

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

DATE 01/01/92

COMPANY Yates Petroleum Corp LEASE Slinkard UR Federal Com WELL NO. 4

LOCATION: Unit C Section 12 Township 20S Range 29E

L 10608 H 10608 L/H 1.000 G 0.710 %CO₂ 0.000 %N₂ 1.412 %H₂S 0.000

d 2.441 Fr 0.010495 GH 7531.7 P_{cr} 665.8 T_{cr} 388.3

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	0.057	0.084	0.104	0.123	
2 Tw(W.H.°R)	522	522	522	522	
3 Ts(B.H.°R)	624	624	624	624	
4 T = (Tw+Ts) / 2	572.7	572.7	572.7	572.7	
5 Z (Est.)	0.989	0.991	0.992	0.994	
6 TZ	566.5	567.3	568.2	569.0	
7 GH / TZ	13.296	13.277	13.255	13.237	
8 e ^{as} (Table XIV)	1.646	1.645	1.644	1.643	
9 1-e ^{-s} (Table XIV)	0.393	0.392	0.392	0.391	
10 Pt	58.2	50.2	41.2	33.2	
11 Pt ² / 1000	3.4	2.5	1.7	1.1	
12 Fr (Table XV)	0.010495	0.010495	0.010495	0.010495	
13 Fc = FrTZ	5.945	5.954	5.963	5.971	
14 FcQm	0.34	0.50	0.62	0.73	
15 L / H(FcQm) ²	0.1	0.3	0.4	0.5	
16 Fw = L / H(FcQm) ² (1-e ^{-s})	0.04	0.10	0.15	0.21	
17 Pw ² = Pt ² +Fw	3.4	2.6	1.8	1.3	
18 Ps ² = e ^{as} Pw ²	5.7	4.3	3.0	2.2	
19 Ps	75.2	65.6	55.1	46.4	
20 P = (Pt+Ps) / 2	66.7	57.9	48.2	39.8	
21 Pr = (P / Pcr)	0.10	0.09	0.07	0.06	
22 Tr = (T / Tcr)	1.47	1.47	1.47	1.47	
23 Z (Table XI)	0.989	0.991	0.992	0.994	