NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122
Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Undesignated Formation Yates County Lea

Initial X Annual Special Date of Test 11-2-64

Company Phillips Petroleum Company Lease M. E. Hale Well No. 11

Unit K Sec. 35 Twp. 17S Rge. 34E Purchaser Phillips Petroleum Co. (Designated)

Casing 4.5" Wt. 9.5# / 10.5# I.D. 4.090" / 4.052" Set at 6225' Perf. 2997' To 3100'

Tubing 2.375" Wt. 4.7# I.D. 1.995" Set at 2977' Perf. None To

Gas Pay: From 2997' To 3100' L 2977' xG 0.776 -GL 4018 Bar.Press. 13.2

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

Date of Completion: 10-31-64 Packer None Reservoir Temp. 96°F

OBSERVED DATA

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

No.	Flow Data (Prover)* (Line) Size	(~~Choke~~) (Orifice) Size	Press. psig	Diff. h_g* 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						1531	73	1531	73	24 hr. S.I.
1.	2" *	1"		3.5*	58	1410	73	1410	73	1.0
2.	2" *	1"		14 *	50	1168	72	1168	72	1.0
3.	2" *	1"		28 *	52	638	72	785	72	1.0
4.	4"	1.5"	20.4	19.8	54	295	72	509	72	1.0
5.										

FLOW CALCULATIONS

No.	Coefficient (24-Hour)	$\sqrt{P_w p_f}$	Pressure psia	Flow Temp. Factor F_t	Gravity Factor F_g	Compress. Factor F_{pv}	Rate of Flow Q-MCFPD @ 15.025 psia
1.	169.4	-		1.0019	0.8793		149.2
2.	357.3	-		1.0098	0.8793		317.3
3.	538.4	-		1.0078	0.8793		477.1
4.	13.99	25.79	33.6	1.0058	0.8793		319.1
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio Dry Gas cf/bbl.
Gravity of Liquid Hydrocarbons deg.
F_c Pw measured $(1-e^{-s})$

Specific Gravity Separator Gas
Specific Gravity Flowing Fluid
P_c 1544.2 P_c^2 2384.6

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.	1423.2					2025.5	359.1		92.2
2.	1181.2					1395.2	989.4		76.5
3.	798.2					637.1	1747.5		51.7
4.	522.2					272.7	2111.9		33.8
5.									

Absolute Potential: 600 MCFPD; n 0.73
COMPANY Phillips Petroleum Company
ADDRESS Box 2130 - Hobbs, N.M.
AGENT and TITLE W. J. Mueller - Reservoir Engineer
WITNESSED W. J. Mueller
COMPANY

REMARKS

Flow tests No. 1, 2 & 3 taken through 2" orifice well tester. Test No. 4 taken
* through 4" in-line meter.

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.