

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

Adopted 9-1-65

DATE 6/20/88

COMPANY Yates Petroleum Corporation LEASE Eng TX Federal WELL NO. 1

LOCATION: Unit E Section 35 Township 19S Range 24E

L 8937.0 H 8937.0 L/H 1.000 G .595 %CO2 .71 %N2 .22 %H2S 0.00

d 2.441 Fr .010495 GH 5317.5 Pcr 674.9 Tcr 352.5

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	.164	.188	.216	.231	0.000
2 Tw(W.H.°R)	522.0	522.0	522.0	522.0	0.0
3 Ts(B.H.°R)	610.0	610.0	610.0	610.0	0.0
4 T=(Tw+Ts)/2	566.0	566.0	566.0	566.0	0.0
5 Z(Est.)	.825	.825	.825	.827	0.000
6 TZ	466.7	466.8	467.1	467.9	0.0
7 GH/TZ	11.394	11.392	11.383	11.365	0.000
8 e ^s (Table XIV)	1.533	1.533	1.532	1.531	0.000
9 1-e ^{-s} (Table XIV)	.348	.348	.347	.347	0.000
10 Pt	2227.2	2047.2	1991.2	1913.2	0.0
11 Pt ² /1000	4960.4	4191.0	3964.9	3660.3	0.0
12 Fr(Table XV)	.010495	.010495	.010495	.010495	0.000000
13 Fc=FrTZ	4.898	4.901	4.902	4.915	0.000
14 FcQm	.803	.919	1.059	1.136	0.000
15 L/H(FcQm) ²	.645	.845	1.121	1.291	0.000
16 Fw=L/H(FcQm) ² (1-e ^{-s})	.224	.294	.390	.448	0.000
17 Pw ² =Pt ² +Fw	4960.6	4191.3	3965.3	3660.8	0.0
18 Ps ² =e ^s Pw ²	7604.9	6423.7	6076.7	5603.8	0.0
19 Ps	2757.7	2534.5	2465.1	2367.2	0.0
20 P=(Pt+Ps)/2	2492.5	2290.9	2228.2	2140.2	0.0
21 Pr=(P/Pcr)	3.69	3.39	3.30	3.17	0.00
22 Tr=(T/Tcr)	1.61	1.61	1.61	1.61	0.00
23 Z(Table XI)	.825	.825	.825	.827	0.000