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State of New Mexico
Energy Minerals and Natural Resources

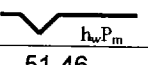
Form C-122
Revised October, 1999

Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator Fasken Oil and Ranch, Ltd.						Lease or Unit Name Maralo "34" Federal					
Type Test ☒ Initial ☐ Annual ☐ Special						Test Date 9-28-01		Well No. 4			
Completion Date 7-30-01		Total Depth 11,100'		Plug Back TD 11,068'		Elevation 3201' GR		Unit Ltr. - Sec. - TWP - Rge. C 34 20S 27E			
Csg. Size 5-1/2"	Wt. 17	d 4.892	Set At 11,100'	Perforations: From: 10,916' To: 10,924'				County Eddy			
Tbg. Size 2-7/8"	Wt. 6.5	d 2.441	Set At 10,864'	Perforations: From: To:				Pool Avalon			
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single						Packer Set At 10,864'		Formation Morrow			
Producing Thru Tubing		Reservoir Temp. °F 175		Mean Annual Temp. °F 60		Baro. Press. - P. 13.2		Connection El Paso Field Services			
L 10,864'	H 10,864'	Gg 0.602	%CO ₂ 0.89	%N ₂ 0.20	%H ₂ S 0.00	Prover Orifice		Meter Run 3"		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						2202	80	1860	80	-
1.	3.068" x 1.375"		510	5.06	80	510	80	1860	80	24 hr
2.										
3.										
4.										
5.										

RATE OF FLOW CALCULATIONS							
No.	COEFFICIENT (24 HOUR)		Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1.	9.249	51.46	523.2	0.9813	1.289	1.063	640
2.							
3.							
4.							
5.							

No.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	Mcf/bbl.
1.	1.28	540	1.52	0.885	A. P. I. Gravity of Liquid Hydrocarbons	Deg.
2.					Specific Gravity Separator Gas 0.594	XXXXXXXXXX
3.					Specific Gravity Flowing Fluid 0.594	XXXXXX
4.					Critical Pressure 671	P.S.I.A.
5.					Critical Temperature 351	R.

No.	P _i ²	P _w	P _w ²	P _c ² - P _w ²
1.	4973.8	527.6	278.3	4627.9
2.				
3.				
4.				
5.				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = \frac{4906.2}{4627.9}$

AOF = Q (640) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 678$

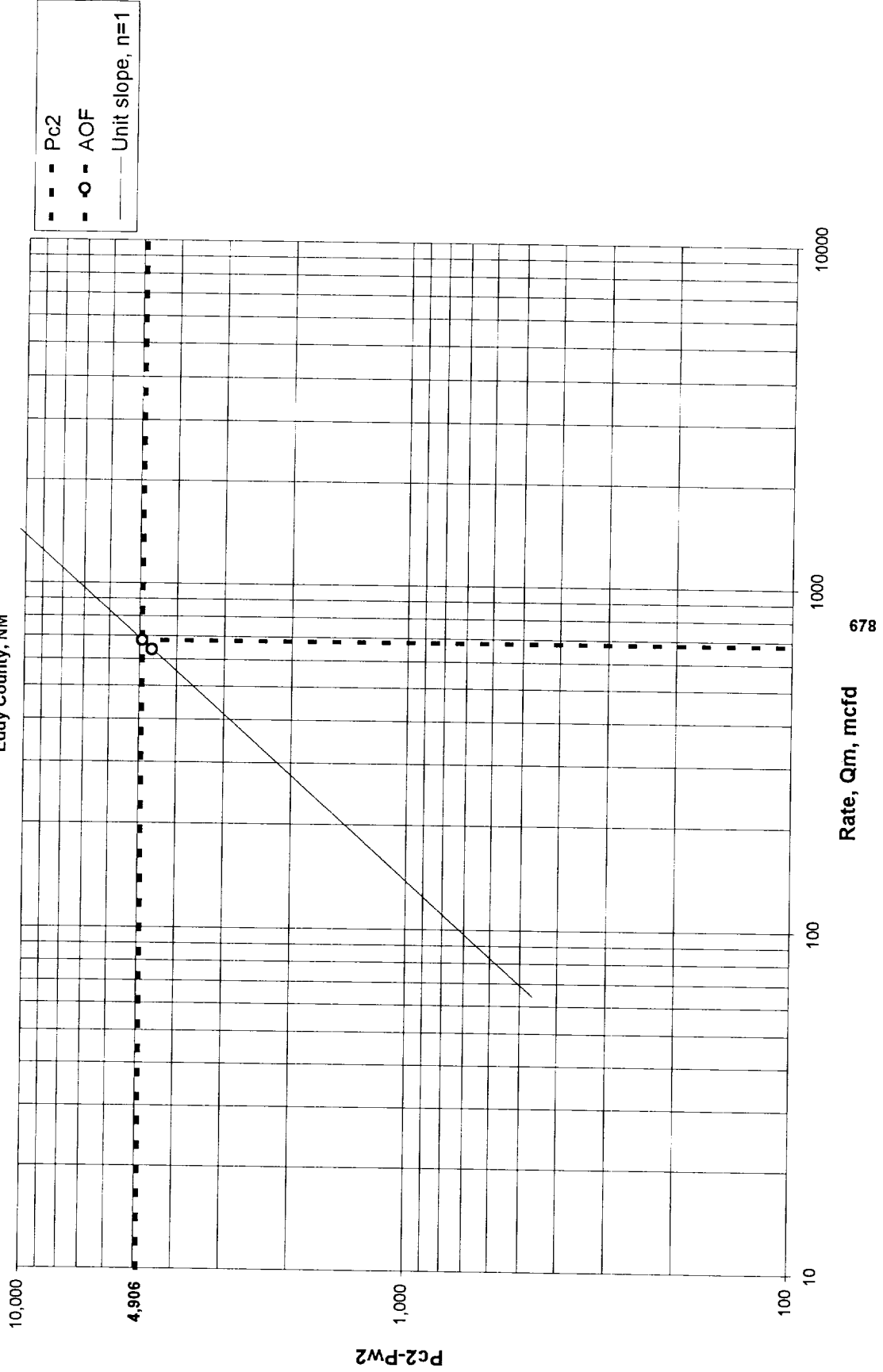
(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.060$

Absolute Open Flow	678	Mcf/d @ 15.025	Angle of Slope θ: 45	Slope, n: 1.00
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Remarks:
An approximation of AOF was made with unit slope through the maximum rate.

Approved By Division	Conducted By: Fasken Oil and Ranch, Ltd.	Calculated By: Carl Brown	Checked By:
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Fasken Oil and Ranch, Ltd.
 Maralo "34" Federal No. 4
 Unit C, Sec 34, T20S, R27E
 Burfon Flat (Morrow) Field
 Eddy County, NM



WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (Pw)

C-122D

DATE: 08/28/2001

COMPANY Fasken Oil and Ranch, Ltd. LEASE Maralo "34" Federal WELL NO. 4

LOCATION: Unit C Section 34 Township 20S Range 27E

L 10864 H 10864 L / H 1 G 0.602 %CO2 0.23 %N2 0.89 %H2S 0

d 2.441 Fr 0.010763 GH 6540.128 Pcr 670 Tcr 355

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	0.64				
2 Tw(W.H.DegR)	540				
3 Ts(B.H.DegR)	635				
4 $T = (Tw + Ts) / 2$	587.5				
5 Z (Est.)	0.852				
6 TZ	500.6				
7 GH / TZ	13.066				
8 e^s (Table XIV)	1.632				
9 $1 - e^s$ (Table XIV)	0.387				
10 Pt	523.2				
11 $Pt^2 / 1000$	273.7				
12 Fr (Table XV)	0.010763				
13 $Fc = FrTZ$	5.387				
14 FcQm	3.448				
15 $L / H(FcQm)^2$	11.888				
16 $Fw = L / H(FcQm)^2(1 - e^s)$	4.605				
17 $Pw^2 = Pt^2 + Fw$	278.3				
18 $Ps^2 = e^s Pw^2$	454.3				
19 Ps	674.0				
20 $P = (Pt + Ps) / 2$	598.6				
21 $Pr = (P / Pcr)$	0.893				
22 $Tr = (T / Tcr)$	1.655				
23 Z (Table XI)	0.852				