

CASE STUDY



PROJECT Potable Water for Defence Training Area

PRODUCT Brackish Water Reverse Osmosis (BWRO)

INDUSTRY Defence

LOCATION Timber Creek, Northern Territory

BACKGROUND

Defence facilities are often located in extremely remote regions for safety and security reasons, creating unique challenges for essential services such as potable water supply. At one Department of Defence (DoD) field training site, the existing water treatment plant (WTP) was no longer able to meet potable water standards in accordance with the Australian Drinking Water Guidelines (ADWG).

With no surface water available, the site relied solely on bore water containing dissolved iron concentrations well above ADWG limits. The harsh desert climate, with high summer temperatures and low overnight winter temperatures, further impacted system performance, reliability, and sustainability.

SOLUTION

MAK Water worked closely with DoD to design a fit-for-purpose potable water treatment solution tailored to the remote site's operational and environmental conditions. Comprehensive feed-water data sets were obtained to develop a custom pretreatment process targeting elevated dissolved iron levels.

A fully automated system was engineered to minimise operator input, supported by remote monitoring and alerting capabilities. The resulting high-availability potable water treatment plant meets all ADWG requirements, ensuring safe and reliable water for Defence personnel.

MAK WATER KEY SOLUTIONS

- Desalination plant with extensive pretreatment delivering consistent, high-quality potable water for personnel and associated facilities
- 38 kL/d insulated containerised plant room fitted with reverse-cycle air-conditioning to withstand extreme temperature variations
- Premium instrumentation package enabling continuous automated functionality with remote access for troubleshooting and alert diagnostics

RESULTS AND BENEFITS

- **Reliable and Safe Water Supply.** Desalination of the local bore water source provides compliant, high-quality potable water for the site.
- **Operational Efficiency.** Autonomous operation reduces operator involvement, while remote access minimises site visits for diagnostics.
- **Sustainability.** Treating local water sources avoids the environmental and financial burden of trucking in potable water.



MAK Water containerised BWRO plant installed onsite



Internal view of containerised BWRO plant