derivation of Equations 1, 2, and 3:

general form of single pump characteristic curve:

$\Delta h = a - bQ^2$ a and b obtained from Figure 5:

$a = 24.838$

$b = 0.0869$

Equation 1: $\Delta h = 24.838 - 0.0869Q^2$

general form of pumps in series characteristic curve:

$\Delta h = n(a - bQ^2)$ $n = 2$ (number of pumps in series)

Equation 2: $\Delta h = 2(24.838 - 0.0869Q^2) = 49.676 - 0.1738Q^2$

general form of pumps in parallel characteristic curve:

$\Delta h = a - b\left(\frac{Q}{n}\right)^2$ $n = 2$ (number of pumps in parallel)

Equation 3: $\Delta h = 24.838 - 0.0869\left(\frac{Q}{2}\right)^2 = 24.838 - 0.0217Q^2$