

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form G-122  
Revised 9-1-65

**RECEIVED**

|                                                                                                                           |             |                                  |                           |                                    |                    |                                       |                 |                                            |  |
|---------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------------|---------------------------|------------------------------------|--------------------|---------------------------------------|-----------------|--------------------------------------------|--|
| Type Test<br><input checked="" type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Special |             |                                  |                           |                                    |                    | Test Date<br>6-29-79                  |                 | JUL 9 1979                                 |  |
| Company<br>MESA PETROLEUM COMPANY                                                                                         |             |                                  |                           | Connection<br>AIR                  |                    |                                       |                 | O.C.C.                                     |  |
| Pool<br>VANDERGRIFT                                                                                                       |             |                                  |                           | Formation<br>MORROW                |                    |                                       |                 | ARTESIA, OFFICE                            |  |
| Completion Date                                                                                                           |             | Total Depth<br>9119              |                           | Plug back To<br>9032               |                    | Elevation<br>3637                     |                 | Name of Lease Name<br>WILLIAMSON FED. COM. |  |
| Crp. Size<br>4 1/2                                                                                                        | Wt.<br>11.6 | d                                | Set At<br>9119            | Perforations:<br>From 8893 To 8989 |                    | Well No.<br># 1                       |                 |                                            |  |
| Tq. Size<br>2 3/8                                                                                                         | Wt.<br>4.7  | d                                | Set At<br>8847            | Perforations:<br>From To           |                    | Unit<br>12 16 27                      |                 |                                            |  |
| Type Well - Single - Protobhead - G.G. or G.O. Multiple<br>SINGLE                                                         |             |                                  |                           |                                    |                    | Packer Set At<br>8863                 |                 | County<br>EDDY                             |  |
| Producing Thru<br>TBG.                                                                                                    |             | Reservoir Temp. °F<br>161 @ 8863 |                           | Mean Annual Temp. °F<br>60°        |                    | Zero. Press. - P <sub>g</sub><br>13.2 |                 | State<br>NEW MEXICO                        |  |
| L<br>8863                                                                                                                 | H<br>8863   | Gg<br>.646                       | % CO <sub>2</sub><br>.383 | % N <sub>2</sub><br>.489           | % H <sub>2</sub> S | Prover                                | Meter Run<br>4" | 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         | of Flow |
| 51        |                  |       |              |                 |                      |             | 2440            |             |                 |                  | 72 HRS. |
| 1.        | 4 X              | 1,000 |              | 418             | 2.0                  | 85          | 2275            | 76          |                 |                  | 1 HR.   |
| 2.        | 4 X              | 1,000 |              | 420             | 4.8                  | 86          | 2115            | 76          |                 |                  | 1 HR.   |
| 3.        | 4 X              | 1,000 |              | 420             | 9.0                  | 87          | 1980            | 76          |                 |                  | 1 HR.   |
| 4.        | 4 X              | 1,000 |              | 423             | 18.0                 | 85          | 1740            | 74          |                 |                  | 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. Compens. Factor, Fpv | Rate of Flow Q, Mhd |
| 1                         | 4.753                 | 29.37            | 431.2                   | .9768                 | 1.244             | 1.039                       | 176                 |
| 2                         | 4.753                 | 45.60            | 433.2                   | .9759                 | 1.244             | 1.038                       | 273                 |
| 3                         | 4.753                 | 62.44            | 433.2                   | .9750                 | 1.244             | 1.038                       | 374                 |
| 4                         | 4.753                 | 88.61            | 436.2                   | .9768                 | 1.244             | 1.039                       | 532                 |
| 5.                        |                       |                  |                         |                       |                   |                             |                     |

  

| NO. | P <sub>g</sub> | Temp. °R | T <sub>g</sub> | Z    | Gas Liquid Hydrocarbon Ratio          | Meq/psi.     |
|-----|----------------|----------|----------------|------|---------------------------------------|--------------|
| 1   | .64            | 545      | 1.45           | .927 | DRY                                   |              |
| 2   | .65            | 546      | 1.46           | .928 | A.P.I. Gravity of Liquid Hydrocarbons | Doq.         |
| 3   | .65            | 547      | 1.46           | .926 | Specific Gravity Separator Gas        | .646         |
| 4   | .65            | 545      | 1.45           | .926 | Specific Gravity Flowing Fluid        | XXXXXX       |
| 5.  |                |          |                |      | Critical Pressure                     | 670 P.S.I.A. |
|     |                |          |                |      | Critical Temperature                  | 375 °R       |

  

| NO. | P <sub>g</sub> | P <sub>w</sub> | P <sub>w</sub> <sup>2</sup> | P <sub>g</sub> <sup>2</sup> - P <sub>w</sub> <sup>2</sup> |
|-----|----------------|----------------|-----------------------------|-----------------------------------------------------------|
| 1   | 2453.2         | 6018.2         |                             |                                                           |
| 1   |                | 2288.4         | 5236.7                      | 781.5                                                     |
| 2   |                | 2128.7         | 4531.2                      | 1487.0                                                    |
| 3   |                | 1994.1         | 3976.5                      | 2041.7                                                    |
| 4   |                | 1755.3         | 3081.2                      | 2937.0                                                    |
| 5   |                |                |                             |                                                           |

  

(1)  $\frac{P_g^2}{P_g^2 - P_w^2} = 2.049$

ACF = Q  $\left[ \frac{P_g^2}{P_g^2 - P_w^2} \right]^n = 1.090$

(2)  $\left[ \frac{P_g^2}{P_g^2 - P_w^2} \right]^n = 2.049$

  

|                    |       |              |                  |     |          |       |
|--------------------|-------|--------------|------------------|-----|----------|-------|
| Absolute Open Flow | 1,090 | Mhd @ 15.025 | Angle of Slope ° | 45° | Slope, n | 1,000 |
| Remarks:           |       |              |                  |     |          |       |

  

|                         |                                |                                  |             |
|-------------------------|--------------------------------|----------------------------------|-------------|
| Approved By Commission: | Conducted By:<br>JOHN R. DAVIS | Calculated By:<br>LARRY C. DAVIS | Checked By: |
|-------------------------|--------------------------------|----------------------------------|-------------|