MBD™ Modular Brine Crystallization System
HPD® Evaporation and Crystallization
The system is based on HPD® Forced Circulation Crystallization technology to treat a variety of waste streams followed by management of waste brines for disposal (as a concentrated or solid waste brine).

This “Bulldozer” system is supplied as a modular, skidded system and designed to treat feed from RO reject, ponds, or untreated brines without complex pretreatment:

- Capacity: 13.5 m³/h (70 gpm)
- High-efficiency, Mechanical Vapor Recompression (MVR) driven
- Process designed to resist scaling
- Materials of construction minimizes corrosion
- Used for volume reduction or Zero Liquid Discharge (ZLD)

Veolia Water Technologies offers the MBD™ (Modular Bulldozer Design) System as an ideal solution that not only effectively treats high TDS wastewater, but also manages the subsequent mixed salts. Utilizing Veolia’s HPD® thermal evaporation technology, it is a proven and cost-effective solution to the high cost and long-term liabilities associated with multiple ponds or deepwell injection.

**Environmental Performance**

- Water recovery up to 99%
- High-purity recovered water suitable for reuse, discharge, or aquifer reinjection
- Produces solid salt cake suitable for landfill disposal (ZLD option)
- Minimal chemical consumption

**Modular Design**

- Rapid deployment to site
- Supplied as (3) skids; can be redeployed
- Shippable by standard, over-the-road transport
- Small footprint

**Mixed Salt Management (ZLD option)**

- Centrifuge or filter press
- Supplied as skidded package

**Applications**

- Pond volume reduction
- Evaporator blowdown treatment
- Pilot well testing
- Zero Liquid Waste (ZLW) requirements
Supplied As Modular System

The MBD™ System is designed as a modular and skidded system that can be shipped by over-the-road transport. This allows rapid deployment to site while reducing overall installation costs.

The tables below outline the content of each module and skid as well as associated equipment supplied for the system.

<table>
<thead>
<tr>
<th>Components</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Module #1</td>
<td>Heater/vapor body</td>
</tr>
<tr>
<td>Module #2</td>
<td>Vapor washer</td>
</tr>
<tr>
<td>Packaged Skid</td>
<td>Compressor + motor</td>
</tr>
<tr>
<td>Optional Module #3</td>
<td>ZLD package</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Ancillary Equipment Included</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pumps • Platforms and decking</td>
</tr>
<tr>
<td>Instrumentation, control panels • Insulation</td>
</tr>
<tr>
<td>Valving • Electrical, wiring</td>
</tr>
<tr>
<td>Piping • Motor starters (option)</td>
</tr>
</tbody>
</table>

3D Rendering

Simplified Flow Diagram
Resourcing the world

Veolia Water Technologies
HPD® Evaporation and Crystallization

Plainfield, IL, USA
tel +1 (815) 609-2000

Pyrmont, New South Wales, Australia
tel +61 (0) 407 520 605

Shanghai, P.R. China
tel +86 1380199664

Calgary, AB Canada
tel +1 403 261-0873

Getxo, Vizcaya, Spain
tel +34 94 491 40 92

São Paulo, Brazil
tel +55 (11) 3888-8800

Singapore
tel +65 (6546) 1110

hpd.info@veolia.com

technomaps.veoliawatertechnologies.com/hpdevaporation • hpd.info@veolia.com