



GEMI[®]

Collecting the Drops:

**A Water
Sustainability
Planner**

Case Example

Ashland Water Technologies, Drew Industrial, Division of Ashland Inc.: Improving Industrial Water Treatment with an Ultrasonic System

Drew Industrial's SONOXIDE[®] ultrasonic water treatment system helped a large office complex in the mid-Atlantic region of the U.S. improve control of microbiological growth and sediment control in its industrial treatment system without the addition of chemical microbiocides or dispersant.

The Drew Industrial client's facility in the U.S. had continually maintained adequate microbiological control in its twin 1500-ton refrigeration units through the application of chemical oxidizing microbiocides. While biological counts typically were acceptable and within industry standard at an average of 10^4 CFU / mL, this facility's goal was to reduce the number of chemicals used at this commercial property. The traditional microbiological control applied at the site consisted of dibromonitripropionamide (DBNPA) fed daily and glutaraldehyde fed twice weekly. In addition to episodic algae bloom, the plant also had problems with silt and organic matter fouling low-flow areas of the cooling systems. Sand filters used to remove contaminants would typically foul. This resulted in downtime and increased maintenance, as well as the need for three annual scheduled outages to clean the entire cooling operation.

The facility was interested in evaluating a non-chemical approach alongside a chemically treated system to determine if any improvement could be made in reducing the algae problem, without negatively affecting performance and reliability of the cooling system and side-stream filtration process.

Solution

Ashland installed the new ultrasonic water treatment system to one of the refrigeration systems and eliminated the application of oxidizing microbiocides. Extensive sampling and testing were performed to monitor the success of the change in microbiological control and compared to the system that remained on chemical microbiocides. Within one week after the SONOXIDE unit was installed, the total microbiological plate count averaged 10^2 CFU / mL. Control has remained excellent since that time.

During the first month of operation of the SONOXIDE ultrasonic treatment system, the presence of algae was reduced with no visible accumulation of biofilm in the system. In addition, the performance of the side-stream sand filters became much improved, with a noticeable reduction in backwashing and cleaning. No negative effects to the cooling water inhibitor program were observed, as excellent corrosion control and deposit control were realized after converting the microbiological control program to the SONOXIDE treatment system.

Benefits

- Excellent control of microbiological activity reduced to $\leq 10^3$ CFU/mL.
- Total system microbiological control including total bacteria, biofilm and algae.
- Reduced fouling by microbiological growth.
- Excellent microbiological growth and biofilm control without the addition of chemical microbiocides or dispersants.
- Complete compatibility with corrosion control and deposit control program.