

WFF

EARLOUGHER ENGINEERING
CORE SUMMARY

Company Kewanee Oil Company Lease Parks Well No. 134
Location 1770 feet North, 320 feet East of SW Corner
Section 27 Twp. 20-S Rge. 21-E County Anderson State Kansas
Formation Cored Squirrel Sand Type Core Rotary, 3-inch
Date Cored 11/ 2-11 /48 Date Shot _____ Date Completed _____

Depths: Started coring, sandy shale 645.0 ft.
 Top of oil pay sand 654.7 "
 Bottom of oil pay 683.3 "
 Net feet of oil pay 15.9 "
 Bottom of core, shale 694.5 "
 Total cored 49.5 "
 Feet analyzed 26.3 "

Shot Record: Set Packer _____ Feet

Depth, Feet		Feet	Shell Diameter	Quarts Per Foot	Quarts Total
From	To				
662	682	20	4-1/2"	3.2	64

Set packer 659. feet (bottom cement 654. feet).
Plug back with cement to 683. feet.

Completion Data:

Hrs. well stood after coring _____; Feet Fluid in Hole _____ (Oil _____ Water _____)

Clean-out time, hrs. _____; Initial production, bbls. day _____ (Oil _____ Water _____)

Remarks: This core shows 15.9 net feet of shaly oil sand in a broken section between 654.7 and 683.3 feet. The first core cut between 645.0 and 661.4 feet stuck in core barrel which necessitated breaking it up to remove it. However, several of the fractures have the appearance of being natural to the formation.

PERMEABILITY Permeability is low averaging only 3.1 millidarcys. Individual values range from 0.3 to 14. millidarcys. Permeability capacity is 49 foot-millidarcys.

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POROSITY Average porosity is 16.7 percent and values range from 13.4 to 21.2 percent.

PERCENT SATURATION Average oil saturation is 31 percent and average water saturation 50 percent.

OIL CONTENT Average oil content is 407 barrels per acre-foot and values range from 300 to 540 barrels per acre-foot.

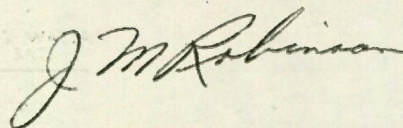
LABORATORY FLOODING TESTS Laboratory flooding tests yielded an average oil recovery of 123 barrels per acre-foot and average residual oil saturation was 22 percent. Permeability to water was low in these laboratory tests.

CONCLUSIONS

1. Net feet of oil pay sand is 15.9 feet located in a broken section between 654.7 and 683.3 feet. The oil sand itself is quite shaly.
2. Laboratory flooding tests indicate a low oil recovery and low permeability to water.
3. Estimated oil recovery by water flooding is 1,000 barrels per acre from the area of which this core is representative. This relatively low oil recovery is indicated by the results of laboratory flooding tests.

Respectfully submitted

EARLOUGHER ENGINEERING



J. M. Robinson, Engineer

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EARLOUGHER ENGINEERING

RESULTS OF SATURATION TESTS

COMPANY **Kewanee Oil Company**

WELL **Parks No. 134**

Sat. No.	Depth Feet	Porosity Per Cent	PER CENT SAT.			Avg. Oil Content Bbls./A. Ft.	FT. OF SAND		Total Oil Content Bbls./Acre																				
			Oil	Water	Total		Ft.	Cum.																					
1	646.5	12.4	35.	42.	77.	330.	1.7*																						
2	648.9	12.3	32.	68.	100.	300.	1.4*																						
F- 1	650.3	10.7	31.	69.	100.	260.	1.3*																						
3	651.7	14.8	31.	63.	94.	360.	1.1*																						
F- 2	652.9	10.8	29.	-	-	240.	2.1*																						
4	655.1	21.2	28.	40.	68.	460.	0.6	0.6	280.																				
F- 3	656.2	17.0	28.	-	-	370.	0.9	1.5	330.																				
5	657.4	18.5	37.	37.	74.	540.	1.4	2.9	760.																				
6	659.4	17.3	24.	60.	84.	320.	0.9	3.8	290.																				
7	660.3	12.7	21.	77.	98.	210.	0.6*																						
8	661.6	21.0	32.	38.	70.	530.	0.6	4.4	320.																				
F- 4	664.5	13.6	31.	-	-	330.	1.2	5.6	400.																				
9	665.3	17.3	27.	52.	79.	360.	0.8	6.4	290.																				
F- 5	666.2	15.7	39.	-	-	480.	0.8	7.2	380.																				
10	666.9	18.3	32.	47.	79.	450.	0.6	7.8	270.																				
F- 6	667.7	17.9	25.	-	-	340.	0.8	8.6	270.																				
11	668.4	17.8	28.	49.	77.	380.	0.9	9.5	340.																				
F- 7	671.8	13.4	29.	-	-	300.	1.0	10.5	300.																				
12	674.2	15.0	39.	56.	95.	450.	1.1	11.6	500.																				
F- 8	675.0	17.2	34.	-	-	450.	0.9	12.5	410.																				
13	675.9	17.2	35.	50.	85.	460.	0.6	13.1	280.																				
14	680.4	14.7	29.	55.	84.	430.	1.7	14.8	730.																				
F- 9	681.5	14.7	18.	-	-	210.	0.8*																						
15	682.5	16.7	23.	63.	86.	300.	1.1	15.9	330.																				
16	684.5	15.4	28.	51.	79.	340.	0.7*																						
17	688.4	11.6	45.	55.	100.	410.	0.7*																						
*Not included in cumulative feet of sand.																													
<table border="1"> <thead> <tr> <th>Sec.</th> <th>DEPTH, FEET</th> <th>From</th> <th>To</th> <th>No.</th> <th>Avg. Oil Sat.</th> <th>Avg. Water Sat.</th> <th>Avg. Oil Content Bbls./A. Ft.</th> <th>Oil Recovery</th> <th>Fixed Prod.</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>										Sec.	DEPTH, FEET	From	To	No.	Avg. Oil Sat.	Avg. Water Sat.	Avg. Oil Content Bbls./A. Ft.	Oil Recovery	Fixed Prod.										
Sec.	DEPTH, FEET	From	To	No.	Avg. Oil Sat.	Avg. Water Sat.	Avg. Oil Content Bbls./A. Ft.	Oil Recovery	Fixed Prod.																				
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SUMMARY

DEPTH FEET		FEET OF SAND	AVG. POROSITY	AVG. OIL SAT.	AVG. WATER SAT.	AVG. OIL CONTENT BBLs./A. FT.	TOTAL OIL CONTENT BBLs./ACRE
FROM	TO						
1. 654.7	683.3	15.9	16.7	31.	50.	407.	6,480.

REMARKS: 1/ Unless otherwise noted, oil content and saturation before flooding equals 2/ Oil recovery as Bbls./A. Ft. Diff. equals 2 1/2 ft. oil content from adjacent

EARLOUGH ENGINEERING

RESULTS OF PERMEABILITY TESTS

COMPANY **Kewanee Oil Company** WELL **Parks No. 134**

Sample No.	Depth Feet	Permeability Millidarcys	FEET OF SAND		Capacity Ft. X Md.	Sample No.	Depth Feet	Permeability Millidarcys	FEET OF SAND		Capacity Ft. X Md.
			Ft.	Cum. Ft.					Ft.	Cum. Ft.	
1	645.1	Cracked	0.5*			22	664.1	0.3	0.6	5.0	0.2
2	645.9	0.3	0.5*			23	664.7	1.3	0.6	5.6	0.8
3	646.7	Cracked	1.2*			24	665.1	4.2	0.5	6.1	2.1
4	649.0	0.3	1.0*			25	665.6	1.2	0.3	6.4	0.4
5	649.8	Cracked	0.4*			26	666.0	0.9	0.8	7.2	0.7
6	650.5	0.4	0.9*			27	666.6	2.2	0.6	7.8	1.3
7	651.5	Cracked	0.6*			28	667.9	8.2	0.8	8.6	6.6
8	652.0	2.0	0.3*			29	668.3	5.5	0.9	9.5	5.0
9	652.5	1.8	0.6*			30	670.3	0.2	0.5*		
10	653.0	0.2	1.5*			31	672.0	1.0	1.0	10.5	1.0
11	653.9	Imp.	0.2*			32	674.5	0.9	1.1	11.6	1.0
12	654.7	14.	0.6	0.6	8.4	33	674.8	0.9	0.4	12.0	0.4
13	655.3	Imp.	0.5*			34	675.2	2.2	0.5	12.5	1.1
14	656.0	0.9	0.5	1.1	0.5	35	675.7	1.2	0.3	12.8	0.4
15	656.6	1.0	0.4	1.5	0.4	36	676.1	0.4	0.3	13.1	0.1
16	657.2	6.4	0.6	2.1	3.8	37	681.0	0.9	1.7	14.8	1.6
17	657.7	0.3	0.8	2.9	0.2	38	681.6	1.6	0.8*		
18	659.1	3.1	0.9	3.8	2.8	39	682.1	3.8	0.8	15.6	3.0
19	660.1	Imp.	0.2*			40	683.2	2.2	0.3	15.9	0.7
20	660.5	0.7	0.6*			41	684.3	1.4	0.7*		
21	661.8	10.	0.6	4.4	6.0	42	688.1	0.1	0.7*		

*Not included in cumulative feet of sand.

SUMMARY

	DEPTH FEET		FEET OF SAND	AVERAGE PERMEABILITY	CAPACITY FT. X MD.
	FROM	TO			
1.	654.7	683.3	15.9	3.1	49.

EARLOUGHER ENGINEERING

RESULTS OF LABORATORY FLOODING TESTS

COMPANY Kewanee Oil Company

LEASE Parks

WELL NO. 134

*Not included in cumulative feet of sand.

SUMMARY

Sec.	DEPTH, FEET		Net Ft. of Sand	Avg. Por.	Average Core Sat.		CORE OIL CONTENT		PERMEABILITY		FLOOD POT RESIDUALS				OIL RECOVERY		
	From	To			Oil	Water	Avg. B./A. Ft.	Total Bbl./Ac.	Avg. Mds.	Capacity Ft. x Md.	Saturation		Oil Content		Diff.	Flood Pot	
											Oil	Water	B./A. Ft.	Bbl./Ac.			
1.	654.7	683.3	15.9	16.7	31.	50.	407.	6480.	3.1	49.	22.	69.	285.	4530.	1950.	1820.	

REMARKS: 1/ Unless otherwise noted, oil content and saturation before flooding equals flood pot oil recovery plus flood pot residual.
2/ Oil recovery as B./A. Ft. Diff. equals B./A. Ft. oil content from adjacent saturation sample minus flood pot residual oil content for flood sample.