

WORK SHEET FOR STEPWISE CALCULATION

XXXXXXXXXXXXX

PRESSURE

XXXXXXXXXXXXX

Form C-122-1

(SURFACE)

(P_c & P_w)

RATE #4

COMPANY Grace Petroleum Company LEASE Whitten Federal

WELL NO. 1 DATE 9-4-79

LOCATION: UNIT I SECTION 14 TOWNSHIP 20 S RANGE 34 E

13090 H 13090 L/H 1.0 G .700 % CO₂ 0.23 % N₂ 0.60 % H₂S 0

d 2.441 F_r .010763 Q_m 3.884 M² cfd (L/H) (F_r Q_m)² P_{cr} 668 T_{cr} 392

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		13090	6545	0							
2	GH		9163	4581	0							
3	37.5GH		343613	171807	0							
4	P _c or P _n		2759.2	2322.5	1887.0							
5	P _r		4.13	3.47	2.82							
6	T		647	592	537							
7	T _r		1.65	1.51	1.37							
8	Z		.839	.776	.689							
9	P/Z P/Z	$\bar{4} \div \bar{8}$	3288.67	2992.98	2738.88							
10	P/TZ	$\bar{9} \div \bar{6}$	5.0829	5.0557	5.1003							
11	(P/TZ ² /1000	$(10^2/1000)$										
12	L/H(F _r Q _m) ²											
13		$\bar{11} + \bar{12}$										
14	I _n	$\bar{10} \div \bar{13}$	196.735	197.795	196.065							
15	M=P _n -P _{n-1}			437	435							
16	N=1 + 1 _{n-1}			393.471	394.531							
17	M x N	$\bar{15} \times \bar{16}$		171946	171621							
18	$\sum (M \times N)$	$\sum \bar{17}$		171946	343567							

delta P = $\frac{3(343613)}{196.735 + 4(197.795) + 196.065} = 1030837$

= 870.6 P = 2759.2 - 870.6 = 1888.6