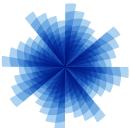


# Water Treatment Solutions for the Mining Industry



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Desalinating Water  
— Since  
**1965**  
— With Excellence

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## What's new in the Mining Industry?

The mining industry is probably the second largest industrial user of water in the world, using large quantities of water for mineral processing, dust suppression, slurry transport and potable water. Increased pressure from governments and local authorities on the mining industries to be more sustainable, coupled with ever-tightening effluent discharge regulations, are forcing mining operations to search for solutions to meet a new set of challenges.

## IDE Solutions and Technologies for the Mining Industry

We understand the need for reliable and cost effective water treatment and offer the mining industry a range of solutions for both process water supply and effluent treatment – to meet any water-related challenge, anywhere.



# Industrial Effluent Treatment

## MAXH<sub>2</sub>O Desalter

This patented, state-of-the-art product is a semi-batch RO system with an integrated salt precipitation cycle for effluent treatment. This technology completely eliminates the recovery limits caused by the water chemistry, thus maximizing the RO potential. The MAXH<sub>2</sub>O Desalter is an ideal solution for treating relatively low salinity water with a high content of sparingly soluble salts such as sulfates, silica, calcium, magnesium, etc., and reaching up to 98% recovery.

## Zero Liquid Discharge (ZLD)

In addition to the MAXH<sub>2</sub>O Desalter system, IDE offers Zero Liquid Discharge (ZLD) solutions using thermal evaporators and crystallizers to further increase the recovery up to ZLD.

Our ZLD solutions convert a high volume of liquid waste to distilled water for reuse, and solid salts that can be disposed of in landfills, or be used as raw material for the chemical industry.

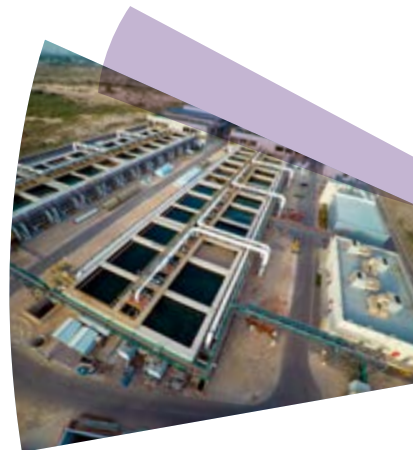
# Process water supply

## SWRO

We have been delivering reliable and efficient, small to mega size, SWRO plants for more than 50 years. Our fully automated plants implement cutting-edge technologies that are more energy efficient, reduced chemical consumption and increased plant availability and reliability.

## High Recovery BWRO

The standard brackish and wastewater RO technology is based on a two or three stage RO train arrangement, in which high recovery operation depends upon the specific water chemistry. Trying to overcome the limits of the chemistry typically results in scaling, and affects plant availability and reliability. MAXH<sub>2</sub>O Pulse Flow RO (PFRO) technology offers a way to overcome this challenge. By operating the BWRO in a Pulse Flow regime, the system is able to break the barrier and operate beyond limits imposed by the water chemistry.





# Robust & Reliable Thermal Desalination

## Mechanical Vapor Compression (MVC)

**IDE MVC** unit is a reliable, cost-effective water treatment solution for industries in which robustness and reliability are of paramount importance. Dozens of enterprises with a critical need for stable and reliable sources of process water have deployed the MVC as an affordable, low-maintenance, workhorse desalination solution.

The IDE MVC units have been serving the mining industry in South America for more than 40 years



## The Perfect Solution for Refineries

- Minera Michilla, Chile – MVC-1,344 m<sup>3</sup>/day (0.4MGD); 2 x MVC-500 m<sup>3</sup>/day (0.3MGD)
- BHP Escondida, Chile- MVC 1,500 m<sup>3</sup>/day (0.4 MGD)
- SPCC, Peru - 2 x MVC-1,320 m<sup>3</sup>/day (0.7MGD)

## Multi-Effect Distillation (MED)

The IDE **MED units** are the industry's most reliable, robust and cost-effective seawater desalination solutions where waste heat is available. With capacities ranging from 2,000 to 25,000 m<sup>3</sup>/day per unit, these units are ideal for industries that can provide low-grade waste heat as an energy source, to produce high-grade process water.





Complex  
Desalination  
Made Simple



## We've done it before

### **CITIC Pacific Mining, Sino Iron in Cape Preston, WA, Australia**

Capacity: 140,000 m<sup>3</sup>/day (37MGD)

Technology: Seawater Reverse Osmosis (SWRO)

Commissioned: 2013

This plant provides high quality process water for the CITIC Pacific Mining Sino Iron project, as well as potable water for the mining camp. The Cape Preston Plant is the first large-scale pre-engineered modular plant - the entire plant was fabricated in 60 pre-assembled modules and tested in the production facility before being shipped to the site.

## And we're doing it again

### **Quebrada Blanca (QB2), Chile**

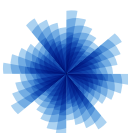
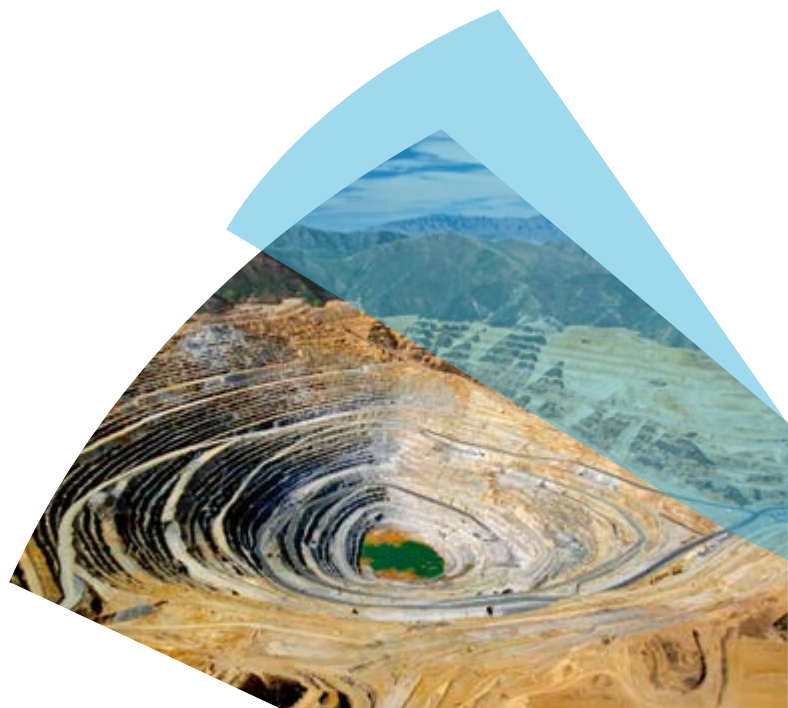
Capacity: 102,360 m<sup>3</sup>/day (27MGD)

Technology: Seawater Reverse Osmosis (SWRO)

Commissioning: 2020

The Quebrada Blanca copper mine is located in the northern Chilean Andes, 4,400 meters above sea level and approximately 145km from the Pacific Ocean. When complete, the \$4.8B extension of the mine (QB2) will make this Chile's second largest copper operation, and place it among the world's top five copper mines.

The plant design is based on the IDE MPD approach to benefit from the shortened on-site construction period, resulting in significant CAPEX savings. The high quality process water from the plant will be piped 145 km from the project port to the mine site.



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## IDE - Over 50 Years of Experience

A world leader in desalination and water treatment solutions, IDE is at the forefront of the development, engineering, construction and operation of enhanced desalination, industrial water treatment and water reuse facilities. IDE's headquarters are in Israel, with offices in the USA, China, India, Chile and Australia, facilitating client partnerships across the globe.

- Innovative water treatment technologies that provide our clients with end-to-end solutions
- Developed some of the most advanced membrane-based and thermal solutions
- Designed, built and operates some of the world's largest desalination plants
- Successful implementations in more than 400 plants in over 40 countries



**MIT Technology  
Review 2015 -16**  
50 Smartest Companies



**2016 Fortune  
Change the World List**  
2nd place

