

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

Adopted 9-1-65

DATE 4/5/89

COMPANY Yates Petroleum Corporation LEASE Salt Grass WS Fed. WELL NO. 1

LOCATION: Unit I Section 26 Township 14S Range 27E

L 8090.0 H 8090.0 L/H 1.000 G .654 %CO₂ .34 %N₂ .46 %H₂S 0.00

d 2.441 Fr .010495 GH 5294.9 Pcr 670.8 Tcr 372.1

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	.512	.585	.867	1.009	0.000
2 Tw(W.H.°R)	522.0	522.0	522.0	522.0	0.0
3 Ts(B.H.°R)	624.0	624.0	624.0	624.0	0.0
4 T=(Tw+Ts)/2	573.0	573.0	573.0	573.0	0.0
5 Z(Est.)	.820	.824	.832	.838	0.000
6 TZ	469.8	472.3	476.7	480.0	0.0
7 GH/TZ	11.270	11.210	11.107	11.030	0.000
8 e ^s (Table XIV)	1.526	1.522	1.517	1.512	0.000
9 1-e ^{-s} (Table XIV)	.345	.343	.341	.339	0.000
10 Pt	1412.2	1359.2	1273.2	1213.2	0.0
11 Pt ² /1000	1994.3	1847.4	1621.0	1471.9	0.0
12 Fr(Table XV)	.010495	.010495	.010495	.010495	0.000000
13 Fc=FrTZ	4.931	4.957	5.003	5.038	0.000
14 FcQm	2.524	2.898	4.338	5.082	0.000
15 L/H(FcQm) ²	6.373	8.398	18.823	25.826	0.000
16 Fw=L/H(FcQm) ² (1-e ^{-s})	2.196	2.882	6.412	8.748	0.000
17 Pw ² =Pt ² +Fw	1996.5	1850.3	1627.5	1480.6	0.0
18 Ps ² =e ^s Pw ²	3046.5	2817.1	2468.2	2239.1	0.0
19 Ps	1745.4	1678.4	1571.1	1496.4	0.0
20 P=(Pt+Ps)/2	1578.8	1518.8	1422.1	1354.8	0.0
21 Pr=(P/Pcr)	2.35	2.26	2.12	2.02	0.00
22 Tr=(T/Tcr)	1.54	1.54	1.54	1.54	0.00
23 Z(Table XI)	.820	.824	.832	.838	0.000