

WORK SHEET FOR CALCULATION OF WELLHEAD PRESSURES (P_c or P_w)

FROM KNOWN BOTTOM HOLE PRESSURE (P_f or P_s)

COMPANY Conoco, Inc. LEASE Tuesday Federal WELL NO. 1 DATE 4-2-85

LOCATION: Unit M Section 34 Township 19S Range 29E

L 11,084' H 11,084' L/H 1.000 G 0.665 % CO₂ 0.32 % N₂ 0.78 % H₂S —

GH 7,371 P_{cr} 670 T_{cr} 380

TABLE IX & X

51BHP

LINE		1st								2nd	
		1st ₁	2nd ₂	3rd ₃	1st ₄	2nd ₅	3rd ₆	1st ₇	2nd ₈	1st ₉	2nd ₁₀
1	T _w (W.H. °R)	534	534	534	531	531	531	532	532	532	532
2	T _s (B.H. °R)	693	693	693	693	693	693	693	693	693	693
3	T = $\frac{T_w + T_s}{2}$	614	614	614	612	612	612	613	613	613	613
4	Z (Est.)	0.997	0.952	0.950	0.983	0.939	0.937	0.982	0.937	0.982	0.937
5	TZ	612	585	583	602	575	573	602	574	602	574
6	GH/TZ	12.044	12.600	12.643	12.244	12.819	12.864	12.244	12.841	12.244	12.841
7	e ^S (Table XIV)	1.571	1.604	1.607	1.583	1.617	1.620	1.583	1.619	1.583	1.619
8	P _f or P _s	5267.2	5267.2	5267.2	5130.2	5130.2	5130.2	5110.2	5110.2	5110.2	5110.2
9	P _f ² or P _s ²	27743.4	27743.4	27743.4	26319.0	26319.0	26319.0	26114.1	26114.1	26114.1	26114.1
10	P _c ² = P _f ² /e ^S or P _w ² = P _s ² /e ^S	17659.7	17296.4	17264.1	16626.0	16276.4	16246.3	16496.6	16129.8	16496.6	16129.8
11	P _c or P _w	4202	4159	4155	4077	4034	4031	4062	4016	4062	4016
12	P = $\frac{P_w + P_s}{2}$ or $\frac{P_c + P_f}{2}$	4734.6	4713.1	4711.1	4603.6	4582.1	4580.6	4586.1	4563.1	4586.1	4563.1
13	P _T = (P/P _{cr})	7.07	7.03	7.03	6.87	6.84	6.84	6.84	6.81	6.84	6.81
14	T _T = (T/T _{cr})	1.62	1.62	1.62	1.61	1.61	1.61	1.61	1.61	1.61	1.61
15	Z (Table XI)	0.952	0.950	0.950	0.939	0.937	0.937	0.937	0.936	0.937	0.936