

NEW MEXICO OIL CONSERVATION COMMISSION
MULTIPOINT NO ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
Revised 9-1-65

C/SF

RECEIVED

Type Test ☒ Initial ☐ Annual ☐ Special		Test Date 6-16-81		AUG 17 1981	
Company Yates Petroleum Corporation		Connection Transwestern Pipeline Co.			
Pool Unders. Pool <u>Pecos Slope</u> <u>Abo Gas</u>		Formation Abo		Unit ARTESIA, OFFICE L-6274	
Completion Date 3-31-81		Total Depth 4500' KB		Plug Back TD 4481 KB	
Elevation 3801.5 KB		Form or Lease Name Dee State Co		Well No. #1	
Casing Size 4 1/2	Wt. 9.5#	d 4090	Set At 4497	Perforations: From 3834 KB To 3967 KB	
Tub. Size 2 3/8	Wt. 4.7#	d 1.995	Set At 3900	Perforations: From To	
Type Well - Single - Draddenhead - G.C. or G.O. Multiple Single				Packer Set At 3809	
Producing Thru Tubing		Reservoir Temp. °F 104 @ 3840		Mean Annual Temp. °F 62	
Baro. Press. - P _a 13.2		State New Mexico		County Chaves	
L 3840	H 3840	C _g .671	% CO ₂ 2.3	% N ₂ 5.3	% H ₂ S 0
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							1010		Packer		72 hrs
1.	2.016 x 1.125			620	22	60	975	72			24
2.	2.016 x 1.125			680	47	60	929	72			24
3.	2.016 x 1.125			690	65	60	895	70			24
4.	2.016 x 1.125			865	86	63	840	70			24
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	6.393	118.03	633.2	1.000	1.221	1.062	978
2	6.393	180.50	693.2	1.000	1.221	1.068	1505
3	6.393	213.79	703.2	1.000	1.221	1.069	1784
4	6.393	272.75	878.2	.9971	1.221	1.085	2303
5							

NO.	P _i	Temp. °R	T _i	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	.946	520	1.42	.887	749	67.5	.671	XXXXXXX	669	365
2	1.04	520	1.42	.876						
3	1.05	520	1.42	.875						
4	1.31	530	1.43	.850						
5										

P _i 1023.2 P _e 1047			
NO.	P _i ²	P _w ²	P _e ² - P _w ²
1	976.5		989.6
2	888.7		919.7
3	824.8		868.6
4	728.0		801.6
5			

$$(1) \frac{P_e^2}{P_e^2 - P_w^2} = 18.240$$

$$AOF = Q \left[\frac{P_e^2}{P_e^2 - P_w^2} \right]^n = 5445$$

$$(2) \left[\frac{P_e^2}{P_e^2 - P_w^2} \right]^n = 5.568$$

Absolute Open Flow	5,445	Mcf/d @ 15.025	Angle of Slope θ	Slope, n
Remarks:	Static Pressures by Bennett Wireline, flowing pressures DW			

Approved by Commission:	Conducted By: David Weaver	Calculated By: Al Springer	Checked By:
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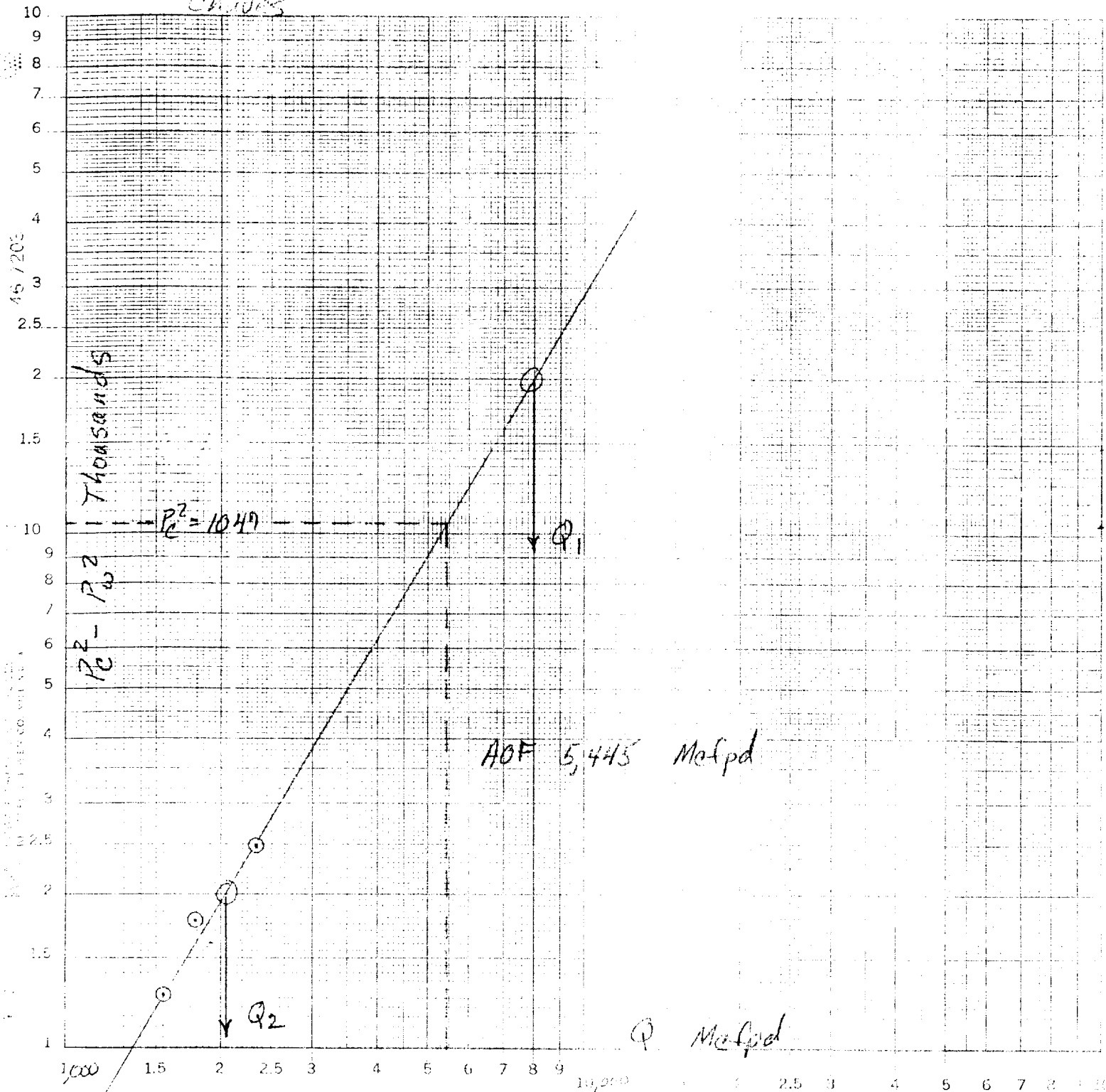
Yates Petroleum Corp.

Dec State "OQ" #1

M 32-55-20 E

CHANGES

6/16/81



$$(P_c^2 - P_w^2)_1 = 2000$$

$$(P_c^2 - P_w^2)_2 = 200$$

$$Q_1 = 8000 \text{ mcf/d}$$

$$Q_2 = 2050 \text{ mcf/d}$$

$$\log Q_1 = 3.90309$$

$$\log Q_2 = 3.31175$$

$$n = .59134 = .591$$

COMPANY Yates Petroleum LEASE Dice 00 WELL NO. #1 DATE 6/10/81

LOCATION: Unit M Section 32 Township 5S Range 25E

L 3840 H 3840 LH 1.000 G .696 % CO₂ 2.3 % N₂ 5.3 % H₂S 0

d 1.955 F_r .018231 GH 2592 P_{cr} 668 T_{cr} 366

LINE	Trial #1	Trial #2	Trial #3	Trial #1	Trial #2	Trial #3	Trial #1	Trial #2	Trial #3	Trial #1	Trial #2	Trial #3
1 Q _m	.978	.978	.978	1.506	1.505	1.505	1.794	1.784	1.784	2.303	2.303	2.303
2 T _w (W.H. °R)	532	532	532	532	532	532	530	530	530	530	530	530
3 T _s (B.H. °R)	554	554	554	554	554	554	554	554	554	554	554	554
4 T = ($\frac{L_w + T_s}{2}$)	543	543	543	547	547	547	547	547	547	547	547	547
5 Z (Est.)	.885	.885	.885	.892	.892	.892	.892	.892	.892	.892	.892	.892
6 T _D	405.0	405.0	405.0	408.5	408.5	408.5	408.5	408.5	408.5	408.5	408.5	408.5
7 GH/TZ	5.5343	5.5343	5.5343	5.5412	5.5412	5.5412	5.5412	5.5412	5.5412	5.5412	5.5412	5.5412
8 e ^s (Table XIV)	1.226	1.226	1.226	1.225	1.225	1.225	1.225	1.225	1.225	1.225	1.225	1.225
9 1-e ^s (Table XIV)	.182	.182	.182	.184	.184	.184	.184	.184	.184	.184	.184	.184
10 P _r	221.0	221.0	221.0	222.2	222.2	222.2	222.2	222.2	222.2	222.2	222.2	222.2
11 P _r 2 1000	996.5	996.5	996.5	996.5	996.5	996.5	996.5	996.5	996.5	996.5	996.5	996.5
12 P _r (Table XIV)	.012	.012	.012	.012	.012	.012	.012	.012	.012	.012	.012	.012
13 P _r = P _r 2	8.8040	8.8040	8.8040	8.8040	8.8040	8.8040	8.8040	8.8040	8.8040	8.8040	8.8040	8.8040
14 F _r Q _m	5.65	5.65	5.65	5.65	5.65	5.65	5.65	5.65	5.65	5.65	5.65	5.65
15 L/H (F _r Q _m) ²	74.8	74.8	74.8	69.5	69.5	69.5	69.5	69.5	69.5	69.5	69.5	69.5
16 F _w = L/H (F _r Q _m) ² (1-e ^s)	12.61	13.05	13.06	31.72	31.72	31.72	164.6	164.6	164.6	234.1	234.1	234.1
17 P _r 2 = P _r 2 + F _w	990.1	990.1	990.1	990.1	990.1	990.1	990.1	990.1	990.1	990.1	990.1	990.1
18 F _s 2 = e ^s P _w 2	12.04	12.04	12.04	12.04	12.04	12.04	12.04	12.04	12.04	12.04	12.04	12.04
19 F _s	1100.0	1100.0	1100.0	1100.0	1100.0	1100.0	1100.0	1100.0	1100.0	1100.0	1100.0	1100.0
20 P _r = (P _r + F _s)	1044.1	1044.1	1044.1	1044.1	1044.1	1044.1	1044.1	1044.1	1044.1	1044.1	1044.1	1044.1
21 P _r = (P _r / P _{cr})	1.56	1.57	1.57	1.50	1.50	1.50	1.45	1.45	1.45	1.38	1.38	1.38
22 T _r = (T/T _{cr})	1.50	1.50	1.50	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
23 Z (Table XI)	.854	.853	.853	.855	.855	.855	.860	.860	.860	.866	.866	.866