OILFIELD RESEARCH LABORATORIES

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February 14, 1981

Oaks Petroleum, Inc.
c/o Calvin T. Oaks, Jr.
R R # 2
Stoystown, PA 15563

Gentlemen:

Enclosed herewith is the report of the analysis of the rotary cores taken from the Collins Lease, Well No. C-2, located in Franklin County, Kansas and submitted to our laboratory on October 30, 1980.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Sanford A. Michel

SAM/kas

2 c to Stoystown, PA
3 c to Paola, KS

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Oaks Petroleum, Inc. Lease Collins Well No. C-2

Location 590' SNL & 2280' WEL SE¼

Section 16 Twp. 17S Rge. 21E County Franklin State Kansas

	Peru	Upper Squirrel
Elevation, Feet		
Name of Sand		
Top of Core	359.0	492.0
Bottom of Core	364.5	503.5
Top of Sand	360.1	492.0
Bottom of Sand * (Tested)	362.8	* 501.0
Total Feet of Permeable Sand	2.7	7.6
Total Feet of Floodable Sand	1.7	3.6

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
PERU SAND		
0 - 120	1.7	1.7
230 & Above	1.0	2.7
UPPER SQUIRREL SAND		
0 - 7	4.8	4.8
10 - 15	1.4	6.2
60 & Above	1.4	7.6

Average Permeability Millidarcys	143.0	21.9
Average Percent Porosity	14.4	18.5
Average Percent Oil Saturation	41.7	42.1
Average Percent Water Saturation	28.0	41.6
Average Oil Content, Bbls./A. Ft.	482.	604.
Total Oil Content, Bbls./Acre	1,301.	4,587.
Average Percent Oil Recovery by Laboratory Flooding Tests	19.6	9.3
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	246.	134.
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	418.	482.
Total Calculated Oil Recovery, Bbls./Acre	See "Calculated Recovery" Section	

The cores were sampled and the samples sealed in plastic bags by a representative of the client. Air was used as a drilling fluid.

FORMATION CORED

The detailed log of the formation cored is as follows:

Depth Interval, Feet	Description
	PERU SAND
359.0 - 360.1	Hard gray limestone.
360.1 - 362.8	Brown calcareous sandstone.
362.8 - 363.6	Hard gray limestone.
363.6 - 364.5	Gray sandy shale.
	SQUIRREL SAND
492.0 - 493.5	Grayish brown shaly sandstone.
493.5 - 494.9	Brown slightly calcareous sandstone.
494.9 - 495.7	Grayish brown shaly slightly calcareous sandstone.
495.7 - 497.1	Hard gray limestone.
497.1 - 498.3	Brown shaly slightly calcareous sandstone.
498.3 - 499.7	Brown slightly calcareous sandstone.
499.7 - 501.0	Grayish brown shaly slightly calcareous sandstone.
501.0 - 501.9	Gray sandy shale.
501.9 - 503.5	Brown and gray laminated sandstone and shale.

LABORATORY FLOODING TESTS

PERU SAND

The sand in this core responded to laboratory flooding tests, as a total recovery of 418 barrels of oil per acre was obtained from 1.7 feet of sand. The weighted average percent oil saturation was reduced

from 52.5 to 32.9, or represents an average recovery of 19.6 percent. The weighted average effective permeability of the samples is 5.00 millidarcys, while the average initial fluid production pressure is 30.0 pounds per square inch (See Table V).

By observing the data given in Table IV, you will note that of the 3 samples tested, 2 produced water and oil, and 1 sample produced water only. This indicates that approximately 67 percent of the sand represented by these samples is floodable pay sand.

UPPER SQUIRREL SAND

The sand in this core responded to laboratory flooding tests, as a total recovery of 482 barrels of oil per acre was obtained from 3.6 feet of sand. The weighted average percent oil saturation was reduced from 41.4 to 32.1, or represents an average recovery of 9.3 percent. The weighted average effective permeability of the samples is 2.00 millidarcys, while the average initial fluid production pressure is 35.0 pounds per square inch (See Table V).

By observing the data given in Table IV, you will note that of the 8 samples tested, 4 produced water and oil, and 1 sample produced water only. This indicates that approximately 50 percent of the sand represented by these samples is floodable pay sand.

CALCULATED RECOVERY

It would appear from a study of the core data, that efficient primary and waterflood operations in the vicinity of this well should recover approximately 520 barrels of oil per acre from the Peru Sand, and approximately 930 barrels of oil per acre from the Upper Squirrel Sand. This is an average recovery of 308 barrels per acre foot from 1.7 feet of floodable sand from the Peru Sand, and an average recovery of 257 barrels per acre foot from 3.6 feet of floodable sand from the Upper Squirrel Sand.

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

	PERU SAND	UPPER SQUIRREL SAND
Original formation volume factor, estimated	1.03	1.04
Reservoir water saturation, percent, estimated	20.0	30.0
Average porosity, percent	16.1	18.8
Oil saturation after flooding, percent	32.9	32.1
Performance factor, percent, estimated	55.0	50.0
Net floodable sand, feet	1.7	3.6

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Oaks Petroleum, Inc. Lease Collins Well No. C-2

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.		
						PERU SAND					
1	360.4	11.8	22	38	60	201	118.	1.0	1.0	201	118.00
2	361.5	19.9	50	23	73	772	231.	1.0	2.0	772	231.00
3	362.5	10.4	58	21	79	468	53.	0.7	2.7	328	37.10
						UPPER SQUIRREL SAND					
4	492.5	17.2	41	49	90	547	4.6	1.5	1.5	821	6.90
5	493.6	20.9	47	32	79	762	61.	0.5	2.0	381	30.50
6	494.5	20.1	43	40	83	671	110.	0.9	2.9	604	99.00
7	495.5	20.3	37	44	81	583	2.2	0.8	3.7	466	1.76
8	497.5	19.5	41	38	79	620	6.1	1.2	4.9	744	7.32
9	498.5	13.2	45	50	95	461	11.	0.7	5.6	323	7.70
10	499.5	19.5	45	34	79	681	14.	0.7	6.3	477	9.80
11	500.5	18.2	42	39	81	593	2.6	1.3	7.6	771	3.38

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company Oaks Petroleum, Inc. Lease Collins Well No. C-2

Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.
	PERU SAND		
360.1 - 362.8	2.7	143.0	386.10
	UPPER SQUIRREL SAND		
492.0 - 501.0	7.6	21.9	166.36

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
		PERU SAND				
360.1 - 362.8	2.7	14.4	41.7	28.0	482	1,301
		UPPER SQUIRREL SAND				
492.0 - 501.0	7.6	18.5	42.1	41.6	604	4,587

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company Oaks Petroleum, Inc. Lease Collins Well No. C-2

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.			
						PERU SAND						
1	360.4	11.9	22	203	0	0	22	73	203	24	0.40	40
2	361.5	19.9	50	772	20	309	30	66	463	309	7.80	25
3	362.5	10.5	58	472	19	155	37	56	317	44	1.00	35
						UPPER SQUIRREL SAND						
4	492.5	17.7	40	549	0	0	40	51	549	0	Imp.	-
5	493.6	21.0	47	766	0	0	47	43	766	23	0.50	40
6	494.5	20.3	43	677	11	173	32	65	504	213	5.60	25
7	495.5	20.4	37	586	7	111	30	66	475	38	0.80	40
8	497.5	19.7	41	627	9	138	32	59	489	42	1.00	30
9	498.5	13.3	45	464	10	103	35	60	361	22	0.30	45
10	499.5	19.1	46	682	0	0	46	36	682	0	Imp.	-
11	500.5	18.7	41	595	0	0	41	42	595	0	Imp.	-

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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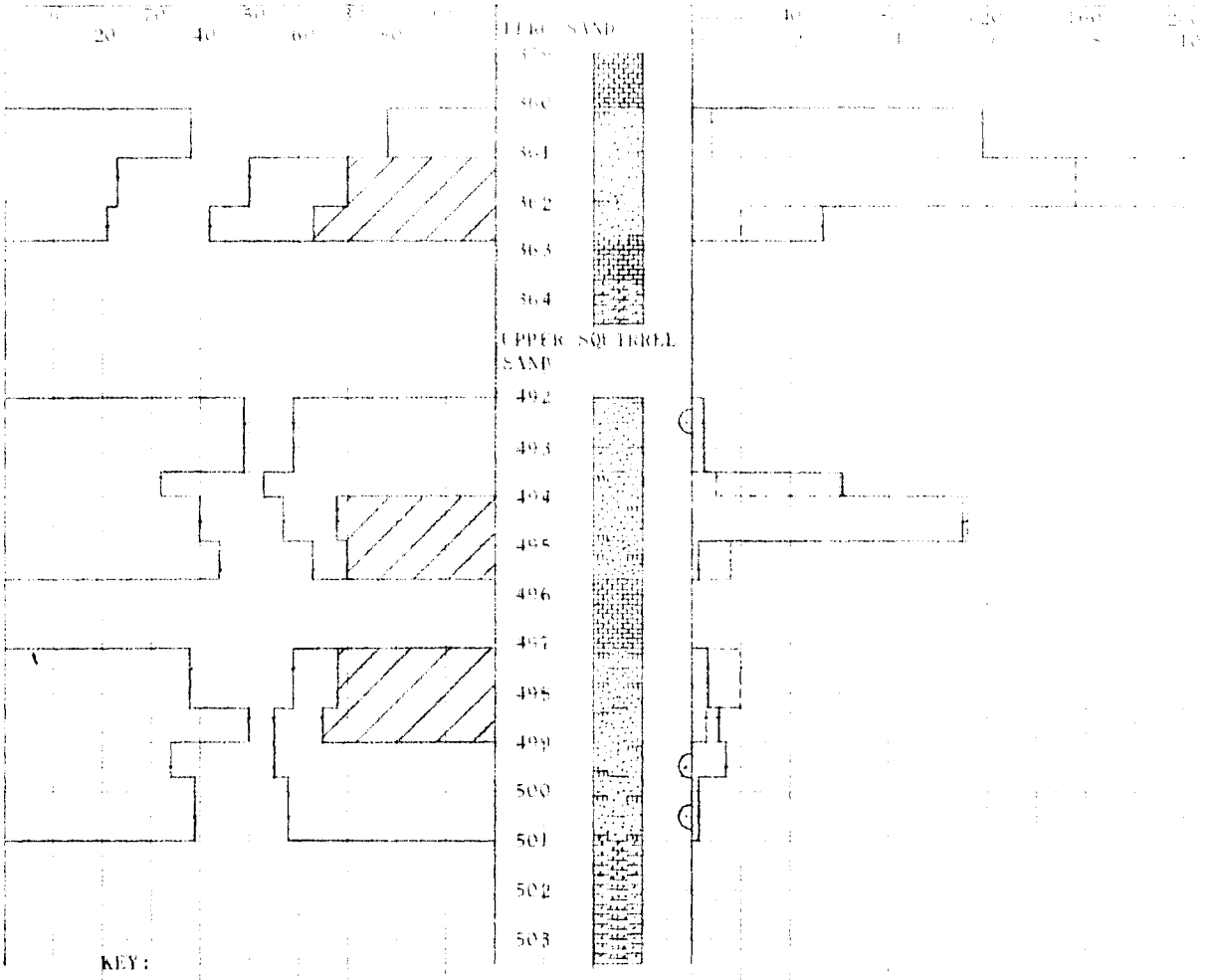
SUMMARY OF LABORATORY FLOODING TESTS

TABLE V

Company: Oaks Petroleum, Inc. Lease: Collins Well No.: C-2

	PERU SAND	UPPER SQUIRREL SAND
Depth Interval, Feet	360.1 - 362.8	492.0 - 501.0
Feet of Core Analyzed	1.7	3.6
Average Percent Porosity	16.1	18.8
Average Percent Original Oil Saturation	52.5	41.4
Average Percent Oil Recovery	19.6	9.3
Average Percent Residual Oil Saturation	32.9	32.1
Average Percent Residual Water Saturation	61.9	62.3
Average Percent Total Residual Fluid Saturation	94.8	94.4
Average Original Oil Content, Bbls./A. Ft.	649.	599.
Average Oil Recovery, Bbls./A. Ft.	246.	134.
Average Residual Oil Content, Bbls./A. Ft.	403.	465.
Total Original Oil Content, Bbls./Acre	1,103.	2,155.
Total Oil Recovery, Bbls./Acre	418.	482.
Total Residual Oil Content, Bbls./Acre	685.	1,673.
Average Effective Permeability, Millidarcys	5.00	2.00
Average Initial Fluid Production Pressure, p.s.i.	30.0	35.0

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



OAKS PETROLEUM, INC.

COLLINS LEASE WELL NO. C - 2

FRANKLIN COUNTY, KANSAS

DEPTH INTERVAL, FEET	FEET OF CORE ANALYZED	AVERAGE PERCENT POROSITY	AVG. OIL SATURATION PERCENT	AVG. WATER SATURATION PERCENT	AVERAGE PERMEABILITY, MILLIDARCYS	CALCULATED OIL RECOVERY BBLS. / ACRE
			PERU SAND			
360.1 - 362.8	2.7	14.4	41.7	28.0	143.0	520 (PRIMARY AND WATERFLOODING)
			UPPER SQUIRREL SAND			
492.0 - 503.0	7.6	18.5	42.1	41.6	21.9	930 (PRIMARY AND WATERFLOODING)

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CHANUTE, KANSAS
FEBRUARY, 1981

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