

May 30, 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 Swing Lease, Well No. O-23, Anderson County, Kansas, and submitted to our laboratory on May 11, 1949.

In calculating the recovery for the sand within the vicinity of this well, no allowance was made for oil lost during coring and, of course, it is assumed that the sand is not pressured up.

Very truly yours,

OIL FIELD RESEARCH LABORATORIES

Carl L. Pate

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

DEEP ROCK OIL CORPORATION

CORE ANALYSIS REPORT

EWING LEASE

WELL NO. G-23

ANDERSON COUNTY, KANSAS

OIL FIELD RESEARCH LABORATORIES

CHANDLER, KANSAS

MAY 28, 1949

Oil Field Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Deep Rock Oil Corporation Lease Ewing Well No. 0-23
 Location 1000 ft. West of East Line and 320 ft. North of South Line, #1
 Section 13 Twp. 21 Rge. 20 County Anderson State Kansas

Name of Sand	Squirrel
Top of Core	651.00
Bottom of Core	697.50
Top of Sand	676.42
Bottom of Sand	693.92
Total Feet of Permeable Sand	12.29

Distribution of Permeable Sand:
 Permeability Range
 Millidarcys

Feet

Cum. Ft.

Average Effective Permeability, Millidarcys	1.69
Average Percent Porosity	18.13
Average Percent Oil Saturation	40.36
Average Percent Water Saturation	39.44
Average Oil Content, Bbls./A. Ft.	579.
Total Oil Content, Bbls./Acre	8,963.
Average Percent Oil Recovery by Laboratory Flooding Tests	17.26
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	257.
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	3,155.
Total Calculated Oil Recovery, Bbls./Acre	2,280.
Packer Setting, Feet	675.0
Viscosity, Centipoises @	

Note: The above averages are for that part of the sand section extending from the packer setting to the top of the cement plug.

A. P. I. Gravity, degrees @ 60 °F

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LOG

Company Deep Rock Oil Corporation Lease Swing Well No. O-25

<u>Depth Interval,</u> <u>Feet</u>	<u>Description</u>
651.00 - 667.40	- Discarded at well.
667.40 - 669.70	- Gray shale.
669.70 - 670.20	- Gray sandy shale.
670.20 - 670.70	- Gray shale.
670.70 - 671.08	- Slightly laminated sandstone and shale.
671.08 - 671.70	- Laminated shaley sandstone.
671.70 - 674.00	- Gray shale.
674.00 - 674.40	- Slightly laminated shaley sandstone.
674.40 - 675.05	- Brown fine grained micaceous shaley sandstone.
675.05 - 676.42	- Laminated sandstone and shale.
676.42 - 677.10	- Brown fine grained finely laminated micaceous sandstone.
677.10 - 677.25	- Laminated sandstone and shale.
677.25 - 677.55	- Dark brown fine grained micaceous sandstone.
677.55 - 677.90	- Laminated shaley sandstone.
677.90 - 678.24	- Laminated sandstone and shale.
678.24 - 678.90	- Dark brown fine grained micaceous sandstone.
678.90 - 679.50	- Laminated sandstone and shale.
679.50 - 683.95	- Dark brown fine grained micaceous sandstone.
683.95 - 684.30	- Laminated sandstone and shale.
684.30 - 685.12	- Brown fine grained micaceous slightly shaley sandstone.
685.12 - 685.55	- Gray sandy shale.
685.55 - 686.08	- Brown fine grained micaceous slightly shaley sandstone.

686.08 - 687.30 - Gray sandy shale.

687.30 - 690.90 - Brown fine grained slightly laminated micaceous sandstone.

690.90 - 693.62 - Brown fine grained laminated micaceous sandstone.

693.62 - 693.92 - Dark brown fine grained micaceous sandstone.

693.92 - 694.23 - Gray sandy shale.

694.23 - 694.60 - Gray shale.

694.60 - 697.50 - Gray shale (discarded at well).

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SHOT RECOMMENDATION

Company Deep Rock Oil Corporation Lease Swing Well No. O-25

<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>
680.0 - 693.0	13.0	3 $\frac{1}{2}$	2.0	26.0

Recommended Packer Setting - 675.0 feet
Note: Plug hole back to 694.0 feet

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RESULTS OF SATURATION TESTS

TABLE III

Company Deep Rock Oil Corporation Lease Ewing Well No. C-23

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-5	674.56	15.2	31.1	-	-	367	0.65	0.65	238
F-9	675.20	13.3	18.0	-	-	186	0.65	1.30	121
F10	676.23	14.0	32.9	-	-	358	0.72	2.02	258
F11	676.94	18.1	44.1	-	-	620	0.68	2.70	421
F12	677.40	20.2	47.9	-	-	752	0.30	3.00	226
F13	678.80	19.6	51.7	-	-	794	0.66	3.66	524
F14	679.70	20.2	41.0	-	-	643	0.70	4.36	450
F15	680.75	20.2	42.7	-	-	671	0.90	5.26	605
F16	681.37	18.5	49.7	-	-	714	1.00	6.26	714
F17	682.60	17.8	37.9	-	-	525	1.10	7.36	577
F18	683.77	20.7	50.6	-	-	617	0.75	8.11	613
19	684.67	20.2	46.4	32.1	78.5	723	0.82	8.93	596
F20	685.74	18.3	45.2	-	-	643	0.52	9.46	340
22	687.50	20.4	43.9	35.0	78.9	695	0.85	10.11	451
F23	688.40	19.0	37.7	-	-	556	0.80	10.91	445
24	689.10	19.0	44.9	35.1	80.0	662	0.55	11.46	364
F25	689.56	19.2	41.9	-	-	624	0.85	12.31	530
F26	690.70	18.6	42.3	-	-	618	0.75	13.06	464
F27	691.80	16.4	30.5	-	-	388	1.30	14.36	505
28	692.75	15.6	40.6	52.7	93.5	495	0.85	15.21	420
F29	793.35	14.2	22.5	-	-	248	0.57	15.78	141
F30	693.74	18.1	42.5	-	-	598	0.30	16.08	180
							Total	- - - -	9,183

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SUMMARY OF SATURATION TESTS

TABLE IV

Company	Deep Rock Oil Corporation	Lease	Swing	Well No.	C-23	
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
674.40-683.95	8.11	18.01	40.79	-	585	4,747
684.30-693.92	7.97	18.03	39.22	39.44	557	4,436
675.00-694.00	15.48	18.13	40.36	39.44	579	8,963

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RESULTS OF LAB

Company Deep Rock Oil CorporationLease Ex

Sample No.	Depth, Feet	Effective Porosity Percent	Original Oil Saturation		Oil Recovery	
			Percent	Bbls./A. Ft.	Percent	Bbls./
8	674.56	16.2	31.1	367	0.0	
9	675.20	13.3	18.0	186	0.0	
10	676.23	14.0	32.9	358	0.0	
11	676.94	18.1	44.1	620	17.6	24
12	677.40	20.2	47.9	752	21.8	34
13	678.80	19.8	51.7	794	25.1	38
14	679.70	20.2	41.0	643	13.6	21
15	680.75	20.2	42.7	671	20.6	32
16	681.57	16.5	49.7	714	24.4	35
17	682.60	17.6	37.3	525	10.9	15
18	683.77	20.7	50.3	617	25.1	40
19	684.67	20.8	43.5	705	20.6	33
20	685.74	18.3	45.2	643	21.9	31
23	688.40	19.0	37.7	556	16.6	24
25	689.56	19.2	41.7	624	18.8	26
26	690.70	18.8	42.3	618	23.4	34
27	691.80	16.4	30.5	368	4.1	5
28	692.75	16.5	36.0	462	12.0	16
29	693.35	14.2	72.5	248	0.0	
30	695.74	18.1	42.5	598	18.3	25

Notes: cc - cubic
 *Volume of
 of maximum
 **Determine
 which at

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LABORATORY FLOODING TESTS

TABLE V

ing Well No. 0-2

A. Ft.	Residual Saturation			Volume of Water Recovered cc*	*** Effective Permeability, Millidarcys	Initial Fluid Production Pressure Lbs./Sq. In.
	% Oil	% Water	Bbbs./A. Ft.			
0	31.1	68.5	367	51	0.12	30
0	18.0	79.4	186	0	Imp.	50+
0	32.9	65.9	388	0	Imp.	50+
2	23.5	59.3	372	5	0.1065	25
2	26.1	64.1	410	29	0.635	15
6	26.6	58.7	408	127	4.55	10
4	27.4	58.0	429	157	7.76	10
6	22.1	69.6	347	39	2.17	15
1	25.3	70.6	363	49	1.60	15
1	27.0	66.5	374	3	0.175	35
4	25.7	72.4	413	76	2.02	10
5	22.9	70.0	370	20	1.05	20
5	23.5	75.0	351	20	0.456	15
5	21.1	76.0	311	65	3.52	15
	26.1	63.6	388	19	0.709	25
2	18.9	72.3	276	54	2.08	10
2	26.4	62.2	336	2	0.0941	40
4	24.0	73.8	308	2	0.111	35
0	22.5	65.5	248	0	Imp.	50+
5	24.2	69.2	340	64	1.76	10

* centimeter.

water recovered at the time
in oil recovery.

d by passing water through sample
ill contains residual oil.

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SUMMARY OF LABORATORY FLOODING TESTS

TABLE VI

Company	Deep Rock Oil Corporation	Lease	Ewing	Well No.	0-23
Depth Interval, Feet	676.42 - 683.95	684.30 - 693.92	675.00 - 694.00		
Feet of Core Analyzed	6.09	6.20	12.29		
Average Percent Porosity	19.28	18.24	18.76		
Average Percent Original Oil Saturation	45.16	36.74	41.92		
Average Percent Oil Recovery	19.43	15.13	17.26		
Average Percent Residual Oil Saturation	25.73	23.61	24.66		
Average Percent Residual Water Saturation	65.70	69.47	67.59		
Average Percent Total Residual Fluid Saturation	91.43	93.06	92.23		
Average Original Oil Content, Bbls./A. Ft.	676.	364.	616.		
Average Oil Recovery, Bbls./A. Ft.	294.	280.	257.		
Average Residual Oil Content, Bbls./A. Ft.	384.	334.	359.		
Total Original Oil Content, Bbls./Acre	4,130.	3,431.	7,561.		
Total Oil Recovery, Bbls./Acre	1,789.	1,366.	3,155.		
Total Residual Oil Content, Bbls./Acre	2,341.	2,065.	4,406.		
Average Effective Permeability, Millidarcys	2.29	1.10	1.69		
Average Initial Fluid Production Pressure, p.s.i.	18.9	21.3	19.1		

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