

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>11-10-80                                     |  |
| Company<br>Southland Royalty Company                                                                                      |  |                            |  | Connection<br>Northwest Pipeline Corporation |  |                                                           |  |
| Pool<br>Basin                                                                                                             |  |                            |  | Formation<br>Dakota                          |  | Unit                                                      |  |
| Completion Date<br>9-28-80                                                                                                |  | Total Depth<br>8700'       |  | Plug Back TD<br>8696'                        |  | Elevation<br>6999' GR                                     |  |
| Farm or Lease Name<br>Reese Mesa                                                                                          |  | Well No.<br>#6             |  |                                              |  |                                                           |  |
| Csg. Size<br>7.000<br>4.500                                                                                               |  | Wd 20 & 23#<br>10.5 & 11.6 |  | Set At 6652'<br>8698'                        |  | Perforations:<br>From                      To             |  |
| Thq. Size<br>2.375                                                                                                        |  | Wt.<br>4.7#                |  | Set At<br>8670'                              |  | Perforations:<br>From 8512'                      To 8678' |  |
| Type Well - Single - Bradenhead - G.G. or G.O. Multiple<br>GG-Multiple                                                    |  |                            |  | Packer Set At<br>6575'                       |  | County<br>San Juan                                        |  |
| Producing Thru<br>Tubing                                                                                                  |  | Reservoir Temp. °F<br>B    |  | 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         | Duration of Flow |
| 1.        | 2" X 3/4"        |   |              |                 |                      |             | 2725            |             |                 |                  | 1 Hour           |
| 2.        |                  |   |              |                 |                      |             | 134             |             |                 |                  | 2 Hours          |
| 3.        |                  |   |              |                 |                      |             | 94              |             |                 |                  | 3 Hours          |
| 4.        |                  |   |              |                 |                      |             | 73              |             |                 |                  |                  |
| 5.        |                  |   |              |                 |                      |             |                 |             |                 |                  |                  |

  

| RATE OF FLOW CALCULATIONS |                       |                  |                         |                                  |                               |                                        |                      |
|---------------------------|-----------------------|------------------|-------------------------|----------------------------------|-------------------------------|----------------------------------------|----------------------|
| NO.                       | Coefficient (24 Hour) | $\sqrt{P_w F_m}$ | Pressure P <sub>w</sub> | Flow Temp. Factor F <sub>t</sub> | Gravity Factor F <sub>g</sub> | Surf. Compres. Factor, F <sub>pv</sub> | Rate of Flow Q, Mcfd |
| 1                         | 12.365                |                  | 85.2                    | 1.0000                           | .9258                         | 1.000                                  | 975                  |
| 2                         |                       |                  |                         |                                  |                               |                                        |                      |
| 3                         |                       |                  |                         |                                  |                               |                                        |                      |
| 4                         |                       |                  |                         |                                  |                               |                                        |                      |
| 5                         |                       |                  |                         |                                  |                               |                                        |                      |

  

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

  

|                                                                |                |                             |                                                           |                                            |  |                                                             |  |
|----------------------------------------------------------------|----------------|-----------------------------|-----------------------------------------------------------|--------------------------------------------|--|-------------------------------------------------------------|--|
| P <sub>c</sub> 2737.2    P <sub>c</sub> <sup>2</sup> 7492263.8 |                |                             |                                                           | (1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.0010$ |  | (2) $\left[ \frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.0007$ |  |
| NO.                                                            | 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                                                              | 85.2           | 7259.0                      | 7485004.8                                                 |                                            |  |                                                             |  |
| 2                                                              |                |                             |                                                           |                                            |  |                                                             |  |
| 3                                                              |                |                             |                                                           |                                            |  |                                                             |  |
| 4                                                              |                |                             |                                                           |                                            |  |                                                             |  |
| 5                                                              |                |                             |                                                           |                                            |  |                                                             |  |

  

|                                        |  |  |  |                        |  |  |  |
|----------------------------------------|--|--|--|------------------------|--|--|--|
| Absolute Open Flow _____ Mcfd @ 15.025 |  |  |  | Angle of Slope @ _____ |  |  |  |
| Remarks: _____                         |  |  |  |                        |  |  |  |
|                                        |  |  |  |                        |  |  |  |

  

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

