

OILFIELD RESEARCH LABORATORIES

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

August 6, 1980

Lincoln 77
8485 Kathy Lane
Lincoln, Nebraska 68526

Gentlemen:

Enclosed herewith is the report of the analysis of the rotary core taken from the Parmley Lease, Well No. 5, Coffey County, Kansas and submitted to our laboratory on June 4, 1980.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES


Benjamin R. Pearman

SAM/ks

5 c to Lincoln, Nebraska

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GENERAL INFORMATION & SUMMARY

Company Lincoln 77 Lease Parmley Well No. 5
 Location SW $\frac{1}{4}$ - SE $\frac{1}{4}$ - SW $\frac{1}{4}$
 Section 29 Twp. 22S Rge. 17E County Coffey State Kansas
 Elevation, Feet - - - - -

Name of Sand - - - - - Lower Squirrel
 Top of Core - - - - - 971.0
 Bottom of Core - - - - - 984.6
 Top of Sand - - - - - 974.2
 Bottom of Sand - - - - - 984.6
 Total Feet of Permeable Sand - - - - - 7.9
 Total Feet of Floodable Sand - - - - - 0.0

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 5	3.8	3.8
5 - 20	2.4	6.2
90 -110	1.7	7.9

Average Permeability Millidarcys - - - - - 26.2
 Average Percent Porosity - - - - - 18.1
 Average Percent Oil Saturation - - - - - 46.3
 Average Percent Water Saturation - - - - - 25.7
 Average Oil Content, Bbls./A. Ft. - - - - - 673.
 Total Oil Content, Bbls./Acre - - - - - 5990.
 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

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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, Feet</u>	<u>Description</u>
971.0 - 974.2	Gray shale.
974.2 - 975.3	Brown shaly sandstone.
975.3 - 979.0	Brown slightly carbonaceous sandstone.
979.0 - 979.7	Brown slightly shaly sandstone.
979.7 - 981.7	Brown shaly sandstone.
981.7 - 982.6	Brown slightly carbonaceous sandstone.
982.6 - 984.6	Brown shaly sandstone.

RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Lincoln 77

Parnley

Lease

Well No.

5

Company

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	974.5	16.2	49	17	66	616	1.3	1.1	1.1	678	1.43
2	975.5	22.3	66	7	73	1142	93.	0.7	1.8	799	65.10
3	976.5	23.0	54	11	65	964	101.	1.0	2.8	964	101.00
4	977.3	22.4	57	14	71	991	17.	0.5	3.3	496	8.50
5	978.0	20.1	52	16	68	811	10.	1.0	4.3	811	10.00
6	979.2	16.4	53	29	82	674	3.0	0.7	5.0	472	2.10
7	981.5	13.5	27	59	86	283	0.57	1.0	6.0	283	0.57
8	982.5	18.4	45	22	67	642	18.	0.9	6.9	578	16.20
9	983.4	16.2	35	35	70	440	2.1	1.0	7.9	440	2.10
10	984.5	15.9	38	37	75	469	Imp.	1.0	8.9	469	0.00

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company		Lease		Well No.	
Lincoln 77		Parnley		5	
Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.		
974.2 - 984.6	7.9	26.2	207.00		
Depth Interval, Feet	Feet of Core Analyzed	Average Percent Porosity	Average Percent Oil Saturation	Average Percent Water Saturation	Total Oil Content Bbls./Acre
974.2 - 984.6	8.9	18.1	46.3	25.7	5,990
				673.	

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

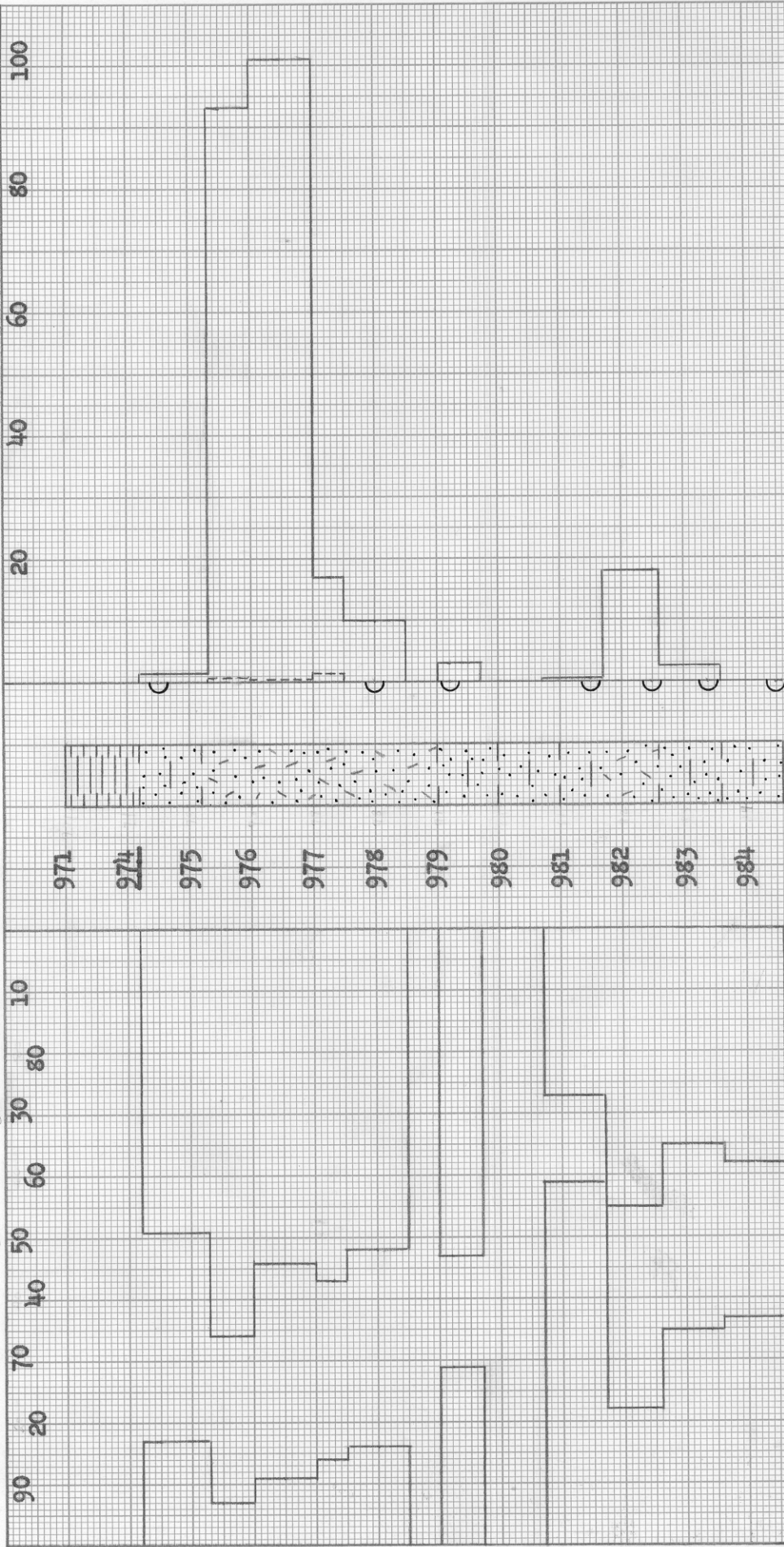
Company		Lincoln 77		Lease		Parnley		Well No.		5	
Sample No.	Depth, Feet	Effective Porosity Percent	Original Oil Saturation		Oil Recovery		Residual Saturation		Volume of Water Recovered cc*	Effective Permeability Millidarcys**	Initial Fluid Production Pressure Lbs./Sq./In.
			%	Bbls./A. Ft.	%	Bbls./A. Ft.	% Oil	% Water			
1	974.5	16.3	49	620	0	0	49	19	0	Imp.	-
2	975.5	22.7	65	1145	0	0	65	25	58	0.82	45
3	976.5	23.0	54	964	0	0	54	37	50	0.75	45
4	977.3	22.1	58	994	0	0	58	32	65	1.12	40
5	978.0	20.0	52	807	0	0	52	20	0	Imp.	-
6	979.2	16.0	54	670	0	0	54	30	0	Imp.	-
7	981.5	13.7	27	287	0	0	27	59	0	Imp.	-
8	982.5	18.4	45	642	0	0	45	24	0	Imp.	-
9	983.4	16.0	35	434	0	0	35	37	0	Imp.	-
10	984.5	16.4	37	471	0	0	37	40	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.

WATER SAT., PERCENT → → OIL SAT., PERCENT
— PERMEABILITY, IN MILLIDARCS
--- EFFECTIVE PERMEABILITY TO WATER, IN MILLIDARCS



KEY:



SHALE



CARBONACEOUS SANDSTONE



SHALY SANDSTONE



IMPERMEABLE TO WATER

LINCOLN 77

PARMLEY LEASE

WELL NO. 5

COFFEY COUNTY, KANSAS

DEPTH INTERVAL, FEET	FEET OF CORE ANALYZED	AVG. OIL		AVG. WATER		AVERAGE		CALCULATED	
		PERCENT	SATURATION PERCENT	PERCENT	SATURATION PERCENT	PERMEABILITY MILLIDARCS	OIL RECOVERY, BBLs./ACRE		

974.2 - 984.6

8.9

18.1

46.3

25.7

26.2

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CHANUTE, KANSAS
AUGUST, 1980

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