

NEW MEXICO OIL CONSERVATION COMMISSION
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

Type Test ☐ Initial ☐ Annual ☒ Special						Test Date 3/15/89			
Company Sun Exploration & Production Co. Llano, Inc.				Connection					
Pool Gem-Morrow (Gas)				Formation Morrow				Unit	
Completion Date 3-16-89		Total Depth 13,750'		Plug Back TD 13,435'		Elevation 3627.9' GR		Farm or Lease Name Sun Bright Federal Com.	
Csg. Size 5-1/2"	Wt. 17 & 20	d	Set At 13,750'	Perforations: From 13,130' To 13,308		Well No. #1			
Thq. Size 2-7/8"	Wt. 6.5#	d	Set At 13,015'	Perforations: From To		Unit Sec. Twp. Rge. C, 21, T-19S, R-33-E			
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single						Packer Set At 13,015'		County	
Producing Thru		Reservoir Temp. °F a		Mean Annual Temp. °F		Baro. Press. - P _g		State New Mexico	
L 13219	H 13219	Gg .633	% CO ₂ .76	% N ₂ .47	% H ₂ S 0.00	Prover 0.0	Meter Run 4.0	Taps Flg.	

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							4520	74			72.0
1.	4.03 x 1.500			185	4.0	85	4172	74	0	0	1.0
2.	4.03 x 1.500			195	9.0	84	3952	74	0	0	1.0
3.	4.03 x 1.500			200	20.5	78	3568	74	0	0	1.0
4.	4.03 x 1.500			200	38.0	72	3120	74	0	0	1.0
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, F _{pv}	Rate of Flow Q, Mcfd
1	10.84	28.16	198.2	.9768	1.2571	1.0159	381
2	10.84	43.29	208.2	.9777	1.2571	1.0169	587
3	10.84	66.11	213.2	.9831	1.2571	1.0182	902
4	10.84	90.01	213.2	.9887	1.2571	1.0191	1236
5							

NO.	P _t	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	0.000 Mcf/bbl.
1.	.29	545	1.49	.969	A.P.L. Gravity of Liquid Hydrocarbons	0.0 Deg.
2.	.31	544	1.49	.967	Specific Gravity Separator Gas	.633 XXXXXXXXXX
3.	.32	538	1.47	.965	Specific Gravity Flowing Fluid	XXXXXX .633
4.	.32	532	1.45	.963	Critical Pressure	673 P.S.I.A. 673 P.S.I.A.
5.					Critical Temperature	366 R 366 R

P _c 4514.4 P _c ² 20380			
NO.	P _w	P _w ²	P _c ² - P _w ²
1	4166	17352	3028
2	3945	15564	4815
3	3562	12686	7694
4	3115	9706	10674
5			

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.9093$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.8302$

ACT = 0 $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 2262$

Absolute Open Flow	2262 Mcfd @ 15,025	Angle of Slope	46.9	Slope, n	.935
--------------------	--------------------	----------------	------	----------	------

Remarks: Set CIRP at 13,470', dumped 4 sxs cmt on top, Perf'd 13,130-13,308' and retest.

Approved By: FOR RECORD ONLY	Calculated By:	Checked By:
-------------------------------------	----------------	-------------