

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>7-16-81                          |                    |                                                         |                   |
| Company<br>Southland Royalty Company                                                                                      |             |                         |                   | Connection<br>Southern Union Gathering        |                    |                                                         |                   |
| Pool<br>Aztec                                                                                                             |             |                         |                   | Formation<br>Pictured Cliffs                  |                    | Unit                                                    |                   |
| Completion Date<br>6-16-81                                                                                                |             | Total Depth<br>2630'    |                   | Plug Back TD<br>2615'                         |                    | Elevation<br>6037' GR                                   |                   |
| Farm or Lease Name<br>Culpepper Martin                                                                                    |             |                         |                   |                                               |                    |                                                         |                   |
| Csg. Size<br>2.875                                                                                                        | Wt.<br>6.5# | d<br>2.441              | Set At<br>2627'   | Perforations:<br>From 2404' To 2503'          |                    | Well No.<br>20                                          |                   |
| Tbg. Size<br>-----                                                                                                        | Wt.<br>---  | d<br>----               | Set At<br>----    | Perforations:<br>From                      To |                    | Unit    Sec.    Twp.    Rye.<br>A      33    32N    12W |                   |
| Type Well - Single - Bradenhead - G.G. or G.O. Multiple<br>Single                                                         |             |                         |                   | Packer Set At<br>-----                        |                    | County<br>San Juan                                      |                   |
| Producing Thru<br>Casing                                                                                                  |             | Reservoir Temp. °F<br>θ |                   | Mean Annual Temp. °F                          |                    | Baro. Press. - P <sub>a</sub><br>12.2                   |                   |
| State<br>New Mexico                                                                                                       |             |                         |                   |                                               |                    |                                                         |                   |
| L                                                                                                                         | H           | Gg<br>.700              | % CO <sub>2</sub> | % N <sub>2</sub>                              | % H <sub>2</sub> S | Prover                                                  | 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. |                  | Temp. °F |
| SI        |                  |   |              |                 |                      |             |                 |             | 862             |                  |          |
| 1.        | 2"               | X | 3/8"         |                 |                      |             |                 |             | 344             |                  | 1 hr     |
| 2.        |                  |   |              |                 |                      |             |                 |             | 284             |                  | 2 hrs    |
| 3.        |                  |   |              |                 |                      |             |                 |             | 258             |                  | 3 hrs    |
| 4.        |                  |   |              |                 |                      |             |                 |             |                 |                  |          |
| 5.        |                  |   |              |                 |                      |             |                 |             |                 |                  |          |

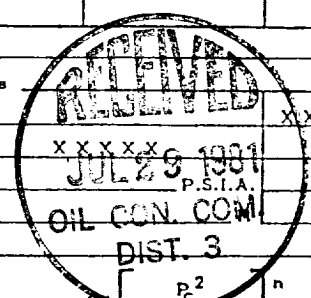
  

| RATE OF FLOW CALCULATIONS |                       |                  |                         |                       |                   |                                         |                      |
|---------------------------|-----------------------|------------------|-------------------------|-----------------------|-------------------|-----------------------------------------|----------------------|
| 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>pv</sub> | Rate of Flow Q, Mcfd |
| 1                         | 3.03                  |                  | 270.2                   | 1.0000                | .9258             | 1.0000                                  | 758                  |
| 2.                        |                       |                  |                         |                       |                   |                                         |                      |
| 3.                        |                       |                  |                         |                       |                   |                                         |                      |
| 4.                        |                       |                  |                         |                       |                   |                                         |                      |
| 5.                        |                       |                  |                         |                       |                   |                                         |                      |

|     |                |          |                |   |                                                  |
|-----|----------------|----------|----------------|---|--------------------------------------------------|
| NO. | P <sub>t</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 _____ XXXXXXXXXX  |
| 3.  |                |          |                |   | Specific Gravity Flowing Fluid _____ XXXXXX      |
| 4.  |                |          |                |   | Critical Pressure _____ P.S.I.A.                 |
| 5.  |                |          |                |   | Critical Temperature _____ R                     |



|                                                              |                             |                                            |                             |                                                             |  |
|--------------------------------------------------------------|-----------------------------|--------------------------------------------|-----------------------------|-------------------------------------------------------------|--|
| P <sub>c</sub> 874.2    P <sub>c</sub> <sup>2</sup> 764225.6 |                             | (1) $\frac{P_c^2}{P_e^2 - P_w^2} = 1.1056$ |                             | (2) $\left[ \frac{P_c^2}{P_e^2 - P_w^2} \right]^n = 1.0891$ |  |
| NO                                                           | P <sub>t</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                                                            |                             | 270.2                                      | 73008.0                     | 691217.6                                                    |  |
| 2                                                            |                             |                                            |                             |                                                             |  |
| 3                                                            |                             |                                            |                             |                                                             |  |
| 4                                                            |                             |                                            |                             |                                                             |  |
| 5                                                            |                             |                                            |                             |                                                             |  |

$$AOF = Q \left[ \frac{P_c^2}{P_e^2 - P_w^2} \right]^n = 825$$

|                           |  |              |  |                  |  |                 |  |
|---------------------------|--|--------------|--|------------------|--|-----------------|--|
| Absolute Open Flow    825 |  | Mcf @ 15.025 |  | Angle of Slope θ |  | Slope, n    .85 |  |
| Remarks: _____            |  |              |  |                  |  |                 |  |

|                      |                                |                               |                               |
|----------------------|--------------------------------|-------------------------------|-------------------------------|
| Approved By Division | Conducted By:<br>Jim Choquette | Calculated By:<br>James Smith | Checked By:<br>L. O. Van Ryan |
|----------------------|--------------------------------|-------------------------------|-------------------------------|