

RECEIVED

NEW MEXICO OIL CONSERVATION COMMISSION

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

JUL 8 1977

Form C-122
Revised 9-1-65

122 file

file

Type Test ☒ Initial ☐ Annual		Test Date 5-6-77	
Company Yates Petroleum Corporation		Connection El Paso Natural Pipeline Co.	
Pool Burton Flats Morrow		Formation Morrow	
Completion Date 2-2-77		Total Depth 11400 KB	Plug Back TD 11278 KB
Csg. Size Slim Hole		Wt. 6.4#	Set At 11326
Thg. Size 2-7/8"		Perforations: From 11134 To 11148 KB	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single		Packer Set At -----	
Producing Thru Tubing		Reservoir Temp. °F 162	Mean Annual Temp. °F 62
Baro. Press. - P _a 13.2		State New Mexico	
L 11130	H 11130	G _g	% CO ₂ 0.83
% N ₂ 1.17		% H ₂ S Nil	Prover 4"
Meter Run 4"		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	of Flow
SI							3234	62			Weeks
1.	4.026 x 0.750			515	6	78	2500	60			1 hour
2.				517	9	79	2316	58			1 hour
3.				518	16	80	2004	55			1 hour
4.				519	29	78	1511	50			1 hour
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	2.661	51.39	528.2	.9831	1.278	1.0414	196
2.		69.08	530.2	.9822	1.278	1.0420	240
3.		92.19	531.2	.9813	1.278	1.0426	321
4.		124.23	532.2	.9831	1.278	1.0423	433
5.							

NO.	P _t	Temp. °R	T _f	Z	Gas Liquid Hydrocarbon Ratio	Rate of Flow
1.	0.785	538	1.503	.922	147.42 Mcf/bbl.	
2.	0.788	539	1.506	.921	A.P.I. Gravity of Liquid Hydrocarbons 56.0 Deg.	
3.	0.789	540	1.508	.920	Specific Gravity Separator Gas 0.612	XXXXXX
4.	0.791	538	1.503	.9205	Specific Gravity Flowing Fluid XXXXX	0.632
5.					Critical Pressure 673 P.S.I.A.	672.5 P.S.I.A.
					Critical Temperature 358 °R	364.5 °R

NO.	P _t ²	P _w	P _w ²	P _t ² - P _w ²
1			11223	8813
2			9775	10261
3			7466	12570
4			4292	15744
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.2726$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 551$

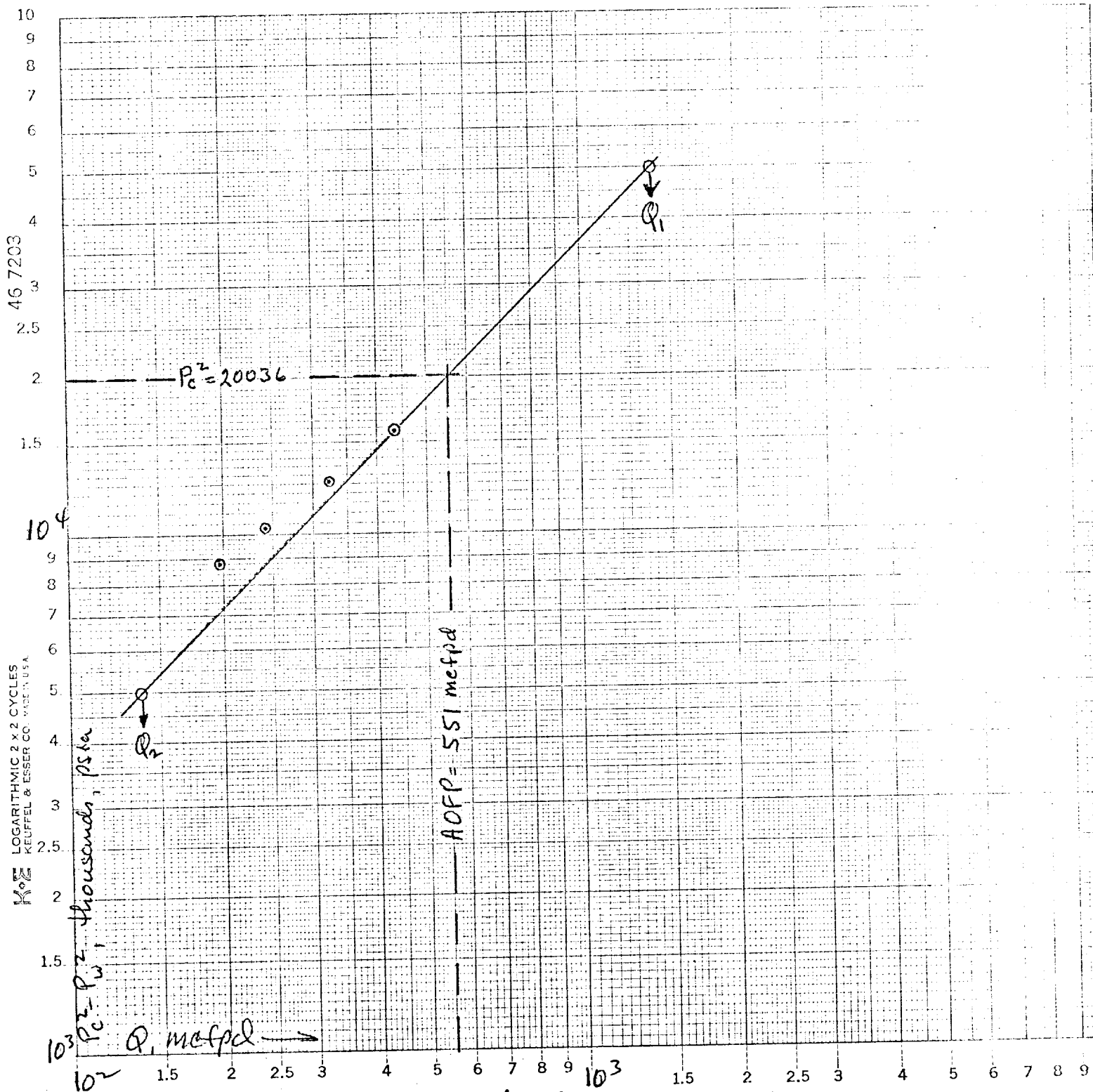
(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.2726$

Absolute Open Flow	551 Mcfd @ 15.025	Angle of Slope θ	45°	Slope, n	1.000
--------------------	-------------------	-------------------------	-----	----------	-------

Remarks: Static pressures by Bennett Wireline. Flowing pressures by DWT. Calculations worksheet C-122D attached hereto.

Approved By Commission:	Conducted By: Don Weaver	Calculated By: Eddie Mahfood	Checked By:
-------------------------	-----------------------------	---------------------------------	-------------

YPC - MWS State GW Com No. 1
 1980/s 1980/w Sec 36-20S-27E, Eddy Co, N.M.



$$Q_1 = 1370 \text{ mcfpd} \quad \log Q_1 = 3.1367$$

$$Q_2 = 137 \text{ mcfpd} \quad \log Q_2 = 2.1367$$

$$n = 1.0000$$

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w)

C-122D
Adopted 9-1-65

COMPANY Yates Petr Corp LEASE MDS State Oil Co WELL NO. 1 DATE 5-6-77

LOCATION: Unit K Section 36 Township 20-S Range 27-E

L 11130 H 11130 L/H 1 % CO₂ 0.83 % N₂ 1.17 % H₂S Nil

d 2.441 F_r 1010765 GH 7034 P_{CT} 0.225 T_{CT} 364.5
670.4 365.5
3.3+ 53-
1.22 53-
672.7

LINE	1	2	3	4	1	2	3	4
1 Q _m	0.196	0.240	0.321	0.433	0.196	0.240	0.321	0.433
2 T _w (W.H. °R)	520	518	515	510				
3 T _s (B.H. °R)	616	608	599	582				
4 T = ($\frac{T_w + T_s}{2}$)	568	563	556	546				
5 Z (Est.)	.807	.795	.782	.769				
6 TZ	458.38	447.59	434.79	420.79				
7 GH/TZ	15.345	15.715	16.178	16.328				
8 e ^s (Table XIV)	1.7780	1.8028	1.8343	1.8447				
9 1-e ^s (Table XIV)	0.4375	0.4453	0.4548	0.4579				
10 P _t	2513.2	2329.2	2017.2	1524.2				
11 P _t 2/1000	6316.2	5425.2	4069.1	2323.2				
12 F _r (Table XV) $= .0375 \frac{P_t}{T}$	.57546	.58933	.60667	.61230				
13 F _c = F _r TZ	4.9335	4.8174	4.6796	4.6366				
14 F _c Q _m	0.967	1.1562	1.5022	2.0076				
15 L/H (F _c Q _m) ²	0.935	1.3367	2.2565	4.0306				
16 F _w = L/H (F _c Q _m) ² (1-e ^s)	0.409	0.595	1.026	1.846				
17 P _w ² = P _t ² + F _w	6316.6	5425.8	4070.1	2325.0				
18 P _s ² = e ^s P _w ²	11230.9	9781.6	7465.8	4289.0				
19 P _s	3351.3	3127.6	2732.4	2071.0				
20 P = ($\frac{P_t + P_s}{2}$)	2932.2	2728.4	2374.5	1799.6				
21 P _r = (P/P _{cr})	4.36	4.06	3.53	2.67				
22 T _r = (T/T _{cr})	1.558	1.545	1.525	1.498				
23 Z (Table XI)	.808	.796	.782	.758				