



Nalco Water helps U.S. ice cream plant expand production capacity and achieve nearly \$600K in savings



SITUATION





- An ice cream manufacturer in the southeastern United States wanted to expand its production capacity to meet increased demand. The challenge? To do so without increasing water consumption and while reducing costs and improving the efficiency of its operations.

SOLUTION

Nalco Water played a crucial role in achieving these goals. To meet the requirements of increased production as well as product line changes on downstream water treatment, Nalco Water adopted a Total Water Management (TWM) approach to the customer's needs. This included serving as a true partner by taking on essential responsibilities that might have otherwise fallen on plant management.

- The first step was to lead the design and build of a state-of-the-art wastewater treatment plant. The system included both primary and secondary treatment processes - including two Equalization Tanks and two Dissolved Air Flotation (DAF) systems, one to remove fats, oils and greases and the second to remove biosolids from the trickling filter used for polishing.

As part of the design and build solution, Nalco Water financed the project, retaining ownership of capital assets for the length of the contract, thereby relieving the customer of a significant financial burden. In addition, Nalco

CUSTOMER IMPACT	eROI SM	ECONOMIC RESULTS
Reduced consumption by 7,200 cubic meters (91902039) gallons.	 WATER	Annual savings 16K
Reduced waste hauling from 115 loads per month to 25.	 WASTE	Annual savings 78K
Reduced energy consumption by 21,600 kWh	 ENERGY	Annual savings 4K
Recovered lost product	 PRODUCTIVITY	450K savings

eROI is our exponential value: the combined outcomes of improved performance, operational efficiency and sustainable impact delivered through our services and programs.

Water assumed responsibility for overseeing and managing the water treatment processes and assets, bringing in two full-time staff members to work onsite seven days a week as well as providing remote access and monitoring capabilities.

As with any expansion, there were growing pains along the way. Over time, the plant's influent Chemical Oxygen Demand (COD) loads increased due to expansion and production changes. These changes increased the risk of not conforming to water discharge compliance requirements. Once again, Nalco Water partnered with the customer, taking a Total Water Management approach.

To develop a holistic solution and get an accurate picture of the customer's objectives and constraints, Nalco Water conducted a sitewide Total Plant Assessment (TPA). (A TPA identifies opportunities for saving critical water and energy resources to enhance plant productivity and quality. It provides customers with concrete data on water and other savings.) This resulted in a set of tailored and integrated TWM solutions involving chemistry, water technology and managed operations including:

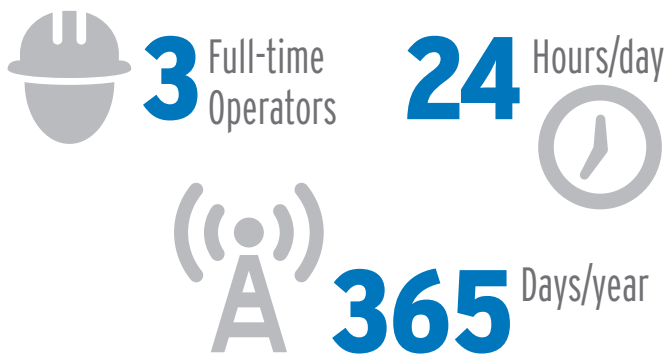
- A productivity project to recoup lost product.
- Implementation of Nalco Water's patented 3D TRASAR™ Technology for Cooling Water on two cooling towers and 3D TRASAR Technology for Boiler Water to deliver real-time monitoring and patented chemistry control, along with 24/7/365 System Assurance Center (SAC) system monitoring and control.
- Optimization of the wastewater treatment plant through the implementation of an improved chemistry and service program, which resulted in an increase in removal of COD and Biological Oxygen Demand (BOD) - ensuring compliance.

With the expansion in production, another wrinkle emerged. Sludge generation had increased beyond the capacity of the customer's existing assets. To solve this, Nalco Water designed, engineered, and optimized a belt filter press for sludge dewatering and provided an additional full-time managed operations staff member. The outcome? Sludge loads dropped from 115 per month to 25 per month on average.

RESULTS

Through this Total Water Management approach, the customer realized several significant benefits. Not only were its expansion goals met, it achieved \$450,000 in savings. Nalco Water's solutions also helped boost sustainability by reducing the plant's water consumption by 7,200 cubic meters and its energy consumption by 21,600 kWh. This, along with reductions in waste handling, led to additional combined annual savings of \$98,000.

This successful implementation led to a strong vote of confidence in Nalco Water - with a 12-year extension of the managed operations contract. As the plant grows, the customer's water needs will continue to evolve. So, too, will Nalco Water as we continue to play a critical role as a trusted partner in the ice cream plant's ongoing Total Water Management journey.



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