

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

C-122D
Revised 9-1-65

COMPANY Nater Petroleum Corp LEASE Kitchens PH WELL NO. 1 DATE 12-14-81

LOCATION: Unit K Section 6 Township 9.5 Range 26 E

L 4350' H 4350' L/H 1 C 0.646 % CO₂ 0.95 % N₂ 5.61 % H₂S 0

d 1.195 F₁ 0.018231 CH 2810 P_{cr} 664 T_{cr} 357
1ST RATE 2ND RATE 3RD RATE 4TH RATE

LINE	1 ST TRIAL	2 ND TRIAL	1 ST TRIAL	2 ND TRIAL	1 ST TRIAL	2 ND TRIAL	1 ST TRIAL	2 ND TRIAL
1 Q _m	0.048	0.048	0.058	0.058	0.071	0.071	0.079	0.079
2 T _g (W.H. 99)	5.22	5.22	5.22	5.22	5.22	5.22	5.22	5.22
3 P ₁ (B.H. P ₁)	5.59	5.59	5.59	5.59	5.59	5.59	5.59	5.59
4 T ₁ = (W ₁ / P ₁)	540.5	540.5	540.5	540.5	540.5	540.5	540.5	540.5
5 T ₁ (B.H. T ₁)	0.958	0.911	0.920	Not	0.930	0.939	0.970	0.958
6 T ₂	517.80	492.40	497.26	Required	502.67	507.53	524.29	517.80
7 CH/T ₂	5.427	5.707	5.651	Required	5.590	5.537	5.360	5.427
8 e ^S (Table XIV)	1.226	1.239	1.236		1.233	1.231	1.223	1.226
9 1-e ^S (Table XIV)	0.184	0.193	0.111		0.189	0.188	0.182	0.184
10 F ₁	585.2	585.2	513.2	513.2	383.2	383.2	263.2	263.2
11 P ₁ 2/1000	342.5	342.5	263.4	263.4	146.8	146.8	69.3	69.3
12 F ₂ (Table XV)	1.018231	1.018231	1.018231	1.018231	1.018231	1.018231	1.018231	1.018231
13 F ₂ = F ₁ T ₂	9.440	8.977	9.066		1.164	9.253	9.558	9.440
14 F ₂ Q _m	.4531	.4309	.5258		.6507	.6569	.7551	.7458
15 L/H (F ₂ Q _m) ²	.2053	.1857	.2765		.4234	.4316	.5702	.5562
16 F _w = L/H (F ₂ Q _m) ² (1-e ^S)	.0378	.0358	.0528		.0800	.0811	.1038	.1023
17 P _w ² = P ₁ ² + F _w	342.54	342.54	263.45		146.88	146.88	69.40	69.40
18 P _s ² = e ^S P _w ²	419.95	424.41	325.62		181.10	180.81	84.88	85.08
19 P _s	648.04	651.47	570.63		425.56	425.22	291.34	291.69
20 P = (P ₁ + P _s)	616.62	618.33	541.92		404.38	404.21	277.27	277.45
21 P _r = (P/P _{cr})	.9286	.9312	.8161		.6090	.6087	.4176	.4178
22 T _r = (T/T _{cr})	1.5140	1.5140	1.5140	✓	1.5140	1.5140	1.5140	1.5140
23 Z (Table XI)	0.911	0.911	0.920	✓	0.939	0.939	0.958	0.958