

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test ☒ Initial ☐ Annual		FEB 10 1989		Test Date 2-3-89			
Company SANTA FE ENERGY		Connection AIR O. C. D.		1980 FNL			
Pool E. CARLSBAD, WOLF CAMP		Formation ARTESIA, OFFICE WOLF CAMP		1730 FWL			
Completion Date 1-20-89		Total Length 10045		Plug Back TD 9825		Elevation 3085	
Casing Size 5.500		ID 17.0		Set At 4.892		Perforations From 9670 To 9744	
Tubing Size 2.375		ID 4.7		Set At 1.995		Perforations From To	
Type Well - Single - Brindenberg - G.C. or G.C. Multiple SINGLE-GAS		Packer Set At 9480		County EDDY		State NEW MEXICO	
Producing thru TUBING		Reservoir Temp. °F 177 @ 9707		Mean Annual Temp. °F 60.0		Burn. Press. - P ₀ 13.2	
L 9707		H 9707		G ₀ 681		% CO ₂ 47	
						% N ₂ 73	
						all H ₂ S 0	
						Prover 0	
						Meter Run 3.1	
						Taps FLANGE	

FLOW DATA						TUBING DATA		BHP 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							3814	61	5121	177	234
1.	3.07 X	1.250		510	3.0	70	3594	53	5036	177	1
2.	3.07 X	1.250		500	5.0	64	3384	53	4908	177	1
3.	3.07 X	1.250		490	9.5	61	3178	59	4713	177	1
4.	3.07 X	1.250		510	24.0	62	2380	58	4401	177	1
5.											

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor F _L	Gravity Factor F _G	Super Compress. Factor, F _{sp}	Rate of Flow Q, Mscf/d
1	7.58	39.62	523.2	.9905	1.2118	1.0552	380
2	7.58	50.66	513.2	.9952	1.2118	1.0565	489
3	7.58	69.14	503.2	.9990	1.2118	1.0565	670
4	7.58	112.06	523.2	.9981	1.2118	1.0585	1087
5							

NO.	P ₁	Temp. °R	T ₁	Z	Gas Liquid Hydrocarbon Ratio	Met/cbl.
1	.78	530.	1.39	.898	182.	
2	.77	524.	1.38	.896		
3	.75	521.	1.37	.896		
4	.78	522.	1.37	.893		
5						

NO.	P ₁	P _w	P ₂	P ₂ - P _w
1	25496	3982	15853	1336
2	24214	3863	14963	1926
3	22332	3697	13671	3218
4	19488	3428	11753	5136
5				

(1) $\frac{P_2^2}{P_2^2 - P_w^2} = 3.2884$

AOI = Q $\left[\frac{P_2^2}{P_2^2 - P_w^2} \right]^n = 2800.0$

(2) $\left[\frac{P_2^2}{P_2^2 - P_w^2} \right]^n = 2.5763$

Post ID-2
2-24-89
comp & BK

Absolute Open Flow	2800.0	Mscf @ 15.025	Angle of Slope α	51.5	Slope, n	.795
Remarks: CHOKE SIZE: 1ST RATE 57/64 2ND RATE 10.5/64 3RD RATE 15/64 4TH RATE 17.5/64						
Approved By Division	Conducted By:	Calculated By:	Checked By:			
	BENNETT-CATHEY	MATT LEE				