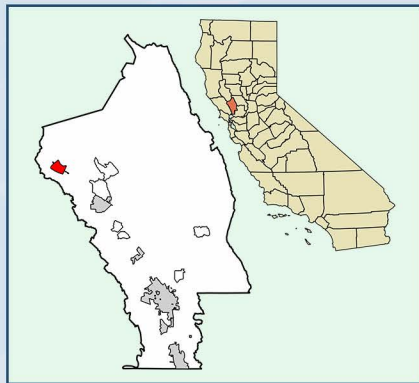


## Castello di Amorosa Winery & Vineyard

B E T T E R W A T E R . B E T T E R W O R L D .

### PROJECT OVERVIEW:



**LOCATION:** Calistoga, CA  
Napa County, 94515, United States

**PROJECT NAME:** Castello di Amorosa Winery & Vineyard

**INSTALLATION DATE:**  
Spring 2017

**PROJECT SIZE:**  
9,000 gpd

**FACILITY OWNER:**  
Castello di Amorosa

**PROJECT OWNER:**  
REHS

**DESIGNER:** BioMicrobics inc.  
REHS

**CONTRACTOR:**  
PE REB Eng.

**MANUFACTURER:**  
BioMicrobics inc.

**EQUIPMENT:** High strength membrane bioreactor flat sheet membrane units, filtrate pumps with effluent line and effluent disconnect, lifting cables, vacuum gauges, blowers, and control panels

### TIME FOR A CHANGE

When its leach field failed, the owners of Napa Valley winery Castello di Amorosa knew it was time to reconsider their wastewater system. The winery's values led them to search for a system that would save water and conserve natural resources on the property due to a series of droughts in California that resulted in increased water-use restrictions.

### FINDING A SOLUTION

The well-known Napa Valley winery adopted BioMicrobics' wastewater treatment system to resolve their wastewater management issues. Castello di Amorosa was able to treat and recycle over 1.35 million gallons of wastewater in its first year of operation, and **over 5 million gallons of water since 2017** thanks to the BioBarrier® HSMBR® Winery System.



### A PRECISE TREATMENT SYSTEM FOR THE WINERY'S CUSTOM NEEDS



The winery's environmental values led to a search for the best treatment-system science, design and tank material. They selected three ZCL | Xerxes 22,000-gallon/83,000-liter underground fiberglass wastewater tanks (10-foot-diameter) to replace the previous concrete tanks and a BioBarrier HSMBR (High Strength Membrane Bioreactor) treatment system was installed inside each new tank. Each of the three tanks operated independently in order to meet the winery's wastewater needs, which can vary significantly day to day. During the most water-intensive times when wine is bottled and barrels are washed, or when all three tank systems run, treating up to 9,000 gallons/34,000 liters of water per day. A whole day's water flow may go in and out of the three tanks in less than an hour. That level of flow requires surge protection for a high volume of flow so the treatment process isn't interrupted. From 250 GPD to 100,000 GPD flows, the immersed, aerated, membrane technology allows for installation into a smaller footprint with either above or below ground tanks. They meet water quality requirements for the reduction of chemical and microbiological contaminants for non-potable water use. The treated wastewater (high-quality effluent) can be used for restricted indoor water use or unrestricted outdoor water use.



S I M P L E . L O W C O S T . R O B U S T .



**E N V I R O N M E N T A L S U S T A I N A B I L I T Y :**

Castello di Amorosa greatly decreased their dependency on freshwater sources by reusing the treated effluent for grape irrigation, leading to significant water conservation. The system’s effective adoption not only increased the winery’s environmental sustainability but also boosted its standing as a trustworthy and environmentally conscientious company. The success and advantages of BioMicrobics, a winery wastewater treatment company, with other solutions, are attested to by the case study of Castello di Amorosa.

**BioBarrier<sup>®</sup> HSMBR<sup>®</sup>**  
**HIGHSTRENGTH MEMBRANE BIOREACTOR**

BioBarrier MBR and BioBarrier HSMBR are membrane aerated biofilm technologies certified for onsite and water reuse applications. These packaged wastewater treatment plants meet the challenges of difficult site conditions and varying wastewater concentrations. Certified for water reuse (NSF/ANSI 40/245/350, EN12566-3, and CAN/BNQ 3680-600), the BioBarrier systems are complete, optimized wastewater and graywater systems that provide high levels of treatment. The BioBarrier system’s flat-sheet membranes (0.3 to 1.3 micron pores) physically separate the solids and bacteria from wastewater to keep them in the tank, allowing the treated water (high-quality effluent) to exit the tanks by means of a submerged filtrate pump. The resulting water can be reused in numerous ways, including vineyard irrigation.



**A P P L I C A T I O N H I G H L I G H T S :**

- 1.35 million gallons of wastewater treated and reused in first year of operation
- Tanks and treatment system are a high-efficiency, low-maintenance pairing
- Winery wastewater treatment with BioMicrobics and ZCL | Xerxes is now Napa Green-Certified
- Corrosion resistance of fiberglass is advantage in winery’s acidic soil
- Three 22,000-gallon fiberglass water tanks (10-foot-diameter)



Both the winery and land have received Napa Green-certification, which means they meet all the regulatory components needed for environmental sustainability, including water conservation and water efficiency.

**BIO MICROBICS**  
 BETTER WATER. BETTER WORLD. •  
 16002 West 110th St. • Lenexa, KS 66219 USA  
 1-800-753-3278 • ph: 1-913-422-0707 • f: 1-913-422-0808  
 • sales@biomicrobics.com