NEW MEXICO OIL CONSERVATION COMMSSION

MULTIPOINT , ONE POINT BACK PRESSURE TES OR GAS WELL

Feb 122 gates

Form C-122
Revised 9-1-65

RECEIVED

SEP 25 1979

O. C. C.
ARTESIA, OFFICE

Type Test: [X] Initial [ ] Annual [ ] Special				Test Date: 7-10-79			
Company: Yates Petroleum Corp.			Connection: Transwestern Pipeline Company				
Pool: E. Eagle Creek Atoka Morrow			Formation: Morrow			Unit:	
Completion Date: 2-15-79	Total Depth: 8942' KB		Plug Back TD: 8928' KB		Elevation: 3436' KB	Farm or Lease Name: Patterson "EL"	
Csg. Size: 5-1/2"	Wt.: 17#	d: 4.892	Set At: 8931' KB	Perforations: From 8467 To 8491'		Well No.: 2	
Tbg. Size: 2-7/8"	Wt.: 6.5#	d: 2.441	Set At: 8434' KB	Perforations: From To		Unit: N	Sec.: 31	Twp.: 17S	Rge.: 26E
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Single			Packer Set At: 8434' KB			County: Eddy	
Producing Thru: Tubing	Reservoir Temp. °F: 142 @ 8482		Mean Annual Temp. °F: 62	Baro. Press. – P_a: 13.2		State: New Mexico	
L: 8475	H: 8475	Gg: .660	% CO_2: 1.31	% N_2: 0.43	% H_2S: Nil	Prover:	Meter Run: 2"	Taps: Flange

	FLOW DATA				TUBING DATA		CASING DATA		
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	Duration of Flow
SI						2765	78			Days
1.	2.067	x 1.250	198	14	90	2730	80			1 hour
2.			198	27	90	2699	83			1 hour
3.			199	52	90	2628	86			1 hour
4.			200	92	90	2517	90			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 Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	8.120	54.38	211.2	.9723	1.258	1.0180	550
2.	8.120	75.51	211.2	.9723	1.258	1.0180	763
3.	8.120	105.04	212.2	.9723	1.258	1.0181	1062
4.	8.120	140.05	213.2	.9723	1.258	1.0182	1416
5.							

NO.	P_t	Temp. °R	T_r	Z
1.	0.313	550	1.465	.9649
2.	0.313	550	1.465	.9649
3.	0.314	550	1.465	.9648
4.	0.316	550	1.465	.9646
5.				

Gas Liquid Hydrocarbon Ratio 85.70 Mcf/bbl.

A.P.I. Gravity of Liquid Hydrocarbons 56.8 Deg.

Specific Gravity Separator Gas 0.632 xxxxxxxxx

Specific Gravity Flowing Fluid xxxxx .666

Critical Pressure 675 P.S.I.A. 825 P.S.I.A.

Critical Temperature 375.5 R 396.5 R

P_c 3563.2 P_c^2 12753

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1			12437	316
2			12148	605
3			11532	1221
4			10583	2170
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 5.877$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 2.4247$

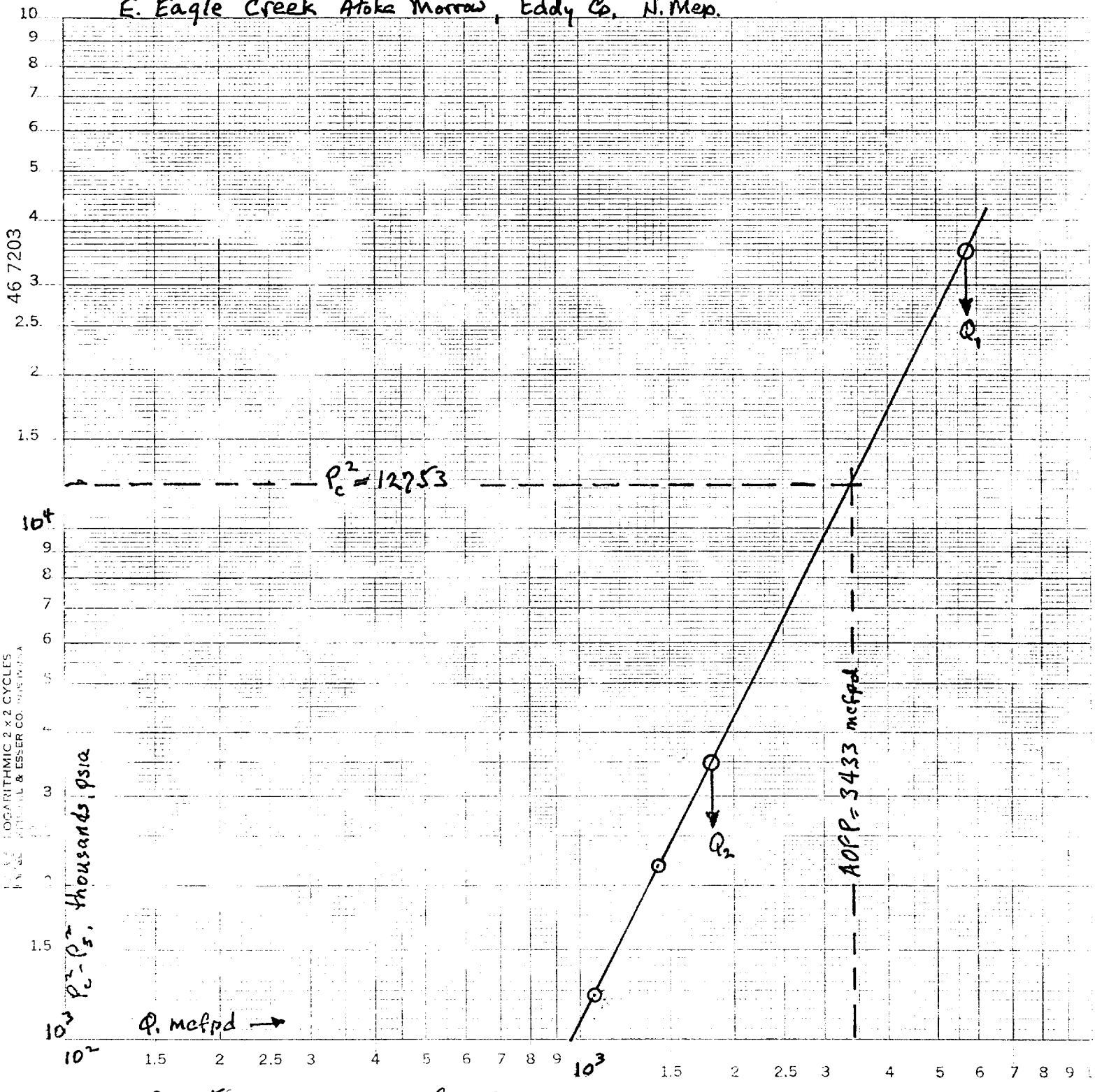
AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 3433$

Absolute Open Flow 3433 Mcfd @ 15.025 Angle of Slope θ 63.4 deg Slope, n .5001

Remarks: Static pressures by Bennett Wireline; flowing pressures by DWT. Calculations worksheet C-122D attached. NOTE: Opened well on too small small orifice plate.

Approved By Commission:	Conducted By:	Calculated By:	Checked By:
	Hal Elless	Eddie Mahfood	

YPC - Patterson EL No.2, N-31-12s-25E
E. Eagle Creek Atoka Morrow, Eddy Co. N. Mex.



$Q_1 = 5710$ mcfpd
$Q_2 = 1805$ mcfpd

$\log Q_1 = 3.7566$
$\log Q_2 = 3.2565$
$n = 0.5001$

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w)

C-122D
Adopted 9-1-65

COMPANY YPC LEASE Patterson EL WELL NO. 2 DATE 7-10-79

LOCATION: Unit N Section 31 Township 17S Range 25E

L 8475 H 8475 L/H 1.000 G .672* % CO_2 1.30 % N_2 0.03 % H_2S Nil H_2O = 0.78

- 8433(5.9585) + 50248
- 42(23.93) - 1005
8475(6.0470) - 51253

d 2.4592 F_r .1009684 GH 5695 P_{cr} 725* TABLE IX & X T_{cr} 398.5* TABLE IX & X

*Mole fraction H_2S = .0158

LINE	S1	1	2	3	4					
1 Q_m	--	0.550	0.763	1.062	1.416					
2 T_w (W.H. °R)	538	540	543	546	550					
3 T_s (B.H. °R)	602	601	601	600	600					
4 $T = (\frac{T_w + T_s}{2})$	570	570.5	572	573	575					
5 Z (Est.)	.7465	.7455	.745	.743	.742					
6 TZ	425.50	425.31	426.14	425.74	426.65					
7 GH/TZ	13.384	13.390	13.364	13.377	13.348					
8 e^s (Table XIV)	1.6519	1.6523	1.6506	1.6514	1.6496					
9 $1-e^{-s}$ (Table XIV)		0.3948	0.3942	0.3945	0.3938					
10 P_t	2778.2	2743.2	2712.2	2641.2	2530.2					
11 $P_t^2/1000$	7718.4	7525.1	7356.0	6975.9	6401.9					
12 F_r (Table XV)	0.50191	0.50214	0.50116	0.50163	0.50056					
13 $F_c = F_r$ TZ		4.1187	4.1267	4.1229	4.1317					
14 $F_c Q_m$		2.265	3.149	4.230	5.850					
15 $L/H (F_c Q_m)^2$		5.13	9.914	17.893	34.23					
16 $F_w = L/H(F_c Q_m)^2(1-e^{-s})$		2.0	3.9	7.0	13.5					
17 $P_w^2 = P_t^2 + F_w$		7527.1	7359.9	6982.9	6415.4					
18 $P_s^2 = e^s P_w^2$	12753	12437	12148	11532	10583					
19 P_s	3571.2	3526.6	3485.4	3395.8	3253.1					
20 $P = (\frac{P_t + P_s}{2})$	3174.7	3134.9	3098.8	3018.5	2891.7					
21 $P_r = (P/P_{cr})$	4.377	4.324	4.274	4.163	3.989					
22 $T_r = (T/T_{cr})$	1.4304	1.432	1.435	1.438	1.443					
23 Z (Table XI)	.7465	0.7455	0.745	0.743	0.742					