

CASE STUDY

PROJECT WATER SUPPLY AND WASTEWATER TREATMENT FOR MINING OPERATIONS

PRODUCT Seawater Reverse Osmosis (SWRO), Ultrafiltration (UF), Biocombi

INDUSTRY Mining

LOCATION Western Australia



BACKGROUND

A major iron ore development in the West Pilbara region required a reliable water supply and wastewater treatment solution to support mining operations. With limited freshwater resources in the area, a sustainable desalination and wastewater treatment strategy was essential to ensure operational efficiency and regulatory compliance.

SOLUTION

MAK Water designed an integrated water treatment solution including Seawater Reverse Osmosis (SWRO), Ultrafiltration (UF) pre-treatment and a Biocombi wastewater treatment system. This approach ensured a consistent supply of high-quality potable water while effectively managing wastewater in compliance with environmental regulations.

MAK WATER KEY SOLUTIONS

- SWRO desalination plants deliver high-quality potable water for mining operations and associated facilities
 - 3.3 MLD containerised SWRO with 2 x 1656 m³/day trains
 - 5.4 MLD shed-based SWRO with 3 x 1800 m³/day trains
- UF Pre-Treatment to remove suspended solids and organic materials, minimising SWRO membrane fouling and improving efficiency
 - 2 x UF trains each at 3175 m³/day
- Biocombi wastewater treatment system.

RESULTS AND BENEFITS

- **Reliable Water Supply:** Containerised SWRO systems provide a consistent, high-quality potable water source
- **Operational Efficiency:** UF pre-treatment significantly reduces membrane fouling, minimising maintenance and downtime
- **Environmental Compliance:** Biocombi ensures wastewater is treated safely, meeting regulatory standards and supporting the client's commitment to sustainability
- **Integrated Solutions:** Delivers a seamless approach to water supply and wastewater management
- **Sustainability:** MAK Water assisted the client with their journey towards a sustainable water future, meeting supply and treatment needs while adhering to environmental standards, contributing to the long-term sustainability of the project



Seawater Reverse Osmosis (SWRO) plants and Biocombi wastewater treatment system



Biocombi wastewater treatment system