

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (F_w)COMPANY Phoenix Resources LEASE Gardner Draw WELL NO. 3 DATE 6-5-79
LOCATION: Unit 7117 Section 17 Township 19 Range 21L 7117 H 7117 L/H 1 G 0.645 % CO₂ 19 % N₂ 21 % H₂S 375d 1.995 F_r 0.018231 GH 4590 P_{CT} 670 T_{CT} 375
1st Rate 2nd Rate 3rd Rate

LINE	1st Trial	2nd Trial	1st Trial	2nd Trial	1st Trial	2nd Trial	1st Trial	2nd Trial
1 Q _m	0.793	0.793	0.616	0.616	1.626	1.626	2.013	2.013
2 T _w (W.H. °R)	534	534	534	534	535	535	535	535
3 T _s (B.H. °R)	569	569	569	569	569	569	569	569
4 T = ($\frac{T_w + T_s}{2}$)	551.5	551.5	551.5	551.5	552	552	552	552
5 Z (Est.)	0.765	0.759	0.768	0.769	0.804	0.804	0.858	0.853
6 TZ	422	419	424	424	444	444	471	471
7 GH/TZ	10.827	10.955	10.825	10.825	10.223	10.338	9.68	9.745
8 e ^s (Table XIV)	1.504	1.508	1.501	1.501	1.469	1.474	1.438	1.441
9 1 - e ^s (Table XIV)	0.335	0.337	0.334	0.334	0.318	0.322	0.305	0.306
10 P _t	1758.2	1758.2	1611.2	1611.2	1235.2	1235.2	853.2	853.2
11 P _t ² /1000	3091.3	3091.3	2596.0	2596.0	1525.7	1525.7	728.0	728.0
12 F _r (Table XV)	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231
13 F _c = F _r TZ	7.69	7.64	7.73	7.73	8.19	8.09	8.64	8.59
14 F _c Q _m	6.1	6.06	4.76	4.76	13.32	13.15	17.39	17.29
15 L/H (F _c Q _m) ²	37.21	36.72	22.66	22.66	172.4	172.9	302.4	298.94
16 F _w = L/H (F _c Q _m) ² (1 - e ^{-s})	12.5	12.4	7.6	7.6	55.7	55.7	92.2	91.5
17 P _w ² = P _t ² + F _w	3103.8	3103.7	2603.6	2603.6	1582.1	1581.4	820.2	819.5
18 P _s ² = e ^s P _w ²	4668.1	4680.4	3908.0	3908.0	2320.9	2331.0	1179.4	1180.9
19 P _s	2160.6	2163.4	1976.9	1976.9	1523.5	1526.8	1086.0	1086.7
20 P = ($\frac{P_t + P_s}{2}$)	1959.4	1960.8	1794.7	1794.7	1379.4	1381.0	969.6	970.0
21 P _r = (P/P _{cr})	2.92	2.93	2.68	2.68	2.06	2.06	1.45	1.45
22 T _r = (T/T _{cr})	1.47	1.47	1.47	1.47	1.47	1.47	1.47	1.47
23 Z (Table XI)	0.759	0.759	0.769	0.769	0.804	0.804	0.853	0.853