OILFIELD RESEARCH LABORATORIES

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

September 18, 1979

Oaks Petroleum, Inc.
R. 2
Stoystown, Pennsylvania 15563

Gentlemen:

Enclosed herewith is the report of the analysis of the rotary core taken from the East Miller Lease, Well No. O-47, Franklin County, Kansas, and submitted to our laboratory on September 13, 1979.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Benjamin R. Pearman

Benjamin R. Pearman

BRP:bl
3 c to Stoystown, Pennsylvania
1 c to Ottawa, Kansas

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Oaks Petroleum, Inc. Lease East Miller Well No. O-47

Location 440' FEL & 565' FSL W½ SE

Section 10 Twp. 17S Rge. 21E County Franklin State Kansas

Name of Sand	Upper Squirrel
Top of Core	591.0
Bottom of Core	607.0
Top of Sand	592.5
Bottom of Sand	605.6
Total Feet of Permeable Sand	10.8
Total Feet of Floodable Sand	7.6

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 6	2.6	2.6
10 - 25	3.4	6.0
25 & above	4.8	10.8

Average Permeability Millidarcys	31.8
Average Percent Porosity	18.3
Average Percent Oil Saturation	38.3
Average Percent Water Saturation	46.1
Average Oil Content, Bbls./A. Ft.	499.
Total Oil Content, Bbls./Acre	5,389.
Average Percent Oil Recovery by Laboratory Flooding Tests	10.4
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	165.
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	1,257
Total Calculated Oil Recovery, Bbls./Acre	See "Calculated Recovery Section"
Packer Setting, Feet	
Viscosity, Centipoises @	
A. P. I. Gravity, degrees @ 60 °F	
Elevation, Feet	

This core is reportedly from a virgin area. The core was sampled by a representative of Oilfield Research Laboratories. Fresh water mud was the circulating fluid while taking this core.

FORMATION CORED

The detailed log of the formation cored is as follows:

Depth Interval, Feet	Description
591.0 - 591.9	Gray sandy shale.
591.9 - 592.5	Gray and brown laminated shale and sandstone.
592.5 - 593.6	Brown shaly sandstone.
593.6 - 595.3	Brown slightly shaly sandstone.
595.3 - 596.0	Brown and gray laminated sandstone and shale.
596.0 - 599.0	Brown sandstone.
599.0 - 600.4	Gray and light brown laminated shale and sandstone.
600.4 - 601.6	Brown slightly shaly sandstone.
601.6 - 602.7	Gray and light brown laminated shale and sandstone.
602.7 - 605.0	Gray shale.
605.0 - 605.6	Brown and gray laminated sandstone and shale.
605.6 - 607.0	Gray shale.

LABORATORY FLOODING TESTS

The sand in this core responded to laboratory flooding tests, as a total recovery of 1,257 barrels of oil per acre was obtained from 7.6 feet of sand. The weighted average percent oil saturation was reduced from 38.0 to 27.6, or represents an average recovery of 10.4 percent. The weighted average effective permeability of the samples is 3.00 millidarcys, while the average initial fluid production pressure is 17.9 pounds per square inch (See Table V).

CALCULATED RECOVERY

The results of the laboratory testing indicate that efficient primary and waterflooding in the vicinity of this well should recover approximately 2,350 barrels of oil per acre. This is an average recovery of 309 barrels per acre foot from the 7.6 feet of floodable pay sand analyzed in this core.

These recovery values were calculated using the following data and assumptions:

Original formation volume factor	1.04
Reservoir water saturation, percent	30.0
Average porosity, percent	20.1
Oil saturation after flooding, percent	27.6
Performance factor, percent	50.0
Net floodable pay sand, feet	7.6

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Oaks Petroleum, Inc. Lease East Miller Well No. O-47

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	592.7	20.2	41	38	79	643	0.92	0.5	0.5	322	0.46
2	593.5	16.2	29	61	90	365	15.	0.6	1.1	219	9.00
3	594.5	21.9	39	38	77	663	31.	1.7	2.8	1,128	52.70
4	595.5	14.9	31	64	95	358	5.1	0.7	3.5	251	3.57
5	596.5	20.6	47	35	82	751	13.	1.0	4.5	751	13.00
6	597.5	19.8	36	38	74	553	72.	1.0	5.5	553	72.00
7	598.5	22.3	39	35	74	675	120.	1.0	6.5	675	120.00
8	599.5	15.5	47	47	94	565	2.2	1.4	7.9	795	3.08
9	600.5	14.8	36	55	91	184	24.	1.2	9.1	221	28.80
10	601.8	15.3	34	57	91	166	25.	1.1	10.2	183	27.50
11	605.4	19.0	33	51	84	486	23.	0.6	10.8	292	13.80

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company Oaks Petroleum, Inc. Lease East Miller Well No. O-47

Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.
592.5 - 605.6	10.8	31.8	343.91

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
592.5 - 605.6	10.8	18.3	38.3	46.1	499	5,389

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company Oaks Petroleum, Inc. Lease East Miller Well No. O-47

Sample No.	Depth, Feet	Effective Porosity Percent	Original Oil Saturation		Oil Recovery		Residual Saturation			Volume of Water Recovered cc*	Effective Permeability Millidarcys**	Initial Fluid Production Pressure Lbs./Sq./In.
			%	Bbls./A. Ft.	%	Bbls./A. Ft.	% Oil	% Water	Bbls./A. Ft.			
1	592.7	20.2	42	658	0	0	42	42	658	0	Imp.	-
2	593.5	16.7	28	363	0	0	28	63	363	0	Imp.	-
3	594.5	21.6	39	654	10	168	29	64	486	57	1.83	20
4	595.5	15.0	30	349	0	0	30	66	349	0	Imp.	-
5	596.5	20.1	47	733	20	312	27	66	421	48	1.60	25
6	597.5	20.1	36	561	8	125	28	69	436	47	1.87	20
7	598.5	22.5	39	681	16	279	23	70	402	295	11.68	10
8	599.5	15.3	46	546	0	0	46	45	546	0	Imp.	-
9	600.5	15.3	36	427	6	71	30	61	356	114	2.40	15
10	601.8	20.8	34	549	7	113	27	70	436	36	1.10	15
11	605.4	19.5	33	499	5	76	28	68	423	20	0.70	20

Notes: cc—cubic centimeter.

*—Volume of water recovered at the time of maximum oil recovery.

**—Determined by passing water through sample which still contains residual oil.

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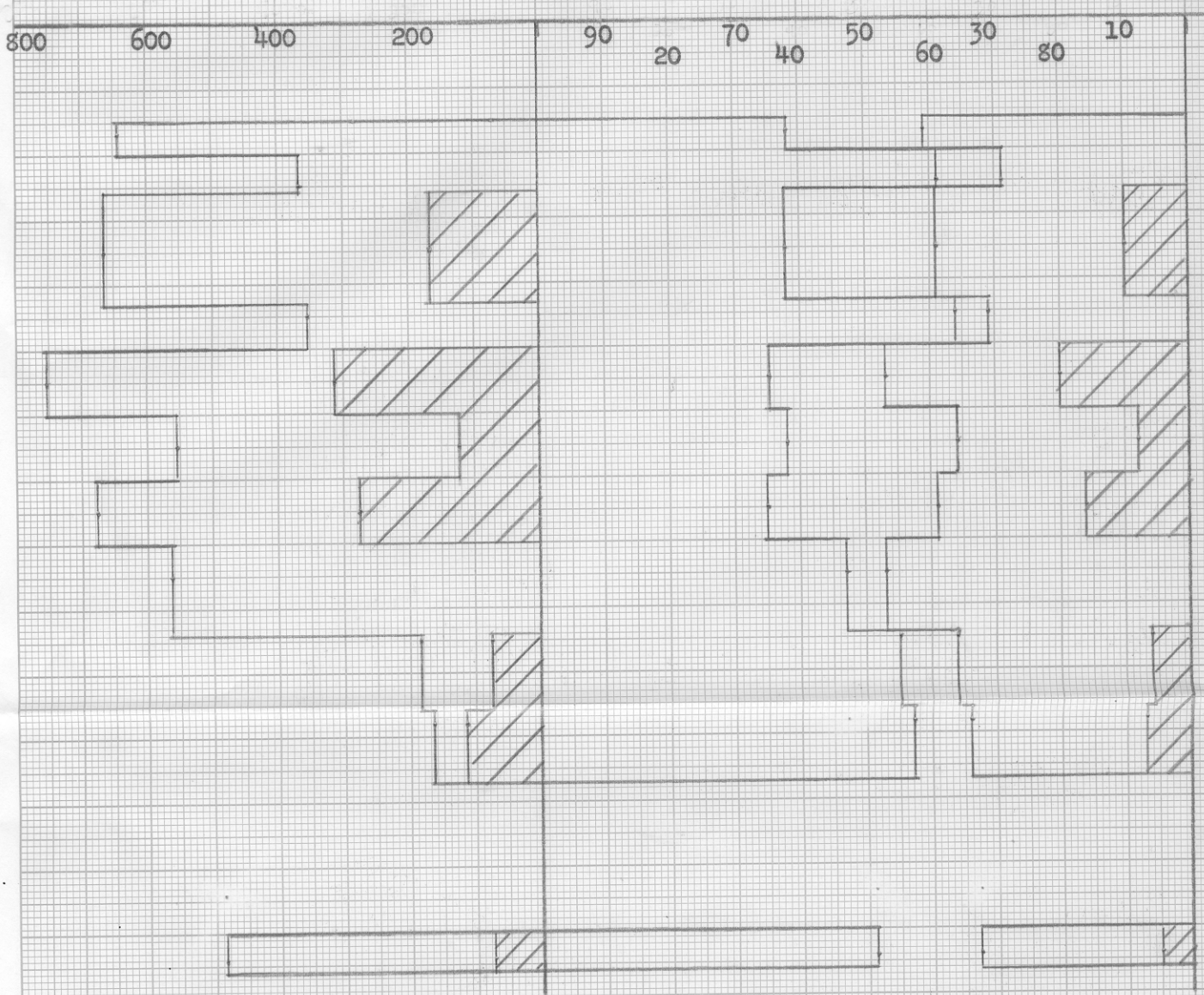
SUMMARY OF LABORATORY FLOODING TESTS

TABLE V

Company Oaks Petroleum, Inc. Lease East Miller Well No. O-47

Depth Interval, Feet	592.5 - 605.6
Feet of Core Analyzed	7.6
Average Percent Porosity	20.1
Average Percent Original Oil Saturation	38.0
Average Percent Oil Recovery	10.4
Average Percent Residual Oil Saturation	27.6
Average Percent Residual Water Saturation	66.4
Average Percent Total Residual Fluid Saturation	94.0
Average Original Oil Content, Bbls./A. Ft.	592.
Average Oil Recovery, Bbls./A. Ft.	165.
Average Residual Oil Content, Bbls./A. Ft.	427.
Total Original Oil Content, Bbls./Acre	4,502.
Total Oil Recovery, Bbls./Acre	1,257.
Total Residual Oil Content, Bbls./Acre	3,245.
Average Effective Permeability, Millidarcys	3.00
Average Initial Fluid Production Pressure, p.s.i.	17.9

NOTE: Only those samples which recovered oil were used in calculating the above averages.



KEY:

FLOOD POT RECOVERY

SANDSTONE

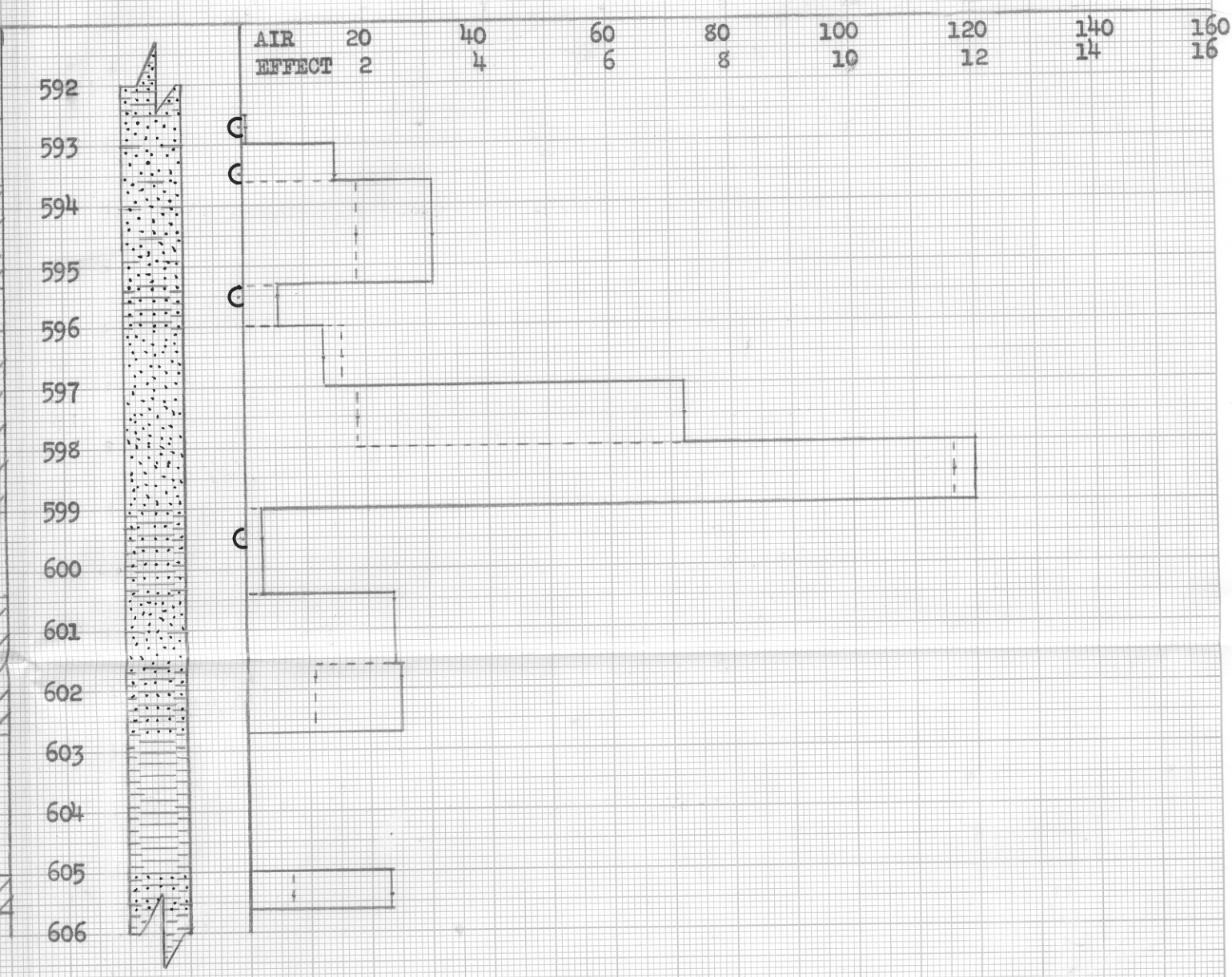
SHALY SANDSTONE

IMPERMEABLE TO WATER

OAKS PETROLE

DEPTH INTERVAL, FEET	FEET OF CORE ANALYZED	AVERAGE PERCENT POROSITY	AVG. OIL SATURATION PERCENT	AVG. SATUR PERC
592.5 - 605.6	10.8	18.3	38.3	46

——— AIR PERMEABILITY, IN MILLIDARCYS
- - - - - - EFFECTIVE PERMEABILITY IN MILLIDARCYS



LAMINATED SANDSTONE & SHALE SHALE SANDY SHALE

OLEUM, INC.

AVG. WATER SATURATION PERCENT	AVG. OIL CONTENT BBLS./A.FT.	TOTAL OIL CONTENT BBLS./ACRE	AVG. AIR PERMEABILITY MILLIDARCYS	CALCULATED OIL RECOVERY BBLS./ACRE
46.1	499	5,389	31.8	2,350 (PRIMARY & WATERFLOODING)

OILFIELD RESEARCH LABORATORIES
CHANUTE, KANSAS
SEPTEMBER, 1979.