

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w)

C-122D
Revised 9-1-65

COMPANY Yates Peir Bell LEASE Federal AB Com WELL NO. 2 DATE 4-4-65

LOCATION: Unit 0 Section 5 Township 18 N Range 25 E

L 8296 H 8296 L/H 1.00 G 1605 % CO₂ 3.56 % N₂ 0.57 % H₂S 11.1

2 3/4 - 8175 (393) 32576 d 2.00 F_r 0.015 GH 5019 P_{cr} 673 T_{cr} 358

5 1/2 - 121 (2393) 2810 d 2.00 F_r 0.015 GH 5019 P_{cr} 673 T_{cr} 358

LINE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1 Q _m	-	1.020	1.694	2.369	2.780	-	1.020	1.694	2.369	2.780	-	1.020	1.694	2.369	2.780	-	1.020	1.694	2.369	2.780	-	1.020	1.694	2.369
2 T _w (W.H. °R)	534	536	538	540	543		534	536	538	540	543		534	536	538	540	543		534	536	538	540	543	
3 S (B.H. °R)	611	610	609	605	607		611	610	609	605	607		611	610	609	605	607		611	610	609	605	607	
4 T = ($\frac{L_w + 1 S}{2}$)	572.5	573	573.5	574	575		572.5	573	573.5	574	575		572.5	573	573.5	574	575		572.5	573	573.5	574	575	
5 Z (Est.)	.8255	.850	.860	.882	.910		.8255	.850	.860	.882	.910		.8255	.850	.860	.882	.910		.8255	.850	.860	.882	.910	
6 T _Z	472.60	487.05	493.21	506.27	523.25		472.60	487.05	493.21	506.27	523.25		472.60	487.05	493.21	506.27	523.25		472.60	487.05	493.21	506.27	523.25	
7 GH T _Z	10.620	10.705	10.176	9.9137	9.5920		10.620	10.705	10.176	9.9137	9.5920		10.620	10.705	10.176	9.9137	9.5920		10.620	10.705	10.176	9.9137	9.5920	
8 e ^s (Table XIV)	1.44592	1.44917	1.4646	1.4503	1.4329		1.44592	1.44917	1.4646	1.4503	1.4329		1.44592	1.44917	1.4646	1.4503	1.4329		1.44592	1.44917	1.4646	1.4503	1.4329	
9 1 - e ^s (Table XIV)		0.3305	0.3172	0.3105	0.3021			0.3305	0.3172	0.3105	0.3021			0.3305	0.3172	0.3105	0.3021			0.3305	0.3172	0.3105	0.3021	
10 F ₁	1801.2	1443.2	1227.2	950.2	655.2		1801.2	1443.2	1227.2	950.2	655.2		1801.2	1443.2	1227.2	950.2	655.2		1801.2	1443.2	1227.2	950.2	655.2	
11 P ₁ 2/1000	32.44.3	2082.8	1506.0	902.9	429.3		32.44.3	2082.8	1506.0	902.9	429.3		32.44.3	2082.8	1506.0	902.9	429.3		32.44.3	2082.8	1506.0	902.9	429.3	
12 F ₁ (Table XIV)	1.39825	1.38643	1.38161	1.37176	1.35970		1.39825	1.38643	1.38161	1.37176	1.35970		1.39825	1.38643	1.38161	1.37176	1.35970		1.39825	1.38643	1.38161	1.37176	1.35970	
13 T _c = F ₁ T _Z		7.8883	7.9880	8.1945	8.4946			7.8883	7.9880	8.1945	8.4946			7.8883	7.9880	8.1945	8.4946			7.8883	7.9880	8.1945	8.4946	
14 F _c Q _m		8.046	13.532	19.425	23.559			8.046	13.532	19.425	23.559			8.046	13.532	19.425	23.559			8.046	13.532	19.425	23.559	
15 L/H (F _c Q _m) ²		64.7	183.1	379.3	555.04			64.7	183.1	379.3	555.04			64.7	183.1	379.3	555.04			64.7	183.1	379.3	555.04	
16 F _w = L/H (F _c Q _m) ² (1 - e ^{-s})		20.7	58.1	117.1	169.7			20.7	58.1	117.1	169.7			20.7	58.1	117.1	169.7			20.7	58.1	117.1	169.7	
17 F _w ² = P ₁ ² + F _w		2103.5	1564.1	1020.0	597.0			2103.5	1564.1	1020.0	597.0			2103.5	1564.1	1020.0	597.0			2103.5	1564.1	1020.0	597.0	
18 P _s ² = e ^s P _w ²	4031.5	3095.8	2290.8	1479.3	855.4		4031.5	3095.8	2290.8	1479.3	855.4		4031.5	3095.8	2290.8	1479.3	855.4		4031.5	3095.8	2290.8	1479.3	855.4	
19 P _s	2198.1	1759.5	1513.5	1216.3	924.9		2198.1	1759.5	1513.5	1216.3	924.9		2198.1	1759.5	1513.5	1216.3	924.9		2198.1	1759.5	1513.5	1216.3	924.9	
20 P = ($\frac{P_1^2 + P_s^2}{2}$)	1999.7	1601.3	1370.4	1083.2	790.0		1999.7	1601.3	1370.4	1083.2	790.0		1999.7	1601.3	1370.4	1083.2	790.0		1999.7	1601.3	1370.4	1083.2	790.0	
21 P _r = (P/P _{cr})	2.971	2.379	2.036	1.610	1.174		2.971	2.379	2.036	1.610	1.174		2.971	2.379	2.036	1.610	1.174		2.971	2.379	2.036	1.610	1.174	
22 T _r = (T/T _{cr})	1.5992	1.6006	1.6020	1.6034	1.6061		1.5992	1.6006	1.6020	1.6034	1.6061		1.5992	1.6006	1.6020	1.6034	1.6061		1.5992	1.6006	1.6020	1.6034	1.6061	
23 Z (Table XI)	.8255	.844	.860	.882	.912		.8255	.844	.860	.882	.912		.8255	.844	.860	.882	.912		.8255	.844	.860	.882	.912	