Fixed Film Reactors

Nviro's package Fixed Film Reactors (FFR) are designed to handle high-strength industrial wastewater. FFRs operate by distributing wastewater across the media to promote the growth of a biofilm of BOD and ammonia-consuming bacteria to remove contaminants.

One of the earliest forms of wastewater treatment technologies, the FFRs of the 1800's used coarse stone and gravel as the media for biofilm growth. Modern FFRs use engineered media to provide more surface area for bacterial growth in a smaller footprint.

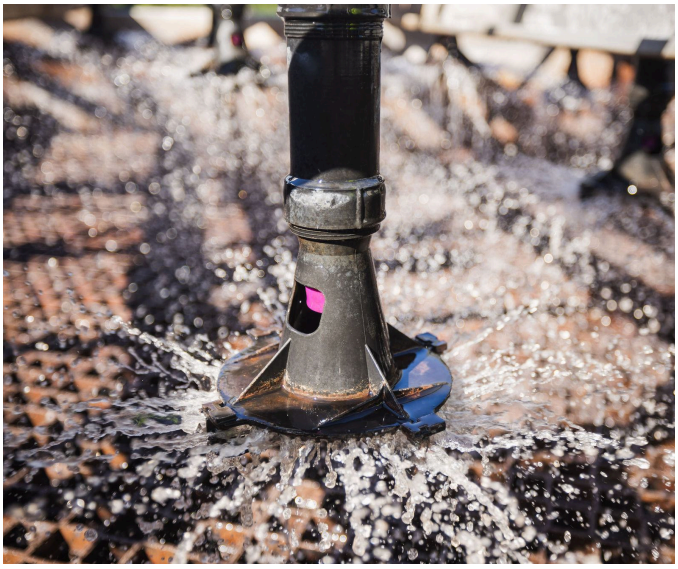

Figure 1: Clog-resistant nozzles provide even distribution of wastewater over the media

NVIRO'S FIXED FILM REACTOR

Nviro's FFR system uses an anti-fouling modular vertical media developed for high loads to reduce clogging/fouling by bacterial growth. All while still providing a high density of surface area.

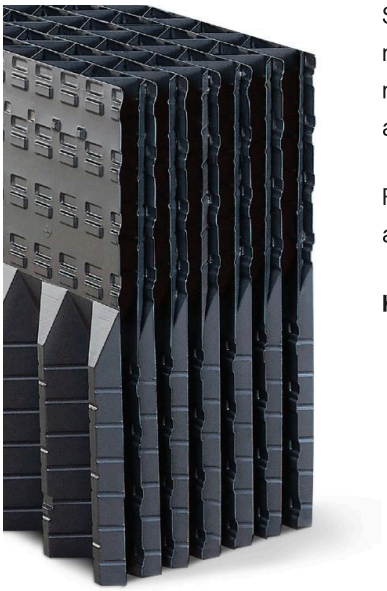

Figure 2: BRENTWOOD's anti-fouling media

Systems are constructed with circular stainless-steel tanks designed to use less steel material. Custom-built equipment skids house all the equipment needed to operate and maintain the system, including blowers, pumps, and valves, all controlled by Nviro's fully automated PLC-based control system.

FFRs can operate independently for industrial pretreatment or pre-treatment for other activated sludge systems, reducing the size of the secondary treatment system.

Key Features

- Capable of removing 50-70% of soluble BOD
- Forced air counterflow scours the media while maintaining aerobic conditions
- Anti-fouling media maintains capacity while promoting biofilm growth
- Multiple distribution zones for intermittent scouring and biology sloughing
- Flow control valves regulate effluent flow to the next phase of treatment
- Clog-resistant nozzles ensure even flow distribution

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