

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

JUN 9 1982

Type Test ☒ Initial ☐ Annual ☐ Special		Test Date 4-20-82		O. C. D.	
Company Yates Petroleum Corporation		Connection Transwestern Pipeline		ARTESIA, OFFICE	
Pool Pecos Slope		Formation Abo		Unit	
Completion Date 2-3-82		Total Depth 4375		Plug Back TD 4317	
Elevation 3647.8		Form or Lease Name Rook "RK" St.		Well No. 1	
Coq. Size 4 1/2	Wt. 9.5	d 4.090	Set At 4375	Perforations: From 3678 To 3985	Unit Soc. Twp. Rge. H 16 8S 25E
Ting. Size 2 3/8	Wt. 4.7	d 1.995	Set At 3892	Perforations: From To	
Type Well - Single - Bradenhead - G.C. or G.O. Multiple Single				Packer Set At -----	
Producing Thru Tubing		Reservoir Temp. °F 94 3314		Mean Annual Temp. °F 62°	
Baro. Press. -- P ₀ 13.2		County Chaves		State New Mexico	
L 3892	H 3892	Gq .680	% CO ₂ 1.87	% N ₂ 10.82	% H ₂ S -----
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	
SI							980				
1.	2.067	X	.875	180	1.0	75	873	62			24 hrs
2.	2.067	X	.875	185	2.3	68	843	62			24 hrs
3.	2.067	X	.875	185	4.1	68	702	62			24 hrs
4.	2.067	X	.875	210	7	65	210	62			24 hrs
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, F _{pv}	Rate of Flow Q, Mcd
1	3.729	13.7	193.2	.9859	1.213	1.015	62
2	3.729	21.3	198.2	.9924	1.213	1.016	97
3	3.729	28.5	198.2	.9924	1.213	1.016	130
4	3.729	39.5	223.2	.9952	1.213	1.019	181
5							

NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio Dry	Mcf/bbl.
1	.29	535	1.52	.971	A.P.I. Gravity of Liquid Hydrocarbons -----	Deq.
2	.30	528	1.50	.969	Specific Gravity Separator Gas .680	X X X X X X X X
3	.30	528	1.50	.969	Specific Gravity Flowing Fluid X X X X X	
4	.34	525	1.49	.964	Critical Pressure 661 P.S.I.A.	661 P.S.I.A.
5					Critical Temperature 352 R	352 R

NO.	P _c	P _w	P _c ²	P _w ²	P _c ² - P _w ²
1	785.9		791.5	195.0	
2	732.9		746.5	240.0	
3	511.9		536.5	450.0	
4	49.8		100.5	886.0	
5					

$$(1) \frac{P_c^2}{P_c^2 - P_w^2} = 1.113 \quad (2) \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.071$$

$$AOIF = Q \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 194 \text{ mcfpd}$$

Absolute Open Flow 194 mcfpd Mcd @ 15.025 Angle of Slope 6 Slope, n .635

Remarks:

Approved By Division Conducted By: David Weaver Calculated By: Al Springer Checked By:

COMPANY

Yates Petroleum Corp

LEASE

Book

WELL NO.

#3

DATE

6-2-82

LOCATION: Unit

H

Section

16

Township

85

Range

25E

L 3892

H 3892

LNH 1.0000

C. 680

% CO₂ 1.47% N₂ 10.02% H₂S

d 1.205

F₁ 0.01823

CH 2647

Pcf 661

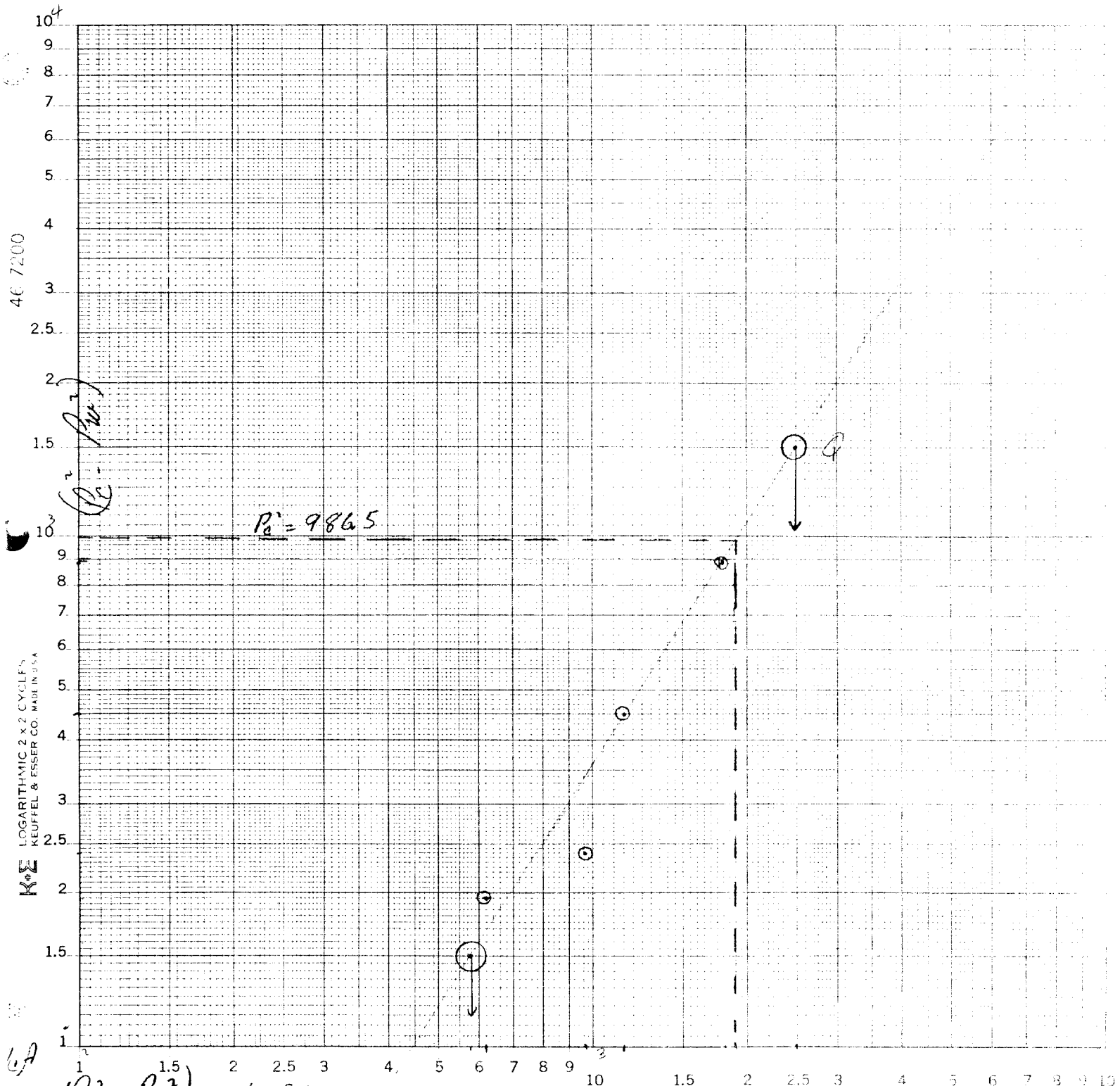
TCF

352°

TABLE IX & X

LINE	1 st Rate	2 nd Rate	3 rd Rate	4 th Rate		
1 Q _m	.62	.97	1.30	1.41		
2 T _w (W.H. °R)	535°	524°	528	525°		
3 T _s (B.H. °R)	554°	554°	554	554°		
4 T = $(\frac{1}{2} T_w + T_s)$	544.5	544.5	541.0	539.50		
5 Z (Est.)	.881	.881	.901	.901		
6 T _z	479.70	479.70	479.70	479.70		
7 CH/TZ	5.518	5.550	5.430	5.410		
8 e ^s (Table XIV)	1.230	1.230	1.226	1.211		
9 1-e ^s (Table XIV)	.187	.187	.184	.174		
10 P _z	886.2	886.2	715.2	223.2		
11 P _z / 1000	785.4	785.4	511.9	44.8		
12 F ₁ (Table XV)	.01823	.01823	.01823	.01823		
13 F _z = F ₁ T _z	8.745	8.649	4.086	9.432		
32 4 F _z C _m	5.422	4.419	11.500	10.000		
35 15 L/H (F _z C _m) ²	29.397	20.412	133.45	241.441		
37 16 F _z L/H (F _z C _m) ² (1-e ^s)	5.497	13.324	24.554	50.711		
40 17 P _w ² = P _z ² + F _w	791.5	740.5	536.5	100.5		
42 18 F _s ² = e ^s P _w ²	973.4	919.3	657.7	121.7		
45 19 F _s	986.6	958.1	811.0	349.9		
49 20 P = $(\frac{P_z}{2} + \frac{P_s}{2})$	936.5	909.4	763.3	296.1		
21 P ₁ = (P/P _z)	1.42	1.37	1.15	.43		
22 T ₁ = (T/T _z)	1.55	1.54	1.54	1.53		
23 Z (Table XI)	.881	.881	.901	.959		

MOOK MA 51 51
 H-16-88-25E
 Pecos Slope Abo
 Yates Petr. Corp.
 Chavez, New Mexico



$$(P_c^2 - P_w^2)_1 = 1,500$$

$$(P_c^2 - P_w^2)_2 = 150$$

$$Q_1 = 2,500$$

$$Q_2 = 580$$

$$\log Q_1 = 3.39794$$

$$\log Q_2 = 2.76119$$

$$N = .69975$$

$$N = .650$$