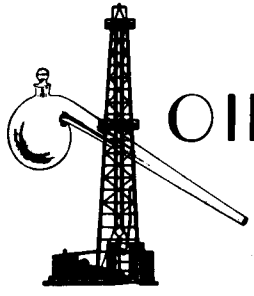


31-22-18E



OILFIELD RESEARCH LABORATORIES

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

February 14, 1966

Wolfe 13-10

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 Wolfe Lease, Well No. 13-10, Anderson County, Kansas, and submitted to our laboratory on February 11, 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

6 c.

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Russell Operating Company Lease Wolfe Well No. 13-10

Location 935' NSL & 622' EWL, W $\frac{1}{2}$ SE $\frac{1}{4}$

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

Name of Sand	Squirrel
Top of Core	847.0
Bottom of Core	895.0
Top of Sand	871.3
Bottom of Sand	889.2
Total Feet of Permeable Sand	17.1
Total Feet of Floodable Sand	

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 5	4.2	4.2
5 - 10	6.9	11.1
10 - 15	6.0	17.1

Average Permeability Millidarcys	8.4
Average Percent Porosity	17.3
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	1035.1

OILFIELD RESEARCH LABORATORIES

-LOG-

Company Russell Operating Co. Lease Wolfe Well No. 13-10

Depth Interval, Description
Feet

847.0 - 871.3 - Shale.

871.3 - 873.0 - Brown, laminated, shaly sandstone.

873.0 - 873.8 - Laminated sandy shale.

873.8 - 889.2 - Brown, slightly shaly sandstone.

889.2 - 895.0 - Shale.

Oilfield Research Laboratories
RESULTS OF PERMEABILITY AND POROSITY TESTS

TABLE I A

Company Russell Operating Co. Lease Wolfe Well No. 13-10

Sample No.	Depth, Feet	Permeability Millidarcys	Feet of Core		Permeability Capacity Ft. x Md.	Percent Porosity
			Ft.	Cum. Ft.		
1	871.5	10.	0.7	0.7	7.00	17.8
2	872.5	0.74	1.0	1.7	0.74	15.7
3	873.5	Imp.	0.8	2.5	0.00	7.9
4	874.5	2.0	1.2	3.7	2.40	16.0
5	875.5	3.8	1.0	4.7	3.80	18.4
6	876.5	8.8	1.0	5.7	8.80	20.3
7	877.5	1.4	1.0	6.7	1.40	15.4
8	878.5	11.	1.0	7.7	11.00	19.9
9	879.5	11.	1.0	8.7	11.00	20.4
10	880.5	7.0	1.0	9.7	7.00	19.3
11	881.5	12.	1.0	10.7	12.00	19.4
12	882.5	9.7	1.0	11.7	9.70	19.6
13	883.5	15.	1.0	12.7	15.00	20.0
14	884.5	15.	1.0	13.7	15.00	18.5
15	885.5	15.	1.0	14.7	15.00	19.2
16	886.5	7.3	1.0	15.7	7.30	13.9
17	887.5	7.3	1.0	16.7	7.30	13.4
18	888.5	8.3	1.2	17.9	9.96	15.1

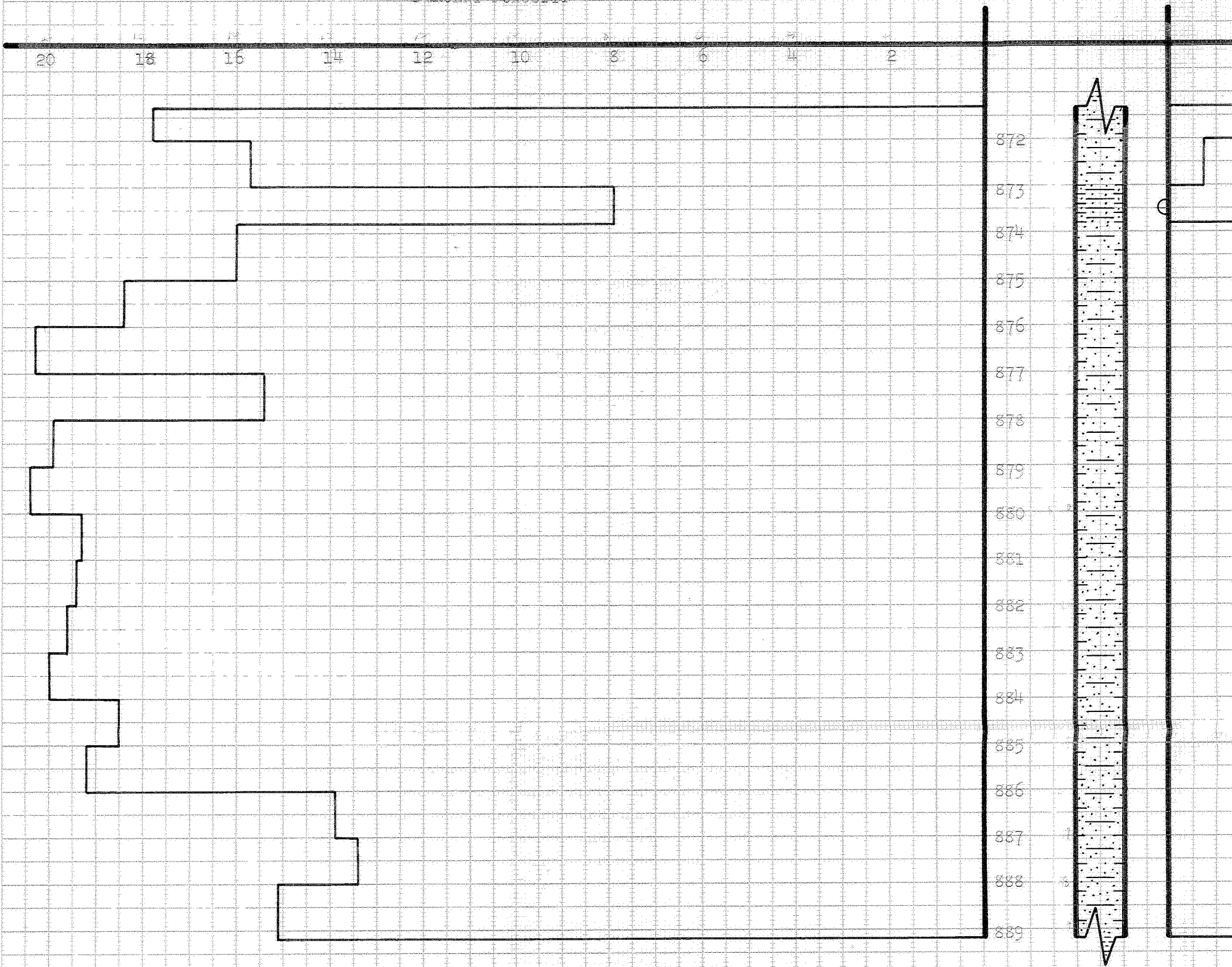
Oilfield Research Laboratories

SUMMARY OF PERMEABILITY & POROSITY TESTS

TABLE II A

Company, <u>Russell Operating Co.</u>		Lease <u>Wolfe</u>		Well No. <u>13-10</u>	
<u>Depth Interval, Feet</u>	<u>Feet of Core Analyzed</u>	<u>Average Air Permeability, Millidarcys</u>	<u>Average Effective Permeability, Millidarcys</u>	<u>Permeability Capacity Ft. x Md.</u>	<u>Average Percent Porosity</u>
871.3 - 878.0	6.7	4.1		24.14	16.1
878.0 - 889.2	11.2	10.7		120.26	18.0
871.3 - 889.2	17.9	8.4		144.40	17.3

PERCENT POROSITY



SHALY SANDSTONE



SANDY SHALE

RUSSELL OPERATING

WOLFE LEASE

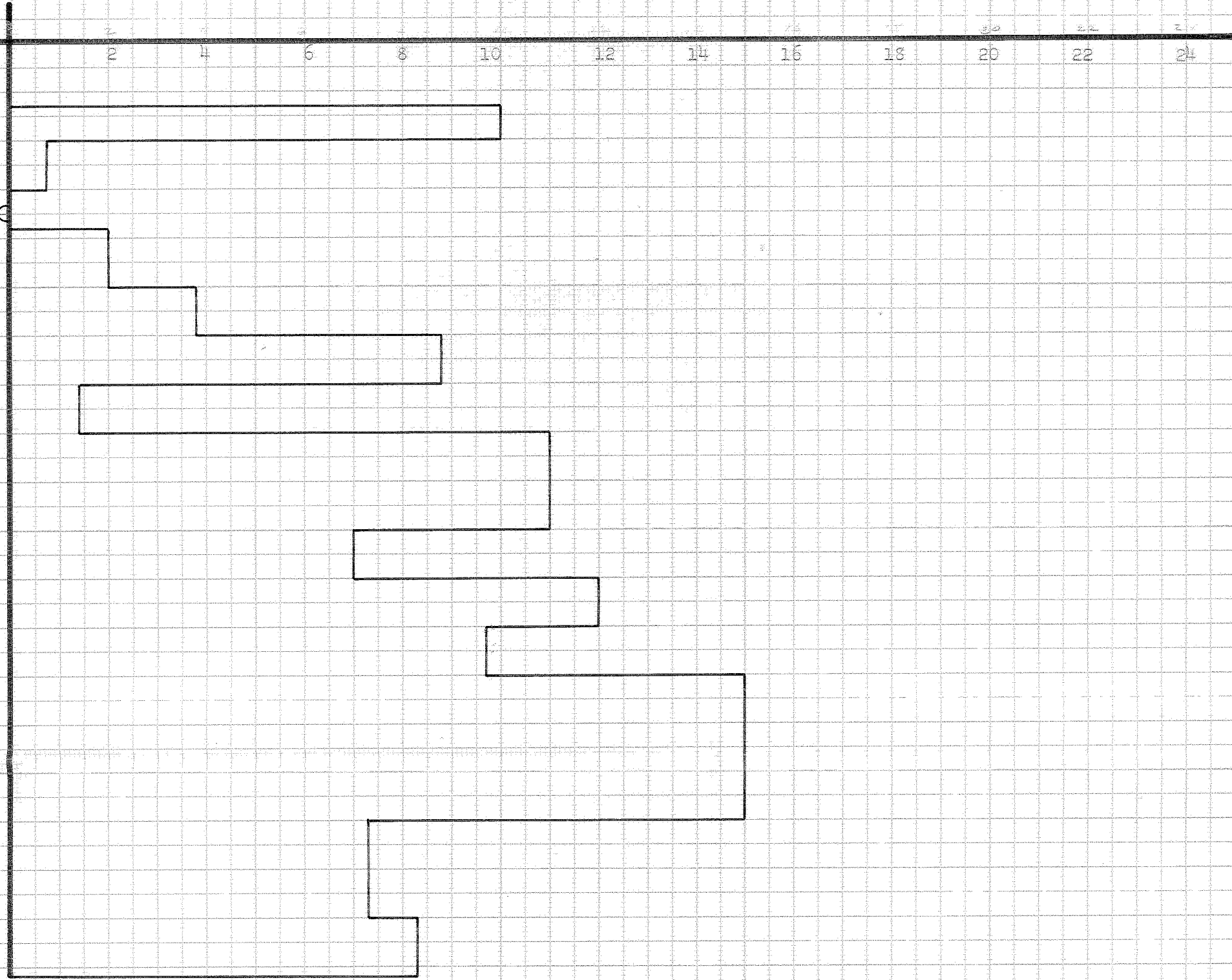
ANDERSON COUNTY, INDIANA

DEPTH INTERVAL, FEET	FEET OF CORE ANALYZED	AV PORO MIL
871.3 - 878.0	6.7	
878.0 - 889.2	11.2	
871.3 - 889.2	17.9	

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

K+M STANDARD
MILLIMETER © CROSS SEC

AIR PERMEABILITY, IN MILLIDARCYs



SHALE

○ IMPERMEABLE TO AIR

OPERATING COMPANY

WELL NO. 13-10

SON COUNTY, KANSAS

CORE DEPTH	AVG. AIR PERMEABILITY, MILLIDARCYs	AVERAGE POROSITY, PERCENT
	4.1	16.1
	10.7	18.0
	8.4	17.3

OILFIELD RESEARCH LABORATORIES
CHAMUTE, KANSAS
FEBRUARY, 1966