

3D TRASAR™ Technology for Canning & Bottling Helps Midwest Pet Food Cannery Save 1.6 Million Gallons of Water and Avoid Shutdown



BACKGROUND

A Midwest pet food cannery with consistent double-digit annual growth was experiencing very high microbial counts in their thermal processing cooling water. Good microbiological control of the process cooling water is critical to eliminate the risk of contaminated water entering the containers during the retort process and presenting a food safety concern. Further, the presence of high levels of fats, oils, greases and proteins in the recycled process cooling water presented an even greater challenge in keeping the process water under good operational control.

The customer's previous microbiological treatment program utilized an oxidizing biocide controlled via ORP (oxidation reduction potential) supplemented with periodic shocks of chlorine dioxide. The treatment proved to be ineffective in controlling and removing the biofilms. Microbio counts were regularly out of control, and the plant faced some serious decisions: Either shutdown completely or invest in infrastructure to convert their recycled cooling water to a once-through system, and discharge it to a

nearby creek after proper treatment. The proposed infrastructure changes were extremely costly, with capital options ranging from \$500,000 to \$1 million.

SOLUTION

Nalco Water implemented 3D TRASAR™ Technology for Canning & Bottling to control and dose the oxidant feed based on direct free chlorine measurements in the recycled cooling water. The solution utilized Nalco Water's patented self-cleaning oxidant sensor to ensure accurate, reliable and consistent free chlorine measurements.

The results were dramatic. Within 24 hours of implementing the system, microbial counts dropped from "too numerous to count" to well below the target threshold, providing the plant with assurance against food safety risks and saving them from the choice between a complete shutdown or a massive investment in a cooling water infrastructure that would be far less efficient.

ANNUAL SAVINGS



WATER

Water savings of

**1.6 million
gallons**
annually



COSTS

Avoided unplanned shutdown and
infrastructure changes

**\$500,000-
\$1 million**



ENVIRONMENTAL
RESPONSIBILITY

Avoided switching to once-through
cooling & increased environmental
discharge



BRAND
PROTECTION

Improved reliability & results helping
protect equity & reputation

VALUE DELIVERED

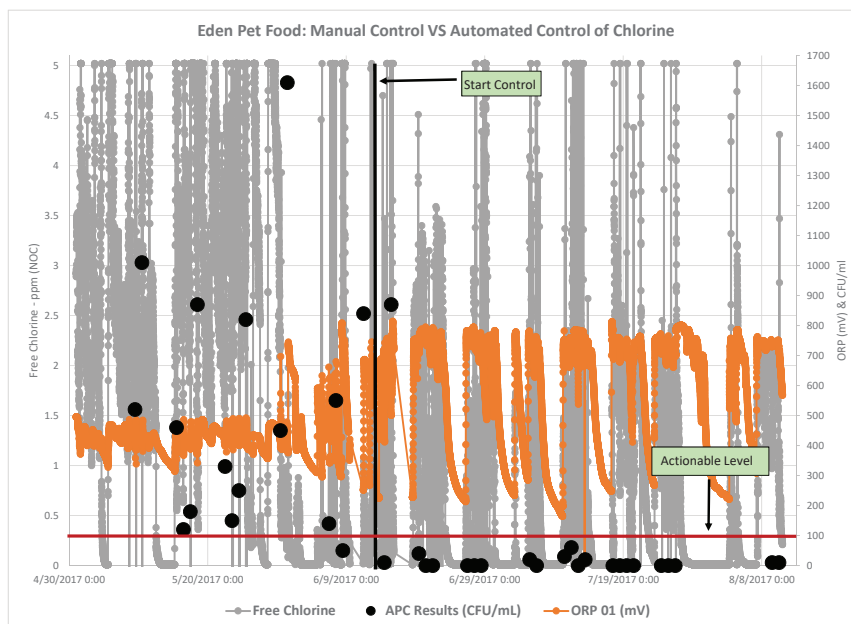
Up to

\$1 million
in capital investment savings

RESULTS

Utilizing 3D TRASAR Technology for Canning & Bottling, the customer was able to:

- Save 1.6 million gallons of water annually
- Avoid a complete shutdown of their facility
- Avoid the high \$500,000 to \$1 million cost of infrastructure enhancements
- Avoid the need to treat the once-through cooling water prior to discharging it to the waterway
- Protect their high-quality brand



THE GRAPH ABOVE SHOWS THE IMPACT OF MANUAL VERSUS AUTOMATED CONTROL OF BIOCIDES. THE BLACK DOTS ARE THE BACTERIAL COUNTS MEASURED IN CFU/ML. BEFORE IMPLEMENTING BIOCIDES CONTROL VIA 3D TRASAR TECHNOLOGY FOR CANNING & BOTTLING, MICROBIO COUNTS WERE OUT OF SPEC ALMOST EVERY DAY. AFTER CONTROL WAS INITIATED, MICROBIO COUNTS WERE CONSISTENTLY MAINTAINED BELOW THE 100 CFU/ML TARGET.

CONCLUSION

The plant manager summarized the impact on his operation this way, “Nalco Water’s 3D TRASAR system designed for thermal processing made an immediate difference in getting our microbio counts under control. Before implementing the system, we often had high risk of contamination, causing us to consider a substantial change to our cooling water infrastructure. After putting the Nalco Water system in place, the levels dropped well below our limits and stayed there consistently, which saved us up to \$1 million in potential infrastructure changes. The before-and-after results were night and day, and we now have the real-time data available to monitor the levels. I went from not sleeping at night to smiling again.”



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