

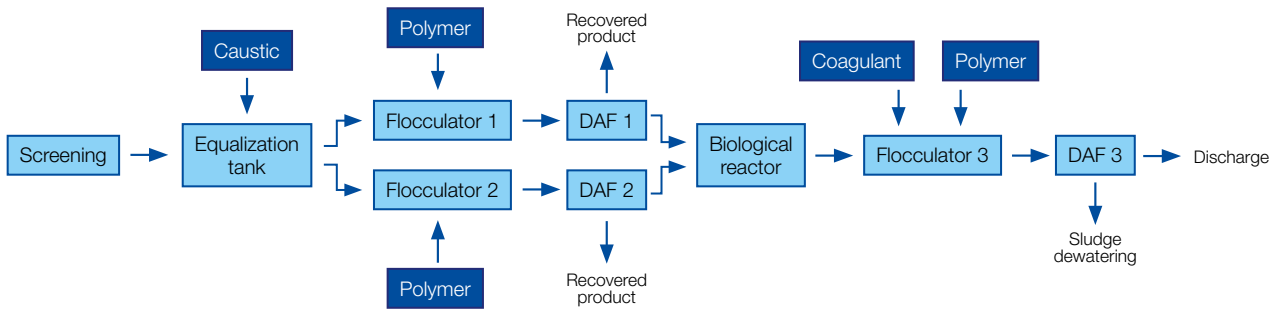
Poultry kill and processing

The poultry plant processes 400'000 birds per day, generating 8'706 cubic meters of wastewater laden with proteins, feathers, offal, and bone.

- Preliminary screens remove the coarse solids while the rest of the emulsified oils, fats, and proteins are sent to a DAF system for recovery.
- Two DAF units separate solids from the water and send them to recovered product cookers where they are concentrated into an oily product which is sold to a renderer.
- DAF effluent is biologically treated in a 3'785 m³ aeration basin.
- A third DAF unit is used to separate biomass and remove TP from the biological treatment system. Effluent from this DAF meets the requirements for discharge to a local waterway.



Solution delivered



Equipment supplied

- PCL-90 DAF (2)
- PCL-180 DAF (1)
- F-12 flocculator (2)
- F-14 flocculator (1)
- Recovered product tanks (2)

DAF sizing calculations

Hydraulic surface loading rate

$$= \frac{\text{Feed flow + recycle flow in m}^3/\text{h}}{\text{Effective surface area in m}^2}$$

$$= \frac{363.4 + 54.5 \text{ m}^3/\text{h}}{x \text{ m}^2} = 2.4 \text{ m}^3/\text{m}^2/\text{h}$$

$$= 174.1 \text{ m}^2 \text{ required}$$

Solids loading rate

$$= \frac{\text{Weight of TSS in feed in kg/h}}{\text{Free surface area in m}^2}$$

$$= \frac{907.2 \text{ kg/h}}{x \text{ m}^2} = 73.2 \text{ kg/m}^2/\text{h}$$

$$= 12.4 \text{ m}^2 \text{ required}$$

	Design parameters	Discharge requirements
Flow	8.706 m ³ /d	
TSS	1'500 - 2'500 mg/l	30 mg/l
FOG	2'500 mg/l	10 mg/l
COD	6'800 mg/l	
BOD	4'200 mg/l	30 mg/l
TP		0.2 mg/l

