



A fresh water mud was used as a circulating fluid in the coring of the sand in this well. This well was drilled in a virgin area. The core was sampled and sealed in plastic bags by a representative of Oilfield Research Laboratories. Two feet of sand was drilled before coring was started.

#### FORMATION CORED

The detailed log of the formation cored is as follows:

<u>Depth Interval,</u> <u>Feet</u>	<u>Description</u>
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2437.0 - 2444.5	- Light brown fine grained micaceous shaly sandstone.
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Coring was started at a depth of 2437.0 feet in light brown fine grained micaceous shaly sandstone and completed at 2444.5 feet in same type of material. This core shows a total of 7.5 feet of sandstone.

#### PERMEABILITY

The weighted average permeability of the cored section is 0.56 millidarcys respectively. By observing the data given on the coregraph, it is noticeable that the sand has a comparatively uniform permeability profile. The permeability of the sand varies from impermeable to a maximum of 2.0 millidarcys.

#### PERCENT SATURATION & OIL CONTENT

The sand in this core shows a low weighted average percent oil saturation, namely, 23.6. The weighted average percent water saturation is 65.8. This gives an overall weighted average total fluid saturation of 89.4 percent.

In an effort to determine whether or not any flushing of the sand occurred during coring, all of the saturation samples were analyzed for

chloride content. The results of these tests are given in Tables VI and VII. From the data given in these tables and on the coregraph, it is evident that very little flushing of the sand occurred during the coring of same.

The weighted average oil content of the cored section is 301 barrels per acre foot while the total oil content, as shown by this core, is 2,258 barrels per acre.

#### LABORATORY FLOODING TESTS

The tests show that the sand, represented by this core, is not floodable as all the samples were impermeable to water.

#### CONCLUSION

From a study of the above data, we estimate that approximately 260 barrels of oil per acre can be recovered from the area, represented by this core, by efficient primary production methods. The analysis indicates that it would not be practical to waterflood the sand reservoir.

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## RESULTS OF LABORATORY FLOODING TESTS

TABLE IV

Company Jackson Brothers

Lease Jackson Heirs

Well No. 26

Sample No.	Depth, Feet	Effective Porosity Percent	Original Oil Saturation		Oil Recovery		Residual Saturation			Volume of Water Recovered cc <sup>a</sup>	Effective Permeability Millidarcys <sup>aa</sup>	Initial Fluid Production Pressure Lbs./Sq./In.
			%	Bbls./A. Ft.	%	Bbls./A. Ft.	% Oil	% Water	Bbls./A. Ft.			
1	2437.1	15.3	19	226	0	0	19	77	226	None	Imp.	50+
2	2438.1	15.4	20	239	0	0	20	78	239	None	Imp.	50+
3	2439.1	15.8	26	319	0	0	26	70	319	None	Imp.	50+
4	2440.1	16.2	20	251	0	0	20	70	251	None	Imp.	50+
5	2441.1	16.1	15	187	0	0	15	75	187	None	Imp.	50+
6	2442.1	16.0	27	335	0	0	27	65	335	None	Imp.	50+
7	2443.1 <sup>f</sup>	17.0	20	264	0	0	20	72	264	None	Imp.	50+
8	2444.1	17.5	<del>27</del> 74	367	0	0	27	<del>63</del> 570 71	367	None	Imp.	50+

Notes: cc—cubic centimeter.

<sup>a</sup>—Volume of water recovered at the time of maximum oil recovery.

<sup>aa</sup>—Determined by passing water through sample which still contains residual oil.

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**SUMMARY OF WATER DIFFERENTIATION TESTS**

**TABLE VII**

Company Jackson Brothers Lease Jackson Heirs Well No. 26

<u>Depth Interval, Feet</u>	<u>Chloride Content of Brine in Sand, ppm</u>	<u>Average Percent Connate Water</u>	<u>Average Percent Drilling &amp; Foreign Water</u>
2437.0 - 2444.5	87,767		

Note: ppm -- parts per million.

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**RESULTS OF SATURATION & PERMEABILITY TESTS**

TABLE 1-B

Company Jackson Brothers Lease Jackson Heirs Well No. 26

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	2437.1	15.6	17	77	94	206	Imp.	0.6	0.6	124	0.00
2	2438.1	15.8	22	74	96	270	0.68	1.0	1.6	270	0.68
3	2439.1	16.1	29	63	92	362	0.17	1.0	2.6	362	0.17
4	2440.1	16.5	23	63	86	294	0.32	1.0	3.6	294	0.32
5	2441.1	15.9	13	73	86	160	0.16	1.0	4.6	160	0.16
6	2442.1	16.3	30	58	88	379	0.18	1.0	5.6	379	0.18
7	2443.1	17.3	22	66	88	295	Imp.	1.0	6.6	295	0.00
8	2444.1	17.3	31	56	87	416	2.0	0.9	7.5	374	1.80

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**RESULTS OF WATER DIFFERENTIATION TESTS**  
**TABLE VI**

Company Jackson Brothers Lease Jackson Heirs Well No. 26

Sample No.	Depth, Feet	Chloride Content of Brine in Sand ppm	Percent Water Saturation		
			Connate	Drilling & Foreign	Total
1	2437.1	87,500			
2	2438.1	82,400			
3	2439.1	86,250			
4	2440.1	95,500			
5	2441.1	93,700			
6	2442.1	88,600			
7	2443.1	82,400			
8	2444.1	85,400			

Note: ppm — parts per million