

OIL FIELD RESEARCH LABORATORIES
CHANUTE, KANSAS

August 25, 1951

Mr. M. C. Colt
Iola, Kansas

Dear Sir:

Enclosed herewith is the report of the partial analysis of the 2 3/8" Rotary core taken from the Jackson Lease, Well No. 1 $\frac{1}{2}$, Allen County, Kansas, and submitted to our laboratory on August 4, 1951.

In calculating the recovery for 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 36 percent. The calculated recovery does not include the loss of 7.13 feet. Assuming that the loss is sand containing recoverable oil equal to the average of the remainder of the core an additional recovery of 1,200 barrels of oil per acre could be expected.

Very truly yours,

OIL FIELD RESEARCH LABORATORIES

Clayton A. Nattier

Clayton A. Nattier

By: *(Signature)*

CAN:mm

c. c.

15-26-20E

JACKSON 1-A

M. C. COLT

CORE ANALYSIS REPORT

JACKSON LEASE

WELL NO. 1 A

ALLEN COUNTY, KANSAS

OIL FIELD RESEARCH LABORATORIES

CHANUTE, KANSAS

AUGUST 25, 1951

Oil Field Research Laboratories

GENERAL INFORMATION & SUMMARY

Company M. C. Colt Lease Jackson Well No. 1

Location 480' South of North Line & 10' West of East Line, NW $\frac{1}{4}$

Section 15 Twp. 26S Rge. 20E County Allen State Kansas

		Bartlesville
Name of Sand		
Top of Core		686.00
Bottom of Core		722.00
Top of Sand		686.45
Bottom of Sand		709.80
Total Feet of Permeable Sand		12.58
Total Feet of Floodable Sand		12.36
Distribution of Permeable Sand:		
Permeability Range	Feet	Cum. Ft.
Millidarcys		

Average Permeability ^{Effective} Permeability Millidarcys		3.23
Average Percent Porosity		17.49
Average Percent Oil Saturation		30.59
Average Percent Water Saturation		-
Average Oil Content, Bbls./A. Ft.		417.
Total Oil Content, Bbls./Acre		5,616.
Average Percent Oil Recovery by Laboratory Flooding Tests		5.06
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.		70.
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre		867.
Total Calculated Oil Recovery, Bbls./Acre		2,150.
Packer Setting, Feet		687.00
Viscosity, Centipoises @		
A. P. I. Gravity, degrees @ 60 °F		
Elevation, Feet		

OIL FIELD RESEARCH LABORATORIES
CHANUTE, KANSAS

LOG

Company M. C. Colt Lease Jackson Well No. 1

<u>Depth Interval, Feet</u>	<u>Description</u>
686.00 - 686.45	- Gray fine grained micaceous calcareous sandstone.
686.45 - 686.80	- Light brown fine grained micaceous slightly shaley sandstone.
686.80 - 687.10	- Light brown fine grained micaceous sandstone.
687.10 - 687.70	- Light brown fine grained slightly laminated micaceous shaley sandstone.
687.70 - 688.03	- Light brown fine grained micaceous sandstone.
688.03 - 688.27	- Gray shale.
688.27 - 688.35	- Light brown fine grained laminated micaceous shaley sandstone.
688.35 - 688.65	- Laminated sandy shale.
688.65 - 688.87	- Light brown fine grained slightly laminated micaceous shaley sandstone.
688.87 - 695.00	- Loss.
695.00 - 701.70	- Brown fine grained micaceous sandstone.
701.70 - 702.05	- Brown fine grained slightly laminated micaceous shaley sandstone.
702.05 - 702.22	- Gray sandy shale.
702.22 - 704.60	- Brown fine grained micaceous sandstone.
704.60 - 704.75	- Gray shale.
704.75 - 709.25	- Brown fine grained micaceous sandstone.
709.25 - 709.80	- Conglomeratic sandstone.
709.80 - 713.45	- Gray shale.
713.45 - 713.65	- Coal.
713.65 - 714.50	- Gray shale.
714.50 - 722.00	- Loss.

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SHOT RECOMMENDATION

Company M. C. Colt Lease Jackson Well No. 1

<u>Depth Interval, Feet</u>	<u>Feet of Sand</u>	<u>Size of Shell Inches</u>	<u>Qts./Ft.</u>	<u>Total Quarts</u>
692.00 - 707.50	15.5	3.0	1.5	23.25

Recommended Packer Setting 687.00 Feet

Note: Plug hole back to 708.50 Feet

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RESULTS OF SATURATION TESTS

TABLE III

Company M. C. Colt Lease Jackson Well No. 1

Sat. No.	Depth, Feet	Effective Porosity Percent	Percent Saturation			Oil Content, Bbbs./A. Ft.	Feet of Core		Total Oil Content Bbbs./Acre
			Oil	Water	Total		Ft.	Cum. Ft.	
1	686.95	18.1	27.6	-	-	388	0.30	0.30	116
2	687.80	17.0	27.4	-	-	361	0.33	0.63	119
3	688.75	16.3	17.0	-	-	215	0.22	0.85	47
4	695.68	18.6	29.6	-	-	427	1.20	2.05	513
5	696.65	15.9	28.6	-	-	353	0.90	2.95	318
6	697.58	16.1	27.2	-	-	340	1.10	4.05	374
7	698.75	17.9	26.1	-	-	363	1.10	5.15	388
8	699.72	17.4	25.0	-	-	338	1.00	6.15	338
9	700.90	16.9	29.3	-	-	385	1.40	7.55	539
10	702.33	17.6	31.9	-	-	436	0.68	8.23	297
11	703.50	17.2	30.4	-	-	406	1.05	9.28	427
12	704.42	16.6	30.2	-	-	389	0.65	9.93	252
13	705.38	17.3	36.3	-	-	487	0.95	10.88	463
14	706.05	17.4	37.7	-	-	509	0.80	11.68	407
15	707.08	20.5	39.3	-	-	625	1.00	12.68	625
16	707.90	18.5	34.0	-	-	488	0.90	13.58	440
17	708.90	13.1	29.9	-	-	304	0.85	14.43	258
							Total		5,921

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SUMMARY OF LABORATORY FLOODING TESTS

TABLE VI

Company	Lease		Well No.	
M. C. Colt	686.80	Jackson	702.22	1
Depth, Interval, Feet	688.03	695.00	708.40	687.00
Feet of Core Analyzed	0.63	701.70	708.40	708.40
Average Percent Porosity	17.46	6.70	5.23	12.36
Average Percent Original Oil Saturation	27.62	17.18	18.07	17.39
Average Percent Oil Recovery	2.54	27.60	33.98	30.29
Average Percent Residual Oil Saturation	25.08	4.06	6.58	5.06
Average Percent Residual Water Saturation	67.46	23.54	27.40	25.23
Average Percent Total Residual Fluid Saturation	92.54	66.07	64.26	65.36
Average Original Oil Content, Bbls./A. Ft.	376.	89.61	91.66	90.59
Average Oil Recovery, Bbls./A. Ft.	35.	370.	478.	416.
Average Residual Oil Content, Bbls./A. Ft.	341.	55.	93.	70.
Total Original Oil Content, Bbls./Acre	237.	315.	385.	346.
Total Oil Recovery, Bbls./Acre	22.	2,479.	2,502.	5,140.
Total Residual Oil Content, Bbls./Acre	215.	366.	486.	867.
Average Effective Permeability, Millidarcys	4.21	2,113.	2,016.	4,273.
Average Initial Fluid Production Pressure, p.s.i.	12.5	1.99	4.71	3.22
	12.5	28.3	20.0	22.5

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

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RESULTS OF LABORATORY FLOODING TESTS

TABLE V

Company M. C. Colt Lease Jackson Well No. 1

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	686.95	18.1	27.6	388	2.5	35	25.1	67.0	353	172	4.37	10
2	687.80	17.0	27.4	361	2.4	32	25.0	67.8	329	156	4.07	15
3	688.75	16.3	17.0	215	0.0	0	17.0	65.0	215	10	0.643	30
4	695.68	18.6	29.6	427	8.0	115	21.6	72.2	312	179	7.59	15
5	696.65	15.9	28.6	353	3.9	48	24.7	61.6	305	15	0.515	25
6	697.58	16.1	27.2	340	2.4	30	24.8	65.5	310	8	0.175	35
7	698.75	17.9	26.1	363	1.6	22	24.5	62.5	341	17	0.465	30
8	699.72	17.4	25.0	338	1.7	23	23.3	62.2	315	10	0.270	35
9	700.90	16.9	29.3	385	5.7	75	23.6	70.0	310	26	0.779	30
10	702.33	17.6	31.9	436	10.3	141	21.6	73.0	295	170	6.74	15
11	703.50	17.2	30.4	406	5.4	72	25.0	71.2	334	138	9.55	15
12	704.42	16.6	30.2	389	3.8	49	26.4	61.5	340	29	0.900	25
13	705.38	17.3	36.3	387	6.9	92	29.4	55.6	395	9	0.257	30
14	706.05	17.4	37.7	509	0.0	0	37.7	57.5	509	0	Imp.	50
15	707.08	20.5	39.3	625	9.6	137	30.7	59.8	488	133	6.01	15
16	707.90	18.5	34.0	488	4.4	63	29.6	65.6	425	107	3.53	20
17	708.90	13.1	29.9	304	0.0	0	29.9	46.2	304	0	Imp.	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.

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SUMMARY OF SATURATION TESTS

TABLE IV

Company M. C. Colt Lease Jackson Well No. 1

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
686.80 - 688.87	0.85	17.17	24.82	-	332	282
695.00 - 701.70	6.70	17.18	27.75	-	369	2,470
702.22 - 709.25	6.88	17.37	33.90	-	461	3,169
687.00 - 708.50	13.48	17.49	30.59	-	417	5,616