

WORK SHEET FOR STEPWISE CALCULATION

XXXXXXXXXX PRESSURE (P_c & P_w)

Form C-122-E

RATE NO . 1

COMPANY Monsanto Company LEASE Albert Federal WELL NO. 1 DATE 1-10-77

LOCATION: UNIT 0 SECTION 32 TOWNSHIP 19S RANGE 25E

L 9299 H 9299 L/H 1.00 G 0.595 % CO₂ 0.00 % N₂ 0.00 % H₂S 0.00
d 2.441 F_r 0.010763 Q_m 1.156 M² cfd (L/H) (F_r Q_m)² 0.000155 P_{cr} 672 T_{cr} 354

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		0	4650		9299						
2	GH		0	2766		5533						
	37.5GH		0	103742		207484						
4	P _c or P _n		2682.2	3040.2	3029.2	3375.2	3356.2					
5	P _r		3.99	4.52	4.51	5.02	4.99					
6	T		518	567	567	616	616					
7	T _r		1.46	1.60	1.60	1.74	1.74					
8	Z		0.752	0.829	0.829	0.893	0.892					
9	P/Z P/Z		3566.76	3667.31	3654.04	3781.31	3761.71					
10	P/TZ		9 ÷ 6	6.4679	6.4445	6.1385	6.1067					
11	(P/TZ) ² /1000		0.047412	0.041834	0.041532	0.037681	0.037291					
12	L/H(F _r Q _m) ²		0.000155	0.000155	0.000155	0.000155	0.000155					
1				11 + 12		0.047567	0.041989	0.041687	0.037836	0.037446		
14	I _n			10 ÷ 13		144.757	154.039	154.594	162.240	163.078		
15	M=P _n -P _{n-1}			358		347	346					
16	N=1 _n +1 _{n-1}			298.797		299.352	316.834	317.673				
17	M x N			103875		103875	103879					
18	Σ (M x N)			15 x 16		103875	103879					
				Σ 17		103875	207754					

$$\Delta P = \frac{3[207484]}{144.757 + 4[154.594]} + 163.078 = \frac{622452}{926.211} = 672.0 \quad P = 2682.2 + 672.0 = 3354.2$$