



OILFIELD RESEARCH LABORATORIES

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

March 30, 1968

Hill & Tate
535 N. Alleghany
El Dorado, Kansas 67042

Gentlemen:

Enclosed herewith are the results of tests run on the Rotary cores taken from the Tannihill Lease, Well No. 1, 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 core was exposed to air for $1\frac{1}{2}$ hours before being sampled.

We are of the opinion that the lower sand contains mostly a very viscous oil or asphalt and as a result it is very doubtful whether sufficient primary oil would be recovered to justify completion in this sand.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Carl L. Pate
Carl L. Pate

CLP:bjo

5 c. - El Dorado, Kansas

60-25-10E

Tannihill 1

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Hill & Tate Lease Tannihill Well No. 1

Location SE SE NE

Section 6 Twp. 25S Rge. 16E County Woodson State Kansas

Name of Sand - - - - - Upper Squirrel

Top of Core - - - - - 931.0

Bottom of Core - - - - - 948.0

Top of Sand - - (Cored) - - - - - 931.0

Bottom of Sand - - - - - 941.0

Total Feet of Permeable Sand - - - - - 9.5

Total Feet of Floodable Sand - - - - -

Distribution of Permeable Sand:
Permeability Range
Millidarcys

Feet

Cum. Ft.

0 - 5 3.2 3.2

5 - 10 1.8 5.0

10 - 25 1.6 6.6

25 & above 2.9 9.5

Average Permeability Millidarcys - - - - - 15.4

Average Percent Porosity - - - - - 16.4

Average Percent Oil Saturation - - - - - 51.2

Average Percent Water Saturation - - - - - 30.5

Average Oil Content, Bbls./A. Ft. - - - - - 658.

Total Oil Content, Bbls./Acre - - - - - 6,249.

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 - - - - -

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Hill & Tate Lease Tannahill Well No. 1

Location SE SE NE

Section 6 Twp. 25S Rge. 16E County Woodson State Kansas

Name of Sand - - - - - Lower Squirrel

Top of Core - - - - - 979.0

Bottom of Core - - - - - 996.0

Top of Sand - - - - - 979.0

Bottom of Sand - - - (Analyzed) - - - 993.8

Total Feet of Permeable Sand - - - - - 10.0

Total Feet of Floodable Sand - - - - -

Distribution of Permeable Sand:
Permeability Range
Millidarcys

Feet

Cum. Ft.

0 - 50

1.6

1.6

50 - 100

2.7

4.3

100 - 200

4.3

8.6

200 & above

1.4

10.0

Average Permeability Millidarcys - - - - - 118.9

Average Percent Porosity - - - - - 19.0

Average Percent Oil Saturation - - - - - 66.1

Average Percent Water Saturation - - - - - 24.0

Average Oil Content, Bbls./A. Ft. - - - - - 981.

Total Oil Content, Bbls./Acre - - - - - 9,814.

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 - - - - -

- LOG -

Company Hill & Tate lease Tannahill Well No. 1Depth Interval, Description
FeetUPPER SQUIRREL SAND

931.0 - 931.5 - Brown slightly shaly sandstone.
931.5 - 932.4 - Brown shaly sandstone.
932.4 - 933.3 - Brown slightly shaly sandstone.
933.4 - 934.0 - Brown shaly sandstone.
934.0 - 936.0 - Brown slightly shaly sandstone.
936.0 - 940.5 - Dark brown sandstone.
940.5 - 941.5 - Brown finely laminated shaly sandstone.
941.5 - 942.5 - Laminated sandy shale.
942.5 - 948.0 - Sandy shale.

LOWER SQUIRREL SAND

979.0 - 980.1 - Dark carbonaceous slightly shaly sandstone.
980.1 - 982.0 - Gray laminated sandy shale.
982.0 - 982.5 - Dark carbonaceous shaly sandstone.
982.5 - 985.2 - Dark carbonaceous sandstone with a few shale streaks.
985.2 - 989.8 - Dark carbonaceous slightly laminated shaly sandstone.
989.8 - 991.0 - Gray sandy shale.
991.0 - 992.7 - Dark carbonaceous laminated shaly sandstone.
992.7 - 993.8 - Dark carbonaceous sandstone.
993.8 - 996.0 - Gray shaly sandstone.

RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company		Hill & Tate		Lease		Tannahill		Well No.		I	
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.		
1	931.1	13.9	36	42	78	389	6.5	0.5	0.5	194	3.25
2	932.5	14.8	48	35	83	551	5.4	1.3	1.8	716	7.02
3	933.1	17.7	42	34	76	577	4.2	1.2	3.0	692	5.04
4	934.1	16.1	47	35	82	588	3.7	0.6	3.6	353	2.22
5	935.1	15.8	51	33	84	626	4.4	1.4	5.0	876	6.16
6	936.1	17.3	56	25	81	752	23.	0.6	5.6	451	13.80
7	937.1	18.4	62	24	86	885	25.	1.0	6.6	885	25.00
8	938.1	16.1	53	28	81	662	19.	1.0	7.6	662	19.00
9	939.1	16.9	60	23	83	787	27.	1.0	8.6	787	27.00
10	940.1	17.1	53	31	84	703	42.	0.9	9.5	633	37.80
						UPPER SAND					
11	979.1	15.0	73	21	94	850	39.	1.1	1.1	935	42.90
12	982.1	14.3	32	62	94	355	0.42	0.5	1.6	177	0.21
13	983.1	19.5	58	20	78	877	125.	1.1	2.7	965	137.50
14	984.1	20.3	57	32	89	898	147.	1.0	3.7	898	147.00
15	985.1	20.3	74	18	92	1166	50.	0.6	4.3	699	30.00
16	986.1	17.7	65	24	89	893	301.	1.4	5.7	1250	421.25
17	987.1	20.0	77	16	93	1195	81.	1.0	6.7	1195	81.00
18	988.1	20.8	71	22	93	1146	135.	1.0	7.7	1146	135.00
19	989.1	19.9	65	24	89	1003	109.	1.2	8.9	1205	130.80
20	992.8	21.0	75	19	94	1222	58.	1.1	10.0	1344	63.80
						LOWER SAND					

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SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

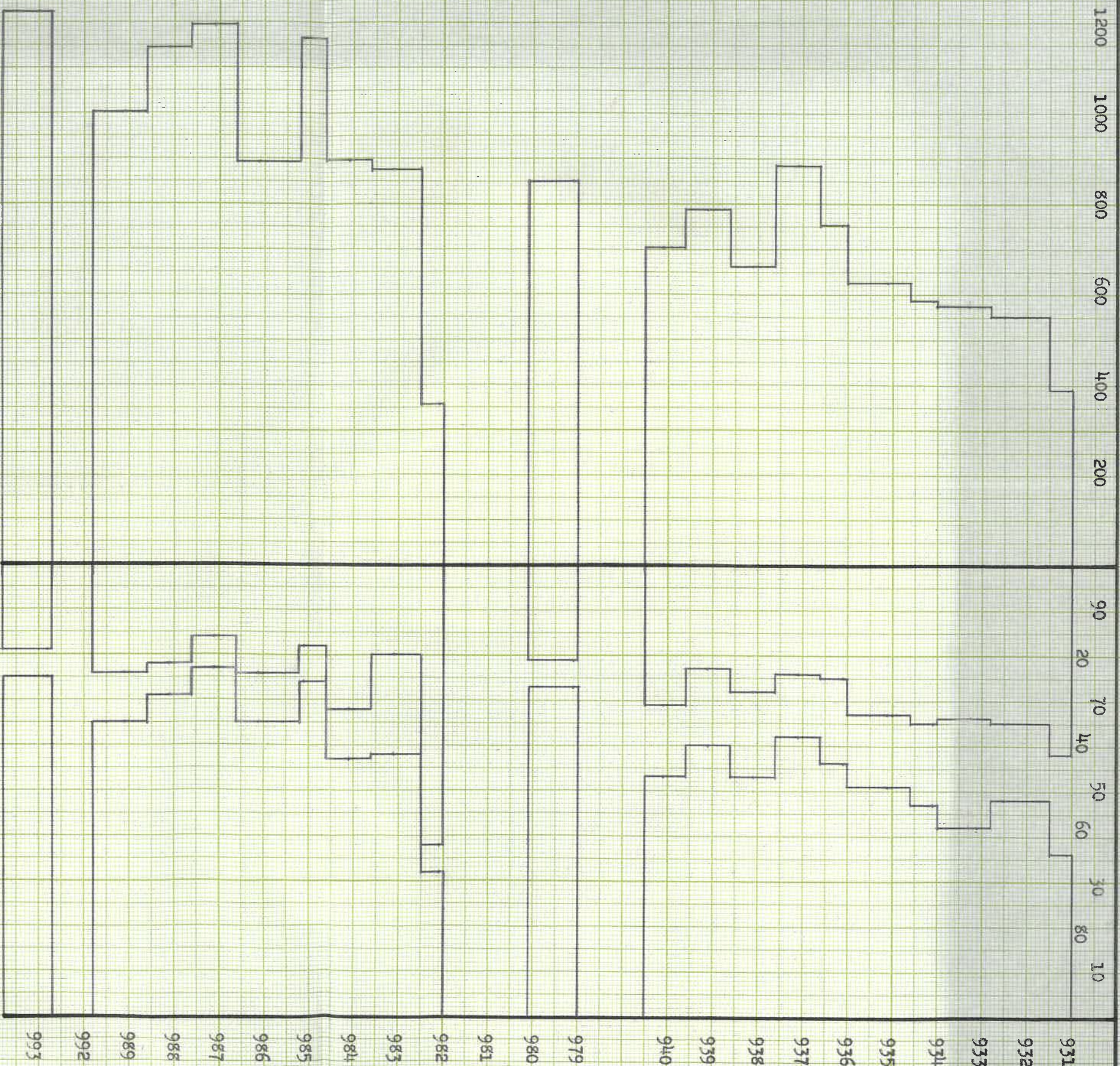
Company	Hill & Tate	Lease	Tannahill	Well No.	1
Depth Interval, Feet	Feet of Core Analyzed	Average Permeability, Millidarcys	Permeability Capacity, Ft. x Md.		
UPPER SAND					
931.0 - 936.0	5.0	4.7	23.69		
936.0 - 940.5	4.5	27.2	122.60		
931.0 - 940.5	9.5	15.4	146.29		
LOWER SAND					
979.0 - 993.8	10.0	118.9	1,189.46		
Depth Interval, Feet	Feet of Core Analyzed	Average Percent Porosity	Average Percent Oil Saturation	Average Percent Water Saturation	Total Oil Content Bbls./Acre
UPPER SAND					
931.0 - 936.0	5.0	15.8	44.1	34.9	2,831.
936.0 - 940.5	4.5	17.2	57.0	26.2	3,418.
931.0 - 940.5	9.5	16.4	51.2	30.8	6,249.
LOWER SAND					
979.0 - 993.8	10.0	19.0	66.1	24.0	9,814.

OIL CONTENT
BBLs./A. FT.

WATER SAT.
PERCENT



OIL SAT.
PERCENT



KEY:

SANDSTONE

CARBONACEOUS SANDSTONE

CARBONACEOUS SANDSTONE WITH A F

SHALY SANDSTONE

HILL

TANNHILL LE
WOODSON

UPPER SA

LOWER SA

979.0 - 993.8

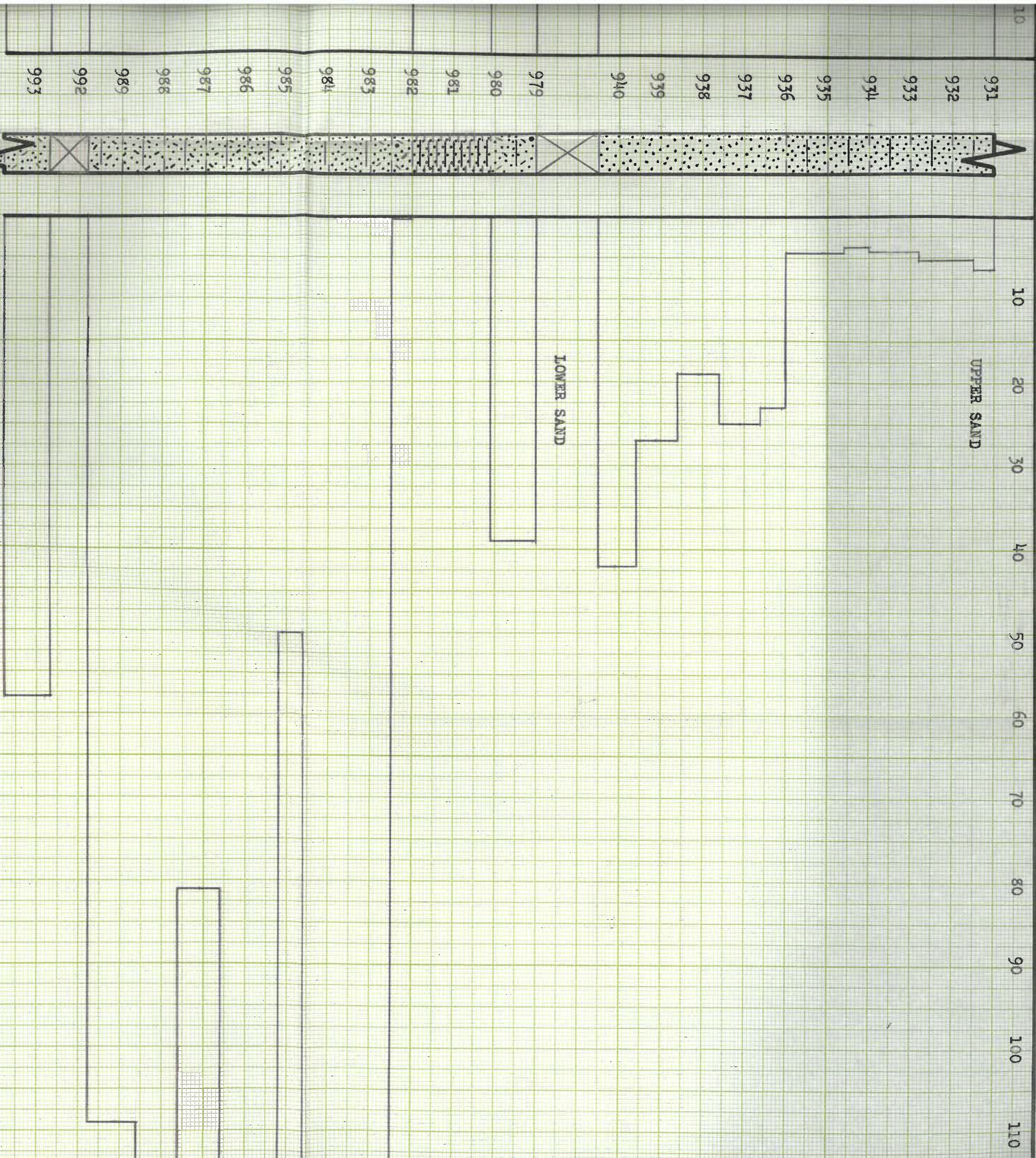
10.0

19.0

66.1

24.0

AIR PERMEABILITY, MILLIDARCS



STONE WITH A FEW SHALE STREAKS

HILL 8 TATE

WANNHILL LEASE WELL NO. 1
WOODSON COUNTY, KANSAS

AVG. WATER SATURATION PERCENT	AVG. OIL CONTENT BRIS./A.F.T.	TOTAL OIL CONTENT BRIS./ACRE	AVG. AIR PERMEABILITY MILLIDARCS
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UPPER SAND

34.9	566.	2,831.	4.7
26.2	760.	3,418.	27.2
30.8	658.	6,249.	15.4

LOWER SAND

24.0	981.	9,814.	118.9
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OILFIELD RESEARCH LABORATORIES
CHANDLER, KANSAS
MARCH, 1968