

A case study on PFAS in different matrices downstream a waste processing company at River Nieuwe Kale, Belgium.

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PFAS, or per- and polyfluoroalkyl substances, are chemically, highly inert substances that once released into the environment remain there forever. They cause risks to humans and the environment. This study involves the monitoring of PFAS contamination at the discharge point of a waste treatment company, located on the river Nieuwe Kale, Belgium. The objective is to determine the impact of the PFAS discharge on surface water, sediment and biota.

The study showed that PFAS concentrations in both surface water, sediment and biota are significantly higher than the recommended limits at the discharge point and downstream of the company. Short PFAS chains such as PFBA are found more in wastewater and surface water, while longer PFAS chains such as 6:2 FTS, PFOA and PFOS are found in the sediment. In biota, PFOS dominates the measured PFAS. The difference between the matrices can be explained by water solubility and the degree of accumulation in the sediment and fish tissue.

Despite the company discharging within its permits, the PFAS pollution has an actual risk on the aquatic ecosystem of the Nieuwe Kale.