

RECEIVED

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test ☒ Initial ☐ Annual ☐ Special		Test Date 1/29/82		MAR 26 1982	
Company Yates Petroleum Corp. ✓		Connection Transwestern			
Pool Pecos Slope Abo Gas		Formation Abo		Unit ARTESIA, OFFICE	
Completion Date 10/12/81		Total Depth 4150'		Plug Back TD 4030'	
Elevation 4039.5 GL		Farm or Lease Name Monaghan QY Fed.			
Cas. Size 4 1/2"	WT. 9.5#	d 4.090	Set At 4030'	Perforations: From 3692 To 3922	
Well No. #1					
Tub. Size 2-3/8"	WT. 4.7#	d 1.995	Set At 3768'	Perforations: From To	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single				Packer Set At None	
Producing Thru Tubing		Reservoir Temp. °F 98° @ 3807'		Mean Annual Temp. °F 62	
Bare. Press. - P _g 13.2		State New Mexico			
L 3768	H 3768	G _g .660	% CO ₂ 1.84	% N ₂ 5.24	% H ₂ S -
Prover -		Meter Run 2"		Taps Flanged	

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.	
51							1026			
1.	2.067 x .875			250	14.0	52	925	61		
2.	2.067 x .875			240	30.9	52	850	61		24 hrs.
3.	2.067 x .875			235	36.3	52	750	61		24 hrs.
4.	2.067 x .875			230	95.5	54	564	61		24 hrs.
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	3.729	60.7	263.2	1.008	1.231	1.025	288
2	3.729	88.5	253.2	1.008	1.231	1.024	419
3	3.729	94.9	248.2	1.008	1.231	1.023	449
4	3.729	152.4	243.2	1.006	1.231	1.023	720
5							

NO.	P _g	Temp. °R	T _g	Z	Gas Liquid Hydrocarbon Ratio _____ Dry _____ Mcf/bbl.
1	.39	512	1.42	.952	A.P.L. Gravity of Liquid Hydrocarbons _____ Dry _____ Deg.
2	.37	512	1.42	.955	Specific Gravity Separator Gas _____ .660 _____ XXXXXXXXX
3	.38	512	1.42	.953	Specific Gravity Flowing Fluid _____ XXXXX _____ .660
4	.36	514	1.42	.956	Critical Pressure _____ 669 _____ P.S.I.A. _____ 669 _____ P.S.I.A.
5					Critical Temperature _____ 361 _____ R _____ 361 _____ R

P _c 1039.2 P _c ² 1079.9			
NO.	P _w	P _w ²	P _c ² - P _w ²
1	880.2	881.3	198.6
2	745.1	747.4	332.5
3	582.5	585.2	494.7
4	333.2	340.4	739.5
5			

$$(1) \frac{P_c^2}{P_c^2 - P_w^2} = 1.4603$$

$$AOI = Q \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 936 \text{ mcfpd}$$

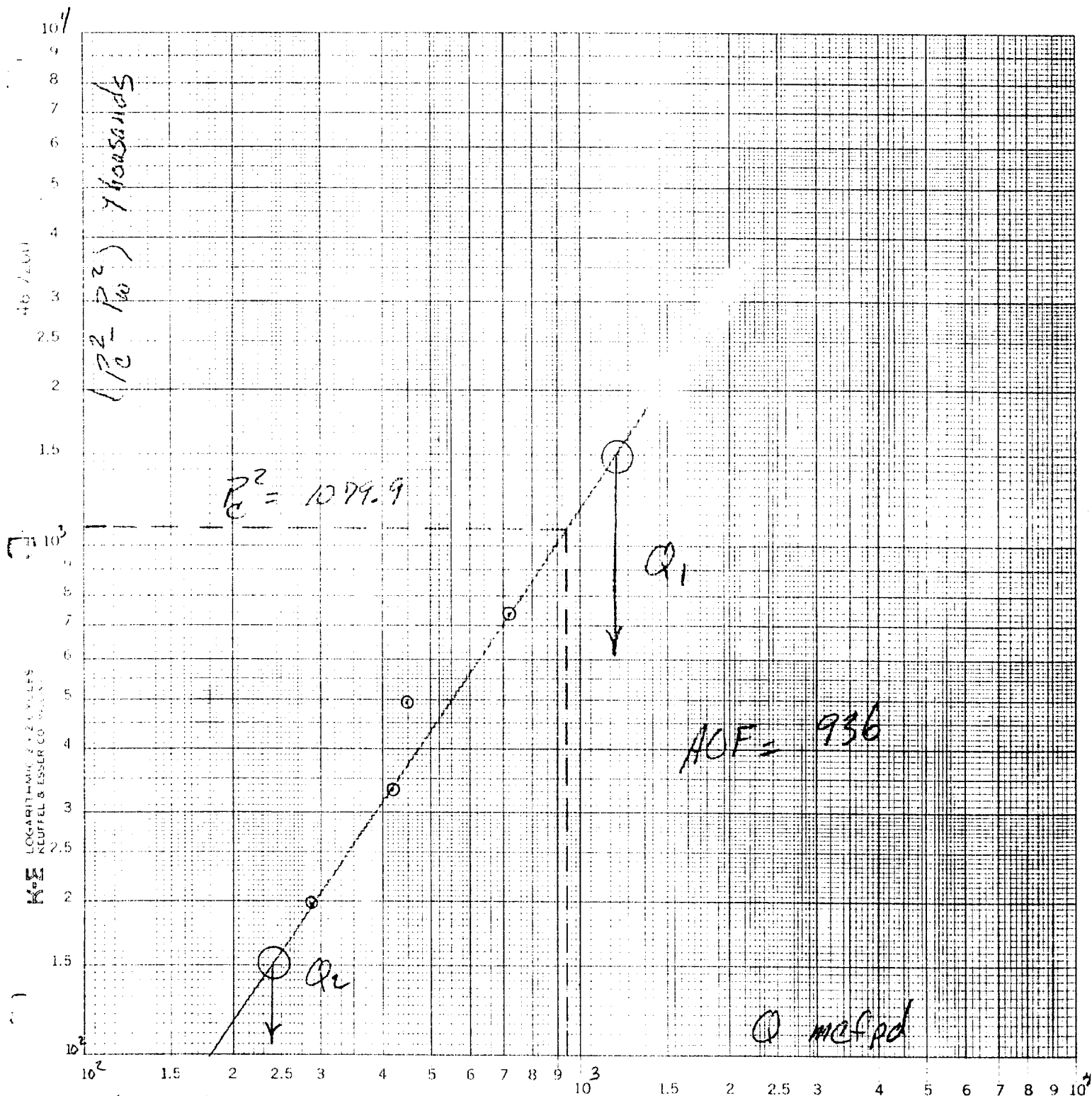
$$(2) \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.2994$$

Absolute Open Flow _____ 936 _____ Mcfd @ 15.025	Angle of Slope θ _____	Slope, n _____ .692
Remarks: _____		
Approved By Division	Conducted By: David Weaver	Calculated By: Al Springer
Checked By:		

1000

1000

Yates Petroleum Corp
 Monaghan - QY Fed #1
 U.S. M., Sec 34 - T5-24E
 Chaves County, New Mexico



$$(P_e^2 - P_w^2)_1 = 1,500$$

$$(P_e^2 - P_w^2)_2 = 150$$

$$Q_1 = 1180$$

$$Q_2 = 240$$

$$\log Q_1 = 3.07188$$

$$\log Q_2 = 2.38021$$

$$\eta = .69167 = .692$$

1

WORKSHEET FOR CALCULATION OF ST. C COLUMN WELLHEAD PRESSURE (P_w)C-122D
Revised 9-1-65COMPANY Yates Petroleum Corp LEASE Monegan QY Feel WELL NO. #1 DATE 3/25/82LOCATION: Unit M Section 34 Township 5S Range 24E
L 3768 H 3768 L/H 1.000 G .660 % CO₂ 1.84 % N₂ 5.24 % H₂S 0
d 1.995 F_r .01823 GH 2487 P_{Cr} 669 T_{Cr} 361

TABLE IX & X

LINE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1 Q _m																							
2 T _w (W.H. OR)																							
3 T _w (B.H. OR)																							
4 T _w (B.H. OR)																							
5 T _w (B.H. OR)																							
6 T _w (B.H. OR)																							
7 GH/TZ																							
8 e ^s (Table XIV)																							
9 1-e ^s (Table XIV)																							
10 P _r																							
11 P _r ² /1000																							
12 F _r (Table XV)																							
13 F _c = F _r TZ																							
14 F _c Q _m																							
15 L/H (F _c Q _m) ²																							
16 F _w = L/H (F _c Q _m) ² (1-e ^{-s})																							
17 P _w ² = P _r ² + F _w																							
18 P _s ² = e ^s P _w ²																							
19 P _s																							
20 P = (P _r + P _s)																							
21 P _r = (P/P _{Cr})																							
22 T _r = (T/T _{Cr})																							
23 Z _r = (Z _r /Z _{Cr})																							

2 3 6 9 13 17 24 27 32 34 35 37 40 42 45 49 52 57

