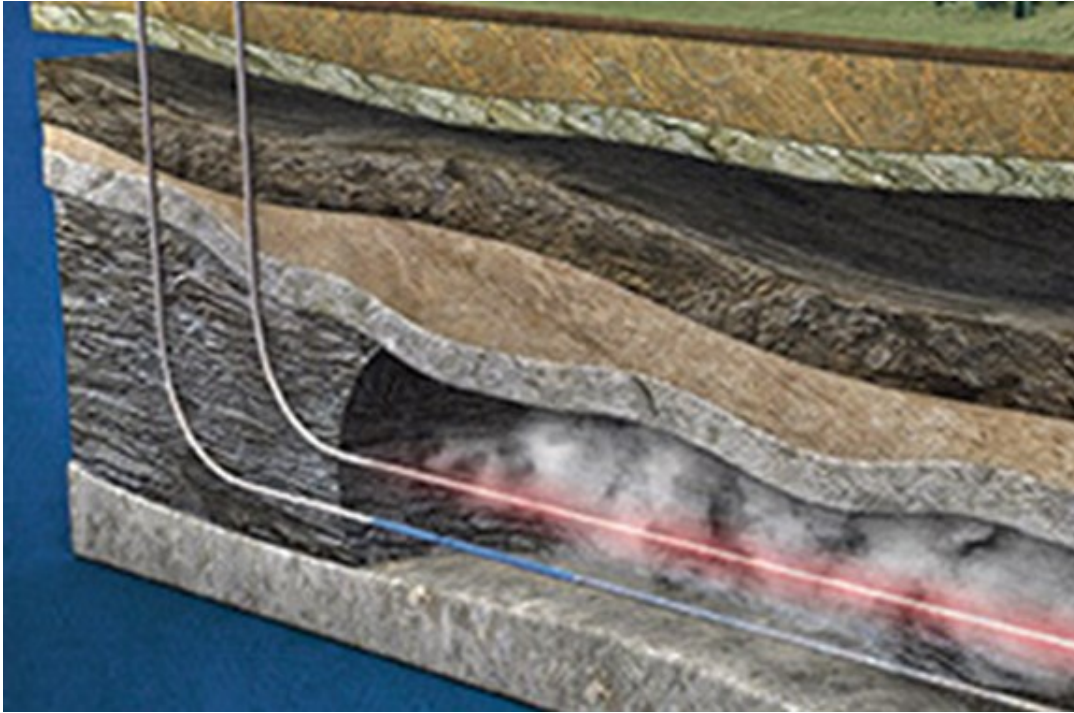




**WATER TREATMENT
FOR SAGD CASE**



Water treatment for SAGD oil production pre-treatment for RO

LiqTech silicon carbide membrane technology removes solids and oil from Lake Maracaibo surface water. The treated water gets further processed by Reverse Osmosis thus ensuring steam generation.

The Case

A South American oil company utilizes the SAGD (Steam Assisted Gravity Drainage) enhanced oil recovery process. The SAGD process is used for recovering heavy oil by injecting steam into the reservoir. The steam assists the heavy oil to flow more freely to oil recovery pipelines below steam vents. Significant amounts of water and steam are needed for this production principle.



The Solution

The oil company has several steam production barges operating on a lake in South America. Conventionally, chemicals in combination with media filtration and cartridge filters have been used as prefiltration prior to a Reverse Osmosis (RO) desalination process. LiqTech membrane technology offers improved and consistent pretreatment quality of the water fed to the RO system, thus ensuring more robust operation and lower operating costs of the RO system. In addition, the footprint and weight of the LiqTech membrane system are significantly smaller and lower than the alternative.

LiqTech delivered a fully automated SiC ceramic UF membrane system, with integrated backwash and cleaning in place (CIP) chemical modules. The system comes with a self-cleaning prefiltration module to protect the membranes from larger debris. The system is ready for plug and play installation at the customer site.

LiqTech System Design

Materials and Components

The UF ceramic membranes are made from silicon carbide material which proves to be extremely robust with high permeability and stable flux. Further, the membranes are chemically inert and very temperature resistant. These superior properties of SiC membranes provide the utmost operational robustness in a remote environment.

Modular Systems

The Silicon Carbide UF filtration system is designed for 10,000 BPD capacity (66 m³/h) with full operational flexibility. The system consists of two trains each with five M99 multi-housing holding 99 pcs. LiqTech OD25x1,178mm UF Membrane elements per housing. The two trains can be operated in parallel or one train at the time. The individual trains can be cleaned one at the time to maintain capacity on the remaining membranes in operation.

The system is fitted with a redundant feed and circulation pump per the customer's request.

LiqTech Installation



- 100 micron self-cleaning prefiltration module
- Fully automated SiC cross-flow membrane system with integrated backwash and CIP modules
- 10 pcs. M99 membrane multihousings
- 990 pcs. LiqTech SiC OD 25x1,178 UF membrane elements

We are here to help you