15

ORGANIC GEOCHEMICAL DATA REPORT

GRI JOB NO. R508

OH-1 Well, Carroll Co., Ohio

prepared

by

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Organic Geochemical Data

GRI Job *No.* R508

OH-I Well

Table II

Density of Core Sample

OH-l Well

GRI Sample Number	Density - By Water Displacement
R508-00l	2.7
R508-002	2.7
R508-003	2.7
RS08-004	2.8
RS08-005	2.6
R508-006	2.5
R508-007	2.4
RS08-008	2.7
R508-009	2.7
R508-010	2.7

Table III

Organic Carbon Analyses and Gross Lithological Description

GeoChem Sample Number	Well Interval	Gross Lithological Description	GSA Color Code	Total Organic Carbon (% of Rock)
R508-001c -A	2082'	100% Shale, noncalcareous, very slightly silty, very hard, fissile, indurated, no show, medium dark gray to medium gray.	N4 to N5	0.68
R508-002c -A	2110'	100% Shale, noncalcareous, very slightly silty, very hard, fissile, indurated, no show, medium dark gray to medium gray.	N4 to N5	0.53
R508-003c -A	2140'	100% Shale, noncalcareous, very slightly silty, very hard, fissile, indurated, no show, medium dark gray to medium gray.	N4 to N5	0.41
R508-004c -A	2169'	100% Shale, noncalcareous, very slightly silty, very hard, fissile, indurated, no show, medium dark gray to medium gray.	N4 to N5	0.25, 0.20R
R508-005c -A	2198'	100% Shale, noncalcareous, very slightly silty, very hard, fissile, indurated, no show, dark gray to medium dark gray.	N3 to N4	3.59
R508-006c -A	3080'	100% Shale, noncalcareous, very slightly silty, very hard, fissile, indurated, no show, dark gray to medium dark gray.	N3 to N4	4.85
R508-007c -A	3110'	100% Shale, noncalcareous, very slightly silty, very hard, fissile, indurated, no show, dark gray.	N3	6.33

OH-l Well

Organic Carbon Analyses and Gross Lithological Description

GeoChem Sample Number	Well Interval	Gross Lithological Description	GSA Color Code	Total Organic Carbon (% of Rock)
R508-008c -A	3137 [1]	100% Shale, noncalcareous, very slightly silty, very hard, fissile, indurated, no show, dark gray to medium gray.	N3 to N5	0.83
R508-009c -A	3171'	100% Shale, noncalcareous, very slightly silty, very hard, fissile, indurated, no show, dark gray to medium dark gray.	N3 to N4	0.71
R508-010c -A	3196'	100% Shale, noncalcareous, very slightly silty, very hard, fissile, indurated, no show, dark gray to medium gray.	N3 to N5	0.40

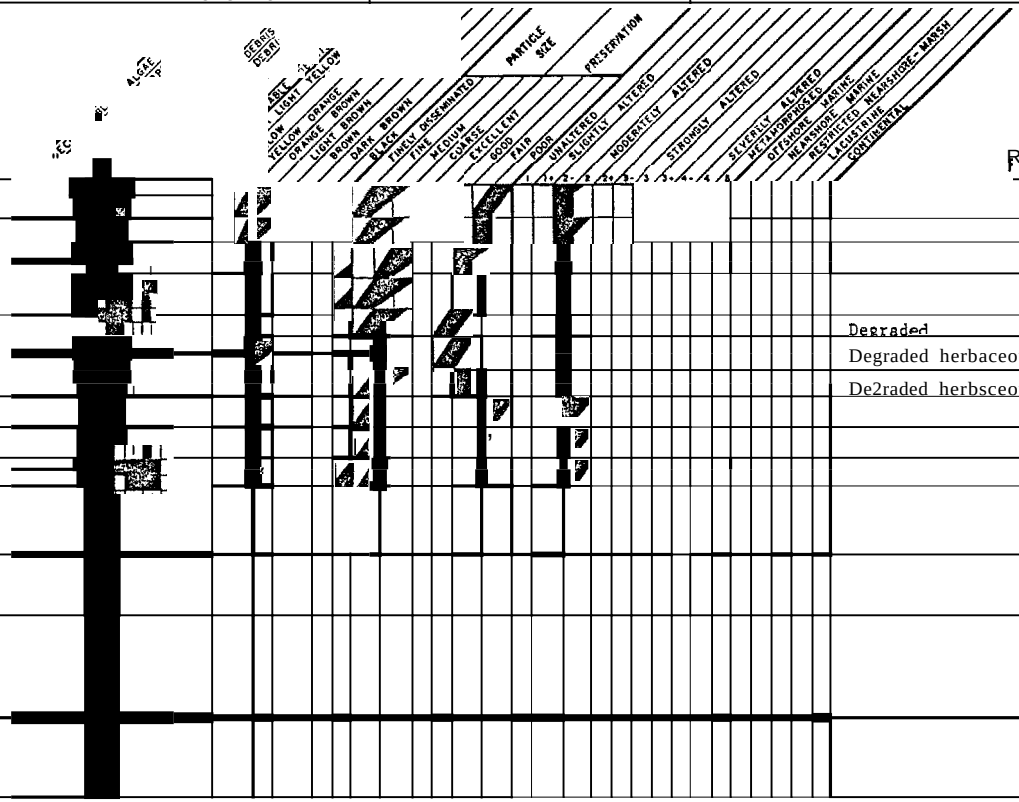
c - core

Table IV

OH-1 Well

VISUAL KEROGEN ASSESSMENT WORKSHEET

GEOCHEM No.	DEPTH	TYPE OF ORGANIC MATTER	COLOR OF ORGANIC MATTER	STATE OF ORGANIC MATTER	MATURATION INDEX	DEPOSITIONAL ENVIRONMENT	REMAR"
R508-001	2082						
R508-002	2110						
R508-003	2140						
R508-004	2169						
R508-005	2195						Degraded
R508-006	3080						Degraded herbaceous
R508-007	3110						De2raded herbsceous
R508-008	3137						
R508 009	3171						
R508-010	3196						



OH-1 Well

Vitrinite Reflectance Summary

GeoChem Sample Number	Depth (feet)	Number of Readings	Minimum Reflectance (% Ro)	Maximum Reflectance (% Ro)	Average Reflectance (% Ro)
R508-009	3171	46	.39	1.57	.72
	(population 1)	32	.39	.67	.57
	(population 2)	11	.75	1.15	.92
	(population 3)	3	1.39	1.57	1.50
R508-010	3196	7	.78	2.12	1.33
	(population 1)	3	.78	.92	.87
	(population 2)	2	1.17	1.33	1.25
	(population 3)	2	2.06	2.12	2.09

Table VI

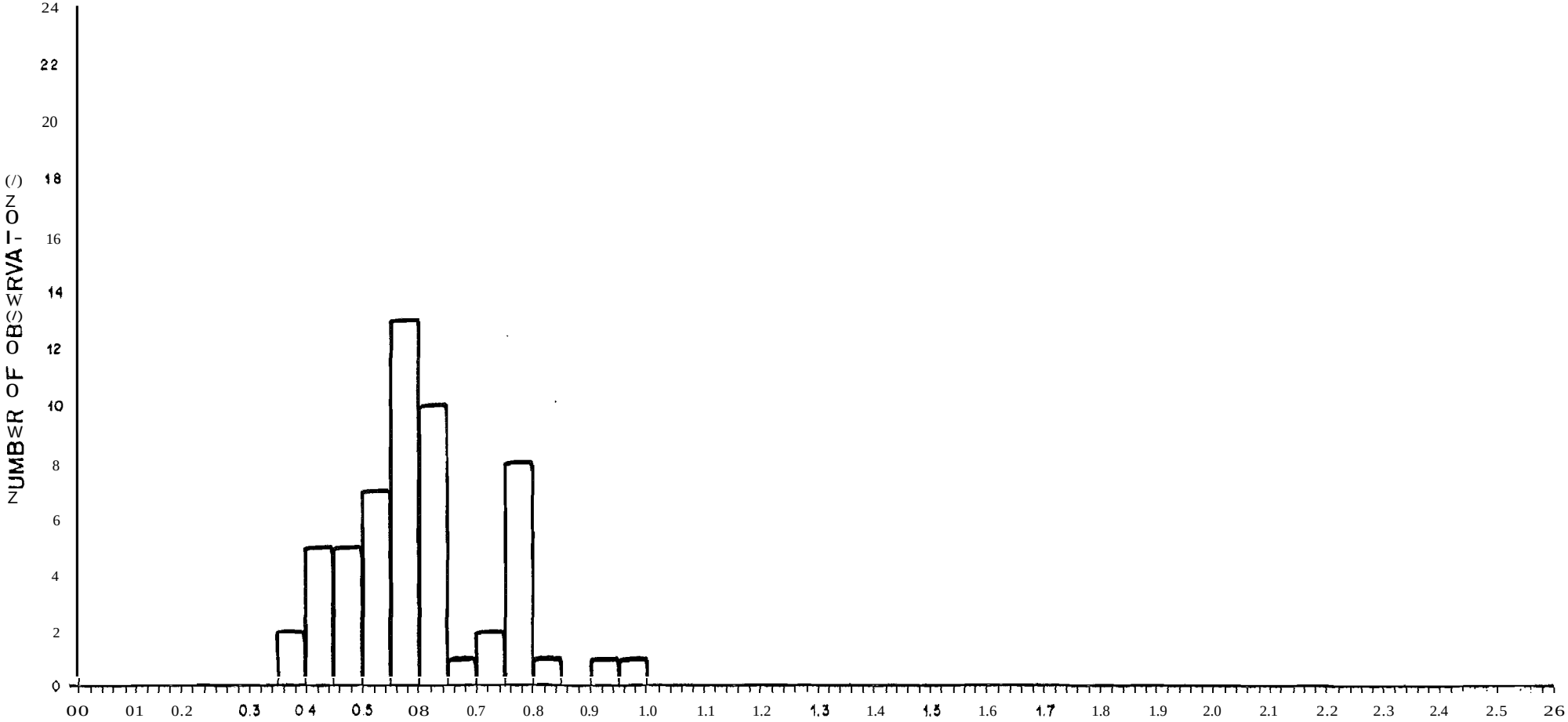
WELL OR OUTCROP well LOCATION Carrol Co., Ohio DEPTH OR SAMPLE NO. 2082'

MIN. REFLECTANCE .37 (% Ro) MAX. REFLECTANCE .96 (%Ro) AVG. REFLECTANCE .60 (% Ro)

pop. 1: NO. OF obs. 43 MIN. Ro .37 (O/oRo) MAX. Ro .66 (%Ro) AVG. Ro .54 (%Ro) REMARKS

pop. 2: NO. OF oes. 13 MIN. Ro .73 (% Ro) MAX. Ro .96 (% Ro) AVG. Ro .80 (% Ro) REMARKS

POP. 3: NO. OF oas MIN. Ro (%Ro) MAX. Ro (% Ro) AVG. Ro {%Ro) REMARKS



VITRINITE REFLECTANCE HISTOGRAM

COMPANY DOE-Monsanto GEOCHEM NO. R508-002 NUMBER OF OBSERVATIONS 19

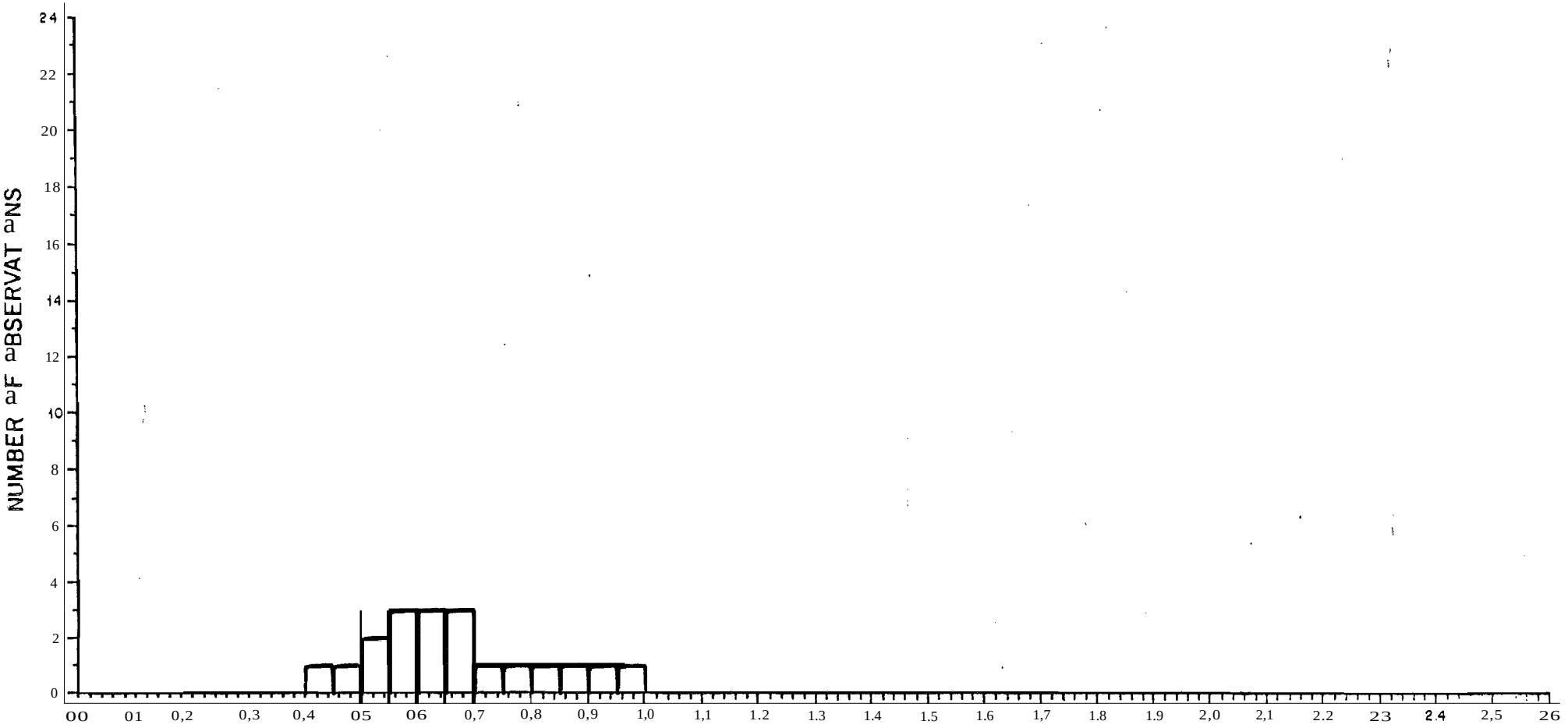
WELL OR OUTCROP well LOCATION Carrol Co; , Ohio DEPTH OR SAMPLE NO. 2110'

MIN. REFLECTANCE .40 (%Ro) MAX. REFLECTANCE .95 (%Ro) AVG. REFLECTANCE .66 (%Ro)

pop. I: NO. OF 08S. 15 MIN. Ro •40 (% Ro) MAX. Ro .76 (% Ro) AVG. Ro .59 C%Ro) REMARKS

pop. 2: NO. OF 08S. 4 MIN. Ro .84 (% Ro) MAX. Ro .95 (% Ro) AVG. Ro .90 (% Ro) REMARKS

POP. 3: NO. OF 08S. MIN. Ro C%Ro) MAX. Ro (% Ro) AVG. Ro (°/0Ro) REMARKS



VITRINITE REFLECTANCE HISTOGRAM

COMPANY DOE-Monsanto GEOCHEM NO. R508-003 NUMBER OF OBSERVATIONS 42

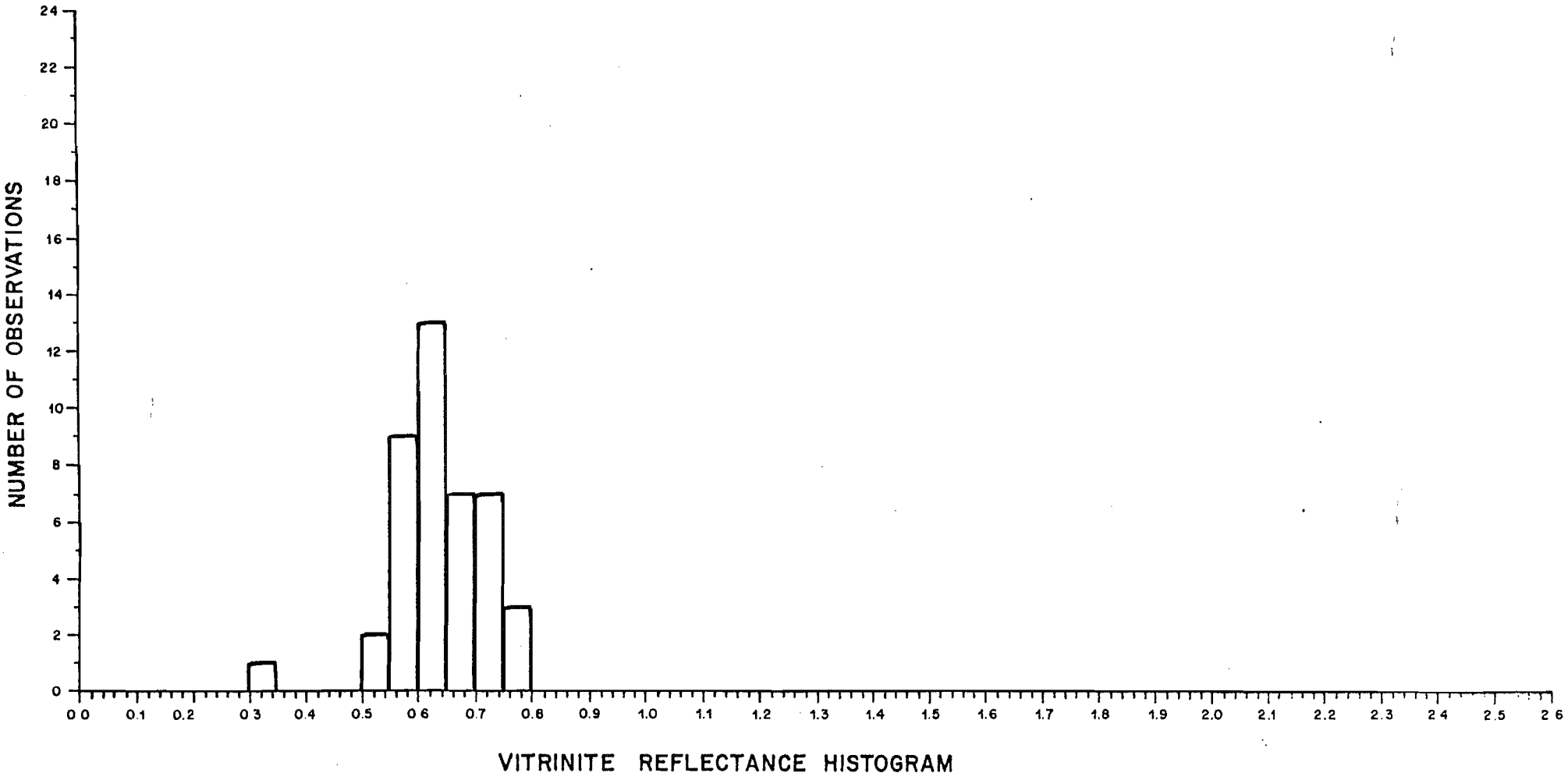
WELL OR OUTCROP well LOCATION Carrol Co., Ohio DEPTH OR SAMPLE NO. 2140'

MIN. REFLECTANCE .33 (% Ro) MAX. REFLECTANCE .79 (% Ro) AVG. REFLECTANCE .64 (% Ro)

POP. 1: NO. OF OBS. 42 MIN. Ro .33 (% Ro) MAX. Ro .79 (% Ro) AVG. Ro .64 (% Ro) REMARKS

POP. 2: NO. OF OBS. MIN. Ro (% Ro) MAX. Ro (% Ro) AVG. Ro (% Ro) REMARKS

POP. 3: NO. OF OBS. MIN. Ro (% Ro) MAX. Ro (% Ro) AVG. Ro (% Ro) REMARKS



COMPANY DOE-Monsanto GEOCHEM NO. R508-004 NUMBER OF OBSERVATIONS 63

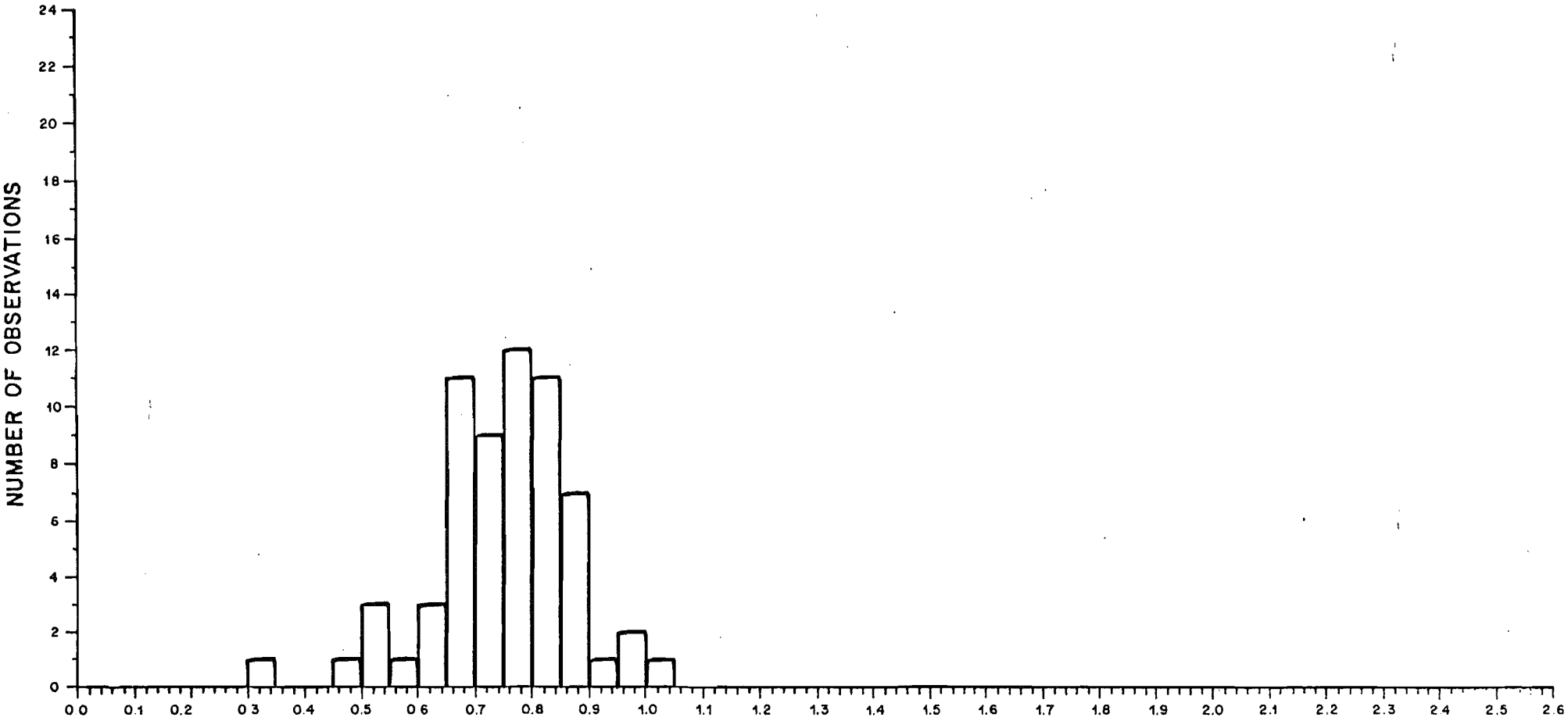
WELL OR OUTCROP well LOCATION Carrol Co., Ohio DEPTH OR SAMPLE NO. 2169'

MIN. REFLECTANCE .32 (% Ro) MAX. REFLECTANCE 1.00 (% Ro) AVG. REFLECTANCE .74 (% Ro)

POP. 1: NO. OF OBS. 6 MIN. Ro .32 (% Ro) MAX. Ro .56 (% Ro) AVG. Ro .48 (% Ro) REMARKS

POP. 2: NO. OF OBS. 53 MIN. Ro .63 (% Ro) MAX. Ro .87 (% Ro) AVG. Ro .75 (% Ro) REMARKS

POP. 3: NO. OF OBS. 4 MIN. Ro .92 (% Ro) MAX. Ro 1.00 (% Ro) AVG. Ro .97 (% Ro) REMARKS

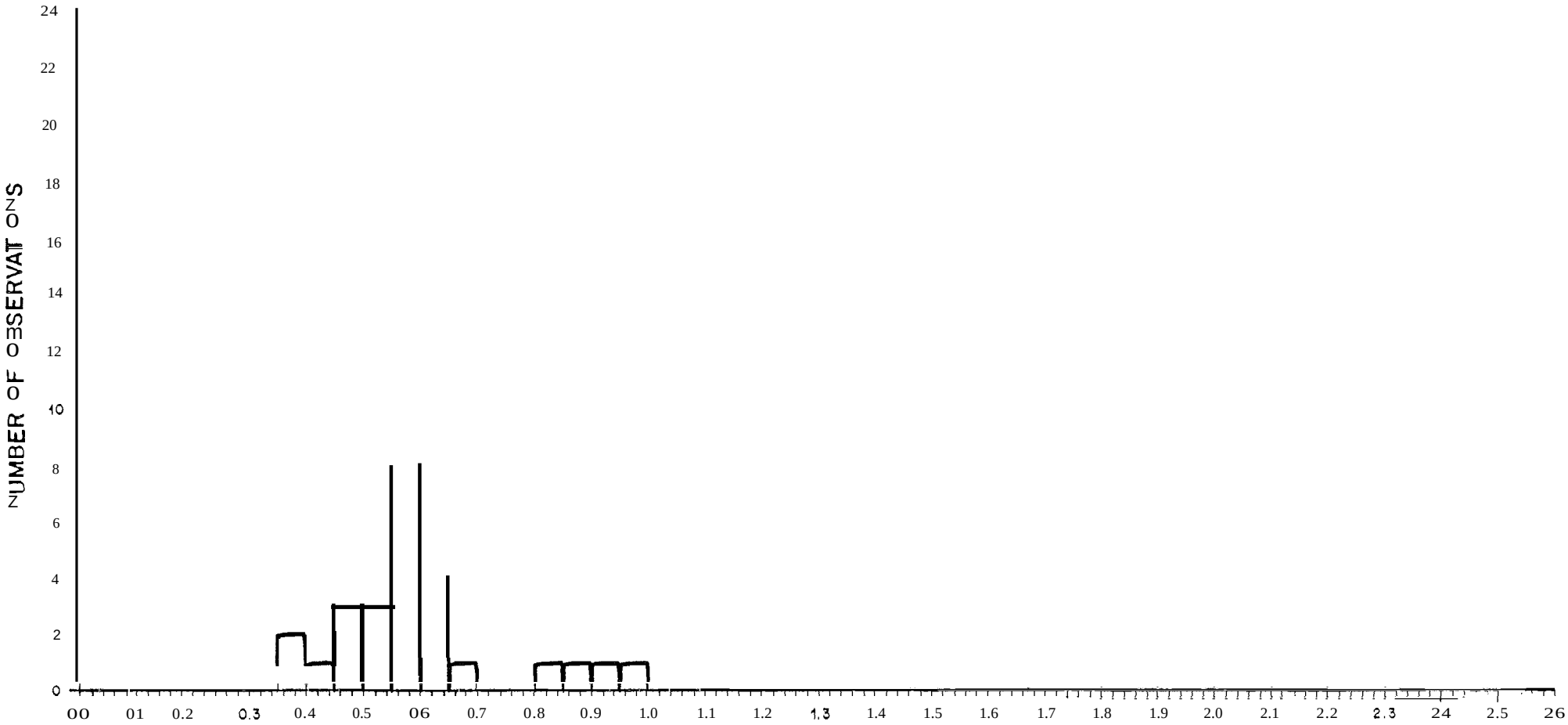


VITRINITE REFLECTANCE HISTOGRAM

WELL OR OUTCROP well LOCATION Carrol CO., Ohio DEPTH OR SAMPLE NO. 2198'

MIN. REFLECTANCE .35 (% Ro) MAX. REFLECTANCE .95 (%Ro) AVG. REFLECTANCE .59 (% Ro)

pop. 1:	NO. OF OBS.	22	MIN. Ro	.35	(%Ro)	MAX. Ro	.65	(O/oRo)	AVG. Ro	.54	(%Ro)	REMARKS		_
pop. 2:	NO. OF OBS.	4	MIN. Ro	.82	(% Ro)	MAX. Ro	.95	(% Ro)	AVG. Ro	.90	(% Ro)	REMARKS		_
POP. 3:	NO. OF OBS.		MIN. Ro		(% Ro)	MAX. Ro		(% Ro)	AVG. Ro		(°/0Ro)	REMARKS		_



VITRINITE REFLECTANCE HISTOGRAM

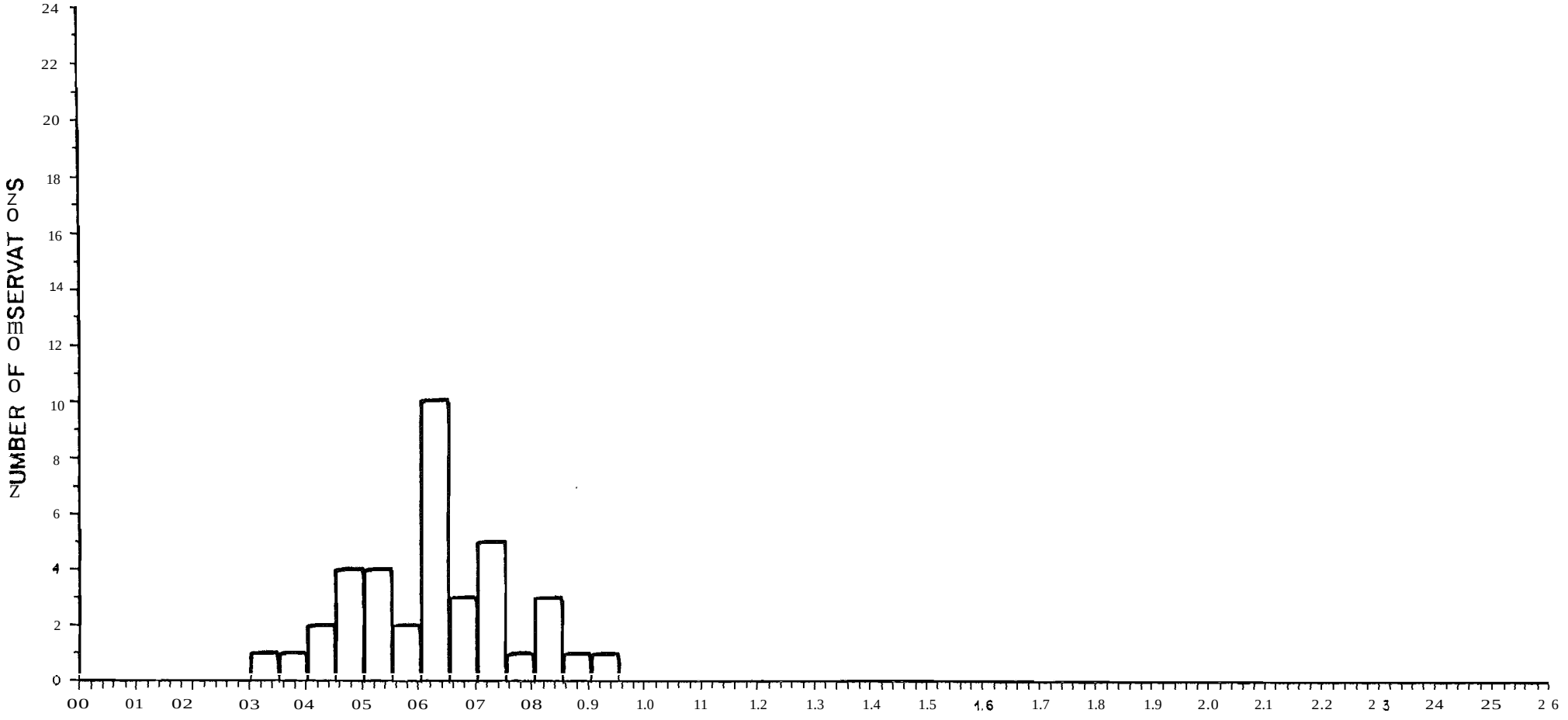
WELL OR OUTCROP well LOCATION Carrol Co•• Ohio DEPTH OR SAMPLE NO. 3080'

MIN. REFLECTANCE •34 (% Ro) MAX. REFLECTANCE .94 (%Ro) AVG. REFLECTANCE .62

pop. I: NO. OF OBS. 27 MIN. Ro •34 (% Ro) MAX. Ro •66 (% Ro) AVG. Ro .55 (%Ro) REMARKS

pop. 2: NO. OF OBS. 11 MIN. Ro .72 (% Ro) MAX. Ro .94 (% Ro) AVG. Ro .79 (% Ro) REMARKS

POP. 3: NO. OF OBS. ____ MIN. Ro (% Ro) MAX. Ro (% Ro) AVG. Ro____(% Ro) REMARKS



VITRINITE REFLECTANCE HISTOGRAM

COMPANY DOE-Monsanto GEOCHEM NO. R508-007 NUMBER OF OBSERVATIONS 11

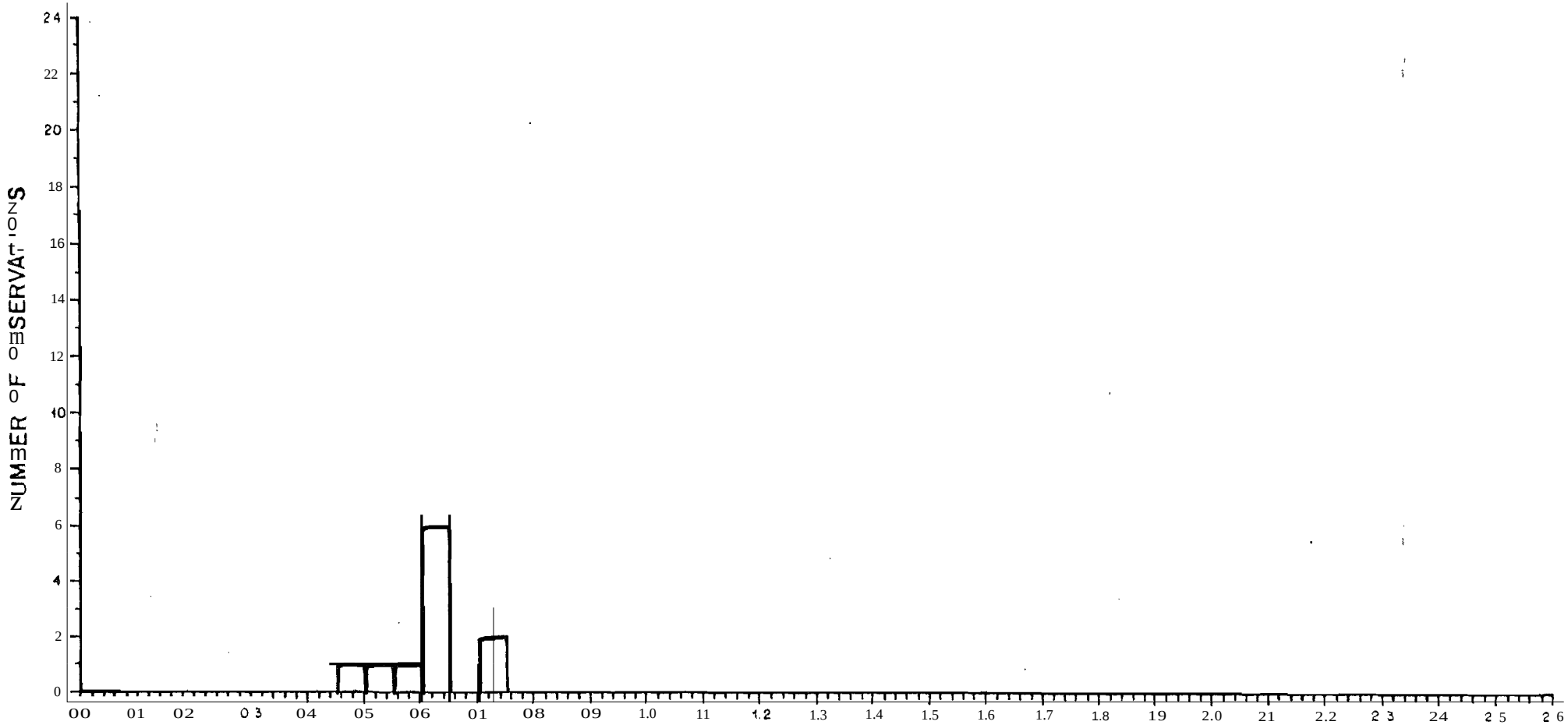
WELL OR OUTCROP well LOCATION Carrol Co; , Ohio DEPTH OR SAMPLE NO. 3110'

MIN. REFLECTANCE .46 (% Ro) MAX. REFLECTANCE .74 (%Ro) AVG. REFLECTANCE .62 (%Ro)

pop. I: NO. OF 08S. 11 MIN. Ro .46 (%Ro) MAX. Ro .74 (%Ro) AVG.Ro .62 (%Ro) REMARKS

pop. 2: NO. OF OBS. MIN. Ro (%Ro) MAX. Ro (%Ro) AVG. Ro (% Ro) REMARKS

POP. 3: NO. OF 085. MIN. Ro (%Ro) MAX. Ro (% Ro) AVG. Ro (% Ro) REMARKS



VITRINITE REFLECTANCE HISTOGRAM

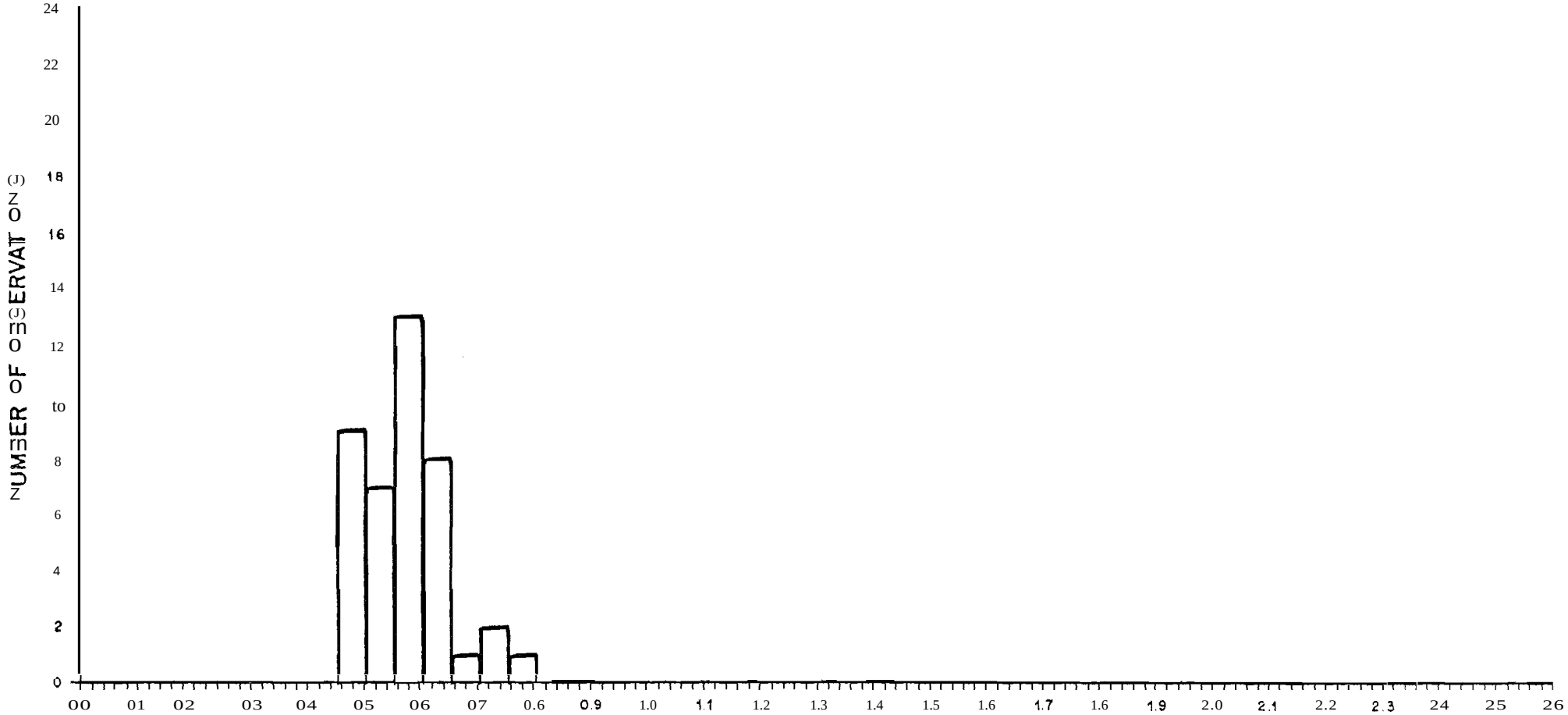
WELL OR OUTCROP well LOCATION Carrol CO., Ohio DEPTH OR SAMPLE NO. 3137'

MIN. REFLECTANCE .45 (% Ro) MAX. REFLECTANCE .75 (%Ro) AVG. REFLECTANCE .56 (% Ro)

pop. I: NO. OF 085.41 MIN.Ro .45 (%Ro) MAX. Ro .75 (%Ro) AVG.Ro .56 (%Ro) REMARKS _

pop. 2: NO. OF 085. MIN. Ro (% Ro) MAX. Ro (% Ro) AVG.. Ro (% Ro) REMARKS _

POP. 3: NO. OF 08S. MIN. Ro (%Ro) MAX. Ro (% Ro) AVG. Ro (% Ro) REMARKS _



VITRINITE REFLECTANCE HISTOGRAM

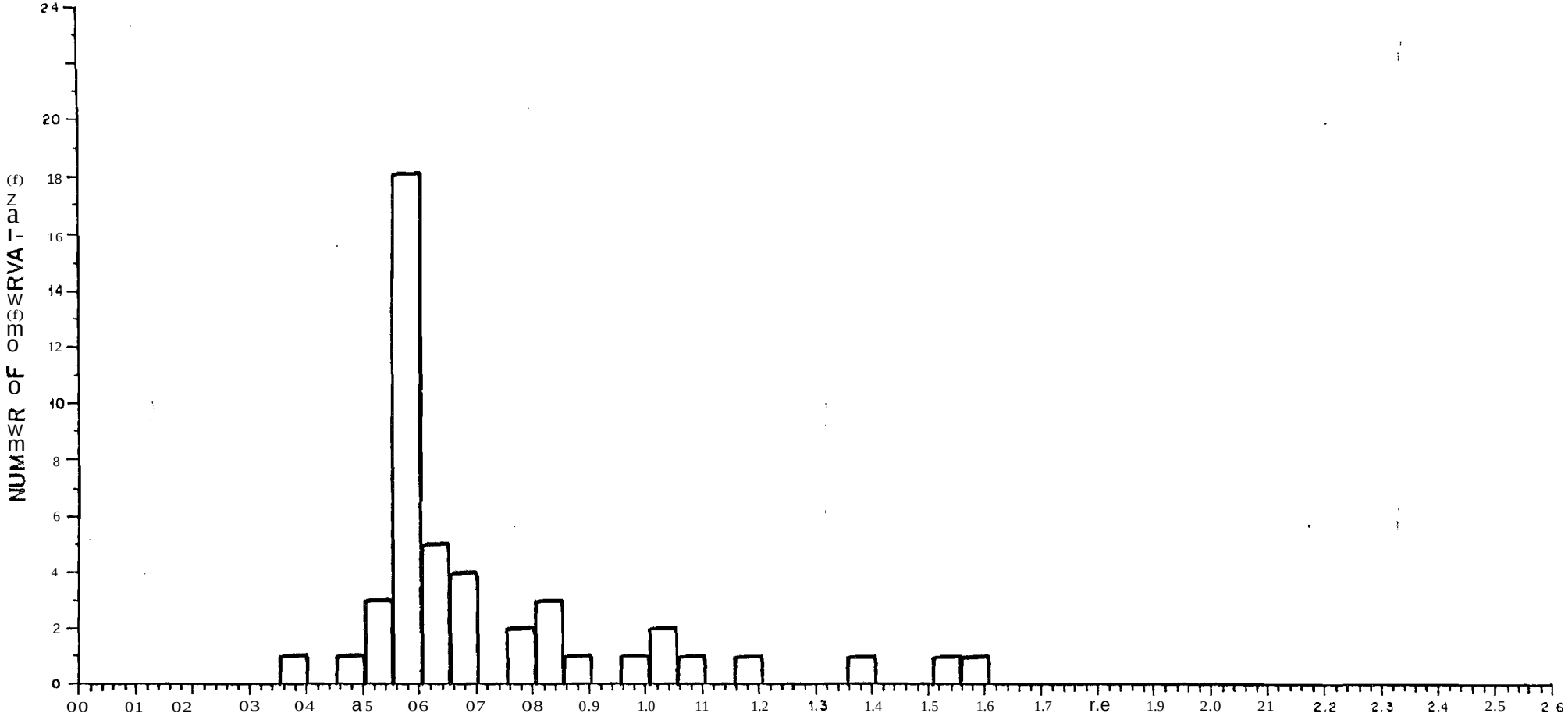
WELL OR OUTCROP well LOCATION Carrol Co., Ohio DEPTH OR SAMPLE NO. 3171'

MIN. REFLECTANCE .39 (% Ro) MAX. REFLECTANCE 1. 57 (%Ro) AVG. REFLECTANCE .72 (%Ro)

pop. I: NO. OF OBS. 32 MIN. Ro .39 (%Ro) MAX. Ro .67 (%Ro) AVG. Ro .57 (%Ro) REMARKS

pop. 2: NO. OF OBS. 11 MIN. Ro .75 (%Ro) MAX. Ro 1.15 (%Ro) AVG.Ro .92 (%Ro) REMARKS

POP. 3: NO. OF OBS. 3 MIN. Ro 1. 39 (% Ro) MAX. Ro 1. 57 (G/o Ro) AVG. Ro 1. 50 (% Ro) REMARKS



VITRINITE REFLECTANCE HISTOGRAM

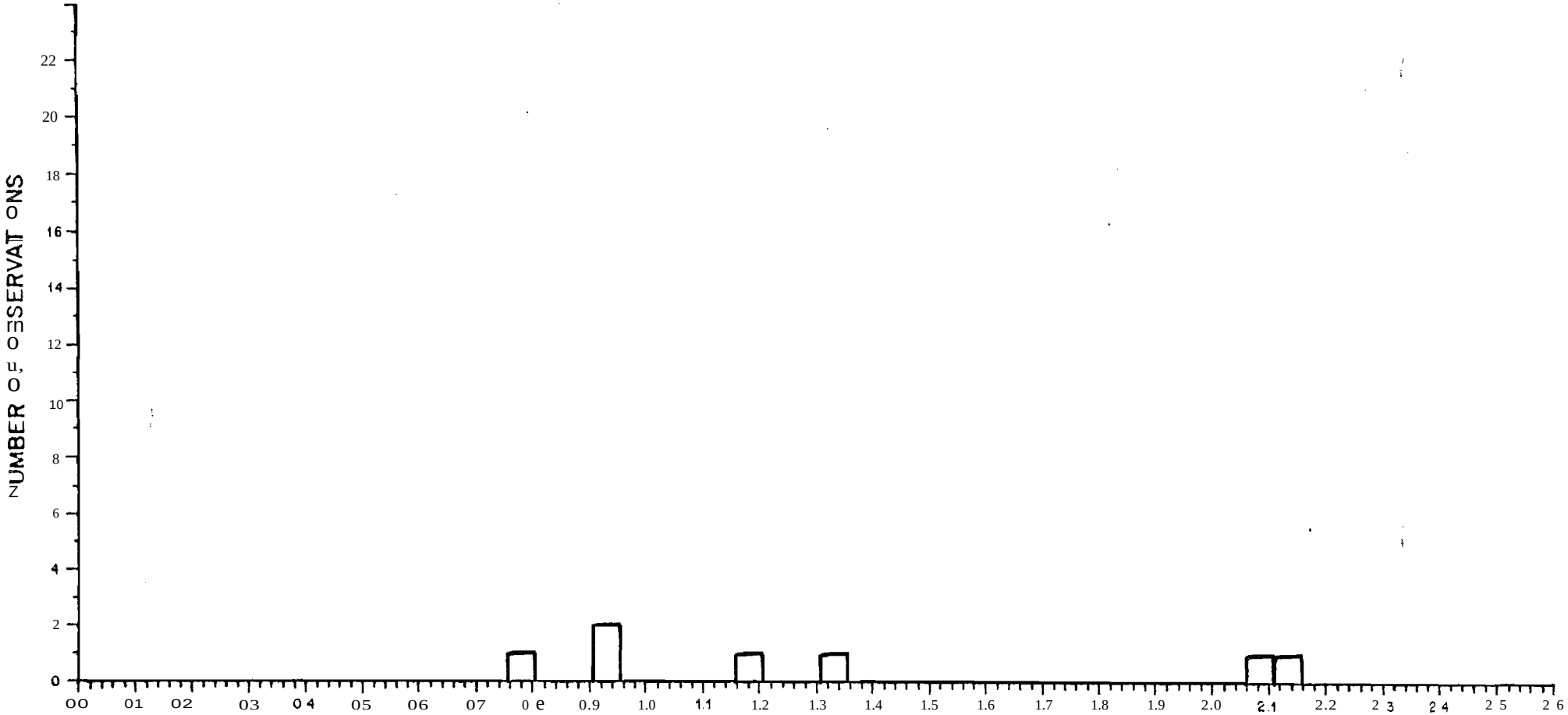
WELL OR OUTCROP well LOCATION Carrol Co•• Ohio DEPTH OR SAMPLE *NO.* *3196'*

MIN. REFLECTANCE .78 (% Ro) MAX. REFLECTANCE 2.12 (OJoRo) AVG. REFLECTANCE 1. 33 (%Ro)

pop. I: NO. OF OBS. 3 MIN. Ro .78 (%Ro) MAX. Ro .92 (%Ro) AVG. Ro .87 (%Ro) REMARKS

pop. 2: NO. OF 08S. 2 MIN. Ro 1.17 (%Ro) MAX. Ro 1.33 (%Ro) AVG. Ro1.25 (% Ro) REMARKS

POp. 3: NO. OF 08S. 2 MIN. Ro 2.06 (% Ro) MAX. Ro 2.12 (% Ro) AVG. Ro2.09 (% Ro) REMARKS



VITRINITE REFLECTANCE HISTOGRAM

Table VII

Summary of C15+ Soxhlet Extraction, Deasphaltening and Liquid Chromatography

A. Weights of Extracts and Chromatographic Fractions

GeoChem Sample Number	Well	Interval	Weight of Rock Extd. (grams)	Total Extract (grams)	Precipitated Asphaltenes (grams)	N-C5 SOluble (grams)	Sulfur (grams)	Paraffins-Naphthenes (grams)	Aromatics (grams)	Eluted NSO'S (grams)	Noneluted NSO'S (grams)
508-001		2082	61.3	0.0145	0.0085	0.0060	N.D.	N.D.	N.D.	N.D.	N.D.
508-002		2110	92.0	0.0163	0.0073	0.0090	N.D.	N.D.	N.D.	N.D.	N.D.
508-003		2140	93.8	0.0335	0.0064	0.0271	N.D.	0.0092	0.0145	0.0034	0.0000
508-004		2169	50.2	0.0077	0.0045	0.0032	N.D.	N.D.	N.D.	N.D.	N.D.
508-005		2198	91.6	0.3143	0.0243	0.2900	N.D.	0.1070	0.1242	0.0401	0.0187
508-006		3080	51.8	0.2103	0.0199	0.1904	N.D.	0.0855	0.0693	0.0208	; 0.0148
508-007		3110	92.6	0.6402	0.0337	0.6065	N.D.	0.2356	0.2324	0.0781	0.0604
508-008		3137	91.5	0.0'924	0.0147	0.0777	N.D.	0.0231	0.0229	0.0067	0.0250
508-009		3171	93.3	0.0830	0.0132	0.0698	N.D.	0.0232	0.0214	0.0074	0.0178
508-010		3196	46.7	0.0382	0.0109	0.0273	N.D.	0.0130	0.0112	0.0028	0.0003
508-011		SDO-1	75.3	0.2154	0.0202	0.1952	N.D.	0.0361	0.0711	0.0563	0.0317

OH-l Well

Table VII (Continued)

C. Composition of Extracts

GeoChem sample Number	Well	Interval	Hydrocarbons: Paraffin-Naphthene %	Hydrocarbons: Aromatic %	Hydrocarbons: PN/Arom	Sulfur %	Nonhydrocarbons: Eluted NSO'S %	Nonhydrocarbons: Noneluted NSO'S %	Nonhydrocarbons: Precipitd. Asphaltene %	Nonhydrocarbons: Asph/NSO	HC'S %	HC/Non HC
508-001		2082							58.6			
508-002		2110							44.8			
508-003		2140	27.5	43.3	0.63		10.1	0.0	19.1	1.88	70.7	2.42
508-004		2169							58.4			
508-005		2198	34.0	39.5	0.86		12.8	5.9	7.7	0.41	73.6	2.78
508-006		3080	40.7	33.0	1.23		9.9	7.0	9.5	0.56	73.6	2.79
508-007		3110	36.8	36.3	1.01		12.2	9.4	5.3	0.24	73.1	2.72
508-008		3137	25.0	24.8	1.01		7.3	27.1	15.9	0.46	49.8	0.99
508-009		3171	28.0	25.8	1.08		8.9	21.4	15.9	0.52	53.7	1.16
508-010		3196	34.0	29.3	1.16		7.3	0.8	28.5	3.52	63.4	1.73
50B-Oll		SDO-l	16.8	33.0	0.51		26.1	14.7	9.4	0.23	49.8	0.99

Table VII

Saturate Hydrocarbon Analyses

Summary of Paraffin-Naphthene Distribution

GeoChem Sample Number	Well	Interval	% Paraffin	% Isoprenoid	% Naphthene	*C-P* Index A	*C-P* Index B	ip19/ip20
508-001		2082	8.3	0.8	90.9	1.10		0.69
508-002		2110	11.4	1.3	87.3	1.11		0.77
508-003		2140	17.7	3.9	78.4	1.15	1.31	1.78
508-004		2169	12.2	1.1	86.7	1.12		0.81
508-005		2198	13.4	3.2	83.4	1.11	1.29	1.68
508-006		3080	12.0	1.5	86.5	1.09		1.31
508-007		3110	11.3	1.5	87.3	1.11		1.21
508-008		3137	11.0	1.7	87.3	1.09		1.43
508-009		3171	19.5	2.0	78.5	1.07	1.17	1.17
508-010		3196	16.4	2.1	81.6	1.08	1.20	1.24
508-011		SDO-1	5.8	1.6	92.6	1.16		1.23

Table VIII

OH-1 Well

Table V-B

Saturate Hydrocarbon Analyses

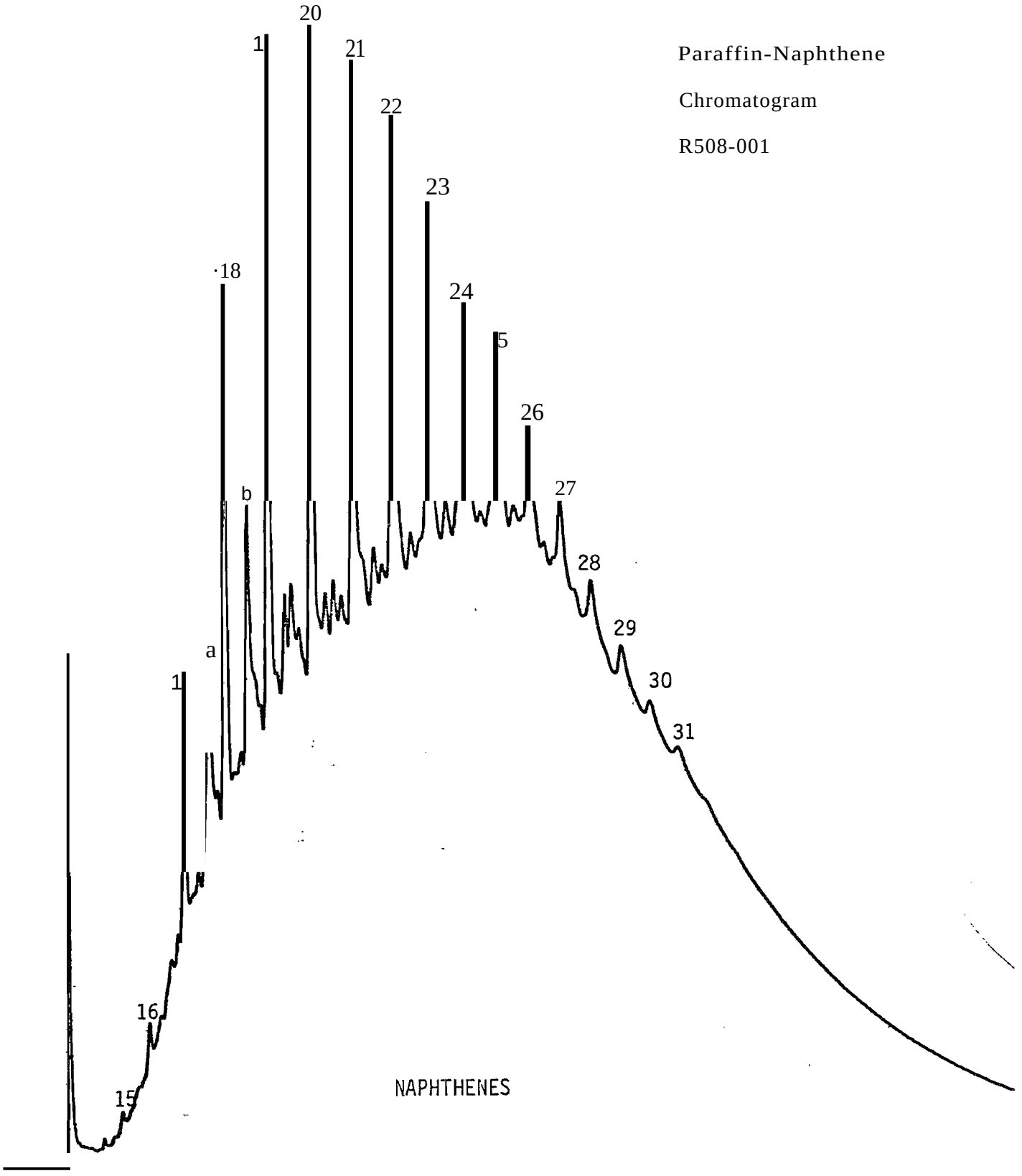
Normalized Paraffin Distribution

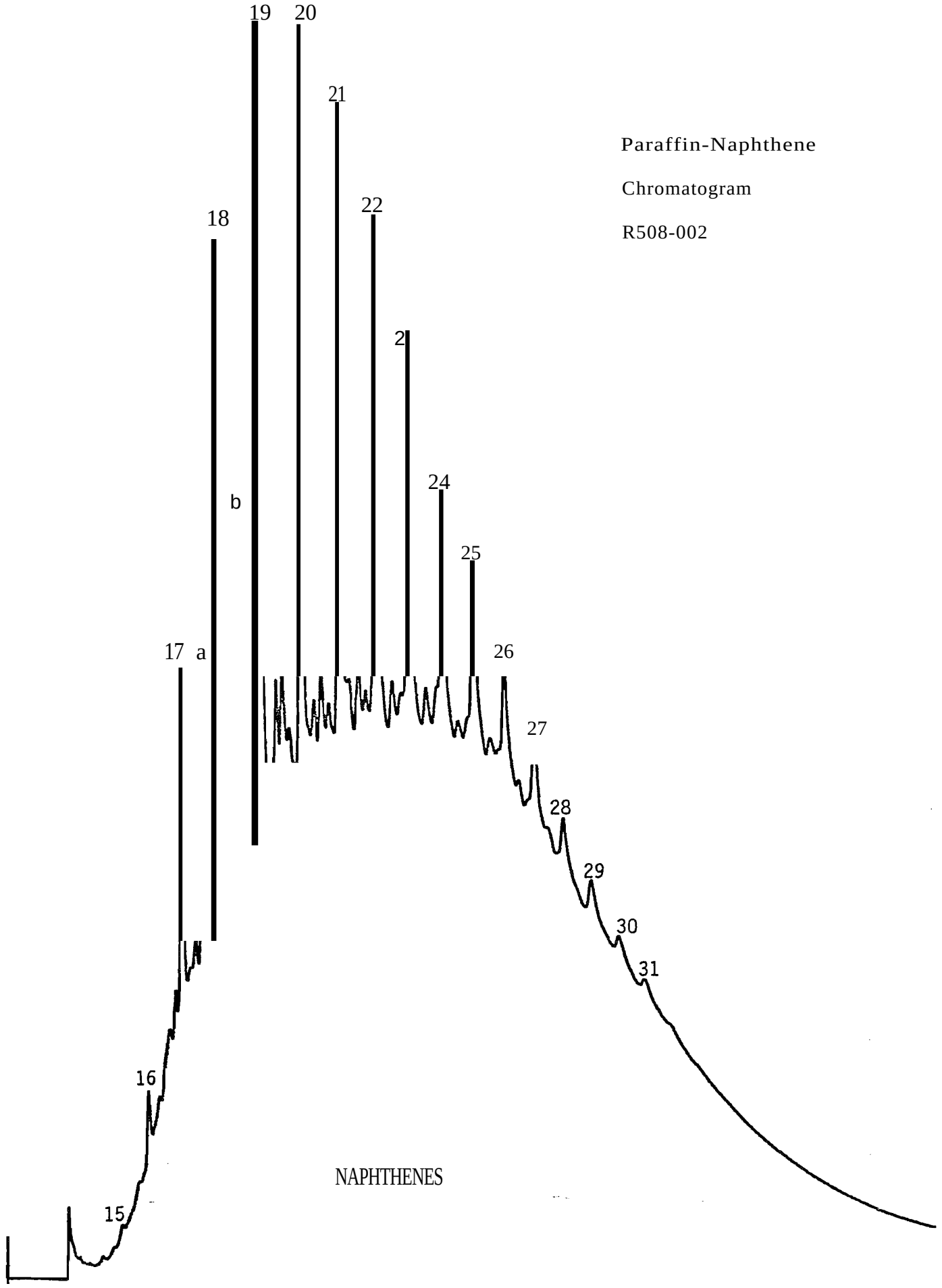
GeoChem Sample Number	Well Interval	% nC15	% nC16	% nC17	% ip19	% nC18	% ip20	% nC19	% nC20	% nC21	% nC22	% nC23	% nC24	% nC25	% nC26	% nC27	% nC28	% nC29	% nC30	% nC31	% nC32	% nC33	% nC34	% nC35
508-001	2082	0.2	0.5	5.0	3.6	11.3	5.3	14.8	13.8	12.3	10.2	7.5	4.9	4.1	2.4	1.8	0.9	0.7	0.3	0.3	0.0	0.0	0.0	0.0
508-002	2110	0.1	0.8	6.2	4.5	11.9	5.8	14.7	13.8	12.0	9.6	7.2	4.6	3.5	2.1	1.5	0.8	0.6	0.2	0.2	0.0	0.0	0.0	0.0
508-003	2140	1.5	6.1	11.3	11.6	12.1	6.5	12.2	10.4	8.9	6.5	4.6	2.9	2.2	1.2	0.9	0.5	0.3	0.2	0.2	0.1	0.0	0.0	0.0
508-004	2169	0.1	0.6	5.1	3.8	11.8	4.7	15.8	14.7	12.7	9.9	7.2	4.7	3.5	2.0	1.6	0.7	0.6	0.3	0.1	0.0	0.0	0.0	0.0
508-005	2198	6.8	8.6	10.8	12.2	9.8	7.2	9.3	7.9	7.0	5.7	4.5	3.2	2.6	1.5	1.1	0.6	0.4	0.2	0.2	0.1	0.0	0.0	0.0
508-006	3080	7.7	11.4	13.7	6.5	12.3	4.9	10.5	8.7	7.1	5.3	4.1	2.8	1.9	1.2	0.7	0.5	0.3	0.2	0.1	0.0	0.0	0.0	0.0
508-007	3110	5.2	10.7	14.5	6.3	12.7	5.2	11.0	8.9	7.3	5.6	4.3	2.9	2.3	1.4	0.8	0.5	0.3	0.1	0.1	0.0	0.0	0.0	0.0
508-008	3137	2.0	10.0	16.8	8.0	14.4	5.6	11.5	8.8	6.5	4.8	3.6	2.6	2.0	1.2	0.9	0.5	0.5	0.3	0.2	0.0	0.0	0.0	0.0
508-009	3171	3.5	7.6	11.7	5.1	11.4	4.4	10.5	9.3	8.0	6.7	5.8	4.3	3.8	2.5	2.0	1.5	1.1	0.5	0.3	0.2	0.0	0.0	0.0
508-010	3196	3.2	8.3	12.4	6.3	12.6	5.0	11.7	9.9	8.3	6.5	4.9	3.5	2.7	1.7	1.2	0.7	0.5	0.2	0.1	0.1	0.0	0.0	0.0
508-011	SDO-l	0.2	6.5	12.4	11.7	12.6	9.5	11.0	8.6	7.0	5.6	4.9	3.4	3.1	1.4	1.1	0.4	0.4	0.2	0.0	0.0	0.0	0.0	0.0

Paraffin-Naphthene

Chromatogram

R508-001




Paraffin-Naphthene
Chromatogram
R508-002
19
20
21
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27
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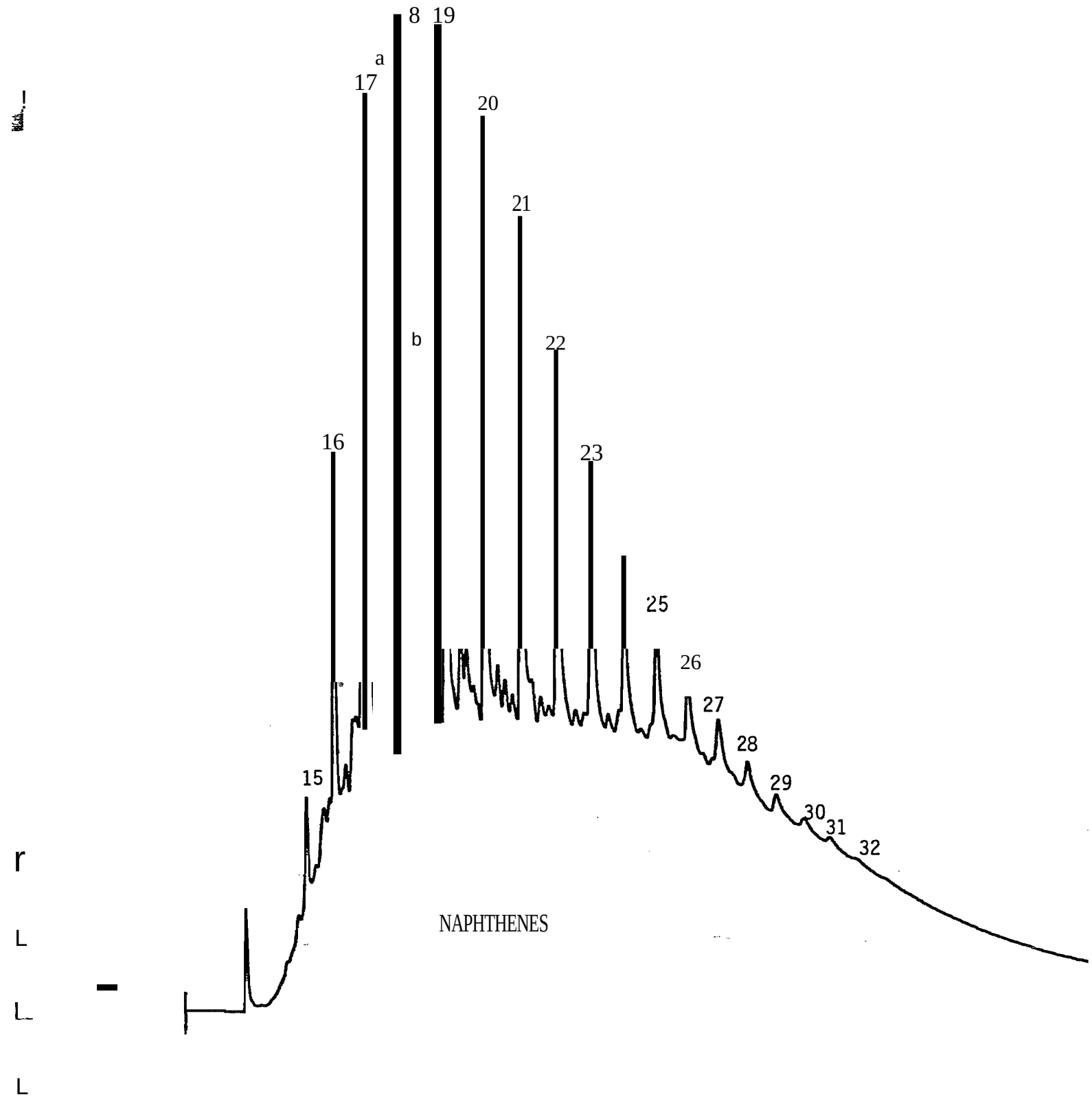
18
b
17
a
16
15
NAPHTHENES

Paraffin-Naphthene

Chromatogram

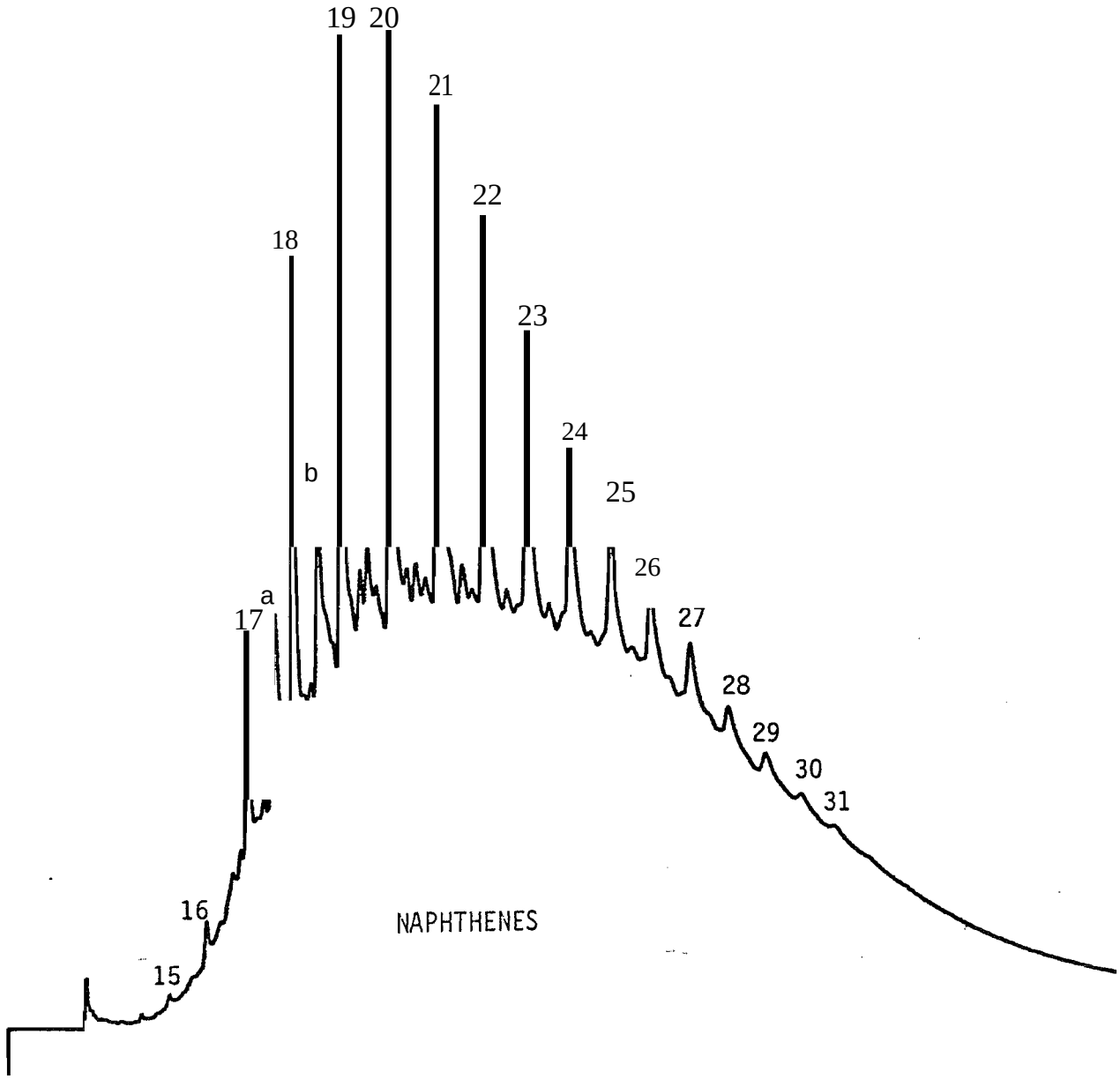
R508-003



Paraffin-Naphthene

Chromatogram

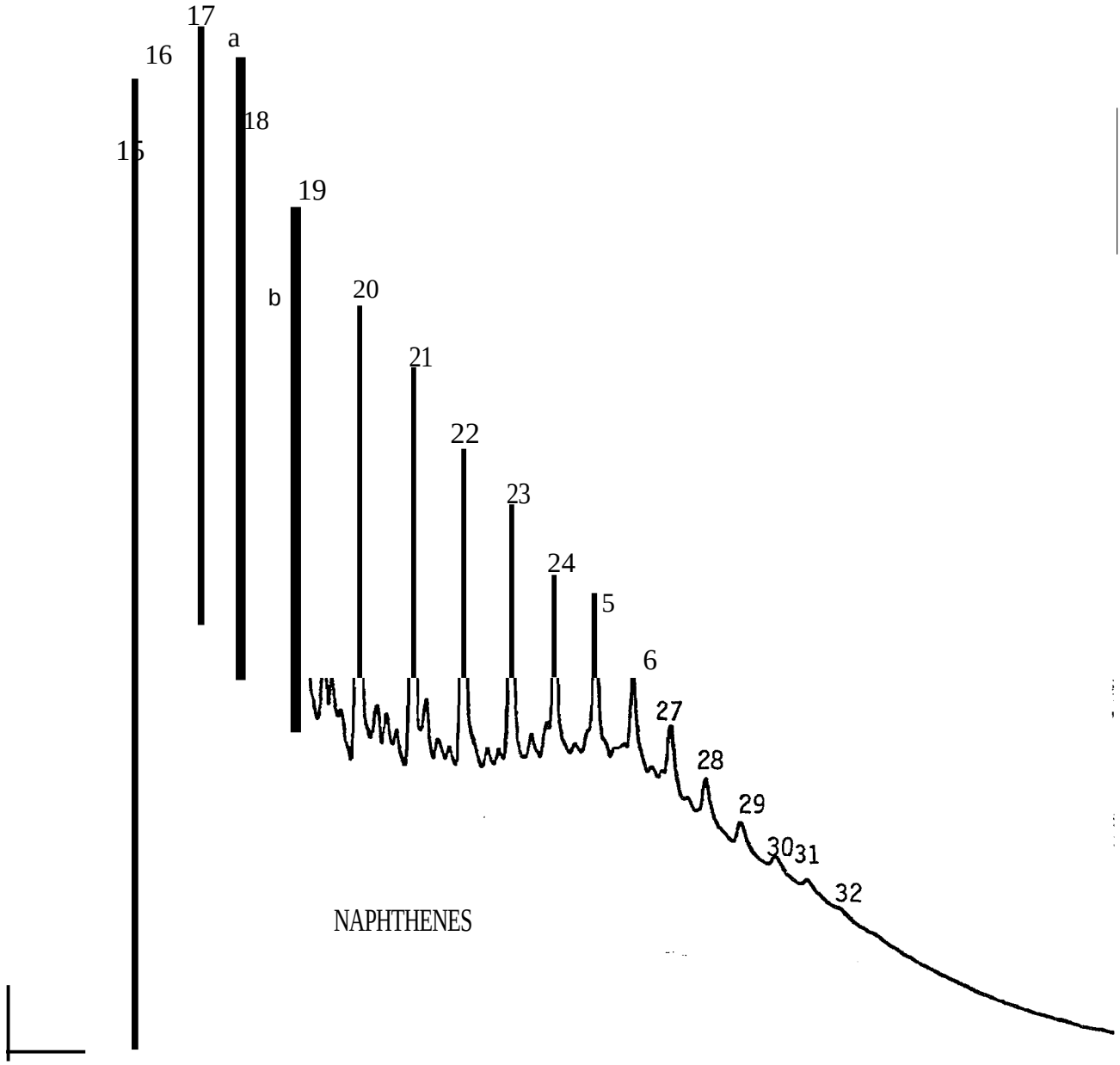
RS08-004



Paraffin-Naphthene

Chromatogram

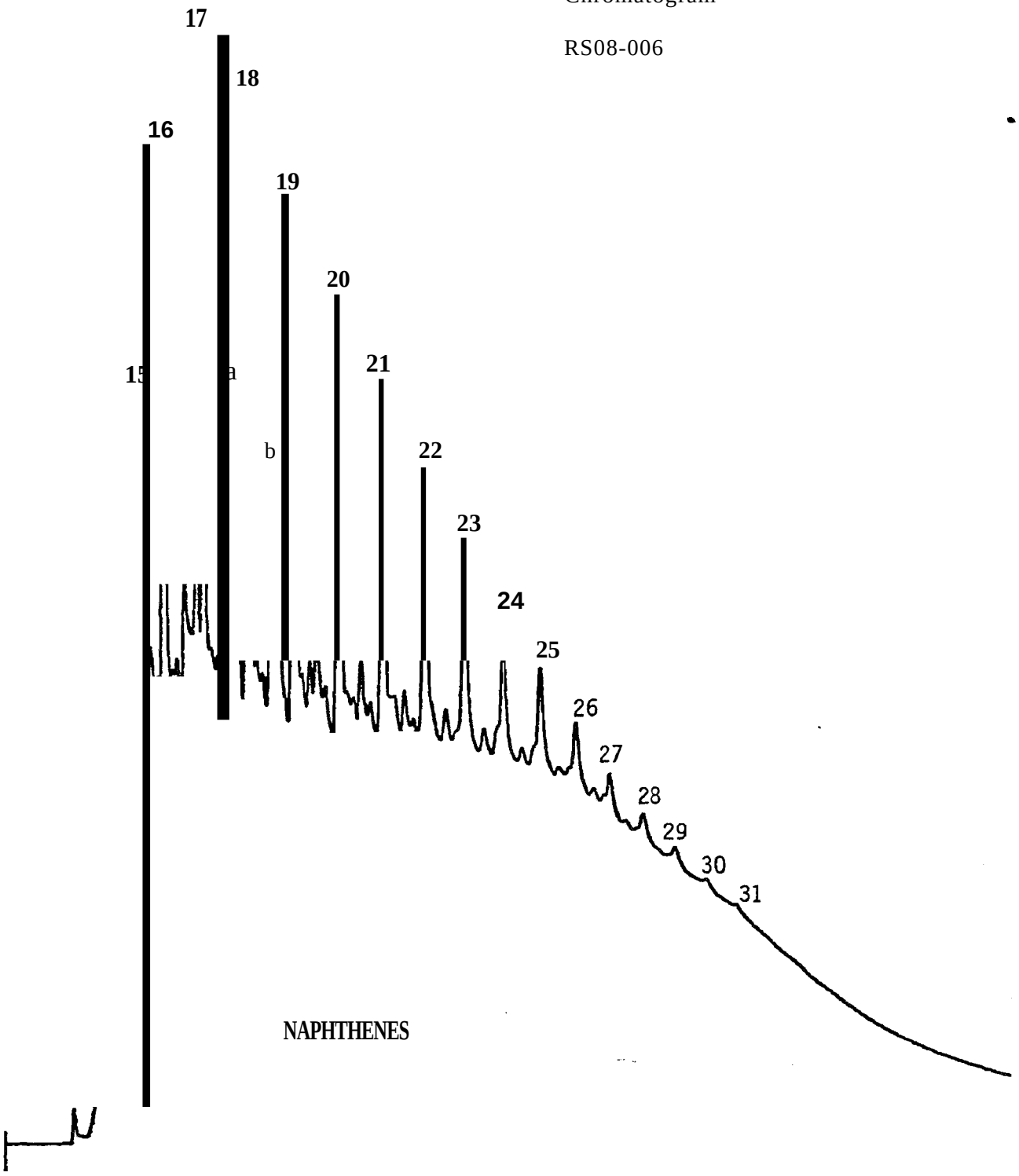
R508-005

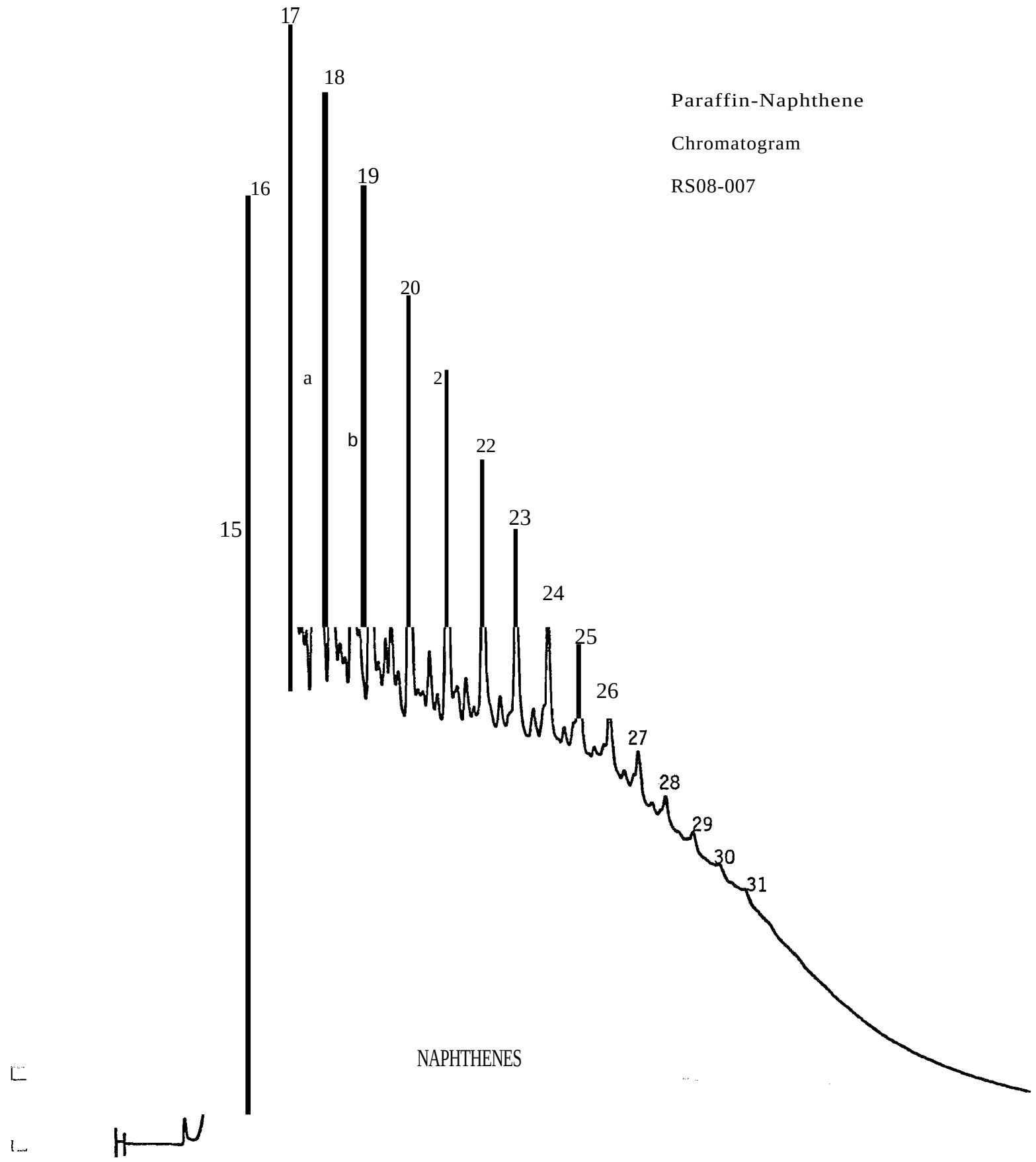


Paraffin-Naphthene

Chromatogram

RS08-006




Paraffin-Naphthene
Chromatogram
RS08-007
17
18
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16
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a
2
b
22
15
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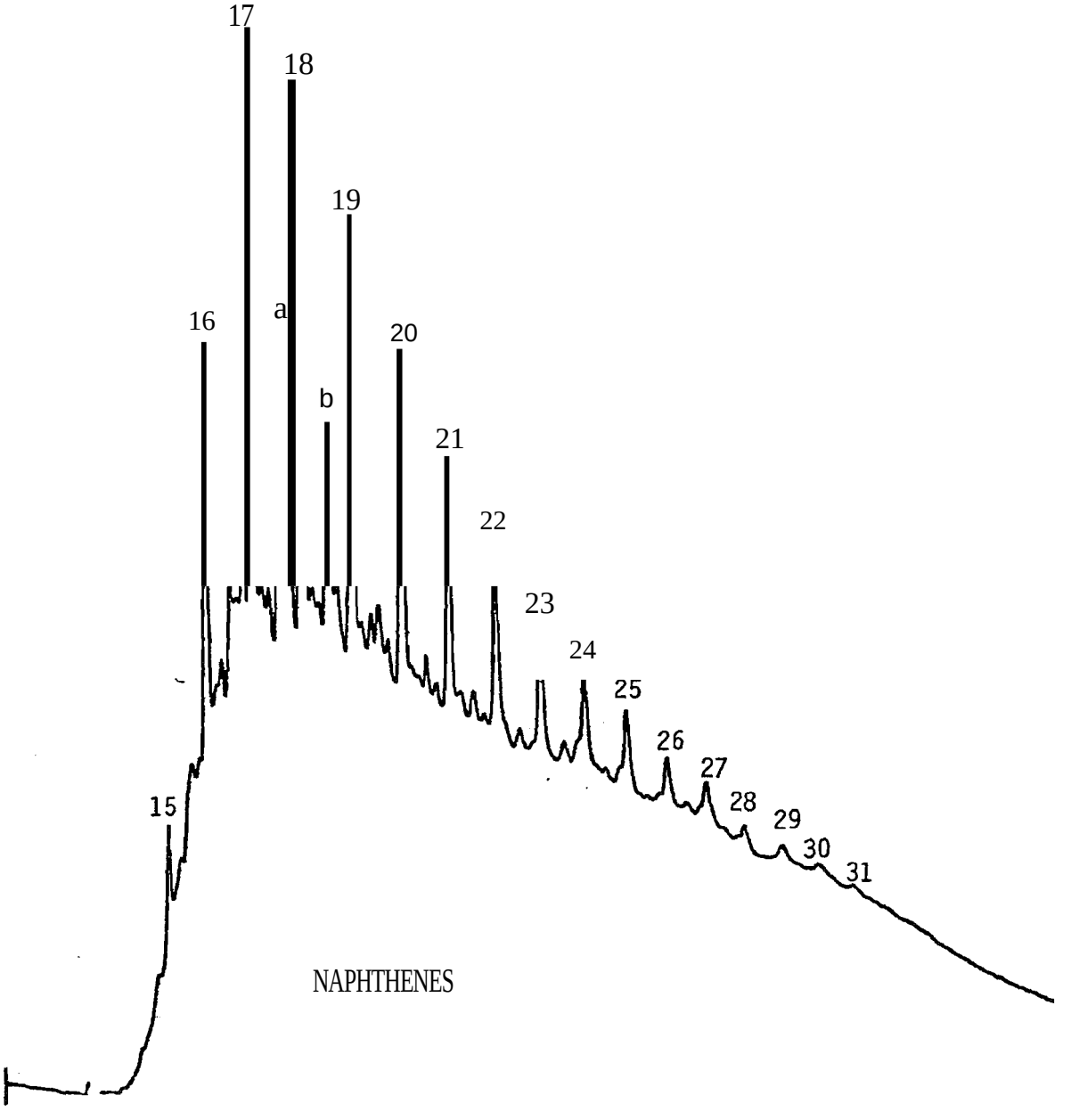
31
NAPHTHENES

Paraffin-Naphthene

Chromatogram

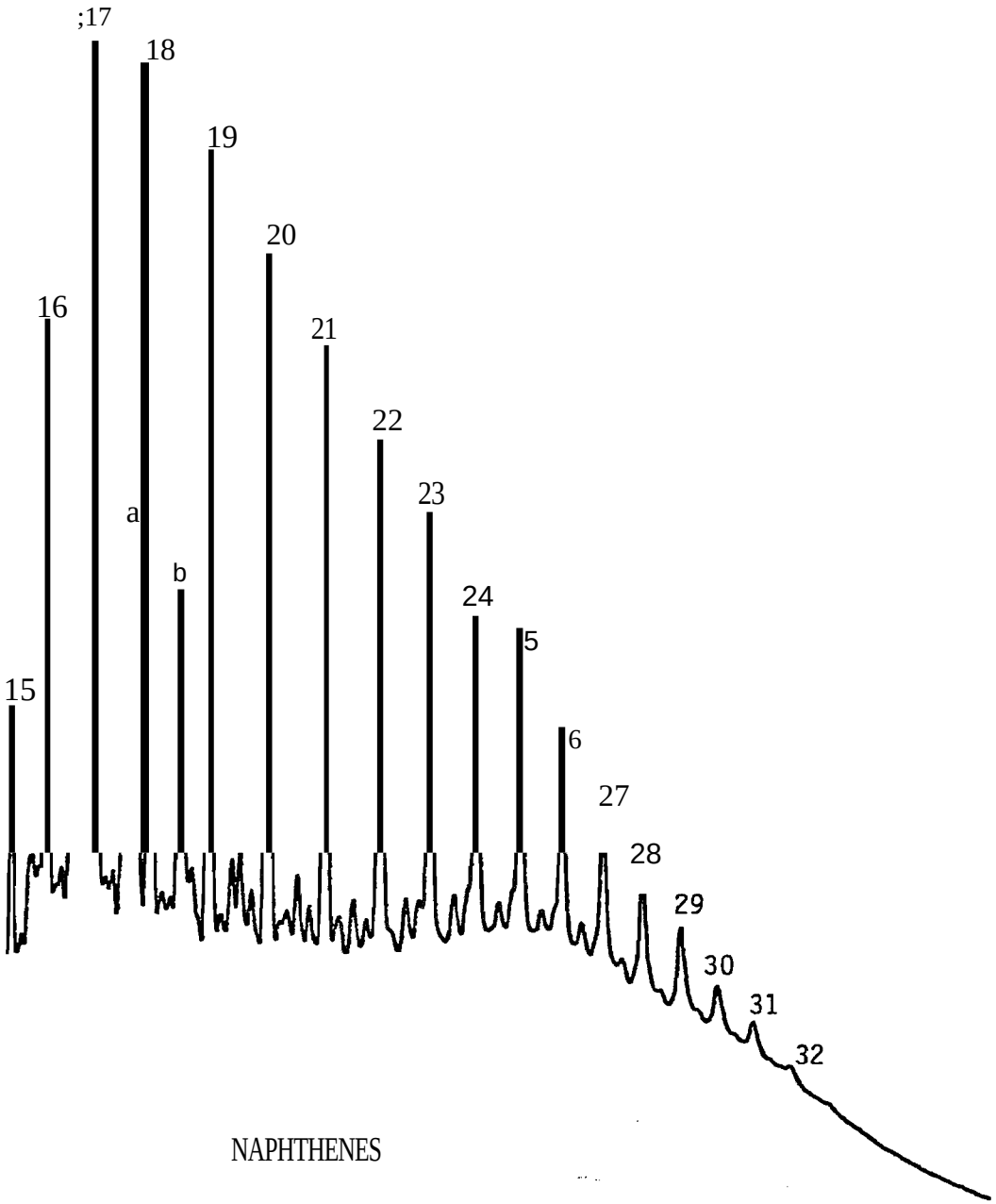
R508-008

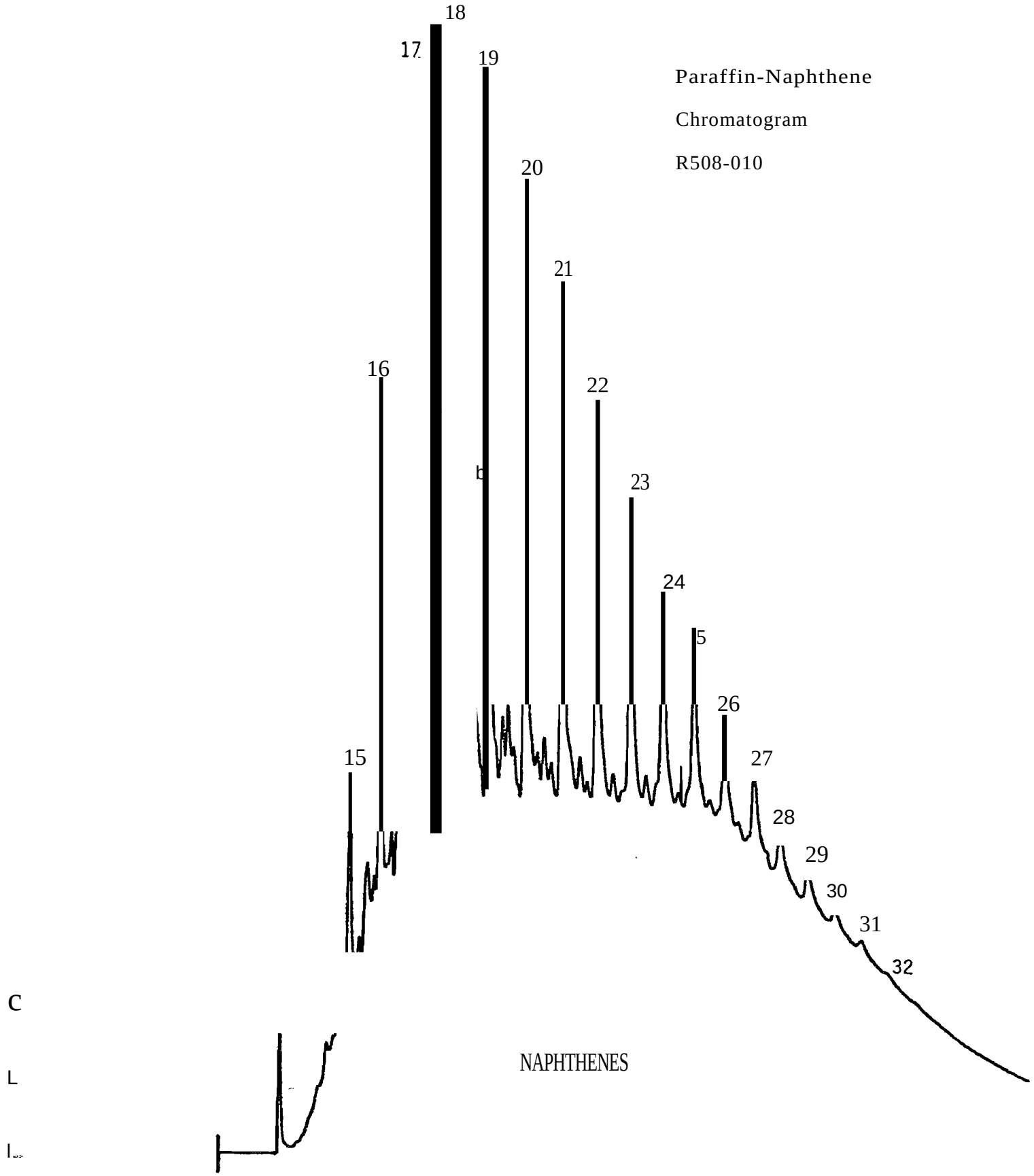


Paraffin-Naphthene

Chromatogram

R508-009




Paraffin-Naphthene
Chromatogram
R508-010
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16
17
18
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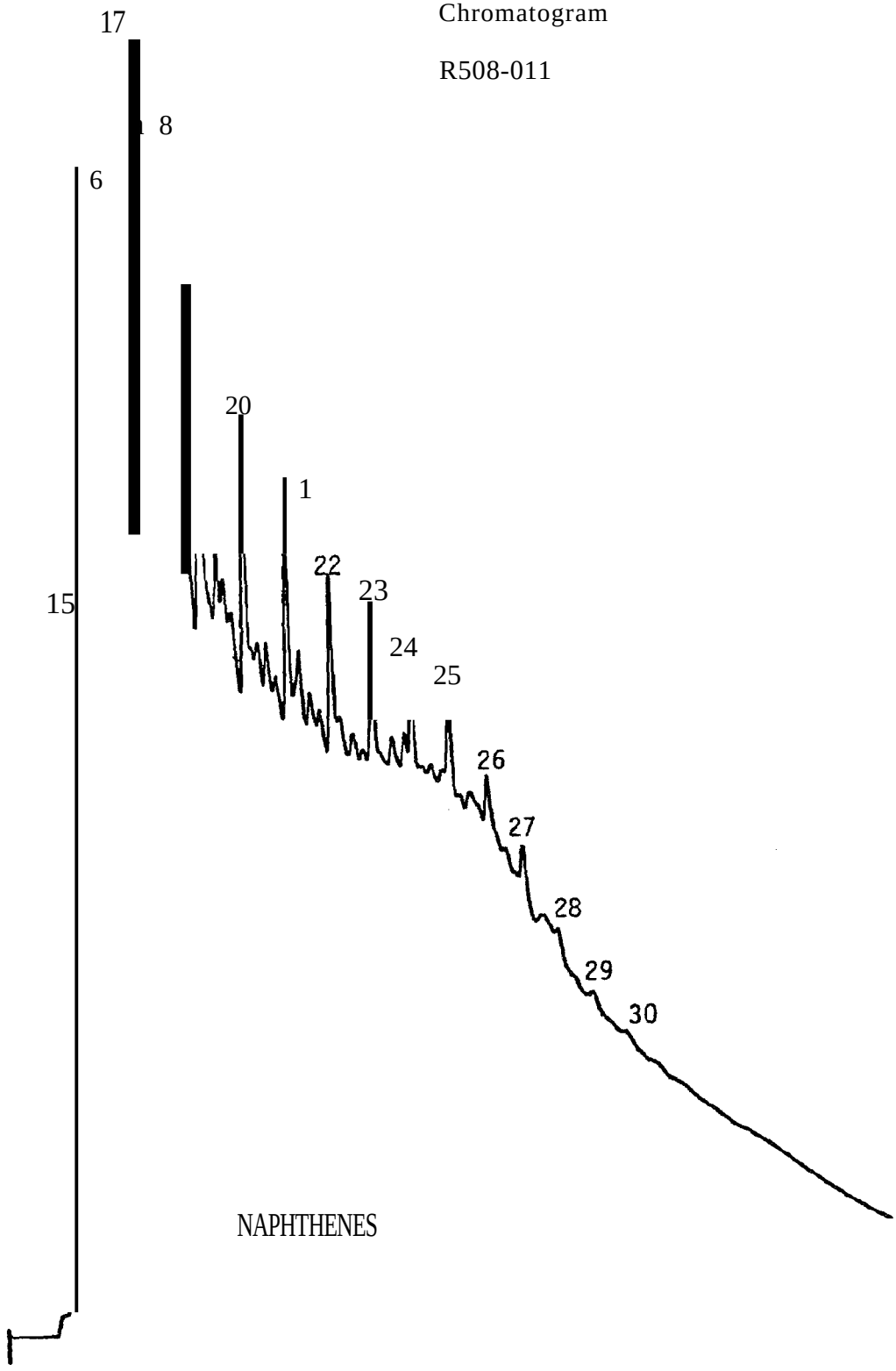
31
32
NAPHTHENES

Paraffin-Naphthene

Chromatogram

R508-011



Paraffin-Naphthene

Chromatogram

STANDARD

No. Denotes n-C_n Paraffins

a = ip-C_{19} = Isoprenoid Pristane

b ip-C_{20} = Isoprenoid Phytane

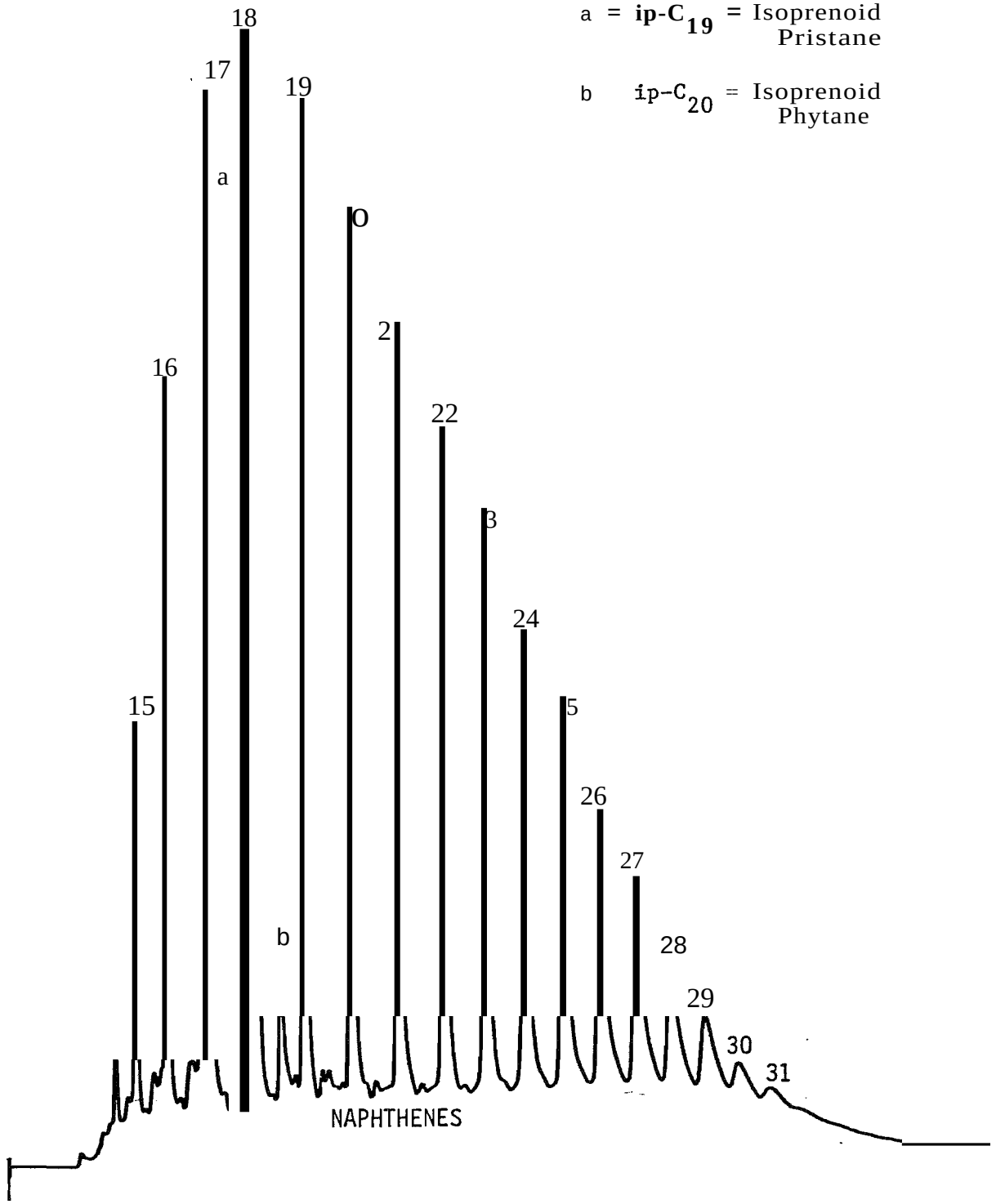


Table IX Age

Glen Gery #5 Well, CarrolTCo., Ohio

		FIRST CYCLE PALYNOMORPHS				SECOND CYCLE PALYNOMORPHS			
GEOCHEM No.	DEPTH	SYSTEM	SERIES	STAGE	RATIONALE	SYSTEM	SERIES	STAGE	RATIONALE
508-001	2082'	D	U	Fa	Spores: Presence of Convolutispora sp., spores with grapnel-like processes. Acritarchs: Unellium ampullium Elektoriskos dolos, Gorgonisphaeridium elongatum.	D	L-M	-	Spores: Dibolisporites sp. (as seen in Canadian
508-005	2198'	D	U or M	-	Stratigraphic position between samples of Upper and Middle Devonian Age				
508-006	3080'	D	U or M	-	Stratigraphic position between samples of Upper and Middle Devonian Age	0			Large size of Tasmanites indicative of Devonian
508-010	3196'	D	M	Gi	Acritarchs: Navifusa bacillur Oiexallophasis remotum, Polyedryxium dlabo-1icum, P. decorur etc. (see range chart & dier- is.s.ton	0	M		A few dark spores have a Middle Devonian Aspect, and much of the .woody material appears (by TAl) to'be reworked.

KEY

D	Devonian	M	Middle
U	Upper	Gi	Givetian
Fa	Famennian	L	Lower

Table X

SAMPLE No. R508-001 DATE. / / OPERATOR _ _ _ _ _ _ _

COMMENTS:

TYPE VISUAL	2.52	3.17	0.00	5.04	6.35	1.00	10.08	12.7	16.0	20.2	25.4	32.0	40.3	50.8	64.0	80.1	101.6	SIZE RANGE
01																		
02																		
03																		
04																		
05																		
06																		
07																		
08						3	4	3	2									
09		9	11	11	10	6	4	4	2									
10			1	2.														
11																		
12																		
13										3	1	1						
14																		
15																		
16																		
17									2	2	1	1						
18										1	2	2	2	1				
19																		
20					1	1	1	1	1									
21																		
22																		
23																		
24																		
25		3	1															
26																		
27																		1
28																		
TOTAL PERCENTAGE		12	13	13	11	10	9	8	7	6	4	4	2	1				
PERCENTAGE FROM COULTER		12	13	13	11	1111	9	8	7	6	4	4	2	1				

CaULTER **COUNTER®** Model T&TA

PARTICLE SIZE ANALYSIS

•15 - 200μ
X PERCENT

COULTER ELECTRONICS IHC•
590 W 10 ST.
HIALEAH, FLA. 3)010

ORGANIZAliON

OPERATOR

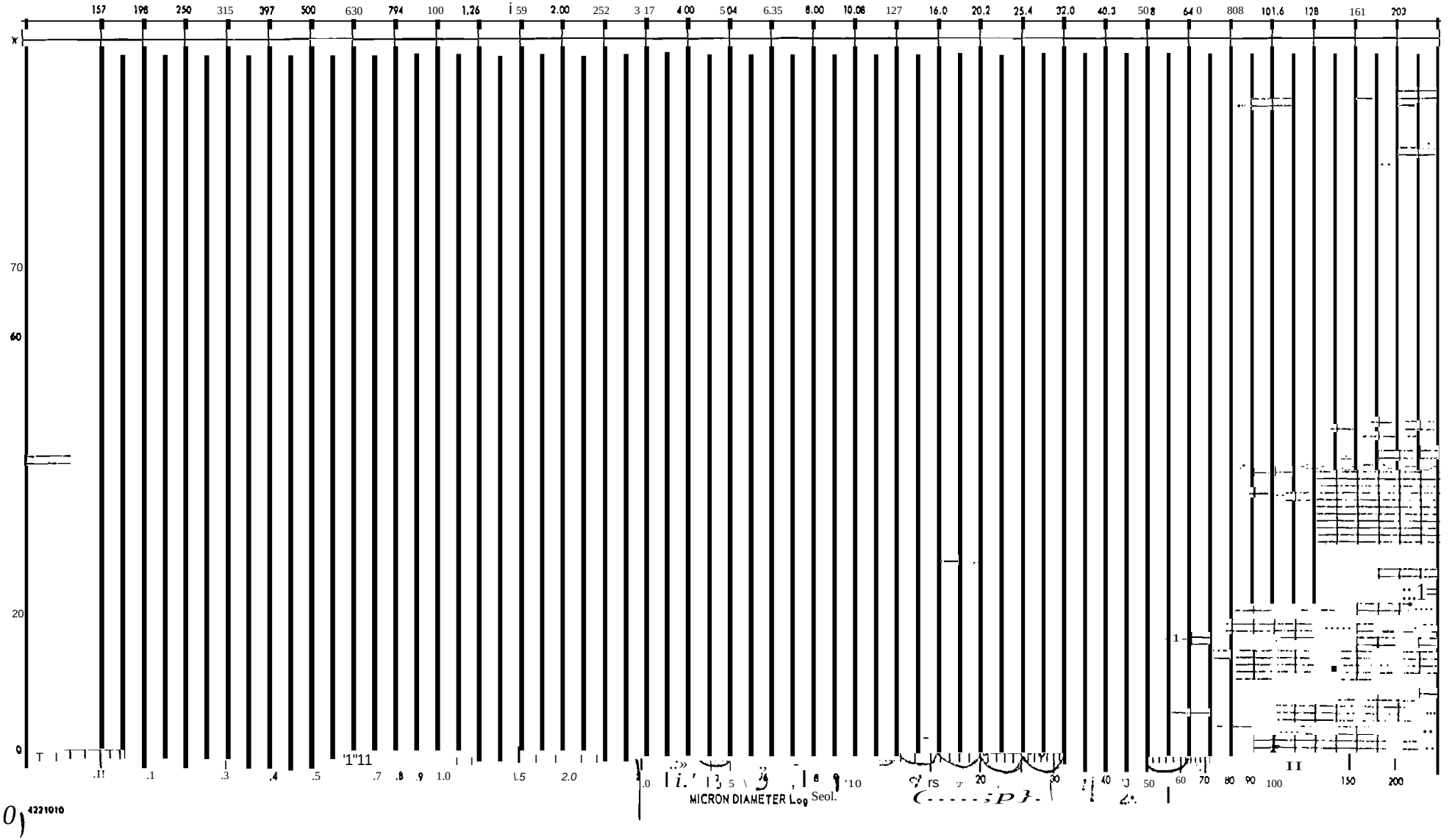
EQUIPMENT

k-d $\sqrt[3]{2^w}$ .S., $\frac{d2}{d1}$)3 .he. W2 - W1 $\frac{\Delta 2}{A1} = \left(\frac{d1}{d1}\right)^3$ ..hen W2 ± W1

FOA MODEL T FOR MODEL TA

SAMPLE !EllING!

SAMPLE	ELECTROLYTE	DI!PER!ANT	APER. SIZE	!ERIAL		PART DIA.	W	±IA	A	DIA.	W	±IA	A
R508 - 001			200μ										
T - 425.3													
T C - 8237S:3													



4221010

SAMPLE No. R 508-002 DATE. / / OPERATOR

COMMENTS:

TYPE VISUAL	2.52	3.17	4.00	5.04	6.35	8.00	10.08	12.7	16.0	20.2	25.4	32.0	40.3	50.8	64.0	80.6	101.6	SIZE RANGE
01									1				1	1				
02																		
03																		
04					2	3	4	5	1									
05																		
06																		
07																		
08																		
09		11	11	9	7	6												
10			1	5	1													
11																		
12																		
13										2	1							
14																		
15																		
16																		
17						1	1	2	2	2								
18					2	1	4	3	3	1	2	2						
19																		
20																		
21																		
22																		
23																		
24		1		1														
25		4	3					1			1						1	
26		1		1				1				1					1	
27		1		1	1	1		1		1		1		1			1	
28		1		1	1	1	1	1		1		1	1	1			1	
TOTAL PERCENTAGE		15	15	14	12	11	9	8	11	5	3	2		1			1	
PERCENTAGE FROM COULTER		15	15	14	11	10	9	8	11	5	3	2	1	1			1	

COULTER COUNTER- Model T&TA

PARTICLE SIZE ANALYSIS

.15 - 200μ
E PERCENT

COULTER ELECTRONICS INC.
590 W 20 IT.
HIALEAH, FLA. 11010

ORGANIZATIDH

OPERATOR

EQUIPMENT

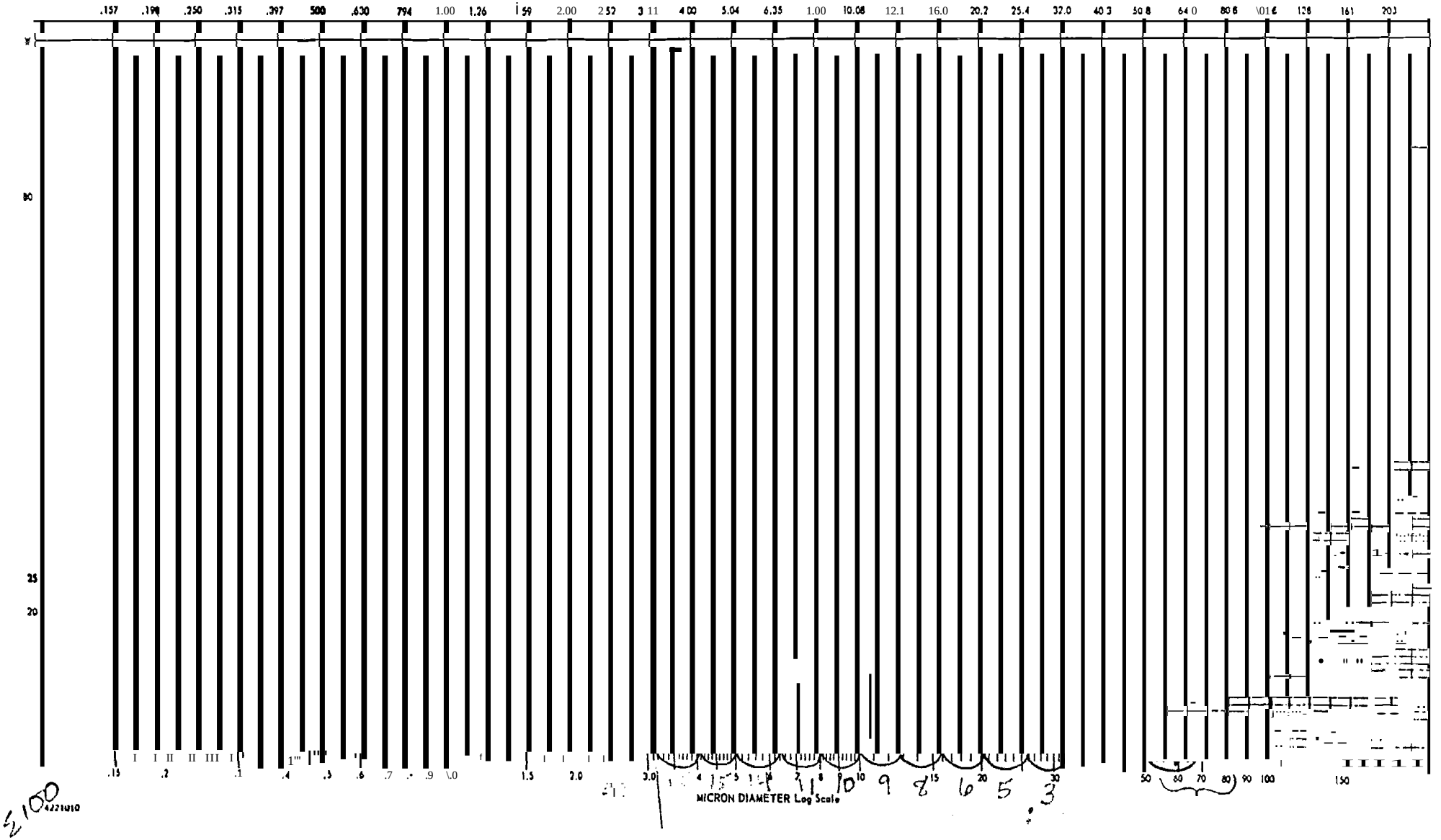
$k = d\sqrt[3]{2^w}$ FOR MOOEL T

$\frac{S}{A1} = \left(\frac{d2}{d1}\right)^3$ .h•• W2 = W1

$\frac{A2}{A1} = \left(\frac{d1}{d2}\right)^3$ .h•• 112 • III FOR MOOEL TA

SAMPLE SETTINGS

SAMPLE	ELECTROLYTE	DISPERSANT	APER. SIZE	SERIAL		PART 01...	W	± IA	A	DIA.	W	± IA	A
R50e - 002			200μ		Fine dark or								
T - «ez. o					[illegible]								
T C - 851393													



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4221010

SAMPLE No. R 508-003 DATE. / / OPERATOR _____

COMMENTS:

TYPE VISUAL	2.52	3.17	4.00	5.04	6.35	8.00	10.01	12.7	16.0	20.2	25.4	32.0	40.3	50.8	64.0	80.8	101.1	SIZE RANGE
01																		
02																		
03																		
04									1	3	4	4	2					
05																		
06																		
07																		
08				4	3	6	6	5	3									
09			6	4														
10				1	8	2												
11																		
12																		
13																		
14																		
15																		
16																		
17									3	3	1							
18							2	2	2	2	2	2	3	1				
19						3	3	3										
20																		
21																		
22																		
23																		
24								1										
25		2		1														
26																		
27																		
28																		
TOTAL PERCENTAGE		8	1	0	1	1	1	10	9	8	7	6	5	2	1			
PERCENTAGE FROM COULTER		8	10	11	11	11	10	9	8	7	6	5	2	1				

COULTER COUNTER® ModeJ T&TA

PARTICLE SIZE ANALYSIS

·15 · 200...
XPERCENT

COULTER ELECTRONICS INC.
590 W 20 ST.
HIALEAH, FLA. 33010

ORGANIZATION

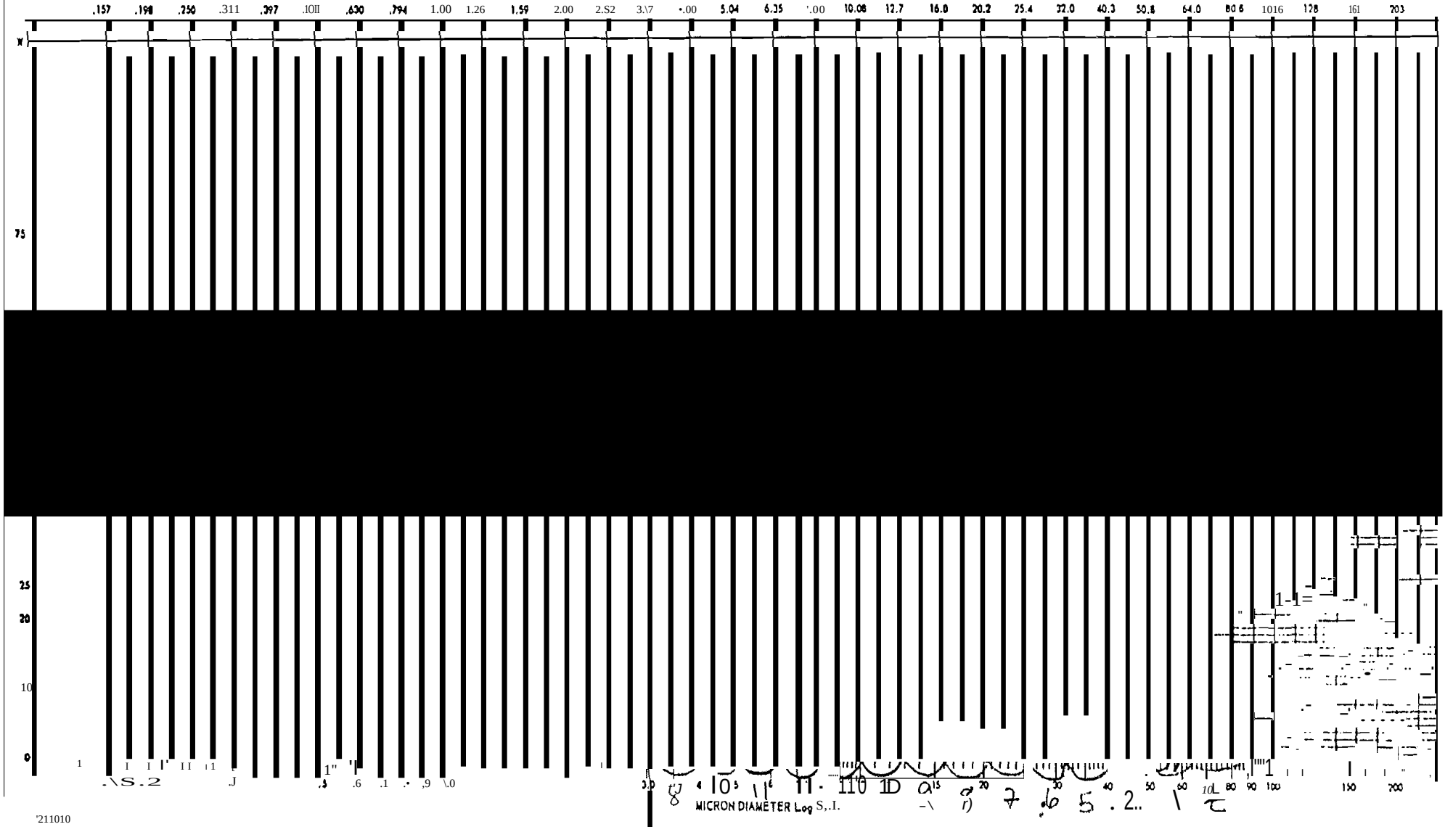
OPERATOR

EQUIPMENT

$k = d\sqrt[3]{2w}$ FOR MODEL T $\frac{A2}{A1} = \left(\frac{d2}{d1}\right)^3$ .h·· W2 = W1 $\frac{A2}{A1} = \left(\frac{d1}{d2}\right)^3$ when FOR MODEL TA

SAMPLE SETTINGS

SAMPLE	ELECTROLYTE	DISPERSANT	APER. SIZE	SERIAL		PART DIA.	W	± IA	A	DIA.	W	± I.	A
R508-003			200u		small amt. of dark								
-7- 241.4					black ostiment								
TC-663622													



'211010

SAMPLE No. R508-004 DATE. / / OPERATOR

COMMENTS:

TYPE VISUAL	2.52	3.17	'GO	3.04	..35	I.GO	1001	12.7	160	20.2	25.4	32.0	40.3	50.8	64.0	80.5	10\./	SIZE RANGE
01																		
02																		
03																		
04																		
05																		
06																		
07																		
08					3	4	7	8	4									
09		10	11	S	3	3				1								
10				3	4	2												
11																		
12																		
13										2	1							
14																		
15																		
16																		
17																		
18									2	4	2							
19									2		2	3	1					
20						1	2	1										
21																		
22																		
23																		
24																		
25		13	2				1											
26		1																
27																		
28																		
TOTAL PERCENTAGE		13	13	111/0		10	9	9	8	11	S	3						
PERCENTAGE FROM COULTER		13	13	11	1/0	J/0	l-q	9	7	7	5	2	2	11		i		

COULTER COUNTER- Model T&TA

PARTICLE SIZE ANALYSIS

·15 - 200μ
X PERCENT

COULTER ELECTRONICS INC
590 W 20 IT.
HIALEAH, FLA. 33010

ORGANIZATION

OPERATOR

EQUIPMENT

$k = d\sqrt[3]{2^w}$ FOR MODEL T

$\frac{A2}{A1} = \left(\frac{d2}{d1}\right)^3$ when W2 = W1

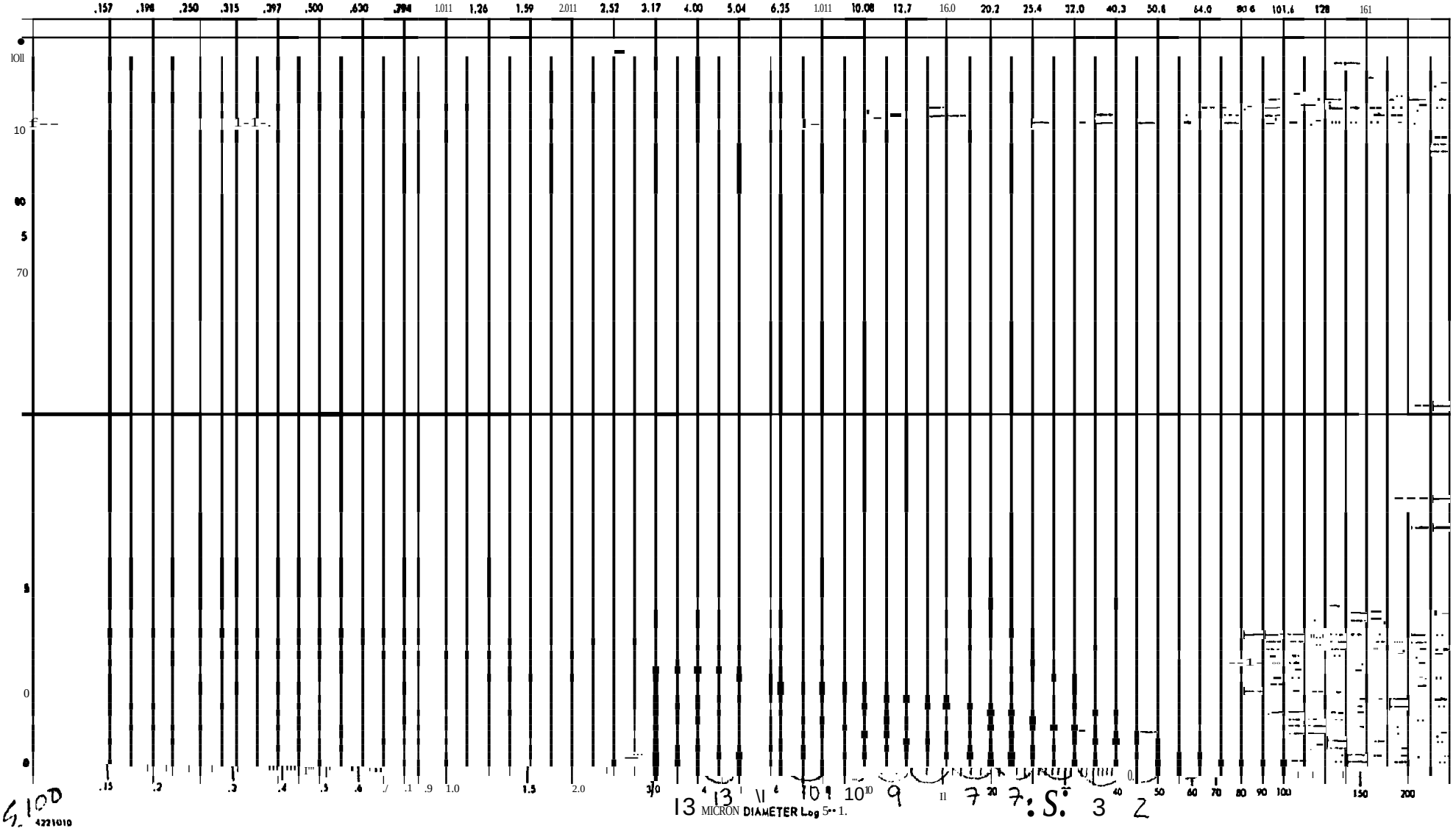
$\frac{A2}{A1} = \left(\frac{d1}{d2}\right)^3$ wh-- FOR MODEL TA

APER. SIZE	SERIAL		PART D1....	W				SAMPLE SETTINGS Dia.	W	± fA
200μ										

SAMPLE R508-004 ELECTROLYTE DISPERSANT

T-472.1

TC-897509



4221010

SAMPLE No. R508-005 DATE. / / OPERATOR _

COMMENTS:

TYPE VISUAL	2.52	3.17	4.00	5.04	6.35	8.00	10.111	12.7	160	20.2	25.4	32.0	40.3	50.8	64.0	..,0	1011	SIZE RANGE
01																		
02																		
03																		
04									2	3	3							
05																		
06																		
07																		
08				6	9	9	S	7	3	1								
09		9	12	6														
10			r	0.	3	2												
11																		
12																		
13																		
14																		
15																		
16																		
17																		
18							2	2	2	2								
19																		
20																		
21																		
22																		
23																		
24																		
25		13																
26																		
27																		
28																		
TOTAL PERCENTAGE		12	14	14	12	11	10	10	7	1	0131							
PERCENTAGE FROM		12	14	14	12	111	10	9	7	6	3							

COULTER

COULTER COUNTER- Model T & TA

PARTICLE SIZE ANALYSIS'

.15 – 200μ
I PERCENT

COULTER ELECTRONICS INC.
590 W 20 ST.
HIALEAM, FL... 33010

ORGANIZATION

OPERATOR

EQUIP..ENT

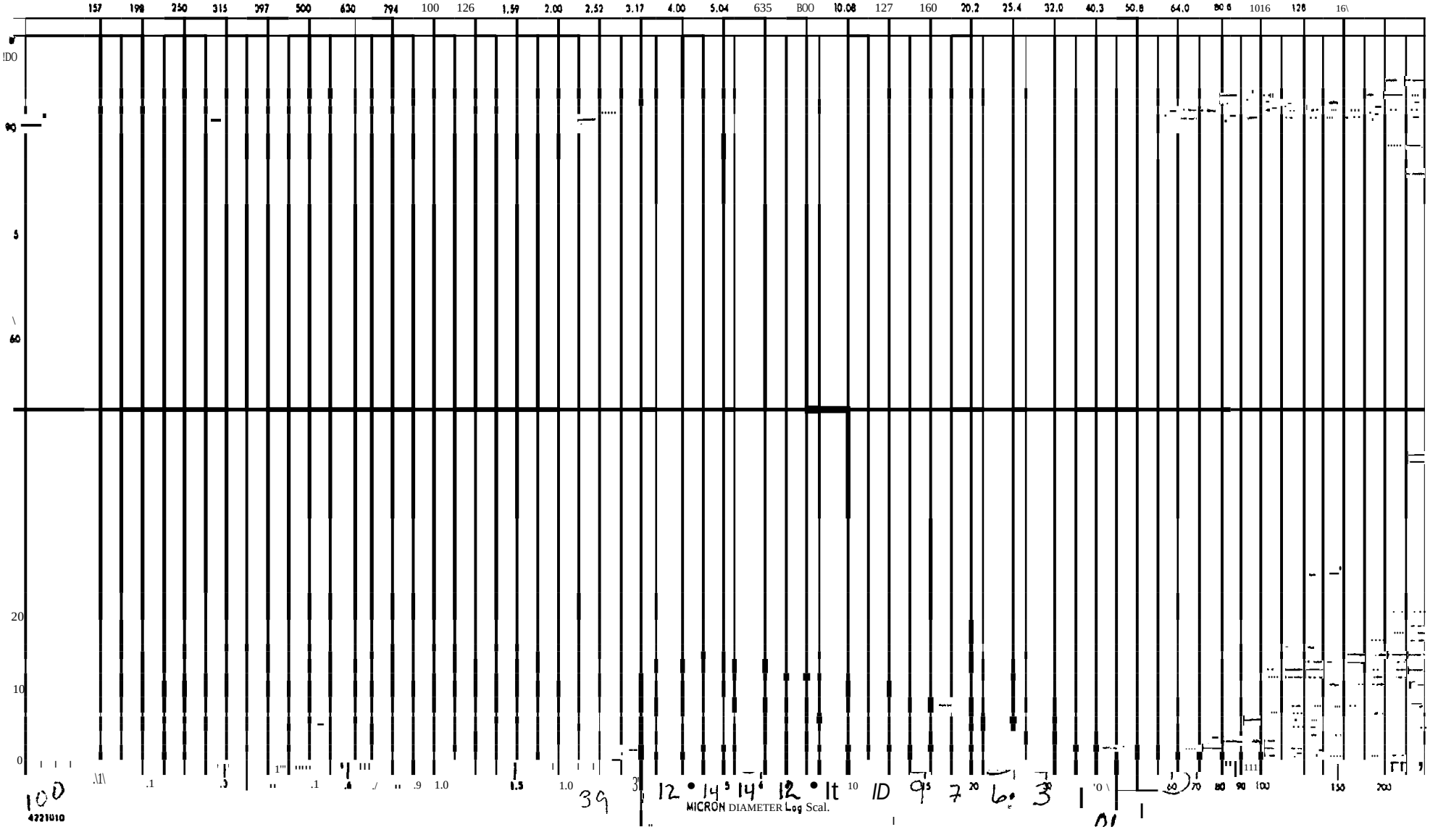
$k = d\sqrt[3]{2^n}$ FOR MODEL T

$\frac{A2}{A1} = \left(\frac{d2}{d1}\right)^3$ when W2 = W1

$\frac{A2}{A1} = \left(\frac{d1}{d2}\right)^3$ wh·· W2 • W1 FOR MODEL TA

SAMPLE SETTINGS

	APER. SIZE	SERIAL		PART DIA.	W	±IA	A	D'A.	W	i1A	A
SAMPLE R508 - 005 ELECTROLYTE <63μ SIEVE DISPERSANT	200μ		VERY BLACK SEDIMENT								
T - 501.2			WITH MANY CHARCOAL FLAKY								
TC - 888625			PARTICLES. SIEVING WAS								
			NECESSARY								



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12 • 14 5 14 6 12 • It 10 ID 9 5 7 20 6 3

4221010

SAMPLE No. R508-006 DATE. / / *OPERATOR* _____

COMMENTS:

TYPE VISUAL	2.52	117	1.IID	5.04	6.35	1.IID	10.08	12.7	16.0	20.2	25.4	32.0	40.3	50.8	64.0	80.6	101.6	SIZE RANGE
01																		
02																		
03																		
04										2	3	2	1					
05																		
06																		
07																		
08			1	4	4	9	9	8	9	6	3							
09		5	6	5														
10			2	6	4	3	2											
11																		
12																		
13																		
14																		
15																		
16																		
17																		
18																		
19																		
20																		
21																		
22																		
23																		
24		3																
25																		
26																		
27																		
28																		
TOTAL PERCENTAGE	8	12	15	13	12	11	10	9	6	5	4	3	2	1	1	1	1	
PERCENTAGE FROM COULTER	8	12	15	13	12	10	9	6	5	4	3	2	2	1	1			

COULTER COUNTER- Model T&TA

PARTICLE SIZE ANALYSIS

-15 - 200....
RPERCENT

COULTER ELECTRONICS INC-
590 W 20 ST.
HIALEAH, FLA.))010

ORGANIZATIOH

OPERATOR

EQUIPMIHT

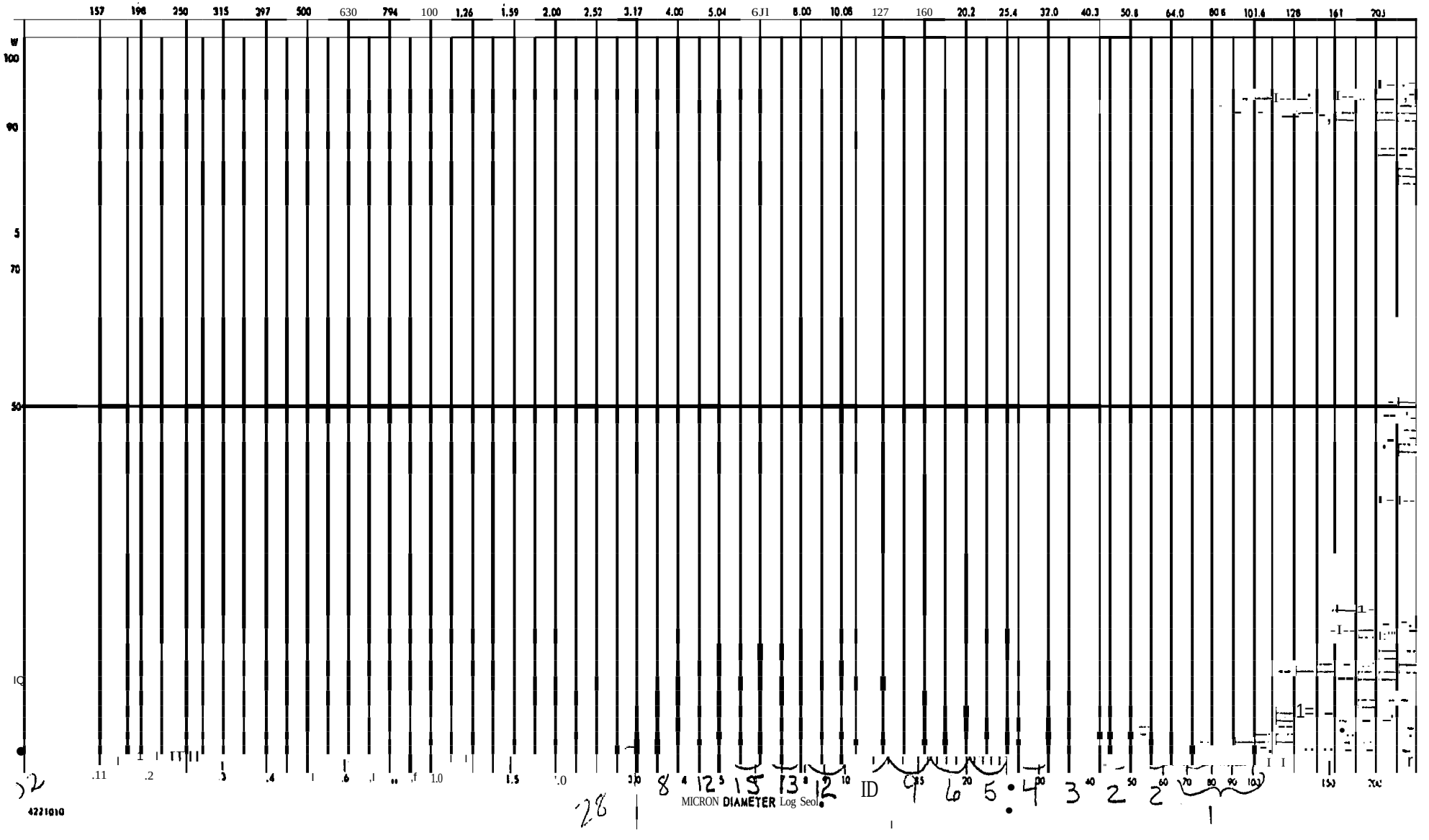
$k = d\sqrt[3]{2w}$ FOR MODEL T

$\frac{A2}{A1} = \left(\frac{d2}{d1}\right)^3 wh..$ W2. W1

$\frac{A2}{A1} = \left(\frac{d1}{d2}\right)^3 wh..$ WI. W1 FOR MODEL TA

SAMPLE SETTINGS

SAMPLE	ELECTROLYTE	DISPERSANT	APER. SIZE	SERIAL		PART DIA.	W	± IA	A	OIA.	●	± IA	A
R508 - 006			200u										
T - 4332													
T C-695406													



4221010

28

SAMPLE No. R508-D07 DATE. / / OPERATOR

COMMENTS:

TYPE VISUAL	2.52	117	4.00	5.04	6.35	8.00	10.08	12.7	16.0	20.2	25.4	32.0	40.3	50.8	64.0	80.6	101.6	SIZE RANGE
01																		
02																		
03																		
04											2	2						
05																		
06																		
07																		
08		3	9	13	9	9	9	9	8	8	4							
09		7	3															
10					2	2												
11																		
12																		
13																		
14																		
15																		
16																		
17																		
18																		
19																		
20																		
21																		
22																		
23																		
24																		
25																		
26																		
27																		
28																		
TOTAL PERCENTAGE		10	11	13	11	11	19	19	18	18	6	3	1					
PERCENTAGE FROM COULTER		12	12	13	11	11	19	9	8	8	6	3	1					

COULTER COUNTER- Model T&TA

PARTICLE SIZE ANALYSIS

-15 - 200μ
X PERCENT

CaULTER ELECTRONICS INC.
Ito -10 IT.
HIALEAH, fLA. 11010

ORGANIZATIOH

OPERATOR

EQUIP..ENT

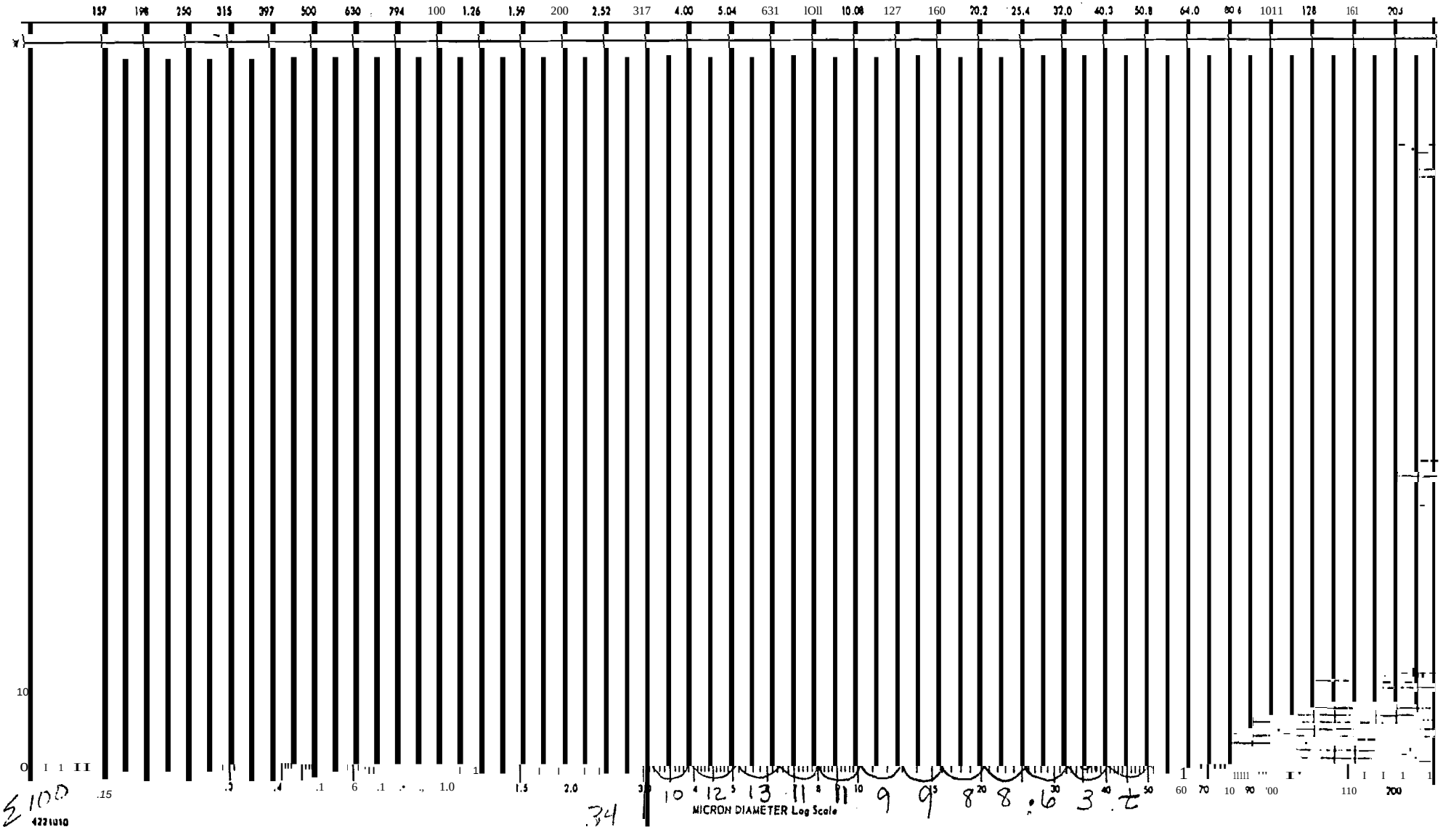
$k = d\sqrt[3]{2w}$ FOR MOOEL T

$\frac{A_2}{A_1} = \left(\frac{d_2}{d_1}\right)^3$ wh.. '2.'1

$\frac{A_2}{A_1} = \left(\frac{d_1}{d_2}\right)^3$ wlr• WI' WI FOR MODEL TA

SAMPLE SETTINGS

	APER. SIZE	SERIAL		PART DIA.	W	± IA	A	DIA.	W	± IA	A
SAMPLE R5(J8 - 007 ILICTmrE rr 3 μ SIEVE DISPERSANT	200μ		VERY 1/, sCK SEDIMENT								
T -375.J			WITH SEVERAL FLAKY								
TC-770221			PARTICLES & SIEVING								
			WAS NECESSARY								



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.34

4221010

SAMPLE No. R508-008 DATE. / / OPERATOR

COMMENTS:

TYPE VISUAL	2.52	3.17	4.00	5.04	6.35	8.00	10.08	12.7	16.0	20.2	25.4	32.0	40.3	50.8	64.0	101.6	SIZE RANGE
01																	
02																	
03																	
04							2	2	2	1							
05																	
06																	
07																	
08																	
09		?	10	8	9	9	7	6	4								
10			1	4	3	2											
11																	
12																	
13									2								
14																	
15																	
16																	
17										3	1	2	1				
18										2	3	J	f				
19																	
20						J	2	2									
21																	
22																	
23																	
24																	
25		2															
26																	
27																	
28	A					1		1									
TOTAL PERCENTAGE		9	11	12	12	12	11	10	8	6	4	3	2	1	1	1	
PERCENTAGE FROM COULTER		9	11	12	12	12	11	10	8	6	4	3	2	1	1	1	

COULTER COUNTER® Model T&TA

PARTICLE SIZE ANALYSIS

.15 – 200μ
XPERCENT

COULTER ELECTRONICS INC.
590 W 20 ST.
HIALEAH, FLA. 31010

ORGANIZATION

OPERATOR

EQUIPMENT

$k = d\sqrt[3]{2w}$ FOR MODELT

$\frac{A2}{A1} = \left(\frac{d2}{d1}\right)^1$ when W2 = W1

$\frac{A2}{A1} = \left(\frac{d1}{d2}\right)^3$ when W2 = WI FOR MODEL TA

SAMPLE SETTINGS

SAMPLE	ELECTROLYTE	DISPERSANT	APER. SIZE	SERIAL		PART alA.	W			DIA.	W	± IA	
R508-008			200μ		FINE DARK GRAY								
T-401.7					SEDIMENT								
TC-708173													

.157 .198 .250 .315 .397 .500 .630 .794 1.00 1.26 1.59 2.00 2.52 3.17 4.00 5.04 6.35 8.00 10.01 12.7 16.0 20.2 25.4 32.0 40.3 50.1 64.0 80.6 101.6 128 161 203

[redacted]

20
10
0

.11 .2 .3 .4 .1 .6 .7 .8 .9 1.0 2.0 3 4 5 10 20 30 40 50 60 70 80 90 100 150 200

MICRON DIAMETER 100 Seol.

SAMPLE No. R508-009 DATE. / / OPERATOR _

COMMENTS:

TYPE VISUAL	2.52	3.17	4.00	5.[illegible]	6.35	1.00	10.08	12.7	160	20.2	25.4	32.0	40.3	50.8	64.0	".1	IOU	SIZE RANGE
01												1	1	1				
02																		
03																		
04											1	2	2					
05																		
06																		
07																		
08				4	3	9	5	5	1									
09			9	8	4	2												
10				2	3	6	3											
11																		
12																		
13										2	1							
14																		
15																		
16																		
17							2	2	2	1								
18									1	2	3							
19							2	2	3	J								
20							2	1										
21																		
22																		
23				1							1							
24				1														
25		1	1	1		1	1						1			1		
26		1		1	1		1	j			1					1		
27		1	1	1	1	1		1		1						1		
28		1	1	1	1	1	1	1	1	1			1	1		1		
TOTAL PERCENTAGE		11	01	0	1/t1	11	12	11	10	8	6	5	3	3	j	1		
PERCENTAGE FROM COULTER		10	10	11	11	12	11	10	8	6	5	3	3	1		i		

COULTER COUNTER- Model T & TA

PARTICLE SIZE ANALYSIS

.15 - 200μ
I PERCENT

COULTER ELECTRONICS INC.
590 W 20 ST.
HIALEAH, FLA. 33010

ORGANIZATION
OPERATOR
EQUIPMENT

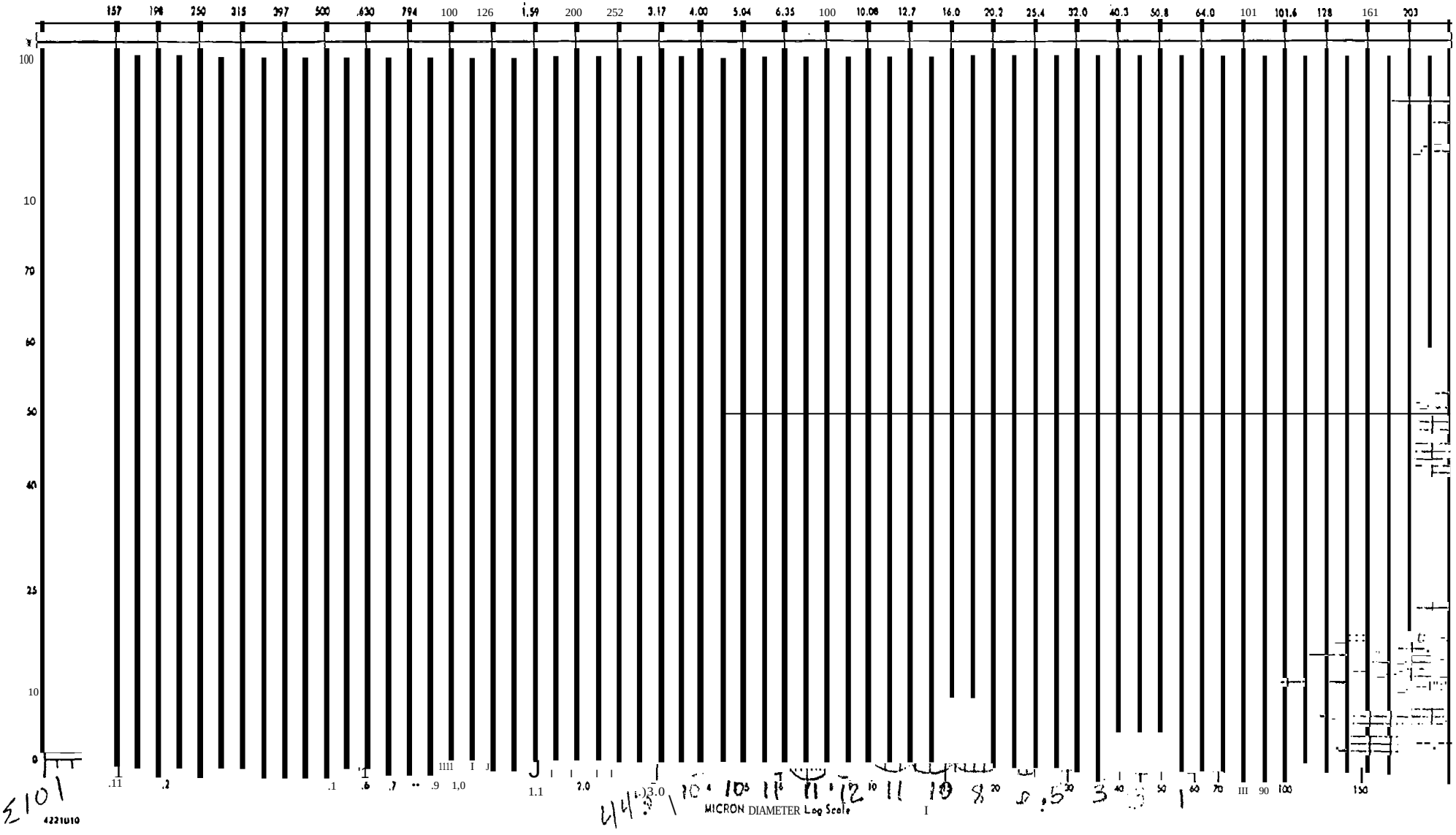
$k = d\sqrt[3]{2W}$ FOR MODEL T

$\frac{A2}{A1} = \left(\frac{d2}{d1}\right)^3$ when W2 = WI

$\frac{A2}{A1} = \left(\frac{d1}{d2}\right)^3$ .ho. W2 = W1 FOR MODEL TA

SAMPLE SETTINGS

	APER. SIZE	SERIAL		PART DIA.	W	± IA	A	DIA.	●	± IA	●
SAMPLE R508 - 00 9 ELECTROLYTE DISPERSANT	'aoo:										
T - 475.4											
T C- 740 661											



4221010

SAMPLE No. 8508-010 DATE. 3/12/79 OPERATOR

COMMENTS:

TYPE VISUAL	2.52	117	4.00	5.04	6.35	100	10.08	12.7	160	20.2	25.4	32.0	40.3	50.8	64.0	80.8	101.6	SIZE RANGE
01																		
02																		
03																		
04																		
05																		
06																		
07																		
08			3	4	4	5	10	4	f									
09		1	6	4	4	4												
10				2	2	S.												
11																		
12																		
13											J	I	I	J				
14																		
15																		
16																		
17								1	2	2	2							
18								2	2	2	2	2						
19										1	2	2	2					
20							t	3	3	2								
21																		
22																		
23																		
24																		
25		J																
26																		
27				J	J													
28																		
TOTAL PERCENTAGE	8	9	10	10	111	111	10	8	7	7	5	3						
PERCENTAGE FROM COULTER	8	9	10	10	111	111	10	8	11/7	7	5	3						

COULTER **COUNTER®** Model T&TA

PARTICLE SIZE ANALYSIS

.15 – 200μ
X PERCENT

COULTER ELECTRONICS INC.
590 W 20 ST.
HIALEAH, FLA. 33010

ORGANIZATION

OPERATOR

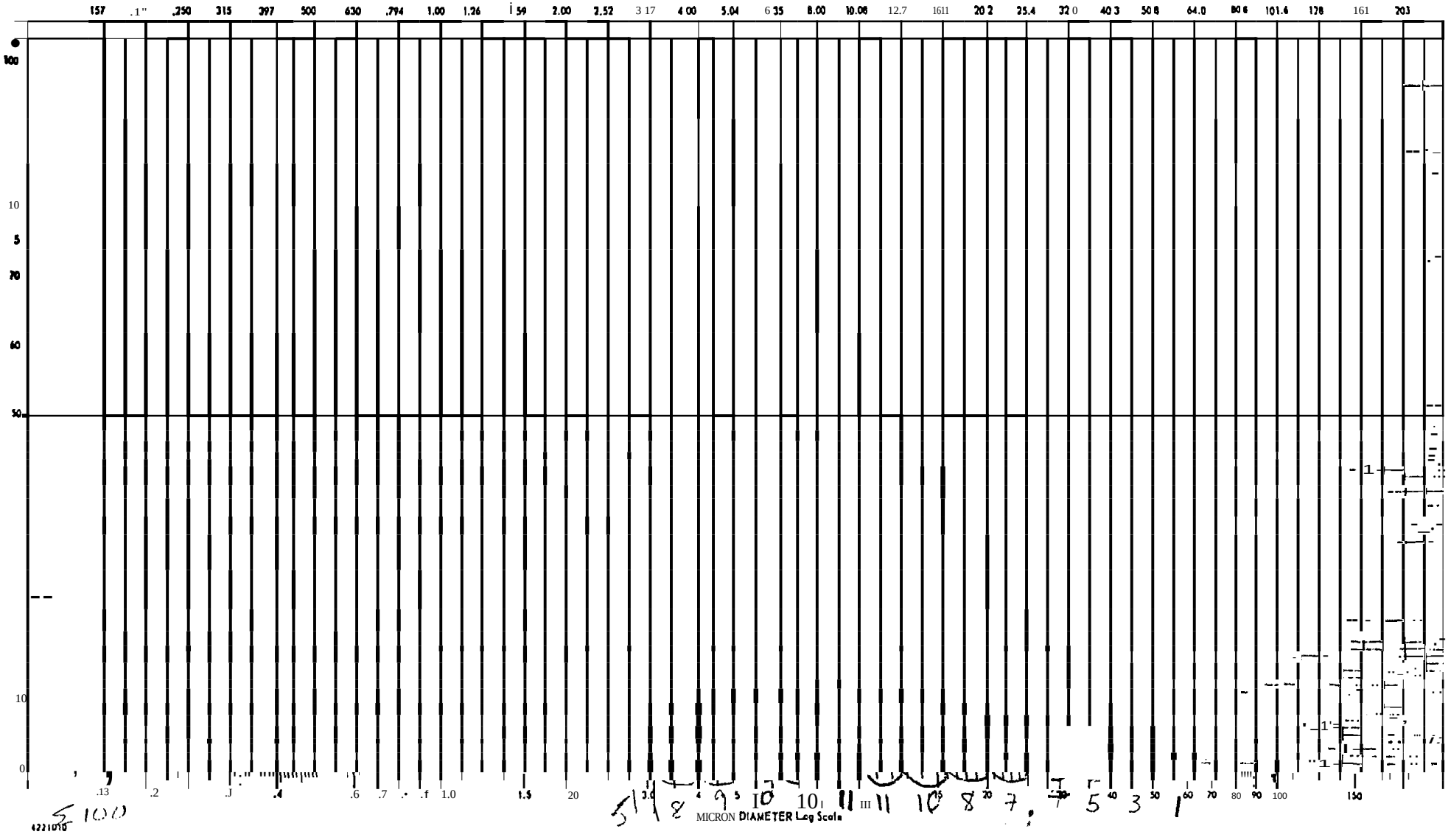
EQUIPMENT

$k = d\sqrt[3]{2w}$ FOR MODEL T

$\frac{A2}{A1} = \left(\frac{d2}{d1}\right)^3$ when W2 = W1 $\frac{A2}{A1} = \left(\frac{d1}{d2}\right)^3$ when W2 = W1 FOR MODEL TA

SAMPLE SETTINGS

	APER. SIZE	SERIAL		PART 01'.	W	±IA	●	DIA.	W	±I.	●
SAMPLE R508-010 ELECTROLYTE DISPERSANT	200μ										
T-359.5											
TC-529020											



4221010

PARTICLE SIZE DISTRIBUTION

GRl Sample Number RS08-011

Cumulative Weight Percent Coarser Than ϕ (%)	
4 ϕ	.5
5 ϕ	1.8
6 ϕ	15.2
7 ϕ	36.0
8 ϕ	54.3
9 ϕ	64.2
10 ϕ	77.6
11 ϕ	86.3
Median ϕ	7.8

Table XI
KEROGEN COMPOSITION

GeoChem Sample Number	Weight Percent (Ash Free)				Weight Percent Ash	Atomic Hie	Atomic ole
	e	H	N	0			
R508-003	41. 25	3.27	1.10	54.38	15.59	.94	.99
R508-005	68.02	6.68	2.39	22.91	23.36	1.17	.25
R508-006	72.85	7.08	1.82	18.25	17.26	1.16	.19
R508-007	79.83	7.19	2.47	10.51	18.94	1. 07	.10
R508-011	48.66	5.56	1.72	44.07	19.75	1.36	.68

Table XII

OH-l Well

WHOLE ROCK COMPOSITION

GeoChem Sample Number	Weight Percent (Ash Free) C	H	N	0	Weight Percent Ash	Atomic Hie	Atomic ole
SAMPLE SDO-1							
R508-011 (1)	55.8	5.9	1.7	36.6	81.4	1.27	0.49
R508-011 (2)	54.2	6.7	2.0	37.1	80.7	1.48	0.51
RS08-01l (3)	53.1	6.9	2.5	37.5	80.4	1.56	0.53

Table XIII
Chemical Composition

Sample No.	R508-01l
Major Oxides (Wt. %)	
SiO_2	54.0
Al_{203}	10.9
Fe_{203}	8.95
MgO	1.48
CaO	.962
NaZO	.143
K_20	2.73
TiO_Z	.575
P_2O_5	.09
MnO	.0831
Major Elements (Wt. %)	
S	4.06

Elemental Composition

Sample No.	RS08-011
Minor and Trace Elements (PPM)	
Be	2.3
B	
Sc	10
V	143
Cr	99
Co	41
Ni	100
eu	54.9
Zn	51
Ga	10
Ge	<20
As	10
Se	<5
Rb	110
Sr	73.3
Zr	100
Mo	176
Ag	N.D.
Cd	N.D.
Sn	5
Sb	<1
Cs	<2
Ba	449
La	70
Ce	<160
Hf	< 40
Ta	< 65
W	4
Au	<.02
Pb	N.D.
Tb	N.D.
U	32
Cl	140
F	732

X-RAY IDENTIFICATION OF MINERAL PHASES

GRI Sample Number R50B-	001	005	006	010	011
Percent Distribution (%)					
Clay (lOA)	29	25	22	19	17'
Clay (7A)	26	13	9	12	10
Quartz (4,27A)	26	32	43	23	34
Potassium Feldspar (4.24A) ,	0	0	0	0	0
Sodium Feldspar (4 ,20A)	11	10	13	4	7
Calcite (3 03A)	0	0	0	3B	0
Dolomite (2,B9A)	6	6	0	0	7
Siderite (2.79A)	0	0	0	0	0
Pyrite (2.72A)	3	13	13	4	24

CLAY MINERALOGY

GRI Sample Number R50e":'	001	005	006	010	all
Percent Distribution					
Montmorillonite	0	a	0	0	0
Illite	74	85	89	50	56
Mixed-Layer	10	0	0	34	35
Kaolinite	0	0	0	0	0
Chlorite	16	15	11	16	9
Crystallinity (mm)	1.3	1.9	1.1	2.0	2.3
Sharpness Ratio	6.1	4.0	4.2	3.1	3.0
lOA Peak Height (mm)	116	48	67	93	54

Table XV

OH-1 Well

Detailed C_4-C_7 Hydrocarbon Analyses

GeoChem Sample Number	508-001	508-002	508-003	508-004	508-005
Isobutane	4.4	1.3	7.0	3.9	10.6
n-Butane	13.3	5.6	25.7	14.1	18.5
Isopentane	18.1	9.0	18.1	14.5	18.7
n-Pentane	14.4	9.9	15.2	13.0	15.8
2, 2-Dimethylbutane	0.3	0.4	0.2	0.2	0.1
Cyclopentane	1.0	0.8	0.9	0.5	2.1
2, 3-Dimethylbutane	0.9	0.9	0.7	0.8	0.5
2-Methylpentane	6.7	8.0	5.3	7.4	4.8
3-Methylpentane	4.4	5.1	3.4	4.6	3.4
n-Hexane	7.2	11.2	5.4	8.5	4.4
Methylcyclopentane	4.9	4.9	3.7	4.2	4.6
2, 2-Dimethylpentane	0.3	0.4	0.1	0.3	0.1
Benzene	0.1	0.2	0.0	0.1	0.1
2, 4-Dimethylpentane	0.6	1.0	0.4	0.7	0.2
2, 2, 3-Trimethylbutane	0.2	0.2	0.1	0.2	0.1
Cyclohexane	3.1	3.3	1.8	2.0	2.9
3, 3-Dimethylpentane	0.1	0.3	0.1	0.2	0.1
1, 1-Dimethylcyclopentane	0.3	1.3	0.5	1.0	0.7
2-Methylhexane	2.8	5.8	1.7	4.0	1.2
2, 3-Dimethylpentane	0.0	0.0	0.0	0.0	0.0
1, cis-3-Dimethylcyclopentane	1.4	2.1	0.9	1.7	1.3
3-Methylhexane	3.4	6.9	2.3	5.0	0.0
1 trans-3-Dimethylcyclopentane	0.0	0.0	0.0	0.0	2.4
1 trans-2-Dimethylcyclopentane	2.1	3.3	1.3	2.5	2.1
3-Ethyl pentane	0.5	0.7	0.3	0.6	0.2
n-Heptane	3.3	7.8	1.6	4.4	1.2
1, cis-2-Dimethylcyclopentane	0.8	0.9	0.4	0.7	0.5
Methylcyclohexane	5.0	8.2	2.7	4.6	3.0
Toluene	0.3	0.5	0.2	0.1	0.2
C_{4-C7} Hydrocarbon Content (ppm*)	9753.0	3445.1	12393.3	5556.2	102607.9
2-methyl pentane/3-methyl pentane	1.52	1.57	1.56	1.61	1.41
isopentane/n-pentane	1.26	0.91	1.19	1.12	1.18
cyclohexane/methylcyclopentane	0.63	0.67	0.49	0.48	0.63
methyl cyclopentane/methylcyclohexane	0.98	0.60	1.37	0.91	1.53

*PPM values are expressed as volumes of gas per million volumes of cuttings

OH-l Well

Detailed C4-C7 Hydrocarbon Analyses

GeoChem Sample Number	508-006	508-007	508-008	508-009	508-010
Isobutane	16.0	16.2	4.1	2.1	3.0
n-Butane	35.1	33.2	11.9	8.5	7.8
Isopentane	13.4	13.2	9.9	6.7	4.8
n-Pentane	13.4	10.6	10.7	8.7	6.5
2, 2-Dimethylbutane	0.1	0.2	0.2	0.3	0.5
Cyclopentane	1.5	1.7	1.7	1.6	1.3
2, 3-Dimethyl butane	0.3	0.4	0.7	0.6	0.7
2-Methyl pentane	2.7	2.8	5.7	4.9	4.0
3-Methylpentane	1.9	2.1	4.2	3.7	2.9
n-Hexane	3.3	3.3	8.1	8.0	7.3
1 Methylcyclopentane	3.2	3.8	7.6	8.6	7.3
2, 2-Dimethyl pentane	0.1	0.1	0.2	0.3	0.4
Benzene	0.2	0.3	0.2	0.3	0.3
2, 4-Dimethylpentane	0.2	0.2	0.4	0.6	0.7
2, 2, 3-Trimethylbutane	0.1	0.1	0.1	0.2	0.3
Cyelohexarie	1.6	2.2	4.6	5.8	6.0
3, 3-Dimethylpentane	0.1	0.1	0.2	0.3	0.5
1, 1-Dimethyleyclopentane	0.4	0.6	1.5	2.2	2.8
2-Methylhexane	0.7	1.0	3.2	3.7	4.1
2, 3-Dimethyl pentane	0.0	0.0	0.0	0.0	0.0
1, CiS-3l-hDimethYleyel0pentane	0.6	0.8	2.2	2.8	2.8
3-Methy exane	0.7	0.8	4.9	3.0	5.5
1 trans-3-Dimethylcyelopentane	0.5	0.6	0.0	2.6	0.0
1 trans-2-Dimethylcyclopentane	0.9	1.2	3.8	4.7	5.0
3-Ethyl pentane	0.2	0.3	0.5	0.7	0.9
n-Heptane	0.9	1.2	5.2	5.7	6.8
1, cis-2-Dimethylcyclopentane	0.3	0.5	1.1	1.5	1.8
Methylcyclohexane	1.4	2.0	6.7	11.0	14.8
Toluene	0.3	0.5	0.6	1.1	1.3
C4-C7 Hydrocarbon Content (ppm*)	36675.7	19840.4	10512.1	766.4	267.3
2-methylpentane/3-methylpentane	1.42	1.33	1.36	1.32	1.38
isopentane/n-pentane	1.00	1.25	0.93	0.77	0.74
cyclohexane/methylcyclopentane	0.50	0.58	0.61	0.67	0.82
methylcyclopentane/methylcyelohexane	2.29	1.90	1.13	0.78	0.49

*PPM values are expressed as volumes of gas per million volumes of cuttings