

OILFIELD RESEARCH LABORATORIES

536 NORTH HIGHLAND - CHANUTE, KANSAS - PHONE HE1-2650

March 30, 1968

17-25-105

TEC Drilling Company, Inc.
P. O. Box 693
El Dorado, Kansas 67042

Gentlemen:

Enclosed herewith are the results of test run on the Rotary cores taken from the Stockebrand Lease, Well No. 4, Woodson County, Kansas, and submitted to our laboratory on March 28, 1968.

These cores are from a virgin territory and were sampled and the samples were sealed in tin cans by a representative of Oilfield Research Laboratories.

The upper sand was exposed to air approximately 3½ hours before being sampled.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Carl L. Pate

CLP:bjø

5. -- El Dorado, Kansas

Stockebrand 4

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company TEC Drilling Company, Inc. Lease Stoeckeband Well No. 4

Location SE SE NE SE

Section 17 Twp. 25S Rge. 16E County Woodson State Kansas

Name of Sand	Upper Squirrel
Top of Core	875.0
Bottom of Core	890.5
Top of Sand (Cored)	875.0
Bottom of Sand	883.0
Total Feet of Permeable Sand	7.0
Total Feet of Floodable Sand	

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 2	1.5	1.5
2 - 5	1.6	3.1
5 & above	3.9	7.0

Average Permeability Millidarcys	4.5
Average Percent Porosity	16.5
Average Percent Oil Saturation	51.4
Average Percent Water Saturation	31.8
Average Oil Content, Bbls./A. Ft.	652.
Total Oil Content, Bbls./Acre	4,565.
Average Percent Oil Recovery by Laboratory Flooding Tests	
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	
Total Calculated Oil Recovery, Bbls./Acre	
Packer Setting, Feet	
Viscosity, Centipoises @	
A. P. I. Gravity, degrees @ 60 °F	
Elevation, Feet	

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GENERAL INFORMATION & SUMMARY

Company TEC Drilling Company, Inc. Lease Stockebrand Well No. 4

Location SE SE NE SE

Section 17 Twp. 25S Rge. 16E County Woodson State Kansas

Name of Sand - - - - - Lower Squirrel

Top of Core - - - - - 919.0

Bottom of Core - - - - - 937.0

Top of Sand - - (Cored) - - - - - 919.0

Bottom of Sand - - - - - 929.3

Total Feet of Permeable Sand - - - - - 9.6

Total Feet of Floodable Sand - - - - -

Distribution of Permeable Sand:
Permeability Range
Millidarcys

Feet

Cum. Ft.

Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 25	3.0	3.0
25 - 100	2.0	5.0
100 - 200	3.0	8.0
200 & above	1.6	9.6

Average Permeability Millidarcys - - - - - 97.2

Average Percent Porosity - - - - - 21.4

Average Percent Oil Saturation - - - - - 69.9

Average Percent Water Saturation - - - - - 14.5

Average Oil Content, Bbls./A. Ft. - - - - - 1,156.

Total Oil Content, Bbls./Acre - - - - - 11,088.

Average Percent Oil Recovery by Laboratory Flooding Tests - - - - -

Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft. - - - - -

Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre - - - - -

Total Calculated Oil Recovery, Bbls./Acre - - - - -

Packer Setting, Feet - - - - -

Viscosity, Centipoises @ - - - - -

A. P. I. Gravity, degrees @ 60 °F - - - - -

Elevation, Feet - - - - -

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- LOG -

Company TEC Drilling Company, Inc. Lease Stockebrand Well No. 4

Depth Interval, Description
Feet _____

UPPER SQUIRREL SAND

875.0 - 876.5 - Brown slightly calcareous shaly sandstone.

876.5 - 881.5 - Brown laminated shaly sandstone.

881.5 - 882.5 - Sandy shale.

882.5 - 883.0 - Brown shaly sandstone.

883.0 - 890.5 - Sandy shale.

LOWER SQUIRREL SAND

919.0 - 927.2 - Dark brown sandstone.

927.2 - 928.2 - Dark carbonaceous sandstone.

928.2 - 928.9 - Gray shaly sandstone.

928.9 - 929.3 - Dark carbonaceous sandstone.

929.2 - 934.5 - Silty sandy shale.

934.5 - 937.0 - Loss.

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company TEC Drilling Company, Inc. Lease Stockebrand Well No. 4

Sample No.	Depth, Feet	Effective Porosity Percent	Percent Saturation			Oil Content Bbls. / A Ft.	Perm., Mill.	Feet of Sand		Total Oil Content	Perm. Capacity Ft. X md.
			Oil	Water	Total			Ft.	Cum. Ft.		
						<u>UPPER SAND</u>					
1	875.4	15.1	51	31	82	598	2.1	0.7	0.7	419	1.47
2	876.1	13.0	62	34	96	625	6.6	0.8	1.5	500	5.28
3	877.1	17.8	48	31	79	663	7.1	1.1	2.6	729	6.81
4	878.1	18.2	50	29	79	706	7.4	1.0	3.6	706	7.40
5	879.1	17.1	46	39	85	611	0.37	1.0	4.6	611	0.37
6	880.1	16.3	55	27	82	696	7.3	1.0	5.6	696	7.30
7	881.1	16.8	46	32	78	600	2.4	0.9	6.5	540	2.16
8	882.9	15.9	59	31	90	728	1.0	0.5	7.0	364	0.50
						<u>LOWER SAND</u>					
9	919.1	21.6	58	14	72	972	202.	0.6	0.6	583	121.15
10	920.1	20.7	65	15	80	1043	92.	1.0	1.6	1043	92.00
11	921.1	23.0	58	12	70	1035	116.	1.0	2.6	1035	116.00
12	922.1	22.7	62	13	75	1092	226.	1.0	3.6	1092	226.00
13	923.1	22.1	74	14	88	1269	196.	1.0	4.6	1269	196.00
14	924.1	20.5	67	14	81	1066	40.	1.0	5.6	1066	40.00
15	925.1	21.8	70	17	87	1184	118.	1.0	6.6	1184	118.00
16	926.1	18.6	80	17	97	1154	5.6	1.0	7.6	1154	5.60
17	927.1	19.5	80	15	95	1210	15.	0.6	8.2	726	9.00
18	928.1	22.0	80	14	94	1366	1.2	1.0	9.2	1366	1.20
19	929.1	22.7	81	15	96	1426	20.	0.4	9.6	570	8.00

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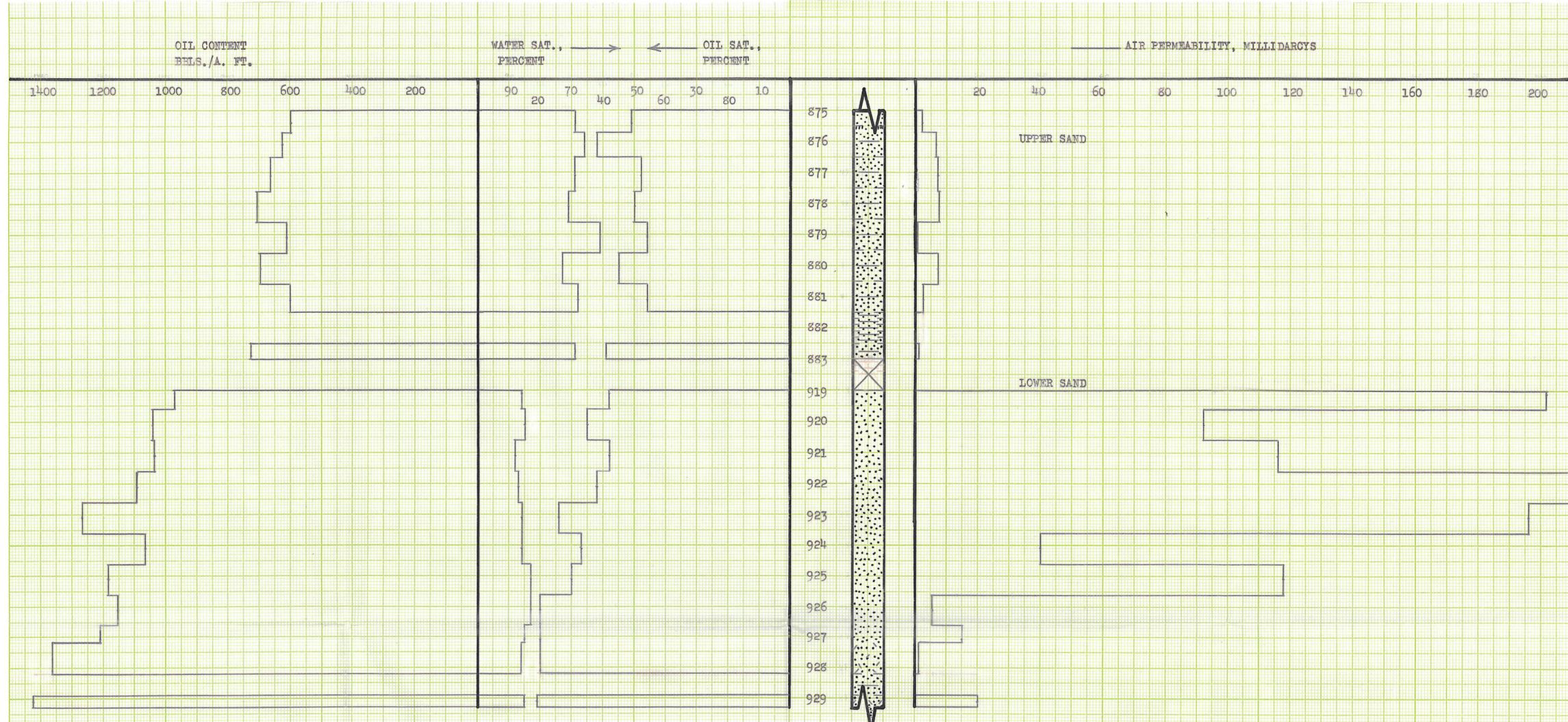
SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

Company TEC Drilling Company, Inc. Lease Stockebrand Well No. 4

Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity Ft. x Md.
<u>UPPER SAND</u>			
875.0 - 883.0	7.0	4.5	31.29
<u>LOWER SAND</u>			
919.0 - 929.3	9.6	97.2	932.95

Depth Interval, Feet	Feet of Core Analyzed	Average Percent Porosity	Average Percent Oil Saturation	Average Percent Water Saturation	Average Oil Content Bbl./A. Ft.	Total Oil Content Bbls./Acre
<u>UPPER SAND</u>						
875.0 - 883.0	7.0	16.5	51.4	31.8	652.	4,565.
<u>LOWER SAND</u>						
919.0 - 929.3	9.6	21.4	69.9	14.5	1,156.	11,088.



KEY:
 SANDSTONE
 CARBONACEOUS SANDSTONE

SHALY SANDSTONE
 CALCAREOUS SHALY SANDSTONE
 SANDY SHALE

TEC DRILLING COMPANY

STOCKBRAND LEASE WELL NO. 4

WOODSON COUNTY, KANSAS

DEPTH INTERVAL FEET	FEET OF CORE ANALYZED	AVERAGE POROSITY PERCENT	AVG. OIL SATURATION PERCENT	AVG. WATER SATURATION PERCENT	AVG. OIL CONTENT BLS./A. FT.	TOTAL OIL CONTENT BLS./ACRE	AVG. AIR PERMEABILITY MILLIDARCY
UPPER SAND							
875.0 - 883.0	7.0	16.5	51.4	31.8	652.	4,565.	4.5
LOWER SAND							
919.0 - 929.3	9.6	21.4	69.9	14.5	1,156.	11,088.	97.2

OILFIELD RESEARCH LABORATORIES
 CHANUTE, KANSAS
 MARCH, 1968

KEIFFEL & ESSER CO.
 MADE IN U.S.A.

STANDARD CROSS SECTION
 MILLIMETER