



Mex ico

Nestlé draws water from its milk

In the water-parched Mexican state of Jalisco, Nestlé's success in implementing zero-water dairy production offers hope for improved stewardship of water in a country where the resource is under serious stress. A unique technology is being implemented – and recognized – worldwide.

Issue at stake

› Conserve scarce groundwater resources in Mexico and limit extraction.

Objective

› Recycle the water used in powdered milk production at Nestlé's dairy facility in Lagos de Moreno.

Veolia solution

› Treat effluent from the water used to produce dairy products in two steps. First, a membrane reactor removes solids and then the reverse osmosis step allows the water to be reused.





In October 2014,

as Nestlé inaugurated its new dairy plant in Lagos de Moreno, Mexico, the celebration was about more than just the facility's production of Nido, one of the world's leading infant formulas. It was also about achieving zero-water dairy production. To achieve this feat and as part of its global commitment to preserve water resources, Nestlé entrusted Veolia, along with dairy technology firm GEA Filtration, with finding a solution to reduce water consumption at its plant in the water-stressed state of Jalisco. Increasing population growth over the past 60 years has decreased available

groundwater throughout Mexico. The Lagos de Moreno plant – actually three side-by-side facilities, which also produce ice cream and cereals, in addition to Nido powdered milk – requires 1.6 million liters of water per day, roughly equivalent to the daily water consumption of 6,400 people.

Zeroing in on resource savings

In 2013, Veolia added new technologies to treat the effluent from the GEA Filtration-built wastewater treatment plant so water

could be reused within the plant. The effluent is made up of “cow water,” the condensate recovered from evaporation of dairy products, and discharges from the “clean in place” sanitization of processing equipment.

A polishing system featuring Veolia's Aquantis membrane bioreactor treats the effluent to produce a filtrate virtually free of solids. A further reverse osmosis treatment step retains dissolved solids and salts to drinking-water quality levels. The project, called “Cero Agua” (zero water) by Nestlé, enables the treated water to be reused for non-food production applications such as



A Water Technologies Mexico engineer works on a reverse osmosis membrane module.

cooling, watering the gardens and cleaning, eliminating the plant's need for external water resources.

Leading a global wave

Nestlé has reduced its water consumption globally by one third during the past 10 years and by 50% at its plants in Mexico, even while global production has increased. The Jalisco Cero Agua project is one of more than 370 initiatives Nestlé is undertaking in its factories around the world that are helping to conserve water. A world-first for

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the dairy products industry, the zero-water technology is now being rolled out by Nestlé at its other plants worldwide, starting with dairy factories in water-stressed areas of South Africa, Pakistan, India and China. In 2015, Nestlé was recognized at the Global Water Summit in Athens with the Corporate Water Stewardship award for the Cero Agua project. "Twelve years ago, we were told that this couldn't be done, due to cost implications, water quality issues, the technical complexity involved," said Jim Knill, Nestlé's head of dairy operations. "But we've shown that the technology works – now we want to apply it elsewhere." ■