

## MULTI-PHASE FLOW TEST REPORT

Pool Eumont Formation Queens Lea 6-19-56  
Initial x Annual 6-27-56  
Company The Texas Company Lease E. H. B. Phillips No. 1  
Unit D Sec. 10 Twp. 20-S Rge. 37-E Permian Basin Pipe Line Co.  
Casing 7 5/8 Wt. 26.40 I.D. 6.770 Set at 3760 3529 3633  
Tubing 2 3/8 Wt. 4.70 I.D. 1.995 Set at 3632 3628 3631  
Gas Pay: From 3529 To 3633 L 3628 xG .665 -GL .2413 Bar.Press.  
Producing Thru: Casing x Tubing x Type Well Single  
Date of Completion: 4-17-53 Packer None Reservoir Temp.

 $CO_2 = 1.81\%$   $N_2 = 1.08\%$ 

## OBSERVED DATA

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

| No. | Flow Data                           |                                       |                |                |                      | Tubing Data    |                      | Casing Data    |                      | Duration of Flow Hr. |
|-----|-------------------------------------|---------------------------------------|----------------|----------------|----------------------|----------------|----------------------|----------------|----------------------|----------------------|
|     | ( <u>Prover</u> )<br>(Line)<br>Size | ( <u>Choke</u> )<br>(Orifice)<br>Size | Press.<br>psig | Diff.<br>$h_w$ | Temp.<br>$^{\circ}F$ | Press.<br>psig | Temp.<br>$^{\circ}F$ | Press.<br>psig | Temp.<br>$^{\circ}F$ |                      |
| SI  |                                     |                                       |                |                |                      | 963.5          |                      | 963.9          |                      | 71 1/4               |
| 1.  | 4                                   | 1.50                                  | 454.6          | 7.9            | 77                   | 861.2          |                      | 867.5          |                      | 24                   |
| 2.  | 4                                   | 1.50                                  | 458.2          | 17.1           | 74                   | 788.7          |                      | 802.3          |                      | 24                   |
| 3.  | 4                                   | 1.50                                  | 459.4          | 25.8           | 75                   | 725.8          |                      | 747.8          |                      | 24                   |
| 4.  | 4                                   | 1.50                                  | 449.0          | 39.9           | 72                   | 638.4          |                      | 675.6          |                      | 23 3/4               |
| 5.  |                                     |                                       |                |                |                      |                |                      |                |                      |                      |

## FLOW CALCULATION

| No. | Coefficient<br>(24-Hour) | $\sqrt{C_{wof}}$ | Pressure<br>psia | Flow Temp.<br>Factor<br>$F_t$ | Gravity<br>Factor<br>$F_g$ | Compress.<br>Factor<br>$F_{pv}$ | Rate of Flow<br>q-MCFPD<br>at 1025 psia |
|-----|--------------------------|------------------|------------------|-------------------------------|----------------------------|---------------------------------|-----------------------------------------|
| 1.  | 15.26                    | 60.79            | 467.8            | .9840                         | .9498                      | 1.045                           | 906                                     |
| 2.  | 15.26                    | 89.78            | 471.4            | .9868                         | .9498                      | 1.046                           | 1,343                                   |
| 3.  | 15.26                    | 110.4            | 472.6            | .9859                         | .9498                      | 1.045                           | 1,649                                   |
| 4.  | 15.26                    | 135.8            | 462.2            | .9887                         | .9498                      | 1.045                           | 2,034                                   |
| 5.  |                          |                  |                  |                               |                            |                                 |                                         |

## PRESSURE LOSS FACTORS

Gas Liquid Hydrocarbon Ratio 1/100 Separator Gas 1/100  
Gravity of Liquid Hydrocarbons 0.85 Gravity of Flowing Fluid 0.85  
 $F_c = (1 - e^{-S})$  977.1  $P_c^2$  954.7

| No. | $P_w$<br>$P_t$ (psia) | $P_c$ | $F_c Q$ | $(F_c Q)^2$ | $(F_c Q)^2$<br>(1 - $e^{-S}$ ) | $P_w^2$<br>$P_c^2$ | Cal.<br>$C_w$ | $\frac{P_w}{P_c}$ |
|-----|-----------------------|-------|---------|-------------|--------------------------------|--------------------|---------------|-------------------|
| 1.  | 880.7                 |       |         |             | 775.6                          | 179.1              |               | .90               |
| 2.  | 815.5                 |       |         |             | 665.0                          | 289.7              |               | .83               |
| 3.  | 761.0                 |       |         |             | 579.1                          | 375.6              |               | .78               |
| 4.  | 688.8                 |       |         |             | 474.4                          | 480.3              |               | .70               |
| 5.  |                       |       |         |             |                                |                    |               |                   |

Absolute Potential: 3,550 MCFPD; n .83

COMPANY The Texas Company  
ADDRESS Box 1270, Midland, Texas  
AGENT and TITLE L. I. Baker, District Gas Man  
WITNESSED H. E. Barrett  
COMPANY Permian Basin Pipe Line Company

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.

$F_{pv}$  = Supercompressibility factor.

$n$  = Slope of back pressure curve.

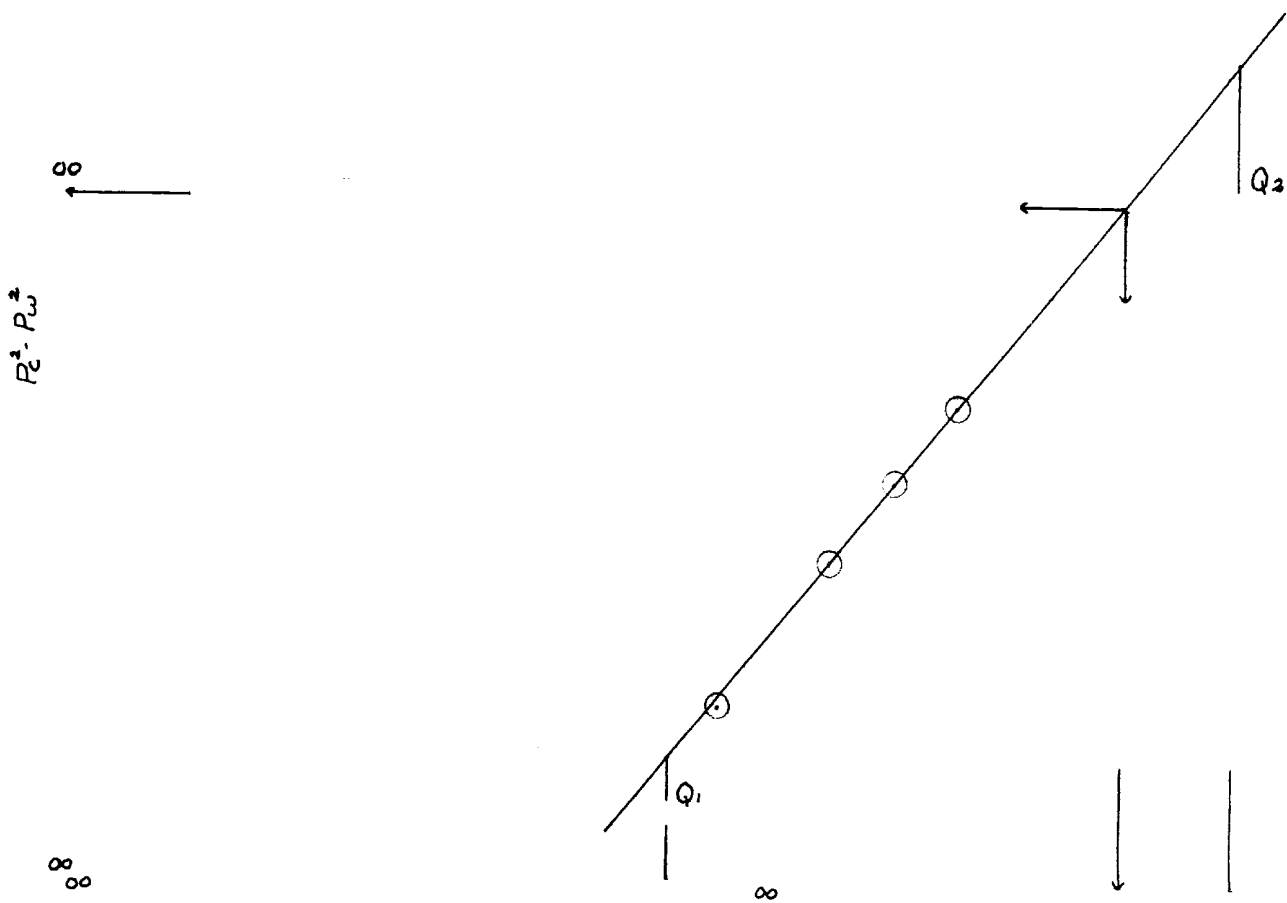
Note: If  $P_w$  cannot be taken because of manner of completion or condition of well, then  $P_w$  must be calculated by adding the pressure drop due to friction within the flow string to  $P_t$ .

The Texas Co.  
E.H.B. Phillips Well #1

$Q_2: 5200; \text{Log}: 3.716003$

$Q_1: 777; \text{Log}: 2.890421$

Slope  $n = 0.225582$



$Q = \text{MCF/Day}$

$Q = 3,550$