



OILFIELD RESEARCH LABORATORIES

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

March 5, 1979

Inexco Oil Company, Inc.
Rt. 2 Box 3
Moran, Kansas 66755

Gentlemen:

Enclosed herewith is the report of the analysis of the rotary core taken from the Cook Lease, Well No. B-8, Allen County, Kansas, and submitted to our laboratory on February 28, 1979.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Benjamin R. Pearman
Benjamin R. Pearman

SAM:km

3 c to Louis Boyce
c/o Inexco Oil Company, Inc.
1015 City National Bank Building
Oklahoma City, Oklahoma 73102
2 c to Moran, Kansas

- REGISTERED ENGINEERS -

CORE ANALYSIS - WATER ANALYSIS - REPRESSURING ENGINEERING - SURVEYING & MAPPING - PROPERTY EVALUATION & OPERATION

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GENERAL INFORMATION & SUMMARY

Company Inexco Oil Company, Inc. Lease Cook Well No. B-8

Location 660' NSL & 220' EWL NW

Section 24 Twp. 26S Rge. 20E County Allen State Kansas

Name of Sand - - - - - Bartlesville

Top of Core - - - - - 748.0

Bottom of Core - - - - - 785.0

Top of Sand - - - - - 748.0

Bottom of Sand - - - - - 785.0

Total Feet of Permeable Sand - - - - - 7.9

Total Feet of Floodable Sand - - - - - 5.0

Distribution of Permeable Sand:
Permeability Range
Millidarcys

Feet

Cum. Ft.

0 - 10

1.3

1.3

10 - 100

5.6

6.9

100 - 200

1.0

7.9

Average Permeability Millidarcys - - - - - 54.5

Average Percent Porosity - - - - - 16.8

Average Percent Oil Saturation - - - - - 37.7

Average Percent Water Saturation - - - - - 34.4

Average Oil Content, Bbls./A. Ft. - - - - - 495.

Total Oil Content, Bbls./Acre - - - - - 4,404.

Average Percent Oil Recovery by Laboratory Flooding Tests - - - - - 5.2

Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft. - - - - - 76.

Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre - - - - - 378.

Total Calculated Oil Recovery, Bbls./Acre (Primary & Waterflooding) 1,325.

Packer Setting, Feet - - - - -

Viscosity, Centipoises @ - - - - -

A. P. I. Gravity, degrees @ 60 °F - - - - -

Elevation, Feet - - - - -

The core was sampled and the samples were sealed in plastic bags by an agent of the client. The drilling fluid consisted of fresh water mud. The core was reported to be from non-virgin territory.

FORMATION CORED

The detailed log of the formation cored is as follows:

<u>Depth Interval, Feet</u>	<u>Description</u>
748.0 - 752.0	Dark brown shaly sandstone.
752.0 - 754.0	Dark brown slightly carbonaceous shaly sandstone.
779.0 - 779.9	Gray sandy shale.
779.9 - 780.3	Brown shaly sandstone.
780.3 - 780.8	Gray sandy shale.
780.8 - 782.0	Brown shaly sandstone.
782.0 - 783.7	Gray sandy shale.
783.7 - 785.0	Brown carbonaceous shaly sandstone.

SUMMARY

From a study of the data, it would appear that efficient primary and waterflood operations in the vicinity of this well should recover approximately 1,325 barrels of oil per acre. This is an average recovery of 265 barrels per acre foot from 5.0 feet of floodable sand analyzed in this core.

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

Original formation volume factor	1.06
Reservoir water saturation, percent	25.
Average porosity, percent	18.5
Oil saturation after flooding, percent	34.0

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Performance factor, percent	50.0
Net floodable pay sand, feet	5.0

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Inexco Oil Company, Inc. Lease Cook Well No. B-8

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	748.5	16.2	32	48	80	402	127.	1.0	1.0	402	127.00
2	749.5	18.5	34	40	74	488	40.	1.0	2.0	488	40.00
3	750.5	20.3	35	41	76	551	92.	1.0	3.0	551	92.00
4	751.5	17.9	38	43	81	528	Imp.	1.0	4.0	528	0.00
5	752.5	19.5	47	25	72	711	39.	1.0	5.0	711	39.00
6	753.5	17.6	47	39	86	642	93.	1.0	6.0	642	93.00
7	780.0	14.0	35	27	62	380	23.	0.4	6.4	152	9.20
8	781.0	15.1	36	27	63	422	24.	1.2	7.6	506	28.80
9	784.0	12.0	35	21	56	326	1.2	1.3	8.9	424	1.56

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company Inexco Oil Company, Inc. Lease Cook Well No. B-8

Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.
748.0 - 754.0	5.0	78.2	391.00
779.0 - 785.0	2.9	13.6	39.56
748.0 - 785.0	7.9	54.5	430.56

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
748.0 - 754.0	6.0	18.3	38.8	39.3	554	3,322
779.0 - 785.0	2.9	13.6	35.4	24.3	373	1,082
748.0 - 785.0	8.9	16.8	37.7	34.4	495	4,404

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company			Inexco Oil Company, Inc.			Lease			Cook			Well No.			B-8		
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.					
			%	Bbbls./A. Ft.	%	Bbbls./A. Ft.	% Oil	% Water	Bbbls./A. Ft.								
1	748.5	16.7	32	414	3	39	29	63	375	78	1.76	30					
2	749.5	18.2	35	494	2	28	33	61	466	109	2.53	20					
3	750.5	20.0	35	543	2	31	33	62	512	83	2.53	30					
4	751.5	17.4	38	513	0	0	38	55	513	42	1.46	30					
5	752.5	19.3	47	704	13	195	34	57	509	97	2.61	30					
6	753.5	18.1	47	660	6	85	41	50	575	43	1.00	30					
7	780.0	14.2	35	386	0	0	35	58	386	0	Imp.	—					
8	781.0	15.2	36	424	0	0	36	49	424	44	1.07	30					
9	784.0	12.1	34	319	0	0	34	57	319	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.

Company Inexco Oil Company, Inc.

Lease Cook

Well No. B-8

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SUMMARY OF LABORATORY FLOODING TESTS

TABLE V

Company	Inexco Oil Company, Inc.	Lease	Cook	Well No.	B-8
Depth Interval, Feet	748.0 - 754.0				
Feet of Core Analyzed	5.0				
Average Percent Porosity	18.5				
Average Percent Original Oil Saturation	39.2				
Average Percent Oil Recovery	5.2				
Average Percent Residual Oil Saturation	34.0				
Average Percent Residual Water Saturation	58.6				
Average Percent Total Residual Fluid Saturation	92.6				
Average Original Oil Content, Bbls./A. Ft.	563.				
Average Oil Recovery, Bbls./A. Ft.	76.				
Average Residual Oil Content, Bbls./A. Ft.	487.				
Total Original Oil Content, Bbls./Acre	2,815.				
Total Oil Recovery, Bbls./Acre	378.				
Total Residual Oil Content, Bbls./Acre	2,437.				
Average Effective Permeability, Millidarcys	2.1				
Average Initial Fluid Production Pressure, p.s.i.	28.0				

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