



# Customer Success Story

## Customer Details



**Client:** Dairy Processor

**Location:** Wisconsin

**Market:** Industrial Application

**Product:** Fine Bubble Diffused Aeration

## About Our Customer/Problem

A global cheese producer in Wisconsin was embarking on a strategic initiative to accommodate the projected surge in cheese production, thereby necessitating the expansion of their wastewater management capabilities. Their existing infrastructure featured a lagoon-based system utilizing 17 floating, high-speed surface aerators across three primary lagoons, with an additional polishing lagoon. However, it became evident that this setup would prove inadequate in meeting their future demands for wastewater treatment.

To address this challenge, the environmental team at the company considered alternative aeration options, specifically high-speed aspirating aerators, and fine bubble diffused aeration.

While high-speed aerators presented a cost-effective solution, fine bubble diffused aeration promised numerous advantages, including more consistent wastewater temperatures, superior mixing capabilities, and reduced long-term power costs.

The cheese producing company turned to the experts at Lemna Environmental Technologies (LET) with over 40 years of experience for a customized and innovative solution. Through close collaboration, LET engineered a system that not only met current effluent standards but also allowed for future production expansion, securing the company's infrastructure for years to come.

## Our Recommendation: LemTec™ Aeration Technology

Through advanced integrated lagoon technology and wastewater process modeling, LET suggested implementing the Lemna fine bubble diffused aeration system. This advanced system was successfully installed and operational within a few months.

The newly designed system significantly enhanced the treatment capacity of the first aerated lagoon.

Moreover, it ensured the maintenance of optimal liquid temperatures, thereby improving the overall performance of subsequent treatment processes in the downstream lagoons. This solution not only addressed their immediate needs but also positioned the company for long-term efficiency and sustainability in their wastewater management practices.

## Design Parameters

Constituent	Influent	Effluent
BOD	3200 mg/l	20 mg/l
TSS	3200 mg/l	20 mg/l
Ammonia	139	2 mg/l
Flow	.202	

## Diffuser Aeration Design

Air Flow	4400 SCFM
Blowers	3 (125 HP) 2-working 1-spare

## Results

The company has made substantial improvements to their cheese production facility, while simultaneously maintaining the exceptional quality of their wastewater treatment. The integration of the Lemna system has empowered them to significantly enhance their wastewater management capacity without the need for process alterations or modifications to their existing lagoon system.

The fine bubble aeration system has delivered impressive results, generating savings equivalent to 60 horsepower (Hp) compared to the alternative option. This translates to an annual cost reduction of approximately \$24,000, showcasing not only the efficiency but also the cost-effectiveness of the solution. Their commitment to innovation and sustainability has allowed them to achieve both increased production and enhanced environmental responsibility.

## Layout

