

April 14, 1949

Deep Rock Oil Corporation
Tulsa, Oklahoma

Attention: Mr. T. F. Lawry

Gentlemen:

Enclosed herewith is the report of the partial analysis of the Keystone barrel core taken from the Thompson Lease, Well No. TC-45, Franklin County, Kansas, and submitted to our laboratory on April 4, 1949.

In calculating the recovery for the sand section within the vicinity of this well, an allowance was made for oil lost during coring and it was assumed that the true water saturation of the sand is approximately 44 percent.

Very truly yours,

OIL FIELD RESEARCH LABORATORIES

Carl L. Pate

CLP:bb
c.c. to Mr. Neil Henderson

DEEP ROCK OIL CORPORATION

CORE ANALYSIS REPORT

THOMPSON LEASE WELL NO. TC-45

FRANKLIN COUNTY, KANSAS

OIL FIELD RESEARCH LABORATORIES

CHANUTE, KANSAS

APRIL 13, 1949

Oil Field Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Deep Rock Oil Corporation Lease Thompson Well No. TC-45

Location 330' W. of E. Line & 660' S. of N. Line, NW $\frac{1}{4}$

Section 19 Twp. 16S Rge. 21E County Franklin State Kansas

Name of Sand		Squirrel
Top of Core		633.00
Bottom of Core		653.00
Top of Sand		642.10
Bottom of Sand		650.50
Total Feet of Permeable Sand		6.07
Distribution of Permeable Sand:		
Permeability Range	Feet	Cum. Ft.
Millidarcys		

Average Effective Permeability, Millidarcys		3.24
Average Percent Porosity		23.44
Average Percent Oil Saturation		38.41
Average Percent Water Saturation		-
Average Oil Content, Bbls./A. Ft.		707.
Total Oil Content, Bbls./Acre		5,300.
Average Percent Oil Recovery by Laboratory Flooding Tests		10.61
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.		189.
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre		1,149.
Total Calculated Oil Recovery, Bbls./Acre		1,900.
Packer Setting, Feet		643.0
Viscosity, Centipoises @	<p>Note: The above averages are for that part of the sand section extending from the Packer Setting to the top of cement plug.</p>	
A. P. I. Gravity, degrees @ 60 °F		

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LOG

Company Deep Rock Oil Corporation Lease Thompson Well No. TC-45

<u>Depth Interval,</u> <u>Feet</u>	<u>Description</u>
633.00 - 634.30	- Limestone.
634.30 - 636.60	- Brown limestone.
636.60 - 642.10	- Rotten shale (discarded at well).
642.10 - 643.00	- Dark brown fine grained micaceous shaley sandstone.
643.00 - 645.20	- Dark brown fine grained micaceous slightly shaley sandstone.
645.20 - 645.75	- Dark brown fine grained micaceous shaley sandstone.
645.75 - 646.80	- Dark brown fine grained micaceous slightly shaley sandstone.
646.80 - 649.07	- Dark brown fine grained micaceous sandstone.
649.07 - 649.40	- Dark brown fine grained micaceous shaley sandstone.
649.40 - 650.50	- Dark brown fine grained micaceous slightly shaley sandstone.
650.50 - 651.42	- Gray shale.
651.42 - 651.81	- Dark brown fine grained micaceous shaley sandstone.
651.81 - 651.95	- Gray shale.
651.95 - 652.13	- Dark brown fine grained laminated micaceous sandstone.
652.13 - 652.35	- Gray shale.
652.35 - 653.00	- Gray shale (discarded at well).

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SHOT RECOMMENDATION

Company Deep Rock Oil Corporation Lease Thompson Well No. TC-45

<u>Depth Interval,</u> <u>Feet</u>	<u>Feet of</u> <u>Sand</u>	<u>Size of Shell,</u> <u>Inches</u>	<u>Qts./Ft.</u>	<u>Total Qts.</u>
648.0 - 650.0	2.0	4 $\frac{1}{2}$	3.1	6.2

Recommended Packer Setting - 643.0 feet.
Note: Plug hole back to 652.0 feet.

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RESULTS OF SATURATION TESTS

TABLE III

Company Deep Rock Oil Corporation Lease Thompson Well No. TC-45

Sat. No.	Depth, Feet	Effective Porosity Percent	Percent Saturation			Oil Content, Bbls./A. Ft.	Feet of Core		Total Oil Content Bbls./Acre
			Oil	Water	Total		Ft.	Cum. Ft.	
F-1	634.45	14.1	49.2	-	-	536	0.90	0.90	484
F-2	636.00	15.4	35.6	-	-	426	1.40	2.30	599
F-3	642.70	22.2	24.5	-	-	422	1.10	3.40	464
F-4	643.65	23.6	39.2	-	-	724	0.90	4.30	690
F-5	644.65	24.4	39.1	-	-	740	1.10	5.40	615
F-6	645.36	23.4	36.0	-	-	689	0.55	5.95	378
F-7	646.70	21.0	34.6	-	-	864	1.05	7.00	591
F-8	647.90	22.2	34.7	-	-	596	1.40	8.40	636
F-9	648.90	22.9	34.6	-	-	616	0.67	9.27	536
F-10	649.75	26.2	46.3	-	-	984	1.43	10.70	<u>1,410</u>
				44.7	93.0		Total	- - - -	6,763

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SUMMARY OF SATURATION TESTS

TABLE IV

Company	Deep Rock Oil Corporation	Lease	Thompson	Well No.	TC-45	
Depth Interval, Feet	Feet of Core Analyzed	Average Percent Porosity	Average Percent Oil Saturation	Average Percent Water Saturation	Average Oil Content Bbls./A. Ft.	Total Oil Content Bbls./Acre
634.30-636.60	2.30	14.91	41.04	-	471	1,083
642.10-650.50	8.40	23.31	36.93	-	676	5,680
643.00-652.00	7.50	23.44	36.41	-	707	5,300

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RESULTS OF LABORATORY FLOODING TESTS

TABLE V

Company Deep Rock Oil Corporation Lease Thompson Well No. TC-45

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.
			Percent	Bbls./A. Ft.	Percent	Bbls./A. Ft.	% Oil	% Water	Bbls./A. Ft.			
1	634.45	14.1	49.2	538	0.0	0	49.2	34.5	538	0	Imp.	50 +
2	635.00	15.4	35.8	428	0.0	0	35.8	47.8	428	0	Imp.	50 +
3	642.70	22.2	24.5	422	5.1	55	21.4	71.5	369	17	1.02	25
4	643.55	23.8	39.2	724	13.1	242	26.1	65.3	482	99	5.04	15
5	644.55	24.4	39.1	740	11.7	222	27.4	69.4	518	76	4.07	20
6	645.36	23.6	38.0	689	14.6	265	23.4	73.4	424	72	3.24	15
7	646.70	21.0	34.5	564	7.4	121	27.2	72.0	443	22	1.39	25
8	647.50	22.2	34.7	598	13.7	236	21.0	76.4	362	104	2.16	15
9	648.70	22.9	34.6	616	4.7	64	29.9	68.6	532	122	4.81	15

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.

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SUMMARY OF LABORATORY FLOODING TESTS

TABLE VI

Company Deep Rock Oil Corporation	Lease Thompson	Well No. TC-45
Depth Interval, Feet		643.00 - 652.00
Feet of Core Analyzed		6.07
Average Percent Porosity		22.80
Average Percent Original Oil Saturation		36.11
Average Percent Oil Recovery		10.61
Average Percent Residual Oil Saturation		25.50
Average Percent Residual Water Saturation		71.17
Average Percent Total Residual Fluid Saturation		96.67
Average Original Oil Content, Bbls./A. Ft.		641.
Average Oil Recovery, Bbls./A. Ft.		189.
Average Residual Oil Content, Bbls./A. Ft.		452.
Total Original Oil Content, Bbls./Acre		3,894.
Total Oil Recovery, Bbls./Acre		1,149.
Total Residual Oil Content, Bbls./Acre		2,745.
Average Effective Permeability, Millidarcys		3.24
Average Initial Fluid Production Pressure, p.s.i.		18.6

NOTE: Only those samples which recovered oil were used in calculating the above averages.