED TO:

Mr. David Thompson
Centec
2160 Industrial Drive
Salem, VA 24153



GERALD D. WRIGHT, CPIM
MANAGER, PRODUCTION PLANNING AND CONTROL

R. L. MYERS, PH.D.
PRESIDENT

PAUL E. MILLS
DIRECTOR OF QUALITY ASSURANCE

JAMES J. ZOLDAK
DIRECTOR OF LABORATORY OPERATIONS

EXHIBIT I - LABORATORY CHRONICLE

SAMPLE IDENTIFIER: 29377
COMPUCHEM SAMPLE NUMBER: 3498

	<u>Date</u>
Received/Refrigerated	04/25/83
Organics	
Extracted	04/28/83
Analyzed	
1. Volatiles	04/29/83
2. Acids	04/29/83
3. Base/Neutrals	Not Requested
4. Pesticides/PCBS	05/02/83
Inorganics	
1. Metals	Not Requested
2. Cyanides	Not Requested
3. Phenols	Not Requested

EXHIBIT II - COMPOUND LIST

SAMPLE IDENTIFIER: 29377
COMPUCHEM SAMPLE NUMBER: 3498

<u>VOLATILE ORGANICS</u>		<u>CONCENTRATION</u> <u>(UG/L)</u>	<u>DETECTION</u> <u>LIMIT</u> <u>(UG/L)</u>	<u>SCAN</u> <u>NUMBER</u>
1V.	ACROLEIN	BDL	100	
2V.	ACRYLONITRILE	BDL	100	
3V.	BENZENE	BDL	10	
4V.	BIS (CHLOROMETHYL) ETHER	BDL	10	
5V.	BROMOFORM	BDL	10	
6V.	CARBON TETRACHLORIDE	BDL	10	
7V.	CHLOROBENZENE	BDL	10	
8V.	CHLORODIBROMOMETHANE	BDL	10	
9V.	CHLOROETHANE	BDL	10	
10V.	2-CHLOROETHYL VINYL ETHER	BDL	10	
11V.	CHLOROFORM	BDL	10	
12V.	DICHLOROBROMOMETHANE	BDL	10	
13V.	DICHLORODIFLUOROMETHANE	BDL	10	
14V.	1,1-DICHLOROETHANE	BDL	10	
15V.	1,2-DICHLOROETHANE	BDL	10	
16V.	1,1-DICHLOROETHYLENE	BDL	10	
17V.	1,2-DICHLOROPROPANE	BDL	10	
18V.	1,3-DICHLOROPROPYLENE	BDL	10	
19V.	ETHYLBENZENE	BDL	10	
20V.	METHYL BROMIDE	BDL	10	
21V.	METHYL CHLORIDE	BDL	10	
22V.	METHYLENE CHLORIDE	BDL	10	
23V.	1,1,2,2-TETRACHLOROETHANE	BDL	10	
24V.	TETRACHLOROETHYLENE	BDL	10	
25V.	TOLUENE	BDL	10	
26V.	1,2-TRANS-DICHLOROETHYLENE	BDL	10	
27V.	1,1,1-TRICHLOROETHANE	BDL	10	
28V.	1,1,2-TRICHLOROETHANE	BDL	10	
29V.	TRICHLOROETHYLENE	BDL	10	
30V.	TRICHLOROFUOROMETHANE	BDL	10	
31V.	VINYL CHLORIDE	BDL	10	

BDL = BELOW DETECTION LIMIT

EXHIBIT II - COMPOUND LIST

SAMPLE IDENTIFIER: 29377
COMPUCHEM SAMPLE NUMBER: 3498

<u>ACID EXTRACTABLE ORGANICS</u>		<u>CONCENTRATION (UG/L)</u>	<u>DETECTION LIMIT (UG/L)</u>	<u>SCAN NUMBER</u>
1A.	2-CHLOROPHENOL	BDL	25	
2A.	2,4-DICHLOROPHENOL	BDL	25	
3A.	2,4-DIMETHYLPHENOL	BDL	25	
4A.	4,6-DINITRO-O-CRESOL	BDL	250	
5A.	2,4-DINITROPHENOL	BDL	250	
6A.	2-NITROPHENOL	BDL	25	
7A.	4-NITROPHENOL	BDL	25	
8A.	P-CHLORO-M-CRESOL	BDL	25	
9A.	PENTACHLOROPHENOL	BDL	25	
10A.	PHENOL	BDL	25	
11A.	2,4,6-TRICHLOROPHENOL	BDL	25	

BDL = BELOW DETECTION LIMIT

CompuChem employs Methods 624 and 625 for priority pollutant analysis. These methods were proposed by the U.S. E.P.A. in Volume 44 of the Federal Register on December 3, 1979. As these methods are currently in a "proposed" status, all aspects of the methods may not be validated until the U.S. E.P.A. promulgates the methods in "final" form.

EXHIBIT II - COMPOUND LIST

SAMPLE IDENTIFIER: 29377
COMPUCHEM SAMPLE NUMBER: 3498

<u>PESTICIDES/PCB'S</u>		<u>CONCENTRATION</u> <u>(UG/L)</u>	<u>DETECTION</u> <u>LIMIT</u> <u>(UG/L)</u>
1P.	ALDRIN	BDL	0.1
2P.	ALPHA-BHC	BDL	0.1
3P.	BETA-BHC	BDL	0.1
4P.	GAMMA-BHC	BDL	0.1
5P.	DELTA-BHC	BDL	0.1
6P.	CHLORDANE	BDL	0.1
7P.	4,4'-DDT	BDL	0.1
8P.	4,4'-DDE	BDL	0.1
9P.	4,4'-DDD	BDL	0.1
10P.	DIELDRIN	BDL	0.1
11P.	ALPHA-ENDOSULFAN	BDL	0.1
12P.	BETA-ENDOSULFAN	BDL	0.1
13P.	ENDOSULFAN SULFATE	BDL	0.1
14P.	ENDRIN	BDL	0.1
15P.	ENDRIN ALDEHYDE	BDL	0.1
16P.	HEPTACHLOR	BDL	0.1
17P.	HEPTACHLOR EPOXIDE	BDL	0.1
18P.	PCB-1242	BDL	0.1
19P.	PCB-1254	BDL	0.1
20P.	PCB-1221	BDL	0.1
21P.	PCB-1232	BDL	0.1
22P.	PCB-1248	BDL	0.1
23P.	PCB-1260	BDL	0.1
24P.	PCB-1016	BDL	0.1
25P.	TOXAPHENE	BDL	0.1

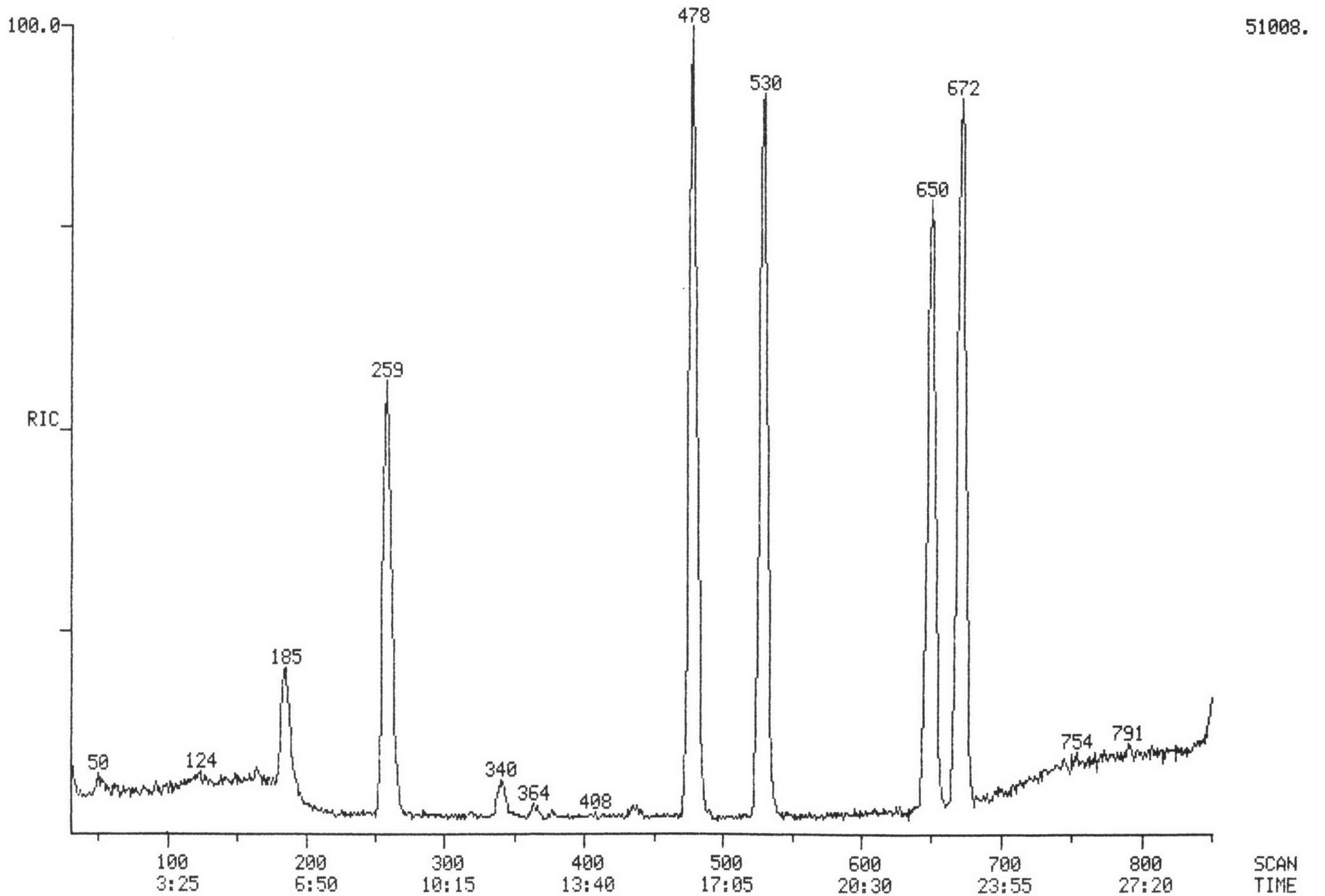
BDL = BELOW DETECTION LIMIT

RIC
04/29/83 11:59:00
SAMPLE: UOA SAMPLE #3498

MEAD COMPUCHEM

DATA: UN003498A05

SCANS 30 TO 850



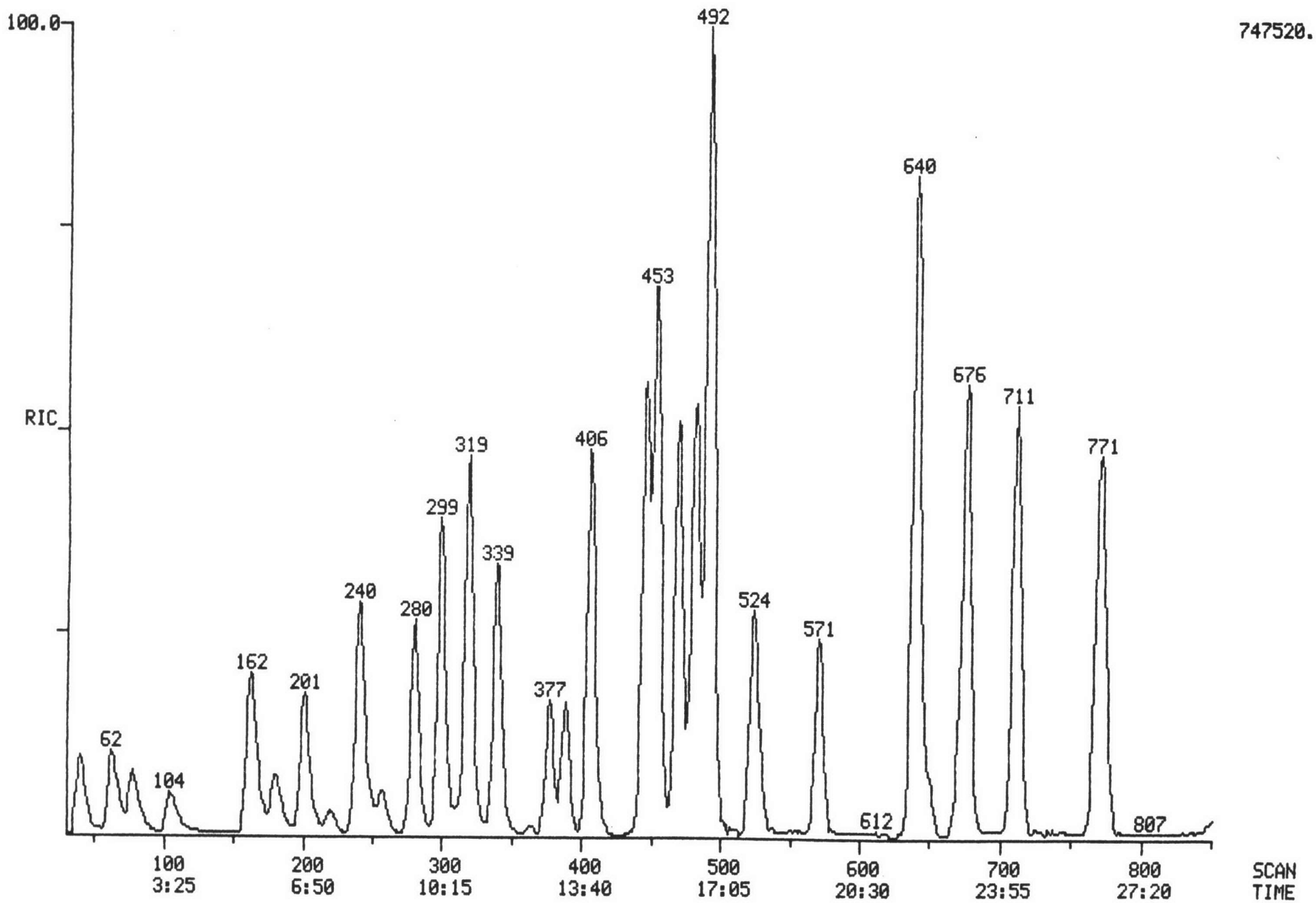
RIC
04/29/83 9:05:00
SAMPLE: 160NG UOA STANDARD

MEAD COMPUCHEM

DATA: US830429A05

SCANS 30 TO 850

747520.

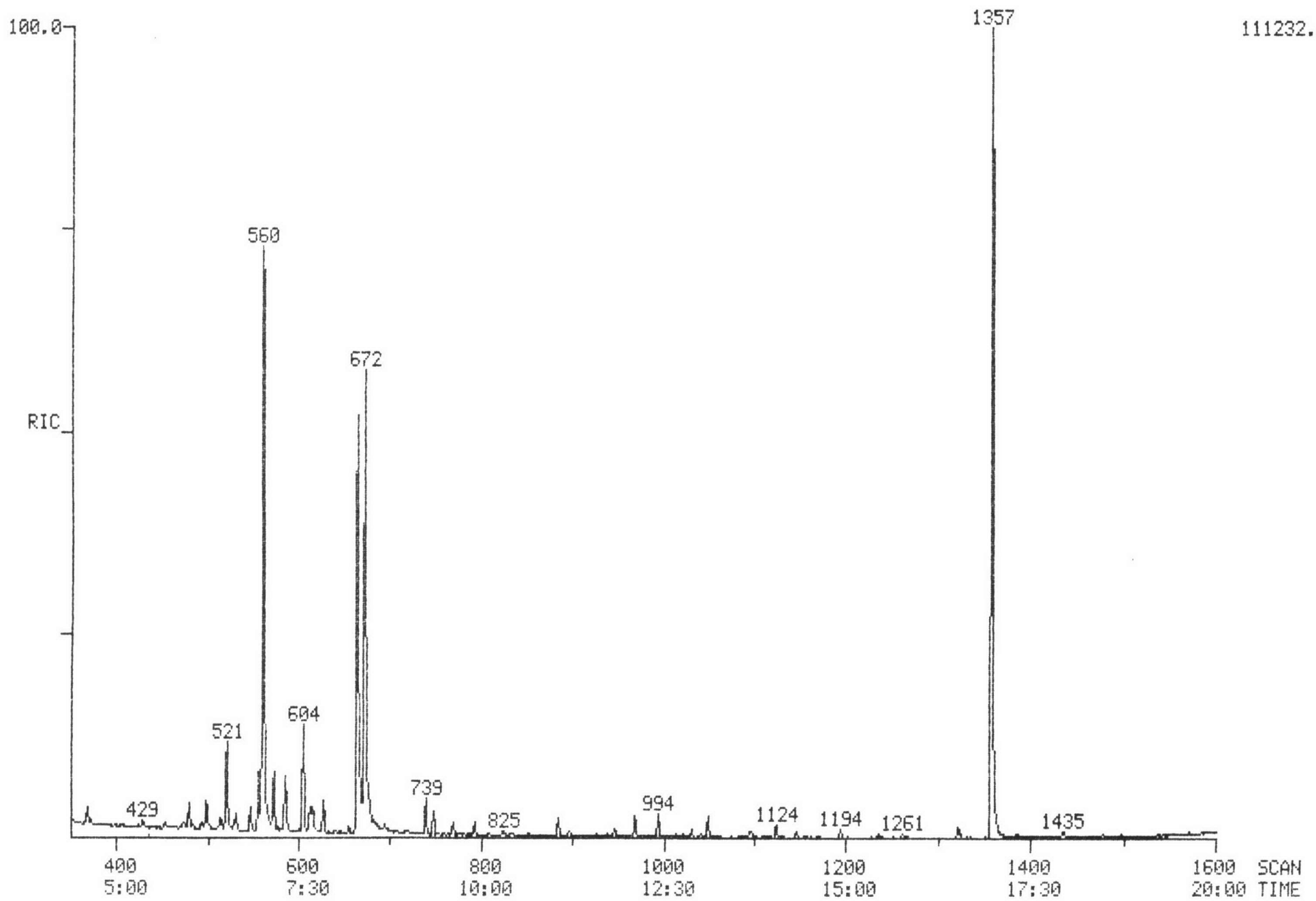


RIC
04/29/83 14:24:00
SAMPLE: ACID #3498

MEAD COMPUCHEM

DATA: AC003498A02

SCANS 350 TO 1600

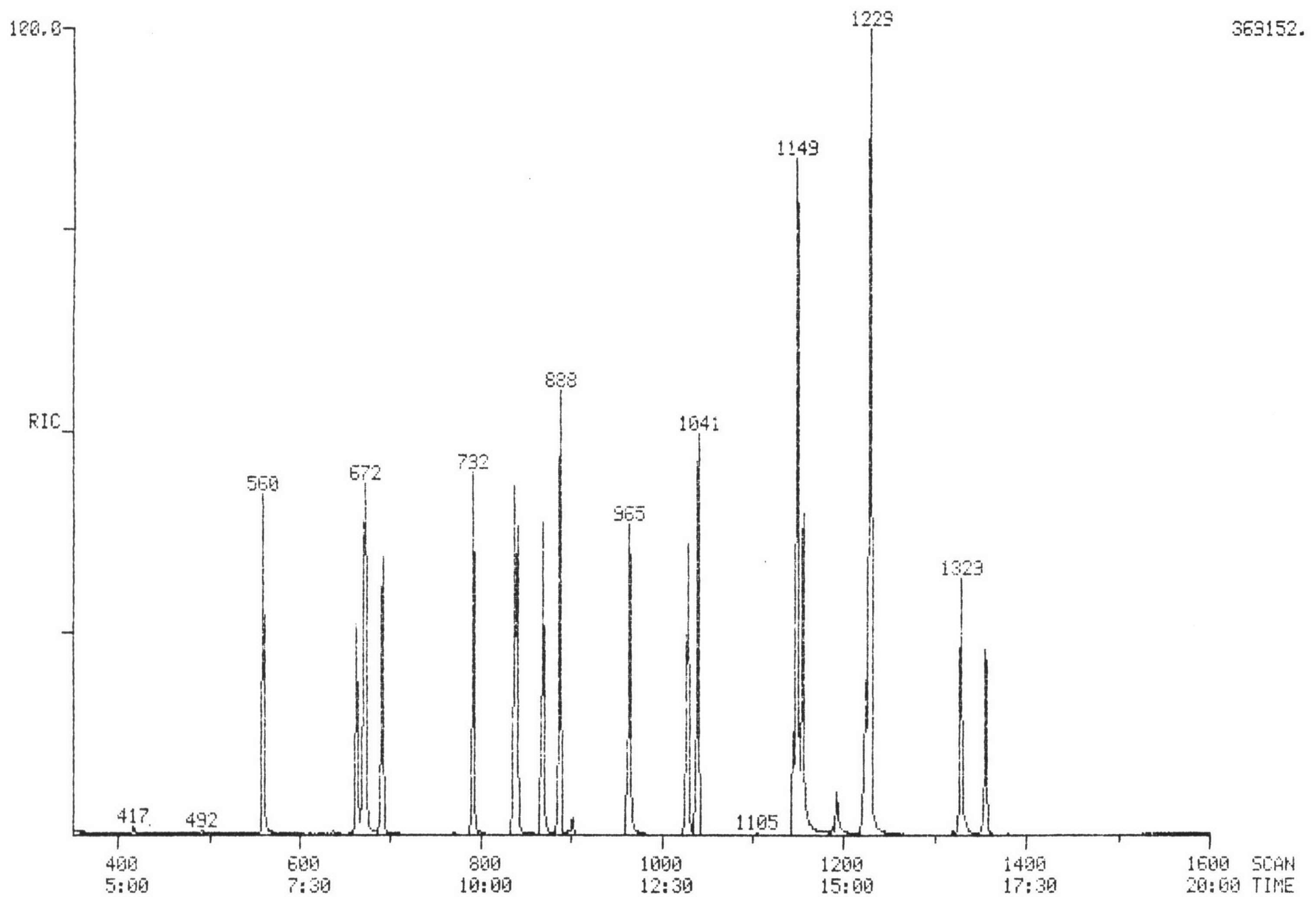


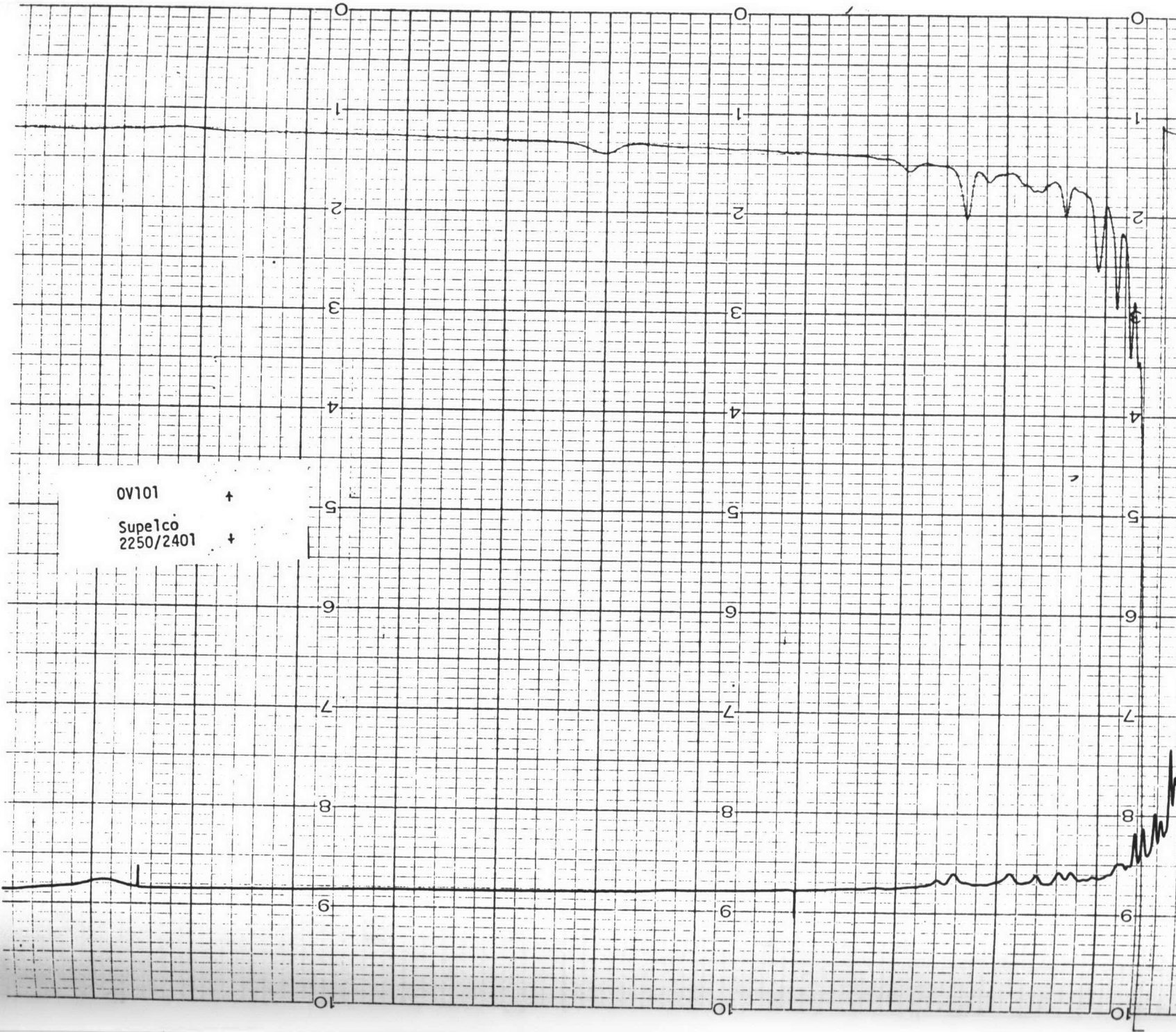
RIC
04/29/83 8:18:00
SAMPLE: ACID STD #3304, 120 NG , EX 4-28

MEAD COMPUCEM

DATA: A5830429A02

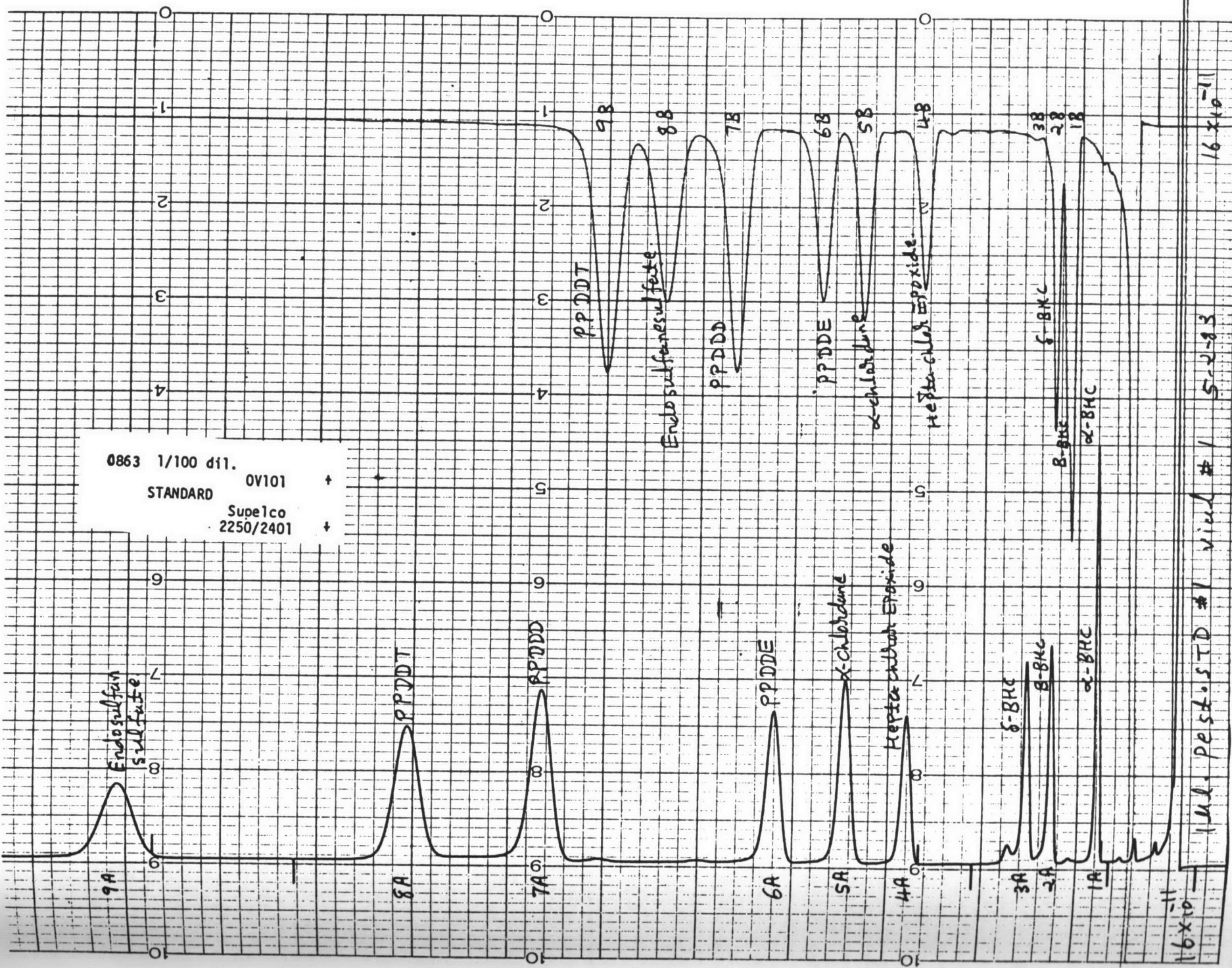
SCANS 350 TO 1600

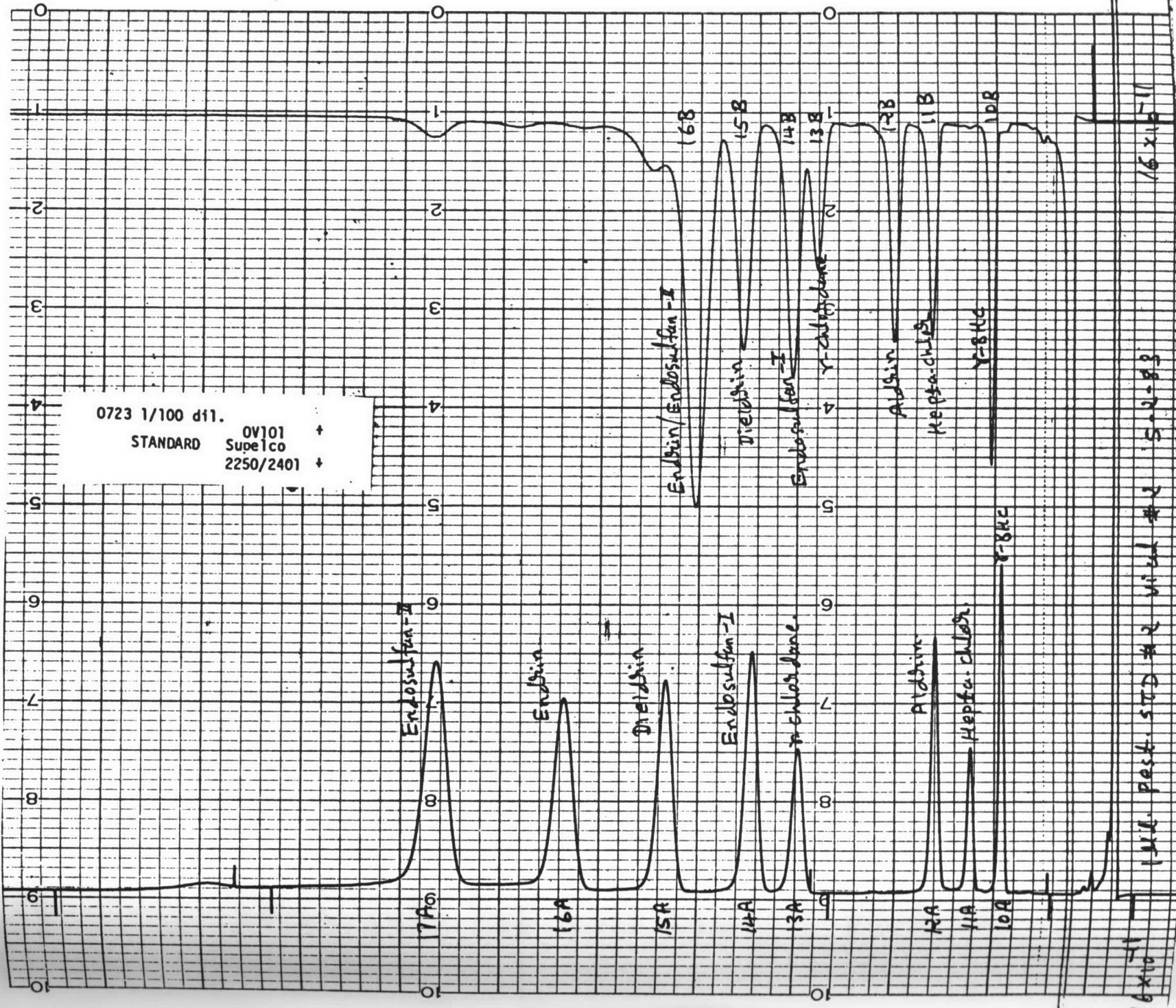




OV101 +
Supelco
2250/2401 +

16x10
1 Jul. sample # 3498 No. Dilution vial #12 5-2-83 16x10 41





2. ANALYTICAL METHODS, DEFINITIONS AND EXPLANATIONS

The CompuChem report contains not only the concentrations of the priority pollutant compounds identified but also additional supportive information which is useful in the review of this data. A complete report includes the following (if ordered):

- Priority Pollutant Data
 - . GC/MS (VOA, B/N/P, Acid)
 - . Pesticides (Method 608)
 - . Inorganics
- Other Analytical Data (EP Toxicity, etc.)
- Conventional Permit Data

The GC/MS priority pollutant data is presented in summary form (concentration of each identified compound) along with the detection limits specified by EPA. In addition, a reconstructed total ion chromatogram (RIC) for each fraction and for the relevant instrument calibration (standards) runs are included.

Also included in the report are the spectra for all organic (except for certain pesticides) priority pollutant compounds identified above EPA specified detection limits, as well as a laboratory chronicle of completion dates.

To assist in the interpretation and utilization of this data, a Glossary of frequently used terms, a Compound Cross-Reference List and a typical Spectral Match Diagram with explanatory notation are also included.

If the Twenty Peak option has been ordered, the report also includes spectral match diagrams for as many as twenty (20) additional non-priority pollutant compounds with peaks greater than 25% of the intensity of the internal standard (d₁₀-anthracene).

If the Quality Control option has been ordered, the report also includes BFB and DFTPP tuning data for the GC/MS instruments, a summary of surrogate spike recovery data and the following:

- Matrix Spike Data
- Duplicate Data
- Method Blank Data

Also included with the method blank is an RIC for each fraction plus spectra and spectral match diagrams for any compounds identified with concentrations greater than EPA specified detection limits found in the blank.

If the Chain-of-Custody option has been ordered, this information is included in the section with the sample data.

ANALYTICAL METHODS

The analytical methods used by CompuChem for priority pollutant, RCRA and NPDES permit analyses are based on those promulgated by EPA. These methods have appeared in the Federal Register as noted below.

In summary, gas chromatography/mass spectrometry (GC/MS) is the analytical technique employed for the analysis of organic compounds while atomic absorption spectrophotometry (AAS) is used for the analysis of metals.

On occasion CompuChem also performs analyses for other parameters which are not on the priority pollutant list. In these cases also, EPA methods are used if available, and if not methods are developed and verified along guidelines suggested by EPA.

References for Methods

Volatile Organics	(Method 624)	Federal Register	12-3-79
Acid Extractables	(Method 625)	"	"
Base/Neutral/Pesticide Extractables	(Method 625)	"	"
Pesticides	(Method 608)	"	"
Inorganics	EPA: Analysis of Water and Waste Water (1974, 1979)		
RCRA		Federal Register	5-19-80

GLOSSARY OF TERMS

ACID FRACTION

Those compounds which solvent extract from the sample when it is pH-adjusted acidic (pH<2).

BFB TUNING

Each GC/MS instrument dedicated to VOA analyses is certified according to protocol prior to each 8-hour shift by injecting BFB (bromofluorobenzene) and comparing relationships between ion abundances for certain key mass numbers. If the prescribed relative ion abundances are not present, the instrument is adjusted until the criteria are met. With the available QC option, these parameters are included in the report for the BFB analysis following the specific sample analyzed.

B/N/P FRACTION

Those compounds which solvent extract from the sample when it is pH-adjusted basic (pH>11). This includes the pesticides (P), bases (B) and since this step is performed first, the neutral (N) compounds.

DFTPP TUNING

Each GC/MS instrument dedicated to Base/Neutral or Acid analyses is certified according to protocol prior to each 8-hour shift by injecting DFTPP (decafluorotriphenylphosphine) and comparing the relationships between ion abundances for certain key mass numbers. If the prescribed relative ion abundances are not present, the instrument is adjusted until the criteria are met. With the available QC option, these parameters are included in the report for the DFTPP analysis following the specific sample analyzed.

INDISTINGUISHABLE ISOMERS

Compounds with essentially the same mass spectrum and which have the same elution time from the gas chromatograph. An example is anthracene and phenanthrene.

INTERNAL STANDARD

CompuChem uses the internal standard method of quantitation. The same amount of d₁₀-anthracene is added to both the calibration standard and the sample. All calculations are referenced to a signal produced by this compound. Then all results are automatically corrected for any change in instrument sensitivity.

MATRIX SPIKES

Actual priority pollutants which are added to a second aliquot of the sample to determine the effect, if any, of the sample matrix on the analytical procedure.

METHOD BLANK

A sample of organic-free laboratory water which undergoes exactly the same extraction procedure at the same time as the actual samples. This monitors for possible contamination from glassware, solvents, or the extraction procedure.

PERCENT RECOVERY (SURROGATES AND MATRIX SPIKES)

The formula for determining percent recovery is:

$$\% \text{ Recovery (Spike)} = \frac{\text{Conc. in Spike} - \text{Conc. in Sample}}{\text{Amount of Spike Added}} \times 100\%$$

$$\% \text{ Recovery (Surrogate)} = \frac{\text{Amount found}}{\text{Amount added}} \times 100\%$$

PURITY VALUE (sometimes abbreviated PUR)

A mathematically devised index which indicates the "goodness of fit" between the spectrum in the sample and a compound in the library. The maximum value is 1000, and values greater than 800 indicate a high probability that the identification is correct. Values from 500 to 800 are only tentative and values less than 500 are not reliable. Also important is the relationship between purity values for the best, second and third matches; ideally the second and third purity scores are much lower than the first.

RIC - RECONSTRUCTED ION CHROMATOGRAM

A plot of the total ion current of the mass spectrometer during the analysis. The plot is analogous to a gas chromatogram where a peak indicates that a compound was detected at that time. The vertical axis is intensity and the horizontal axis is time (both minutes and mass spectral scan marks are labelled).

MATRIX SPIKES

Actual priority pollutants which are added to a second aliquot of the sample to determine the effect, if any, of the sample matrix on the analytical procedure.

METHOD BLANK

A sample of organic-free laboratory water which undergoes exactly the same extraction procedure at the same time as the actual samples. This monitors for possible contamination from glassware, solvents, or the extraction procedure.

PERCENT RECOVERY (SURROGATES AND MATRIX SPIKES)

The formula for determining percent recovery is:

$$\% \text{ Recovery (Spike)} = \frac{\text{Conc. in Spike} - \text{Conc. in Sample}}{\text{Amount of Spike Added}} \times 100\%$$

$$\% \text{ Recovery (Surrogate)} = \frac{\text{Amount found}}{\text{Amount added}} \times 100\%$$

PURITY VALUE (sometimes abbreviated PUR)

A mathematically devised index which indicates the "goodness of fit" between the spectrum in the sample and a compound in the library. The maximum value is 1000, and values greater than 800 indicate a high probability that the identification is correct. Values from 500 to 800 are only tentative and values less than 500 are not reliable. Also important is the relationship between purity values for the best, second and third matches; ideally the second and third purity scores are much lower than the first.

RIC - RECONSTRUCTED ION CHROMATOGRAM

A plot of the total ion current of the mass spectrometer during the analysis. The plot is analogous to a gas chromatogram where a peak indicates that a compound was detected at that time. The vertical axis is intensity and the horizontal axis is time (both minutes and mass spectral scan marks are labelled).

RPD - RELATIVE PERCENT DIFFERENCE

An average used to compare duplicate analyses:

$$\text{RPD} = \frac{2 (C_1 - C_2)}{(C_1 + C_2)} \times 100\%$$

where C_1 and C_2 are the concentrations found in two separate aliquots of the same sample.

SATURATED ION

If a compound is present at a high enough concentration in the sample, the intensity of the major ions is generally so strong that the detector is overloaded by the signal. This is a result of the instrument having been adjusted for maximum sensitivity in order to reach lower detection limits.

SPECTRAL MATCH DIAGRAM

A display of the mass spectrum of the sample followed by the mass spectra of the three compounds in the library which are most similar to the sample (see Purity Value).

SURROGATES

A surrogate compound is chemically similar to one of the priority pollutants except that it is deuterated or fluorinated or in some other manner distinguishable by GC/MS from the other compounds in the sample.

TWENTY (20) PEAK SEARCH

An available option in which up to 20 non-priority peaks larger than half the internal standard peak are identified by searching the NBS spectral library. Only an estimate of concentration can be given which is:

Low	< 50 ug/l
Medium	50 - 200 ug/l
High	> 200 ug/l

VOA - VOLATILE ORGANICS ANALYSIS

Those highly volatile compounds detected by introducing the sample directly into the GC/MS through a purge and trap apparatus.

HOW TO INTERPRET "DATA: BN3436A4 #640"

In addition to the actual data, the headers of all RIC's, spectra, and spectral match diagrams contain informatin on the date, the sample and the instrumentation. Some of this information is coded in the following format:

DATA: BN3436A4 #640

BN

In this particular example, BN indicates that the sample analyzed was the base/neutral fraction. Other codes which are used are listed below:

VOA	Volatile Fraction	
AC	Acid Fraction	
BN	Base/Neutral Fraction	(Also includes Pesticides)
VOASTD	Volatile Standard	(sometimes VOASD)
ACSTD	Acid Standard	(sometimes ACSD)
BNSTD	Base/Neutral Standard	(sometimes BNSD)
VOABK	Volatile Blank	(sometimes VOAB)
ACBK	Acid Blank	(sometimes ACB)
BNBK	Base/Neutral Blank	(sometimes BNB)

3436

This is the CompuChem sample number. (In the case of a blank or standard, the number represents the date: two digits for month followed by two digits for day.)

A4

In this particular example, A4 indicates that the sample was run on the first shift (A) and on instrument #4. Other codes which are used include A, B, and C to denote the first, second and third shift respectively and instrument numbers 1 through 18.

From this information, CompuChem management also knows the chemist who performed the measurement, which senior spectroscopist reviewed the data, and which laboratory manager had the overall responsibility for the analysis.

#640

This is the scan number of the peak (or the compound). A specific peak on a RIC will be labelled with this number, and it will also appear in the header of the corresponding spectrum and/or the spectral match diagram.

COMPOUND CROSS-REFERENCE LIST

<u>COMPOUND</u>	<u>NPDES PERMIT</u>	<u>STORET</u>	<u>CAS</u>	<u>EPA CONTRACTORS</u>
<u>VOLATILES</u>				
acrolein	1V	34210	107-02-8	2V
acrylonitrile	2V	34215	107-13-1	3V
benzene	3V	34236	71-43-2	4V
bis (chloromethyl) ether	4V	N/A	542-88-1	N/A
bromoform	5V	32104	75-25-2	47V
carbon tetrachloride	6V	32102	56-23-5	6V
chlorobenzene	7V	34301	108-90-7	7V
chlorodibromomethane	8V	34105	124-48-1	51V
chloroethane	9V	34311	75-00-3	16V
2-chloroethylvinyl ether	10V	34576	110-75-8	19V
chloroform	11V	32106	67-66-3	23V
dichlorobromomethane	12V	32101	75-27-4	48V
dichlorodifluoromethane*	13V	N/A	75-71-8	50V
1,1-dichloroethane	14V	34496	75-34-3	13V
1,2-dichloroethane	15V	34531	107-06-2	10V
1,1-dichloroethylene	16V	34501	75-35-4	29V
1,2-dichloropropane	17V	34541	78-87-5	32V
1,2-dichloropropylene	18V	34561	542-75-6	33V
ethylbenzene	19V	34371	100-41-4	38V
methyl bromide	20V	34413	74-83-9	46V
methyl chloride	21V	34418	74-87-3	45V
methylene chloride	22V	34423	75-09-2	44V
1,1,2,2-tetrachloroethane	23V	34516	79-34-5	15V
tetrachloroethylene	24V	34475	127-18-4	85V
toluene	25V	34010	108-88-3	86V
1,2-trans-dichloroethylene	26V	34546	156-60-5	30V
1,1,1-trichloroethane	27V	34506	71-55-6	11V
1,1,2-trichloroethane	28V	34511	79-00-5	14V
trichloroethylene	29V	39180	79-01-6	87V
trichlorofluoromethane*	30V	34488	75-69-4	49V
vinyl chloride	31V	39175	75-01-4	88V

* Recently removed from list (Fed. Register 46, 5, January 8, 1981)

COMPOUND CROSS-REFERENCE LIST (Continued)

<u>COMPOUND</u>	<u>NPDES PERMIT</u>	<u>STORET</u>	<u>CAS</u>	<u>EPA CONTRACTORS</u>
<u>BASE/NEUTRALS (Cont'd)</u>				
1,2-diphenylhydrazine	30B	34346	122-66-7	37B
fluoranthene	31B	34376	206-44-0	39B
fluorene	32B	34381	86-73-7	80B
hexachlorobenzene	33B	39700	118-71-1	9B
hexachlorobutadiene	34B	34391	87-68-3	52B
hexachlorocyclopentadiene	35B	34386	77-47-4	53B
hexachloroethane	36B	34396	67-72-1	12B
indeno (1,2,3-cd) pyrene	37B	34403	193-39-5	83B
isophorone	38B	34408	78-59-1	54B
naphthalene	39B	39250	91-20-3	55B
nitrobenzene	40B	34447	98-95-3	56B
N-nitrosodimethylamine	41B	34438	62-75-9	61B
N-nitrosodi-n-propylamine	42B	34428	621-64-7	63B
N-nitrosodiphenylamine	43B	34433	86-30-6	62B
phenanthrene	44B	34461	85-01-8	81B
pyrene	45B	34469	129-00-0	84B
1,2,4-trichlorobenzene	46B	34551	120-82-1	8B
<u>PESTICIDES</u>				
aldrin	1P	39330	309-00-2	89P
alpha-BHC	2P	39337	319-84-6	102P
beta-BHC	3P	39338	319-85-7	103P
gamma-BHC	4P	34259	58-89-9	104P
delta-BHC	5P	39340	319-86-8	105P
chlordane	6P	39350	57-74-9	91P
4,4'-DDT	7P	39300	50-29-3	92P
4,4'-DDE	8P	39320	72-55-9	93P
4,4'-DDD	9P	39310	72-54-8	94P
dieldrin	10P	39380	60-57-1	90P
alpha-endosulfan	11P	34361	115-29-7	95P
beta-endosulfan	12P	34356	115-29-7	96P
endosulfan sulfate	13P	34351	1031-07-8	97P
endrin	14P	39390	72-20-8	98P
endrin aldehyde	15P	34366	7421-93-4	99P
heptachlor	16P	39410	76-44-8	100P
heptachlor epoxide	17P	39420	1024-57-3	101P
PCB-1242	18P	39496	53469-21-9	106P
PCB-1254	19P	39504	11097-69-1	107P
PCB-1221	20P	39488	11104-28-2	108P
PCB-1232	21P	39492	11141-16-5	109P
PCB-1248	22P	39500	12672-29-6	110P
PCB-1260	23P	39508	11096-82-5	111P
PCB-1016	24P	34671	12674-11-2	112P
toxaphene	25P	39400	8001-35-2	113P

COMPOUND CROSS-REFERENCE LIST (Continued)

<u>COMPOUND</u>	<u>NPDES PERMIT</u>	<u>STORET</u>	<u>CAS</u>	<u>EPA CONTRACTORS</u>
<u>ACIDS</u>				
2-chlorophenol	1A	34586	95-57-8	24A
2,4-dichlorophenol	2A	34601	120-83-2	31A
2,4-dimethylphenol	3A	34606	105-67-9	34A
4,6-dinitro-o-cresol	4A	34657	534-52-1	60A
2,4-dinitrophenol	5A	34616	51-28-5	59A
2-nitrophenol	6A	34591	88-75-5	57A
4-nitrophenol	7A	34646	100-02-7	58A
p-chloro-m-cresol	8A	34452	59-50-7	22A
pentachlorophenol	9A	39094	87-86-5	64A
phenol	10A	34694	108-95-2	65A
2,4,6-trichlorophenol	11A	34621	88-06-2	21A
<u>BASE/NEUTRALS</u>				
acenaphthene	1B	34205	83-32-9	1B
acenaphthylene	2B	34200	208-96-8	77B
anthracene	3B	34220	120-12-7	78B
benzidine	4B	39120	92-87-5	5B
benzo (a) anthracene	5B	34526	56-55-3	72B
benzo (a) pyrene	6B	34247	50-32-8	73B
3,4-benzofluoranthene	7B	34230	205-99-2	74B
benzo (g,h,i) perylene	8B	34521	191-24-2	79B
benzo (k) fluoranthene	9B	34242	207-08-9	75B
bis (2-chloroethoxy) methane	10B	34278	111-91-1	43B
bis (2-chloroethyl) ether	11B	34273	111-44-4	18B
bis (2-chloroisopropyl) ether	12B	34283	39638-32-9	42B
bis (2-ethylhexyl) phthalate	13B	39100	117-81-7	66B
4-bromophenyl phenyl ether	14B	34636	101-55-3	41B
butylbenzyl phthalate	15B	34292	85-68-7	67B
2-chloronaphthalene	16B	34581	91-58-7	20B
4-chlorophenyl phenyl ether	17B	34641	7005-72-3	40B
chrysene	18B	34320	218-01-9	76B
dibenzo (a,h) anthracene	19B	34556	53-70-3	82B
1,2-dichlorobenzene	20B	34536	95-50-1	25B
1,3-dichlorobenzene	21B	34566	541-73-1	26B
1,4-dichlorobenzene	22B	34571	106-46-7	27B
3,3'-dichlorobenzidine	23B	34631	91-94-1	28B
diethyl phthalate	24B	34336	84-66-2	70B
dimethyl phthalate	25B	34341	131-11-3	71B
di-n-butyl phthalate	26B	39110	84-74-2	68B
2,4-dinitrotoluene	27B	34611	121-14-2	35B
2,6-dinitrotoluene	28B	34626	606-20-2	36B
di-n-octyl phthalate	29B	34596	117-84-0	69B

COMPOUND CROSS-REFERENCE LIST (Continued)

<u>COMPOUND</u>	<u>NPDES PERMIT</u>	<u>STORET</u>	<u>CAS</u>	<u>EPA CONTRACTORS</u>
<u>METALS, CYANIDE, and PHENOLS (ALL TOTAL)</u>				
Antimony	1M		7440-36-0	
Arsenic	2M		7440-38-2	
Beryllium	3M		7440-41-7	
Cadmium	4M		7440-43-9	
Chromium	5M		7440-47-3	
Copper	6M		7550-50-8	
Lead	7M		7439-92-1	
Mercury	8M		7439-97-6	
Nickel	9M		7440-02-0	
Selenium	10M		7782-49-2	
Silver	11M		7440-22-4	
Thallium	12M		7440-28-0	
Zinc	13M		7440-66-6	
Cyanide	14M		57-12-5	
Phenols	15M		N/A	
 <u>DIOXIN</u>				
2,3,7,8-tetrachlorodi- benzo-p-dioxin		34675	1764-01-6	129B

