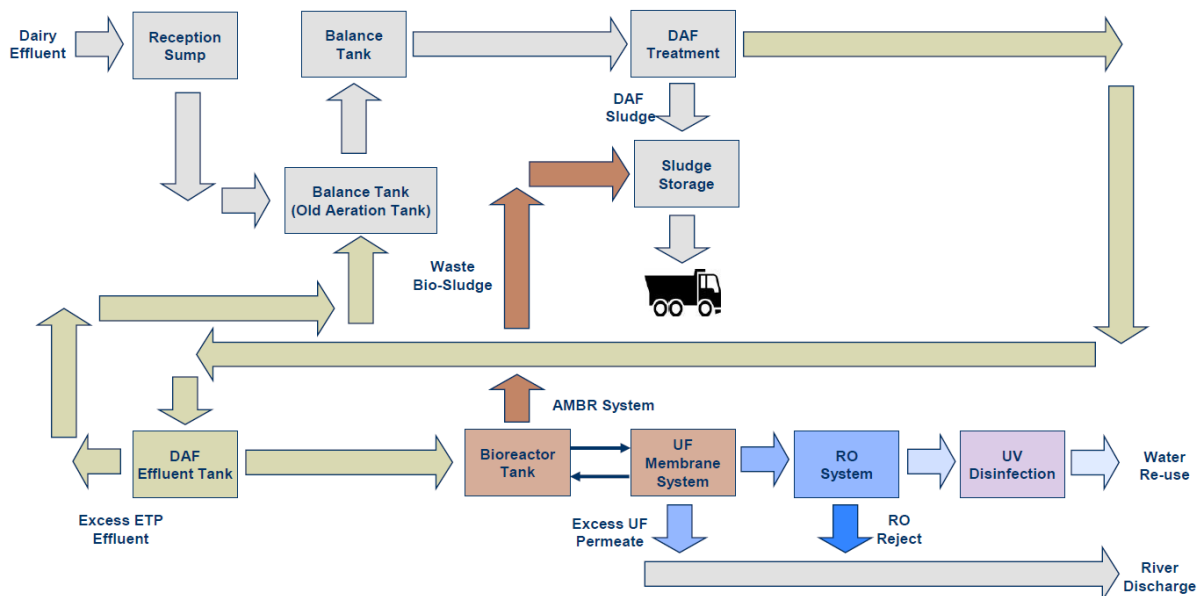


## WYKE FARMS 100% GREEN Water Recovery Plant

### Project aims;

- To provide tertiary treatment (reverse osmosis and UV disinfection) to produce potable water for re-use.
- Extend the existing waste water treatment plant, by providing further biological treatment, UF and RO membrane systems, producing high quality waste water for discharge to river.

### NEW PLANT OVERVIEW



#### • **Primary treatment**

Waste water is settled to take out any solids before being transferred to a balance tank. From there the water travels to Dissolved air flotation unit, which floats off further solids.

#### • **Secondary treatment**

Waste water is pumped to the bioreactor. The Bioreactor forms the first stage of the new system and holds the biomass population which breaks down the organic matter in the wastewater. The biomass requires oxygen to operate and this is provided by the jet aeration system and air blowers.

The water is then separated from the biomass using the Ultra filtration membrane separation system. This involves the circulation of biomass through external membrane banks. Under pressure the treated effluent is produced as permeate from the membranes and the biomass is retained and returned to the bioreactor. The permeate from the membrane system is discharged to the UF Permeate Tank which provides a reservoir for UF membrane flushing, feed water for tertiary treatment in the RO System or discharge to the river.

#### • **Tertiary treatment**

When the Factory requires recovered water, the UF permeate is transferred to the Reverse Osmosis system. The RO drives water through two stages of RO membranes. The reverse osmosis process produces an ultra-clean permeate stream which is transferred to our recovered water tank via a UV disinfection Unit.

The system can produce up to 300,000L of potable water per day.