

# OILFIELD RESEARCH LABORATORIES

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

November 12, 1980

HB Drilling & Service, Inc.  
Box 283  
Parsons, Kansas 67357

Gentlemen:

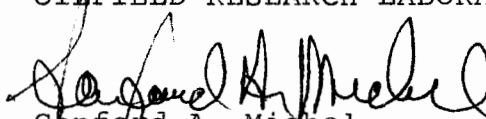
Attached hereto are the results of tests run on the rotary core taken from the Casey Lease, Well No. A-4, located in Section 18, T-29S, R-21E, Neosho County, Kansas.

The core was sampled and sealed in plastic bags by a representative of the client and submitted to our laboratory on November 3, 1980.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES



Sanford A. Michel

SAM/tem

5 c to Parsons, Kansas

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LOGName HB Drilling & Service, Inc. Lease Casey Well No. A-4

| <u>Depth Interval,<br/>Feet</u> | <u>Description</u>                                       |
|---------------------------------|--|
|                                 | PERU SAND  |
| 164.0 - 165.2                   | Gray sandy shale.  |
| 165.2 - 173.3                   | Grayish light brown shaly slightly calcareous sandstone. |
| 173.3 - 174.9                   | Gray carbonaceous shaly slightly calcareous sandstone.   |
| 212.0 - 216.1                   | Grayish light brown limestone.                           |
| 216.1 - 217.7                   | Gray limestone.  |
| 217.7 - 218.6                   | Light brown limestone.                                   |
| 218.6 - 222.4                   | Gray limestone.  |

**Oilfield Research Laboratories**

**RESULTS OF SATURATION & PERMEABILITY TESTS**

**TABLE 1**

Company HB Drilling & Service, Inc. Lease Casey Well No. A-4

| Sample No. | Depth, Feet | Porosity Percent | Percent Saturation |       |       | Oil Content Bbls. / A Ft. | Perm., Mill. |
|------------|-------------|------------------|--------------------|-------|-------|---------------------------|--------------|
|            |             |                  | Oil                | Water | Total |                           |              |
| 1          | 165.5       | 11.6             | 27                 | 70    | 97    | 243                       | Imp.         |
| 2          | 166.5       | 9.4              | 25                 | 67    | 92    | 182                       | Imp.         |
| 3          | 167.5       | 15.1             | 25                 | 49    | 74    | 293                       | 1.2          |
| 4          | 168.5       | 12.9             | 25                 | 58    | 83    | 250                       | 1.3          |
| 5          | 170.5       | 16.2             | 33                 | 47    | 80    | 415                       | 6.0          |
| 6          | 171.5       | 15.9             | 27                 | 45    | 72    | 333                       | 2.9          |
| 7          | 172.5       | 13.4             | 27                 | 50    | 77    | 281                       | 4.3          |
| 8          | 173.5       | 15.7             | 41                 | 46    | 87    | 499                       | 3.3          |
| 9          | 174.5       | 15.0             | 43                 | 42    | 85    | 500                       | 0.23         |
| 10         | 212.5       | 9.5              | 51                 | 44    | 95    | 376                       | Imp.         |
| 11         | 213.5       | 12.8             | 32                 | 17    | 49    | 318                       | 0.38         |
| 12         | 214.5       | 12.7             | 63                 | 35    | 98    | 621                       | 0.54         |
| 13         | 215.5       | 14.1             | 37                 | 53    | 90    | 405                       | 1.3          |
| 14         | 218.5       | 9.7              | 42                 | 23    | 65    | 316                       | 0.84         |