

UV Water Treatment  
**Hydro-Optic™ Technology**

## High Desert Milk Relies on Hydro-Optic™ UV Disinfection to Replace Traditional Heat Pasteurization

*Idaho-based High Desert Milk processes 2.5 million lb of milk into 200,000 lb of dry milk per day and pasteurizes large quantities of condensate of whey (COW) water. In 2012, the facility implemented Atlantium's Hydro-Optic™ (HOD) UV disinfection solution to meet the FDA PMO 2011 Grade "A" regulatory criteria as an alternative to traditional, high-energy consumption heat pasteurization and provide the assurance that no spores or other water-borne microorganisms can infiltrate their production line, including heat-resistant spores that pasteurization can't kill.*



High Desert Milk, a dairyman's cooperative with 30,000 cows in Burley, Idaho, processes high-quality raw milk into Grade "A" Non-Fat Dry Milk and Skim Milk Powder (SMP) for a global customer base. The facility processes 2.5 million lb (1,150 tons) of milk into 200,000 lb (90 tons) of dry milk per day and pasteurizes large quantities of condensate of whey (COW) water. High Desert Milk turned to Atlantium's HOD UV disinfection solution to meet the FDA Pasteurized Milk Ordinance (PMO) 2011 Grade "A" regulatory criteria while providing a sustainable treatment alternative to traditional heat pasteurization.

### Why HOD UV?

As a Grade "A" manufacturer, High Desert Milk adheres to the FDA PMO. After the facility introduced reverse osmosis (RO) and a polisher into its treatment process in 2011, they needed to pasteurize the water before using it for rinsing and flushing.

Because 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 the HOD UV system that provides pasteurized water equivalent in accordance with the PMO 2009 revision. Atlantium HOD UV systems meet, and even surpass, all PMO Grade "A" rules.

Other benefits of HOD UV include:

- Customers receive Grade "A" products as specified, with extremely low spore counts
- Reduced water consumption by recycling large volumes of water
- Reduced energy consumption by replacing heat pasteurization with UV pasteurization

The HOD UV technology offers a sustainable alternative to chemicals and heat for water disinfection and is validated to FDA PMO and FSMA criteria for pasteurized equivalent water, coliform-free water and COW water reuse. It delivers unprecedented microbial inactivation, achieving water pasteurization without heat and taking water safety to levels never before achieved with other UV systems or with chemicals.

An Atlantium HOD UV system (RZ104 Series), installed in 2012, is used for the pasteurized equivalent water application in the COW water process line. HOD UV enables High Desert Milk to recycle its COW water for sanitation and flushing processes to meet PMO Grade "A" regulations, with the assurance that no spores or other water-borne microorganisms can infiltrate their production line, including heat-resistant spores that pasteurization can't kill.

The production process includes raw milk pasteurization, separation, secondary pasteurization, evaporation, RO and polisher technology. The polished water is treated with the HOD UV system before being used for the plant clean-in-place system (i.e., rinsing, flushing, etc.)

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 lb (40m<sup>3</sup>) of polished water daily.

### **Desert Milk Profits**

- Products are uncompromised by infiltration of spores and other microorganisms that could affect shelf life
- Eliminated wasting 35,000 lb (176 gpm) of polished water per day (by heat pasteurization)
- 80% of the daily consumption of 2 million lb (900m<sup>3</sup>) of process water is recovered COW water
- Eliminated 15 minutes per flush of downtime (time wasted by heat pasteurization)
- Real-time monitoring and control guarantees biosecurity
- Compliance reports at the touch of a button
- HOD UV system easily integrated with plant controls

"We are very pleased with the HOD UV system. Since installing the system, the water quality is consistently within specifications," said Shawn Burton, High Desert Milk Plant Manager.



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