

NEW MEXICO OIL CONSERVATION COMMISSION  
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Revised 9-1-65

RECEIVED

|                                                                                                                           |              |                                  |                        |                                      |                           |                                       |                                                                                                                                                                                                              |                                      |  |
|---------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------------|------------------------|--------------------------------------|---------------------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|--|
| Type Test<br><input checked="" type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Special |              |                                  |                        |                                      | Test Date<br>1-1-82       |                                       | <div style="font-size: 1.2em; font-weight: bold;">JAN 22 1982</div> <div style="font-size: 1.2em; font-weight: bold;">O. C. D.</div> <div style="font-size: 1.2em; font-weight: bold;">ARTESIA, OFFICE</div> |                                      |  |
| Company<br>MESA PETROLEUM CO. ✓                                                                                           |              |                                  |                        |                                      | Connection<br>UNCONNECTED |                                       |                                                                                                                                                                                                              |                                      |  |
| Well<br><del>Peas Hope</del><br>UNDESIGNATED ABO                                                                          |              |                                  |                        |                                      | Formation<br>ABO          |                                       |                                                                                                                                                                                                              |                                      |  |
| Completion Date<br>1-1-82                                                                                                 |              | Total Depth<br>4155'             |                        | Plug Back TD<br>4096'                |                           | Elevation<br>3827'                    |                                                                                                                                                                                                              | Farm or Lease Name<br>SAVAGE FEDERAL |  |
| Csg. Size<br>4-1/2"                                                                                                       | Wt.<br>10.5# | d                                | Set At<br>4152'        | Perforations:<br>From 3622' To 3778' |                           | Well No.<br>4                         |                                                                                                                                                                                                              |                                      |  |
| Tub. Size<br>2-3/8"                                                                                                       | Wt.<br>4.7#  | d                                | Set At<br>3504'        | Perforations:<br>From OPEN ENDED To  |                           | Unit<br>N 4 7 25                      |                                                                                                                                                                                                              |                                      |  |
| Type Well - Single - Production - G.G. or G.O. Multiple<br>SINGLE                                                         |              |                                  |                        |                                      | Packer Set At<br>NONE     |                                       | County<br>CHAVES                                                                                                                                                                                             |                                      |  |
| Producing Thru<br>TUBING                                                                                                  |              | Reservoir Temp. °F<br>101 @ 4155 |                        | Mean Annual Temp. °F<br>60           |                           | Baro. Press. - P <sub>o</sub><br>13.2 |                                                                                                                                                                                                              | State<br>NEW MEXICO                  |  |
| L                                                                                                                         | H            | Gg<br>.65                        | % CO <sub>2</sub><br>1 | % N <sub>2</sub><br>1                | % H <sub>2</sub> S        | Prover<br>2" orifice well tester      |                                                                                                                                                                                                              | Meter Run                            |  |

| 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  |
| 1.        | 2" orifice       | 1 1/4 | 10.5         |                 |                      | 20          | 840             | 54          | 890             |                  | 72 hr. SI |
| 2.        | well             | 1 1/4 | 24           |                 |                      | 24          | 660             | 52          | 805             |                  | 1 hr.     |
| 3.        | tester           | 1 1/4 | 29           |                 |                      | 35          | 460             | 60          | 640             |                  | 1 hr.     |
| 4.        |                  | 1 1/4 | 30           |                 |                      | 40          | 320             | 61          | 460             |                  | 1 hr.     |
| 5.        |                  |       |              |                 |                      |             |                 |             | 330             |                  |           |

| 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, Fpv | Rate of Flow Q, Mhd |
| 1.                        | 776                   | 2" orifice well  |                         | 1.0408                | .9608             |                             | 776                 |
| 2.                        | 1407                  | tester           |                         | 1.0365                | .9608             |                             | 1401                |
| 3.                        | 1578                  |                  |                         | 1.0249                | .9608             |                             | 1554                |
| 4.                        | 1610                  |                  |                         | 1.0198                | .9608             |                             | 1578                |
| 5.                        |                       |                  |                         |                       |                   |                             |                     |

|     |                |          |                |   |                                                      |
|-----|----------------|----------|----------------|---|------------------------------------------------------|
| NO. | P <sub>r</sub> | Temp. °R | T <sub>r</sub> | Z | Gas Liquid Hydrocarbon Ratio _____ Mcf/Sbl.          |
| 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       |
| 4.  |                |          |                |   | Critical Pressure _____ P.S.I.A. _____ P.S.I.A.      |
| 5.  |                |          |                |   | Critical Temperature _____ R _____ R                 |

|     |                |                |                             |                             |                                                           |                                                                                                                                                                                                                                                                                                                          |
|-----|----------------|----------------|-----------------------------|-----------------------------|-----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NO. | P <sub>r</sub> | P <sub>w</sub> | P <sub>r</sub> <sup>2</sup> | P <sub>w</sub> <sup>2</sup> | P <sub>r</sub> <sup>2</sup> - P <sub>w</sub> <sup>2</sup> | <div style="display: flex; justify-content: space-between;"> <div> <p>(1) <math>\frac{P_r^2}{P_r^2 - P_w^2} = 1.1693</math></p> <p>ACT = 0 <math>\left[ \frac{P_r^2}{P_r^2 - P_w^2} \right]^n = 1700</math></p> </div> <div> <p>(2) <math>\left[ \frac{P_r^2}{P_r^2 - P_w^2} \right]^n = 1.0813</math></p> </div> </div> |
| 1.  |                | 818            | 669                         | 146                         |                                                           |                                                                                                                                                                                                                                                                                                                          |
| 2.  |                | 653            | 426                         | 389                         |                                                           |                                                                                                                                                                                                                                                                                                                          |
| 3.  |                | 473            | 224                         | 591                         |                                                           |                                                                                                                                                                                                                                                                                                                          |
| 4.  |                | 343            | 118                         | 697                         |                                                           |                                                                                                                                                                                                                                                                                                                          |

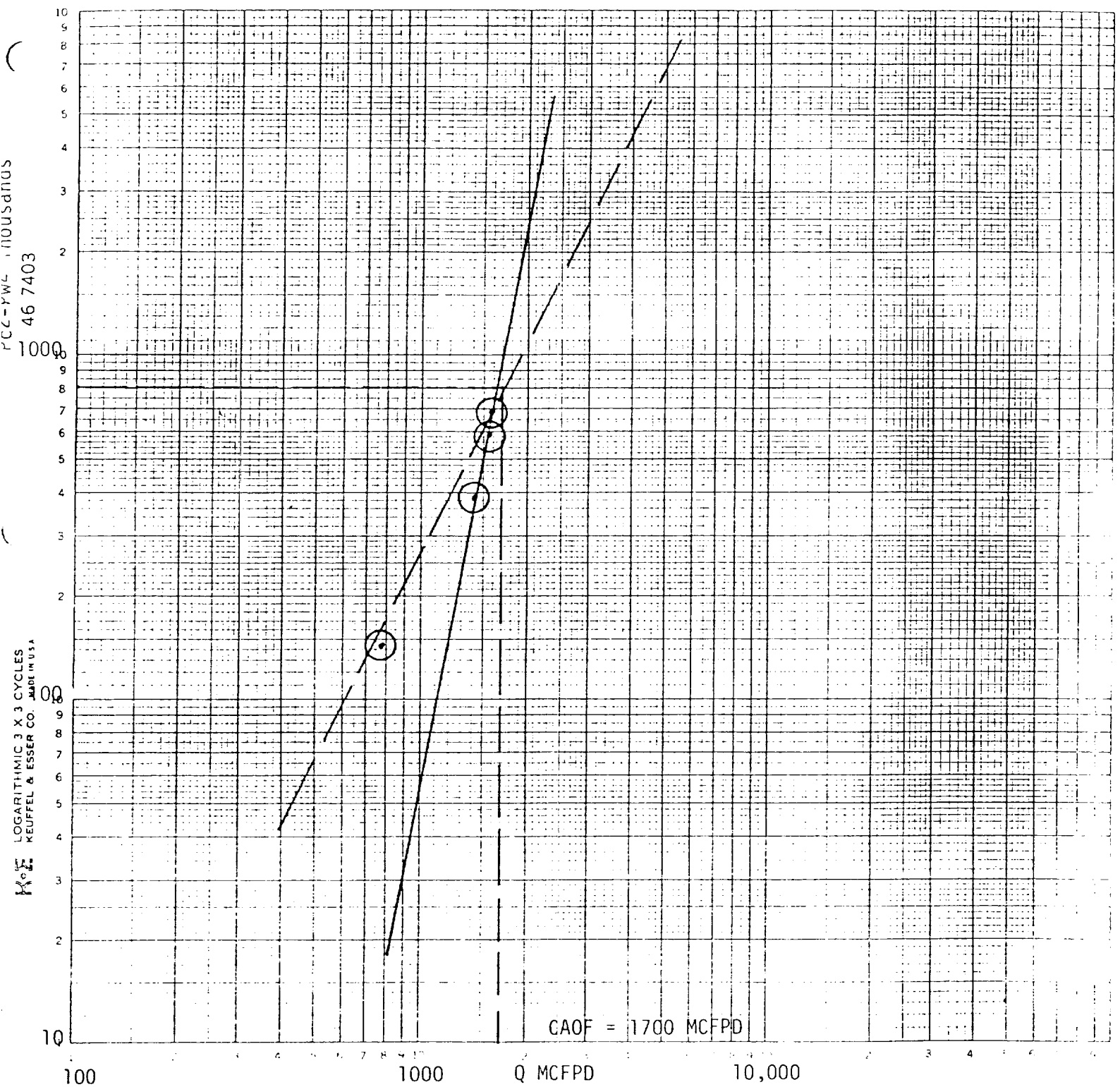
|                         |  |              |                        |            |
|-------------------------|--|--------------|------------------------|------------|
| Absolute Open Flow 1700 |  | Mhd @ 15.025 | Angle of Slope α 63.5° | Slope, n 5 |
|-------------------------|--|--------------|------------------------|------------|

Remarks: Plot of P<sub>c</sub><sup>2</sup>-P<sub>w</sub><sup>2</sup> vs Q yeilded a straight line with a θ greater than 63.5°  
Drew 63.5° line through highest point.

|                         |                              |                                                        |             |
|-------------------------|------------------------------|--------------------------------------------------------|-------------|
| Approved By Commission: | Conducted By:<br>JAMES CRAIG | Calculated By: <u>2/8 1-6-82</u><br>E.L. BUTTROSS, JR. | Checked By: |
|-------------------------|------------------------------|--------------------------------------------------------|-------------|



Assumed  $N = .5$  and  $\theta = 63.5^\circ$