Atoka: Start at 35 MCFPD and decline to 10 MCFPD

$$N_1 = \frac{-365\ (10-35)}{\ln\ (1-.5)} = 13{,}165 \text{ MCF}$$

6> Estimated bottom-hole pressure for each artificially lifted zone. A current (within 30 days) measured bottom-hole pressure for each zone capable of flowing.

See Attachments B and C for shut-in tubing pressures of Morrow and Atoka zones.

Morrow: SITP = 1755 psi
Assuming gas mostly methane (MW = 16)

$$P = P_s\, e^{\exp \frac{MW\,(D-D_s)}{1544\, z\, T}}$$

MW= 16
P_S = 1755
D = 10061'
$T = \frac{185 + 60}{2} = 123^\circ F = 583^\circ R$
Z = .84

$$P = 1755\, e^{\frac{16\ (10061)}{1544\ (.84)\ (583)}} = 2171 \text{ psi}$$

Atoka: SITP = 2280 psi
MW = 16
P_S = 2280
D = 9692'
$T = 583^\circ R$
Z = .84

$$P = 2280\, e^{\frac{16\ (9692)}{1544\ (.84)\ (583)}} = 2799 \text{ psi}$$

7> A description of the fluid characteristics of each zone showing that the fluids will not be incompatible in the well-bore.

Both Morrow and Atoka produce sweet gas. Don't anticipate any compatibility problems.

8> A computation showing that the value of the commingled production will not be less than the sum of the values of the individual streams.

Both Morrow and Atoka produce sweet gas. The value of the gas will not be affected by commingling.

9> A formula for the allocation of production to each of the commingled zones and a description of the factors or data used in determining such formula.

$$\text{Morrow} = \frac{\text{Morrow Reserves}}{\text{Total Reserves}}$$

$\frac{101{,}065 \text{ MCF}}{114{,}230 \text{ MCF}} = .8848$ Say 88%

$$\text{Atoka} = \frac{\text{Atoka Reserves}}{\text{Total Reserves}}$$

$\frac{13{,}165 \text{ MCF}}{114{,}230 \text{ MCF}} = .1152$ Say 12%