Impact Analysis: Lagunitas Brewing Co.

PROJECT MISSION

Treat spent brewing water with a cost effective process while generating renewable energy and producing recycled water for reuse onsite.

CHALLENGE

Lagunitas Brewing Co., one of the fastest growing breweries in the nation, was transporting over **50,000 gallons per day of high-strength** spent brewing water to East Bay Municipal Utility District (EBMUD), requiring **over 3,000 trucks a year**. The high-strength flow makes up 40% of Lagunitas' spent brewing water. The low-strength flow was discharged to Petaluma for treatment to comply with environmental regulatory standards. Trucking and treatment came at high monetary and environmental costs for Lagunitas. The brewery also faced a hefty connection fee to increase water consumption, hampering expansion.

This is the reality for many breweries across the country. Brewing is a water-intensive process, the by-products of which are rich in organics and nutrients that disrupt traditional municipal systems.

SOLUTION

The Cambrian Innovation® treatment system at Lagunitas is comprised of **1 headworks unit controlling 3 EcoVolt® Reactors, 2 proprietary membrane bioreactors (MBRs) , and a reverse osmosis system.** It is designed to treat 100% of Lagunitas' spent brewing water. The system can easily expand to accommodate a doubling of Lagunitas' production.

The installation **rapidly eliminates >99% percent of the biological oxygen demand (BOD)** in the spent brewing water. The EcoVolt® Reactors treat high-strength spent brewing water and convert carbon dioxide directly into high-quality biogas that is used onsite to generate both heat and electricity. Next, the MBRs and RO treat the full flow, producing over **80,000 gallons of clean, recycled water a day**.

AT A GLANCE

LOCATION
Petaluma, California

CUSTOMER
Lagunitas Brewing Company

ECOVOLT® TREATMENT CAPACITY
Current Installation: 60,000 GPD
Expansion: up to 120,000 GPD

ENERGY PRODUCTION
130 kW of renewable electricity and 45,000 therms/year of heat

CLEAN WATER PRODUCTION
80,000 GPD (>40% of current demand the site's current water demand)

CARBON DIOXIDE REDUCTION
1,600 metric tons, equivalent to planting 1,580 acres of forest every year

WATER:BEER RATIO
From 4.0 down to 2.5

Taking the Diesel Out of Beer

"Relative to the other anaerobic digestion systems we evaluated, the Cambrian system offers a scalable solution allowing us to add capacity as we grow… and requires much less operating oversight."

Leon Sharyon, CFO of Lagunitas Brewing Company

ENVIRONMENTAL BENEFITS

EcoVolt® is designed from the ground up to meet all environmental compliance and sustainability goals, while providing a return on investment for customers.

The installation at Lagunitas Brewing Co. is completely self-powered, and sends excess energy back to the brewery. It enables the company to meet their sewer discharge requirements, cut their input water costs and footprint by over 40%, and eliminate over 1,600 metric tons of carbon dioxide emissions each year. That is equivalent to planting 1,580 acres of forest or taking 332 passenger vehicles off the road every year!

SYSTEM BENEFITS

The entire system is expandable, road-shippable, fully automated, and remotely monitored and controlled by Cambrian Innovation®, reducing operator intensiveness.

HIGHLIGHTS

- ENERGY POSITIVE
- WATER REUSE ONSITE
- CUTS OPERATING COSTS
- PREFABRICATED
- TURN-KEY INSTALLATION
- REMOTE MONITORING
- REMOTE OPERATION

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