

SEAWATER REVERSE OSMOSIS FOR BRINE PRODUCTION


 IXOM

Key Facts

Client: Confidential

Site: Confidential

Location: Australia

Purpose: Concentrating seawater to produce brine of a consistent quality

Technology: Containerised Seawater Reverse Osmosis (SWRO)

Supporting infrastructure supplied by Ixom:

- MCC, PLC & SCADA
- CIP skid

Capacity: 1 ML/day

Feed Water Source: Seawater (TDS up to 35,000 mg/L)

Treated Water Quality: Brine TDS of 50,000 mg/L

Contract Type: EPC

Start-up: 2013

BACKGROUND

The client engaged Ixom to provide a Salinity Correction System for a fully automated 24 hours-7days operation without down time.

In the Salinity Correction System the brine concentrate is the "product", the fresh water permeate produced is the "reject" which is stored for other uses.



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

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CUSTOMISED SOLUTION

One of the challenges was that the RO plant will be required to operate to produce a consistent brine TDS of 50,000 mg/L, with the RO plant taking its feed from a seawater source subject to considerable seasonal variation in TDS concentration and temperature.

To achieve a consistent brine concentration with variable feed water, Ixom's solution was to blend reject brine from the RO to the incoming sea water in order to maintain feed salinity of 34,000 mg/L.

Ixom designed and built a SWRO containerised plant with duty/standby trains. Each train is capable of treating 0.5 ML/day of filtered seawater and operating at 32% recovery.

The RO container, fitted with personnel access doors and air conditioning systems, included:

- Two SWRO trains, with feed pump and by pass control
- Brine recycle pipe-work and instrumentation to control brine recirculation
- Electrical/control room at one end with switchboard, MCC and PLC

RESULT

Ixom successfully commissioned the SWRO plant in 2013, and the plant operates as per design to produce a consistent brine concentration of 50,000 mg/L regardless of the feed seawater quality.

OTHER WTS SOLUTIONS



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



Contaminated Ground Water Treatment Plant – 60 m³/d – Fenton Process – VIC



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

What's your challenge?

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