

# LOADING CALCULATIONS

## Hydraulic Loading Rate:

$$\text{HLR} = Q \div A$$

Units: GPD/ft<sup>2</sup>, MGD/acre, inches/day

## Organic Loading Rate:

**Surface Loading:**  $\text{OLR} = (Q \times \text{BOD}) \div A$

**Volume Loading:**  $\text{OLR} = (Q \times \text{BOD}) \div V$

**Units:** lbs BOD/day/1000 ft<sup>2</sup> or lbs BOD/day/1000 ft<sup>3</sup>

## Food to Microorganism Ratio (F/M):

$$F/M = (Q \times \text{BOD}_5) \div (\text{MLVSS} \times \text{Aeration Volume})$$

$$F/M = (\text{lbs BOD/day}) \div (\text{lbs MLVSS})$$

**Units:** lbs BOD/day/lb MLVSS