

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w)

Form C-1222
Adopted 9-1-65

COMPANY MESA PETROLEUM CO.

LEASE LINCOLN STATE COM.

WELL NO. #1

DATE 9-18-78

LOCATION: Unit H

Section 24

Township 18

Range 24

L 8447

H 8447

L/H 1.000

G .671

% CO₂ _____

% N₂ _____

% H₂S _____

d 1.995

F_r .018231

GH 5668

P_{cr} 669

T_{cr} 382

TABLE IX & X

LINE	1st	2nd	1st	2nd	1st	2nd	1st	2nd		
1 Q _m	.793	.793	1.048	1.048	1.502	1.502	1.954	1.954		
2 T _w (W.H. °R)	534	534	534	534	534	534	534	534		
3 T _s (B.H. °R)	620	620	620	620	620	620	620	620		
4 T = ($\frac{1}{2}T_w + T_s$)	577	577	577	577	577	577	577	577		
5 Z (Est.)	.774	.771	.780	.773	.808	.793	.888	.871		
6 TZ	446.6	444.9	450.1	446.0	446.2	457.6	512.4	502.6		
7 GH/TZ	12.692	12.741	12.594	12.708	12.157	12.387	11.062	11.278		
8 e ^s (Table XIV)	1.610	1.612	1.604	1.611	1.578	1.591	1.514	1.526		
9 1-e ^s (Table XIV)	.379	.380	.376	.379	.366	.372	.340	.345		
10 P _t	2113.2	2113.2	1923.2	1923.2	1503.2	1503.2	778.2	778.2		
11 P _t ² /1000	4465.6	4465.6	3698.7	3698.7	2259.6	2259.6	605.6	605.6		
12 F _r (Table XV)	.018231	.018231	.018231	.018231	.018231	.018231	.018231	.018231		
13 F _c = F _r TZ	8.142	8.110	8.205	8.131	8.500	8.342	9.341	9.162		
14 F _c Q _m	6.46	6.43	8.60	8.52	12.77	12.53	13.25	17.90		
15 L/H (F _c Q _m) ²	41.7	41.4	73.9	72.6	163.0	157.0	333.2	320.5		
16 F _w = L/H (F _c Q _m) ² (1-e ^{-s})	15.79	15.71	27.83	27.53	59.67	58.33	113.12	110.54		
17 P _w ² = P _t ² + F _w	4481.4	4481.3	3726.5	3726.2	2319.3	2317.9	712.7	716.1		
18 P _s ² = e ^s P _w ²	7212.9	7226.1	5976.0	6001.1	3658.9	3688.5	1933.2	1093.1		
19 P _s	2685.7	2688.1	2444.6	2449.7	1912.8	1920.5	1042.2	1045.5		
20 P = ($\frac{P_t + P_s}{2}$)	2399.4	2400.7	2183.9	2186.5	1708.0	1711.9	110.7	911.9		
21 P _r = (P/P _{cr})	3.59	3.59	3.26	3.27	2.55	2.56	1.36	1.36		
22 T _r = (T/T _{cr})	1.51	1.51	1.51	1.51	1.51	1.51	1.51	1.51		
23 Z (Table XI)	.771	.771	.773	.773	.793	.793	.871	.871		