WORK SHEET FOR STEPWISE CALCULATION (SHUT-IN) PRESSURE (P_f & P_s) Form C-122-E

XXXXXXXXXX (P_c & P_w)

RATE NO. 4

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

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

9299 H 9299 L/H 1.00 G 0.595 % CO_2 0.00 % N_2 0.00 % H_2S 0.00

d 2.441 F_r 0.010763 Q_m 2.123 M^2cfd (L/H) $(F_rQ_M)^2$ 0.000522 P_{cr} 672 T_{cr} 354

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		0	4650	9929							
2	GH		0	2766	5533							
	37.5GH		0	103742	207484							
4	P_c or P_n		2003.2	2272.2	2543.2	2534.2						
5	P_r		2.98	3.38	3.78	3.77						
6	T		519	568	616	616						
7	T_r		1.47	1.60	1.74	1.74						
8	Z		0.758	0.771	0.869	0.870						
9	P/Z P/Z	$\overline{4} \div \overline{8}$	2641.35	2947.08	2925.24	2914.21						
10	P/TZ	$\overline{9} \div \overline{6}$	5.0893	5.1931	4.7488	4.7309						
11	$(P/TZ)^2/1000$	$(10^2/1000$	0.025901	0.026968	0.022551	0.022381						
12	$L/H(F_rQ_m)^2$		0.000522	0.000522	0.000522	0.000522						
		$\overline{11} + \overline{12}$	0.026423	0.027490	0.023073	0.022903						
14	l_n	$\overline{10} \div \overline{13}$	192.608	188.906	205.816	206.559						
15	$M=P_n - P_{n-1}$			269	271	262	262					
16	$N=l_n + l_{n-1}$			381.514	394.722	395.465						
17	M x N	$\overline{15} \times \overline{16}$		102627		103612						
18	Σ(M x N)	Σ $\overline{17}$		102627		206239						

$$\text{Delta P} = \frac{3[207484]}{192.608 + 4[188.906] + 206.559} = \frac{622452}{1154.791} = 539.0 \qquad P = 2003.2 + 539.0 = 2542.2$$