

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

Adopted 9-1-65

DATE 5/3/88

COMPANY Yates Petroleum Corporation LEASE Northwestern Shores WELL NO. XR Fed 1

LOCATION: Unit B Section 36 Township 18S Range 26E

L 9368.0 H 9368.0 L/H 1.000 G .631 %CO₂ .20 %N₂ .45 %H₂S 0.00

d 2.441 Fr .010495 GH 5907.0 Pcr 671.0 Tcr 364.5

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	2.298	2.621	2.785	2.940	0.000
2 Tw(W.H.°R)	522.0	522.0	522.0	522.0	0.0
3 Ts(B.H.°R)	640.0	640.0	640.0	640.0	0.0
4 T=(Tw+Ts)/2	581.0	581.0	581.0	581.0	0.0
5 Z(Est.)	.830	.830	.831	.831	0.000
6 TZ	482.0	482.3	482.7	482.9	0.0
7 GH/TZ	12.256	12.249	12.239	12.233	0.000
8 e ^s (Table XIV)	1.583	1.583	1.582	1.582	0.000
9 1-e ^{-s} (Table XIV)	.368	.368	.368	.368	0.000
10 Pt	1632.2	1619.2	1603.2	1593.2	0.0
11 Pt ² /1000	2664.1	2621.8	2570.3	2538.3	0.0
12 Fr(Table XV)	.010495	.010495	.010495	.010495	0.000000
13 Fc=FrTZ	5.058	5.061	5.065	5.068	0.000
14 FcQm	11.622	13.267	14.106	14.899	0.000
15 L/H(FcQm) ²	135.062	176.013	198.977	221.969	0.000
16 Fw=L/H(FcQm) ² (1-e ^{-s})	49.764	64.824	73.233	81.664	0.000
17 Pw ² =Pt ² +Fw	2713.8	2686.6	2643.5	2620.0	0.0
18 Ps ² =e ^s Pw ²	4297.1	4252.9	4183.0	4144.9	0.0
19 Ps	2073.0	2062.3	2045.3	2035.9	0.0
20 P=(Pt+Ps)/2	1852.6	1840.7	1824.2	1814.6	0.0
21 Pr=(P/Pcr)	2.76	2.74	2.72	2.70	0.00
22 Tr=(T/Tcr)	1.59	1.59	1.59	1.59	0.00
23 Z(Table XI)	.830	.830	.831	.831	0.000