

## NEW MEXICO OIL CONSERVATION COMMISSION

1957 DEC 9 AM 10:31

Form C-122

## MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Revised 12-1-55

Pool Jalnet Formation Yates County Lea  
Initial Annual Special X Date of Test 4/8-4/12/1957  
Company J. R. Cone Lease Magnolia-Myers Well No. 4  
Unit I Sec. 22 Twp. 24-S Rge. 36-E Purchaser El Paso Natural Gas Company  
Casing 5-1/2 Wt. 15.5 I.D. 4.950 Set at 3400 Perf. 3154 To 3312  
Tubing 2-3/8 Wt. 4.7 I.D. 1.995 Set at 3307 Perf. 3301 To 3307  
Gas Pay: From 3154 To 3312 L 3301 xG 0.655 -GL 2162 Bar.Press. 13.2  
Producing Thru: Casing          Tubing X Type Well Single  
Single-Bradenhead-G. G. or G.O. Dual  
Date of Completion: April 18, 1956 Packer None Reservoir Temp.         

## OBSERVED DATA

Tested Through Pressure Transducer (Meter)Type Taps Flange

| No. | Flow Data   |                |             | Tubing Data          |           | Casing Data |           | Duration of Flow Hr. |
|-----|-------------|----------------|-------------|----------------------|-----------|-------------|-----------|----------------------|
|     | (Line) Size | (Orifice) Size | Press. psig | Diff. h <sub>w</sub> | Temp. °F. | Press. psig | Temp. °F. |                      |
| SI  |             |                |             |                      |           |             |           |                      |
| 1.  | 4.000       | 0.750          | 225         | 18.49                | 59        | 595         | 478       | 72                   |
| 2.  | 4.000       | 0.750          | 240         | 31.36                | 65        | 305         | 425       | 24                   |
| 3.  | 4.000       | 0.750          | 240         | 34.81                | 72        | 301         | 415       | 24                   |
| 4.  | 4.000       | 0.750          | 225         | 56.25                | 48        | 248         | 320       | 24                   |
| 5.  |             |                |             |                      |           |             |           |                      |

## FLOW CALCULATIONS

| No. | Coefficient (24-Hour) | $\sqrt{h_{wpf}}$ | Pressure psia | Flow Temp. Factor F <sub>t</sub> | Gravity Factor F <sub>g</sub> | Compress. Factor F <sub>pv</sub> | Rate of Flow Q-MCFPD @ 15.025 psia |
|-----|-----------------------|------------------|---------------|----------------------------------|-------------------------------|----------------------------------|------------------------------------|
| 1.  | 3.435                 | 66.34            |               | 1.0010                           | 0.9571                        | 1.024                            | 223                                |
| 2.  | 3.435                 | 89.07            |               | 0.9952                           | 0.9571                        | 1.024                            | 299                                |
| 3.  | 3.435                 | 93.85            |               | 0.9887                           | 0.9571                        | 1.023                            | 311                                |
| 4.  | 3.435                 | 115.70           |               | 1.0177                           | 0.9571                        | 1.026                            | 395                                |
| 5.  |                       |                  |               |                                  |                               |                                  |                                    |

## PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio          cf/bbl.  
Gravity of Liquid Hydrocarbons          deg.  
F<sub>c</sub> Measured (1-e<sup>-s</sup>)

Specific Gravity Separator Gas 0.655  
Specific Gravity Flowing Fluid           
P<sub>c</sub> 608.2 P<sub>c</sub><sup>2</sup> 369.9

| No. | P <sub>t</sub> (psia) | P <sub>t</sub> <sup>2</sup> | F <sub>c</sub> Q | (F <sub>c</sub> Q) <sup>2</sup> | (F <sub>c</sub> Q) <sup>2</sup> (1-e <sup>-s</sup> ) | P <sub>w</sub> <sup>2</sup> | P <sub>c</sub> <sup>2</sup> -P <sub>w</sub> <sup>2</sup> | Cal. P <sub>w</sub> | P <sub>w</sub> /P <sub>c</sub> |
|-----|-----------------------|-----------------------------|------------------|---------------------------------|------------------------------------------------------|-----------------------------|----------------------------------------------------------|---------------------|--------------------------------|
| 1.  | 313.2                 | 98.1                        |                  |                                 |                                                      | 238.3                       | 131.6                                                    | 488.2               | 0.8027                         |
| 2.  | 318.2                 | 101.3                       |                  |                                 |                                                      | 192.0                       | 177.9                                                    | 438.2               | 0.7205                         |
| 3.  | 314.2                 | 98.7                        |                  |                                 |                                                      | 183.4                       | 186.5                                                    | 428.2               | 0.7040                         |
| 4.  | 261.2                 | 68.2                        |                  |                                 |                                                      | 111.0                       | 258.9                                                    | 333.2               | 0.5478                         |
| 5.  |                       |                             |                  |                                 |                                                      |                             |                                                          |                     |                                |

Absolute Potential: 600 MCFPD; n 0.961COMPANY J. R. ConeADDRESS 1708 Great Plains Life Building, Lubbock, TexasAGENT and TITLE Ed Stern - L. O. Stern, Professional EngineerWITNESSED         COMPANY El Paso Natural Gas Company

## 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.

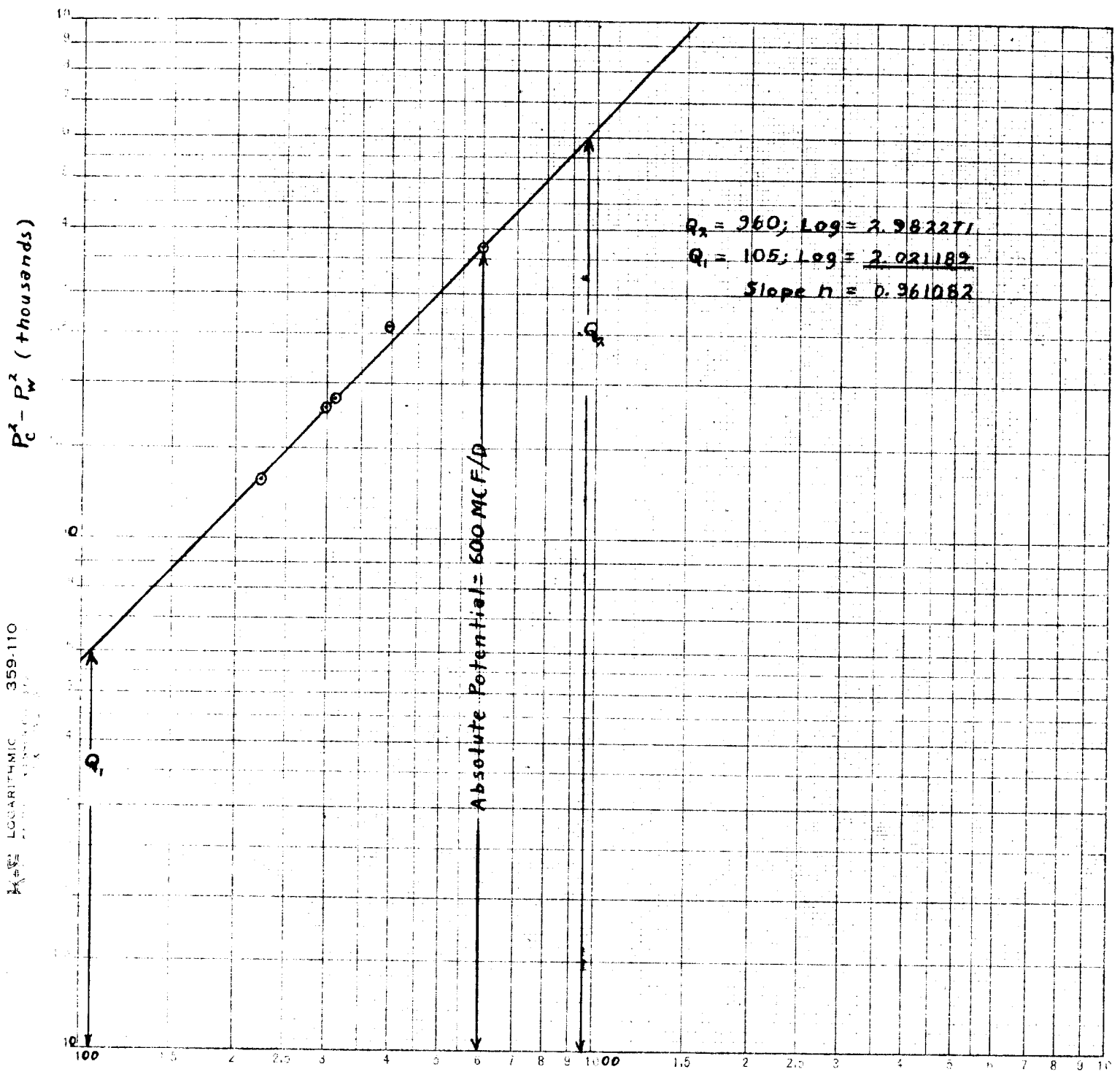
$F_t$  = Flowing temperature correction factor.

$F_{pv}$  = 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  $P_t$ .

J. R. CONE  
 Magnolia - Myers No 4  
 I-22-24-36 Lea County  
 4-12-1957



$Q = \text{MCF/D} @ 15.025 \text{ psia} \& 60^\circ \text{F}$