

CASE STUDY

PROJECT UNDERGROUND MINE
PRODUCT Membrane Bioreactor (MBR)
INDUSTRY Mining
LOCATION Mongolia



BACKGROUND

An Australian mining company developing one of the world's largest known copper and gold deposits needed a solution for sewage treatment that was to be located 2 km underground. Due to the small footprint available and hazardous nature of the environment, a completely bespoke design was required. The plant was separated into 3 sections with unique start-up and shutdown sequences to mitigate risk of methane build up underground.

MAK Water's innovative design and ability to meet the complex project standards won the project in a competitive tender process. The plant was constructed according to project engineering and design specifications, using project preferred electrical equipment, and supplied with site specific vendor drawing and data package.

SOLUTION

MAK Water provided a Membrane Bioreactor (MBR) Sewage Treatment Plant to produce treated effluent complying with Class A effluent standards, enabling the mine to reuse the wastewater.

MAK WATER KEY SOLUTIONS

- HAZOP, safety in design, operability, and constructability studies
- Compliance to client specific specifications including preferred equipment, drawings & data package
- Inlet works/screening, with flow balancing, mixing and odour control
- Customised plant layout to enable transport through the narrow underground shafts and allowing for maintenance access via monorail routes
- Duty/standby arrangement for rotating equipment

RESULTS AND BENEFITS

- **Consultative Design Process.** A fit-for-purpose solution that complies with client specifications in a commercially sensible manner.
- **Safe, Compliant Effluent.** Designed around the site-specific influent quality to meet the required Class A treated effluent quality
- **Turnkey Solution.** Complete bespoke design, manufacture, and commissioning package



Pump motor controls. Signage in English and Mongolian.



Carbon odour filters treat plant biogas emissions