

MEXICO OIL CONSERVATION COM. ON  
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122  
Revised 9-1-65  
C-122 file  
RECEIVED

|                                                                                                                           |              |                                  |                        |                                    |                       |                                       |             |                                       |  |
|---------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------------|------------------------|------------------------------------|-----------------------|---------------------------------------|-------------|---------------------------------------|--|
| Type Test<br><input checked="" type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Special |              |                                  |                        |                                    | Test Date<br>10-29-81 |                                       | DEC 15 1981 |                                       |  |
| Company<br>MESA PETROLEUM CO.                                                                                             |              |                                  |                        | Connection<br>UNCONNECTED          |                       |                                       |             | O. C. D.<br>ARTESIA, OFFICE           |  |
| Pool<br>UNDESIGNATED ABO                                                                                                  |              |                                  |                        | Formation<br>ABO                   |                       |                                       |             | Unit                                  |  |
| Completion Date<br>10-29-81                                                                                               |              | Total Depth<br>3850              |                        | Plug Back TD<br>3807               |                       | Elevation<br>3746                     |             | Farm or Lease Name<br>STEWART FEDERAL |  |
| Csg. Size<br>4 1/2                                                                                                        | Wt.<br>10.5# | d                                | Set At<br>3835         | Perforations:<br>From 3514 To 3790 |                       | Well No.<br>2                         |             | Unit Sec. Twp. Rge.                   |  |
| Tq. Size<br>2 3/8                                                                                                         | Wt.<br>4.7#  | d                                | Set At<br>3424         | Perforations:<br>From OPEN ENDED   |                       | Unit<br>H 1 8S 24E                    |             | County<br>CHAVES                      |  |
| Type Well - Single - Bradenhead - G.G. or G.O. Multiple<br>SINGLE                                                         |              |                                  |                        | Packer Set At<br>NONE              |                       | Baro. Press. - P <sub>a</sub><br>13.2 |             | State<br>NEW MEXICO                   |  |
| Producing Thru<br>TUBING                                                                                                  |              | Reservoir Temp. °F<br>102 @ 3850 |                        | Mean Annual Temp. °F<br>60         |                       | Prover<br>CHOKE                       |             | Meter Run                             |  |
| L<br>3424                                                                                                                 | H<br>3424    | Gg<br>.65                        | % CO <sub>2</sub><br>1 | % N <sub>2</sub><br>1              | % H <sub>2</sub> S    | 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        |                  |       |              |                 |                      |          | 925             |          | 850             |          | 56 hr. SI        |
| 1.        | CHOKE            | 14/64 |              | 900             |                      | 58       | 900             | 58       | 830             |          | 1 hr.            |
| 2.        | COEFF.           | 19/64 |              | 860             |                      | 65       | 860             | 65       | 800             |          | 1 hr.            |
| 3.        |                  | 24/64 |              | 775             |                      | 65       | 775             | 65       | 760             |          | 1 hr.            |
| 4.        |                  | 29/64 |              | 665             |                      | 68       | 665             | 68       | 705             |          | 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 Compress. Factor, Fpv | Rate of Flow Q, Mcfd |
| 1                         | .7924                 | CHOKE            | 913                     | 1.0020                | 1.240             |                             | 899                  |
| 2.                        | 1.484                 | CHOKE            | 873                     | .9952                 | 1.240             |                             | 1599                 |
| 3.                        | 2.388                 | CHOKE            | 788                     | .9952                 | 1.240             |                             | 2322                 |
| 4.                        | 3.460                 | CHOKE            | 678                     | .9924                 | 1.240             |                             | 2687                 |
| 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 _____ 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 _____ H                 |

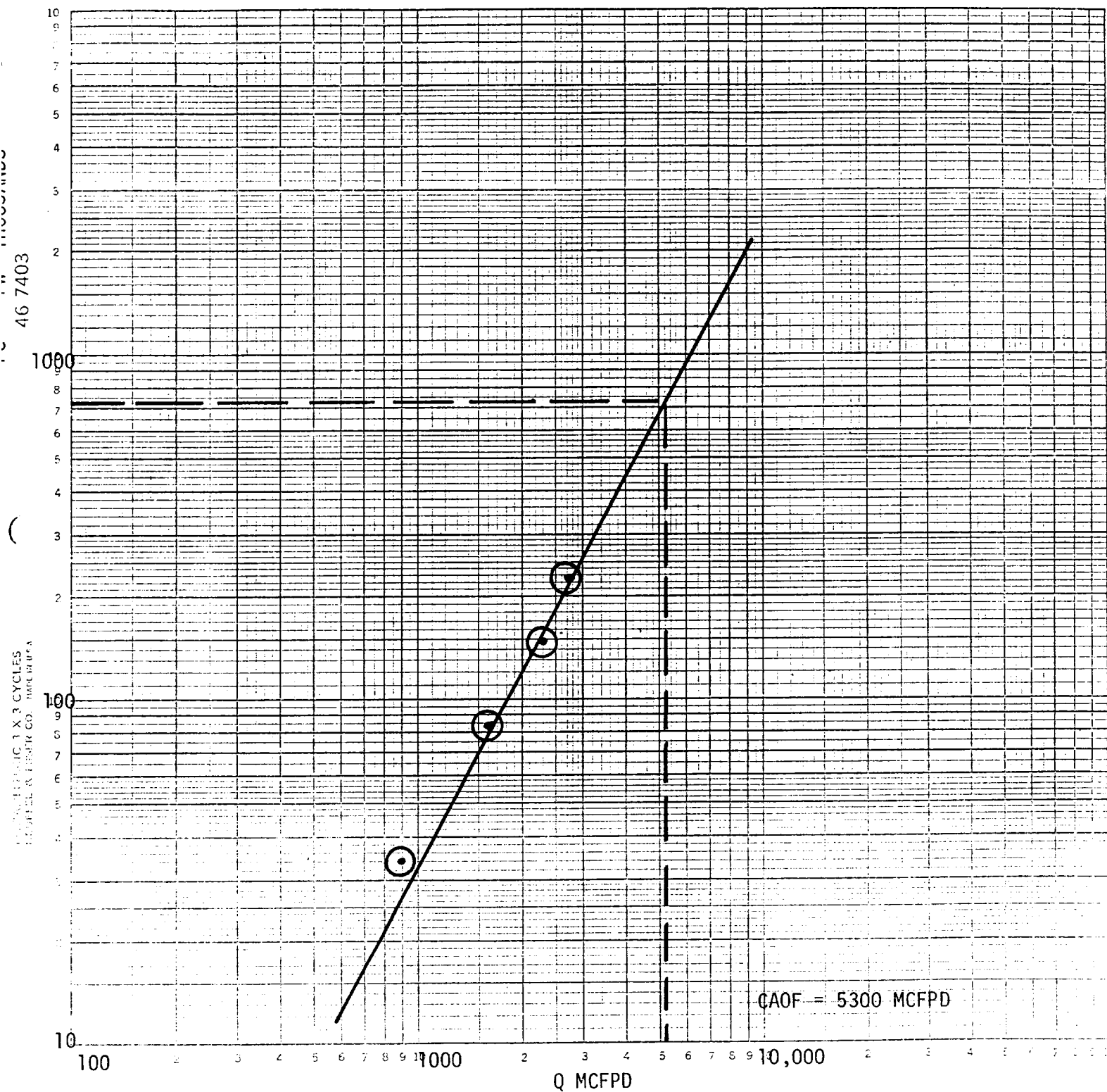
  

|     |                             |                             |                             |                                                           |                                                                |                                                                            |
|-----|-----------------------------|-----------------------------|-----------------------------|-----------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------------------|
| NO. | P <sub>t</sub> <sup>2</sup> | P <sub>w</sub> <sup>2</sup> | P <sub>w</sub> <sup>2</sup> | P <sub>t</sub> <sup>2</sup> - P <sub>w</sub> <sup>2</sup> | (1) $\frac{P_t^2}{P_t^2 - P_w^2} = 1.6932$                     | (2) $\left[ \frac{P_t^2}{P_t^2 - P_w^2} \right]^n = 1.3219$                |
| 1   |                             | 843                         | 711                         | 34                                                        | AOF = Q $\left[ \frac{P_t^2}{P_t^2 - P_w^2} \right]^n = 5,300$ | <i>Posted + Book</i><br><i>ID-2 + Book</i><br><i>12-18-81</i><br><i>ST</i> |
| 2   |                             | 813                         | 661                         | 84                                                        |                                                                |                                                                            |
| 3   |                             | 773                         | 598                         | 147                                                       |                                                                |                                                                            |
| 4   |                             | 718                         | 516                         | 229                                                       |                                                                |                                                                            |
| 5   |                             |                             |                             |                                                           |                                                                |                                                                            |

|                                                    |  |                              |  |                                           |  |
|----------------------------------------------------|--|------------------------------|--|-------------------------------------------|--|
| Absolute Open Flow _____ 5,300 _____ Mcfd @ 15.025 |  | Angle of Slope @ _____ 62.1° |  | Slope, n _____ .53                        |  |
| Remarks: _____                                     |  |                              |  |                                           |  |
| Approved By Commission: _____                      |  | Conducted By: JAMES CRAIG    |  | Calculated By: E.L. BUTTROSS, JR. 11-3-81 |  |
|                                                    |  |                              |  | Checked By: _____                         |  |

MESA PETROLEUM CO.  
 STEWART FEDERAL NO 2  
 SEC 1, T8S, R24E  
 CHAVES CO., NM  
 10-29-81



$$n = 1/\text{slope} = \frac{\text{Log } Q_2 - \text{Log } Q_1}{\text{cycle}} = \frac{\text{Log } 6200 - \text{Log } 1800}{\text{cycle}} = \frac{3.79 - 3.26}{\text{cycle}} = .53$$

$$\theta = 62.1^\circ$$