NEW MEXICO OIL CONSERVATION COMMISSION

HOBBS OFFICE OCC

1957 FEB 14 PM 12:53

Form C-122
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Eumont Formation Queen County Lea

Initial ____ Annual ____ Special X Date of Test 12-7-56

Company Humble Oil & Ref. Co. Lease N. M. State M Well No. 1

Unit J Sec. 18 Twp. 22S Rge. 37 E Purchaser El Paso Natural Gas

Casing 7 Wt. 24 I.D. 6.366 Set at 3609 Perf. 3530 To 3550

Tubing 2 Wt. 4.7 I.D. 1.995 Set at 3492 Perf. none To ____

Gas Pay: From 3530 To 3550 L 3492 xG 0.692 -GL 2416 Bar.Press. 13.2

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

Date of Completion: 8-5-56 Packer 3492 Reservoir Temp. 90

OBSERVED DATA

Tested Through [redacted] (Meter) Type Taps Flange

| No. | Flow Data (Prover) (Line) Size | Flow Data (Choke) (Orifice) Size | Flow Data Press. psig | Flow Data Diff. $h_w$ | Flow Data Temp. °F. | Tubing Data Press. psig | Tubing Data Temp. °F. | Casing Data Press. psig | Casing Data Temp. °F. | Duration of Flow Hr. |
|---|---|---|---|---|---|---|---|---|---|---|
| SI | | | | | | 719 | | | | 72 |
| 1. | 4 | 0.750 | 553 | 10.29 | 79 | 676 | | | | 24 |
| 2. | 4 | 0.750 | 570 | 17.64 | 83 | 654 | | | | 24 |
| 3. | 4 | 0.750 | 556 | 32.49 | 98 | 619 | | | | 24 |
| 4. | 4 | 0.750 | 541 | 27.04 | 80 | 568 | | | | 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. | 3.435 | 76.33 | 566.2 | 0.9822 | 0.9325 | 1.060 | 255 |
| 2. | 3.435 | 101.4 | 583.2 | 0.9786 | 0.9325 | 1.058 | 336 |
| 3. | 3.435 | 136.0 | 569.2 | 0.9853 | 0.9325 | 1.053 | 449 |
| 4. | 3.435 | 122.4 | 554.2 | 0.9813 | 0.9325 | 1.055 | 406 |
| 5. | | | | | | | |

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio 429 cf/bbl.
Gravity of Liquid Hydrocarbons ____ deg.
$F_c$ 9.936 $(1-e^{-s})$ 0.153

Specific Gravity Separator Gas 0.685
Specific Gravity Flowing Fluid ____
$P_c$ 732.2 $P_c^2$ 536.1

| No. | $P_w$ $P_t$ (psia) | $P_t^2$ | $F_cQ$ | $(F_cQ)^2$ | $(F_cQ)^2$ $(1-e^{-s})$ | $P_w^2$ | $P_c^2-P_w^2$ | Cal. $P_w$ | $\frac{P_w}{P_c}$ |
|---|---|---|---|---|---|---|---|---|---|
| 1. | 689.2 | 474.9 | 2.53 | 6.40 | 0.98 | 475.0 | 61.1 | 689.1 | 0.965 |
| 2. | 667.2 | 445.2 | 3.34 | 11.16 | 1.71 | 446.9 | 89.2 | 668.5 | 0.936 |
| 3. | 632.2 | 399.7 | 4.40 | 19.36 | 2.96 | 402.7 | 133.4 | 634.6 | 0.888 |
| 4. | 581.2 | 337.8 | 4.03 | 16.24 | 2.48 | 340.3 | 195.8 | 583.4 | 0.817 |
| 5. | | | | | | | | | |

Absolute Potential: 1250 MCFPD; n 0.733

COMPANY Humble Oil & Refining Company
ADDRESS Box 2347, Hobbs, New Mexico
AGENT and TITLE M. M. Brom District Superintendent
WITNESSED Nabe
COMPANY El Paso Natural Gas Co.

REMARKS

LEVIS 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 $P_t$.