

NEW MEXICO OIL CONSERVATION COMMISSION
MULTIPOOL AND ONE POINT BACK PRESSURE TEST FOR 3 WELL

Form O-124 **95F**

Type Test ☒ Initial ☐ Annual ☐ Special						Test Date 01/06/1999	
Company Yates Petroleum Corp				Connection Agave Energy Company			
Pool Logan Draw				Formation Morrow			
Completion Date 1/03/1999		Total Depth 9720		Plug Back TD 9655		Elevation 3483	
Csg. Size 4.500	Wt. 11.900	d 4.000	Set At 9720	Perforations: From 9343 To 9457			
Tbg. Size 2.375	Wt. 4.600	d 1.995	Set At 9244	Perforations: From 9343 To 9457			
Type Well Single				Packer Set At 9285		County Eddy	
Producing Thru Tubing		Resv. Temp. °F 151 @ 9300		Mean Temp. °F 62		Baro. Press. - Pa 13.2	
State New Mexico							
L 9720	H 9720	Gg 0.663	%CO ₂ 1.127	%N ₂ 0.442	%H ₂ S 0.000	Prover 0.000	Meter Run 4.000
						Taps Flange	

FLOW DATA						TUBING DATA		CASING DATA		Duration of Flow	
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. hw	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.		Temp. °F
Sl.	0.000	x	0.000	0	0.0	0	2600	0			0
1.	4.026	x	1.250	600	50.0	60	1200	60			24
2.	4.026	x	1.250	600	54.0	60	1000	60			24
3.	4.026	x	1.250	600	58.0	60	800	60			24
4.	4.026	x	1.250	600	61.0	60	600	60			24
5.		x									

RATE OF FLOW CALCULATIONS							
NO.	Coefficient (24 Hour)	$\sqrt{hwPm}$	Pressure Pm	Flow Temp. Factor Ft	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1.	7.469	175.1	613.2	1.0000	1.228	1.065	1711
2.	7.469	182.0	613.2	1.0000	1.228	1.065	1778
3.	7.469	188.6	613.2	1.0000	1.228	1.065	1842
4.	7.469	193.4	613.2	1.0000	1.228	1.065	1889
5.							

NO.	Pr	Temp °R	Tr	Z	Gas Liquid Hydrocarbon Ratio	Mcf/bbl.
1.	0.91	520	1.39	0.882	0	
2.	0.91	520	1.39	0.882	0.000	
3.	0.91	520	1.39	0.882	0.663	xxxxxxxxxx
4.	0.91	520	1.39	0.882	0.663	xxxxxxxxxx
5.						

NO.	Pc	Pw	Pw²	Pc² - Pw²
1.	1471.9	1246.0	1552.6	5276.2
2.	1026.6	1056.8	1116.8	5712.0
3.	661.3	872.8	761.7	6067.1
4.	376.0	696.9	485.6	6343.2
5.				

Pc 2613.2 Pc² 6828.8		(1) $\frac{Pc^2}{Pc^2 - Pw^2} = 1.126$		(2) $\left[\frac{Pc^2}{Pc^2 - Pw^2} \right]^n = 1.071$	
		AOF = Q		$\left[\frac{Pc^2}{Pc^2 - Pw^2} \right]^n = 1974$	

Absolute Open Flow	1974	Mcf/d @ 15.025	Angle of Slope θ	30	Slope, n	0.582
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Remarks:			
Approved By Commission:	Conducted By: Tony Vasquez	Calculated By: Katie Brunson	Checked By: Pinson McWhorter

Company
Well
Location
10^5

Yates Petroleum Corp
DUKE ARP FEDERAL #1
L 14-17S-27E

County
Date

Eddy
01-06-1999

Q, Mcfd

10^4

Pc-Pwf

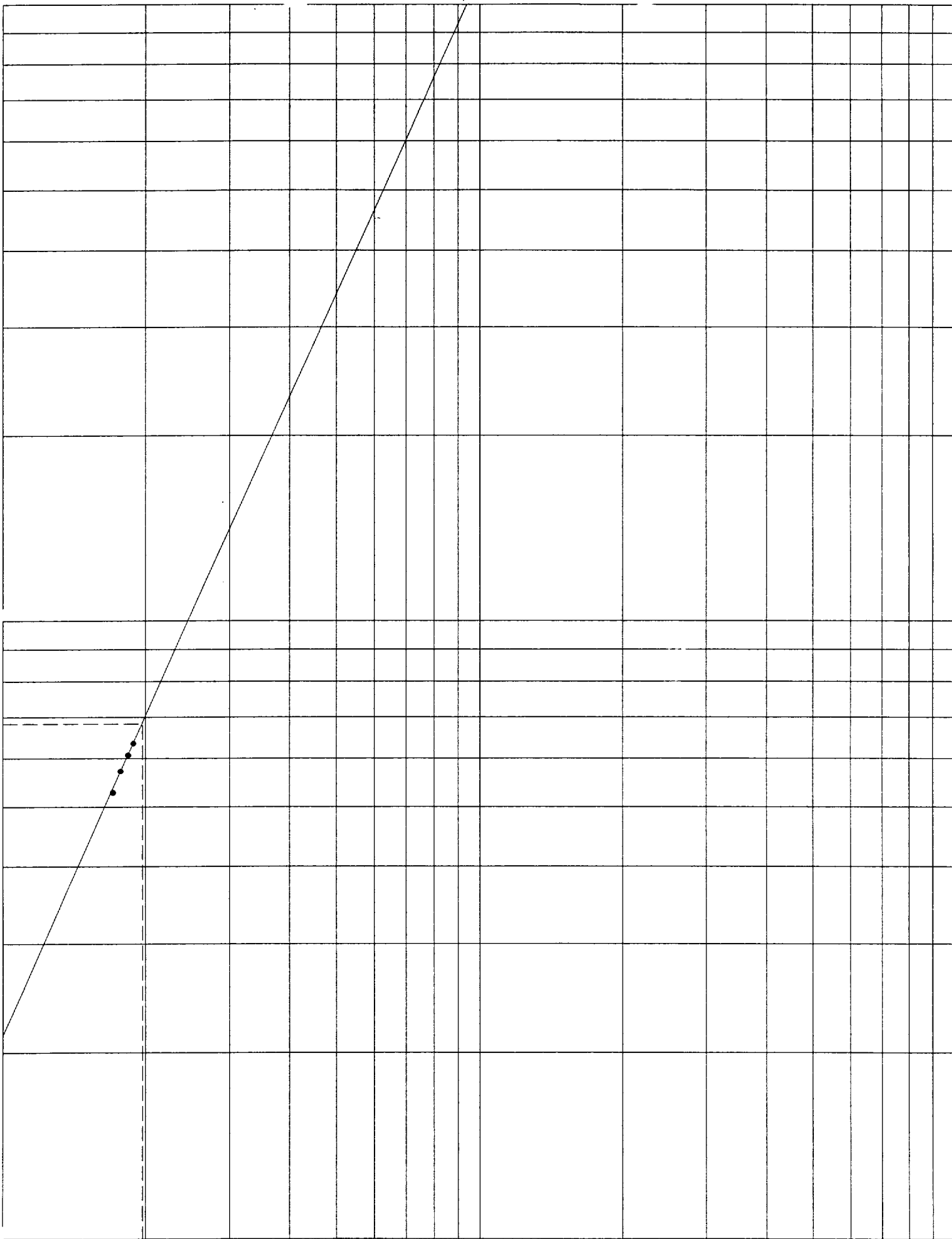
10^3

10^3

10^4

AOF = 1974

10^5



WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (Pw) C-122D

DATE 01/06/1999

COMPANY Yates Petroleum Corp LEASE DUKE ARP FEDERAL WELL NO. 1

LOCATION: Unit L Section 14 Township 17S Range 27E

L 9720 H 9720 L/H 1.000 G 0.663 %CO₂ 1.127 %N₂ 0.442 %H₂S 0.000

d 1.995 Fr 0.017777 GH 6444.4 Pcr 673.9 Tcr 373.7

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	1.711	1.778	1.842	1.889	
2 Tw(W.H.°R)	520	520	520	520	
3 Ts(B.H.°R)	611	611	611	611	
4 T = (Tw+Ts) / 2	565.2	565.2	565.2	565.2	
5 Z (Est.)	0.820	0.843	0.868	0.895	
6 TZ	463.6	476.3	490.6	505.8	
7 GH / TZ	13.899	13.529	13.136	12.741	
8 e ^Λ s(Table XIV)	1.684	1.660	1.636	1.613	
9 1-e ^Λ -s(Table XIV)	0.406	0.398	0.389	0.380	
10 Pt	1213.2	1013.2	813.2	613.2	
11 Pt ² / 1000	1471.9	1026.6	661.3	376.0	
12 Fr (Table XV)	0.017777	0.017777	0.017777	0.017777	
13 Fc = FrTZ	8.242	8.468	8.721	8.992	
14 FcQm	14.10	15.05	16.07	16.99	
15 L / H(FcQm) ²	198.8	226.6	258.2	288.6	
16 Fw = L / H(FcQm) ² (1-e ^Λ -s)	80.75	90.24	100.44	109.61	
17 Pw ² = Pt ² +Fw	1552.6	1116.8	761.7	485.6	
18 Ps ² = e ^Λ sPw ²	2614.7	1854.2	1246.5	783.1	
19 Ps	1617.0	1361.7	1116.5	884.9	
20 P = (Pt+Ps) / 2	1415.1	1187.4	964.8	749.1	
21 Pr = (P / Pcr)	2.10	1.76	1.43	1.11	
22 Tr = (T / Tcr)	1.51	1.51	1.51	1.51	
23 Z (Table XI)	0.820	0.843	0.868	0.895	