

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

45 file
Form C-122
Revised 8-1-65
0-133 file
RECEIVED

Type Test ☒ Initial ☐ Annual ☐ Special		Test Date 10-19-78		JAN 16 1979	
Company Yates Petroleum Corp. ✓		Connection Transwestern Pipeline Co.		O.C.C. ARTERIA, OFFICE	
Pool Eagle Creek Permo-Penn		Formation Wolfcamp & Cisco		Unit NM 3603	
Completion Date 9-20-78		Total Depth 8400' KB		Plug Back TD 6617' KB	
		Elevation 3604' KB		Farm or Lease Name Federal "GC" Com	
Csg. Size 5-1/2"	Wt. 15.5-17#	d 4.950	Set At 8334' KB	Perforations: From 6276 To 6600'	
Tbg. Size 2-3/8"	Wt. 4.7#	d 1.995	Set At 6238' KB	Perforations: From To	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single				Packer Set At 6238' KB	
Producing Thru Tubing		Reservoir Temp. °F 122 @ 6513		Mean Annual Temp. °F 62	
		Baro. Press. - P _a 13.2		State New Mexico	
L 6513	H 6513	G _g 0.692	% CO ₂ 0.13	% N ₂ 1.12	% H ₂ S Nil
Prover 2"		Meter Run 2"		Taps Flange	

FLOW DATA						TUBING DATA		CASING DATA		Duration of Flow	
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. hw	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.		Temp. °F
SI							1817	35			Weeks
1.	2.067 x 0.500			235	5	75	1185	46			1 hour
2.				235	11	75	1010	54			1 hour
3.				235	21	75	905	60			1 hour
4.				235	37	75	840	65			1 hour
5.											

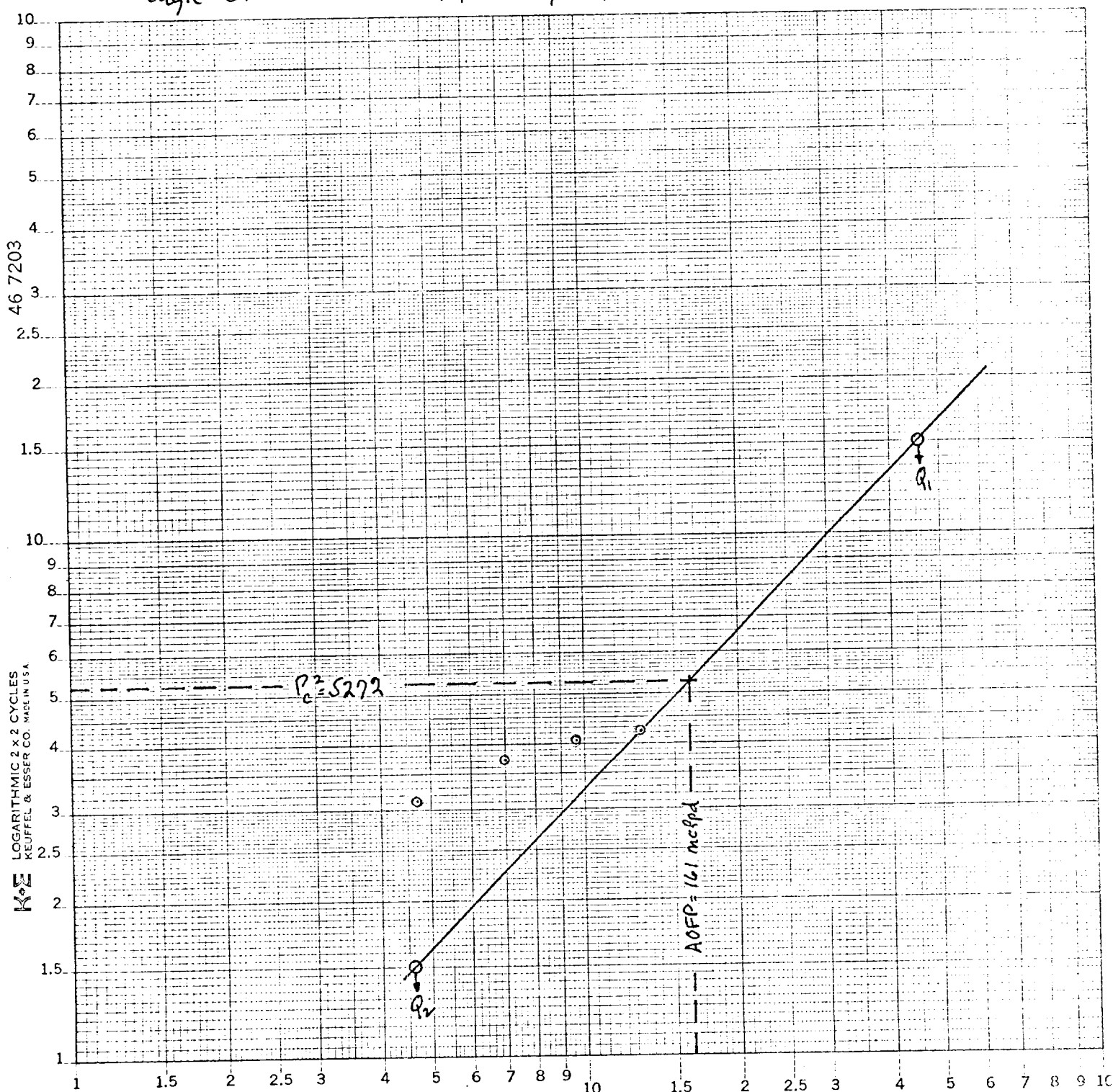
RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor F _t	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1	1.189	35.25	248.2	.9859	1.123	1.0233	47
2	1.189	52.25	248.2	.9859	1.123	1.0233	70
3	1.189	72.20	248.2	.9859	1.123	1.0233	97
4	1.189	95.83	248.2	.9859	1.123	1.0233	129
5							

NO.	P _t	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	90.0 Mcf/bbl.
1	.371	535	1.429	.955	A.P.I. Gravity of Liquid Hydrocarbons	57.5 Deg.
2	.371	535	1.429	.955	Specific Gravity Separator Gas	0.660
3	.371	535	1.429	.955	Specific Gravity Flowing Fluid	XXXXXX
4	.371	535	1.429	.955	Critical Pressure	669 P.S.I.A.
5					Critical Temperature	374.5 °R

P _c 2296.2 P _c ² 5272				(1) $\frac{P_c^2}{P_c^2 - R_w^2} = 1.249$		(2) $\left[\frac{P_c^2}{P_c^2 - R_w^2} \right]^n = 1.249$	
NO.	P _t ²	P _w	R _w ²	P _c ² - R _w ²	AOF = Q $\left[\frac{P_c^2}{P_c^2 - R_w^2} \right]^n = 161$		
1			2156	3116			
2			1542	3730			
3			1227	4045			
4			1051	4221			

Absolute Open Flow		161 Mcfd @ 15.025	Angle of Slope @ 45 degrees	Slope, n 1.000
Remarks: Static pressure by Bennett Wireline; flowing pressures by DWT. This is a low capacity well. Calculations worksheet C-122D attached.				
Approved By Commission:	Conducted By:	Calculated By:	Checked By:	
	Hal Elless	Eddie Mahfood		

YPC - Federal GC No. 1, Unit P - Sec 32-17S-25E
 Eagle Creek Perm Perm, Eddy Co, N. Mex.



$$Q_1 = 460 \text{ mcfpd} \quad \log Q_1 = 2.6628$$

$$Q_2 = 46 \text{ mcfpd} \quad \log Q_2 = 1.6628$$

$$n = 1.0000$$

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w)

COMPANY Yates Petroleum Corp. WELL NO. 1 DATE 10-78

LOCATION: Unit P Section 32 Township 17-S Range 25-E

L 6513 H 6513 L/H 1.000 G 1697 % CO₂ 0.13 % N₂ 1.12 % H₂S NH

$$\frac{238-6235(3.48)-248153}{52-278(24.50)-6811.0} = \frac{6513(4.3539)-316263}{0.01370}$$
 F_T 0.01370 GH 4540 P_{Cr} 60.8 T_{Cr} 387.5

LINE		1	2	3	4			
1 Q _m	—	1047	1070	1097	1129			
2 T _w (W.H. °R)	495	506	514	520	525			
3 T _s (B.H. °R)	582	582	582	581	581			
4 T = ($\frac{T_w + T_s}{2}$)	538.5	544	548	550.5	553			544
5 Z (Fst.)		1765	1803	1825	1840			17695
6 TZ	375.33	416.16	440.04	454.16	464.52			418.61
7 GH/TZ	12.096	10.909	10.312	9.9964	9.7735			10.845
8 e ^s (Table XIV)	1.5740	1.5055	1.4724	1.4548	1.4427			1.5018
9 1-e ^s (Table XIV)		0.3358	0.3208	0.3126	0.3068			0.3342
10 P _t	1830.2	1193.2	1023.2	918.2	853.2			1198.2
11 P _t ² /1000		1435.68	1046.94	843.09	729.95			1435.68
12 F _T (Table XV) $\cdot 0.355 \frac{G_H}{T_Z}$	0.45360	1409.10	1386.89	1374.87	1366.51			140670
13 F _C = F _T TZ		57814	60285	62222	6364			5735
14 F _C Q _m		0.268	0.422	0.604	0.821			0.270
15 L/H (F _C Q _m) ²		0.077	0.178	0.364	0.674			0.073
16 F _w = L/H (F _C Q _m) ² (1-e ^s)		0.074	0.06	0.11	0.21			0.02
17 P _w ² = P _t ² + F _w		1435.70	1047.00	843.20	728.16			1435.70
18 P _s ² = e ^s P _w ²	5272.3	2161.46	1541.6	1226.7	1050.5			2156.1
19 P _s	2296.2	1470.2	1241.6	1107.6	1024.9			1468.4
20 P = ($\frac{P_t + P_s}{2}$)	2063.2	1334.2	1132.4	1012.9	939.1			1333.3
21 P _t = (P/P _{Cr})	3.089	2.0	1.695	1.516	1.406			2.0
22 T _t = (T/T _{Cr})	1.390	1.404	1.414	1.421	1.427			1.404
23 Z (Table XI)	1.697	1.7695	1.803	1.825	1.840			1.7695