

BEVERAGE MANUFACTURER REDUCES WATER CONSUMPTION BY MILLIONS OF GALLONS ANNUALLY WITH AVISTA™ MEMBRANE TREATMENT SOLUTIONS



82M
Gallons Water
Savings Per Year



86%
New Average
Recovery



331
Less Membranes
Going to Landfills

BACKGROUND

Driven by drought and upcoming restrictions imposed by governmental agencies, a Fortune 100 beverage company wanted to implement a water reduction program across five facilities. The company required a proactive and integrated approach to reduce water and energy consumption. The manufacturer contacted several leading water treatment providers, including Kurita.

SOLUTION

Kurita worked with the beverage manufacturer to establish goals and possible solutions, including a focus on pre-treatment. The company was using reverse osmosis (RO) membranes as part of their pre-treatment solutions to purify water to quality standards. Kurita performed a comprehensive site audit and worked with the company to identify small to large system optimizations and potential savings. This allowed Kurita to guide required system changes, namely membrane system recovery rates. There were additional modifications of other processes, such as filter backwash and automatic rinses.

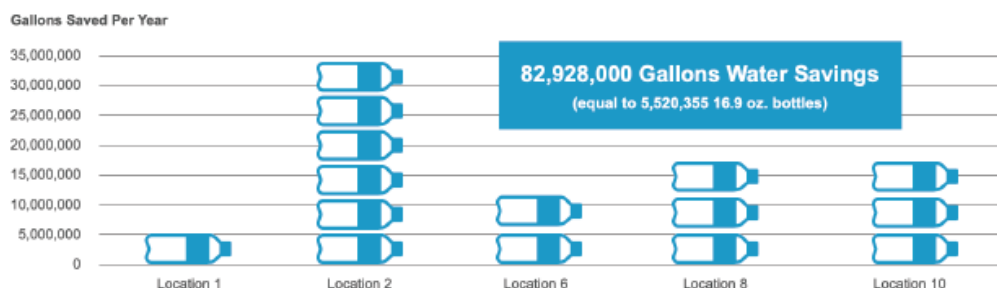
Although the average membrane element service life is about five years, several of the facilities were replacing their membranes more than one time per year. Kurita carefully selected targeted antiscalants, optimized system operation procedures, and updated cleaning chemicals, using Avista™ Membrane Treatment Solutions. This included Vitec™, an antiscalant that both inhibits scale and disperses colloidal particles in RO systems, maximizing water use and minimizing waste.

The beverage manufacturer's RO systems were taken off-line for cleaning, and once back online, Kurita implemented Vitec as a continuous antiscalant to protect the RO systems and meet quality standards.



RESULTS

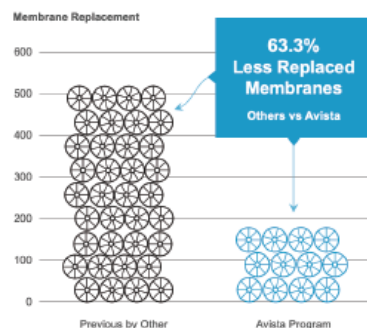
Kurita's pre-treatment program exceeded expectations. Not only did the company experience water savings but also savings in energy, capital cost, and waste.



The five systems were designed to operate at 75% recovery. These lower recovery facilities require more energy to process the water. As a result of the company and Kurita's efforts, the average water consumption savings per facility was over 16 million gallons annually; one facility saved just over 33 million annually. A grand total for all facilities savings was close to 83 million gallons of water annually.

FACILITY	CURRENT AVISTA RECOVERY
Location 1	88%
Location 2	80%
Location 6	94.7%
Location 8	93%
Location 10*	76%
Average Recovery	86.35%

*Location 10 has extremely high silica in their water feed.



By switching to Vitec, the manufacturer was able to increase the recovery, which not only resulted in water savings but also energy savings. For perspective, when the recovery increases from 75% to 85% using the Vitec antiscalant, the cost savings in energy use can be reduced on average by 13.9%. Inevitably, the customer replaced their membranes 63.3% less. This led to 331 less membranes going to landfills annually.

With Kurita, the beverage manufacturer was able to realize significant savings in water, energy, costs, and waste reduction.

