

## NEW MEXICO OIL CONSERVATION COMMISSION

HOBBS OFFICE 000

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Form C-122

Revised 12-1-55

## MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Eumont Formation S. R. County Lea Date of Test 9-30-56Initial Annual X Special Date of Test 9-30-56Company Cities Service Oil Lease State "C" Well No. 3Unit K Sec. 16 Twp. 21S Rge. 36E Purchaser Permian Basin Pipeline Co.Casing 7" Wt. 24# I.D. 6.366" Set at 3748' Perf. 3130 To 3250Tubing 2 3/8" Wt. 4.7# I.D. 1.995" Set at Perf. To Perf.Gas Pay: From 3130 To 3250 L 3130 xG .660 -GL 2066' Bar.Press. 13.2Producing Thru: Casing X Tubing Type Well G.O. DualDate of Completion: 8-3-54 Packer Single-Bradenhead-G. G. or G.O. Dual Reservoir Temp. Reservoir Temp.

## OBSERVED DATA

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

No.	Flow Data					Tubing Data		Casing Data		Duration of Flow Hr.
	(Prover) (Line) Size	(Choke) (Orifice) Size	Press. psig	Diff. h <sub>w</sub>	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
SI										
1.	4	0.75	473.6	4.9	108			947.6		73
2.	4	0.75	470.7	14.6	78			677.7		23 3/4
3.	4	0.75	474.6	26.0	76			609.5		24
4.	4	0.75	474.6	41.5	76			564.9		23 1/2
5.								525.8		24

## 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.	3.515	48.84	486.8	0.9568	0.9535	1.036	162
2.	3.515	84.05	483.9	0.9831	0.9535	1.043	269
3.	3.515	112.6	487.8	0.9850	0.9535	1.043	388
4.	3.515	141.0	478.8	0.9850	0.9535	1.043	485
5.							

## PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio cf/bbl. Specific Gravity Separator Gas Specific Gravity Separator Gas  
Gravity of Liquid Hydrocarbons deg. Specific Gravity Flowing Fluid Specific Gravity Flowing Fluid  
F<sub>c</sub> .752 (1-e<sup>-S</sup>) .150 P<sub>c</sub> 947.6 P<sub>c</sub><sup>2</sup> 923.1

No.	P <sub>w</sub> 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.	690.9					477.3	455.8		
2.	622.7					387.8	535.3		
3.	578.1					334.2	588.9		
4.	539.0					290.5	632.6		
5.									

Absolute Potential: 708 MCFPD; n 1.0 limitedCOMPANY Permian Basin Pipeline Co.ADDRESS Hobbs, New MexicoAGENT and TITLE R. L. West, Gas EngineerWITNESSED E. H. Furrey, Jr.COMPANY Cities Service Oil Co.

## REMARKS

Slope (N) in excess of 1.0, but as this being a retest an average slope of 1.0 was drawn through the high rate of flow data point.

LAWIS A. LEE  
GAS ENGINEER

## 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  $P_t$ .