

OIL CONSERVATION DIVISION

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENTP. O. BOX 2088
SANTA FE, NEW MEXICO 87501Form C-122
Revised 10-1-78

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test ☒ Initial ☐ Annual ☐ Special						Test Date 02-02-91			
Company Santa Fe Energy Operating Partners, LP				Connection Transwestern Pipeline Co.					
Pool Und. Bilbrey Morrow				Formation Morrow				Unit	
Completion Date 11-21-90		Total Depth 14,770		Plug Back TD 14,679		Elevation 3712 KB		Farm or Lease Name Bilbrey 27 Federal	
Csq. Size 4.500	Wt. 13.5	d 3.920	Set At 14,770'	Perforations: From 14,426 To 14,436		Well No. 1			
Thq. Size 2.375	Wt. 4.7	d 1.995	Set At 14,374'	Perforations: From To		Unit Sec. Twp. Rge. FL 27 21S 32E			
Type Well - Single - Brodenhead - G.G. or G.O. Multiple Single (gas)						Packer Set At 14,327'		County Lea	
Producing Thru Tubing		Reservoir Temp. °F 200 @ 14,767		Mean Annual Temp. °F 60		Baro. Press. - P _a		State NM	
L 14,374	H 14,374	Cq 0.60	% CO ₂ 0	% N ₂ 0	% H ₂ S 0	Prover -	Meter Run 4.026	Taps 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				-	-	-	3278	60	-	-	72 Hr
1.	4.026	x	1.750	862	2.0	104	2731	64	-	-	1.6
2.	4.026	x	1.750	875	4.8	88	2349	64	-	-	2.3
3.	4.026	x	1.750	900	11.0	112	1915	64	-	-	2.0
4.	4.026	x	1.750	930	11.0	108	1630	64	-	-	1.3
5.											

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor F _t	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1	14.93	41.84	875.2	0.9602	1.2910	1.0566	818
2	14.93	64.95	888.2	0.9741	1.2910	1.0648	1298
3	14.93	100.23	913.2	0.9535	1.2910	1.0555	1944
4	14.93	101.86	943.2	0.9568	1.2910	1.0590	1989
5.							

NO.	R _t	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.	A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
1	1.30	564	1.57	0.896	0	0
2	1.32	548	1.53	0.882	0.60	XXXXXXX
3	1.36	572	1.60	0.898	XXXXX	0.60
4	1.40	568	1.58	0.892	673	673 P.S.I.A.
5					359	359 R

NO.	P _i ²	P _w	P _w ²	P _e ² - P _w ²
1	7531	2746	7539	3293
2	5580	2372	5625	5207
3	3718	1960	3841	6991
4	2700	1683	2833	7999
5				

(1) $\frac{P_e^2}{P_e^2 - P_w^2} = 1.3541$

(2) $\left[\frac{P_e^2}{P_e^2 - P_w^2} \right]^n = 1.3541$

AOF = Q $\left[\frac{P_e^2}{P_e^2 - P_w^2} \right]^n = 2693$

$P_e = 3291.2$ $P_e^2 = 10832$

Absolute Open Flow	2689.8	Mcfd @ 15.025	Angle of Slope @	45.0	Slope, n	1.0
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Remarks: _____

Approved By Division	Conducted By: Schlumberger	Calculated By: Gil Hillsman	Checked By:
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