

OILFIELD RESEARCH LABORATORIES

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

December 2, 1980

Blackhawk Oil Company
15 North Highland
Chanute, Kansas 66720

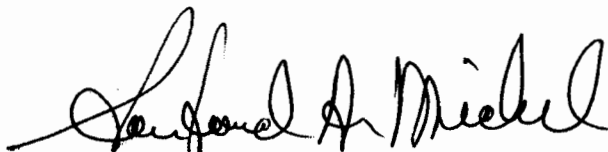
Gentlemen:

Enclosed herewith is the report of the analysis of the rotary core taken from the Campbell Lease, Well No. 4, located in Wilson County, Kansas and submitted to our laboratory on November 17, 1980.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES


Sanford A. Michel

SAM/mkf

5 c to Chanute, Kansas

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GENERAL INFORMATION & SUMMARY

Company Blackhawk Oil Co. Lease Campbell Well No. 4

Location -

Section 36 Twp. 27S Rge. 16E County Wilson State Kansas

Elevation, Feet - - - - -

Name of Sand - - - - - Squirrel

Top of Core - - - - - 873.0

Bottom of Core - - - - - 884.0

Top of Sand - - - - - 873.0

Bottom of Sand - - - - - 882.8

Total Feet of Permeable Sand - - - - - 8.0

Total Feet of Floodable Sand - - - - - 0.0

Distribution of Permeable Sand:
Permeability Range
Millidarcys

Feet

Cum. Ft.

0 - 2

2.9

2.9

2 - 4

3.1

6.0

4 - 7

2.0

8.0

Average Permeability Millidarcys - - - - - 3.1

Average Percent Porosity - - - - - 11.7

Average Percent Oil Saturation - - - - - 45.8

Average Percent Water Saturation - - - - - 39.3

Average Oil Content, Bbls./A. Ft. - - - - - 427.

Total Oil Content, Bbls./Acre - - - - - 4,185.

Average Percent Oil Recovery by Laboratory Flooding Tests - - - - - 0.0

Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft. - - - - - 0.0

Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre - - - - - 0.0

Total Calculated Oil Recovery, Bbls./Acre - - - - - 0.0

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.

Since the core did not respond to flooding susceptibility tests, no calculated recovery is given.

FORMATION CORED

The detailed log of the formation cored is as follows:

<u>Depth Interval,</u> <u>Feet</u>	<u>Description</u>
873.0 - 875.2	Brown very calcareous sandstone.
875.2 - 876.7	Brown slightly calcareous shaly sandstone.
876.7 - 882.8	Brown and gray laminated slightly calcareous sandstone and shale.
882.8 - 884.0	Gray sandy shale.

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Blackhawk Oil Company Lease Campbell Well No. 4

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	873.5	8.8	65	31	96	444	Imp.	1.0	1.0	444	0.00
2	874.6	10.7	70	18	88	581	0.45	1.2	2.2	697	0.54
3	875.4	12.3	55	21	76	525	3.8	0.8	3.0	420	3.04
4	876.5	8.3	19	70	89	122	1.8	0.7	3.7	85	1.26
5	877.5	5.9	22	71	93	101	2.1	1.3	5.0	131	2.73
6	878.5	15.7	48	29	77	585	2.9	1.0	6.0	585	2.90
7	879.7	14.5	43	37	80	484	2.0	1.0	7.0	484	2.00
8	880.5	14.6	49	33	82	555	5.6	1.0	8.0	555	5.60
9	881.5	13.2	43	41	84	440	6.8	1.0	9.0	440	6.80
10	882.4	14.6	38	43	81	430	Imp.	0.8	9.8	344	0.00

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company		Lease		Well No.	
Blackhawk Oil Company		Campbell		4	
Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.		
873.0 - 882.8	8.0	3.1	24.87		
Depth Interval, Feet	Feet of Core Analyzed	Average Percent Porosity	Average Percent Oil Saturation	Average Percent Water Saturation	Total Oil Content Bbls./Acre
873.0 - 882.8	9.8	11.7	45.8	39.3	4,185
				427	

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Blackhawk Oil Company			Lease Campbell			Well No. 4					
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			
1	873.5	9.2	64	457	0	0	64	32	0	Imp.	-
2	874.6	10.6	70	576	0	0	70	19	0	Imp.	-
3	875.4	11.8	56	513	0	0	56	22	0	Imp.	-
4	876.5	8.3	19	122	0	0	19	70	0	Imp.	-
5	877.5	6.2	21	101	0	0	21	73	0	Imp.	-
6	878.5	15.8	48	588	0	0	48	30	0	Imp.	-
7	879.7	14.9	42	485	0	0	42	39	0	Imp.	-
8	880.5	14.5	49	551	0	0	49	35	0	Imp.	-
9	881.5	13.7	42	446	0	0	42	43	30	0.37	45
10	882.4	14.7	38	433	0	0	38	44	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.