Virtual Plant Tour –
Pilot Plant for Cow Water Purification

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b-watersmart.eu

Technology for Water
ENVIROCHEMIE

Treatment of vapour condensate for reuse

Feed Water

Vapour condensate fron whey

Feed characteristics

- TOC 5 - 25 mg/L
- Nitrogen up to 6 mg/L
- Phosporous < 0,5 mg/L

Treatment goal

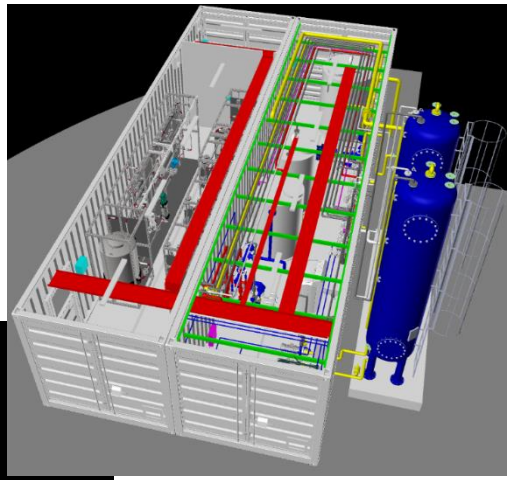
Purified water needs to fit the german law requirements for drinking water

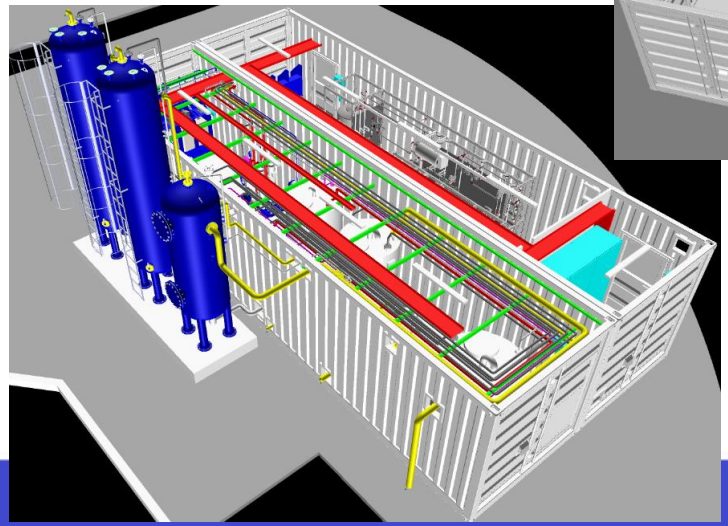
Achieved characteristics

- hygienically safe
- TOC < 0,1 mg/L
- low el. Conductivity < 5 µS/cm

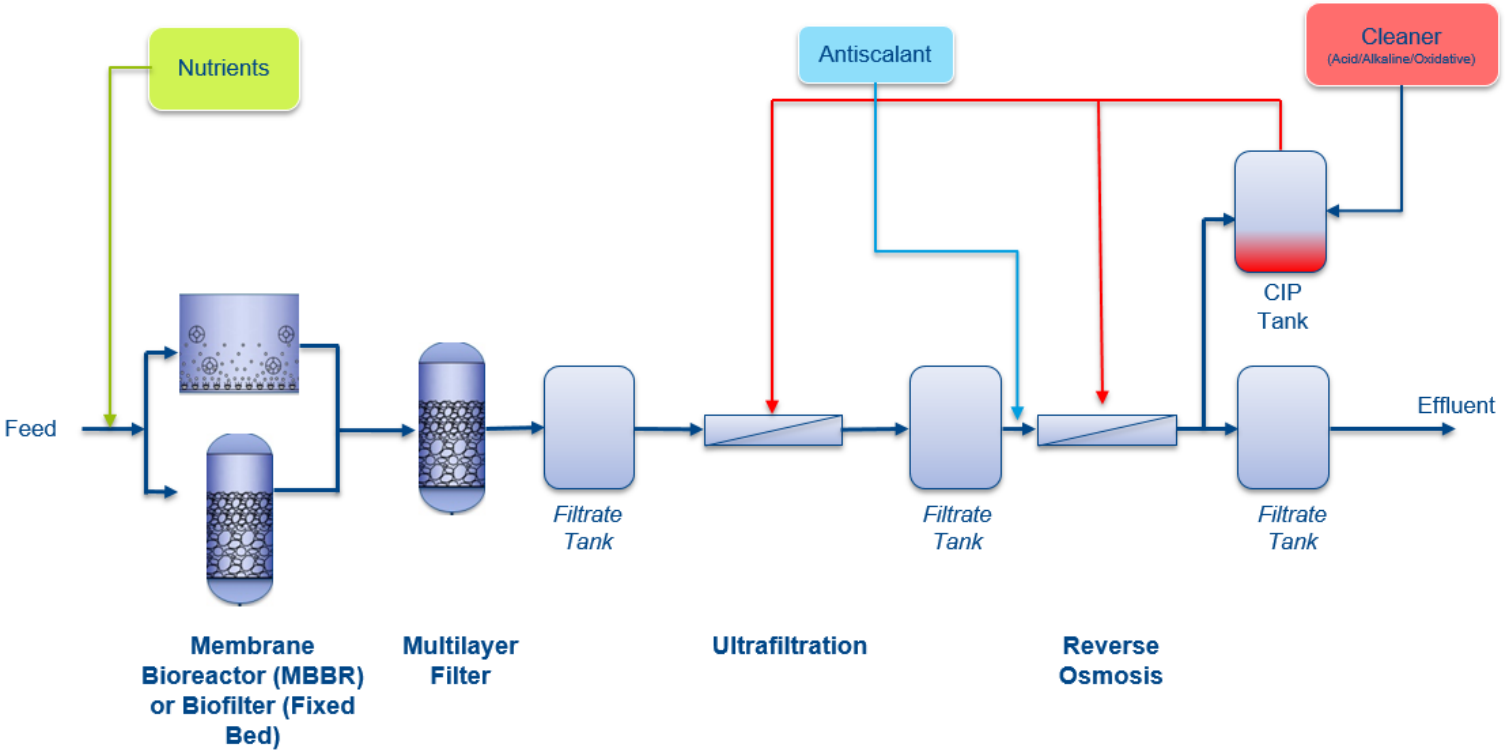
General overview

- footprint: < 75 m^2
- 2x 40”-Container + 3 GRP tanks (outside installation)
- treatment capacity 6 m^3/h
- fully automated operation
- remote access
- Digital data acquisition and evalualtion (WaterExpert)





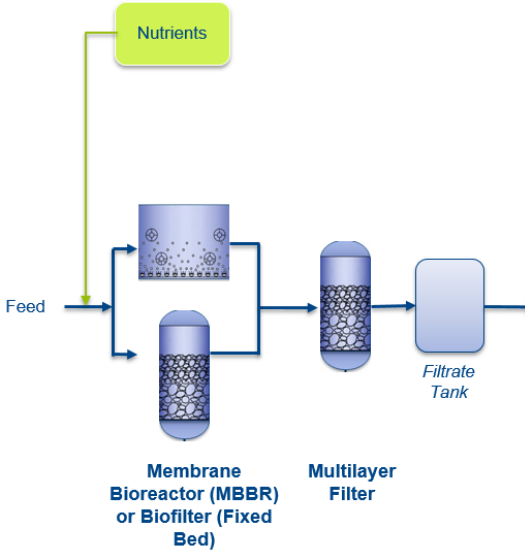
Process overview



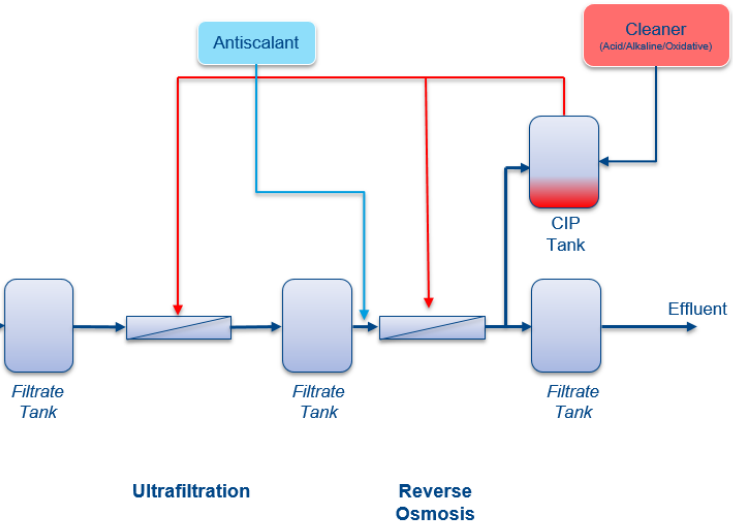
Assigned tasks for each process step

Treatment is a combination of biological, bio-physical and membrane treatment steps

- the biological step eliminates C, N and P
- Der bio-physical process retains the excess sludge from the biological stage and further reduces residual concentrations of C, N und P
- dosification of trace-elements optimizes the metabolic processes



Assigned tasks for each process step



- The first membrane stage removes microorganisms and reduces higher molecular weight carbon compounds of the inert COD fraction.
- The second membrane stage removes low molecular weight carbon compounds and serves as a second barrier for microorganisms. Additionally, it can be sanitized with hot water.
- The UV irradiation protects the containment system where the generated water is temporarily stored from recontamination, for example, from the introduction of microorganisms from the atmosphere.

DMK Edewecht, installation nearby the whey powder production

Inner view of the “Biomar Module”

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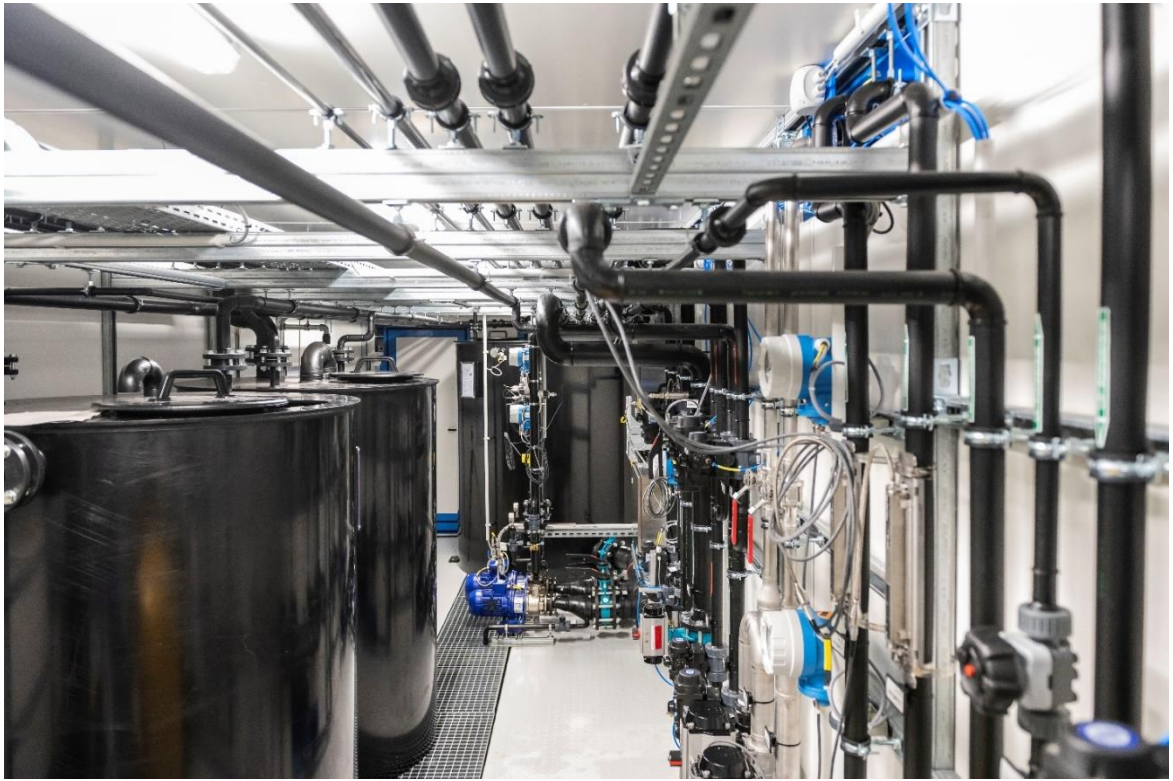

Inner view of the “Biomar Module”

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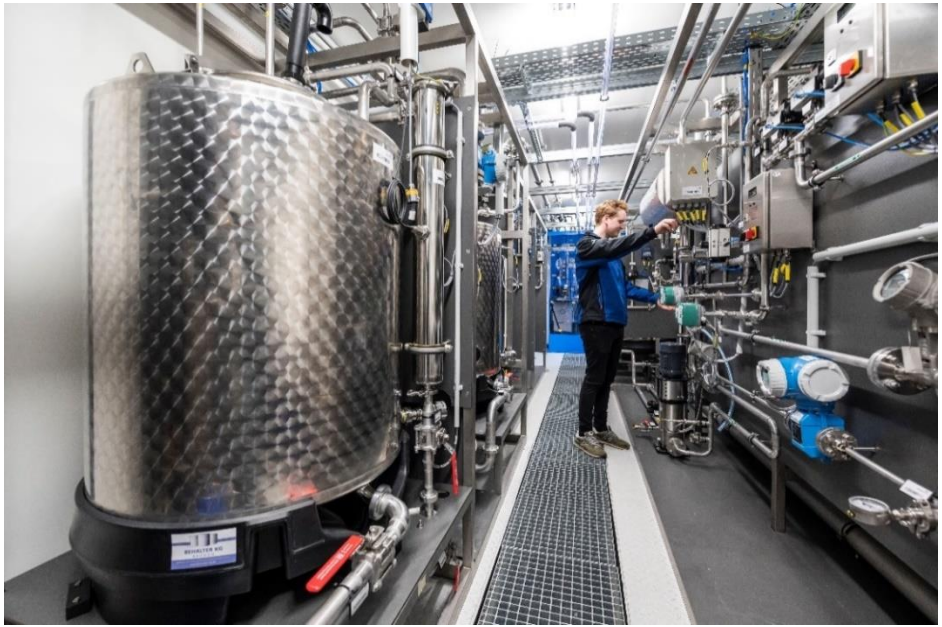

Membrane step 1, ultrafiltration

Membranstep 2, HSRO and product water tank

2 x TOC online monitor for the feed and product water quality

B-WaterSmart

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