

# OILFIELD RESEARCH LABORATORIES

536 NORTH HIGHLAND - CHANUTE, KANSAS 66720 - PHONE (316) 431-2650

November 25, 1981

Dick Shannon  
3000 North 123rd.  
Kansas City, Kansas 66109

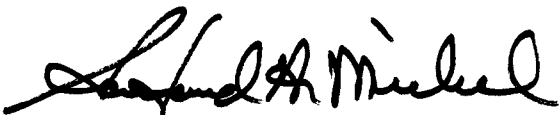
Gentlemen:

Enclosed herewith is the report of the analysis of the rotary core taken from the Shannon Lease, Well No. 1, located in Wyandotte County, Kansas and submitted to our laboratory on November 14, 1981.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES



Sanford A. Michel

SAM/mkf

5 c to Kansas City, Ks.

# Oilfield Research Laboratories

## GENERAL INFORMATION & SUMMARY

Company Dick Shannon Lease Shannon Well No. 1  
 Location NE $\frac{1}{4}$   
 Section 32 Twp. 10S Rge. 23E County Wyandotte State Kansas

Elevation, Feet .....

Name of Sand.....

SQUIRREL

Top of Core .....

504.0

Bottom of Core .....

507.6

Top of Sand .....

504.0

Bottom of Sand .....

507.6

Total Feet of Permeable Sand .....

3.6

Total Feet of Floodable Sand .....

0.0

| Distribution of Permeable Sand:<br>Permeability Range<br>Millidarcys | Feet | Cum. Ft. |
|----------------------------------------------------------------------|------|----------|
| 0 - 10                                                               | 1.0  | 1.0      |
| 10 - 20                                                              | 0.6  | 1.6      |
| 50 - 70                                                              | 2.0  | 3.6      |

Average Permeability Millidarcys .....

37.3

Average Percent Porosity .....

14.5

Average Percent Oil Saturation .....

27.0

Average Percent Water Saturation .....

49.6

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

318.

Total Oil Content, Bbls./Acre .....

1,145.

Average Percent Oil Recovery by Laboratory Flooding Tests .....

0.

Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft. ....

0.

Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre .....

0.

Total Calculated Oil Recovery, Bbls./Acre .....

0.

The core was sampled and the samples sealed in plastic bags by a representative of the client. Fresh water mud was used as a drilling fluid. The core was reported to be from a virgin area.

Inasmuch as the core did not respond to flooding susceptibility tests, no calculated recovery is given.

#### FORMATION CORED

The detailed log of the formation cored is as follows:

| Depth Interval,<br>Feet | Description                                        |
|-------------------------|----------------------------------------------------|
| 504.0 - 506.6           | Brown sandstone.                                   |
| 506.6 - 507.6           | Grayish brown slightly calcareous shaly sandstone. |

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## RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Dick Shannon Lease Shannon Well No. 1

| 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          | 504.6       | 17.8                       | 35                 | 43    | 78    | 483                       | 62.          | 1.0          | 1.0      | 483               | 62.00                    |
| 2          | 505.4       | 14.7                       | 34                 | 50    | 84    | 388                       | 54.          | 1.0          | 2.0      | 388               | 54.00                    |
| 3          | 506.5       | 12.8                       | 27                 | 39    | 66    | 268                       | 19.          | 0.6          | 2.6      | 161               | 11.40                    |
| 4          | 507.4       | 12.1                       | 12                 | 62    | 74    | 113                       | 6.8          | 1.0          | 3.6      | 113               | 6.80                     |

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## SUMMARY OF PERMEABILITY & SATURATION TESTS

TABLE III

| Company | Dick Shannon            | Lease                    | Shannon                                 | Well No.                              | 1                                      |                                    |
|---------|-------------------------|--------------------------|-----------------------------------------|---------------------------------------|----------------------------------------|------------------------------------|
|         | Depth Interval,<br>Feet | Feet of Core<br>Analyzed | Average<br>Permeability,<br>Millidarcys | Permeability<br>Capacity<br>Ft. x Md. |                                        |                                    |
|         | 504.0 - 507.6           | 3.6                      | 37.3                                    | 134.20                                |                                        |                                    |
|         | Depth Interval,<br>Feet | Feet of Core<br>Analyzed | Average<br>Percent<br>Porosity          | Average<br>Percent Oil<br>Saturation  | Average<br>Percent Water<br>Saturation | Total Oil<br>Content<br>Bbbl./Acre |
|         | 504.0 - 507.6           | 3.6                      | 14.5                                    | 27.0                                  | 49.6                                   | 318                                |
|         |                         |                          |                                         |                                       |                                        | 1,145                              |

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## RESULTS OF LABORATORY FLOODING TESTS

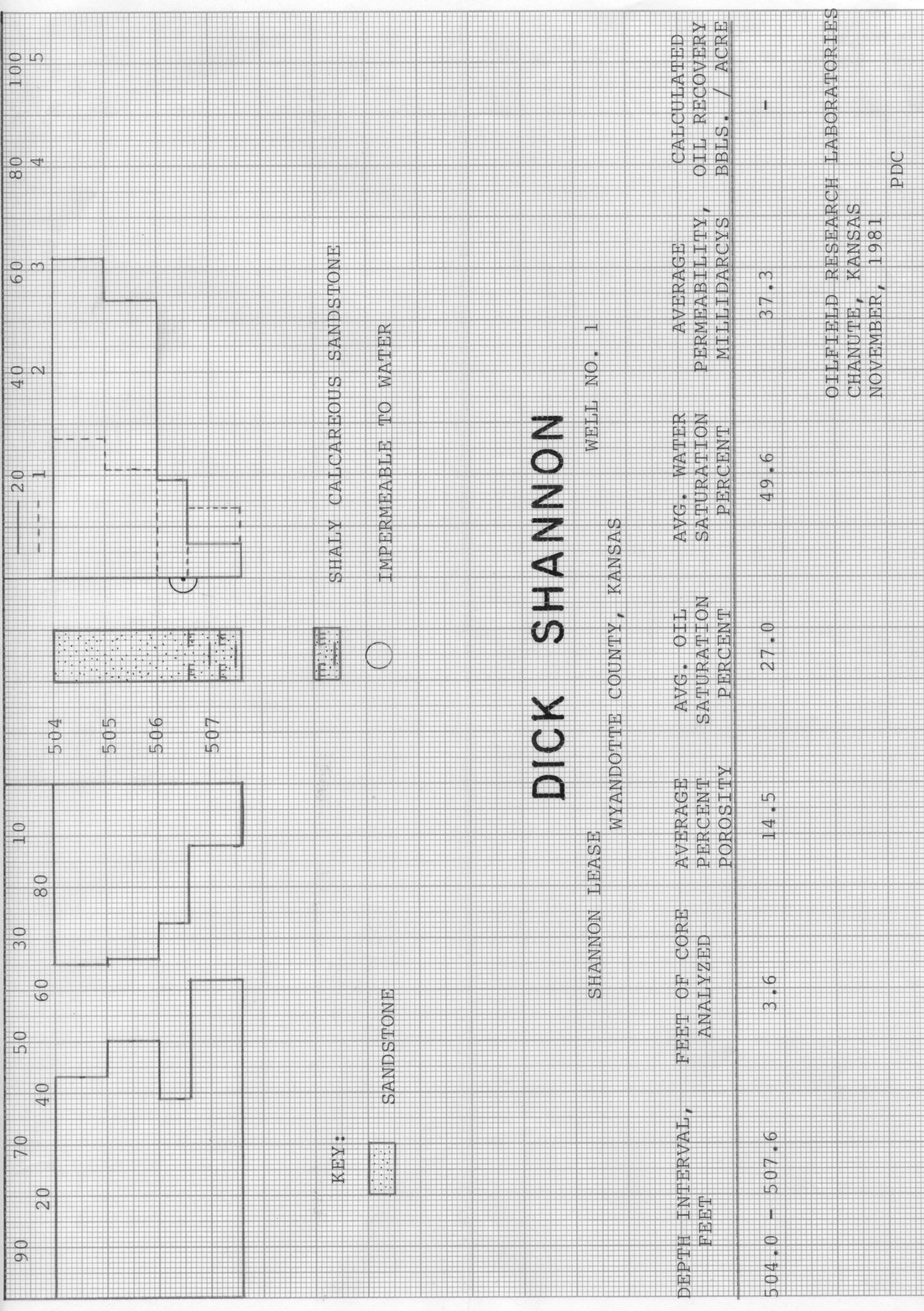
TABLE IV

| Company    |             | Dick Shannon               |                         | Lease        |              | Shannon      |                     | Well No. |                               | 1                                    |                                                |
|------------|-------------|----------------------------|-------------------------|--------------|--------------|--------------|---------------------|----------|-------------------------------|--------------------------------------|------------------------------------------------|
| Sample No. | Depth, Feet | Effective Porosity Percent | Original Oil Saturation |              | Oil Recovery |              | Residual Saturation |          | Volume of Water Recovered cc* | Effective Permeability Millidarcys** | Initial Fluid Production Pressure Lbs./Sq./In. |
|            |             |                            | %                       | Bbls./A. Ft. | %            | Bbls./A. Ft. | % Oil               | % Water  |                               |                                      |                                                |
| 1          | 504.6       | 18.2                       | 34                      | 480          | 0            | 0            | 34                  | 57       | 72                            | 1.35                                 | 30                                             |
| 2          | 505.4       | 14.5                       | 34                      | 382          | 0            | 0            | 34                  | 59       | 62                            | 1.05                                 | 25                                             |
| 3          | 506.5       | 12.3                       | 28                      | 267          | 0            | 0            | 28                  | 42       | 0                             | Imp.                                 | -                                              |
| 4          | 507.4       | 12.0                       | 12                      | 112          | 0            | 0            | 12                  | 78       | 26                            | 0.67                                 | 50                                             |

Notes: cc—cubic centimeter.

\*—Volume of water recovered at the time of maximum oil recovery.

\*\*—Determined by passing water through sample which still contains residual oil.



DICK SHANNON

WELL NO. 1

SHANNON LEASE

WYANDOTTE COUNTY, KANSAS

SHALY CALCAREOUS SANDSTONE

IMPERMEABLE TO WATER

SANDSTONE

OILFIELD RESEARCH LABORATORIES  
CHANUTE, KANSAS  
NOVEMBER, 1981

PDC