

Case Study

Winery Wastewater Treatment Upgrade



The Problem

With growing production volumes and increasing environmental scrutiny, a leading Australian winery with operations across two sites found its ageing wastewater infrastructure under significant pressure. The existing system struggled to handle high-strength, variable-quality wastewater, particularly during seasonal peak loads. This placed both EPA compliance and long-term sustainability goals at risk.

Key Issues Identified

Inadequate Treatment: The legacy system couldn't process the high organic loads consistently

Variable Influent Quality: Wastewater was sourced from two separate facilities, contributing fluctuating volumes and contaminant levels

EPA Compliance Risks: Ageing infrastructure risked breaching environmental discharge regulations

Limited Reuse Capability: Insufficient treatment limited opportunities to recycle water for irrigation

Scalability Concerns: A future-ready solution was needed to accommodate continued growth and tightening regulations

The Solution:

To meet both immediate compliance requirements and future production demands, Waterform Technologies delivered a hybrid UltraBiox™ Wastewater Treatment System, combining Moving Bed Biofilm Reactor (MBBR) and Sequencing Batch Reactor (SBR) technologies for advanced Biological Nutrient Removal (BNR). The system was tailored to suit variable load conditions, integrate with existing infrastructure, and enable reliable water reuse.

System Features:

Hybrid Biological Treatment: UltraBiox™ MBBR/SBR BNR system for high-strength wastewater treatment with exceptional nutrient removal

Aerated Lagoons: Two large lagoons supported by six Fuchs Oxystar aerators for additional biological processing

Tertiary Filtration + UV Disinfection: Media filters and UV Strike system ensured EPA-compliant effluent quality

Automation + Remote Monitoring: SCADA-integrated iSiteControl platform delivered 24/7 oversight and optimisation

Repurposed Infrastructure: Existing dam was converted for treated water storage, with irrigation enhanced through earthen bunding

This advanced system ensures the site remains compliant while enabling efficient, sustainable operations — with built-in scalability for the future.

The Outcome:

The upgraded wastewater system now delivers strong environmental, operational, and financial performance:

— Regulatory Compliance

Consistently meets EPA discharge limits, reducing compliance risks and ensuring long-term approval.

— Water Reuse

Treated effluent is reused for vineyard irrigation, cutting freshwater reliance and lowering water costs.

— Operational Efficiency

Automation and remote monitoring reduce manual input while maintaining system reliability.

— Future Scalability

Modular design allows for easy expansion to meet future production demands.

— Cost Savings

Lower energy use and reduced disposal costs support ongoing financial sustainability.

This fit-for-purpose solution ensures the winery operates with confidence—meeting compliance, improving sustainability, and supporting growth without compromising day-to-day efficiency.

The Result:

A compliant, efficient, and scalable wastewater system that reinforces the winery's commitment to environmental responsibility and operational excellence.



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