

WORKSHEET FOR CALCULATION OF STATIC COLUMN WELLHEAD PRESSURE (P_w)

COMPANY PLAINS LEASING LEASE BELWIS SAN ANTONIO UNIT WELL NO. 2402 DATE 9-19-94

LOCATION: Unit 4453 Section H 4453 Township G 07364 Range 0.05

d 1.995 F_r 0.018231 GH 3279 P_{cr} 668 T_{cr} 401

TABLE IX & X

NE	Flow 1	Flow 2	Flow 3	Flow 4	Flow 5
1 Q _m	0.340	0.560	1.308	2.027	2.261
2 T _w (W.H. °R)	521	522	525	527	528
3 T _s (B.H. °R)	574	574	574	574	574
4 T = (T _w + T _s)	547.5	548	549.5	550.5	551
5 Z (Est.)	0.73	0.740	0.746	0.759	0.773
6 TZ	399.7	405.2	408.8	417.1	423.9
7 GH/TZ	8.204	8.092	8.021	7.952	7.735
8 e ^s (Table XIV)	1.360	1.355	1.351	1.343	1.335
9 1-e ^s (Table XIV)	0.265	0.262	0.260	0.255	0.252
0 P ₁	1243.2	1243.2	1212.2	1145.2	1067.2
1 P ₁ ² /1000	1545.5	1545.5	1469.4	1311.5	1138.9
2 F _r (Table XV)	0.018231	0.018231	0.018231	0.018231	0.018231
3 F _C = F _r TZ	7.287	7.387	7.453	7.604	7.757
4 F _C Q _m	2.478	2.512	2.496	2.452	2.416
5 L/H (F _C Q _m) ²	6.140	6.310	6.422	6.592	6.762
6 F _w = L/H (F _C Q _m) ² (1-e ^s)	1.627	1.653	1.670	1.687	1.704
7 P _w ² = P ₁ ² + F _w	1547.1	1547.2	1473.9	1336.7	1200.9
8 P _w ² = e ^s P _w ²	2104.1	2096.5	1991.2	1795.2	1603.2
9 P _s	1450.6	1447.9	1411.1	1339.9	1266.2
10 P = (P ₁ + P _s)	1396.9	1345.6	1311.7	1242.3	1167.1
11 P _r = (P/P _{cr})	2.0163	2.0144	1.9635	1.8597	1.7472
12 T _r = (T/T _{cr})	1.3653	1.3653	1.3666	1.3703	1.3728
13 Z (Table XI)	0.740	0.740	0.746	0.759	0.773