

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

DATE 03/01/1993

COMPANY Yates Petroleum Corp LEASE Margaret RQ State WELL NO. 4

LOCATION: Unit F Section 36 Township 4S Range 24E

L 3596 H 3596 L/H 1.000 G 0.655 %CO₂ 0.000 %N₂ 6.483 %H₂S 0.000

d 1.995 Fr 0.017777 GH 2355.4 Pcr 659.2 Tcr 356.0

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	0.096	0.097	0.111	0.116	
2 Tw(W.H.°R)	522	522	522	522	
3 Ts(B.H.°R)	578	578	578	578	
4 T = (Tw+Ts) / 2	549.7	549.7	549.7	549.7	
5 Z (Est.)	0.983	0.984	0.985	0.986	
6 TZ	540.6	541.1	541.6	542.2	
7 GH / TZ	4.357	4.353	4.349	4.344	
8 e ^{As} (Table XIV)	1.177	1.177	1.177	1.177	
9 1-e ^{As} (Table XIV)	0.151	0.151	0.150	0.150	
10 Pt	113.2	106.2	100.2	93.2	
11 Pt ² / 1000	12.8	11.3	10.0	8.7	
12 Fr (Table XV)	0.017777	0.017777	0.017777	0.017777	
13 Fc = FrTZ	9.610	9.620	9.628	9.638	
14 FcQm	0.92	0.94	1.07	1.12	
15 L / H(FcQm) ²	0.8	0.9	1.1	1.2	
16 Fw = L / H(FcQm) ² (1-e ^{As})	0.13	0.13	0.17	0.19	
17 Pw ² = Pt ² +Fw	12.9	11.4	10.2	8.9	
18 Ps ² = e ^{As} Pw ²	15.2	13.4	12.0	10.4	
19 Ps	123.4	115.9	109.6	102.2	
20 P = (Pt+Ps) / 2	118.3	111.1	104.9	97.7	
21 Pr = (P / Pcr)	0.18	0.17	0.16	0.15	
22 Tr = (T / Tcr)	1.54	1.54	1.54	1.54	
23 Z (Table XI)	0.983	0.984	0.985	0.986	