

D3.2 Finescreens at WWTP Aarle-Rixtel

As of the first large scale wastewater treatment plants (wwtp's) in Europe, the wwtp Aarle-Rixtel is equipped with CellCap screens. The essence of the innovative concept in this project is the recovery of suspended solids from raw wastewater based on particle size. In comparison to common solids separation based on density, the positive impact on downstream processes is significant. Besides the difference in characteristics of the solids removed, the BOD:N ratio of filtrate can be controlled by changing the operational conditions of the screens.

The wwtp Aarle-Rixtel, one of the facilities of Waterboard AA en Maas, is designed for 340,000 PE and can treat a hydraulic capacity at FFT of 16,000 m³/h. The CellCap screens are designed for a hydraulic capacity of 4,000 m³/h representing approximately 120% of the DWF.

The wwtp Aarle-Rixtel is built in two identical purification lanes that can be operated independently from each other. This setup allows an accurate comparison of the impact of the CellCaps on the downstream processes. Supported by a network of European partners, a lean consortium consisting of a technology developer (BWA), a launching customer (Waterboard Aa en Maas) and a knowledge institute (KWR) highly experienced in leading European projects, wants to use this full-scale reference to validate the concept. During a period of 24 months, only the influent of one of the two purification lanes will be pre-treated with CellCap screens. During this period the downstream processes will be closely monitored. Besides the operation of the CellCaps, close attention will be given to the activity of biomass, dewatering characteristics, energy consumption and others.

The project, named ScreenCap, that is awarded with a European subsidy from the EcolInnovation call, should become a reference for the further market replication of fine-screen technology.