

## ENVIRONMENTAL TECHNOLOGY



### SeReAnt - Antwerp Biological treatment filtrate dredging spoils

The municipal port company of Antwerp is responsible for maintenance dredging in the harbor docks of Antwerp. The project **AMORAS** (Antwerp **M**echanical **D**ewatering (in Flemish “Ontwatering”), **R**ecycling and **A**pplication of **S**ludge) is set up by the Flemish Government and the port of Antwerp. It is an investment in a sustainable solution for the storage and processing of the dredging spoils from the port of Antwerp. This project was assigned to SeReAnt, a temporary trade association of Dredging International / DEC with Jan De Nul / Envisan.

The sand present in the maintenance dredging spoils is separated by hydro cyclones and recycled. The remaining fine silt fraction is mechanically dewatered by membrane chamber filter presses. The filtrate is purified through a water treatment plant before being discharged in the docks.

Trevi nv was responsible for the design and construction of the wastewater treatment plant with a hydraulic capacity up to 250 m<sup>3</sup> per hour.

The plant is divided into two identical and parallel purification streets who can work completely independent of each other.



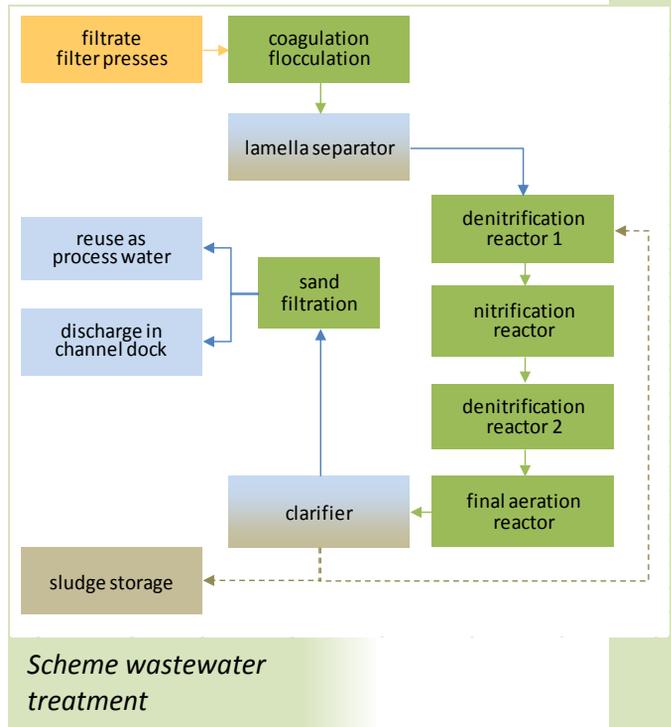
*Continuous sand filters*

The purification process is divided in two steps. At first fine particulate matter is removed by a physico-chemical pretreatment plant (coagulation and flocculation). In a subsequent biological plant organic compounds and nitrogen are removed.

The biological treatment consists of an activated sludge system with four reactors: a first denitrification step, a nitrification step, a second denitrification step and a final aeration reactor.

Subsequently the biologically purified waste water is separated from the activated sludge in a clarifier. A post treatment by sand filtration is foreseen to reduce the particulate matter in the effluent.

A part of the purified waste water is reused as process water, the remaining quantity is discharged in the channel dock B1 in accordance with the applicable environmental standards.



Trevi nv  
Dulle-Grietlaan 17/1  
9050 Gentbrugge  
Belgium

T +32 9 220 05 77  
F +32 9 222 88 89  
E info@trevi-env.com  
S www.trevi-env.com

ISO 14001  
ISO 9001  
VCA  
BE 0447.717.158

Trevi is a Belgian company with a team of specialized professionals at its disposal: environmental consultants, process experts, programmers and installers. This diversity offers you as a client the advantage to solve all environmental problems with only one partner in all disciplines: water, air, soil and energy as well. Our consequent approach by research, pilot tests, design, realization, start-up, follow up and exploitation guarantees the provided quality.