ACON
ENVIRONMENT

ULTRAFILTRATION UNIT

for the production of drinking water out of surface water

Ultrafiltration unit for the production of drinking water out of surface water

Our transportable ultrafiltration unit cleans up to 2500 m³ surface water per day. This can provide up to 15.000 persons to cover their requirement from freshwater.

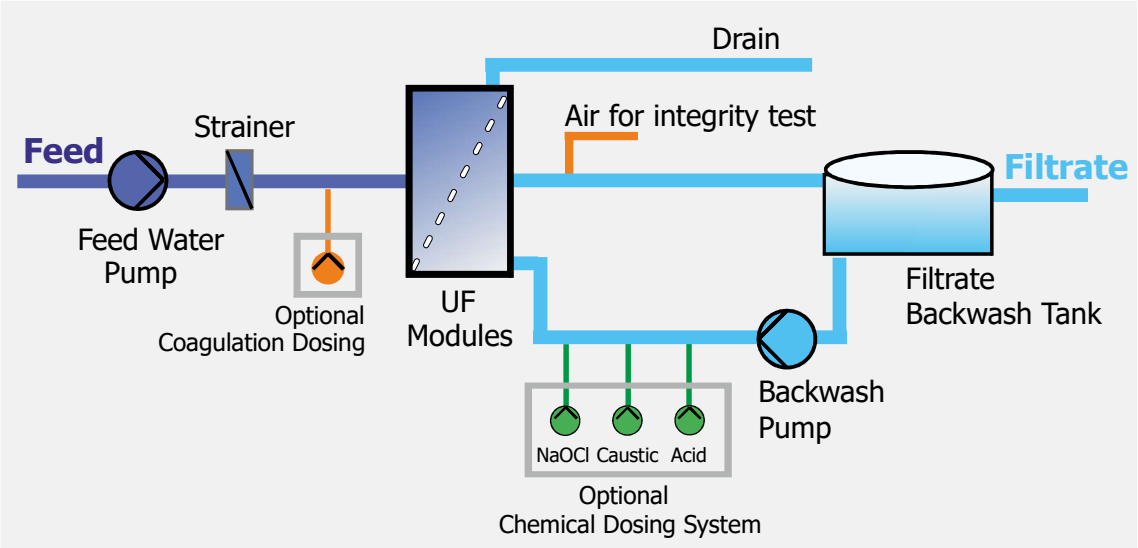
The ultrafiltration unit is modular and transportable in 20" and 40"-containers. The unit completely preinstalled and ready to operate. It is simple to handle. The unit capacity can vary due to un-steady inflow conditions.

Ultrafiltration, which belongs to membrane filtration processes, is a pressure driven filtration technology.

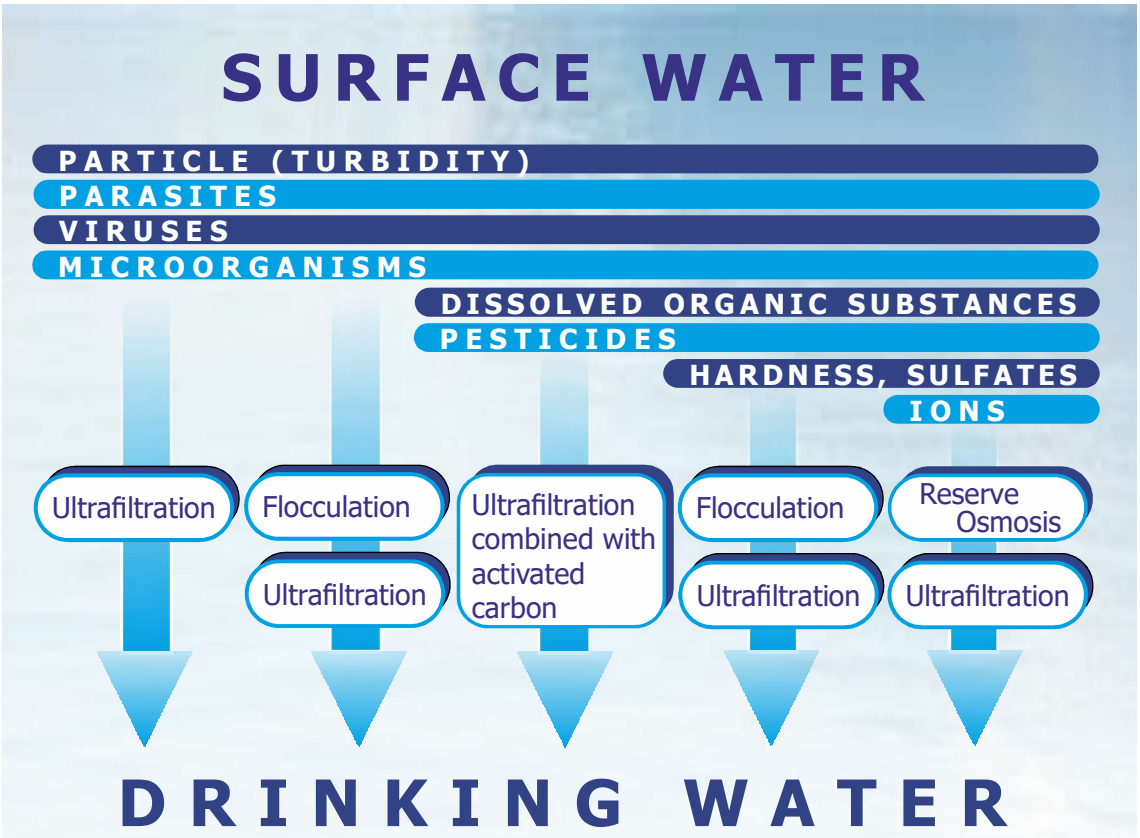
The flux rate or the filtrate flow was assumed with app. 80l/m²h. The total recovery of the plant is about 90% of the raw water inflow (at FNU<2). App. 10% of the inflow has to be discharged as backwash water into a sewer.

The cleaning can be accomplished by a so called „chemical enhanced backwash" (CEBW) with NaOCl for disinfection reasons once or twice a day. Additional a more intense cleaning will have to be made app. every three months.

A basic membrane filtration process diagram is illustrated in Graphic 1:



There are different processes to clean the feed water and to make a fresh drinking water. Next side it shows you the different contaminations and cleaning processes. Based on the contamination of the feed water, the cleaning processes are used optimally.



Advantages of the Ultrafiltration

Compared to conventional treatment processes, ultrafiltration offers various advantages:

Raw water quality
To be confirmed by the client
Clean water quality
Turbidity: none
suspended solids: none
pH: neutral
free of bacteria and viruses

- Ultrafiltration provides a complete barrier against microorganisms and particels.
- The quality of the filtrate is not dependent on the feed water quality.
- Ultrafiltration eliminates chlorine-resistant pathogens.
- Concentrate that originates from the ultrafiltration process consists only of the contaminants. The amount of sludge created in the process and to be disposed is thus significantly lower than with conventional treatments.
- The compact construction of the system means lower investment in facilities and space.
- Ultrafiltration can be easily automated.
  Downstream treatment steps enjoy higher productivity due to the fact that nearly all foulness will have already been removed by ultrafiltration.
- Investment and operation costs for downstream nanofiltration or reverse osmosis systems decrease substantially because the systems can be operated at higher flux rates and with less frequent cleaning.

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Landesgericht Wels FN 244135y
Steuer-Nr.: 030/6941
UID-Nr.: ATU57786257