

OILFIELD RESEARCH LABORATORIES

536 NORTH HIGHLAND - CHANUTE, KANSAS 66720 - PHONE (316) 431-2650

September 12, 1980

International Research Association
c/o Grogan Ebberts
2108 West 18th Street
Emporia, Kansas 66801

Gentlemen:

Enclosed herewith are the results of tests run on the rotary core taken from the Bracken Lease, Well No. 3, Elk County, Kansas and submitted to our laboratory on July 29, 1980.

The core was sampled and the samples sealed in foil by a representative of the client.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES



Sanford A. Michel

SAM/ks

5 c to Emporia, Kansas

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company International Research Assoc. Lease Bracken Well No. 3
 Location 495' FNL & 165' FWL SW $\frac{1}{4}$ SE $\frac{1}{4}$
 Section 3 Twp. 29S Rge. 13E County Elk State Kansas

Elevation, Feet	-
Name of Sand	New Albany
Top of Core	503.7
Bottom of Core	517.6
Top of Sand	503.7
Bottom of Sand	517.6
Total Feet of Permeable Sand	13.9

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 50	3.5	3.5
50 - 100	5.0	8.5
100 - 140	4.0	12.5
170 & Above	1.4	13.9

Average Permeability Millidarcys	82.5
Average Percent Porosity	20.8
Average Percent Oil Saturation	44.4
Average Percent Water Saturation	47.2
Average Oil Content, Bbls./A. Ft.	719.
Total Oil Content, Bbls./Acre	9,994.

OILFIELD RESEARCH LABORATORIES

LOG

Name International Research Association

Lease Bracken Well No. 3

<u>Depth Interval,</u> <u>Feet</u>	<u>Description</u>
---------------------------------------	--------------------

503.7 - 504.6	Grayish brown slightly calcareous shaly sandstone.
---------------	--

504.6 - 517.6	Brown slightly calcareous sandstone.
---------------	--------------------------------------

Oilfield Research Laboratories

RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company		International Research Association				Lease		Bracken		Well No.		3	
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.				
1	504.5	19.5	50	42	92	756	2.5	0.9	0.9	680	2.25		
2	505.5	22.0	49	41	90	836	172.	1.4	2.3	1170	240.80		
3	506.5	22.9	41	50	91	728	123.	1.0	3.3	728	123.00		
4	507.5	21.3	48	46	94	793	118.	1.0	4.3	793	118.00		
5	508.7	22.3	39	51	90	675	53.	1.5	5.8	1013	79.50		
6	510.5	22.4	42	46	88	730	60.	1.5	7.3	1095	90.00		
7	511.5	21.1	52	38	90	851	108.	1.0	8.3	851	108.00		
8	512.5	20.7	50	46	96	803	137.	1.0	9.3	803	137.00		
9	513.5	18.6	42	51	93	606	49.	1.0	10.3	606	49.00		
10	514.7	17.4	42	52	94	567	86.	1.0	11.3	567	86.00		
11	515.5	20.9	45	48	93	730	52.	1.0	12.3	730	52.00		
12	516.5	21.8	45	44	89	761	39.	1.0	13.3	761	39.00		
13	517.5	15.1	28	67	95	328	36.	0.6	13.9	197	21.60		

Oilfield Research Laboratories

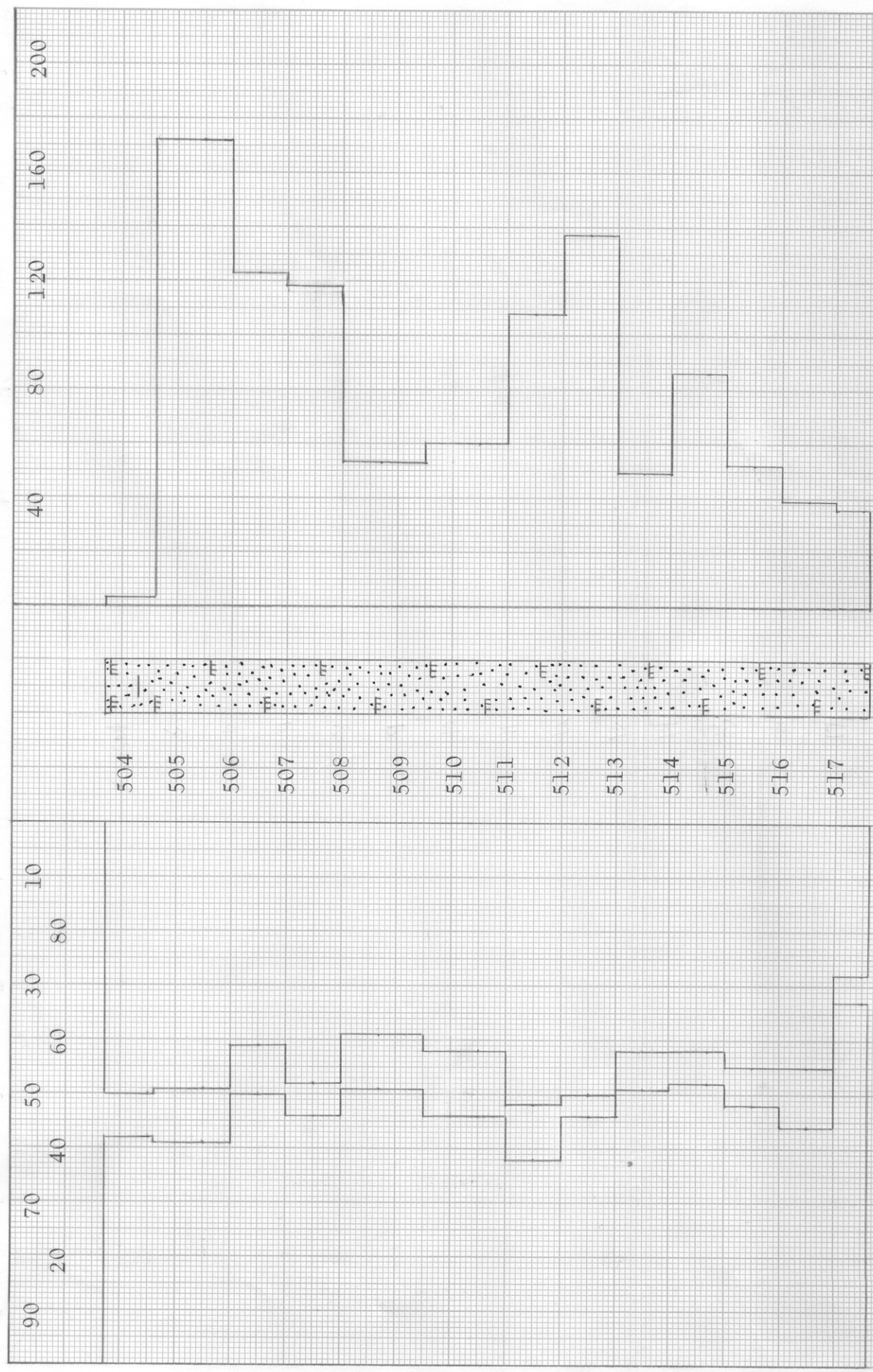
SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

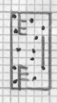
International Research Association		Lease	Bracken	Well No.	3
Company					
Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.		
503.7 - 517.6	13.9	82.5	1146.15		
Depth Interval, Feet	Feet of Core Analyzed	Average Percent Porosity	Average Percent Oil Saturation	Average Percent Water Saturation	Total Oil Content Bbls./Acre
503.7 - 517.6	13.9	20.8	44.4	47.2	719
					9,994

WATER SAT., PERCENT → OIL SAT., PERCENT

— PERMEABILITY, IN MILLIDARCYS



KEY:



SHALY CALCAREOUS SANDSTONE



CALCAREOUS SANDSTONE

KEY:



SHALY CALCAREOUS SANDSTONE



CALCAREOUS SANDSTONE

INTERNATIONAL RESEARCH ASSOCIATION

CHARLES BRACKENLEASE

WELDED NO. 3

VERMILION COUNTY, KANSAS

DEPTH INTERVAL, FEET	FEET OF CORE ANALYZED	AVERAGE POROSITY PERCENT	AVG. OIL SATURATION PERCENT	AVG. WATER SATURATION PERCENT	AVERAGE PERMEABILITY MILLIDARCS
503.77 - 517.6	13.9	20.8	44.4	47.2	82.5

OILFIELD RESEARCH LABORATORIES
CHANUTE, KANSAS
SEPTEMBER, 1980