

RECORDED BENEFITS

- \$240,000 annual production increase from the hydrotreating unit
- 27% increase in total flow through the cooling system
- 49% increase in flow to critical exchangers
- Extended cooling tower life
- Decreased cleaning and maintenance costs of heat exchangers

Refinery Increases Cooling Water Flow and Extends Asset Life by Addressing Biofilm

ClearPointSM Biofilm Detection & Control

Customer Challenge

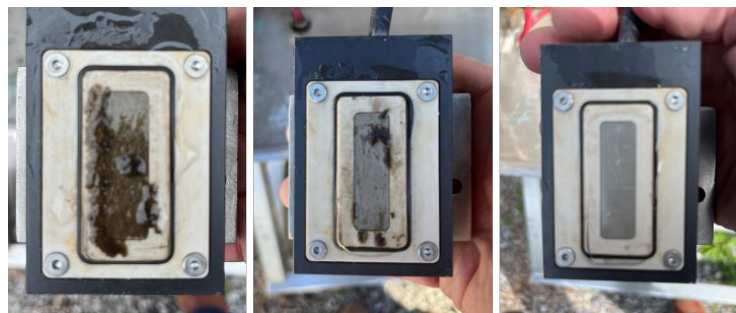
A refinery in the southeastern United States was experiencing inadequate cooling and high corrosion rates in its cooling water system. Additionally, several heat exchangers were experiencing low flow rates which limited throughput in the unit. During an audit by the Solenis team, it was discovered that the cooling water system was experiencing high microbiological activity, and it was suspected that biofilm had formed throughout the system.

Recommended Solution

Solenis' ClearPoint program was initiated at the refinery to monitor and control biofilm levels in the cooling system. The program utilizes a novel biofilm analyzer, a proprietary in situ stabilized chlorine solution, and expert service to provide a comprehensive safeguard against microbiological activity and biofilm. In addition to the ClearPoint program, Solenis utilized its HexEvalTM program to identify which heat exchangers posed the greatest threat to reliable operation due to biofouling.

Results Achieved

Implementation of the ClearPoint program resulted in a 27% increase of total flow through the cooling loop, a 49% increase in flow to critical heat exchangers, and an estimated life extension of five years for each cooling tower. Additionally, the HexEval program indicated that only 25% of the heat exchangers needed to be cleaned during the next turnaround, saving the refinery approximately \$125,000 in cleaning costs. Due to the flow improvements, the refinery was able to increase production throughput, resulting in a \$240,000 annual improvement from the hydrotreating unit.



Biofilm sensor before start of ClearPoint program (left), one week after start of program (middle), and 10 days after start of program (right).

All statements, information and data presented herein are believed to be accurate and reliable, but are not to be taken as a guarantee, an express warranty, or an implied warranty of merchantability or fitness for a particular purpose, or representation, express or implied, for which Solenis and its affiliates and subsidiaries assume legal responsibility. TMTrademark, Solenis or its subsidiaries, registered in various countries. *Trademark owned by a third party. ©2024 Solenis.