

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test ☒ Initial ☐ Annual ☐ Special		Test Date 8 28 89	
Company BILL FENN INC		Connection AIR	
Pool BUFFALO VALLEY <i>Penn</i>		Formation ATOKA	
Completion Date 8 24 89	Total Depth 8580	Plug Back TD 8580	Elevation 3542
Farm or Lease Name TANNER FEDERAL		Well No. 1	
Coq. Size 5.500	Wt. 15.5	Set At 4.950	8580
Perforations: From 8380 To 8387	Unit Sec. Twp. Rge. 35-14S-27E		
Thq. Size 2.375	Wt. 4.7	Set At 1.995	8344
Perforations: From 0 To 0	County CHAVES		
Type Well - Single - Hardhead - G.G. or G.O. Multiple SINGLE GAS		Packer Set At 8344	
Producing Thru TUBING	Reservoir Temp. °F 153 @ 8383	Mean Annual Temp. °F 60.0	Baro. Press. - P _a 13.2
State NM		Meter Run 4.0	
L 8383	H 8383	G _g .680	% CO ₂ .93
% N ₂ .34		% H ₂ S .00	Prover .0
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							1500	70	PKR		72.0
1.	4.03X1.625			90	4.0	88	1285	60	PKR		1.0
2.	4.03X1.625			90	10.0	87	1180	60	PKR		1.0
3.	4.03X1.625			100	24.0	85	1040	60	PKR		1.0
4.	4.03X1.625			100	47.0	74	890	60	PKR		2.0
5.											

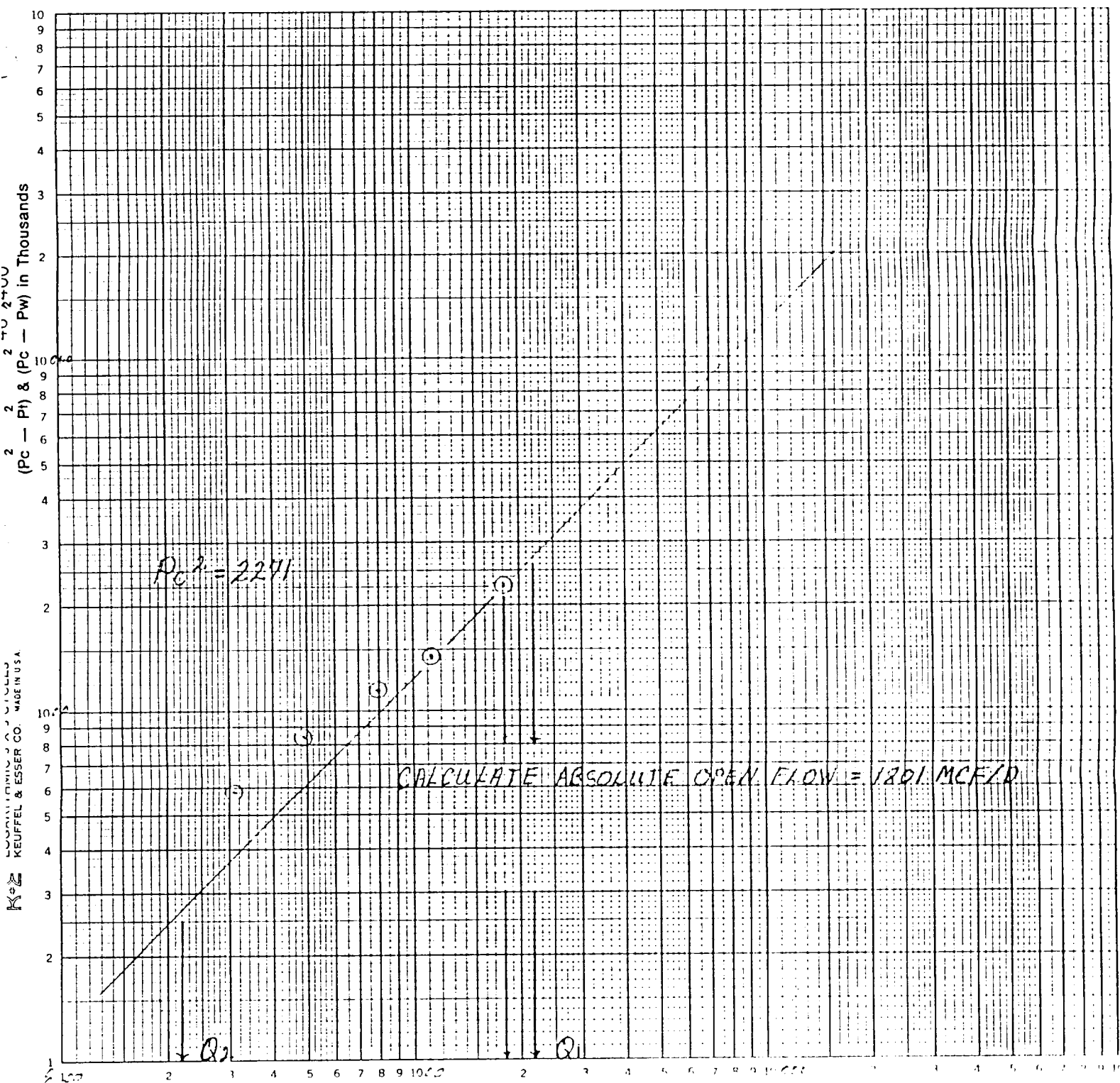
RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor F _t	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1	12.79	20.32	103.2	.9741	1.2127	1.0091	310
2	12.79	32.12	103.2	.9750	1.2127	1.0092	490
3	12.79	52.12	113.2	.9768	1.2127	1.0102	798
4	12.79	72.94	113.2	.9868	1.2127	1.0109	1129
5							

NO.	P _t	Temp. °R	T _t	Z	Gas Liquid Hydrocarbon Ratio	A.P.I. Gravity of Liquid Hydrocarbons	Specific Gravity Separator Gas	Specific Gravity Flowing Fluid	Critical Pressure	Critical Temperature
1	.15	548	1.44	.982	0	0	.680	X X X X X X X X	672	381
2	.15	547	1.44	.982			X X X X X			
3	.17	545	1.43	.980						
4	.17	534	1.40	.978						
5										

P _c = 1506.9 P _c ² = 2271				$(1) \frac{P_c^2}{P_c^2 - P_w^2} = 1.5961$ $(2) \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.5961$	
NO	P _i ²	P _w	P _w ²	P _c ² - P _w ²	
1	1685	1300	1690	581	
2	1424	1196	1431	840	
3	1109	1061	1126	1145	
4	816	921	848	1423	
5					

Absolute Open Flow 1801 Mcfd @ 15.025		Angle of Slope @ 45.0	Slope, n 1.000
Remarks: CHOKE SIZE: 1ST RATE 6/64 2ND RATE 8/64 3RD RATE 10/64 4TH RATE 12/64			
Approved By Division	Conducted By: BENNETT CATHEY	Calculated By: MATT LEE	Checked By:

BACK PRESSURE CURVE

Operator BILL FENN Lease TANNER FED. Well No. 1County CHAVES Field BUFFALO VALLEY Location 35-14s-27EDate of Test 8-28-89 Slope "n" 1.000 Angle of Slope 45°Calc. Abs. Potential 1801 MCF/D

$$\overline{\Delta P}_1^2 \quad P_c^2 - P_w^2 = 2700$$

$$\overline{\Delta P}_2^2 \quad P_c^2 - P_w^2 = 270$$

$$Q_1 = 2200$$

$$Q_2 = 220$$

 $Q, \text{ Mcfd}$

$$\text{LOG } Q_1 = 3.342$$

$$\text{LOG } Q_2 = 2.342$$

$$n = 1.000$$

