

17-233 ✓
OILFIELD RESEARCH LABORATORIES

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



December 2, 1967

Mr. H. S. Woodard
Route 3
Warrenton, Missouri 63383

Dear Sir:

Enclosed herewith are the results of tests run on the Cable tool core taken from the Fisher Lease, Well No. 1-P, Miami County, Kansas, and submitted to our laboratory on November 27, 1967.

This core was sampled and the samples sealed in cans by a representative of Oilfield Research Laboratories.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Carl L. Pate
by bjo

Carl L. Pate

CLP:bjo

6 c. - Warrenton, Missouri

Fisher 1-P

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company H. S. Woodard Lease Fisher Well No. 1-P

Location 330° WEL and 840° SNL, NW/4

Section 19 Twp. 17S Rge. 23E County Miami State Kansas

| | |
|------------------------------|-------|
| Name of Sand | Peru |
| Top of Core | 360.7 |
| Bottom of Core | 379.3 |
| Top of Sand - (Cored) | 360.7 |
| Bottom of Sand | 375.1 |
| Total Feet of Permeable Sand | 14.4 |
| Total Feet of Floodable Sand | |

Distribution of Permeable Sand:

| Permeability Range Millidarcys | Feet | Cum. Ft. |
|-----------------------------------|------|----------|
| 0 - 100 | 2.7 | 2.7 |
| 100 - 200 | 4.3 | 7.0 |
| 200 - 300 | 3.6 | 10.6 |
| 300 - 400 | 1.0 | 11.6 |
| 400 & above | 2.8 | 14.4 |

| | |
|---|--------|
| Average Permeability Millidarcys | 257.8 |
| Average Percent Porosity | 24.3 |
| Average Percent Oil Saturation | 36.3 |
| Average Percent Water Saturation | 55.8 |
| Average Oil Content, Bbls./A. Ft. | 624. |
| Total Oil Content, Bbls./Acre | 8,995. |
| 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

- LOG -

Company H. S. Woodard Lease Fisher Well No. 1-P

Depth Interval, Description
Feet

360.7 - 363.3 - Light brown slightly laminated shaly sandstone.

363.3 - 364.2 - Light brown calcareous sandstone.

364.2 - 374.5 - Brown slightly laminated shaly sandstone.

374.5 - 375.1 - Brown slightly calcareous sandstone.

375.1 - 378.0 - Sandy lime.

378.0 - 379.3 - Shale.

Oilfield Research Laboratories

RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company H. S. Woodward

Lease Fisher

Well No. 1-P

| Sample No. | Depth, Feet | Effective Porosity Percent | Percent Saturation | | | Oil Content Bbbs. / A Ft. | Perm., Mill. | Feet of Sand | | Total Oil Content | Perm. Capacity Ft. X md. |
|------------|-------------|----------------------------|--------------------|-------|-------|---------------------------|--------------|--------------|----------|-------------------|--------------------------|
| | | | Oil | Water | Total | | | Ft. | Cum. Ft. | | |
| 1 | 361.0 | 24.8 | 26 | 71 | 97 | 500 | 489. | 0.8 | 0.8 | 400 | 391.25 |
| 2 | 362.0 | 22.7 | 28 | 63 | 91 | 493 | 37. | 1.0 | 1.8 | 493 | 37.00 |
| 3 | 363.0 | 21.0 | 38 | 58 | 96 | 619 | 44. | 0.8 | 2.6 | 495 | 360.00 |
| 4 | 364.0 | 8.2 | 37 | 48 | 85 | 235 | 57. | 0.9 | 3.5 | 212 | 51.30 |
| 5 | 365.0 | 28.6 | 37 | 51 | 88 | 821 | 178. | 1.3 | 4.8 | 231 | 106.70 |
| 6 | 366.0 | 25.6 | 35 | 64 | 99 | 695 | 582. | 1.0 | 5.8 | 695 | 582.00 |
| 7 | 367.0 | 27.6 | 30 | 67 | 97 | 643 | 153. | 1.0 | 6.8 | 643 | 153.00 |
| 8 | 368.0 | 25.9 | 36 | 46 | 82 | 724 | 288. | 1.0 | 7.8 | 724 | 288.00 |
| 9 | 369.0 | 26.7 | 44 | 45 | 89 | 911 | 241. | 1.0 | 8.8 | 911 | 241.00 |
| 10 | 370.0 | 28.2 | 34 | 61 | 95 | 744 | 437. | 1.0 | 9.8 | 744 | 437.00 |
| 11 | 371.0 | 27.9 | 42 | 54 | 96 | 909 | 298. | 1.0 | 10.8 | 909 | 298.00 |
| 12 | 372.0 | 26.8 | 36 | 51 | 87 | 749 | 145. | 1.0 | 11.8 | 749 | 145.00 |
| 13 | 373.0 | 22.4 | 38 | 57 | 95 | 660 | 147. | 1.0 | 12.8 | 660 | 147.00 |
| 14 | 374.0 | 26.6 | 42 | 48 | 90 | 867 | 329. | 1.0 | 13.8 | 867 | 329.00 |
| 15 | 375.0 | 13.4 | 42 | 55 | 97 | 437 | 244. | 0.6 | 14.4 | 262 | 146.35 |

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SUMMARY OF PERMEABILITY & SATURATION TESTS

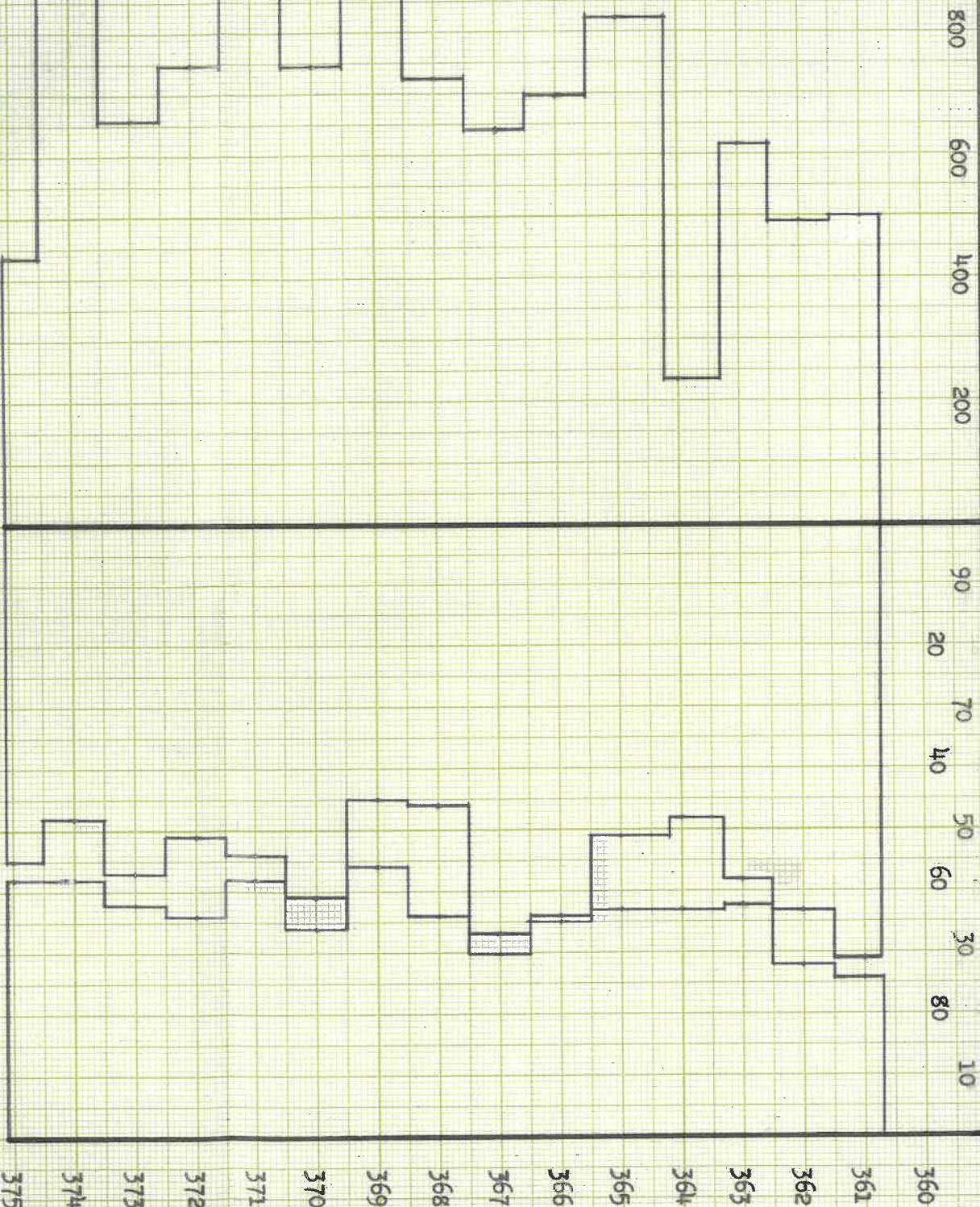
TABLE III

| Company | H. S. Woodard | Lease | Fisher | Well No. | 1-P | |
|---------|-------------------------|--------------------------|---|--|---------------------------------------|------------------------------------|
| | Depth Interval, Feet | Feet of Core Analyzed | Average Permeability, Millidarcys | Permeability Capacity Ft. x Md. | | |
| | 360.7 - 367.5 | 6.8 | 247.2 | 1,681.25 | | |
| | 367.5 - 375.1 | 7.6 | 267.3 | 2,031.35 | | |
| | 360.7 - 375.1 | 14.4 | 257.8 | 3,712.60 | | |
| | Depth Interval, Feet | Feet of Core Analyzed | Average Percent Oil Saturation | Average Percent Water Saturation | Average Oil Content Bbl./A. Ft. | Total Oil Content Bbls./Acre |
| | 360.7 - 367.5 | 6.8 | 23.1 | 33.2 | 466. | 3,169. |
| | 367.5 - 375.1 | 7.6 | 25.3 | 39.1 | 766. | 5,826. |
| | 360.7 - 375.1 | 14.4 | 24.3 | 36.3 | 624. | 8,995. |

OIL CONTENT
BELS./A. FT.

WATER SAT.,
PERCENT

OIL SAT.,
PERCENT



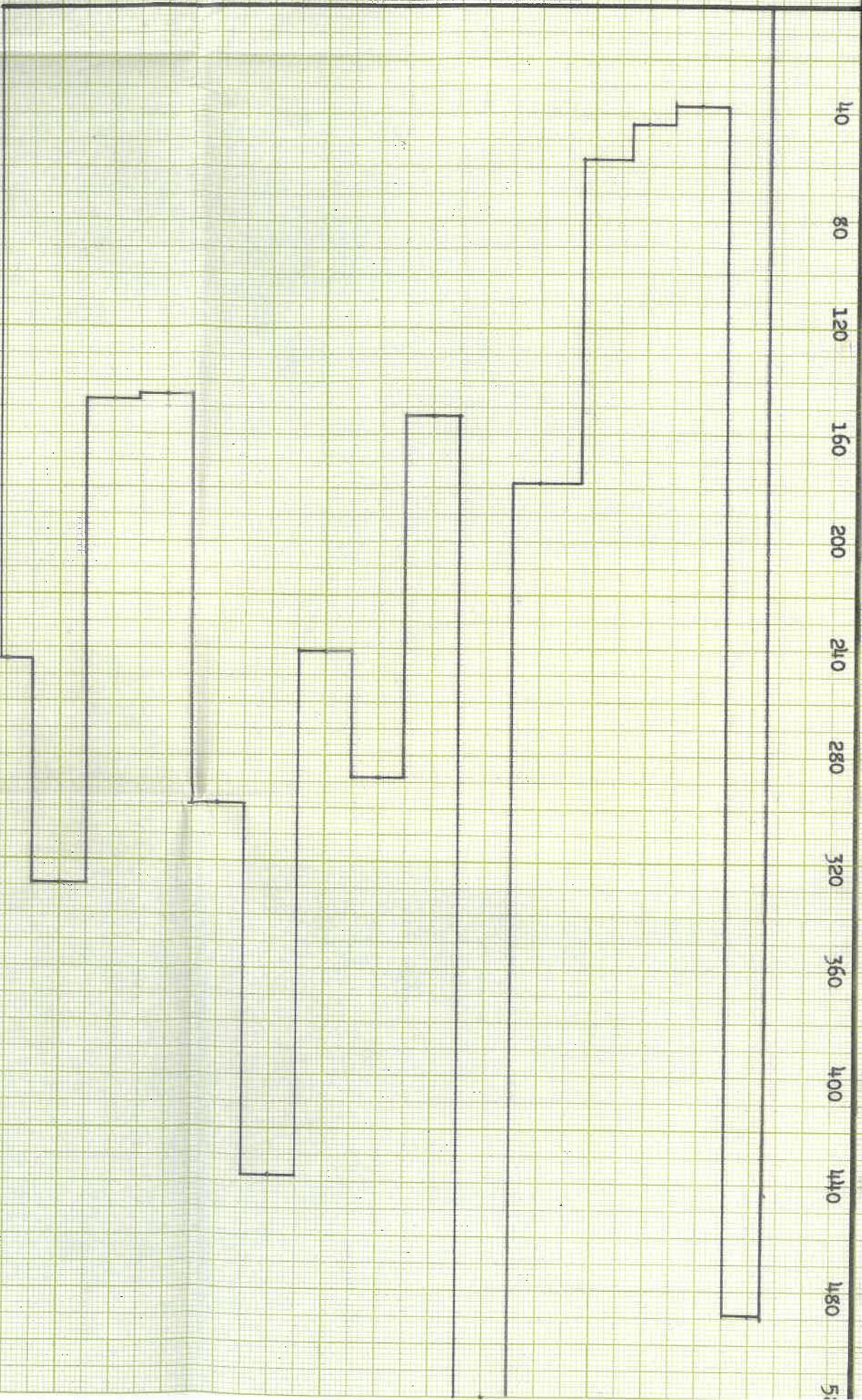
KEY:
SHALY SANDSTONE

CALCAREOUS SANDSTONE

H. S. W.O.
FISHER LEASE
MIAMI COUNTY,

| DEPTH INTERVAL FEET | FEET OF CORE ANALYZED | AVERAGE POROSITY PERCENT | AVG. OIL SATURATION PERCENT | AVG. WATER SATURATION PERCENT |
|------------------------|--------------------------|--------------------------------|-----------------------------------|-------------------------------------|
| 369.7 - 367.5 | 6.8 | 23.1 | 33.2 | 59.8 |
| 367.5 - 375.1 | 7.6 | 25.3 | 39.1 | 52.0 |
| 360.7 - 375.1 | 14.4 | 24.3 | 36.3 | 55.6 |

AIR PERMEABILITY, MILLIDARCY



DSTONE

SANDY LIMESTONE

WOODARD

LEASE WELL NO. 1-P
LANI COUNTY, KANSAS

| AVG. WATER SATURATION PERCENT | AVG. OIL CONTENT BBL.S./A. FT. | TOTAL OIL CONTENT BBL.S./ACRE | AVG. AIR PERMEABILITY MILLIDARCY |
|-------------------------------|--------------------------------|-------------------------------|----------------------------------|
| 59.8 | 466 | 3,169 | 247.2 |
| 52.0 | 766 | 5,826 | 267.3 |
| 55.6 | 624 | 8,995 | 257.8 |

OILFIELD RESEARCH LABORATORIES
CHANUTE, KANSAS
DECEMBER, 1967