

## CASE STUDY

### Cold Storage Facilities

IL USA



#### OVERVIEW

Cold storage facilities show common operational concerns. Keeping product cold in a reliable and cost effective manner is central to business operations. Their ability to keep and store product at constant low temperatures is their business. In this industry, a facility's refrigeration system can be the costliest culprit of a high utility bill.

#### WATER SYSTEM CHALLENGES

**Mineral Scaling:** Makeup water that is supplied to the condenser basin in an open cooling water system contains dissolved minerals. As evaporates the water becomes supersaturated with these minerals. Calcium carbonate, for example, precipitates as scale on pipe, equipment and heat exchanger surfaces, impeding heat transfer and reducing system efficiency.

**Microbiological Contamination:** Algae and bacteria make the treatment of cooling tower water particularly difficult. Warm, wet, nutrient-rich environments like evap. Condensers are ideal for micro-organism growth, leading to biofilms and slimes. Slime restricts airflow in cooling tower fill, clogs filters and creates corrosive conditions. Some biologic outbreaks can also be harmful to humans if not controlled properly.

**Corrosion:** Most of the corrosion on iron, steel, and galvanized surfaces is microbial induced. Biofilms allow microbes to create highly corrosive environments which result in corrosion pits. General corrosion can also occur due to low pH conditions in the water. Copper corrosion control is critical to protect the investment in chillers, condensers, and other refrigeration equipment.

#### SOLUTION

The **ScaleBuster**® patented electrostatic water conditioner works synergistically with a separation device to remove scale from equipment surfaces and restore the cooling system to its optimal operating efficiency. A patented **EnviroTower**™ system (based on a 4" **ScaleBuster**® SB100) was installed in 2009 as a 4" side stream of 250 gpm.

#### RESULTS

The **EnviroTower**™ system (based on the **ScaleBuster**® technology) protects the cooling system (chillers, heat exchangers, cooling towers) against corrosion, while the filter system captures and eliminates the old corrosion released into the water while allowing the operators to reduce chemical use by up to 85% and cycle up the cooling towers to save over 35% water, all this while saving energy by keeping the systems free of scale.

#### ABOUT THE TECHNOLOGY

The patented **ScaleBuster**® technology completely replaces traditional chemical treatment; providing control of scale and corrosion in various water process systems to create an exceptionally clean system. This dramatically reduces energy and water consumption, while reducing or, in certain cases, eliminating toxic water discharge to the environment.

