

MULTI-POINT BACK PRESSURE TEST FOR GAS WELLS

Pool South Platte Formation Pictured Bluffs County Elk Arriba

Initial X Annual \_\_\_\_\_ Special \_\_\_\_\_ Date of Test 11/6/59

Company Astec Oil and Gas Company Lease Arizona-Moarilla Well No. 1-4

Unit I Sec. 23 Twp. 25N Rge. 4E Purchaser \_\_\_\_\_

Casing 4 1/2 Wt. 9 1/2 I.D. 4.090 Set at 3000 Perf. 3300 To 3454

Tubing 2 Wt. 4.7 I.D. 1.905 Set at 3461 Perf. 3431 To 3461

Gas Pay: From 3300 To 3454 L \_\_\_\_\_ xG \_\_\_\_\_ -GL \_\_\_\_\_ Bar.Press. \_\_\_\_\_

Producing Thru: Casing \_\_\_\_\_ Tubing X Type Well Single-Well

Date of Completion: 11/6/59 Packer \_\_\_\_\_ Reservoir Temp. \_\_\_\_\_

T.P. 3510  
T.P. 6996

OBSERVED DATA

Tested Through (Brown) (Choke) (Nucor) Type Taps \_\_\_\_\_

Flow Data						Tubing Data		Casing Data		Duration of Flow Hr.
No.	(Prover) (Line) Size	(Choke) (Orifice) Size	Press. psig	Diff. h <sub>w</sub>	Temp. °F.	Press. psig	Temp. °F.	Press. psig	Temp. °F.	
SI						<u>363</u>		<u>364</u>		<u>20 days</u>
1.		<u>.750</u>	<u>156</u>			<u>156</u>	<u>60</u>	<u>206</u>		<u>3 hour</u>
2.										
3.										
4.										
5.										

FLOW CALCULATIONS

No.	Coefficient (24-Hour)	$\sqrt{h_w p_f}$	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.	<u>12.350</u>		<u>113</u>	<u>1.000</u>	<u>.9603</u>	<u>1.010</u>	<u>1.411</u>
2.							
3.							
4.							
5.							

PRESSURE CALCULATIONS

Gas Liquid Hydrocarbon Ratio \_\_\_\_\_ cf/bbl.

Gravity of Liquid Hydrocarbons \_\_\_\_\_ deg.

$P_c$  \_\_\_\_\_ (1-e<sup>-s</sup>)

Specific Gravity Separator Gas \_\_\_\_\_

Specific Gravity Flowing Fluid \_\_\_\_\_

$P_c$  976  $P_c$  952,576

No.	$P_w$ $P_t$ (psia)	$P_t^2$	$F_c Q$	$(F_c Q)^2$	$(F_c Q)^2$ (1-e <sup>-s</sup> )	$P_w^2$	$P_c^2 - P_w^2$	Cal. $P_w$	$P_w$ $P_c$
1.	<u>215</u>					<u>47,525</u>	<u>905,052</u>		
2.									
3.									
4.									
5.									

Absolute Potential: 1,170 MCFPD; n .85

COMPANY Astec Oil and Gas Company

ADDRESS Box 786, Farmington, New Mexico

AGENT and TITLE ORIGINAL SIGNED BY D. K. BRYANT D. K. Bryant, Production Engineer

WITNESSED \_\_\_\_\_

COMPANY \_\_\_\_\_

REMARKS



## 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  $P_t$ .

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