



Universität Stuttgart

Institute for Sanitary Engineering, Water Quality and Solid
Waste Management (ISWA)

Micropollutant Competence Center Baden-Württemberg
(KomS)

Call for Master's Thesis

Development of an Investigation Concept for the Verification of Micropollutant Elimination in Wastewater with Ozone and Activated Carbon



February 2020

BACKGROUND:

The discussion about assessment of micropollutants and their adverse effect on the aquatic life has been intensively increased in the past ten years. According to investigations, the wastewater treatment plants are the main entry source of the micropollutants to the water bodies. Treatment of wastewater with activated carbon has been widely investigated in the last few years, however, in the state of Baden-Wuerttemberg little to no experiments have been carried out for the feasibility of the ozonation as a measure for micropollutants' elimination. Not every wastewater is suitable for ozonation treatment; it is heavily dependant on the wastewater matrix, and transformation products.

During your master's thesis, you would be working on development of a methodology, where a combination treatment of activated carbon and ozonation, will be carried out for elimination of micropollutants. Your objectives need to be structured in a way that an optimization of the combination treatment with ozonation and PAC (powdered activated carbon), or ozonation and GAC (granulated activated carbon) will be accomplished. Your wastewater samples will be from the wastewater treatment plant of LFKW Stuttgart. Samples from the wastewater treatment plant of Donaueschingen will then complement your initial results in order to validate the transferability of them.

TASKS:

- Extensive literature review on treatment of micropollutants with the combination of Ozone and Activated Carbon
- Development of innovative methodology in the laboratory
- Extensive laboratory work (with Ozone and Activated Carbon) on wastewater samples
- Data analysis and evaluation
- Graphical representation of the results

REQUIREMENTS:

- Background of Environmental or Chemistry Engineering
- Experience in working in the laboratory especially working with chemicals
- Excellent data analysis and MS-Excel knowledge
- Able to work independently and very well organized
- Excellent command of English or German

- Theory/Practical work: 30/70 %
- Beginning: from now!

KONTAKT

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