

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

|                                                                                                                           |            |                         |                                        |                            |                          |                                       |                    |                                        |  |
|---------------------------------------------------------------------------------------------------------------------------|------------|-------------------------|----------------------------------------|----------------------------|--------------------------|---------------------------------------|--------------------|----------------------------------------|--|
| Type Test<br><input checked="" type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Special |            |                         |                                        |                            | Test Date<br>2-5-91      |                                       |                    |                                        |  |
| Company<br>Enron Oil & Gas Company                                                                                        |            |                         |                                        | Connection                 |                          |                                       |                    |                                        |  |
| Well<br>Pitchfork Ranch                                                                                                   |            |                         |                                        | Formation<br>Morrow        |                          |                                       |                    | Unit<br>#                              |  |
| Completion Date<br>12-18-90                                                                                               |            | Total Depth<br>15,675'  |                                        | Plug Back TD<br>15,406     |                          | Elevation<br>3465 KB                  |                    | Farm or Lease Name<br>Half 6 Fed. Com. |  |
| Coq. Size<br>3 1/2                                                                                                        | Wt.<br>d   | Set At<br>15,442        | Perforations:<br>From 15,288 To 15,360 |                            |                          | Well No.<br>1                         |                    |                                        |  |
| Trg. Size<br>2 7/8"                                                                                                       | Wt.<br>6.5 | Set At<br>14,564        | Perforations:<br>From OPEN To ENDED    |                            |                          | Unit Sec. Twp. Rge.<br>0 6 25s 34e    |                    |                                        |  |
| Type Well - Single - Brdenhead - G.O. or G.O. Multiple<br>Single                                                          |            |                         |                                        |                            | Packer Set At<br>14,564' |                                       | County<br>Lea      |                                        |  |
| Producing Thru<br>Tubing                                                                                                  |            | Reservoir Temp. °F<br>p |                                        | Mean Annual Temp. °F<br>60 |                          | Baro. Press. - P <sub>g</sub><br>13.2 |                    | State<br>New Mexico                    |  |
| L<br>15288                                                                                                                | H<br>15288 | Cg<br>.607              | % CO <sub>2</sub><br>1.19              | % N <sub>2</sub><br>.16    | % H <sub>2</sub> S<br>-  | Proves                                | Meter Run<br>4.026 | Taps<br>FLG                            |  |

  

| 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. |                  | Temp. °F |
| SI        |                  |   |              |                 |                      |             | 3265            |             | PKR             |                  | 24 hrs.  |
| 1.        | 4 x 2.000        |   |              | 915             | 7.00                 | 78          | 3142            |             | "               |                  | 1 hr.    |
| 2.        | 4 x 2.000        |   |              | 915             | 12.00                | 78          | 3072            |             | "               |                  | 1 hr.    |
| 3.        | 4 x 2.000        |   |              | 920             | 26.00                | 78          | 2942            |             | "               |                  | 1 hr.    |
| 4.        | 4 x 2.000        |   |              | 930             | 48.00                | 80          | 2738            |             | "               |                  | 1 hr.    |
| 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 Fg | Super Compress. Factor, F <sub>sc</sub> | Rate of Flow Q, Mscf/d |
| 1                         | 19.81                 | 80.61            | 928.2                   | .9831                 | 1.284             | 1.073                                   | 2,163                  |
| 2                         | 19.81                 | 105.54           | 928.2                   | .9831                 | 1.284             | 1.073                                   | 2,832                  |
| 3                         | 19.81                 | 155.77           | 933.2                   | .9831                 | 1.284             | 1.073                                   | 4,180                  |
| 4                         | 19.81                 | 212.78           | 943.2                   | .9813                 | 1.284             | 1.074                                   | 5,704                  |
| 5                         |                       |                  |                         |                       |                   |                                         |                        |

  

|     |                |          |                |      |                                                 |
|-----|----------------|----------|----------------|------|-------------------------------------------------|
| NO. | P <sub>1</sub> | Temp. °F | T <sub>1</sub> | Z    | Gas Liquid Hydrocarbon Ratio 620.0 Mcf/ubl.     |
| 1   | 1.39           | 538      | 1.50           | .869 | A.P.I. Gravity of Liquid Hydrocarbons 51.0 Deg. |
| 2   | 1.39           | 538      | 1.50           | .869 | Specific Gravity Separator Gas .607             |
| 3   | 1.39           | 538      | 1.50           | .869 | Specific Gravity Flowing Fluid X X X X X        |
| 4   | 1.41           | 540      | 1.51           | .867 | Critical Pressure * 667 P.S.I.A. * 667 P.S.I.A. |
| 5   |                |          |                |      | Critical Temperature * 357 °F * 361 °F          |

  

|                                                              |                             |                |                             |                                                           |                                                                 |                                                            |  |
|--------------------------------------------------------------|-----------------------------|----------------|-----------------------------|-----------------------------------------------------------|-----------------------------------------------------------------|------------------------------------------------------------|--|
| P <sub>c</sub> 3278.2    P <sub>c</sub> <sup>2</sup> 10746.6 |                             |                |                             | (1) $\frac{P_c^2}{P_c^2 - P_w^2} = 3.990$                 |                                                                 | (2) $\left[ \frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 2.839$ |  |
| NO.                                                          | P <sub>1</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> | $AOF = Q \left[ \frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 16.193$ |                                                            |  |
| 1                                                            |                             | 3167.8         | 10035.0                     | 711.6                                                     |                                                                 |                                                            |  |
| 2                                                            |                             | 3106.2         | 9648.5                      | 1098.1                                                    |                                                                 |                                                            |  |
| 3                                                            |                             | 3000.5         | 9003.0                      | 1742.6                                                    |                                                                 |                                                            |  |
| 4                                                            |                             | 2837.8         | 8053.1                      | 2693.5                                                    |                                                                 |                                                            |  |
| 5                                                            |                             |                |                             |                                                           |                                                                 |                                                            |  |

  

|                                                                 |  |                     |  |               |  |
|-----------------------------------------------------------------|--|---------------------|--|---------------|--|
| Absolute Open Flow 16,193 Mscf @ 15.025                         |  | Angle of Slope 53.0 |  | Slope, n .754 |  |
| Remarks: Well produced 1.00 BBL 51.0 API condensate during test |  |                     |  |               |  |
| * Corrected to 1.19% Co <sub>2</sub>                            |  |                     |  |               |  |

  

|                      |                                        |                              |                           |
|----------------------|----------------------------------------|------------------------------|---------------------------|
| Approved By Division | Conducted By:<br>Jarrel Services, Inc. | Calculated By:<br>Bob Murray | Checked By:<br>Bob Murray |
|----------------------|----------------------------------------|------------------------------|---------------------------|

Enron Oil & Gas Company  
 Half 6 Fed. Com. No. 1  
 0 - 6 - 25s - 34e  
 Lea County, New Mexico  
 2-5-91

