

WORK SHEET FOR STEPWISE CALCULATION

(SUBSURFACE) PRESSURE (P_f & P_g)
 XXXXXXXXXXXXXXXXXX (P_c & P_w)

Form C-122-E

CLIENT: Monsanto Company LEASE: Cerf Federal WELL NO. 2 DATE: 10-20-76

SECTION: 10 TOWNSHIP: 21S RANGE: 27E

10239 H 10239 L/H 1.00 G 0.793 % CO₂ 0.00 % N₂ 0.00 % H₂S 0.00
 d 1.995 F 0.018231 Q_m 0.792 M² cfd (L/H) (F Q_m)² 0.000208 P_{cr} 666 T_{cr} 421

ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
H		0	5120		10239						
GH		0	4060		8120						
37.5GH		0	152241		304482						
P _c or P _n		2115.2	2657.2	2650.2	3185.2	3167.2					
P _r		3.18	3.99	3.98	4.78	4.76					
P _r		517	566	566	614	614					
P _r		1.23	1.34	1.34	1.46	1.46					
Z		0.576	0.680	0.679	0.781	0.780					
P/Z P/Z		4 ÷ 8	3670.95	3906.50	3901.94	4078.36	4060.51				
P/PZ		9 ÷ 5	7.1005	6.9080	6.9000	6.6423	6.6132				
(P/PZ) ² /1000		(10 ² /1000)	0.050417	0.047721	0.047610	0.044120	0.043735				
/H(P _r Q _m) ²			0.000208	0.000208	0.000208	0.000208	0.000208				
T _n		11 ÷ 12	0.050625	0.047930	0.047810	0.044320	0.043943				
T _n		10 ÷ 13	140.256	144.129	144.296	149.843	150.495				
N=P _n - P _{n-1}			542	535	535	517	516				
N=1 _n + 1 _{n-1}			284.385	284.551	294.139	294.791					
N x N		15 x 16			152235						
Σ (M x N)		Σ 17			152235						
					304642						

$$\Delta P = \frac{3[304482]}{140.256 + 4[144.296] + 150.495} = \frac{913447}{867.935} = 1052.4 \quad P = 2115.2 + 1052.4 = 3167.6$$