

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 2-2-81		MAY 14 1981	
Company Yates Petroleum Corporation /				Connection Transwestern Pipeline Company					
Pool <u>Pecos Slope - Abo Gas</u> <u>Undesignated Abo</u>				Formation Abo				Unit ARTESIA, OFFICE	
Completion Date 10-30-80		Total Depth 4475 KB		Plug Back TD 4194 KB		Elevation 3890 KB		Farm or Lease Name Papalote OI State	
Casing Size 5 1/2"	Wt. 14#	d 5.012	Set At 4195 KB	Perforations: From 4052 To 4062 KB		Well No. 1			
Tubing Size 2 7/8"	Wt. 6.5#	d 2.441"	Set At 4017 KB	Perforations: From To		Unit Sec. Twp. Rge. A 16 7s 25e			
Type Well - Single - Bradenhead - G.G. or G.O. Multiple single						Packer Set At 4017 KB		County Chaves	
Producing Thru Tubing		Reservoir Temp. °F 96 4055		Mean Annual Temp. °F 62		Baro. Press. - P _a 13.2		State New Mexico	
L 4055	H 4055	G _g 0.655	% CO ₂ 1.88	% N ₂ 5.01	% H ₂ S N.7	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							1003	32			WEEKS
1.	2.067	X	1.125	430	6	69	859	66			24 hrs.
2.	2.067	X	1.125	400	10	45	787	68			24
3.	2.067	X	1.125	400	18	63	653	69			24
4.	2.067	X	1.125	400	30	63	419	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, Mscf/d
1	6.393	51.57	443.2	0.9915	1.235	1.038	419
2	6.393	64.28	413.2	1.015	1.235	1.042	537
3	6.393	86.24	413.2	0.9971	1.235	1.037	704
4	6.393	111.34	413.2	0.9971	1.235	1.037	909
5							

NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	Mcf/bbl.
1	.663	529	1.469	.9281	A.P.I. Gravity of Liquid Hydrocarbons	---
2	.618	505	1.403	.9217	Specific Gravity Separator Gas	0.656
3	.618	523	1.453	.9297	Specific Gravity Flowing Fluid	XXXXXX
4	.618	523	1.453	.9297	Critical Pressure	668.5 P.S.I.A.
5					Critical Temperature	360 R

P _c 1167.2 P _c ² 1362				
NO.	P _i ²	P _w	R _w ²	P _c ² - R _w ²
1			941	421
2			791	571
3			547	815
4			232	1130
5				

$$(1) \frac{P_c^2}{P_c^2 - R_w^2} = 1.2053$$

$$AOF = Q \left[\frac{R_w^2}{P_c^2 - R_w^2} \right]^n = 1050$$

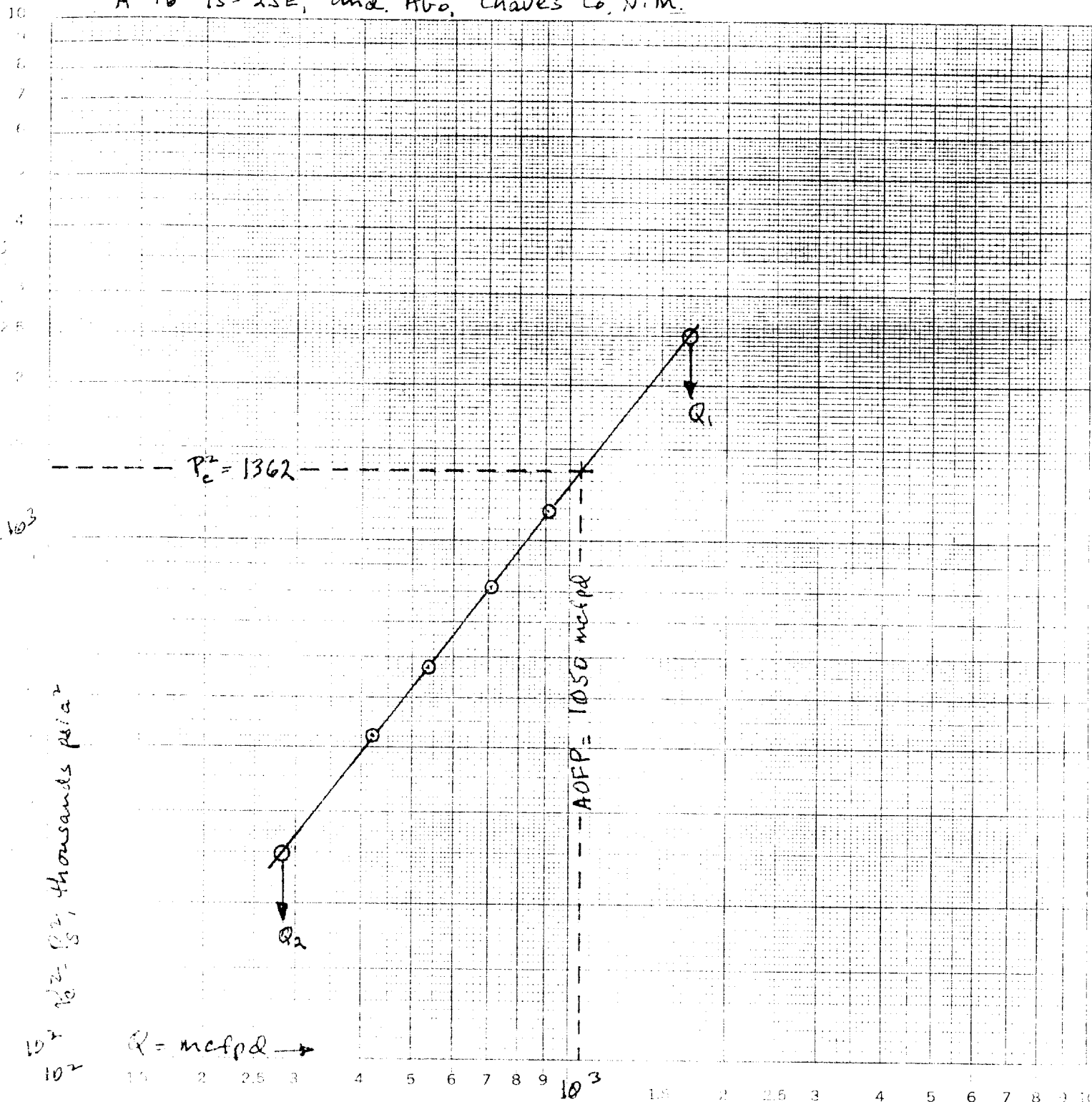
$$(2) \left[\frac{P_c^2}{P_c^2 - R_w^2} \right]^n = 1.156$$

Absolute Open Flow	1050	Mscf @ 15.025	Angle of Slope	52.2 deg.	Slope, n	0.7763
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Remarks: Static pressures by Bennett Wireline flowing pressures by DWT. Calculations worksheet C122D attached.

Approved by Commission:	Conducted By: David Weaver	Calculated By: Eddie Mahfood	Checked By:
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YPC- Papalote Oil State No. 1
A-16-7s-2SE, Und. Abo, Chaves Co, N.M.



$$Q_1 = 1685 \text{ mcfpd} \quad \log Q_1 = 3.2266$$

$$Q_2 = 282 \text{ mcfpd} \quad \log Q_2 = 2.4503$$

$$n = 0.7763$$

WORKSHEET FOR CALCULATION OF SIC COLUMN WELLHEAD PRESSURE (P_w)

C-122D
Adopted 9-1-65

COMPANY AMERICAN OIL FIELD LEASE 100-000-0000 WELL NO. 100 DATE 10-1-65

LOCATION: Unit 4 Section 16 Township 7S Range 4N

1. 4000 H 4000 L/H 1000 G 1656 % CO₂ 1.33 % N₂ 5.01 % H₂ 1.01
 2. 4000 3. 4000 4. 4000 5. 4000 6. 4000 7. 4000 8. 4000 9. 4000 10. 4000
 11. 4000 12. 4000 13. 4000 14. 4000 15. 4000 16. 4000 17. 4000 18. 4000 19. 4000 20. 4000

LINE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1 Q ₀	0.414	0.532	0.701	0.909																				
2 P _w (Table IX)	526	528	529	530																				
3 T ₀ (Table IX)	556	556	556	556																				
4 T = $\frac{(P_w + P_s)}{2}$	541	542	542	542.5																				
5 Z (Table)	0.687	0.745	0.745	0.745																				
6 P ₀	359.99	467.695	473.93	480.927																				
7 G ₀ (Table XIV)	7.3891	5.6875	5.61206	5.462																				
8 e ^s (Table XIV)	1.31928	1.2377	1.2342	1.2273																				
9 1-e ^s (Table XIV)		0.1921	0.1848	0.1852																				
10 P ₁	1016.2	892.2	800.2	666.2																				
11 P ₁ 2 1000	1032.7	760.73	640.3	533.3																				
12 P ₁ (Table XV)	0.27709	0.21382	0.21045	0.20125																				
13 P ₀ = P ₁ T ₀		4.3837	4.4426	4.5645																				
14 P ₀ Q ₀		1.937	2.3857	3.2130																				
15 L/H (F ₀ Q ₀) ²		3.374	5.6915	10.326																				
16 F _w = L/H (F ₀ Q ₀) ² (1-e ^s)		0.65	1.1	1.9																				
17 P _w ² = P ₁ ² + F _w		761.38	641.4	445.7																				
18 P _s ² = e ^s P _w ²		1362.4	791.6	547.0																				
19 P _s		1167.2	889.7	739.6																				
20 P = $\frac{P_1 + P_s}{2}$		1091.7	921.5	782.9																				
21 P _r = (P/P ₀) ^{0.41}		1.185	1.378	1.051																				
22 T _r = (T/T ₀) ^{0.57}		1.159	1.503	1.506																				
23 Z (Table XI)		0.687	0.8705	0.8795																				

ILLEGIBLE