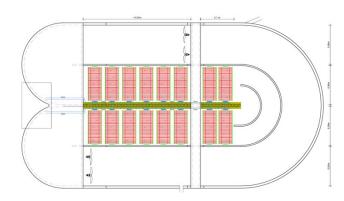


Wastewater Treatment Plant Eggolsheim

Switch from surface aeration to fine bubble aeration without disrupting operations!

The municipal association for wastewater removal in Eggolsheim-Hallerndorf has been operating a fully biological sewage treatment plant (Esmil-Carrousel) since 1989, to which, meanwhile, all districts of both communities have been connected. The plant is designed as an activated sludge plant with extended aerobic sludge stabilisation and has a capacity of 15,000 inhabitants. In the meantime, however, it is being used for 19,000 inhabitants.



Initial situation:

A concept for an addition to the sewage plant was developed that includes an expansion of the activated sludge tank volume upon final completion. During the first construction phase the aeration system of the existing activated sludge tank should be renewed and converted into a fine bubble aeration system despite a water depth of merely 3 m.

This measure was implemented in order to achieve a more energy efficient operation of the aeration system, optimised process control in the activated sludge tank, as well as reliable compliance with the required process parameters.

Measures taken:

As the activated sludge tank of the single-line plant could not be emptied, the special challenge of the project lay in the installation of a fine bubble aeration system into the existing activated sludge tank, including blowers and control technology, without interrupting the operation of the plant. For this purpose, the high efficient MESSNER Aeration Panels were supplied by the company RUDOLF MESSNER UMWELTTECHNIK AG in lifting frames and installed with the tank full in April 2014. The existing surface aerators were disabled and dismantled. The individually designed control concept was implemented into a separate control system with touch panel visualisation. In addition, the necessary online measurement technology was installed with an oxygen and an ammonium/nitrate combination probe.

Results / Benefits:

The startup of the new MESSNER Aeration Panels in liftable frames significantly improves the operating safety of the sewage plant. Therefore, the oxygen requirements are met effortlessly even during peak demand. The installed RMU control system allows meeting the appropriate oxygen demand in accordance with the ammonium and nitrate parameters, and thus provides very high efficiency system operation at lowest discharge values.

