

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test 4 POINT ☒ Initial ☐ Annual ☐ Special				Test Date 6-01-87	
Company HARVARD PETROLEUM				Connection TO AIR	
Pool PECOS SLOPE				Formation ABO	
Completion Date		Total Length 3450		Plug Back To 3364 O. C. D.	
Ceq. Size 4.5		Wi. 10.50		Elevation 481	
Thq. Size 2 3/8		Wi. 4.6		Perforations From OPEN To ENDED	
Type Well - Single - Blindhead - G.G. or G.O. Multiple SINGLE				Packer Set At NONE	
Producing Thru TUBING		Reservoir Temp. °F 60		Baro. Press. - P _g 13.2	
L		H		County CHAVES	
G _g 0.593		% CO ₂ 0.263		% N ₂ 7.186	
Prover 2.000		Meter Run 0		Taps 0	

FLOW DATA						TUBING DATA		BHP 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							994	60	987	60	72HRS
1.	2.000	0.125	937	0.00	60	937	60	935	60	60MIN	
2.	2.000	0.1875	835	0.00	64	835	64	830	64	60MIN	
3.	2.000	0.2187	710	0.00	66	710	66	712	66	60MIN	
4.	2.000	0.2500	585	0.00	66	585	66	585	66	60MIN	
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 _{sp}	Rate of Flow Q, Mcd
1	0.2648	0.00	950.2	1.0000	1.299	1.065	348
2	0.6082	0.00	848.2	0.9962	1.299	1.065	704
3	0.8393	0.00	723.2	0.9943	1.299	1.065	822
4	1.0870	0.00	598.2	0.9943	1.299	1.065	873
5							

NO.	P _t	Temp. °R	T _r	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	1.44	520	1.56	.882	0	0	0.593	XXXXXXX	660	334
2	1.28	524	1.57	.896						
3	1.10	526	1.57	.910						
4	0.91	526	1.57	.924						
5										

NO.	P _t	P _w	P _w ²	P _t ² - P _w ²
1	903	948.2	899	101
2	719	843.2	711	289
3	523	725.2	526	474
4	358	598.2	358	642
5				

(1) $\frac{P_t^2}{P_t^2 - P_w^2} = 2.1097$

AOF = Q $\left[\frac{P_t^2}{P_t^2 - P_w^2} \right]^n = 1243$

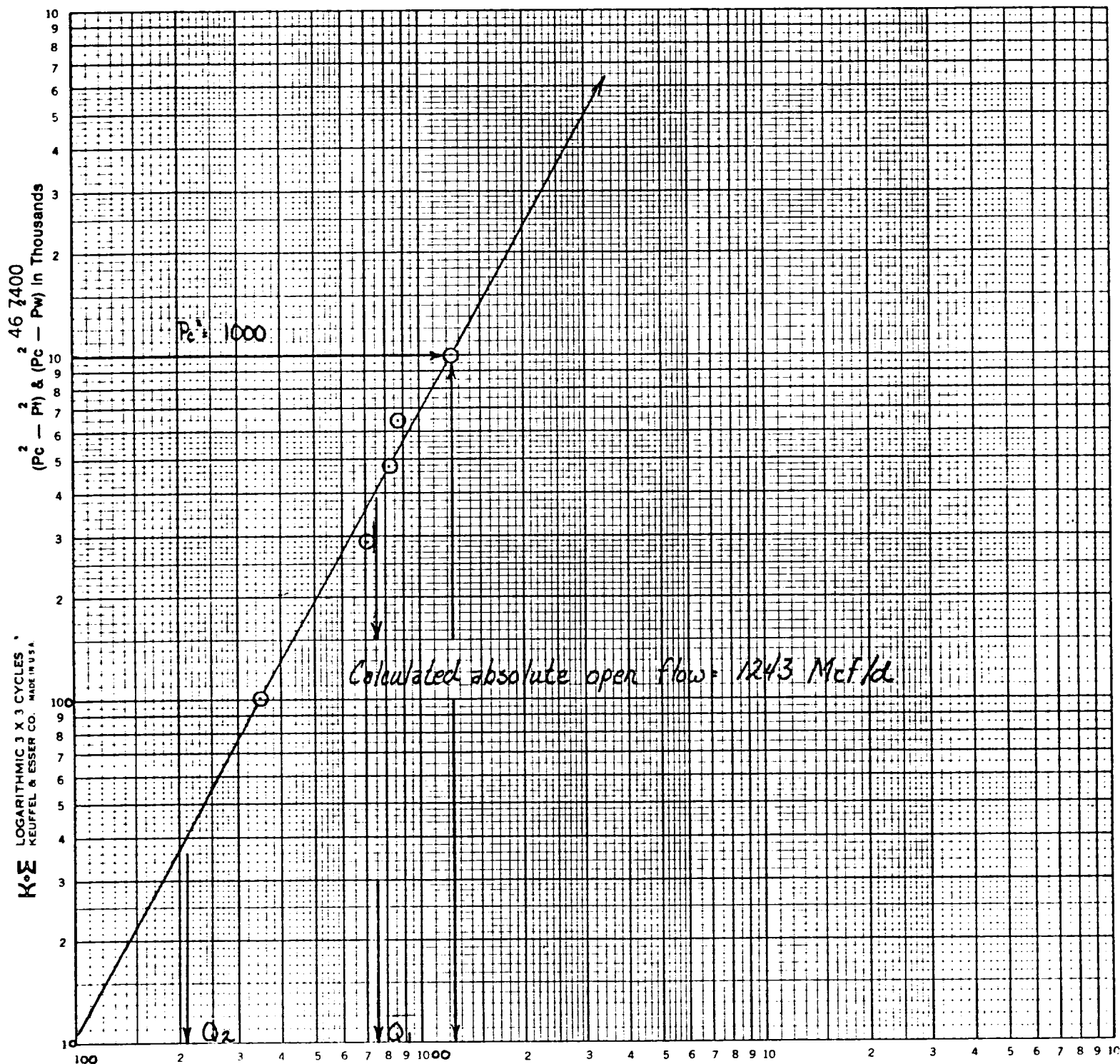
(2) $\left[\frac{P_t^2}{P_t^2 - P_w^2} \right]^n = 1.5122$

Post ID-2
8-7-87
Camp + BK

Absolute Open Flow	1243	Mcd @ 15.025	Angle of Slope	61.0	Slope, n	0.554
Remarks:						
Approved By Division						
Conducted By:		Calculated By:		Checked By:		
RICKY HATCHETT		RICHARD TOWNLEY				

LUKETZ & CATHEY PRODUCTION TESTING BACK PRESSURE CURVE

Operator Harvard Pet. Lease Queso State Well No. 1
 County Chaves Field Pecos Slope Location 34 55 22E
 Date of Test 6-1-87 Slope "n" 0.554 Angle of Slope 61.0
 Calc. Abs. Potential 1243 MCF/D



$$\overline{\Delta P}_1^2 \quad P_c^2 - P_w^2 = 400$$

$$\overline{\Delta P}_2^2 \quad P_c^2 - P_w^2 = 40$$

$$Q_1 = 752$$

$$Q_2 = 210$$

Q , Mcfd

$$\text{LOG } Q_1 = 2.8762$$

$$\text{LOG } Q_2 = 2.3222$$

$$n = 0.5540$$