

**Vitrinite reflectance and visual kerogen data of cuttings from the
Texaco Inc. Tulugak No. 1 well**

Received 11 April 1989

Report contains a total of 34 pages

Geologic Materials Center Data Report No. 121

Vitrinite Reflectance and Visual Kerogen data

Texaco Tulugak #1

Alaska

VITRINITE SUMMARY
TEXACO TULUGAK #1

Depth (FT.)	SAMPLE FILE NAME	SAMPLE NUMBER	NO. OF OBSERVATIONS	MIN. IRo.	MAX. IRo.	AVG. IRo.	STD. DEV.
1400 - 1490	E-769-01	110308 D	80	0.36	1.26	0.59	0.17
		POPULATION NO. 1	69	0.36	0.70	0.53	0.07 +
		POPULATION NO. 2	11	0.75	1.26	0.96	0.16
3010 - 3100	E-769-02	110319 H	80	0.39	1.45	0.65	0.22
		POPULATION NO. 1	64	0.39	0.73	0.56	0.08 +
		POPULATION NO. 2	14	0.80	1.14	0.98	0.10
		POPULATION NO. 3	2	1.36	1.45	1.41	0.06
4090 - 4180	E-769-03	110330 E	80	0.40	1.36	0.70	0.25
		POPULATION NO. 1	56	0.40	0.69	0.56	0.06 +
		POPULATION NO. 2	14	0.74	1.14	0.89	0.13
		POPULATION NO. 3	10	1.16	1.36	1.25	0.08
4990 - 5080	E-769-04	110330 D	80	0.42	1.88	0.87	0.36
		POPULATION NO. 1	54	0.42	0.88	0.65	0.10 +
		POPULATION NO. 2	21	0.92	1.49	1.22	0.19
		POPULATION NO. 3	5	1.56	1.88	1.72	0.12
6060 - 6150	E-769-05	110341 G	80	0.46	1.98	0.85	0.28
		POPULATION NO. 1	3	0.46	0.53	0.49	0.04
		POPULATION NO. 2	65	0.55	1.04	0.77	0.13 +
		POPULATION NO. 3	8	1.05	1.47	1.20	0.13
		POPULATION NO. 4	4	1.67	1.98	1.78	0.14
6960 - 7050	E-769-06	110341 Q	80	0.46	2.13	0.78	0.24
		POPULATION NO. 1	1	0.46	0.46	0.46	0.00
		POPULATION NO. 2	71	0.56	0.94	0.72	0.09 +
		POPULATION NO. 3	7	1.04	1.51	1.28	0.18
		POPULATION NO. 4	1	2.13	2.13	2.13	0.00
8040 - 8130	E-769-07	110352 I	80	0.47	2.20	1.00	0.27
		POPULATION NO. 1	19	0.47	0.84	0.69	0.10 +
		POPULATION NO. 2	58	0.87	1.37	1.06	0.11
		POPULATION NO. 3	3	1.77	2.20	1.94	0.23
8940 - 9030	E-769-08	110352 S	80	0.37	1.95	1.04	0.30
		POPULATION NO. 1	18	0.37	0.84	0.63	0.15 +
		POPULATION NO. 2	54	0.85	1.39	1.10	0.13
		POPULATION NO. 3	8	1.41	1.95	1.58	0.17

VITRINITE SUMMARY

Depth	SAMPLE FILE NAME	SAMPLE NUMBER	NO. OF OBSERVATIONS	MIN. IRo.	MAX. IRo.	AVG. IRo.	STD. DEV.
10,380 - 10470	E-769-09	110363 0	80	0.55	1.83	1.29	0.31
		POPULATION NO. 1	20	0.55	1.07	0.86	0.17 +
		POPULATION NO. 2	52	1.11	1.64	1.39	0.16
		POPULATION NO. 3	8	1.65	1.83	1.72	0.06
11,400 - 11550	E-769-10	110374 6	80	0.34	2.32	1.60	0.36
		POPULATION NO. 1	5	0.34	0.46	0.40	0.05
		POPULATION NO. 2	74	1.28	2.01	1.67	0.16 +
		POPULATION NO. 3	1	2.32	2.32	2.32	0.00
13,080 - 13170	E-769-11	110385 E	80	1.53	2.85	2.03	0.24
		POPULATION NO. 1	12	1.53	1.76	1.67	0.07
		POPULATION NO. 2	48	1.81	2.19	1.99	0.09 +
		POPULATION NO. 3	19	2.20	2.53	2.33	0.09
		POPULATION NO. 4	1	2.85	2.85	2.85	0.00
13,980 - 14070	E-769-12	110385 0	80	1.49	2.73	2.05	0.29
		POPULATION NO. 1	16	1.49	1.77	1.64	0.08
		POPULATION NO. 2	47	1.80	2.29	2.05	0.14 +
		POPULATION NO. 3	17	2.31	2.73	2.44	0.12
15,150 15160-15240	E-769-13	110396 6	80	0.47	3.79	2.48	0.48
		POPULATION NO. 1	2	0.47	0.48	0.48	0.01
		POPULATION NO. 2	3	1.82	1.99	1.89	0.09
		POPULATION NO. 3	50	2.05	2.62	2.36	0.17 +
		POPULATION NO. 4	20	2.66	3.06	2.81	0.11
		POPULATION NO. 5	4	3.28	3.38	3.31	0.05
16,080 - 16170	E-769-14	110396 0	75	1.03	3.94	2.56	0.35
		POPULATION NO. 1	2	1.03	1.23	1.13	0.14
		POPULATION NO. 2	7	2.02	2.32	2.19	0.11
		POPULATION NO. 3	62	2.37	2.85	2.60	0.12 +
		POPULATION NO. 4	3	2.98	3.38	3.13	0.22

+ POPULATION CONSIDERED TO BE IN SITU

PAGE 2

NOTE: ALL INFORMATION CONTAINED HEREIN IS PROPRIETARY
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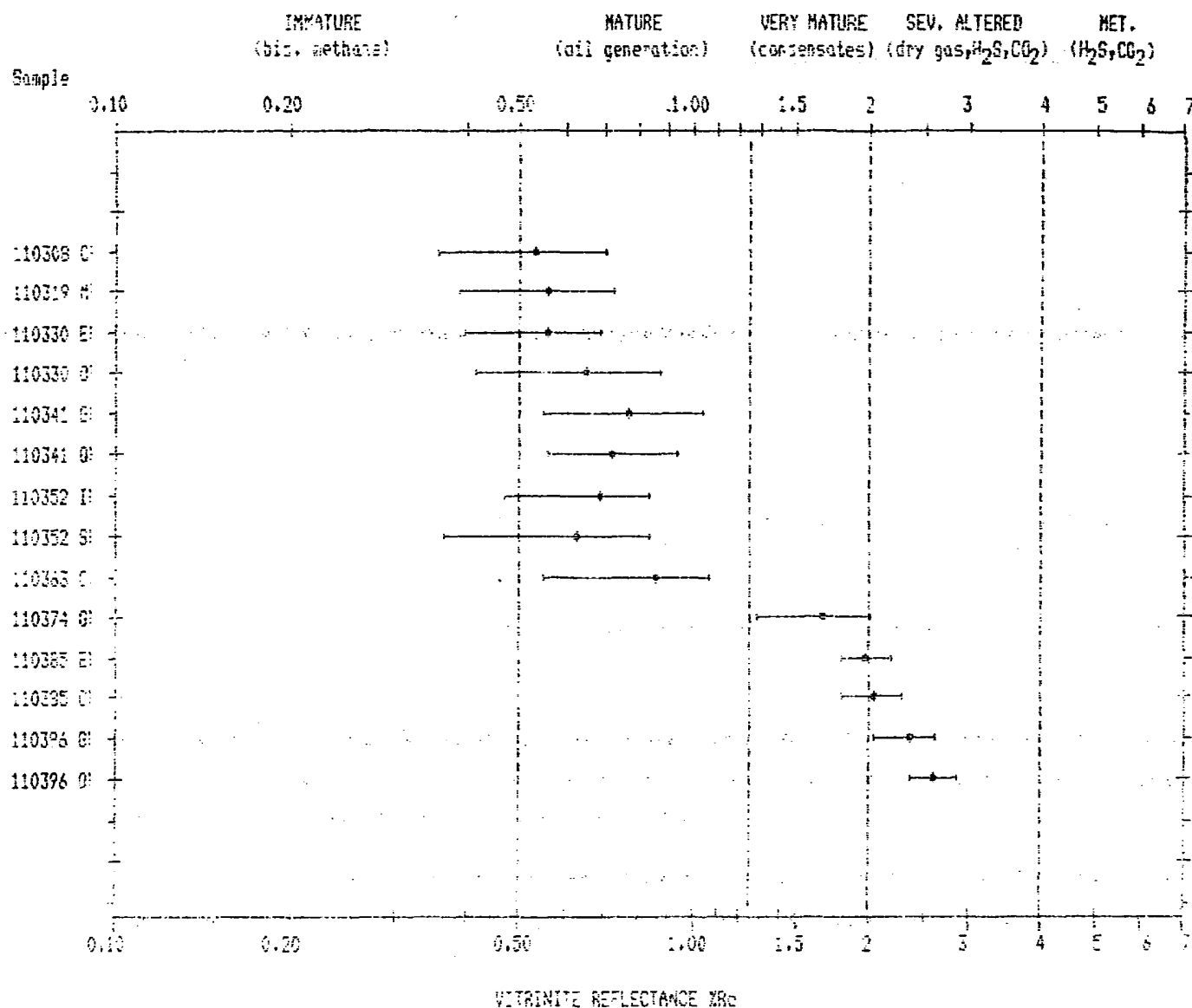
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(BL)

FLUORESCENCE OF POLISHED PLUG AND/OR KEROGEN SLIDE

[illegible]

VITRINITE REFLECTANCE PROFILE (THERMAL MATURITY)

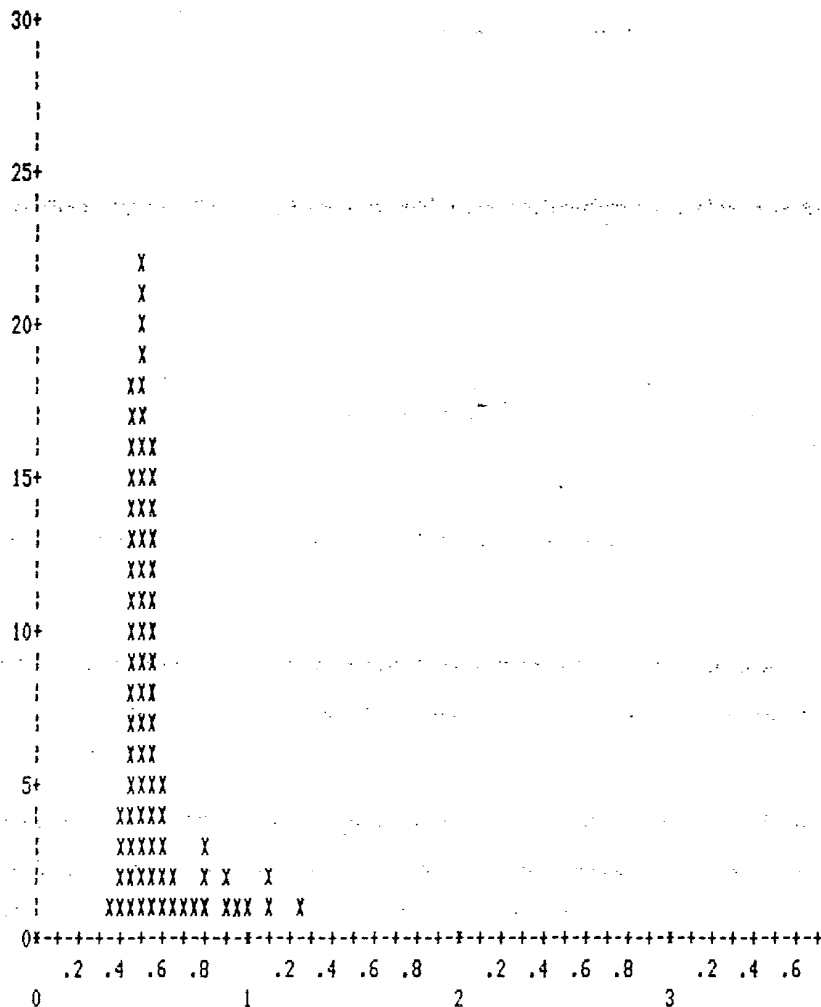


MIN. AVG. MAX.

CLIENT.....EXXON FILE NAME.....E-769-01
 DEPTH/SAMPLE NO..110308 0 TYPE OF SAMPLE.....?CTGS.
 LOCATION.....UNKNOWN DATE.....3-24-89
 ANALYST.....K. W. SCHWAB NO. OF OBSERVATIONS. 80

STANDARD IRo START: 1.02 FINISH: 1.02

REFLECTANCE DATA: MIN. 0.36 MAX. 1.26 AVG. 0.53 STD. DEV. 0.17



VITRINITE REFLECTANCE HISTOGRAM - IRo

POP. # 1 TOTAL CTS. 69 MIN. 0.36 MAX. 0.70 AVG. 0.53 STD. DEV. 0.07 +

POP. # 2 TOTAL CTS. 11 MIN. 0.75 MAX. 1.26 AVG. 0.96 STD. DEV. 0.16

+ POPULATION CONSIDERED TO BE IN SITU

DATA POINTS:

1: 0.36	51: 0.58
2: 0.41	52: 0.58
3: 0.41	53: 0.58
4: 0.43	54: 0.58
5: 0.44	55: 0.58
6: 0.45	56: 0.58
7: 0.45	57: 0.58
8: 0.45	58: 0.58
9: 0.46	59: 0.59
10: 0.46	60: 0.59
11: 0.47	61: 0.59
12: 0.47	62: 0.60
13: 0.47	63: 0.60
14: 0.47	64: 0.62
15: 0.48	65: 0.64
16: 0.48	66: 0.64
17: 0.48	67: 0.67
18: 0.48	68: 0.68
19: 0.48	69: 0.70
20: 0.48	70: 0.75
21: 0.48	71: 0.82
22: 0.49	72: 0.83
23: 0.49	73: 0.84
24: 0.50	74: 0.90
25: 0.50	75: 0.92
26: 0.50	76: 0.98
27: 0.51	77: 1.02
28: 0.51	78: 1.12
29: 0.51	79: 1.13
30: 0.51	80: 1.26
31: 0.51	
32: 0.52	
33: 0.52	
34: 0.52	
35: 0.52	
36: 0.52	
37: 0.52	
38: 0.52	
39: 0.52	
40: 0.53	
41: 0.53	
42: 0.53	
43: 0.54	
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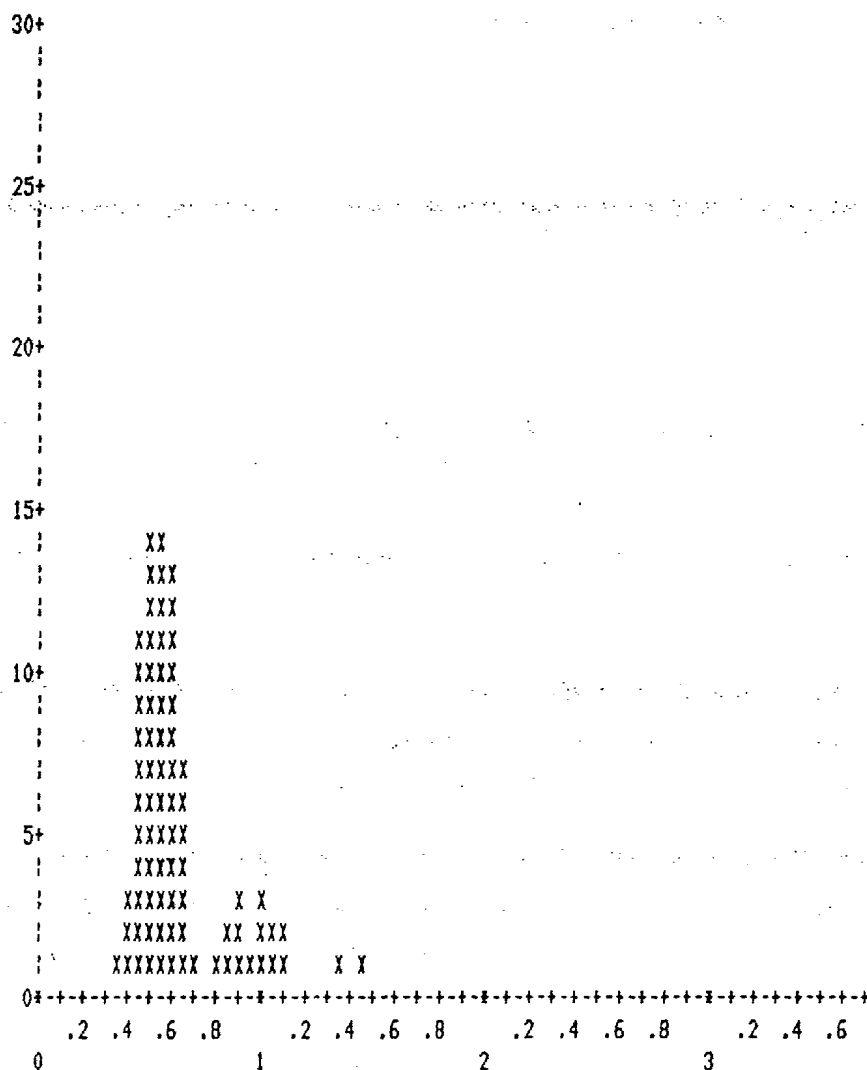
NOTE: ALL INFORMATION CONTAINED HEREIN IS PROPRIETARY

CLIENT.....EXXON
 DEPTH/SAMPLE NO..110319 M
 LOCATION.....UNKNOWN
 ANALYST.....K. W. SCHWAB

FILE NAME.....E-769-02
 TYPE OF SAMPLE.....?CTGS.
 DATE.....3-24-89
 NO. OF OBSERVATIONS. 80

STANDARD IRo START: 1.02 FINISH: 1.02

REFLECTANCE DATA: MIN. 0.39 MAX. 1.45 AVG. 0.65 STD. DEV. 0.22



VITRINITE REFLECTANCE HISTOGRAM - IRo

POP.# 1 TOTAL CTS. 64 MIN. 0.39 MAX. 0.73 AVG. 0.56 STD. DEV. 0.08 +
 POP.# 2 TOTAL CTS. 14 MIN. 0.80 MAX. 1.14 AVG. 0.98 STD. DEV. 0.10
 POP.# 3 TOTAL CTS. 2 MIN. 1.36 MAX. 1.45 AVG. 1.41 STD. DEV. 0.06
 + POPULATION CONSIDERED TO BE IN SITU

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DATA POINTS:

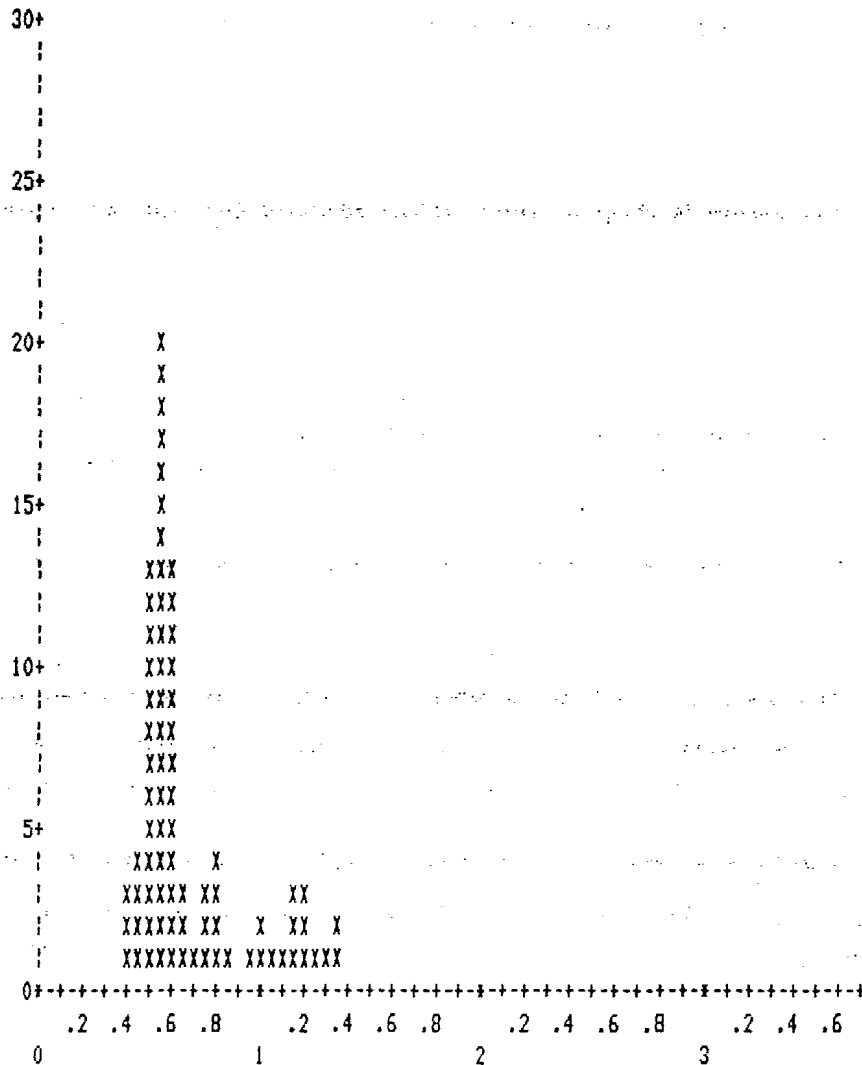
1: 0.39	51: 0.63
2: 0.41	52: 0.63
3: 0.43	53: 0.63
4: 0.43	54: 0.63
5: 0.45	55: 0.64
6: 0.45	56: 0.64
7: 0.46	57: 0.65
8: 0.46	58: 0.65
9: 0.46	59: 0.65
10: 0.47	60: 0.67
11: 0.47	61: 0.68
12: 0.48	62: 0.69
13: 0.48	63: 0.69
14: 0.49	64: 0.73
15: 0.49	65: 0.80
16: 0.50	66: 0.85
17: 0.51	67: 0.89
18: 0.51	68: 0.90
19: 0.51	69: 0.92
20: 0.52	70: 0.93
21: 0.52	71: 0.95
22: 0.52	72: 1.00
23: 0.52	73: 1.02
24: 0.52	74: 1.03
25: 0.52	75: 1.06
26: 0.53	76: 1.07
27: 0.53	77: 1.14
28: 0.54	78: 1.14
29: 0.54	79: 1.36
30: 0.55	80: 1.45
31: 0.55	
32: 0.55	
33: 0.55	
34: 0.55	
35: 0.56	
36: 0.57	
37: 0.57	
38: 0.57	
39: 0.58	
40: 0.58	
41: 0.58	
42: 0.59	
43: 0.59	
44: 0.60	
45: 0.60	
46: 0.61	
47: 0.61	
48: 0.62	
49: 0.63	
50: 0.63	

CLIENT.....EXXON
DEPTH/SAMPLE NO..110330 E
LOCATION.....UNKNOWN
ANALYST.....K. W. SCHWAB

FILE NAME.....E-769-03
TYPE OF SAMPLE.....?CTBS.
DATE.....3-24-89
NO. OF OBSERVATIONS. 80

STANDARD ZRo START: 1.02 FINISH: 1.02

REFLECTANCE DATA: MIN. 0.40 MAX. 1.36 AVG. 0.70 STD. DEV. 0.25



VITRINITE REFLECTANCE HISTOGRAM - ZRo

POP. # 1 TOTAL CTS. 56 MIN. 0.40 MAX. 0.69 AVG. 0.56 STD. DEV. 0.06 +

POP. # 2 TOTAL CTS. 14 MIN. 0.74 MAX. 1.14 AVG. 0.89 STD. DEV. 0.13

POP. # 3 TOTAL CTS. 10 MIN. 1.16 MAX. 1.36 AVG. 1.25 STD. DEV. 0.08

+ POPULATION CONSIDERED TO BE IN SITU

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DATA POINTS:

1: 0.40	51: 0.62
2: 0.42	52: 0.63
3: 0.43	53: 0.64
4: 0.46	54: 0.65
5: 0.49	55: 0.66
6: 0.49	56: 0.69
7: 0.49	57: 0.74
8: 0.50	58: 0.77
9: 0.50	59: 0.79
10: 0.50	60: 0.79
11: 0.52	61: 0.81
12: 0.52	62: 0.82
13: 0.52	63: 0.82
14: 0.53	64: 0.84
15: 0.53	65: 0.87
16: 0.54	66: 0.96
17: 0.54	67: 1.01
18: 0.54	68: 1.04
19: 0.54	69: 1.08
20: 0.54	70: 1.14
21: 0.55	71: 1.16
22: 0.55	72: 1.16
23: 0.55	73: 1.19
24: 0.55	74: 1.20
25: 0.55	75: 1.20
26: 0.56	76: 1.21
27: 0.56	77: 1.29
28: 0.56	78: 1.32
29: 0.56	79: 1.36
30: 0.56	80: 1.36
31: 0.57	
32: 0.57	
33: 0.57	
34: 0.58	
35: 0.58	
36: 0.58	
37: 0.58	
38: 0.59	
39: 0.59	
40: 0.59	
41: 0.60	
42: 0.60	
43: 0.60	
44: 0.61	
45: 0.61	
46: 0.61	
47: 0.61	
48: 0.62	
49: 0.62	
50: 0.62	

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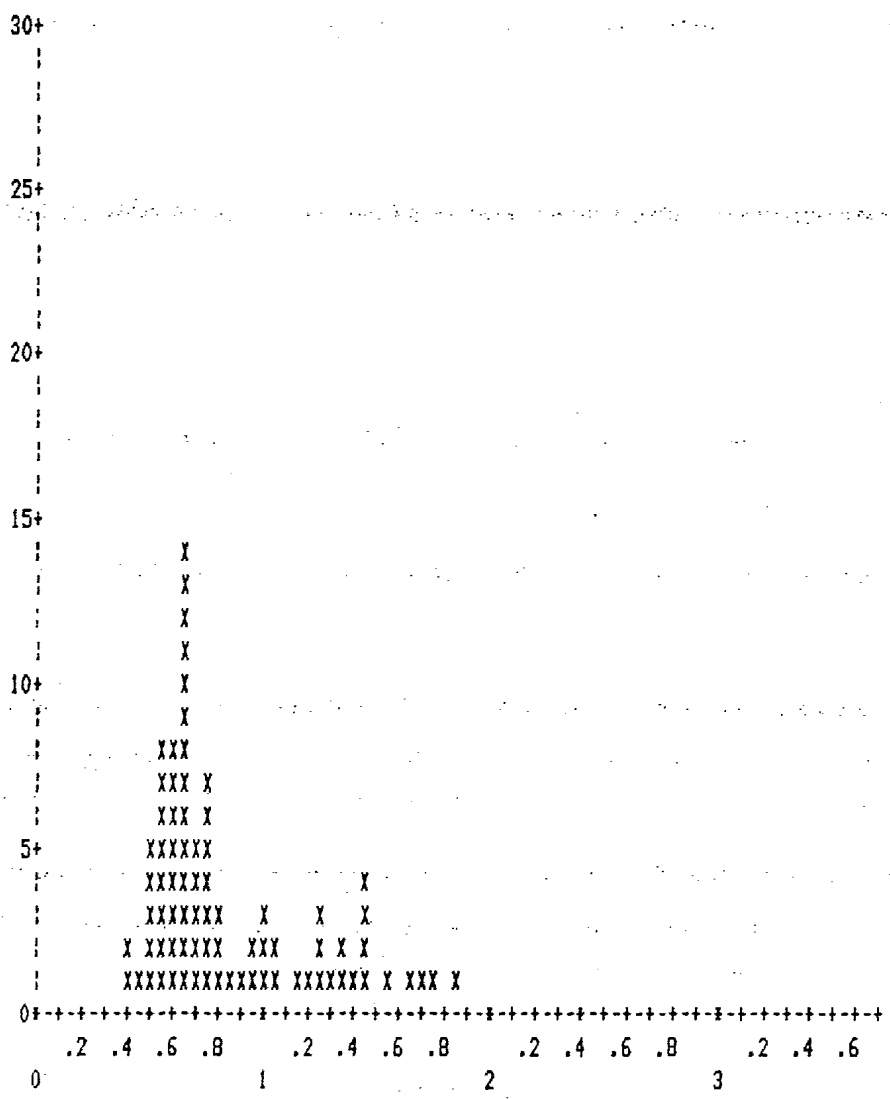
NOTE: ALL INFORMATION CONTAINED HEREIN IS PROPRIETARY

CLIENT.....EXXON
DEPTH/SAMPLE NO..110330 0
LOCATION.....UNKNOWN
ANALYST.....K. W. SCHWAB

FILE NAME.....E-769-04
TYPE OF SAMPLE.....?CTGS.
DATE.....3-24-89
NO. OF OBSERVATIONS. 80

STANDARD IRo START: 1.02 FINISH: 1.02

REFLECTANCE DATA: MIN. 0.42 MAX. 1.88 AVG. 0.87 STD. DEV. 0.36



VITRINITE REFLECTANCE HISTOGRAM - IRo

POP. # 1 TOTAL CTS. 54 MIN. 0.42 MAX. 0.88 AVG. 0.65 STD. DEV. 0.10 +
POP. # 2 TOTAL CTS. 21 MIN. 0.92 MAX. 1.49 AVG. 1.22 STD. DEV. 0.19
POP. # 3 TOTAL CTS. 5 MIN. 1.56 MAX. 1.88 AVG. 1.72 STD. DEV. 0.12

+ POPULATION CONSIDERED TO BE IN SITU

DATA POINTS:

1: 0.42	51: 0.80
2: 0.44	52: 0.81
3: 0.46	53: 0.84
4: 0.50	54: 0.88
5: 0.51	55: 0.92
6: 0.52	56: 0.97
7: 0.52	57: 0.98
8: 0.52	58: 1.01
9: 0.56	59: 1.01
10: 0.58	60: 1.01
11: 0.58	61: 1.06
12: 0.58	62: 1.08
13: 0.58	63: 1.15
14: 0.58	64: 1.24
15: 0.59	65: 1.25
16: 0.59	66: 1.27
17: 0.60	67: 1.28
18: 0.60	68: 1.30
19: 0.61	69: 1.36
20: 0.61	70: 1.39
21: 0.62	71: 1.40
22: 0.63	72: 1.45
23: 0.64	73: 1.47
24: 0.64	74: 1.48
25: 0.65	75: 1.49
26: 0.65	76: 1.56
27: 0.65	77: 1.66
28: 0.65	78: 1.73
29: 0.65	79: 1.78
30: 0.65	80: 1.88
31: 0.66	
32: 0.66	
33: 0.66	
34: 0.66	
35: 0.68	
36: 0.69	
37: 0.69	
38: 0.69	
39: 0.70	
40: 0.71	
41: 0.71	
42: 0.71	
43: 0.73	
44: 0.75	
45: 0.76	
46: 0.78	
47: 0.78	
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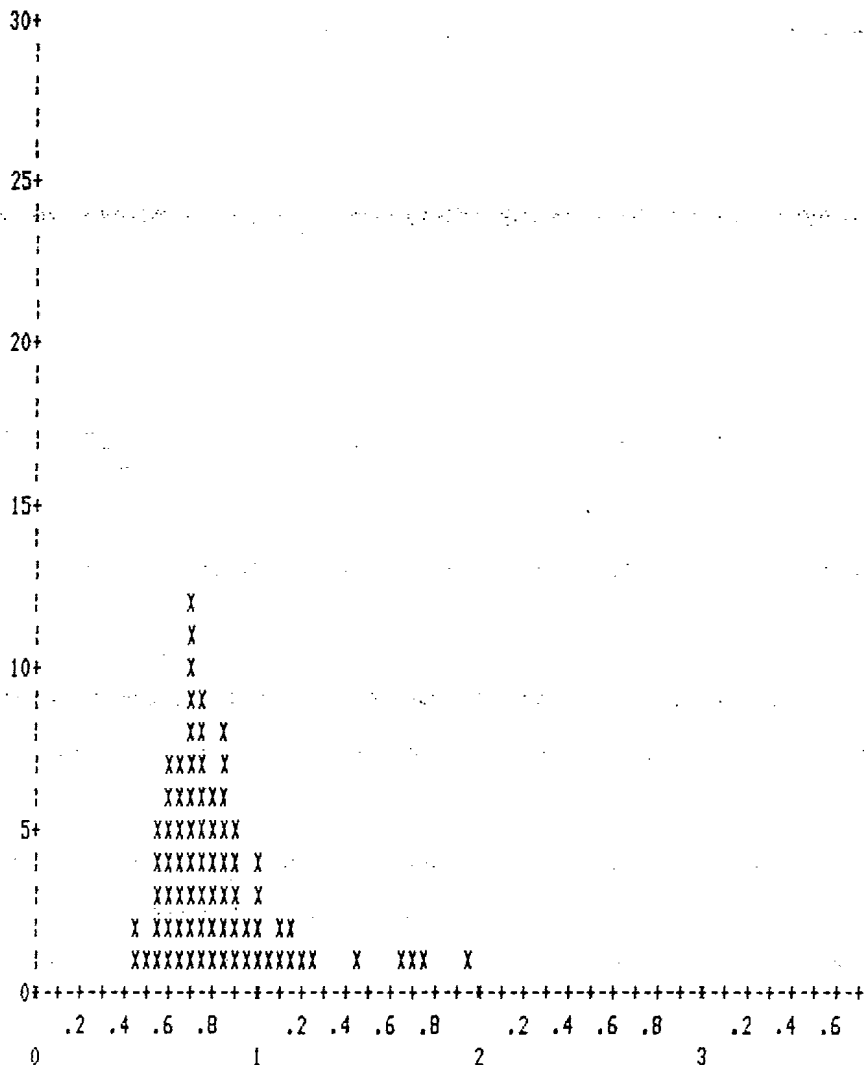
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NOTE: ALL INFORMATION CONTAINED HEREIN IS PROPRIETARY

CLIENT.....EXXON FILE NAME.....E-769-05
 DEPTH/SAMPLE NO..110341 6 TYPE OF SAMPLE.....?CTGS.
 LOCATION.....UNKNOWN DATE.....3-24-89
 ANALYST.....K. W. SCHWAB NO. OF OBSERVATIONS. 80

STANDARD IRo START: 1.02 FINISH: 1.02

REFLECTANCE DATA: MIN. 0.46 MAX. 1.98 AVG. 0.85 STD. DEV. 0.28



VITRINITE REFLECTANCE HISTOGRAM - IRo

POP. #	TOTAL CTS.	MIN.	MAX.	AVG.	STD. DEV.
1	3	0.46	0.53	0.49	0.04
2	65	0.55	1.04	0.77	0.13 +
3	8	1.05	1.47	1.20	0.13
4	4	1.67	1.98	1.78	0.14

+ POPULATION CONSIDERED TO BE IN SITU

PAGE ONE OF TWO

DATA POINTS:

1: 0.46	51: 0.87
2: 0.49	52: 0.87
3: 0.53	53: 0.88
4: 0.55	54: 0.88
5: 0.55	55: 0.89
6: 0.57	56: 0.89
7: 0.58	57: 0.89
8: 0.59	58: 0.90
9: 0.60	59: 0.92
10: 0.62	60: 0.92
11: 0.62	61: 0.93
12: 0.63	62: 0.93
13: 0.63	63: 0.95
14: 0.63	64: 0.97
15: 0.64	65: 1.01
16: 0.65	66: 1.01
17: 0.66	67: 1.03
18: 0.66	68: 1.04
19: 0.67	69: 1.05
20: 0.67	70: 1.10
21: 0.67	71: 1.14
22: 0.68	72: 1.16
23: 0.70	73: 1.17
24: 0.70	74: 1.24
25: 0.70	75: 1.25
26: 0.71	76: 1.47
27: 0.71	77: 1.67
28: 0.72	78: 1.70
29: 0.72	79: 1.76
30: 0.72	80: 1.98
31: 0.72	
32: 0.74	
33: 0.74	
34: 0.74	
35: 0.75	
36: 0.75	
37: 0.76	
38: 0.77	
39: 0.77	
40: 0.78	
41: 0.78	
42: 0.79	
43: 0.79	
44: 0.80	
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46: 0.82	
47: 0.83	
48: 0.83	
49: 0.84	
50: 0.85	

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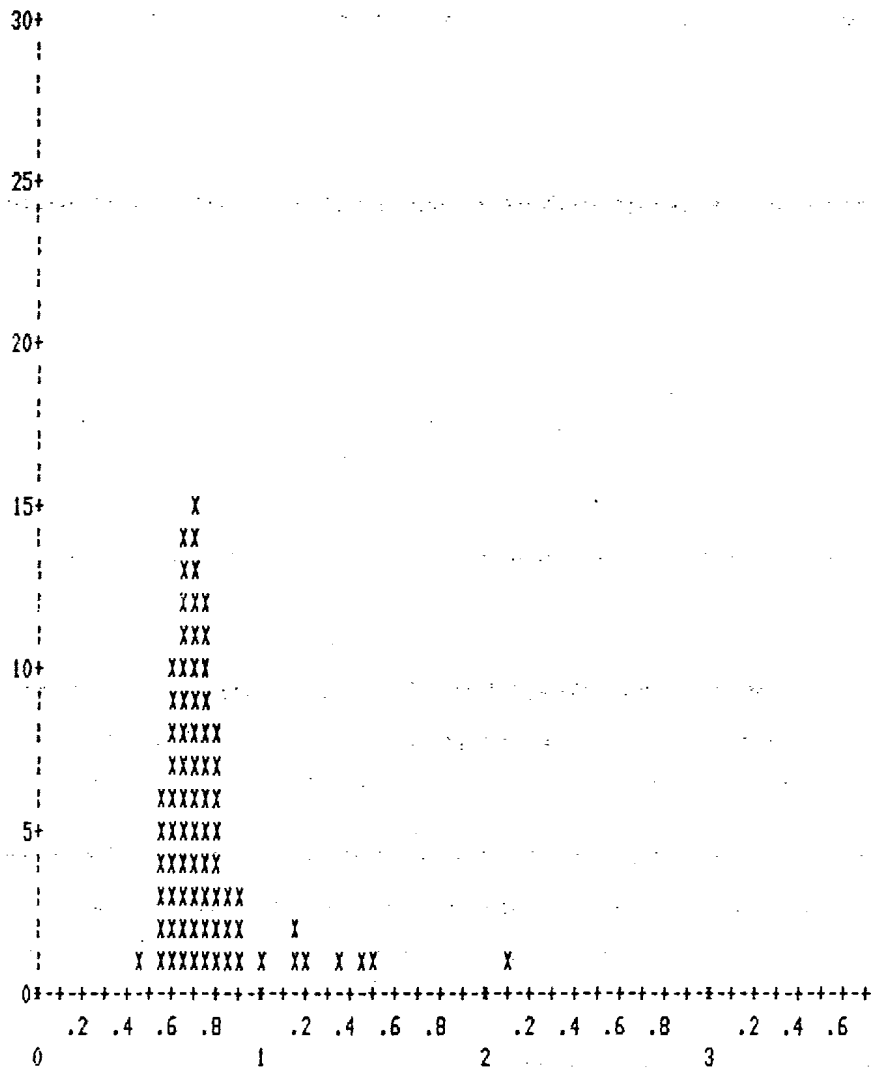
NOTE: ALL INFORMATION CONTAINED HEREIN IS PROPRIETARY

CLIENT.....EXXON
 DEPTH/SAMPLE NO..110341 Q
 LOCATION.....UNKNOWN
 ANALYST.....K. W. SCHWAB

FILE NAME.....E-769-06
 TYPE OF SAMPLE.....?CTGS.
 DATE.....3-24-89
 NO. OF OBSERVATIONS. 80

STANDARD ZRo START: 1.02 FINISH: 1.02

REFLECTANCE DATA: MIN. 0.46 MAX. 2.13 AVG. 0.78 STD. DEV. 0.24



VITRINITE REFLECTANCE HISTOGRAM - ZRo

POP.# 1 TOTAL CTS. 1 MIN. 0.46 MAX. 0.46 AVG. 0.46 STD. DEV. 0.00

POP.# 2 TOTAL CTS. 71 MIN. 0.56 MAX. 0.94 AVG. 0.72 STD. DEV. 0.09 +

POP.# 3 TOTAL CTS. 7 MIN. 1.04 MAX. 1.51 AVG. 1.28 STD. DEV. 0.18

POP.# 4 TOTAL CTS. 1 MIN. 2.13 MAX. 2.13 AVG. 2.13 STD. DEV. 0.00

+ POPULATION CONSIDERED TO BE IN SITU

DATA POINTS:

1: 0.46	51: 0.75
2: 0.56	52: 0.76
3: 0.57	53: 0.76
4: 0.58	54: 0.76
5: 0.59	55: 0.77
6: 0.59	56: 0.77
7: 0.59	57: 0.79
8: 0.60	58: 0.79
9: 0.60	59: 0.80
10: 0.61	60: 0.81
11: 0.61	61: 0.83
12: 0.63	62: 0.83
13: 0.63	63: 0.84
14: 0.64	64: 0.84
15: 0.64	65: 0.84
16: 0.64	66: 0.84
17: 0.64	67: 0.85
18: 0.65	68: 0.87
19: 0.65	69: 0.89
20: 0.65	70: 0.91
21: 0.65	71: 0.93
22: 0.65	72: 0.94
23: 0.66	73: 1.04
24: 0.67	74: 1.17
25: 0.67	75: 1.17
26: 0.67	76: 1.24
27: 0.69	77: 1.38
28: 0.68	78: 1.48
29: 0.68	79: 1.51
30: 0.69	80: 2.13
31: 0.69	
32: 0.70	
33: 0.70	
34: 0.71	
35: 0.71	
36: 0.71	
37: 0.72	
38: 0.72	
39: 0.73	
40: 0.73	
41: 0.74	
42: 0.74	
43: 0.74	
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PAGE TWO OF TWO

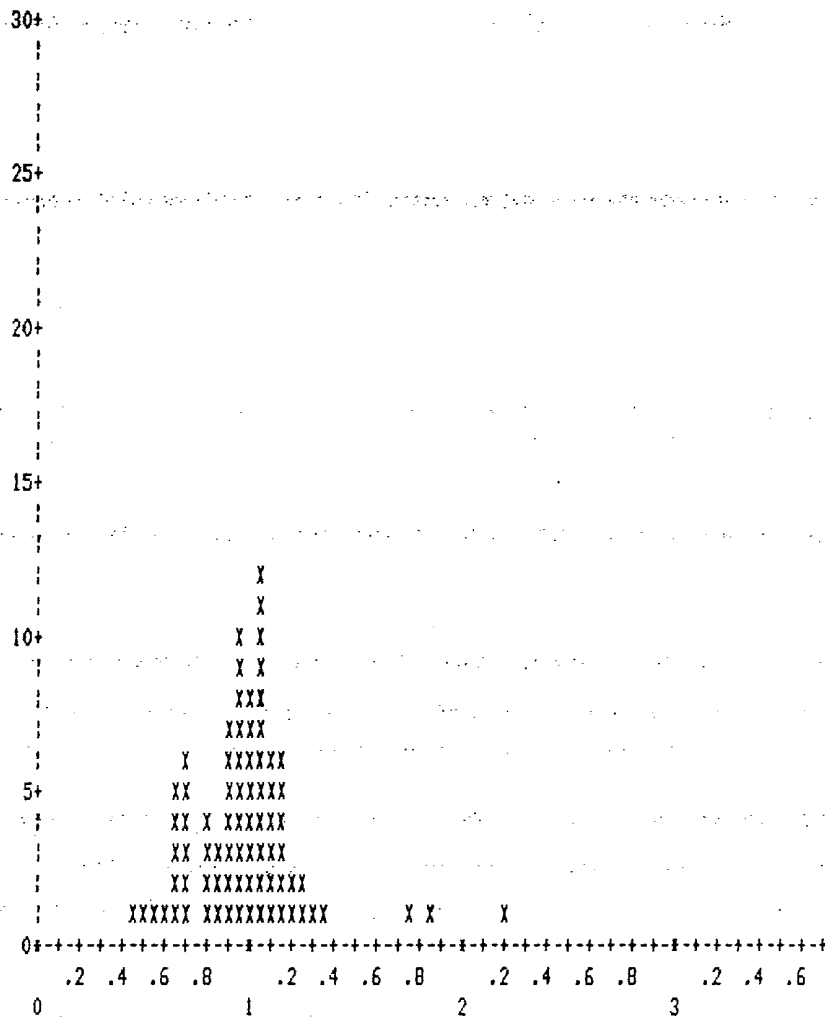
NOTE: ALL INFORMATION CONTAINED HEREIN IS PROPRIETARY

CLIENT.....EXXON
DEPTH/SAMPLE NO..110352 I
LOCATION.....UNKNOWN
ANALYST.....K. W. SCHWAB

FILE NAME.....E-769-07
TYPE OF SAMPLE.....?CT6S.
DATE.....3-24-89
NO. OF OBSERVATIONS. 80

STANDARD IRo START: 1.02 FINISH: 1.02

REFLECTANCE DATA: MIN. 0.47 MAX. 2.20 AVG. 1.00 STD. DEV. 0.27



POP. # 1 TOTAL CTS. 19 MIN. 0.47 MAX. 0.84 AVG. 0.69 STD. DEV. 0.10 +

POP. # 2 TOTAL CTS. 58 MIN. 0.87 MAX. 1.37 AVG. 1.06 STD. DEV. 0.11

POP. # 3 TOTAL CTS. 3 MIN. 1.77 MAX. 2.20 AVG. 1.94 STD. DEV. 0.23

+ POPULATION CONSIDERED TO BE IN SITU

PAGE ONE OF TWO

DATA POINTS:

1: 0.47	51: 1.07
2: 0.53	52: 1.07
3: 0.58	53: 1.08
4: 0.62	54: 1.08
5: 0.66	55: 1.08
6: 0.67	56: 1.08
7: 0.68	57: 1.09
8: 0.69	58: 1.09
9: 0.69	59: 1.09
10: 0.70	60: 1.10
11: 0.70	61: 1.10
12: 0.70	62: 1.10
13: 0.72	63: 1.10
14: 0.73	64: 1.12
15: 0.73	65: 1.12
16: 0.81	66: 1.16
17: 0.82	67: 1.17
18: 0.84	68: 1.17
19: 0.84	69: 1.18
20: 0.87	70: 1.19
21: 0.88	71: 1.19
22: 0.88	72: 1.20
23: 0.90	73: 1.22
24: 0.90	74: 1.27
25: 0.91	75: 1.28
26: 0.91	76: 1.32
27: 0.93	77: 1.37
28: 0.93	78: 1.77
29: 0.94	79: 1.85
30: 0.95	80: 2.20
31: 0.96	
32: 0.96	
33: 0.96	
34: 0.97	
35: 0.98	
36: 0.98	
37: 0.98	
38: 0.99	
39: 0.99	
40: 1.01	
41: 1.01	
42: 1.01	
43: 1.01	
44: 1.02	
45: 1.02	
46: 1.04	
47: 1.04	
48: 1.05	
49: 1.06	
50: 1.06	

PAGE TWO OF TWO

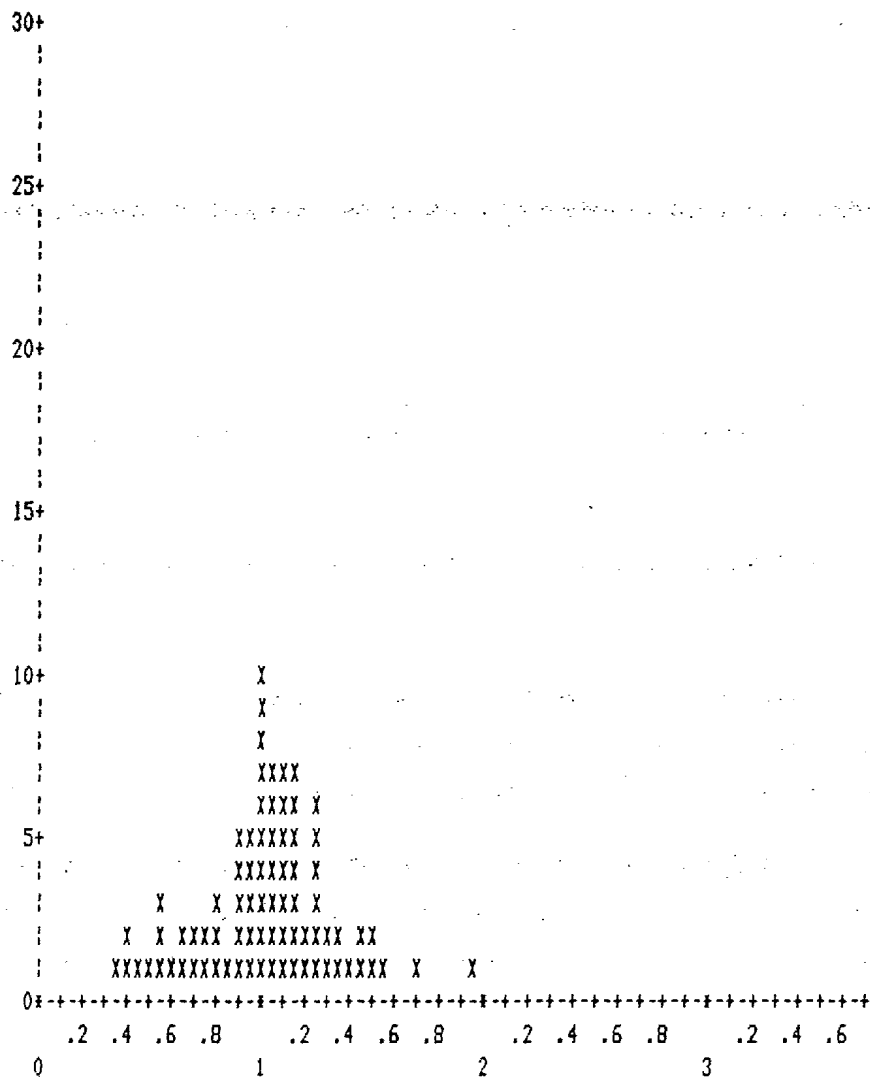
NOTE: ALL INFORMATION CONTAINED HEREIN IS PROPRIETARY

CLIENT.....EXXON
 DEPTH/SAMPLE NO..110352 S
 LOCATION.....UNKNOWN
 ANALYST.....K. W. SCHWAB

FILE NAME.....E-769-08
 TYPE OF SAMPLE.....?CTGS.
 DATE.....3-24-89
 NO. OF OBSERVATIONS. 80

STANDARD ZRo START: 1.02 FINISH: 1.02

REFLECTANCE DATA: MIN. 0.37 MAX. 1.95 AV6. 1.04 STD. DEV. 0.30



VITRINITE REFLECTANCE HISTOGRAM - ZRo

POP.# 1 TOTAL CTS. 18 MIN. 0.37 MAX. 0.84 AV6. 0.63 STD. DEV. 0.15 +

POP.# 2 TOTAL CTS. 54 MIN. 0.85 MAX. 1.39 AV6. 1.10 STD. DEV. 0.13

POP.# 3 TOTAL CTS. 8 MIN. 1.41 MAX. 1.95 AV6. 1.58 STD. DEV. 0.17

+ POPULATION CONSIDERED TO BE IN SITU

PAGE ONE OF TWO

DATA POINTS:

1: 0.37	51: 1.12
2: 0.41	52: 1.14
3: 0.42	53: 1.14
4: 0.47	54: 1.15
5: 0.52	55: 1.15
6: 0.55	56: 1.15
7: 0.56	57: 1.16
8: 0.57	58: 1.17
9: 0.64	59: 1.19
10: 0.67	60: 1.19
11: 0.69	61: 1.23
12: 0.73	62: 1.24
13: 0.74	63: 1.25
14: 0.75	64: 1.25
15: 0.79	65: 1.26
16: 0.81	66: 1.27
17: 0.82	67: 1.27
18: 0.84	68: 1.29
19: 0.85	69: 1.31
20: 0.92	70: 1.33
21: 0.92	71: 1.38
22: 0.93	72: 1.39
23: 0.94	73: 1.41
24: 0.94	74: 1.47
25: 0.95	75: 1.48
26: 0.95	76: 1.53
27: 0.96	77: 1.54
28: 0.96	78: 1.55
29: 0.96	79: 1.71
30: 1.00	80: 1.95
31: 1.02	
32: 1.02	
33: 1.03	
34: 1.03	
35: 1.03	
36: 1.04	
37: 1.04	
38: 1.04	
39: 1.04	
40: 1.07	
41: 1.08	
42: 1.08	
43: 1.09	
44: 1.09	
45: 1.09	
46: 1.09	
47: 1.10	
48: 1.10	
49: 1.10	
50: 1.12	

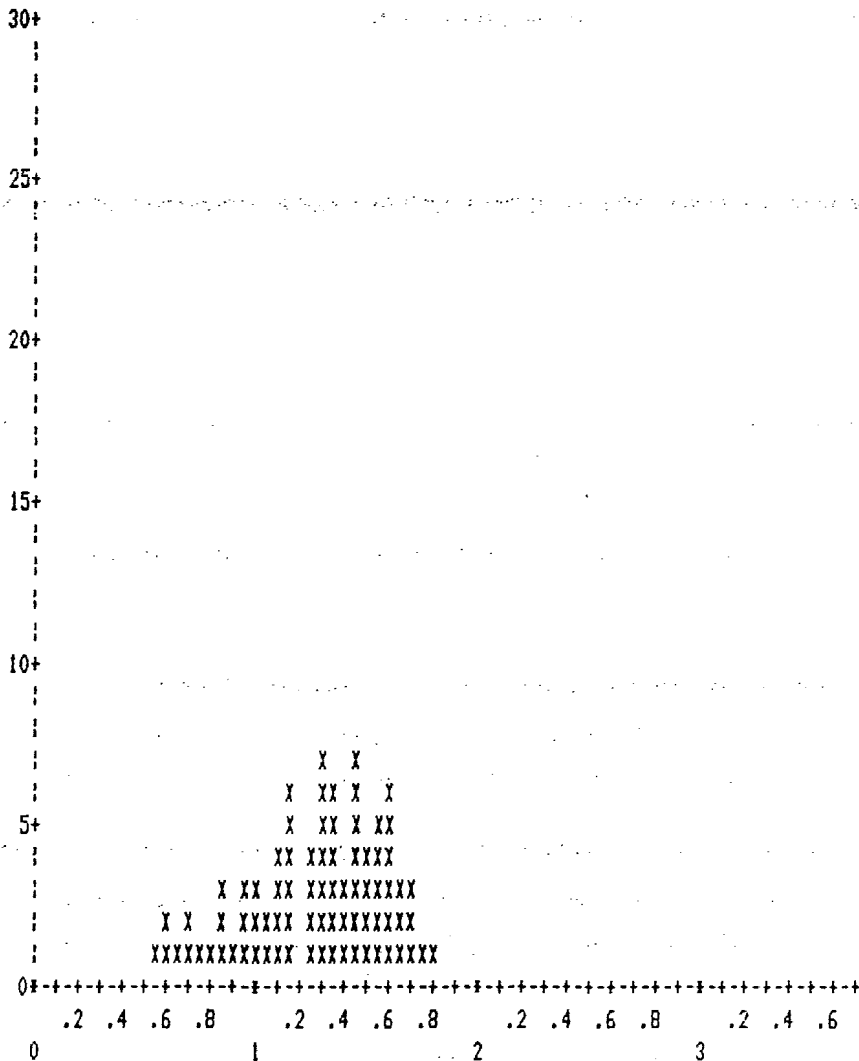
PAGE TWO OF TWO

NOTE: ALL INFORMATION CONTAINED HEREIN IS PROPRIETARY

CLIENT.....EXXON FILE NAME.....E-769-09
 DEPTH/SAMPLE NO..110363 0 TYPE OF SAMPLE.....?CTGS.
 LOCATION.....UNKNOWN DATE.....3-24-89
 ANALYST.....K. W. SCHWAB NO. OF OBSERVATIONS. 80

STANDARD IRo START: 1.02 FINISH: 1.02

REFLECTANCE DATA: MIN. 0.55 MAX. 1.83 AVG. 1.29 STD. DEV. 0.31



VITRINITE REFLECTANCE HISTOGRAM - IRo

POP.# 1 TOTAL CTS. 20 MIN. 0.55 MAX. 1.07 AVG. 0.86 STD. DEV. 0.17 +
 POP.# 2 TOTAL CTS. 52 MIN. 1.11 MAX. 1.64 AVG. 1.39 STD. DEV. 0.16
 POP.# 3 TOTAL CTS. 8 MIN. 1.65 MAX. 1.83 AVG. 1.72 STD. DEV. 0.06
 + POPULATION CONSIDERED TO BE IN SITU

PAGE ONE OF TWO

DATA POINTS:

1: 0.55	51: 1.45
2: 0.60	52: 1.47
3: 0.61	53: 1.47
4: 0.66	54: 1.48
5: 0.72	55: 1.48
6: 0.74	56: 1.48
7: 0.75	57: 1.49
8: 0.82	58: 1.51
9: 0.87	59: 1.51
10: 0.88	60: 1.52
11: 0.89	61: 1.54
12: 0.92	62: 1.56
13: 0.96	63: 1.56
14: 0.96	64: 1.57
15: 0.99	65: 1.58
16: 1.02	66: 1.59
17: 1.03	67: 1.61
18: 1.04	68: 1.61
19: 1.05	69: 1.62
20: 1.07	70: 1.62
21: 1.11	71: 1.63
22: 1.12	72: 1.64
23: 1.13	73: 1.65
24: 1.13	74: 1.66
25: 1.15	75: 1.67
26: 1.16	76: 1.70
27: 1.16	77: 1.72
28: 1.16	78: 1.73
29: 1.17	79: 1.79
30: 1.19	80: 1.83
31: 1.26	
32: 1.26	
33: 1.29	
34: 1.29	
35: 1.30	
36: 1.30	
37: 1.31	
38: 1.31	
39: 1.33	
40: 1.34	
41: 1.34	
42: 1.35	
43: 1.35	
44: 1.35	
45: 1.36	
46: 1.38	
47: 1.39	
48: 1.41	
49: 1.44	
50: 1.44	

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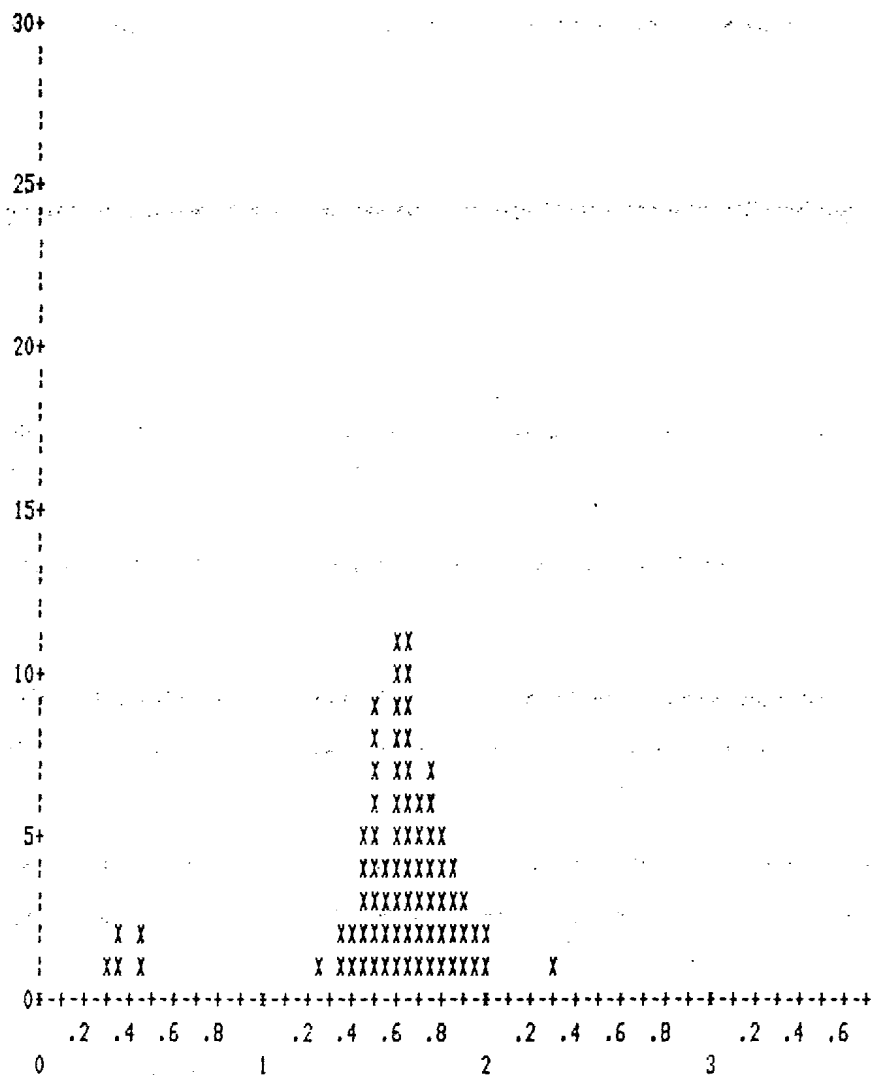
NOTE: ALL INFORMATION CONTAINED HEREIN IS PROPRIETARY

CLIENT.....EXXON
DEPTH/SAMPLE NO...110374 6
LOCATION.....UNKNOWN
ANALYST.....K. W. SCHWAB

FILE NAME.....E-769-10
TYPE OF SAMPLE.....?CTS.
DATE.....3-24-89
NO. OF OBSERVATIONS. 80

STANDARD IRo START: 1.02 FINISH: 1.02

REFLECTANCE DATA: MIN. 0.34 MAX. 2.32 AVG. 1.60 STD. DEV. 0.36



VITRINITE REFLECTANCE HISTOGRAM - IRo

POP.# 1 TOTAL CTS. 5 MIN. 0.34 MAX. 0.46 AVG. 0.40 STD. DEV. 0.05

POP.# 2 TOTAL CTS. 74 MIN. 1.28 MAX. 2.01 AVG. 1.67 STD. DEV. 0.16 +

POP.# 3 TOTAL CTS. 1 MIN. 2.32 MAX. 2.32 AVG. 2.32 STD. DEV. 0.00

+ POPULATION CONSIDERED TO BE IN SITU

PAGE ONE OF TWO

DATA POINTS:

1: 0.34	51: 1.71
2: 0.38	52: 1.73
3: 0.38	53: 1.73
4: 0.46	54: 1.74
5: 0.46	55: 1.74
6: 1.28	56: 1.74
7: 1.36	57: 1.76
8: 1.37	58: 1.76
9: 1.41	59: 1.77
10: 1.43	60: 1.77
11: 1.45	61: 1.77
12: 1.46	62: 1.79
13: 1.47	63: 1.79
14: 1.47	64: 1.80
15: 1.48	65: 1.81
16: 1.51	66: 1.83
17: 1.51	67: 1.83
18: 1.51	68: 1.84
19: 1.52	69: 1.85
20: 1.53	70: 1.87
21: 1.53	71: 1.88
22: 1.53	72: 1.89
23: 1.53	73: 1.93
24: 1.54	74: 1.93
25: 1.57	75: 1.94
26: 1.57	76: 1.98
27: 1.57	77: 1.99
28: 1.57	78: 2.00
29: 1.60	79: 2.01
30: 1.60	80: 2.32
31: 1.60	
32: 1.60	
33: 1.61	
34: 1.61	
35: 1.61	
36: 1.62	
37: 1.63	
38: 1.63	
39: 1.63	
40: 1.65	
41: 1.65	
42: 1.66	
43: 1.66	
44: 1.66	
45: 1.67	
46: 1.68	
47: 1.68	
48: 1.69	
49: 1.69	
50: 1.69	

PAGE TWO OF TWO

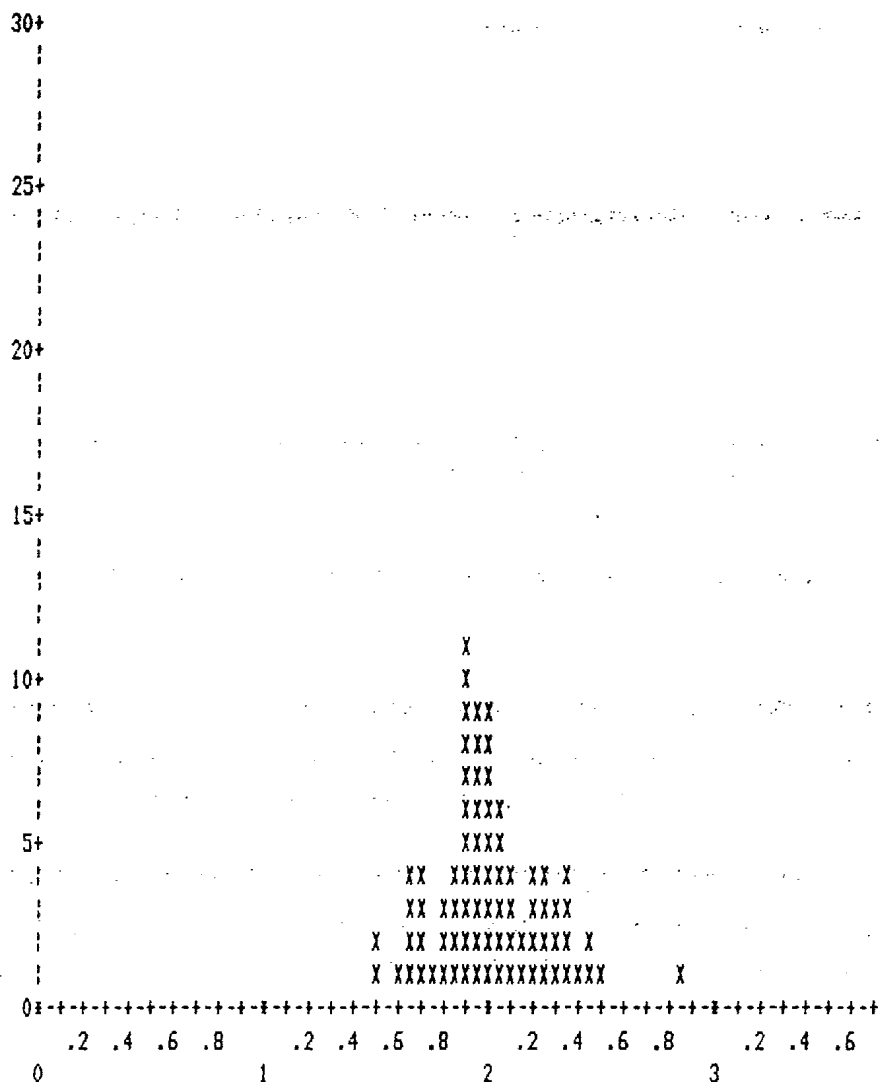
NOTE: ALL INFORMATION CONTAINED HEREIN IS PROPRIETARY

CLIENT.....EXXON
DEPTH/SAMPLE NO..110385 E
LOCATION.....UNKNOWN
ANALYST.....K. W. SCHWAB

FILE NAME.....E-769-11
TYPE OF SAMPLE.....?CTGS.
DATE.....3-24-89
NO. OF OBSERVATIONS. 80

STANDARD IRo START: 1.02 FINISH: 1.02

REFLECTANCE DATA: MIN. 1.53 MAX. 2.85 AVG. 2.03 STD. DEV. 0.24



POP. # 1 TOTAL CTS. 12 MIN. 1.53 MAX. 1.76 AVG. 1.67 STD. DEV. 0.07
POP. # 2 TOTAL CTS. 48 MIN. 1.81 MAX. 2.19 AVG. 1.99 STD. DEV. 0.09 +
POP. # 3 TOTAL CTS. 19 MIN. 2.20 MAX. 2.53 AVG. 2.33 STD. DEV. 0.09
POP. # 4 TOTAL CTS. 1 MIN. 2.85 MAX. 2.85 AVG. 2.85 STD. DEV. 0.00

+ POPULATION CONSIDERED TO BE IN SITU

PAGE ONE OF TWO

DATA POINTS:

1: 1.53	51: 2.06
2: 1.54	52: 2.06
3: 1.64	53: 2.08
4: 1.67	54: 2.09
5: 1.67	55: 2.10
6: 1.68	56: 2.10
7: 1.69	57: 2.11
8: 1.71	58: 2.13
9: 1.71	59: 2.17
10: 1.72	60: 2.19
11: 1.74	61: 2.20
12: 1.76	62: 2.22
13: 1.81	63: 2.22
14: 1.82	64: 2.24
15: 1.84	65: 2.25
16: 1.87	66: 2.26
17: 1.87	67: 2.29
18: 1.88	68: 2.29
19: 1.89	69: 2.31
20: 1.90	70: 2.33
21: 1.90	71: 2.34
22: 1.91	72: 2.35
23: 1.91	73: 2.35
24: 1.91	74: 2.36
25: 1.92	75: 2.38
26: 1.92	76: 2.41
27: 1.92	77: 2.47
28: 1.93	78: 2.49
29: 1.93	79: 2.53
30: 1.94	80: 2.85
31: 1.95	
32: 1.96	
33: 1.97	
34: 1.97	
35: 1.98	
36: 1.98	
37: 1.98	
38: 1.99	
39: 1.99	
40: 2.01	
41: 2.02	
42: 2.02	
43: 2.02	
44: 2.03	
45: 2.03	
46: 2.04	
47: 2.04	
48: 2.04	
49: 2.05	
50: 2.05	

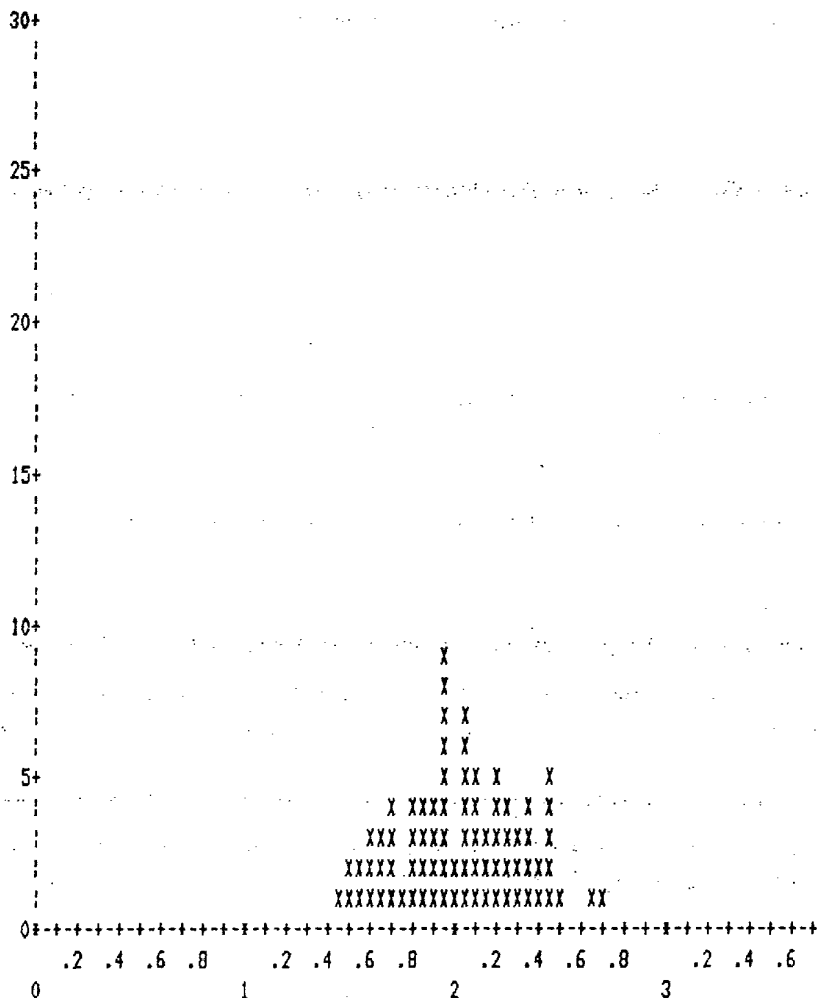
PAGE TWO OF TWO

NOTE: ALL INFORMATION CONTAINED HEREIN IS PROPRIETARY

CLIENT.....EXXON FILE NAME.....E-769-12
 DEPTH/SAMPLE NO..110385 D TYPE OF SAMPLE.....?CTGS.
 LOCATION.....UNKNOWN DATE.....3-24-89
 ANALYST.....K. W. SCHWAB NO. OF OBSERVATIONS. 80

STANDARD IRo START: 1.02 FINISH: 1.02

REFLECTANCE DATA: MIN. 1.49 MAX. 2.73 AVG. 2.05 STD. DEV. 0.29



VITRINITE REFLECTANCE HISTOGRAM - IRo

POP. # 1 TOTAL CTS. 16 MIN. 1.49 MAX. 1.77 AVG. 1.64 STD. DEV. 0.08
 POP. # 2 TOTAL CTS. 47 MIN. 1.80 MAX. 2.29 AVG. 2.05 STD. DEV. 0.14 +
 POP. # 3 TOTAL CTS. 17 MIN. 2.31 MAX. 2.73 AVG. 2.44 STD. DEV. 0.12
 + POPULATION CONSIDERED TO BE IN SITU

PAGE ONE OF TWO

DATA POINTS:

1: 1.49	51: 2.13
2: 1.51	52: 2.17
3: 1.53	53: 2.18
4: 1.57	54: 2.19
5: 1.59	55: 2.20
6: 1.61	56: 2.22
7: 1.61	57: 2.24
8: 1.62	58: 2.24
9: 1.67	59: 2.24
10: 1.67	60: 2.25
11: 1.68	61: 2.25
12: 1.70	62: 2.26
13: 1.71	63: 2.29
14: 1.73	64: 2.31
15: 1.74	65: 2.31
16: 1.77	66: 2.31
17: 1.80	67: 2.36
18: 1.83	68: 2.36
19: 1.84	69: 2.38
20: 1.84	70: 2.39
21: 1.86	71: 2.43
22: 1.86	72: 2.43
23: 1.87	73: 2.45
24: 1.89	74: 2.45
25: 1.91	75: 2.47
26: 1.93	76: 2.47
27: 1.94	77: 2.48
28: 1.94	78: 2.54
29: 1.95	79: 2.66
30: 1.95	80: 2.73
31: 1.97	
32: 1.97	
33: 1.97	
34: 1.98	
35: 1.98	
36: 1.99	
37: 1.99	
38: 2.01	
39: 2.04	
40: 2.05	
41: 2.06	
42: 2.07	
43: 2.08	
44: 2.08	
45: 2.09	
46: 2.09	
47: 2.10	
48: 2.10	
49: 2.12	
50: 2.12	

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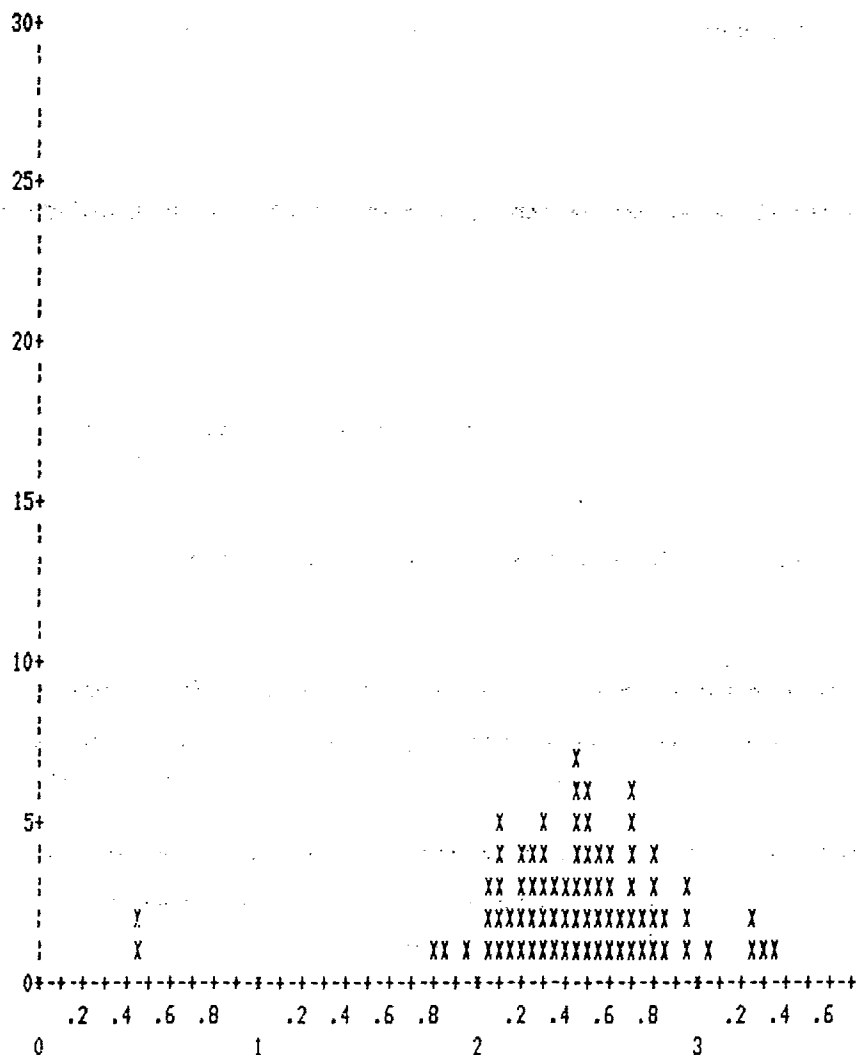
NOTE: ALL INFORMATION CONTAINED HEREIN IS PROPRIETARY

CLIENT.....EXXON
DEPTH/SAMPLE NO..110396 6
LOCATION.....UNKNOWN
ANALYST.....K. W. SCHWAB

FILE NAME.....E-769-13
TYPE OF SAMPLE.....?CT6S.
DATE.....3-24-89
NO. OF OBSERVATIONS. 80

STANDARD ZRo START: 1.02 FINISH: 1.02

REFLECTANCE DATA: MIN. 0.47 MAX. 3.79 AVG. 2.48 STD. DEV. 0.48



POP. # 1 TOTAL CTS. 2 MIN. 0.47 MAX. 0.48 AVG. 0.48 STD. DEV. 0.01

POP. # 2 TOTAL CTS. 3 MIN. 1.82 MAX. 1.99 AVG. 1.89 STD. DEV. 0.09

POP. # 3 TOTAL CTS. 50 MIN. 2.05 MAX. 2.62 AVG. 2.36 STD. DEV. 0.17 +

POP. # 4 TOTAL CTS. 20 MIN. 2.66 MAX. 3.06 AVG. 2.81 STD. DEV. 0.11

POP. # 5 TOTAL CTS. 4 MIN. 3.28 MAX. 3.38 AVG. 3.31 STD. DEV. 0.05

+ POPULATION CONSIDERED TO BE IN SITU

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DATA POINTS:

1: 0.47	51: 2.56
2: 0.48	52: 2.60
3: 1.82	53: 2.61
4: 1.86	54: 2.61
5: 1.99	55: 2.62
6: 2.05	56: 2.66
7: 2.06	57: 2.67
8: 2.09	58: 2.70
9: 2.11	59: 2.71
10: 2.12	60: 2.71
11: 2.13	61: 2.73
12: 2.13	62: 2.74
13: 2.13	63: 2.74
14: 2.17	64: 2.78
15: 2.19	65: 2.78
16: 2.21	66: 2.80
17: 2.21	67: 2.80
18: 2.21	68: 2.83
19: 2.22	69: 2.84
20: 2.26	70: 2.88
21: 2.27	71: 2.89
22: 2.28	72: 2.95
23: 2.29	73: 2.97
24: 2.30	74: 2.98
25: 2.33	75: 3.06
26: 2.33	76: 3.28
27: 2.34	77: 3.28
28: 2.34	78: 3.31
29: 2.37	79: 3.38
30: 2.38	80: 3.79
31: 2.38	
32: 2.40	
33: 2.42	
34: 2.42	
35: 2.45	
36: 2.45	
37: 2.45	
38: 2.47	
39: 2.47	
40: 2.48	
41: 2.48	
42: 2.50	
43: 2.51	
44: 2.52	
45: 2.54	
46: 2.54	
47: 2.54	
48: 2.55	
49: 2.56	
50: 2.56	

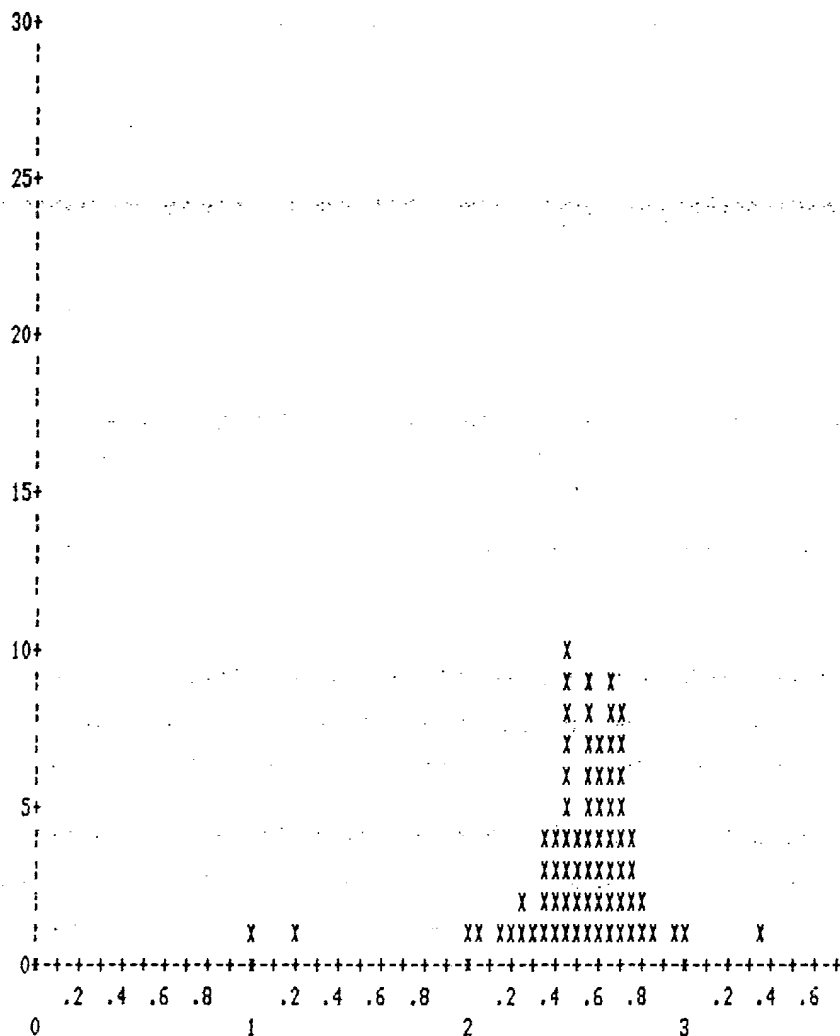
PAGE TWO OF TWO

NOTE: ALL INFORMATION CONTAINED HEREIN IS PROPRIETARY

CLIENT.....EXION FILE NAME.....E-769-14
 DEPTH/SAMPLE NO..110396 0 TYPE OF SAMPLE?CTGS.
 LOCATION.....UNKNOWN DATE.....3-24-89
 ANALYST.....K. W. SCHWAB NO. OF OBSERVATIONS. 75

STANDARD IRo START: 1.02 FINISH: 1.02

REFLECTANCE DATA: MIN. 1.03 MAX. 3.94 AVG. 2.56 STD. DEV. 0.35



VITRINITE REFLECTANCE HISTOGRAM - IRo

POP. # 1 TOTAL CTS. 2 MIN. 1.03 MAX. 1.23 AVG. 1.13 STD. DEV. 0.14
 POP. # 2 TOTAL CTS. 7 MIN. 2.02 MAX. 2.32 AVG. 2.19 STD. DEV. 0.11
 POP. # 3 TOTAL CTS. 62 MIN. 2.37 MAX. 2.85 AVG. 2.60 STD. DEV. 0.12 +
 POP. # 4 TOTAL CTS. 3 MIN. 2.98 MAX. 3.38 AVG. 3.13 STD. DEV. 0.22

+ POPULATION CONSIDERED TO BE IN SITU

PAGE ONE OF TWO

DATA POINTS:

1: 1.03	51: 2.67
2: 1.23	52: 2.68
3: 2.02	53: 2.68
4: 2.06	54: 2.69
5: 2.19	55: 2.69
6: 2.24	56: 2.69
7: 2.25	57: 2.70
8: 2.27	58: 2.70
9: 2.32	59: 2.72
10: 2.37	60: 2.72
11: 2.38	61: 2.73
12: 2.38	62: 2.73
13: 2.39	63: 2.73
14: 2.42	64: 2.73
15: 2.42	65: 2.77
16: 2.44	66: 2.77
17: 2.44	67: 2.78
18: 2.45	68: 2.78
19: 2.46	69: 2.81
20: 2.46	70: 2.81
21: 2.47	71: 2.85
22: 2.48	72: 2.98
23: 2.48	73: 3.03
24: 2.48	74: 3.38
25: 2.49	75: 3.94
26: 2.49	
27: 2.49	
28: 2.50	
29: 2.52	
30: 2.53	
31: 2.53	
32: 2.55	
33: 2.56	
34: 2.56	
35: 2.57	
36: 2.57	
37: 2.58	
38: 2.58	
39: 2.58	
40: 2.59	
41: 2.60	
42: 2.60	
43: 2.61	
44: 2.61	
45: 2.63	
46: 2.63	
47: 2.64	
48: 2.65	
49: 2.66	
50: 2.66	

PAGE TWO OF TWO

NOTE: ALL INFORMATION CONTAINED HEREIN IS PROPRIETARY

WELL/SECTION: **TEXACO NO.1 TULUGAK**
ARCTIC SLOPE, ALASKA

SLIDES REC'D: / / JOB NO.:
 STARTED: / / STUDIED FOR: **M. A. ABRAMS**
 FINISHED: **MARCH 10/89** STUDIED BY: **R.W. HARRIS, JR.**

TABLE-1

SAMPLE NUMBER	INTERVAL IN FT.	TAI	TAI	TAI	Confidence Level (0-5)	Amorphous	Total Amorphous	Botryococcus	Tas./Leio./Tyth.	Dino./Acrit.	Other Aqueous	Total Struct. Aqueous	Biodeg. Terrestrial	Pollen/Spores	Non-Lignified Terr. *	Lignified Terr.	Total Struct. Terrestrial	Inert	Indet. Fines	Resin	Fungi	Microforams	Pyrite	Minerals	Other	Circle TAI Value of Indigenous Population When Possible
110308-O	1400-1490	20	2.3		35		35		R			20	15	R	20	10	VR						A			
110319-M	3010-3100	23			10		10		VR			10	30	R	40	10	R						A			
110330-E	4090-4180	23			20		20		VR			15	15	R	30	15	S						A	A		
110330-O	4990-5080	23	2.4		30		30		R			15	10	5	30	10	R						VA			
110341-G	6060-5150	23	2.4		20		20		R			10	10	R	45	15	R						C			
110341-Q	6960-7050	23	2.4		25		25	R	R			20	10	R	30	15	R						VA			SMALL LEIOSPHERES IN SOME AMORPHOUS CLUMPS.
110352-I	8040-8130	24			20		20					10	20	R	30	20	R						C			
110352-S	8940-9030	24			20		20					10	30	R	30	10	R						C	A		
110363-O	10,380-10,470	25			15		15					10	30	R	30	15	R						C	C		Very rare bitumen.
110374-G	11,460-11,550	26			20		20					10	30	R	30	10	R						C	R		
110385-E	13,080-13,170	26	2.7		20		20					12	25	3	25	15	R						C	R		
110385-O	13,980-14,070	26	2.7	2.8	35		35					20	10	R	25	10	C						A	C		
110396-G	15,150-15,240	27	2.8		10		10					15	20	R	35	15	S						C			
110396-O	16,080-16,170	32			45		45		R			10	20	R	15	10	R						A			
																										* SMALL PORTION OF NON-LIGNIFIED TERR. MAY BE STRUCTURED AQUEOUS.