

Auto Manufacturer Controls Biological Fouling in Wastewater RO Using BioFilmPro™

CHALLENGE

An auto ancillary company faced problems with microbial growth on its RO membranes, causing reduced permeate flow and requiring frequent cleaning. This resulted in increased chemical usage, reduced membrane lifespan, and constant operator involvement, leading to a high overall cost of operation.

The conventional method of injecting Sodium Hypochlorite was used to control biofouling on the site but was ineffective and required cleaning every 36 hours. The auto manufacturer sought a more cost-effective solution to address the biofilm growth and increase in differential pressure.

SOLUTION

After evaluating the system's performance, the implementation of BioFilmPro, Aquatech's proactive biofilm measurement and control technology, was recommended. The technology integrates bacteria deactivation, real-time sensing, and data-driven analytics to accurately predict and control biofilm before a problem occurs.

A sensor was installed downstream of the bacteria deactivator before connecting it to a control panel that controls the biocide dosing pumps for supplemental use if needed. Once in place, the sensor outputs were fed to the predictive analytics software in real-time, where the data was aggregated and analyzed.

Over the initial nine days, a baseline of biofilm signal was established, averaging 800 mV. After introducing bacteria deactivation, the biofilm signal level dropped to an average of 550 mV. Figure 1 shows actual test data collected during the BioFilmPro treatment, highlighting the increase in hours between clean-in-place (CIP).

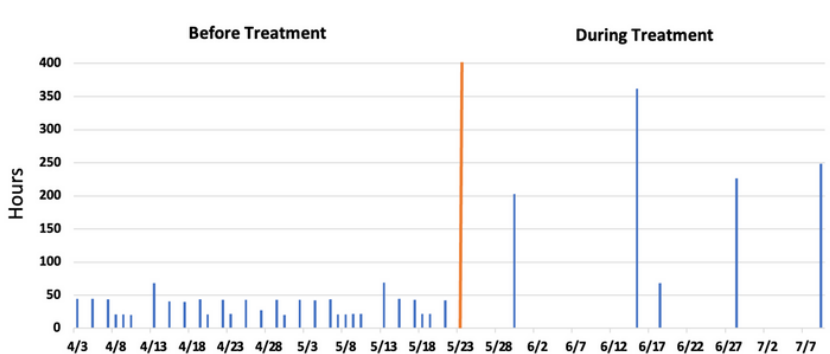


Figure 1: Hours Without Clean-In-Place (CIP)

CUSTOMER BENEFITS

Using smart, data-driven decision-making to proactively manage biofilm growth in the system's RO membranes, the facility was able to reduce its cleaning frequency, reducing plant downtime from every 36 hours to every 260 hours, an over 600% increase in uptime. **The manufacturer also:**



Maintained Plant Efficiency while reducing water & power consumption



Minimized Operator Intervention with real-time monitoring & automatic control



Increased Sustainability by reducing or eliminating biocide consumption

ABOUT BIOFILMRPO

BioFilmPro is a proactive biofilm measurement and control technology aimed at effectively treating biofouling in membrane and cooling systems before a problem arises.

Scan to learn more about BioFilmPro today!



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