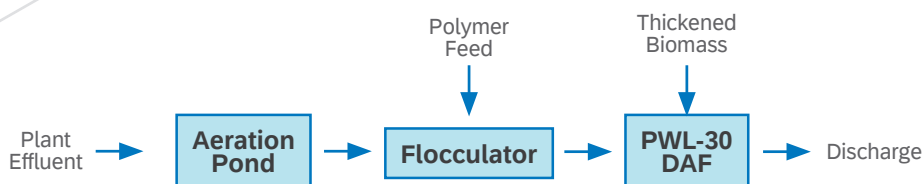


Specialty Chemicals



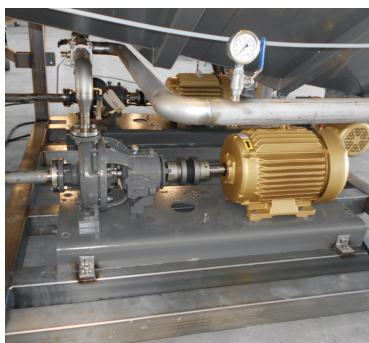
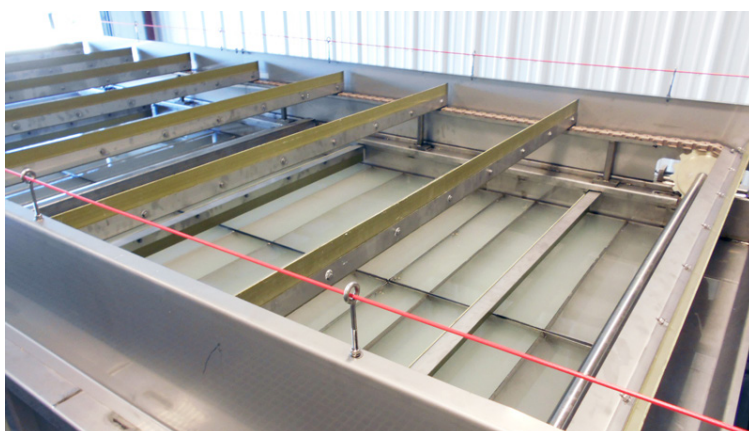
The specialty chemicals manufacturer produces a wide range of coatings, polymers, lubricants, fuel additives, and home use products. They biologically treat the plant effluent in an aeration pond using a continuous waste activated sludge process to reduce BOD.

As a result, a large volume of biomass needs to be separated in a DAF system. A flocculator with polymer dosing helps the DAF achieve a high dry solids percentage in the skimmed biomass.

	Design Parameters	Discharge Requirements
Flow	154,000 GPD	
MLSS	5000 mg/L	< 30 mg/L

Equipment Supplied

PWL-30 DAF
F-3 Flocculator
Pneumatic Controls
Maintenance Catwalk



DAF Sizing Calculations

Hydraulic Surface Loading Rate

$$\begin{aligned}
 &= \frac{\text{Feed Flow + Recycle Flow in gpm}}{\text{Effective Surface Area in sqft}} \\
 &= \frac{107 + 44 \text{ gpm}}{\text{x sqft}} = 2 \text{ gpm/sqft} \\
 &= 75 \text{ sqft required}
 \end{aligned}$$

Solids Loading Rate

$$\begin{aligned}
 &= \frac{\text{Weight of TSS in feed in lbs/hr}}{\text{Free Surface Area in sqft}} \\
 &= \frac{270 \text{ lbs/hr}}{\text{x sqft}} = 3 \text{ lbs/sqft/hr} \\
 &= 90 \text{ sqft required}
 \end{aligned}$$