

GEORGIA INSTITUTE OF TECHNOLOGY  
OFFICE OF CONTRACT ADMINISTRATION  
SPONSORED PROJECT INITIATION

Date: September 17, 1976

Project Title: Gas Chromatograph Tests of Gasoline Samples

Project No: A-232-800

Project Director: Dr. J. A. Knight

Sponsor: Optimal Systems Incorporated, 3050 Jones Ferry Rd., Norcross/Atl., Ga. 30071

Agreement Period: From September 13, 1976 Until September 30, 1976

Type Agreement: Letter dated September 8, 1976

Amount: \$500

Reports Required: Final Report upon completion. (9/ /76)

Sponsor Contact Person (s):

Technical Matters

Contractual Matters

(thru OCA)

Mr. K. E. Homer, Laboratory Manager  
Optimal Systems Incorporated  
3050 Jones Ferry Road  
Norcross/Atl., Ga. 30071

Defense Priority Rating: None

Assigned to: Productivity & Technology Applications (School/Laboratory)

COPIES TO:

Project Director  
Division Chief (EES)  
School/Laboratory Director  
Dean/Director-EES  
Accounting Office  
Procurement Office  
Security Coordinator (OCA)  
Reports Coordinator (OCA)

Library, Technical Reports Section ✓  
Office of Computing Services  
Director, Physical Plant  
EES Information Office  
Project File (OCA)  
Project Code (GTRI)  
Other \_\_\_\_\_

GEORGIA INSTITUTE OF TECHNOLOGY  
OFFICE OF CONTRACT ADMINISTRATION  
SPONSORED PROJECT TERMINATION

Date: 11/30/76

Project Title: Gas Chromatograph tests of Gasoline Samples.

Project No: A-232-800

Project Director: Dr. J. A. Knight

Sponsor: Optimal Systems Incorporated, Norcross/Atl., Ga. 30071

Effective Termination Date: 9/30/76

Clearance of Accounting Charges: 10/31/76

Grant/Contract Closeout Actions Remaining:

- Final Invoice and Closing Documents
- Final Fiscal Report
- Final Report of Inventions
- Govt. Property Inventory & Related Certificate
- Classified Material Certificate
- Other \_\_\_\_\_

Assigned to: Productivity and Technology Applications (School/Laboratory)

COPIES TO:

- Project Director
- Division Chief (EES)
- School/Laboratory Director
- Dean/Director-EES
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- Procurement Office
- Security Coordinator (OCA)
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- EES Information Office
- Project File (OCA)
- Project Code (GTRI)
- Other \_\_\_\_\_

B 328

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A-232-800



ENGINEERING EXPERIMENT STATION  
GEORGIA INSTITUTE OF TECHNOLOGY • ATLANTA, GEORGIA 30332

September 28, 1976

Mr. Kenneth E. Homer  
Laboratory Manager  
Optimal Systems Incorporated  
3050 Jones Ferry Road  
Norcross/Atl., GA 30071

Subject: Fingerprint Determination of Nine Samples by Gas  
Chromatography. Project A-232-800.

Dear Mr. Homer:

I have completed the gas chromatographic fingerprint characterization of six samples of gasoline and one sample of fuel oil and compared the results against similar fingerprints of two samples taken from a manhole leak.

The samples were first chromatographed "as-is." After it was determined that by carefully evaporating the known samples to approximately the same condition as the unknown samples, that a better match could be made with the samples from the manhole leak #1 and #14.

The results of this fingerprint characterization technique can only be termed qualitative and subject to interpretation.

The conditions under which these fingerprint chromatographic scans were taken are:

instrument: Perkin Elmer Model 900  
column: SE-30 10% on Chrom. P 80/100 mesh 10' x 1/8'  
temperature  
program: 2 min. hold at 60°C then 60-180°C at 10°/min.  
sample  
size: 1.0 microliter  
attenua-  
tion: 12,800 X  
chart  
speed: 60 cm./hr.

Qualitative Results

<u>Lab No.</u>	<u>Identification</u>	<u>Comment</u>
1	Manhole #1 Cedar Lane	Control

Mr. Kenneth E. Homer  
Optimal Systems Incorporated

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September 28, 1976

Qualitative Results (cont'd.)

<u>Lab No.</u>	<u>Identification</u>	<u>Comment</u>
2	Texaco #2 Fuel Oil	Eliminated
4	Texaco Fire Chief	Eliminated
5	Texaco Sky Chief	Possible Candidate
7	Waco Regular	Eliminated
10	American Regular	Eliminated
12	Exxon	Eliminated
13	Exxon Extra	Possible Candidate
14	Manhole sample (second sample)	Similar to Sample No. 1

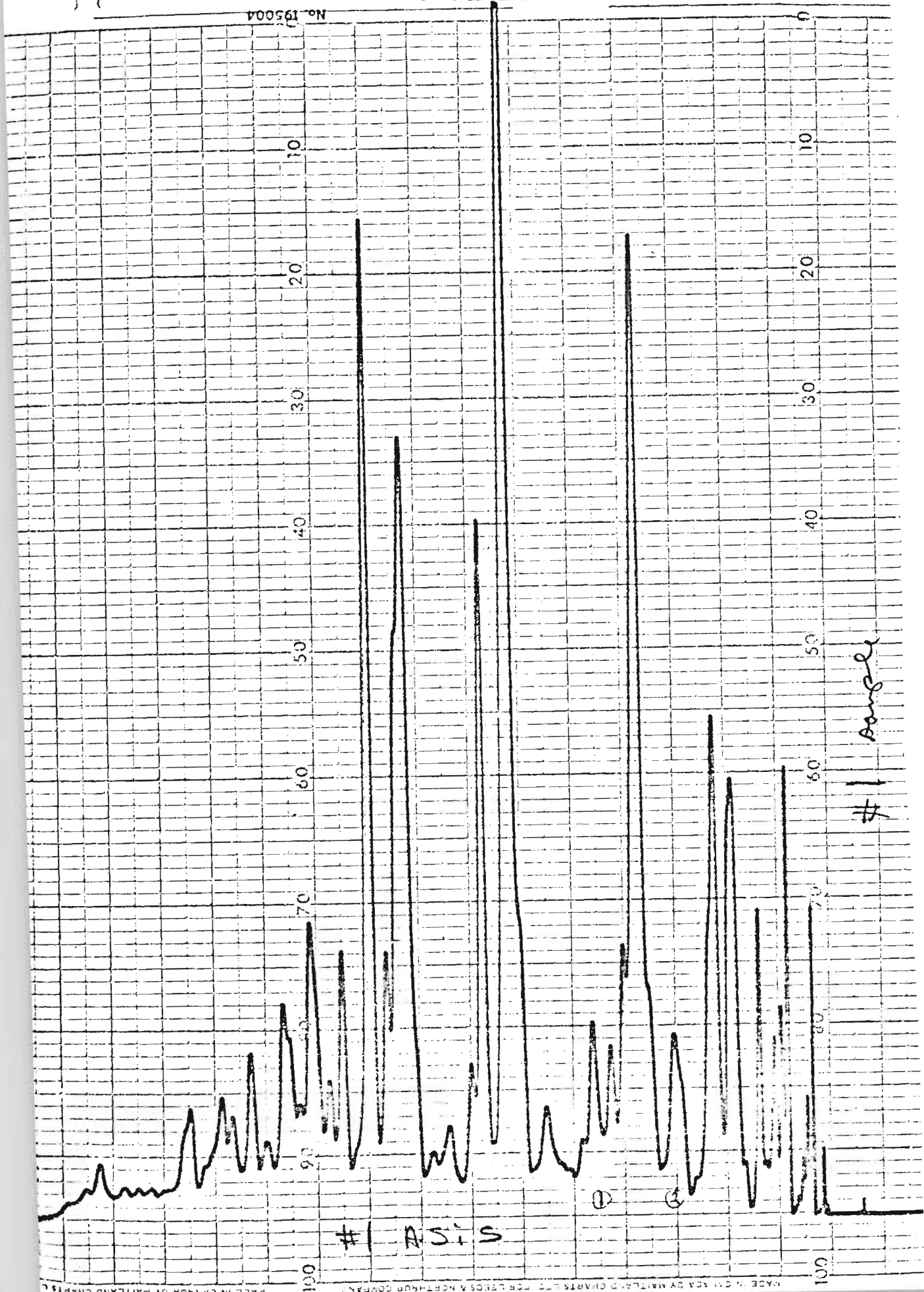
Based on data obtained from this project the possible candidates were Texaco Sky Chief and the Exxon Extra. It was also noted that samples #4, #7 and #12 were identical but did not appear to be possible candidates.

Respectfully submitted,

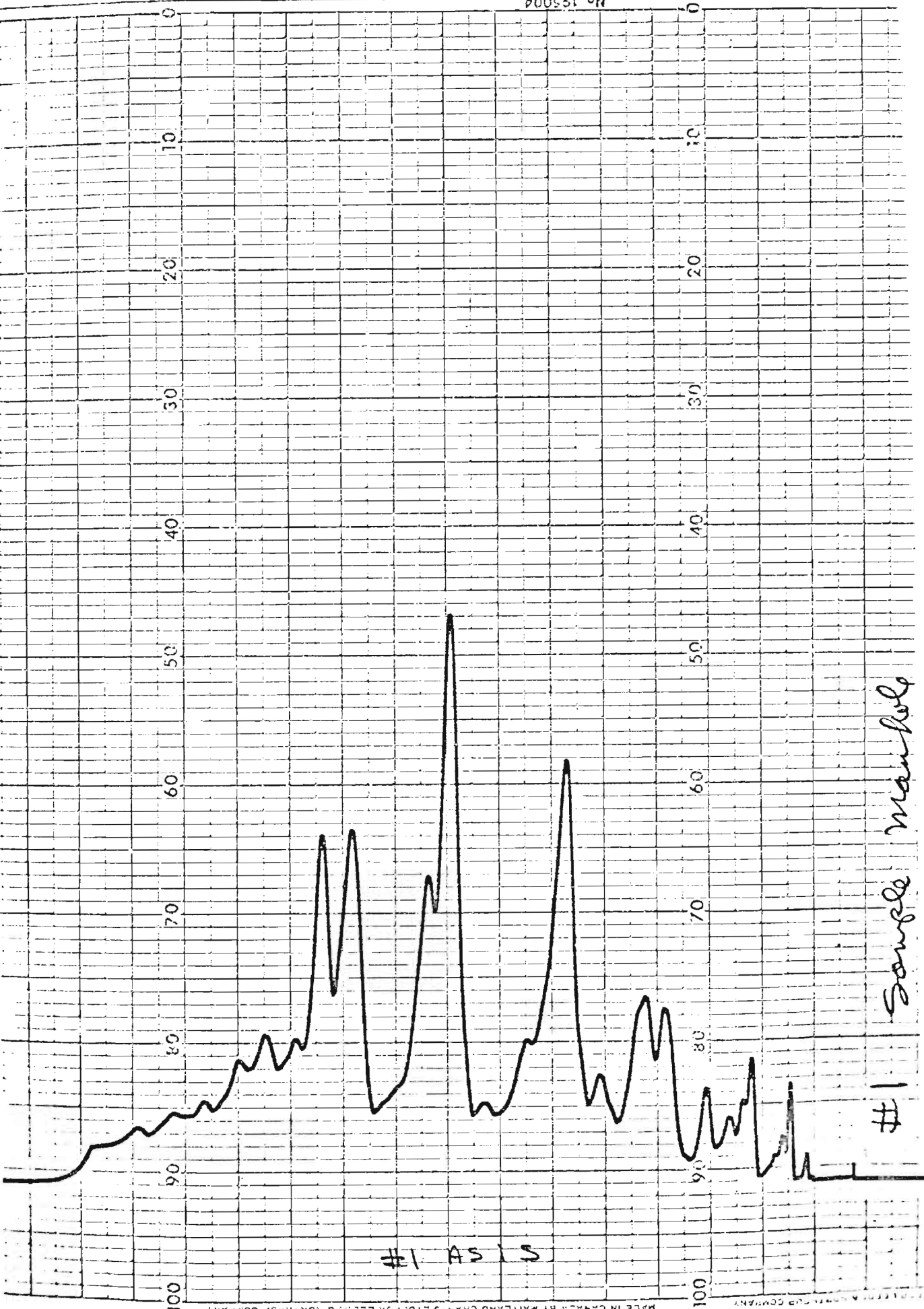
David R. Hurst  
Asst. Research Technologist

DRH:bc

Enclosure: 16 GC Records



# 1 angle



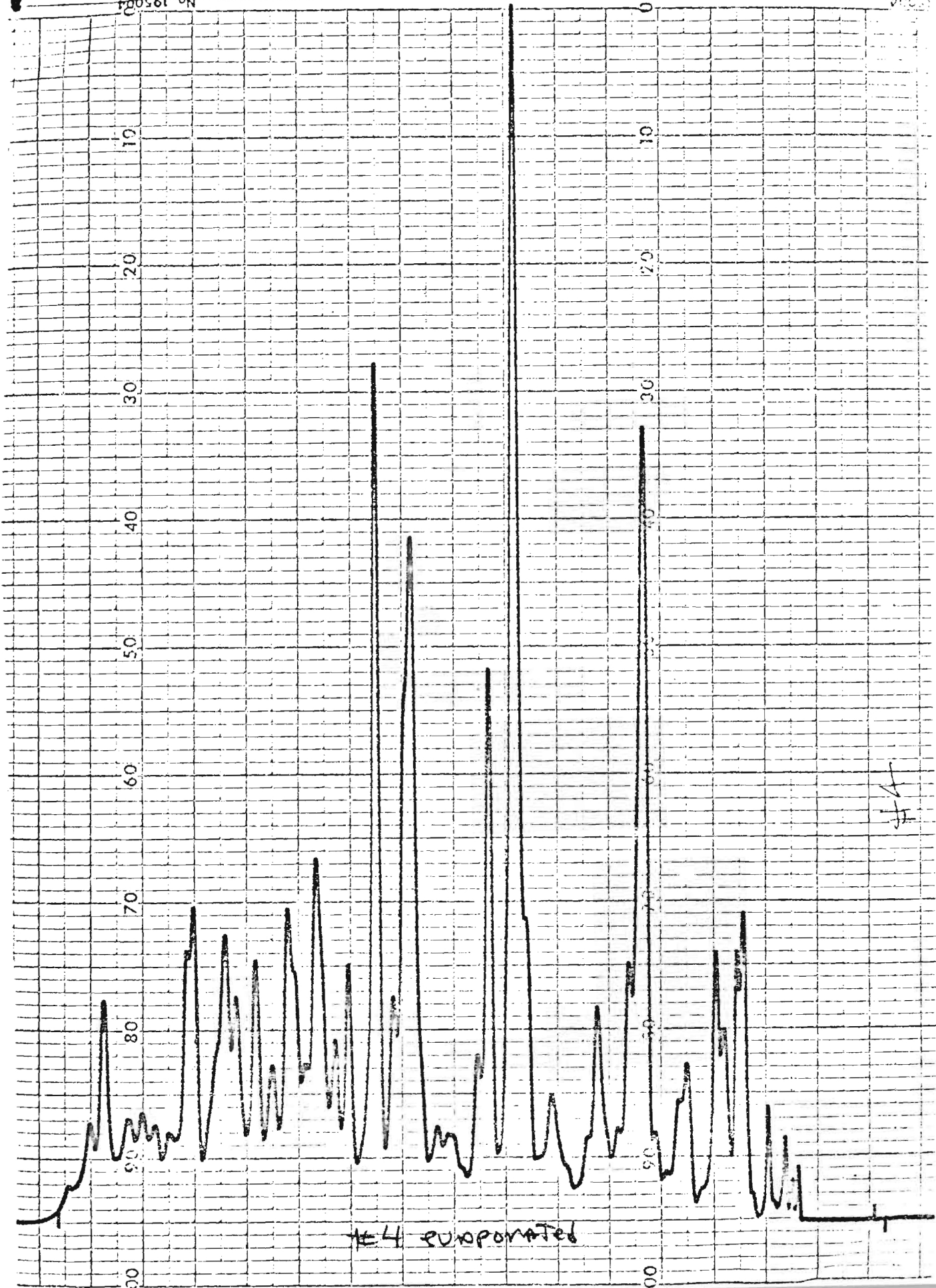
#1 ASIS

#2

Sample Manifold

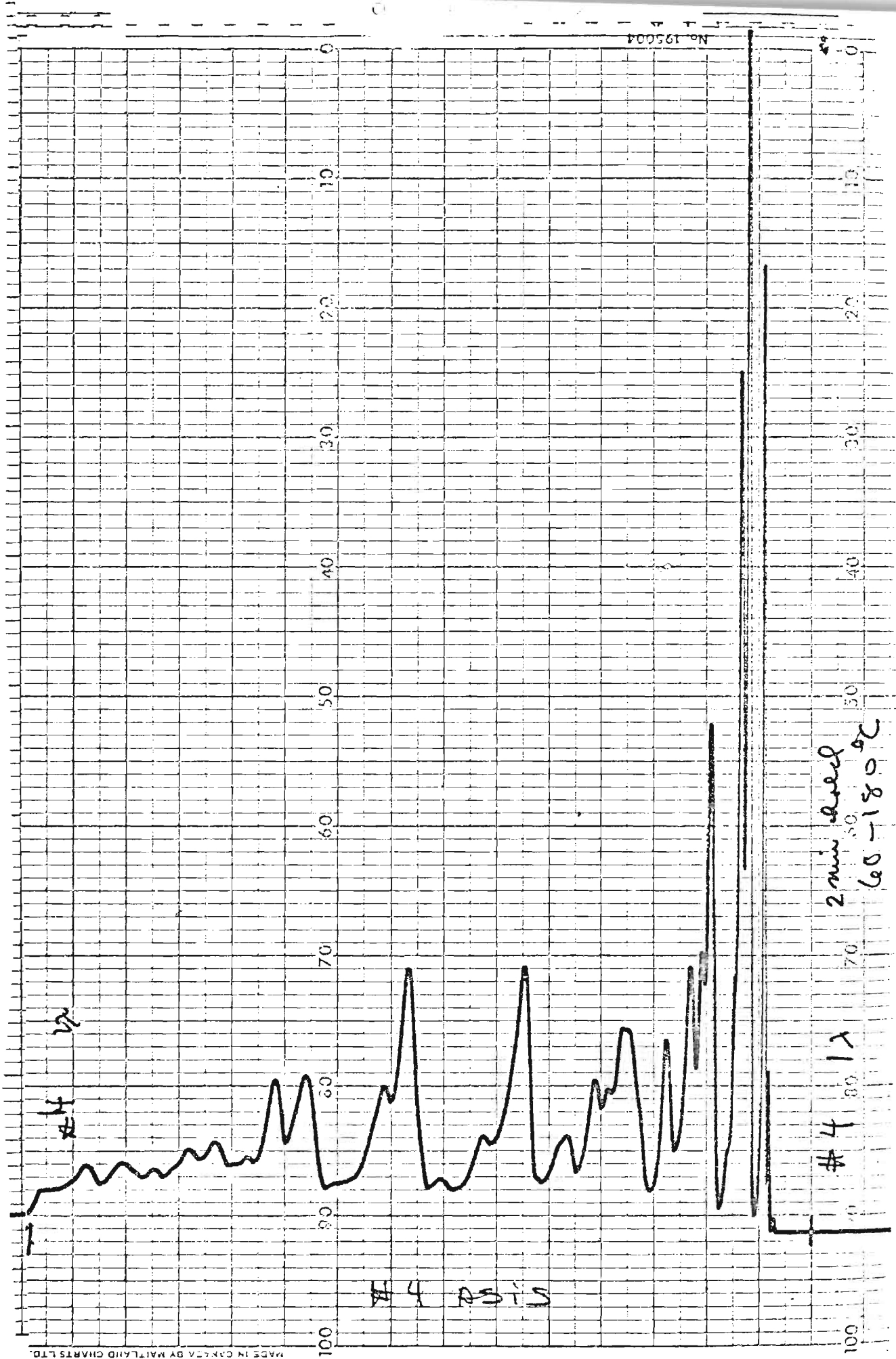
No. 19501

19501



#4 SUPPLEMENT

#4



MADE IN CANADA BY MATHLAND CHARTS LTD.

No. 195004

#4 12

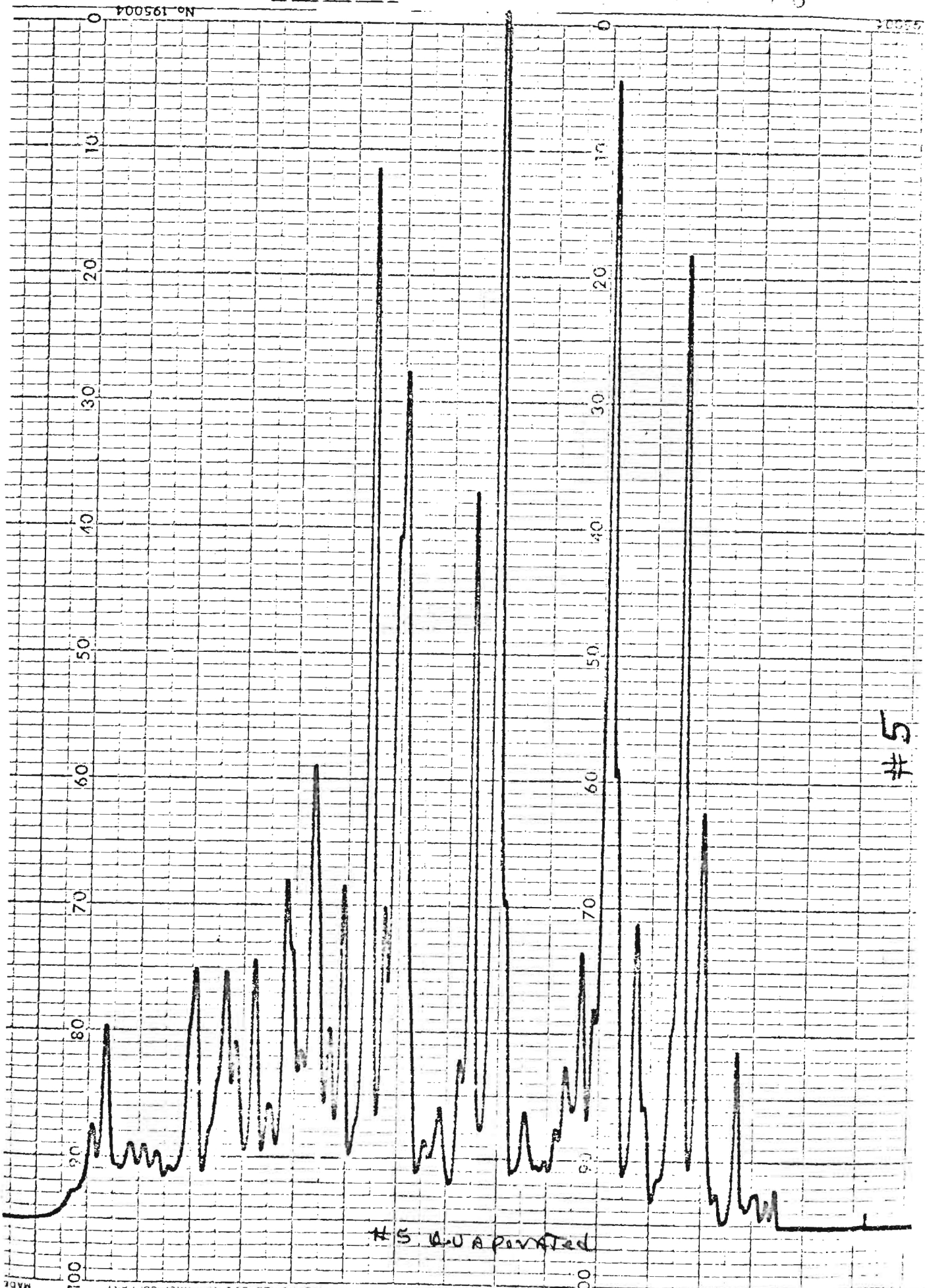
#4 2515

#4 2min hold  
60-180°C

#4 12

49





No. 19504

95004

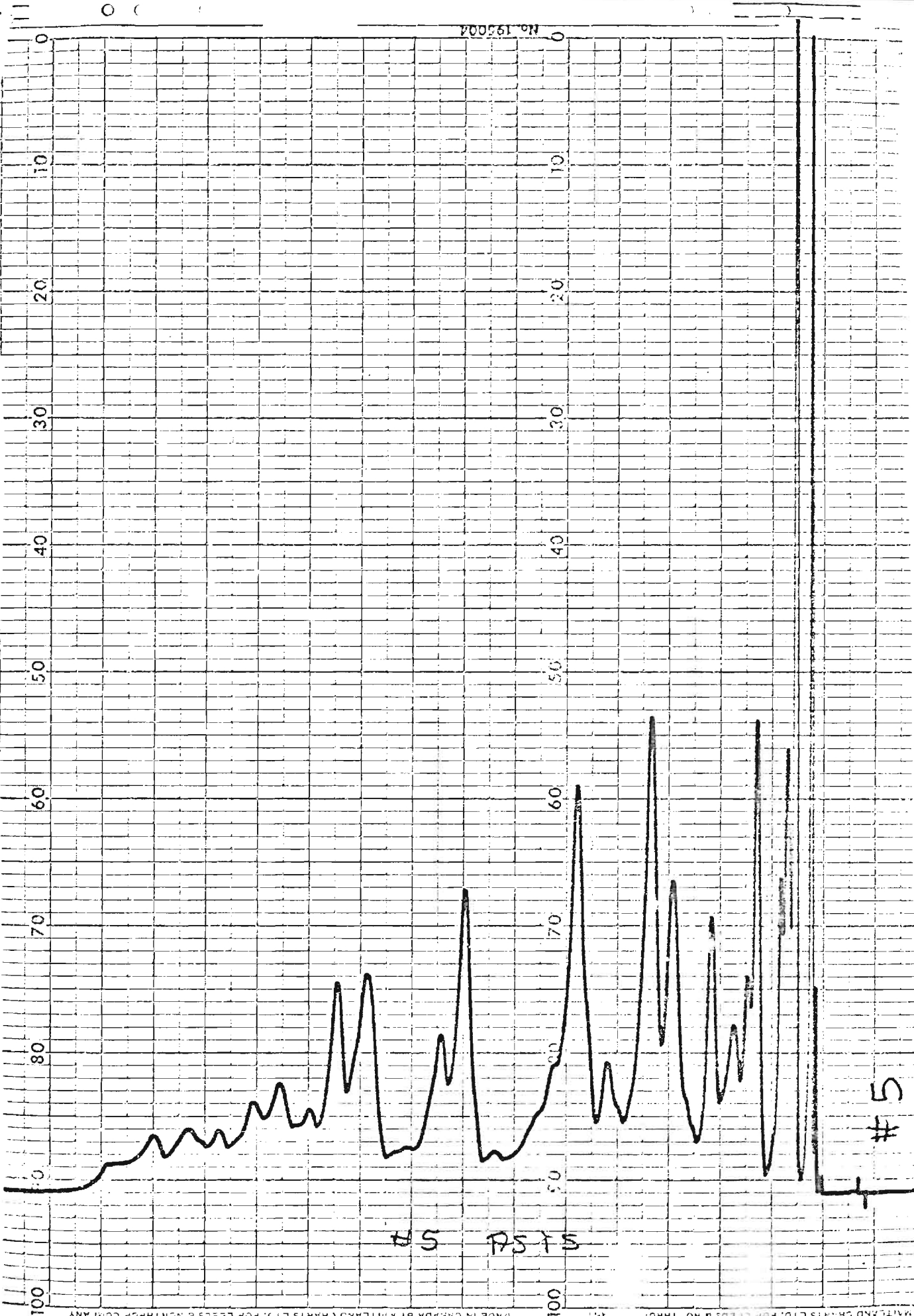
#5

#5. 0.0 A PIVATED

MADE

TO CHAIRMAN AND MEMBERS OF THE HOUSE OF REPRESENTATIVES

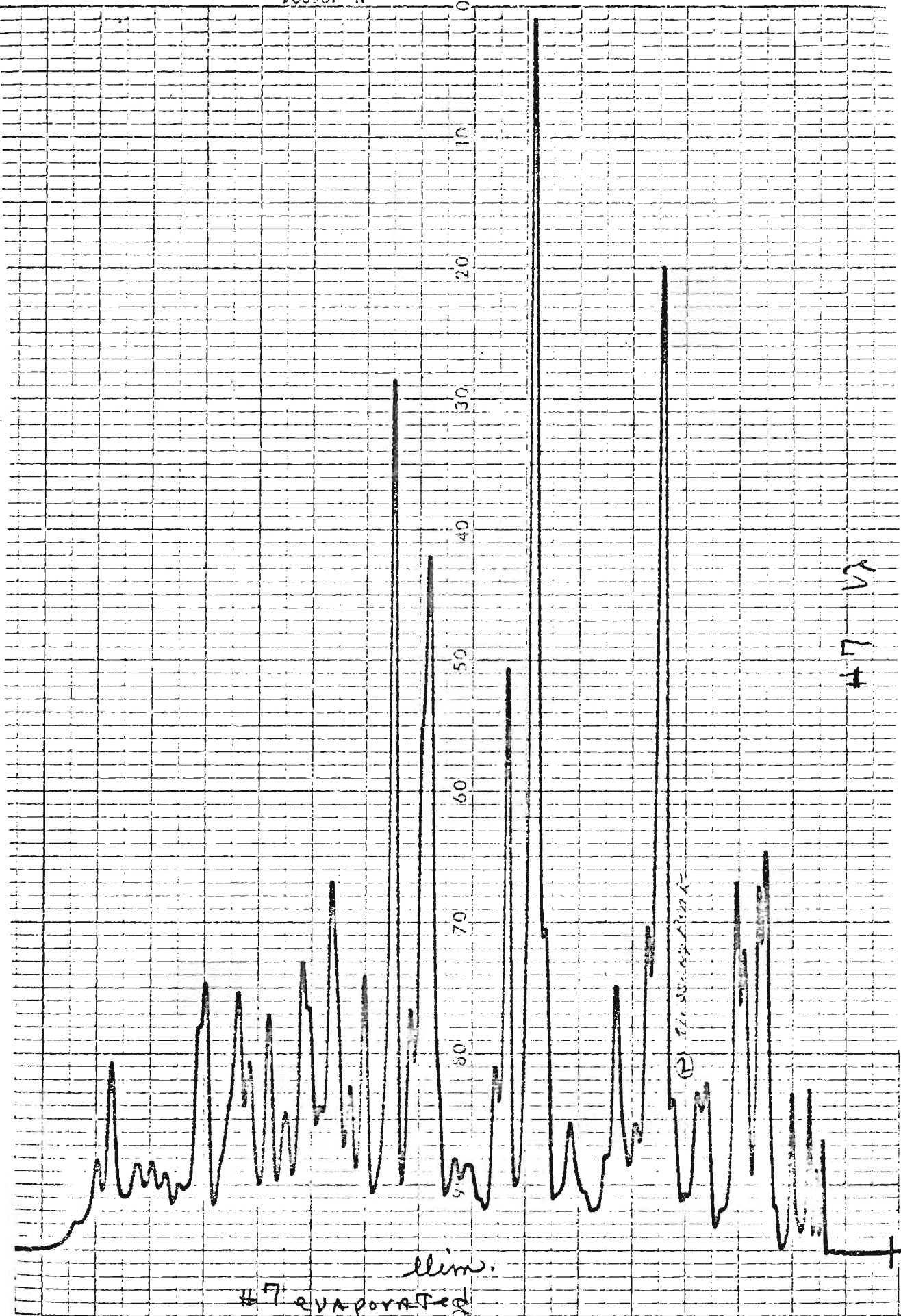
00



No. 195004

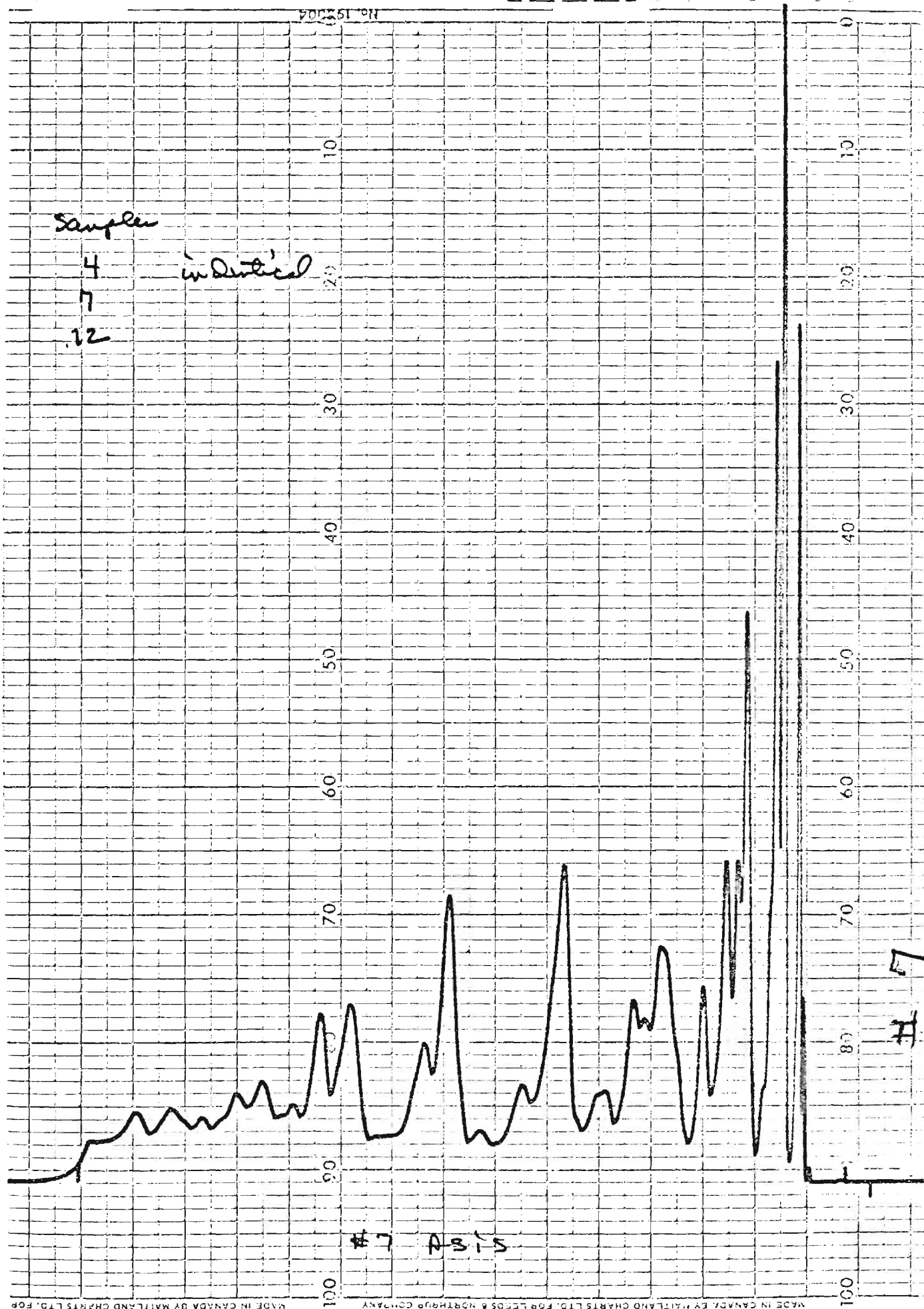
#5 #5 #5

#5



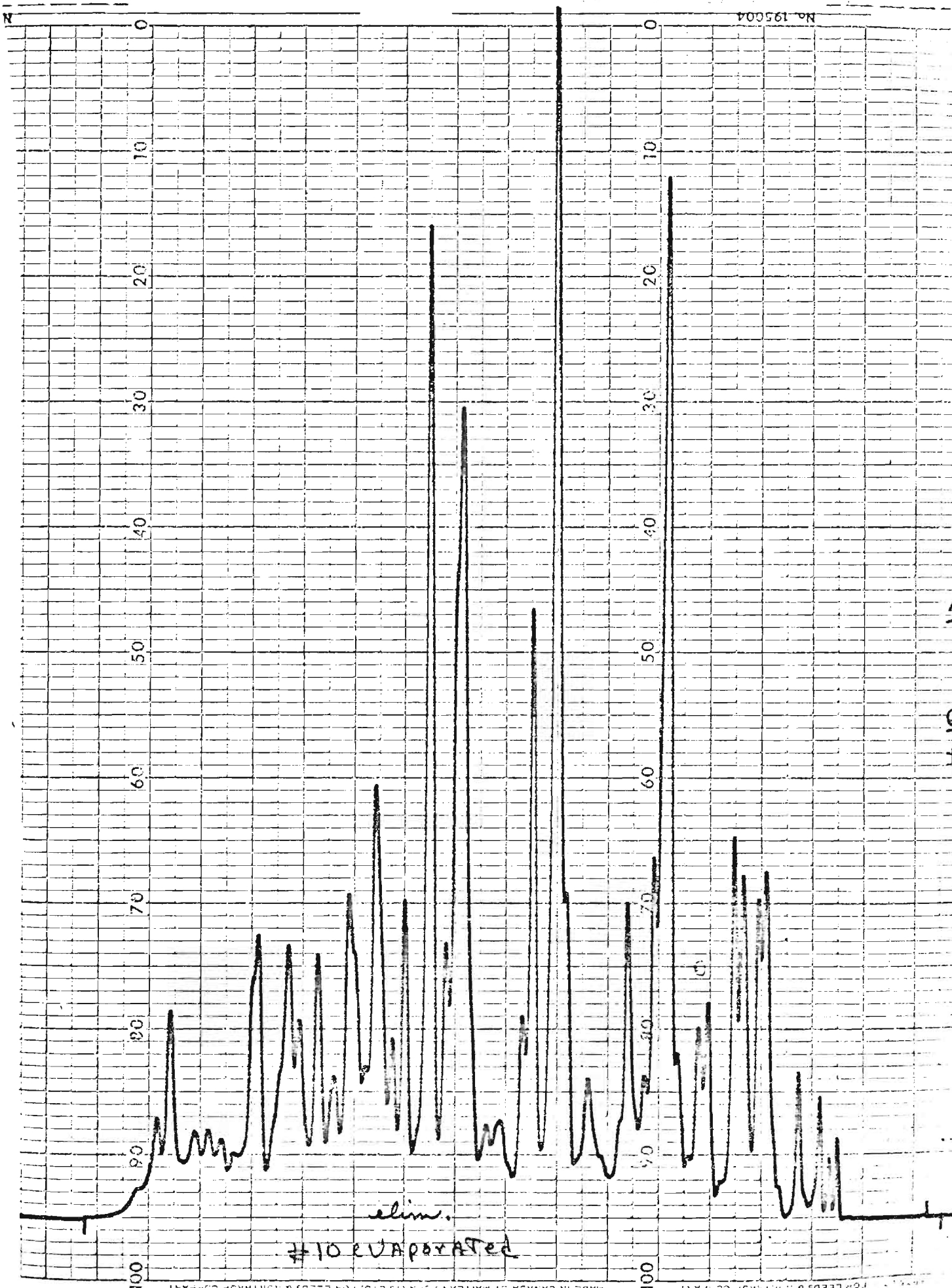
#7 V2

#7 evaporated lim.



Sample  
 4     identical  
 7  
 12

# 7 ABS



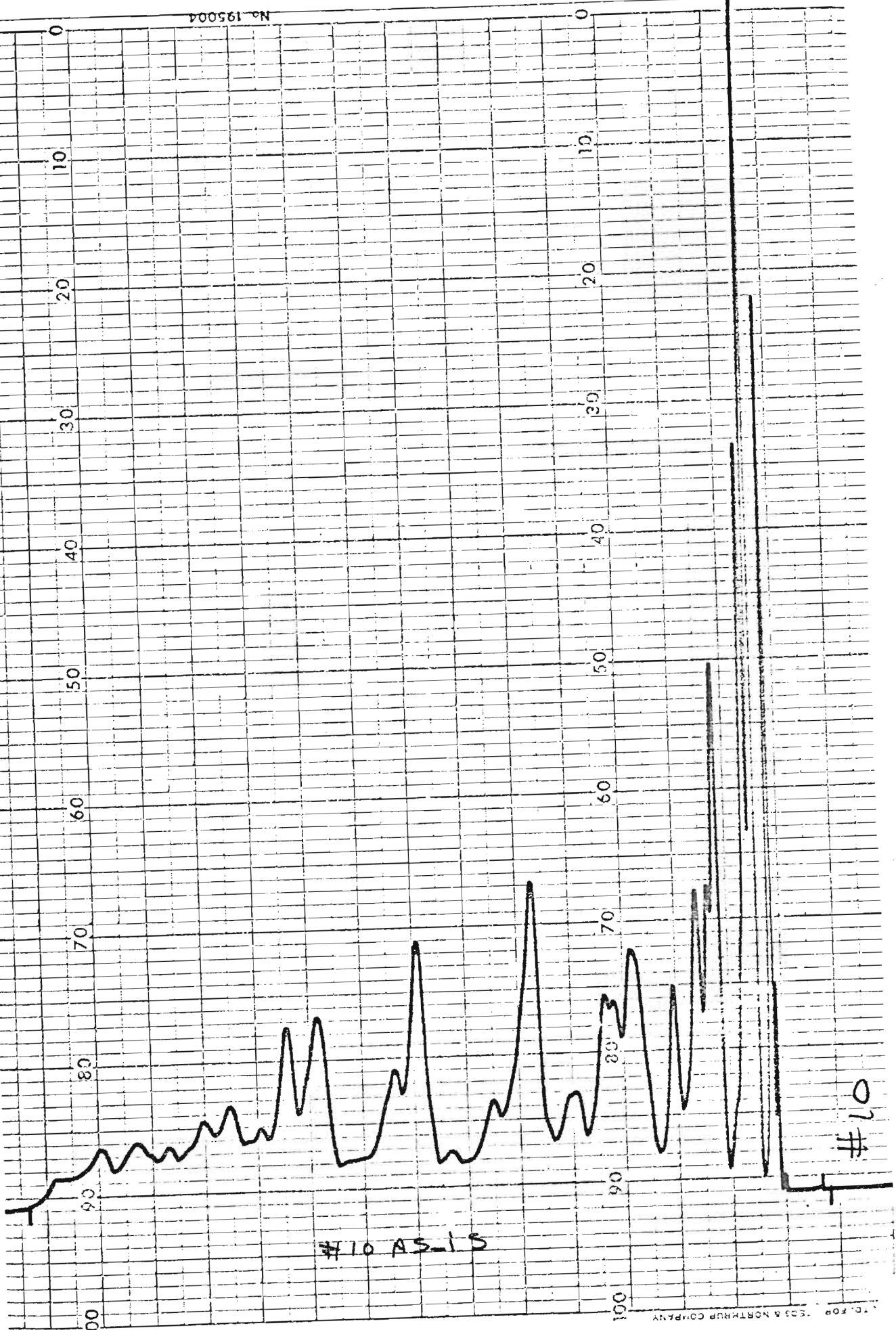
No. 195004

elim.

#10 EVAPORATED

#10 12

No. 195004

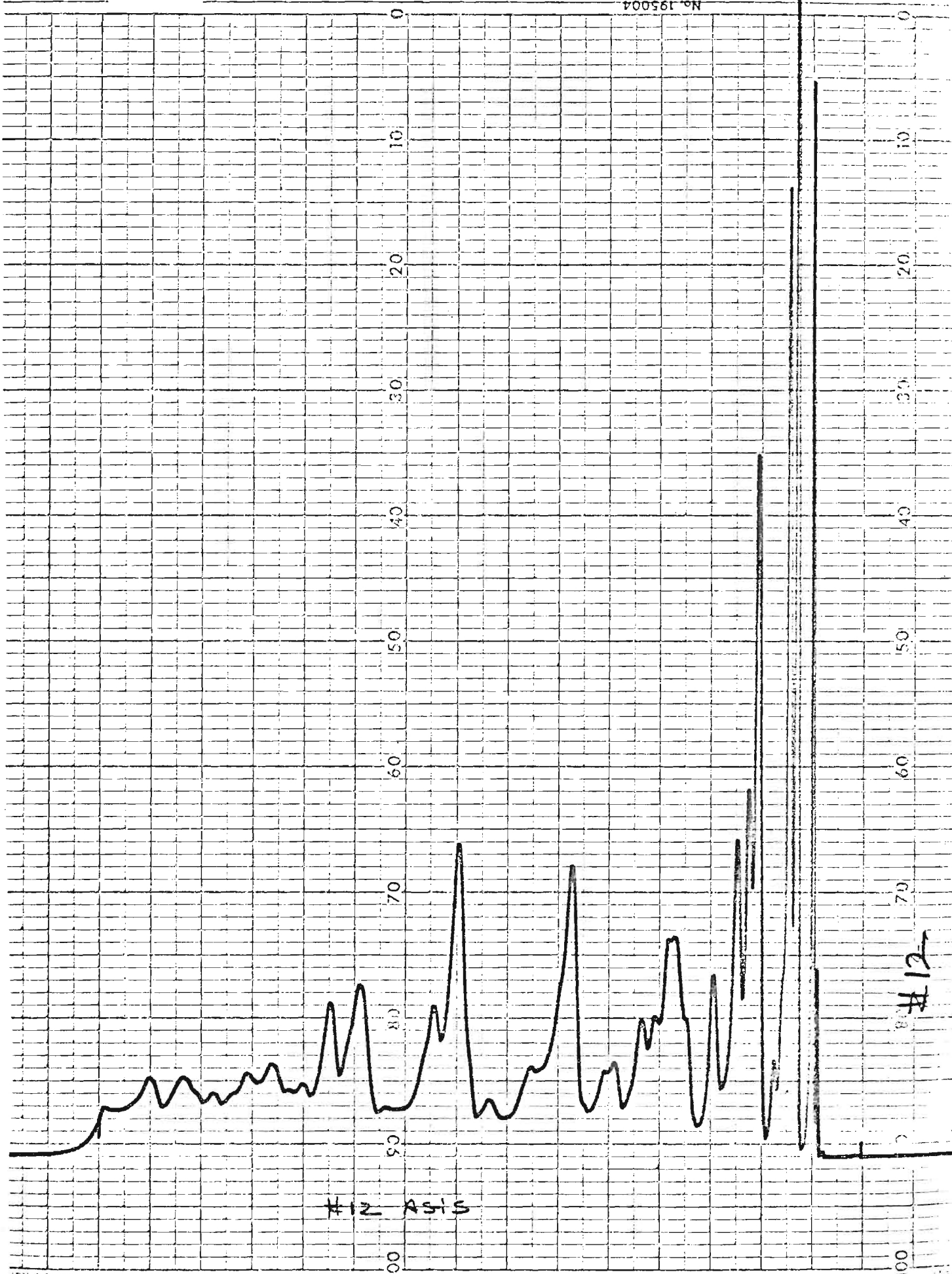


#10 AS-15

#10

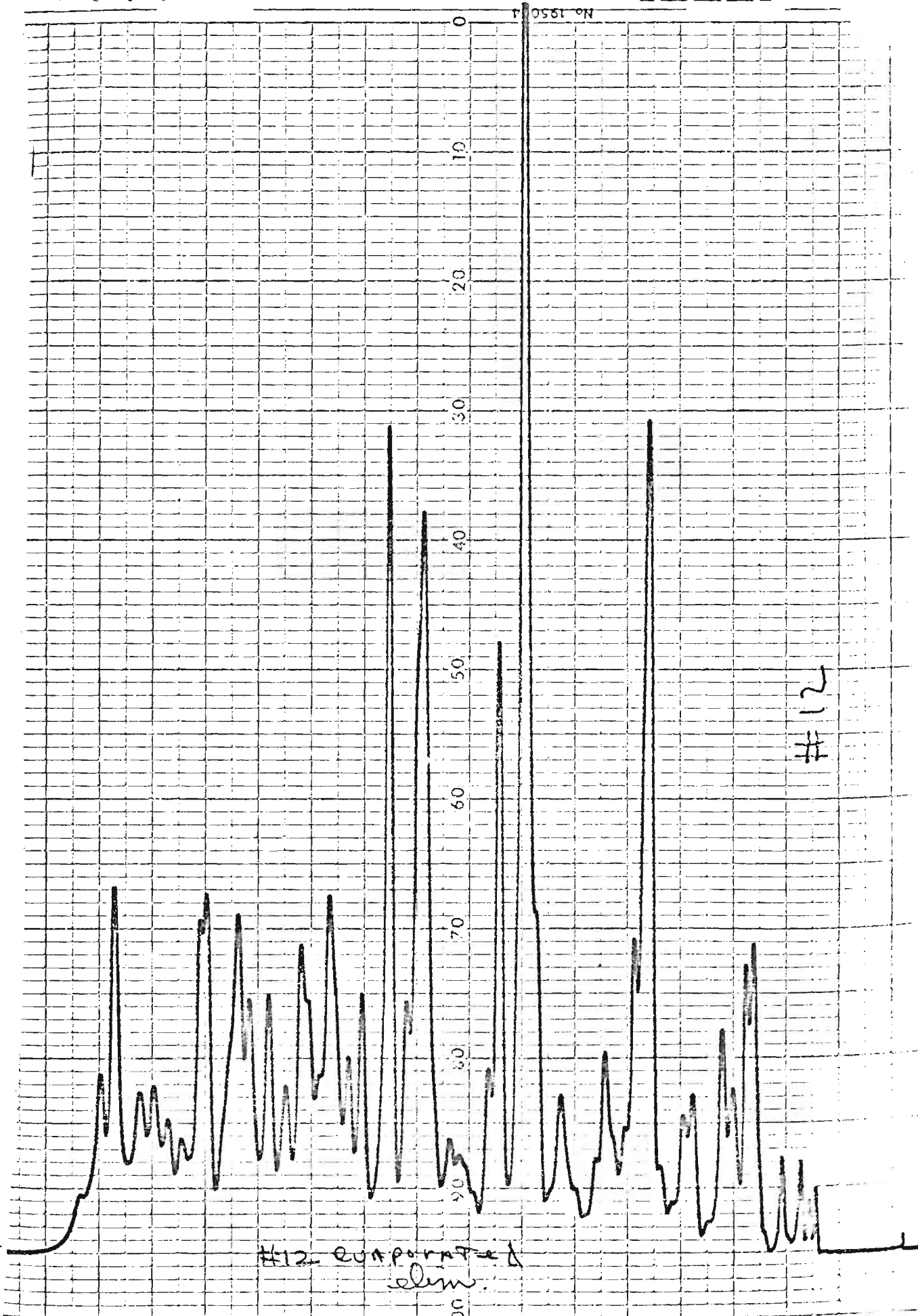
MADE IN

FOR 503 A NORTHROP COMPANY



#12 ST12

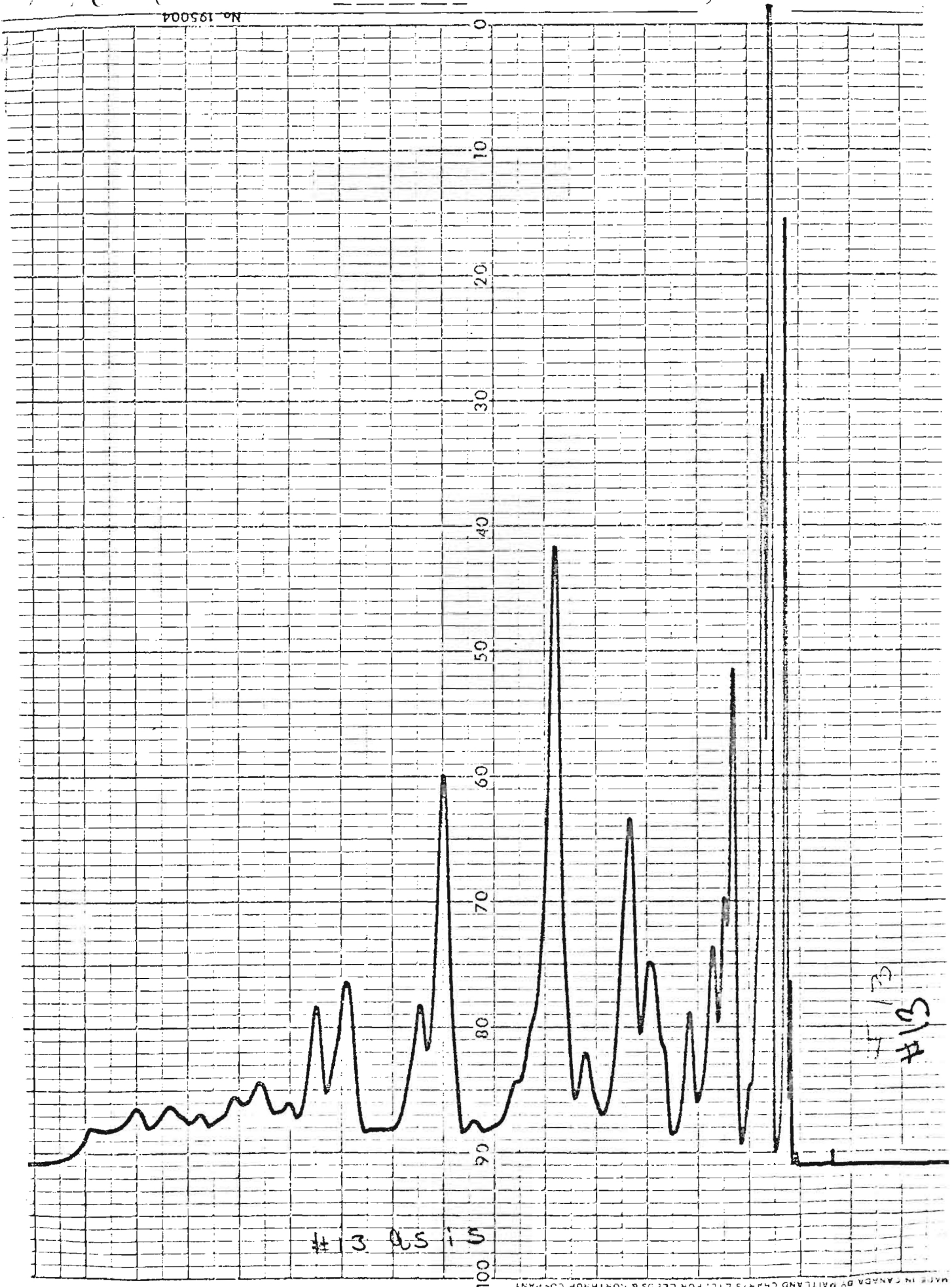
#12



No. 19501

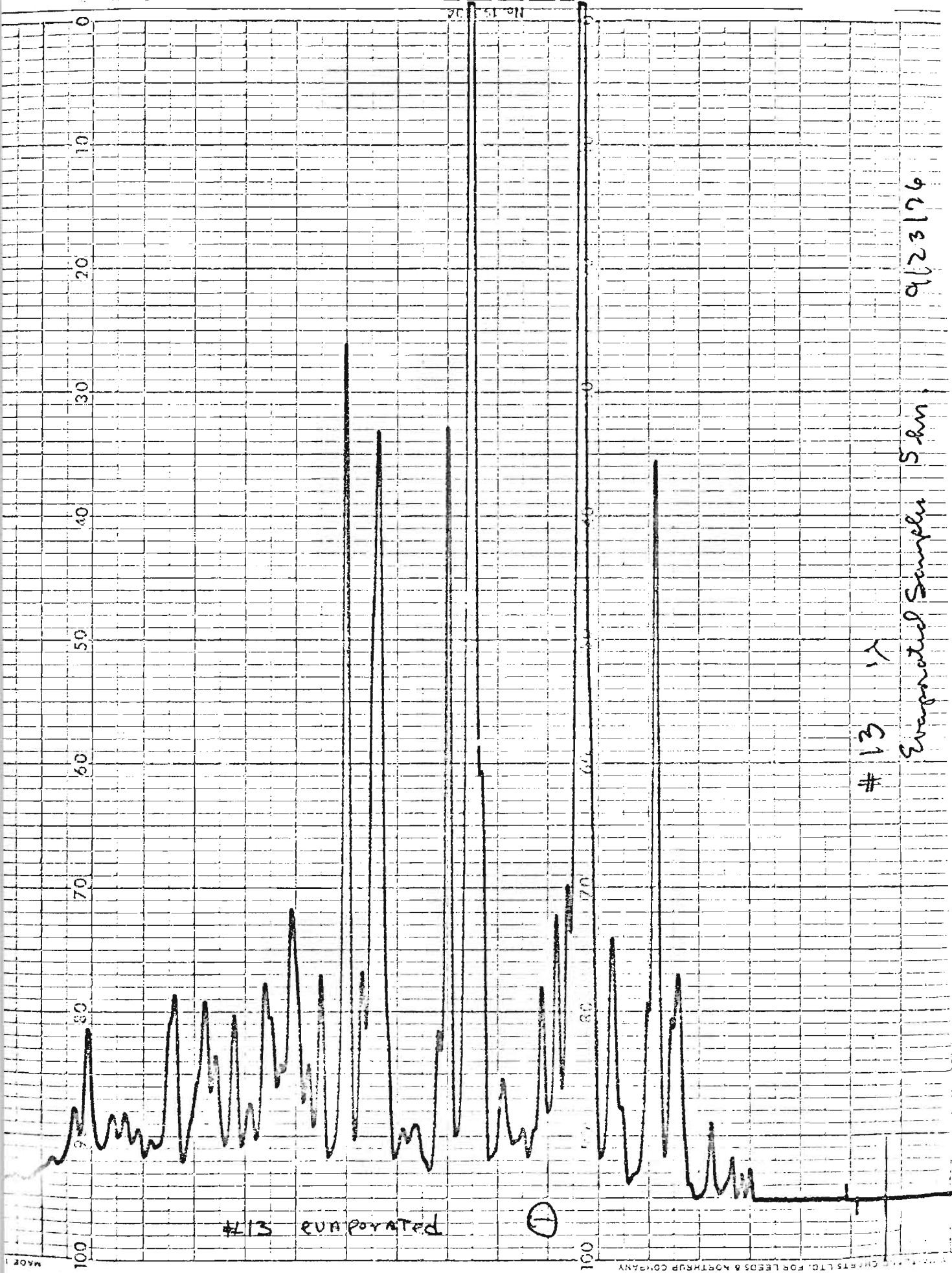
#12 evaporated  
oil





#13 AS 15

#13



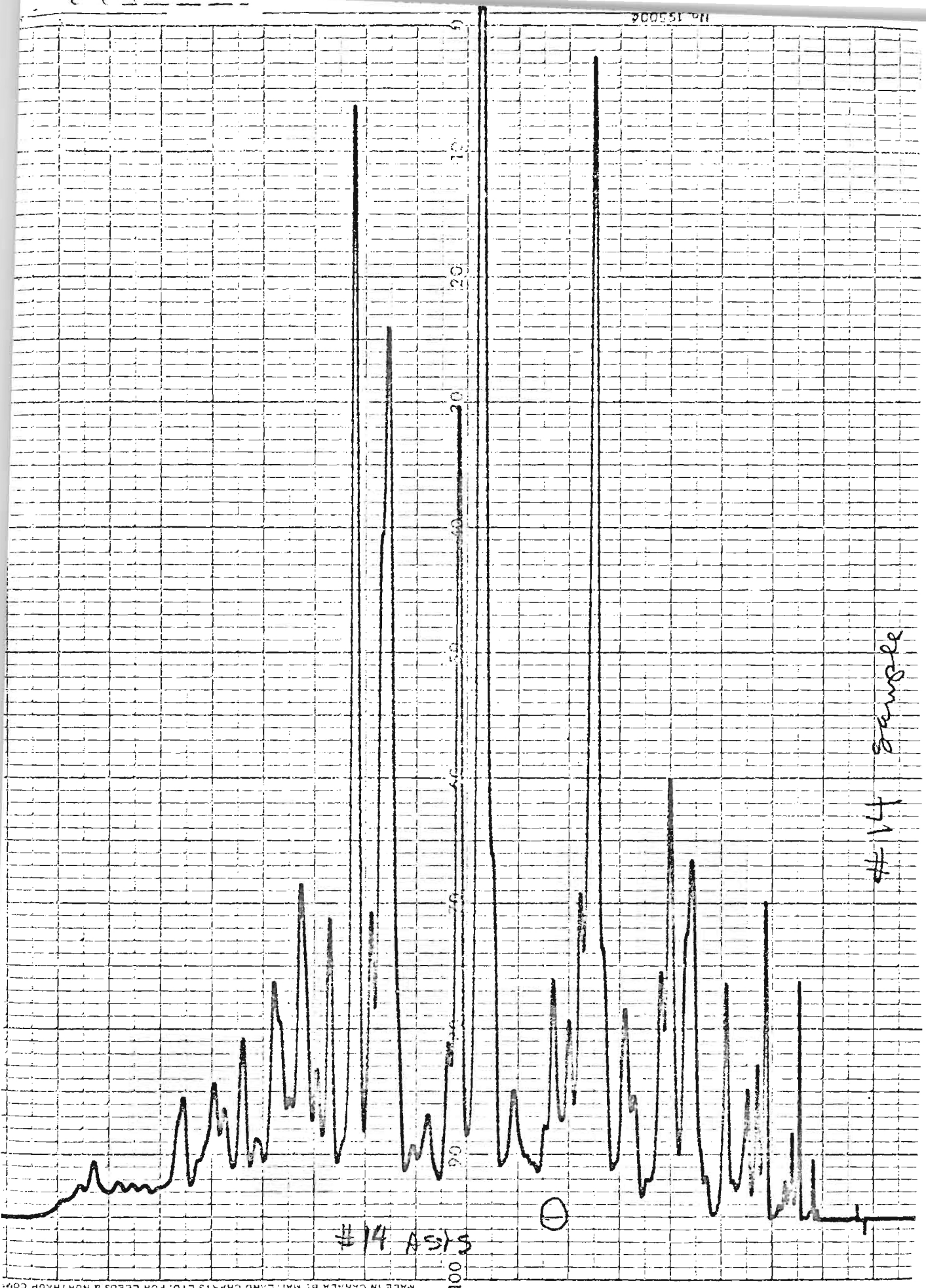
#13 EVAPORATED

⊖

#13 17

Evaporated Samples 5 μm

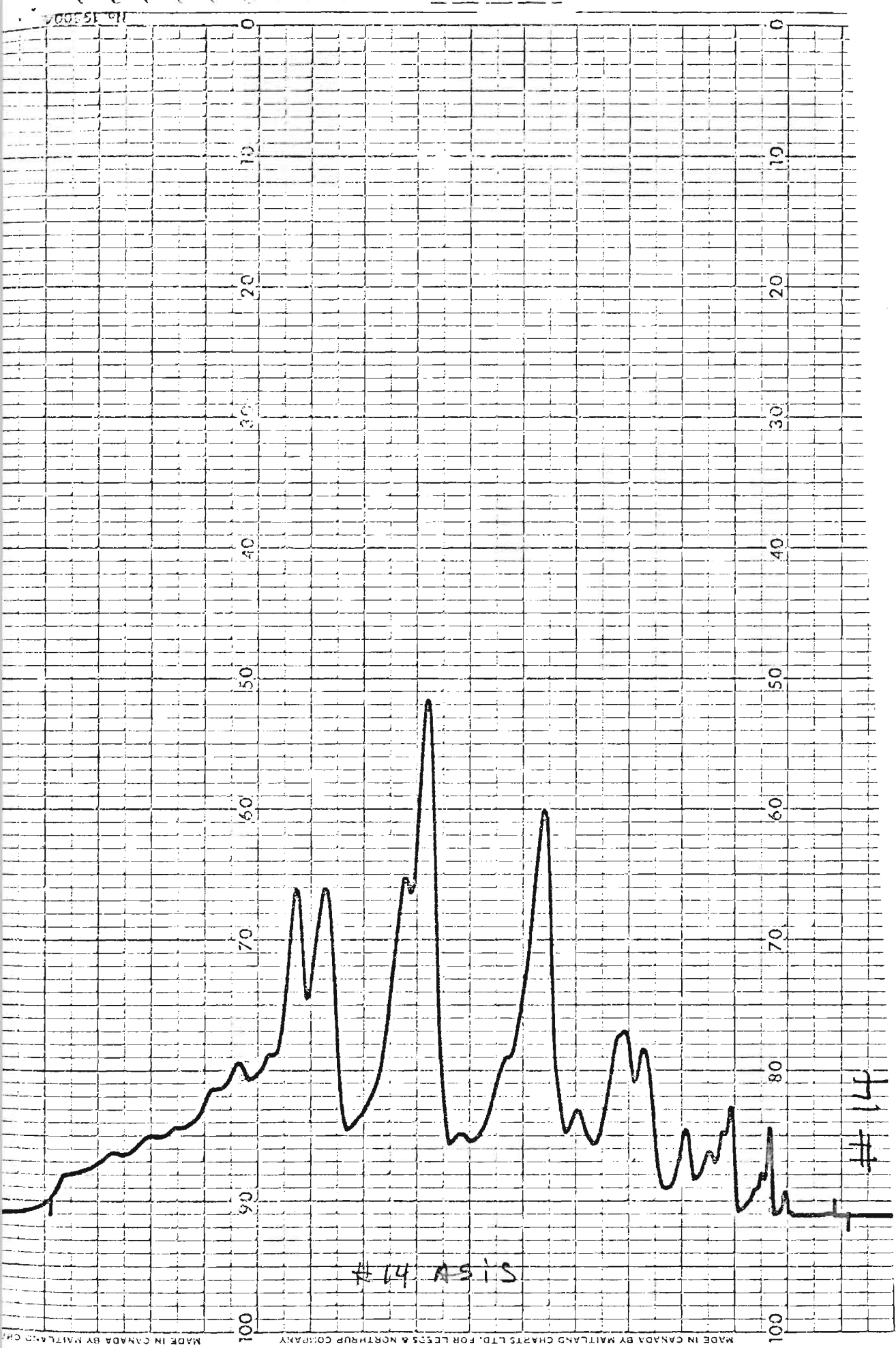
9/23/76



#14 AS15

#14 Sample

No. 153002



#14 ASIS

#14