

## OILFIELD RESEARCH LABORATORIES

813 EAST SIXTH  
OKMULGEE, OKLAHOMA  
PHONE 1486

- REGISTERED ENGINEERS -

Chanute, Kansas

536 N. HIGHLAND  
CHANUTE, KANSAS  
PHONE 728

February 18, 1959

Woodson Pipe Line & Producing Co.  
Iola, Kansas

Gentlemen:

Enclosed herewith are the results of tests run on the 3" Rotary core taken from the Shafer Lease, Well No. 1-A, Woodson County, Kansas, and submitted to our laboratory by an employee of the client on February 11, 1959.

It is recommended that the pipe be perforated from a depth of 1230.0 to 1240.0 feet.

This core was sampled and the samples sealed in cans by a representative of the client.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

*Carl L. McElrea*  
Carl L. McElrea

CLM:cs

2 c.

23-26-14E

1-A

Shafer

# Oilfield Research Laboratories

## GENERAL INFORMATION & SUMMARY

Company Woodson Pipe Line & Producing Co. Lease Shafer Well No. 1-A

Location 510' E. of W. Line & 140' N. of S. Line, W $\frac{1}{2}$ , NW $\frac{1}{4}$

Section 23 Twp. 26S Rge. 14E County Woodson State Kansas

Name of Sand - - - - - Bartlesville

Top of Core - - - - - 1213.0

Bottom of Core - - - - - 1256.0

Good

Top of Sand - - - - - 1228.6

Bottom of Sand - - - - - 1241.9

Total Feet of Permeable Sand - - - - - 5.0

Total Feet of Floodable Sand - - - - - 5.0

Distribution of Permeable Sand:  
Permeability Range  
Millidarcys

Feet

Cum. Ft.

Effective

Average/Permeability Millidarcys - - - - - 3.17

Average Percent Porosity - - - - - 18.4

Average Percent Oil Saturation - - - - - 40.4

Average Percent Water Saturation - - - - - 33.1

Average Oil Content, Bbls./A. Ft. - - - - - 575.

Total Oil Content, Bbls./Acre - - - - - 8,279.

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 - - - - - 917.8

## OILFIELD RESEARCH LABORATORIES

LOGCompany Woodson Pipe Line & Producing Co. Lease Shafer Well No. 1-A

| <u>Depth Interval,<br/>Feet</u> | <u>Description</u>                           |
|---------------------------------|----------------------------------------------|
| 1213.0 - 1216.0                 | - Dark shale.                                |
| 1216.0 - 1217.4                 | - Laminated shale and coal.                  |
| 1217.4 - 1218.1                 | - Coal.                                      |
| 1218.1 - 1219.0                 | - Laminated coal and shale.                  |
| 1219.0 - 1227.5                 | - Gray sandy shale.                          |
| 1227.5 - 1228.6                 | - Grayish light brown shaley sandstone.      |
| 1228.6 - 1231.0                 | - Brown shaley sandstone.                    |
| 1231.0 - 1232.1                 | - Brown and gray laminated shaley sandstone. |
| 1232.1 - 1235.2                 | - Brown shaley sandstone.                    |
| 1235.2 - 1238.4                 | - Dark brown sandstone.                      |
| 1238.4 - 1241.9                 | - Brown conglomeratic sandstone.             |
| 1241.9 - 1242.5                 | - Coal.                                      |
| 1242.5 - 1256.0                 | - Gray sandy shale.                          |

## RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

## Effective

| 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          | 1227.9      | 19.4                       | 26                 | 57    | 83    | 391                       | Imp.         | 1.1          | 1.1      | 430               |                          |
| 2          | 1228.7      | 24.1                       | 28                 | 43    | 71    | 524                       | Imp.         | 0.8          | 1.9      | 419               |                          |
| 3          | 1230.1      | 18.9                       | 53                 | 17    | 70    | 777                       | Imp.         | 1.6          | 3.5      | 1,243             |                          |
| 4          | 1231.9      | 11.6                       | 40                 | 38    | 78    | 360                       | Imp.         | 1.1          | 4.6      | 396               |                          |
| 5          | 1233.2      | 17.2                       | 44                 | 25    | 69    | 588                       | Imp.         | 2.0          | 6.6      | 1,176             |                          |
| 6          | 1235.0      | 17.3                       | 40                 | 31    | 71    | 537                       | Imp.         | 1.1          | 7.7      | 591               |                          |
| 7          | 1236.2      | 20.4                       | 43                 | 25    | 68    | 681                       | 1.31         | 2.0          | 9.7      | 1,362             |                          |
| 8          | 1238.2      | 21.3                       | 46                 | 23    | 69    | 760                       | 8.30         | 1.2          | 10.9     | 912               |                          |
| 9          | 1239.2      | 17.4                       | 40                 | 48    | 88    | 540                       | Imp.         | 1.7          | 12.6     | 918               |                          |
| 10         | 1241.2      | 17.5                       | 34                 | 37    | 71    | 462                       | 1.81         | 1.8          | 14.4     | 832               |                          |
|            |             |                            |                    |       |       |                           |              | Total        | - - -    | 8,279             |                          |

# Oilfield Research Laboratories

## SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

| Company | Woodson Pipe Line & Producing Co. | Lease | Shafer | Well No. | 1-A |
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WOODSON PIPELINE & PRODUCING COMPANY

SHAFER I-A

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1216

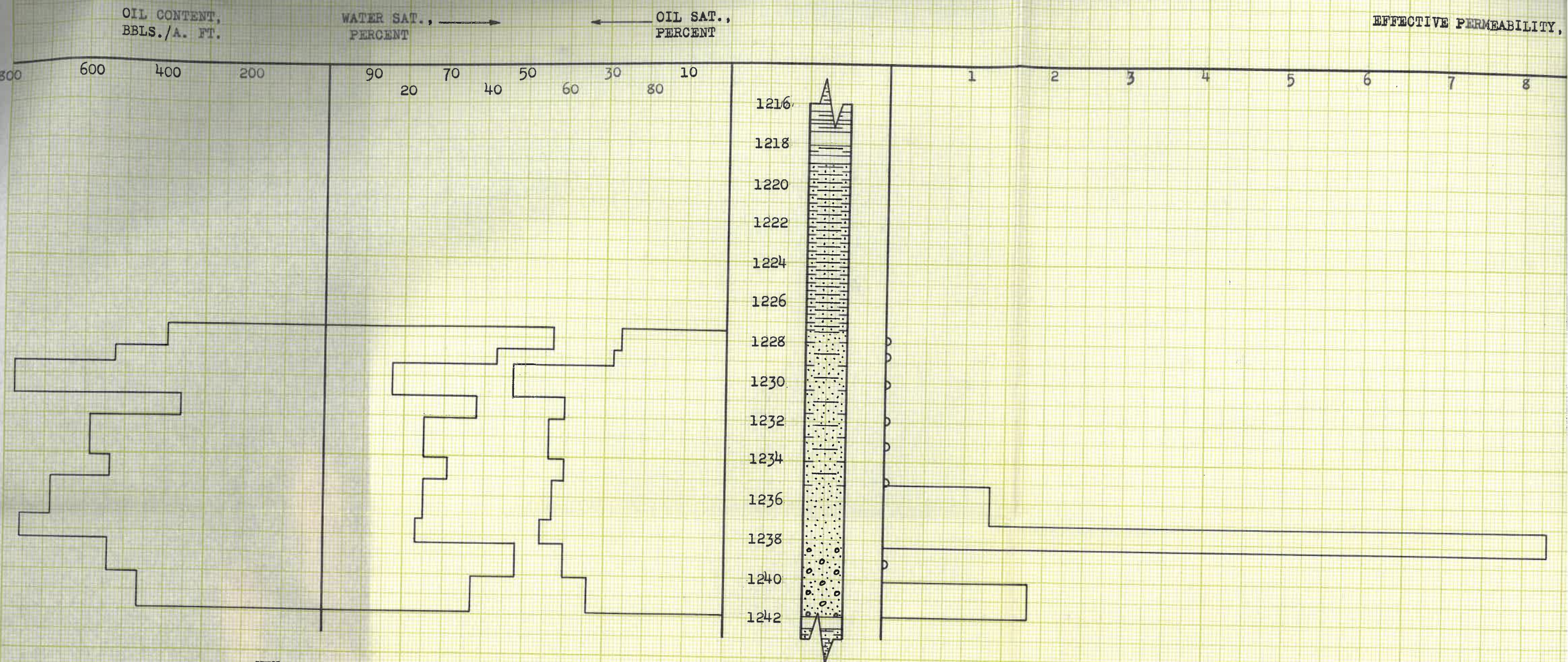
1219

1225

1228

1231





KEY:

 SANDSTONE  
 SHALEY SANDSTONE  
 CONGLOMERATIC SANDSTONE

 SANDY SHALE  
 COAL

 LAMINATED COAL  
 IMPERMEABLE TO OIL

# WOODSON PIPE LINE & PRODUCING COMPANY

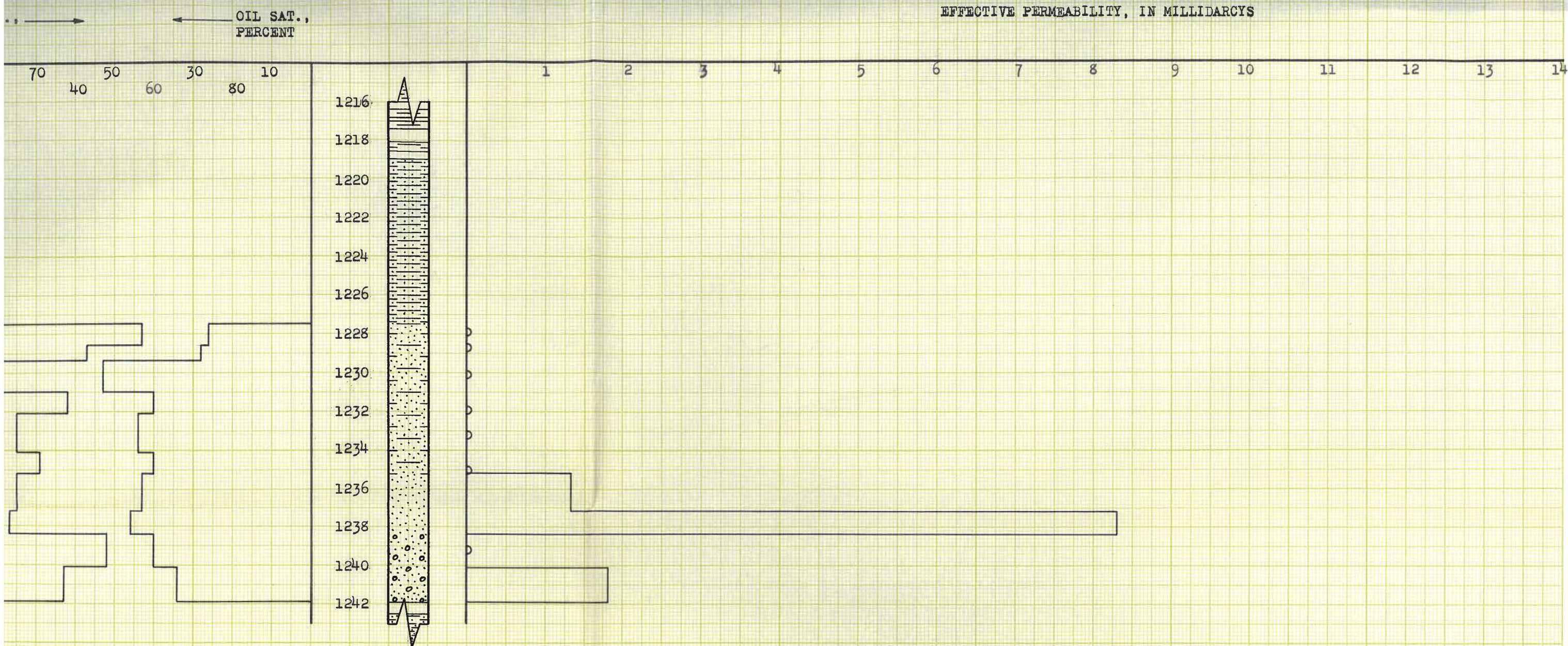
SHAFFER LEASE

WOODSON COUNTY, KANSAS

WELL NO. 1-A

| DEPTH INTERVAL,<br>FEET | FEET OF CORE<br>ANALYZED | AVERAGE<br>POROSITY,<br>PERCENT | AVG. OIL<br>SATURATION<br>PERCENT | AVG. WATER<br>SATURATION<br>PERCENT | AVG. OIL<br>CONTENT<br>BBLs./A.FT. | TOTAL OIL<br>CONTENT<br>BBLs./ACRE | AVG. EFFECTIVE<br>PERMEABILITY,<br>MILLIDARCYs |
|-------------------------|--------------------------|---------------------------------|-----------------------------------|-------------------------------------|------------------------------------|------------------------------------|------------------------------------------------|
| 1227.5 - 1241.9         | 14.4                     | 18.4                            | 40.4                              | 33.1                                | 575                                | 8,279                              | 3.17                                           |





STONE

# WOODSON PIPE LINE & PRODUCING COMPANY

HAFFER LEASE

WELL NO. 1-A

WOODSON COUNTY, KANSAS

| DEPTH INTERVAL,<br>FEET | FEET OF CORE<br>ANALYZED | AVERAGE<br>POROSITY,<br>PERCENT | AVG. OIL<br>SATURATION<br>PERCENT | AVG. WATER<br>SATURATION<br>PERCENT | AVG. OIL<br>CONTENT<br>BBLs./A.FT. | TOTAL OIL<br>CONTENT<br>BBLs./ACRE | AVG. EFFECTIVE<br>PERMEABILITY,<br>MILLIDARCYS |
|-------------------------|--------------------------|---------------------------------|-----------------------------------|-------------------------------------|------------------------------------|------------------------------------|------------------------------------------------|
| 1227.5 - 1241.9         | 14.4                     | 18.4                            | 40.4                              | 33.1                                | 575                                | 8,279                              | 3.17                                           |

OILFIELD RESEARCH LABORATORIES  
CHANUTE, KANSAS  
FEBRUARY, 1959

STANDARD CROSS SECTION  
MILLIMETER

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



WOODSON PIPELINE & PRODUCING COMPANY

SHAHER I-A

1234

1237

1240

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38



31



3e



41  
 48 MJLT X TIRAG 8000



40



39



39  
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