

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test ☒ Initial ☐ Annual ☐ Special		Test Date 05-10-90	
Company Operating Partners, L.P. Santa Fe Energy Resources, Inc.		Connection Vented	
Pool		Formation Morrow	
Completion Date 05-16-90		Total Depth 12,550	Plug Back TD 12,350
Elevation 3620 GL		Farm or Lease Name PQ Osudo St. Com.	
Csq. Size 4 1/2	Wt. 4.7	d 1.995	Set At 12,550
Perforations: From 12,226 To 12,260		Well No. 1	
Tbg. Size 2 3/8 & 2 7/8	Wt. 6.5	d 2.441	Set At 12,013
Perforations: From To		Unit Sec. Twp. Rye.	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single		Packer Set At 12,013	County Lea
Producing Thru Tbg.		Reservoir Temp. °F 196 @ 12,243	Mean Annual Temp. °F 60
Baro. Press. - P _a 13.2		State N.M.	
L 12,243	H 12,243	q _g .674	% CO ₂ .56
% N ₂ .48		% H ₂ S ----	Prover 3.068
Meter Run 3.068		Taps Flg.	
* FLOW DATA			
NO.	Prover Line Size	X	Orifice Size
SI			
1.	3	X	.750
2.	3	X	1.250
3.	3	X	1.250
4.	3	X	1.250
5.	3	X	1.250
TUBING DATA			
	Press. p.s.i.g.	Temp. °F	
	4060		
	4060		
	3818		
	3642		
	3518		
	3228		
CASING DATA			
	Press. p.s.i.g.	Temp. °F	
	PKR		
	PKR		
	PKR		
	PKR		
	PKR		
	PKR		
RATE OF FLOW CALCULATIONS			
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m
1	2.672	35.77	213.2
2	7.577	39.97	228.2
3	7.577	55.21	203.2
4	7.577	74.70	223.2
5	7.577	113.25	233.2
Flow Temp. Factor Ft.			
			.9813
			.9795
			.9813
			.9795
			.9795
Gravity Factor F _g			
			1.218
			1.218
			1.218
			1.218
			1.218
Super Compress. Factor, F _{pv}			
			1.020
			1.022
			1.020
			1.022
			1.022
Rate of Flow Q, Mcfd			
			117
			369
			510
			690
			1,046
19.2 Mcf/bbl.			
NO.	P _t	Temp. °R	T _r
1	.31	540	1.41
2	.34	542	1.41
3	.30	540	1.41
4	.33	542	1.41
5	.34	542	1.41
Z			
			.961
			.957
			.962
			.958
			.957
Gas Liquid Hydrocarbon Ratio _____			
A.P.I. Gravity of Liquid Hydrocarbons 55.0 @ 60° _____			
Specific Gravity Separator Gas .674 _____			
Specific Gravity Flowing Fluid _____			
Critical Pressure 669 _____ P.S.I.A.			
Critical Temperature 382 _____ R			
P _c 4396.9 P _c ² 19332.7			
NO.	P _t ²	P _w	P _w ²
1	4249.3	18056.6	1276.1
2	4128.9	17047.8	2284.9
3	4009.4	16075.3	3257.4
4	3870.3	14979.2	4353.5
5	3652.5	13340.8	5991.9
(1) $\frac{P_c^2}{P_t^2 - P_w^2} = 3.226$			
(2) $\left[\frac{P_c^2}{P_t^2 - P_w^2} \right]^n = 3.226$			
AOF = Q $\left[\frac{P_c^2}{P_t^2 - P_w^2} \right]^n = 3.375$			
Absolute Open Flow 3.375 Mcfd @ 15.025			
Angle of Slope @ 45			
Slope, n 1.000			
Remarks: *BHP's extrapolated to mid-perfs.			
Test calculated from known BHP's obtained with Amerada RPG-3 Instrument Well made			
6.1 BBLs 55.0 API Condensate during test			
Approved By Division		Conducted By:	Calculated By:
		Pro Well Testers	BM
			BM