

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELL. ID PRESSURE (Pw) C-122D

Adopted 9-1-65

DATE 4/5/89

COMPANY Yates Petroleum Corporation LEASE Short RM Federal WELL NO. 1

LOCATION: Unit K Section 25 Township 7S Range 25E

L 3648.0 H 3648.0 L/H 1.000 G .647 %CO₂ .03 %N₂ 5.76 %H₂S 0.00

d 1.995 Fr .017777 GH 2360.3 Pcr 660.8 Tcr 355.3

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	.462	.555	.776	.880	0.000
2 Tw(W.H.°R)	522.0	522.0	522.0	522.0	0.0
3 Ts(B.H.°R)	560.0	560.0	560.0	560.0	0.0
4 T=(Tw+Ts)/2	541.0	541.0	541.0	541.0	0.0
5 Z(Est.)	.914	.920	.938	.961	0.000
6 TZ	494.3	497.9	507.3	519.8	0.0
7 GH/TZ	4.775	4.741	4.652	4.541	0.000
8 e ^s (Table XIV)	1.196	1.195	1.191	1.186	0.000
9 1-e ^{-s} (Table XIV)	.164	.163	.160	.157	0.000
10 Pt	594.2	546.2	422.2	263.2	0.0
11 Pt ² /1000	353.1	298.3	178.3	69.3	0.0
12 Fr(Table XV)	.017777	.017777	.017777	.017777	0.000000
13 Fc=FrTZ	8.789	8.851	9.020	9.240	0.000
14 FcQm	4.063	4.914	7.003	8.128	0.000
15 L/H(FcQm) ²	16.511	24.146	49.036	66.068	0.000
16 Fw=L/H(FcQm) ² (1-e ^{-s})	2.706	3.933	7.849	10.345	0.000
17 Pw ² =Pt ² +Fw	355.8	302.3	186.1	79.6	0.0
18 Ps ² =e ^s Pw ²	425.5	361.1	221.6	94.4	0.0
19 Ps	652.3	600.9	470.7	307.2	0.0
20 P=(Pt+Ps)/2	623.3	573.5	446.5	285.2	0.0
21 Pr=(P/Pcr)	.94	.87	.68	.43	0.00
22 Tr=(T/Tcr)	1.52	1.52	1.52	1.52	0.00
23 Z(Table XI)	.914	.920	.938	.961	0.000