WE

EARLOUGHER ENGINEERING

CORE SUMMARY

Company Kewanee Oil Company Lease Daniels Well No. 124

Location 1930 feet South, 1350 feet West of Center

Section 4 Twp. 21-S Rge. 21-E County Anderson State Kansas

Formation Cored Squirrel Sand Type Core Rotary, 3-inch

Date Cored 9-17-48 Date Shot _____ Date Completed _____

Depths:

Started coring, probable black shale	630.5 ft.
Top of core recovered, black shale	631.0 "
Top of oil sand	631.1 "
Bottom of oil sand	647.1 "
Net feet of oil sand	9.0 "
Bottom of core, black shale	671.3 "
Total cored	40.8 "
Feet analyzed	22.8 "

Shot Record: Set Packer 633.0 Feet

Depth, Feet From	Depth, Feet To	Feet	Shell Diameter	Quarts Per Foot	Quarts Total
636	647	11	4-1/2"	3.2	35.2

Plug back to 647.0 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: Coring was commenced in black shale above the sand at 630.5 feet and stopped at 671.3 feet in black shale below the sand. The 9.0 net feet of oil sand lies in a broken section between 631.1 and 647.1 feet.

PERMEABILITY Average permeability is 18 millidarcys and values range from 0.7 to 39 millidarcys. Permeability capacity is 159 foot-millidarcys.

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POROSITY Average porosity is 19.6 percent and values range from 13.7 to 23.5 percent.

PERCENT SATURATION Average oil saturation is 38 percent and average core water saturation 38 percent. Both oil and water saturation are quite variable probably as a result of the broken shale and sand section.

OIL CONTENT Average oil content is 574 barrels per acre-foot and values range from 340 to 900 barrels per acre-foot.

LABORATORY FLOODING TESTS Laboratory flooding tests yielded an average oil recovery of 317 barrels per acre-foot and average residual oil saturation was 21 percent. The sand responded reasonably well to water flooding in these laboratory tests.

CONCLUSIONS

1. Net feet of oil sand is 9.0 feet located in a broken section between 631.1 and 647.1 feet.

2. The sand has fairly good oil saturation and responded satisfactorily to water flooding in the laboratory.

3. The section cored below the oil sand between 647.1 and 660.8 feet is sandy shale which shows some oil; however, is non-floodable because of the low permeability and porosity.

4. Estimated oil recovery by water flooding is 222 barrels per acre-foot or 2,000 barrels per acre from the area of which this core is representative.

Respectfully submitted

EARLOUGHER ENGINEERING

J M Robinson

J. M. Robinson, Engineer

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Earlougher Engineering

Results of Saturation Tests

COMPANY Kewanee Oil Company WELL Daniels No. 124

Sat. No.	Depth Feet	Porosity Per Cent	Per Cent Sat. Oil	Per Cent Sat. Water	Per Cent Sat. Total	Avg. Oil Content Bbls./A. Ft.	Ft. of Sand Ft.	Ft. of Sand Cum.	Total Oil Content Bbls./Acre
1	631.3	23.2	28	32	60	500	0.8	0.8	400.
F 1	632.1	17.0	26	-	-	340	0.5	1.3	170.
2	633.0	15.6	38	39	77	460	0.6	1.9	280.
F 2	634.0	17.5	45	-	-	610	0.7	2.6	430.
3	634.9	23.5	38	27	65	690	0.9	3.5	620,
F 3	635.9	17.8	43	-	-	600	0.4	3.9	240.
4	636.9	11.8	35	65	100	320	1.2*		
F 4	638.1	16.1	40	-	-	500	0.5	4.4	250.
5	639.5	22.6	46	24	70	800	0.6	5.0	480.
F 5	640.5	23.2	50	-	-	900	0.8	5.8	720.
6	641.5	20.8	21	48	69	340	1.0	6.8	340.
F 6	642.7	19.7	37	-	-	560	0.4	7.2	220.
7	643.5	17.8	34	43	77	470	0.8	8.0	380.
F 7	645.0	22.0	47	-	-	800	0.4	8.4	320.
8	646.8	13.7	48	52	100	510	0.6	9.0	310.
F 8	647.8	11.3	29	-	-	250	1.4*		
9	648.6	13.7	32	68	100	340	1.5*		
F 9	651.0	12.9	23	-	-	230	1.5*		
11	652.1	12.9	15	85	100	150	2.5*		
12	655.2	12.9	27	73	100	270	1.8*		
F 11	656.0	13.6	22	-	-	230	3.3*		

*Not included in cumulative feet of sand.

SUMMARY

Depth Feet From	Depth Feet To	Feet of Sand	Avg. Porosity	Avg. Oil Sat.	Avg. Water Sat.	Avg. Oil Content Bbls./A. Ft.	Total Oil Content Bbls./Acre
631.1	647.1	9.0	19.6	38.	38.	574.	5160.

EARLOUGHER ENGINEERING

RESULTS OF PERMEABILITY TESTS

COMPANY Kewanee Oil Company WELL Daniels No. 124

Sample No.	Depth Feet	Permeability Millidarcys	FEET OF SAND Ft.	FEET OF SAND Cum. Ft.	Capacity Ft. X Md.	Sample No.	Depth Feet	Permeability Millidarcys	FEET OF SAND Ft.	FEET OF SAND Cum. Ft.	Capacity Ft. X Md.
1	631.7	`38.	0.8	0.8	30.	18	641.8	`17.	0.5	6.8	8.5
2	632.3	`5.0	0.5	1.3	2.5	19	642.5	`1.0	0.6*		
3	632.8	0.2	0.4*			20	642.9	`5.2	0.4	7.2	2.1
4	633.2	`3.3	0.6	1.9	2.0	21	643.4	`3.7	0.8	8.0	3.0
5	633.7	`9.8	0.5	2.4	4.9	22	645.2	`30.	0.4	8.4	12.
6	634.2	`2.3	0.2	2.6	0.5	23	645.8	`21.	0.2	8.6	4.0
7	634.7	`39.	0.5	3.1	19.	24	647.0	`2.5	0.4	9.0	1.0
8	635.1	`32.	0.4	3.5	13.	25	647.6	0.2	0.7*		
9	635.7	0.3	0.6*			26	648.4	Imp.	0.7*		
10	636.3	0.3	0.5*			27	649.2	0.1	1.5*		
11	636.7	Imp.	0.7*			28	650.7	0.1	1.0*		
12	637.4	`35.	0.4	3.9	14.	29	651.3	0.2	0.5*		
13	638.0	0.7	0.5	4.4	0.4	30	651.9	Imp.	0.8*		
14	639.7	`27.	0.6	5.0	16.	31	652.8	Imp.	1.7*		
15	640.2	`29.	0.5	5.5	14.	32	655.5	0.2	1.8*		
16	640.7	`10.	0.3	5.8	3.3	33	655.9	0.2	3.3*		
17	641.3	`18.	0.5	6.3	9.0						

*Not included in cumulative feet of sand.

SUMMARY

DEPTH FEET FROM	DEPTH FEET TO	FEET OF SAND	AVERAGE PERMEABILITY	CAPACITY FT. X MD.
631.1	647.1	9.0	18.	159.

EARLOUGHER ENGINEERING

RESULTS OF LABORATORY FLOODING TESTS

COMPANY Kewanee Oil Company LEASE Daniels WELL NO. 124

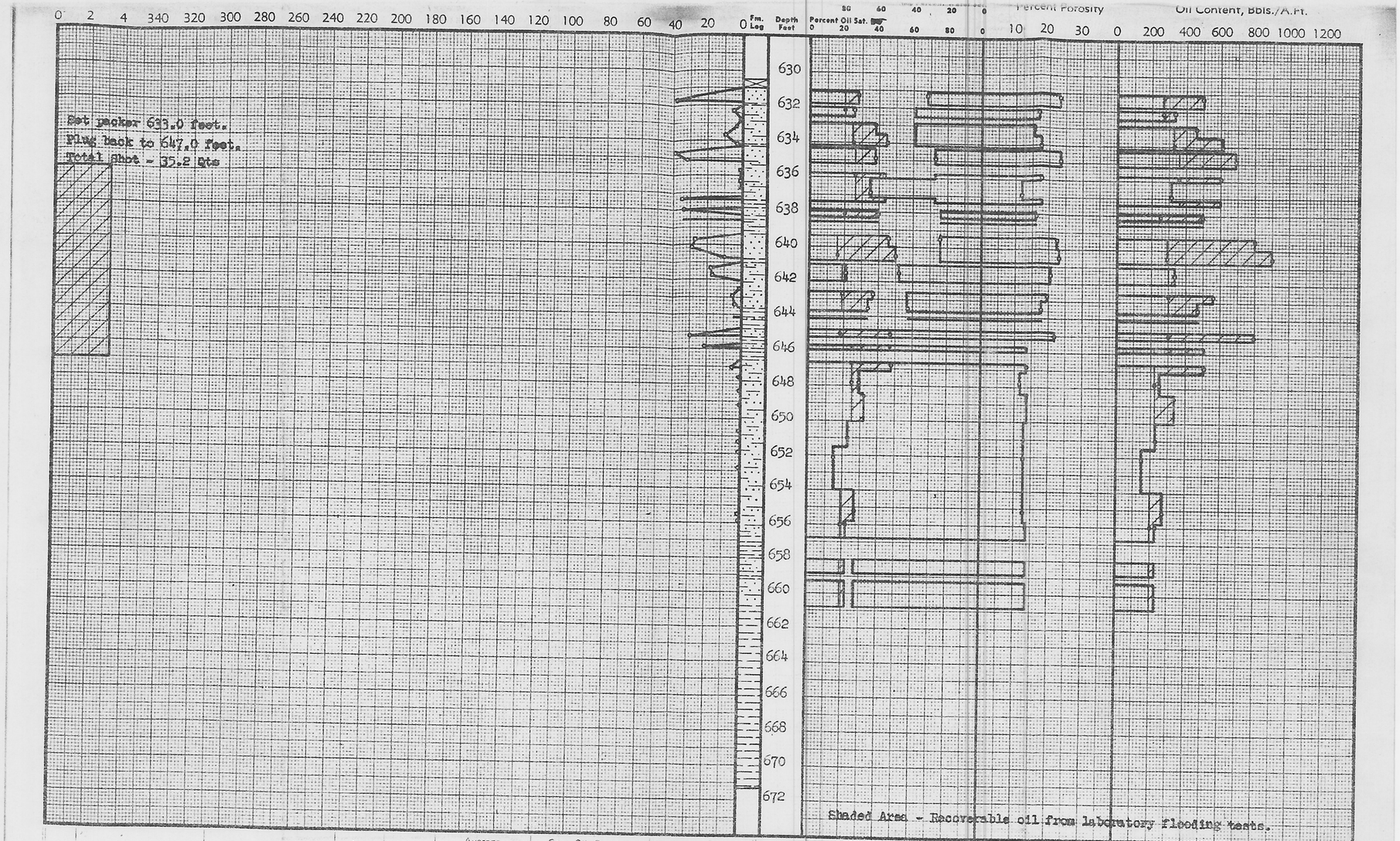
Sample No.	Depth	Porosity	Perm. Approx.	BEFORE FLOODING 1/ Oil Sat.	Water Sat.	Oil Content B./A. Ft.	Max. Press. Psi.	Water Thru c.c.	Time Min.	FLOOD POT RESIDUALS Oil Sat.	Water Sat.	Oil Content B./A. Ft.	OIL RECOVERY B./A. Ft. Diff. 2/	Flood Pot
F 1	632.1	17.0	3.0	26	-	340	40	23	805	20	64	270		75
F 2	634.0	17.5	6.0	45	-	610	40	310	735	25	75	330		278
F 3	635.9	17.8	0.2	43	-	600	40	220	805	26	74	360		243
F 4	638.1	16.1	34.	40	-	500	40	935	735	20	80	250		252
F 5	640.5	23.2	18.	50	-	900	40	3835	735	16	67	290		610.
F 6	642.7	19.7	3.0	37	-	560	40	477	805	19	63	300		264
F 7	645.0	22.0	18	47	-	800	40	3874	805	18	53	300		497
F 8	647.8	11.3	-0-	29	-	250	40	7	805	25	75	220		25*
F 9	651.0	12.9	-0-	23	-	230	40	Trace	565	22	78	220		12*
F 11	656.0	13.6	-0-	22	-	23-	40	15	565	19	81	200		25

*Not included in cumulative feet of sand.

SUMMARY

Sec.	DEPTH, FEET From	To	Net Ft. of Sand	Avg. Por.	Average Core Sat. Oil	Water	CORE OIL CONTENT Avg. B./A. Ft.	Total Bbl./Ac.	PERMEABILITY Avg. Mds.	Capacity Ft. x Md.	FLOOD POT RESIDUALS Saturation Oil	Water	Oil Content B./A. Ft.	Bbl./Ac.	OIL RECOVERY Bbl./Ac. Diff.	Flood Pot
	631.1	647.1	9.0	19.6	38.	38.	574.	5160	18.	159.	21.	68.	320.	2880	2280	2860

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.



Sec	Sand	Depth, Feet From	Depth, Feet To	Net Ft of Sand	Avg. Por.	Average Core Sat. Oil	Average Core Sat. Water	Core Oil Content Avg. B/A.Ft.	Core Oil Content Total Bbl./Ac	Permeability Avg Mds.	Permeability Capacity Ft x Md.	Flood Pot Residuals Saturation Oil	Flood Pot Residuals Saturation Water	Flood Pot Residuals Oil Content B/A Ft	Flood Pot Residuals Oil Content Bbl./Ac
	Squirrel	631.1	647.1	9.0	19.6	38.	38.	574.	5,160.	18.	159.	21.	68.	320.	2,880.

COMPANY KEWANEE OIL COMPANY
LEASE DANIELS WELL NO 124
LOCATION 1930'S. 1350' W. of Center
SEC 4 T 21-S R 21-E COUNTY Anderson
STATE Kansas DATE 10-9-48