

WORKSHEET FOR CALCULATION OF ST. C COLUMN WELLHEAD PRESSURE (P_W)

COMPANY J.C. Barnes Oil Co. LEASE Big Chief WELL NO. 2 DATE 5/3/79

LOCATION: Unit C Section 22 Township 22 Range 28

12288 H 12288 LH 1.000 G 602 % CO₂ 3.5 % N₂ 4.5 % H₂S 358

d 1.995 F_r 0.018231 GH 7397 P_{cr} 671 T_{cr} 358

LINE	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1 Q _m	.136	.136	.270	.270	.390	.390	.485	.485				
2 T _w (W.H. °R)	534	534	534	534	534	534	534	534				
3 T _s (B.H. °R)	657	657	657	657	657	657	657	657				
4 T = ($\frac{1}{W} + \frac{1}{S}$)	595.5	595.5	595.5	595.5	595.5	595.5	595.5	595.5				
5 Z (Est.)	.868	.857	.872	.862	.879	.867	.895	.883				
6 TZ	576.89	510.34	519.28	513.32	523.44	516.30	533.00	525.83				
7 GH/TZ	14.311	14.495	14.246	14.411	14.132	14.328	13.879	14.068				
8 e ^s (Table XIV)	1.710	1.722	1.706	1.717	1.699	1.711	1.683	1.695				
9 1-e ^s (Table XIV)	.415	.419	.414	.417	.411	.416	.406	.410				
10 P ₁	1535.2	1535.2	1465.2	1465.2	1357.2	1357.2	1130.2	1130.2				
11 P ₁ 2/1000	2356.8	2356.8	2146.8	2146.8	1842.0	1842.0	1277.4	1277.4				
12 F _r (Table XV)	.018231	.018231	.018231	.018231	.018231	.018231	.018231	.018231				
13 F _c = F _r TZ	9.423	9.304	9.467	9.358	9.543	9.413	9.717	9.586				
14 F _c Q _m	1.282	1.265	2.556	2.527	3.722	3.671	4.713	4.649				
15 L/H (F _c Q _m) ²	1.642	1.601	6.533	6.384	13.851	13.476	22.208	21.617				
16 F _w = L/H (F _c Q _m) ² (1-e ^s)	.682	.671	2.704	2.665	5.698	5.601	9.011	8.862				
17 P _w ² = P ₁ ² + F _w	2357.5	2357.5	2149.5	2149.5	1847.7	1847.6	1286.4	1286.2				
18 P _s ² = e ^s P _w ²	4032.1	4059.9	3667.3	3690.0	3139.0	3161.9	2164.7	2179.9				
19 P _s	2008.0	2014.9	1915.0	1920.9	1771.7	1778.2	1471.3	1476.4				
20 P = ($\frac{P_1 + P_s}{2}$)	1771.6	1775.1	1690.1	1693.1	1564.5	1567.7	1300.8	1303.3				
21 P _r = (P/P _{cr})	2.64	2.65	2.52	2.52	2.33	2.34	1.94	1.94				
22 T _r = (T/T _{cr})	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66				
23 Z (Table XI)	.857	.857	.862	.862	.867	.867	.883	.883				

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D. C. C.
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