NEW MEXICO OIL CONSERVATION COMMISSION

# MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

| | | | | |
|---|---|---|---|---|
| Type Test: [X] Initial [ ] Annual [ ] Special | | | Test Date: 11/3/80 | |
| Company: Chama Petroleum Co. | | Connection: El Paso Natural Gas Company | | |
| Pool: Undesignated North Quail Ridge | | Formation: Morrow | | Unit |
| Completion Date: 9/27/80 | Total Depth: 13447' | Plug Back TD: 13373' | Elevation: 3776'GL | Farm or Lease Name: Pennizoil Federal |
| Csg. Size: 5½ / Wt.: 20.0 / 17.0 / d: 4.778 / 4.892 / Set At: 13447' KB | | Perforations: From 13200' To 13227' | | Well No.: 1 |
| Tbg. Size: 2 3/8" / Wt.: 6.5 / d: 1.867 / Set At: 13171' | | Perforations: From Open To | | Unit: I / Sec.: 1 / Twp.: 19s / Rge.: 33e |
| Type Well – Single – Bradenhead – G.C. or G.O. Multiple: Single | | Packer Set At: 13171' | | County: Lea |
| Producing Thru: Tubing | Reservoir Temp. °F: 185 @ 12969 | 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 |
|---|---|---|---|---|---|---|---|---|
| 13214 | – | 0.6944 | 0.620 | 0.862 | – | – | 4 X 1.250 | F |

## FLOW DATA

| NO. | Prover Line Size | X Orifice Size | Press. p.s.i.g. | Diff. $h_w$ | Temp. °F | TUBING DATA Press. p.s.i.g. DWT | TUBING DATA Temp. °F | CASING DATA Press. p.s.i.g. | CASING DATA Temp. °F | Duration of Flow |
|---|---|---|---|---|---|---|---|---|---|---|
| SI | | | | | | 4283 | | | | |
| 1. | 4 | 1.250 | 549 | 4 | 72 | 4265 | 75 | PACKER | | 72.0 hr |
| 2. | 4 | 1.250 | 549 | 19 | 79 | 4252 | 74 | | | 1.0 hr |
| 3. | 4 | 1.250 | 549 | 38 | 78 | 4249 | 73 | | | 1.0 hr |
| 4. | 4 | 1.250 | 549 | 61 | 77 | 4236 | 72 | | | 1.0 hr |
| 5. | | | | | | | | | | 1.0 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 | 7.469 | 47.42 | 562.2 | 0.9887 | 1.200 | 1.059 | 415.01 |
| 2 | 7.469 | 103.38 | 562.2 | 0.9822 | 1.200 | 1.058 | 902.87 |
| 3 | 7.469 | 146.05 | 562.2 | 0.9831 | 1.200 | 1.058 | 1361.53 |
| 4 | 7.469 | 184.94 | 562.2 | 0.9840 | 1.200 | 1.058 | 1725.66 |
| 5 | | | | | | | |

| NO. | $P_t$ | Temp. °R | $T_t$ | Z |
|---|---|---|---|---|
| 1 | 0.84 | 532 | 1.39 | 0.891 |
| 2 | 0.84 | 539 | 1.40 | 0.894 |
| 3 | 0.84 | 538 | 1.40 | 0.894 |
| 4 | 0.84 | 537 | 1.40 | 0.894 |
| 5 | | | | |

Gas Liquid Hydrocarbon Ratio: 23.3 Mcf/Bbl.
A.P.I. Gravity of Liquid Hydrocarbons: – Deg.
Specific Gravity Separator Gas: 0.694 XXXXXXXXX
Specific Gravity Flowing Fluid: XXXXX
Critical Pressure: 672 P.S.I.A. – P.S.I.A.
Critical Temperature: 384 R – R

$P_c$ 6486.2 $P_c^2$ 42070.8

| NO | $P_t^2$ | $P_w$ | $P_w^2$ | $P_c^2 - P_w^2$ |
|---|---|---|---|---|
| 1 | | 6481.2 | 42006.0 | 64.8 |
| 2 | | 6472.2 | 41889.4 | 181.4 |
| 3 | | 6464.2 | 41785.9 | 284.9 |
| 4 | | 6458.2 | 41708.3 | 362.5 |
| 5 | | | | |

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 116.06$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 51.55$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 88960$

Absolute Open Flow: 88960 Mcfd @ 15.025 Angle of Slope θ: 50° 20' Slope, n: 0.829

Remarks: * BOTTOM HOLE PRESSRUE @ (-9438) 13214' USED FOR PRESSURE CALCULATIONS
48.24 BD/D ÷ 8.04 BD During Test

| Approved By Commission: | Conducted By: | Calculated By: | Checked By: |
|---|---|---|---|
| Jerry Sexton, Dist. I Supv. | JARREL SERVICES, INC. | Joe A. Coleman | Joe A. Coleman |