



WAYNE-SANDERSON FARM'S CASE STUDY

WATER & ENERGY SOLUTIONS

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Project Overview

Wayne-Sanderson Farms, a Fortune 1000 company produces, processes markets and distributes fresh and frozen chicken. One of their North Carolina hatchery locations was experiencing issues with their current reverse osmosis (RO) system used to treat water during the humidification process.

For hatcheries, there are four primary factors to consider when incubating eggs. These include temperature, ventilation, turning, and humidity. Out of the four, humidity is the most difficult factor to control and measure. The water quality used in humidification systems plays an important role in ensuring the humidifiers are in continuous operating condition, essential in the artificial environment of a hatchery.

Problem Overview

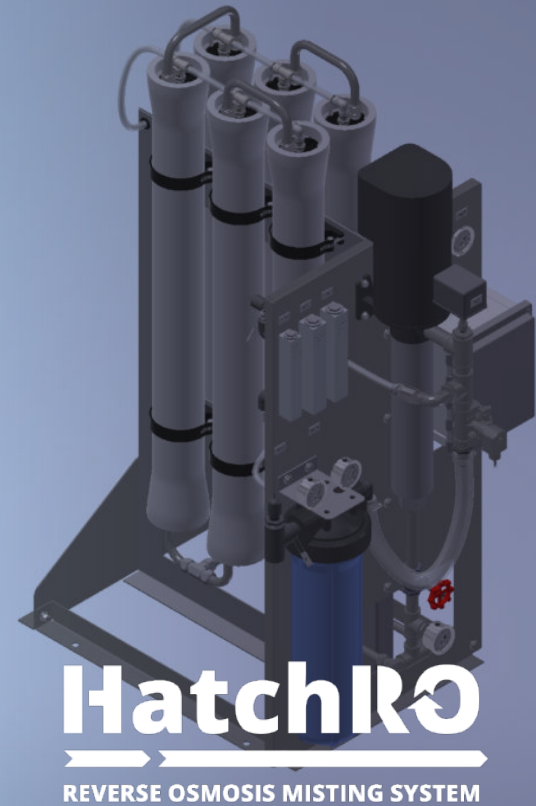
Wayne-Sanderson Farms contacted Kemco Systems needing a RO system to replace an existing RO system that was installed approximately 10 years ago. The single RO unit was producing 6 GPM of high-purity water. During the winter the system struggled to keep up with the humidifier's demand and often the storage tank had to be filled with water from another source. This additional non-filter water source posed a secondary problem with the hatchery spraying system. Using clean water reduces spray nozzle and water line maintenance, and extends the useful life of boilers, chillers, ventilation, and high-pressure washing systems. The addition of non-filtered water can reduce the overall life of the aforementioned equipment. After a local water treatment company attempted to repair the existing system with limited success, Wayne-Sanderson Farms sought a replacement system and once again turned to Kemco Systems.



Solution Overview

The Kemco HatchRO Series Reverse Osmosis (RO) is an economical way of removing scaling minerals from water that affect the operation of humidifiers, specifically misting nozzles. Removing the minerals lowers the level of required humidifier maintenance especially the nozzles used to create mist for humidity absorption. By removing minerals from a humidifier's water supply, the limescale that builds up in the system is virtually eliminated lowering the level of required humidifier nozzle maintenance.

Wayne-Sanderson Farms utilize hundreds of misting nozzles in this facility and were experiencing scaling due to poor water conditions. The nozzles were plugging rapidly and needed frequent replacements. This cost can be more than \$5,000 every few months for nozzles alone, not including the loss of eggs caused by poor incubator environment conditions. Kemco's Hatch RO systems reduce the scale potential to less than 3%, aiding in control of the humidity and helping reduce embryonic deaths from poor humidity levels.



Why Wayne-Sanderson Farms Chose the Kemco HatchRO

Kemco Systems' all stainless steel HatchRO features a modular industrial design to accommodate tight facility footprints. As an added benefit, Kemco's HatchRO requires little maintenance, affording Wayne-Sanderson Farms the ability to prevent scaling, reduce maintenance costs and reduce their environmental impact.

Results

In order to optimize Wayne-Sanderson Farms' operation, Kemco provided two HatchRO units, capable of delivering 6-7 GPM of high-purity water each. In addition to the RO units, Kemco also provided a separate alternating panel which alternates use from one RO to the other after each use, allowing for even operation and pump use.

Should the tank levels drop below a critical set point when the volume is high, both RO units operate providing twice the flow rate at 12-14 GPM. This system will alleviate the hatcheries' problem with seasonal water demands by maintaining the flows in the winter when the humidifiers are at their highest demand and only one operational unit in the summer when the demand is lower.

