

Status quo report on wastewater treatment plant, receiving water's biocoenosis and quality as basis for evaluation of large-scale ozonation process.

Brückner I, Kirchner K, Müller Y, Schiwy S, Klaer K, Dolny R, Wendt L, Könemann S, Pinnekamp J, Hollert H, Rosenbaum MA (2018) Status quo report on wastewater treatment plant, receiving water's biocoenosis and quality as basis for evaluation of large-scale ozonation process. *Water Sci Technol* 77(2), 337-345.

[Details](#)



Abstract

The project DemO3AC (demonstration of large-scale wastewater ozonation at the Aachen-Soers wastewater treatment plant, Germany) of the Eifel-Rur Waterboard contains the construction of a large-scale ozonation plant for advanced treatment of the entire 25 million m³/yr of wastewater passing through its largest wastewater treatment plant (WWTP). In dry periods, up to 70% of the receiving water consists of treated wastewater. Thus, it is expected that effects of ozonation on downstream water biocoenosis will become observable. Extensive monitoring of receiving water and the WWTP shows a severe pollution with micropollutants (already prior to WWTP inlet). (Eco-)Toxicological investigations showed increased toxicity at the inlet of the WWTP for all assays. However, endocrine-disrupting potential was also present at other sampling points at the

WWTP and in the river and could not be eliminated sufficiently by the WWTP. Total cell counts at the WWTP are slightly below average. Investigations of antibiotic resistances show no increase after the WWTP outlet in the river. However, cells carrying antibiotic-resistant genes seem to be more stress resistant in general. Comparing investigations after implementation of ozonation should lead to an approximation of the correlation between micropollutants and water quality/biocoenosis and the effects that ozonation has on this matter.

Involved units

[Bio Pilot Plant](#) [Miriam Agler-Rosenbaum](#) [Read more](#)

Leibniz-HKI-Authors



Miriam Agler-Rosenbaum

[Details](#)

Identifier

doi: 10.2166/wst.2017.548

PMID: 29377818