

FlexPro® CL

Helps a Gulf Coast Chemical Plant Reduce Cooling Tower Corrosion

Background

A gulf coast chemical plant was experiencing issues with corrosion in one of its cooling systems. The 120,000-gallon capacity galvanized steel cooling tower was being fed demineralized water, resulting in extremely low hardness and corrosion. Recirculation rates were around 10,000 gallons per minute, and the heat exchangers and associated piping were made of admiralty brass and mild steel, respectively. Prior to the FlexPro® CL treatment program, the tower was being fed a zinc/phosphate regimen, and corrosion rates were consistently inadequate. To add to the difficulty of treatment, the tower had very poor pH control despite requiring a relatively high pH of 8. In summary, the packaged cooling tower presented a unique problem for water treatment.

Solution

Given the increasing corrosion rates occurring in the system, the customer knew they were running the risk of an equipment failure if they did not act soon. As an alternative, ChemTreat proposed use of its FlexPro® CL product line, a phosphate-free product with a history of excelling in low-hardness waters over a broad pH range. In addition to feeding FlexPro® CL, a bromine biocide treatment program was selected for microbial control. With its exclusive FlexPro® CL technology, ChemTreat was able to present a solution not offered by other water treatment companies.

Zinc/Phosphate Program			
Specimen Type	Admiralty Brass	Mild Steel	Galvanized Steel
Specimen Number	24564	178818	9112
Exposure Period (days)	29	29	29
Corrosion Rate (mpy)	2.24	3.64	12.28

FlexPro®CL Program			
Specimen Type	Admiralty Brass	Mild Steel	Galvanized Steel
Specimen Number	23863	184826	9251
Exposure Period (days)	39	39	39
Corrosion Rate (mpy)	<0.10	0.07	3.38

Summary

For months, FlexPro® CL produced corrosion rates well below the control values. As seen by the graphs below, corrosion rates outperformed the previous zinc phosphate treatment. Costs for tower treatment only increased 4 percent on the whole. The customer was very happy with the transition to FlexPro® CL and pleased at the continued success of the product.

