NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Crosby Devonian Formation Devonian County Lea

Initial X Annual ____ Special ____ Date of Test 1-24-58

Company El Paso Natural Gas Company Lease Gregory Federal Well No. 4

Unit 1980 SW Sec. 33 Twp. 25 Rge. 37 Purchaser El Paso Natural Gas Company

Casing 5 1/2 Wt. 17 I.D. 4.892 Set at 8460 Perf. 8316 To 8372

Tubing 2 1/2 Wt. 6.5 I.D. 2.441 Set at 8359 Perf. ____ To ____

Gas Pay: From 8316 To 8372 L 8359 xG Mix 0.697 -GL 5826 Bar.Press. 13.2

Producing Thru: Casing ____ Tubing X Type Well Single

Date of Completion: 1-19-58 Packer None Single-Bradenhead-G. G. or G.O. Dual Reservoir Temp. ____

OBSERVED DATA

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

No.	Flow Data (Prover) (~~Choke~~) Size	(Orifice) Size	Press. psig	Diff. h_w	Temp. °F.	Tubing Data Press. psig	Tubing Data Temp. °F.	Casing Data Press. psig	Casing Data Temp. °F.	Duration of Flow Hr.
SI						2652		2628		72
1.	2	1.000	141		69	2494		2526		3
2.	2	1.000	262		69	2300		2373		3
3.	2	1.500	118		41	1983		2172		3
4.	2	1.500	145		37	1907		2130		3
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.	22.0662		154.2	0.9915	0.9682	1.014	3312
2.	22.0662		275.2	1.0107	0.9682	1.029	6115
3.	54.3653		131.2	1.0188	0.9682	1.012	7120
4.	54.3653		158.2	1.0229	0.9682	1.016	8654
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio 50,918 cf/bbl.
Gravity of Liquid Hydrocarbons 43.5 deg.
F_c ____ $(1-e^{-s})$ ____

Assumed
Specific Gravity Separator Gas 0.640
Specific Gravity Flowing Fluid .697
P_c 2665.2 P_c^2 7103.3

No.	P_w P_t (psia)	P_t^2	F_cQ	$(F_cQ)^2$	$\frac{(F_cQ)^2}{(1-e^{-s})}$	P_w^2	$P_c^2-P_w^2$	Cal. P_w	$\frac{P_w}{P_c}$
1.	2507.2	6286.1				6447.5	655.8		0.953
2.	2313.2	5350.9				5694.0	1409.3		.895
3.	1996.2	3984.8				4775.1	2328.2		.820
4.	1920.2	3687.2				4593.3	2510.0		.804
5.									

Absolute Potential: 20,750 MCFPD; n 0.767765
COMPANY El Paso Natural Gas Company
ADDRESS P. O. Box 1384, Jal, New Mexico
AGENT and TITLE Peyton N. Randolph Peyton N. Randolph - Gas Engineer
WITNESSED ____
COMPANY ____

REMARKS

Note: No 24 hour point was run due to the separator not functioning properly. This well will be retested when it is tied into a pipeline.

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.