March 16, 1950

Mr. Simon Lebow
608 Capital Building
Tulsa, Oklahoma

Dear Sir:

Enclosed herewith is the report of the partial analysis made on the Keystone barrel core taken from the F. Ziegler Lease, Well No. C-1, Bourbon County, Kansas, and submitted to our laboratory on March 13, 1950.

Even though crude oil was used as a circulating fluid in the coring operation, the sand still had a high water saturation. This indicates that the sand, for the most part, is watered out. By comparing the chloride content of the brine in the sand in this core with that taken from the McLimons Core Test Well No.1, it is evident that considerable flushing of the sand did occur in the coring of the latter well.

It is very unfortunate that the sand represented by this core is, for the most part, watered out. Otherwise, the data obtained from the analysis of this core together with that from the former core would be reasonably reliable for estimating the amount of recoverable oil in place.

Very truly yours,

OIL FIELD RESEARCH LABORATORIES

Carl L. Pate

CLP:bb

SIMON LEBOW

CORE ANALYSIS REPORT

F. ZIEGLER LEASE WELL NO. C-1

BOURBON COUNTY, KANSAS

OIL FIELD RESEARCH LABORATORIES

CHANUTE, KANSAS

MARCH 17, 1950

Oil Field Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Simon Lebow Lease F. Ziegler Well No. C-1

Location SW¼, SE¼

Section 6 Twp. 24 S Rge. 22E County Bourbon State Kansas

Name of Sand	Bartlesville
Top of Core	512.10
Bottom of Core	539.80
Top of Sand	517.05
Bottom of Sand	533.90
Total Feet of Permeable Sand	5.70

Distribution of Permeable Sand:

Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 40	3.00	3.00
40 - 80	1.35	4.35
80 - 120	0.30	4.65
120 & above	1.05	5.70

Average Permeability, Millidarcys	60.95
Average Percent Porosity	25.96
Average Percent Oil Saturation	25.90
Average Percent Water Saturation	66.50
Average Oil Content, Bbls./A. Ft.	519.
Total Oil Content, Bbls./Acre	8,484.
Average Percent Oil Recovery by Laboratory Flooding Tests	1.57
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	34.
Aotal Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	188.
Total Calculated Oil Recovery, Bbls./Acre	130. -
Packer Setting, Feet	-
Viscosity, Centipoises @ 84° F.	14.8
A. P. I. Gravity, degrees @ 60 °F	31.3

Note: Crude oil was used as a circulating fluid in the coring of the sand in this well.

OIL FIELD RESEARCH LABORATORIES

LOG

Company Simon Lebow Lease F. Ziegler Well No. C-1

Depth Interval, Feet	Description
512.10 - 517.05	Gray shale.
517.05 - 518.00	Light brown fine grained micaceous slightly shaley sandstone.
518.00 - 518.50	Lose.
518.50 - 520.55	Light brown fine grained micaceous slightly shaley sandstone.
520.55 - 521.80	Hard light brown fine grained micaceous calcareous sandstone.
521.80 - 522.40	Brown medium grained micaceous slightly calcareous sandstone.
522.40 - 526.35	Brown medium grained shaley sandstone.
526.35 - 526.65	Hard brown medium grained sandstone.
526.65 - 533.90	Soft brown medium grained shaley sandstone.
533.90 - 534.00	Coal.
534.00 - 539.20	Gray shale.

Oil Field Research Laboratories

RESULTS OF PERMEABILITY TESTS

TABLE I

Company Simon Lebow Lease F. Ziegler Well No. C-1

Sample No.	Depth, Feet	Permeability Millidarcys	Feet of Core		Permeability Capacity Ft. x Md.
			Ft.	Cum. Ft.	
1	517.30	2.2	0.40	0.40	0.88
2	517.60	10.	0.55	0.95	5.50
3	518.60	85.	0.30	1.25	25.50
4	519.05	193.	0.40	1.65	77.20
5	519.30	253.	0.30	1.95	75.90
6	519.80	64.	0.50	2.45	32.00
7	520.20	13.	0.55	3.00	7.15
8	520.60	Imp.	0.25	3.25	0.00
9	521.00	Imp.	0.35	3.60	0.00
10	521.35	Imp.	0.65	4.25	0.00
11	521.85	3.4	0.30	4.55	1.02
12	522.25	Imp.	0.30	4.85	0.00
13	522.65	21.	0.40	5.25	8.40
14	523.00	71.	0.45	5.70	31.95
15	523.47	64.	0.40	6.10	25.60
16	523.85	18.	0.35	6.45	6.30
17	524.20	134.	0.35	6.80	46.90
18	524.45	6.9	0.45	7.25	3.11

Oil Field Research Laboratories

SUMMARY OF PERMEABILITY TESTS

TABLE II

Company Simon Lebow Lease F. Ziegler Well No. C-1

Depth Interval Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity, Ft. x Md.
517.05 - 526.65	5.70	60.95	347.41

Oil Field Research Laboratories

RESULTS OF SATURATION TESTS

TABLE III

Company Simon Lebow Lease F. Ziegler Well No. C-1

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	517.72	15.5	30.3	36.6	66.9	364	0.95	0.95	346
2	519.52	28.6	28.4	60.6	89.0	631	2.05	3.00	1,292
3	520.73	9.0	24.8	62.0	86.8	173	1.25	4.25	216
4	522.13	14.7	38.4	54.0	92.4	438	0.60	4.85	263
5	523.57	25.4	20.9	72.7	93.6	412	1.95	6.80	804
6	525.22	26.2	22.2	69.9	92.1	452	2.00	8.80	905
7	526.41	13.2	27.6	71.6	99.2	282	0.30	9.10	85
8	527.82	31.3	26.1	71.4	97.5	634	1.70	10.80	1,080
9	528.95	31.2	25.4	72.9	98.3	616	1.25	12.05	771
10	530.22	33.2	30.6	67.2	97.8	790	1.30	13.35	1,030
11	531.58	29.4	21.5	74.8	96.3	492	1.40	14.75	690
12	532.97	30.4	26.6	69.0	95.6	627	1.60	16.35	1,002
							Total	- - - -	8,484

Oil Field Research Laboratories

SUMMARY OF SATURATION TESTS

TABLE IV

Company Simon Labon Lease F. Ziegler Well No. C-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
517.05 - 526.65	9.10	21.91	25.79	62.88	430	3,911
526.65 - 533.90	7.25	31.05	26.03	71.03	631	4,573
517.05 - 533.90	16.35	25.96	25.90	66.50	519	8,484

Oil Field Research Laboratories

RESULTS OF LABORATORY FLOODING TESTS

TABLE V

Company Simon Lebow Lease F. Ziegler Well No. C-1

Sample No.	Depth, Feet	Effective Porosity Percent	Original Oil Saturation		Oil Recovery		Residual Saturation			Volume of Water Recovered cc*	[redacted] Effective Permeability, Millidarcys **	Initial Fluid Production Pressure Lbs./Sq. In.
			Percent	Bbls./A. Ft.	Percent	Bbls./A. Ft.	% Oil	% Water	Bbls./A. Ft.			
1	517.88	17.6	27.2	372	0.0	0	27.2	61.3	372	21	0.348	25
2	519.66	21.3	28.4	469	0.0	0	28.4	63.2	469	13	0.351	25
3	520.88	8.0	25.8	160	0.0	0	25.8	52.2	160	0	Imp.	50+
4	521.98	17.1	35.4	470	2.1	28	33.3	66.7	442	20	0.561	25
5	523.72	24.5	21.1	402	0.0	0	21.1	76.2	402	5	0.126	35
6	525.05	26.8	21.3	443	0.0	0	21.3	74.0	443	13	0.472	30
7	526.55	14.1	27.2	298	1.1	12	26.1	72.1	286	.6	0.195	30
8	527.68	29.4	24.6	561	0.8	18	23.8	75.4	543	79	1.94	15
9	528.82	28.9	25.3	567	0.0	0	25.3	71.1	567	174.5	11.85	5
10	530.09	31.2	27.8	673	0.0	0	27.8	68.7	673	1,133.	62.70	5
11	531.72	29.4	23.0	525	0.9	21	22.1	74.4	504	18.	1.35	15
12	533.12	30.9	27.5	658	2.8	67	24.7	66.5	591	209	80.00	5

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 Simon Lebow Lease F. Ziegler Well No. C-1

Depth Interval, Feet	521.80 - 526.65	526.65 - 533.90	521.80 - 533.90
Feet of Core Analyzed	0.90	4.70	5.60
Average Percent Porosity	16.11	29.91	27.68
Average Percent Original Oil Saturation	32.67	25.15	26.36
Average Percent Oil Recovery	1.78	1.53	1.57
Average Percent Residual Oil Saturation	30.89	23.62	24.79
Average Percent Residual Water Saturation	68.44	72.02	71.45
Average Percent Total Residual Fluid Saturation	99.33	95.64	96.24
Average Original Oil Content, Bbls./A. Ft.	413.	582.	556.
Average Oil Recovery, Bbls./A. Ft.	23.	35.	34.
Average Residual Oil Content, Bbls./A. Ft.	390.	547.	522.
Total Original Oil Content, Bbls./Acre	372.	2,740.	556.
Total Oil Recovery, Bbls./Acre	21.	167.	188.
Total Residual Oil Content, Bbls./Acre	351.	2,573.	2,924.
Average Effective Permeability, Millidarcys	0.490	28.32	23.85
Average Initial Fluid Production Pressure, p.s.i.	27.5	11.7	18.0

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

Oil Field Research Laboratories

RESULTS OF WATER DIFFERENTIATION TESTS

TABLE VII

Company Simon Lebow Lease F. Ziegler Well No. C-1

Sample No.	Depth, Feet	Chloride Content of Brine in Sand ppm	Percent Water Saturation		
			Connate	Drilling & Foreign	Total
1	517.72	14,780			
2	519.52	9,500			
3	520.73	17,430			
4	522.13	14,380			
5	523.57	12,380			
6	525.22	13,110			
7	526.41	11,330			
8	527.82	10,850			
9	528.95	12,300			
10	530.22	9,920			
11	531.58	12,780			
12	532.97	9,750			

Note: ppm - parts per million.

Oil Field Research Laboratories

SUMMARY OF WATER DIFFERENTIATION TESTS

TABLE VIII

Company Simon Lebow Lease F. Ziegler Well No. C-1

Depth Interval, Feet	Chloride Content of Brine in Sand, ppm	Average Percent Connate Water	Average Percent Drilling & Foreign Water
517.05 - 526.65	12,930		
526.65 - 533.90	11,069		
517.05 - 533.90	12,105		

Note: ppm - parts per million.