

Quantor[®] SL

VATTENRENING



Water treatment plant which is container-based and scalable for easy installation.

Biological treatment of leachate from the composting plant and sludge from septic tanks with our scalable **QuantorSL**. Based on your water analysis and volume of leachate per day and any other problems we equip the water treatment plant with the right components for the best results. The tailored solution for both leachate and sludge from septic tanks to our customer.

Of course we can dimension the plant to the usual gray water also, if desired, which is not as demanding as the above leachate.

1. DESCRIPTION OF THE SYSTEM

The wastewater treatment plant will consist of 2-4 pcs 40 ft containers depending on the degree of soiling and the quantity of leachate water to be purified, but also the degree of purification of the water to be discharged.

Quantor[®]SL can be easily installed on site. The existing sewage / collection basin will serve as the surge tank. Our compact units need only the clients hard made surface to be put the facility on and routed power, pipe connections from the pool and out to the edge of a ditch (or other alt if desired) where the treated water is released. Waste water will be pumped from the collection basin to the processing units of submersible pump. We have chosen to work with Alfa Laval's MBR technology for biological treatment of different types of wastewater. They are characterized by high efficiency, flexibility and a limited environmental impact - with all process steps in the same tank.

Below examples of design solutions based on waste data from the customer:

Total volume of leachate water from composting plant	:	100 m ³ /dag
Mean flow velocity	:	4,2 m ³ /h
Design flow rate (with filter)	:	5 m ³ /h
BOD concentration	:	<1.200 mg/L
COD concentration	:	<3.000 mg/L
TSS concentration	:	<600 mg/L
Total organic load of BOD	:	<120 Kg/dag
Total organic load as COD	:	<300 Kg/dag
TSS load	:	<60Kg/dag
T-N concentration	:	<150 mg/L
Total nitrogen load	:	<15 Kg/dag
T-P cocentration	:	<10 mg/L
Total phosphorus load	:	1 Kg/dag
Necessary calculated MBR Surface	:	<75 Kg BOD / dag (efter förbehandling)
Necessary calculated MBR Surface	:	400 m ²
Selected MBR modules (v)	:	17 m ³
The necessary oxygen supply in aeration tank (OC = 2.0 Kg O ₂ / kg BOD)	:	75x2= 150 Kg O ₂ /dag
The required amount of air in the aeration basin	:	<325 m ³ / timme

We have chosen to install the all-in-one system Alfa Laval membrane bioreactor (MBR) combining secondary and tertiary treatment of wastewater and provide a superior quality of the discharged water (effective filtration of sludge down to 0.01 microns), which makes that it is suitable for reuse. It removes suspended solids down to <1 mg / l BOD to <5 mg / l and manages a filtration area of 5-40 liters / hour / m². The gravity-driven, pump-free and energy-efficient design with compact membrane filtration modules based on a patented solution. Compared to other MBR solutions offer this improved reactor safety, ease of operation and in addition the low costs of operation and maintenance, in addition developed in Sweden / Denmark, which guarantees good quality.

The following table shows the water quality of treated water:

COD concentration	:	<100 mg/L
BOD concentration	:	<25 mg/L
TSS concentration	:	<10 mg/L
pH	:	6,5-7,5



This picture shows the facility as specified above.

Easy to expand the system with a module according to the below image. Based on the customer's future needs, we can build an additional container for large volumes of leachate (200 m³/day) or more dirty such as from 3 chambers septic tanks. All facilities meet well today and tomorrow demanding requirements.

In the basic configuration described above can be upgraded from the start of production, the MCC / PLC, electrical components, piping, etc. in order to later be able to relax in the fourth container module to withstand even future expected increase in waste streams according to us provided surfaces with greater load and volumes, see picture below.



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