

CASE STUDY



PROJECT PRODUCT TUNNEL CONSTRUCTION WWTP
Lamella Clarifier (LC), Ultrafiltration (UF), Brackish Water Reverse Osmosis (BWRO), Filter Press (FP)

INDUSTRY LOCATION Infrastructure and Urban Development
New South Wales

BACKGROUND

As the nation transitions to renewable energy, ambitious tunnelling infrastructure projects are required to deliver one of the largest pumped hydroelectric schemes in the world. MAK Water was invited to tender for the design, manufacture and commissioning of two packaged water treatment plants for Australia's largest committed renewable energy project. Project challenges included high turbidity and the variable quality of tunnelling construction wastewater with, elevated TDS. Treated water was to be compliant with strict environment discharge to a sensitive alpine stream in a national park. Available footprint was limited and the plants had to operate continuously 24/7 in alpine conditions of high winds and sub zero temperatures. The water treatment was critical to the progress of this major project and so MAK Water had to deliver on an expedited delivery schedule.

SOLUTION

54m³/h (1.3ML/day) coarse inlet screening, large balance/buffer tank with mixing pump and chemical dosing, lamella clarifier (LC), ultrafiltration (UF), brackish water reverse osmosis (BWRO), filter press (FP) for sludge management.

MAK WATER KEY SOLUTIONS

- Design and manufacture of custom 2 x 54m³/h packaged tunnel construction wastewater treatment plants.
- Equipment winterisation and cyclone tie downs for high wind conditions
- Standby critical pumps and process equipment for redundancy
- Small footprint plant design included container stacking and concrete bunker for dewatered cake
- Premium Instrumentation package with ClearAccess™ Remote Monitoring

RESULTS AND BENEFITS

- **Compliant Discharge.** Fit for purpose plants and proven process ensures consistent and compliant environmental discharge.
- **Fast Delivery.** A packaged plant enables fast factory fabrication and minimal onsite installation, which helps to achieve the client's tight project timeline.
- **Plant Reliability.** Robust design for Alpine conditions and standby equipment ensures the plants are always available to treat water, be it during a snowstorm or a heatwave.
- **Remote Access.** ClearAccess™ allows for remote monitoring and alert notifications for operational personnel.



Stacking containers saved space



Lamella clarifier next to stacked containers



Filter Press container mounted atop a concrete bund for dewatered cake collection & storage