

CORE LABORATORIES, INC.
Petroleum Research Engineering
DALLAS, TEXAS

25-55-50W
15-18-206E7

NWC 153

CORE ANALYSIS REPORT

FOR

MOBIL OIL CORPORATION

NIX #1, UNIT 3
HUGOTON FIELD
STEVENS COUNTY, KANSAS

MOBIL OIL CORPORATION
NIX #1, UNIT 3
HUGOTON FIELD
STEVENS COUNTY, KANSAS

DATE : 08-MAR-84
FORMATION : AS NOTED
DRLG. FLUID: WATER BASE MUD
LOCATION : NW NW SEC 25, T33S, R36W

FILE NO : 3804-6734
ANALYSTS : D.F.
ELEVATION: 3024.5 KB

FULL DIAMETER DEAN-STARK CORE ANALYSIS

FINAL REPORT

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID OIL	SATS. WTR	GRAIN DEN	DESCRIPTION
CORE NO. 1, 2625-2684, CUT 59', 59'									
HERINGTON FM.									
1	2625.0-26.0	4.38	2.35	<0.01	9.0	0.0	82.9	2.70	SLTST, GY
2	2626.0-27.0	0.38	0.33	0.27	9.9	0.0	73.9	2.71	SLTST, GY
3	2627.0-28.0	1.42	1.03	0.58	10.8	0.0	95.4	2.76	SLTST, GY SL/ANHY
4	2628.0-29.0	7.08	6.04	0.79	16.8	0.0	55.0	2.72	SLTST, GY
5	2629.0-30.0	11.	7.40	4.84	16.2	0.0	53.3	2.74	SLTST, GY
6	2630.0-31.0	2.65	1.76	0.22	13.2	0.0	51.9	2.75	SLTST, GY
7	2631.0-32.0	6.80	4.40	0.90	10.1	0.0	75.0	2.69	SLTST, GY
8	2632.0-33.0	31.	12.	1.32	14.0	0.0	68.8	2.75	SLTST, GY
9	2633.0-34.0	3.00	1.41	<0.01	11.9	0.0	74.2	2.71	SLTST, GY
10	2634.0-35.0	0.04	0.03	0.02	7.9	0.0	57.9	2.86	DOL, GY SUC SLTY
11	2635.0-36.0	4.07	1.30	0.11	10.5	0.0	35.6	2.87	DOL, GY SUC SLTY
12	2636.0-37.0	0.03	0.02	0.04	7.2	0.0	40.2	2.92	DOL, GY SUC SLTY ANHY
13	2637.0-38.0	1.63	1.17	0.15	2.6	0.0	57.5	2.86	DOL, GY SUC SLTY
14	2638.0-39.0	0.05	0.05	0.09	4.7	0.0	23.3	2.87	DOL, GY SUC SLTY
15	2639.0-40.0	0.08	0.07	0.21	5.7	0.0	39.1	2.86	DOL, GY SUC SLTY
16	2640.0-41.0	0.03	0.02	0.08	7.4	0.0	67.4	2.79	DOL, GY SUC V/SLTY
17	2641.0-42.0	0.37	0.20	0.35	4.3	0.0	90.9	2.71	DOL, GY SUC V/SLTY
18	2642.0-43.0	<0.01	<0.01	0.26	1.6	0.0	64.0	2.93	ANHY, GY XLTY DOL
PADDOCK FM.									
	2643.0-44.0								NO ANALYSIS--ANHYDRITE
19	2644.0-45.0	<0.01	<0.01	0.10	8.3	0.0	84.8	2.88	DOL, GY SUC SLTY SL/ANHY

HF
HF
HF

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		MAXIMUM	90 DEG	VERTICAL					
20	2645.0-46.0	<0.01	<0.01	0.27	3.7	0.0	82.6	2.72	DOL, GY SUC V/SLTY
21	2646.0-47.0	0.02	*	0.01	10.1	0.0	83.0	2.72	SLTST, GY
	2647.0-52.5								NO ANALYSIS--ANHYDRITE & SHA
KRIDER FM.									
	2652.5-55.0								NO ANALYSIS--ANHYDRITE
22	2655.0-56.0	<0.01	<0.01	0.13	8.3	0.0	62.0	2.76	DOL, GY SUC V/SLTY
23	2656.0-57.0	1.46	0.44	0.22	9.5	0.0	78.1	2.76	DOL, GY SUC V/SLTY HF
24	2657.0-58.0	0.35	0.16	0.03	10.9	0.0	51.5	2.81	DOL, GY SUC SLTY
25	2658.0-59.0	0.66	0.64	0.58	12.8	0.0	44.4	2.77	DOL, GY SUC V/SLTY
26	2659.0-60.0	0.36	0.26	0.06	10.2	0.0	61.5	2.78	DOL, GY SUC V/SLTY
27	2660.0-61.0	1.03	1.00	0.16	9.4	0.0	47.8	2.80	DOL, GY SUC SLTY
28	2661.0-62.0	0.43	0.37	<0.01	9.0	0.0	48.6	2.80	DOL, GY SUC SLTY
29	2662.0-63.0	0.27	0.16	<0.01	8.4	0.0	52.5	2.80	DOL, GY SUC SLTY
	2663.0-65.0								NO ANALYSIS--ANHYDRITE & SHA
30	2665.0-66.0	<0.01	<0.01	<0.01	2.1	0.0	72.5	2.73	DOL, GY SUC V/SLTY
31	2666.0-67.0	<0.01	<0.01	<0.01	6.8	0.0	86.5	2.84	SLTST, GY ANHY
32	2667.0-68.0	0.01	0.01	0.07	2.9	0.0	82.1	2.76	SLTST, GY
33	2668.0-69.0	<0.01	<0.01	0.02	2.1	0.0	89.3	2.75	SLTST, GY
34	2669.0-70.0	0.03	<0.01	<0.01	1.9	0.0	88.5	2.75	SLTST, GY
35	2670.0-71.0	0.13	<0.01	<0.01	2.2	0.0	96.2	2.76	SLTST, GY HF
36	2671.0-72.0	0.02	<0.01	<0.01	2.7	0.0	88.9	2.76	SLTST, GY
37	2672.0-73.0	0.02	<0.01	<0.01	2.5	0.0	80.9	2.78	SLTST, GY SL/ANHY
38	2673.0-74.0	0.21	0.03	0.01	3.1	0.0	82.5	2.77	SLTST, GY SL/ANHY HF
39	2674.0-75.0	0.28	0.02	<0.01	3.6	0.0	86.4	2.80	SLTST, GY ANHY HF
40	2675.0-76.0	0.02	0.02	0.09	3.6	0.0	86.4	2.80	DOL, GY SUC
41	2676.0-77.0	1.02	0.96	0.07	4.4	0.0	84.9	2.80	DOL, BRN XLN HF
	2677.0-78.0								NO ANALYSIS--SHALY ANHYDRITE
42	2678.0-79.0	0.21	0.03	0.02	2.9	0.0	87.2	2.78	DOL, BRN XLN SLTY HF

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MOBIL OIL CORPORATION
NIX #1, UNIT 3

DATE : 08-MAR-84
FORMATION : AS NOTED

FILE NO : 3804-6734
ANALYSTS : D.F.

FULL DIAMETER DEAN-STARK CORE ANALYSIS

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM 90 DEG VERTICAL	POR. He	FLUID OIL	SATS. WTR	GRAIN DEN	DESCRIPTION
43	2679.0-80.0	0.14 <0.01 0.06	2.0	0.0	87.5	2.85	DOL, GY XLN
44	2680.0-81.0	0.02 0.01 0.09	2.7	0.0	81.7	2.79	DOL, BRN XLN SLTY
45	2681.0-82.0	0.02 0.01 <0.01	2.4	0.0	93.1	2.79	DOL, GY XLN SLTY
46	2682.0-83.0	<0.01 <0.01 <0.01	3.5	0.0	71.4	2.80	DOL, GY SUC
47	2683.0-84.0	0.02 <0.01 0.02	5.3	0.0	50.0	2.84	DOL, GY SUC
CORE NO. 2, 2684-2744, CUT 60', REC. 60'							
48	2684.0-85.0	0.04 0.02 0.02	3.8	0.0	74.5	2.78	DOL, GY SUC SLTY
49	2685.0-86.0	0.02 0.01 0.01	5.9	0.0	83.3	2.84	DOL, BRN XLN
50	2686.0-87.0	0.34 0.25 <0.01	10.1	0.0	52.4	2.87	DOL, BRN SUC
51	2687.0-88.0	0.71 0.64 0.98	10.9	0.0	51.9	2.89	DOL, BRN SUC SL/ANHY
52	2688.0-89.0	5.70 5.46 3.88	16.2	0.0	62.4	2.88	DOL, BRN SUC SL/ANHY
53	2689.0-90.0	0.58 0.56 0.47	12.7	0.0	55.5	2.89	DOL, GY SUC SL/ANHY
54	2690.0-91.0	0.56 0.54 0.64	11.1	0.0	57.8	2.89	DOL, BRN SUC SL/ANHY
55	2691.0-92.0	16. 14. 5.99	21.3	0.0	67.7	2.87	DOL, BRN SUC
56	2692.0-93.0	18. 17. 23.	21.1	0.0	58.8	2.87	DOL, BRN SUC
57	2693.0-94.0	7.16 6.81 9.77	17.1	0.0	66.2	2.87	DOL, BRN SUC
58	2694.0-95.0	11. 9.54 11.	22.0	0.0	74.3	2.87	DOL, BRN SUC
59	2695.0-96.0	18. 18. 29.	20.8	0.0	66.3	2.87	DOL, BRN SUC
60	2696.0-97.0	11. 10. 7.79	18.7	0.0	62.9	2.86	DOL, BRN SUC
61	2697.0-98.0	1.54 1.34 1.84	15.2	0.0	56.2	2.87	DOL, BRN SUC
62	2698.0-99.0	7.63 6.52 1.22	17.3	0.0	63.3	2.86	DOL, BRN SUC
63	2699.0-00.0	10. 10. 9.10	17.9	0.0	59.8	2.86	DOL, BRN SUC
64	2700.0-01.0	16. 16. 8.98	18.5	0.0	66.8	2.86	DOL, BRN SUC
65	2701.0-02.0	6.67 5.98 2.94	17.3	0.0	70.0	2.86	DOL, BRN SUC
66	2702.0-03.0	6.62 5.75 4.90	17.1	0.0	66.3	2.86	DOL, BRN SUC
67	2703.0-04.0	16. 15. 8.81	18.0	0.0	65.0	2.86	DOL, BRN SUC
68	2704.0-05.0	27. * 7.08	17.3	0.0	60.9	2.84	DOL, BRN SUC
69	2705.0-06.0	80 7.21 11.	16.3	0.0	50.5	2.87	DOL, BRN SUC

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		MAXIMUM	90 DEG	VERTICAL						
70	2706.0-07.0	1.41	1.33	1.05	11.5	0.0	48.2	2.88	DOL, BRN SUC	SL/ANHY
71	2707.0-08.0	4.36	3.81	3.73	15.1	0.0	63.8	2.86	DOL, BRN SUC	
72	2708.0-09.0	8.65	6.93	4.93	16.4	0.0	61.5	2.87	DOL, BRN SUC	
73	2709.0-10.0	8.57	8.02	9.50	15.3	0.0	60.1	2.87	DOL, BRN SUC	
74	2710.0-11.0	9.99	9.44	9.27	14.9	0.0	54.4	2.86	DOL, BRN SUC	
75	2711.0-12.0	3.06	2.78	1.31	10.6	0.0	54.7	2.86	DOL, BRN SUC	
76	2712.0-13.0	5.28	5.00	3.13	13.4	0.0	56.4	2.89	DOL, BRN SUC	SL/ANHY
77	2713.0-14.0	17.	13.	6.89	15.6	0.0	39.7	2.87	DOL, BRN SUC	
78	2714.0-15.0	16.	16.	18.	18.3	0.0	58.6	2.86	DOL, BRN SUC	
79	2715.0-16.0	25.	*	18.	17.4	0.0	66.7	2.83	DOL, BRN SUC	
80	2716.0-17.0	1.17	1.12	0.49	12.9	0.0	63.6	2.84	DOL, BRN SUC	
81	2717.0-18.0	1.34	1.34	0.38	15.1	0.0	66.9	2.83	DOL, BRN SUC	
82	2718.0-19.0	3.23	2.53	0.09	14.8	0.0	71.9	2.83	DOL, BRN SUC	
83	2719.0-20.0	1.14	1.04	0.10	12.4	0.0	73.8	2.83	DOL, BRN SUC	
84	2720.0-21.0	7.27	5.73	3.01	14.4	0.0	56.6	2.85	DOL, BRN SUC	
85	2721.0-22.0	5.04	4.06	2.54	13.1	0.0	53.5	2.86	DOL, BRN SUC	
86	2722.0-23.0	2.53	2.39	1.90	12.8	0.0	51.3	2.86	DOL, BRN SUC	
87	2723.0-24.0	0.02	0.02	0.02	7.9	0.0	57.7	2.86	DOL, BRN XLN	
88	2724.0-25.0	0.92	0.19	0.27	10.8	0.0	56.5	2.86	DOL, BRN SUC	
ODELL FM.										
	2725.0-29.0								NO ANALYSIS--SHALE	
89	2729.0-30.0	0.03	0.01	0.02	6.8	0.0	85.3	2.82	DOL, BRN XLN	
90	2730.0-31.0	0.02	0.01	0.04	7.5	0.0	88.8	2.81	DOL, BRN XLN	
WINFIELD FM.										
91	2731.0-32.0	4.29	0.93	0.77	12.1	0.0	52.8	2.86	DOL, BRN SUC	
92	2732.0-33.0	0.12	0.06	0.64	11.3	0.0	37.8	2.87	DOL, BRN SUC	

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93	2733.0-34.0	0.96	0.75	0.18	10.3	0.0	36.8	2.88 DOL, BRN SUC SL/ANHY
94	2734.0-35.0	0.08	0.04	1.65	8.7	0.0	41.3	2.87 DOL, BRN XLN
95	2735.0-36.0	0.22	0.19	0.40	6.6	0.0	53.2	2.86 DOL, BRN XLN
96	2736.0-37.0	0.01	<0.01	0.02	5.2	0.0	49.2	2.85 DOL, BRN XLN
97	2737.0-38.0	0.02	0.01	0.03	1.7	0.0	75.0	2.86 DOL, BRN XLN
98	2738.0-39.0	0.25	0.23	0.02	5.4	0.0	50.8	2.87 DOL, BRN XLN
99	2739.0-40.0	0.06	0.05	0.02	4.3	0.0	65.4	2.90 DOL, BRN XLN ANHY
100	2740.0-41.0	42.	1.95	1.16	9.6	0.0	34.5	2.86 DOL, BRN XLN
101	2741.0-42.0	0.39	*	0.02	6.7	0.0	45.6	2.83 DOL, BRN XLN
102	2742.0-43.0	9.20	9.05	8.07	13.1	0.0	40.4	2.86 DOL, BRN SUC
103	2743.0-44.0	15.	12.	12.	15.9	0.0	45.3	2.86 DOL, BRN SUC

VF

CORE NO. 3, 2744-2804, CUT 60', REC. 60'

104	2744.0-45.0	13.	8.58	8.28	15.7	0.0	59.7	2.86 DOL, BRN SUC
105	2745.0-46.0	0.07	0.03	0.02	9.4	0.0	48.7	2.87 DOL, BRN XLN
106	2746.0-47.0	10.	9.62	11.	15.9	0.0	47.4	2.86 DOL, BRN SUC
107	2747.0-48.0	4.07	3.75	4.18	13.6	0.0	45.2	2.86 DOL, BRN SUC
108	2748.0-49.0	11.	11.	7.92	16.7	0.0	50.0	2.85 DOL, BRN SUC
109	2749.0-50.0	2.62	1.72	<0.01	11.5	0.0	61.0	2.85 DOL, BRN SUC
110	2750.0-51.0	4.85	3.32	8.64	12.3	0.0	46.4	2.86 DOL, BRN SUC
111	2751.0-52.0	5.33	5.29	3.87	15.0	0.0	54.1	2.86 DOL, BRN SUC
112	2752.0-53.0	1.10	1.06	0.90	14.4	0.0	51.4	2.86 DOL, BRN SUC
113	2753.0-54.0	1.75	1.71	1.38	15.7	0.0	41.8	2.87 DOL, BRN SUC
114	2754.0-55.0	6.38	1.38	1.23	10.3	0.0	53.6	2.89 DOL, BRN SUC SL/ANHY
115	2755.0-56.0	0.08	0.06	0.02	5.5	0.0	69.1	2.89 DOL, BRN XLN SL/ANHY
116	2756.0-57.0	0.25	0.22	0.02	7.0	0.0	40.7	2.87 DOL, BRN XLN
117	2757.0-58.0	0.11	0.11	0.02	9.2	0.0	39.8	2.87 DOL, BRN XLN
118	2758.0-59.0	0.44	0.42	0.28	9.7	0.0	44.9	2.86 DOL, BRN XLN
119	2759.0-60.0	20.	18.	1.25	13.3	0.0	50.9	2.86 DOL, BRN SUC

HF

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SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID OIL	SATS. WTR	GRAIN DEN	DESCRIPTION	
120	2760.0-61.0	13.	12.	7.85	14.9	0.0	54.9	2.85	DOL, BRN SUC	
121	2761.0-62.0	4.92	4.80	0.50	15.6	0.0	62.0	2.85	DOL, BRN SUC	
122	2762.0-63.0	8.82	8.26	7.25	16.8	0.0	55.4	2.87	DOL, BRN SUC	
123	2763.0-64.0	4.58	4.16	1.27	12.3	0.0	49.7	2.86	DOL, BRN SUC	
124	2764.0-65.0	1.25	0.02	0.02	5.3	0.0	95.3	2.83	SLTST, GY DOL ANHY	HF
GAGE SH.										
125	2765.0-66.0	0.03	0.02	0.01	6.8	0.0	89.0	2.80	SLTST, GY DOL ANHY	
126	2766.0-67.0	32.	27.	0.02	14.3	0.0	75.4	2.72	SLTST, GY SHY	HF
127	2767.0-68.0	1.20	1.15	0.01	10.8	0.0	72.5	2.75	SLTST, GY DOL	
128	2768.0-69.0	0.19	*	0.83	13.8	0.0	84.8	2.68	SLTST, GY SHY	
129	2769.0-70.0	18.	10.	0.09	15.2	0.0	86.9	2.69	SLTST, GY V/SHY SH/LAM	
	2770.0-88.0								NO ANALYSIS--SHALE	
TOWANDA FM.										
	2788.0-91.0								NO ANALYSIS--SHALE	
130	2791.0-92.0	0.11	*	0.02	11.2	0.0	88.4	2.73	SLTST, GY SHY	
131	2792.0-93.0	0.02	0.01	0.01	2.3	0.0	74.3	2.84	DOL, BRN XLN	
132	2793.0-94.0	4.01	3.69	0.42	8.2	0.0	72.2	2.71	DOL, BRN XLN SLTY SHY	HF
133	2794.0-95.0	4.41	3.89	0.39	18.0	0.0	70.7	2.84	DOL, BRN SUC	
134	2795.0-96.0	4.94	3.13	0.07	11.6	0.0	89.9	2.80	DOL, BRN SUC	
135	2796.0-97.0	1.88	1.76	0.37	13.7	0.0	90.2	2.72	DOL, BRN SUC SHY	
136	2797.0-98.0	6.96	6.40	0.07	18.2	0.0	62.3	2.86	DOL, BRN SUC	
137	2798.0-99.0	8.46	8.18	0.10	18.5	0.0	65.9	2.82	DOL, BRN SUC	
138	2799.0-00.0	1.54	1.40	0.80	14.1	0.0	73.5	2.82	DOL, BRN SUC	
139	2800.0-01.0	0.61	0.57	0.11	14.1	0.0	87.6	2.79	DOL, BRN SUC SLTY	
140	2801.0-02.0	0.26	0.24	0.02	8.9	0.0	89.7	2.82	DOL, BRN SUC	
141	2802.0-03.0	2.23	0.24	0.01	11.2	0.0	91.1	2.76	DOL, BRN SUC V/SLTY	

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CORE LABORATORIES, INC.
Petroleum Research Engineering
DALLAS, TEXAS

MOBIL OIL CORPORATION
NIX #1, UNIT 3

DATE : 08-MAR-84
FORMATION : AS NOTED

FILE NO : 3804-6734
ANALYSTS : D.F.

FULL DIAMETER DEAN-STARK CORE ANALYSIS

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM 90 DEG VERTICAL	POR. He	FLUID OIL	SATS. WTR	GRAIN DEN	DESCRIPTION
142	2803.0-04.0	13. 11. 0.21	11.6	0.0	91.4	2.76	DOL, BRN SUC V/SLTY
CORE NO. 4, 2804-2864, CUT 60', REC. 60'							
143	2804.0-05.0	2.48 2.21 0.48	7.3	0.0	85.6	2.75	DOL, BRN XLN V/SLTY
144	2805.0-06.0	0.07 0.06 0.12	4.1	0.0	80.0	2.80	DOL, BRN XLN
145	2806.0-07.0	0.04 0.02 0.01	3.5	0.0	95.6	2.78	DOL, BRN XLN SLTY
146	2807.0-08.0	0.04 0.03 0.04	5.1	0.0	71.0	2.81	DOL, BRN XLN
147	2808.0-09.0	0.36 0.32 0.01	10.2	0.0	43.2	2.86	DOL, BRN SUC
148	2809.0-10.0	1.45 1.06 0.99	13.6	0.0	33.7	2.87	DOL, BRN SUC
149	2810.0-11.0	4.20 3.80 0.21	14.4	0.0	33.3	2.88	DOL, BRN SUC SL/ANHY
150	2811.0-12.0	15. 14. 0.38	18.7	0.0	32.2	2.86	DOL, BRN SUC
151	2812.0-13.0	12. 11. 0.72	18.3	0.0	30.0	2.87	DOL, BRN SUC
152	2813.0-14.0	21. 18. 16.	19.8	0.0	30.3	2.87	DOL, BRN SUC
153	2814.0-15.0	41. 30. 5.41	18.6	0.0	34.2	2.86	DOL, BRN SUC
154	2815.0-16.0	16. 13. 3.25	16.1	0.0	34.9	2.86	DOL, BRN SUC
155	2816.0-17.0	21. 20. 27.	24.7	0.0	47.5	2.87	DOL, BRN SUC
156	2817.0-18.0	16. 14. 11.	23.2	0.0	50.0	2.86	DOL, BRN SUC
157	2818.0-19.0	39. 33. 47.	28.1	0.0	58.3	2.85	DOL, BRN SUC
158	2819.0-20.0	30. 28. 34.	23.9	0.0	59.4	2.88	DOL, BRN SUC SL/ANHY
159	2820.0-21.0	26. 19. 27.	22.5	0.0	57.8	2.88	DOL, BRN SUC SL/ANHY
160	2821.0-22.0	44. 35. 34.	18.7	0.0	40.5	2.86	DOL, BRN SUC
161	2822.0-23.0	47. 41. 52.	19.8	0.0	38.2	2.86	DOL, BRN SUC
162	2823.0-24.0	47. 43. 60.	20.0	0.0	44.4	2.87	DOL, BRN SUC
163	2824.0-25.0	26. 21. 34.	20.7	0.0	41.4	2.86	DOL, BRN SUC
164	2825.0-26.0	31. 17. 41.	22.8	0.0	38.7	2.86	DOL, BRN SUC
165	2826.0-27.0	20. 18. 38.	19.7	0.0	34.3	2.88	DOL, BRN SUC SL/ANHY
166	2827.0-28.0	14. 13. 18.	18.7	0.0	36.0	2.88	DOL, BRN SUC SL/ANHY
167	2828.0-29.0	19. 16. 27.	19.8	0.0	35.3	2.86	DOL, BRN SUC
168	2829.0-30.0	32. 29. 30.	20.6	0.0	40.7	2.86	DOL, BRN SUC

These analyses, opinions or interpretations are based on observations and materials supplied by the client to whom, and for whose exclusive and confidential use this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc. (all errors and omissions excepted); but Core Laboratories, Inc. and its officers and employees assume no responsibility and make no warranty as to the production, or profitability of any oil, gas or other mineral well or sand in connection with which such report is relied upon.

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Petroleum Research Engineering
DALLAS, TEXAS

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MOBIL OIL CORPORATION
NIX #1, UNIT 3

DATE : 08-MAR-84
FORMATION : AS NOTED

FILE NO : 3804-6734
ANALYSTS : D.F.

FULL DIAMETER DEAN-STARK CORE ANALYSIS

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD)			POR. He	FLUID OIL	SATS. WTR	GRAIN DEN	DESCRIPTION	
		MAXIMUM	90 DEG	VERTICAL						
169	2830.0-31.0	29.	20.	16.	20.3	0.0	52.0	2.87	DOL, BRN SUC	
170	2831.0-32.0	14.	13.	17.	19.7	0.0	40.4	2.86	DOL, BRN SUC	
171	2832.0-33.0	8.64	6.97	12.	18.7	0.0	39.8	2.86	DOL, BRN SUC	
172	2833.0-34.0	9.01	3.74	7.73	19.2	0.0	44.2	2.86	DOL, BRN SUC	
173	2834.0-35.0	7.88	7.48	12.	18.6	0.0	49.1	2.87	DOL, BRN SUC	
174	2835.0-36.0	9.53	9.14	14.	21.3	0.0	53.3	2.86	DOL, BRN SUC	
175	2836.0-37.0	5.63	5.40	5.66	21.2	0.0	69.3	2.84	DOL, BRN SUC	
176	2837.0-38.0	7.42	4.31	6.03	24.3	0.0	73.7	2.83	DOL, BRN SUC	
177	2838.0-39.0	5.05	4.82	4.49	21.8	0.0	73.4	2.83	DOL, BRN SUC	
178	2839.0-40.0	22.	19.	25.	25.8	0.0	56.4	2.84	DOL, BRN SUC	
179	2840.0-41.0	1.05	0.51	0.01	13.7	0.0	85.5	2.81	DOL, BRN SUC SL/SLTY	
180	2841.0-42.0	1.11	0.03	<0.01	2.8	0.0	87.9	2.60	SLTST, GY V/SHY	HF
181	2842.0-43.0	0.34	0.06	0.01	2.7	0.0	88.3	2.58	SH, BLK SLTY	HF

HOLMESVILLE SH.

182	2843.0-44.0	0.71	0.67	0.02	11.6	0.0	87.9	2.72	SLTST, GY	
183	2844.0-45.0	2.83	2.79	0.83	16.5	0.0	88.6	2.74	SLTST, GY	
184	2845.0-46.0	3.14	3.06	3.22	17.7	0.0	88.7	2.75	SLTST, GY	
185	2846.0-47.0	1.58	1.46	0.86	16.8	0.0	87.2	2.75	SLTST, GY	

FORT RILEY FM.

186	2847.0-48.0	2.40	2.17	1.51	16.9	0.0	85.8	2.75	SLTST, GY	
187	2848.0-49.0	0.86	0.78	0.02	14.5	0.0	87.0	2.74	SLTST, GY	
188	2849.0-50.0	1.37	1.29	0.23	14.9	0.0	85.2	2.74	SLTST, GY	
189	2850.0-51.0	2.26	2.22	0.13	16.2	0.0	83.4	2.74	SLTST, GY	
190	2851.0-52.0	2.21	2.14	0.26	16.2	0.0	80.7	2.76	SLTST, GY DOL	
191	2852.0-53.0	0.91	0.83	0.01	13.8	0.0	85.7	2.75	SLTST, GY	
192	2853.0-54.0	1.38	1.26	0.26	15.0	0.0	84.6	2.74	SLTST, GY	

MOBIL OIL CORPORATION
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FULL DIAMETER DEAN-STARK CORE ANALYSIS

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID OIL	SATS. WTR	GRAIN DEN	DESCRIPTION		
193	2854.0-55.0	1.71	0.82	0.01	12.5	0.0	86.7	2.73	LS, GY SUC	SL/SLTY	
194	2855.0-56.0	0.59	0.51	0.07	11.6	0.0	85.1	2.74	LS, GY SUC		
195	2856.0-57.0	0.66	0.65	0.01	12.6	0.0	81.8	2.72	LS, GY SUC		
196	2857.0-58.0	1.04	0.97	0.37	14.0	0.0	84.1	2.73	LS, GY SUC		
197	2858.0-59.0	1.81	1.34	0.98	14.1	0.0	83.0	2.73	LS, GY SUC		
198	2859.0-60.0	1.49	1.23	0.59	13.4	0.0	80.9	2.74	LS, GY SUC		
199	2860.0-61.0	0.70	0.57	0.01	14.2	0.0	84.4	2.79	LS, GY SUC	SL/ANHY	
200	2861.0-62.0	0.87	0.79	0.23	14.1	0.0	84.8	2.75	LS, GY SUC		
201	2862.0-63.0	0.56	0.40	0.04	12.3	0.0	85.1	2.77	LS, GY SUC	SL/ANHY	
202	2863.0-64.0	0.98	0.90	0.30	13.9	0.0	83.4	2.73	LS, GY SUC		

CORE NO. 5, 2864-2901, CUT 37', REC. 37'

203	2864.0-65.0	0.79	0.67	0.04	13.9	0.0	76.9	2.78	LS, BRN SUC	DOL	
204	2865.0-66.0	2.39	2.24	0.19	13.2	0.0	82.7	2.75	LS, GY SUC		
205	2866.0-67.0	1.21	1.20	0.27	14.3	0.0	78.7	2.73	LS, GY SUC		
206	2867.0-68.0	2.35	1.45	0.62	15.3	0.0	80.7	2.72	LS, GY SUC		
207	2868.0-69.0	1.03	1.03	0.40	15.0	0.0	80.2	2.74	LS, GY SUC		
208	2869.0-70.0	1.38	1.26	0.52	15.6	0.0	81.1	2.74	LS, GY SUC		
209	2870.0-71.0	9.70	4.91	4.86	15.3	0.0	71.0	2.75	LS, GY SUC		
210	2871.0-72.0	3.56	2.97	2.06	16.5	0.0	78.1	2.74	LS, GY SUC		
211	2872.0-73.0	1.04	1.00	0.47	13.8	0.0	80.5	2.75	LS, GY SUC		
212	2873.0-74.0	0.82	0.80	0.30	12.8	0.0	81.9	2.75	LS, GY SUC		
213	2874.0-75.0	0.38	0.36	0.01	12.6	0.0	81.2	2.76	LS, GY SUC	SL/DOL	
214	2875.0-76.0	0.46	0.22	0.14	11.4	0.0	46.1	2.76	LS, GY SUC	SL/DOL	
215	2876.0-77.0	0.32	0.16	0.01	12.8	0.0	79.9	2.77	LS, GY SUC	SL/DOL	
216	2877.0-78.0	0.71	0.50	0.12	11.2	0.0	80.4	2.74	LS, GY SUC		
217	2878.0-79.0	0.47	0.43	0.01	10.9	0.0	81.9	2.75	LS, GY SUC		
218	2879.0-80.0	0.20	0.18	0.14	11.0	0.0	80.7	2.73	LS, GY SUC		
219	2880.0-81.0	0.26	0.26	0.01	11.8	0.0	81.2	2.76	LS, GY SUC	SL/DOL	

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Petroleum Reservoir Engineering
 DALLAS, TEXAS

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MOBIL OIL CORPORATION
 NIX #1, UNIT 3

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 FORMATION : AS NOTED

FILE NO : 3804-6734
 ANALYSTS : D.F.

FULL DIAMETER DEAN-STARK CORE ANALYSIS

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	FOR. He	FLUID OIL	SATS. WTR	GRAIN DEN	DESCRIPTION		
220	2881.0-82.0	1.18	1.09	0.36	15.3	0.0	85.1	2.75	LS, GY	SUC	
221	2882.0-83.0	0.41	0.40	0.01	11.9	0.0	82.9	2.72	LS, GY	SUC	
222	2883.0-84.0	0.36	0.22	0.16	11.4	0.0	79.0	2.72	LS, GY	SUC	
223	2884.0-85.0	0.13	0.07	0.01	10.0	0.0	84.7	2.72	LS, GY	SUC	
224	2885.0-86.0	0.47	0.44	0.14	14.4	0.0	87.4	2.74	LS, GY	SUC	
225	2886.0-87.0	0.37	0.15	0.01	14.0	0.0	82.9	2.71	LS, GY	SUC	
226	2887.0-88.0	0.11	0.08	0.11	9.5	0.0	81.4	2.72	LS, GY	SUC	
227	2888.0-89.0	0.06	0.05	0.01	10.3	0.0	81.3	2.72	LS, GY	SUC	
228	2889.0-90.0	0.61	0.13	0.18	9.3	0.0	81.2	2.71	LS, GY	SUC	
229	2890.0-91.0	0.12	0.10	0.01	14.5	0.0	82.2	2.74	SLTST, GY	SL/CALC SL/ANHY	
230	2891.0-92.0	0.07	0.03	0.16	9.9	0.0	73.1	2.71	SLTST, GY	SL/CALC	
231	2892.0-93.0	0.06	0.03	0.01	12.2	0.0	86.4	2.74	SLTST, GY	SL/CALC	
232	2893.0-94.0	0.03	0.02	0.09	7.7	0.0	74.7	2.66	SLTST, GY	SL/CALC SHY	
233	2894.0-95.0	0.10	0.03	0.01	6.1	0.0	77.0	2.63	LS, GY	XLN V/SHY	
234	2895.0-96.0	0.25	<0.01	<0.01	7.4	0.0	76.4	2.65	LS, GY	XLN V/SHY	HF
235	2896.0-97.0	0.08	<0.01	0.01	8.3	0.0	87.1	2.67	LS, GY	XLN SHY	
236	2897.0-98.0	0.02	<0.01	0.05	4.8	0.0	86.6	2.63	LS, GY	XLN V/SHY	HF
237	2898.0-99.0	3.51	0.02	0.01	6.1	0.0	82.7	2.69	LS, GY	XLN SHY	HF
238	2899.0-00.0	0.02	*	0.04	5.6	0.0	53.3	2.74	LS, GY	XLN	
239	2900.0-01.0	0.04	0.01	0.01	3.7	0.0	74.0	2.61	LS, GY	XLN V/SHY	

CORE NO. 6, 2901-2938, CUT 37', REC. 37'

240	2901.0-02.0	0.01	0.02	0.02	9.1	0.0	87.8	2.69	LS, GY	XLN SHY	
241	2902.0-03.0	0.01	<0.01	<0.01	7.0	0.0	78.6	2.68	LS, GY	XLN SHY	
242	2903.0-04.0	0.01	*	0.01	2.7	0.0	72.1	2.68	LS, GY	XLN SHY	
243	2904.0-05.0	0.01	0.01	0.01	6.3	0.0	31.0	2.71	LS, GY	XLN	
244	2905.0-06.0	0.08	*	<0.01	5.0	0.0	47.4	2.69	LS, GY	XLN SHY	HF
245	2906.0-07.0	6.04	0.36	0.01	3.6	0.0	88.4	2.68	LS, GY	XLN SHY	HF
246	2907.0-08.0	<0.01	<0.01	<0.01	4.6	0.0	54.8	2.71	LS, GY	XLN	

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Petroleum Research Engineering
DALLAS, TEXAS

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MOBIL OIL CORPORATION
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FULL DIAMETER DEAN-STARK CORE ANALYSIS

SAMPLE NUMBER	DEPTH	PERM. TO AIR (MD) MAXIMUM	90 DEG	VERTICAL	POR. He	FLUID OIL	SATS. WTR	GRAIN DEN	DESCRIPTION			
247	2908.0-09.0	5.85	5.09	<0.01	6.6	0.0	93.7	2.67	LS, GY XLN	SHY		HF
248	2909.0-10.0	14.	12.	0.09	7.8	0.0	87.2	2.74	LS, GY XLN			
249	2910.0-11.0	0.03	<0.01	1.98	4.4	0.0	75.9	2.67	LS, GY XLN	SHY		VF
250	2911.0-12.0	0.03	0.02	0.01	8.2	0.0	77.2	2.69	LS, GY XLN	SHY		
251	2912.0-13.0	0.24	0.05	0.01	8.6	0.0	75.0	2.72	LS, GY XLN			
252	2913.0-14.0	99.	36.	0.02	7.2	0.0	85.3	2.68	LS, GY XLN	SHY		HF
253	2914.0-15.0	11.	11.	0.01	5.9	0.0	86.1	2.64	LS, GY XLN	V/SHY		HF
254	2915.0-16.0	0.31	0.21	0.04	5.4	0.0	81.3	2.64	LS, GY XLN	V/SHY		HF
255	2916.0-17.0	0.49	0.10	0.01	3.8	0.0	87.8	2.64	LS, GY XLN	V/SHY		HF
256	2917.0-18.0	0.01	<0.01	0.04	1.1	0.0	82.3	2.65	LS, GY XLN	V/SHY		
257	2918.0-19.0	0.01	<0.01	<0.01	2.1	0.0	79.3	2.64	LS, GY XLN	V/SHY		
258	2919.0-20.0	0.04	<0.01	0.04	3.4	0.0	73.2	2.68	LS, GY XLN	SHY		
259	2920.0-21.0	0.02	0.01	0.01	0.9	0.0	54.5	2.69	LS, GY XLN	SHY		
260	2921.0-22.0	0.63	0.22	0.01	3.3	0.0	85.0	2.69	LS, GY XLN	SHY		
261	2922.0-23.0	0.56	0.20	0.01	3.3	0.0	87.4	2.66	LS, GY XLN	V/SHY		
262	2923.0-24.0	0.02	0.01	<0.01	1.9	0.0	73.9	2.70	LS, GY XLN	SLTY		
263	2924.0-25.0	0.08	0.03	0.01	5.6	0.0	77.9	2.72	LS, GY XLN	SL/SLTY		
264	2925.0-26.0	0.03	0.02	<0.01	6.1	0.0	85.1	2.68	LS, GY XLN	SHY SL/SLTY		
265	2926.0-27.0	0.04	0.03	0.01	7.1	0.0	83.7	2.68	LS, GY XLN	SHY SL/SLTY		
266	2927.0-28.0	2.90	1.52	0.07	6.3	0.0	86.8	2.69	LS, GY XLN	SHY SL/SLTY		HF
267	2928.0-29.0	0.67	0.60	0.02	6.8	0.0	86.6	2.67	LS, GY XLN	SHY SL/SLTY		
WREFORD FM.												
268	2929.0-30.0	0.19	0.18	0.02	4.5	0.0	80.9	2.62	SLTST, GY	V/SHY		
269	2930.0-31.0	0.60	<0.01	0.01	5.3	0.0	89.1	2.62	SLTST, GY	V/SHY		
	2931.0-38.0								NO ANALYSIS--SHALE			

* SAMPLE NOT SUITABLE FOR FULL DIAMETER ANALYSIS

CORE LABORATORIES, INC.
Petroleum Research Engineering
DALLAS, TEXAS

MOBIL OIL CORPORATION
WELL #1, UNIT 3

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ANALYSTS : D.F.

*** CORE SUMMARY AVERAGES FOR 1 ZONE ***

DEPTH INTERVAL: 2625.0 TO 2931.0

FEET OF CORE ANALYZED : 269.0 FEET OF CORE INCLUDED IN AVERAGES: 269.0

-- SAMPLES FALLING WITHIN THE FOLLOWING RANGES WERE AVERAGED --

PERMEABILITY MAXIMUM RANGE (MD.)	:	0.00 TO 100.	(UNCORRECTED FOR SLIPPAGE)
HELIUM POROSITY RANGE (%)	:	0.0 TO 100.0	
OIL SATURATION RANGE (%)	:	0.0 TO 100.0	
WATER SATURATION RANGE (%)	:	0.0 TO 100.0	

SHALE SAMPLES EXCLUDED FROM AVERAGES.

AVERAGES FOR DEPTH INTERVAL: 2625.0 TO 2931.0

AVERAGE PERMEABILITY (MILLIDARCIES)

ARITHMETIC PERMEABILITY	:	5.7
GEOMETRIC PERMEABILITY	:	0.82
HARMONIC PERMEABILITY	:	0.05
GEOMETRIC MAXIMUM & 90 DEG PERM.	:	0.59

PRODUCTIVE CAPACITY (MILLIDARCY-FEET)

ARITHMETIC CAPACITY	:	1540.
GEOMETRIC CAPACITY	:	221.
HARMONIC CAPACITY	:	13.
GEOMETRIC MAXIMUM & 90 DEG CAPACITY:	:	160.

AVERAGE POROSITY (PERCENT) : 11.5

AVERAGE TOTAL WATER SATURATION : 64.7
(PERCENT OF PORE SPACE)

AVERAGE RESIDUAL OIL SATURATION : 0.0
(PERCENT OF PORE SPACE)

AVERAGE CONNATE WATER SATURATION :
(PERCENT OF PORE SPACE)

PERMEABILITY VS POROSITY

COMPANY: MOBIL OIL CORPORATION
 FIELD : HUGOTON FIELD

WELL : NIX #1, UNIT 3
 COUNTY, STATE: STEVENS COUNTY, KANSAS

AIR PERMEABILITY : MD - HORIZONTAL (UNCORRECTED FOR SLIPPAGE)
 POROSITY : PERCENT (HELIUM)

DEPTH INTERVAL	RANGE & SYMBOL	PERMEABILITY		POROSITY		POROSITY AVERAGE	PERMEABILITY AVERAGES		
		MINIMUM	MAXIMUM	MIN.	MAX.		ARITHMETIC	HARMONIC	GEOMETRIC
2625.0 - 2643.0	1 (X)	0.001	32.0	2.5	16.9	9.5	4.4	0.13	0.88

EQUATION OF REDUCED LINE RELATING PERMEABILITY(K) TO POROSITY :
 $\log(K) = (\text{SLOPE})(\text{POROSITY}) + \log \text{ OF INTERCEPT}$
 $K = \text{ANTILOG}((\text{SLOPE})(\text{POROSITY}) + \log \text{ OF INTERCEPT})$

RANGE	EQUATION OF THE LINE
1	PERM = ANTILOG((0.2431)(POROSITY) + -2.3730)

PERMEABILITY: MILLIDARCIES

0.01

0.1

1

0.0 4.0 8.0 12.0 16.0 20.0 24.0

POROSITY: PERCENT

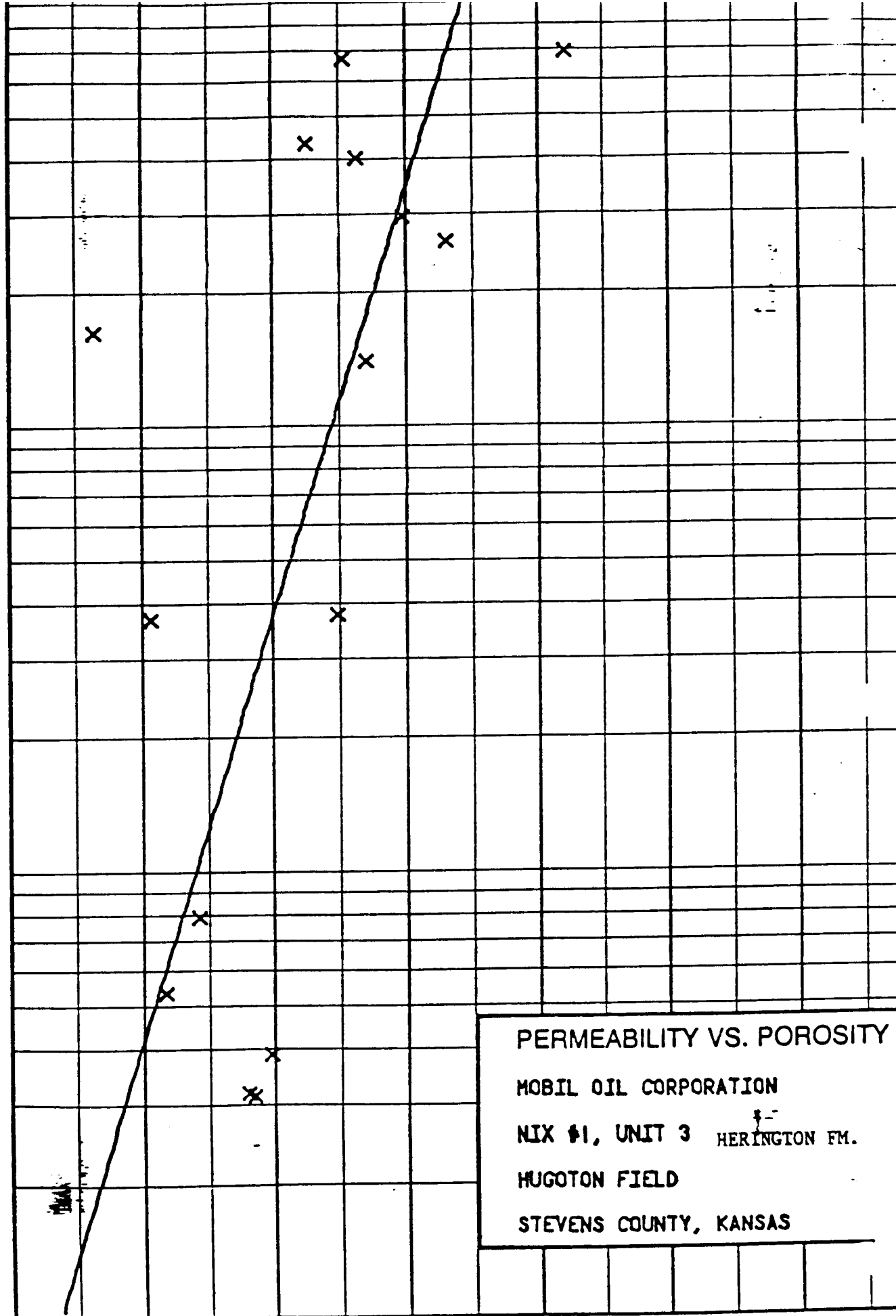
PERMEABILITY VS. POROSITY

MOBIL OIL CORPORATION

NIX #1, UNIT 3 HERINGTON FM.

HUGOTON FIELD

STEVENS COUNTY, KANSAS



PERMEABILITY VS POROSITY

COMPANY: MOBIL OIL CORPORATION
 FIELD : HUGOTON FIELD

WELL : NIX #1, UNIT 3
 COUNTY, STATE: STEVENS COUNTY, KANSAS

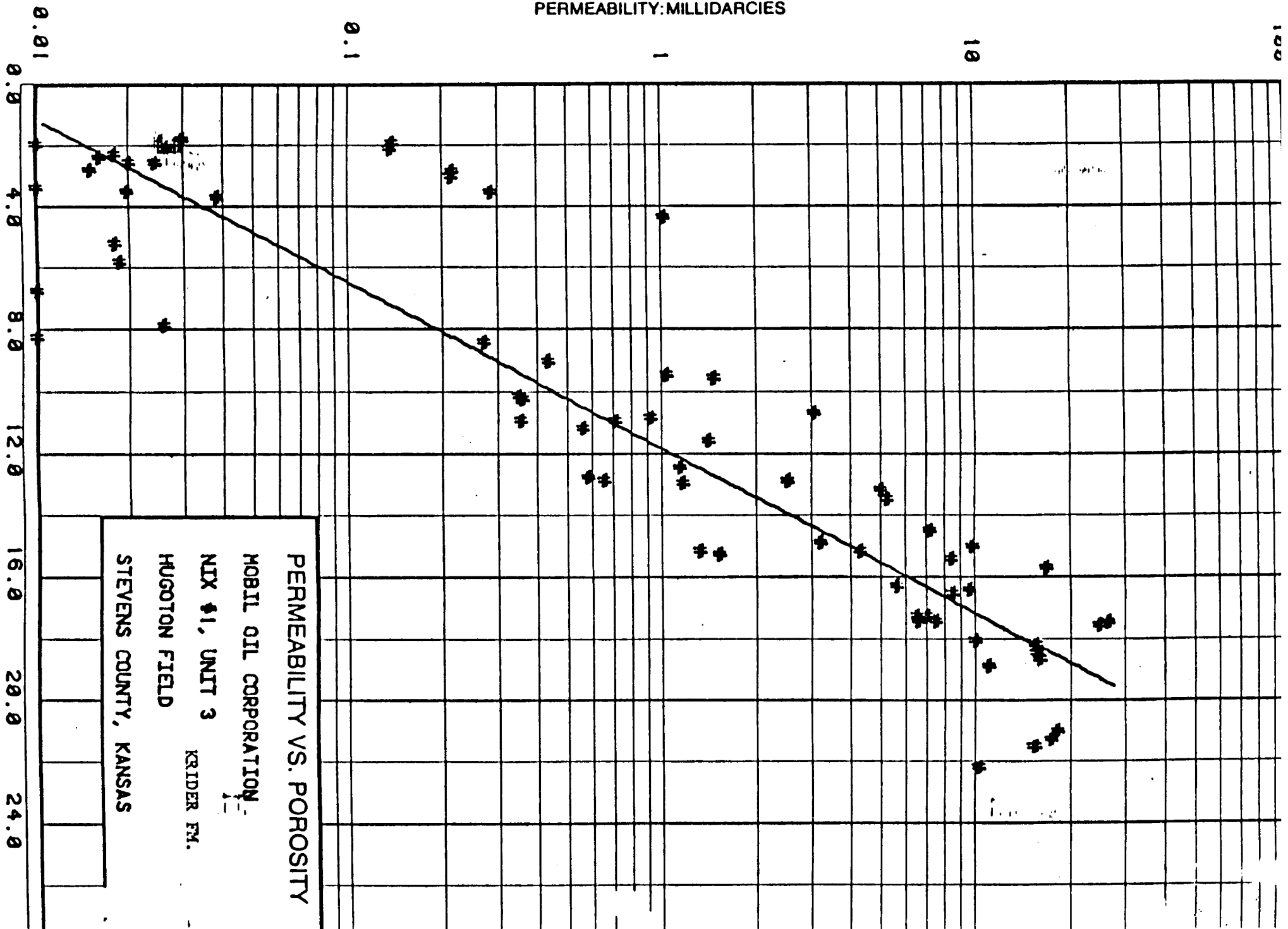
AIR PERMEABILITY : MD - HORIZONTAL (UNCORRECTED FOR SLIPPAGE)
 POROSITY : PERCENT (HELIUM)

DEPTH INTERVAL	RANGE & SYMBOL	PERMEABILITY		POROSITY		POROSITY AVERAGE	PERMEABILITY AVERAGES		
		MINIMUM	MAXIMUM	MIN.	MAX.		ARITHMETIC	HARMONIC	GEOMETRIC
2655.0 - 2725.0	1 (#)	0.001	28.0	1.8	22.1	11.1	4.8	0.04	0.72

EQUATION OF REDUCED LINE RELATING PERMEABILITY(K) TO POROSITY :
 $\text{LOG}(K) = (\text{SLOPE})(\text{POROSITY}) + \text{LOG OF INTERCEPT}$
 $K = \text{ANTILOG}((\text{SLOPE})(\text{POROSITY}) + \text{LOG OF INTERCEPT})$

RANGE	EQUATION OF THE LINE
1	PERM = ANTILOG((0.1921)(POROSITY) + -2.2742)

PERMEABILITY: MILLIDARCIES



PERMEABILITY: MILLIDARCIES

PERMEABILITY VS POROSITY

COMPANY: MOBIL OIL CORPORATION
FIELD : HUGOTON FIELD

WELL : NIX #1, UNIT 3
COUNTY, STATE: STEVENS COUNTY, KANSAS

AIR PERMEABILITY : MD - HORIZONTAL (UNCORRECTED FOR SLIPPAGE)
POROSITY : PERCENT (HELIUM)

DEPTH INTERVAL	RANGE & SYMBOL	PERMEABILITY		POROSITY		POROSITY AVERAGE	PERMEABILITY AVERAGES		
		MINIMUM	MAXIMUM	MIN.	MAX.		ARITHMETIC	HARMONIC	GEOMETRIC
2731.0 - 2765.0	1 (0)	0.001	43.0	1.6	16.9	10.9	5.5	0.15	1.2

EQUATION OF REDUCED LINE RELATING PERMEABILITY(K) TO POROSITY :
 $\log(K) = (\text{SLOPE})(\text{POROSITY}) + \log \text{ OF INTERCEPT}$
 $K = \text{ANTILOG}((\text{SLOPE})(\text{POROSITY}) + \log \text{ OF INTERCEPT})$

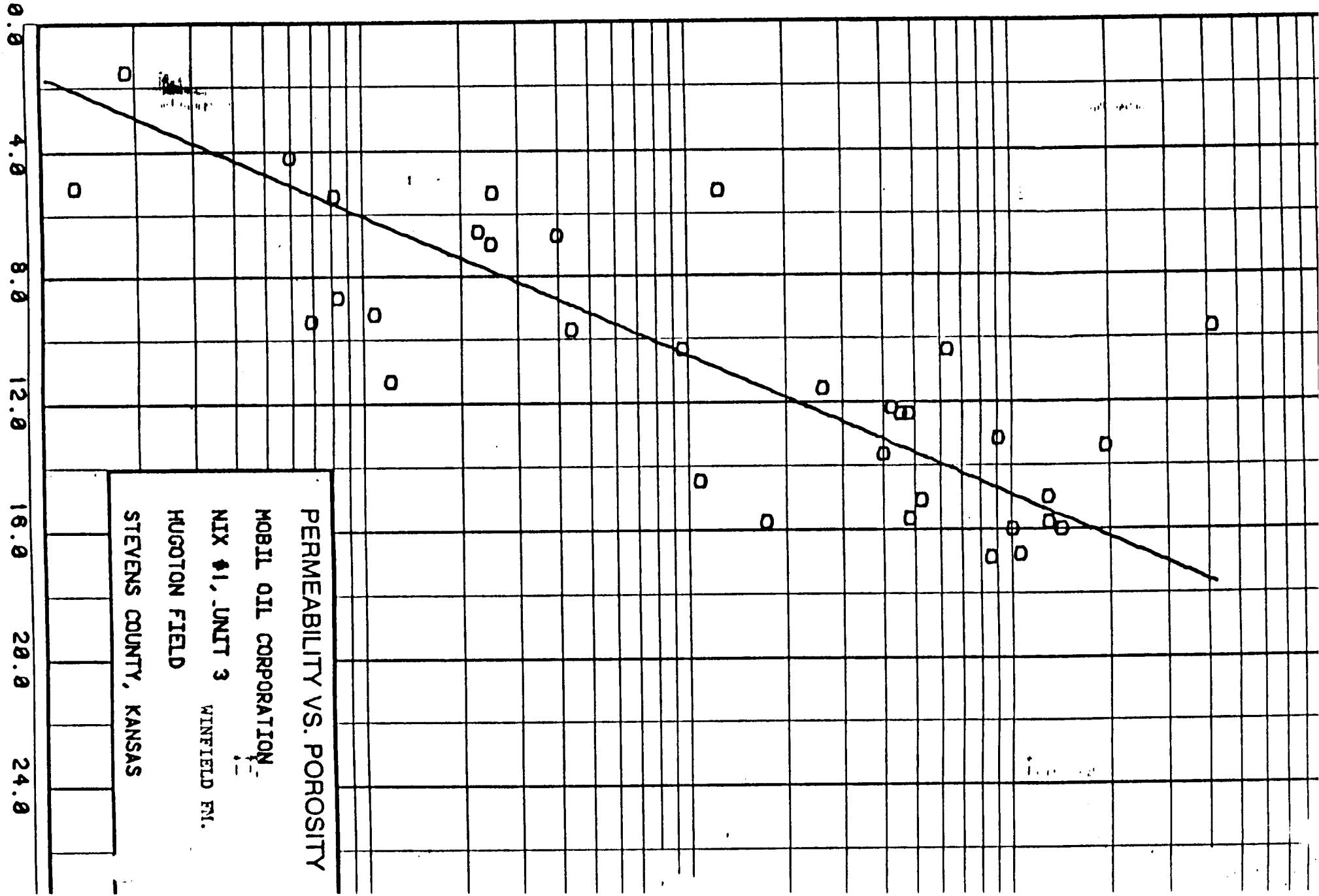
RANGE	EQUATION OF THE LINE
1	PERM = ANTILOG((0.2312)(POROSITY) + -2.4309)

PERMEABILITY: MILLIDARCIES

0.1

10

0.01



PERMEABILITY VS. POROSITY
 MOBIL OIL CORPORATION
 NIX #1, UNIT 3
 HUGOTON FIELD
 STEVENS COUNTY, KANSAS

POROSITY: PERCENT

78

PERMEABILITY VS POROSITY

COMPANY: MOBIL OIL CORPORATION
 FIELD : HUGOTON FIELD

WELL : NIX #1, UNIT 3
 COUNTY, STATE: STEVENS COUNTY, KANSAS

AIR PERMEABILITY : MD - HORIZONTAL (UNCORRECTED FOR SLIPPAGE)
 POROSITY : PERCENT (HELIUM)

DEPTH INTERVAL	RANGE & SYMBOL	PERMEABILITY		POROSITY		POROSITY AVERAGE	PERMEABILITY AVERAGES		
		MINIMUM	MAXIMUM	MIN.	MAX.		ARITHMETIC	HARMONIC	GEOMETRIC
2791.0 - 2843.0	1 (0)	0.010	48.0	2.2	28.2	16.2	13.	0.35	4.7

EQUATION OF REDUCED LINE RELATING PERMEABILITY(K) TO POROSITY :
 $\text{LOG}(K) = (\text{SLOPE})(\text{POROSITY}) + \text{LOG OF INTERCEPT}$
 $K = \text{ANTILOG}((\text{SLOPE})(\text{POROSITY}) + \text{LOG OF INTERCEPT})$

RANGE	EQUATION OF THE LINE
1	PERM = ANTILOG((0.1349)(POROSITY) + -1.5168)

PERMEABILITY: MILLIDARCIES

0.01

0.1

1

10

100

0.0

4.0

8.0

12.0

16.0

20.0

24.0

POROSITY: PERCENT

PERMEABILITY VS. POROSITY

MOBIL OIL CORPORATION

NIX #1, UNIT 3

HUGOTON FIELD TOWANDA FM.

STEVENS COUNTY, KANSAS

PERMEABILITY VS POROSITY

COMPANY: MOBIL OIL CORPORATION
 FIELD : HUGOTON FIELD

WELL : NIX #1, UNIT 3
 COUNTY, STATE: STEVENS COUNTY, KANSAS

AIR PERMEABILITY : MD - HORIZONTAL (UNCORRECTED FOR SLIPPAGE)
 POROSITY : PERCENT (HELIUM)

DEPTH INTERVAL	RANGE & SYMBOL	PERMEABILITY		POROSITY		POROSITY AVERAGE	PERMEABILITY AVERAGES		
		MINIMUM	MAXIMUM	MIN.	MAX.		ARITHMETIC	HARMONIC	GEOMETRIC
2847.0 - 2929.0	1 (B)	0.001	100.0	0.8	17.0	9.8	2.4	0.04	0.33

EQUATION OF REDUCED LINE RELATING PERMEABILITY(K) TO POROSITY :
 $\log(K) = (\text{SLOPE})(\text{POROSITY}) + \log \text{ OF INTERCEPT}$
 $K = \text{ANTILOG}((\text{SLOPE})(\text{POROSITY}) + \log \text{ OF INTERCEPT})$

RANGE	EQUATION OF THE LINE
1	PERM = ANTILOG((0.2027)(POROSITY) + -2.4755)

PERMEABILITY: MILLIDARCIES

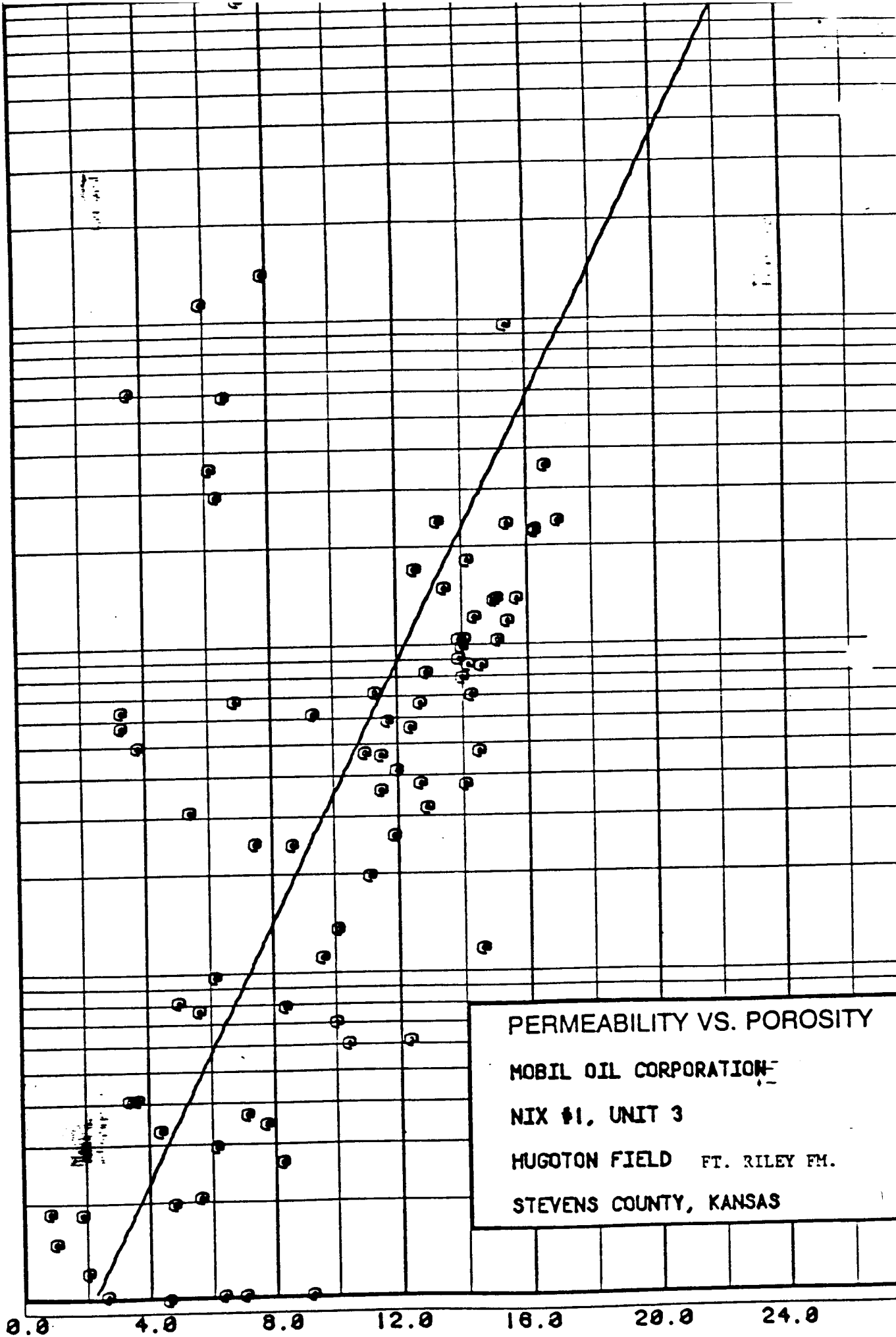
0.01

0.1

1

10

100



PERMEABILITY VS. POROSITY

MOBIL OIL CORPORATION

NIX #1, UNIT 3

HUGOTON FIELD FT. RILEY FM.

STEVENS COUNTY, KANSAS

STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

COMPANY: MOBIL OIL CORPORATION
FIELD : HUGOTON FIELD

WELL : NIX #1, UNIT 3
COUNTY, STATE: STEVENS COUNTY, KANSAS

AIR PERMEABILITY : MD. (HORIZONTAL) RANGE USED 0.001 TO 100.
POROSITY : PERCENT (HELIUM) RANGE USED 0.0 TO 46.0

(PERMEABILITY UNCORRECTED FOR SLIPPAGE)

DEPTH LIMITS : 2625.0 - 2931.0 INTERVAL LENGTH : 306.0
FEET ANALYZED IN ZONE : 269.0 LITHOLOGY EXCLUDED : NONE

DATA SUMMARY

POROSITY AVERAGE	PERMEABILITY AVERAGES		
	ARITHMETIC	HARMONIC	GEOMETRIC
11.5	5.7	0.05	0.82

STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

COMPANY: MOBIL OIL CORPORATION
 FIELD : HUGOTON FIELD

WELL : NIX #1, UNIT 3
 COUNTY, STATE: STEVENS COUNTY, KANSAS

GROUPING BY POROSITY RANGES

POROSITY RANGE	FEET IN RANGE	AVERAGE POROSITY	AVERAGE PERM. (GEOM.) (ARITH)	FREQUENCY (PERCENT)	CUMULATIVE FREQUENCY (%)
0.0 - 2.0	6.0	1.5	0.017	0.018	2.2
2.0 - 4.0	29.0	3.0	0.064	0.417	10.8
4.0 - 6.0	23.0	5.1	0.095	0.698	8.6
6.0 - 8.0	25.0	7.0	0.168	5.2	9.3
8.0 - 10.0	22.0	9.0	0.213	2.6	8.2
10.0 - 12.0	34.0	11.0	0.708	1.7	12.6
12.0 - 14.0	31.0	13.1	1.4	2.7	11.5
14.0 - 16.0	38.0	14.8	2.8	6.1	14.1
16.0 - 18.0	22.0	16.8	6.4	8.5	8.2
18.0 - 20.0	20.0	18.8	15.	18.	7.4
20.0 - 22.0	10.0	20.9	17.	21.	3.7
22.0 - 24.0	5.0	22.9	21.	23.	1.9
24.0 - 26.0	3.0	24.9	15.	17.	1.1
28.0 - 30.0	1.0	28.1	39.	39.	0.4
					100.0

TOTAL NUMBER OF FEET = 269.0

STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

COMPANY: MOBIL OIL CORPORATION
FIELD : HUGOTON FIELD

WELL : NIX #1, UNIT 3
COUNTY, STATE: STEVENS COUNTY, KANSAS

GROUPING BY PERMEABILITY RANGES

PERMEABILITY RANGE	FEET IN RANGE	AVERAGE PERM. (GEOM.)	AVERAGE PERM. (ARITH)	AVERAGE POROSITY	FREQUENCY (PERCENT)	CUMULATIVE FREQUENCY (%)
0.005 - 0.010	9.0	0.006	0.006	4.6	3.3	3.3
0.010 - 0.020	19.0	0.015	0.015	3.7	7.1	10.4
0.020 - 0.039	19.0	0.030	0.030	6.2	7.1	17.5
0.039 - 0.078	11.0	0.060	0.061	6.9	4.1	21.6
0.078 - 0.156	13.0	0.104	0.106	7.8	4.8	26.4
0.156 - 0.312	15.0	0.236	0.238	7.2	5.6	32.0
0.312 - 0.625	27.0	0.440	0.450	9.9	10.0	42.0
0.625 - 1.250	30.0	0.917	0.938	11.5	11.2	53.2
1.250 - 2.500	24.0	1.7	1.8	13.3	8.9	62.1
2.500 - 5.000	23.0	3.7	3.7	12.6	8.6	70.6
5.- 10.	30.0	7.2	7.4	15.9	11.2	81.8
10.- 20.	28.0	14.	15.	17.0	10.4	92.2
20.- 40.	15.0	27.	28.	20.8	5.6	97.8
40.- 80.	5.0	44.	45.	17.3	1.9	99.6
80.- 160.	1.0	99.	99.	7.2	0.4	100.0

TOTAL NUMBER OF FEET = 269.0

STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

COMPANY: MOBIL OIL CORPORATION
FIELD : HUGOTON FIELD

WELL : NIX #1, UNIT 3
COUNTY, STATE: STEVENS COUNTY, KANSAS

POROSITY-FEET OF STORAGE CAPACITY LOST FOR SELECTED POROSITY CUT OFF

POROSITY CUT OFF	FEET LOST	CAPACITY LOST (%)	FEET REMAINING	CAPACITY REMAINING (%)	ARITH MEAN	MEDIAN
0.0	0.0	0.0	269.0	100.0	11.5	11.7
2.0	6.0	0.3	263.0	99.7	11.7	11.9
4.0	35.0	3.1	234.0	96.9	12.8	12.8
6.0	58.0	6.8	211.0	93.2	13.7	13.6
8.0	83.0	12.4	186.0	87.6	14.6	14.3
10.0	105.0	18.8	164.0	81.2	15.3	14.9
12.0	139.0	30.9	130.0	69.1	16.5	15.8
14.0	170.0	43.9	99.0	56.1	17.5	17.0
16.0	208.0	62.1	61.0	37.9	19.2	18.9
18.0	230.0	74.1	39.0	25.9	20.6	
20.0	250.0	86.2	19.0	13.8	22.4	
22.0	260.0	93.0	9.0	7.0	24.1	
24.0	265.0	96.7	4.0	3.3	25.7	
26.0	268.0	99.1	1.0	0.9	28.1	
28.0	268.0	99.1	1.0	0.9	28.1	
30.0	269.0	100.0	0.0	0.0		

TOTAL STORAGE CAPACITY IN POROSITY-FEET = 3097.7

STATISTICAL DATA FOR POROSITY AND PERMEABILITY HISTOGRAM

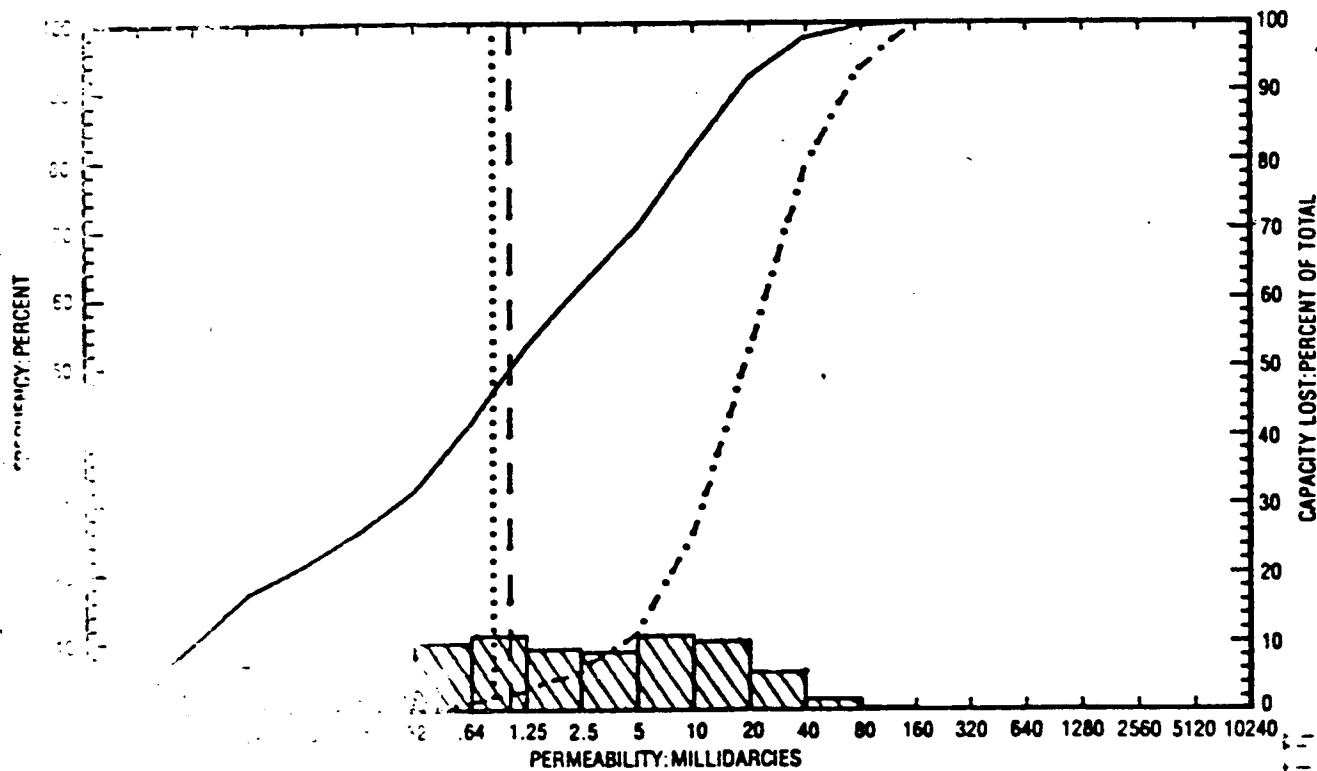
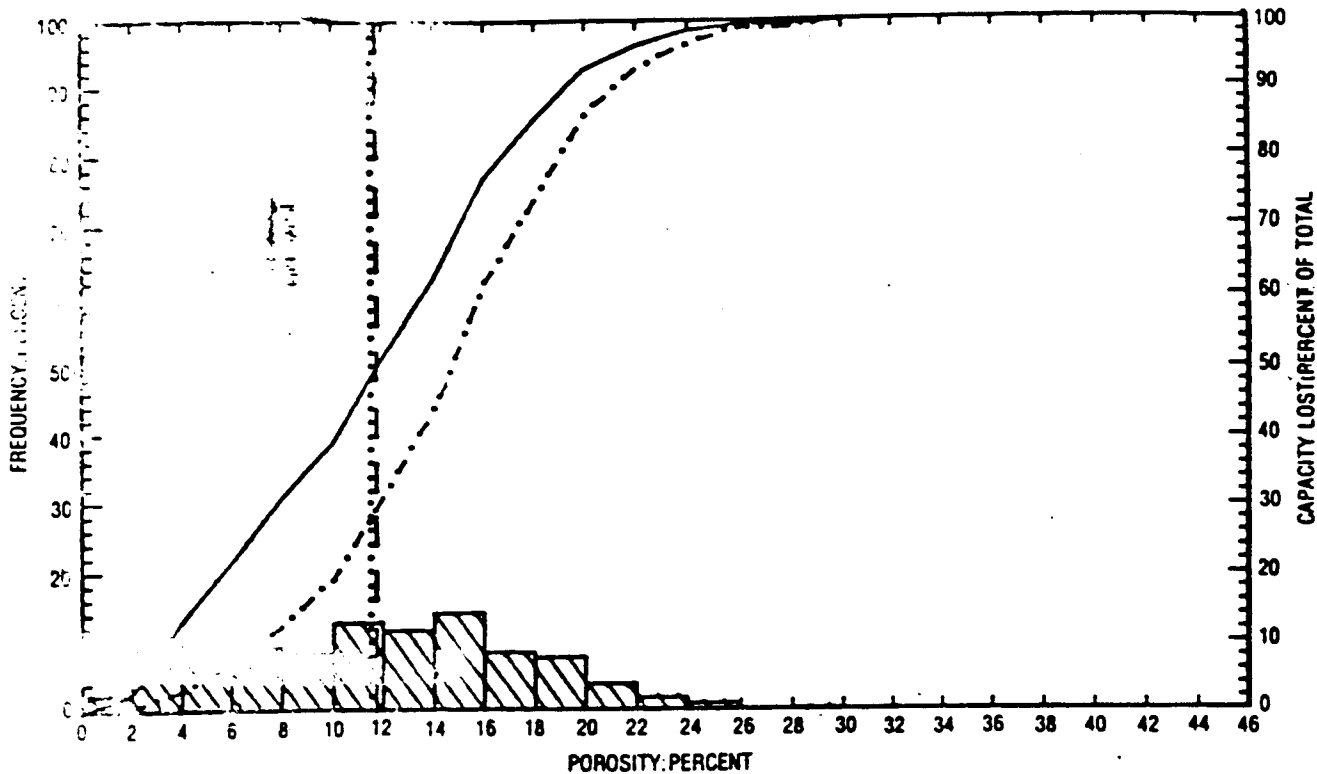
COMPANY: MOBIL OIL CORPORATION
FIELD : HUGOTON FIELD

WELL : NIX #1, UNIT 3
COUNTY, STATE: STEVENS COUNTY, KANSAS

MILLIDARCY-FEET OF FLOW CAPACITY LOST FOR SELECTED PERMEABILITY CUT OFF

PERMEABILITY CUT OFF	FEET LOST	CAPACITY LOST (%)	FEET REMAINING	CAPACITY REMAINING (%)	GEOM MEAN	MEDIAN
0.005	0.0	0.0	269.0	100.0	0.82	1.03
0.010	9.0	0.0	260.0	100.0	0.99	1.14
0.020	28.0	0.0	241.0	100.0	1.37	1.47
0.039	47.0	0.1	222.0	99.9	1.90	1.93
0.078	58.0	0.1	211.0	99.9	2.28	2.26
0.156	71.0	0.2	198.0	99.8	2.79	2.74
0.312	86.0	0.4	183.0	99.6	3.42	3.43
0.625	113.0	1.2	156.0	98.8	4.88	5.12
1.250	143.0	3.0	126.0	97.0	7.26	7.24
2.500	167.0	5.8	102.0	94.2	10.18	9.55
5.	190.0	11.4	79.0	88.6	13.71	12.65
10.	220.0	25.8	49.0	74.2	20.25	
20.	248.0	52.2	21.0	47.8	32.38	
40.	263.0	79.1	6.0	20.9	50.80	
80.	268.0	93.6	1.0	6.4	99.00	
160.	269.0	100.0	0.0	0.0		

TOTAL FLOW CAPACITY IN MILLIDARCY-FEET(ARITHMETIC) = 1538.37



PERMEABILITY AND POROSITY HISTOGRAMS

MOBIL OIL CORPORATION
 NIX #1, UNIT 3
 HUGOTON FIELD
 STEVENS COUNTY, KANSAS

LEGEND	
ARITHMETIC MEAN POROSITY	
GEOMETRIC MEAN PERMEABILITY	
MEDIAN VALUE	-----
CUMULATIVE FREQUENCY	————
CUMULATIVE CAPACITY LOST	- - - - -

CORE LABORATORIES, INC.

LAB

Petroleum Reservoir Engineering

COMPANY MOBIL OIL CORPORATION

FILE NO 3884-8734

WELL NIX #1, UNIT 3

DATE 88-MAR-84

FIELD HUGOTON

FORMATION AS NOTED

ELEV 3824.5 KS

COUNTY STEVENS

STATE KANSAS

DRUG FLD WATER BASE MUD

CORES

LOCATION NW 1/4 SEC 25, T33N, R38W

CORRELATION COREGRAPH

This correlation graph is a plot of gamma ray, permeability, porosity, and oil saturation data for a core sample. The gamma ray curve is plotted on the left side of the graph, and the permeability, porosity, and oil saturation curves are plotted on the right side. The gamma ray curve is a line graph showing the variation of gamma ray intensity with depth. The permeability, porosity, and oil saturation curves are also line graphs showing the variation of these properties with depth. The gamma ray curve is plotted on a scale of 0 to 100, and the permeability, porosity, and oil saturation curves are plotted on a scale of 0 to 100. The gamma ray curve is plotted on a scale of 0 to 100, and the permeability, porosity, and oil saturation curves are plotted on a scale of 0 to 100.

VERTICAL SCALE: 1" = 10'

