

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

Adopted 9-1-65

DATE 5/2/88

COMPANY Yates Petroleum Corporation LEASE North Millman Unit WELL NO. 4

LOCATION: Unit 0 Section 6 Township 19S Range 28E

L 10652.0 H 10652.0 L/H 1.000 G .646 %CO₂ 1.35 %N₂ .55 %H₂S 0.00

d 2.441 Fr .010495 GH 6886.1 Pcr 675.3 Tcr 367.5

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	.281	.300	.338	.346	0.000
2 Tw(W.H.°R)	522.0	522.0	522.0	522.0	0.0
3 Ts(B.H.°R)	664.0	664.0	664.0	664.0	0.0
4 T=(Tw+Ts)/2	593.0	593.0	593.0	593.0	0.0
5 Z(Est.)	.862	.874	.889	.926	0.000
6 TZ	511.2	518.4	527.0	548.9	0.0
7 GH/TZ	13.470	13.284	13.067	12.546	0.000
8 e ^s (Table XIV)	1.657	1.646	1.632	1.600	0.000
9 1-e ^{-s} (Table XIV)	.397	.392	.387	.375	0.000
10 Pt	1229.2	1088.2	936.2	598.2	0.0
11 Pt ² /1000	1510.9	1184.2	876.5	357.8	0.0
12 Fr(Table XV)	.010495	.010495	.010495	.010495	0.000000
13 Fc=FrTZ	5.365	5.441	5.531	5.765	0.000
14 FcQm	1.506	1.630	1.868	1.992	0.000
15 L/H(FcQm) ²	2.269	2.657	3.488	3.969	0.000
16 Fw=L/H(FcQm) ² (1-e ^{-s})	.900	1.042	1.351	1.489	0.000
17 Pw ² =Pt ² +Fw	1511.8	1185.2	877.8	359.3	0.0
18 Ps ² =e ^s Pw ²	2505.4	1950.4	1432.9	575.0	0.0
19 Ps	1582.8	1396.6	1197.0	758.3	0.0
20 P=(Pt+Ps)/2	1406.0	1242.4	1066.6	678.2	0.0
21 Pr=(P/Pcr)	2.08	1.84	1.58	1.00	0.00
22 Tr=(T/Tcr)	1.61	1.61	1.61	1.61	0.00
23 Z(Table XI)	.862	.874	.889	.926	0.000