

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

c/sf
file Form C-122
Revised 9-1-65

RECEIVED

Type Test ☒ Initial ☐ Annual ☐ Special						Test Date NOV 1 1982 9/27/82	
Company Yates Petroleum Corporation				Connection Transwestern Pipeline			
Pool Pecos Slope - Abo Gas				Formation Abo			
Completion Date 5/13/82		Total Depth 4200'		Plug Back TD 4127'		Elevation 3993' GL	
Firm or Lease Name Monaghan "QY" Federal				Well No. 5			
Test Size 4 1/2"	Wt. 9.5#	d 4.090	Set At 4193'	Perforations: From 3702 To 3819		Unit Sec. Top. Rye. P 27 5S 24E	
Test Size 2 3/8"	Wt. 4.7#	d 1.995	Set At 3668'	Perforations: From To		Unit Sec. Top. Rye. P 27 5S 24E	
Type Well - Single - Brodenhead - G.O. or G.O. Multiple Single						Packoff Set At 3668'	
Producing Thru Tubing		Reservoir Temp. °F 102° 3665'		Mean Annual Temp. °F 62		Baro. Presb. - P _g 13.2 psi	
L 3668'		H 3668'		Gg .645		Motor Run. Tops 2" Flanged	
% CO ₂ % H ₂ % H ₂ S Previor 0.03 5.59 0 --				State New Mexico			

FLOW DATA						TUBING DATA		CASING DATA		Duration of Flow	
NO.	Prover Line Size	X	Critical Size	Press. p.s.i.g.	Diff. hw	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.		Temp. °F
1	2.067 x 1.125			220	19.6	70	840	62			24 hr.
2	2.067 x 1.125			230	26.1	70	814	62			24 hr.
3	2.067 x 1.125			280	28.4	70	777	62			24 hr.
4	2.067 x 1.125			280	45.0	70	730	62			24 hr.
5											

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcf/D
1	6.393	67.5	233.2	.9905	1.245	1.020	543
2	6.393	79.6	243.2	.9905	1.245	1.021	641
3	6.393	91.3	293.2	.9905	1.245	1.025	738
4	6.393	114.9	293.2	.9905	1.245	1.025	928
5							

NO.	P _t	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio <u>Dry</u> Mcf/bbl.	
1	.35	530	1.48	.962	A.P.I. Gravity of Liquid Hydrocarbons <u>--</u> Deg.	
2	.37	530	1.48	.960	Specific Gravity Separator Gas <u>.645</u> XXXXX	
3	.45	530	1.48	.952	Specific Gravity Flowing Fluid <u>XXXXX</u> .645	
4	.45	530	1.48	.952	Critical Pressure <u>659</u> P.S.I.A. 659 P.S.I.A.	
5					Critical Temperature <u>358</u> R 358 R	

NO.	P _t ²	P _w ²	P _t ² - P _w ²	$(1) \frac{P_c^2}{P_t^2 - P_w^2} = \frac{2.515}{\dots}$		$(2) \left[\frac{P_c^2}{P_t^2 - P_w^2} \right]^n = \frac{2.231}{\dots}$	
1	728.0	731.7	203.8	$AOI = Q \left[\frac{P_c^2}{P_t^2 - P_w^2} \right]^n = \frac{2070}{\dots}$			
2	684.3	689.5	246.0				
3	624.4	631.4	304.1				
4	552.3	563.5	372.0				
5							

Absolute Open Flow 2070 Mcf @ 15.025		Angle of Slope @ Slope, n .870	
Remarks:			
Approved By Commission:		Conducted By: David Weaver	
Calculated By: Andie Alderson		Checked By:	

COMPANY Yucca Petroleum Corp. LEASE Cr. - Washburn Gul' Fed. WELL NO. 5 DATE 10/27/82

LOCATION: Unit 4 Section 27 Township 5S Range 24E

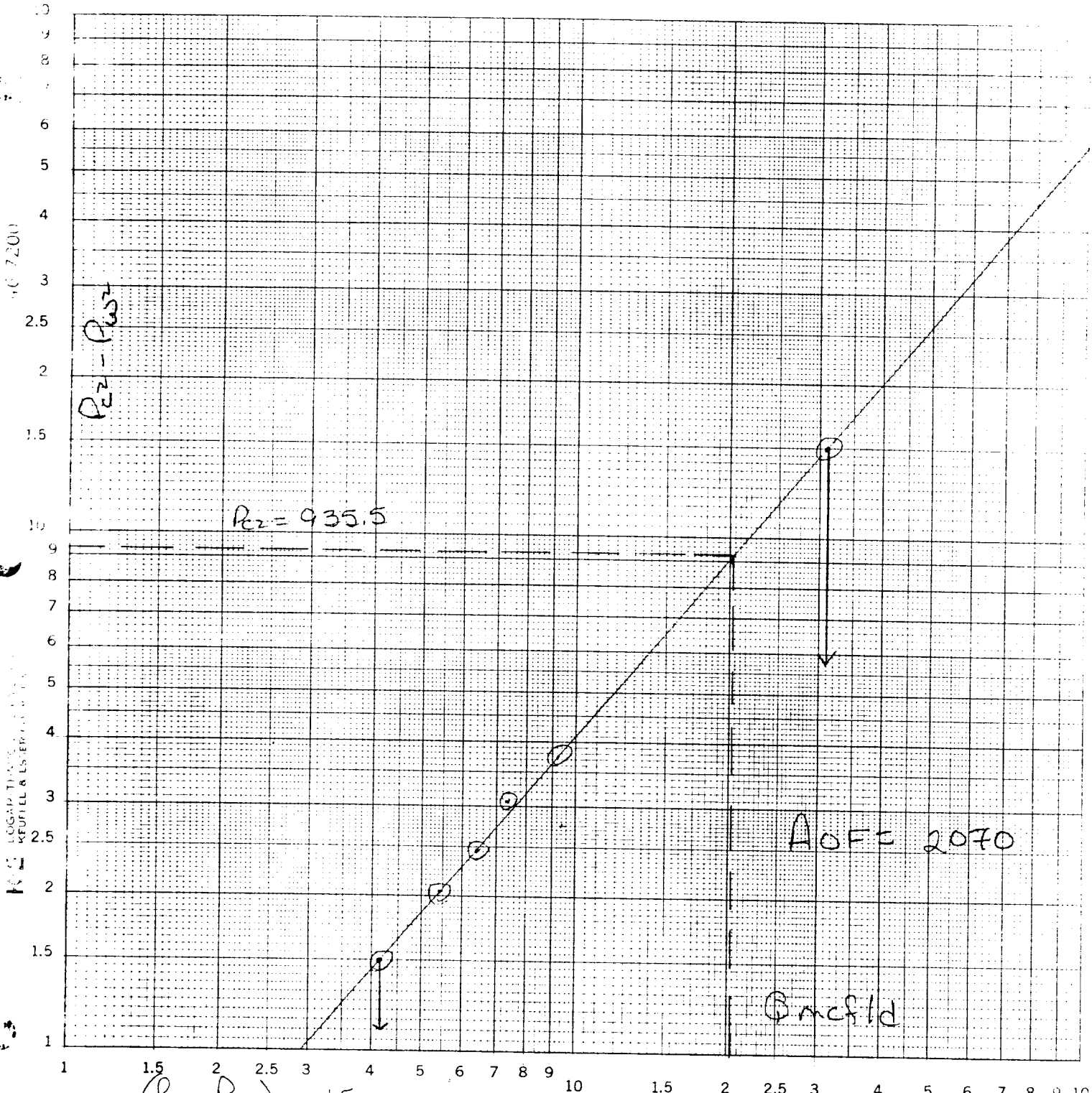
L 3668 H 3668 L/H 1 C. 645 % CO₂ 03 % N₂ 5.89 % H₂S 0

d 1.915 F_r .01823 GH 2366 P_{cr} 659 T_{cr} 358

TABLE IX B 1

LINE	1st	2nd	3rd	4th				
1 Q _m	.543	.641	.738	.928				
2 T _w (W.H. °R)	522	522	522	522				
3 T _s (3.H. °R)	562	562	562	562				
4 T = $(\frac{1}{2}T_w + \frac{1}{2}T_s)$	542	542	542	542				
5 Z (Est.)	.874	.877	.882	.888				
6 T _z	473.71	475.35	478.04	481.3				
7 CH/TZ	4.995	4.978	4.949	4.916				
8 e ^s (Table XIV)	1.206	1.205	1.204	1.202				
9 1-e ^s (Table XIV)	.171	.170	.169	.168				
10 P _t	853.2	827.2	790.2	743.2				
11 P _t 2/1000	728.0	684.3	624.4	552.3				
12 F _r (Table XVI)	.01823	.01822	.01823	.01823				
13 F _z = F _r TZ	8.636	7.665	8.715	8.774				
32								
14 F ₀ Q _m	4.687	5.554	6.1131	8.142				
3								
35								
15 L/H (F ₀ Q _m) ²	21.988	30.852	41.364	66.297				
37								
16 F _w = L/H (F ₀ Q _m) ² (1-e ^s)	3.760	5.245	6.991	11.138				
40								
17 P _w ² = P _t ² + F _w	731.7	689.5	631.4	563.5				
42								
18 F _s ² = e ^s P _w ²	882.4	830.9	760.2	677.3				
45								
19 F _s	939.4	911.5	871.9	823.0				
49								
20 F = $(\frac{F_t + P_s}{2})$	896.3	869.4	831.1	783.1				
21 P _t - F/P ₀	1.36	1.26	1.26	1.19				
22 T _t = (T/T _{cr})	.51	.51	.51	.51				
23 T _t (Table XI)	.51	.51	.51	.51				

Yates Petroleum Co.
 Monaghan "Oy" Field #5
 Unit P 27-55-24E
 Chaves County



$$\begin{aligned} (P_{c2} - P_{w2})_1 &= 1500 \\ (P_{c2} - P_{w2})_2 &= 150 \\ Q_1 &= 3100 \\ Q_2 &= 418 \end{aligned}$$

$$\begin{aligned} \log Q_1 &= 3.49136 \\ \log Q_2 &= 2.62118 \\ n &= .87019 = .87 \end{aligned}$$