

OILFIELD RESEARCH LABORATORIES

536 NORTH HIGHLAND - CHANUTE, KANSAS - PHONE HE1-2650

August 3, 1966

Hal Thomas
22800 Lakeland Boulevard
Cleveland, Ohio

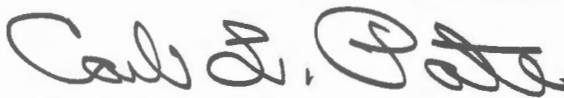
Dear Sir:

Enclosed herewith is the report of the analysis of the Rotary core taken from the Gladis Parsons Lease, Well No. 5, Allen County, Kansas, and submitted to our laboratory on July 30, 1966.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES


Carl L. Pate

CLP:rf

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GENERAL INFORMATION & SUMMARY

Company Hal Thomas Lease Gladis Parsons Well No. 5

Location W/2 SE/4

Section 28 Twp. 26S Rge. 21E County Allen State Kansas

Name of Sand - - - - - Bartlesville

Top of Core - - - - - 646.0

Bottom of Core - - - - - 662.5

Top of Sand - - - - - 649.6

Bottom of Sand - - - - - 661.0

Total Feet of Permeable Sand - - - - - 7.7

Total Feet of Floodable Sand - - - - -

Distribution of Permeable Sand:
Permeability Range
Millidarcys

Feet

Cum. Ft.

0 - 2	3.4	3.4
2 - 10	1.0	4.4
10 & above	3.3	7.7

Average Permeability Millidarcys - - - - - 7.1

Average Percent Porosity - - - - - 16.6

Average Percent Oil Saturation - - - - - 39.1

Average Percent Water Saturation - - - - - 35.9

Average Oil Content, Bbls./A. Ft. - - - - - 510.

Total Oil Content, Bbls./Acre - - - - - 4,641.

Average Percent Oil Recovery by Laboratory Flooding Tests - - - - - 6.0

Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft. - - - - - 84.

Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre - - - - - 84.

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

Packer Setting, Feet - - - - -

Viscosity, Centipoises @ - - - - -

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

Elevation, Feet - - - - -

The core was submitted to our laboratory approximately 12 hours after it was removed from the core barrel. Samples were taken from the core after we received same.

FORMATION CORED

The detailed log of the formation cored is as follows:

Depth Interval, Description Feet

646.0 - 649.6 - Sandy shale.
649.6 - 652.0 - Brown laminated shaly sandstone.
652.0 - 654.3 - Sandy shale.
654.3 - 657.6 - Brown laminated shaly sandstone.
657.6 - 661.0 - Dark carbonaceous laminated shaly sandstone.
661.0 - 662.5 - Sandy shale.

Coring was started at a depth of 646.0 feet in sandy shale and completed at 662.5 feet in same type of material. This core shows a total of 9.1 feet of sandstone. For the most part, the sand section is made up of brown fine grained laminated shaly sandstone.

PERMEABILITY

The weighted average permeability of the cored section is 7.1 millidarcys (See Table III). By observing the data given on the coregraph, it is noticeable that the sand has a very irregular permeability profile. The permeability of the sand varies from impermeable to a maximum of 17 millidarcys.

PERCENT SATURATION & OIL CONTENT

The sand in this core shows a fairly good weighted average percent oil saturation, namely, 39.1. The weighted average percent water saturation of the cored section is 35.9 (See Table

III). This gives an overall weighted average total fluid saturation of 75.0 percent.

The weighted average oil content of the cored section is 510 barrels per acre foot. The total oil content, as shown by this core, is 4,641 barrels per acre (See Table III).

LABORATORY FLOODING TESTS

The sand in this core did not respond to any appreciable extent to laboratory flooding tests, as a total recovery of only 84 barrels of oil per acre was obtained from one foot of sand. The percent oil saturation was reduced from 41 to 35, or represents a recovery of 6 percent. The effective permeability of the sample is only 0.015 millidarcy, while the initial fluid production pressure is 50 pounds per square inch.

By observing the data given in Table IV, you will note that of the 8 samples tested, none produced water and one oil.

CONCLUSION

On the basis of the above data, it is doubtful whether this well will make a commercial oil producer as the sand is very tight for its depth. Furthermore, for the same reason given above, we do not consider the area, represented by this core, to be a good water-flood prospect.

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Hal Thomas Lease Gladis Parsons Well No. 5

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	650.1	20.1	40	33	73	624	2.5	1.0	1.0	624	2.50
2	651.1	14.6	36	40	76	408	Imp.	1.4	2.4	571	0.00
3	655.1	15.0	37	24	61	431	12.	1.3	3.7	561	15.60
4	656.1	18.3	41	32	73	582	14.	1.0	4.7	582	14.00
5	657.1	17.9	42	35	77	584	1.8	1.0	5.7	584	1.80
6	658.1	14.6	33	55	88	374	17.	1.0	6.7	374	17.00
7	659.1	19.3	48	27	75	718	1.9	1.0	7.7	718	1.90
8	660.1	15.2	38	41	79	448	1.6	1.4	9.1	627	2.24

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company Hal Thomas Lease Gladis Parsons Well No. 5

Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.
649.6 - 661.0	7.7	7.1	55.04

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
649.6 - 661.0	9.1	16.6	39.1	35.9	510	4,641

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RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company Hal Thomas Lease Gladis Parsons Well No. 5

Sample No.	Depth, Feet	Effective Porosity Percent	Original Oil Saturation		Oil Recovery		Residual Saturation			Volume of Water Recovered cc*	Effective Permeability mD/darcy**	Initial Fluid Production Pressure Lbs./Sq./In.
			%	Bbls./A. Ft.	%	Bbls./A. Ft.	% Oil	% Water	Bbls./A. Ft.			
1	650.1	19.6	38	578	0	0	38	50	578	None	Imp.	-
2	651.1	15.1	33	387	0	0	33	45	387	None	Imp.	-
3	655.1	14.6	35	396	0	0	35	32	396	None	Imp.	-
4	656.1	18.0	41	573	6	84	35	54	489	None	0.015	50
5	657.1	17.5	40	543	0	0	40	41	543	None	0.015	-
6	658.1	14.3	30	333	0	0	30	62	333	None	0.015	-
7	659.1	18.8	45	656	0	0	45	30	656	None	0.015	-
8	660.1	15.5	35	421	0	0	35	45	421	None	0.015	-

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.

