

Ewing W-33  
14-21-2CE

October 8, 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 W-33, Anderson County, Kansas, and submitted to our laboratory on September 30, 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. Fete

CLP:bb

c.c. to Mr. Neil Henderson  
Mr. Jack McQuency

DEEP ROCK OIL CORPORATION

CORE ANALYSIS REPORT

EWING LEASE

WELL NO. U-73

ANDERSON COUNTY, KANSAS

OIL FIELD RESEARCH LABORATORIES

CHANUTE, KANSAS

OCTOBER 7, 1949

# Oil Field Research Laboratories

## GENERAL INFORMATION & SUMMARY

Company Deep Rock Oil Corporation Lease Ewing Well No. W-33

Location 660' East of West line and 990' North of South line, NE1

Section 14 Twp. 21 Rge. 20 County Anderson State Kansas

Name of Sand		Squirrel
Top of Core		682.30
Bottom of Core		727.70
<del>broken</del> Top of Sand		707.00
Bottom of Sand		723.08
Total Feet of Permeable Sand		5.87
Distribution of Permeable Sand:		
Permeable Range	Feet	Cum. Ft.
Millidarcys		

<del>effective</del>		
Average Permeability, Millidarcys		0.658
Average Percent Porosity		15.49
Average Percent Oil Saturation		34.65
Average Percent Water Saturation		-
Average Oil Content, Bbls./A. Ft.		420.
Total Oil Content, Bbls./Acre		4,764.
Average Percent Oil Recovery by Laboratory Flooding Tests		6.64
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.		90.
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre		529.
Total Calculated Oil Recovery, Bbls./Acre		450.
Packer Setting, Feet	<b>Note: The above averages are for that part 708.0 of the sand section extending from the packer setting to the top of the cement plug.</b>	
Viscosity, Centipoises @		
A. P. I. Gravity, degrees @ 60 °F		

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LOG

Company Dean Beck Oil Corporation Lease Eving Well No. K-11

<u>Depth Interval,</u> <u>Feet</u>	<u>Description</u>
682.30 - 683.50	- Brown fine grained laminated micaceous sandstone.
683.50 - 683.65	- Gray shale.
683.65 - 683.80	- Laminated shaley sandstone.
683.80 - 684.40	- Gray shale.
684.40 - 684.55	- Brown fine grained laminated micaceous sandstone.
684.55 - 684.70	- Gray sandy shale.
684.70 - 685.25	- Brown fine grained micaceous sandstone.
685.25 - 685.38	- Gray sandy shale.
685.38 - 685.56	- Brown fine grained slightly laminated micaceous sandstone.
685.56 - 685.72	- Gray sandy shale.
685.72 - 686.42	- Brown fine grained slightly laminated micaceous sandstone.
686.42 - 686.90	- Laminated sandstone and shale.
686.90 - 687.30	- Brown fine grained slightly laminated micaceous sandstone.
687.30 - 687.68	- Laminated shale and sandstone.
687.68 - 688.75	- Gray sandy shale.
688.75 - 688.85	- Brown fine grained micaceous sandstone.
688.85 - 689.35	- Laminated sandstone and shale.
689.35 - 689.75	- Brown fine grained laminated micaceous sandstone.
689.75 - 690.85	- Laminated sandstone and shale.
690.85 - 691.20	- Laminated shale and sandstone.
691.20 - 693.20	- Gray shale.
693.20 - 693.55	- Laminated sandstone and shale.
693.55 - 693.90	- Brown fine grained slightly laminated micaceous sandstone.

693.90 - 694.25 - Laminated sandstone and shale.  
694.25 - 694.60 - Gray shale.  
694.60 - 695.20 - Brown fine grained slightly laminated micaceous sandstone.  
695.20 - 696.10 - Finely laminated sandstone and shale.  
696.10 - 696.40 - Brown fine grained laminated micaceous sandstone.  
696.40 - 696.60 - Laminated shaley sandstone.  
696.60 - 697.40 - Gray shale.  
697.40 - 697.80 - Finely laminated sandstone and shale.  
697.80 - 698.40 - Gray shale.  
698.40 - 698.80 - Brown fine grained laminated micaceous sandstone.  
698.80 - 700.27 - Gray shale.  
700.27 - 700.37 - Brown fine grained micaceous shaley sandstone.  
700.37 - 700.90 - Gray shale.  
700.90 - 701.55 - Brown fine grained laminated micaceous sandstone.  
701.55 - 702.13 - Gray sandy shale.  
702.13 - 702.40 - Gray shale.  
702.40 - 702.75 - Finely laminated shale and sandstone.  
702.75 - 703.50 - Gray shale.  
703.50 - 703.90 - Laminated sandstone and shale.  
703.90 - 704.60 - Gray sandy shale.  
704.60 - 704.80 - Brown fine grained micaceous sandstone.  
704.80 - 705.08 - Gray sandy shale.  
705.08 - 705.25 - Brown fine grained micaceous sandstone.  
705.25 - 705.60 - Gray sandy shale.  
705.60 - 706.80 - Finely laminated sandstone and shale.  
706.80 - 707.00 - Gray sandy shale.  
707.00 - 707.22 - Brown fine grained micaceous sandstone.  
707.22 - 707.80 - Brown fine grained laminated micaceous sandstone.

707.80 - 708.65 - Brown fine grained micaceous sandstone.  
708.65 - 709.20 - Brown fine grained laminated micaceous sandstone.  
709.20 - 710.00 - Gray shale.  
710.00 - 711.07 - Laminated sandstone and shale.  
711.07 - 711.55 - Brown fine grained slightly laminated micaceous sandstone.  
711.55 - 712.20 - Brown fine grained finely laminated micaceous sandstone.  
712.20 - 712.55 - Brown fine grained micaceous sandstone.  
712.55 - 713.48 - Finely laminated sandstone and shale.  
713.48 - 714.00 - Brown fine grained slightly laminated micaceous sandstone.  
714.00 - 714.70 - Brown fine grained finely laminated micaceous sandstone.  
714.70 - 715.00 - Laminated sandstone and shale.  
715.00 - 716.00 - Brown fine grained laminated micaceous sandstone.  
716.00 - 716.80 - Brown fine grained slightly laminated micaceous sandstone.  
716.80 - 717.40 - Brown fine grained laminated micaceous sandstone.  
717.40 - 718.30 - Laminated sandstone and shale.  
718.30 - 718.65 - Brown fine grained finely laminated micaceous sandstone.  
718.65 - 719.23 - Laminated sandstone and shale.  
719.23 - 720.13 - Finely laminated sandstone and shale.  
720.13 - 721.60 - Brown fine grained laminated micaceous sandstone.  
721.60 - 722.30 - Brown fine grained finely laminated micaceous sandstone.  
722.30 - 722.60 - Brown fine grained finely laminated micaceous slightly calcareous sandstone.  
722.60 - 723.08 - Brown fine grained micaceous calcareous sandstone.  
723.08 - 723.40 - Gray sandy shale.  
723.40 - 724.10 - Hard gray sandy calcareous shale  
724.10 - 725.90 - Gray shale.  
725.90 - 727.70 - (Discarded at well).

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**SHOT RECOMMENDATION**

Company Deep Rock Oil Corporation Lease Evring Well No. W-23

<u>Depth Interval, Feet</u>	<u>Feet of Sand</u>	<u>Size of Shell Inches</u>	<u>Qts./Ft.</u>	<u>Total Quarts</u>
713.0 - 721.5	8.5	3/8	2.0	17.0

Recommended Packer Setting-708.0  
Note: Plug hole back to-723.0

## Oil Field Research Laboratories

### RESULTS OF SATURATION TESTS

TABLE III

Company Deep Rock Oil Corporation Lease Ewing Well No. E-33

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	685.06	14.0	29.1	-	-	316	0.55	0.55	174
F-2	685.80	17.2	44.7	-	-	597	0.70	1.25	416
F-3	687.07	16.6	34.8	-	-	448	0.40	1.65	180
F-5	690.06	13.8	30.4	-	-	326	1.10	2.75	359
6	691.02	14.5	22.4	68.4	90.8	252	0.35	3.10	88
F-7	693.36	13.5	29.3	-	-	307	0.35	3.45	107
F-8	693.80	16.4	38.8	-	-	494	0.35	3.80	173
8	694.07	13.5	32.9	60.5	93.4	345	0.35	4.15	121
F-9	695.02	16.5	49.8	-	-	637	0.60	4.75	382
F10	696.66	12.2	37.9	-	-	359	0.90	5.65	323
F11	697.60	13.9	25.6	-	-	276	0.40	6.05	110
F12	698.60	18.3	29.8	-	-	423	0.40	6.45	169
F13A	701.10	14.5	30.9	-	-	348	0.65	7.10	226
F15	702.57	14.7	36.2	-	-	413	0.35	7.45	145
16	703.70	14.1	32.4	58.8	91.2	354	0.40	7.85	142
F17	705.80	14.4	33.6	-	-	378	0.60	8.45	228
F19	707.50	15.5	30.7	-	-	369	0.58	9.03	214
F20	709.00	14.8	40.2	-	-	461	1.40	10.43	645
F22	711.37	17.8	38.0	-	-	416	0.48	10.91	199

Oil Field Research Laboratories

RESULTS OF SATURATION TESTS

TABLE III

Company Deep Rock Oil Corporation

Lease Ewing

Well No. W-33

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-23	712.10	14.6	32.3	-	-	366	1.00	11.91	366
F-24	713.10	12.7	19.2	-	-	189	0.93	12.84	176
F-25	713.82	15.7	27.3	-	-	335	0.52	13.36	174
F-26	714.50	14.9	28.3	-	-	327	0.70	14.06	229
F-27	715.13	17.3	43.9	-	-	590	0.50	14.56	294
F-28	715.82	17.1	42.7	-	-	567	1.30	15.86	737
F-29	717.20	16.0	32.3	-	-	401	0.60	16.46	240
F-30	718.46	15.5	32.2	-	-	388	0.35	16.81	136
31	719.45	13.5	31.4	59.5	90.9	329	0.90	17.71	296
F-32	720.34	19.4	36.1	-	-	544	1.47	19.18	800
F-33	722.00	12.9	35.0	-	-	351	0.70	19.88	246
F-34	722.82	12.6	46.4	-	-	453	0.78	20.66	354
							<b>Total</b>	<b>-----</b>	<b>8,449</b>

**Oil Field Research Laboratories**

**SUMMARY OF SATURATION TESTS**

**TABLE IV**

Company Deep Rock Oil Corporation Lease Swing Well No. 8-33

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
684.70-709.20	10.43	14.79	34.91	62.45	403	4,202
711.07-723.08	10.23	15.44	34.10	-	415	4,247
708.00-723.00	11.35	15.49	34.65	-	420	4,764

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RESULTS OF LABORATORY FLOODING TESTS

TABLE V

Company Deep Rock Oil Corporation Lease SWING Well No. 1-23

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	
1	685.06	14.0	29.1	316	0.0	0	29.1	68.8	316	0		Imp.	50+
2	685.80	17.2	44.7	597	8.3	111	35.4	59.1	486	0		0.082	35
3	687.07	16.6	34.8	448	0.0	0	34.8	60.0	448	0		Imp.	50+
5	690.06	13.8	30.4	326	0.0	0	30.4	65.2	326	0		Imp.	50+
7	695.36	13.5	29.3	307	0.0	0	29.3	64.5	307	0		Imp.	50+
8	695.80	16.4	38.5	494	9.0	115	29.8	67.7	379	99		0.287	35
9	695.02	16.5	49.8	637	0.0	0	49.8	49.5	637	0		Imp.	50+
10	695.66	12.2	37.9	359	0.0	0	37.9	61.3	359	0		Imp.	50+
11	697.60	13.9	25.6	279	0.0	0	25.6	65.0	276	0		Imp.	50+
12	698.60	16.3	29.8	423	1.0	14	28.8	59.4	409	2		0.248	30
13	701.10	14.5	30.9	348	0.0	0	30.9	64.8	348	0		Imp.	50+
15	702.57	14.7	36.2	413	0.0	0	36.2	58.1	413	0		Imp.	50+
17	705.80	14.4	35.6	376	0.0	0	35.6	60.1	376	0		Imp.	50+
19	707.50	15.5	30.7	369	0.0	0	30.7	64.0	369	2		0.112	45
20	709.00	14.8	40.2	461	0.0	0	40.2	55.5	461	0		Imp.	50+
22	711.37	17.6	30.0	415	8.8	122	21.2	77.2	293	20		0.466	30
23	712.10	14.5	32.5	366	6.5	74	25.8	68.2	292	142		1.41	20
24	713.10	12.7	19.2	189	0.0	0	19.2	79.8	189	0		Imp.	50+
25	713.82	15.7	27.3	335	3.5	47	23.5	70.5	288	9		0.182	45
26	714.50	14.9	28.3	327	0.0	0	28.3	66.5	327	5		0.107	45
27	715.13	17.3	43.9	590	6.7	90	37.2	59.6	500	14		0.349	30
28	715.82	17.1	42.7	567	7.0	93	35.7	57.2	474	18		0.576	30
29	717.20	16.0	32.3	401	1.2	15	31.1	66.7	386	2		0.114	45
30	718.46	18.5	32.2	388	0.0	0	32.2	65.5	388	4		0.111	45
32	720.54	19.4	36.1	544	8.9	154	27.2	70.8	410	38		0.777	25
33	722.00	12.9	35.0	351	0.0	0	35.0	58.5	351	0		Imp.	50+
34	722.82	12.5	46.4	453	0.0	0	46.4	40.0	453	1		0.114	50

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 Wing Well No. 2-33

	685.72-698.00	708.00-723.00
Depth Interval, Feet		
Feet of Core Analyzed	1.45	5.87
Average Percent Porosity	17.28	17.10
Average Percent Original Oil Saturation	39.10	35.92
Average Percent Oil Recovery	6.41	6.64
Average Percent Residual Oil Saturation	32.69	29.28
Average Percent Residual Water Saturation	61.31	66.49
Average Percent Total Residual Fluid Saturation	94.00	95.77
Average Original Oil Content, Bbls./A. Ft.	525.	479.
Average Oil Recovery, Bbls./A. Ft.	86.	90.
Average Residual Oil Content, Bbls./A. Ft.	439.	389.
Total Original Oil Content, Bbls./Acre	761.	2,814.
Total Oil Recovery, Bbls./Acre	124.	529.
Total Residual Oil Content, Bbls./Acre	637.	2,285.
Average Effective Permeability, Millidarcys	0.229	0.658.
Average Initial Fluid Production Pressure, p.s.i.	40.0	32.1

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