

**NE MEXICO OIL CONSERVATION COMMS**  
**MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL**

Form C-122  
 Revised 9-1-65

|                                                                                                                           |             |                                  |                           |                                               |                          |                                                             |
|---------------------------------------------------------------------------------------------------------------------------|-------------|----------------------------------|---------------------------|-----------------------------------------------|--------------------------|-------------------------------------------------------------|
| Type Test<br><input checked="" type="checkbox"/> Initial <input type="checkbox"/> Annual <input type="checkbox"/> Special |             |                                  |                           |                                               | Test Date<br>1-18-90     |                                                             |
| Company<br>O.G.S. Operating Company, Inc.                                                                                 |             |                                  |                           | Connection<br>Vented                          |                          |                                                             |
| Pool<br>Bluitt                                                                                                            |             |                                  |                           | Formation<br>San Andres                       |                          | Unit<br>A                                                   |
| Completion Date<br>1-17-90                                                                                                |             | Total Depth<br>4620              |                           | Plug Back TD<br>4585                          |                          | Elevation<br>4015.4                                         |
| Farm or Lease Name<br>Bilberry                                                                                            |             |                                  |                           |                                               |                          | Well No.<br>2                                               |
| Csg. Size<br>4 1/2                                                                                                        | Wt.<br>10.5 | d<br>4.052                       | Set At<br>4620            | Perforations:<br>From 4467 To 4550            |                          | Unit<br>2                                                   |
| Tbg. Size<br>2 3/8                                                                                                        | Wt.<br>4.7  | d<br>1.995                       | Set At<br>4470            | Perforations:<br>From                      To |                          | Unit    Sec.    Twp.    Rge.<br>A       15       8S     37E |
| Type Well - Single - Bradenhead - G.G. or G.O. Multiple<br>Single                                                         |             |                                  |                           | Packer Set At<br>None                         |                          | County<br>Roosevelt                                         |
| Producing Thru<br>Tbg.                                                                                                    |             | Reservoir Temp. °F<br>119 @ 4467 |                           | Mean Annual Temp. °F<br>60                    |                          | Baro. Press. - P <sub>g</sub><br>13.2                       |
| State<br>NM                                                                                                               |             |                                  |                           |                                               |                          |                                                             |
| L<br>4467                                                                                                                 | H<br>4467   | Gg<br>.736                       | % CO <sub>2</sub><br>5.53 | % N <sub>2</sub><br>6.84                      | % H <sub>2</sub> S<br>-- | Prover<br>2"                                                |
| Meter Run                                                                                                                 |             | Taps                             |                           |                                               |                          |                                                             |

| FLOW DATA |                  |   |              |                 |                      | TUBING DATA |                 | CASING DATA |                 | Duration of Flow |          |
|-----------|------------------|---|--------------|-----------------|----------------------|-------------|-----------------|-------------|-----------------|------------------|----------|
| NO.       | Prover Line Size | X | Orifice Size | Press. p.s.i.g. | Diff. h <sub>w</sub> | Temp. °F    | Press. p.s.i.g. | Temp. °F    | Press. p.s.i.g. |                  | Temp. °F |
| SI        |                  |   |              |                 |                      |             | 1288            |             | 1288            |                  | 24 Hrs.  |
| 1.        | 2                | x | 3/16         | 1097            |                      | 33          | 1097            |             | 1100            |                  | 1 Hr.    |
| 2.        | 2                | x | 1/4          | 806             |                      | 33          | 860             |             | 860             |                  | 1 Hr.    |
| 3.        | 2                | x | 3/8          | 357             |                      | 33          | 357             |             | 570             |                  | 1 Hr.    |
| 4.        | 2                | x | 7/16         | 280             |                      | 43          | 280             |             | 560             |                  | 1 Hr.    |
| 5.        |                  |   |              |                 |                      |             |                 |             |                 |                  |          |

| RATE OF FLOW CALCULATIONS |                       |                  |                         |                                  |                               |                                         |                      |
|---------------------------|-----------------------|------------------|-------------------------|----------------------------------|-------------------------------|-----------------------------------------|----------------------|
| NO.                       | Coefficient (24 Hour) | $\sqrt{h_w P_m}$ | Pressure P <sub>m</sub> | Flow Temp. Factor F <sub>L</sub> | Gravity Factor F <sub>g</sub> | Super Compress. Factor, F <sub>pv</sub> | Rate of Flow Q, Mcfd |
| 1                         | .6082                 |                  | 1110.2                  | 1.027                            | 1.166                         | 1.163                                   | 940                  |
| 2                         | 1.087                 |                  | 873.2                   | 1.027                            | 1.166                         | 1.124                                   | 1,278                |
| 3                         | 2.378                 |                  | 370.2                   | 1.027                            | 1.166                         | 1.048                                   | 1,105                |
| 4                         | 3.408                 |                  | 293.2                   | 1.017                            | 1.166                         | 1.036                                   | 1,228                |
| 5.                        |                       |                  |                         |                                  |                               |                                         |                      |

|     |                |          |                |      |                                                            |
|-----|----------------|----------|----------------|------|------------------------------------------------------------|
| NO. | P <sub>r</sub> | Temp. °R | T <sub>r</sub> | Z    | Gas Liquid Hydrocarbon Ratio <u>Dry Gas</u> Mcf/bbl.       |
| 1.  | 1.62           | 493      | 1.29           | .739 | A.P.I. Gravity of Liquid Hydrocarbons <u>Dry</u> Deg.      |
| 2.  | 1.28           | 493      | 1.29           | .792 | Specific Gravity Separator Gas <u>.736</u> X X X X X X X X |
| 3.  | .54            | 493      | 1.29           | .911 | Specific Gravity Flowing Fluid <u>X X X X X</u>            |
| 4.  | .42            | 503      | 1.32           | .931 | Critical Pressure * <u>682</u> P.S.I.A. P.S.I.A.           |
| 5.  |                |          |                |      | Critical Temperature * <u>381</u> R R                      |

|                                                             |                             |                |                             |                                                           |                                           |                                                            |
|-------------------------------------------------------------|-----------------------------|----------------|-----------------------------|-----------------------------------------------------------|-------------------------------------------|------------------------------------------------------------|
| P <sub>c</sub> 1301.2    P <sub>c</sub> <sup>2</sup> 1693.1 |                             |                |                             |                                                           |                                           |                                                            |
| NO.                                                         | P <sub>i</sub> <sup>2</sup> | P <sub>w</sub> | P <sub>w</sub> <sup>2</sup> | P <sub>c</sub> <sup>2</sup> - P <sub>w</sub> <sup>2</sup> | (1) $\frac{P_c^2}{P_c^2 - P_w^2} = 3.730$ | (2) $\left[ \frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.929$ |
| 1                                                           |                             | 1113.2         | 1239.2                      | 453.9                                                     |                                           |                                                            |
| 2                                                           |                             | 873.2          | 762.5                       | 930.6                                                     |                                           |                                                            |
| 3                                                           |                             | 583.2          | 340.1                       | 1353.0                                                    |                                           |                                                            |
| 4                                                           |                             | 573.2          | 328.6                       | 1364.5                                                    |                                           |                                                            |
| 5                                                           |                             |                |                             |                                                           |                                           |                                                            |

|                                                                |                              |                      |
|----------------------------------------------------------------|------------------------------|----------------------|
| AOF = Q $\left[ \frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.813$ |                              |                      |
| Absolute Open Flow <u>1,813</u> Mcfd @ 15.025                  | Angle of Slope @ <u>63.5</u> | Slope, n <u>.499</u> |

Remarks: \* = corrected to 5.53% CO<sub>2</sub> & 6.84% N<sub>2</sub>  
 Well calculated using Csg. pressures

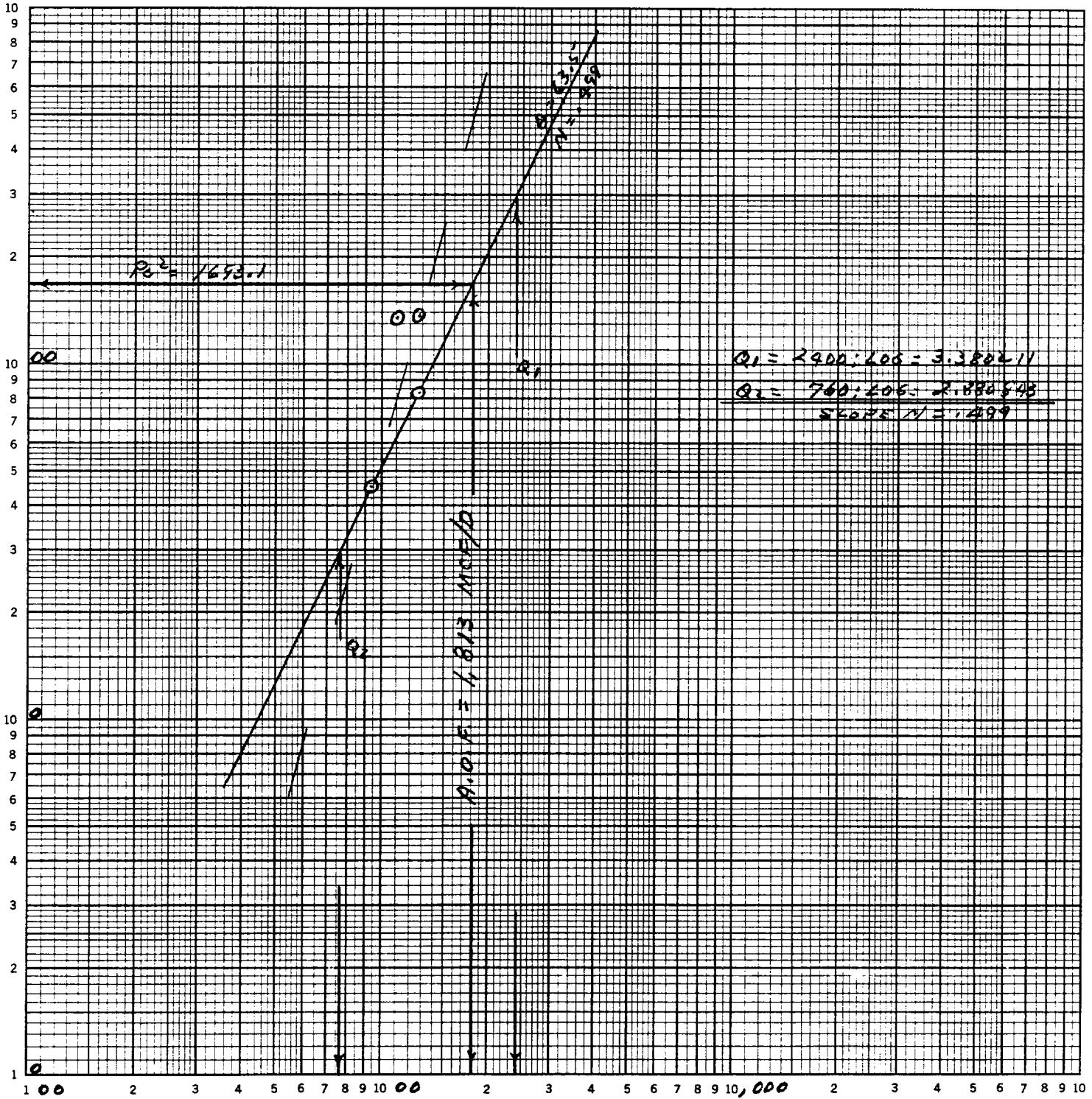
|                         |                                        |                       |                                 |
|-------------------------|----------------------------------------|-----------------------|---------------------------------|
| Approved By Commission: | Conducted By:<br>John West Engineering | Calculated By:<br>JBM | Checked By:<br>JBM <sup>3</sup> |
|-------------------------|----------------------------------------|-----------------------|---------------------------------|

O.G.S. OPERATING CO., INC.  
Bilberry No. 2

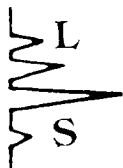
A - 15 - 8S - 37E  
Roosevelt Co., NM  
1-18-90

Pc2 - Pw2 (Thsnds.)  
46 7400

K&E LOGARITHMIC 3 X 3 CYCLES  
KEUFFEL & ESSER CO. MADE IN U.S.A.



Q - MCF/DAY



## LABORATORY SERVICES

1331 Tasker Drive  
Hobbs, New Mexico 88240

Telephone: (505) 397-3713

FOR: John West Engineering Co.  
Attention: Mr. Buz Thomason  
412 N. Dal Paso  
Hobbs, New Mexico 88240

SAMPLE  
IDENTIFICATION: Bilberry #2  
COMPANY: O.G.S. Operating Co.  
LEASE:  
PLANT:

SAMPLE DATA: DATE SAMPLED: 1/18/90 1:45 PM GAS (X) LIQUID ( )  
ANALYSIS DATE: 1/19/90 SAMPLED BY: J. West Eng. Co.  
PRESSURE — PSIG ANALYSIS BY: Rolland Perry  
SAMPLE TEMP. °F:  
ATMOS. TEMP. °F: 43

REMARKS:

### COMPONENT ANALYSIS

| COMPONENT        |        | MOL<br>PERCENT | GPM          | LIQ. VOL.<br>PERCENT |
|------------------|--------|----------------|--------------|----------------------|
| Hydrogen Sulfide | (H2S)  | ---            |              |                      |
| Nitrogen         | (N2)   | 6.84           |              |                      |
| Carbon Dioxide   | (CO2)  | 5.53           |              |                      |
| Methane          | (C1)   | 75.44          |              |                      |
| Ethane           | (C2)   | 7.06           | 1.801        |                      |
| Propane          | (C3)   | 3.00           | 0.827        |                      |
| I-Butane         | (IC4)  | 0.36           | 0.118        |                      |
| N-Butane         | (NC4)  | 0.81           | 0.255        |                      |
| I-Pentane        | (IC5)  | 0.22           | 0.080        |                      |
| N-Pentane        | (NC5)  | 0.22           | 0.080        |                      |
| Hexane           | (C6)   | 0.52           | 0.240        |                      |
| Heptanes Plus    | (C7 +) |                |              |                      |
|                  |        | <u>100.00</u>  | <u>3.401</u> |                      |

BTU/CU. FT.—DRY 1047  
AT 14.650 WET 1026

SPECIFIC GRAVITY—CALCULATED 0.736  
MEASURED

VAPOR PRESSURE (ABSOLUTE)—CALCULATED

26# GASOLINE— 0.489

CU. FT./GAL. —