

NEW MEXICO OIL CONSERVATION COMMISSION  
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122  
Revised 9-1-65

|                                                                                                                           |             |                                             |                           |                                         |                          |
|---------------------------------------------------------------------------------------------------------------------------|-------------|---------------------------------------------|---------------------------|-----------------------------------------|--------------------------|
| Type Test<br><input checked="" type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Special |             |                                             |                           | Test Date<br>12-31-80                   |                          |
| Company<br>Amoco Production Company ✓                                                                                     |             |                                             |                           | Connection<br>Gas Company of New Mexico |                          |
| Pool<br>Undesignated <i>Boyd</i>                                                                                          |             |                                             |                           | Formation<br>Morrow                     |                          |
| Completion Date<br>7-14-80                                                                                                |             | Total Depth<br>9362'                        |                           | Plug Back TD<br>9316'                   |                          |
| Elevation<br>3484'                                                                                                        |             | Form or Lease Name<br>Alley <del>Unit</del> |                           |                                         |                          |
| Csg. Size<br>5.500                                                                                                        | Wt.<br>15.5 | d<br>4.950                                  | Set At<br>9362'           | Perforations:<br>From 9000 To 9096      |                          |
| Tbg. Size<br>2.375                                                                                                        | Wt.<br>4.7  | d<br>1.995                                  | Set At<br>8895'           | Perforations:<br>From 0 To 0            |                          |
| Type Well - Single - Bradenhead - G.G. or G.O. Multiple<br>Single                                                         |             |                                             |                           | Packer Set At<br>8791'                  |                          |
| Producing Thru<br>Tubing                                                                                                  |             | Reservoir Temp. °F<br>154 @ 9048'           |                           | Mean Annual Temp. °F<br>60.0            |                          |
|                                                                                                                           |             |                                             |                           | Baro. Press. - P <sub>a</sub><br>13.2   |                          |
| L<br>9048                                                                                                                 | H<br>9048   | G <sub>g</sub><br>0.593                     | % CO <sub>2</sub><br>0.68 | % N <sub>2</sub><br>0.30                | % H <sub>2</sub> S<br>0. |
| Prover<br>0.                                                                                                              |             | Meter Run<br>2.1                            |                           | Taps<br>Flange                          |                          |

| FLOW DATA |                        |         |                 |                    |                         |             | TUBING DATA        |             | CASING DATA        |             | Duration<br>of<br>Flow |
|-----------|------------------------|---------|-----------------|--------------------|-------------------------|-------------|--------------------|-------------|--------------------|-------------|------------------------|
| NO.       | Prover<br>Line<br>Size | X       | Orifice<br>Size | Press.<br>p.s.i.g. | Diff.<br>h <sub>w</sub> | Temp.<br>°F | Press.<br>p.s.i.g. | Temp.<br>°F | Press.<br>p.s.i.g. | Temp.<br>°F |                        |
| SI        |                        |         |                 |                    |                         |             | 2774.              | 55          |                    |             | 46.0                   |
| 1.        | 2.07                   | X 1.500 |                 | 395                | 2.2                     | 71          | 2728               | 57          | 0.                 | 0.          | 0.7                    |
| 2.        | 2.07                   | X 1.500 |                 | 410                | 19.4                    | 62          | 2585               | 61          | 0.                 | 0.          | 0.7                    |
| 3.        | 2.07X                  | 1.500   |                 | 430                | 41.0                    | 53          | 2353               | 62          | 0.                 | 0.          | 0.7                    |
| 4.        | 2.07                   | X1.500  |                 | 450                | 60.8                    | 50          | 2180               | 62          | 0.                 | 0.          | 0.5                    |
| 5.        |                        |         |                 |                    |                         |             |                    |             |                    |             |                        |

| RATE OF FLOW CALCULATIONS |                       |                  |                         |                                  |                               |                                         |                      |
|---------------------------|-----------------------|------------------|-------------------------|----------------------------------|-------------------------------|-----------------------------------------|----------------------|
| NO.                       | Coefficient (24 Hour) | $\sqrt{h_w P_m}$ | Pressure P <sub>m</sub> | Flow Temp. Factor F <sub>t</sub> | Gravity Factor F <sub>g</sub> | Super Compress. Factor, F <sub>pv</sub> | Rate of Flow Q, Mcfd |
| 1                         | 12.74                 | 30.31            | 408.2                   | 0.9896                           | 1.2990                        | 1.0320                                  | 512                  |
| 2                         | 12.74                 | 90.52            | 423.2                   | 0.9981                           | 1.2990                        | 1.0357                                  | 1549                 |
| 3                         | 12.74                 | 134.73           | 443.2                   | 1.0068                           | 1.2990                        | 1.0400                                  | 2336 ✓               |
| 4                         | 12.74                 | 167.87           | 463.2                   | 1.0098                           | 1.2990                        | 1.0426                                  | 2926                 |
| 5                         |                       |                  |                         |                                  |                               |                                         |                      |

| NO. | P <sub>r</sub> | Temp. °R | T <sub>r</sub> | Z     | Gas Liquid Hydrocarbon Ratio | A.P.I. Gravity of Liquid Hydrocarbons | Specific Gravity Separator Gas | Specific Gravity Flowing Fluid | Critical Pressure | Critical Temperature |
|-----|----------------|----------|----------------|-------|------------------------------|---------------------------------------|--------------------------------|--------------------------------|-------------------|----------------------|
| 1.  | 0.60           | 531.     | 1.50           | 0.939 | 0.                           | 0.                                    | 0.593                          | X X X X X X X X                | 675.              | 354.                 |
| 2.  | 0.63           | 522      | 1.47           | 0.932 |                              |                                       |                                |                                | P.S.I.A.          | R                    |
| 3.  | 0.66           | 513      | 1.45           | 0.924 |                              |                                       |                                |                                |                   |                      |
| 4.  | 0.69           | 510      | 1.44           | 0.920 |                              |                                       |                                |                                |                   |                      |
| 5.  |                |          |                |       |                              |                                       |                                |                                |                   |                      |

| NO. | P <sub>i</sub> <sup>2</sup> | P <sub>w</sub> <sup>2</sup> | P <sub>c</sub> <sup>2</sup> | P <sub>c</sub> <sup>2</sup> - P <sub>w</sub> <sup>2</sup> |
|-----|-----------------------------|-----------------------------|-----------------------------|-----------------------------------------------------------|
| 1   | 7514                        | 2747                        | 7549                        | 259                                                       |
| 2   | 6751                        | 2610                        | 6810                        | 997                                                       |
| 3   | 5599                        | 2392                        | 5722                        | 2086                                                      |
| 4   | 4810                        | 2237                        | 5002                        | 2805                                                      |
| 5   |                             |                             |                             |                                                           |

(1)  $\frac{P_c^2}{P_c^2 - P_w^2} = 2.7832$       (2)  $\left[ \frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 2.1110$

AOF = Q  $\left[ \frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 6176$

Absolute Open Flow 6176 Mcfd @ 15.025      Angle of Slope  $\theta$  53.9      Slope, n 0.730

Remarks: \_\_\_\_\_

|                         |                                        |                                   |                               |
|-------------------------|----------------------------------------|-----------------------------------|-------------------------------|
| Approved By Commission: | Conducted By:<br>John West Engineering | Calculated By:<br>Chris VanDooren | Checked By:<br>Larry Sheppard |
|-------------------------|----------------------------------------|-----------------------------------|-------------------------------|