3 - OCC
1 - Midland
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NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Rumont Formation Yates - Seven Rivers County Lea

Initial ____ Annual ____ Special X Date of Test 4-29/5-3-63

Company Tidewater Oil Company Lease State "E" Well No. 2

Unit P Sec. 16 Twp. 21 Rge. 36 Purchaser El Paso Natural Gas Co.

Casing 7" Wt. 24 I.D. ____ Set at 3810 Perf. ____ To ____

Tubing 2-7/8" Wt. 6.5 I.D. ____ Set at 3661 Perf. ____ To ____

Gas Pay: From 3100 To 3305 L 3100 xG .663 =GL 2055 Bar.Press. 13.2

Producing Thru: Casing X Tubing ____ Type Well G.O. Dual
Single-Bradenhead-G. G. or G.O. Dual

Date of Completion: 10-17-52 Packer 2699 Reservoir Temp. ____

OBSERVED DATA

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

| No. | Flow Data (Prover) (Line) Size | Flow Data (Choke) (Orifice) Size | 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 | | | | | | | | 870 | | 72 |
| 1. | 4 | 1.25 | 562 | 4.00 | 80 | | | 777 | | 24 |
| 2. | 4 | 1.25 | 629 | 5.76 | 82 | | | 739 | | 24 |
| 3. | 4 | 1.25 | 584 | 12.96 | 84 | | | 670 | | 24 |
| 4. | 4 | 1.25 | 613 | 14.44 | 83 | | | 644 | | 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. | 9.643 | 47.97 | | .9813 | .9513 | 1.053 | 454.7 |
| 2. | 9.643 | 60.82 | | .9793 | .9513 | 1.059 | 578.7 |
| 3. | 9.643 | 87.98 | | .9777 | .9513 | 1.053 | 836.9 |
| 4. | 9.643 | 95.09 | | .9768 | .9513 | 1.055 | 898.9 |
| 5. | | | | | | | |

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio Dry cf/bbl. Specific Gravity Separator Gas .663
Gravity of Liquid Hydrocarbons None deg. Specific Gravity Flowing Fluid None
$F_c$ 0.865 $(1-e^{-s})$ 0.132 $P_c$ 883.2 $P_c^2$ 780.0

| No. | $P_w$ / $P_t$ (psia) | $P_t^2$ | $F_cQ$ | $(F_cQ)^2$ | $\frac{(F_cQ)^2}{(1-e^{-s})}$ | $P_w^2$ | $P_c^2-P_w^2$ | Cal. $P_w$ | $\frac{P_w}{P_c}$ |
|---|---|---|---|---|---|---|---|---|---|
| 1. | 790.2 | 624.4 | 0.393 | 0.154 | .08 | 624.4 | 155.6 | | 801.7 |
| 2. | 752.2 | 565.8 | 0.500 | 0.250 | .09 | 565.8 | 214.2 | | 851 |
| 3. | 683.2 | 466.8 | 0.719 | 0.517 | .07 | 466.9 | 313.1 | | 7735 |
| 4. | 657.2 | 431.9 | 0.777 | 0.604 | .08 | 432.0 | 348.0 | | 1441 |
| 5. | | | | | | | | | |

Absolute Potential: 1850 MCFPD; n .873

COMPANY Tidewater Oil Co.
ADDRESS Box 547, Hobbs, N. Mex.
AGENT and TITLE C. L. Wade, Superintendent C. L. Wade
WITNESSED J. B. Murray
COMPANY El Paso Natural Gas Co.

REMARKS

## 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 $P_t$.