

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

DATE 2/11/1999

COMPANY Yates Petroleum Corp LEASE PRESTON FEDERAL WELL NO. 25

LOCATION: Unit N Section 34 Township 20.5 Range 23E

L 9520 H 9520 L / H 1.000 G 0.663 %CO₂ 0.613 %N₂ 0.722 %H₂S 0.000

d 2.441 Fr 0.010495 GH 6311.8 P_{cr} 671.2 T_{cr} 373.7

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	1.228	1.357	1.418	1.476	
2 Tw(W.H.°R)	520	520	520	520	
3 Ts(B.H.°R)	585	585	585	585	
4 T = (Tw+Ts) / 2	552.2	552.2	552.2	552.2	
5 Z (Est.)	0.872	0.899	0.926	0.954	
6 TZ	481.4	496.3	511.5	526.6	
7 GH / TZ	13.112	12.717	12.339	11.985	
8 e ^{As} (Table XIV)	1.635	1.611	1.588	1.567	
9 1-e ^{As} (Table XIV)	0.388	0.379	0.370	0.362	
10 Pt	733.2	566.2	400.2	233.2	
11 Pt ² / 1000	537.6	320.6	160.2	54.4	
12 Fr (Table XV)	0.010495	0.010495	0.010495	0.010495	
13 Fc = FrTZ	5.052	5.209	5.369	5.527	
14 FcQm	6.20	7.07	7.61	8.16	
15 L / H(FcQm) ²	38.5	50.0	57.9	66.5	
16 Fw = L / H(FcQm) ² (1-e ^{As})	14.95	18.98	21.46	24.10	
17 Pw ² = Pt ² +Fw	552.5	339.6	181.6	78.5	
18 Ps ² = e ^{As} Pw ²	903.4	546.9	288.5	123.0	
19 Ps	950.5	739.5	537.1	350.7	
20 P = (Pt+Ps) / 2	841.8	652.9	468.7	291.9	
21 Pr = (P / P _{cr})	1.25	0.97	0.70	0.43	
22 Tr = (T / T _{cr})	1.48	1.48	1.48	1.48	
23 Z (Table XI)	0.872	0.899	0.926	0.954	