## NEW MEXICO OIL CONSERVATION COMMISSION

HOBBS OFFICE OCC

Form C-122

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

1957 FEB 11 AM 9:49

Revised 12-1-55

Pool __Eumont__ Formation __Yates-7 Rivers__ County __Lea__

Initial ____ Annual ____ Special __X__ Date of Test __10-8-56__

Company __Continental Oil Company__ Lease __Lockhart A-30__ Well No. __5__

Unit __K__ Sec. __30__ Twp. __21S__ Rge. __36E__ Purchaser __EPNG__

Casing __5 1/2__ Wt. __17.0__ I.D. __-__ Set at __3887__ Perf. __3348__ To __3427__

Tubing __none__ Wt. __-__ I.D. __-__ Set at __-__ Perf. __-__ To __-__

Gas Pay: From __3348__ To __3427__ L __3348__ xG __.675__ -GL __2260__ Bar.Press. __13.2__

Producing Thru: Casing __X__ Tubing ____ Type Well __Single__

Date of Completion: __4-16-51__ Packer __none__

Single-Bradenhead-G. G. or G.O. Dual
Reservoir Temp. __90°__

### OBSERVED DATA

Tested Through (Prover) (Choke) (Meter)          Type Taps ____

| No. | (Prover) (Line) Size | (Choke) (Orifice) Size | Flow Data Press. psig | Diff. $h_w$ | Temp. °F. | Tubing Data Press. psig | Tubing Data Temp. °F. | Casing Data Press. psig | Casing Data Temp. °F. | Duration of Flow Hr. |
|---|---|---|---|---|---|---|---|---|---|---|
| SI | | | | | | | | 787 | | 72 |
| 1. | 2 | .250 | 723 | | 76 | | | 723 | | 2 1/2 |
| 2. | 2 | .500 | 445 | | 71 | | | 445 | | 2 1/2 |
| 3. | 2 | .625 | 318 | | 70 | | | 318 | | 2 1/4 |
| 4. | 2 | .750 | 225 | | 70 | | | 225 | | 2 3/4 |
| 5. | 2 | .750 | 225 | | 70 | | | 225 | | 24 |

### 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. | 1.4030 | | 736.2 | .9850 | .9427 | 1.075 | 1,031 |
| 2. | 5.5233 | | 458.2 | .9896 | .9427 | 1.047 | 2,472 |
| 3. | 8.3555 | | 331.2 | .9905 | .9427 | 1.033 | 2,669 |
| 4. | 12.2023 | | 238.2 | .9905 | .9427 | 1.022 | 2,774 |
| 5. | 12.2023 | | 238.2 | .9905 | .9427 | 1.022 | 2,774 |

### PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio ____ cf/bbl.
Gravity of Liquid Hydrocarbons ____ deg.
$F_c$ __.9583__ $(1-e^{-s})$ __0.144__

Specific Gravity Separator Gas ____
Specific Gravity Flowing Fluid ____
$P_c$ __800.2__ $P_c^2$ __640.3__

| 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. $P_w$ | $\frac{P_w}{P_c}$ |
|---|---|---|---|---|---|---|---|---|---|
| 1. | 736.2 | 542.0 | 1.0 | 1.0 | .1 | 542.1 | 98.3 | 736.3 | .92 |
| 2. | 458.2 | 209.9 | 2.4 | 5.8 | .8 | 210.7 | 430.4 | 459.0 | .57 |
| 3. | 331.2 | 109.7 | 2.6 | 6.8 | 1.0 | 110.7 | 530.6 | 332.7 | .42 |
| 4. | 238.2 | 56.7 | 2.7 | 7.3 | 1.1 | 57.8 | 583.6 | 240.4 | .30 |
| 5. | 238.2 | 56.7 | 2.7 | 7.3 | 1.1 | 57.8 | 583.6 | 240.4 | .30 |

Absolute Potential: __2,950__ MCFPD; n __.56__
COMPANY __Continental Oil Company__
ADDRESS __Box 427, Hobbs, N. M.__
AGENT and TITLE __W. D. Howard, Gas Tester__
WITNESSED ____
COMPANY ____

### REMARKS

Good draw-down. 1st, 3rd and 4th points line up with resulting slope of .56. The
data point corresponding to the 4th rate of flow also represents the data point for
the 24 hr. continuation of flow.

ELVIS A. UTZ
GAS ENGINEER

## 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.

$F_{pv}$ = Supercompressability 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 $P_t$.