THINK IDE
YOUR PARTNERS IN SAGD
(Steam Assisted Gravity Drainage)

Reliable | Sustainable | Economical
Produced Water Treatment Solutions
SAGD Produced Water Evaporator/Concentrator

www.ide-tech.com
Horizontal means Reliable, Sustainable, Economical.

Establishing a reliable, sustainable and cost effective water treatment process is fundamental to maximizing the production of SAGD oil extraction. The use of evaporators has become essential to increase water reuse and to meet water disposal regulations. Based on our 20 years of experience of treating produced water, IDE has created the horizontal evaporator to deliver improved reliability, sustainability and economy to the SAGD industry. Further, it is resilient to challenging chemical water compositions and high scaling and fouling conditions.

Why Horizontal Evaporators are Simply Better

**Horizontal means lower installation costs, faster erection**

Horizontal, modular, pre-fabricated design creates substantial cost savings by minimizing the high cost of onsite erection and installation. All modules arrive in standard Alberta-sized modules (24’ x 24’ x 120’), enabling easy and quick installation on site, and requiring minimal site works and manpower. The units are up and running within 6 weeks of arrival on site, reducing the uncertainty of project delivery timetables.

**Horizontal means higher reliability and availability, and faster recovery from upsets**

A horizontal evaporator design with removable tube bundles allows faster and easier recovery from upsets, reducing down time and increasing reliability, as removable tube bundles allow external chemical and mechanical cleaning. A spare tube bundle can be quickly installed to replace a fouled bundle in the event of a process upset, ensuring that the evaporator is returned to service in just 24 hours. Cleaning is performed by Alberta-based service providers.

**Horizontal means improved safety due to lower risk to personnel**

IDE’s evaporators are horizontal, so all of the auxiliary equipment is at ground level and there is no elevated maintenance work, dramatically reducing the risk to personnel safety. Our cleaning system is much more personnel friendly than vertical in-situ cleaning.

**Horizontal means increased economy from reduced energy consumption**

Because IDE’s evaporators are horizontal, energy consumption is much lower as less power is required to overcome elevation to the inlet distributor. IDE’s modular evaporator package is highly efficient, offering 30%-40% savings on power consumption in comparison to competitive evaporators. This also means reduction in GHG emissions.

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**Back-End Evaporator**

- Produced Water
- Horizontal Evaporator
- Warm Lime Softener
- Ion Exchanger
- Effect 1
- Effect 2
- Compressor
- Blowdown
- Distilled Water
- OTSG
- Deaerator

**Front-End Evaporator**

- Produced Water
- Horizontal Evaporator
- Drum Boiler
- Compressor
- Effect 1
- Effect 2
# Horizontal SAGD Produced Water
## Mechanical Vapor Compression – Technical Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>IDE’s Horizontal MVC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat Transfer Area</td>
<td>High</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>Low 8-12 KW/m³</td>
</tr>
<tr>
<td>Recovery</td>
<td>Up to 98%</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Ground-level access to key equipment</td>
</tr>
<tr>
<td>Operation</td>
<td>Fully automatic, remote access</td>
</tr>
<tr>
<td>Capacity</td>
<td>100-6,000 m³/day (600 - 36,000 bbl/day)</td>
</tr>
<tr>
<td>Spraying Nozzles</td>
<td>Overlapping redundant nozzle design</td>
</tr>
<tr>
<td>Distillate Quality</td>
<td>Reduced carry over, high distillate quality</td>
</tr>
</tbody>
</table>

**Removable tube bundle**

![Removable tube bundle image]
About IDE

A world leader in water treatment solutions, IDE specializes in the development, engineering, construction and operation of enhanced desalination facilities, industrial water treatment and water reuse plants.

Recognized for developing some of the most advanced thermal and membrane technology, IDE has designed, built and currently operates some of the world’s largest desalination facilities (e.g. in China, India, US, Australia and Israel) and ground-breaking industrial water treatment plants.

IDE partners with a wide range of customers, oil & gas, mining, refineries, power stations and municipalities, on all aspects of water projects, and delivers approximately 3 million m³/day of high quality water worldwide. We listen first so we can create the best solutions for your needs. We then bring technological leadership, proven reliability and consistent delivery to all our projects. Our highly experienced and dedicated team knows that strong partnerships lead to success and growth.

IDE has teams in the US, China, India, Australia and Chile, as well as the Israel head office, and a partnership with Fair Canada Engineering Ltd., in Alberta, enabling full client partnership anywhere in the world.

IDE is jointly owned by two of Israel’s largest industrial enterprise groups – ICL, one of the world’s leading fertilizer and specialty chemical companies, and Delek, a leading energy and infrastructure group.