

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test ☒ Initial ☐ Annual ☐ Special		Test Date 5-31-85	
Company SOUTHLAND ROYALTY COMPANY		Connection	
Pool PITCHFORK RANCH		Formation MORROW	
Completion Date 3-30-84		Total Depth 15,136'	Plug Back TD 15055
Elevation		Farm or Lease Name VACA RIDGE "20" FED.	
Csg. Size 4 1/2"	Wt. 15.10	Set At 3.701	15,136'
Perforations: From 14386 To 14742		Well No. 1	
Tub. Size 2 7/8"	Wt. 6.5	Set At 2.441	12,562'
Perforations: From 14,386' To 14,742'		Unit Sec. Twp. Rge. 0 20 24S 34E	
Type Well - Single - Bradenhead - G.C. or G.O. Multiple Single		Packer Set At 12,562'	County LEA
Producing Thru TUBING	Reservoir Temp. °F 208	Mean Annual Temp. °F 14800	Baro. Press. - P _a 60
State NEW MEXICO		Prover Meter Run 4.026	
L 14564	H 14564	G _g 0.574	% CO ₂ 0.41
% N ₂ 0.31		% H ₂ S 0	Taps FLANGE

FLOW DATA

NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h _w	Temp. °F	TUBING DATA		CASING DATA		Duration of Flow
							Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	
SI	Months						7250	93	Pkr.		
1.	4.026 X 1.000			698.0	1.1	98	6980	80	Pkr.		60 mins.
2.	4.026 X 1.000			698.4	3.0	106	6620	79	Pkr.		60 mins.
3.	4.026 X 1.000			695.4	4.6	106	6120	80	Pkr.		60 mins.
4.	4.026 X 1.000			694.3	10.3	104	5120	79	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 F _g	Super Compress. Factor, F _{sp}	Rate of Flow Q, Mcfd
1	4.753	27.970	711.2	0.9653	1.319	1.0437	176.662
2	4.753	46.204	711.6	0.9585	1.319	1.0414	289.136
3	4.753	57.093	709.6	0.9585	1.319	1.0412	357.208
4	4.753	85.365	707.5	0.9602	1.319	1.0417	535.299
5.							

NO.	P _f	Temp. °R	T _f	Z	Gas Liquid Hydrocarbon Ratio (Trace)	Mcf/bbl.
1	1.0655	558	1.5998	0.9180	A.P.I. Gravity of Liquid Hydrocarbons	-
2.	1.0661	566	1.6227	0.9221	Specific Gravity Separator Gas	0.575
3.	1.0616	566	1.6227	0.9224	Specific Gravity Flowing Fluid	X X X X X X X X
4.	1.0599	564	1.6170	0.9215	Critical Pressure	667.5
5					Critical Temperature	348.8

P_f 9336.2 P_f² 87165

NO.	P _f ²	P _s	P _s ²	P _f ² - P _s ²
1	48905	9092.2	82668	4497
2	43999	8773.2	76969	10196
3	37616	8316.2	69159	18006
4	26350	7347.2	53981	33184
5				

$$(1) \frac{P_f^2}{P_f^2 - P_s^2} = \frac{2.62672}{1} = 2.62672$$

$$(2) \left[\frac{P_f^2}{P_f^2 - P_s^2} \right]^n = \frac{1.70858}{1} = 1.70858$$

$$AOF = Q \left[\frac{P_f^2}{P_f^2 - P_s^2} \right]^n = \frac{914.599}{1} = 914.599$$

Absolute Open Flow 914.599 Mcfd @ 15.025 Angle of Slope @ 60.98° Slope, n 0.55467

Remarks: BHP measured with Amerada RPG-3 Gauge No. 32709, 0-11000 PSI capacity.

Approved By Division	Conducted By: TEFTLELL, INC.	Calculated By: D. A. WARREN, JR.	Checked By: Earrell Robert
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JUN 17 1985

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