

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test ☒ Initial ☐ Annual ☐ Special						Test Date JUNE 3, 1985	
Company SOUTHLAND ROYALTY COMPANY				Connection To Atmosphere			
Pool JOHNSON RANCH				Formation Atoka		Unit	
Completion Date 5-29-85		Total Depth 15,694'		Plug Back TD 15,000'		Elevation 3522.4 GL	
Farm or Lease Name MADERA RIDGE "27" ST.		Well No. 1		Perforations: From 14878 To 14896			
Ceq. Size 4 1/2		Set At 15690		Perforations: From To		Unit Sec. Twp. Rye. B 27 24S 33E	
Thg. Size 2 7/8		Set At 12800		Perforations: From To			
Type Well - Single - Drdhead - G.G. or G.O. Multiple SINGLE				Packer Set At 12800		County LEA	
Producing Thru TUBING		Reservoir Temp. °F 70°		Mean Annual Temp. °F 70°		State NEW MEXICO	
L 14887		H 14887		Cg 0.586		% CO ₂ 0.33	
				% N ₂ 0.79		% H ₂ S NONE	
				Prover		Meter Run 4.026	
						Tcps 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	MONTHS						6005		Pkr.		
1.	4.026	x	1.000	395	7	108	5885	80	Pkr.		60 mins.
2.	4.026	x	1.000	440	28	93	5825	79	Pkr.		60 mins.
3.	4.026	x	1.750	495	11	81	5700	75	Pkr.		60 mins.
4.	4.026	x	1.750	660	67	51	5190	75	Pkr.		60 mins.
5.											

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, Fpv	Rate of Flow Q, Mcfd
1	4.753	53.455	408.2	0.9568	1.3063	1.0243	325.270
2	4.753	112.648	453.2	0.9697	1.3063	1.0298	698.433
3	14.930	74.768	508.2	0.9804	1.3063	1.0363	1481.512
4	14.930	212.378	673.2	1.0090	1.3063	1.0603	4431.310
5							

NO.	R	Temp. °R	T _g	Z	Gas Liquid Hydrocarbon Ratio	Mcf/bbl.
1	0.612	568	1.615	0.95307	163.025	
2	0.680	553	1.572	0.94300		
3	0.762	541	1.538	0.93124		
4	1.010	511	1.453	0.88946		
5						

NO.	P _f	P _s	P _s ²	P _f ²	P _f ² - P _s ²
1	34789	7645.2	58449	1210260	1151811
2	34085	7585.2	57535	1161800	1104265
3	32641	7559.2	57142	1065420	1008278
4	27073	6926.2	47972	734960	687000
5					

(1) $\frac{P_f^2}{P_f^2 - P_s^2} = 4.83868$

(2) $\left[\frac{P_f^2}{P_f^2 - P_s^2} \right]^n = 3.68869$

AOF = Q $\left[\frac{P_f^2}{P_f^2 - P_s^2} \right]^n = 16345.716$

Absolute Open Flow 16345.716 Mcfd @ 15.025

Angle of Slope 50.38°

Slope, n 0.82788

Remarks: BHP MEASURED WITH AMERADA RPG-3 GAUGE NO. 32709, 0-11000 PSI RANGE

Approved By Division	Conducted By: TEFTELLER, INC.	Calculated By: CHARLES M. AVERY, JR.	Checked By: Darrell Roberts
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