C-122D
Adopted 9-1-65

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w)

COMPANY: IPC LEASE: Stonewall LP St. WELL NO.: 4 DATE: 10-14-81

LOCATION: Unit: 11 Section: 30 Township: 20 S Range: 28 E

L: 10556 H: 10556 L/H: 1.000 G: 0.629 % CO_2: 0.64 % N_2: 0.41 % H_2S: Nil

d: 2.0005 F_r: 0.01639 GH: 6640 0.54% H_2O P_{cr} (TABLE IX & X): 691 T_{cr} (TABLE IX & X): 370

10508 (39.8) 413213
37 (7.26) 676
11 (1.3)
10556 (1.004) 415

LINE	S1	1	2	3	4					4
1 Q_m	-	1.695	2.320	3.167	3.792					3.792
2 T_w (W.H. °R)	522	525	526	527	527					
3 T_s (B.H. °R)	622	621	621	620	620					
4 $T = \frac{T_w + T_s}{2}$	572	573	573.5	573.5	573.5					573.5
5 Z (Est.)	.8005	.819	.829	.846	.862					.857
6 TZ	457.886	464.282	475.432	485.181	494.357					491.49
7 GH/TZ	14.5014	14.1491	13.9663	13.6856	13.4316					13.5100
8 e^s (Table XIV)	1.72254	1.6999	1.6823	1.67064	1.6548					1.65967
9 $1-e^{-s}$ (Table XIV)		0.4117	0.4077	0.4014	0.3957					0.3975
10 P_t	1763.2	1472.2	1333.2	1118.2	955.2					955.2
11 $P_t^2/1000$	3108.9	2167.37	1777.42	1250.4	912.41					912.41
12 F_r (Table XV)	0.5438	0.53059	0.52373	0.51321	0.50563					0.50662
13 $F_c = F_r TZ$		7.6916	7.7923	7.9521	8.1025					8.0555
14 $F_c Q_m$		13.037	18.078	25.1844	30.725					30.547
15 $L/H (F_c Q_m)^2$		169.97	326.82	634.25	944.0					933.09
16 $F_w = L/H (F_c Q_m)^2 (1-e^{-s})$		69.98	133.25	254.6	373.51					370.88
17 $P_w^2 = P_t^2 + F_w$		2237.35	1910.67	1505.0	1285.95					1283.29
18 $P_s^2 = e^s P_w^2$	5355.2	3803.3	3225.8	2514.3	2123.0					2129.8
19 P_s	2314.2	1950.2	1796.0	1585.7	1458.6					1459.4
20 $P = (\frac{P_t + P_s}{2})$	2038.7	1711.2	1564.6	1351.9	1207.0					1207.3
21 $P_r = (P/P_{cr})$	2.95	2.476	2.264	1.956	1.747					1.747
22 $T_r = (T/T_{cr})$	1.546	1.549	1.550	1.550	1.550					1.550
23 Z (Table XI)	0.8005	0.819	0.829	0.846	0.857					0.857