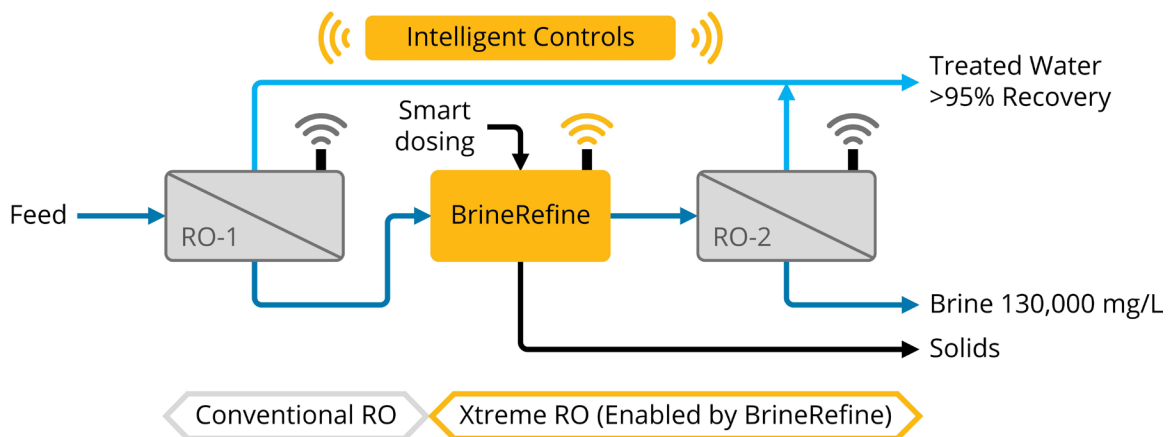
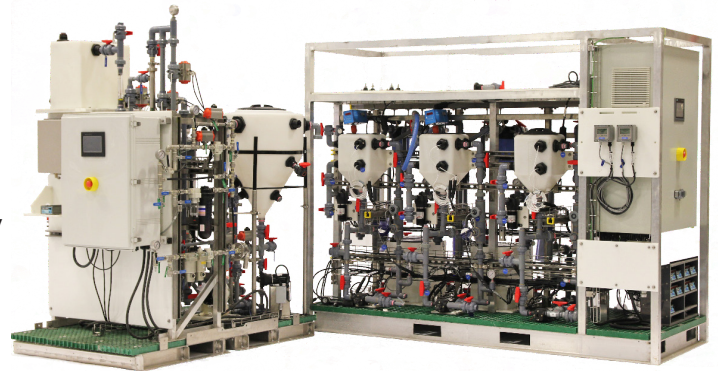


# BrineRefine

## Precise & Automated: Packaged Chemical Softening Technology

- Removes scaling ions to increase downstream recovery
- No coagulants or flocculants that foul reverse osmosis membranes
- No large clarifiers
- Compact, modular & expandable
- Single package with precision dosing & intelligent controls
- Total treatment optimization: communicates up & downstream
- Smart solids management



### Process Flexibility

Treats highly variable water with optimized and automated chemical dosing. Adjusts on the fly.

### Cost-Effective Operations

Maximize membrane system recovery. Reduces the size of downstream evaporator crystallizer systems and decreases disposal costs.

### Simple Solids Management

Single step, hassle-free, proprietary solids management for easy handling and safe disposal.

### Double Brine Concentration

Can be integrated with our XtremeRO technology to reduce brine volumes by 50% vs. conventional RO.

### Maximize Reverse Osmosis (RO) Recovery

Pushes treated water recovery to osmotic pressure limits while lowering scaling risk for the downstream RO system. No coagulants that gel & foul RO membranes.

### Total Support

Complete package delivery and installation options. Remote monitoring, 24/7 expert assistance, and predictive maintenance.

## Utility Requirements

<b>Capacity</b>	Modular blocks of: 600 m <sup>3</sup> /day, dependent on water chemistry
<b>Footprint</b>	1. 40' ISO shipping container, 2 high Expandable based on hydraulic capacity and water chemistry 2. Custom built
<b>Voltage</b>	208/408/608 V; 3 phase

### Inputs

<b>Inlet Water Spec</b>	Vast flexibility, contact Saltworks
<b>Chemicals</b>	Dependent on water chemistry, contact Saltworks
<b>Electrical Energy</b>	~2 kWh/m <sup>3</sup> (50 kW)

### Outputs

Solid filter cake  
Non-scaling water; RO, disposal well, and evaporator-friendly

## Automation

- Optimized dosing control system for optimized operating cost
- User-friendly with smart reporting
- Communicates with downstream RO system for maximum system performance
- Smart slurry & solids management with low footprint
- Maximized uptime and minimized operator intervention

## Traditional Chemical Softening Vs. BrineRefine

	Traditional Chemical Softening	BrineRefine
<b>Space</b>	<ul style="list-style-type: none"> <li>• Large clarification tanks</li> <li>• Custom-built</li> </ul>	<ul style="list-style-type: none"> <li>• Compact slurry squeezer</li> <li>• Factory-built</li> </ul>
<b>Flocculation</b>	Expensive & shear-sensitive additives	None
<b>Reagent Dosing</b>	Imprecise if water chemistry changes	Optimized and automated
<b>Site Package</b>	Custom design, stick-built, building required	One modular package, ISO frames, factory-built
<b>Plant Integration</b>	Discrete process, often manual integration	Communicates with the upstream and downstream process for total system optimization

## Delivery Models

Saltworks can deliver complete RO-optimized packages or work with engineering companies & RO vendors to deliver a partnered project.