NEW MEXICO OIL CONSERVATION COMMSSION

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

C-SF

RECEIVED
JUL 2 1980
O. C. D.
ARTESIA, OFFICE

Type Test: ☒ Initial ☐ Annual ☐ Special			Test Date: 6/3/80	
Company: Yates Petroleum Corporation		Connection: Transwestern Pipeline Co.		Unit
Pool: Eagle Creek Strawn		Formation: Strawn		
Completion Date: 5/22/80	Total Depth: 8340 KB	Plug Back TD: 7792 KB	Elevation: 3624 KB	Farm or Lease Name: Federal CR
Csg. Size: 7" / Wt.: 26# / d: 6.276 / Set At: 8340 KB		Perforations: From 7643 To 7758		Well No.: 1
Tbg. Size: 2-3/8" / Wt.: 4.7 / d: 1.995 / Set At: 7608 KB		Perforations: From To		Unit: M / Sec.: 29 / Twp.: 17S / Rge.: 25E
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Single		Packer Set At: 7598 KB		County: Eddy
Producing Thru: Tubing	Reservoir Temp. °F: 134 @ 7700	Mean Annual Temp. °F: 62	Baro. Press. – P_a: 13.2	State: N. Mex.

L	H	Gg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
7700	7700	0.651	0.31	1.20	Nil	-	2"	Flange

NO.	FLOW DATA: Prover Line Size X Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	TUBING DATA: Press. p.s.i.g.	Temp. °F	CASING DATA: Press. p.s.i.g.	Temp. °F	Duration of Flow
SI					2004	60			5 days
1.	2.067 x 0.750	305	7	70	1795	73			1 hr
2.	2.067 x 0.750	304	12	70	1648	75			1 hr
3.	2.067 x 0.750	303	21	70	1376	77			1 hr
4.	2.067 x 0.750	303	38	70	645	78			1 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, Mcfd
1	2.709	47.20	318.2	.9905	1.256	1.0287	164
2.	2.709	61.70	317.2	.9905	1.256	1.0285	214
3.	2.709	81.49	316.2	.9905	1.256	1.0284	282
4.	2.709	109.62	316.2	.9905	1.256	1.0283	380
5.							

NO.	P_t	Temp. °R	T	Z
1.	.475	530	1.450	.9450
2.	.473	530	1.450	.9453
3.	.472	530	1.450	.9456
4.	.471	530	1.450	.9458
5.				

Gas Liquid Hydrocarbon Ratio 183.33 Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons 52.1 Deg.
Specific Gravity Separator Gas 0.634 XXXXXXXXX
Specific Gravity Flowing Fluid XXXXX 0.651
Critical Pressure 670.5 P.S.I.A. 688.5 P.S.I.A.
Critical Temperature 365.5 R 378 R

P_c 2523 P_c^2 6365

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1			5037	1328
2			4226	2129
3			2919	3446
4			632	5733
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.1102$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.0646$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 405$

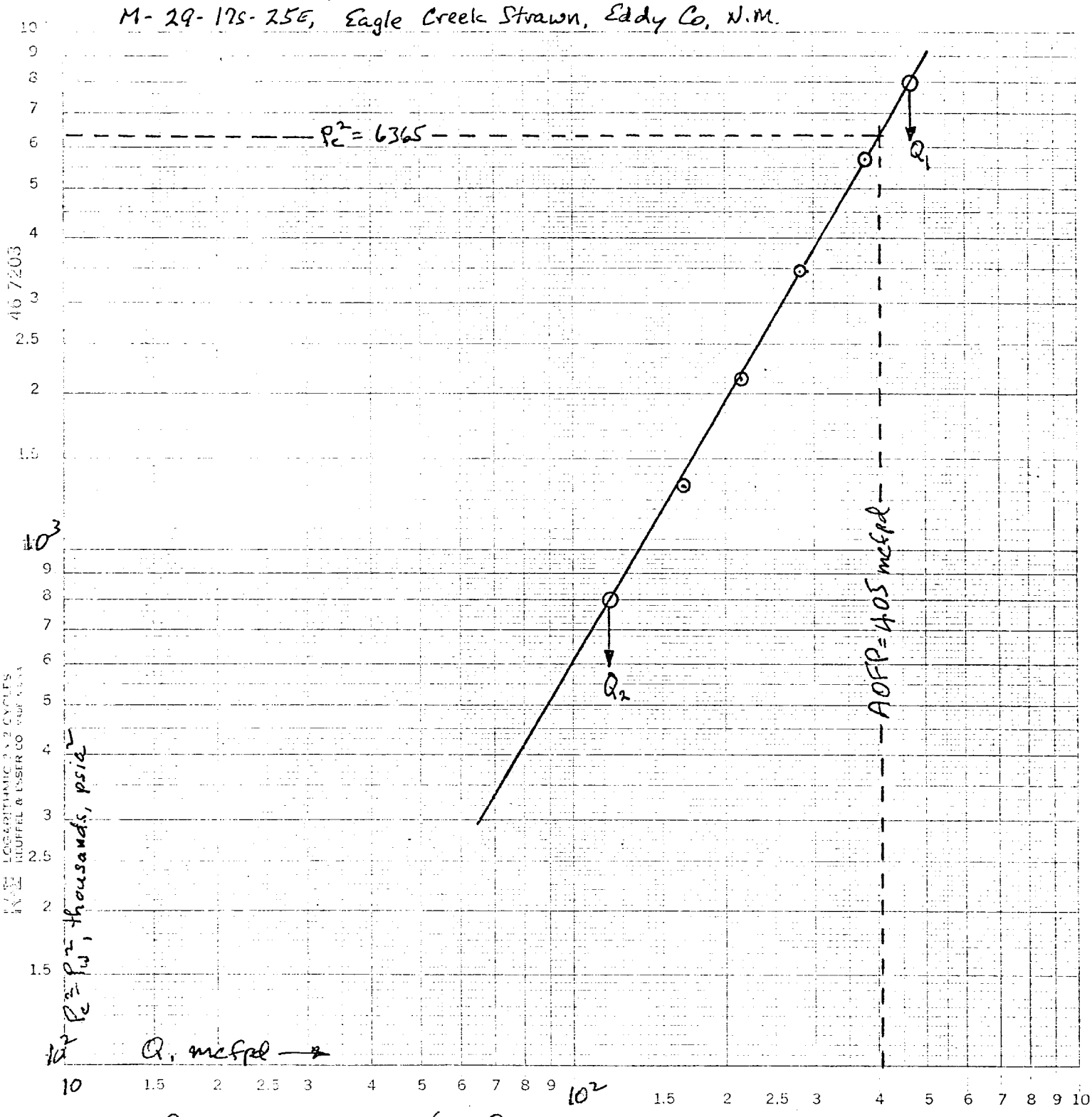
Absolute Open Flow 405 Mcfd @ 15.025 Angle of Slope θ 59.1 deg Slope, n 0.5984

Remarks: Static pressures by Bennett Wireline, flowing pressures by DWT.
Calculations work sheet C122D attached.

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

YPC- Federal CR #1

M- 29- 17S- 25E, Eagle Creek Strawn, Eddy Co, N.M.



Q_1 = 468 mcfpd log Q_1 = 2.6703

Q_2 = 118 mcfpd log Q_2 = 2.0719

n = 0.5984

C-122D
Adopted 9-1-65

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w)

COMPANY YPC LEASE Federal CR WELL NO. 1 DATE 6-3-80

LOCATION: Unit M Section 29 Township 17S Range 25E

L 7700 H 7700 L/H 1.000 G 0.651 % CO_2 0.31 % N_2 1.20 % H_2S Nil

2 3/8 · 7700 · 3.98 = 30256
7" 98(31.38) = 3859
[illegible] 4.43 [illegible]

d 2.1049 F_r 0.014508 GH 5013 0.58% [illegible] P_{cr} 688.5 (TABLE IX & X) T_{cr} 378.2 (TABLE IX & X)

LINE	51	1	2	3	4					
1 Q_m	—	0.1641	0.2141	[illegible]	[illegible]					
2 T_w (W.H. °R)	520	533	535	537	538					
3 T_s (B.H. °R)	594	594	594	593	593					
4 $T = (\frac{T_w + T_s}{2})$	557	563.5	564.5	565	565.5					
5 Z (Est.)	.7545	0.772	.782	.805	.895					
6 TZ	420.25	435.02	441.44	454.83	506.123					
7 GH/TZ	11.929	11.524	11.356	11.022	9.9047					
8 e^s (Table XIV)	1.5642	1.5405	1.5309	1.5118	1.4498					
9 $1-e^{-s}$ (Table XIV)		0.3509	0.3468	0.3385	0.3103					
10 P_t	2017.2	1808.2	1661.2	1389.2	658.7					
11 $P_t^2/1000$	4069.1	3269.59	2759.6	1929.9	433.2					
12 ~~F_r (Table XV)~~ = .103/5 [illegible]	0.44734	0.43213	0.42585	0.41332	0.37143					
13 $F_c = F_r TZ$		6.3113	6.4044	6.599	7.343					
14 $F_c Q_m$		1.035	1.3705	1.861	2.790					
15 $L/H (F_c Q_m)^2$		1.071	1.878	3.463	7.786					
16 $F_w = L/H(F_c Q_m)^2(1-e^{-s})$		0.38	0.65	1.2	2.4					
17 $P_w^2 = P_t^2 + F_w$		3269.97	2760.25	1931.1	435.6					
18 $P_s^2 = e^s P_w^2$	6365	5037.4	4225.7	2919.4	631.53					
19 P_s	2523	2244.4	2055.6	1708.6	794.7					
20 $P = (\frac{P_t + P_s}{2})$	2270.1	2026.3	1858.4	1548.9	726.4					
21 $P_r = (P/P_{cr})$	3.297	2.943	2.699	2.250	1.055					
22 $T_r = (T/T_{cr})$	1.4727	1.490	1.4925	1.494	1.495					
23 Z (Table XI)	.7545	0.772	0.782	0.805	0.895					