

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Revised 12-1-55

Pool Undesignated Formation Queen County Lea
 Initial X Annual _____ Special _____ Date of Test 1-9-61
 Company Cactus Drilling Company Lease Catron State "C" Well No. 1
 Unit I Sec. 2 Twp. 18 Rge. 36 Purchaser none
 Casing 4 1/2 Wt. 11.60 I.D. _____ Set at 4775 Perf. 4504 To 4520
4680 To 4688
 Tubing 2 Wt. 4.7 I.D. _____ Set at 4495 Perf. _____ To _____
 Gas Pay: From 4504 To 4520 L 4495 xG mix. 757 GL 3103 Bar. Press. 13.2
 Producing Thru: Casing _____ Tubing X Type Well Single
 Single-Bradenhead-G. G. or G.O. Dual
 Date of Completion: 1-9-61 Packer 4465 Reservoir Temp. _____

OBSERVED DATA

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

No.	Flow Data					Tubing Data		Casing Data		Duration of Flow Hr.
	(Prover) (Line) Size	(Choke) (Orifice) Size	Press. psig	Diff. h CHOKE	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
SI						1550				72
1.	2"	1.000	33	12/64	72	1600				3
2.	2	1.000	74	16/64	60	1545				3
3.	2	1.500	32	19/64	45	1363				3
4.	2	1.500	44	22/64	41	1170				3
5.	2	1.000	27	12/64	80	1427				220

Unable to plot first two flow rates due to calculated P_w^2 being greater than P_c^2

FLOW CALCULATIONS

No.	Coefficient (24-Hour) Prover	$\sqrt{h_{wfp}}$	Pressure psia	Flow Temp. Factor Ft	Gravity Factor F_g	Compress. Factor F_{pv}	Rate of Flow Q-MCFPD @ 15.025 psia
1.	22.0662		45.2	.9887	.9325		910
2.	22.0662		87.2	1.0000	.9325		1,794
3.	54.3653		45.2	1.0188	.9325		2,325
4.	54.3653		57.2	1.0188	.9325		2,954
5.	22.0662		40.2	.9813	.9325		812

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio 47.71 M cf/bbl.
 Gravity of Liquid Hydrocarbons 28.7 deg.
 ρ_c 9.936 (1-e^{-s}) .209
 Specific Gravity Separator Gas .690
 Specific Gravity Flowing Fluid .8832
 P_c 1563.2 P_c^2 2443.6

*Larger than P_c^2

$P_c^2 - P_t^2$

No.	P_w^* Pt (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	$P_c^2 - P_t^2$
1.	1613.2	2602.4	9.3	86.5	10.1	2620.5	*		*
2.	1558.2	2428.0	17.8	316.8	66.2	2494.2	*		15.6
3.	1376.2	1893.9	23.1	533.6	111.5	2005.4	438.2		549.7
4.	1183.2	1400.0	29.3	858.5	179.4	1579.4	864.2		1043.6
5.	1140.2	2074.2	8.1	65.6	13.7	2087.9	355.7		369.4

Absolute Potential: 5,600 MCFPD; n .45 n 1.000
 COMPANY Ran By EL Paso Natural Gas Company
 ADDRESS Jal New Mexico
 AGENT and TITLE Tester L. D. Southern
 WITNESSED R. E. Davis
 COMPANY Cactus Drilling Company

REMARKS

Handwritten notes and signatures at the bottom of the page.

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} = Supercompressibility 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 .

Cactus Drilling Company
 Catron State "C" No.1
 Sec. 2, Twp. 18, Rge. 36
 Lea County, N. M.
 January 1, 1961

