

Adopted 9-1-65

DATE 4/6/89

COMPANY Yates Petroleum Corporation LEASE Willow Creek Unit WELL NO. 4LOCATION: Unit G Section 31 Township 4S Range 25EL 3810.0 H 3810.0 L/H 1.000 G .648 %CO₂ .04 %N₂ 6.58 %H₂S 0.00d 2.441 Fr .010495 GH 2468.9 Pcr 659.5 Tcr 353.4

LINE	1st Rate	2nd Rate	3rd Rate	4th Rate	5th Rate
1 Qm	.134	.159	.180	.206	0.000
2 Tw(W.H.°R)	522.0	522.0	522.0	522.0	0.0
3 Ts(B.H.°R)	566.0	566.0	566.0	566.0	0.0
4 T=(Tw+Ts)/2	544.0	544.0	544.0	544.0	0.0
5 Z(Est.)	.907	.923	.928	.977	0.000
6 TZ	493.3	502.2	504.8	531.6	0.0
7 GH/TZ	5.005	4.916	4.891	4.644	0.000
8 es(Table XIV)	1.206	1.202	1.201	1.190	0.000
9 1-e ^{-s} (Table XIV)	.171	.168	.168	.160	0.000
10 Pt	669.2	547.2	513.2	158.2	0.0
11 Pt ² /1000	447.8	299.4	263.4	25.0	0.0
12 Fr(Table XV)	.010495	.010495	.010495	.010495	0.000000
13 Fc=FrTZ	5.179	5.271	5.299	5.580	0.000
14 FcQm	.694	.839	.955	1.147	0.000
15 L/H(FcQm) ²	.481	.704	.912	1.315	0.000
16 Fw=L/H(FcQm) ² (1-e ^{-s})	.082	.119	.153	.210	0.000
17 Pw ² =Pt ² +Fw	447.9	299.5	263.5	25.2	0.0
18 Ps ² =e ^s Pw ²	540.3	360.2	316.6	30.0	0.0
19 Ps	735.1	600.2	562.6	173.3	0.0
20 P=(Pt+Ps)/2	702.1	573.7	537.9	165.8	0.0
21 Pr=(P/Pcr)	1.06	.87	.82	.25	0.00
22 Tr=(T/Tcr)	1.54	1.54	1.54	1.54	0.00
23 Z(Table XI)	.907	.923	.928	.977	0.000