

## OIL CONSERVATION DIVISION

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENTP. O. BOX 2088  
SANTA FE, NEW MEXICO 87501Form C-122  
Revised 10-1-78

RECEIVED

C/SF MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL  
C-122

|                                                                                                                           |             |                                     |                             |                                        |                         |
|---------------------------------------------------------------------------------------------------------------------------|-------------|-------------------------------------|-----------------------------|----------------------------------------|-------------------------|
| Type Test<br><input checked="" type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Special |             | Test Date<br>2/4/82                 |                             | APR 1 1982                             |                         |
| Company<br>Yates Petroleum Corp. ✓                                                                                        |             | Connection<br>Transwestern Pipeline |                             | O. C. D.<br>ARTESIA, OFFICE            |                         |
| Pool<br>Pecos Slope<br>Undesignated Abo                                                                                   |             | Formation<br>Abo                    |                             | Unit                                   |                         |
| Completion Date<br>11/25/81                                                                                               |             | Total Depth<br>5175'                |                             | Plug Back TD<br>5015'                  |                         |
| Elevation<br>3841'                                                                                                        |             | Farm or Lease Name<br>McConkey "HX" |                             | Well No.<br>#2                         |                         |
| Csg. Size<br>4 1/2"                                                                                                       | Wt.<br>9.5# | d<br>4.090                          | Set At<br>5024'             | Perforations:<br>From 4472 To 4784     | Well No.<br>#2          |
| Tub. Size<br>2 7/8"                                                                                                       | Wt.<br>6.5# | d<br>2.441                          | Set At<br>4408              | Perforations:<br>From To               | Unit<br>K               |
| Type Well - Single - Bradenhead - G.C. or G.O. Multiple<br>Single                                                         |             |                                     |                             | Packer Set At<br>4408                  | County<br>Chaves        |
| Producing Thru<br>Tubing                                                                                                  |             | Reservoir Temp. °F<br>108 @ 4628'   | Mean Annual Temp. °F<br>62° | Burn. Press. - P <sub>ga</sub><br>13.2 | State<br>New Mexico     |
| L<br>4408                                                                                                                 | H<br>4408   | Gg<br>.648                          | % CO <sub>2</sub><br>0.56   | % N <sub>2</sub><br>6.93               | % H <sub>2</sub> S<br>0 |
| Prover<br>-                                                                                                               |             | Meter Run<br>2                      | Taps<br>Flanged             |                                        |                         |

| 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>h <sub>w</sub> | Temp.<br>°F | Press.<br>p.s.i.g. | Temp.<br>°F | Press.<br>p.s.i.g. |                        |
| SI        |                        |   |                 |                    |                         |             | 920                |             |                    |                        |
| 1.        | 2.067 x .500           |   |                 | 265                | 9.1                     | 39          | 840                | 51          |                    |                        |
| 2.        | 2.067 x .500           |   |                 | 300                | 12.7                    | 39          | 801                | 51          |                    |                        |
| 3.        | 2.067 x .500           |   |                 | 630                | 6.5                     | 28          | 740                | 51          |                    |                        |
| 4.        | 2.067 x .500           |   |                 | 500                | 17.1                    | 30          | 640                | 51          |                    |                        |
| 5.        |                        |   |                 |                    |                         |             |                    |             |                    |                        |

| RATE OF FLOW CALCULATIONS |                          |                  |                            |                                        |                                     |                                               |                         |
|---------------------------|--------------------------|------------------|----------------------------|----------------------------------------|-------------------------------------|-----------------------------------------------|-------------------------|
| NO.                       | Coefficient<br>(24 Hour) | $\sqrt{h_w P_m}$ | Pressure<br>P <sub>m</sub> | Flow Temp.<br>Factor<br>F <sub>t</sub> | Gravity<br>Factor<br>F <sub>g</sub> | Super<br>Compress.<br>Factor, F <sub>pv</sub> | Rate of Flow<br>Q, Mcfd |
| 1                         | 1.189                    | 50.4             | 278.2                      | 1.021                                  | 1.242                               | 1.027                                         | 78                      |
| 2                         | 1.189                    | 63.1             | 313.2                      | 1.021                                  | 1.242                               | 1.030                                         | 98                      |
| 3                         | 1.189                    | 64.5             | 643.2                      | 1.032                                  | 1.242                               | 1.069                                         | 105                     |
| 4                         | 1.189                    | 93.7             | 513.2                      | 1.030                                  | 1.242                               | 1.052                                         | 150                     |
| 5                         |                          |                  |                            |                                        |                                     |                                               |                         |

| NO. | P <sub>g</sub> | Temp. °R | T <sub>g</sub> | Z    | Gas Liquid Hydrocarbon Ratio              | Mcf/bbl.     |
|-----|----------------|----------|----------------|------|-------------------------------------------|--------------|
| 1   | .42            | 499      | 1.42           | .948 | Dry                                       |              |
| 2   | .47            | 499      | 1.42           | .942 | A.P.L. Gravity of Liquid Hydrocarbons Dry |              |
| 3   | .97            | 488      | 1.39           | .875 | Specific Gravity Separator Gas .652       | XXXXXX       |
| 4   | .77            | 490      | 1.40           | .903 | Specific Gravity Flowing Fluid XXXXX      | .652         |
| 5   |                |          |                |      | Critical Pressure 662 P.S.I.A.            | 662 P.S.I.A. |
|     |                |          |                |      | Critical Temperature 351 R                | 351 R        |

| NO. | P <sub>c</sub> | P <sub>w</sub> | P <sub>c</sub> <sup>2</sup> | P <sub>w</sub> <sup>2</sup> | P <sub>c</sub> <sup>2</sup> - P <sub>w</sub> <sup>2</sup> |
|-----|----------------|----------------|-----------------------------|-----------------------------|-----------------------------------------------------------|
| 1   | 933.2          | 870.9          | 870.9                       | 143.0                       |                                                           |
| 2   | 727.9          | 662.8          | 662.9                       | 208.0                       |                                                           |
| 3   | 662.8          | 574.8          | 574.9                       | 296.0                       |                                                           |
| 4   | 574.8          | 426.7          | 426.8                       | 444.1                       |                                                           |
| 5   |                |                |                             |                             |                                                           |

$$(1) \frac{P_c^2}{P_c^2 - P_w^2} = 1.9610$$

$$A \cdot B \cdot C = Q \left[ \frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 222$$

$$(2) \left[ \frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.4819$$

|                    |     |                |                  |               |
|--------------------|-----|----------------|------------------|---------------|
| Absolute Open Flow | 222 | Mcf/d @ 15.025 | Angle of Slope @ | Slope, n .584 |
|--------------------|-----|----------------|------------------|---------------|

Remarks:

|                      |                               |                               |             |
|----------------------|-------------------------------|-------------------------------|-------------|
| Approved By Division | Conducted By:<br>David Weaver | Calculated By:<br>Al Springer | Checked By: |
|----------------------|-------------------------------|-------------------------------|-------------|



WORKSHEET FOR CALCULATION OF ST. C COLUMN WELLHEAD PRESSURE (P<sub>w</sub>)

9-C-1220  
Revised 9-1-85

COMPANY Nates Petroleum Corp LEASE McDonkey "H" WELL NO. 42 DATE 3/31/82

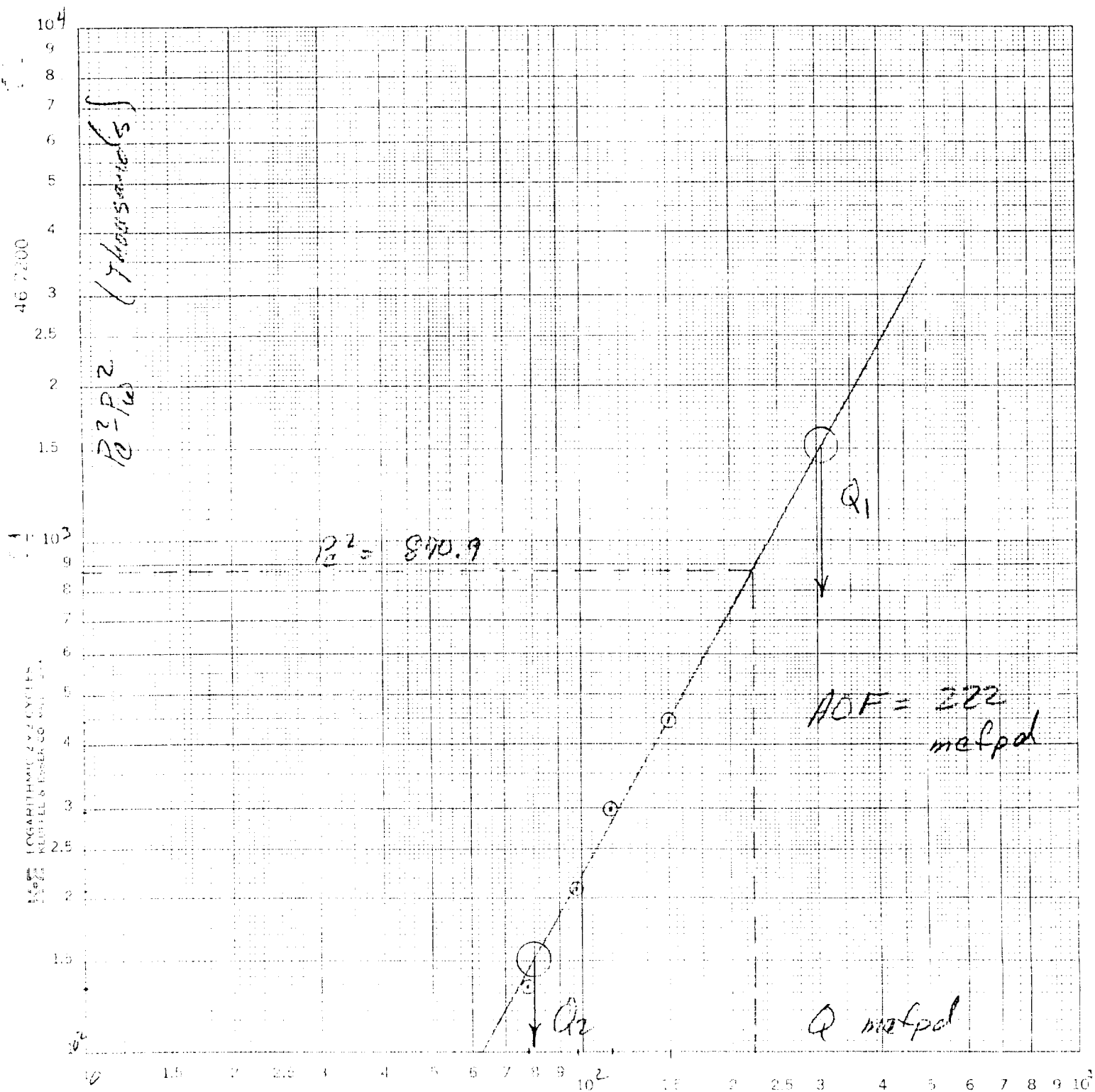
LOCATION: Unit K Section 16 Township 9S Range 26E

4408 14408 1.00 6.48 % CO<sub>2</sub> 0.56 % H<sub>2</sub> 6.83 % H<sub>2</sub>S 0

2.441 0.010963 2856 662 351

| LINE | 1 <sup>st</sup> rate | 2 <sup>nd</sup> rate | 3 <sup>rd</sup> rate | 4 <sup>th</sup> rate |  |  |  |  |  |
|------|----------------------|----------------------|----------------------|----------------------|--|--|--|--|--|
| 1    | .098                 | .098                 | .105                 | .150                 |  |  |  |  |  |
| 2    | 511                  | 511                  | 511                  | 511                  |  |  |  |  |  |
| 3    | 565                  | 565                  | 565                  | 565                  |  |  |  |  |  |
| 4    | 539.5                | 539.5                | 539.5                | 539.5                |  |  |  |  |  |
| 5    | .881                 | .881                 | .893                 | .904                 |  |  |  |  |  |
| 6    | 4195.3               | 4195.3               | 481.77               | 4189.83              |  |  |  |  |  |
| 7    | 6.009                | 5.995                | 5.928                | 5.534                |  |  |  |  |  |
| 8    | 1.253                | 1.251                | 1.249                | 1.245                |  |  |  |  |  |
| 9    | .202                 | .201                 | .199                 | .197                 |  |  |  |  |  |
| 10   | 853.2                | 814.2                | 758.2                | 653.2                |  |  |  |  |  |
| 11   | 727.9                | 662.8                | 574.8                | 426.7                |  |  |  |  |  |
| 12   | .010963              | .010963              | .010963              | .010963              |  |  |  |  |  |
| 13   | 5.116                | 5.145                | 5.185                | 5.267                |  |  |  |  |  |
| 14   | .399                 | .504                 | .574                 | .790                 |  |  |  |  |  |
| 15   | .159                 | .254                 | .296                 | .624                 |  |  |  |  |  |
| 16   | .032                 | .051                 | .059                 | .123                 |  |  |  |  |  |
| 17   | 727.7                | 662.9                | 574.9                | 426.8                |  |  |  |  |  |
| 18   | 912.1                | 829.3                | 718.0                | 531.4                |  |  |  |  |  |
| 19   | 955.0                | 910.7                | 847.4                | 728.7                |  |  |  |  |  |
| 20   | 904.1                | 862.4                | 802.8                | 691.1                |  |  |  |  |  |
| 21   | 1.57                 | 1.30                 | 1.21                 | 1.04                 |  |  |  |  |  |
| 22   | 1.54                 | 1.54                 | 1.54                 | 1.54                 |  |  |  |  |  |
| 23   | .881                 | .886                 | .893                 | .900                 |  |  |  |  |  |

Yates Petroleum Corp.  
 McConkey H-1 #2  
 (K) Sec 10 - 95 - 26E  
 Chance County, New Mex.



$$\left( \frac{Q_1}{Q_2} \right)^2 = 15.2$$

$$\frac{Q_1}{Q_2} = \sqrt{15.2}$$

$$Q_1 = 309$$

$$\log Q_1 = 2.48914$$

$$\log Q_2 = 1.90309$$

$$n = .58405 = .584$$