Linnaeus ECO-TECH 2016
Kalmar, Sweden, November 21-23, 2016

STORMWATER MANAGEMENT - BYPASS TECHNOLOGY

Peter Hartwig
aqua consult Ingenieur GmbH, Germany

Abstract

The water quality in a river is influenced by the discharge from the sewerage network. Through increased efficiencies of the wastewater treatment plants, the main deterioration comes from combined water overflow.

In view to a reduction of the discharge from combined water outflow the increase of the influ-ent to a wastewater treatment plant can be an efficient solution. The main bottleneck on the waste water treatment plant is the final clarifier with the limited capacity regarding sludge discharge from the biological stage.

Through bypassing the aeration with combined water and a direct feed of the combined water into the final clarification the specific sludge volume loading, which is significant to the effi-ciency of the final clarification, will not be raised. But the adsorption capability of the aerated sludge, the sedimentation effect of the final clarification, and the partial recirculation over return-sludge can be used for an elimination of suspended solids, COD, ammonia and phos-phate from the combined wastewater. In large-scale tests in Wilhelmshaven (160,000 PE) removal efficiencies for the elimination in the bypass of 75 % of COD, 60 % of ammonia and 89 % of suspended solids were reached. In comparison with conventional procedures for combined water treatment (e.g. storage volumes, soil filter) the bypass technology has got the possibility to achieve a highly efficient and economical combined water treatment by using the capability of existing clarifiers.

In the frame of the presentation the basics for this advanced solution will be explained and the results from the technical application will be demonstrated.