

NEW MEXICO OIL CONSERVATION COMMISSION
MULTIPOINT A ONE POINT BACK PRESSURE TEST OR GAS WELL

Form C-122
Revised 9-1-65
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RECEIVED

Type Test ☒ Initial ☐ Annual ☐ Special						Test Date 8-3-79		SEP 11 1979	
Company Yates Petroleum Corp.						Connection Transwestern Pipeline Co.			
Pool Wildcat Upper Penn						Formation Upper Penn		Unit	
Completion Date 7-25-79		Total Depth 8670' KB		Plug Back TD 6550' KB		Elevation 3354' KB		Farm or Lease Name Caffall "FD" Com	
Csg. Size 5-1/2"	Wt. 15.5#	d 4.950	Set At 8623' KB	Perforations: From 6481 To 6491		Well No. 1		Unit Sec. Twp. Rge. 0 15 17S 26E	
Thq. Size 2-3/8"	Wt. 4.7#	d 1.995	Set At 6434' KB	Perforations: From To		County Eddy		State New Mexico	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple Single						Packer Set At 6434' KB		State New Mexico	
Producing Thru Tubing L 6476 H 6476 Gg 0.660		Reservoir Temp. °F 120 @ 6486		Mean Annual Temp. °F 62		Baro. Press. - P _a 13.2		Meter Run 4" Taps Flange	
		% CO ₂ 0.40		% N ₂ 0.37		% H ₂ S Nil		Prover	

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							1140	80			Days
1.	4.026 x 1.125			527	10	75	1010	79			1 hour
2.				528	18	75	927	78			1 hour
3.				529	35	75	773	77			1 hour
4.				530	51	75	580	76			1 hour
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, Fpv	Rate of Flow Q, Mcfd
1	6.031	73.50	540.2	.9859	1.268	1.046	580
2	6.031	98.70	541.2	.9859	1.268	1.046	778
3	6.031	137.76	542.2	.9859	1.268	1.046	1086
4	6.031	166.44	543.2	.9859	1.268	1.046	1313
5.							

NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	83.85 Mcf/bbl.
1.	.804	535	1.470	.9136	A.P.I. Gravity of Liquid Hydrocarbons	46 Deg.
2.	.805	535	1.470	.9135	Specific Gravity Separator Gas	0.622 XXXXXXXXXX
3.	.807	535	1.470	.9133	Specific Gravity Flowing Fluid	.660 XXXXXX
4.	.808	535	1.470	.9132	Critical Pressure	672 P.S.I.A.
5.					Critical Temperature	364 R

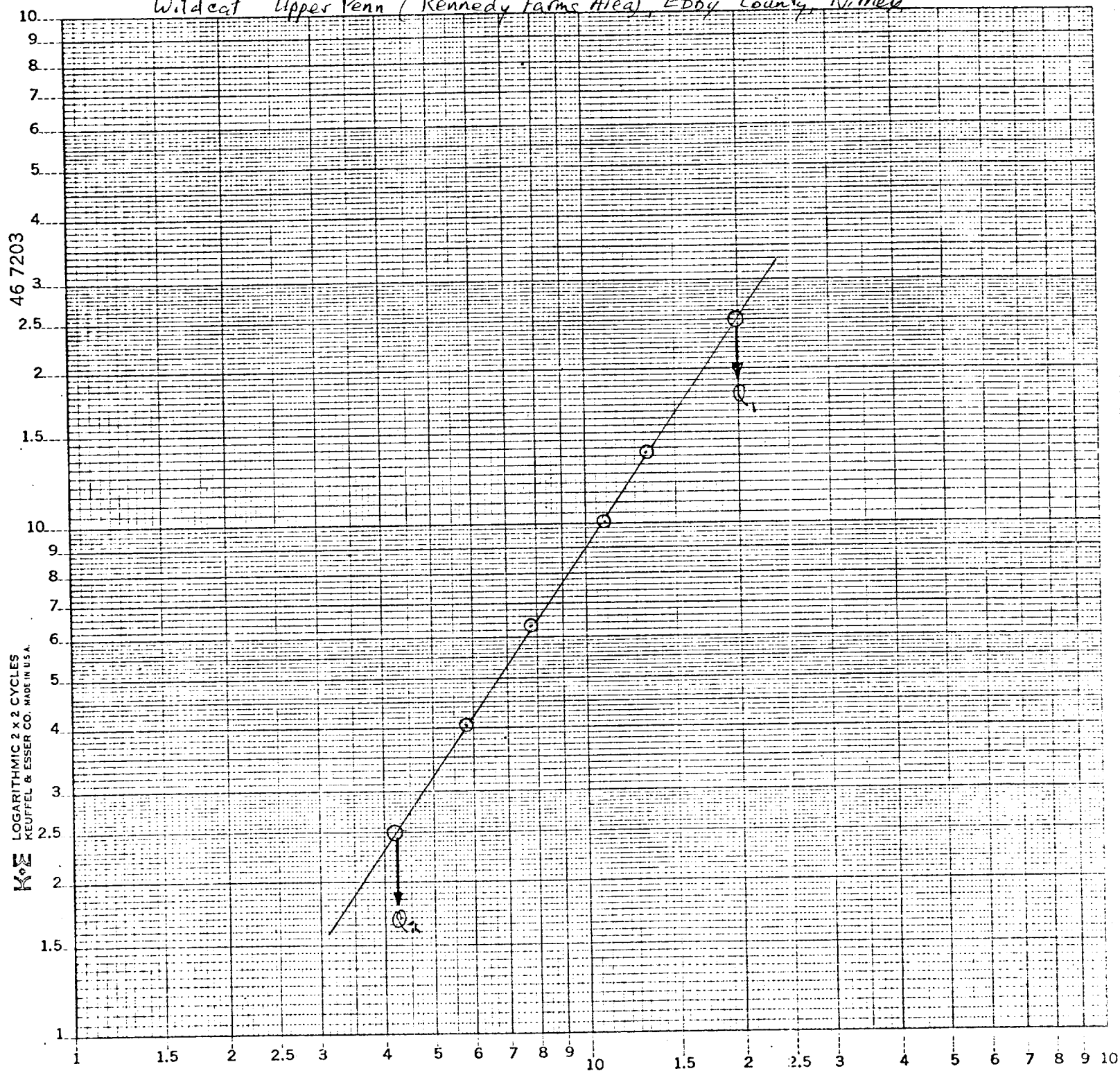
NO.	P _c	P _w	P _c ² - P _w ²	(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.3858$	(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 1.2458$
1	1376.0	1893	1489		
2			1262		
3			890		
4			527		
5					

Absolute Open Flow 1635 Mcfd @ 15.025		Angle of Slope 56.0 deg		Slope, n 0.67354	
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Remarks: Pressures by Dead Weight testers. Static compares with Bennett Wireline. Calculations worksheet C-122D attached.

Approved By Commission:	Conducted By: David Weaver	Calculated By: Eddie Mahfood	Checked By:
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YPC - Caffall FD Com #1, O-15-17s-26E
 Wildcat Upper Penn (Kennedy Farms Area), Eddy County, N. Mex.



$$Q_1 = 1990 \text{ mcfpd} \quad \log Q_1 = 3.29885$$

$$Q_2 = 422 \text{ mcfpd} \quad \log Q_2 = 2.62531$$

$$n = 0.67354$$

WORKSHEET FOR CALCULATION OF SIC COLUMN WELLHEAD PRESSURE (P_w)

C-122D
Adopted 9-1-65

COMPANY Nates Petroleum Corp LEASE Caffall FD Com WELL NO. 1 DATE 8-4-79

LOCATION: Unit 0 Section 15 Township 17S Range 26E

L 61196 H 6476 L/H 1.06 G 0.660 %CO₂ 0.40 %N₂ 0.37 %H₂S 1.1

d 2.0312 F_r 0.013417 GH 112.714 P_{cr} 715 * T_{cr} 340 X

TABLE IX & X

LINE	1	2	3	4	5	6	7	8	9
1 Q _m	51	1	2	3	4	5	6	7	8
2 T _w (W.H. °R)	-	0.580	0.1778	1.036	1.213	0.580	0.778	1.036	1.213
3 T _s (B.H. °R)	540	579	579	578	577	576	575	574	573
4 T = (L _w + T _s)	560	559	558	557	556	555	554	553	552
5 T (Est.)	580	580	580	580	580	580	580	580	580
6 T ₂	453.60	460.05	464.26	480.01	496.44	461.73	461.73	461.73	461.73
7 GH/T ₂	9.4224	9.279	9.206	8.904	8.610	9.255	9.255	9.255	9.255
8 e ^s (Table XIV)	1.4238	1.4162	1.4123	1.3764	1.3811	1.4150	1.4150	1.4150	1.4150
9 1-e ^s (Table XIV)		0.5762	0.5877	0.6236	0.6189	0.5850	0.5850	0.5850	0.5850
10 P ₁	1153.2	1023.2	100.2	986.2	593.2	1023.2	1023.2	1023.2	1023.2
11 P ₁ 2/1000	1329.9	1046.7	854.0	618.1	351.9	1046.7	1046.7	1046.7	1046.7
12 F _r (Table XV)	0.35334	0.34996	0.34528	0.33390	0.32288	0.34528	0.34528	0.34528	0.34528
13 F _c = F _r T ₂		7.3317	7.0876	7.6402	7.9012	7.6402	7.6402	7.6402	7.6402
14 F _c Q _m		4.2524	5.949	8.297	10.374	10.374	10.374	10.374	10.374
15 L/H (F _c Q _m) ²		18.08	33.05	68.85	107.63	107.63	107.63	107.63	107.63
16 F _w = L/H (F _c Q _m) ² (1-e ^s)		5.13	1.6	19.5	29.6	29.6	29.6	29.6	29.6
17 P _w ² = P ₁ ² + F _w		1233.5	100.0	637.6	381.5	100.0	100.0	100.0	100.0
18 P _s ² = e ^s P _w ²		1893.4	1040.1	1500.3	810.3	526.9	526.9	526.9	526.9
19 P _s		1376.0	1220.7	1123.4	943.6	735.7	735.7	735.7	735.7
20 P = (P ₁ + P _s)		1264.6	1121.7	1021.8	864.1	735.7	735.7	735.7	735.7
21 P ₁ = (P/P _{cr})		1.0767	1.0569	1.0141	1.0210	1.0569	1.0569	1.0569	1.0569
22 T ₁ = (T/T _{cr})		1.4436	1.4433	1.4431	1.4430	1.4430	1.4430	1.4430	1.4430
23 Z (Table XI)		0.811	0.8226	0.8226	0.861	0.890	0.890	0.890	0.890