

File

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

RECEIVED

|                                                                                                                           |  |                         |  |                            |  |                                       |  |
|---------------------------------------------------------------------------------------------------------------------------|--|-------------------------|--|----------------------------|--|---------------------------------------|--|
| Type Test<br><input checked="" type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Special |  |                         |  | Test Date<br>12-03-87      |  | DEC 17 '87                            |  |
| Company<br>ELK OIL CO. ✓                                                                                                  |  |                         |  | Connection<br>AIR          |  |                                       |  |
| Pool<br>N. FOOR RANCH PENN                                                                                                |  |                         |  | Formation<br>PENN          |  | Unit<br>O.C.D.<br>ARTESIA, OFFICE     |  |
| Completion Date<br>12-8-87                                                                                                |  | Total Depth<br>6530     |  | Plug Back TD<br>6460       |  | Elevation<br>3958' AK                 |  |
| Csq. Size 5/8<br><del>2-3/8</del>                                                                                         |  | Wt. 15.5                |  | Set At 6530                |  | Perforations:<br>From 6341 To 6394    |  |
| Thg. Size 2-3/8                                                                                                           |  | Wt.                     |  | Set At 6274                |  | Perforations:<br>From OPEN To ENDED   |  |
| Type Well - Single - Bradenhead - G.C. or G.O. Multiple<br>SINGLE                                                         |  |                         |  | Packer Set At<br>6274      |  | Well No.<br>1                         |  |
| Producing Thru<br>TUBING                                                                                                  |  | Reservoir Temp. °F<br># |  | Mean Annual Temp. °F<br>60 |  | Baro. Press. - P <sub>a</sub><br>13.2 |  |
| L                                                                                                                         |  | H                       |  | Cg<br>.70                  |  | % CO <sub>2</sub>                     |  |
|                                                                                                                           |  |                         |  | % N <sub>2</sub>           |  | % H <sub>2</sub> S                    |  |
|                                                                                                                           |  |                         |  | Prover<br>2                |  | Meter Run                             |  |
|                                                                                                                           |  |                         |  |                            |  | Taps                                  |  |

  

| FLOW DATA |                  |   |              |                 |                      | TUBING DATA |                 | CASING DATA |                 | Duration of Flow |
|-----------|------------------|---|--------------|-----------------|----------------------|-------------|-----------------|-------------|-----------------|------------------|
| NO.       | Prover Line Size | x | Orifice Size | Press. p.s.i.g. | Diff. h <sub>w</sub> | Temp. °F    | Press. p.s.i.g. | Temp. °F    | Press. p.s.i.g. |                  |
| SI        |                  |   |              |                 |                      |             | 1867            |             | PACKER          |                  |
| 1.        | 2                | x | 3/32         | 1770            |                      | 65          | 1772            |             | "               |                  |
| 2.        | 2                | x | 3/16         | 1437            |                      | 65          | 1440            |             | "               | 1 hr.            |
| 3.        | 2                | x | 1/4          | 980             |                      | 65          | 985             |             | "               | "                |
| 4.        | 2                | x | 5/16         | 750             |                      | 65          | 755             |             | "               | "                |
| 5.        |                  |   |              |                 |                      |             |                 |             |                 |                  |

  

| RATE OF FLOW CALCULATIONS |                       |                  |                         |                       |                               |                                         |                      |
|---------------------------|-----------------------|------------------|-------------------------|-----------------------|-------------------------------|-----------------------------------------|----------------------|
| NO.                       | Coefficient (24 Hour) | $\sqrt{h_w P_m}$ | Pressure P <sub>m</sub> | Flow Temp. Factor Ft. | Gravity Factor F <sub>g</sub> | Super Compress. Factor, F <sub>pv</sub> | Rate of Flow Q, Mcfd |
| 1                         | .1410                 |                  | 1783.2                  | .9952                 | 1.1952                        | 1.2143                                  | 363                  |
| 2                         | .6082                 |                  | 1450.2                  | .9952                 | 1.1952                        | 1.1862                                  | 1244                 |
| 3                         | 1.0870                |                  | 993.2                   | .9952                 | 1.1952                        | 1.1397                                  | 1452                 |
| 4                         | 1.6720                |                  | 763.2                   | .9952                 | 1.1952                        | 1.0929                                  | 1658                 |
| 5                         |                       |                  |                         |                       |                               |                                         |                      |

  

|     |                |          |                |   |                                                  |
|-----|----------------|----------|----------------|---|--------------------------------------------------|
| NO. | P <sub>r</sub> | Temp. °R | T <sub>r</sub> | Z | Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.      |
| 1   |                |          |                |   | A.P.I. Gravity of Liquid Hydrocarbons _____ Deg. |
| 2   |                |          |                |   | Specific Gravity Separator Gas _____ XXXXXXXXX   |
| 3   |                |          |                |   | Specific Gravity Flowing Fluid _____ XXXXX       |
| 4   |                |          |                |   | Critical Pressure _____ P.S.I.A. _____ P.S.I.A.  |
| 5   |                |          |                |   | Critical Temperature _____ R _____ R             |

  

|                                                        |                             |                |                             |                                                           |
|--------------------------------------------------------|-----------------------------|----------------|-----------------------------|-----------------------------------------------------------|
| P <sub>c</sub> 2196.2 P <sub>c</sub> <sup>2</sup> 4823 |                             |                |                             |                                                           |
| NO.                                                    | P <sub>i</sub> <sup>2</sup> | P <sub>w</sub> | P <sub>w</sub> <sup>2</sup> | P <sub>c</sub> <sup>2</sup> - P <sub>w</sub> <sup>2</sup> |
| 1                                                      |                             | 2067.2         | 4273                        | 550                                                       |
| 2                                                      |                             | 1693.2         | 2867                        | 1956                                                      |
| 3                                                      |                             | 1281.2         | 1641                        | 3182                                                      |
| 4                                                      |                             | 944.2          | 891                         | 3932                                                      |
| 5                                                      |                             |                |                             |                                                           |

(1)  $\frac{P_c^2}{P_c^2 - P_w^2} = 1.2266$

AOF = Q  $\left[ \frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 2000$

(2)  $\left[ \frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.1869$

Post FD-2  
1-8-88  
comp & AK

  

|                                       |                    |                 |
|---------------------------------------|--------------------|-----------------|
| Absolute Open Flow 2000 Mcfd @ 15.025 | Angle of Slope 51° | Slope, n 1.1869 |
|---------------------------------------|--------------------|-----------------|

  

Remarks: ALL BOTTOM HOLE PRESSURES DONE WITH AMERADA TYPE GAUGE.

  

|                      |                                 |                              |             |
|----------------------|---------------------------------|------------------------------|-------------|
| Approved By Division | Conducted By:<br>KELTIC SERVICE | Calculated By:<br>MIKE KELLY | Checked By: |
|----------------------|---------------------------------|------------------------------|-------------|