

Institute for Sanitary Engineering, Water Quality and Solid Wastemangement | ISWA

Research

Comparative investigation of three continuous filters filled with different granular activated carbons

At the wastewater treatment plant in Emmingen-Liptingen, one of the three existing continuously operating sand filters was converted for the elimination of organic micropollutants (OMPs) at the end of 2013. For this purpose, the filter material was replaced with granular activated carbon (GAC).

At the beginning of the investigation, it was assumed that the GAC should be replaced with reactivated GAC after 1-2 years to get a constant removal of OMPs. After the end of the first investigations in 2016, it was decided that the GAC would remain in the filter to check how long removal is given. For the seven monitored substances in Baden-Württemberg, an average OMP removal (including biological treatment) of 79 % was still achieved after more than 4 years of operation.

In this project, the removal of OMPs with the GAC filter will be investigated for two more years.

Due to the good results, the investigations will be extended and the other two sand filters will be converted to GAC filters too. One filter will be filled with the GAC which is

already in use (Cyclecarb 401), the other filter will be filled with a coarser GAC. This allows a direct comparison of the OMP removal of fresh and loaded GAC, as well as a coarser GAC. Besides, operational issues, such as fluidization of the GAC, can be investigated and compared.

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Contact:

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Project partner:

Gemeinde Emmingen-Liptingen
Jedele und Partner GmbH (JuP)

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Figure 1: GAC-Filter Emmingen-Liptingen (Source: Jedele und Partner GmbH)