

IL CONSERVATION DIVISIO

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

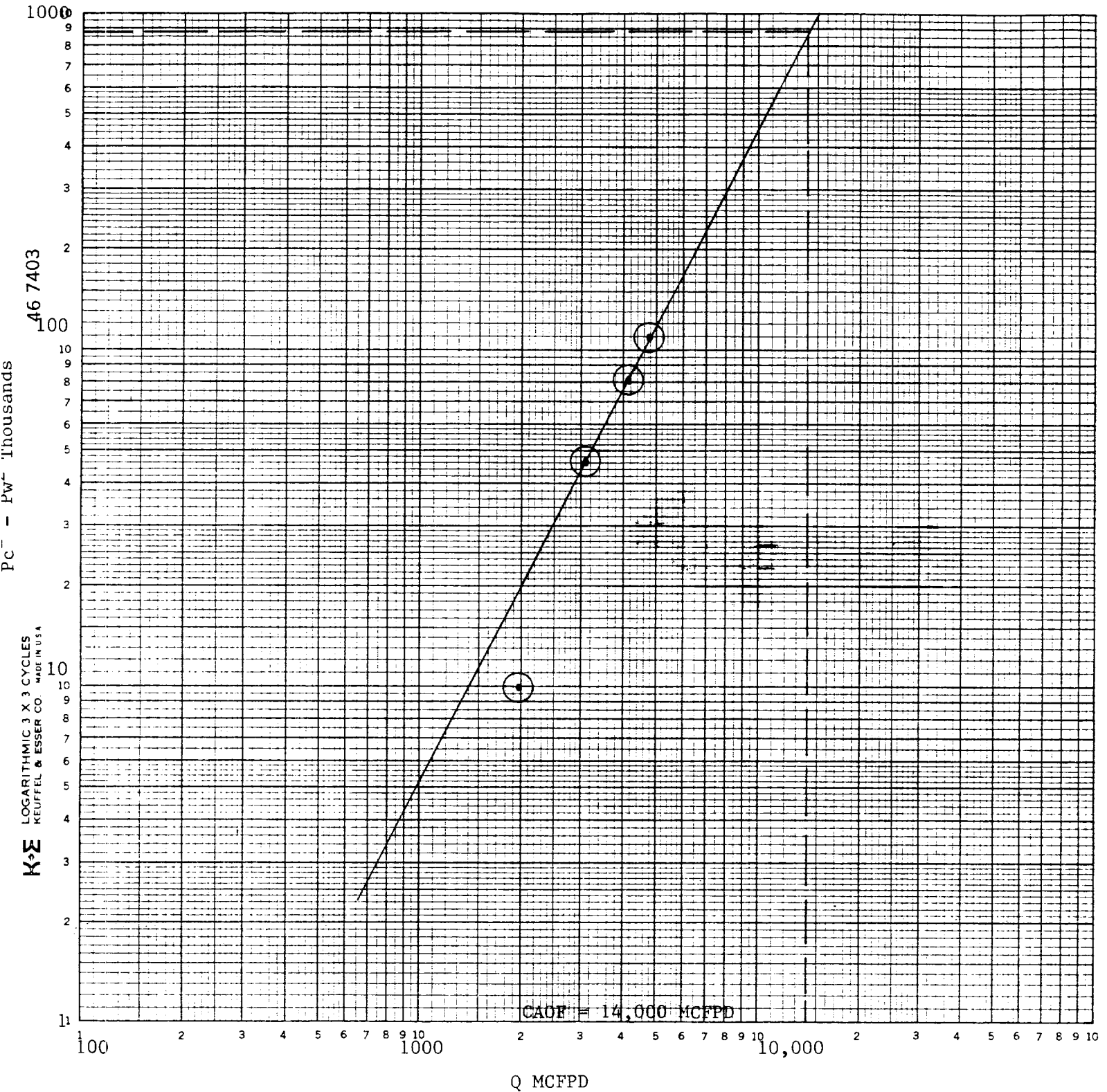
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MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELLS
FEB 20 1984

Type Test ☒ Initial ☐ Annual ☐ Special		Test Date 1-16-84		O. C. D. ARTESIA, OFFICE			
Company MESA PETROLEUM CO. ✓		Connection UNCONNECTED					
Pool PECOS SLOPE ABO		Formation ABO		Unit			
Completion Date 1-13-84		Total Depth 4250		Plug Back TD 4187			
Elevation 3546		Farm or Lease Name FRANCIS FED COM		Well No. 1			
Csg. Size 4 1/2	Wt. 10.5#	Set At 4250	Perforations: From 3775 To 4122		Unit Sec. Twp. Rge. F 13 8S 25E		
Thq. Size 2 3/8	Wt. 4.7#	Set At 4119	Perforations: From OPEN ENDED To				
Type Well - Single - Bradenhead - G.C. or G.O. Multiple SINGLE			Packer Set At NONE		County CHAVES		
Producing Thru TUBING		Reservoir Temp. °F 98.0 4250		Mean Annual Temp. °F 60			
Baro. Press. - P _g 13.2		State NEW MEXICO					
L	H	G _g .65	% CO ₂ 1	% N ₂ 1	% H ₂ S		
Prover 2" CRITICAL FLOW PROVER		Meter Run		Taps			
FLOW DATA							
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h _w		
SI							
1.	2" x 1 1/4"		43	26			
2.	2" x 1 1/4"		76	32			
3.	2" x 1 1/4"		106	38			
4.	2" x 1 1/4"		124	43			
5.							
TUBING DATA							
			Press. p.s.i.g.	Temp. °F			
			920				
			870	52			
			790	54			
			680	58			
			580	59			
CASING DATA							
			Press. p.s.i.g.	Temp. °F			
			930				
			925				
			905				
			885				
			870				
RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1	27.63	FLOW PROVER	56	1.034	1.24		1983
2	"	"	89	1.028	1.24		3134
3	"	"	119	1.022	1.24		4166
4	"	"	137	1.017	1.24		4773
5							
NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.		
1					A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.		
2					Specific Gravity Separator Gas _____ X X X X X X X X		
3					Specific Gravity Flowing Fluid _____ X X X X X		
4					Critical Pressure _____ P.S.I.A. _____ P.S.I.A.		
5					Critical Temperature _____ R _____ R		
P _c 943 P _c ² 889							
NO.	P _i ²	P _w	P _w ²	P _c ² - P _w ²	(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 8.0818$		
1		938	879	10	(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 2.9641$		
2		918	842	47			
3		898	806	83			
4		883	779	110			
5					AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 14,000$		
Absolute Open Flow 14,000 Mcfd @ 15.025					Angle of Slope θ 62.5°		Slope, n 52
Remarks:							
Approved By Division		Conducted By: JAMES CRAIG		Calculated By: Feb 1-18-84 E. L. BUTTROSS, JR.		Checked By:	

MESA OILFIELD CO.
 FRANCIS FED COM #1
 CHAVES CO., NEW MEXICO
 1-16-84



$$N = 1/\text{Slope} = \frac{\log Q_2 - \log Q_1}{\log P_2 - \log P_1} = \frac{\log 4600 - \log 1400}{\log 100 - \log 10} = 3.60 - 3.14 = .52$$

$$\theta = 62.5^\circ$$