

## NEW MEXICO OIL CONSERVATION COMMISSION

MOORE'S OFFICE OCC Form C-122

Revised 12-1-55

## MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool Jalmit Formation Tates & S.R. County LeaInitial Annual Special X Date of Test 9-10/10-59Company Amerada Petroleum Corporation Lease State LMT Well No. 5Unit A Sec. 36 Twp. 238 Rge. 36E Purchaser Permian Basin Pipeline CompanyCasing 5-1/2" Wt. 15.5# I.D. 4.950" Set at 3485' Perf. 2835' To 3420'Tubing 2-3/8" Wt. 4.7# I.D. 1.995" Set at 3573' Perf. (1) 0.895 (1) 2537 To (2) 0.848 (2) 2404Gas Pay: From 2835' To 3420' L 2835' xG (3) 0.793 (3) 2248 (4) 2191 Bar.Press. (4) 0.773Producing Thru: Casing X Tubing (4) 0.773 Type Well Gas-Oil DualDate of Completion: 2-5-54 Packer 3468 Single-Bradenhead-G. G. or G.O. Dual Reservoir Temp. 87.7° CalculatedCO<sub>2</sub> = 0.22%N<sub>2</sub> = 1.57%

OBSERVED DATA

Tested Through (~~Pressure~~) (~~Flow~~) (Meter)Type Taps Pipe

No.	Flow Data					Tubing Data		Casing Data		Duration of Flow Hr.
	(Line) Size	(Choke) (Orifice) Size	Press. psig	Diff. h <sub>w</sub>	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
SI								803.4		72.00
1.	4"	1.25	442.3	2.0	120			589.3	None	24.00
2.	4"	1.25	447.6	4.6	78			581.3	None	24.00
3.	4"	1.25	431.7	11.0	72			557.9	None	24.00
4.	4"	1.25	448.0	19.3	74			532.2	None	24.00
5.										

## FLOW CALCULATIONS

No.	Coefficient (24-Hour)	$\sqrt{h_{wpf}}$	Pressure psia	Flow Temp. Factor F <sub>t</sub>	Gravity Factor F <sub>g</sub>	Compress. Factor F <sub>pv</sub>	Rate of Flow Q-MCFPD @ 15.025 psia
1.	10.24	30.18	455.5	0.9469	0.9445	1.029	290
2.	10.24	46.04	460.8	0.9431	0.9445	1.039	464
3.	10.24	69.96	444.9	0.9487	0.9445	1.040	710
4.	10.24	94.10	461.2	0.9468	0.9445	1.041	935
5.							

## PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio (1) 11,674 (3) 20,579 (4) 23,863 cf/bbl.  
Gravity of Liquid Hydrocarbons (2) 14.618 deg.  
F<sub>c</sub> 1.793 (1-e<sup>-s</sup>) 0.160 0.143  
0.152 0.140

Specific Gravity Separator Gas 0.645  
Specific Gravity Flowing Fluid Above  
P<sub>c</sub> 816.6 P<sub>c</sub><sup>2</sup> 666.8

No.	P <sub>w</sub> P <sub>t</sub> (psia)	P <sub>t</sub> <sup>2</sup>	F <sub>c</sub> Q	(F <sub>c</sub> Q) <sup>2</sup>	(F <sub>c</sub> Q) <sup>2</sup> (1-e <sup>-s</sup> )	P <sub>w</sub> <sup>2</sup>	P <sub>c</sub> <sup>2</sup> -P <sub>w</sub> <sup>2</sup>	Cal. P <sub>w</sub>	P <sub>w</sub> /P <sub>c</sub>
1.	602.5	363.0	0.520	0.270	0.0433	363.0	303.8	602.5	0.738
2.	594.5	353.4	0.832	0.692	0.1852	353.5	313.3	594.6	0.738
3.	571.1	326.2	1.773	1.680	0.2317	326.4	340.4	571.3	0.700
4.	545.4	297.5	1.712	2.931	0.4183	297.9	368.9	545.8	0.668
5.									

Absolute Potential: 1727 MCFPD; n 1.00 LimitedCOMPANY Amerada Petroleum CorporationADDRESS Drawer D - Monument, New MexicoAGENT and TITLE R. E. Baschal District EngineerWITNESSED J.D. HortonCOMPANY Permian Basin Pipeline Company

## REMARKS

Resulting slope (n) in excess of 1.00, therefore a line with a slope of 1.00 was drawn through the point with the highest flow rate.

## 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  $P_t$ .