

14-21-20E
Ewing 2-35

November 2, 1949

Deep Rock Oil Corporation
Tulsa, Oklahoma

Attention: Mr. T. F. Lawry

Gentlemen:

Enclosed herewith is the report of the partial analysis made on the Keystone barrel core taken from the Ewing Lease, Well No. 9-35, Anderson County, Kansas, and submitted to our laboratory on October 15, 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. Fate

CLF:bb
c.c. to Mr. Neil Anderson
Mr. Jack McQueeney

DEEP ROCK OIL CORPORATION

CORE ANALYSIS REPORT

EWING LEASE

WELL NO. S-75

ANDERSON COUNTY, KANSAS

OIL FIELD RESEARCH LABORATORIES

CHANDLER, KANSAS

NOVEMBER 1, 1949

Oil Field Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Deep Rock Oil Corporation Lease Ewing Well No. 8-35
 Location 990' West of East Line and 330' North of South Line, NE 1/4,
 Section 14 Twp. 21 Rge. 20 County Anderson State Kansas

Name of Sand	Squirrel
Top of Core	679.50
Bottom of Core	720.60
Top of Pay Sand	695.10
Bottom of Sand	717.65
Total Feet of Permeable Sand	12.28
Distribution of Permeable Sand:	
Permeable Range Millidarcys	Feet
	Cum. Ft.

Average Effective Permeability, Millidarcys	1.81
Average Percent Porosity	18.34
Average Percent Oil Saturation	40.44
Average Percent Water Saturation	-
Average Oil Content, Bbls./A. Ft.	588.
Total Oil Content, Bbls./Acre	9,007.
Average Percent Oil Recovery by Laboratory Flooding Tests	17.60
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	267.
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	3,277.
Total Calculated Oil Recovery, Bbls./Acre	2,050.
Packer Setting, Feet	695.50
Viscosity, Centipoises @	
A. P. I. Gravity, degrees @ 60 °F	

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

OIL FIELD RESEARCH LABORATORIES

LOG

Company Deep Rock Oil Corporation Lease Evins Well No. 8-35

<u>Depth Interval,</u> <u>Feet</u>	<u>Description</u>
679.50 - 680.35	- Gray shale.
680.35 - 681.38	- Gray sandy shale containing an angular fracture.
681.38 - 682.05	- Laminated sandstone and shale.
682.05 - 682.80	- Gray shale.
682.80 - 683.50	- Finely laminated sandstone and shale.
683.50 - 684.15	- Gray shale.
684.15 - 684.93	- Laminated sandstone and shale.
684.93 - 685.15	- Brown fine grained finely laminated micaceous sandstone.
685.15 - 686.22	- Brown fine grained finely laminated micaceous sandstone.
686.22 - 686.45	- Laminated sandstone and shale.
686.45 - 686.55	- Brown fine grained micaceous sandstone.
686.55 - 686.72	- Gray shale.
686.72 - 686.87	- Brown fine grained micaceous sandstone.
686.87 - 687.00	- Gray shale.
687.00 - 687.40	- Brown fine grained slightly laminated micaceous sandstone.
687.40 - 687.70	- Gray shale.
687.70 - 687.95	- Finely laminated sandstone and shale.
687.95 - 690.40	- Gray shale.
690.40 - 690.70	- Gray sandy shale.
690.70 - 691.20	- Brown fine grained finely laminated micaceous sandstone.
691.20 - 691.40	- Gray sandy shale.

691.40 - 693.00 - Laminated sandstone and shale.
693.00 - 693.15 - Gray sandy shale.
693.15 - 693.26 - Brown fine grained micaceous sandstone.
693.26 - 693.80 - Laminated sandstone shale.
693.80 - 694.30 - Brown fine grained finely laminated micaceous sandstone.
694.30 - 694.55 - Gray sandy shale.
694.55 - 695.10 - Laminated sandstone and shale.
695.10 - 695.50 - Brown fine grained laminated micaceous sandstone.
695.50 - 695.60 - Gray shale.
695.60 - 696.30 - Brown fine grained slightly laminated micaceous sandstone.
696.30 - 696.40 - Gray shale.
696.40 - 696.53 - Brown fine grained micaceous sandstone.
696.53 - 696.60 - Gray sandy shale.
696.60 - 696.90 - Brown fine grained micaceous sandstone.
696.90 - 697.00 - Gray shale.
697.00 - 697.40 - Brown fine grained micaceous sandstone.
697.40 - 697.60 - Laminated sandstone and shale.
697.60 - 697.77 - Brown fine grained micaceous sandstone.
697.77 - 697.87 - Laminated sandstone and shale.
697.87 - 698.40 - Brown fine grained micaceous sandstone.
698.40 - 698.75 - Laminated sandstone and shale.
698.75 - 699.20 - Brown fine grained slightly laminated micaceous sandstone.
699.20 - 700.00 - Gray sandy shale.
700.00 - 700.40 - Brown fine grained slightly laminated micaceous sandstone.
700.40 - 700.57 - Gray shale.
700.57 - 700.80 - Brown fine grained slightly laminated micaceous sandstone.
700.80 - 701.20 - Brown fine grained micaceous sandstone.

701.20 - 701.35 - Brown fine grained laminated micaceous sandstone.
701.35 - 701.70 - Brown fine grained micaceous sandstone.
701.70 - 702.10 - Laminated shale and sandstone.
702.10 - 702.35 - Finely laminated sandstone and shale.
702.35 - 702.59 - Brown fine grained micaceous sandstone.
702.59 - 702.69 - Gray shale.
702.69 - 703.43 - Brown fine grained micaceous sandstone.
703.43 - 704.13 - Brown fine grained finely laminated micaceous sandstone.
704.13 - 705.75 - Brown fine grained micaceous sandstone.
705.75 - 706.53 - Brown fine grained laminated micaceous sandstone.
706.53 - 709.00 - Brown fine grained micaceous sandstone.
709.00 - 709.30 - Gray shale.
709.30 - 710.00 - Brown fine grained micaceous sandstone.
710.00 - 710.18 - Gray shale.
710.18 - 710.53 - Brown fine grained micaceous sandstone.
710.53 - 710.80 - Gray shale.
710.80 - 711.40 - Brown fine grained micaceous sandstone.
711.40 - 711.50 - Gray shale.
711.50 - 711.75 - Brown fine grained micaceous sandstone.
711.75 - 713.40 - Gray shale.
713.40 - 713.91 - Brown fine grained micaceous sandstone.
713.91 - 714.55 - Gray shale.
714.55 - 715.20 - Laminated sandstone and shale.
715.20 - 715.60 - Brown fine grained laminated micaceous sandstone.
715.60 - 717.20 - Brown fine grained micaceous sandstone.
717.20 - 717.65 - Brown fine grained micaceous shaley sandstone.
717.65 - 717.95 - Gray shale.
717.95 - 719.20 - Gray sandy shale.
719.20 - 720.60 - Gray shale.

Oil Field Research Laboratories

SHOT RECOMMENDATION

Company Deep Rock Oil Corporation Lease Kring Well No. 8-35

Depth Interval, Feet	Feet of Sand	Size of Shell Inches	Qts./Ft.	Total Quarts
<u>700.5 - 716.5</u>	<u>16.0</u>	<u>3$\frac{1}{2}$</u>	<u>2.0</u>	<u>32.0</u>

Recommended Packer Setting - 695.5 feet
Note: Plug hole back to - 717.5 feet

Oil Field Research Laboratories

RESULTS OF SATURATION TESTS

TABLE III

Company Deep Rock Oil Corporation

Lease Spring

Well No. S-35

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.	
2	681.55	14.1	15.5	-	-	170	0.67	0.67	114
3	683.20	14.4	16.0	-	-	205	0.70	1.37	144
4	684.45	15.3	23.5	-	-	279	0.75	2.15	218
5	685.54	16.3	23.4	-	-	296	1.07	3.22	317
6	687.20	17.5	26.4	-	-	348	0.65	3.90	237
7	691.00	13.2	24.7	-	-	253	0.50	4.40	127
8	691.90	14.4	23.0	-	-	258	0.90	5.30	232
9	692.80	13.6	22.2	-	-	234	0.70	6.00	164
10	694.12	16.1	26.6	-	-	333	0.50	6.50	167
11	695.30	16.7	42.7	-	-	554	0.40	6.90	221
12	696.10	19.0	48.6	-	-	718	0.70	7.60	302
13	697.20	16.7	37.9	-	-	490	0.40	8.00	196
14	698.20	20.5	51.7	-	-	834	0.53	8.53	441
15	699.00	17.3	32.9	-	-	441	0.45	8.98	198
16	700.20	19.5	35.8	-	-	551	0.40	9.38	220
17	701.00	22.2	60.0	-	-	1,066	1.13	10.51	1,205
18	701.90	14.3	33.8	-	-	375	0.65	11.16	244
19	703.10	20.7	56.0	-	-	900	0.74	11.90	665
20	703.84	14.1	23.7	-	-	259	0.70	12.60	181
21	704.50	18.3	34.0	-	-	453	0.67	13.47	420

Oil Field Research Laboratories

RESULTS OF SATURATION TESTS

TABLE III

Company Deep Rock Oil Corporation Lease Erving Well No. S-35

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.	
22	705.36	19.3	36.3	-	-	544	0.75	14.22	408
23	706.80	18.5	43.6	-	-	626	0.78	15.00	490
24	707.80	19.3	34.7	-	-	520	1.07	16.07	556
25	708.00	20.6	30.9	-	-	494	0.80	16.87	394
26	708.92	16.1	29.4	-	-	368	0.60	17.47	221
27	709.90	20.1	38.5	-	-	601	0.70	18.17	421
28	711.00	17.7	39.8	-	-	546	0.60	18.77	328
29	713.50	15.8	39.9	-	-	489	0.51	19.28	249
30	714.90	14.0	24.0	-	-	261	0.65	19.93	170
31	716.00	17.0	48.8	-	-	643	1.20	21.13	770
32	716.86	18.4	48.2	-	-	688	0.80	21.93	550
33	717.35	18.3	40.7	-	-	593	0.45	22.38	266
							Total	- - - -	11,036

Oil Field Research Laboratories

SUMMARY OF SATURATION TESTS

TABLE IV

Company Deep Rock Oil Corporation Lease Swing Well No. 3-35

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
681.38-694.30	6.50	15.06	22.49	-	265	1,720
695.10-708.40	10.37	18.87	40.82	-	611	6,341
708.40-717.65	5.51	17.20	39.90	-	540	2,975
695.50-717.50	15.33	18.34	40.44	-	586	9,007

Oil Field Research Laboratories

RESULTS OF LABORATORY FLOODING TESTS

TABLE V

Company Deep Rock Oil Corporation Lease Swing Well No. 8-35

Sample No.	Depth, Feet	Effective Porosity Percent	Original Oil Saturation		Oil Recovery		Residual Saturation			Volume of Water Recovered cc*	Permeability, Millidarcys		Initial Fluid Production Pressure Lbs./Sq. In.
			Percent	Bbls./A. Ft.	Percent	Bbls./A. Ft.	% Oil	% Water	Bbls./A. Ft.		Dry	**Effective	
2	681.55	14.1	15.5	170	0.0	0	15.5	71.4	170	0		Imp.	50+
3	683.20	14.4	18.0	205	0.0	0	18.0	72.8	205	0		Imp.	50+
4	684.45	15.3	23.5	279	0.0	0	23.5	72.5	279	0		Imp.	50+
5	685.54	16.3	23.4	296	0.0	0	23.4	72.2	296	0		Imp.	50+
6	687.20	17.5	26.4	359	0.8	11	25.6	64.1	348	0		0.003	45
7	691.00	13.2	24.7	253	0.0	0	24.7	70.0	253	0		Imp.	50+
8	691.90	14.4	23.0	256	0.0	0	23.0	65.3	256	0		Imp.	50+
9	692.80	13.6	22.2	234	0.0	0	22.2	70.7	234	0		Imp.	50+
10	694.12	16.1	26.6	333	0.0	0	26.6	62.7	322	0		Imp.	50+
11	695.30	16.7	42.7	554	18.3	237	24.4	71.9	317	1.5		0.157	30
12	696.10	19.0	48.6	718	13.2	195	35.4	60.5	523	3		0.174	25
13	697.20	16.7	37.9	490	9.3	120	28.6	68.0	370	45		1.20	20
14	698.20	20.6	51.7	834	25.4	410	25.3	67.0	424	129.5		5.87	10
15	699.00	17.5	32.9	441	0.0	0	32.9	64.3	441	0		Imp.	50+
16	700.20	19.8	35.8	551	16.4	252	19.4	79.4	299	10		0.266	30
17	701.00	22.9	60.0	1066	34.5	613	25.5	70.8	453	86.5		2.87	15
18	701.90	14.3	33.8	375	0.0	0	33.8	62.5	375	0		Imp.	50+
19	703.10	20.7	56.0	900	27.7	445	28.3	68.7	455	60.5		2.26	15
20	703.64	14.1	23.7	259	0.0	0	23.7	68.5	259	0		Imp.	50+
21	704.60	16.3	34.0	463	9.0	126	25.0	75.9	355	120		2.29	10
22	705.56	19.3	36.3	544	11.8	177	24.5	74.5	367	146		2.29	10
23	706.20	16.5	43.6	626	17.7	254	25.9	67.7	372	2		0.291	25
24	707.20	19.3	34.7	520	10.1	151	24.6	70.5	369	69.5		1.99	10
25	708.00	20.6	30.9	494	6.6	106	24.3	74.2	388	153.6		4.02	10
26	708.82	16.1	29.4	368	0.0	0	29.4	63.9	368	0		Imp.	50+
27	709.60	20.1	38.5	601	16.6	259	21.9	69.0	342	20		1.06	30
28	711.00	17.7	39.8	546	15.3	210	24.5	75.0	326	25		0.698	20
29	713.60	15.8	39.9	489	13.0	159	26.9	72.4	330	13		0.417	30
30	714.80	14.0	24.0	261	0.0	0	24.0	67.5	261	0		Imp.	50+
31	716.00	17.0	48.8	643	23.6	311	25.2	70.0	332	26		1.19	20
32	716.85	16.4	48.2	686	24.4	348	23.8	73.6	340	22		0.899	15
33	717.35	18.3	40.7	593	5.9	84	35.8	56.8	509	0		0.026	25

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.

Oil Field Research Laboratories

SUMMARY OF LABORATORY FLOODING TESTS

TABLE VI

Company	Deep Rock Oil Corporation		Lease	Swing	Well No.	2-35
Depth Interval, Feet	656.72 - 708.40	709.30 - 717.65	655.50 - 717.50			
Feet of Core Analyzed	9.25	4.25	12.28			
Average Percent Porosity	19.52	17.86	19.17			
Average Percent Original Oil Saturation	41.93	43.88	43.44			
Average Percent Oil Recovery	15.88	18.29	17.50			
Average Percent Residual Oil Saturation	26.05	25.59	25.34			
Average Percent Residual Water Saturation	69.92	70.12	70.41			
Average Percent Total Residual Fluid Saturation	95.97	95.71	96.25			
Average Original Oil Content, Bbls./A. Ft.	644.	607.	651.			
Average Oil Recovery, Bbls./A. Ft.	850.	253.	267.			
Average Residual Oil Content, Bbls./A. Ft.	394.	354.	384.			
Total Original Oil Content, Bbls./Acre	5,964.	2,585.	7,995.			
Total Oil Recovery, Bbls./Acre	2,315.	1,077.	3,277.			
Total Residual Oil Content, Bbls./Acre	3,649.	1,508.	4,718.			
Average Effective Permeability, Millidarcys	2.03	0.83	1.81			
Average Initial Fluid Production Pressure, p.s.i.	19.6	25.0	19.4			

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