

ULTRA-HIGH RECOVERY FOR SAVINGS AND GROWTH

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CUSTOMER

SUEZ Water, Cetaqua Technological Center

LOCATION

Spain

PROJECT TYPE

Industrial Wastewater Reuse Treatment

COMMISSIONED

2018

CAPACITY

170 m³/day

STATUS

Completed

OVERVIEW

Suez asked for ROTEC to be included as a lead technology for one of the largest coppers and precious metals manufacturers in the world. ROTEC was chosen as one of the two best and final technologies for a pilot which lasted over a year. On the basis of its very high performance, at the end of this period, the ROTEC Flow Reversal – FR technology was considered for the large-scale facility.

Challenging conventional design thinking, the Spanish industrial wastewater treatment facility achieved continuous stable recovery of 82% during extremely harsh feed water conditions thanks to implementation of ROTEC's cutting-edge proprietary FR technology, and increased production due to highly cost-effective wastewater treatment.



THE PROCESS

A turnkey commercial Demo RO facility installation, including commissioning and remote supervision of plant operation. ROTEC designed, manufactured, installed on-site and supervised a demo unit testing the maximum recovery possible when utilizing the FR method on a wastewater stream from a Copper mine factory, to achieve the highest brine concentration for the ZERO Liquid Discharge process. The Pilot comprised three stages, 3:1:1 configuration, utilizing ROTEC's FR technology to reverse the flow between the pressure vessels (PVs) in the 1st stage to the PVs in the 3rd stage, with simultaneous reverse flow in the 2nd stage. This allowed the system to demonstrate an unprecedented stable operation of 82-92% recovery rate.

ECO-FRIENDLY WATER SAVINGS

The ROTEC system has been operating successfully at the Shafdan plant, delivering **90% recovery**, the highest performance for a 2-stage RO system, and **zero CIP**, unprecedented in high-recovery wastewater reuse. **It also led to a 50% reduction in chemical consumption** vs. conventional RO systems.

The plant achieved ultra-high recovery with smooth operation, no downtime or CIP cleaning – cutting chemical consumption by half, while significantly reducing OPEX.

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*Last Name

*Company

Title

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ROTEC provides holistic, modular reverse osmosis desalination solutions and services. With our eco-friendly approach based on our FR-RO technology, we enhance water recovery, efficiency, and reliability, supporting healthy communities.

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