STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

JUL 25 1988

Form C-122
Revised 10-1-78

# MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

RECEIVED
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OCD
HOBBS, OFFICE

| | | | | | |
|---|---|---|---|---|---|
| Type Test: XX Initial ☐ Annual ☐ Special | | | | Test Date: 7-14-88 | |
| Company: Barbara Fasken | | Connection: None (Vent to atmosphere) | | | |
| Pool: Quail Ridge | | Formation: Morrow | | Unit: L | |
| Completion Date: 7-14-88 | Total Depth: 13,656 | Plug Back TD: 13562 | Elevation: 3614GL | Farm or Lease Name: Ling Fed | |
| Csg. Size: 5½ / Wt.: 17# & 20# / d: / Set At: 13659 | | Perforations: From 13172 To 13305 | | Well No.: 2 | |
| Tbg. Size: 2 3/8 / Wt.: 4.7 / d: 1.995 / Set At: 13122 | | Perforations: From open To end | | Unit: L / Sec.: 31 / Twp.: 19S / Rge.: 34E | |
| Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Single | | Packer Set At: 13084 | | County: Lea | |
| Producing Thru: Tbg | Reservoir Temp. °F: 186 @ 13238.5 | Mean Annual Temp. °F: 60 | Baro. Press. – $P_a$: 13.2 | State: New Mexico | |

| L | H | Gg | % $CO_2$ | % $N_2$ | % $H_2S$ | Prover | Meter Run | Taps |
|---|---|---|---|---|---|---|---|---|
| *13238.5 | 13238.5 | .664 | .42 | .57 | 0 | | 4.026 | Flg |

| | FLOW DATA | | | | TUBING DATA | | CASING DATA | | |
|---|---|---|---|---|---|---|---|---|---|
| NO. | Prover Line Size X Orifice Size | Press. p.s.i.g. | Diff. $h_w$ | Temp. °F | Press. p.s.i.g. | Temp. °F | Press. p.s.i.g. | Temp. °F | Duration of Flow |
| SI | | | | | 3495 | | 3350 | | 72 hrs |
| 1. | 4 X 1.750 | 460 | 2.00 | 78 | 3200 | 60 | 3300 | | 1 hr |
| 2. | 4 X 1.750 | 470 | 4.00 | 78 | 2860 | 62 | 3300 | | 1 hr |
| 3. | 4 X 1.750 | 490 | 9.00 | 78 | 2500 | 64 | 3200 | | 1 hr |
| 4. | 4 X 1.750 | 650 | 50.00 | 78 | 2420 | 63 | 2600 | | 1 hr |
| 5. | 4 X 1.750 | 660 | 74.00 | 77 | 2140 | 63 | 2250 | | 1 hr |

## RATE OF FLOW CALCULATIONS

| NO. | Coefficient (24 Hour) | $\sqrt{h_w P_m}$ | Pressure $P_m$ | Flow Temp. Factor Ft. | Gravity Factor Fg | Super Compress. Factor, Fpv | Rate of Flow Q, Mcfd |
|---|---|---|---|---|---|---|---|
| 1 | 14.93 | 30.76 | 473.2 | .9831 | 1.227 | 1.048 | 581 |
| 2. | 14.93 | 43.96 | 483.2 | .9831 | 1.227 | 1.049 | 830 |
| 3 | 14.93 | 67.30 | 503.2 | .9831 | 1.227 | 1.051 | 1.274 |
| 4. | 14.93 | 182.10 | 663.2 | .9831 | 1.227 | 1.068 | 3.503 |
| 5. | 14.93 | 223.20 | 673.2 | .9840 | 1.227 | 1.069 | 4.301 |

| NO. | $P_t$ | Temp. °R | $T_r$ | Z |
|---|---|---|---|---|
| 1 | .70 | 538 | 1.42 | .911 |
| 2. | .72 | 538 | 1.42 | .909 |
| 3. | .75 | 538 | 1.42 | .905 |
| 4. | .98 | 538 | 1.42 | .877 |
| 5. | 1.00 | 537 | 1.42 | .875 |

Gas Liquid Hydrocarbon Ratio: 39.7 Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons: 54.5 @ 60° Deg.
Specific Gravity Separator Gas: .664 / xxxxxxxxx
Specific Gravity Flowing Fluid: xxxxx / G Mix .738
Critical Pressure: 670 P.S.I.A. / 668 P.S.I.A.
Critical Temperature: 378 R / 401 R

* $P_c$ 3765.6 $P_c^2$ 14179.7

| NO | ***$P_t^2$ | $P_w$ | $P_w^2$ | $P_c^2 - P_w^2$ |
|---|---|---|---|---|
| BHP 1 | 5093.2 | 3649.7 | 13320.3 | 859.4 |
| owBHP | 4951.2 | 3558.6 | 122663.6 | 1516.1 |
| owBHP | 4842.2 | 3413.6 | 11652.7 | 2527.0 |
| owBHP | 4664.2 | 2774.9 | 7700.1 | 6479.6 |
| owBHP | 3862.2 | 2311.3 | 5342.1 | 8837.6 |

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.604$

(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.577$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 6.783$

Absolute Open Flow: 6,783 Mcfd @ 15.025 | Angle of Slope θ: 46 | Slope, n: .964

Remarks: *BHP instrument set @ mid-perfs 13238.5
**Shut in BHP Cal. to surface. Well made 11.0 BBL cond.
***Shut in & flowing BHPs & 7.5 BBLs water

| Approved By Division | Conducted By: | Calculated By: | Checked By: |
|---|---|---|---|
| | David Bruns | Joe Murray | D. Bruns |