

## FORMATION LOG

Augusta Oil Co., Inc.  
 #1 Levering  
 SW SW SW; 5-26S-3E  
 Butler County, Kansas  
 Elevation: 1316 Kelly Bushing  
 1314 Derrick Floor  
 1310 Ground

8 5/8" Casing: 129'  
 5 1/2" Casing: 2846'  
 Comm: 6-5-57  
 Comp:

NOTE: All measurements are from the top of the kelly bushing and are drilling measurements:

| <u>Depth</u> | <u>Formation Description</u>                                                        | <u>Remarks</u>                       |
|--------------|-------------------------------------------------------------------------------------|--------------------------------------|
| 0 - 22       | Soil and clay                                                                       | Drillers log 0-1600'                 |
| 22 - 34      | Sand and gravel                                                                     |                                      |
| 34 - 190     | Limestone and shale                                                                 |                                      |
| 190 - 305    | Limestone and shale streaks                                                         |                                      |
| 305 - 420    | Limestone and shale                                                                 |                                      |
| 420 - 32     | Red rock                                                                            |                                      |
| 432 - 830    | Limestone and shale                                                                 |                                      |
| 830 - 40     | Red rock                                                                            |                                      |
| 840 - 1310   | Shale and shells                                                                    |                                      |
| 1310 - 1572  | Limestone and shale streaks                                                         |                                      |
| 1572 - 1600  | Limestone                                                                           | Log from electric log<br>1600 - 2000 |
| 1600 - 08    | Limestone with shale streaks                                                        |                                      |
| 1608 - 16    | Shale                                                                               | Some porosity                        |
| 1616 - 30    | Limestone                                                                           |                                      |
| 1630 - 70    | Shale, a few limestone streaks                                                      | Some porosity                        |
| 1670 - 98    | Limestone                                                                           |                                      |
| 1698 - 1714  | Shale                                                                               | Some porosity                        |
| 1714 - 52    | Limestone                                                                           |                                      |
| 1752 - 70    | Shale, a few limestone streaks                                                      | Sample log 2000 - T.D.               |
| 1770 - 90    | Limestone (possibly sand)                                                           |                                      |
| 1790 - 1830  | Shale, a few limestone streaks                                                      | Top Lansing                          |
| 1830 - 66    | Limestone (possibly sand)                                                           |                                      |
| 1866 - 1951  | Shale                                                                               | Top Lansing                          |
| 1951 - 63    | Limestone                                                                           |                                      |
| 1963 - 79    | Shale                                                                               | Top Lansing                          |
| 1979 - 93    | Limestone                                                                           |                                      |
| 1993 - 2000  | Shale, possibly some thin sand streaks                                              | Top Lansing                          |
| 2000 - 40    | Shale, gray, some streaks fine gray sand at top                                     |                                      |
| 2040 - 80    | Limestone, light gray to tan, dense to finely crystalline. A few thin shale streaks | Top Lansing                          |

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| 1310 - 1572  | Limestone and shale streaks                                                         |                                      |
| 1572 - 1600  | Limestone                                                                           | Log from electric log<br>1600 - 2000 |
| 1600 - 08    | Limestone with shale streaks                                                        |                                      |
| 1608 - 16    | Shale                                                                               | Some porosity                        |
| 1616 - 30    | Limestone                                                                           |                                      |
| 1630 - 70    | Shale, a few limestone streaks                                                      |                                      |
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| 1951 - 63    | Limestone                                                                           |                                      |
| 1963 - 79    | Shale                                                                               |                                      |
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| 2040 - 80    | Limestone, light gray to tan, dense to finely crystalline, A few thin shale streaks |                                      |
|              |                                                                                     | Sample log 2000 - T.D.               |
|              |                                                                                     | Top Lansing                          |

-2- Formation Log: Augusta Oil Co., Inc. #1 Levering.

| <u>Depth</u> | <u>Formation Description</u>                                             | <u>Remarks</u>                         |
|--------------|--------------------------------------------------------------------------|----------------------------------------|
| 2080 - 2106  | Limestone as above, chalky<br>some fossils                               | Porous, no show                        |
| 2106 - 11    | Limestone as above, less porous                                          |                                        |
| 2111 - 13    | Shale gray and green                                                     |                                        |
| 2113 - 22    | Limestone tan finely crystal-<br>line                                    |                                        |
| 2122 - 34    | Limestone, cream, crystalline,<br>fossiliferous, vuglar                  | Very porous<br>No show                 |
| 2134 - 76    | Limestone, light tan to brown,<br>dense to subcrystalline                |                                        |
| 2176 - 79    | Shale, with limestone streaks                                            |                                        |
| 2179 - 98    | Limestone, darker brown,<br>dense                                        |                                        |
| 2198 - 2209  | Shale, gray and brown                                                    |                                        |
| 2209 - 14    | Limestone, dark gray-brown,<br>subcrystalline to dense                   |                                        |
| 2214 - 29    | Limestone, gray to tan, fine-<br>ly crystalline, chalky                  | Porous. No show                        |
| 2229 - 31    | Limestone, gray dense                                                    | Base Lansing                           |
| 2231 - 2317  | Shale, gray and maroon                                                   |                                        |
| 2317 - 22    | Limestone gray, brown, dense                                             | Top Kansas City Limestone              |
| 2322 - 25    | Shale, gray                                                              |                                        |
| 2325 - 36    | Limestone as above                                                       |                                        |
| 2336 - 44    | Shale, gray and black                                                    |                                        |
| 2344 - 70    | Limestone, tan, subcrystalline<br>to finely crystalline, some<br>fossils | Streaks of porosity,<br>No show        |
| 2370 - 74    | Shale, gray, with thin lime-<br>stone streaks                            |                                        |
| 2374 - 98    | Limestone as above                                                       | Good porosity 2377-79<br>No show       |
| 2398 - 99    | Shale, green and gray                                                    |                                        |
| 2399 - 2414  | Limestone, tan to brown<br>subcrystalline. Some thin shale<br>streaks    |                                        |
| 2414 - 20    | Limestone light gray to tan<br>subcrystalline, fossiliferous             | Slight porosity<br>2400-20<br>No show  |
| 2420 - 26    | Limestone as above, some<br>chert, no porosity                           |                                        |
| 2426 - 30    | Shale, gray                                                              |                                        |
| 2430 - 52    | Limestone tan to brown, dense,<br>to subcrystalline, fossiliferous       | Very good porosity<br>3434-46. No show |
| 2452 - 56    | Shale, gray                                                              |                                        |
| 2456 - 68    | Limestone as above                                                       |                                        |

-3- Formation Log: Augusta Oil Co., Inc. #1 Levering.

| <u>Depth</u> | <u>Formation Description</u>                                                                      | <u>Remarks</u>   |
|--------------|---------------------------------------------------------------------------------------------------|------------------|
| 2468 - 2475  | Limestone, tan, subcrystalline, fossiliferous                                                     | Some porosity    |
| 2475 - 80    | Limestone, as above, no porosity                                                                  | No show          |
| 2480 - 99    | Shale, gray, green-gray, maroon                                                                   | Base Kansas City |
| 2499 - 2501  | Limestone, light tan, fossiliferous                                                               |                  |
| 2501 - 36    | Shale as above                                                                                    |                  |
| 2536 - 44    | Shale as above, some thin limestone streaks                                                       |                  |
| 2544 - 49    | Shale as above                                                                                    |                  |
| 2549 - 61    | Limestone, gray-tan to brown, subcrystalline to dense, shaly; trace chert, gray, opaque, speckled |                  |
| 2561 - 64    | Shale as above                                                                                    |                  |
| 2564 - 67    | Limestone as above                                                                                |                  |
| 2567 - 71    | Shale as above                                                                                    |                  |
| 2571 - 80    | Sand, green-gray, submedium shaly. Some green inclusions                                          |                  |
| 2580 - 94    | Shale as above                                                                                    |                  |
| 2594 - 2601  | Limestone, light gray, subcrystalline to dense                                                    |                  |
| 2601 - 07    | Shale as above                                                                                    |                  |
| 2607 - 10    | Limestone, brown, dense; some green-gray limestone                                                |                  |
| 2610 - 27    | Shale, as above                                                                                   |                  |
| 2627 - 34    | Limestone tan to gray, finely crystalline, resinous                                               |                  |
| 2634 - 48    | Shale, as above, some thin limestone streaks                                                      |                  |
| 2648 - 52    | Limestone, light tan, dense                                                                       |                  |
| 2652 - 65    | Shale, gray, green, brown                                                                         |                  |
| 2665 - 83    | Limestone, tan, brown, gray, dense. Some chert, gray opaque. Some shale streaks                   |                  |
| 2683 - 2722  | Shale as above, streaks of limestone as above                                                     |                  |
| 2722 - 36    | Limestone, gray-brown, dense; some streaks of shale as above                                      |                  |
| 2736 - 54    | Shale as above                                                                                    |                  |
| 2754 - 59    | Chert, green-gray, brown, translucent to opaque                                                   |                  |
| 2759 - 80    | Shale, green to gray, possibly a trace of chert as above                                          |                  |

-4- Formation Log: Augusta Oil Company, Inc. #1 Levering.

| <u>Depth</u> | <u>Formation Description</u>                                                                                            | <u>Remarks</u>                                                           |
|--------------|-------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| 2780 - 2783  | Limestone, gray, shaly, some chert                                                                                      | Top Mississippi 2780                                                     |
| 2783 - 92    | Chert white, vitreous to devitrified. Some gray and green chert. Some vugular porosity                                  | Zone #1 - Trace odor, trace free oil. Fair stain and fluorescence D.S.T. |
| 2792 - 94    | Shale, green and gray                                                                                                   |                                                                          |
| 2794 - 2804  | Dolomite, light tan, very finely sucrose. No apparent porosity in samples. Electric log shows some porosity             | No show                                                                  |
| 2804 - 15    | Dolomite as above, darker, tighter, somewhat calcareous. Probable trace maroon shale. Possible trace chert. No porosity |                                                                          |
| 2815 - 24    | Limestone, gray, finely sucrose, dolomitic; some limestone green-brown crystalline. Trace glauconite, no porosity       |                                                                          |
| 2824 - 29    | Chert, white to amber, vitreous to devitrified. Good porosity                                                           | Zone #3 - No odor no show                                                |
| 2829 - 34    | Chert as above with purple and maroon shale, no porosity                                                                |                                                                          |
| 2834 - 41    | Chert, white opaque, sub-vitreous to tripolitic. Some porosity                                                          | No show - Zone #4                                                        |
| 2841 - 47    | Chert as above, very good porosity                                                                                      | No show                                                                  |
| 2847         | Total depth - Still in Mississippi - Zone #4                                                                            |                                                                          |

Ran Schlumberger Electrical Survey and Microlog and set 5 1/2" casing at 2846' with 75 sacks cement.

Drill Stem Test: Only one test run in this well.

2782-89 Mississippi - Zone #1 - Open 1 hour - good blow throughout test.

Recovered 500' gas.

375' oil.

60' heavily oil cut mud.

315' water - slightly oil cut at top.

Initial Bottom Hole Pressure - failed to get.

Initial Flow Pressure: 30 p.s.i.

Final Flow Pressure: 330 p.s.i.

-5- Formation Log: Augusta Oil Co., Inc. #1 Levering.

Drill Stem Test Contd.:

Final Bottom Hole Pressure: 750 p.s.i. (15 min.).

Completion Data:

6-25-57

Ran Lane-Wells Gamma Ray Collar locator log - measurements checked with Schlumberger log.

Perforated 6 holes 2825-27.

Hole filled up with 615' of salt water in 15 minutes.

1500' salt water in 1 1/2 hours.

Set Lane-Wells plug 2814 (top of plug).

Perforated 6 holes 2783-85.

60' oil and 48' water in 20 minutes.

Started swabbing well.

Samples examined and log compiled by

WENDELL S. JOHNS