

DELIVERABILITY TEST REPORT

Type Test ☐ Initial ☐ Annual ☒ Special				Test Date 10/17/98			
Company Read & Stevens, Inc.				Connection GPM Gas Corporation			
Pool Buffalo Valley				Formation Morrow		Unit	
Completion 4-19-97		Total Depth 9050'		Plug Back TD 8998'		Elevation 3492' GR	
Csg. Size 5 1/2"		Wt. 17#		d 4.892		Set At 9040'	
Tbg. Size 2 3/8"		Wt. 4.6#		d 1.995		Set At 8546'	
Type Well - Single - Brodenhead - G.G. or G.O. Multiple Single				Packer Set At 8546'		Form or Lease Name Harris Federal	
Producing Thru Tubing		Reservoir Temp. °F 157 @ 8660'		Mean Annual Temp. °F 60		Baro. Press. - P _a 13.2	
L 8666		H 8666		Gg. 0.634		% CO ₂ 0.3	
				% N ₂ 1.20		% H ₂ S	
				Prover		Meter Run	
						Taps	
FLOW DATA				TUBING DATA		CASING DATA	
NO.	Prover Line Size	X	Choke Orifice Size	Press. p.s.i.g.	Diff. hw	Temp. °F	Press. p.s.i.g.
NO.	Prover Line Size	X	Choke Orifice Size	Press. p.s.i.g.	Diff. hw	Temp. °F	Press. p.s.i.g.
1.	Total Flow Meter					71	435
1.						74	220
NO.	Coefficient (24-Hour)	$\sqrt{h_w P_m}$		Pressure P _m	Flow Temp. Factor Ft	Gravity Factor F _g	Super Compress. Factor F _{pv}
1.					0.9868	1.256	1.019
NO.	P _r	Temp. R.	T _r	Z	Gas Liquid Hydrocarbon Ratio _____ Dry Mcl/bbl.		
	0.465	534	1.57	0.963	A.P.I. Gravity of Liquid Hydrocarbons _____ Dry Deg.		
					Specific Gravity Separator Gas _____ 0.634		
					Specific Gravity Flowing Fluid _____ XXXXX		
	P _d _____ 63.2				Critical Pressure _____ 674 p.s.i.a.		
	P _d _____ 3.99				Critical Temperature _____ 367 R		
	P _c _____ 435.0	P _c _____ 200.9			PI _____ PI ² _____		
NO.	P _i	P _i ²	P _c ² - P _i ²	P _w	P _w ²	P _c ² - P _w ²	P _s
	233	54.4	146.5	322.4	104.0	96.9	393.7

$$\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2} = \frac{200.9 - 3.99}{200.9 - 104} = 2.031$$

$$\text{Log} \frac{P_c^2 - P_d^2}{P_c^2 - P_w^2} = 0.3078$$

$$\left[\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2} \right]^n = 1.425$$

$$n \text{ Log} \frac{P_c^2 - P_d^2}{P_c^2 - P_w^2} = 0.154$$

$$\text{Deliv.} = Q \left[\frac{P_c^2 - P_d^2}{P_c^2 - P_w^2} \right]^n$$

Deliv. 1732 Mcl/d

n 0.50

Multi Point Back Pressure Test
(Source of n)

Division _____

Company _____

Others _____

Read & Stevens, Inc.

