

NEW MEXICO OIL CONSERVATION COMMISSION
MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Form C-122
 Revised 9-1-65

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Type Test ☒ Initial ☐ Annual ☐ Special						Test Date 11/3/80			
Company Yates Petroleum Corporation				Connection Transwestern Pipeline Co.					
Pool Boyd				Formation Morrow				Unit NM 14118-	
Completion Date 6/19/80		Total Depth 9320 KB		Plug Back TD 9230 KB		Elevation 3629 KB		Farm or Lease Name Allison CQ Federal	
Csg. Size 5 1/2"	Wt. 17#	d 4.892	Set At 9320	Perforations: From 8804 To 8960		Well No. 5			
Tbg. Size 2 7/8"	Wt. 6.5#	d 2.441	Set At 8775	Perforations: From To		Unit C Sec. 13 Twp. 19S Rge. 24E			
Type Well - Single - Brdenhead - G.G. or G.O. Multiple Single						Packer Set At 8775 KB		County Eddy	
Producing Thru Tubing		Reservoir Temp. °F 145 8848		Mean Annual Temp. °F 62		Baro. Press. - P _a 13.2		State New Mexico	
L 8848	H 8848	G _g 0.596	% CO ₂ 1.35	% N ₂ 0.32	% 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
1.	2.067 X 0.500			520	13	68	2248	57			Weeks
2.	2.067 X 0.500			520	23	68	2025	62			2 hrs.
3.	2.067 X 0.500			521	44	68	1792	69			2 hrs.
4.	2.067 X 0.500			520	81	68	1606	71			2 hrs.

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.	1.189	83.26	533.2	.9924	1.295	1.042	133
2.	1.189	110.74	533.2	.9924	1.295	1.042	176
3.	1.189	153.31	534.2	.9924	1.295	1.042	244
4.	1.189	207.82	533.2	.9924	1.295	1.042	331

NO.	P _t	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
1.	0.788	528	1.500	0.921	A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
2.	0.788	528	1.500	0.921	Specific Gravity Separator Gas 0.596 X X X X X X X X
3.	0.788	528	1.500	0.921	Specific Gravity Flowing Fluid X X X X X
4.	0.788	528	1.500	0.921	Critical Pressure 677 P.S.I.A. P.S.I.A.
5.					Critical Temperature 352 R R

NO.	P _i ²	P _w	P _w ²	P _c ² - P _w ²	(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.9774$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.9453$ AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 644$
1.			6737	1663	
2.			6220	2180	
3.			5218	3182	
4.			4152	4248	

Absolute Open Flow 644 Mcfd @ 15.025	Angle of Slope @ 45.7 deg.	Slope, n 0.9760
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marks: Static pressure by Bennett Wireline, flowing pressure by DWT. Calculations worksheet C-122D attached.

Approved By Commission:	Conducted By: Don Weaver	Calculated By: Eddie Mahfood	Checked By:
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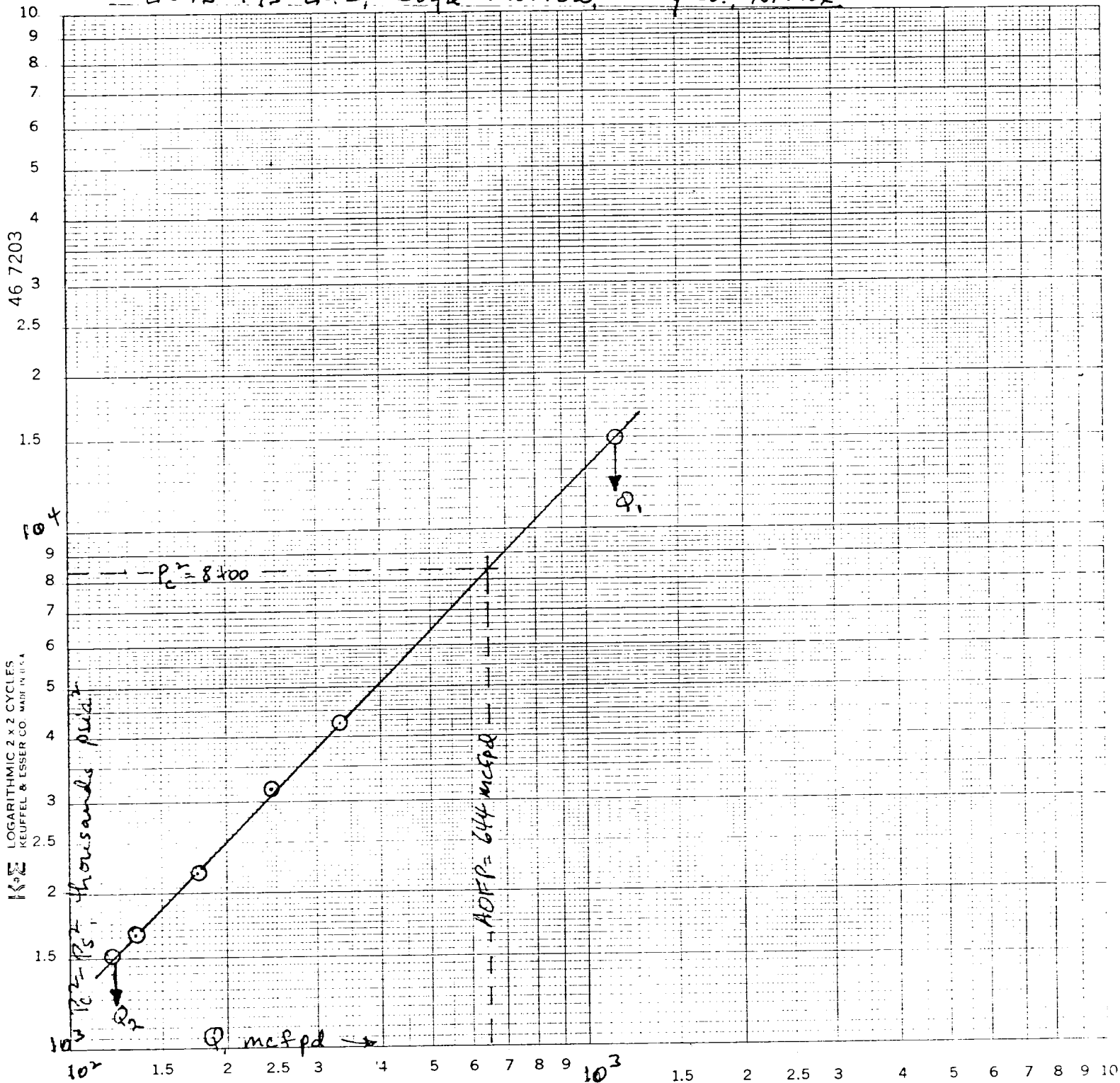
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YPC- Allison CQ Federal No. 5

O. C. D.
ARTESIA, OFFICE

C-13-195-24E, Boyd Morrow, Eddy Co., N. Mex.



$$Q_1 = 1145 \text{ mcfpd}$$

$$\log Q_1 = 3.0588$$

$$Q_2 = 121 \text{ mcfpd}$$

$$\log Q_2 = 2.0828$$

$$n = 0.9760$$

WORKSHEET FOR CALCULATION OF ST. 1C COLUMN WELLHEAD PRESSURE (P_w)

C-122D
Adapted 9-1-65

COMPANY

YPC

LEASE

Albion (49) Federal

WELL NO.

5

DATE

11-3-80

LOCATION: Unit

C

Section

13

Township

19S

Range

24E

L 2848

H 2048

L/H 1.000

G 0.596

% CO₂ 1.55

% N₂ 0.38

% H₂S 1.11

2848 - 2048 (800) = 800
2848 - 2048 (800) = 800
2848 - 2048 (800) = 800

d 24249

F_r 0.021952

GH 51.12 11

5.14 11.00

P_{cr} 602

T_{cr} 398

TABLE IX B

LINE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1 Q _m	—	0.133	0.196	0.244	0.331																		
2 T _w (W.H. °R)	517	522	526	529	531																		
3 T _g (B.H. °R)	605	605	604	604	603																		
4 T = (1/w ² + 1/s)	561	563.5	565	566.5	567																		
5 Z (Est.)	.710	.726	.730	.742	.762																		
6 T _Z	398.31	409.10	418.45	420.34	432.05																		
7 GH/TZ	13.239	12.879	12.725	12.545	12.2254																		
8 e ^s (Table XIV)	1.6429	1.62155	1.6157	1.6007	1.5804																		
9 1-e ^s (Table XIV)		0.3533	0.3801	0.3953	0.4192																		
10 P ₁	22661.2	20233.2	19622.2	18055.2	1619.2																		
11 P ₁ 2/1000	51.3.1	41.54.26	3850.23	3228.8	2621.81																		
12 F _r (Table XV)	0.49648	0.49338	0.47946	0.47014	0.45990																		
13 F _{cr} = F _r TZ		8.08982	8.9776	9.1432	9.2510																		
14 F _{cr} Q _m		1.1325	1.577	2.221	3.111																		
15 L/H (F _{cr} Q _m) ²		1.401	2.493	4.499	9.077																		
16 F _w = L/H (F _{cr} Q _m) ² (1-e ^s)		0.54	3.15	1.09	3.55																		
17 P _w ² = P ₁ ² + F _w		4154.80	3851.18	3266.66	2625.36																		
18 P _w ² = e ^s P _w ²		6400.1	6117.2	6220.4	5218.66																		
19 P _s		2878.2	2575.2	2494.1	2284.4																		
20 P = (P ₁ ² + P _s ²) ^{1/2}		2579.7	2316.1	2223.4	2044.8																		
21 P _r = (P/P _{cr})		3.113	2.825	2.775	2.546																		
22 T _r = (T/T _{cr})		1.4015	1.416	1.423	1.425																		
23 Z (Table XI)		0.710	0.726	0.730	0.742																		

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567

0.761

431.47

12.2215

1.5714

0.3676

1619.2

2621.81

0.45820

9.346

3.1067

9.6515

3.55

2625.36

4151.9

2037.6

1828.4

2.299