

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w)

Form C-122D
Adopted 9-1-6

COMPANY Atlantic Richfield LEASE State No. 157 D WELL NO. # 4 DATE 3/24/76

LOCATION: Unit I Section 12 Township 22S Range 36E

L 3379 H 3379 L/H 1,000 G .701 % CO₂ --- % N₂ --- % H₂S ---

d 1.995 F_r .018231 GH 2369 P_{cr} 668 T_{cr} 392

TABLE IX & X

LINE	1st Rate		2nd Rate		3rd Rate		4th Rate	
	1st Trial	2nd Trial	1st Trial	2nd Trial	1st Trial	2nd Trial	1st Trial	2nd Trial
1 Q _m	.317	.317	.481	.481	.802	.802	1.036	1.036
2 T _w (W.H. °R)	534	534	534	534	534	534	534	534
3 T _s (B.H. °R)	568	568	568	568	568	568	568	568
4 T = ($\frac{1}{2} \frac{P_t + P_s}{T_s}$)	551	551	551	551	551	551	551	551
5 Z (Est.)	.918	.913	.942	.938	.946	.943	.953	.948
6 T _Z	505.8	503.1	519.0	516.8	521.2	519.6	525.1	522.3
7 GH/TZ	4.684	4.709	4.564	4.584	4.545	4.559	4.511	4.535
8 e ^s (Table XIV)	1.192	1.193	1.187	1.188	1.186	1.186	1.184	1.185
9 1 - e ^s (Table XIV)	.161	.162	.158	.158	.157	.157	.155	.156
10 P _t	443.2	443.2	317.2	317.2	285.2	285.2	254.2	254.2
11 P _t ² /1000	196.4	196.4	100.6	100.6	81.34	81.34	64.62	64.62
12 F _r (Table XV)	.018231	.018231	.018231	.018231	.018231	.018231	.018231	.018231
13 F _c = F _r TZ	9.221	9.172	9.462	9.422	9.502	9.473	9.573	9.522
14 F _c Q _m	2.92	2.91	4.55	4.53	7.62	7.60	9.92	9.86
15 L/H (F _c Q _m) ²	8.54	8.45	20.71	20.54	58.07	57.72	98.36	97.31
16 F _w = L/H (F _c Q _m) ² (1 - e ^{-s})	1.37	1.37	3.27	3.24	9.12	9.06	15.25	15.18
17 P _w ² = P _t ² + F _w	197.8	197.8	103.9	103.9	90.5	90.4	79.9	79.8
18 P _s ² = e ^s P _w ²	235.8	236.0	123.3	123.3	107.3	107.2	94.6	94.6
19 P _s	485.6	485.8	351.2	351.2	327.5	327.4	307.6	307.6
20 P = ($\frac{P_t + P_s}{2}$)	464.4	464.5	334.2	334.2	306.4	306.3	280.9	280.9
21 P _r = (P/P _{cr})	.70	.70	.50	.50	.46	.46	.42	.42
22 T _r = (T/T _{cr})	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41
23 Z (Table XI)	.913	.913	.938	.938	.943	.943	.948	.948