NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Undesignated Formation Mississippian County Lea

Initial X Annual ______ Special ______ Date of Test 7-28-57

Company Phillips Petroleum Company Lease Austin Well No. 1

Unit M Sec. 17 Twp. 14-S Rge. 36-E Purchaser -

Casing 7" Wt. 23# 26# I.D. 6.366" 6.276" Set at 13,425 Perf. 13194'-198' 13202'-208' To 13214-248' 13270-286'

Tubing 2-3/8" Wt. 4.7# I.D. 1.995 Set at 13170' Perf. open ended To -

Gas Pay: From 13202' To 13286' 13170 xG .836 -GL 11,020 Bar.Press. ______

Producing Thru: Casing ______ Tubing X Type Well Single
Single-Bradenhead-G. G. or G.O. Dual

Date of Completion: 7-18-57 Packer 13145 Reservoir Temp. 228

OBSERVED DATA

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

	Flow Data					Tubing Data		Casing Data		
No.	(Prover) ~~(Line)~~ Size	~~(Choke)~~ (Orifice) Size	Press. psig	Diff. h_w	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	Duration of Flow Hr.
SI						2812	80			72
1.	4"	2"	1.56		73	2250	80	pkr	-	2
2.	4"	2"	9.34		39	1867	83	"	-	2
3.	4"	2"	15.72		38	1748	85	"	-	2
4.	4"	2"	23.53		30	1542	82	"	-	20
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.	~~86.594~~		15.36	.9877	.9463	1.000	670*
2.	~~86.594~~		22.54	1.0213	.9463	1.000	1627*
3.	~~86.594~~		28.92	1.0219	.9463	1.000	2425
4.	~~86.594~~		36.72	1.0302	.9463	1.000	3102
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio 15,300 cf/bbl. Specific Gravity Separator Gas .67
Gravity of Liquid Hydrocarbons 52 deg. Specific Gravity Flowing Fluid .77
F_c 9.936 $(1-e^{-s})$ .532 P_c 2825.2 P_c^2 7982

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.	2269.2	5322	6.66	44.4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2.	1880.2	3535	16.14	[illegible]	[illegible]	[illegible]	4308.2	[illegible]	[illegible]
3.	1761.2	3100	24.09	[illegible]	[illegible]	[illegible]	4573.5	[illegible]	[illegible]
4.	1555.2	2418	30.82	949	[illegible]	2924	5058	1720	.605
5.									

Absolute Potential: 4425 MCFPD; n 1.000
COMPANY Phillips Petroleum Company
ADDRESS Box 2105, Hobbs, New Mexico
AGENT and TITLE W. C. Rodgers, District Superintendent
WITNESSED G. C. Sheldon
COMPANY Phillips Petroleum Company

REMARKS

*Gas volumes taken from Table No. VII, "Capacities for 4" Flow Nipple & Orfice or 4" Orfice Well Tester of the NMOCC" Manual for Gas-Oil Ratio Determination" as flow pressures were below critical value.

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.