

# GE's Water Treatment Solutions Helped a Canning Facility Reduce Chloride Discharge by 80%, Meeting Tightening City Regulations

## Challenge

A seasonal vegetable canning facility in Wisconsin was faced with environmental pressure to reduce chloride discharge in its wastewater, which was going to the city's publicly owned treatment works (POTW). The elevated chloride levels were caused by the use of sodium chloride brine solution to regenerate the water softeners which are typically used in this canning process.

In order to meet tightening city requirements, the company needed a water treatment solution that would help reduce chloride discharge to acceptable levels.

## Solution

Two projects were undertaken to address the challenge. The first involved installing a Reverse Osmosis system (RO) ahead of the softeners, eliminating the need to regenerate the softeners with the NaCl brine solution. Instead of feeding softened water into the RO system, city water was fed directly into the RO. A GE antiscalant – Hypersperse\* MD220 – was also applied to the hard city water to prevent scaling and to maintain optimum RO operation.

To address the plant's remaining soft water requirements – including cooling, cleaning, and topping off canned vegetables – the second project involved improvements to the existing water softener system. GE referred the customer to Pargreen Water Technologies, a GE-preferred vendor, for the installation of a brine reclamation system. Pargreen also supplied a polishing softener to address any remaining hardness issues after RO processing.

## Results

The total impact of these solutions was so significant that city officials commended the customer on achieving a significant reduction in chloride discharge. City records indicated average 2009 levels of chloride per week of 12,656 ppm. Chloride levels dropped to just 2,442 ppm per week in 2010, a reduction of more than 80 percent. Here's a breakdown of the benefits that resulted from these projects in 2010:

- Salt Reduction – 28.9 tons of salt annually was eliminated from entering the environment
  - The RO project reduced soft water demand by 29 percent, eliminating 27.1 tons of salt.
  - The brine reclamation project reduced the salt associated with the plant's remaining soft water needs by 10 percent, cutting another 1.7 tons of salt.
- Wastewater Reduction – 750,000 gallons of wastewater was prevented from entering the city's sewer system
  - The RO project cut the amount of wastewater going to the sewer by about 250,000 gallons.
  - The brine reclamation project cut another 500,000 gallons of water from going to the city's sewer system.
- Cost Savings – Approximately \$11,000 annually
  - Salt costs were reduced by more than \$4,600.
- City water and sewer costs were cut by more than \$6400.



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