Sedimentation Capture Velocity Estimates

Miramar WTP

$V_{Capture.MWTP.Basin1.2} := 0.54 \ \frac{gpm}{ft^2}$

$V_{Capture.MWTP.Basin1.2} = 0.37 \ \frac{mm}{s}$

$Q_{Basin3.4} := 80 \ mgd$

$Q_{Basin5.6} := 110 \ mgd$

$A_{Plates.Basin3.4} := 142000 \ ft^2$

$A_{Plates.Basin5.6} := 173700 \ ft^2$

$V_{Capture.MWTP.Basin3.4} := \frac{Q_{Basin3.4}}{A_{Plates.Basin3.4}}$

$V_{Capture.MWTP.Basin3.4} = 0.39 \ \frac{gpm}{ft^2}$

$V_{Capture.MWTP.Basin3.4} = 0.27 \ \frac{mm}{s}$

$V_{Capture.MWTP.Basin5.6} := \frac{Q_{Basin5.6}}{A_{Plates.Basin5.6}}$

$V_{Capture.MWTP.Basin5.6} = 0.44 \ \frac{gpm}{ft^2}$

$V_{Capture.MWTP.Basin5.6} = 0.3 \ \frac{mm}{s}$

Alvarado WTP

$Q_{Plant.AWTP} := 120 \ mgd$

$L_{Basins12.AWTP} := 137.6 \ ft$

$L_{Basins34.AWTP} := 236.92 \ ft$

$W_{Basins12.AWTP} := 170 \ ft$

$W_{Basins34.AWTP} := 93.5 \ ft$

$A_{Basins12.AWTP} := L_{Basins12.AWTP} \cdot W_{Basins12.AWTP} = 23392 \ ft^2$

$A_{Basins34.AWTP} := L_{Basins34.AWTP} \cdot W_{Basins34.AWTP} = 22152.02 \ ft^2$

$V_{Capture.AWTP} := \frac{Q_{Plant.AWTP}}{2 \cdot A_{Basins12.AWTP} + 2 \cdot A_{Basins34.AWTP}}$

$V_{Capture.AWTP} = 0.62 \ \frac{mm}{s}$