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

January 16, 1979

Elliott & Clopine
1116 W. 9th
Chanute, Kansas 66720

Gentlemen:

Enclosed herewith is the report of the analysis of the rotary core taken from the Elliott Lease, Well No. 1, Neosho County, Kansas, and submitted to our laboratory on January 2, 1979.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Benjamin R. Pearman

Benjamin R. Pearman

SAM:km
2 c to Chanute, Kansas

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GENERAL INFORMATION & SUMMARY

Company Elliott & Clopine Lease Elliott Well No. 1

Location SE SW

Section 13 Twp. 29S Rge. 19E County Neosho State Kansas

Name of Sand	Upper Bartlesville
Top of Core	748.0
Bottom of Core	758.6
Top of Sand	748.6
Bottom of Sand	757.8
Total Feet of Permeable Sand	7.1
Total Feet of Floodable Sand	4.3

Distribution of Permeable Sand:

Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 50	4.1	4.1
50 - 100	1.3	5.4
100 - 210	1.7	7.1

Average Permeability Millidarcys	61.0
Average Percent Porosity	17.5
Average Percent Oil Saturation	51.8
Average Percent Water Saturation	29.4
Average Oil Content, Bbls./A. Ft.	708.
Total Oil Content, Bbls./Acre	5,029.
Average Percent Oil Recovery by Laboratory Flooding Tests	19.6
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	301.
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	1,293.
Total Calculated Oil Recovery, Bbls./Acre (Primary & Waterflooding)	1,460.
Packer Setting, Feet	
Viscosity, Centipoises @	
A. P. I. Gravity, degrees @ 60 °F	
Elevation, Feet	

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

FORMATION CORED

The detailed log of the formation cored is as follows:

Depth Interval, Feet	Description
748.0 - 748.6	Gray shale.
748.6 - 750.0	Light brown and gray laminated shaly sandstone.
750.0 - 751.4	Gray shale.
751.4 - 751.7	Light brown and gray laminated shaly sandstone.
751.7 - 752.4	Gray shale.
752.4 - 752.7	Light brown and gray laminated very shaly sandstone.
752.7 - 755.7	Dark brown sandstone.
755.7 - 757.8	Light brown slightly shaly carbonaceous laminated sandstone.
757.8 - 758.6	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 1,460 barrels of oil per acre. This is an average recovery of 340 barrels per acre foot from the 4.3 acre feet analyzed in this core.

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

Original formation volume factor	1.04
Reservoir water saturation, percent	20.
Average porosity, percent	19.7
Oil saturation after flooding, percent	32.9
Performance factor, percent	50.0
Net floodable pay sand, feet	4.3

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Elliott & Clopine Lease Elliott Well No. 1

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	749.5	14.0	51	30	81	554	6.3	1.4	1.4	776	8.82
2	751.5	13.7	31	46	77	330	8.5	0.3	1.7	99	2.55
3	752.6	12.5	45	47	92	436	1.5	0.3	2.0	131	0.45
4	753.5	18.6	40	36	76	577	61.	1.3	3.3	750	79.30
5	754.5	21.2	48	24	72	790	145.	1.0	4.3	790	145.00
6	755.5	20.5	64	19	83	1018	203.	0.7	5.0	713	142.10
7	756.5	18.9	61	22	83	894	34.	1.3	6.3	1162	44.20
8	757.6	15.8	62	33	95	760	13.	0.8	7.1	608	10.40

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company Elliott & Clopine Lease Elliott Well No. 1

Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.
748.6 - 757.8	7.1	61.0	432.82

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
748.6 - 757.8	7.1	17.5	51.8	29.4	708	5,029

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company Elliott & Clopine Lease Elliott Well No. 1

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	749.5	14.2	49	540	0	0	49	41	540	0	Imp.	-
2	751.5	13.9	32	345	0	0	32	60	345	0	Imp.	-
3	752.6	12.1	44	414	0	0	44	48	414	0	Imp.	-
4	753.5	19.1	40	593	10	148	30	67	445	242	8.33	20
5	754.5	21.0	48	782	16	261	32	59	521	285	9.62	20
6	755.5	20.3	62	977	29	457	33	57	520	315	9.85	20
7	756.5	19.1	61	905	27	400	34	61	505	228	6.50	20
8	757.6	16.0	62	770	0	0	62	32	770	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 Elliott & Clopine Lease Elliott Well No. 1

Depth Interval, Feet	748.6 - 757.8
Feet of Core Analyzed	4.3
Average Percent Porosity	19.7
Average Percent Original Oil Saturation	52.5
Average Percent Oil Recovery	19.6
Average Percent Residual Oil Saturation	32.9
Average Percent Residual Water Saturation	61.7
Average Percent Total Residual Fluid Saturation	94.6
Average Original Oil Content, Bbls./A. Ft.	794.
Average Oil Recovery, Bbls./A. Ft.	301.
Average Residual Oil Content, Bbls./A. Ft.	493.
Total Original Oil Content, Bbls./Acre	3,413.
Total Oil Recovery, Bbls./Acre	1,293.
Total Residual Oil Content, Bbls./Acre	2,120.
Average Effective Permeability, Millidarcys	8.3
Average Initial Fluid Production Pressure, p.s.i.	20.

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