

N MEXICO OIL CONSERVATION COMM. ON
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 6-24-81		AUG 03 1981	
Company Southland Royalty Company /					Connection Northern Natural Gas			
Pool <u>Turkey Track, Atoka Gas</u> <u>Undesignated Atoka</u>					Formation Atoka		Unit ARTESIA, OFFICE	
Completion Date PB 6/19/81		Total Depth 11,758'		Plug Back TD 11,300'		Elevation 3420' GR		Farm or Lease Name 34 Empire Federal 34 Com
Csg. Size 4 1/2	Wt. 11.6#	d 4.00	Set At 11,758	Perforations: From 10,776 To 10,789'		Well No. 1		
Tbg. Size 2 3/8"	Wt. 4.7#	d 1.995	Set At 10,668	Perforations: From To		Unit Sec. Twp. Rge. S-34 T-18-S R-29-E		
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single					Packer Set At 10,668'		County Eddy	
Producing Thru Tbg		Reservoir Temp. *F 182 @ 10783.		Mean Annual Temp. *F 60.0		Baro. Press. - P _a 13.2		State New Mexico
L 10783.	H 10783.	G _g 0.611	% CO ₂ 0.	% N ₂ 0.	% H ₂ S 0.	Prover 0.	Meter Run 4.0	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							3573.	90.			128.0
1.	4.00 x 1.750			585.	6.0	80.	3525.	90.	0.	0.	1.0
2.	4.00 x 1.750			590.	11.5	75.	3500.	88.	0.	0.	1.0
3.	4.00 x 1.750			593.	20.5	62.	3475.	86.	0.	0.	1.0
4.	4.00 x 1.750			597.	44.5	42.	3400.	80.	0.	0.	1.0
5.											

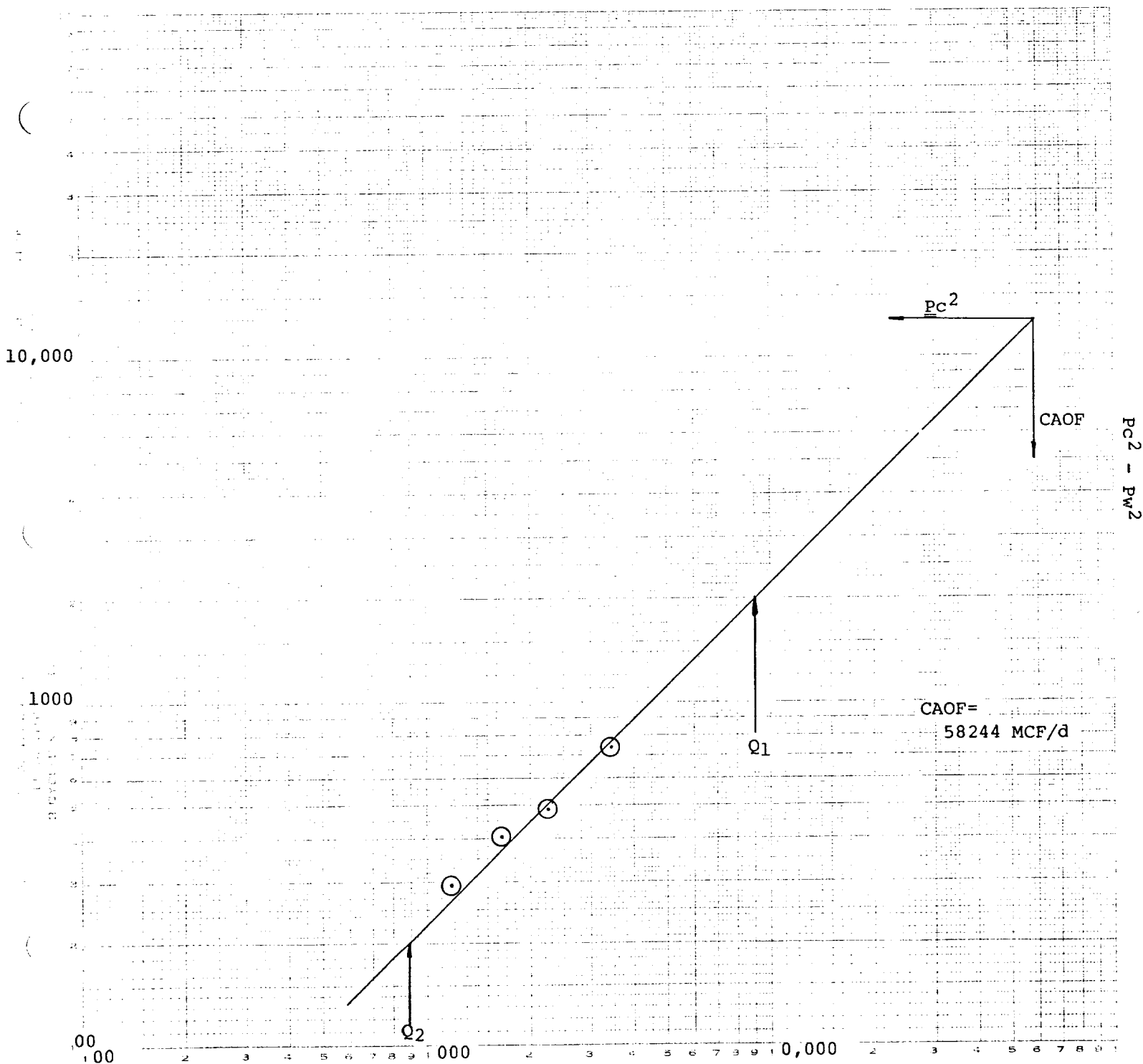
RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1	14.94	59.91	598.2	0.9813	1.2791	1.0481	1177.
2	14.94	83.29	603.2	0.9859	1.2791	1.0504	1648.
3	14.94	111.48	606.2	0.9981	1.2791	1.0557	2244.
4	14.94	164.78	610.2	1.0178	1.2791	1.0650	3412.
5							

NO.	P _r	Temp. *R	T _r	Z	Gas Liquid Hydrocarbon Ratio	0.	Mcf/bbl.	
					A.P.I. Gravity of Liquid Hydrocarbons	55.7	Deg.	
	1.	0.89	540.	1.49	0.910	Specific Gravity Separator Gas	0.611	X X X X X X X X
	2.	0.90	535.	1.48	0.906	Specific Gravity Flowing Fluid	X X X X X	0.611
	3.	0.90	522.	1.44	0.897	Critical Pressure	672.	P.S.I.A.
4.	0.91	502.	1.39	0.882	Critical Temperature	362.	R	
5.								

P _c 3550.6	P _c ² 12607.	(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 17.0681$	(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 17.0681$
NO.	P _t ²	P _w	P _w ²
1	12519.	3509	12314.
2	12343.	3493.	12200.
3	12168.	3481.	12119.
4	11650.	3445.	11868.
5			

Absolute Open Flow		58244.	Mcf/d @ 15.025	Angle of Slope	45.0	Slope, n	1.000
Remarks:							
Approved By Commission:		Conducted By:		Calculated By:		Checked By:	
		Northern Natural Gas		Ray Nokes		Ray Nokes	

Southland Royalty Company
 Empire Federal 34 Com #1
 G, 1980' FNL & 1980' FEL
 Sec. 34, T-18-S, R-29-E
 Eddy County, New Mexico
 NM 109074



$$Q_1 = 9000$$

$$Q_2 = 885$$

$$\text{Log } Q_1 = 3.9541$$

$$\text{Log } Q_2 = 2.9469$$

$$n = 1.0072 \approx 1.00$$