

NEW MEXICO OIL CONSERVATION COMMISSION

HOBBS OFFICE OCC

1957 FEB 7 AM 9:57

Form C-122

Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Jalut Formation Yates County Lee

Initial Annual Special X Date of Test 12-31-56/1-4-57

Company R. Olson (Personal) Lease Madge Well No. 2

Unit B Sec. 8 Twp. 24 Rge. 37 Purchaser EPMS

Casing 5 1/2" Wt. 15.5 I.D. Set at 2821 Perf. To

Tubing 2 1/2" Wt. 6.5 I.D. Set at 3070 Perf. To

Gas Pay: From 2900 To 3030 L 3070 xG 0.670 -GL 2057 Bar.Press. 13.2

Producing Thru: Casing Tubing X Type Well Single

Date of Completion: 8-23-1954 Packer Single-Bradenhead-G. G. or G.O. Dual Reservoir Temp.

OBSERVED DATA

Tested Through (Pressure) (Flow) (Meter) Type Taps Flange

| No. | Flow Data | | | Tubing Data | | Casing Data | | Duration of Flow Hr. |
|-----|-------------|----------------|-------------|----------------------|-----------|-------------|-----------|----------------------|
| | (Line) Size | (Orifice) Size | Press. psig | Diff. h _w | Temp. °F. | Press. psig | Temp. °F. | |
| SI | | | | | | | | |
| 1. | 4 | 1.500 | 572 | 24.0 | 84 | 861 | | 24 |
| 2. | 4 | 1.500 | 550 | 43.6 | 79 | 834 | | 24 |
| 3. | 4 | 1.500 | 555 | 36.3 | 77 | 817 | | 24 |
| 4. | 4 | 1.500 | 550 | 85.6 | 76 | 782 | | 24 |
| 5. | | | | | | | | |

FLOW CALCULATIONS

| No. | Coefficient <u>Flange</u> (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. | 13999 | 118.41 | | .9777 | .9463 | 1.056 | 1.619 |
| 2. | 13.99 | 136.60 | | .9822 | .9463 | 1.057 | 2.152 |
| 3. | 13.99 | 178.75 | | .9840 | .9463 | 1.057 | 2.462 |
| 4. | 13.99 | 219.48 | | .9850 | .9463 | 1.057 | 3.026 |
| 5. | | | | | | | |

PRESSURE CALCULATIONS

as Liquid Hydrocarbon Ratio Det cf/bbl.

Gravity of Liquid Hydrocarbons deg.

c 5.866 (1-e⁻⁵) 0.132

Specific Gravity Separator Gas 0.670

Specific Gravity Flowing Fluid

P_c 913.2 P_c² 833.9

| No. | P _t (psia) | P _t ² | F _c Q | (F _c Q) ² | (F _c Q) ² (1-e ⁻⁵) | P _w ² | P _c ² -P _w ² | Cal. P _w | P _w / P _c |
|-----|-----------------------|-----------------------------|------------------|---------------------------------|---|-----------------------------|--|------------------------|------------------------------------|
| 1. | 876.2 | 766.2 | 9.5 | 90.3 | 11.9 | 776.1 | 57.8 | 880.9 | 0.996 |
| 2. | 848.2 | 719.4 | 12.6 | 158.8 | 21.0 | 740.4 | 93.5 | 860.4 | 0.987 |
| 3. | 830.2 | 689.2 | 14.4 | 207.4 | 27.4 | 716.6 | 117.3 | 846.5 | 0.987 |
| 4. | 795.2 | 632.3 | 17.8 | 316.8 | 41.8 | 674.1 | 159.8 | 821.0 | 0.868 |
| 5. | | | | | | | | | |

Absolute Potential: 8,000 MCFPD; n .596

COMPANY R. Olson-Howard Olson

ADDRESS Drawer 3, Jal. N.M.

AGENT and TITLE J.H. Payne, Jr.

WITNESSED Earl G. Smith

COMPANY EPMS

REMARKS

Now

ELMS A. DUTY

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 .