

N MEXICO OIL CONSERVATION COMMISSION
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

RECEIVED

Type Test ☒ Initial ☐ Annual ☐ Special					Test Date 8-5-81		AUG 11 1981		
Company Southland Royalty Company ✓				Connection Transwestern Pipeline Company				O. C. D. ARTESIA, OFFICE	
Pool Wildcat				Formation Strawn				Unit	
Completion Date 3-5-81		Total Depth 11,610		Plug Back TD 11,165		Elevation 3473.8' GR		Farm or Lease Name Empire, Federal 2	
Csg. Size 4.5	Wt. 13.5#	d 3.920"	Set At 11,596'	Perforations: From 10,420 To 10,442		Well No. 1			
Tbg. Size 2.375	Wt. 4.7#	d 1.995"	Set At 10,312	Perforations: From 0 To 0		Unit Sec. Twp. Rge. S21 T18S R29			
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Gas-Single					Packer Set At 10,312'		County Eddy County		
Producing Thru TBG		Reservoir Temp. °F 178. @ 10421.		Mean Annual Temp. °F 60.0		Baro. Press. - P _a 13.2		State New Mexico	
L 10431.	H 10431.	G _g 0.682	% CO ₂ 0.00	% N ₂ 0.00	% H ₂ S 0.00	Prover 0.0	Meter Run 2.0	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							1975.	85.			96.0
1.	2.00 x 0.625			825.	5.5	59.	1835.	82.	0.	0.	1.0
2.	2.00 x 0.625			830.	8.0	60.	1735.	86.	0.	0.	1.0
3.	2.00 x 0.625			835.	15.0	62.	1605.	90.	0.	0.	1.0
4.	2.00 x 0.625			840.	24.5	62.	1435.	93.	0.	0.	1.0
5.											

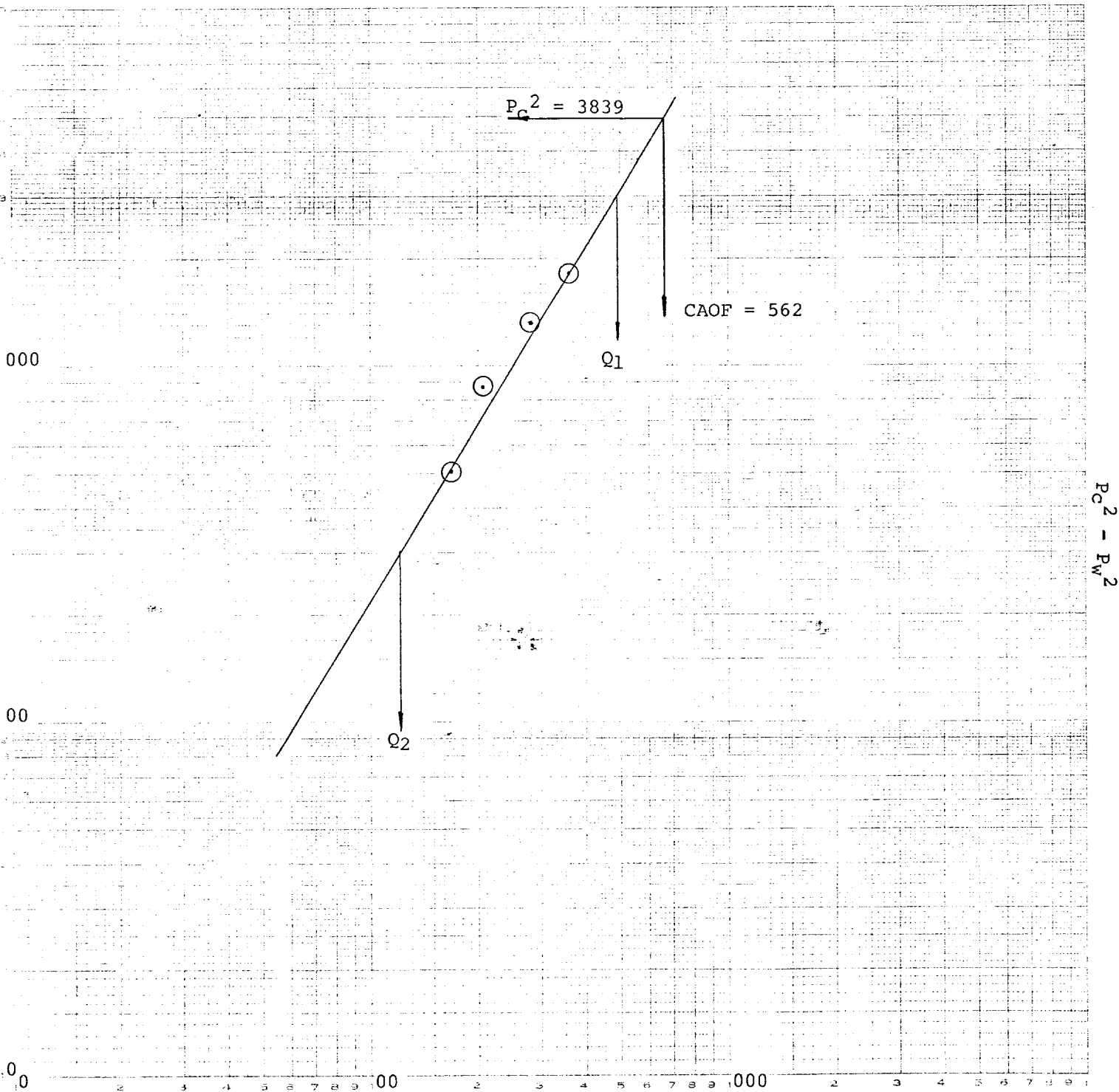
RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1	1.87	67.90	838.2	1.0010	1.2105	1.1021	169.
2	1.87	82.13	843.2	1.0000	1.2105	1.1020	205.
3	1.87	112.80	848.2	0.9981	1.2105	1.1011	280.
4	1.87	144.58	853.2	0.9981	1.2105	1.1017	360.
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.	1.25	519.	1.35	0.823	0.0	57.2	0.682	X X X X X X X X	668.	384.
2.	1.26	520.	1.35	0.823				X X X X X		
3.	1.27	522.	1.36	0.825						
4.	1.28	522.	1.36	0.824						
5.										

P _c 1959.3 P _c ² 3839.					$(1) \frac{P_c^2}{P_c^2 - P_w^2} = 2.1196$ $(2) \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.5639$	
NO.	P _t ²	P _w	P _w ²	P _c ² - P _w ²	$AOF = Q \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 562.$	
1	3416.	1825.	3330.	509.		
2	3056.	1722.	2966.	873.		
3	2619.	1591.	2531.	1308.		
4	2097.	1424.	2038.	1811.		
5						

Absolute Open Flow 562. Mcfd @ 15.025		Angle of Slope θ 59.2	Slope, n 0.595
Remarks:			
Approved By Commission:		Conducted By: Don Bennett	Calculated By: Ray Nokes
			Checked By: Ray Nokes

SOUTHLAND ROYALTY COMPANY
 Empire Federal 21 #1
 S-21, T-18-S, R-29-E
 Eddy County, New Mexico
 August 11, 1981



Q = MCFD

$Q_1 = 480$
 $Q_2 = 122$

$\text{Log } Q_1 = 2.6812$
 $\text{Log } Q_2 = 2.0865$
 $n = .59488 \quad .595$