ENVIRONMENTAL TECHNOLOGY

DUPONT GENENCOR - Bruges

Exploitation biological water treatment

DUPONT GENENCOR produces custom industrial enzymes. The old yeast plant in Bruges was transformed into a modern production site.

The enzymes are obtained by the bio-engineering of micro-organisms which are then grown in batch fermenters. Then, the enzymes are separated from the culture medium.

The waste water is treated at the factory by amongst others ultra-filtration to withhold the largest part of the pollutant. The filtrate is discharged to the own water treatment plant.

This biological water treatment consists of two covered static tanks, a biological treatment consisting of 5 tanks with a total capacity of 6700 m³ and a settling tank. The process is developed for a biological nitrogen and phosphorus removal. The installation processes an average of 1300 m³/d of waste water. The effluent is discharged to the Bruges WWTP.

Historically the sludge was dehydrated by WWTP by flocculation with a polymer, thickening on a belt-filter, chemical conditioning with ferric chloride and lime milk and a final dewatering in a filter press. The chemicals were responsible for about 40% of the final

Aerial view WWTP

weight of the sludge cakes. The operation of the filter press also took the full-time presence of an operator. This kind of sludge treatment caused high costs of working on chemicals and labor.

By the end of 2014 the contract for the exploitation of the WWTP was granted to Trevi, for a minimum period of 5 years. The contract consists of the total control of the WWTP: the process monitoring, analysis, administration, reporting and technical maintenance.

Trevi replaced the existing sludge dewatering by a new belt-filter with a higher capacity. The thickened sludge is stored in two new sludge tanks and is removed liquidly by tank trucks. No more ferric chloride or lime milk is added and the filter press is no longer used. This new sludge dewatering demands little follow-up. This allowed the presence of an operator to be reduced from 5 to 3 days a week.
This adjustment of the sludge treatment caused a significant decrease of the operating costs for chemicals and labor. Also the frequency for sampling was reduced from daily to weekly, causing a further decline in the costs for labor and analyses.

Trevi also conducts a study on the WWTP to determine the sources of odor nuisance and suggest a remediation.

In consultation with the client Trevi also conducts a pilot test to examine process optimizations in the biological cleaning. These optimizations are intended to make the effluent suitable for discharge on surface water. If the water treatment can be uncoupled from the WWTP, an important saving can again be obtained, this time on the corporate tax rates.

Bioreactor

Aeration reactor

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 0477.717.158

Trevi is a Belgian company with a team of specialised 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, realisation, start-up, follow up and exploitation guarantees the provided quality.