

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122

Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Bumont Formation Queen County Lee
 Initial Annual Special X Date of Test 4-12 to 19, 1963
 Company Shell Oil Company Lease State "B" Well No. 1
 Unit E Sec. 36 Twp. 198 Rge. 36E Purchaser El Paso Natural Gas Company
 Casing 7" Wt. 24.00 I.D. 6.366 Set at 3775 Perf. 2968 To 3544
 Tubing 2 1/2" Wt. 6.50 I.D. 2.441 Set at 3922 Perf. To
 Gas Pay: From 2968 To 3544 L 2968 xG .677 -GL 2009 Bar.Press. 13.2
 Producing Thru: Casing X Tubing Type Well G.O. Dual
 Date of Completion: 6-29-53 Packer 3573 Single-Bradenhead-G. G. or G.O. Dual
 Reservoir Temp.

OBSERVED DATA

Tested Through (Prover) (Choke) (Meter) Type Taps Flgs.

| No. | Flow Data | | | | | Tubing Data | | Casing Data | | Duration of Flow Hr. |
|-----|----------------------|------------------------|-------------|----------------------|-----------|-------------|-----------|-------------|-----------|----------------------|
| | (Prover) (Line) Size | (Choke) (Orifice) Size | Press. psig | Diff. h _w | Temp. °F. | Press. psig | Temp. °F. | Press. psig | Temp. °F. | |
| SI | | | | | | Packer | | 766 | | 72 |
| 1. | 4 | 1.500 | 217 | 5.29 | 66 | | | 613 | | 24 |
| 2. | 4 | 1.500 | 200 | 10.34 | 63 | | | 580 | | 24 |
| 3. | 4 | 1.500 | 192 | 16.00 | 60 | | | 547 | | 24 |
| 4. | 4 | 1.500 | 197 | 23.04 | 60 | | | 519 | | 24 |
| 5. | | | | | | | | | | |

FLOW CALCULATIONS

| No. | Coefficient (24-Hour) | $\sqrt{h_w P_f}$ | Pressure psia | Flow Temp. Factor F _t | Gravity Factor F _g | Compress. Factor F _{pv} | Rate of Flow Q-MCFPD @ 15.025 psia |
|-----|-----------------------|------------------|---------------|----------------------------------|-------------------------------|----------------------------------|------------------------------------|
| 1. | 13.99 | 34.89 | 230.2 | .9943 | .9414 | 1.022 | 466.9 |
| 2. | 13.99 | 46.72 | 213.2 | .9971 | .9414 | 1.022 | 627.0 |
| 3. | 13.99 | 57.30 | 205.2 | 1.000 | .9414 | 1.021 | 770.4 |
| 4. | 13.99 | 69.99 | 210.2 | 1.000 | .9414 | 1.021 | 935.7 |
| 5. | | | | | | | |

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio Dry cf/bbl.
 Gravity of Liquid Hydrocarbons None deg.
 F_c .865 (1-e^{-S}) .129
 Specific Gravity Separator Gas .677
 Specific Gravity Flowing Fluid None
 P_c 779.2 P_c² 607.1

| No. | P _w P _t (psia) | P _t ² | F _c Q | (F _c Q) ² | (F _c Q) ² (1-e ^{-S}) | P _w ² | P _c ² -P _w ² | Cal. P _w | P _w /P _c |
|-----|--------------------------------------|-----------------------------|------------------|---------------------------------|--|-----------------------------|--|---------------------|--------------------------------|
| 1. | 626.2 | 392.1 | .4039 | .1631 | .0210 | 392.1 | 213.0 | 626.2 | 80.4 |
| 2. | 593.2 | 351.9 | .5623 | .2941 | .0379 | 351.9 | 255.2 | 593.2 | 76.1 |
| 3. | 560.2 | 313.8 | .6664 | .4441 | .0573 | 313.8 | 293.3 | 560.2 | 71.9 |
| 4. | 532.2 | 283.2 | .8094 | .6551 | .0845 | 283.2 | 323.8 | 532.2 | 68.5 |
| 5. | | | | | | | | | |

Absolute Potential: MCFPD; n
 COMPANY Shell Oil Company
 ADDRESS P. O. Box 1853, Roswell, New Mexico
 AGENT and TITLE A. L. Ellard, Gas Tester
 WITNESSED R. A. Mikel
 COMPANY El Paso Natural Gas Company

REMARKS

Slope greater than 1.000, a slope of 1.000 drawn through high rate of flow.

INSTRUCTIONS

This form is to be used for reporting multi-point back pressure tests on gas wells in the State, except those on which special orders are applicable. Three copies of this form and the back pressure curve shall be filed with the Commission at Box 871, Santa Fe.

The log log paper used for plotting the back pressure curve shall be of at least three inch cycles.

NOMENCLATURE

- Q = Actual rate of flow at end of flow period at W. H. working pressure (P_w).
MCF/da. @ 15.025 psia and 60° F.
- P_c = 72 hour wellhead shut-in casing (or tubing) pressure whichever is greater.
psia
- P_w = Static wellhead working pressure as determined at the end of flow period.
(Casing if flowing thru tubing, tubing if flowing thru casing.) psia
- P_t = Flowing wellhead pressure (tubing if flowing through tubing, casing if
flowing through casing.) psia
- P_f = Meter pressure, psia.
- h_w = Differential meter pressure, inches water.
- F_g = Gravity correction factor.
- F_t = Flowing temperature correction factor.
- F_{pv} = Supercompressibility factor.
- n = Slope of back pressure curve.

Note: If P_w cannot be taken because of manner of completion or condition of well, then P_w must be calculated by adding the pressure drop due to friction within the flow string to P_t .