

CASE STUDY

Pet food production

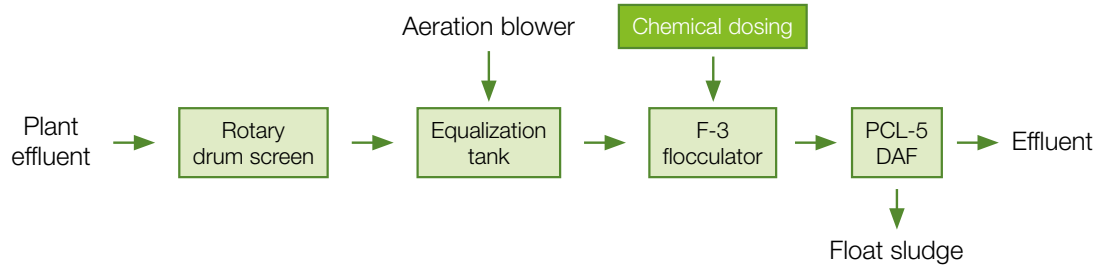
The plant processes a variety of organic ingredients including chicken, beef, lamb, vegetables, and rice into specially formulated pet food products.

Plant wastewater largely comes from washing raw ingredients and sanitizing process equipment. It carries varying concentrations of oil and grease, and has a weekly surge of wastewater with high pH from the use of cleaning chemicals.

The delivered wastewater treatment solution included a preliminary screen, equalization (EQ) tank, chemical dosing equipment, pipe flocculator, DAF unit, and sludge holding tank, along with all necessary ancillary controls, monitoring systems, pumps, and access platforms to provide a complete installation. From purchase to start-up, the project was completed within 12 weeks.



Solution delivered



Equipment supplied

- Rotary drum screen
- 75.7 m³ gal EQ tank
- PCL-5 DAF
- F-3 flocculator
- Stainless steel platform

	Design parameters	Discharge requirements
Flow	416.4 m ³ /d	
TSS	350 mg/l	300 mg/l
FOG	900 mg/l	150 mg/l
BOG	450 mg/l	300 mg/l

DAF sizing calculations

Hydraulic surface loading rate

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

$$= \frac{17.3 + 5.9 \text{ m}^3/\text{h}}{x \text{ m}^2} = 2.4 \text{ m}^3/\text{m}^2/\text{h}$$

$$= 9.7 \text{ m}^2 \text{ required}$$

Solids loading rate

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

$$= \frac{15.9 \text{ kg/h}}{x \text{ m}^2} = 12.2 \text{ kg/m}^2/\text{h}$$

$$= 1.3 \text{ m}^2 \text{ required}$$

