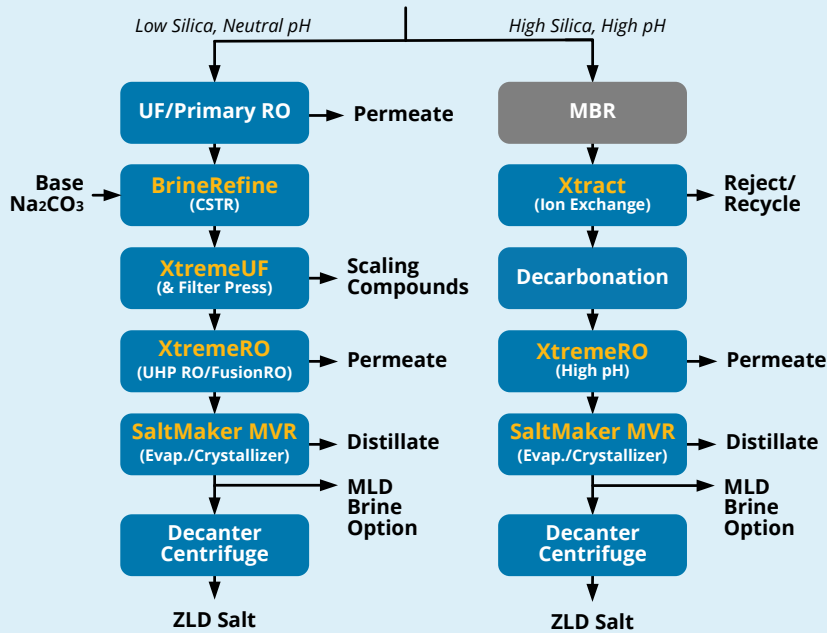


# Semiconductor Wastewater Solutions

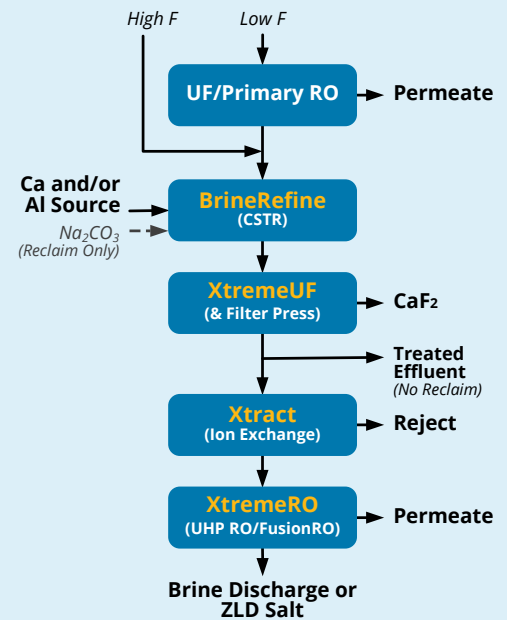
## Advanced Water Recovery & Waste Minimization / ZLD

Economically treat challenging fab wastewater—including hydrofluoric acid, PFAS, azoles, and high-TDS brines—while recycling high-quality water and meeting strict discharge limits with Saltworks' modular, automated systems.

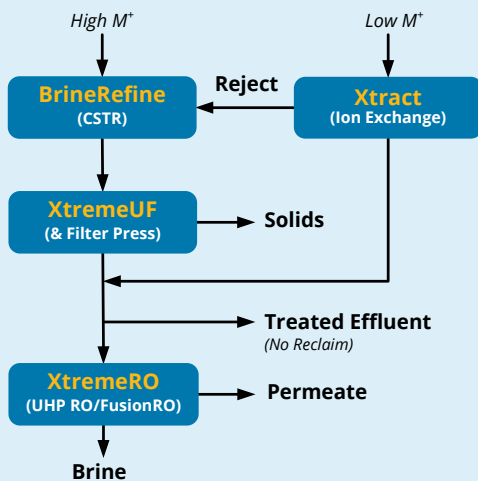
### Minimal and Zero Liquid Discharge (MLD / ZLD)



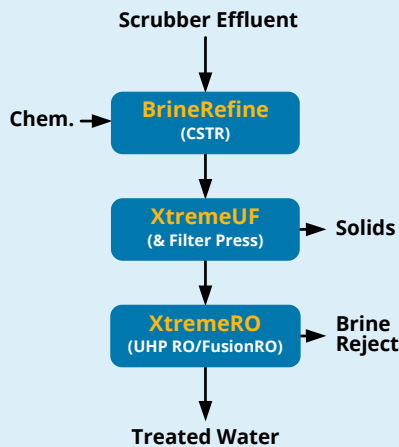
### Fluoride Treatment



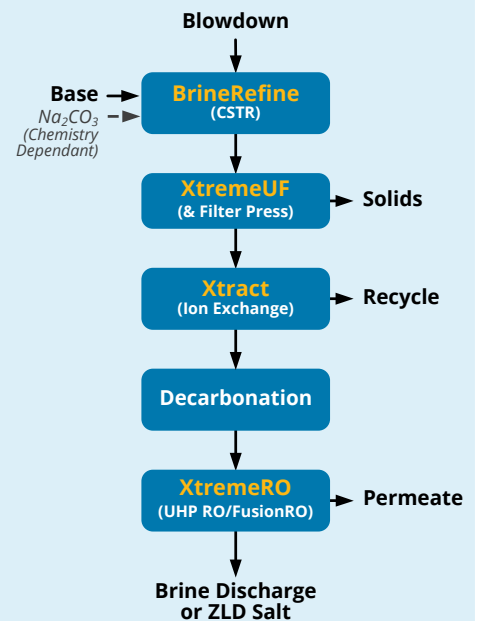
### Heavy Metals Treatment



### Scrubber Wastewater Reclaim



### Cooling Tower Blowdown Treatment



Saltworks offers solutions for various other streams including:

- Azoles
- Grind wash
- Ammonia
- PFAS
- TMA
- Saturated silica
- Peroxides

Solutions vary based on stream composition.

**Contact our experts to discuss treatment options.**

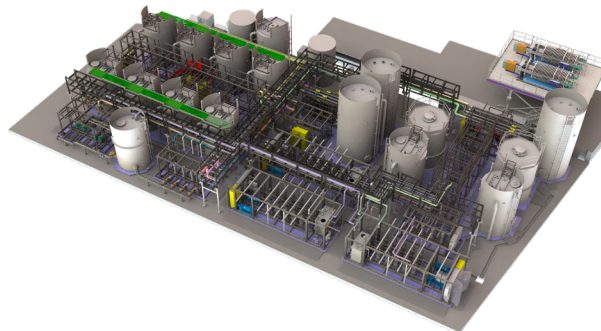
**By Saltworks**  
System/ Technology

Process by Others

## How Saltworks Solves Fab Wastewater Challenges

Semiconductor fabs face explosive demand, tightening discharge limits and aim to reduce freshwater withdrawals—all while maintaining high uptime. Modern fabs produce complex wastewater streams, including:

- Hydrofluoric acid wastewater (HFW) & fluorides
- Backgrind waste
- Azoles and organics
- High-TDS brine from rinse & scrubber systems
- Cooling tower blowdown
- Metals & other selective contaminants



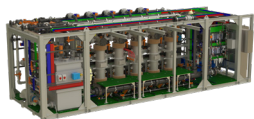
Full-scale modular semiconductor wastewater treatment plant

Saltworks engineers design and deliver off-site constructed, fully integrated, intelligently automated, and cost-effective wastewater treatment and reuse systems for semiconductor fabs. We treat point source and blended streams.

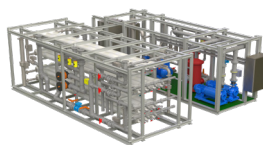
Our solutions feature modular unit processes that seamlessly integrate to provide end-to-end treatment for complex semiconductor effluents. They reliably achieve reuse targets and meet stringent discharge limits. Saltworks' systems are standardized, robust, and trusted by industry leaders across semiconductors, automotive, pharma, manufacturing, mining, and more. Systems are assembled from our standardized repeatable products:



**BrineRefine**  
Continuous Stir-Tank Reactor  
HFW Treatment & Softening



**XtremeUF**  
Tailored Ultrafiltration  
Solids & Contaminant Removal



**XtremeRO & FusionRO**  
UHP Hybridized RO / NF  
Water Recovery & Minimization



**SaltMaker MVR**  
Evaporator Crystallizer  
Zero Liquid Discharge

### Key Features of Saltworks' Systems

<b>Ultra-High Water Recovery</b>	Achieve 95–99% recovery minimizing evaporator size, brine volume, and total cost of ownership.
<b>Modular Fab-Grade Design</b>	Standardized, site-ready modules with repeatable, fungible unit operations that scale easily, featuring built-in redundancy and automation for uninterrupted 24/7 fab operation.
<b>Lowest Total Installed Cost</b>	Plants are designed, built, and tested for the lowest installed cost and fastest commissioning, leveraging modular off-site manufacturing (OSM) and factory integration.
<b>Accelerated Delivery Schedule</b>	Standardized designs and integrated supply chain enable rapid delivery from order to site-ready system.
<b>Multiple Stream Solutions</b>	Optimized flowsheets for point sources or blended stream treatments.
<b>Intelligence &amp; Automation</b>	Intelligent systems with automated controls and remote monitoring for uptime assurance, predictive maintenance, and reduced operator exposure.