

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Emout Formation Yates County Lee
Initial _____ Annual _____ Special X Date of Test 8-27 to 8-31-56
Company Shell Oil Company Lease State "M" Well No. 4
Unit P Sec. 1 Twp. 21S Rge. 35E Purchaser El Paso Natural Gas Company
Casing 7 Wt. 24 I.D. 6.336 Set at 3715 Perf. 2920 To 3230
Tubing 2 Wt. 4.7 I.D. 1.995 Set at 2848 Perf. _____ To _____
Gas Pay: From 2920 To 3230 L 2848 xG .675 -GL 1922 Bar.Press. 13.2
Producing Thru: Casing _____ Tubing X Type Well Single
Single-Br. denhead-G. G. or G.O. Dual
Date of Completion: 8-1-56 Packer 2840 Reservoir Temp. _____

OBSERVED DATA

Tested Through (Prover) (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						892				72
1.	4	1.750	603	3.72	62	838				24
2.	4	1.750	574	5.82	62	764				24
3.	4	1.750	577	7.72	65	673				24
4.	4	1.750	590	8.652	67	609				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.	19.27	91.83		.9981	.9427	1.068	1.779
2.	19.27	140.52		.9981	.9427	1.064	2.711
3.	19.27	187.03		.9952	.9427	1.062	3.591
4.	19.27	212.41		.9933	.9427	1.066	4.086
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio _____ cf/bbl.
Gravity of Liquid Hydrocarbons _____ deg.
F_c 9.936 (1-e^{-s}) .124

Specific Gravity Separator Gas _____
Specific Gravity Flowing Fluid _____
P_c 905.2 P_c² 819.4

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.	851.2	724.5	17.7	313.3	38.8	763.3	56.1	873.7	.9254
2.	777.2	604.0	26.9	723.6	89.7	693.7	125.7	832.9	.9201
3.	686.2	470.9	35.7	127.5	158.0	628.9	190.5	793.0	.8760
4.	622.2	387.1	40.6	164.8	204.4	591.5	227.9	769.1	.8496
5.									

Absolute Potential: 9,600 MCFPD; n 0.577

COMPANY Shell Oil Company
ADDRESS Box 1957, Hobbs, New Mexico
AGENT and TITLE W. M. Frankle
WITNESSED Edward Mabe
COMPANY El Paso Natural Gas Company

REMARKS

ELVIS A. UTZ
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 .

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