

WORK SHEET FOR STEPWISE CALCULATION

(SUBSURFACE) PRESSURE $(P_f \& P_g)$
~~XXSURFACE~~ $(P_c \& P_w)$

Form C-122-E

RATE NO.4

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

SECTION: UNIT F SECTION 10 TOWNSHIP 21S RANGE 27E
11437 H 11437 L/H 1.00 G 0.596 % CO₂ 0.00 % N₂ 0.00 % H₂S 0.00
d 2.441 F 0.010763 Q_m 2.114 M²cf/d (L/H) $(F Q_M)^2$ 0.000518 P_{cr} 671 T_{cr} 358

ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
H		0	5719	11437							
GH		0	3408	6816							
37.5GH		0	127808	255617							
P _g or P _n		1462.2	1690.2	1918.2							
P _r		2.18	2.52	2.86							
T _r		531	578	624							
T _r		1.48	1.61	1.74							
Z		0.802	0.844	0.880							
P/2 P/2		4 ÷ 8	1822.74	2003.56	2179.77						
P/π2		9 ÷ 6	3.4327	3.4694	3.4932						
(P/π2) ² /1000		(10 ² /1000)	0.011783	0.0120360	0.012203						
(H(F Q _m) ²) ²			0.000518	0.0005180	0.000518						
T _r		11 + 12	0.012301	0.0125540	0.012720						
T _r		10 ÷ 13	276.351	274.618							
M = P _n - P _{n-1}			228	230	231						
N = 1/n + 1/n-1			555.411	550.969							
M x N		15 x 16	126634	126723							
Σ (M x N)		Σ 17	126634	253357							

Delta P = $\frac{3[255617]}{279.059 + 4[276.351] + 274.618} = \frac{766851}{1659.081} = 462.2$
P = 1462.2 + 462.2 = 1924.4