

## Carbon Dioxide Removal Problem

- Groundwater containing 20 mg/l of carbon dioxide will be degasified using a series of six multiple-tray aerators. Each aerator uses eight trays, and the aerators will be operated in parallel. For flexibility, any five aerators will be operative at one time while one aerator is inoperative for cleaning and maintenance.
- The design population is 40,000, and the maximum demand is 130 gal/person-day. The  $k$  value is 0.30, and the hydraulic loading is 3 gpm/ft.<sup>2</sup>.
- Determine:
  - The carbon dioxide content of the product water.
  - The size of the trays if the length-to-width ratio is 1:1 and the trays are made in 1 in. increments.

$$\frac{C}{C_0} = e^{-kn}$$