

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

File  
C172  
Form C-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>1-29-81                    |  | <b>APR 29 1981</b>                      |  |
| Company<br>Yates Petroleum Corporation                                                                                    |  | Connection<br>Transwestern Pipeline Co. |  |                                         |  |
| Pool<br>Und. Abo                                                                                                          |  | Formation<br>Abo                        |  | <b>O.C.D.</b><br><b>ARTESIA, OFFICE</b> |  |
| Completion Date<br>11-14-80                                                                                               |  | Total Depth<br>4450 KB                  |  | Plug Back TD<br>4214                    |  |
| Casing Size<br>5 1/2                                                                                                      |  | Set At<br>14#                           |  | Perforations:<br>From 3946 To 4090      |  |
| Tubing Size<br>2 7/8                                                                                                      |  | Set At<br>6.5#                          |  | Perforations:<br>From To                |  |
| Type Well - Single - Bradenhead - G.G. or G.O. Multiple<br>Single                                                         |  |                                         |  | Packer Set At<br>3913                   |  |
| Producing Thru<br>Tubing                                                                                                  |  | Reservoir Temp. °F<br>99 @ 4018         |  | Mean Annual Temp. °F<br>62              |  |
| Baro. Press. - P <sub>d</sub><br>13.2                                                                                     |  | State<br>NM                             |  | County<br>Chaves                        |  |
| L<br>4017                                                                                                                 |  | H<br>4017                               |  | C <sub>g</sub><br>0.690                 |  |
| % CO <sub>2</sub><br>5.52                                                                                                 |  | % N <sub>2</sub><br>5.16                |  | % H <sub>2</sub> S<br>N.7               |  |
| Prover<br>-----                                                                                                           |  | Meter Run<br>2"                         |  | Taps<br>Flanged                         |  |

  

| 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.        | 2.067 X 0.750    |   |              | 475             | 10                   | 70       | 1002            | 51       |                 |          | Weeks            |
| 2.        | 2.067 X 0.750    |   |              | 460             | 19                   | 70       | 920             | 59       |                 |          | 20               |
| 3.        | 2.067 X 0.750    |   |              | 460             | 37                   | 70       | 859             | 62       |                 |          | 24               |
| 4.        | 2.067 X 0.750    |   |              | 460             | 54                   | 65       | 723             | 64       |                 |          | 24               |
| 5.        |                  |   |              |                 |                      |          | 578             | 66       |                 |          | 24               |

  

| 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. Comp. Factor, F <sub>pv</sub> | Rate of Flow Q, Mcfd |
| 1                         | 2.709                 | 69.87            | 488.2                   | .9905                 | 1.204                         | 1.042                                | 235                  |
| 2                         | 2.709                 | 94.82            | 473.2                   | .9905                 | 1.204                         | 1.041                                | 319                  |
| 3                         | 2.709                 | 132.32           | 473.2                   | .9905                 | 1.204                         | 1.041                                | 445                  |
| 4                         | 2.709                 | 159.85           | 473.2                   | .9952                 | 1.204                         | 1.042                                | 541                  |
| 5                         |                       |                  |                         |                       |                               |                                      |                      |

  

| NO. | P <sub>r</sub> | Temp. °R | T <sub>r</sub> | Z     | Gas Liquid Hydrocarbon Ratio | A.P.I. Gravity of Liquid Hydrocarbons | Specific Gravity Separator Gas | Specific Gravity Flowing Fluid | Critical Pressure | Critical Temperature |
|-----|----------------|----------|----------------|-------|------------------------------|---------------------------------------|--------------------------------|--------------------------------|-------------------|----------------------|
| 1   | 0.715          | 530      | 1.458          | .9209 |                              |                                       | 0.690                          | XXXXXX                         | 682.5             | 363.5                |
| 2   | 0.693          | 530      | 1.458          | .9231 |                              |                                       |                                | XXXXXX                         |                   |                      |
| 3   | 0.693          | 530      | 1.458          | .9231 |                              |                                       |                                |                                |                   |                      |
| 4   | 0.693          | 525      | 1.444          | .9205 |                              |                                       |                                |                                |                   |                      |
| 5   |                |          |                |       |                              |                                       |                                |                                |                   |                      |

  

| NO. | P <sub>r</sub> <sup>2</sup> | P <sub>w</sub> <sup>2</sup> | R <sub>w</sub> <sup>2</sup> | P <sub>r</sub> <sup>2</sup> - R <sub>w</sub> <sup>2</sup> | (1) $\frac{P_c^2}{R_w^2 - R_w^2} = 1.5006$ | (2) $\left[ \frac{R_w^2}{R_c^2 - R_w^2} \right]^n = 1.2666$ |
|-----|-----------------------------|-----------------------------|-----------------------------|-----------------------------------------------------------|--------------------------------------------|-------------------------------------------------------------|
| 1   |                             |                             | 1091                        | 207                                                       |                                            |                                                             |
| 2   |                             |                             | 950                         | 348                                                       |                                            |                                                             |
| 3   |                             |                             | 674                         | 624                                                       |                                            |                                                             |
| 4   |                             |                             | 433                         | 865                                                       |                                            |                                                             |
| 5   |                             |                             |                             |                                                           |                                            |                                                             |

  

|                                      |  |                         |  |                 |  |
|--------------------------------------|--|-------------------------|--|-----------------|--|
| Absolute Open Flow 685 Mcfd @ 15.025 |  | Angle of Slope 59.8 deg |  | Slope, n 0.5822 |  |
|--------------------------------------|--|-------------------------|--|-----------------|--|

  

Remarks: BHP extrapolated from BHP buildup by Bennett Wireline. Tubing pressures from dead weight tester. Calculations worksheet C122D attached.

  

|                         |                               |                                 |             |
|-------------------------|-------------------------------|---------------------------------|-------------|
| Approved By Commission: | Conducted By:<br>David Weaver | Calculated By:<br>Eddie Mahfood | Checked By: |
|-------------------------|-------------------------------|---------------------------------|-------------|