

OILFIELD RESEARCH LABORATORIES

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August 4, 1980

Rantoul Energy Corporation
P. O. Box 516
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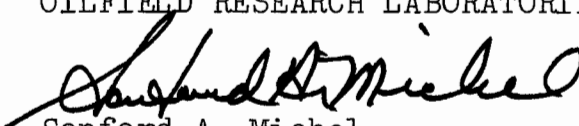
Gentlemen:

Enclosed herewith is the report of the analysis of the rotary core taken from the Peckham Lease, Well No. 7, Franklin County, Kansas and submitted to our laboratory on June 3, 1980.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES



Sanford A. Michel

SAM/kas

5 c to Hutchinson, Kansas

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GENERAL INFORMATION & SUMMARY

Company Rantoul Energy Corporation Lease Peckham Well No. 7

Location ---

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

Elevation, Feet - - - - -

Name of Sand - - - - - Squirrel

Top of Core - - - - - 481.0

Bottom of Core - - - - - 497.2

Top of Sand - - - - - 481.0

Bottom of Sand - - - - - 497.2

Total Feet of Permeable Sand - - - - - 14.0

Total Feet of Floodable Sand - - - - - 7.3

Distribution of Permeable Sand: Permeability Range Millidarcys

Feet

Cum. Ft.

0 - 10	7.7	7.7
10 - 20	1.0	8.7
20 - 50	1.7	10.4
50 - 100	1.7	12.1
100 - 150	1.9	14.0

Average Permeability Millidarcys - - - - - 34.5

Average Percent Porosity - - - - - 19.3

Average Percent Oil Saturation - - - - - 29.9

Average Percent Water Saturation - - - - - 52.2

Average Oil Content, Bbls./A. Ft. - - - - - 447.

Total Oil Content, Bbls./Acre - - - - - 6800.

Average Percent Oil Recovery by Laboratory Flooding Tests - - - - - 2.4

Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft. - - - - - 41.

Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre - - - - - 298.

Total Calculated Oil Recovery, Bbls./Acre - - - - - See "Calculated Recovery" Section

The core was sampled and the samples sealed in plastic bags by a representative of the client. The core was reported to be from a non-virgin area.

FORMATION CORED

The detailed log of the formation cored is as follows:

<u>Depth Interval, Feet</u>	<u>Description</u>
481.0 - 488.3	Light brown shaly sandstone.
488.3 - 490.9	Brown sandstone.
490.9 - 491.6	Brown shaly sandstone.
491.6 - 497.2	Light brown very shaly sandstone.

LABORATORY FLOODING TESTS

The sand in this core responded to laboratory flooding tests, as a total recovery of 298 barrels of oil per acre was obtained from 7.3 feet of sand. The weighted average percent oil saturation was reduced from 30.2 to 27.8, or represents an average recovery of 2.4 percent. The weighted average effective permeability of the samples is 3.85 millidarcys, while the average initial fluid production pressure is 16.9 pounds per square inch (see Table V).

By observing the data given in Table IV, you will note that of the 15 samples tested, 8 produced water and oil, and 2 samples produced water only. This indicates that approximately 53 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 2130 barrels of oil per acre. This is an average recovery of 292 barrels per acre foot from 7.3 feet of floodable sand analyzed in this core.

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

Original formation volume factor, estimated	1.04
Reservoir water saturation, percent, estimated	35.0
Average porosity, percent	21.7
Oil saturation after flooding, percent	27.8
Performance factor, percent, estimated	50.0
Net floodable sand, feet	7.3

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company	Rantoul Energy Corporation	Lease	Peckham	Well No.	7
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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			Ft.	Cum. Ft.		
1	481.8	21.4	29	48	481	39.	1.0	1.0	481	39.00
2	482.5	22.0	24	51	410	19.	1.0	2.0	410	19.00
3	483.3	19.6	32	44	487	9.6	1.0	3.0	487	9.60
4	484.5	22.8	24	51	410	70.	1.0	4.0	410	70.00
5	485.3	23.5	27	53	492	0.19	1.0	5.0	492	0.19
6	486.5	21.2	30	46	493	8.7	1.0	6.0	493	8.70
7	487.3	16.5	33	56	422	2.8	1.3	7.3	549	3.64
8	488.5	23.8	29	35	536	86.	0.7	8.0	375	60.20
9	489.5	23.8	35	36	646	121.	1.0	9.0	646	121.00
10	490.5	22.6	31	43	544	123.	0.9	9.9	490	110.70
11	491.5	16.2	28	56	352	31.	0.7	10.6	246	21.70
12	492.5	17.3	43	51	577	8.5	1.4	12.0	808	11.90
13	494.5	15.2	32	63	377	0.78	1.0	13.0	377	0.78
14	495.3	13.2	25	70	256	6.3	1.0	14.0	256	6.30
15	496.3	14.3	21	71	233	Imp.	1.2	15.2	280	0.00

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company	Rantoul Energy Corporation		Lease	Peckham	Well No.	
	Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.		
	481.0 - 488.3	7.3	20.6	150.13		
	488.3 - 497.2	6.7	49.6	332.58		
	481.0 - 497.2	14.0	34.5	482.71		

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
481.0 - 488.3	7.3	20.8	28.6	50.1	455.	3,322.
488.3 - 497.2	7.9	18.0	31.0	54.2	440.	3,478.
481.0 - 497.2	15.2	19.3	29.9	52.2	447.	6,800.

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Rantoul Energy Corporation			Lease		Peckham		Well No.		7			
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.
			%	Bbbs./A. Ft.	%	Bbbs./A. Ft.	% Oil	% Water	Bbbs./A. Ft.			
1	481.8	21.4	29	481	2	33	27	71	448	338	3.90	15
2	482.5	22.0	24	410	0	0	24	69	410	357	3.75	15
3	483.3	19.7	32	489	3	46	29	66	443	311	3.75	15
4	484.5	22.6	24	421	0	0	24	71	421	316	8.25	15
5	485.3	23.5	27	492	2	36	25	72	456	23	0.22	10
6	486.5	21.1	30	491	2	33	28	70	458	103	1.20	25
7	487.3	16.5	33	422	0	0	33	58	422	0	Imp.	-
8	488.5	23.7	29	533	2	37	27	70	496	35	0.67	25
9	489.5	24.1	35	654	4	75	31	62	579	320	15.85	15
10	490.5	22.6	31	544	2	35	29	65	509	180	2.87	10
11	491.5	16.3	28	354	2	25	26	71	329	21	0.22	20
12	492.5	17.4	43	580	0	0	43	53	580	0	Imp.	-
13	494.5	15.7	31	378	0	0	31	64	378	0	Imp.	-
14	495.3	13.0	25	252	0	0	25	70	252	0	Imp.	-
15	496.3	14.4	21	235	0	0	21	73	235	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	Rantoul Energy Corporation	Lease	Pekham	Well No.	7
Depth Interval, Feet	481.0 - 488.3		488.3 - 497.2		481.0 - 497.2
Feet of Core Analyzed	4.0		3.3		7.3
Average Percent Porosity	21.4		21.9		21.7
Average Percent Original Oil Saturation	29.6		31.2		30.2
Average Percent Oil Recovery	2.3		2.6		2.4
Average Percent Residual Oil Saturation	27.3		28.6		27.8
Average Percent Residual Water Saturation	69.8		66.4		68.3
Average Percent Total Residual Fluid Saturation	97.1		95.0		96.1
Average Original Oil Content, Bbls./A. Ft.	488.		532.		509.
Average Oil Recovery, Bbls./A. Ft.	37.		45.		41.
Average Residual Oil Content, Bbls./A. Ft.	451.		487.		468.
Total Original Oil Content, Bbls./Acre	1953.		1758.		3711.
Total Oil Recovery, Bbls./Acre	148.		150.		298.
Total Residual Oil Content, Bbls./Acre	1805.		1608.		3413.
Average Effective Permeability, Millidarcys	2.27		5.77		3.85
Average Initial Fluid Production Pressure, p.s.i.	16.3		17.5		16.9

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