



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

Form C-122

*dsr*

|                                                                                                                           |                               |                            |                           |
|---------------------------------------------------------------------------------------------------------------------------|-------------------------------|----------------------------|---------------------------|
| Type Test<br><input checked="" type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Special |                               | Test Date<br>9/21/1999     |                           |
| Company<br>Yates Petroleum Corp                                                                                           |                               | Connection<br>GPM Gas Corp |                           |
| Pool<br>Burton Flat                                                                                                       |                               | Formation<br>Morrow        |                           |
| Completion Date<br>9/7/1999                                                                                               |                               | Total Depth<br>11200       | Plug Back TD<br>10949     |
| Elevation<br>3160                                                                                                         |                               |                            |                           |
| Csg. Size<br>5.500                                                                                                        | Wt.<br>17.000                 | d<br>4.892                 | Set At<br>11200           |
| Perforations<br>From 10908 To 10914                                                                                       |                               |                            |                           |
| Tbg. Size<br>2.875                                                                                                        | Wt.<br>6.500                  | d<br>2.441                 | Set At<br>10818           |
| Perforations<br>From 10908 To 10914                                                                                       |                               |                            |                           |
| Type Well<br>Single                                                                                                       |                               | Packer Set At<br>10828     | County<br>Eddy            |
| Producing Thru<br>Tubing                                                                                                  | Resv. Temp. °F<br>173 @ 10930 | Mean Temp. °F<br>62        | Baro. Press. - Pa<br>13.2 |
| State<br>New Mexico                                                                                                       |                               |                            |                           |
| L<br>11200                                                                                                                | H<br>11200                    | Gg<br>0.598                | %CO <sub>2</sub><br>0.891 |
| %N <sub>2</sub><br>0.448                                                                                                  | %H <sub>2</sub> S<br>0.000    | Prover<br>0.000            | Meter Run<br>4.000        |
| Taps<br>Flange                                                                                                            |                               |                            |                           |

| FLOW DATA |                        |   |                 |                    |             | TUBING DATA |                    | CASING DATA |                    | Duration<br>of<br>Flow |             |
|-----------|------------------------|---|-----------------|--------------------|-------------|-------------|--------------------|-------------|--------------------|------------------------|-------------|
| NO.       | Prover<br>Line<br>Size | X | Orifice<br>Size | Press.<br>p.s.i.g. | Diff.<br>hw | Temp.<br>°F | Press.<br>p.s.i.g. | Temp.<br>°F | Press.<br>p.s.i.g. |                        | Temp.<br>°F |
| SI.       | 0.000                  | x | 0.000           | 0                  | 0.0         | 0           | 2000               | 0           |                    |                        | 0           |
| 1.        | 4.026                  | x | 1.500           | 600                | 15.0        | 60          | 1000               | 60          |                    |                        | 24          |
| 2.        | 4.026                  | x | 1.500           | 600                | 16.0        | 60          | 867                | 60          |                    |                        | 24          |
| 3.        | 4.026                  | x | 1.500           | 600                | 17.0        | 60          | 733                | 60          |                    |                        | 24          |
| 4.        | 4.026                  | x | 1.500           | 600                | 18.0        | 60          | 600                | 60          |                    |                        | 24          |
| 5.        |                        | x |                 |                    |             |             |                    |             |                    |                        |             |

| RATE OF FLOW CALCULATIONS |                          |               |                |                            |                         |                                   |                         |
|---------------------------|--------------------------|---------------|----------------|----------------------------|-------------------------|-----------------------------------|-------------------------|
| NO.                       | Coefficient<br>(24 Hour) | $\sqrt{hwPm}$ | Pressure<br>Pm | Flow Temp.<br>Factor<br>Ft | Gravity<br>Factor<br>Fg | Super<br>Compress.<br>Factor, Fpv | Rate of Flow<br>Q, Mcfd |
| 1.                        | 10.840                   | 95.9          | 613.2          | 1.0000                     | 1.293                   | 1.052                             | 1414                    |
| 2.                        | 10.840                   | 99.1          | 613.2          | 1.0000                     | 1.293                   | 1.052                             | 1460                    |
| 3.                        | 10.840                   | 102.1         | 613.2          | 1.0000                     | 1.293                   | 1.052                             | 1505                    |
| 4.                        | 10.840                   | 105.1         | 613.2          | 1.0000                     | 1.293                   | 1.052                             | 1549                    |
| 5.                        |                          |               |                |                            |                         |                                   |                         |

| NO. | Pr   | Temp °R | Tr   | Z     | Gas Liquid Hydrocarbon Ratio | Mcf/bbl.   |
|-----|------|---------|------|-------|------------------------------|------------|
| 1.  | 0.91 | 520     | 1.47 | 0.904 | 0                            |            |
| 2.  | 0.91 | 520     | 1.47 | 0.904 | 0.000                        |            |
| 3.  | 0.91 | 520     | 1.47 | 0.904 | 0.598                        | XXXXXXXXXX |
| 4.  | 0.91 | 520     | 1.47 | 0.904 | 0.598                        | 0.598      |
| 5.  |      |         |      |       |                              |            |

| NO. | Pt     | Pw     | Pwf    | Pc <sup>2</sup> - Pwf <sup>2</sup> | (1) $\frac{Pc^2}{Pc^2 - Pwf^2} =$ | (2) $\left[ \frac{Pc^2}{Pc^2 - Pwf^2} \right]^n =$ |
|-----|--------|--------|--------|------------------------------------|-----------------------------------|----------------------------------------------------|
| 1.  | 1026.6 | 1024.2 | 1048.9 | 3004.1                             | 1.168                             | 1.083                                              |
| 2.  | 774.8  | 893.8  | 799.0  | 3254.0                             |                                   |                                                    |
| 3.  | 556.8  | 763.5  | 583.0  | 3470.0                             |                                   |                                                    |
| 4.  | 376.0  | 635.8  | 404.2  | 3648.7                             |                                   |                                                    |
| 5.  |        |        |        |                                    |                                   |                                                    |

|                                          |  |                                 |                                 |
|------------------------------------------|--|---------------------------------|---------------------------------|
| Absolute Open Flow<br>1630 Mcfd @ 15.025 |  | Angle of Slope<br>$\theta$ 27   | Slope, n<br>0.514               |
| Remarks:                                 |  |                                 |                                 |
| Approved By Commission:                  |  |                                 |                                 |
| Conducted By:<br>Blaine Wallace          |  | Calculated By:<br>Katie Brunson | Checked By:<br>Pinson McWhorter |

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

DATE 9/21/1999

COMPANY Yates Petroleum Corp LEASE SOUTH AVALON ASZ STATE WELL NO. 1

LOCATION: Unit C Section 14 Township 21S Range 26E

L 11200 H 11200 L/H 1.000 G 0.598 %CO<sub>2</sub> 0.891 %N<sub>2</sub> 0.448 %H<sub>2</sub>S 0.000

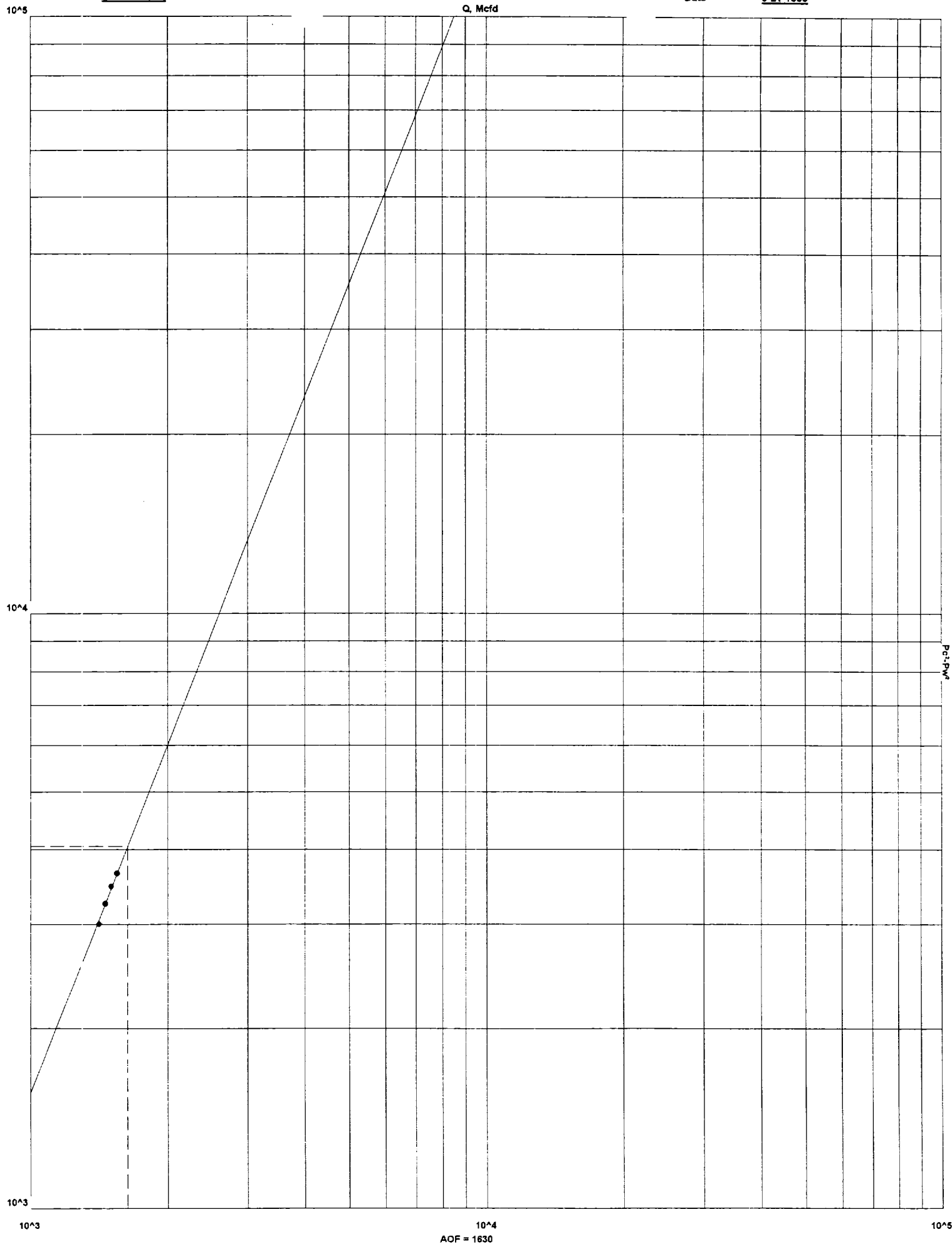
d 2.441 Fr 0.010495 GH 6697.6 P<sub>cr</sub> 675.2 T<sub>cr</sub> 352.6

| LINE                                                  | 1st Rate | 2nd Rate | 3rd Rate | 4th Rate | 5th Rate |
|-------------------------------------------------------|----------|----------|----------|----------|----------|
| 1 Qm                                                  | 1.414    | 1.460    | 1.505    | 1.549    |          |
| 2 Tw(W.H.°R)                                          | 520      | 520      | 520      | 520      |          |
| 3 Ts(B.H.°R)                                          | 633      | 633      | 633      | 633      |          |
| 4 T = (Tw+Ts) / 2                                     | 576.2    | 576.2    | 576.2    | 576.2    |          |
| 5 Z (Est.)                                            | 0.887    | 0.899    | 0.912    | 0.926    |          |
| 6 TZ                                                  | 510.8    | 517.8    | 525.4    | 533.4    |          |
| 7 GH / TZ                                             | 13.112   | 12.934   | 12.747   | 12.557   |          |
| 8 e <sup>-s</sup> (Table XIV)                         | 1.635    | 1.624    | 1.613    | 1.602    |          |
| 9 1-e <sup>-s</sup> (Table XIV)                       | 0.388    | 0.384    | 0.380    | 0.376    |          |
| 10 Pt                                                 | 1013.2   | 880.2    | 746.2    | 613.2    |          |
| 11 Pt <sup>2</sup> / 1000                             | 1026.6   | 774.8    | 556.8    | 376.0    |          |
| 12 Fr (Table XV)                                      | 0.010495 | 0.010495 | 0.010495 | 0.010495 |          |
| 13 Fc = FrTZ                                          | 5.361    | 5.435    | 5.514    | 5.598    |          |
| 14 FcQm                                               | 7.58     | 7.93     | 8.30     | 8.67     |          |
| 15 L / H(FcQm) <sup>2</sup>                           | 57.4     | 63.0     | 68.9     | 75.2     |          |
| 16 Fw = L / H(FcQm) <sup>2</sup> (1-e <sup>-s</sup> ) | 22.31    | 24.20    | 26.17    | 28.22    |          |
| 17 Pw <sup>2</sup> = Pt <sup>2</sup> +Fw              | 1048.9   | 799.0    | 583.0    | 404.2    |          |
| 18 Ps <sup>2</sup> = e <sup>-s</sup> Pw <sup>2</sup>  | 1714.8   | 1297.6   | 940.3    | 647.4    |          |
| 19 Ps                                                 | 1309.5   | 1139.1   | 969.7    | 804.6    |          |
| 20 P = (Pt+Ps) / 2                                    | 1161.4   | 1009.7   | 857.9    | 708.9    |          |
| 21 Pr = (P / Pcr)                                     | 1.72     | 1.50     | 1.27     | 1.05     |          |
| 22 Tr = (T / Tcr)                                     | 1.63     | 1.63     | 1.63     | 1.63     |          |
| 23 Z (Table XI)                                       | 0.887    | 0.899    | 0.912    | 0.926    |          |

Well Location SOUTH AVALON ASZ STATE #1  
C 14-21S-26E

County Eddy  
Date 9-21-1999

Q, Mc/d



10^4  
AOF = 1630

Pwf, Pwf