



OILFIELD RESEARCH LABORATORIES

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

March 10, 1979

Inexco Oil Company, Inc.
R. 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-9, Allen County, Kansas, and submitted to our laboratory on March 7, 1979.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Benjamin R. Pearman
Benjamin R. Pearman

SAM;km

3 c to Inexco Oil Company, Inc.
c/o Louis Boyce
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

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Inexco Oil Company, Inc. Lease Cook Well No. B-9

Location 220' WEL & 660' NSL NW

Section 23 Twp. 26S Rge. 20E County Allen State Kansas

Name of Sand	-		Bartlesville
Top of Core	-		741.0
Bottom of Core	-		769.0
Top of Sand	-		741.0
Bottom of Sand	-		768.7
Total Feet of Permeable Sand	-		4.8
Total Feet of Floodable Sand	-		1.5

Distribution of Permeable Sand:
Permeability Range
Millidarcys

Feet

Cum. Ft.

	Feet	Cum. Ft.
0 - 10	2.0	2.0
10 - 50	2.0	4.0
50 - 200	0.8	4.8

Average Permeability Millidarcys	-		45.9
Average Percent Porosity	-		15.6
Average Percent Oil Saturation	-		35.6
Average Percent Water Saturation	-		43.8
Average Oil Content, Bbls./A. Ft.	-		430.
Total Oil Content, Bbls./Acre	-		2,063.
Average Percent Oil Recovery by Laboratory Flooding Tests	-		11.3
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	-		145.
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	-		217.
Total Calculated Oil Recovery, Bbls./Acre	-	(Primary & Waterflooding)	300.
Packer Setting, Feet	-		
Viscosity, Centipoises @	-		
A. P. I. Gravity, degrees @ 60 °F	-		
Elevation, Feet	-		

The core was sampled and the samples sealed in plastic by a representative of the client. The drilling fluid consisted of fresh water mud. The core was from non-virgin territory.

FORMATION CORED

The detailed log of the formation cored is as follows:

<u>Depth Interval, Feet</u>	<u>Description</u>
741.0 - 742.5	Light brown sandstone.
742.5 - 744.0	Light brown and gray laminated sandstone.
766.0 - 766.5	Dark gray shale.
766.5 - 767.8	Light brown sandstone.
767.8 - 768.2	Gray shale.
768.2 - 768.7	Light brown slightly shaly sandstone.
768.7 - 769.0	Gray shale.

SUMMARY

It would appear from a study of the data, that efficient primary and waterflood operations in the vicinity of this well should recover approximately 300 barrels of oil per acre. This is an average recovery of 200 barrels per acre foot from 1.5 acre 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	30.0
Average porosity, percent	16.4
Oil saturation after flooding, percent	35.0
Performance factor, percent	50.0
Net floodable pay sand, feet	1.5

Oilfield Research Laboratories

RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Inexco Oil Company, Inc. Lease Cook Well No. B-9

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	741.2	15.6	44	42	533	44.	1.0	1.0	533	44.00
2	742.2	17.2	51	33	681	50.	0.5	1.5	341	25.00
3	743.5	14.6	41	33	464	5.9	1.5	3.0	696	8.85
4	766.7	15.9	16	67	197	29.	0.5	3.5	99	14.50
5	767.5	18.4	23	59	328	158.	0.8	4.3	262	126.40
6	768.4	12.6	27	43	264	3.5	0.5	4.8	132	1.75

Oilfield Research Laboratories

SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company	Lease	Cook	Well No.			
Inexco Oil Company, Inc.			B-9			
Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.			
741.0 - 744.0	3.0	26.0	77.85			
766.5 - 768.7	1.8	79.3	142.65			
741.0 - 768.7	4.8	45.9	220.50			
Depth Interval, Feet	Feet of Core Analyzed	Average Percent Oil Saturation	Average Percent Water Saturation	Average Oil Content Bbl./A. Ft.	Total Oil Content Bbls./Acre	
741.0 - 744.0	3.0	15.4	43.7	36.0	523	1,570
766.5 - 768.7	1.8	16.1	22.2	56.8	274	493
741.0 - 768.7	4.8	15.6	35.6	43.8	430	2,063

Oilfield Research Laboratories

RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company Inexco Oil Company, Inc. Lease Cook Well No. B-9

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			
1	741.2	16.0	44	546	11	137	33	50	4	0.15	40
2	742.2	17.2	51	680	12	160	39	44	18	0.60	35
3	743.5	14.0	41	445	0	0	41	45	0	Imp.	-
4	766.7	16.4	18	229	0	0	18	74	140	17.49	10
5	767.5	18.9	22	323	0	0	22	72	110	11.78	20
6	768.4	12.6	26	254	0	0	26	44	3	0.22	50

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.

Oilfield Research Laboratories

SUMMARY OF LABORATORY FLOODING TESTS

TABLE V

Company	Inexco Oil Company, Inc.	Lease	Cook	Well No.	B-9
Depth Interval, Feet	766.5 - 768.7				
Feet of Core Analyzed	1.5				
Average Percent Porosity	16.4				
Average Percent Original Oil Saturation	46.3				
Average Percent Oil Recovery	11.3				
Average Percent Residual Oil Saturation	35.0				
Average Percent Residual Water Saturation	48.0				
Average Percent Total Residual Fluid Saturation	83.0				
Average Original Oil Content, Bbls./A. Ft.	591.				
Average Oil Recovery, Bbls./A. Ft.	145.				
Average Residual Oil Content, Bbls./A. Ft.	446.				
Total Original Oil Content, Bbls./Acre	886.				
Total Oil Recovery, Bbls./Acre	217.				
Total Residual Oil Content, Bbls./Acre	669.				
Average Effective Permeability, Millidarcys	0.30				
Average Initial Fluid Production Pressure, p.s.i.	37.5				

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