

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 4-17-81		JUN 18 1981	
Company Yates Petroleum Corporation /			Connection Transwestern Pipeline Co.		
Pool Boyd Morrow			Formation Lower Morrow		Unit ARTESIA, GRACE
Completion Date 12-15-80		Total Depth 9300 KB		Plug Back TD 9208 KB	Elevation 3615 KB
Casing Size 5 1/2		Wt. 17#	d 4.892"	Set At 9299' KB	Perforations: From 8816 To 8820 KB
Tubing Size 2 3/8		Wt. 4.7#	d 1.995"	Set At 8734' KB	Perforations: From To
Type Well - Single - Dradhead - G.G. or G.O. Multiple 9.9 Multiple				Packer Set At 8734 KB	Form or Lease Name Davis NC
Producing Thru Tubing		Reservoir Temp. °F 147 @ 8818 KB		Mean Annual Temp. °F 62	Baro. Press. - P _a 13.2
L 8812		H 8812	C _g 0.582	% CO ₂ 0.76	% N ₂ 0.42
				% H ₂ S Nil	Prover ----
					Meter Run 2"
					Taps Flanged

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
51							2822	63			Days
1.	2.016 X 1.000			530	6.5	100	2650	72			22 Hrs.
2.	2.016 X 1.000			535	16	78	2460	75			24 Hrs.
3.	2.016 X 1.000			540	28	78	2218	77			24 Hrs.
4.	2.016 X 1.000			550	52	78	1753	78			24 Hrs.
5.											

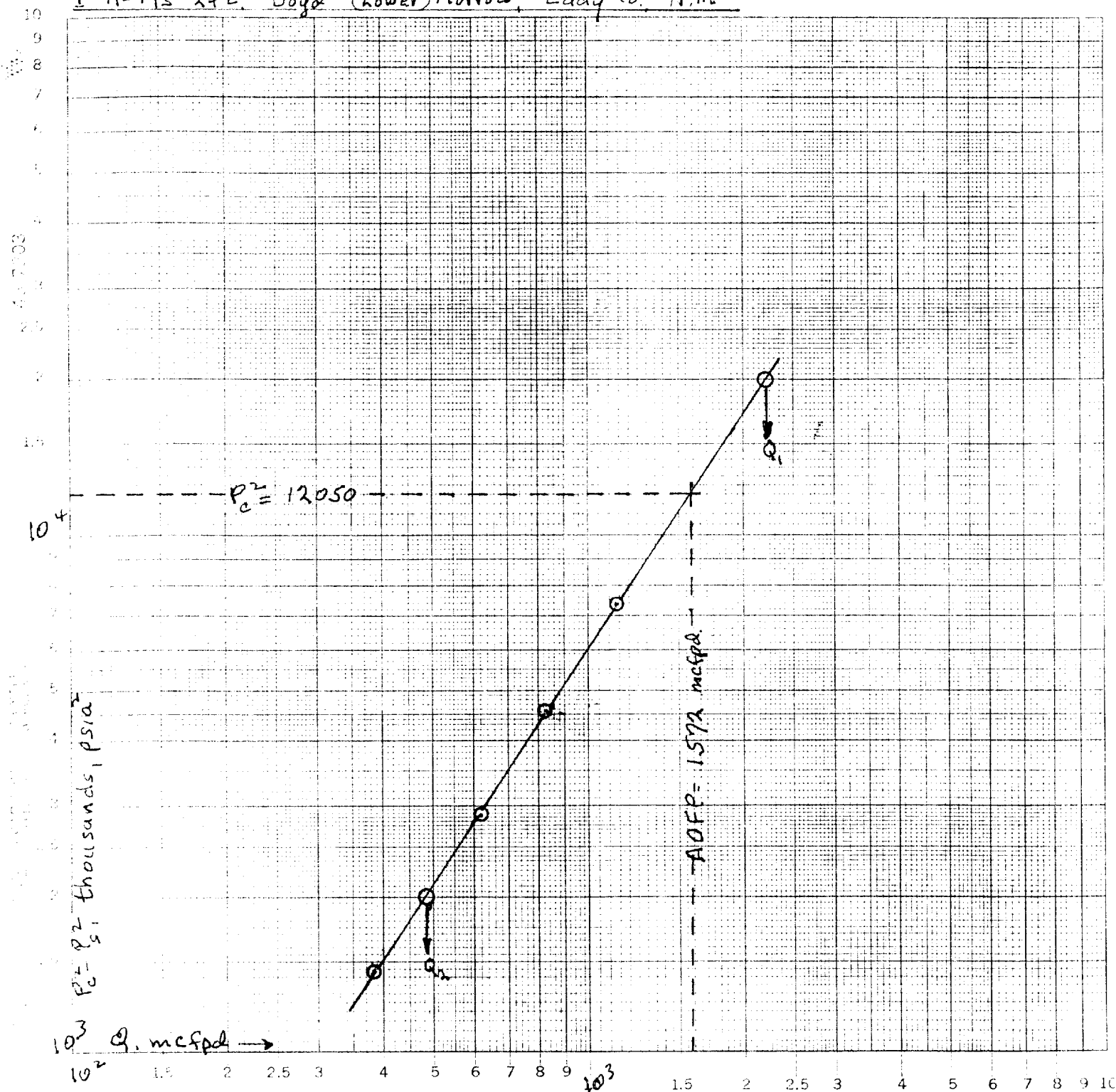
RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor F _t	Gravity Factor F _g	Super. Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1	4.946	59.42	543.2	.9636	1.311	1.0324	383
2	4.946	93.65	548.2	.9831	1.311	1.0389	620
3	4.946	124.46	553.2	.9831	1.311	1.0393	824
4	4.946	171.13	563.2	.9831	1.311	1.0396	1134
5							

NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	A.P.I. Gravity of Liquid Hydrocarbons	Specific Gravity Separator Gas	Specific Gravity Flowing Fluid	Critical Pressure	Critical Temperature
1	0.805	560	1.605'	.9382			0.582	XXXXXX	67.5	349
2	0.812	538	1.542	.9266						
3	0.819	538	1.542	.9258						
4	0.834	538	1.542	.9252						
5										

P _r 3471.2	P _w 12050	(1) $\frac{P_c^2}{P_r^2 - P_w^2} = 1.6363$	(2) $\left[\frac{P_c^2}{P_r^2 - P_w^2} \right]^n = 1.3860$
1			
2			
3			
4			
5			

YPC - Davis NE No. 1

I-11-19S-24E. Boyd (lower) Morrow, Eddy Co. N.M.



$$Q_1 = 2213 \text{ mcfpd}, \log Q_1 = 3.3450$$

$$Q_2 = 481 \text{ mcfpd}, \log Q_2 = 2.6822$$

$$n = 0.6628$$

WORKSHEET FOR CALCULATION OF SIC COLUMN WELLHEAD PRESSURE (P_w)

C-122D
Adopted 9-1-65

COMPANY W.P.A. LEASE W.P.A. WELL NO. 133 DATE 11-1-57

LOCATION: Unit 1 Section 1 Township 133 Range 34

L 2222 H 2222 L/H 0.620 G 0.620 % CO₂ 0.76 % N₂ 3.43 % H₂S 1.9

d 2.0388 F_r 0.015263 GH 5128.6 P_{cr} 675 T_{cr} 349

53.2 (4.186) 306272

LINE	1	2	3	4					
1 Q _m		0.383	0.620	0.824	1.134				
2 T _w (W.H. °R)	523	532	535	537	538				
3 T _s (B.H. °R)	607	607	606	606	605				
4 T = (T _w + T _s) / 2	565	569.5	570.5	571.5	571.5				
5 Z (Est.)	0.8405	0.8375	0.833	0.831	0.843				
6 T _c	474.883	476.456	475.827	474.917	481.775				
7 Q _{H/TZ}	10.7997	10.7523	10.7919	10.7990	10.6452				
8 e ^s (Table XIV)	1.0992	1.0966	1.0989	1.0992	1.0966				
9 1 - e ^s (Table XIV)		0.3318	0.3328	0.3330	0.3291				
10 P _r	28352	26432	24732	22312	17662				
11 P _r / 1000	3038.4	2642.63	6116.7	4978.3	3169.5				
12 F _r (Table XV) $\frac{P_r}{T_c}$	0.40499	0.60323	0.40490	0.40496	0.39920				
13 F _c = F _r T _c		7.5183	7.491	7.486	7.5442				
14 F _c Q _m		2.8745	4.604	6.169	8.612				
15 L/H (F _c Q _m) ²		8.291	21.50	38.05	74.16				
16 F _w = L/H (F _c Q _m) ² (1 - e ^{-s})		2.75	7.12	12.7	24.4				
17 P _w ² = P _r ² + F _w		7095.38	6123.9	4991.0	3143.9				
18 P _s ² = e ^s P _w ²	12050	10619.0	9179.1	7482.5	4686.3				
19 P _s	3471.2	3258.7	3029.7	2735.4	2164.8				
20 P = (P _r + P _s) / 2	3153.2	2960.9	2751.4	2483.3	1965.5				
21 P _r = (P/P _{cr})	4.671	4.387	4.076	3.679	2.911				
22 T _r = (T/T _{cr})	1.619	1.632	1.635	1.6375	1.638				
23 Z (Table XI)	0.8405	0.8375	0.833	0.831	0.843				