

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

Form C-122
Revised 9-1-65

RECEIVED

Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 5-16-80		JUN 17 1980	
Company Yates Petroleum Corp.			Connection Transwestern Pipeline Company			O. C. D.	
Pool Penasco Draw Permo Penn			Formation Cisco			Unit ARTESIA, OFFICE	
Completion Date 4-15-80		Total Depth 8900 KB		Plug Back TD 6750 KB		Elevation 3664 KB	
Farm or Lease Name Cities JG State Com		Well No. 1		Unit P		Sec. Twp. Rge. 13 18S 24E	
Csg. Size 4 1/2		Wt. 10.5#		d 4.052"		Set At 8900' KB	
Perforations: From 6564		To 6619		Thq. Size 2-3/8		Wt. 4.7#	
Perforations: From		To		d 1.995"		Set At 6526' KB	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single				Packer Set At 6526 KB		County Eddy	
Producing Thru Tubing		Reservoir Temp. *F 123 @ 6585		Mean Annual Temp. *F 62		Baro. Press. - P _a 13.2	
State New Mexico		Prover -		Meter Run 4"		Taps Flange	
L 6585		H 6585		G _g 0.681		% CO ₂ 1.64	
% N ₂ 1.07		% H ₂ S N.7		Prover -		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
1.	4.026	x	0.875	279	10	75	1646	62			1 hr
2.	4.026	x	0.875	279	19	75	1580	66			1 hr
3.	4.026	x	0.875	280	43	75	1459	69			1 hr
4.	4.026	x	0.875	280	85	75	1325	71			1 hr

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.	3.630	54.06	292.2	.9859	1.222	1.029	243
2.	3.630	74.51	292.2	.9859	1.222	1.029	335
3.	3.630	112.28	293.2	.9859	1.222	1.029	505
4.	3.630	157.87	293.2	.9859	1.222	1.029	710

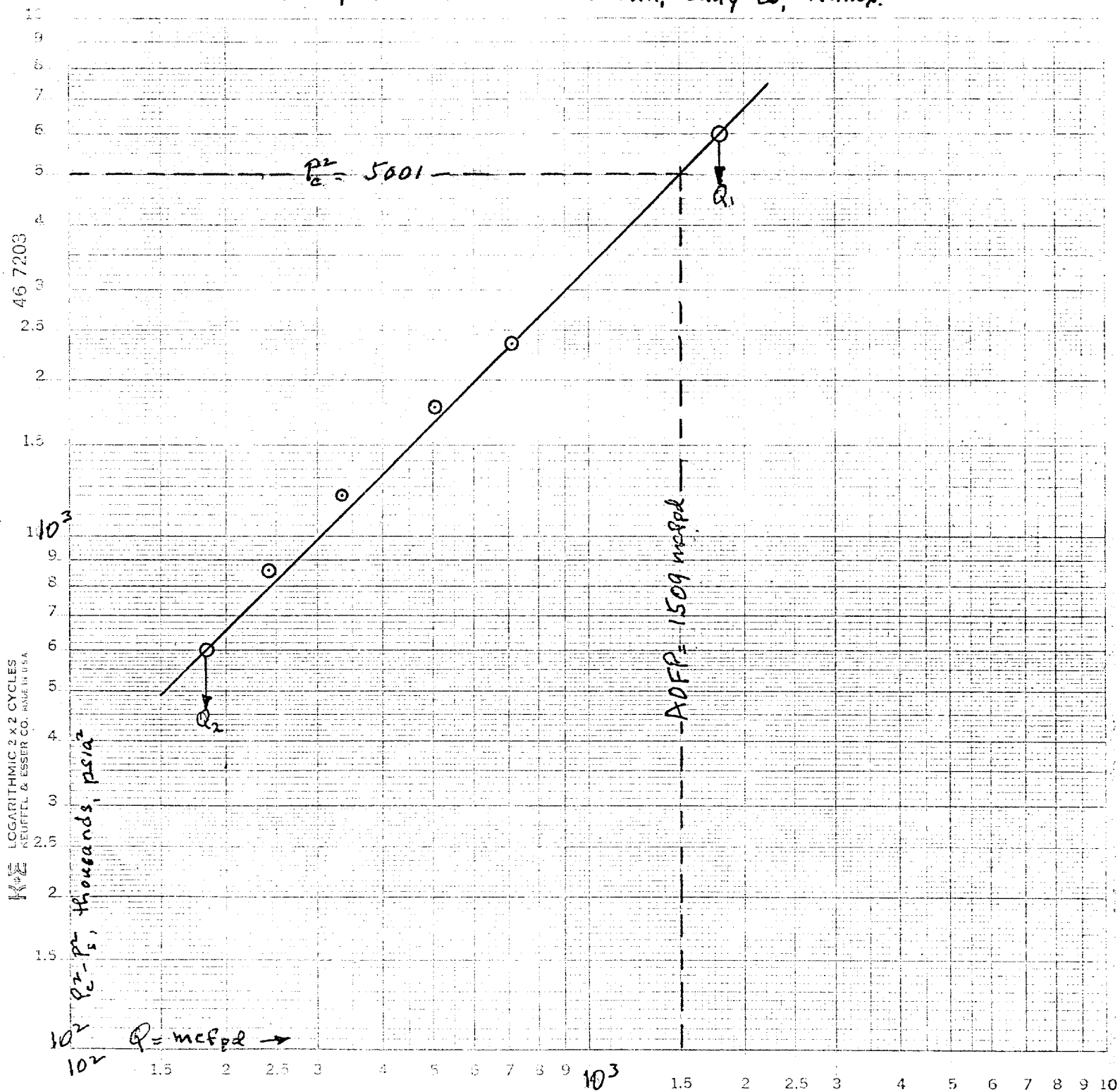
NO.	P _t	Temp. *R	T _r	Z	Gas Liquid Hydrocarbon Ratio	Super Compress. Factor F _{pv}	Rate of Flow Q, Mcfd
1.	0.433	535	1.419	.945	367.1	1.029	243
2.	0.433	535	1.419	.945	56.2	1.029	335
3.	0.433	535	1.419	.945	.670	1.029	505
4.	0.434	535	1.419	.945	.670	1.029	710

NO.	P _t	P _w	P _w ²	P _c ² - P _w ²	(1) $\frac{P_c^2}{P_c^2 - P_w^2} =$	(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n =$
1.			4142	859	2.1254	2.1254
2.			3800	1201		
3.			3223	1778		
4.			2648	2353		

Absolute Open Flow 1509 Mcfd @ 15.025				Angle of Slope 45 deg		Slope, n 1.000	
Remarks: Static pressures by Bennett Wireline; flowing pressures by DWT.							
Calculations sheet form C122D attached							
Approved By Commission:		Conducted By: Don Weaver		Calculated By: Eddie Mahfood		Checked By:	

YPC - Cities 3G State Com #1

P-13-18s-24E, Penasco Draw Perm Penn, Eddy Co, N.Mex.



$$Q_1 = 1800 \text{ mcfpd}$$

$$\log Q_1 = 3.2553$$

$$Q_2 = 180 \text{ mcfpd}$$

$$\log Q_2 = 2.2553$$

$$\eta = 1.0000$$

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w)

C-122D
Adapted 9-1-65

COMPANY YPC LEASE Cities JC State Perm WELL NO. 1 DATE 5-16-80

LOCATION: Unit P Section 13 Township 13S Range 24E

L 6555 H 6555 L/H 1000 G 0.6815 % CO₂ 1.64 % N₂ 1.07 % H₂S N/A

d 2.003 F_r 0.016085 GH 4488 P_{Cr} 674.5 T_{Cr} 22

TABLE IX & X

LINE	SI	1	2	3	4				
1 Q _m		0.243	0.335	0.505	0.710				
2 T _w (W.H. °R)	509	522	526	529	531				
3 T _s (B.H. °R)	583	583	582	582	581				
4 T = ($\frac{1}{w} + 1$)s	546	552.5	554	555.5	556				
5 Z (Est.)	7235	1746	1754	17675	17825				
6 TZ	395.03	412.165	417.72	426.35	435.07				
7 GH/TZ	11.360	10.889	10.744	10.527	10.3156				
8 e ^s (Table XIV)	1.5311	1.5043	1.4962	1.4840	1.4723				
9 1-e ^s (Table XIV)		0.3352	0.3316	0.3262	0.3208				
10 P _t	1807.2	1659.2	1593.2	1472.2	1338.2				
11 P _t ² /1000	3266.0	2752.9	2538.3	2167.4	1790.8				
12 F _r (Table XIV)	0.40833	0.40833	0.40291	0.39475	0.38683				
13 F _c = F _r TZ		6.630	6.719	6.853	6.998				
14 F _c Q _m		1.611	2.251	3.461	4.969				
15 L/H (F _c Q _m) ²		2.595	5.066	11.978	24.69				
16 F _w = L/H (F _c Q _m) ² (1-e ^s)		0.9	1.7	3.9	7.9				
17 P _w ² = P _t ² + F _w		2753.8	2540.0	2171.3	1798.7				
18 P _s ² = e ^s P _w ²	5000.6	4142.5	3800.3	3222.2	2648.2				
19 P _s	2236.2	2035.3	1949.4	1795.1	1627.3				
20 P = ($\frac{P_t + P_s}{2}$)	2071.7	1847.3	1771.3	1633.6	1482.8				
21 P _r = (P/P _{Cr})	2.997	2.739	2.626	2.422	2.198				
22 T _r = (T/T _{Cr})	1.4219	1.439	1.443	1.447	1.448				
23 Z (Table XI)	0.7235	0.746	0.754	0.7625	0.7825				