

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

DATE 10/13/1999

COMPANY Yates Petroleum Corp LEASE Triangle Ranch ASW State Com WELL NO. 1

LOCATION: Unit K Section 13 Township 19S Range 23E

L 8535 H 8535 L/H 1.000 G 0.590 %CO₂ 0.840 %N₂ 0.450 %H₂S 0.000

d 1.995 Fr 0.017777 GH 5035.6 Pcr 675.2 Tcr 350.0

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	0.826	0.886	0.943	0.996	
2 Tw(W.H.°R)	520	520	520	520	
3 Ts(B.H.°R)	603	603	603	603	
4 T = (Tw+Ts) / 2	561.2	561.2	561.2	561.2	
5 Z (Est.)	0.937	0.938	0.939	0.940	
6 TZ	525.9	526.3	526.8	527.3	
7 GH / TZ	9.575	9.567	9.558	9.551	
8 e ^{-s} (Table XIV)	1.432	1.432	1.431	1.431	
9 1-e ^{-s} (Table XIV)	0.302	0.301	0.301	0.301	
10 Pt	488.2	480.2	471.2	463.2	
11 Pt ² / 1000	238.3	230.6	222.0	214.6	
12 Fr (Table XV)	0.017777	0.017777	0.017777	0.017777	
13 Fc = FrTZ	9.349	9.357	9.365	9.373	
14 FcQm	7.72	8.29	8.83	9.34	
15 L / H(FcQm) ²	59.6	68.8	78.0	87.2	
16 Fw = L / H(FcQm) ² (1-e ^{-s})	17.99	20.73	23.49	26.24	
17 Pw ² = Pt ² +Fw	256.3	251.3	245.5	240.8	
18 Ps ² = e ^{-s} Pw ²	367.1	359.8	351.4	344.5	
19 Ps	605.9	599.8	592.8	586.9	
20 P = (Pt+Ps) / 2	547.0	540.0	532.0	525.1	
21 Pr = (P / Pcr)	0.81	0.80	0.79	0.78	
22 Tr = (T / Tcr)	1.60	1.60	1.60	1.60	
23 Z (Table XI)	0.937	0.938	0.939	0.940	