

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Undesignated Formation Morrow County Lea
Initial _____ Annual _____ Special X Date of Test 4/16/4-20-62
Company El Paso Natural Gas Company Lease Mescalero Ridge Unit Well No. 1
Unit D Sec. 21 Twp. 19 Rge. 34 Purchaser Southern Union Gas Company
Casing 7" Wt. 32# I.D. _____ Set at 13709 Perf. 13328 To 13340
Tubing 2 1/16" Wt. 3.25# I.D. _____ Set at 13415 Perf. _____ To _____
Gas Pay: From 13328 To 13340 L 13415 xG Mix-.780 -GL 10464 Bar.Press. 13.2
Producing Thru: Casing _____ Tubing X Type Well G. O. Dual
Single-Bradenhead-G. G. or G.O. Dual
Date of Completion: 9-27-61 Parker 13225 Reservoir Temp. 186°

OBSERVED DATA

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

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						4060				72
1.	2"	1.250	600	4.00	81	3600				24
2.	2"	1.250	670	12.96	70	3064				24
3.	2"	1.250	689	29.70	78	2135				24
4.	2"	1.250	738	40.32	85	1563				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.	10.48	49.53		.9804	.9393	1.062	507.6
2.	10.48	94.10		.9905	.9393	1.076	987.2
3.	10.48	144.41		.9831	.9393	1.075	1,502
4.	10.48	174.03		.9768	.9393	1.075	1,799
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio 26.616 cf/bol.
Gravity of Liquid Hydrocarbons 51.8 @ 60° deg.
 P_c 15.255 $(1-e^{-S})$ 0.5132

Specific Gravity Separator Gas .680
Specific Gravity Flowing Fluid .7719
 P_c 4073.2 P_c^2 16590.9

No.	F_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.	3613.2	13055.2	7.743	59.95	30.77	13086.0	3504.9	3617.5	89
2.	3077.2	9496.1	15.060	226.80	116.40	9612.5	6978.4	3100.4	76
3.	2148.2	4614.8	22.913	525.00	269.40	4884.2	11706.7	2210.0	54
4.	1576.2	2484.4	27.444	753.20	386.50	2870.9	13720.0	1694.4	42
5.									

Absolute Potential: 2,100 MCFPD; n .916

COMPANY El Paso Natural Gas Company

ADDRESS P. O. Box 1384 - Jal, New Mexico

AGENT and TITLE Peyton N. Randolph - Gas Engineer

WITNESSED

COMPANY

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 .