

Dairy Industry Experience



Wastewater Compliance Studies

Ice cream manufacturer – Midwestern United States

Performed studies to address elevated concentrations of oil and grease and biochemical oxygen demand (BOD₅), as outlined in a negotiated Compliance Agreement. O'Brien & Gere surveyed the facility and available data, and developed a work plan that included a sampling program. Based on the results, O'Brien & Gere aided in successfully negotiating a switch from a concentration based limit to a mass-based limit, which brought the facility into compliance without adding pretreatment processes or equipment.

Wastewater Treatment Plant Design

Cheese manufacturer – Northeastern United States

Provided a technology evaluation and conceptual design for a new wastewater treatment plant with enhanced nutrient removal for direct discharge and municipal discharge options. Technologies evaluated were sequencing batch reactor (SBR), oxidation ditch, and conventional activated sludge (CAS). Conceptual design included wastewater collection, dissolved air flotation, dewatering, and chemical addition facilities.

Whey Processing Facilities

Dairy manufacturer – Northeastern United States

Performed a feasibility study and conceptual design to process sweet whey and acid whey solids at a centralized facility for animal feedstock as an alternative to land application at multiple facilities.

SOLUTIONS & SERVICES

Technology evaluations

Pilot studies

Sustainability audits

Conceptual designs

Design-build

Construction

Operations & maintenance

TECHNOLOGY SOLUTIONS

Pretreatment/evaluation

DAFs/clarifiers

Aerobic treatment systems

Anaerobic treatment systems

Solids handling

Membrane technologies

CONTACT

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Dairy Industry Experience

Anaerobic Wastewater Treatment Systems

Yogurt, cream cheese, and string cheese manufacturers – Southeastern United States

Completed multiple design-build-commissioning projects for three production facilities (yogurt, cream cheese, and string cheese). For each project, O'Brien & Gere implemented a fluidized bed anaerobic treatment system with its technology partner to treat high strength waste and process wastewater from production. The team designed and implemented preconditioning, solids handling, dewatering, and biogas conditioning systems. Methane gas from the process is used in the existing boilers to create energy and offset utility costs.

Wastewater Compliance Studies

Dairy manufacturers – Southeastern United States

In response to a Compliance Agreement, O'Brien & Gere was retained to provide engineering services addressing regulatory noncompliance issues related to the wastewater discharge of oil and grease.

Water & Wastewater Management Study

Evaporated milk and cheese products manufacturer – Western United States

Prepared a water balance based on site measurements, observations, and interviews and used results to quantify water usage. Water reduction measures focused on sustainable solutions to reduce well-water usage and wastewater discharge. Treatment alternatives focused on facility surcharge reduction. Results showed water savings measures could reduce well water usage by about 40 percent, wastewater discharge by over 70 percent, and discharge loading surcharges by over \$400,000 per year.

Water & Wastewater Management Study & Design

Ice cream manufacturer – Midwestern United States

Completed a water and wastewater balance based on site measurements, site observations, and interviews identifying viable opportunities to recognize 10% reduction of water, energy (hot water), and chemical usage. Wastewater studies identified the potential opportunity to install a new anaerobic wastewater pretreatment plant. Preliminary economics identified that implementation of an anaerobic pretreatment system at this plant has the potential to save over \$800,000 per year in wastewater discharge loading surcharges and provide biogas as a renewable energy source.

Wastewater Evaluation

Dairy manufacturer – Northeastern and Southeastern United States

As part of designing an enhanced nutrient removal treatment system for a municipal wastewater treatment plant, evaluated toxicity levels for hydrogen peroxide discharge from a significant industrial discharger, a dairy. The plant wanted to change its treatment and cleaning process to periodically include high-strength hydrogen peroxide, and confirm it would still meet discharge limits. Toxicity testing (respirometry-based) confirmed the waste stream would not cause operational or compliance difficulties at the plant. Based on this result, O'Brien & Gere supported the successful negotiations to accept the waste stream.