

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>8-06-81   |                                       |                                                         |                                |  |
| Company<br>Southland Royalty Company                                                                                      |             |                         |                   | Connection<br>Gas Company of New Mexico       |                        |                                       |                                                         |                                |  |
| Pool<br>Fulcher Kutz                                                                                                      |             |                         |                   | Formation<br>Pictured Cliffs                  |                        |                                       |                                                         | Unit                           |  |
| Completion Date<br>7-21-81                                                                                                |             | Total Depth<br>1870'    |                   | Plug Back TD<br>1838'                         |                        | Elevation<br>5677' GR                 |                                                         | Farm or Lease Name<br>Beck "A" |  |
| Csq. Size<br>2.875                                                                                                        | Wt.<br>6.5# | d<br>2.441              | Set At<br>1848'   | Perforations:<br>From 1779' To 1809'          |                        |                                       | Well No.<br>2                                           |                                |  |
| Tbg. Size<br>----                                                                                                         | Wt.<br>---- | d<br>-----              | Set At<br>----    | Perforations:<br>From                      To |                        |                                       | Unit    Sec.    Twp.    Rge.<br>A      10    29N    12W |                                |  |
| Type Well - Single - Bradenhead - G.G. or G.O. Multiple<br>Single - G.G.                                                  |             |                         |                   |                                               | Packer Set At<br>----- |                                       | County<br>San Juan                                      |                                |  |
| Producing Thru<br>Casing                                                                                                  |             | Reservoir Temp. °F<br># |                   | Mean Annual Temp. °F                          |                        | Baro. Press. - P <sub>g</sub><br>12.2 |                                                         | State<br>New Mexico            |  |
| L                                                                                                                         | H           | G <sub>g</sub><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        |                  |   |              |                 |                      |             |                 |             | 193             |                  |       |
| 1.        | 2"               | X | 3/8"         |                 |                      |             |                 |             | 12              |                  | 1 hr  |
| 2.        |                  |   |              |                 |                      |             |                 |             | 14              |                  | 2 hrs |
| 3.        |                  |   |              |                 |                      |             |                 |             | 14              |                  | 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 F <sub>g</sub> | Super Compress. Factor, F <sub>py</sub> | Rate of Flow Q, Mcfd |
| 1                         | 3.03                  |                  | 26.2                    | 1.0000               | .9258                         | 1.0000                                  | 73                   |
| 2.                        |                       |                  |                         |                      |                               |                                         |                      |
| 3.                        |                       |                  |                         |                      |                               |                                         |                      |
| 4.                        |                       |                  |                         |                      |                               |                                         |                      |
| 5.                        |                       |                  |                         |                      |                               |                                         |                      |

  

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

  

|                                                             |                             |                |                             |                                          |                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------------------------------------------|-----------------------------|----------------|-----------------------------|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| P <sub>c</sub> 205.2    P <sub>c</sub> <sup>2</sup> 42107.0 |                             |                |                             | <div style="text-align: center;"> </div> |                                                                                                                                                                                                                                                                                                                                                                                         |
| NO.                                                         | P <sub>t</sub> <sup>2</sup> | P <sub>w</sub> | P <sub>w</sub> <sup>2</sup> |                                          |                                                                                                                                                                                                                                                                                                                                                                                         |
| 1                                                           |                             | 26.2           | 684.4                       | 41420.6                                  | <div style="display: flex; justify-content: space-around;"> <div> <math display="block">(1) \frac{P_c^2}{P_c^2 - P_w^2} = 1.0166</math> </div> <div> <math display="block">(2) \left[ \frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.0141</math> </div> </div> <div style="margin-top: 20px;"> <math display="block">AOF = Q \left[ \frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 74</math> </div> |
| 2                                                           |                             |                |                             |                                          |                                                                                                                                                                                                                                                                                                                                                                                         |
| 3                                                           |                             |                |                             |                                          |                                                                                                                                                                                                                                                                                                                                                                                         |
| 4                                                           |                             |                |                             |                                          |                                                                                                                                                                                                                                                                                                                                                                                         |
| 5                                                           |                             |                |                             |                                          |                                                                                                                                                                                                                                                                                                                                                                                         |

  

|                                           |                           |                 |
|-------------------------------------------|---------------------------|-----------------|
| Absolute Open Flow    74    Mcfd @ 15.025 | Angle of Slope θ    _____ | Slope, n    .85 |
| Remarks: _____                            |                           |                 |
|                                           |                           |                 |

  

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