

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

DATE 11/11/2000

COMPANY Yates Petroleum Corp LEASE RUDOLPH ATX STATE WELL NO. 2

LOCATION: Unit D Section 16 Township 19S Range 31E

L 12500 H 12500 L / H 1.000 G 0.667 %CO₂ 0.672 %N₂ 0.481 %H₂S 0.000

d 2.441 Fr 0.010495 GH 8337.5 Pcr 671.8 Tcr 375.6

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	2.082	5.508	7.826	9.491	
2 Tw(W.H.°R)	522	522	522	522	
3 Ts(B.H.°R)	637	637	637	637	
4 T = (Tw+Ts) / 2	579.2	579.2	579.2	579.2	
5 Z (Est.)	0.852	0.816	0.795	0.794	
6 TZ	493.5	472.7	460.3	459.8	
7 GH / TZ	16.895	17.638	18.112	18.132	
8 e ^s (Table XIV)	1.884	1.938	1.972	1.974	
9 1-e ^s (Table XIV)	0.469	0.484	0.493	0.493	
10 Pt	3174.0	2657.0	2141.0	1624.0	
11 Pt ² / 1000	10074.3	7059.6	4583.9	2637.4	
12 Fr (Table XV)	0.010495	0.010495	0.010495	0.010495	
13 Fc = FrTZ	5.179	4.961	4.831	4.826	
14 FcQm	10.78	27.33	37.81	45.80	
15 L / H(FcQm) ²	116.3	746.7	1429.5	2097.7	
16 Fw = L / H(FcQm) ² (1-e ^s)	54.56	361.21	704.69	1034.93	
17 Pw ² = Pt ² +Fw	10128.8	7420.9	5288.6	3672.3	
18 Ps ² = e ^s Pw ²	19085.7	14380.4	10430.7	7248.4	
19 Ps	4368.7	3792.2	3229.7	2692.3	
20 P = (Pt+Ps) / 2	3771.4	3224.6	2685.3	2158.1	
21 Pr = (P / Pcr)	5.61	4.80	4.00	3.21	
22 Tr = (T / Tcr)	1.54	1.54	1.54	1.54	
23 Z (Table XI)	0.852	0.816	0.795	0.794	