

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

Adopted 9-1-65

DATE 10/29/91

COMPANY Yates Petroleum Corporation LEASE Medano VA State WELL NO. 2

LOCATION: Unit E Section 16 Township 23S Range 31E

L 13916.0 H 13916.0 L/H 1.000 G .584 %CO₂ 8.66 %N₂ 6.50 %H₂S 0.00

d 1.995 Fr .017777 GH 8126.9 Pcr 699.2 Tcr 318.0

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	1.705	1.840	2.097	2.322	0.000
2 Tw(W.H.°R)	522.0	522.0	522.0	522.0	0.0
3 Ts(B.H.°R)	652.0	652.0	652.0	652.0	0.0
4 T=(Tw+Ts)/2	587.0	587.0	587.0	587.0	0.0
5 Z(Est.)	1.025	1.009	.959	.954	0.000
6 TZ	601.5	592.5	562.8	560.2	0.0
7 GH/TZ	13.512	13.717	14.440	14.506	0.000
8 e ^s (Table XIV)	1.660	1.673	1.719	1.723	0.000
9 1-e ^{-s} (Table XIV)	.398	.402	.418	.420	0.000
10 Pt	4713.2	4489.2	3675.2	3592.2	0.0
11 Pt ² /1000	22214.3	20152.9	13507.1	12903.9	0.0
12 Fr(Table XV)	.017777	.017777	.017777	.017777	0.000000
13 Fc=FrTZ	10.692	10.532	10.005	9.960	0.000
14 FcQm	18.229	19.376	20.976	23.124	0.000
15 L/H(FcQm) ²	332.281	375.424	439.997	534.709	0.000
16 Fw=L/H(FcQm) ² (1-e ^{-s})	132.093	150.974	183.968	224.342	0.000
17 Pw ² =Pt ² +Fw	22346.3	20303.9	13691.0	13128.2	0.0
18 Ps ² =e ^s Pw ²	37091.4	33961.0	23528.7	22617.6	0.0
19 Ps	6090.3	5827.6	4850.6	4755.8	0.0
20 P=(Pt+Ps)/2	5401.7	5158.4	4262.9	4174.0	0.0
21 Pr=(P/Pcr)	7.73	7.38	6.10	5.97	0.00
22 Tr=(T/Tcr)	1.85	1.85	1.85	1.85	0.00
23 Z(Table XI)	1.025	1.009	.959	.954	0.000