OILFIELD RESEARCH LABORATORIES

536 NORTH HIGHLAND - CHANUTE, KANSAS - PHONE HE1-2650

February 9, 1968

10-25-10E

Mr. G. M. Smith
260 N. Terrace Drive
Wichita, Kansas 67200

Gentlemen:

Enclosed herewith are the results of tests run on the Rotary cores taken from the E. Light Lease, Well No. 4-A, Woodson County, Kansas, and submitted to our laboratory on February 6, 1968.

These cores are from a virgin territory and were sampled and the samples were sealed in tin cans by a representative of Oilfield Research Laboratories.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Carl L. Pate by bjo

Carl L. Pate

CLP:bjo

4 c. - Wichita, Kansas
1 c. - Yates Center, Kansas

E. Light 4-A

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company G. M. Smith Lease E. Light Well No. 4-A

Location 220' SNL and 220' EWL, E/2, SW/4

Section 16 Twp. 25S Rge. 16E County Woodson State Kansas

Name of Sand	Upper Squirrel
Top of Core	870.0
Bottom of Core	894.0
Top of Sand (Good)	879.8
Bottom of Sand	892.0
Total Feet of Permeable Sand - (Analyzed)	15.7
Total Feet of Floodable Sand	

Distribution of Permeable Sand:

Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 10	2.9	2.9
.1 - 10	2.0	4.9
10 - 25	4.6	9.5
25 - 40	4.2	13.7
40 & above	2.0	15.7

Average Permeability Millidarcys	20.5
Average Percent Porosity	18.0
Average Percent Oil Saturation	50.6
Average Percent Water Saturation	33.4
Average Oil Content, Bbls./A. Ft.	722.
Total Oil Content, Bbls./Acre	14,577.
Average Percent Oil Recovery by Laboratory Flooding Tests	
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	
Total Calculated Oil Recovery, Bbls./Acre	
Packer Setting, Feet	
Viscosity, Centipoises @	
A. P. I. Gravity, degrees @ 60 °F	
Elevation, Feet	

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company G. M. Smith Lease E. Light Well No. 4-A

Location 220' SNL and 220" EWL, E/2, SW/4

Section 16 Twp. 25S Rge. 16E County Woodson State Kansas

Name of Sand	Lower Squirrel
Top of Core	909.0
Bottom of Core	929.0
Top of Sand (Cored)	909.0
Bottom of Sand	919.5
Total Feet of Permeable Sand (Analyzed)	7.5
Total Feet of Floodable Sand	

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 10	3.8	3.8
10 - 50	2.4	6.2
50 & above	1.3	7.5

Average Permeability Millidarcys	46.0
Average Percent Porosity	19.6
Average Percent Oil Saturation	53.2
Average Percent Water Saturation	30.1
Average Oil Content, Bbls./A. Ft.	857.
Total Oil Content, Bbls./Acre	6,424.
Average Percent Oil Recovery by Laboratory Flooding Tests	
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	
Total Calculated Oil Recovery, Bbls./Acre	
Packer Setting, Feet	
Viscosity, Centipoises @	
A. P. I. Gravity, degrees @ 60 °F	
Elevation, Feet	

OILFIELD RESEARCH LABORATORIES

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Company G. M. Smith Lease E. Light Well No. 4-A

Depth Interval, Feet	Description
	UPPER SAND
870.0 - 876.5	Finely laminated shaly sandstone.
876.5 - 877.5	Laminated sandy shale.
877.5 - 879.8	Finely laminated shaly sandstone.
879.8 - 881.2	Brown sandstone.
881.2 - 883.0	Brown slightly shaly sandstone.
883.0 - 890.5	Dark brown sandstone.
890.5 - 891.2	Dark brown carbonaceous sandstone.
891.2 - 892.0	Dark silty sandstone.
892.0 - 894.0	Sandy shale.
	LOWER SAND
909.0 - 909.6	Brown sandstone.
909.6 - 911.0	Laminated shaly sandstone.
911.0 - 913.5	Sandy shale.
913.5 - 915.3	Dark brown sandstone.
915.3 - 919.5	Dark micaceous shaly sandstone.
919.5 - 929.0	Sandy shale.

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company G. M. Smith Lease E. Light Well No. 4-A

Sample No.	Depth, Feet	Effective Porosity Percent	Percent Saturation			Oil Content Bbls. / A Ft.	Perm., Mill.	Feet of Sand		Total Oil Content	Perm. Capacity Ft. X md.
			Oil	Water	Total			Ft.	Cum. Ft.		
						UPPER SAND					
1	870.1	12.4	21	72	93	202	Imp.	0.6	0.6	121	0.00
2	871.1	13.8	44	51	95	472	Imp.	1.0	1.6	472	0.00
3	872.1	13.4	40	55	95	416	Imp.	1.0	2.6	416	0.00
4	873.1	13.4	40	58	98	417	Imp.	1.0	3.6	417	0.00
5	874.1	17.0	50	33	83	661	0.50	1.0	4.6	661	0.50
6	875.1	14.5	47	48	95	530	0.28	1.0	5.6	530	0.28
7	876.1	15.3	40	43	83	476	0.47	0.9	6.5	428	0.42
8	877.7	14.6	44	50	94	500	Imp.	0.9	7.4	450	0.00
9	879.1	17.6	48	32	80	656	3.8	1.4	8.8	918	5.32
10	880.1	21.7	57	22	79	961	24.	0.8	9.6	769	19.20
11	881.1	21.4	58	20	78	965	9.9	0.6	10.2	579	5.94
12	882.1	18.7	58	28	86	844	22.	1.8	12.0	1519	39.60
13	883.1	21.0	54	23	77	880	27.	0.6	12.6	528	16.20
14	884.1	19.8	60	22	82	922	25.	1.0	13.6	922	25.00
15	885.1	21.9	53	18	71	902	43.	1.0	14.6	902	43.00
16	886.1	18.6	55	23	78	795	46.	1.0	15.6	795	46.00
17	887.1	20.0	62	24	86	964	18.	1.0	16.6	964	18.00
18	888.1	19.0	55	25	80	811	14.	1.0	17.6	811	14.00
19	889.1	22.1	54	20	74	930	39.	1.0	18.6	930	39.00
20	890.1	21.9	48	25	73	816	26.	0.9	19.5	734	23.40
21	891.1	20.1	65	14	79	1015	36.	0.7	20.2	711	25.20

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company G. M. Smith Lease E. Light Well No. 4-A

Sample No.	Depth, Feet	Effective Porosity Percent	Percent Saturation			Oil Content Bbls. / A Ft.	Perm., Mill.	Feet of Sand		Total Oil Content	Perm. Capacity Ft. X md.
			Oil	Water	Total			Ft.	Cum. Ft.		
						LOWER SAND					
22	909.1	21.9	62	11	73	1055	310.	0.6	0.6	633	186.00
23	910.6	18.8	63	26	89	920	4.2	1.4	2.0	1288	5.88
24	914.1	19.3	67	15	82	1005	44.	1.1	3.1	1106	48.40
25	915.1	20.3	60	17	77	945	79.	0.7	3.8	662	55.30
26	916.1	19.7	67	13	80	1024	29.	1.3	5.1	1332	37.70
27	917.1	18.6	49	32	81	707	9.1	1.0	6.1	707	9.10
28	918.1	20.0	32	33	65	497	2.0	1.4	7.5	696	2.80

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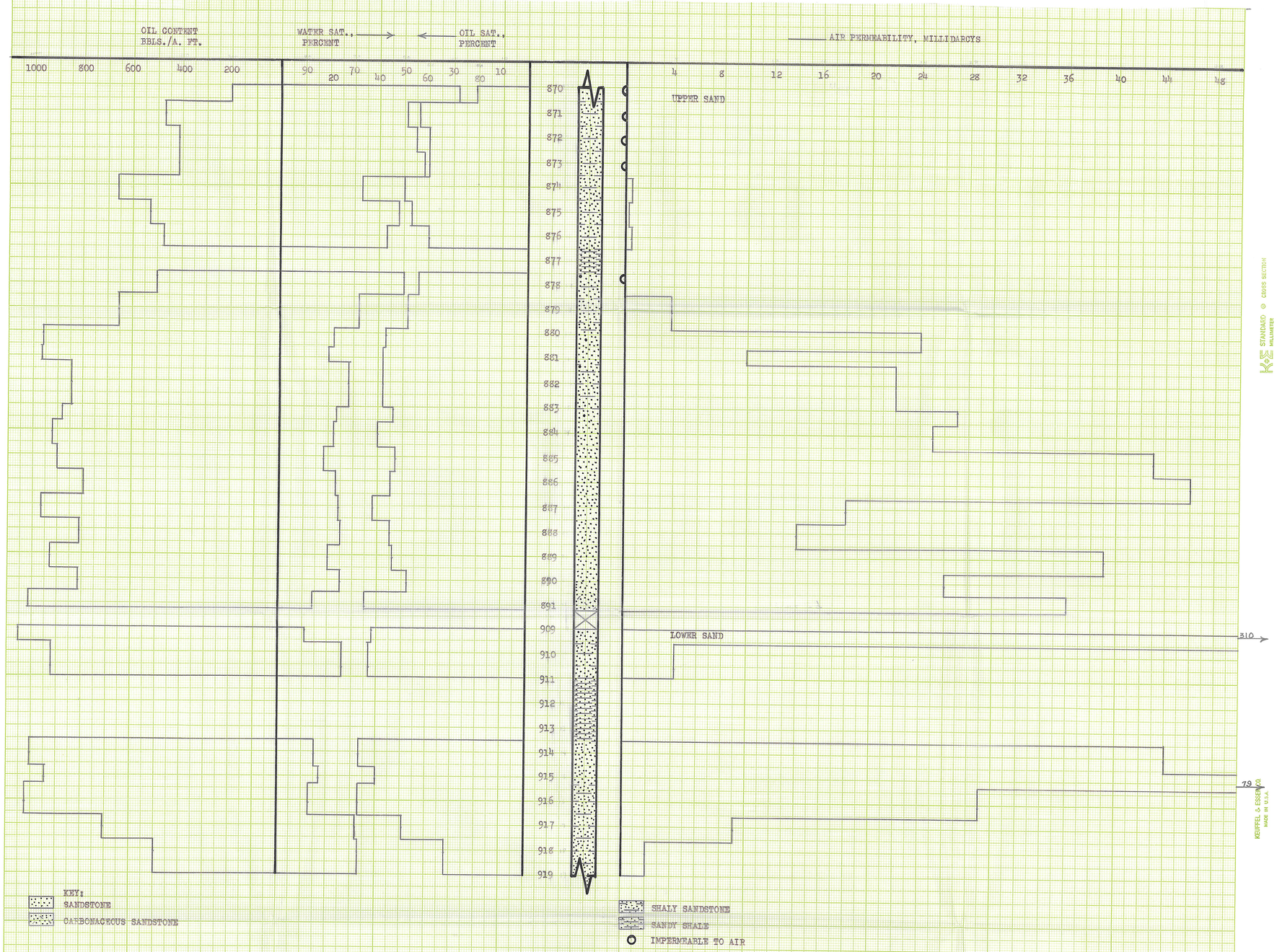
SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company G. M. Smith Lease E. Light Well No. 4-A

Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.
	UPPER SAND		
870.0 - 879.8	4.3	1.5	6.52
879.8 - 891.5	11.4	27.6	314.54
870.0 - 891.5	15.7	20.5	321.06
	LOWER SAND		
909.0 - 919.0	7.5	46.0	345.18

Depth Interval, Feet	Feet of Core Analyzed	Average Percent Porosity	Average Percent Oil Saturation	Average Percent Water Saturation	Average Oil Content Bbl./A. Ft.	Total Oil Content Bbls./Acre
			UPPER SAND			
870.0 - 879.8	8.8	14.9	42.8	47.3	502.	4,413.
879.8 - 891.5	11.4	20.3	56.6	22.6	892.	10,164.
870.0 - 891.5	20.2	18.0	50.6	33.4	722.	14,577.
			LOWER SAND			
909.0 - 919.0	7.5	19.6	53.2	30.1	857.	6,424.



G. M. SMITH

E. LIGHT LEASE WELL NO. 4-A
WOODSON COUNTY, KANSAS

DEPTH INTERVAL FEET	FEET OF CORE ANALYZED	AVERAGE POROSITY PERCENT	AVG. OIL SATURATION PERCENT	AVG. WATER SATURATION PERCENT	AVG. OIL CONTENT BBLS./A.FT.	TOTAL OIL CONTENT BBLS./ACRE	AVG. AIR PERMEABILITY MILLIDARCYS
				UPPER SAND			
870.0 - 879.8	8.8	14.9	42.8	47.3	502.	4,413.	1.5
879.8 - 891.5	11.4	20.3	56.6	22.6	892.	10,164.	27.6
870.0 - 891.5	20.2	18.0	50.6	33.4	722.	14,577.	20.5
				LOWER SAND			
909.0 - 919.0	7.3	19.6	53.2	30.1	857.	6,424.	46.0

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CHANUTE, KANSAS
FEBRUARY, 1968