

WORK SHEET FOR STEPWISE CALCULATION
(SUBSURFACE) PRESSURE (P_f & P_s)
(SURFACE) (P_c & P_w)

Form C-122E
Adopted 9-1-65

COMPANY Continental Oil Co. LEASE Anderson Ranch WELL NO. 3 DATE 9/24/69

LOCATION: Unit A Section 11 Township 16-S Range 25-E

L 12,148 H 12,148 L/H 1.00 G 1.046 % CO₂ .61 % N₂ 1.39 % H₂S 0

d 1.995 F_r 0.1823 Q_m 1.667 M²cfd (L/H) (F_rQ_m)² .0009236 P_{CF} 653 T_{CF} 499

TABLE IX & X

LINE	ITEM	SOURCE	1	2	3	4	5	6	7	8	9	10
1	H		12,148	6074				0				
2	GH		12,706.8	6353.4				0				
3	37.5GH		476,505	238,232				0				
4	P _c or P _n		3407.5	2541.1	2522.5	2523.5		1638.7	1521.6			
5	P _r		5.22	3.89	3.86	3.86		2.51	2.33			
6	T		640	580	580	580		520	520			
7	T _r		1.28	1.16	1.16	1.16		1.04	1.04			
8	Z		.732	.577	.574	.574		.334	.310			
9	P/Z	$\bar{4} \div 8$	4655.0	4403.9	4394.5	4396.3		4966.2	4908.3			
10	P/TZ	$\bar{9} \div 6$	7.2734	7.5929	7.5767	7.5798		9.4350	9.4390			
11	(P/TZ) ² /1000	(10) $\bar{2}/1000$										
12	L/H(F _r Q _m) ²											
13		$\bar{11} + \bar{12}$										
14	I _n	$\bar{10} \div \bar{13}$	137.5	131.7	132.0	131.9		156.0	105.9			
15	M=P _n -P _{n-1}			866.4	885.0	884.0	884.4	884.8	1001.9	1002.3		
16	N=I _n +I _{n-1}			269.2	269.5	269.4		237.9	237.8			
17	M x N	$\bar{15} \times \bar{16}$				238,150						
18	Σ(M x N)	Σ $\bar{17}$	476,505			238,355						

$Q_2 :$

$$G = \frac{G_g + \frac{4595 G_1}{GOR}}{1 + \frac{V_1}{GOR}}$$

$$G = 1.046$$

$$\begin{array}{r} P_{cr} = 652 \\ + 2.4 \\ - 1.4 \\ \hline 653 \end{array}$$

$$\Delta P = \frac{3(37.5 GH)}{I_t + 4I_1 + I_2}$$

$$\Delta P = 1881.7$$

$$P_s = P_t + \Delta P$$

$$P_s = 3373.9$$

$$\Delta P = \frac{3(37.5 GH)}{I_w + 4I_1 + I_2}$$

$$\Delta P = 1854.1$$

$$P_w = P_s - \Delta P$$

$$P_w = 1519.8$$

$$\begin{array}{l} G_g = .736 \\ G_1 = .7694 \\ GOR = \frac{1667,000}{187} = 8914 \\ V_1 = 741 \end{array}$$

$$\begin{array}{r} T_{cr} = 504 \\ - .6 \\ - 4.2 \\ \hline 499 \end{array}$$

$$\begin{array}{r} 37.5 GH = 476,505 \\ I_t = 104.2 \\ I_1 = 130.1 \\ I_2 = 135.1 \end{array}$$

$$P_t = 1492.2$$

$$\begin{array}{r} 37.5 GH = 476,505 \\ I_w = 105.9 \\ I_1 = 131.9 \\ I_2 = 137.5 \end{array}$$

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13.9.69