CASE STUDY

Chemical Processor Reduces Water and Chemical Usage with Custom Chlorine Dioxide RO Cleaning Program

Background

A chemical processing facility on the Gulf Coast used bleach, bisulfite, and DNBPA to slow biofilm growth on the membranes in their reverse osmosis plant.

The high organic content and the alkaline pH of the supply water resulted in high disinfection chemical feed rates.

Typical run times between membrane cleanings was 2–4 weeks, using a lot of RO permeate and cleaning products and contributing to a high level of trihalomethanes (THMs) leaving the RO system.

Solution

The facility worked with their local ChemTreat team to develop a chlorine dioxide (ClO_2) program to replace bleach and DNBPA treatment at the RO plant.

The new treatment program significantly reduced the amount of bleach, DNBPA, bisulfite, and RO cleaning chemicals needed to maintain membrane cleanliness and extend run times. Cleanings now only take place once every 3 months.

Results

Thanks to the new ClO_2 program and the subsequent reduction in membrane cleanings, the facility was able to cut treatment chemical usage by almost **80%**.

Permeate used for membrane cleanings was reduced by **50%**.

Implementing the ClO_2 program has resulted in the following annual savings associated with membrane cleaning:

144k Gallons	85k Gallons	$550k
of permeate	of treatment chemicals	in approximate annual costs

Manpower requirements and waste generation were reduced thanks to the decreased frequency of cleanings.

The enhancement of the treatment program also resulted in an 80% reduction of THMs (disinfection byproducts) leaving the RO system, helping the plant achieve their environmental goals.

Results are examples only. They are not guaranteed. Actual results may vary.

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