

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

File 122
opr
Form C-122
Revised 9-1-65

RECEIVED

Type Test ☒ Initial ☐ Annual ☐ Special				Test Date 1-23-80		APR 1 1980	
Company Yates Petroleum Corp.				Connection Transwestern Pipeline Co.			
Pool East Atoka Morrow Gas				Formation Morrow		Unit O. C. D.	
Completion Date 7-3-79				Total Depth 10287' KB		Farm or Lease Name Beauregard Com	
Csg. Size 4-1/2"		Wt. 17#	Set At 4.000	Perforations: 10151' KB		Well No. 1	
Tbg. Size 2-3/8"		Wt. 4.7#	Set At 1.995	Perforations: 9691 To 10000		Unit Sec. Twp. Hje. K 23-T18S-R27E	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple				Packer Set At 9656 KB		County Eddy Co.	
Producing Thru Tubing		Reservoir Temp. °F 155 @ 9860	Mean Annual Temp. °F 62	Baro. Press. - P _a 13.2		State New Mexico	
L 9860	H 9860	G _q 0.623	% CO ₂ 0.52	% N ₂ 1.11	% H ₂ S Nil	Prover	Meter Run 2" Taps Flange

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							3070	37			Days
1.	2.067	x	0.750	420	18	66	2877	49			1 hr
2.	2.067	x	0.750	420	33	66	2685	57			1 hr
3.	2.067	x	0.750	421	64	66	2427	62			1 hr
4.	2.067	x	0.750	422	94	66	2188	65			1 hr
5.											

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor Ft.	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1	2.709	88.30	433.2	0.9943	1.267	1.0386	313
2	2.709	119.56	433.2	0.9943	1.267	1.0386	424
3	2.709	166.70	434.2	0.9943	1.267	1.0386	591
4	2.709	202.26	435.2	0.9943	1.267	1.0386	717
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	Mc/bbl. Deg.
1.	.645	526	1.453	.927			0.623	X X X X X X X X	672	362	0.623
2.	.645	526	1.453	.927				X X X X X	672	362	
3.	.646	526	1.453	.927					P.S.I.A.	P.S.I.A.	
4.	.648	526	1.453	.927					R	R	
5.											

F _c 3953.2 P _c ² 15631				(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 2.0564$		(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.6645$	
NO.	P _r ²	P _w	P _w ²	P _c ² - P _w ²	AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1193$		
1			13732	1899			
2			11987	3644			
3			9848	5783			
4			8030	7601			
5							

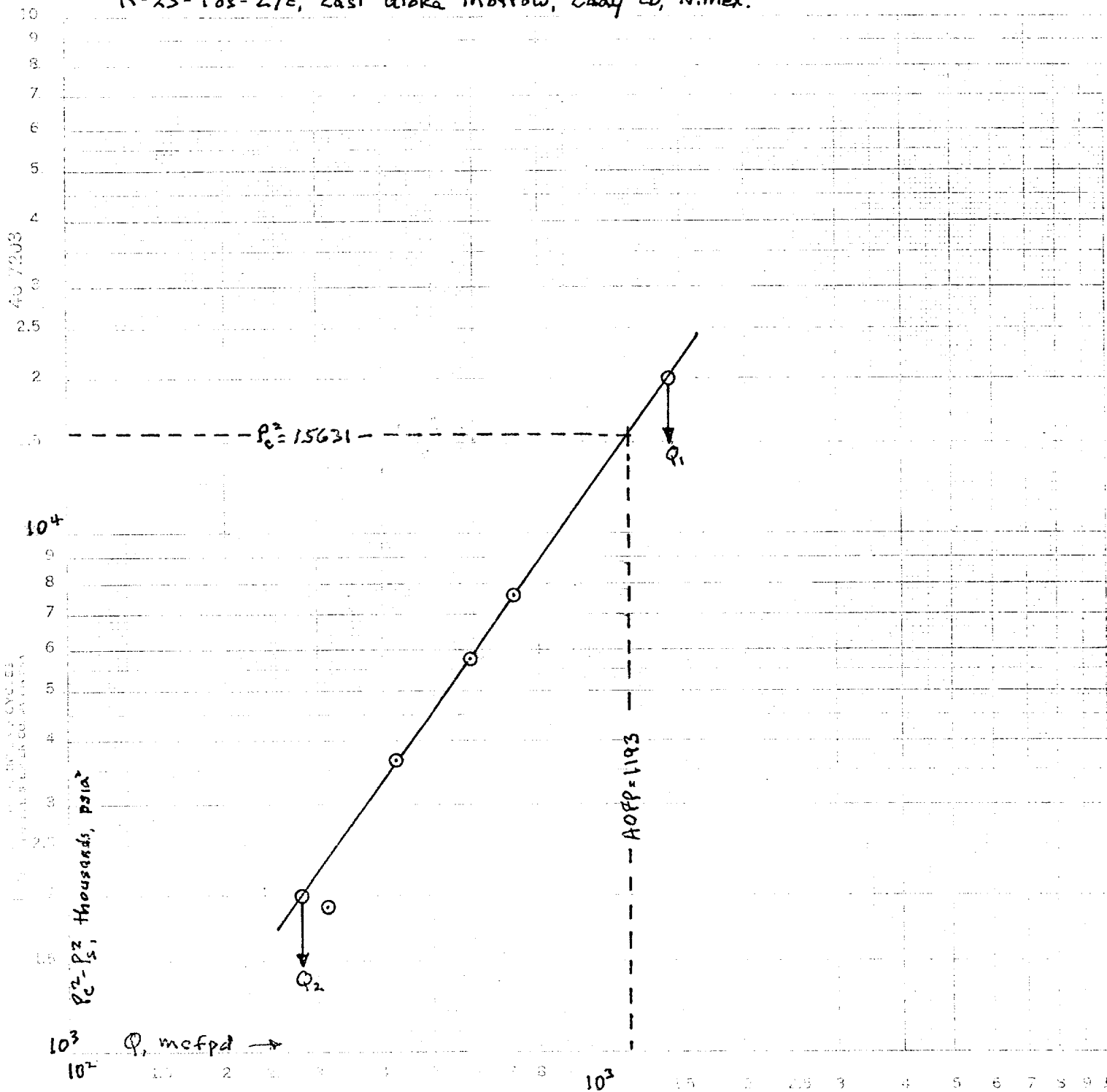
Absolute Open Flow 1193 Mcfd @ 15.025		Angle of Slope @ 54.75 deg.		Slope, n 0.7067	
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Remarks: Static pressures by Bennett Wireline, flowing pressures by dead weight tester. Calculations worksheet C-122D attached.

Approved By Commission:	Conducted By: Don Weaver	Calculated By: Eddie Mahfood	Checked By:
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YPC- Beauregard Com. No.1

K-23-18s-27E, East Atoka Morrow, Eddy Co, N.Mex.



$$Q_1 = 1420 \text{ mcfpd}$$

$$\log Q_1 = 3.1523$$

$$Q_2 = 279 \text{ mcfpd}$$

$$\log Q_2 = 2.4456$$

$$n = 0.7067$$

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w)

C-122D
Adopted 9-1-65

COMPANY YPC LEASE Beauregard Com WELL NO. 1 DATE 1-23-80

LOCATION: Unit K Section 23 Township 18S Range 27E

L 1560 H 9860 L/H 1.000 G 0.623 % CO₂ 0.52 % N₂ 1.11 % H₂S Nil

2 3/4" 9652(3.14) = 38415
4 1/2" 208(16.00) = 3328
9860(4.2336) = 41743

d 2.0575 F_r 0.015393 GH 6142.8

P_{cr} 672 T_{cr} 362
TABLE IX & X TABLE IX & X

LINE	SY	1	2	2	4					
1 Q _m	-	0.313	0.424	0.591	0.717					
2 T _w (W.H. °R)	615	615	615	614	614					
3 T _s (B.H. °R)	497	509	517	522	525					
4 T = (T _w + T _s) / 2	556	562	566	568	569.5					
5 Z (Est.)	.823	.825	.817	.808	.800					
6 TZ	463.15	463.65	462.42	458.94	457.88					
7 GH/TZ	13.263	13.249	13.284	13.385	13.416					
8 e ^s (Table XIV)	1.64437	1.6435	1.6457	1.6519	1.6538					
9 1 - e ^{-s} (Table XIV)		0.3915	0.3923	0.3946	0.3953					
10 P _t	3083.2	2890.2	2615.0	2440.2	2201.2					
11 P _t ² /1000	9506.1	8353.2	7280.3	5954.6	4845.3					
12 F _r (Table XV)	0.49736	0.49683	0.49815	0.50194	0.50309					
13 F _c = F _r TZ		7.137	7.118	7.0645	7.0481					
14 F _c Q _m		2.234	3.018	4.175	5.053					
15 L/H (F _c Q _m) ²		4.990	9.109	17.431	25.54					
16 F _w = L/H (F _c Q _m) ² (1 - e ^{-s})		2.0	3.6	6.4	10.1					
17 P _w ² = P _t ² + F _w		8355.2	7283.7	5961.5	4855.4					
18 P _s ² = e ^s P _w ²	15631.6	13731.8	11987.1	9847.8	8029.4					
19 P _s	3953.7	3705.6	3462.2	3138.1	2833.7					
20 P = (P _t + P _s) / 2	3518.4	3297.9	3080.2	2789.2	2517.5					
21 P _r = (P/P _{cr})	5.235	4.908	4.583	4.150	3.746					
22 T _r = (T/T _{cr})	1.536	1.5325	1.532	1.567	1.593					
23 Z (Table XI)	.853	.825	.817	.808	.800					