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Hutturm site in March 2008



The river Ilz near Fürstneck

Otters dart through the dark river water. One can find crayfish and pearl oysters in the riverbed. On its banks grow colourful monkshood flowers. Kingfisher and dipper birds sit on rocks and chirp. It is also called the black pearl of the Bavarian Forest, the official name of this river is "Ilz".

The Ilz river is one of the most fascinating and unique river landscapes, it is one of Europe's last intact and unaltered rivers, still in its natural state. In 2002 and 2003 the Ilz was distinguished as river landscape of the year. The water in the Ilz is of excellent quality and has a very low concentration of organic pollutants. However, some wastewater treatment plants discharge their effluents into the river and with it bacteria and germs. The Bavarian State government has the goal to further improve the quality of the Ilz water, so that it can be used for bathing and swimming, as it was used in old times.

Disinfection of treated wastewater is necessary to prevent introduction of pathogens and any fiction risk for bathers and swimmers. The commonly used technology for effluent disinfection is sand filtration followed by UV-radiation. An alternative method of wastewater disinfection is ultra-filtration with membranes. For the upgrading of the wastewater treatment plant of Hutthurm, the consulting engineers GFM evaluated both options and prepared a lifecycle cost comparison.

The Hutthurm plant is designed for a BOD freight of around 1,320 kg/d. A great portion of this freight comes from the local beverage industry. The design flow is 2,000 m³/d. Because of the industrial wastewater the design BOD concentration of 660 mg/l is very high. This combination of high freight and low flow made the membrane bio-reactor (MBR) system particularly competitive. In addition, space at the Hutthurm plant is very limited, the ground is rocky and the groundwater table high. These were important reasons for the decision to provide an MBR system instead of the alternative sand filtration and UV-disinfection. Chief operator Krenn was involved in the decision making process from its beginning. His and the mayor's and town counsel's open-mindedness and intrepidity to use technology of the latest state-of-the-art made it possible that MBR technology was investigated and finally selected.

As the consulting engineers of GFM stated, the MBR system of Hutthurm is one of very few such systems in Germany that do not need grant money to become cost competitive. In mid May 2007 the town Hutthurm invited to their ground-braking ceremony. They install the largest MBR system in the State of Bavaria. HUBER supplies the complete mechanical pre-treatment, the membranes for the MBR system and a mechanical thickener for the waste activated sludge. Including in our supply is not only the entire mechanical equipment, but also the control systems. In September, the new MBR system will be started up. The Bavarian State minister of environment is expected to attend.

Mechanical wastewater pre-treatment includes ROTAMAT® screens Ro 2 with a spacing of 5 mm, grit trap and primary clarifier. Then the wastewater, before it enters the MBR system, is screened again in another ROTAMAT® Ro 2 with a much smaller spacing of only 1 mm. The MBR system has two aeration basins. Mixed liquor is pumped from the aeration basins into four filtration chambers. This flow

is far larger than the incoming wastewater flow and the outgoing permeate flow. The surplus overflows at the filtration chambers and returns through channels to the aeration basins. In this way the biomass is constantly recycled between the filtration chambers and aeration basins.

The core of the system are three vacuum rotation membrane units VRM 30/544, each having a membrane surface area of 2,264 m². These units separate clear water from the biomass, they let the water pass as permeate and retain all solids and bacteria in the MBR system. Three of the chambers will be equipped with the VRM units; the fourth chamber serves for later extension. The permeate effluent flows through a storage tank, wherefrom plant process water is taken, and then through a flow meter and into the river Ilz.

Hikers or bikers, seeking recreation and loving the nature, come along the path next to the rushing black waters of the river and bypass the wastewater treatment plant. Of course we hope that one or the other nature lover will know that the Hutthurm plant is the most up-to-date wastewater treatment plant in Bavaria. Further down on its journey our permeate water flows through the three-river-city Passau where both Ilz and Inn enter the river Danube (Donau). As is well visible from the castle at Passau, it takes some way until the black water from the Ilz becomes blended with the brown water of the Danube. Finally, after a few thousand kilometres, our water enters the Black Sea.

Related Products:

- [HUBER Membrane Filtration VRM®](#)
- [Membrane Filtration \(MBR\)](#)

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