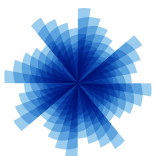


Comprehensive Municipal Wastewater Reuse Solutions

Safer, better water



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www.ide-tech.com

From Drain to Drink

Reusing municipal wastewater is a necessary way to address the world's growing water demand. As a most trusted and experienced supplier for desalinated water, we offer solutions that comply with, and exceed, environmental and regulatory requirements. IDE offers the conventional Fully Advanced Treatment (FAT), as well as an innovative, advanced, and safer Eco-Reuse solution.

Fully Advanced Treatment (FAT)

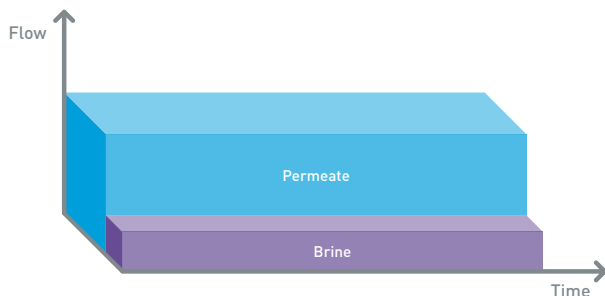
FAT is the conventional solution for industrial and municipal wastewater reuse facilities. This treatment includes three stages - UF/MF, Standard multi-stage RO and UV/AOP - which produces water that meets the requirements of California's Title 22, the strictest regulation for water reuse. During this process Chloramine is dosed to control biofouling.

IDE Eco-Reuse

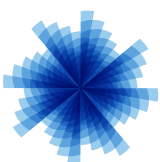
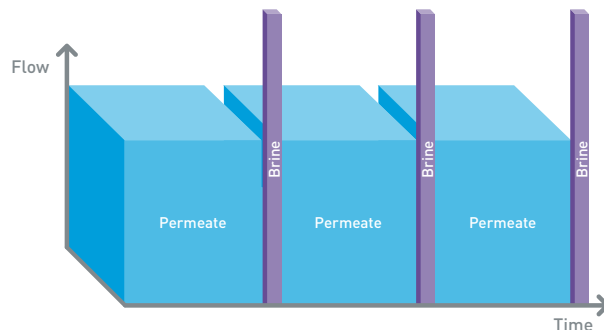
IDE Eco-Reuse offers a chloramine-free process for producing high quality potable water from wastewater. As with the FAT process, the water goes through the same three basic treatment stages: UF/MF, RO and UV/AOP - with a twist in the RO stage. The RO works in a non-continuous flow mode called Pulse Flow RO (PFRO), which allows higher recovery with reduced scaling and fouling. The system constantly changes its flow regime from dead end filtration to flushing mode. This constant change between flow conditions prohibits the formation of scaling crystals, as well as forces bacteria to constantly adapt to the changes. The energy required for this constant adaptation to change leaves the bacteria with insufficient time for reproduction.

Another advantage of this innovative design is that it simplifies the RO design from a multi-stage to a single stage design, while allowing operation with higher flux. This allows CAPEX savings of up to 20%.

Conventional RO Process



Pulse Flow RO



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Technology Advantages of IDE Eco-Reuse



Energy Efficient - about 30% less energy consumption in the UV/AOP stage



Minimized environmental impact by reducing the use of chemicals



Reduces maintenance as membranes are kept constantly clean



Chloramine free - no formation of disinfection byproducts such as NDMA



Reduced biofouling potential

References

Central Coast Blue - Advanced Water Purification Demo Facility, Pismo Beach, California USA

Like many other places, California has been severely impacted by drought. As the state continues to face a shortage of groundwater, advanced water reuse is proving a sustainable alternative for a clean, efficient and safe water source. IDE Eco-Reuse technology is being used in a new wastewater reuse demo facility in California - the Central Coast Blue Advanced Water Purification Demo Facility in the City of Pismo Beach. The facility started operation in 2018, with a capacity of 30 GPM, and allows IDE to demonstrate and test its proprietary Eco-Reuse process. Results show stable performance, with high RO specific flux and stable differential pressure, indicating that the process can be done without Chloramine dosing and with no membrane fouling.

Regional Recycled Water Advanced Purification Center Demo Facility, Metropolitan Water District, Carson, California USA

IDE implemented a demo unit of 1,500 m³/day (0.4 MGD) for the FAT technology, at the Regional Recycled Water Advanced Purification Center Demo Facility in Los Angeles County.





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 all over the globe.

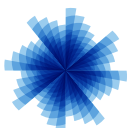
- IDE's innovative water treatment technologies provide our clients with end-to-end solutions
- IDE develops some of the most advanced membrane-based and thermal solutions
- IDE designs, builds and operates some of the world's largest desalination plants
- IDE has implemented over 400 plants in over 40 countries



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