

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

Adopted 9-1-65

DATE 3/30/89

COMPANY Yates Petroleum Corporation LEASE Cedar Lake ADI Fed WELL NO. 1

LOCATION: Unit E Section 26 Township 17S Range 30E

L 10624.0 H 10624.0 L/H 1.000 G .939 %CO₂ .49 %N₂ .37 %H₂S 0.00

d 2.441 Fr .010495 GH 9981.2 Pcr 661.6 Tcr 466.2

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	.730	.842	.850	.917	0.000
2 Tw(W.H.°R)	522.0	522.0	522.0	522.0	0.0
3 Ts(B.H.°R)	656.0	656.0	656.0	656.0	0.0
4 T=(Tw+Ts)/2	589.0	589.0	589.0	589.0	0.0
5 Z(Est.)	.614	.601	.591	.589	0.000
6 TZ	361.4	354.1	348.3	346.7	0.0
7 GH/TZ	27.615	28.188	28.655	28.789	0.000
8 e ^s (Table XIV)	2.817	2.878	2.928	2.943	0.000
9 1-e ^{-s} (Table XIV)	.645	.653	.659	.660	0.000
10 Pt	1795.2	1660.2	1509.2	1388.2	0.0
11 Pt ² /1000	3222.7	2756.3	2277.7	1927.1	0.0
12 Fr(Table XV)	.010495	.010495	.010495	.010495	0.000000
13 Fc=FrTZ	3.793	3.716	3.656	3.639	0.000
14 FcQm	2.769	3.128	3.108	3.335	0.000
15 L/H(FcQm) ²	7.665	9.784	9.661	11.122	0.000
16 Fw=L/H(FcQm) ² (1-e ^{-s})	4.944	6.385	6.362	7.343	0.000
17 Pw ² =Pt ² +Fw	3227.7	2762.6	2284.1	1934.4	0.0
18 Ps ² =e ^s Pw ²	9091.1	7951.8	6688.6	5693.6	0.0
19 Ps	3015.2	2819.9	2586.2	2386.1	0.0
20 P=(Pt+Ps)/2	2405.2	2240.1	2047.7	1887.2	0.0
21 Pr=(P/Pcr)	3.64	3.39	3.10	2.85	0.00
22 Tr=(T/Tcr)	1.26	1.26	1.26	1.26	0.00
23 Z(Table XI)	.614	.601	.591	.589	0.000