

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122

Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Undesignated Formation Pennsylvanian County Lea
Initial X Annual _____ Special _____ Date of Test 11/11/61
Company Pan American Petroleum Corp. Lease Mary Nellis Well No. 1
Unit 0 Sec. 5 Twp. 19-S Rge. 33-E Purchaser Southern Union
Casing 5 1/2" Wt. 17-20 I.D. -- Set at 13723 Perf. 13324-59 To 13412-25
Tubing 2" Wt. 4.7 I.D. 1.995 Set at 13430 Perf. Open ended To _____
Gas Pay: From 13320 To 13425 L 13430 xG 0.7896 -GL 10,581 Bar.Press. 13.2
Producing Thru: Casing _____ Tubing X Type Well Single
Date of Completion: 11/8/61 Packer 13,000 Reservoir Temp. 160°F
Single-Bradenhead-G. G. or G.O. Dual

OBSERVED DATA

Tested Through (Prover) (Choke) (Meter)

Type Taps Flange

Flow Data						Tubing Data		Casing Data		Duration of Flow Hr.
No.	Line (Line) Size	Orifice (Orifice) Size	Press. psig	Diff. h _w	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
SI										
1.	<u>4"</u>	<u>2.000</u>	<u>453</u>	<u>11</u>	<u>72</u>	<u>4353</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>70</u>
2.						<u>500</u>	<u>--</u>	<u>1300</u>	<u>--</u>	<u>24</u>
3.										
4.										
5.										

FLOW CALCULATIONS

No.	Coefficient (24-Hour)	$\sqrt{h_{wpf}}$	Pressure psia	Flow Temp. Factor F _t	Gravity Factor F _g	Compress. Factor F _{pv}	Rate of Flow Q-MCFPD @ 15.025 psia
1.	<u>25.58</u>	<u>71.62</u>	<u>466.2</u>	<u>0.9887</u>	<u>0.9258</u>	<u>1.054</u>	<u>1.764</u>
2.							
3.							
4.							
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio 294.00 cf/bbl.
Gravity of Liquid Hydrocarbons 53 deg.
T_c 9.936 (1-e^{-S}) 0.5174
S = 0.7280

Specific Gravity Separator Gas 0.7
Specific Gravity Flowing Fluid 0.7896
P_c 4366.2 P_c² 19,064

No.	P _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.	<u>513.2</u>	<u>263.4</u>	<u>175.3</u>	<u>307.3</u>	<u>159.0</u>	<u>422.4</u>	<u>18,642</u>	<u>649.9</u>	<u>0.1488</u>
2.									
3.									
4.									
5.									

Absolute Potential: 1.800 MCFPD; n 1.0000COMPANY Pan American Petroleum CorporationADDRESS Box 68, Hobbs, New Mexico

AGENT and TITLE

Original Signed By: J. W. MeekJ. W. Meek, Area EngineerWITNESSED B. A. Kelley and J. T. RodgersCOMPANY Pan American Petroleum Corporation

REMARKS

Low productivity necessitated one-point test at delivery pressure. Well produced 60
bbls. distillate during 24 hour test. Slope assumed 1.000.

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 .