

31-22-18E ✓
OILFIELD RESEARCH LABORATORIES

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

August 16, 1966

McGhee 21-33
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. 21-33, Anderson County, Kansas, and submitted to our laboratory on August 12, 1966.

This core was brought in 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

2 c. - Abilene, Texas
1 c. - Colony, Kansas
2 c. - Houston, Texas
1 c. - Chanute, Kansas

OILFIELD RESEARCH LABORATORIES

-LOG-

Company Russell Operating Co. Lease McGhee Well No. 21-33

<u>Depth Interval,</u>	<u>Description</u>
<u>Feet</u>	

860.0 - 861.0 - Sandy shale.

861.0 - 867.0 - Brown, laminated, shaly sandstone.

867.0 - 868.0 - Laminated sandy shale.

868.0 - 870.7 - Brown, laminated, slightly shaly sandstone.

870.7 - 871.0 - Sandy shale.

871.0 - 875.0 - Brown, slightly shaly sandstone.

875.0 - 877.0 - Brown, laminated, shaly sandstone.

877.0 - 893.0 - Brown, slightly shaly sandstone.

893.0 - 899.0 - Brown to dark, slightly carbonaceous, slightly shaly sandstone.

899.0 - 902.0 - Shale.

Oilfield Research Laboratories

RESULTS OF PERMEABILITY AND POROSITY TESTS

TABLE I A

Company Russell Operating Company Lease McGhee Well No. 21-33

Sample No.	Depth Feet	Permeability Millidarcys	Feet of Core		Permeability Capacity Ft. x Md.	Percent Porosity
			Ft.	Cum. Ft.		
1	860.5	Imp.	1.0	1.0	0.00	7.6
2	861.5	0.98	1.0	2.0	0.98	14.1
3	862.5	1.3	1.0	3.0	1.30	15.3
4	863.5	0.83	1.0	4.0	0.83	13.0
5	864.5	3.5	1.0	5.0	3.50	16.5
6	865.5	4.2	1.0	6.0	4.20	18.2
7	866.5	23.	1.0	7.0	23.00	21.6
8	867.5	0.43	1.0	8.0	0.43	10.0
9	868.5	33.	1.0	9.0	33.00	22.1
10	869.5	29.	1.0	10.0	29.00	21.5
11	870.5	20.	0.7	10.7	14.00	20.9
12	871.5	8.1	1.0	11.7	8.10	19.4
13	872.5	24.	1.0	12.7	24.00	20.6
14	873.5	35.	1.0	13.7	35.00	19.0
15	874.5	23.	1.0	14.7	23.00	20.4
16	875.5	0.87	1.0	15.7	0.87	13.3
17	876.5	1.7	1.0	16.7	1.70	11.8
18	877.5	11.	1.0	17.7	11.00	20.4
19	878.5	22.	1.0	18.7	22.00	21.4
20	879.5	21.	1.0	19.7	21.00	19.7
21	880.5	63.	1.0	20.7	63.00	20.7
22	881.5	53.	1.0	21.7	53.00	20.2
23	882.5	6.6	1.0	22.7	6.60	14.7
24	883.5	33.	1.0	23.7	33.00	19.5
25	884.5	41.	1.0	24.7	41.00	19.6
26	885.5	33.	1.0	25.7	33.00	19.6
27	886.5	37.	1.0	26.7	37.00	20.8
28	887.5	29.	1.0	27.7	29.00	21.1
29	888.5	13.	1.0	28.7	13.00	18.0
30	889.5	1.4	1.0	29.7	1.40	12.7
31	890.5	84.	1.0	30.7	84.00	21.1
32	891.5	41.	1.0	31.7	41.00	21.5
33	892.5	23.	1.0	32.7	23.00	19.6
34	893.5	39.	1.0	33.7	39.00	20.8
35	894.5	1.6	1.0	34.7	1.60	13.4
36	895.5	74.	1.0	35.7	74.00	21.8
37	896.5	63.	1.0	36.7	63.00	17.8
38	897.5	53.	1.0	37.7	53.00	22.4
39	898.5	16.	1.0	38.7	16.00	17.7

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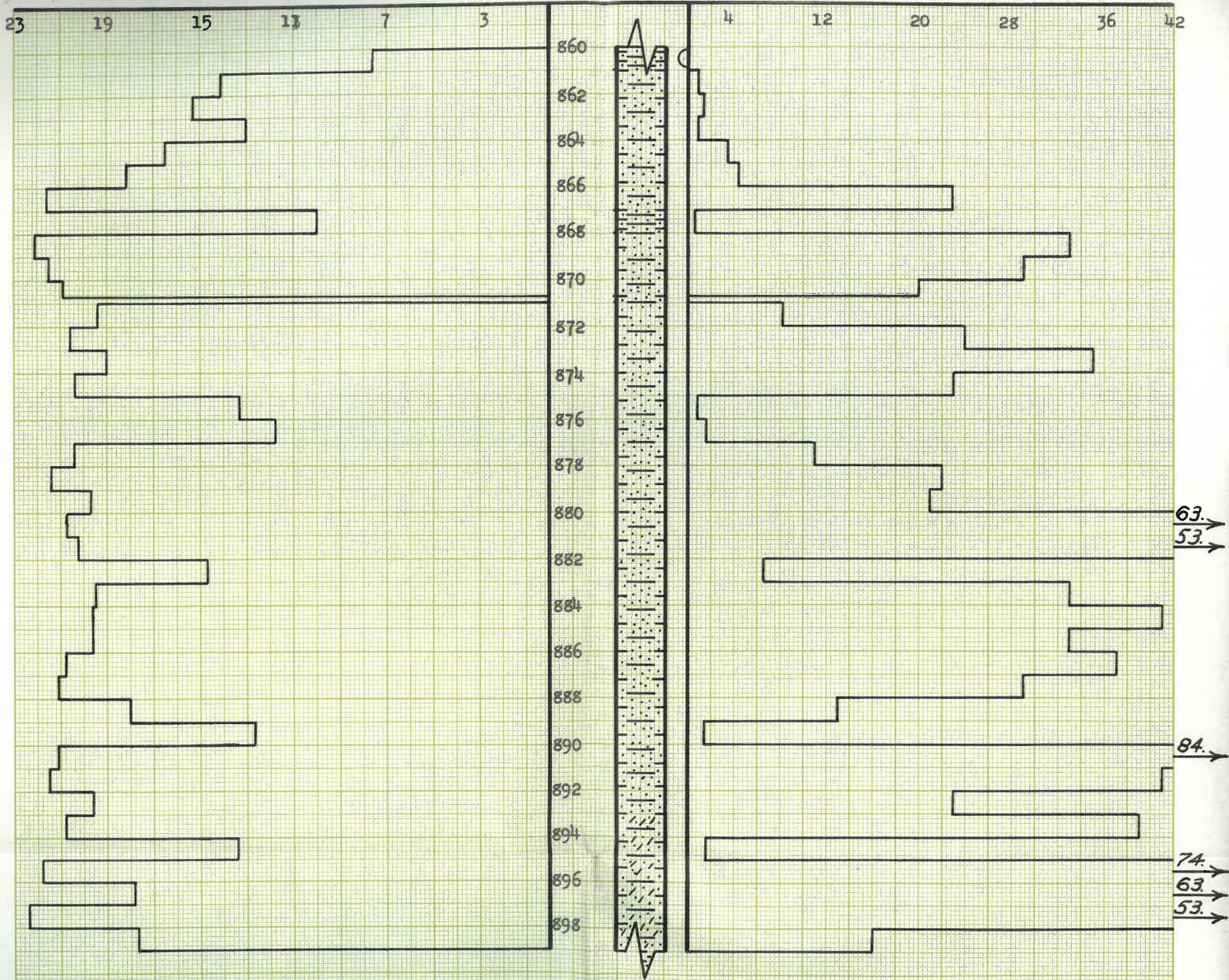
SUMMARY OF PERMEABILITY & POROSITY TESTS

TABLE II A

Company	Russell Operating Company	Lease	McGhee	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
860.0 - 870.7	10.7	11.4		110.24	16.3
871.0 - 893.0	22.0	27.4		604.67	18.9
893.0 - 899.0	6.0	41.1		246.60	19.0
860.0 - 899.0	38.7	25.6		961.51	18.2

PERCENT POROSITY

AIR PERMEABILITY, IN MILLIDARCY

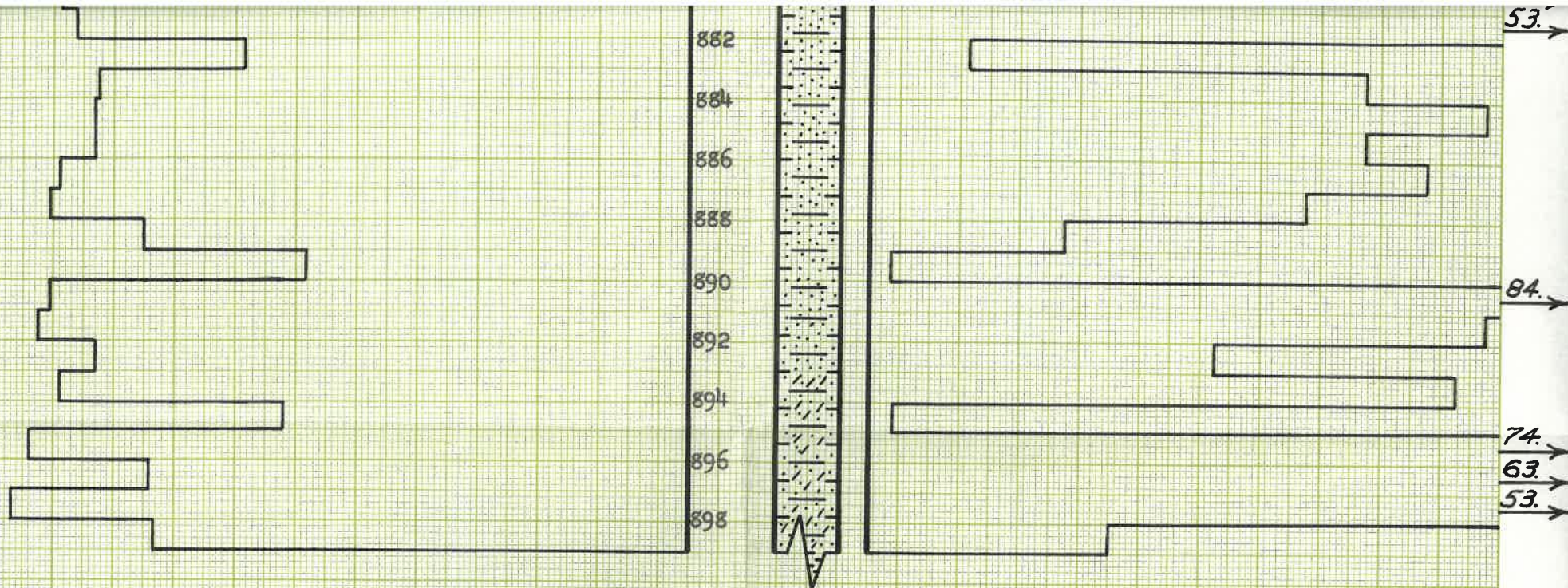


SHALY SANDSTONE
 CARBONACEOUS SHALY SANDSTONE
 SANDY SHALE
 SHALE
 ○ IMPERMEABLE TO AIR

RUSSELL OPERATING COMPANY

McGHEE LEASE WELL NO. 21-33
 ANDERSON COUNTY, KANSAS

DEPTH INTERVAL, FEET OF CORE AVG. AIR AVERAGE



SHALY SANDSTONE
 CARBONACEOUS SHALY SANDSTONE
 SANDY SHALE
 SHALE
 ○ IMPERMEABLE TO AIR

RUSSELL OPERATING COMPANY

McGHEE LEASE

ANDERSON COUNTY, KANSAS

WELL NO. 21-33

DEPTH INTERVAL, FEET	FEET OF CORE ANALYZED	AVG. AIR PERMEABILITY MILLIDARCY	AVERAGE POROSITY, PERCENT
860.0 - 870.7	10.7	11.4	16.3
871.0 - 893.0	22.0	27.4	18.9
893.0 - 899.0	6.0	41.1	19.0
860.0 - 899.0	38.7	25.6	18.2

OILFIELD RESEARCH LABORATORIES
 AUGUST, 1966
 CHANUTE, KANSAS