

HOBBS OFFICE OCC
NEW MEXICO OIL CONSERVATION COMMISSION

MAIN OFFICE OCC

1957 OCT 4 PM 2:54

Form C-122

Revised 12-1-55

1957 OCT 9 AM 8:07

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Eumont Formation Queen County Lea

Initial _____ Annual X Special _____ Date of Test 9-4/13-57

Company Amerada Pet. Corp. Lease Amerada-Gulf State M"U" Unit Well No. 1

Unit N Sec. 5 Twp. 19-S Rge. 37-E Purchaser Permian Basin P.L. Company

Casing 5-1/2" Wt. 15.5# I.D. 4.976 Set at 3970 Perf. 3604' To 3800'

Tubing 2-3/8" Wt. 4.7# I.D. 1.995 Set at 3814 Perf. _____ To _____

Gas Pay: From 3604' To 3800' L 3814 xG 0.685 -GL 2613 Bar.Press. 13.2

Producing Thru: Casing _____ Tubing X Type Well Single

Single-Bradenhead-G. G. or G.O. Dual

Date of Completion: 12-14-56 Packer X Reservoir Temp. _____

OBSERVED DATA

Tested Through ~~OPENED~~ (Meter) Type Taps Pipe

| No. | Flow Data | | | | Tubing Data | | Casing Data | | Duration of Flow Hr. |
|-----|-------------|------------------------|-------------|----------------------|-------------|-------------|-------------|-------------|----------------------|
| | (Line) Size | (Choke) (Orifice) Size | Press. psig | Diff. h _w | Temp. °F. | Press. psig | Temp. °F. | Press. psig | |
| SI | | | | | | 945.5 | | | 72 Hr. SIP |
| 1. | 4" | 1.75" | 474.9 | 2.4 | 52 | 889.0 | | | 24 Hr. |
| 2. | 4" | 1.75" | 477.7 | 6.5 | 57 | 804.5 | | | 24 Hr. |
| 3. | 4" | 1.75" | 474.0 | 10.1 | 60 | 719.8 | | | 24 Hr. |
| 4. | 4" | 1.75" | 473.8 | 18.3 | 66 | 597.0 | | | 24 Hr. |
| 5. | | | | | | | | | |

CO₂ = 1.72% N₂ = 5.67%

FLOW CALCULATIONS

| No. | Coefficient (24-Hour) | $\sqrt{h_{wpf}}$ | Pressure psia | Flow Temp. Factor Ft | Gravity Factor F _g | Compress. Factor F _{pv} | Rate of Flow Q-MCFPD @ 15.025 psia |
|-----|-----------------------|------------------|---------------|----------------------|-------------------------------|----------------------------------|------------------------------------|
| 1. | 21.69 | 34.226 | 488.1 | 1.0078 | 0.9359 | 1.053 | 737 |
| 2. | 21.69 | 56.487 | 490.9 | 1.0029 | 0.9359 | 1.051 | 1209 |
| 3. | 21.69 | 70.148 | 487.2 | 1.0000 | 0.9359 | 1.049 | 1509 |
| 4. | 21.69 | 94.404 | 487.0 | 0.9943 | 0.9359 | 1.047 | 1995 |
| 5. | | | | | | | |

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio _____ cf/bbl. Specific Gravity Separator Gas 0.685
 Gravity of Liquid Hydrocarbons _____ deg. Specific Gravity Flowing Fluid _____
 F_c _____ (1-e^{-s}) P_c 958.7 P_c² 919.1

| No. | P _w P _t (psia) | P _t ² | F _c Q | (F _c Q) ² | (F _c Q) ² (1-e ^{-s}) | P _w ² | P _c ² -P _w ² | Cal. P _w | P _w /P _c |
|-----|--------------------------------------|-----------------------------|------------------|---------------------------------|--|-----------------------------|--|---------------------|--------------------------------|
| 1. | 902.2 | 814.0 | 7.323 | 53.63 | 8.849 | 822.8 | 96.3 | 907.1 | 0.946 |
| 2. | 817.7 | 668.6 | 12.013 | 144.31 | 23.811 | 692.4 | 226.7 | 832.1 | 0.868 |
| 3. | 733.0 | 537.3 | 14.993 | 224.79 | 37.090 | 574.4 | 344.7 | 757.9 | 0.791 |
| 4. | 610.2 | 372.3 | 19.822 | 392.91 | 64.830 | 437.1 | 482.0 | 661.1 | 0.690 |
| 5. | | | | | | | | | |

Absolute Potential: 3090 MCFPD; n 0.63

COMPANY Amerada Pet. Corp.
 ADDRESS Drawer "D" - Monmouth, New Mexico
 AGENT and TITLE O.C. McBryde, Jr. - District Engineer
 WITNESSED J.D. Horton
 COMPANY Permian Basin Pipe Line Co.

REMARKS

Poor point alignment, but due to this being a retest, an average curve was drawn through the data points.

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 .