

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

C-122D
Revised 9-1-65

COMPANY Mobil Oil Corp. LEASE Federal 99 WELL NO. #1 DATE 9-21-73

LOCATION: Unit B Section 8 Township 21-S Range 27-E
L 11173' H 11391' LH 9809 G 595 % CO₂ .99 % N₂ .89 % H₂S

d 2.441 F₁ 0.010763 CH 6777.65 P_{cr} 679 T_{cr} 359
1st RATE 2nd RATE 3rd RATE 4th RATE 5th RATE

LINE	1st RATE	2nd RATE	3rd RATE	4th RATE	5th RATE	6th RATE	7th RATE	8th RATE	9th RATE	10th RATE	11th RATE	12th RATE	13th RATE	14th RATE	15th RATE	16th RATE	17th RATE	18th RATE	19th RATE	20th RATE	21th RATE	22th RATE	23th RATE
1 Q _m	1.667	1.667	2.938	2.938	2.922	2.922	3.623	3.623															
2 T _w (W.H. °R)	539	539	538	538	536	536	535	535															
3 T _s (B.H. °R)	636	636	636	636	636	636	636	636															
4 T = (T _w + T _s)	587.5	587.5	587	587	586	586	585.5	585.5															
5 Z (Est.)	.929	.929	.925	.925	.900	.872	.885	.854															
6 T _z	595.8	527	543	518	527	511	518	500															
7 G _H /T _z	12.42	12.86	12.48	13.08	12.86	13.26	13.08	13.55															
8 e ^s (Table XIV)	1.593	1.615	1.597	1.621	1.615	1.634	1.621	1.648															
9 1-e ^s (Table XIV)	.372	.381	.374	.382	.382	.393	.382	.393															
10 P ₁	3433	3433	3235	3235	3060	3060	2927	2727															
11 P ₁ 2/1000	11785	11785	10965	10965	9364	9364	7437	7437															
12 F ₁ (Table XV)	.010763	.010763	.010763	.010763	.010763	.010763	.010763	.010763															
13 F ₂ = F ₁ T _z	5.87	5.67	5.84	5.58	5.67	5.50	5.58	5.38															
14 F ₂ 2 _m	9.79	9.45	14.0	13.38	16.57	16.07	20.22	19.49															
15 L/H (F ₂ Q _m) ²	94009	87.59	192.3	175.6	269.3	253.3	401.03	372.6															
16 F _w = L/H (F ₂ Q _m) ² (1-e ⁻⁹)	3497	33.4	71.9	67.08	102.87	99.55	153.2	146.4															
17 P _w 2 = P ₁ 2 + F _w	11820	11818	10537	10532	9467	9464	7590	7583															
18 P _s 2 = e ^s P _w 2	18829	19086	16828	17072	15289	15464	12303	12497															
19 P _s	4339	4369	4102	4130	3910	3933	3508	3535															
20 P = (P ₁ + P _s)	3886	3901	3668.5	3682.5	3485	3496.5	3117.5	3131															
21 P ₁ = (P/P _{cr})	5.765	5.78	5.44	5.46	5.17	5.19	4.63	4.65															
22 T ₁ = (T/T _{cr})	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66															
23 Z (Table XI)	.897	.897	.883	.883	.872	.872	.854	.854															

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