

NEW MEXICO OIL CONSERVATION COMMISSION

HOBBS 07177 000

Form C-122

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Revised 12-1-55

Pool Bumont Formation Seven Rivers-Queen County Lea

Initial _____ Annual X Special _____ Date of Test 9-12-56

Company Cities Service Oil Co. Lease State "AO" Well No. 1

Unit G Sec. 2 Twp. 21S Rge. 36E Purchaser Permian Basin Pipeline Company

Casing 5 1/2" Wt. 14.0# I.D. 5.012" Set at 3440' Perf. _____ To _____

Tubing 2-3/8" Wt. 4.7# I.D. 1.995" Set at 3643 Perf. _____ To _____

Gas Pay: From 3440' To 3650' L 3440' xG 0.665' -GL 2288' Bar.Press. 13.2

Producing Thru: Casing X Tubing _____ Type Well single

Date of Completion: 10-15-54 Packer None Reservoir Temp. 94° Est.

OBSERVED DATA

 $\text{CO}_2 - 0.85\%$, $\text{N}_2 - 1.11\%$ Tested Through (Pressure) (Choke) (Meter)Type Taps Flange

No.	Flow Data					Tubing Data		Casing Data		Duration of Flow Hr.
	(Prover) (Line) Size	(Choke) (Orifice) Size	Press. psig	Diff. h_w	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
SI								890.7		72
1.	4"	1.50"	471.5	4.8	93			715.0	93	23 1/2
2.	4"	1.50"	482.9	15.0	68			618.9	68	24
3.	4"	1.50"	482.5	39.2	69			545.7	69	24
4.	4"	1.50"	463.4	47.1	70			516.7	70	24
5.										

FLOW CALCULATIONS

No.	Coefficient (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.	15.26	48.24	484.7	0.9497	0.9498	1.039	764
2.	15.26	86.27	496.1	0.9924	0.9498	1.048	1300
3.	15.26	139.40	495.7	0.9915	0.9498	1.048	2099
4.	15.26	149.80	476.6	0.9905	0.9498	1.044	2245
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio Dry Gas cf/bbl.

Gravity of Liquid Hydrocarbons _____ deg.

$F_c = \frac{1}{1 - e^{-S}}$

Specific Gravity Separator Gas .665

Specific Gravity Flowing Fluid _____

$P_c = 903.9$ $P_c^2 = 817.0$

No.	P_w P_t (psia)	P_c^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	$\frac{P_w}{P_c}$
1.	728.2					530.3	286.7		
2.	632.7					399.8	417.4		
3.	558.9					312.4	504.6		
4.	529.9					280.8	536.2		
5.									

Absolute Potential: 3435 MCFPD; n 1.0 limitedCOMPANY Permian Basin Pipeline Co.ADDRESS Hobbs, New MexicoAGENT and TITLE R. L. West, Gas EngineerWITNESSED Richard O. BorgCOMPANY Cities Service Oil Co.

REMARKS

An average slope drawn through the data points would have been in excess of 1.0. Due to this being a retest, an average slope at 1.0 was drawn through the high data point.

W. A. LEE
JAS. 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 .