CASE STUDY

FilterClear®

A BLUEWATER BIO TECHNOLOGY

Tertiary Solids & BOD Removal: Bugbrooke WRC, Anglian Water

Background

Bugbrooke Water Recycling Centre (WRC) is a municipal sewage treatment works in Northamptonshire. It serves a population equivalent (PE) of over 7,000, with a flow to full treatment (FFT) of 52 L/s. The original treatment plant consisted of inlet works, primary settlement tanks, trickling filters and humus tanks. In AMP5, the Environment Agency issued a more stringent BOD consent (see table right).

Having evaluated several options, Anglian Water and @one Alliance decided that the most cost-effective and robust way to meet the new BOD consent is to remove particulate BOD by tertiary filtration.

FilterClear®, one of Anglian Water's framework technologies, was selected as the preferred solution, based on its low whole life cost (WLC), ease of installation and low carbon footprint. The good operability and reliability of **FilterClear®** have also been demonstrated by an earlier pilot plant at Cambridge Water Recycling Centre (WRC).

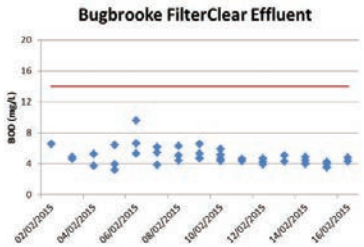
Solution

The **FilterClear®** plant at Bugbrooke WRC comprises three filters, sized to treat the full 52 L/s through two filters when one is backwashing. Variable speed submersible feed pumps have been installed downstream of the existing humus tanks, and filtered water passes through a clean backwash tank to the original final effluent sampling chamber.

The **FilterClear®** plant was manufactured offsite and delivered to the site as a package comprising three filters, associated pipework and control valves, two backwash pumps, one air scour blower and a control panel, all mounted on a single skid. The skid was assembled and tested offsite, reducing the duration and complexity of the site work, and the H&S risks. A kiosk was built around the **FilterClear®** plant, providing security and weather protection; this option would not have been available with some of the alternative filtration technologies considered.

Performance

The performance test started in February 2015, shortly after the commissioning. The results demonstrated excellent performance well below the consent requirements.



Environment Agency BOD consent

	TSS (mg/L)	BOD (mg/L)	Amm-N (mg/L)
Previous Consent	35	23	-
Current Consent	35	14	20

Main Benefits

- Excellent effluent quality
- High filtration rate, therefore small footprint, less material used, low embodied carbon
- Standardised design, offsite manufacturing and package plant delivery, plug & play
- Minimum civil works, reduced onsite time and H&S risks
- Low energy consumption, low operational carbon
- Fully automated system, minimum operational intervention
- Low whole life cost solution

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