

OILFIELD RESEARCH LABORATORIES

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

February 17, 1966

Russell Operating Company
101 Petroleum Building
Abilene, Texas

Attn: Mr. James E. Russell

Gentlemen:

Enclosed herewith are the results of permeability and porosity tests run on the Rotary core taken from the McGhee Lease, Well No. 21-32, Anderson County, Kansas, and submitted to our laboratory on February 14, 1966.

This core was submitted to the laboratory by a representative of the client.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Benjamin R. Pearman
Benjamin R. Pearman

BRP:rf

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Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Russell Operating Company Lease McGhee Well No. 21-32

Location 695' SNL & 865' EWL, NW

Section 31 Twp. 22S Rge. 18E County Anderson State Kansas

Name of Sand	Squirrel
Top of Core	886.0
Bottom of Core	911.0
Top of Sand (Tested)	886.0
Bottom of Sand (Tested)	911.0
Total Feet of Permeable Sand	23.0
Total Feet of Floodable Sand	

Distribution of Permeable Sand:
Permeability Range
Millidarcys

	Feet	Cum. Ft.
0 - 5	6.0	6.0
5 - 10	8.0	14.0
10 - 20	3.0	17.0
20 - 50	6.0	23.0

Average Permeability Millidarcys	14.0
Average Percent Porosity	18.4
Average Percent Oil Saturation	
Average Percent Water Saturation	
Average Oil Content, Bbls./A. Ft.	
Total Oil Content, Bbls./Acre	
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	1047.3

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Company Russell Operating Company Lease McGhee Well No. 21-32

Depth Interval, Description
Feet

886.0 - 895.0 - Brown, slightly shaly sandstone.

895.0 - 901.0 - Brown, laminated, shaly sandstone.

901.0 - 905.0 - Finely laminated, sandy shale.

905.0 - 907.0 - Brown to dark, shaly sandstone.

907.0 - 911.0 - Light brown, laminated, shaly sandstone.

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RESULTS OF PERMEABILITY AND POROSITY TESTS

TABLE I A

Company Russell Operating Co. Lease McGhee Well No. 21-32

Sample No.	Depth, Feet	Permeability Millidarcys	Feet of Core		Permeability Capacity Ft. x Md.	Percent Porosity
			Ft.	Cum. Ft.		
1	886.5	31.	1.0	1.0	31.00	20.6
2	887.5	29.	1.0	2.0	29.00	21.3
3	888.5	18.	1.0	3.0	18.00	17.8
4	889.5	38.	1.0	4.0	38.00	20.6
5	890.5	45.	1.0	5.0	45.00	21.1
6	891.5	21.	1.0	6.0	21.00	19.1
7	892.5	35.	1.0	7.0	35.00	18.5
8	893.5	17.	1.0	8.0	17.00	18.6
9	894.5	2.9	1.0	9.0	2.90	16.6
10	895.5	7.5	1.0	10.0	7.50	17.6
11	896.5	5.0	1.0	11.0	5.00	17.9
12	897.5	2.3	1.0	12.0	2.30	16.1
13	898.5	4.3	1.0	13.0	4.30	16.6
14	899.5	6.1	1.0	14.0	6.10	17.5
15	900.5	6.9	1.0	15.0	6.90	17.4
16	901.5	4.0	1.0	16.0	4.00	18.2
17	902.5	Imp.	1.0	17.0	0.00	15.7
18	903.5	Imp.	1.0	18.0	0.00	15.3
19	904.5	1.1	1.0	19.0	1.10	16.8
20	905.5	5.6	1.0	20.0	5.60	16.7
21	906.5	8.2	1.0	21.0	8.20	18.7
22	907.5	7.9	1.0	22.0	7.90	20.2
23	908.5	8.1	1.0	23.0	8.10	19.9
24	909.5	7.7	1.0	24.0	7.70	20.0
25	910.5	11.	1.0	25.0	11.00	20.8

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SUMMARY OF PERMEABILITY & POROSITY TESTS

TABLE II A

Company	Russell Operating Company	Lease	McChee	Well No.	
Depth Interval, Feet	Feet of Core Analyzed	Average Air Permeability, Millidarcys	Average Effective Permeability, Millidarcys	Permeability Capacity Ft. x Md.	Average Percent Porosity
886.0 - 895.0	9.0	26.4		236.90	19.4
895.0 - 905.0	10.0	4.7		37.20	16.9
905.0 - 911.0	6.0	8.1		48.50	19.4
886.0 - 911.0	25.0	14.0		322.60	18.4

AIR PERMEABILITY, IN MILLIDARCY

48

44

40

36

32

28

24

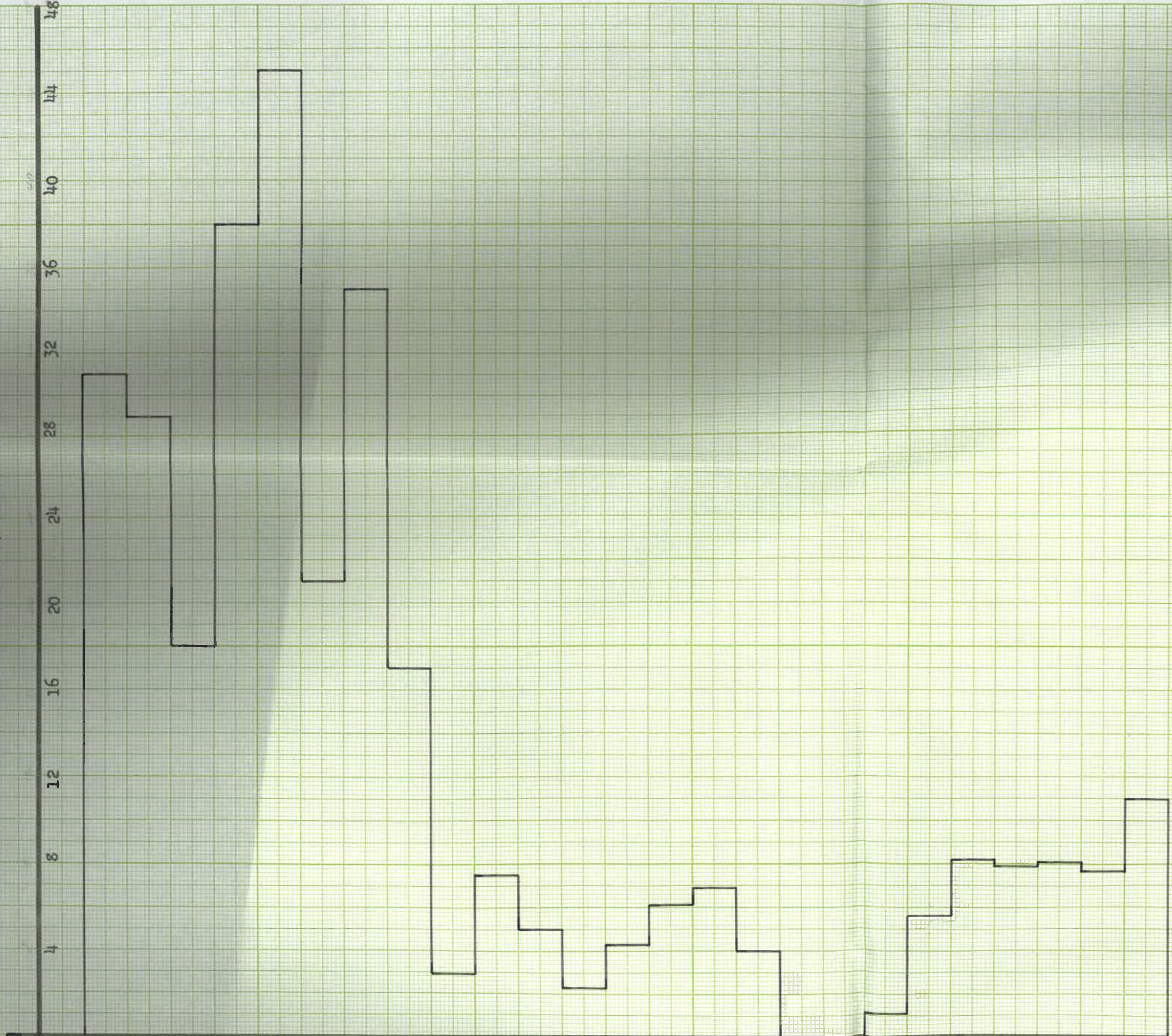
20

16

12

8

4



☐ SANDY SHALE

○ IMPERMEABLE TO AIR

ATING COMPANY

JNTY, KANSAS

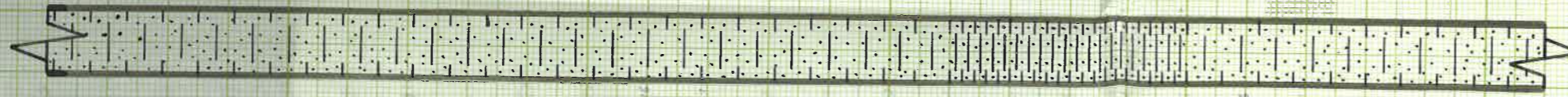
WELL NO. 21-32

AVERAGE AIR PERMEABILITY, MILLIDARCY	AVERAGE POROSITY, PERCENT
26.4	19.4
4.7	16.9
8.1	19.4
14.0	18.4

PERCENT POROSITY

22 20 18 16 14 12 10 8 6 4 2

886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911



SHALY SANDSTONE

RUSSELL OPERATING

McGHEE LEASE

ANDERSON COUNTY, KAN

DEPTH INTERVAL, FEET	FEET OF CORE ANALYZED	AV PER MT
886.0 - 895.0	9.0	
895.0 - 905.0	10.0	
905.0 - 911.0	6.0	
886.0 - 911.0	25.0	