OILFIELD RESEARCH LABORATORIES

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June 16, 1980

Rantoul Energy Corporation
Box 516
Hutchinson, Kansas 67501

Gentlemen:

Enclosed herewith is the report of the analysis of the rotary core taken from the Judson A Lease, Well No. 30, and submitted to our laboratory on May 5, 1980.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Sanford A. Michel

SAM/tem

5 c to Hutchinson, Kansas

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Rantoul Energy Corporation Lease Judson A Well No. 30

Location –

Section 23 Twp. 17S Rge. 21E County Franklin State Kansas

Elevation, Feet	
Name of Sand	Peru
Top of Core	333.0
Bottom of Core	350.3
Top of Sand	333.0
Bottom of Sand	347.2
Total Feet of Permeable Sand	12.5
Total Feet of Floodable Sand	8.6

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
0 – 10	2.7	2.7
10 – 50	2.0	4.7
50 – 100	6.6	11.3
100 – 110	1.2	12.5

Average Permeability Millidarcys	53.5
Average Percent Porosity	19.8
Average Percent Oil Saturation	21.4
Average Percent Water Saturation	61.4
Average Oil Content, Bbls./A. Ft.	347.
Total Oil Content, Bbls./Acre	4,340.
Average Percent Oil Recovery by Laboratory Flooding Tests	6.8
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	114.
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	983.
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. Fresh water mud was used as a drilling fluid.

FORMATION CORED

The detailed log of the formation cored is as follows:

Depth Interval, Feet	Description
333.0 - 334.8	Light brown slightly calcareous sandstone.
334.8 - 336.0	Brown and gray slightly calcareous sandstone and shale.
336.0 - 336.9	Brown slightly calcareous sandstone.
336.9 - 337.8	Brown shaly slightly calcareous sandstone.
337.8 - 338.8	Grayish brown limestone.
338.8 - 344.6	Brown slightly calcareous sandstone.
344.6 - 345.2	Brown slightly calcareous shaly sandstone.
345.2 - 345.9	Gray laminated sandstone and shale.
345.9 - 347.2	Brown slightly calcareous sandstone.
347.2 - 350.3	Gray limestone.

LABORATORY FLOODING TESTS

The lower portion of the sand in this core responded well, relative to the lower portion of the sand, to laboratory flooding tests, as a total overall recovery of 983 barrels of oil per acre was obtained from 8.6 feet of sand. The weighted average percent oil saturation was reduced from 26.6 to 19.8, or represents an average recovery of 6.8 percent. The weighted average effective permeability of the samples is 2.45 millidarcys, while the average initial fluid production pressure is 19.4 pounds per square inch (See Table V).

By observing the data given in Table IV, you will note that of the 12 samples tested, 8 produced water and oil, and 4 samples produced water only. This indicates that approximately 67 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 2,680 barrels of oil per acre. This is an average recovery of 312 barrels per acre foot from 8.6 feet of floodable sand analyzed in this core.

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

Original formation volume factor, estimated	1.03
Reservoir water saturation, percent, estimated	40.0
Average porosity, percent	21.2
Oil saturation after flooding, percent	19.8
Performance factor, percent, estimated	50.0
Net floodable sand, feet	8.6

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Rantoul Energy Corporation Lease Judson A Well No. 30

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	333.5	16.8	6	79	85	78	63.	1.0	1.0	78	63.00
2	334.5	19.7	3	86	89	46	59.	0.8	1.8	37	47.20
3	335.8	22.8	19	62	81	336	1.7	1.2	3.0	403	2.04
4	336.5	22.1	26	67	93	446	58.	0.9	3.9	401	52.20
5	337.5	6.6	6	51	57	31	7.0	0.9	4.8	28	6.30
6	339.6	22.2	16	65	81	276	102.	1.2	6.0	331	122.40
7	340.3	22.2	27	60	87	465	17.	1.0	7.0	465	17.00
8	341.5	23.9	25	63	88	464	44.	1.0	8.0	464	44.00
9	342.7	16.6	31	55	86	399	74.	1.0	9.0	399	74.00
10	343.7	24.7	33	44	77	632	73.	1.6	10.6	1011	116.80
11	345.0	19.3	29	63	92	434	2.3	0.6	11.2	260	1.38
12	346.5	17.0	27	58	85	356	94.	1.3	12.5	463	122.20

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company Rantoul Energy Corporation Lease Judson A Well No. 30

Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.
333.0 - 337.8	4.8	35.6	170.74
338.8 - 347.2	7.7	64.7	497.78
333.0 - 347.2	12.5	53.5	668.52

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
333.0 - 337.8	4.8	17.9	12.5	68.4	197	947
338.8 - 347.2	7.7	21.0	27.0	57.1	441	3,393
333.0 - 347.2	12.5	19.8	21.4	61.4	347	4,340

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company Rantoul Energy Corporation Lease Judson A Well No. 30

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	333.5	17.0	6	79	0	0	6	80	79	31	0.30	25
2	334.5	19.6	3	46	0	0	3	90	46	53	0.60	20
3	335.8	22.4	20	348	0	0	20	72	348	12	0.15	45
4	336.5	22.3	26	450	8	138	18	69	312	505	8.25	10
5	337.5	6.7	6	31	0	0	6	91	31	25	0.37	35
6	339.6	22.0	16	273	2	34	14	80	239	107	1.42	20
7	340.3	22.3	27	467	8	138	19	76	329	10	0.15	25
8	341.5	23.7	25	460	8	147	17	74	313	168	2.25	15
9	342.7	17.0	30	396	9	119	21	70	277	105	1.50	20
10	343.7	24.5	33	627	9	171	24	68	456	131	1.87	25
11	345.0	19.5	29	439	6	91	23	71	348	241	3.52	20
12	346.5	17.1	27	358	5	66	22	73	292	160	2.25	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 Rantoul Energy Corporation Lease Judson A Well No. 30

Depth Interval, Feet	333.0 - 337.8	338.8 - 347.2	333.0 - 347.2
Feet of Core Analyzed	0.9	7.7	8.6
Average Percent Porosity	22.3	21.1	21.2
Average Percent Original Oil Saturation	26.0	26.7	26.6
Average Percent Oil Recovery	8.0	6.7	6.8
Average Percent Residual Oil Saturation	18.0	20.0	19.8
Average Percent Residual Water Saturation	69.0	73.0	72.6
Average Percent Total Residual Fluid Saturation	87.0	93.0	92.4
Average Original Oil Content, Bbls./A. Ft.	450.	440.	440.
Average Oil Recovery, Bbls./A. Ft.	138.	112.	114.
Average Residual Oil Content, Bbls./A. Ft.	312.	328.	326.
Total Original Oil Content, Bbls./Acre	405.	3,383.	3,788.
Total Oil Recovery, Bbls./Acre	124.	859.	983.
Total Residual Oil Content, Bbls./Acre	281.	2,524.	2,805.
Average Effective Permeability, Millidarcys	8.25	1.77	2.45
Average Initial Fluid Production Pressure, p.s.i.	10.0	20.7	19.4

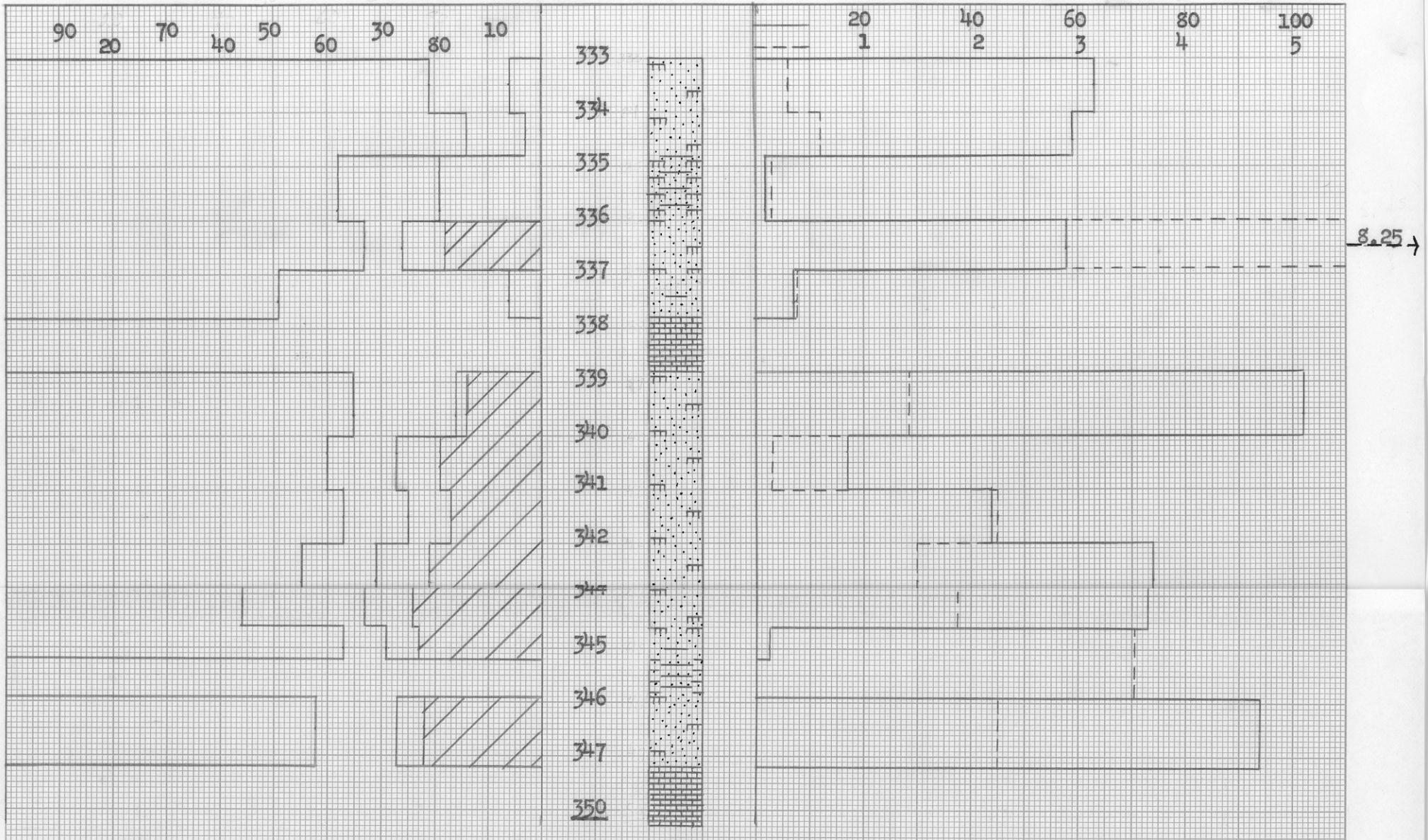
NOTE: Only those samples which recovered oil were used in calculating the above averages.

WATER SAT., PERCENT →

← OIL SAT., PERCENT

——— PERMEABILITY, IN MILLIDARCYS

– – – – EFFECTIVE PERMEABILITY TO WATER, IN MILLIDARCYS



KEY:

CALCAREOUS SANDSTONE

SHALY CALCAREOUS SANDSTONE

LAMINATED SANDSTONE & SHALE

CALCAREOUS SANDSTONE & SHALE

LIMESTONE

FLOODPOT RESIDUAL OIL SATURATION

RANTOUL ENERGY CORP.

JUDSON A LEASE WELL NO. 30

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
333.0 - 337.8	4.8	17.9	12.5	68.4	35.6	
338.8 - 347.2	7.7	21.0	27.0	57.1	64.7	
333.0 - 347.2	12.5	19.8	21.4	61.4	53.5	2,680 (PRIMARY & WATERFLOODING)

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CHANUTE, KANSAS
JUNE, 1980 VM