

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w)

Form C-126D
Adopted 9-1-65

COMPANY Gulf Oil Corp. LEASE Callaway Federal WELL NO. # 3 DATE March 14, 1981

LOCATION: Unit K Section 6 Township 16s Range 28e

L 8884 H 8884 L/H 1.000 C .634 % CO₂ .38 % N₂ .44 % H₂S

d 1.995 F_r .018231 GH 5632 D_{CI} 670 T_{CI} 368
TABLE IX & X TABLE IX & X

LINE	1st rate		2nd rate		3rd rate		4th rate	
	1 st	2 nd	1 st	2 nd	1 st	2 nd	1 st	2 nd
1 Q _m	.086	.086	.142	.142	.193	.193	.247	.247
2 T _w (W.H. °R)	534	534	534	534	534	534	534	534
T _s (B.H. °R)	622	622	622	622	622	622	622	622
4 T = ($\frac{T_w + T_s}{2}$)	578	578	578	578	578	578	578	578
5 Z (Est.)	.815	.807	.821	.811	.834	.822	.849	.837
6 TZ	471.1	466.4	474.5	468.8	482.1	475.1	490.7	483.8
7 GH/TZ	11.956	12.074	11.868	12.015	11.683	11.854	11.477	11.642
8 e ^s (Table XIV)	1.566	1.573	1.561	1.569	1.550	1.560	1.538	1.547
9 1-e ^s (Table XIV)	.361	.364	.359	.363	.355	.359	.350	.354
10 P ₁	1913.2	1913.2	1773.2	1773.2	1563.2	1563.2	1353.2	1353.2
11 P ₁ ² /1000	3660.3	3660.3	3144.2	3144.2	2443.6	2443.6	1831.2	1831.2
12 F _r (Table XV)	.018231	.018231	.018231	.018231	.018231	.018231	.018231	.018231
13 F _c = F _r TZ	8.588	8.504	8.651	8.546	8.788	8.662	8.946	8.820
+ F _c Q _m	.739	.731	1.228	1.214	1.696	1.672	2.210	2.179
15 L/H (F _c Q _m) ²	.545	.535	1.509	1.473	2.877	2.795	4.883	4.746
16 F _w = L/H (F _c Q _m) ² (1-e ^{-s})	.197	.195	.542	.534	1.021	1.003	1.708	1.679
17 P _w ² = P ₁ ² + F _w	3660.5	3660.5	3144.8	3144.8	2444.6	2444.6	1832.9	1832.8
18 P _s ² = e ^s P _w ²	5731.3	5756.9	4907.7	4934.7	3788.7	3812.9	2818.7	2836.1
19 P _s	2394.0	2399.3	2215.3	2221.4	1946.5	1952.7	1678.9	1684.1
20 P = ($\frac{P_1 + P_s}{2}$)	2153.6	2156.3	1994.3	1997.3	1754.8	1757.9	1516.0	1518.6
21 P _r = (P/P _{cr})	3.21	3.22	2.98	2.98	2.62	2.62	2.26	2.27
22 T _r = (T/T _{cr})	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57
23 Z (Table XI)	.807	.807	.811	.811	.822	.822	.837	.837