

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Rec. W. Tex. Prod.

Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 11-3-80		NOV 10 1980	
Company Delta Drilling Company				Connection		NOV 14 1980	
Pool S. Culbraz Bluff - Atoka				Formation Atoka		Unit S. Culbraz Bluff - Atoka	
Completion Date 11-3-80		Total Depth 13171		Plug Back TD 12433		Elevation 2975	
Csg. Size		Wt.		Set At		Perforations: From 11515 To 722	
Tbg. Size 2-7/8"		Wt. 6.5		Set At 11,396		Perforations: From 11,515 To 11,722	
Type Well - Single - Bradenhead - G.C. or G.O. Multiple Single				Packer Set At 11,396		County Eddy	
Producing Thru Tubing		Reservoir Temp. °F 170 @ 11,515		Mean Annual Temp. °F 60		Baro. Press. - P 13.2	
L 11,515		H 11,515		Cg .616		% CO ₂ 0.42	
				% N ₂ 1.98		% H ₂ S 0	
				Prover ---		Meter Run 2.900	
						Taps Flange	

FLOW DATA						TUBING DATA		CASING DATA		Duration of Flow	
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h _w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.		Temp. °F
SI							4999	60	Pkr.	---	Days
1.	2.900 x 1.000			506	5	85	4275	70	Pkr.	---	1 hr.
2.	2.900 x 1.000			513	13	92	3259	70	Pkr.	---	1 hr.
3.	2.900 x 1.000			518	25	94	2262	70	Pkr.	---	1 hr.
4.	2.900 x 1.000			515	16	97	1028	70	Pkr.	---	1 hr.
5.											

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor F _t	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1	4.801	50.951	519.2	.9768	1.274	1.039	316
2.	4.801	82.708	526.2	.9706	1.274	1.037	509
3.	4.801	115.239	531.2	.9688	1.274	1.036	707
4.	4.801	91.930	528.2	.9662	1.274	1.035	562
5.							

NO.	R _t	Temp. °R	T _f	Z	Gas Liquid Hydrocarbon Ratio	Mcf/bbl.
1.	0.78	545	1.53	.927	A.P.I. Gravity of Liquid Hydrocarbons	54.5
2.	0.79	552	1.55	.930	Specific Gravity Separator Gas	.616
3.	0.79	554	1.56	.932	Specific Gravity Flowing Fluid	X X X X X
4.	0.79	557	1.57	.934	Critical Pressure	669.7
5.					Critical Temperature	355.6

NO.	P _i ²	P _w	P _e ²	P _e ² - P _w ²	(1) $\frac{P_e^2}{P_e^2 - P_w^2} = \frac{25,122}{19,940}$	(2) $\left[\frac{P_e^2}{P_e^2 - P_w^2} \right]^n = 1.2599^{.816}$
1	18,388	4289.8	18,402	6,720		
2	10,707	3273.6	10,716	14,406		
3	5,177	2276.4	5,182	19,940		
4	1,084	1042.8	1,087	24,035		
5						

$$AOF = Q \left[\frac{P_e^2}{P_e^2 - P_w^2} \right]^n = 1.2075 \times 707 = 854$$

Absolute Open Flow	854	Mcf/d @ 15.025	Angle of Slope θ	50.8	Slope, n	.816
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Remarks: Four 1-hr. non stable rates to flare. No pipeline connection.

Approved By Division	Conducted By: FESCO, Inc.	Calculated By: John L. Burnett	Checked By: JLB.
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