

OIL FIELD RESEARCH LABORATORIES
CHANUTE, KANSAS

March 5, 1951

Berry & Eells
Newton, Kansas

Gentlemen:

Enclosed herewith is the report of the partial analysis of the small Cable Tool core taken from the Reinhardt & Malson Lease, Well No. 24, Neosho County, Kansas, and submitted to our laboratory on February 21, 1951.

In calculating the recovery for the sand 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 35 per cent.

Very truly yours,

OIL FIELD RESEARCH LABORATORIES

Carl L. Pate

CLP:eam
c.c. to Mr. L. C. McLaughlin

28-27-19E

REINHARDT & MALSON 24

BERRY & EELLS

CORE ANALYSIS REPORT

REINHARDT & MALSON LEASE WELL NO. 24

NEOSHO COUNTY, KANSAS

OIL FIELD RESEARCH LABORATORIES

CHANUTE, KANSAS

MARCH 5, 1951

Oil Field Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Berry & Eells Lease Reinhardt & Malson Well No. 24
 Location 115' North of South & 830' East of West Line
 Section 28 Twp. 27S Rge. 19E County Neosho State Kansas

Name of Sand	Bartlesville	
Top of Core		692.00
Bottom of Core		709.20
Pay		
Top of Sand		696.75
Pay		
Bottom of Sand		707.95
Total Feet of Permeable Sand		10.67
Distribution of Permeable Sand:		
Permeability Range	Feet	Cum. Ft.
Millidarcys		
Effective		
Average Permeability Millidarcys		16.94
Average Percent Porosity		20.04
Average Percent Oil Saturation		44.66
Average Percent Water Saturation		-
Average Oil Content, Bbls./A. Ft.		695.
Total Oil Content, Bbls./Acre		7,523.
Average Percent Oil Recovery by Laboratory Flooding Tests		20.30
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.		317.
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre		3,381.
Total Calculated Oil Recovery, Bbls./Acre		3,350.
Packer Setting, Feet		697.00
Viscosity, Centipoises @		
A. P. I. Gravity, degrees @ 60 °F		

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The above averages are for that part of the sand section extending from the packer setting to the bottom of the core.

LOG

Company Berry & Eells Lease Reinhardt & Malson Well No. 24

<u>Depth Interval,</u> <u>Feet</u>	<u>Description</u>
692.00 - 693.35	- According to log, cavings (Discarded at well).
693.35 - 693.70	- Finely laminated sandy shale.
693.70 - 694.65	- Light brown fine grained micaceous sandstone.
694.65 - 697.35	- Brown fine grained micaceous sandstone.
697.35 - 707.95	- Dark brown fine grained micaceous sandstone containing three shale breaks.
707.95 - 708.10	- Dark fine grained micaceous carbonaceous sandstone.
708.10 - 708.20	- Sandy conglomerate.
708.20 - 708.35	- Gray shale.
708.35 - 709.20	- According to log, gray shale (Discarded at well).

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SHOT RECOMMENDATION

Company Berry & Eells Lease Reinhardt & Malson Well No. 24

<u>Depth Interval, Feet</u>	<u>Feet of Sand</u>	<u>Size of Shell Inches</u>	<u>Qts./Ft.</u>	<u>Total Quarts</u>
701.0 - 706.5	5.5	3½	2.0	11.0

Recommended Packer Setting 697.0 Feet.

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RESULTS OF SATURATION TESTS

TABLE III

Company Berry & Eells Lease Reinhardt & Malson Well No. 24

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.	
1	694.72	16.9	19.3	—	—	253	0.55	0.55	139
2	695.67	20.3	22.7	—	—	354	1.00	1.55	354
3	696.82	21.3	26.6	—	—	440	1.15	2.70	506
4	697.86	20.9	33.8	—	—	549	1.15	3.85	631
5	699.05	21.0	62.1	—	—	1,014	1.24	5.09	1,260
6	700.26	21.8	36.4	—	—	616	0.90	5.99	555
7	701.15	21.0	45.4	—	—	739	0.84	6.83	620
8	702.42	20.9	44.1	—	—	716	1.36	8.19	975
9	703.52	17.3	40.7	—	—	546	1.30	9.49	710
10	704.65	20.1	48.4	—	—	754	0.73	10.22	550
11	705.65	19.0	53.6	—	—	791	1.10	11.32	871
12	706.85	19.2	40.8	—	—	608	1.70	13.02	1,035
13	708.01	20.3	68.5	—	—	1,079	0.15	13.17	162
							Total	— — — — —	8,368

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SUMMARY OF SATURATION TESTS

TABLE IV

Company Berry & Eells Lease Reinhardt & Malson Well No. 24

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
694.65-698.50	3.85	20.29	26.68	-	423	1,630
698.50-708.10	9.32	19.88	46.68	-	723	6,738
697.00-708.10	10.82	20.04	44.66	-	695	7,523

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RESULTS OF LABORATORY FLOODING TESTS

TABLE V

Company Berry & Wells

Lease Reinhardt & Malson

Well No. 24

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	694.72	16.9	19.3	253	0.0	0	19.3	67.3	253	90	3.53	15
2	695.67	20.3	22.7	354	1.5	24	21.2	63.5	334	520	53.70	5
3	696.82	21.3	26.6	440	6.1	101	20.5	68.1	339	183	22.20	10
4	697.86	20.9	33.8	549	14.6	237	19.2	67.0	312	173	13.91	15
5	699.05	21.0	62.1	1014	39.9	652	22.2	63.9	362	99	8.83	5
6	700.26	21.8	36.4	616	13.3	225	23.1	61.3	391	213	15.53	10
7	701.15	21.0	45.4	739	23.4	381	22.0	64.2	358	49	12.89	5
8	702.42	20.9	44.1	716	17.0	276	27.1	59.3	440	146	19.39	10
9	703.52	17.3	40.7	546	14.6	196	26.1	65.1	350	10	0.541	20
10	704.65	20.1	48.4	754	22.2	346	26.2	66.0	408	69	13.03	10
11	705.65	19.0	53.6	791	29.2	431	24.4	68.9	360	105	5.32	10
12	706.85	19.2	40.8	608	15.3	228	25.5	69.0	380	?	46.30	10
13	708.01	20.3	68.5	1079	0.0	0	68.5	30.4	1079	2	0.037	40

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	Berry & Eells			Lease	Reinhardt & Malson			Well No.	24		
Depth Interval, Feet	695.20 - 698.50			698.50 - 707.95			697.00 - 707.95				
Feet of Core Analyzed	3.30			9.17			10.67				
Average Percent Porosity	20.85			19.89			20.05				
Average Percent Original Oil Saturation	27.94			46.28			44.29				
Average Percent Oil Recovery	7.67			21.56			20.30				
Average Percent Residual Oil Saturation	20.27			24.72			23.99				
Average Percent Residual Water Saturation	66.33			64.83			65.16				
Average Percent Total Residual Fluid Saturation	86.60			89.55			89.15				
Average Original Oil Content, Bbls./A. Ft.	453.			716.			689.				
Average Oil Recovery, Bbls./A. Ft.	125.			335.			317.				
Average Residual Oil Content, Bbls./A. Ft.	328.			381.			372.				
Total Original Oil Content, Bbls./Acre	1,495.			6,568.			7,353.				
Total Oil Recovery, Bbls./Acre	412.			3,074.			3,381.				
Total Residual Oil Content, Bbls./Acre	1,083.			3,494.			3,972.				
Average Effective Permeability, Millidarcys	28.87			17.11			16.94				
Average Initial Fluid Production Pressure, p.s.i.	10.0			10.0			10.5				

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