WEARS
AUSTRALIA

Water Engineering & Research Solutions

ResMix 5000

Cost-efficient, fully engineered solution designed for large water storage systems.

The ResMix 5000 system is the leading source water management solution for managing lakes, dams and reservoirs larger than 5,000ML.

Engineered by WEARS Australia, the ResMix 5000 has been designed and manufactured in Australia to improve and maintain water storage systems through mechanical destratification.

It has been engineered and manufactured for large-sized lakes or reservoirs, and can be configured in a 'close-coupled' arrangement (ResMix 5000CC), depending on required application and circumstances, enabling the unit to be adapted to bodies of water with no upper size limits.

Advantages of the ResMix 5000 over other alternatives

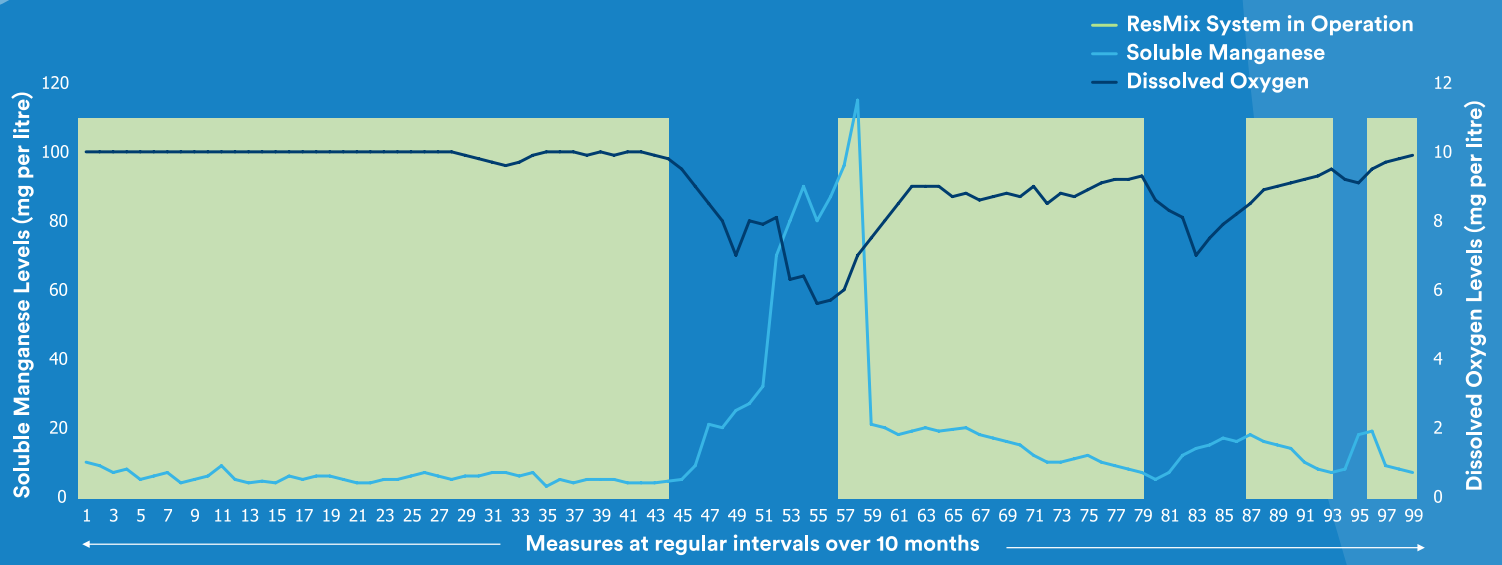
- High-flow, low-powered system providing cost and energy efficiencies.
- Destratifies raw water storage.
- Oxidises heavy metals reducing metal ions (Mn, Fe).
- Controls toxic Blue Green Algae and minimises or eliminates algal blooms without dangerous chemicals.
- Reduces and eliminates taste and odour issues.
- Reduces downstream treatment costs.
- Increases fish habitats.
- Restores the condition and ecology of degraded water storage.
- Eliminates and controls cold water pollution.
- SCADA reports and feedback.

The results

The ResMix 5000 is an energy-efficient and cost-efficient system which is proven to deal with heavy metals and oxidising metallic ions, aiding uniform temperature and Dissolved Oxygen levels throughout large bodies of water, as well as minimising or eliminating incidence of Blue Green Algae. By increasing the Dissolved Oxygen profile of large source water reservoirs, the ResMix systems have a proven track record of improving source water and reducing downstream water treatment costs.

Improved Dissolved Oxygen and Soluble Manganese

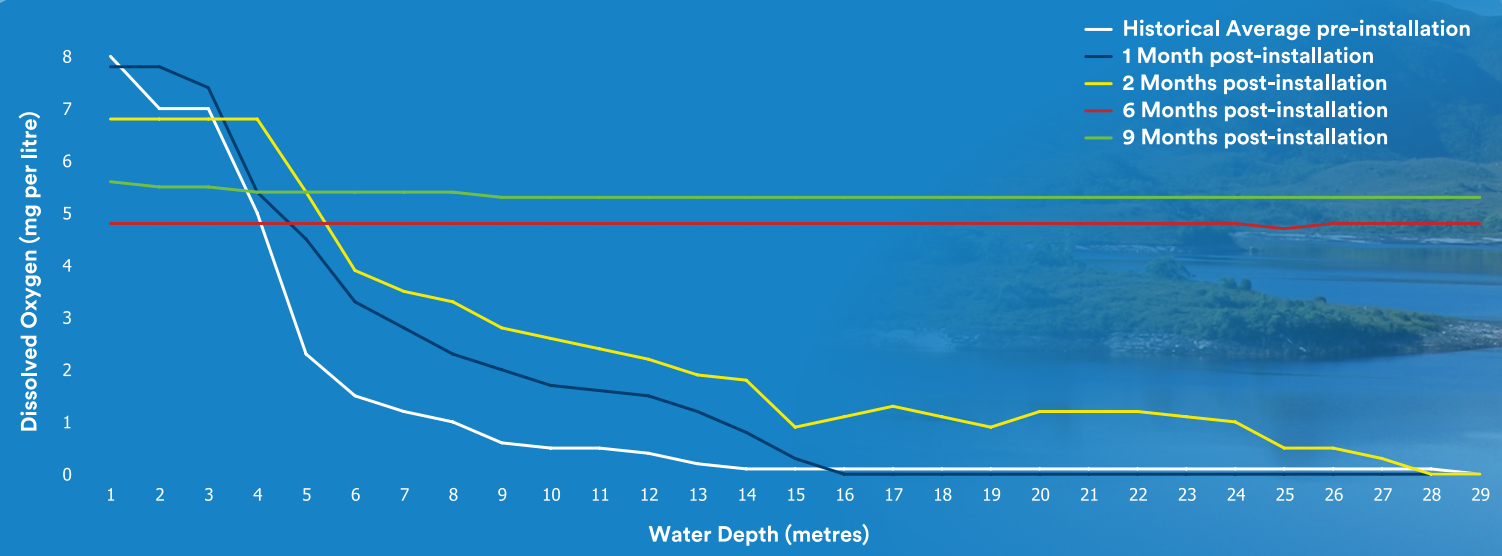
ResMix System - Correlation between ResMix operation with Dissolved Oxygen and Manganese levels



The ResMix 5000 is proven to reduce metallic ions by increasing the oxygen profile in source water storage. The graph shows the impact the ResMix system has on Dissolved Oxygen (DO) and the flow on effect on Soluble Manganese (SM). The client in this installation had site-related power issues which caused the ResMix system to be turned off on several occasions during the 10-month period. In each of these instances, DO levels reduced and SM levels correspondingly increased. When the system was turned back on, it corrected and resolved these issues within a short period of time.

Uniform and increased water oxygenation

ResMix System Installation - Dissolved Oxygen readings pre- and post-installation



Following installation of the ResMix system, results show that the water is immediately impacted by the ResMix system and within 6 months, is uniform and continues to increase in oxygenated water to a consistent and uniform 6mg/L from top to bottom of the water reservoir 9 months after installation.

How it works

Large bodies of water are prone to oxygen depletion and stagnation. This, along with biological imbalances, are the major causes of toxic cyanobacteria. Further challenges faced by water operators are the presence of soluble metallic ions. The top layer of reservoirs typically heat up and become less dense, forming a warmer layer on the top of the reservoir. This warm layer prevents mixing with the cooler, deeper water due to the thermocline which creates stratification.

The ResMix 5000 uses low flow velocities to force surface water down to a designed depth at a very low operating cost. The system mixes the water body to dissipate thermal layering and achieve uniform temperature and oxygen gradients.

Using a 5-metre axial flow pump and moving water through a flexible draft tube, the ResMix 5000 mixes water from the surface layer through the thermocline to the hypolimnetic bottom layers of the reservoir.

This destratification process, which has traditionally been attempted with high-energy, low-efficiency air diffusers, is achieved by the ResMix systems at only 10% of the power previously required.

ResMix 5000 *Product Specifications*

Variable flow rate	Customisable for each unique reservoir
Power consumption	Dependent on reservoir requirements
Maximum diameter (operation mode)	5.1m / 5.1m x 2
Weight	1,800kg / 1,800kg x 2
Blade diameter	5m / 5m x 2
Materials	
• Unit and coupling	Stainless steel
• Floats	HDPE coated
• Motor	5.5kW Helical Geared epoxy coated motor x 2
Reservoir size	5,000ML+ (customised to size, no upper limit)
Effective life	20 years
Maintenance period	2-yearly

Compliant with Australian Standards for Electrical and Manufacturing under AS3000

WEARS Australia provides researched and engineered, cutting-edge solutions for water resource management.

From the laboratory to water storage, WEARS' expertise is in tailoring solutions to reliably ensure that water provided to consumers is consistent, clean, clear, fresh and contaminant-free.

Contact us to find out more about our cutting-edge solutions, or to arrange a complimentary consultation.

+61 7 5423 2770

wears.com.au +61 7 5423 2779 wears@wears.com.au

WEARS
AUSTRALIA

Sustainable solutions for water management

WEARS Australia - 417 Fulham Road, Lower Cressbrook, Toogoolawah Qld 4313, Australia