

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

Form C-122

RECEIVED

|                                                 |  |              |  |                  |                                             |                     |                                         |  |
|-------------------------------------------------|--|--------------|--|------------------|---------------------------------------------|---------------------|-----------------------------------------|--|
| Type Test<br>[x] Initial [ ] Annual [ ] Special |  |              |  |                  | Test Date<br>2/1/86                         |                     |                                         |  |
| Company<br>Yates Petroleum Corporation          |  |              |  |                  | Connection<br>Transwestern Pipeline Company |                     | MAY 04 '88                              |  |
| Pool<br>Pecos Slope ABO                         |  |              |  |                  | Formation<br>Abo                            |                     | Unit<br>O. C. D.                        |  |
| Completion Date<br>12/31/82                     |  |              |  |                  | Total Depth<br>4350.0'                      |                     | ARTESIA, OFFICE                         |  |
| Csg Size Wt.<br>4.500" 9.500#                   |  |              |  |                  | Set At<br>4350.0'                           |                     | Farm or Lease Name<br>O'Connell VX Fed. |  |
| Tbg Size Wt.<br>2.375" 4.700#                   |  |              |  |                  | Set At<br>3696.0'                           |                     | Well No.<br>1                           |  |
| Type Well<br>Single                             |  |              |  |                  | Packer Set At<br>3696.0'                    |                     | Unit Sec Twp Rge<br>J 9 6S 26E          |  |
| Producing Thru<br>Tubing                        |  |              |  |                  | Resv. Temp. °F<br>96 @ 3696'                |                     | Mean Temp. °F<br>62.0                   |  |
|                                                 |  |              |  |                  | Baro. Press. - Pa<br>13.2 psia.             |                     | State<br>New Mexico                     |  |
| L<br>3696.0'                                    |  | H<br>3696.0' |  | Gg<br>.652       |                                             | %CO2<br>.01         |                                         |  |
|                                                 |  |              |  | %N2<br>7.49      |                                             | %H2S<br>0.00        |                                         |  |
|                                                 |  |              |  | Prover<br>0.000" |                                             | Meter Run<br>2.000" |                                         |  |
|                                                 |  |              |  | Taps<br>Flange   |                                             |                     |                                         |  |

| FLOW DATA |                |                   |                |             |             | TUBING DATA    |             | CASING DATA    |             | Duration<br>of<br>Flow |
|-----------|----------------|-------------------|----------------|-------------|-------------|----------------|-------------|----------------|-------------|------------------------|
| NO        | Prover<br>Size | Orifice<br>X Size | Press.<br>psig | Diff.<br>hw | Temp.<br>°F | Press.<br>psig | Temp.<br>°F | Press.<br>psig | Temp.<br>°F |                        |
| SI        | 0.000          | X 0.000           | 0              | 0.0         | 38          | 1016           | 0           | 0              | 0           | 0 hrs.                 |
| 1.        | 2.067          | X 1.000           | 145            | 46.4        | 38          | 686            | 62          | 0              | 0           | 24 hrs.                |
| 2.        | 2.067          | X 1.000           | 160            | 51.8        | 38          | 626            | 62          | 0              | 0           | 24 hrs.                |
| 3.        | 2.067          | X 1.000           | 200            | 57.8        | 38          | 568            | 62          | 0              | 0           | 24 hrs.                |
| 4.        | 2.067          | X 1.000           | 210            | 60.0        | 38          | 460            | 62          | 0              | 0           | 24 hrs.                |
| 5.        | 0.000          | X 0.000           | 0              | 0.0         | 0           | 0              | 0           | 0              | 0           | 0 hrs.                 |

RATE OF FLOW CALCULATIONS

| NO | Coefficient<br>(24 HOUR) | 1/hwPm | Pressure<br>Pm | Flow Temp<br>Factor<br>Ft. | Gravity<br>Factor<br>Fg | Super<br>Compress.<br>Fact. Fpv | Rate of Flow<br>Q, Mcfd |
|----|--------------------------|--------|----------------|----------------------------|-------------------------|---------------------------------|-------------------------|
| 1. | 4.947                    | 85.68  | 158.20         | 1.022                      | 1.238                   | 1.014                           | 544                     |
| 2. | 4.947                    | 94.72  | 173.20         | 1.022                      | 1.238                   | 1.016                           | 602                     |
| 3. | 4.947                    | 111.01 | 213.20         | 1.022                      | 1.238                   | 1.020                           | 709                     |
| 4. | 4.947                    | 115.72 | 223.20         | 1.022                      | 1.238                   | 1.021                           | 739                     |
| 5. | 0.000                    | 0.00   | 0.00           | 0.000                      | 0.000                   | 0.000                           | 0                       |

| NO | Pr   | Temp.<br>°R | Tr   | Z     | Gas Liquid Hydrocarbon Ratio<br>Dry Mcf/bbl.     |
|----|------|-------------|------|-------|--------------------------------------------------|
| 1. | .24  | 498         | 1.41 | .972  | A.P.I. Gravity of Liquid Hydrocarbons 0.000 Deg. |
| 2. | .26  | 498         | 1.41 | .969  | Specific Gravity Separator Gas .652              |
| 3. | .32  | 498         | 1.41 | .962  | Specific Gravity Flowing Fluid xxxxxx .652       |
| 4. | .34  | 498         | 1.41 | .960  | Critical Pressure 657.7 PSIA 657.7 PSIA          |
| 5. | 0.00 | 0           | 0.00 | 0.000 | Critical Temperature 352.2°R 352.2°R             |

| Pc 1029.2 | Pc2 1059.3 |       |       |
|-----------|------------|-------|-------|
| NO        | Pt2        | Pw    | Pw2   |
| 1.        | 488.9      | 701.9 | 492.6 |
| 2.        | 408.6      | 642.8 | 413.2 |
| 3.        | 337.8      | 586.7 | 344.3 |
| 4.        | 223.9      | 480.7 | 231.1 |
| 5.        | 0.0        | 0.0   | 0.0   |

$$Pc^2 - Pw^2 (1) \quad \frac{Pc^2}{Pc^2 - Pw^2} = 1.2775 \quad (2) \quad \left[ \frac{Pc^2}{Pc^2 - Pw^2} \right]^n = 1.2197$$

$$AOF = Q \left[ \frac{Pc^2}{Pc^2 - Pw^2} \right]^n = 902 \text{ Mcfd}$$

Absolute Open Flow 902 Mcfd @ 15.025 Angle of Slope, 0 39 Slope, n .811  
Remarks:

|              |                               |                                    |             |
|--------------|-------------------------------|------------------------------------|-------------|
| Approved By: | Conducted By:<br>David Weaver | Calculated By:<br>Andrea Carpenter | Checked By: |
|--------------|-------------------------------|------------------------------------|-------------|

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (Pw) C-122D

Adopted 9-1-65

DATE 5/4/88

COMPANY Yates Petroleum Corporation LEASE O'Connell VX Fed. WELL NO. 1

LOCATION: Unit J Section 9 Township 6S Range 26E

L 3696.0 H 3696.0 L/H 1.000 G .652 %CO<sub>2</sub> .01 %N<sub>2</sub> 7.49 %H<sub>2</sub>S 0.00

d 1.995 Fr .017777 GH 2409.8 Pcr 657.7 Tcr 352.2

| LINE                                               | 1st Rate | 2nd Rate | 3rd Rate | 4th Rate | 5th Rate |
|----------------------------------------------------|----------|----------|----------|----------|----------|
| 1 Qm                                               | .544     | .602     | .709     | .739     | 0.000    |
| 2 Tw(W.H.°R)                                       | 522.0    | 522.0    | 522.0    | 522.0    | 0.0      |
| 3 Ts(B.H.°R)                                       | 556.0    | 556.0    | 556.0    | 556.0    | 0.0      |
| 4 T=(Tw+Ts)/2                                      | 539.0    | 539.0    | 539.0    | 539.0    | 0.0      |
| 5 Z(Est.)                                          | .900     | .908     | .916     | .931     | 0.000    |
| 6 TZ                                               | 485.3    | 489.6    | 493.9    | 502.0    | 0.0      |
| 7 GH/TZ                                            | 4.966    | 4.921    | 4.879    | 4.800    | 0.000    |
| 8 e <sup>s</sup> (Table XIV)                       | 1.205    | 1.203    | 1.201    | 1.197    | 0.000    |
| 9 1-e <sup>-s</sup> (Table XIV)                    | .170     | .169     | .167     | .165     | 0.000    |
| 10 Pt                                              | 699.2    | 639.2    | 581.2    | 473.2    | 0.0      |
| 11 Pt <sup>2</sup> /1000                           | 488.9    | 408.6    | 337.8    | 223.9    | 0.0      |
| 12 Fr(Table XV)                                    | .017777  | .017777  | .017777  | .017777  | 0.000000 |
| 13 Fc=FrTZ                                         | 8.627    | 8.704    | 8.780    | 8.924    | 0.000    |
| 14 FcQm                                            | 4.693    | 5.242    | 6.221    | 6.598    | 0.000    |
| 15 L/H(FcQm) <sup>2</sup>                          | 22.024   | 27.483   | 38.703   | 43.539   | 0.000    |
| 16 Fw=L/H(FcQm) <sup>2</sup> (1-e <sup>-s</sup> )  | 3.742    | 4.632    | 6.471    | 7.173    | 0.000    |
| 17 Pw <sup>2</sup> =Pt <sup>2</sup> +Fw            | 492.6    | 413.2    | 344.3    | 231.1    | 0.0      |
| 18 Ps <sup>2</sup> =e <sup>s</sup> Pw <sup>2</sup> | 593.4    | 497.0    | 413.4    | 276.7    | 0.0      |
| 19 Ps                                              | 770.4    | 705.0    | 643.0    | 526.0    | 0.0      |
| 20 P=(Pt+Ps)/2                                     | 734.8    | 672.1    | 612.1    | 499.6    | 0.0      |
| 21 Pr=(P/Pcr)                                      | 1.12     | 1.02     | .93      | .76      | 0.00     |
| 22 Tr=(T/Tcr)                                      | 1.53     | 1.53     | 1.53     | 1.53     | 0.00     |
| 23 Z(Table XI)                                     | .900     | .908     | .916     | .931     | 0.000    |

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|          |                             |
|----------|-----------------------------|
| Company  | Yates Petroleum Corporation |
| Well     | O'Connell VX Fed. No. 1     |
| Location | J, 9-6S-26E                 |
| County   | Chaves                      |
| Date     | 5/4/88                      |

