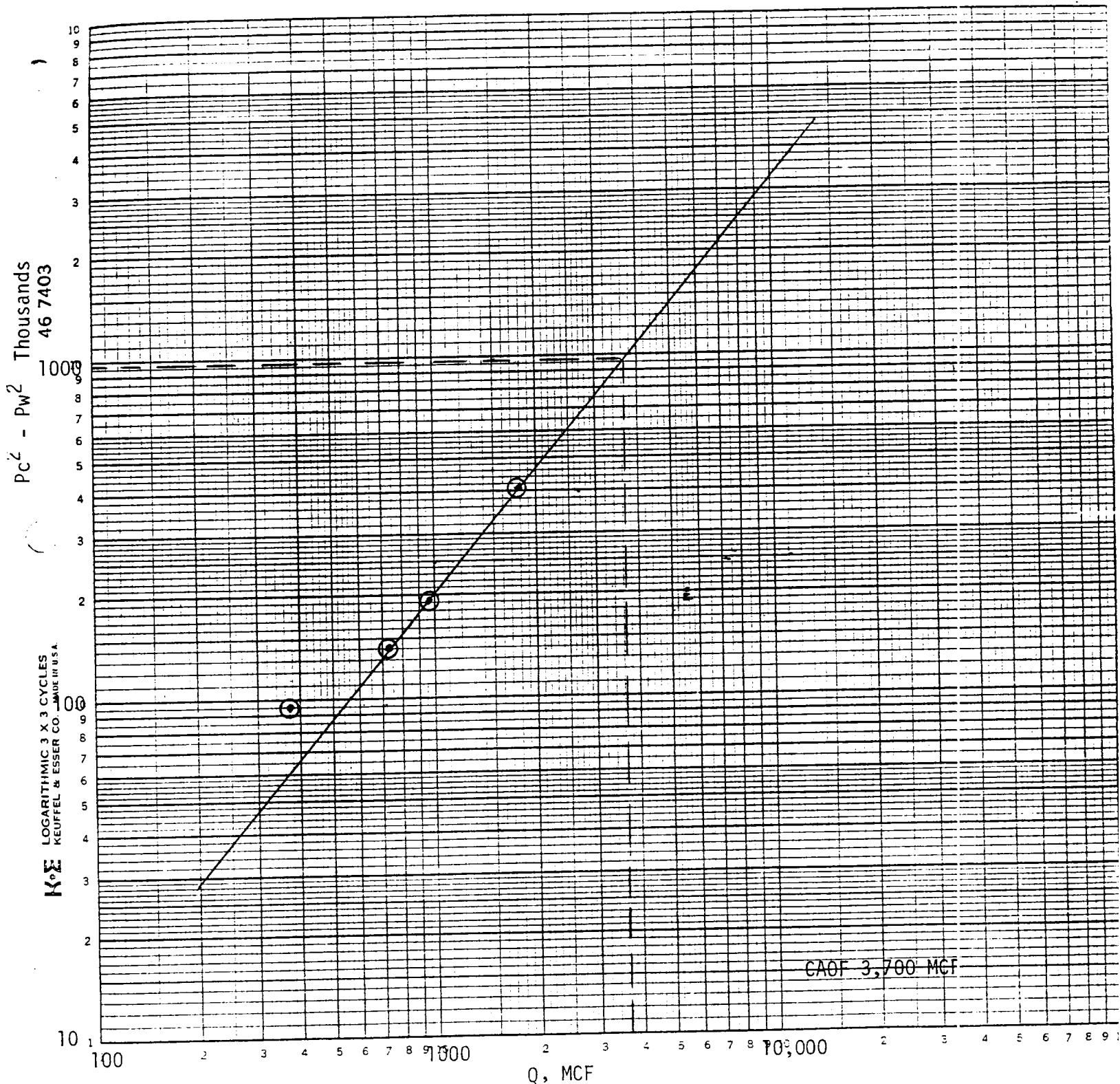


Form C-122
Revised 9-1-65

Type Test		☒ Initial		☐ Annual		☐ Special		Test Date		3-10-81		MAS			
Company				Connection											
Mesa Petroleum Co. ✓				Unconnected											
Pool				Formation				Unit							
Undesignated Abo				Abo											
Completion Date		Total Depth		Plug Back TD		Elevation		Farm or Lease Name							
3-10-81		4155		4021		3972		Huggins Federal							
Csg. Size		Wt.		Set At		Perforations:		Well No.							
4 1/2		10.5		4060		From 3592 To 3856		1							
Thg. Size		Wt.		Set At		Perforations:		Unit Sec. Twp. Rge.							
2 3/8		4.7		3761		From Open Ended To		G 15 5S 24E							
Type Well - Single - Bradenhead - G.G. or G.O. Multiple						Packer Set At		County							
Single						None		Chaves							
Producing Thru		Reservoir Temp. °F		Mean Annual Temp. °F		Baro. Press. - P _g		State							
Tubing		103# 4155		60		13.2		New Mexico							
L		H		Gg		% CO ₂		% N ₂		% H ₂ S		Prover			
3761		3761		.65		1		6				2" Orifice Well Tester			
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							990		985		72 hr				
1.	2" Orifice	1 1/4	3			50	940	80	935		3/4 hr				
2.	Well	1 1/4	10			50	910	80	910		3/4 hr				
3.	Tester	1 1/4	16			50	830	80	880		1/2 hr				
4.		1 1/4	36			50	600	80	745		3/4 hr				
5.															
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 _{sp}	Rate of Flow Q, Mc/d								
1	385	2" Orifice Well Tester		1.0098	.9608		374								
2.	753			1.0098	.9608		731								
3.	1004			1.0098	.9608		974								
4.	1843			1.0098	.9608		1788								
5.															
NO.	P _t	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio _____ Mc/d (bbl).										
					A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.										
1.					Specific Gravity Separator Gas _____ X X X X X X X X										
2.					Specific Gravity Flowing Fluid _____ X X X X X										
3.					Critical Pressure _____ P.S.I.A. _____ P.S.I.A.										
4.					Critical Temperature _____ R _____ R										
5.															
P _c 985 P _c ² 970					(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 4.9490$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 3.7709$										
NO	P _t ²	P _w	P _w ²	P _c ² - P _w ²	(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 4.9490$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 3.7709$										
1		935	874	96	AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 3.700$										
2		910	828	142											
3		880	774	196											
4		745	555	415											
5															
Absolute Open Flow 3.700 Mc/d @ 15.025					Angle of Slope @ 50.3°					Slope, n .83					
Remarks:															
Approved By Commission:				Conducted By: EEB				Calculated By: EEB				Checked By:			
				F. I. Buttross, Jr.											

Mesa Petroleum Co.
Huggins Federal #1
Sec 15, T5S, R24E
Chaves County, New Mexico
3-10-81



$$n = 1/\text{slope} = \frac{\log Q_2 - \log Q_1}{\log PC^2 - PW^2_2 - \log PC^2 - PW^2_1} = \frac{\log 3800 - \log 5600}{3.58 - 2.75} = .83$$

$$\theta = 50.3^\circ$$