

MINE WATER TREATMENT FOR ENVIRONMENTAL DISCHARGE

Key Facts

Client: Glencore

Site: Ulan Coal Mine

Location: Mudgee, NSW

Purpose: To reduce water volumes stored onsite

Technology: Ultrafiltration (UF), Reverse Osmosis (RO)

Supporting infrastructure supplied by Ixom:

- Chemical Storage & Dosing Systems
- CIP system
- Feed, Product and Process tanks
- Plant utilities such as compressed air and process water
- MCC, PLC & SCADA

Capacity: 6 ML/day permeate

Feed Water Source: Underground mine water stored in site dams (TDS ~2,500 mg/L)

Treated Water Quality:
To meet with EPA discharge license
(6.5<pH<8.5 & EC <800 µS/cm²)

Contract Type: EPC (Turnkey) followed by Operation and Maintenance Contract

Start-up: 2010

BACKGROUND

Underground water from different parts of the Ulan Coal mine is pumped to onsite storage dams. The stored water volume is trending upwards with time. This problem is being compounded by rain runoff and ground water ingress into the mine area.

Glencore engaged Ixom to build a water treatment plant to take control of this upward trend and to eventually reduce storage volumes.



IXOM

Ixom Water Treatment Systems

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For specialist advice in an emergency, call Ixom's
24 HOUR EMERGENCY RESPONSE SERVICE

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CUSTOMISED SOLUTION

The Ixom solution was a fully containerised plant, to minimise site construction and commissioning time.

Ultra-filtration

- 4 parallel trains in 40 ft containers
- 36 x hollow fibre UF membranes in each train

Reverse Osmosis

- 4 parallel trains in 40 ft containers
- 2 stage design with 12 pressure vessels per train
- 84 brackish water membranes per train

Post-treatment

- Blending and pH adjustment with sodium hydroxide dosing

RESULT

Fast project delivery using Ixom's pre-engineered modular containerised units, minimising site construction and commissioning time.

The treatment containers were designed, built and commissioned at Ixom's manufacturing facility in South Australia enabling fast project implementation.

The plant produced 6 ML/d of permeate in specification for licensed discharge to the environment, enabling Ulan Coal mine to reduce the inventory of stored water on site.

OTHER WTS SOLUTIONS



Mine Influenced Water Treatment Plant – 11 ML/d – UF & RO – QLD



Ixom Bullet™ self-bunded chemical dosing system (no requirement for expensive concrete bund)



Bore Water Treatment Plant for Boiler Feed Water – 0.9 ML/d – RO – QLD



Backwash Wastewater Treatment Plant – 1 ML/d – UF – NSW

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What's your challenge?

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