Report No. EPGS-DOM.13-85MPA

Vitrinite reflectance (Ro) of dispersed organics and coaly matter from Mobil et al. HIBERNIA B-08

(Revised report)

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G.S.C. Locality No: D191 — Location: 46°47'06.36"N, 48°45'29.87"W

R.T. Elevation: 27.4m — Sample Interval: 550 - 4435m

Total Depth: 4435m — Water Depth: 83m

Release Date: April 6, 1983 — Interval Studied: 1165 - 4435m

Depth Units: Meters referenced to R.T.

Vitrinite Reflectance has been determined on 27 (28 available) samples (Table II) from Mobil et al. Hibernia B-08, which was classified as an extension test well in the Hibernia oil field on the Grand Banks located approximately 295km (183mi) east of St.John's, Newfoundland.

Data acquisition and manipulation for this report utilized the Zeiss Photomultiplier III Zonax microcomputer system with improvements in software to provide a dynamic histogram display as readings are acquired. Sample preparation followed the procedures listed in Appendix I. The analysis of the well revealed the thermal maturation intervals given in Table I. Specific maturation levels as set out in this report were based on those of Dow with modified terminology (1977,Appendix II).

Table I
Inferred Thermal Maturation Levels

Determined

Seaflr-2083m	0.27 - 0.4	% Ro	immature
2083 - 3307m	0.4 - 0.5	% Ro	immature approaching maturity
3307 - 4308m	0.5 - 0.6	% Ro	marginally mature
4308m	0.6	% Ro	onset of significant oil generation
4435m (T.D.)	0.61	% Ro	within oil window

Projected

5885m	0.8	% Ro	peak of oil generation
7110m	1.0	% Ro	onset of significant wet gas generation
8111m	1.2	% Ro	onset of significant dry gas generation
8757m	1.35	% Ro	oil floor

Note: Ro = R_o or reflectance of the vitrinite observed under oil (546nm).

Remarks

The sample coverage of vitrinite reflectance data, in the original report, was adequate for the top section (1165-1995m) and the bottom section (3990-4435m T.D.) but there was a significant gap in the data between these sections. This revised report includes new data (Figure 1, Table II) covering this gap which is important because of extensive DST (Drill Stem Tests) that were carried out over this interval. Eighteen DST's were run in total with 5 misruns and 11 test intervals that flowed gas or oil (Table IV, COGLA 1983).

The line through the data points represents the best fit linear regression established by the least squares method.

The maturation profile, as plotted, (Figure 1) compares favourably with the profiles of Hibernia K-18 (Avery, 1984) and O-35 (Avery, 1981), while it shows a considerably higher thermal regime than at the Hibernia G-55 well (Avery, 1984). The single Ro determination (0.49 Ro) on a sample obtained from conventional core in the Hibernia I-46 well (Avery, 1984) at a depth of 2555.5m falls very close to the maturation curve at the same depth in this well.

As indicated in the title, this report presents a second determination of vitrinite reflectance for this well and replaces the original report (EPGS-DOM.29-84MPA). A repeat analysis was run on 5 samples of the data set used in the original report. Of these, 4 samples in the upper section (1165-1995) have been determined to be lower in reflectance than previously reported. The top sample of the lower section (3990-4435) was also reanalyzed but an almost identical value was obtained (0.61 vs. 0.62 Ro).

Included in this report are 16 additional samples which were obtained from 6 conventional cores. Of these, 12 were samples of disseminated coaly particles which had to be concentrated by palynological processing and 4 were samples of coal which could be extracted directly from the cores. The frequency of sampling within these cores greatly exceeded that necessary for establishing the overall maturation profile, but was undertaken to provide a detailed study of the natural variation occurring in such closely spaced samples which were certain to be void of cavings influence. Of these 16 samples, only two yielded anomalous values (0.31 Ro at 3481.4m and 0.56 at 2675m). These readings were not included in calculating the best fit line.

These maturation data provide evidence that the thermal regime at Hibernia B-08 was suitable for the generation of oil within the drilled section.

References

Avery, M.P., 1981. Vitrinite reflectance measurements of coals in Mobil et al. Hibernia O-35 well. Report No. EPGS-DOM.8-80PAH(MPA).

Avery, M.P., 1984. Vitrinite reflectance (Ro) on the dispersed organics and coaly inclusions in Mobil et al. Hibernia K-18. Report No. EPGS-DOM.3-84MPA.

Avery, M.P., 1984. Vitrinite reflectance (Ro) on the dispersed organics and coaly inclusions in Mobil et al. Hibernia G-55. Report No. EPGS-DOM.15-84MPA.

Avery, M.P., 1984. Vitrinite reflectance (Ro) on a single coal sample taken from conventional core cut in Mobil et al. Hibernia I-46. Report No. EPGS-DOM.26-84MPA.

Canada Oil and Gas Lands Administration (COGLA), 1983. Offshore schedule of wells. Department of Energy, Mines and Resources, Ottawa.

Dow, W.G., 1977. Kerogen studies and geological interpretations. Journal of Geochemical Exploration, no. 7, p. 79-99.

September 15, 1985

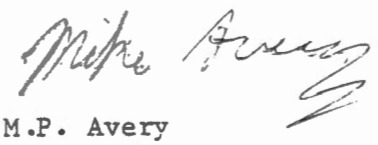

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Table II

Summary of kerogen-based vitrinite reflectance

Seq. #	Sample #	Depths in meters	Mean Ro (SD) non-rotated	Number of readings Total	Edited
1	K0032A	1165-1205	.32(±.02)	14	9
2	K0032B	1255-1295	.39(±.05)	40	35
3	K0032C	1495-1635	.42(±.04)	33	30
4	K0033B	1985-1995	.4 (±.04)	54	22
5	K0562A	2659.0	.41(±.05)	32	29
6	K0562B	2669.2	.46(±.05)	32	31
7	K0562C	2672.0	.47(±.05)	35	31
8*	K0563A	2675.0	.56(±.05)	32	32
9*	PH1324	3481.4	.31(±.04)	34	33
10	K0563B	3482.4	.47(±.03)	21	21
11	K0563C	3483.0	.47(±.03)	24	24
12	K0564A	3488.0	.48(±.04)	31	31
13	K0564B	3496.0	.48(±.03)	17	17
14	PH1322	3554.3	.5 (±.03)	46	46
15	PH1323	3556.6	.47(±.05)	50	50
16	PH1325	3557.0	.49(±.04)	44	44
17	K0564C	3559.1	.48(±.03)	20	20
18	K0565A	3562.0	.5 (±.06)	32	32
19	K0565B	3606.7	.54(±.03)	22	20
20	K0565C	3618.0	.46(±.04)	19	19
21	K0033C	3990-4000	.61(±.04)	42	28
22	K0034A	4110-4120	.64(±.06)	25	13
23	K0034B	4155-4165	.64(±.06)	35	16
24	K0034C	4185-4195	.62(±.09)	30	23
25	K0035A	4245-4255	.68(±.07)	13	6
26	K0035B	4335-4345	.69(±.04)	15	3
27	K0035C	4425-4435	.61(±.05)	21	8

* Values for these samples were suspect (see figure 1) and therefore were not included in the calculation of the maturation curve.

Note : Samples with 'K' prefix letter indicate kerogen type samples while 'PH' indicate unbanded coal particles.

Table III

Formation Tops (COGLA, 1983)

Depth	Formation
1743m	Upper Cretaceous SS
2054-2112m	Petrel Mbr
2249m	Avalon UNCONFORMITY
2940-3185	Catalina SS ('B' marker)
3477m	Hibernia SS
3526m	Main Hibernia SS
3652m	Verrill Canyon
3705-3715m	Upper Jeanne d'Arc SS
4435m	T.D.

Table IV

Drill Stem Tests Results (COGLA 1983)

DST #	Depth in Meters	Comments
1	3912 -3925	Trace gas
2	3705 -3715	Misrun
3	3705 -3715	Oil at 386m^3/d; Gas at 64 428m^3/d
4	3640 -3652	Misrun
5	3640 -3652	Trace oil & gas
6	3604 -3613	Oil at 577m^3/d; Gas at 145 565m^3/d
7	3581.5-3591	Oil at 559m^3/d; Gas at 61 396m^3/d
8	3557 -3564	Misrun
9	3557 -3564	Oil at 489m^3/d; Gas at 358 531m^3/d
10	3530 -3545	Misrun
11	3530 -3545	Oil at 526m^3/d; Gas at 502 680m^3/d
12	3485 -3489	Oil at 455m^3/d; Gas at 515 424m^3/d
13	3071 -3081	Misrun
14	3071 -3081	Gas at 84 960m^3/d
15	3018 -3033	Recovered condensate; no flow meas.
16	3018 -3033	Gas at 280 368m^3/d; condensate at 80m^3/d
17	2954 -2963	Gas at 305 856m^3/d; condensate at 80m^3/d
18	2648 -2661	Oil at 489m^3/d; Gas at 59 472m^3/d

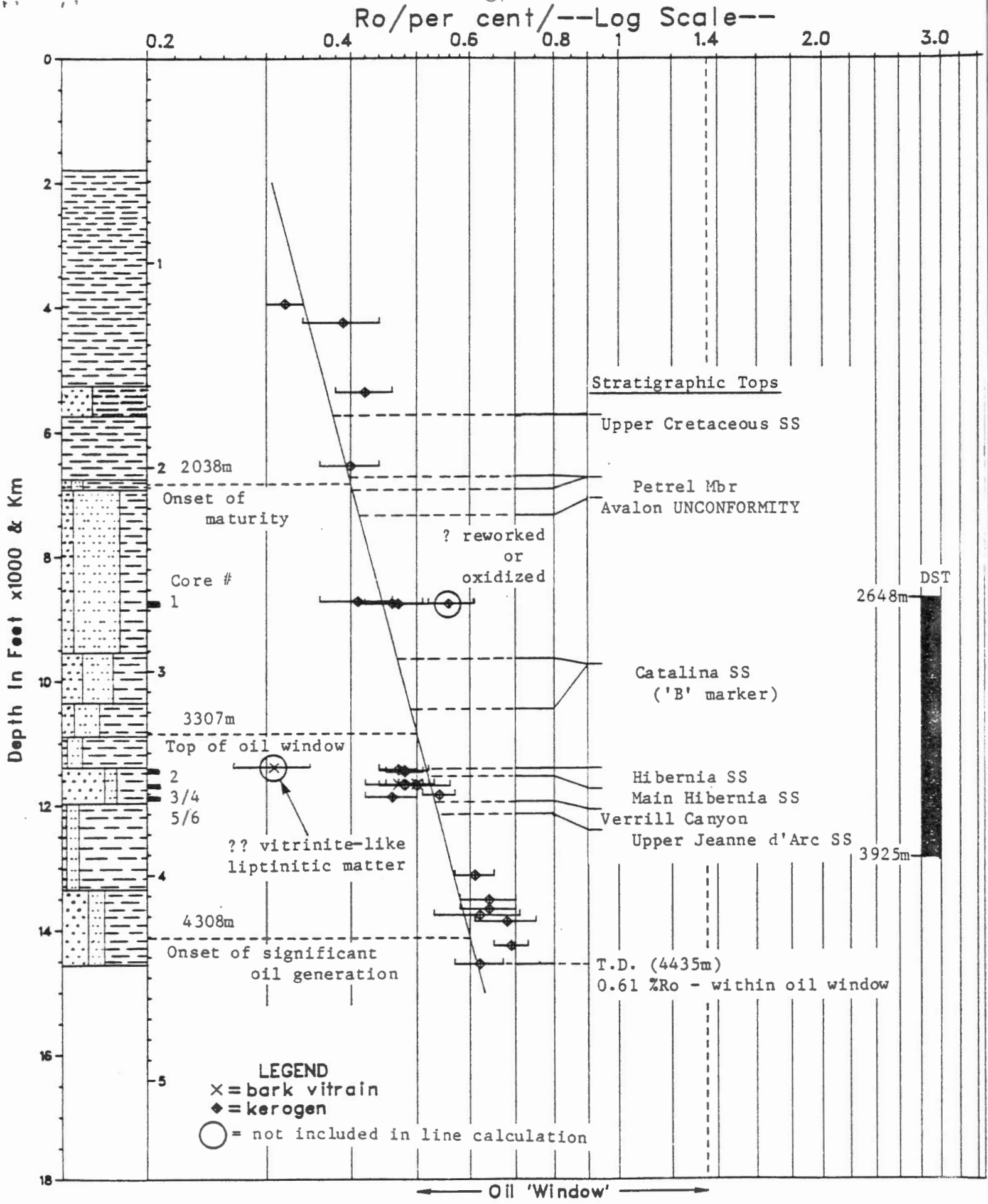


Fig. 1 Hibernia B-08

APPENDIX I

Sample Preparation Method

COGLA Lab preparation

Preliminary Wash
Samples dried in oven
Split: a. all of coarse to Petrology Lab
b. ½ medium to Palynology Lab
c. rest of medium and all of fine combined for Micropaleo Lab
Split "b" is delivered to Palynology Lab and treated as follows:

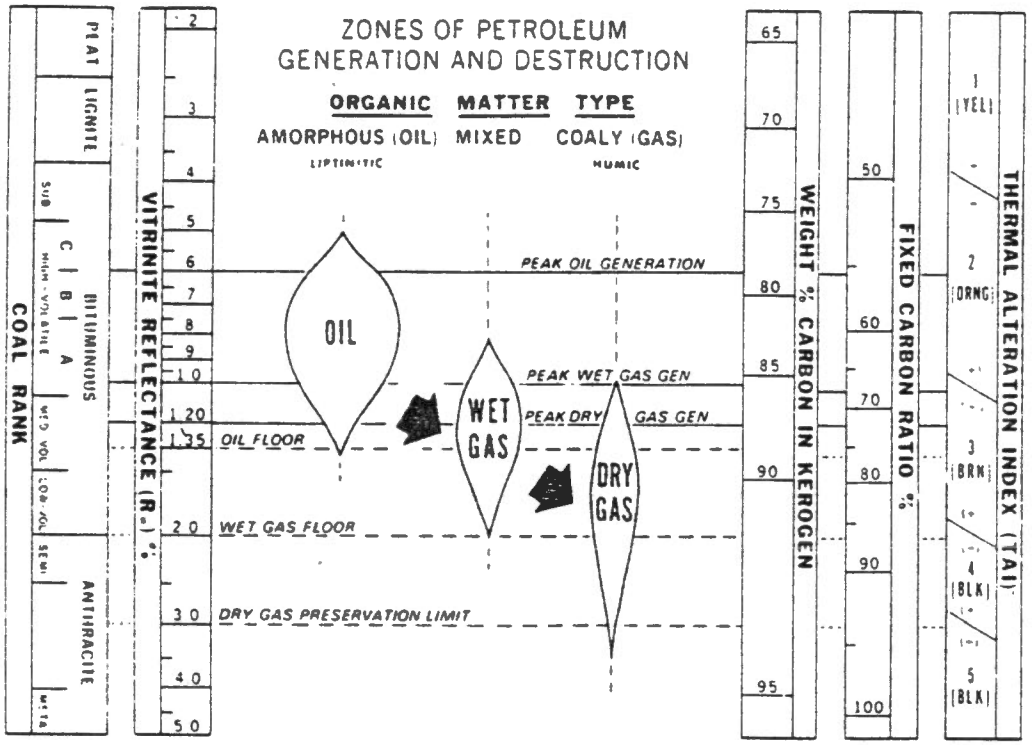
PALYNOLOGY Lab preparation

20-30 grams placed in 250ml plastic beaker.
Add 10% HCl till reaction ceases (removes carbonates).
Washed (rinsed) 3 times.
Conc. HF overnight (removes silicates).
Washed (rinsed) 3 times.
Heated (60-65°C) conc. HCl (remove fluorides caused by HF).
Washed 3 times.
Then put into 15ml test tube with 4-5ml 4% Alconox.
Differential centrifuge at 1500rpm for 90 sec.
Decant.
Wash 3 times with centrifuging.
Float off organic fraction using 2.0 S.G. Znbr solution.
Centrifuge 1000rpm, 8 min.
Float fraction into second test tube.
Wash 3 times with centrifuging.
Kerogen smear slide made.
Remaining kerogen material delivered to Vitrinite Reflectance Lab.

VITRINITE REFLECTANCE Lab preparation

Excess water pipetted off.
Freeze dried.
Mounted using epoxy resin (EPO-TEK 301) in predrilled plastic stubs.
Polished using modified coal petrology polishing methods.
Examined under oil lens at approximately 800x mag'n.

Appendix II (Dow,1977)



Note: For these reports, the terminology used to describe the various maturation levels has been modified. The 'peak' designation, as used in this figure, has been changed to 'onset of significant' and 0.8 Ro is now used as the 'peak of oil generation' (Table I, Figure 1).

Vitrinite Reflectance Histograms

FILE >> KMA32A DESCRIPTION FOLLOWS :
DEPTH 1165-1205M. HIBERNIA B-08. MIKE AVERY. SEPT-6-85

COL>	0	1	2	3	4	5	6	7	8	9
ROW		*.28	*.3	*.31	*.32	*.33	*.33	*.33	*.34	*.36
1	.42	.44	.69	.71	1					

	SUM	NUMBER	MIN	MAX	MEAN	STAND.DEV.
TOTAL >	6.16	14	.28	1	.44	.21
*EDIT >	2.9	9	.28	.36	.32	.02

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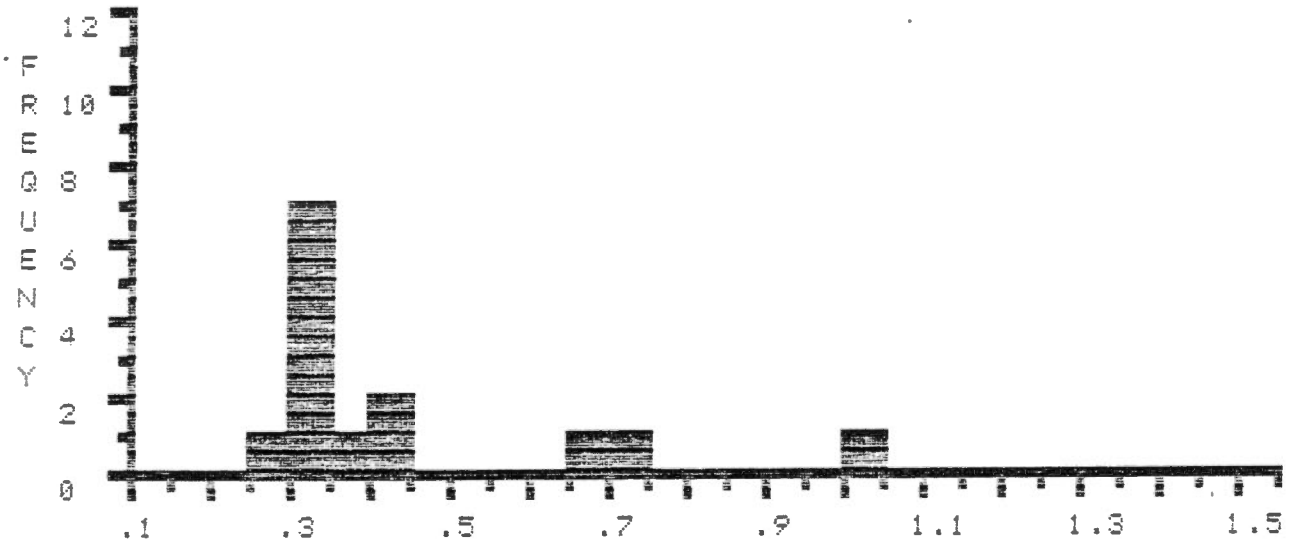

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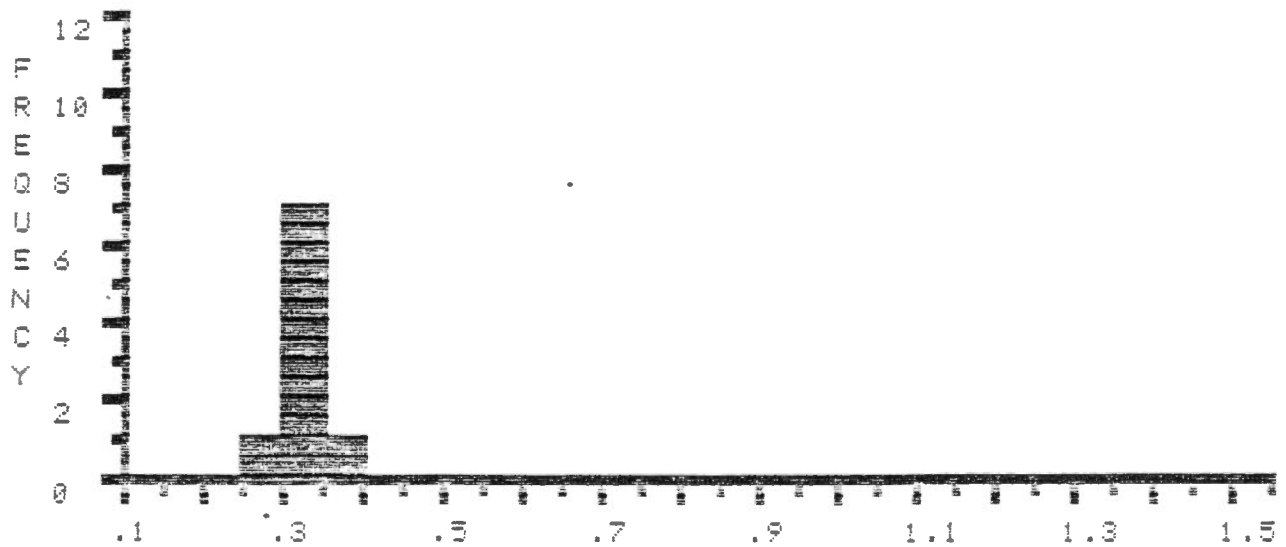
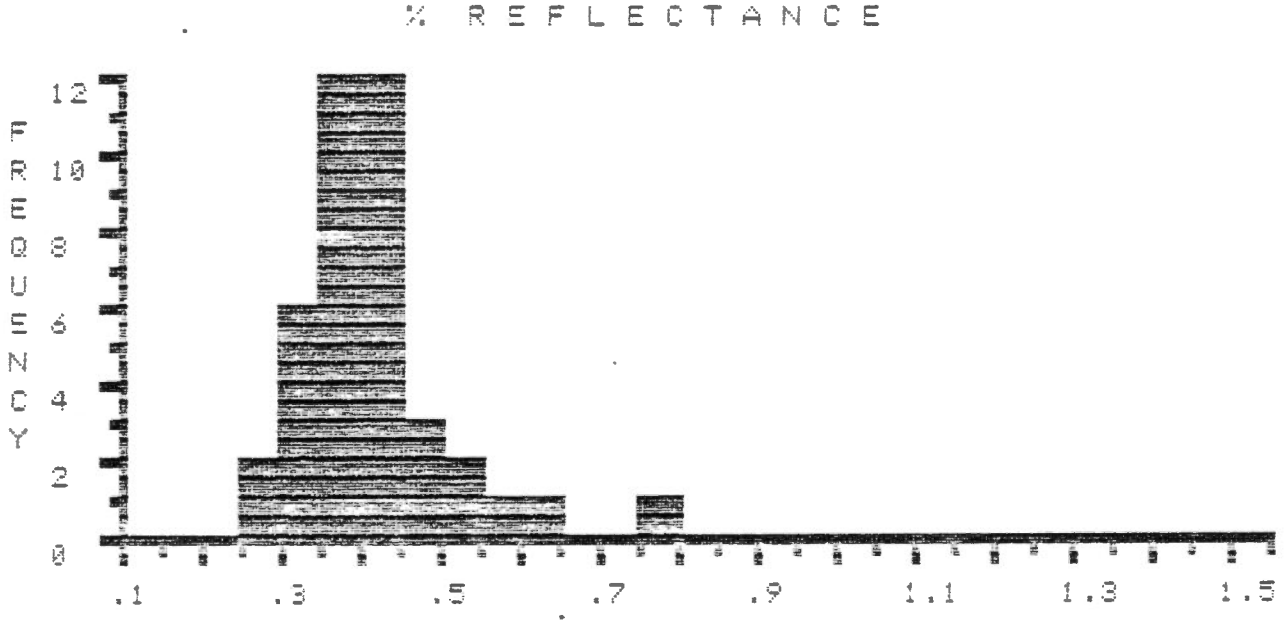
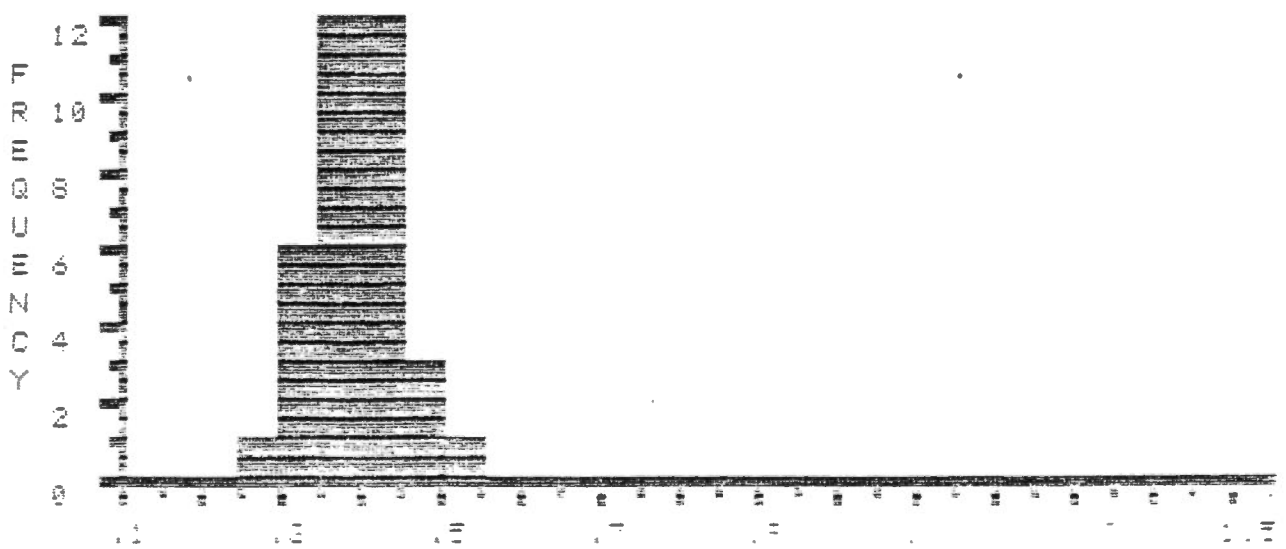


FILE >> KMA32B DESCRIPTION FOLLOWS :
DEPTH 1255-1295M. HIBERNIA B-08. MIKE AVERY. SEPT-6-85

COL>	0	1	2	3	4	5	6	7	8	9
ROW		.25	*.29	*.32	*.32	*.33	*.34	*.34	*.34	*.35
1	*.35	*.36	*.36	*.36	*.36	*.37	*.37	*.37	*.38	*.39
2	*.39	*.4	*.4	*.4	*.4	*.41	*.42	*.42	*.42	*.43
3	*.43	*.43	*.44	*.46	*.46	*.48	*.5	.54	.57	.68
4	.77									

	SUM	NUMBER	MIN	MAX	MEAN	STAND.DEV.
TOTAL >	16.35	40	.25	.77	.41	.09
*EDIT >	13.59	35	.29	.5	.39	.05





FILE >> KMA32C DESCRIPTION FOLLOWS :
DEPTH 1495-1635M, HIBERNIA B-08, MIKE AVERY, SEPT-6-85

COL>	0	1	2	3	4	5	6	7	8	9
ROW		*.34	*.37	*.37	*.37	*.39	*.39	*.39	*.4	*.4
1	*.41	*.41	*.42	*.43	*.43	*.43	*.43	*.44	*.44	*.44
2	*.45	*.45	*.45	*.45	*.45	*.45	*.45	*.45	*.46	*.48
3	*.49	.64	.7	.81						

	SUM	NUMBER	MIN	MAX	MEAN	STAND.DEV.
TOTAL >	14.88	33	.34	.81	.45	.09
*EDIT >	12.73	30	.34	.49	.42	.04

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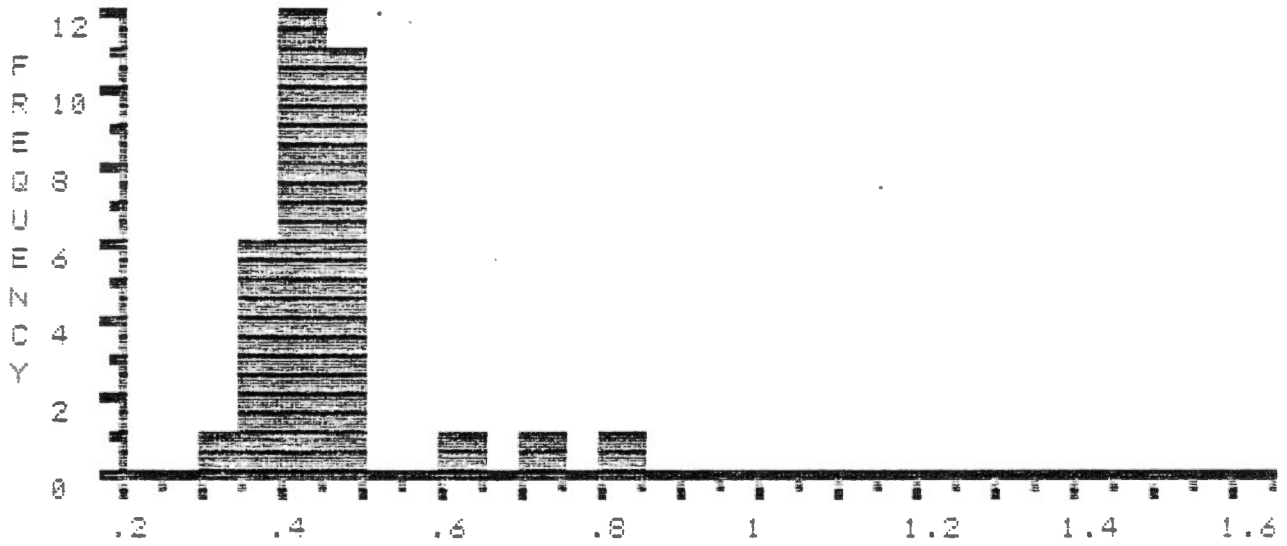

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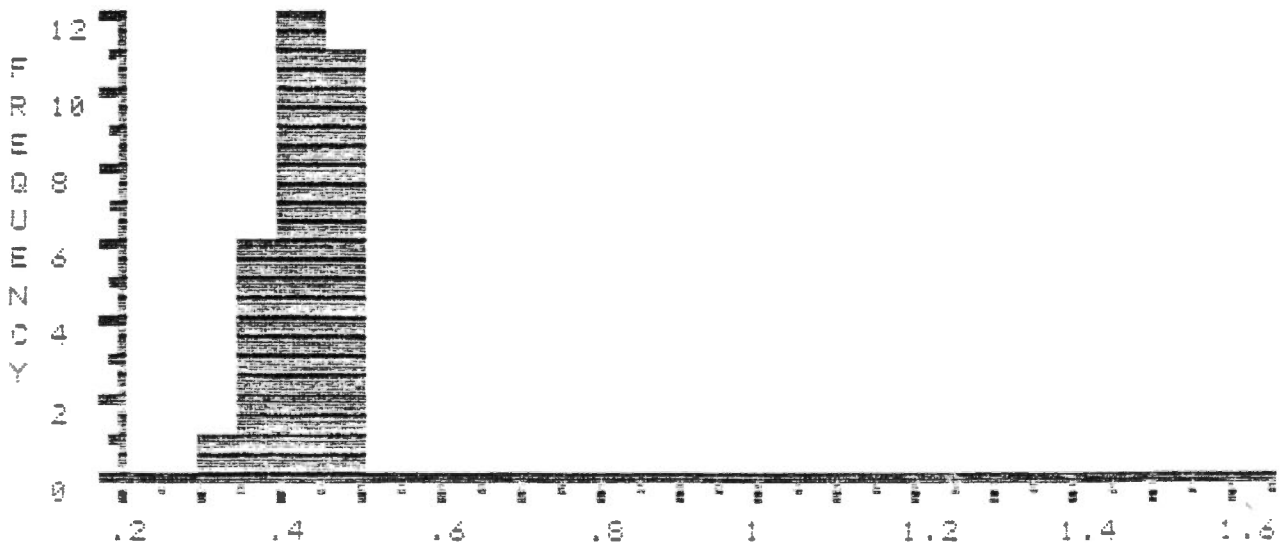

FILE >> KMA33B DESCRIPTION FOLLOWS :
DEPTH 1985-1995M, HIBERNIA B-08, MIKE AVERY, SEPT-9-85

COL>	0	1	2	3	4	5	6	7	8	9
ROW		.23	.29	*.34	*.34	*.35	*.36	*.36	*.36	*.37
1	*.37	*.37	*.38	*.4	*.4	*.41	*.41	*.42	*.42	*.43
2	*.45	*.45	*.46	*.47	*.48	.5	.52	.52	.52	.53
3	.53	.56	.56	.57	.58	.58	.6	.6	.63	.63
4	.64	.65	.66	.69	.7	.7	.72	.78	.79	.86
5	.87	.89	.91	.95	.95					

	SUM	NUMBER	MIN	MAX	MEAN	STAND.DEV.
TOTAL >	29.52	54	.23	.95	.55	.18
*EDIT >	8.81	22	.34	.48	.4	.04

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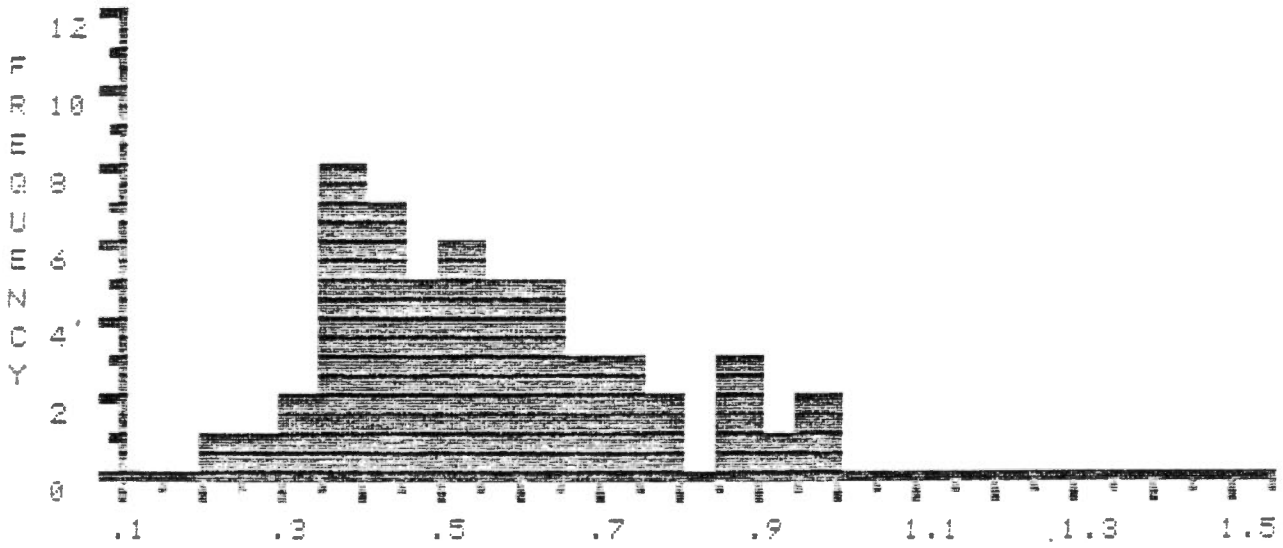

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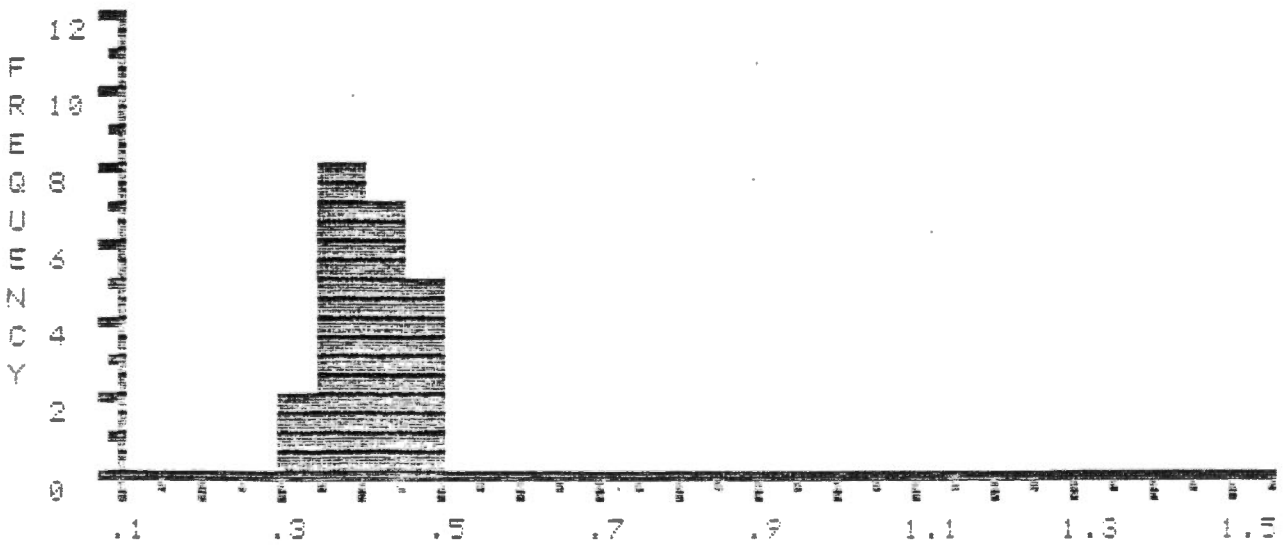

FILE >> K0562A DESCRIPTION FOLLOWS :
DEPTH 2659M, HIBERNIA B-08, MIKE AVERY, AUG-31-85

COL>	0	1	2	3	4	5	6	7	8	9
ROW		*.29	*.35	*.36	*.36	*.37	*.37	*.38	*.38	*.39
1	*.39	*.39	*.4	*.4	*.41	*.41	*.41	*.41	*.42	*.42
2	*.42	*.44	*.44	*.44	*.45	*.45	*.45	*.47	*.5	*.51
3	.71	.86	.91							

	SUM	NUMBER	MIN	MAX	MEAN	STAND.DEV.
TOTAL >	14.36	32	.29	.91	.45	.13
*EDIT >	11.88	29	.29	.51	.41	.05

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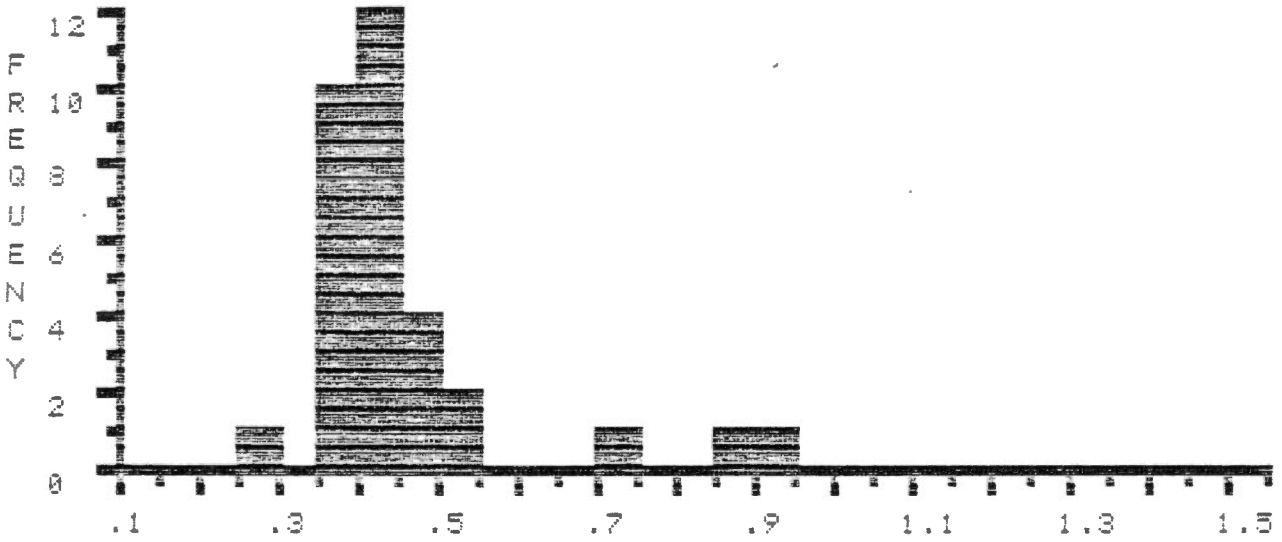

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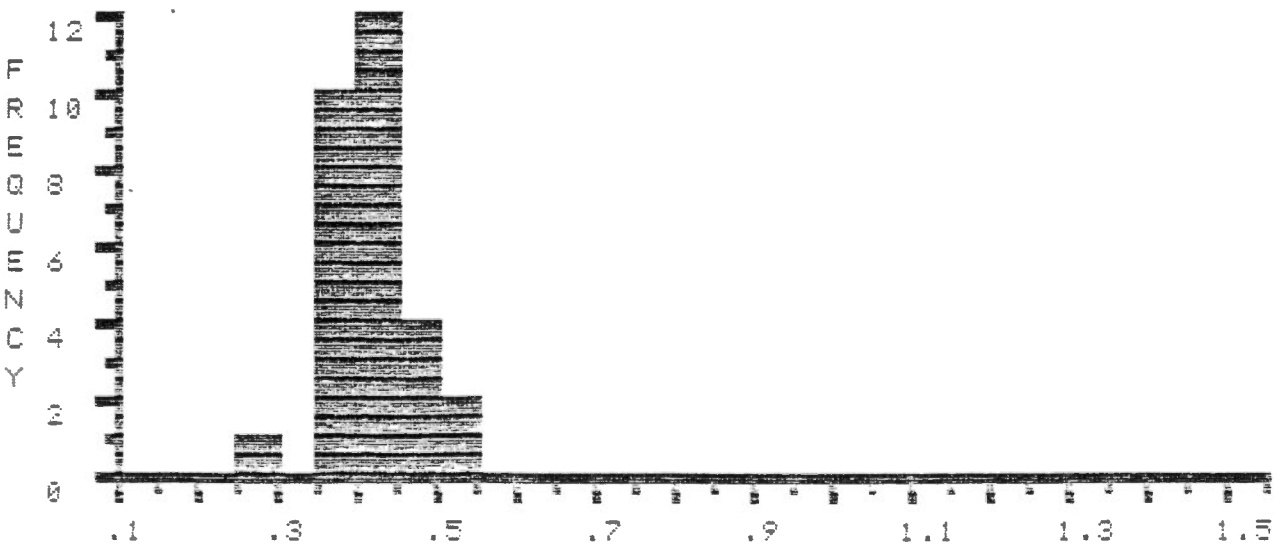
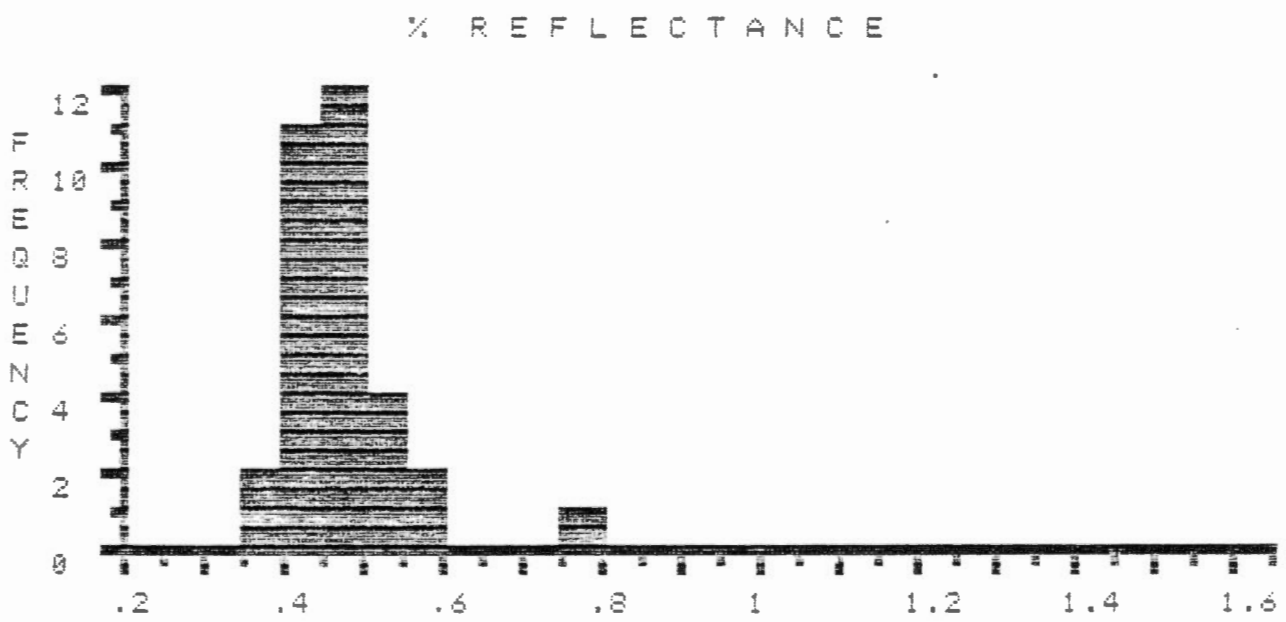
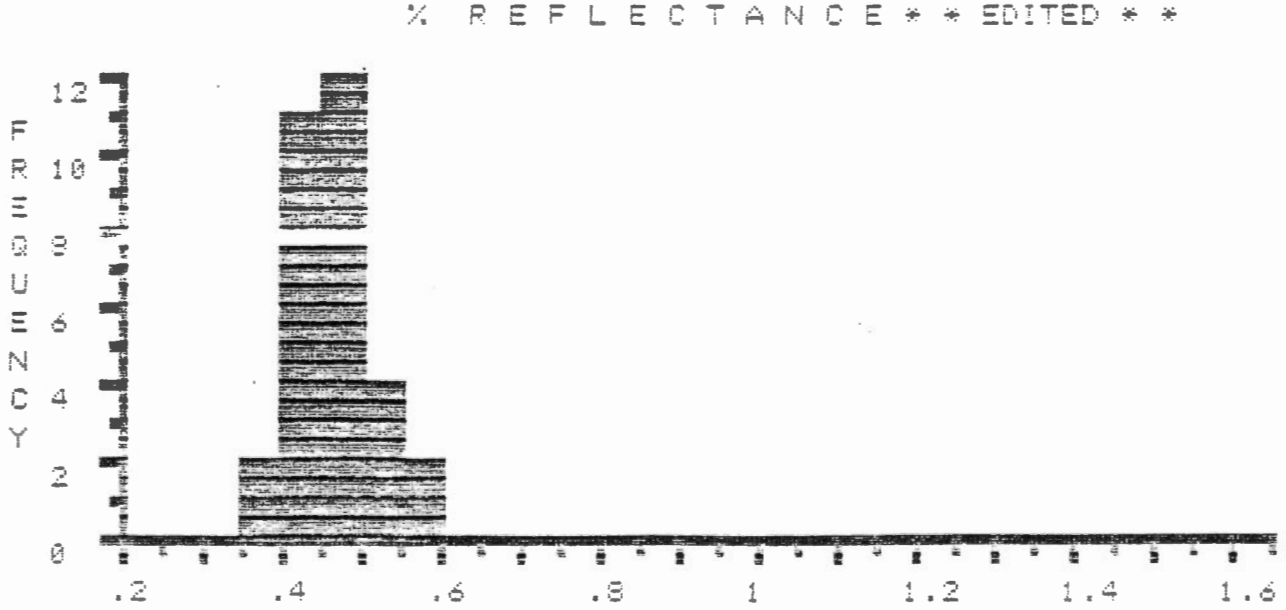


FILE >> K0562B DESCRIPTION FOLLOWS :
DEPTH 2669.2M, HIBERNIA B-08, MIKE AVERY, AUG-31-85

COL>	0	1	2	3	4	5	6	7	8	9
ROW		*.38	*.38	*.4	*.41	*.41	*.41	*.42	*.42	*.43
1	*.43	*.43	*.44	*.44	*.45	*.45	*.45	*.45	*.46	*.47
2	*.48	*.48	*.48	*.48	*.49	*.49	*.5	*.51	*.52	*.53
3	*.56	*.56	.76							

	SUM	NUMBER	MIN	MAX	MEAN	STAND.DEV.
TOTAL >	14.97	32	.38	.76	.47	.07
*EDIT >	14.21	31	.38	.56	.46	.05





FILE >> K0562C DESCRIPTION FOLLOWS :
DEPTH 2672M. HIBERNIA B-08. MIKE AVERY. AUG-31-85

COL>	0	1	2	3	4	5	6	7	8	9
ROW		.27	*.35	*.37	*.39	*.42	*.42	*.43	*.44	*.44
1	*.44	*.44	*.45	*.45	*.46	*.47	*.47	*.47	*.47	*.47
2	*.47	*.48	*.49	*.49	*.5	*.5	*.5	*.5	*.52	*.53
3	*.53	*.53	*.58	.62	.64	.75				

	SUM	NUMBER	MIN	MAX	MEAN	STAND.DEV.
TOTAL >	16.75	35	.27	.75	.48	.08
*EDIT >	14.47	31	.35	.58	.47	.05

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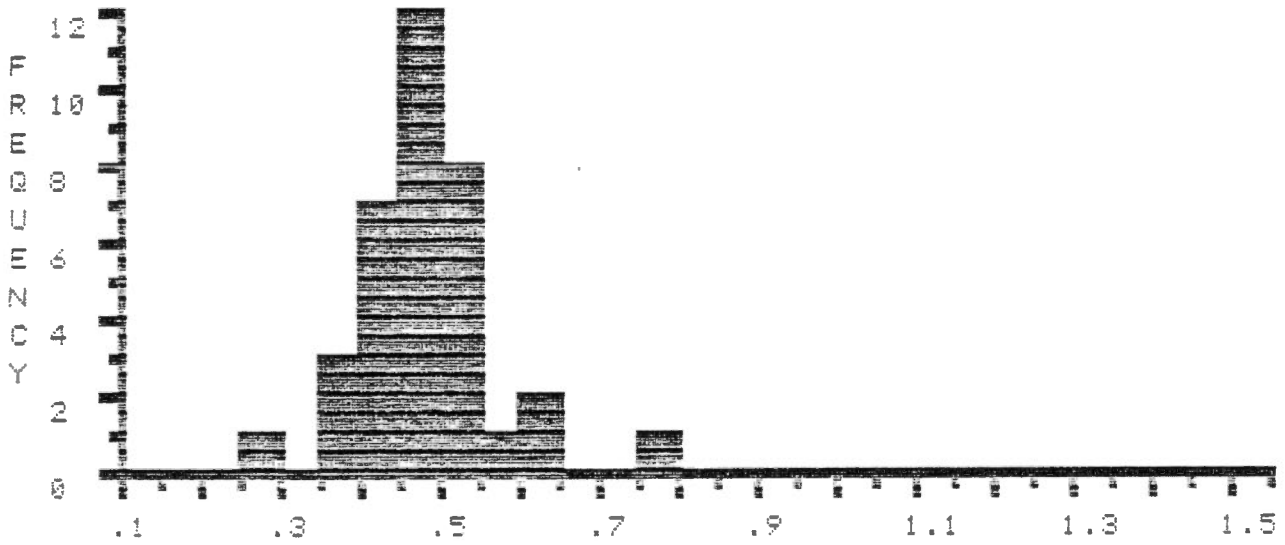

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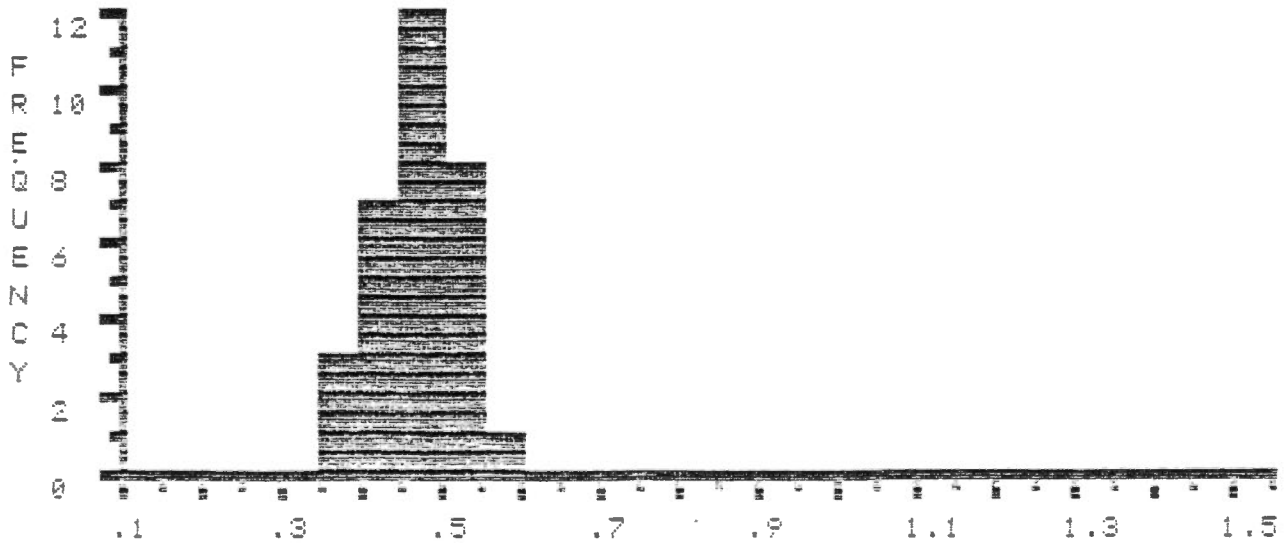
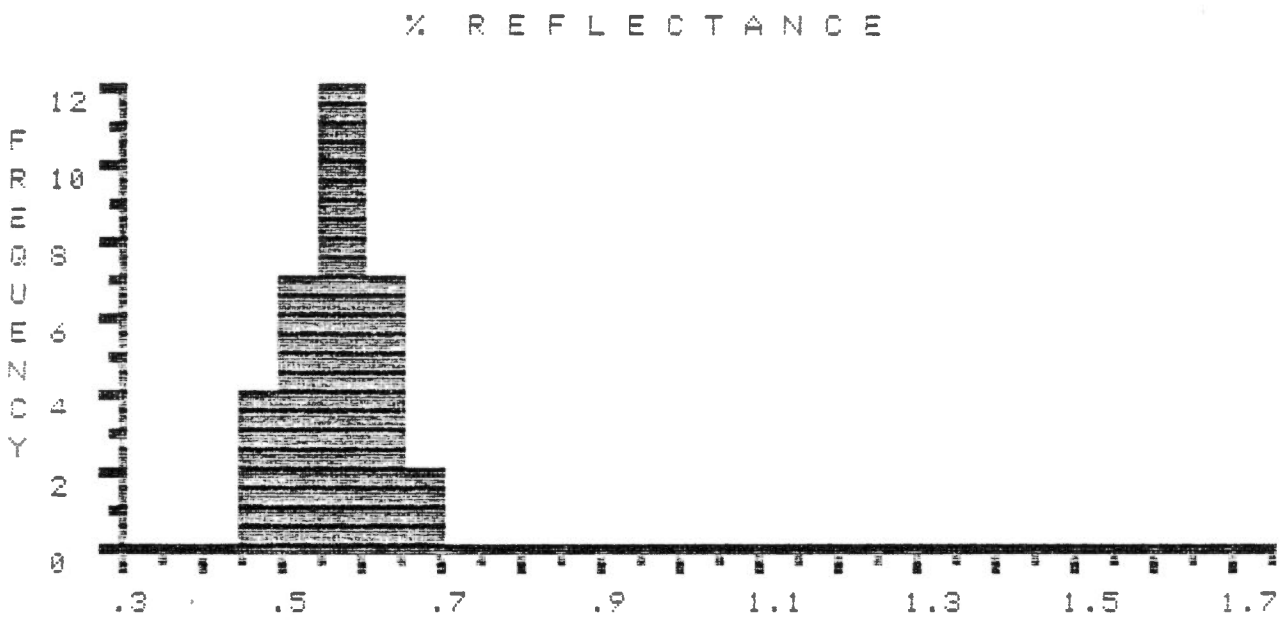


FILE >> K0563A DESCRIPTION FOLLOWS :
DEPTH 2675M, HIBERNIA B-08, MIKE AVERY, AUG-31-85

COL>	0	1	2	3	4	5	6	7	8	9
ROW		.45	.48	.49	.49	.5	.5	.52	.53	.53
1	.54	.54	.55	.55	.55	.56	.56	.57	.57	.57
2	.58	.58	.58	.58	.6	.6	.6	.61	.61	.62
3	.63	.67	.69							

	SUM	NUMBER	MIN	MAX	MEAN	STAND.DEV.
TOTAL >	18	32	.45	.69	.56	.05

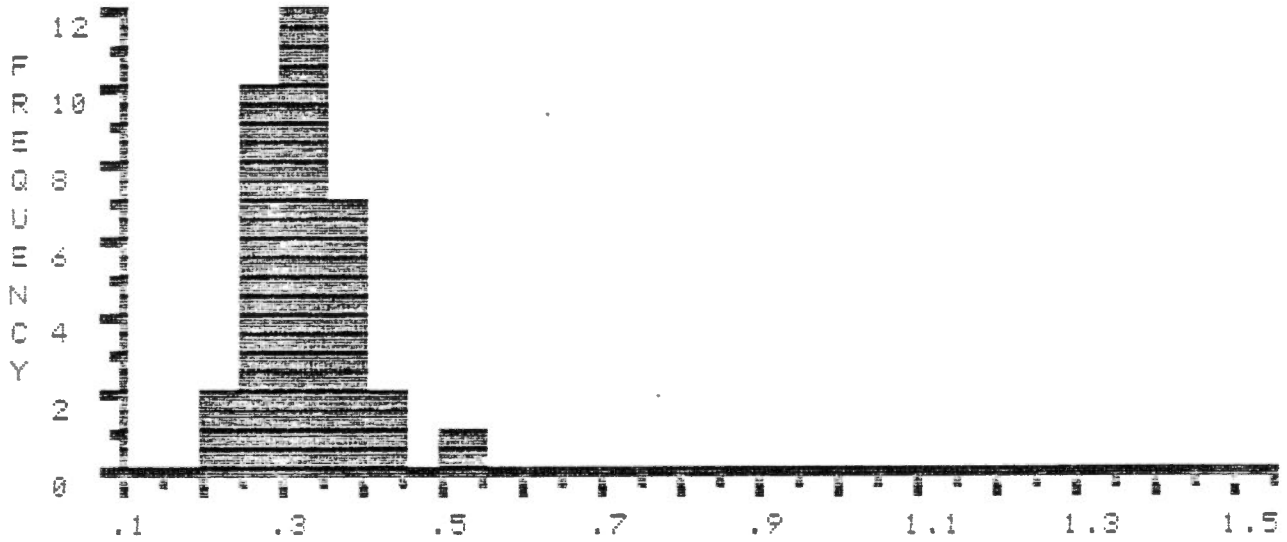


FILE >> PH1324 DESCRIPTION FOLLOWS :
DEPTH 3481.4M, HIBERNIA B-08. MIKE AVERY. AUG-30-85

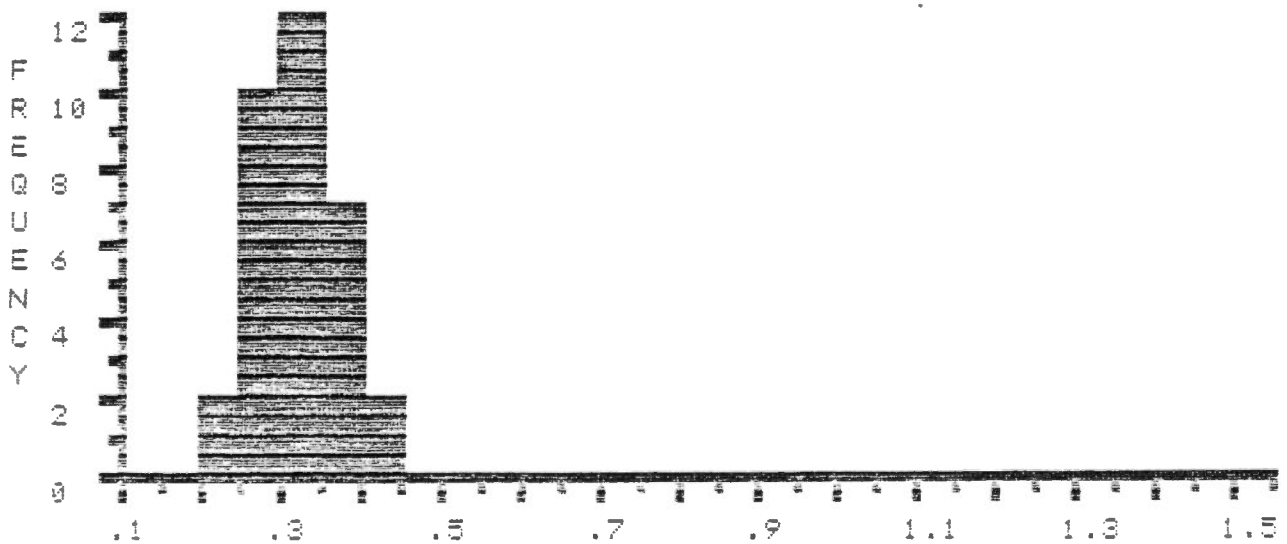
COL>	0	1	2	3	4	5	6	7	8	9
ROW		*.24	*.24	*.25	*.27	*.27	*.27	*.28	*.29	*.29
1	*.29	*.29	*.29	*.3	*.3	*.3	*.3	*.3	*.31	*.31
2	*.31	*.31	*.33	*.33	*.34	*.35	*.35	*.35	*.36	*.37
3	*.38	*.39	*.4	*.41	.52					

	SUM	NUMBER	MIN	MAX	MEAN	STAND.DEV.
TOTAL >	10.89	34	.24	.52	.32	.06
*EDIT >	10.37	33	.24	.41	.31	.04

% R E F L E C T A N C E



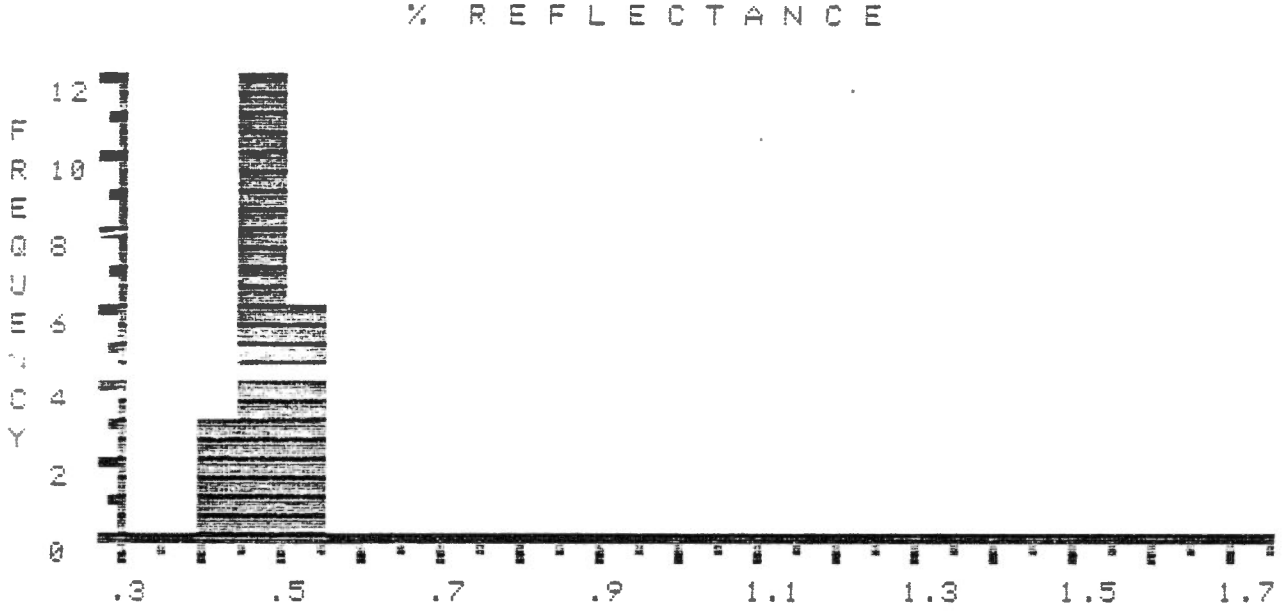
% R E F L E C T A N C E * * EDITED * *



FILE >> K0563B DESCRIPTION FOLLOWS :
DEPTH 3482.4M, HIBERNIA B-08, MIKE AVERY, AUG-31-85

COL>	0	1	2	3	4	5	6	7	8	9
ROW		.4	.41	.44	.45	.45	.46	.46	.46	.46
1	.46	.47	.48	.48	.49	.49	.5	.5	.5	.51
2	.51	.51								

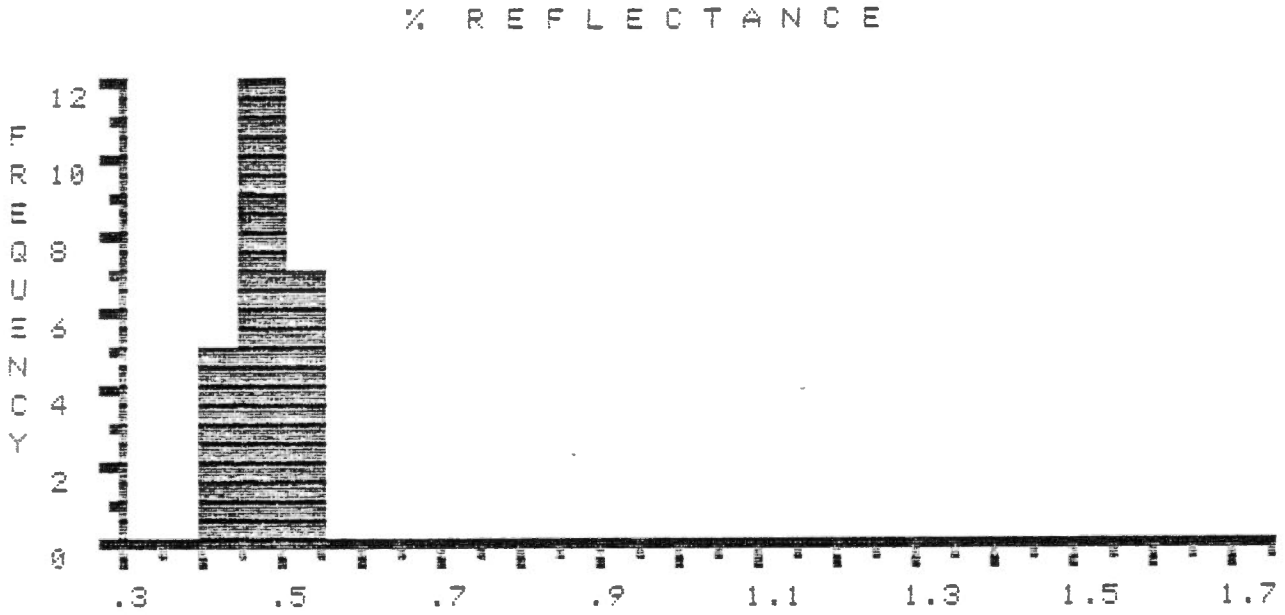
	SUM	NUMBER	MIN	MAX	MEAN	STAND.DEV.
TOTAL >	9.89	21	.4	.51	.47	.03



FILE >> K0563C DESCRIPTION FOLLOWS :
DEPTH 3483M, HIBERNIA B-08, MIKE AVERY, AUG-31-85

COL>	0	1	2	3	4	5	6	7	8	9
ROW		.41	.41	.43	.43	.44	.45	.45	.45	.45
1	.46	.47	.47	.47	.48	.48	.49	.49	.5	.5
2	.5	.5	.52	.52	.54					

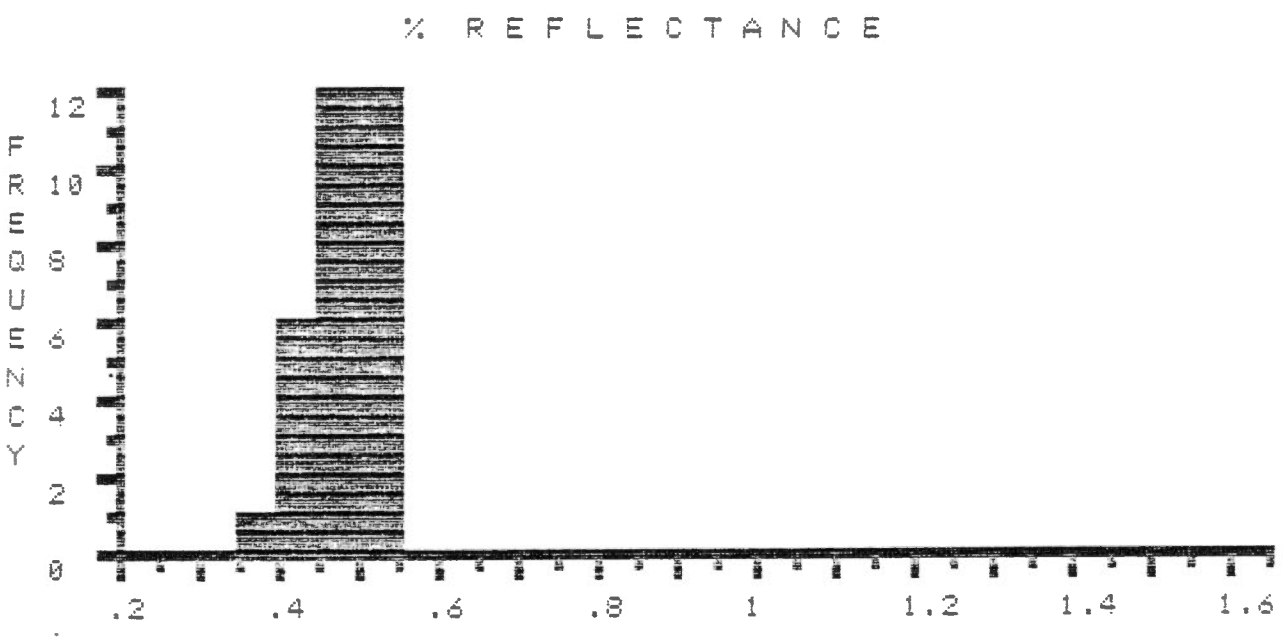
	SUM	NUMBER	MIN	MAX	MEAN	STAND.DEV.
TOTAL >	11.31	24	.41	.54	.47	.03



FILE >> K0564A DESCRIPTION FOLLOWS :
DEPTH 3488M. HIBERNIA B-08, MIKE AVERY. AUG-31-85

COL>	0	1	2	3	4	5	6	7	8	9
ROW		.38	.42	.43	.44	.44	.44	.44	.45	.46
1	.46	.47	.47	.47	.47	.48	.48	.48	.49	.49
2	.5	.5	.5	.51	.51	.51	.51	.52	.52	.52
3	.53	.53								

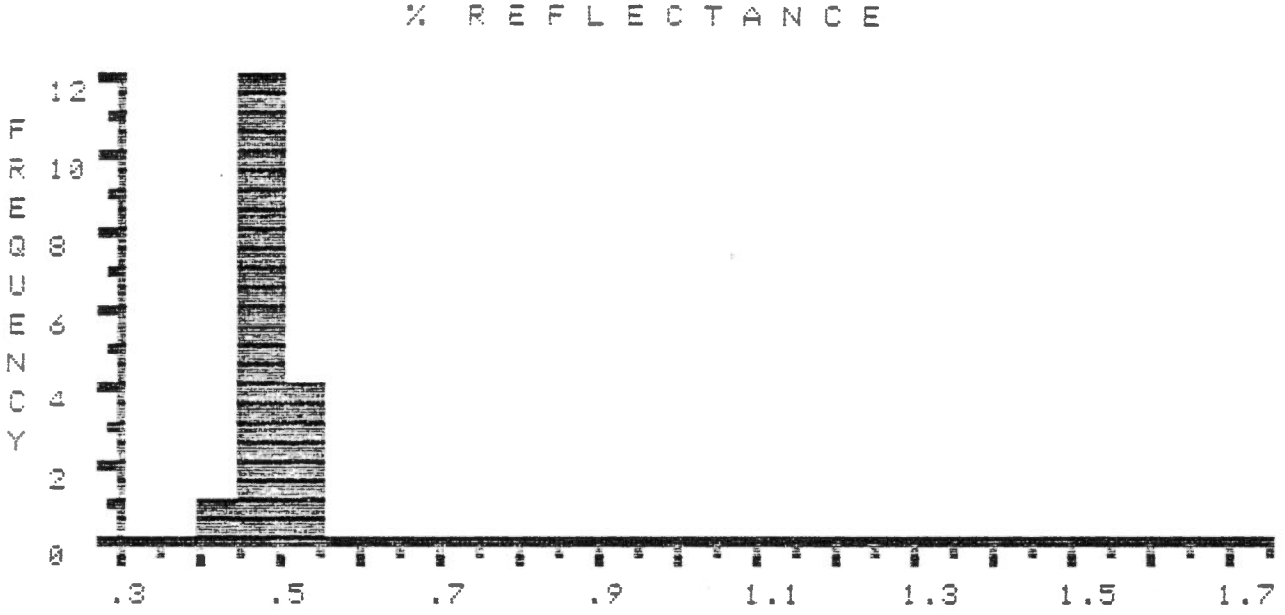
	SUM	NUMBER	MIN	MAX	MEAN	STAND.DEV.
TOTAL >	14.82	31	.38	.53	.48	.04



FILE >> K0564B DESCRIPTION FOLLOWS :
DEPTH 3496M. HIBERNIA B-08, MIKE AVERY, AUG-31-85

COL>	0	1	2	3	4	5	6	7	8	9
ROW		.44	.46	.46	.46	.46	.47	.47	.48	.48
1	.48	.48	.48	.49	.5	.52	.53	.54		

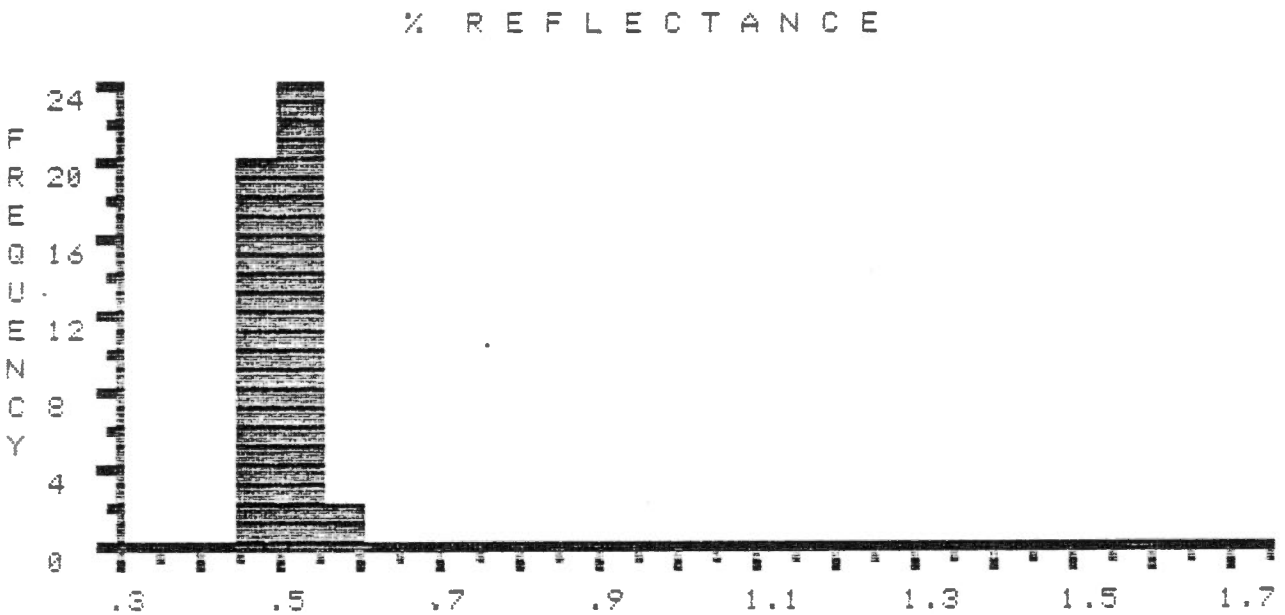
	SUM	NUMBER	MIN	MAX	MEAN	STAND.DEV.
TOTAL >	8.2	17	.44	.54	.48	.03



FILE >> PH1322 DESCRIPTION FOLLOWS :
DEPTH 3554.3M, HIBERNIA B-08, MIKE AVERY, JULY-4-85

COL>	0	1	2	3	4	5	6	7	8	9
ROW		.45	.45	.45	.46	.46	.47	.47	.47	.48
1	.48	.48	.48	.48	.48	.48	.48	.49	.49	.49
2	.49	.5	.5	.5	.5	.51	.51	.51	.51	.51
3	.51	.52	.52	.52	.52	.52	.53	.53	.53	.53
4	.53	.53	.54	.54	.54	.56	.57			

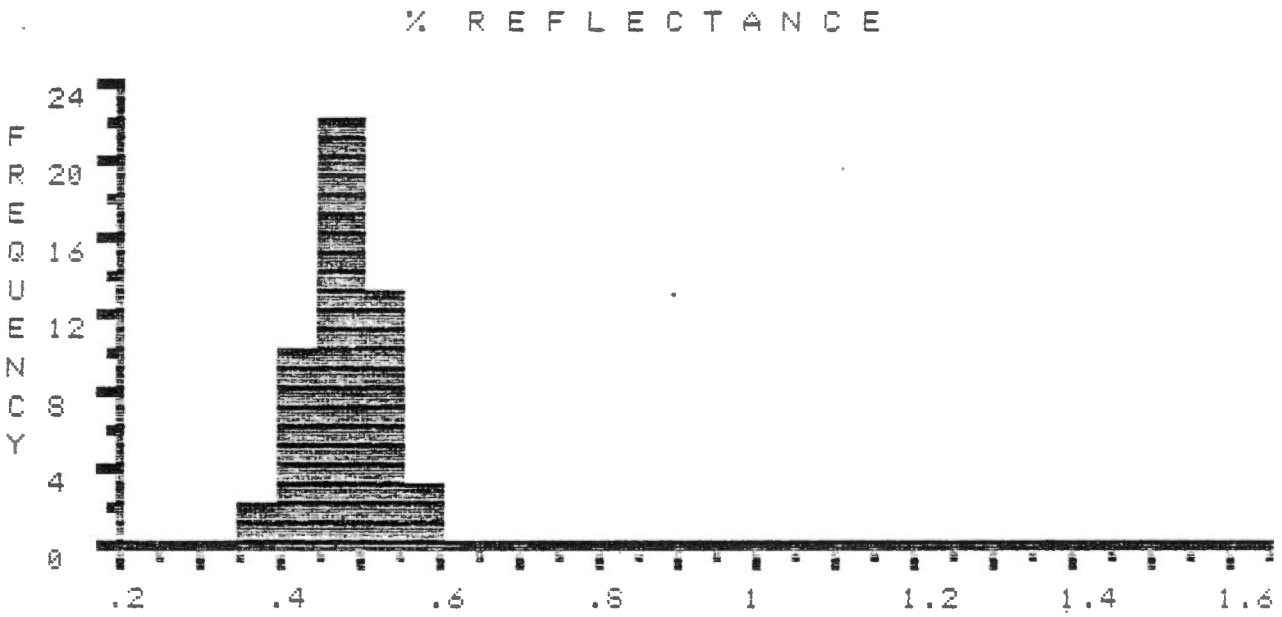
	SUM	NUMBER	MIN	MAX	MEAN	STAND.DEV.
TOTAL >	23.07	46	.45	.57	.5	.03



FILE >> PH1323 DESCRIPTION FOLLOWS :
DEPTH 3556.6M, HIBERNIA B-08, MIKE AVERY, JULY-4-85

COL>	0	1	2	3	4	5	6	7	8	9
ROW		.37	.39	.4	.41	.42	.42	.43	.43	.43
1	.43	.44	.44	.45	.45	.45	.45	.45	.45	.46
2	.46	.46	.46	.46	.46	.46	.47	.47	.47	.48
3	.48	.49	.49	.49	.49	.5	.5	.5	.51	.51
4	.51	.51	.53	.53	.53	.54	.54	.54	.55	.56
5	.56									

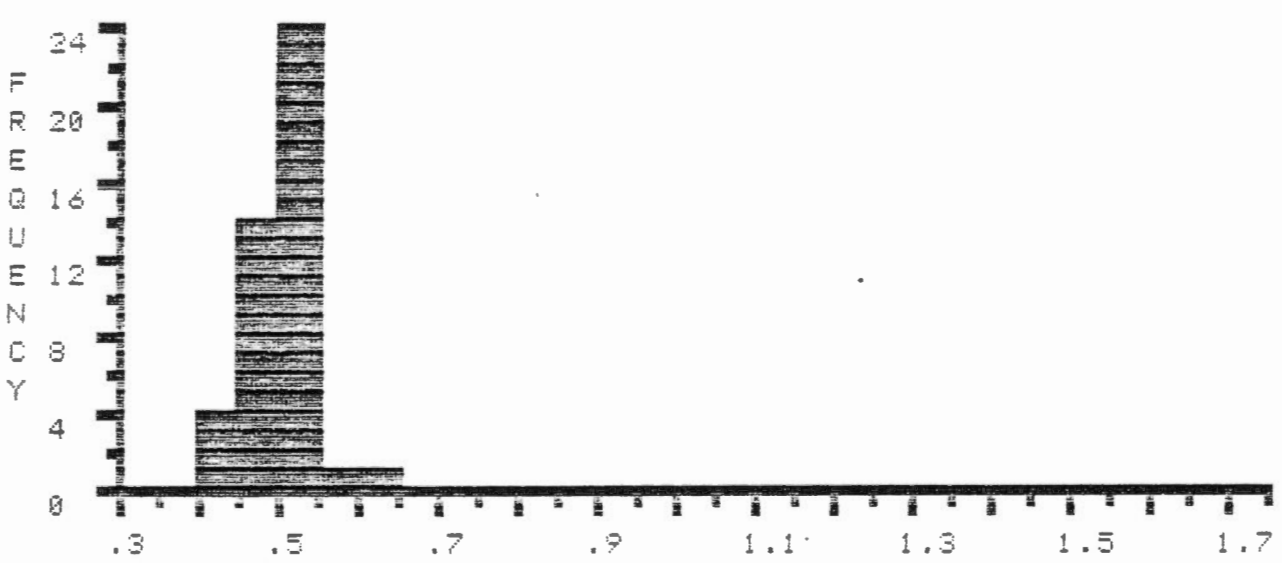
	SUM	NUMBER	MIN	MAX	MEAN	STAND.DEV.
TOTAL >	23.68	50	.37	.56	.47	.05



FILE >> PH1325 DESCRIPTION FOLLOWS :
DEPTH 3557M. HIBERNIA B-08. MIKE AVERY. AUG-27-85

COL>	0	1	2	3	4	5	6	7	8	9
ROW		.41	.43	.43	.44	.45	.45	.45	.46	.46
1	.47	.48	.48	.48	.48	.49	.49	.49	.49	.5
2	.5	.5	.5	.5	.5	.5	.5	.5	.5	.51
3	.51	.51	.51	.51	.51	.52	.52	.52	.52	.53
4	.53	.53	.53	.55	.61					

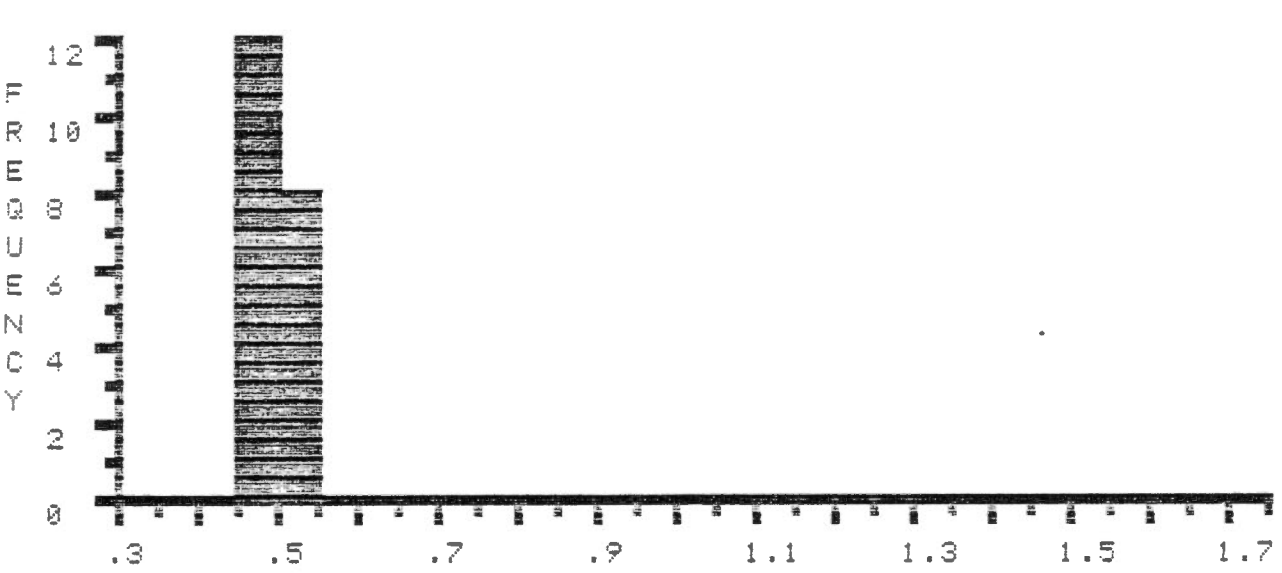
	SUM	NUMBER	MIN	MAX	MEAN	STAND.DEV.
TOTAL >	21.75	44	.41	.61	.49	.04



FILE >> K0564C DESCRIPTION FOLLOWS :
DEPTH 3559.1M. HIBERNIA B-08. MIKE AVERY. AUG-31-85

COL>	0	1	2	3	4	5	6	7	8	9
ROW		.45	.45	.45	.45	.46	.46	.47	.47	.48
1	.49	.49	.49	.5	.5	.5	.51	.52	.52	.53
2	.54									

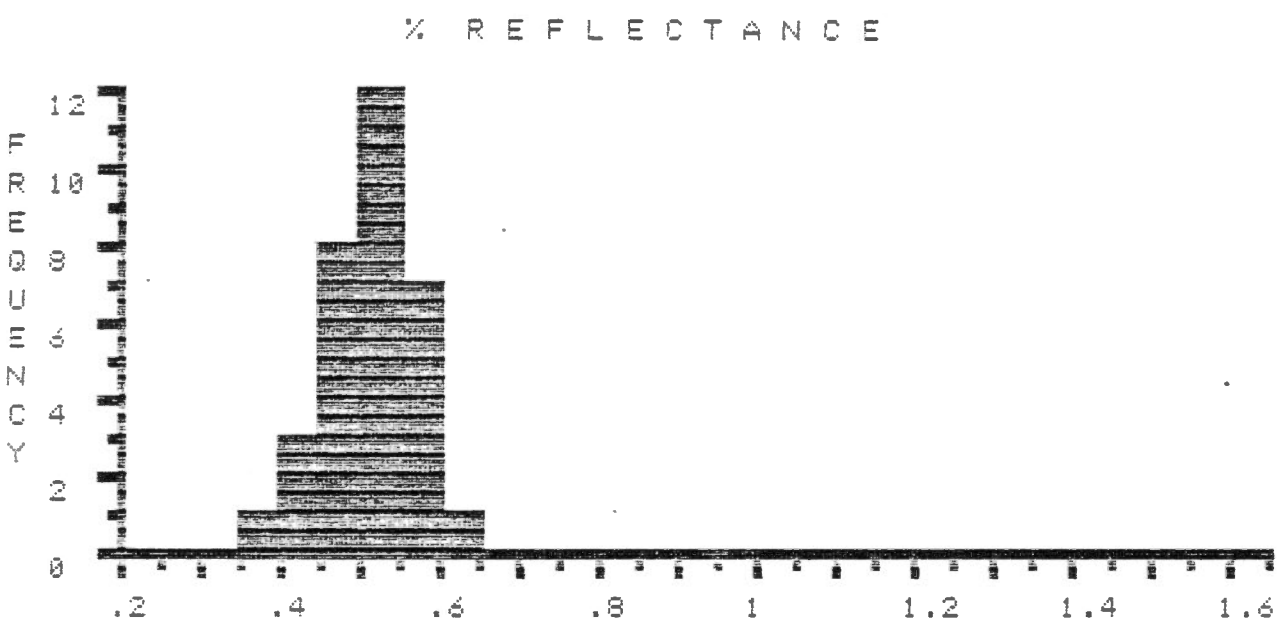
	SUM	NUMBER	MIN	MAX	MEAN	STAND.DEV.
TOTAL >	9.73	20	.45	.54	.48	.03



FILE >> K0565A DESCRIPTION FOLLOWS :
DEPTH 3562M, HIBERNIA B-08, MIKE AVERY, AUG-31-85

COL>	0	1	2	3	4	5	6	7	8	9
ROW		.35	.41	.41	.42	.45	.46	.46	.47	.47
1	.48	.48	.49	.5	.5	.5	.51	.51	.51	.53
2	.53	.53	.53	.53	.54	.55	.55	.55	.57	.57
3	.58	.59	.61							

	SUM	NUMBER	MIN	MAX	MEAN	STAND.DEV.
TOTAL >	16.14	32	.35	.61	.5	.06

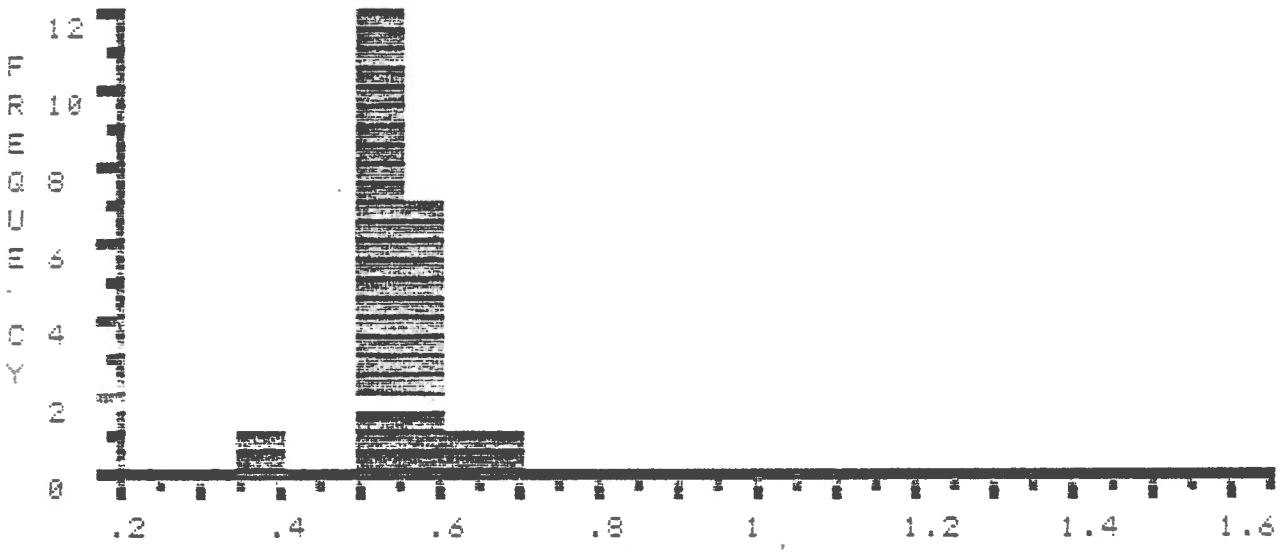


FILE >> K0565B DESCRIPTION FOLLOWS :
DEPTH 3606.7M, HIBERNIA B-08, MIKE AVERY, AUG-31-85

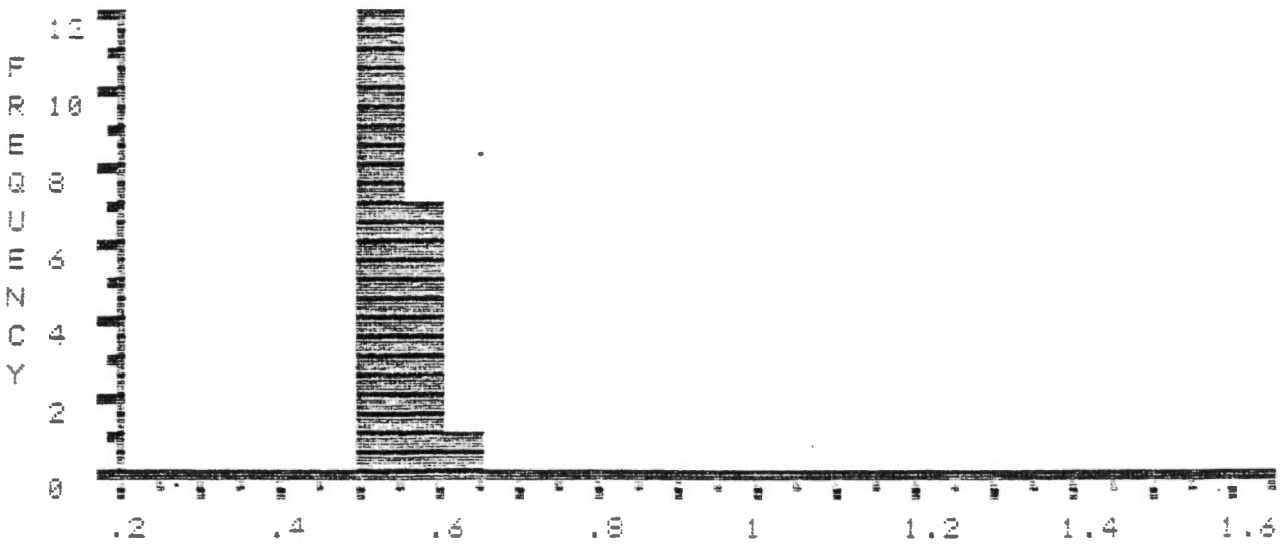
COL>	0	1	2	3	4	5	6	7	8	9
ROW		.39	*.5	*.5	*.5	*.51	*.51	*.51	*.52	*.53
1	*.53	*.54	*.54	*.54	*.55	*.55	*.56	*.56	*.56	*.56
2	*.59	*.6	.65							

	SUM	NUMBER	MIN	MAX	MEAN	STAND.DEV.
TOTAL >	11.8	22	.39	.65	.54	.05
*EDIT >	10.76	20	.5	.6	.54	.03

% R E F L E C T A N C E



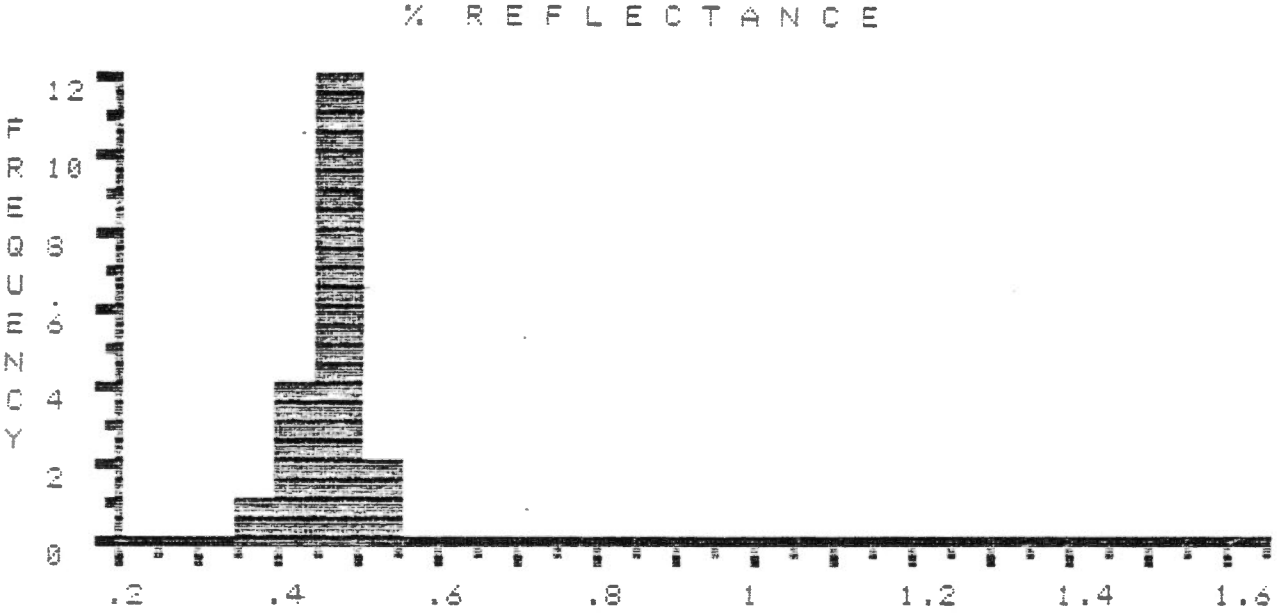
% R E F L E C T A N C E * * EDITED * *



FILE >> K0565C DESCRIPTION FOLLOWS :
DEPTH 3618M. HIBERNIA B-08, MIKE AVERY, AUG-31-85

COL>	0	1	2	3	4	5	6	7	8	9
ROW		.39	.4	.4	.41	.42	.45	.46	.47	.47
1	.47	.47	.47	.48	.48	.48	.49	.49	.51	.52

	SUM	NUMBER	MIN	MAX	MEAN	STAND.DEV.
TOTAL >	8.73	19	.39	.52	.46	.04

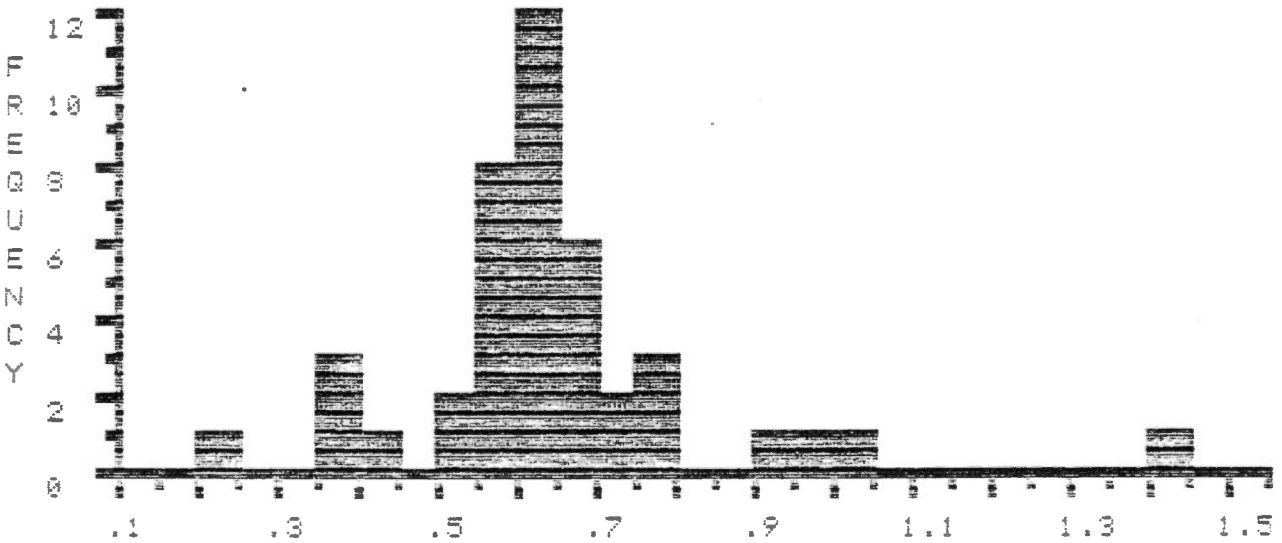


FILE >> KMA33C DESCRIPTION FOLLOWS :
DEPTH 3990-4000M. HIBERNIA B-08. MIKE AVERY. SEPT-9-85

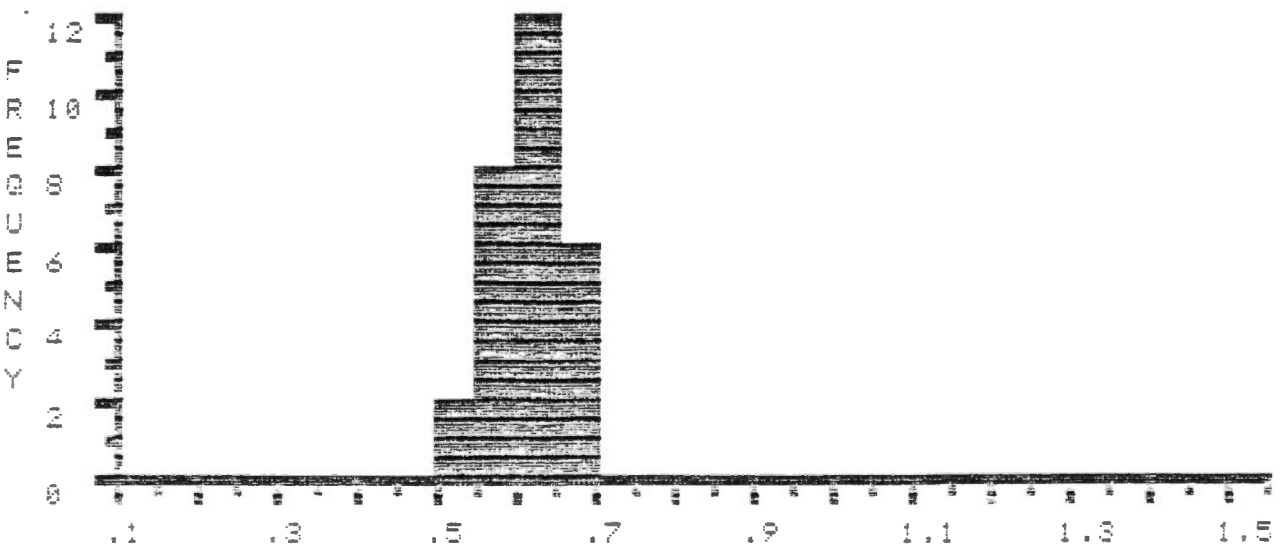
COL>	0	1	2	3	4	5	6	7	8	9
ROW		.24	.36	.37	.37	.41	*.53	*.54	*.55	*.56
1	*.56	*.56	*.56	*.58	*.58	*.59	*.6	*.61	*.61	*.62
2	*.62	*.62	*.62	*.63	*.63	*.64	*.64	*.64	*.65	*.66
3	*.66	*.66	*.68	*.68	.72	.74	.76	.78	.79	.9
4	.98	1.03	1.42							

	SUM	NUMBER	MIN	MAX	MEAN	STAND.DEV.
TOTAL >	26.95	42	.24	1.42	.64	.19
*EDIT >	17.08	28	.53	.68	.61	.04

% R E F L E C T A N C E



% R E F L E C T A N C E * * EDITED * *

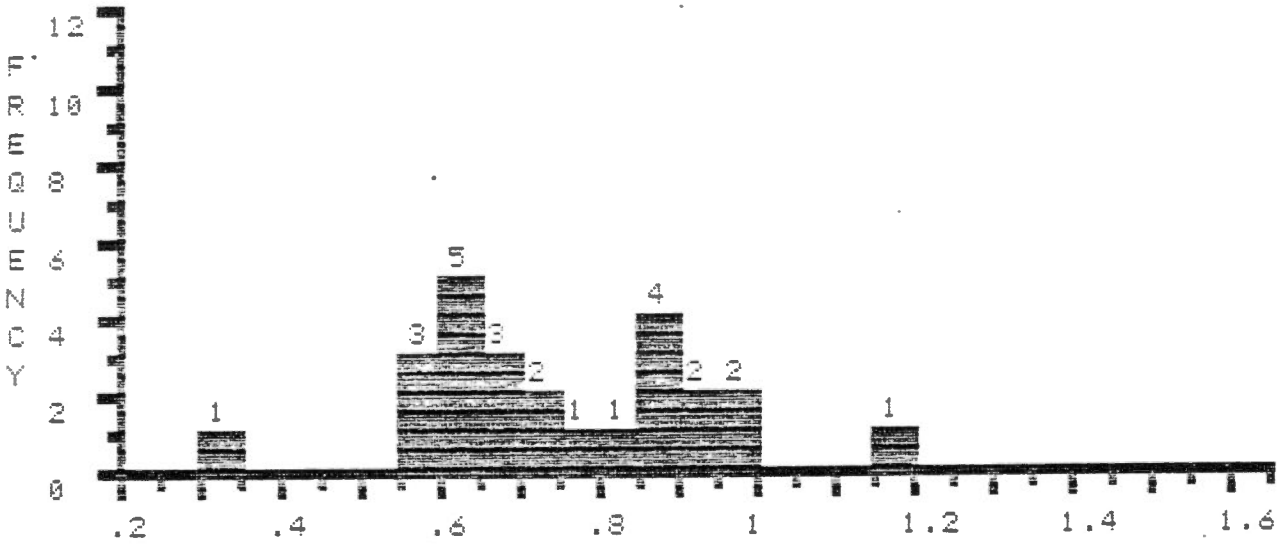


FILE >> K0034A DESCRIPTION FOLLOWS :
DEPTH 4110-4120M, HIBERNIA B-08, MIKE AVERY, AUG-16-84

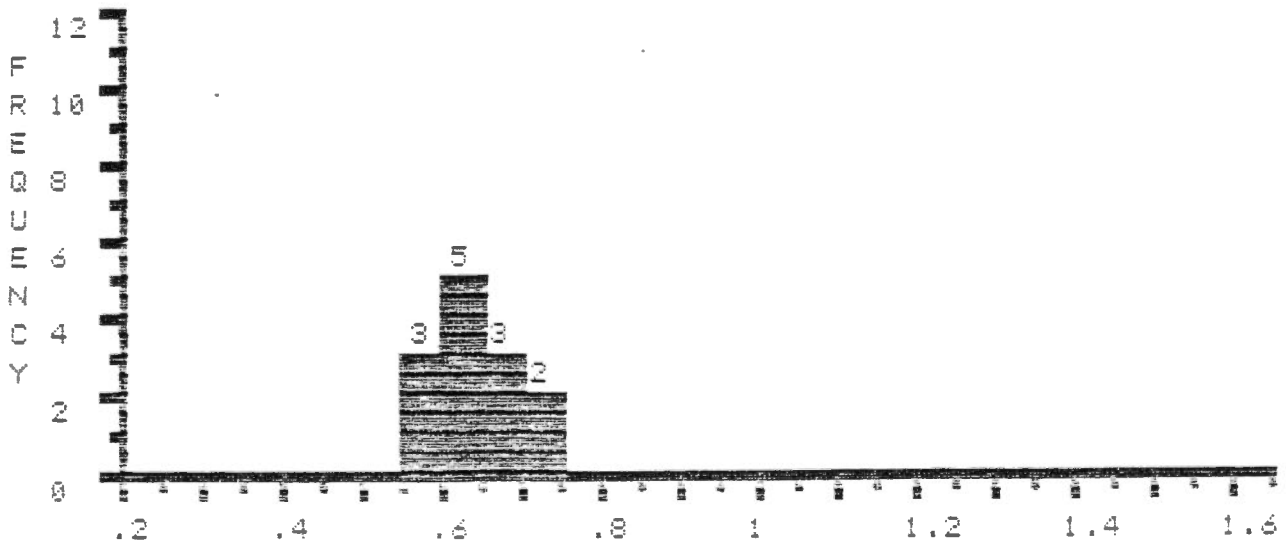
COL>	0	1	2	3	4	5	6	7	8	9
ROW		.34	*.56	*.56	*.59	*.6	*.6	*.63	*.64	*.64
1	*.65	*.65	*.69	*.72	*.74	.79	.81	.85	.86	.87
2	.89	.9	.91	.95	.97	1.16				

	SUM	NUMBER	MIN	MAX	MEAN	STAND.DEV.
TOTAL >	18.57	25	.34	1.16	.74	.18
*EDIT >	8.27	13	.56	.74	.64	.06

% R E F L E C T A N C E



% R E F L E C T A N C E * * EDITED * *

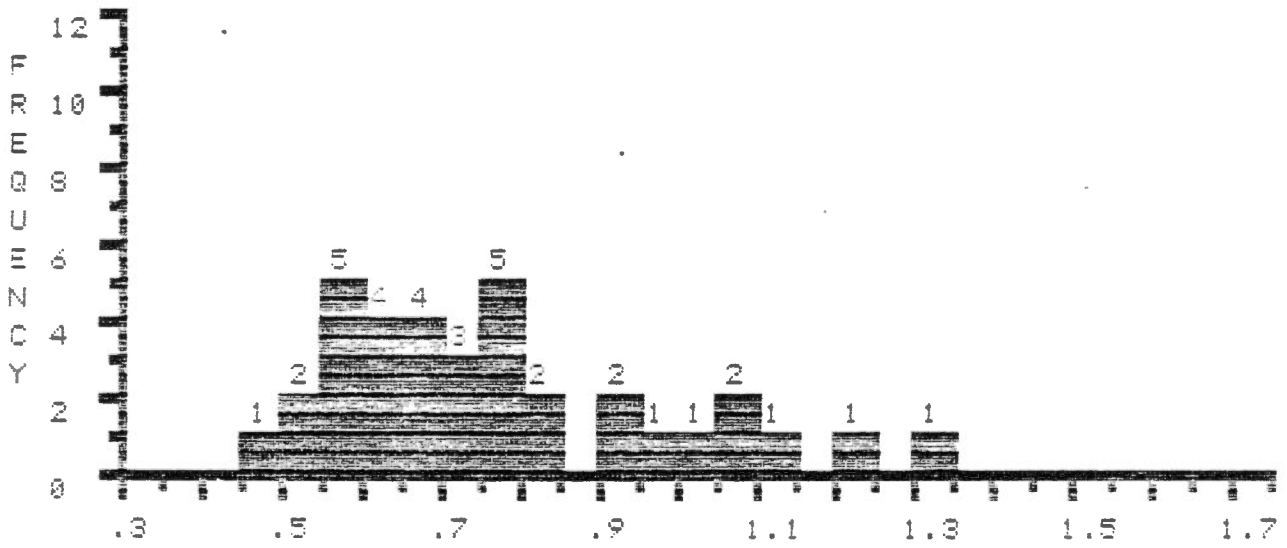


FILE >> K0034B DESCRIPTION FOLLOWS :
DEPTH 4155-4165M, HIBERNIA B-08, MIKE AVERY, AUG-17-84

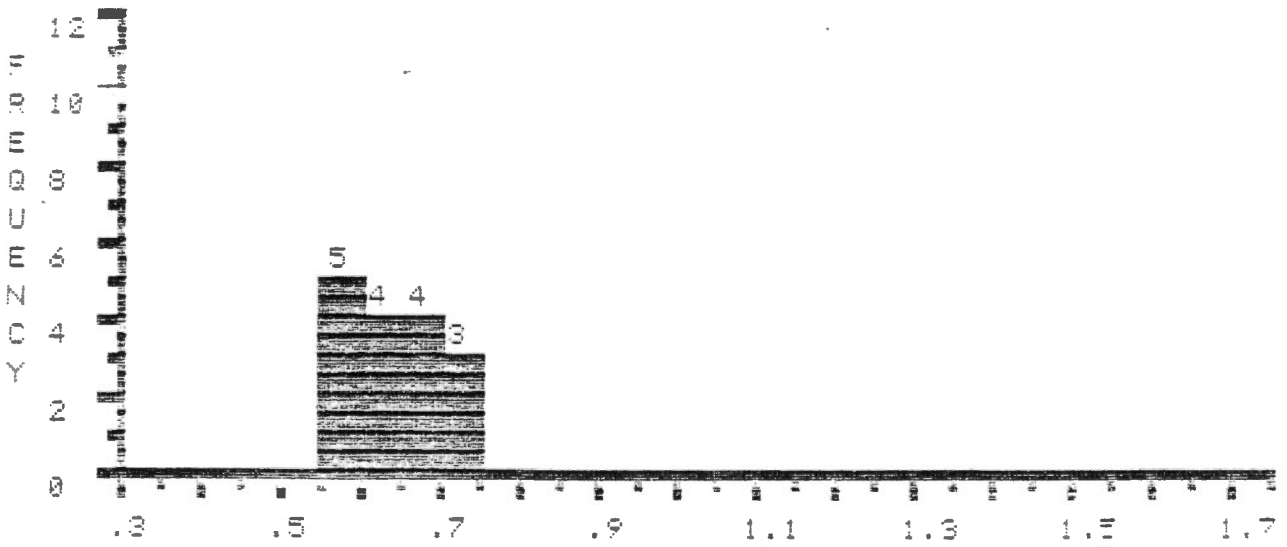
COL>	0	1	2	3	4	5	6	7	8	9
ROW		.49	.5	.52	*.55	*.56	*.58	*.58	*.59	*.61
1	*.62	*.64	*.64	*.65	*.65	*.66	*.69	*.71	*.71	*.73
2	.75	.75	.75	.75	.76	.8	.83	.9	.91	.97
3	1	1.05	1.08	1.13	1.22	1.3				

	SUM	NUMBER	MIN	MAX	MEAN	STAND.DEV.
TOTAL >	26.63	35	.49	1.3	.76	.21
*EDIT >	10.17	16	.55	.73	.64	.06

% R E F L E C T A N C E



% R E F L E C T A N C E * * EDITED * *

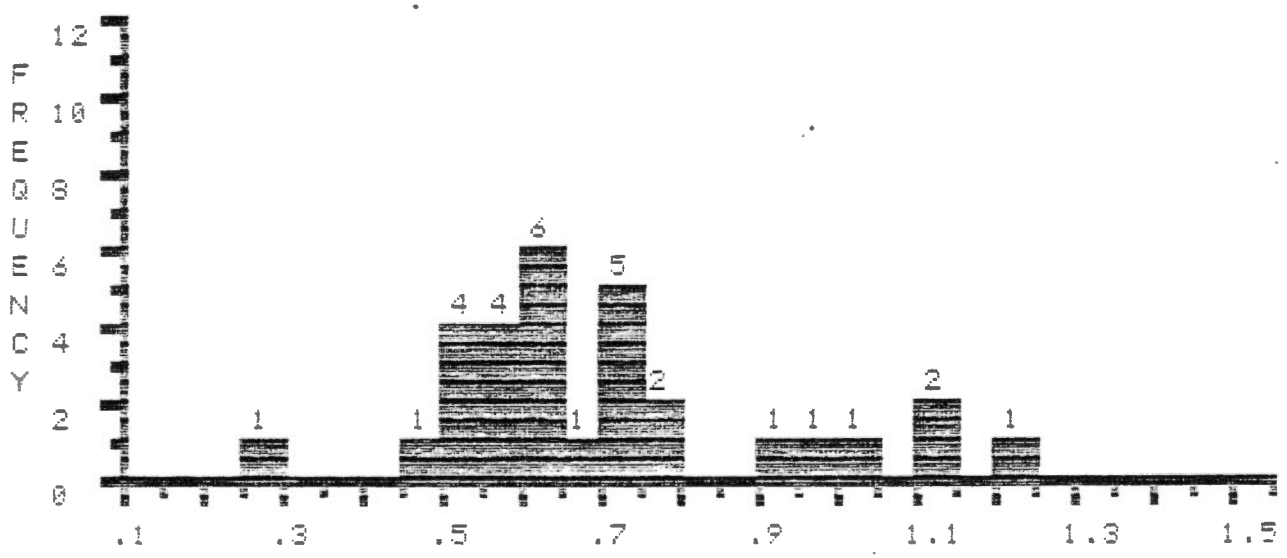


FILE >> K0034C DESCRIPTION FOLLOWS :
DEPTH 4185-4195M, HIBERNIA B-08, MIKE AVERY, AUG-17-84

COL>	0	1	2	3	4	5	6	7	8	9
ROW		.29	*.47	*.52	*.52	*.52	*.53	*.55	*.58	*.59
1	*.59	*.6	*.61	*.61	*.62	*.62	*.63	*.65	*.7	*.71
2	*.72	*.72	*.73	*.78	*.79	.92	.97	1.01	1.1	1.14
3	1.21									

	SUM	NUMBER	MIN	MAX	MEAN	STAND.DEV.
TOTAL >	21	30	.29	1.21	.7	.21
*EDIT >	14.36	23	.47	.79	.62	.09

% R E F L E C T A N C E



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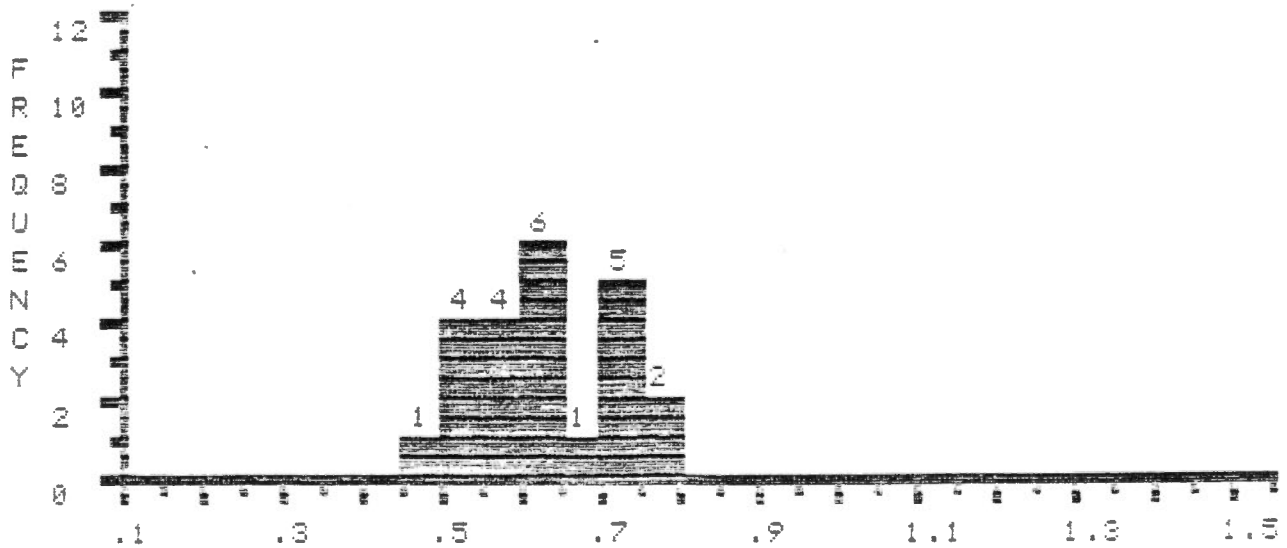
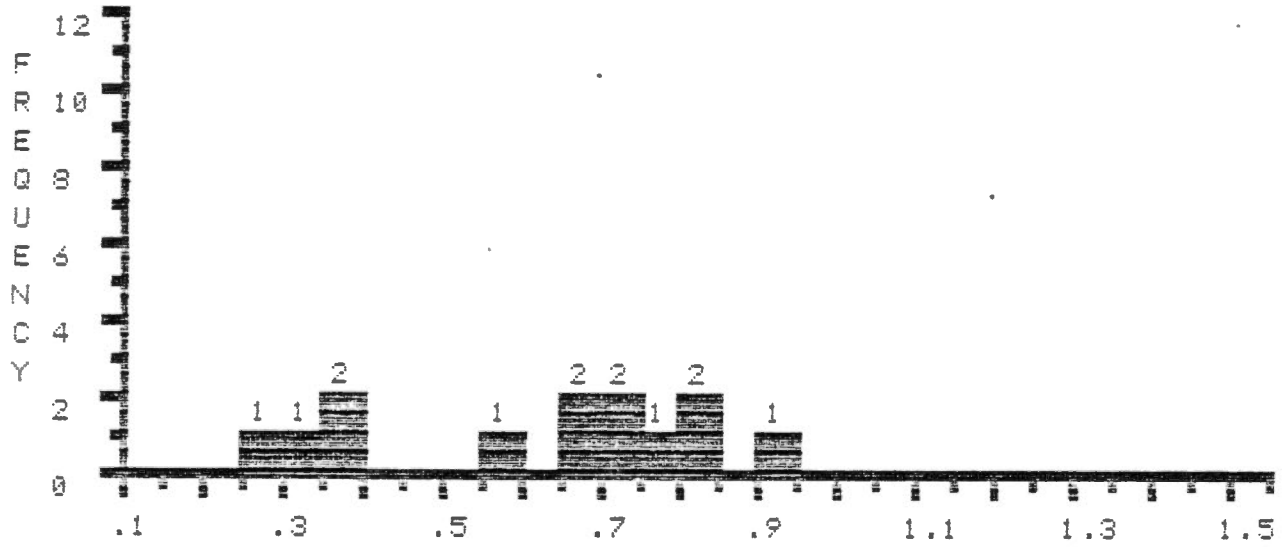


FILE >> K0035A DESCRIPTION FOLLOWS :
DEPTH 4245-4255M, HIBERNIA B-08, MIKE AVERY, AUG-16-84

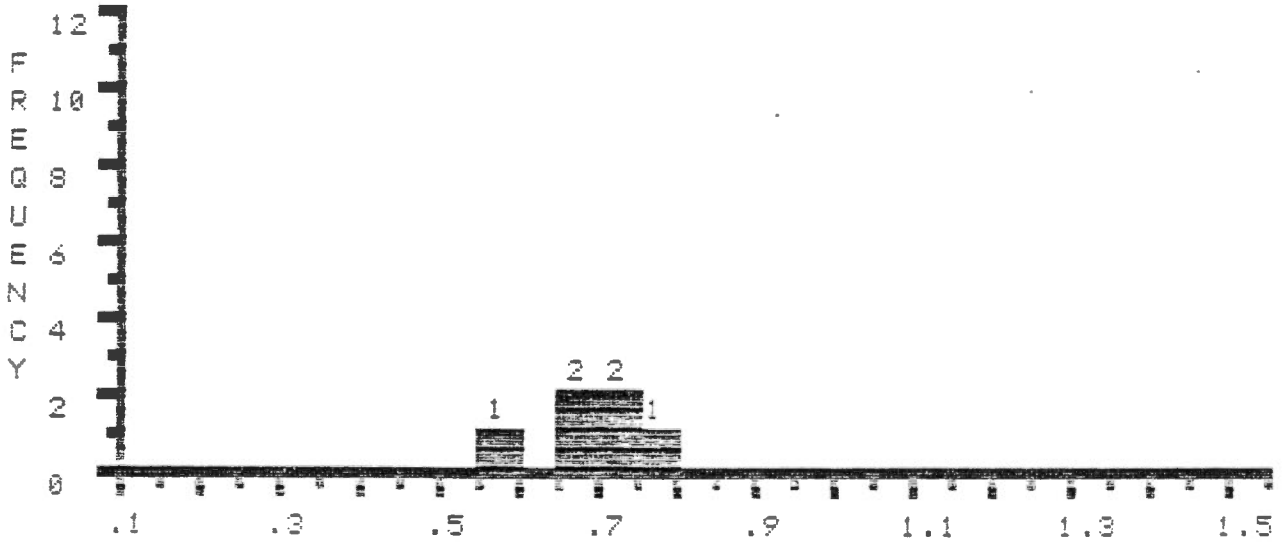
COL>	0	1	2	3	4	5	6	7	8	9
ROW		.28	.3	.38	.39	*.56	*.66	*.68	*.7	*.72
1	*.75	.82	.84	.94						

	SUM	NUMBER	MIN	MAX	MEAN	STAND.DEV.
TOTAL >	8.02	13	.28	.94	.62	.22
*EDIT >	4.07	6	.56	.75	.68	.07

% R E F L E C T A N C E



% R E F L E C T A N C E * * EDITED * *

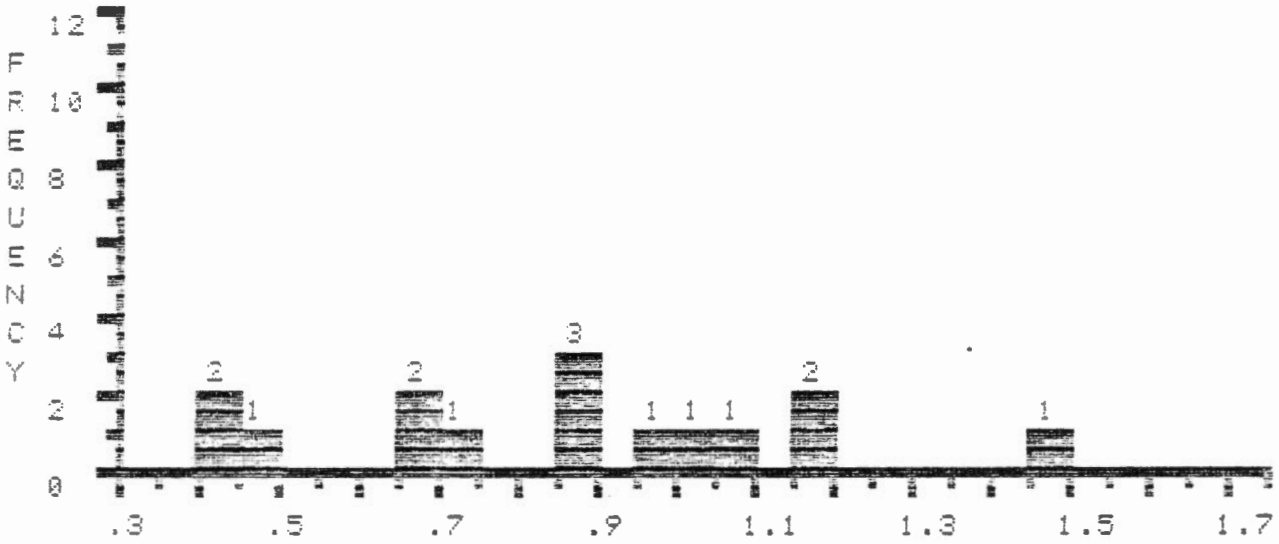


FILE >> K0035B DESCRIPTION FOLLOWS :
DEPTH 4335-4345M, HIBERNIA B-08, MIKE AVERY, AUG-16-84

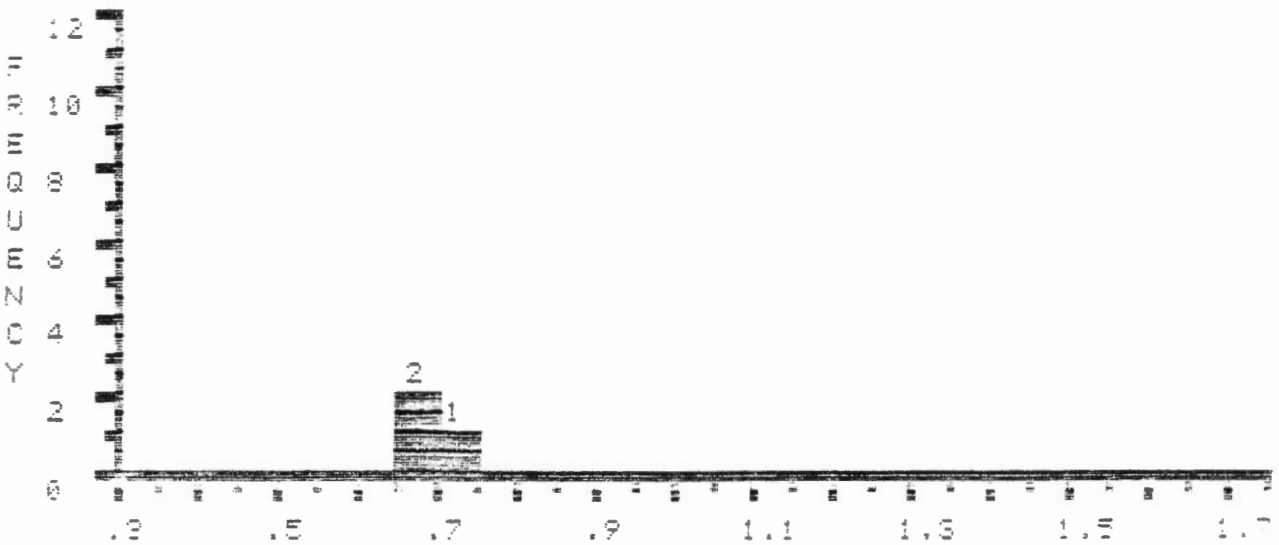
COL>	0	1	2	3	4	5	6	7	8	9
ROW		.4	.41	.48	*.65	*.69	*.72	.87	.87	.88
1	.98	1	1.09	1.18	1.19	1.49				

	SUM	NUMBER	MIN	MAX	MEAN	STAND.DEV.
TOTAL >	12.9	15	.4	1.49	.86	.31
*EDIT >	2.06	3	.65	.72	.69	.04

% R E F L E C T A N C E



% R E F L E C T A N C E * * EDITED * *

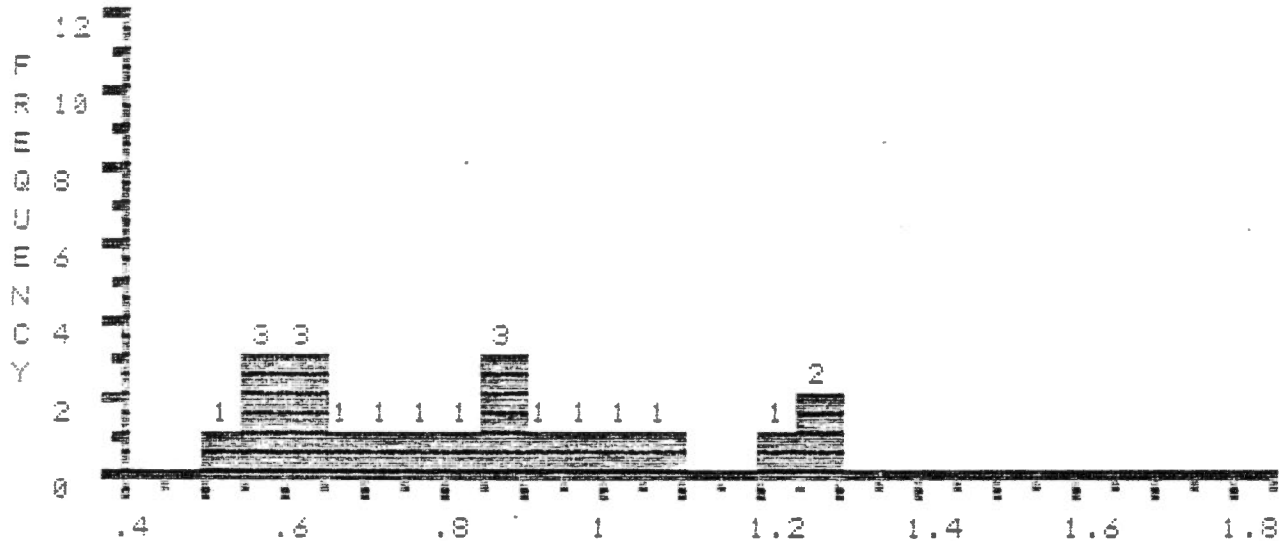


FILE >> K0035C DESCRIPTION FOLLOWS :
DEPTH 4423-4435M, HIBERNIA B-08, MIKE AVERY, AUG-17-84

COL>	0	1	2	3	4	5	6	7	8	9
ROW		*.53	*.57	*.58	*.58	*.63	*.64	*.64	*.68	.71
1	.75	.84	.87	.87	.89	.92	.96	1.02	1.08	1.24
2	1.27	1.28								

	SUM	NUMBER	MIN	MAX	MEAN	STAND.DEV.
TOTAL	[illegible]		.53	1.28	.84	.24
EDIT	*.65	8	.53	.68	.61	.05

% R E F L E C T A N C E



% R E F L E C T A N C E * * EDITED * *