PMO

Food & Beverages

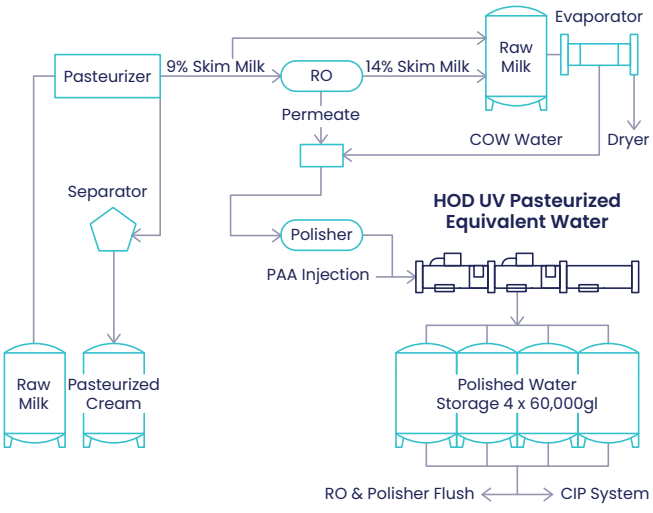
Burley, Idaho, US

Pasteurized Equivalent Water Treatment at High Desert Milk, Idaho, US

Overview

High Desert Milk is a dairyman's cooperative with 30,000 cows. The coop began to manufacture Grade "A" Non-Fat Dry Milk in 2008, at a new state-of-the-art facility based in Burley, Idaho. The facility processes high-quality raw milk into Grade "A" Non-Fat Dry Milk and Skim Milk Powder (SMP) for a global customer base. Both products are manufactured to meet Low, Medium, and High Heat characteristics, and are Kosher and Halal authorized.

The facility processes 2.5 million lbs. (1,134 tons) of milk into 200,000 lbs. (91 tons) of Dry Milk per day. The production process includes raw milk pasteurization, separation, secondary pasteurization, evaporation, RO, and polisher technology.



High Desert Milk customers produce a wide range of products, including infant formula, cheese, chocolate, cereals, and salad dressings that require extended shelf life and need dry milk products for reconstitution that have extremely low spore counts. They needed a solution to pasteurize large quantities of COW water at lower costs while also meeting the FDA PMO 2011 Grade "A" regulatory criteria.

The Solution

An HOD™ (Hydro-Optic Disinfection) RZ Series PMO system, installed in 2012, is used for the pasteurized equivalent water application in the COW water process line.

Atlantium HOD UV systems effectively treat bacteria. This is achieved by combining ultraviolet water disinfection technology with hydraulic and optic principles. The HOD UV system features the unique Total Internal Reflection (TIR) technology that recycles UV light energy, ensures homogenous UV dose distribution, provides superior power (kW) efficiency compared to traditional UV, and achieves unprecedented micro-organism inactivation.

It enables High Desert Milk to recycle its COW water for sanitation and flushing processes while meeting PMO Grade "A" regulations, with the assurance that no spores or other water-borne microorganisms, including heat-resistant ones that heat pasteurization can't kill, can compromise their stored polished water.

Results

- 35,000 lbs (16m^3) per day of HOD UV-treated polished water can be stored for reuse instead of being drained.
- 80% of the daily consumption of 2 million pounds (907 tons) of process water is recovered COW water.
- 15-minute savings of downtime per flush required for heat pasteurization.

As a grade A manufacturer, High Desert Milk adheres to the FDA Pasteurized Milk Ordinance (PMO). After the facility introduced the RO and polisher into their process in 2011, they needed to pasteurize the water before using it for rinsing and flushing. Since the PMO grade "A" 2011 revision allows UV systems that meet specific criteria to pasteurize COW water for reuse, High Desert Milk welcomed the possibility of replacing expensive, high-energy consumption heat pasteurization with a UV system that provides pasteurized water equivalent in accordance with the PMO 2009 revision.

HOD UV systems meet and even surpass all PMO Grade "A" rules. Customers receive Grade "A" products as specified, with extremely low spore counts; reduced water consumption by recycling large volumes of water; and reduced energy consumption by replacing heat pasteurization with UV pasteurization.

The pasteurized equivalent water is tested every day at several sampling points and consistently shows Total Counts (SPC) lower than 10 CFU in 1ml – well under the PMO requirements. The alternative of using heat pasteurization is wasteful as it is time-consuming (production loss of 15 minutes per flush) and requires the draining and loss of 35,000 lbs. (16m^3) of polished water daily.

The facility is planning expansion and increased capacity, which will necessitate additional RO and polishers. They also intend to acquire additional HOD UV systems for pasteurized equivalent water, aligning with their sustainability goals.

> We are very pleased with the Atlantium system and are planning to install more as the plant increases production. Since installing Atlantium's system, the water quality is consistently within specifications. Atlantium-treated water is used for CIP, and we plan to include membrane flush, which will result in saving on membranes downtime, as well as saving a significant amount of polished water compared to our current membrane wash process consumption.
>
> **Mr. Shawn Burton**, High Desert Plant Manager

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About us

For more than two decades, Atlantium Technologies has helped to ensure water safety with its innovative HOD™ (Hydro-Optic Disinfection) UV technology and novel approach to performance, monitoring, and control. Atlantium's superior, environmentally friendly water treatment solutions ensure stable, efficient, and dependable production.

With thousands of full-scale installations for leading brands in various industries globally, we're committed to consistently meeting our customers' water quality needs, ensuring pure results.

Pure Performance

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