

## NEW MEXICO OIL CONSERVATION COMMISSION

MODES OFFICE 000

Form C-122

Revised 12-1-55

## MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

1957 FEB 27 PM 3:03

Pool Jalant Formation Yates County Lea

Initial \_\_\_\_\_ Annual \_\_\_\_\_ Special X Date of Test 11-5 to 11-9-56

Company Cities Service Oil Co. Lease Closson "C" Well No. 3

Unit I Sec. 18 Twp. 22S Rge. 36E Purchaser United Carbon

Casing 7" Wt. 24# I.D. 6.336 Set at 3745 Perf. 3410 To 3460

Tubing 2 1/2" Wt. 6.5 I.D. 2.441 Set at 3457 Perf. \_\_\_\_\_ To \_\_\_\_\_

Gas Pay: From 3410 To 3460 L 3457 xG .660 -GL 2282 Bar.Press. 13.2

Producing Thru: Casing \_\_\_\_\_ Tubing X Type Well single

Date of Completion: 11-14-51 Packer none Single-Bradenhead-G. G. or G.O. Dual  
Reservoir Temp. \_\_\_\_\_

## OBSERVED DATA

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

| No. | Flow Data                           |                                       |                |                         |              | Tubing Data    |              | Casing Data    |              | Duration<br>of Flow<br>Hr. |
|-----|-------------------------------------|---------------------------------------|----------------|-------------------------|--------------|----------------|--------------|----------------|--------------|----------------------------|
|     | ( <u>Prover</u> )<br>(Line)<br>Size | ( <u>Choke</u> )<br>(Orifice)<br>Size | Press.<br>psig | Diff.<br>h <sub>w</sub> | Temp.<br>°F. | Press.<br>psig | Temp.<br>°F. | Press.<br>psig | Temp.<br>°F. |                            |
| SI  |                                     |                                       |                |                         |              | <u>595</u>     |              |                |              | <u>72</u>                  |
| 1.  | <u>8</u>                            | <u>1.875</u>                          | <u>59</u>      | <u>26.0</u>             | <u>60</u>    | <u>588</u>     |              |                |              | <u>24</u>                  |
| 2.  | <u>8</u>                            | <u>1.875</u>                          | <u>59</u>      | <u>86.0</u>             | <u>60</u>    | <u>580</u>     |              |                |              | <u>24</u>                  |
| 3.  | <u>8</u>                            | <u>3.500</u>                          | <u>59</u>      | <u>29.0</u>             | <u>60</u>    | <u>534</u>     |              |                |              | <u>24</u>                  |
| 4.  | <u>8</u>                            | <u>3.500</u>                          | <u>60</u>      | <u>39.0</u>             | <u>60</u>    | <u>510*</u>    |              |                |              | <u>24</u>                  |
| 5.  |                                     |                                       |                |                         |              |                |              |                |              |                            |

\* Unable to get draw down because of choke restriction

## FLOW CALCULATIONS

| No. | Coefficient<br>(24-Hour) | $\sqrt{h_{wpf}}$ | Pressure<br>psia | Flow Temp.<br>Factor<br>F <sub>t</sub> | Gravity<br>Factor<br>F <sub>g</sub> | Compress.<br>Factor<br>F <sub>pv</sub> | Rate of Flow<br>Q-MCFPD<br>@ 15.025 psia |
|-----|--------------------------|------------------|------------------|----------------------------------------|-------------------------------------|----------------------------------------|------------------------------------------|
| 1.  | <u>21.556</u>            | <u>43.27</u>     | <u>72.2</u>      | <u>1.000</u>                           | <u>.9535</u>                        |                                        | <u>890</u>                               |
| 2.  | <u>21.556</u>            | <u>78.69</u>     | <u>72.2</u>      | <u>1.000</u>                           | <u>.9535</u>                        |                                        | <u>1,617</u>                             |
| 3.  | <u>77.001</u>            | <u>45.69</u>     | <u>72.2</u>      | <u>1.000</u>                           | <u>.9535</u>                        |                                        | <u>3,354</u>                             |
| 4.  | <u>77.001</u>            | <u>53.36</u>     | <u>73.2</u>      | <u>1.000</u>                           | <u>.9535</u>                        |                                        | <u>3,978</u>                             |
| 5.  |                          |                  |                  |                                        |                                     |                                        |                                          |

## PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio \_\_\_\_\_ cf/bbl.  
Gravity of Liquid Hydrocarbons \_\_\_\_\_ deg.  
F<sub>c</sub> 5.866 (1-e<sup>-s</sup>) .145

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

| No. | P <sub>w</sub><br>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><br>(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.<br>P <sub>w</sub> | P <sub>w</sub><br>P <sub>c</sub> |
|-----|-----------------------------------------|-----------------------------|------------------|---------------------------------|---------------------------------------------------------|-----------------------------|----------------------------------------------------------|------------------------|----------------------------------|
| 1.  | <u>603.2</u>                            | <u>363.9</u>                | <u>5.22</u>      | <u>27.25</u>                    | <u>3.9</u>                                              | <u>367.8</u>                | <u>2.1</u>                                               |                        |                                  |
| 2.  | <u>593.2</u>                            | <u>351.9</u>                | <u>9.49</u>      | <u>90.06</u>                    | <u>13.1</u>                                             | <u>365.0</u>                | <u>4.9</u>                                               |                        |                                  |
| 3.  | <u>547.2</u>                            | <u>299.4</u>                | <u>19.67</u>     | <u>386.91</u>                   | <u>56.1</u>                                             | <u>355.5</u>                | <u>14.4</u>                                              |                        |                                  |
| 4.  | <u>523.2</u>                            | <u>273.7</u>                | <u>22.98</u>     | <u>528.08</u>                   | <u>76.6</u>                                             | <u>350.3</u>                | <u>19.6</u>                                              |                        |                                  |
| 5.  |                                         |                             |                  |                                 |                                                         |                             |                                                          |                        |                                  |

Absolute Potential: 30,000 MCFPD; n .681

COMPANY Cities Service Oil

ADDRESS Box 97, Hobbs, New Mexico

AGENT and TITLE E. H. Furrey, Jr., Petroleum Engineer

WITNESSED Ed Mabe

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.

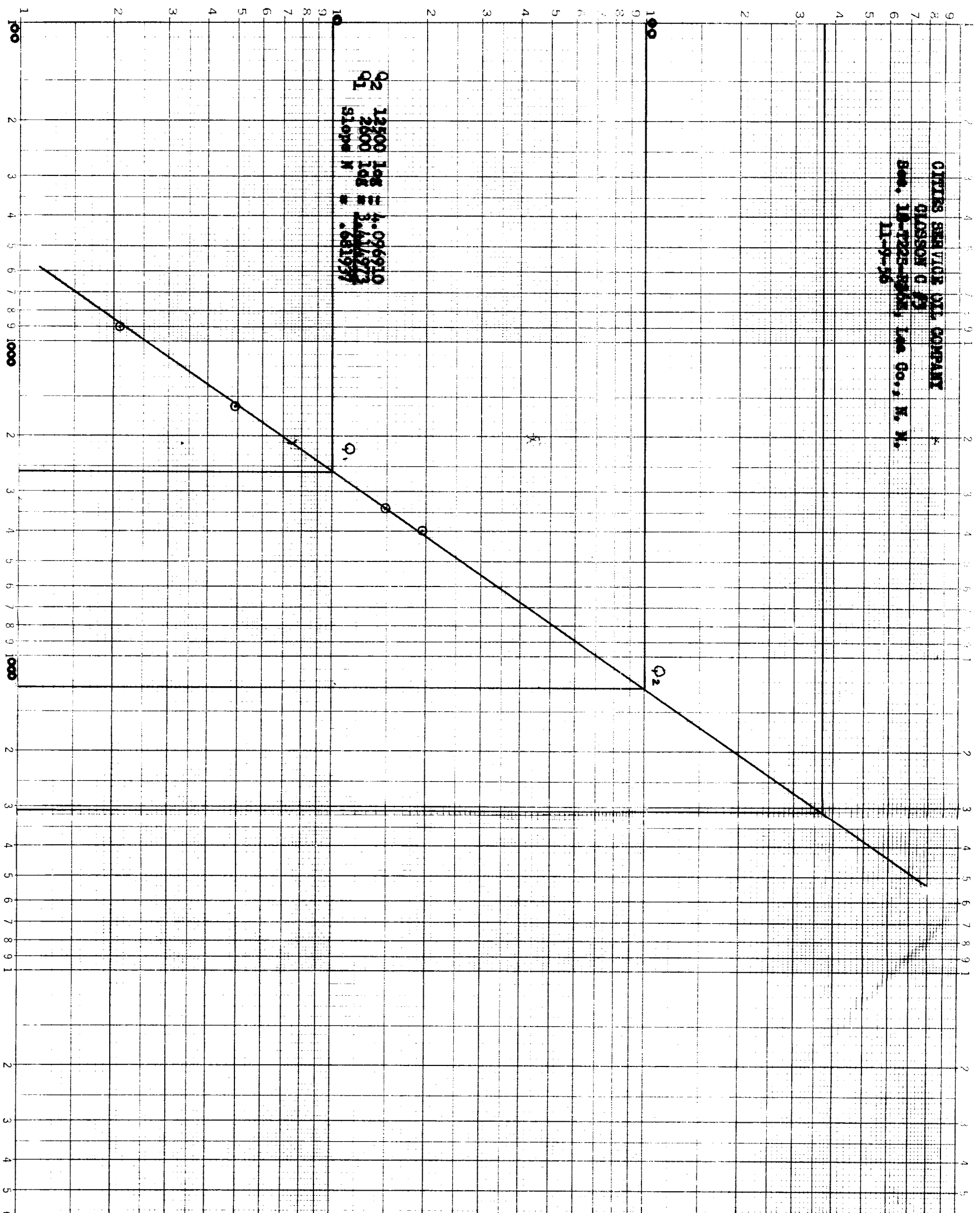
## NOMENCLATURE

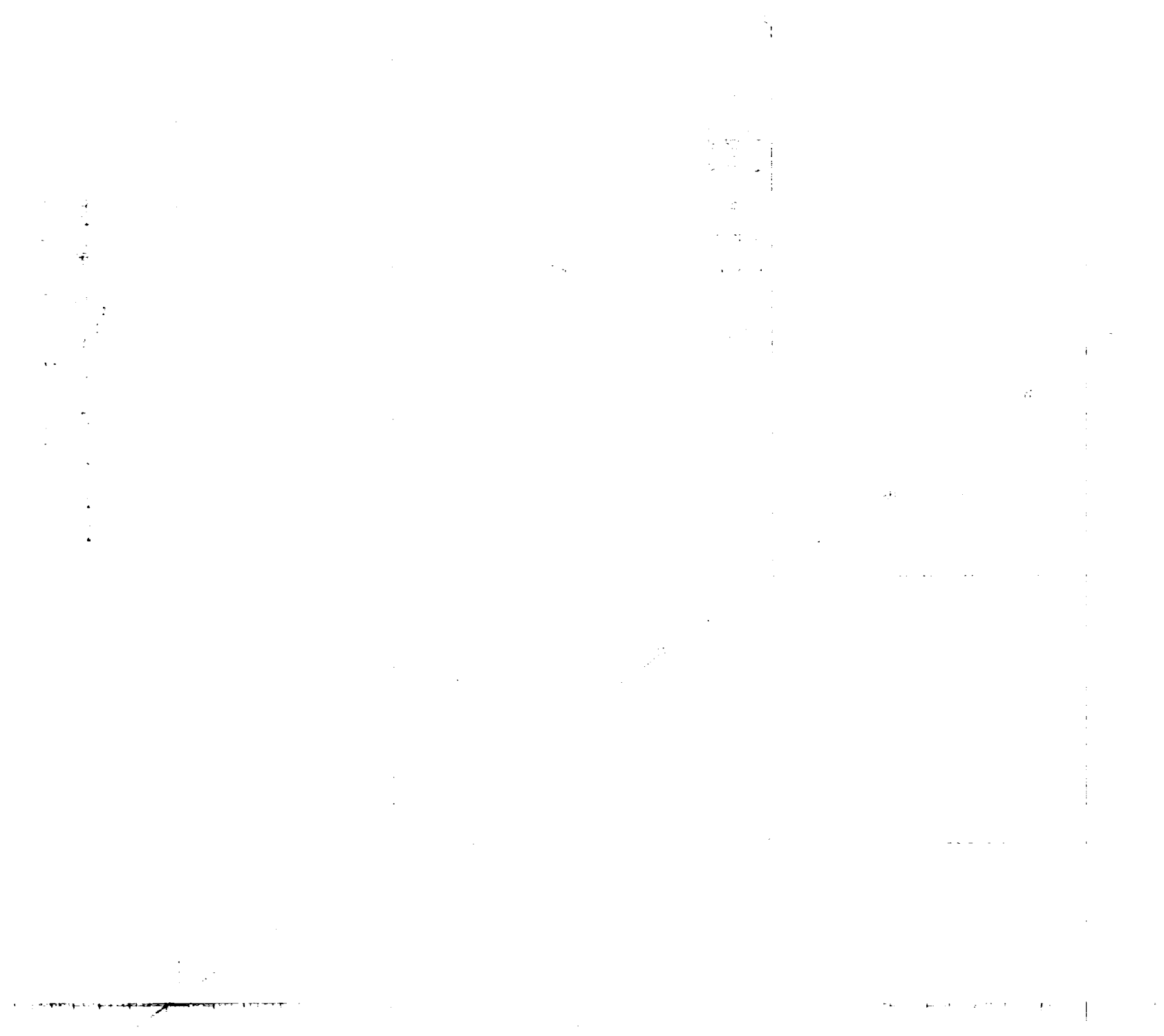
- $Q$  = Actual rate of flow at end of flow period at W. H. working pressure ( $P_w$ ).  
MCF/da. @ 15.025 psia and 60° F.
- $P_c$  = 72 hour wellhead shut-in casing (or tubing) pressure whichever is greater.  
psia
- $P_w$  = Static wellhead working pressure as determined at the end of flow period.  
(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  $P_t$ .



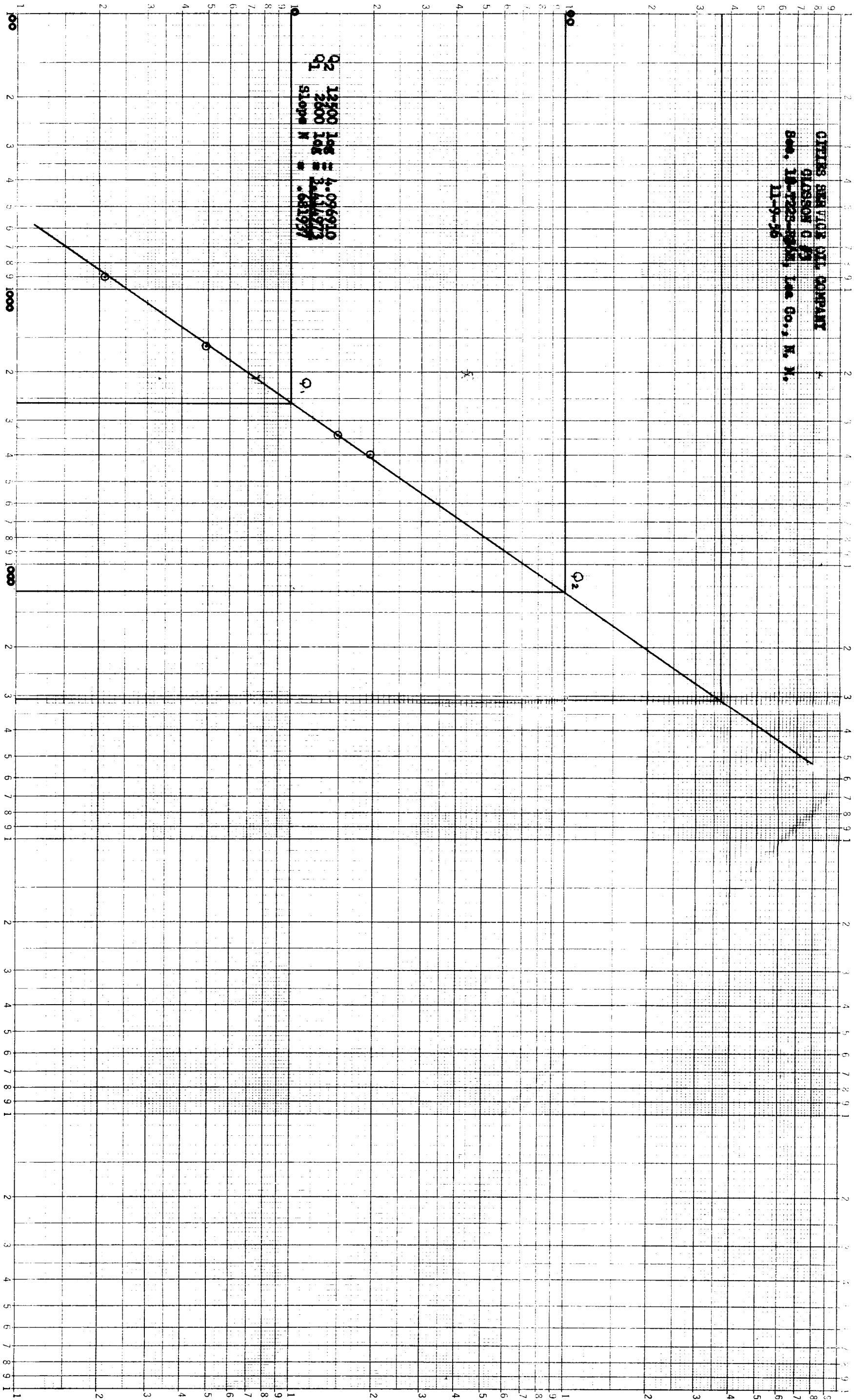
359-125LG KEUFFEL & ESSER CO.  
Logarithmic, 8 X 5 Cycle  
F. C. C. Sheet  
MADE IN U. S. A.





CITIES SERVICE OIL COMPANY  
GLASSBORO, N. J.  
Sec. 19-1228-2348, Loc. 60, N. N.  
11-9-46

$Q_2$  12500 Log = 4.096910  
 $Q_1$  2500 Log = 3.397943  
Slope N = .681977



1000

1000

1000

1000