

NEW MEXICO OIL CONSERVATION COMMISSION

Form C-122

Revised 12-1-55

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Blinebry Formation Blinebry County Lea
Initial _____ Annual _____ Special X Date of Test 9-23-55
Company Pan American Petroleum Corp. Lease Southland Royalty "A" Well No. 6
Unit H Sec. 9 Twp. 21-S Rge. 37-E Purchaser Permian Basin Pipe Line
Casing 5 1/2" Wt. 15.5# I.D. 4.950" Set at 6892' Perf. 5647' To 6108'
Tubing 2-3/8" Wt. 4.7# I.D. 1.995" Set at _____ Perf. _____ To _____
Gas Pay: From 5647' To 6108' L 5647' xGmix. 0.757-GL 4275' Bar.Press. 13.2
Producing Thru: Casing X Tubing _____ Type Well G. O. Dual
Single-Bradenhead-G. G. or G.O. Dual
Date of Completion: 12-31-53 Packer _____ Reservoir Temp. _____

OBSERVED DATA

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

No.	Flow Data			Tubing Data		Casing Data		Duration of Flow Hr.
	(<u>Proven</u>) (Line) Size	(<u>Choke</u>) (Orifice) Size	Press. psig	Diff. h _w	Temp. °F.	Press. psig	Temp. °F.	
SI								
1.	4	2.25	420.0	1.0	88		1851.9	72-1/4 SIP
2.	4	2.25	421.2	8.5	50		1643.0	23-1/4
3.	4	2.25	431.4	13.2	78		1436.7	23
4.	4	2.25	429.0	19.8	46		1328.0	23-1/2
5.							1104.0	23-3/4

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.	40.53	20.81		0.9741	0.9527	1.038	812
2.	40.53	60.76		1.0098	0.9527	1.052	2492
3.	40.53	76.61		0.9831	0.9527	1.043	3033
4.	40.53	93.57		1.0137	0.9527	1.052	3852
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio 42252 x 10³ cf/bbl.
Gravity of Liquid Hydrocarbons 55 deg.
F_c 1.758 (1-e^{-s}) 0.255

Specific Gravity Separator Gas 0.66
Specific Gravity Flowing Fluid _____
P_c 1865.1 P_c 3478.6

No.	P _t 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.	1656.2	2743.0	1.427	2.036	0.5192	2743.5	735.1	1656.5	.89
2.	1449.9	2102.2	4.381	19.19	4.893	2107.1	1371.5	1451.6	.78
3.	1341.2	1798.8	5.332	28.43	7.250	1806.1	1672.5	1343.9	.72
4.	1117.2	1248.1	6.772	45.86	11.69	1259.8	2218.8	1122.5	.60
5.									

Absolute Potential: 5800 MCFPD; n .895COMPANY Pan American Petroleum CorporationADDRESS P. O. Box 68 - Hobbs, New MexicoAGENT and TITLE M. C. McPhail Field Engineer

WITNESSED _____

COMPANY _____

REMARKS _____

ELMS 1.1
GAS ENGINEER

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 .

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OBSERVED DATA

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	(<u>Proven</u>) (Line) Size	(<u>Choke</u>) (Orifice) Size	Press. psig	Diff. h _w	Temp. °F.	Press. psig	Temp. °F.	
SI								
1.	<u>4</u>	<u>2.25</u>	<u>420.0</u>	<u>1.0</u>	<u>88</u>		<u>1851.9</u>	<u>72-1/4 SIP</u>
2.	<u>4</u>	<u>2.25</u>	<u>421.2</u>	<u>8.5</u>	<u>50</u>		<u>1643.0</u>	<u>23-1/4</u>
3.	<u>4</u>	<u>2.25</u>	<u>431.4</u>	<u>13.2</u>	<u>78</u>		<u>1436.7</u>	<u>23</u>
4.	<u>4</u>	<u>2.25</u>	<u>431.4</u>	<u>13.2</u>	<u>78</u>		<u>1328.0</u>	<u>23-1/2</u>
5.	<u>4</u>	<u>2.25</u>	<u>429.0</u>	<u>19.8</u>	<u>46</u>		<u>1104.0</u>	<u>23-3/4</u>

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.	<u>40.53</u>	<u>20.81</u>		<u>0.9741</u>	<u>0.9527</u>	<u>1.036</u>	<u>812</u>
2.	<u>40.53</u>	<u>60.76</u>		<u>1.0096</u>	<u>0.9527</u>	<u>1.052</u>	<u>2492</u>
3.	<u>40.53</u>	<u>76.61</u>		<u>0.9831</u>	<u>0.9527</u>	<u>1.043</u>	<u>3033</u>
4.	<u>40.53</u>	<u>93.57</u>		<u>1.0137</u>	<u>0.9527</u>	<u>1.052</u>	<u>3852</u>
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F_c 1.758 (1-e^{-s}) 0.255

Specific Gravity Separator Gas 0.66
Specific Gravity Flowing Fluid _____
P_c 1865.1 P_c² 3478.6

No.	$\frac{E_w}{P_t}$ (psia)	P _t ²	F _c Q	(F _c Q) ²	$\frac{(F_c Q)^2}{(1-e^{-s})}$	P _w ²	P _c ² -P _w ²	Cal. P _w	$\frac{P_w}{P_c}$
1.	<u>1656.2</u>	<u>2743.0</u>	<u>1.427</u>	<u>2.036</u>	<u>0.5192</u>	<u>2743.5</u>	<u>735.1</u>	<u>1656.5</u>	<u>.89</u>
2.	<u>1449.9</u>	<u>2102.2</u>	<u>4.381</u>	<u>19.19</u>	<u>4.893</u>	<u>2107.1</u>	<u>1371.5</u>	<u>1451.6</u>	<u>.78</u>
3.	<u>1341.2</u>	<u>1798.8</u>	<u>5.332</u>	<u>28.43</u>	<u>7.230</u>	<u>1806.1</u>	<u>1672.5</u>	<u>1343.9</u>	<u>.72</u>
4.	<u>1117.2</u>	<u>1248.1</u>	<u>6.772</u>	<u>45.86</u>	<u>11.69</u>	<u>1259.8</u>	<u>2218.8</u>	<u>1122.5</u>	<u>.60</u>
5.									

Absolute Potential: 5800 MCFPD; n .895
COMPANY Pan American Petroleum Corporation
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AGENT and TITLE M. C. McPhail Field Engineer
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- 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.
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