

MAR 21 '88

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test 4 POINT ☒ Initial ☐ Annual ☐ Special		Test Date 2-20-88		ARTESIA, OFFICE							
Company SUN EXPLORATION & PROD. ✓		Connection TO AIR (NEW WELL)									
Pool Red Lake AtoKa - Morrow Gas		Formation Morrow		Unit							
Completion Date 2-18-88		Total Depth 9960'		Plug Back TD 9941							
Casing Size 5.500		Casing Weight 17		Casing Set At 4.892							
Tubing Size 2.875		Tubing Weight 6.5		Tubing Set At 2.441							
Perforations: From 9590 To 9736		Perforations: From OPEN To ENDED		Well No. SCOGGINS DRAW "A" FEDERAL 1							
Type Well - Single - Blindhead - G.G. or G.O. Multiple SINGLE		Packer Set At 9473		County EDDY							
Producing thru TUBING		Reservoir Temp. °F 168 # 9663		Mean Annual Temp. °F 60							
L 9663		H 9663		Gg .607							
% CO ₂ .209		% N ₂ .563		% H ₂ S 0							
Prover 0		Meter Run 4.026		Tape FLNG							
FLOW DATA											
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. hw	Temp. °F	Press. p.s.i.g.	Temp. °F	BHP DATA	Duration of Flow	
1.	4.026	2.000	270	9.0	76	2280	72	44K	48HRS		
2.	4.026	2.000	250	21.0	76	1790	71	7/64	60MIN		
3.	4.026	2.000	255	43.0	72	1705	71	10/64	60MIN		
4.	4.026	2.000	260	76.0	60	1340	69	15/64	60MIN		
5.						1018	69	19/64	60MIN		
RATE OF FLOW CALCULATIONS											
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, F _{sp}	Rate of Flow Q, Mscf				
1.	19.81	50.49	283.2	0.9850	1.284	1.023	1294				
2.	19.81	74.34	263.2	0.9850	1.284	1.021	1902				
3.	19.81	107.39	268.2	0.9887	1.284	1.017	2747				
4.	19.81	144.09	273.2	1.0000	1.284	1.025	3757				
5.											
NO.	T _g	Temp. °R	T _l	Z	Gas Liquid Hydrocarbon Ratio						
1.	0.42	536	1.49	.956	Mcf/bbl.						
2.	0.39	536	1.49	.959	A.P.I. Gravity of Liquid Hydrocarbons						
3.	0.40	532	1.48	.957	Specific Gravity Separator Gas						
4.	0.41	520	1.45	.952	Specific Gravity Flowing Fluid						
5.					Critical Pressure						
					Critical Temperature						
					P.S.I.A.						
					R						
					R						
$P_c = 2293.2$ $P_c^2 = 5259$											
NO.	P ₁ ²	P _w	P ₂ ²	P ₂ ² - P _w ²	(1) $\frac{P_c^2}{P_2^2 - P_w^2} = 1.5689$			(2) $\left[\frac{P_c^2}{P_2^2 - P_w^2} \right]^n = 1.5689$			
1.	3251.5		3268	1991							
2.	2952.2		2988	2271							
3.	1831.2		1907	3352							
4.	1063.4		1211	4048							
5.											
Absolute Open Flow					4310		Mscf @ 15.025				
Angle of Slope					45°		Slope, n				
Slope, n					1.000						
Remarks:											
Approved By Division											
Conducted By:			Calculated By:			Checked By:					