SULPHATE REMOVAL PROCESS FOR LOW HARDNESS WATER
A Proven, Flexible and Innovative Water Treatment Technology to Improve Recovery in Chemical EOR Applications

THE WATER STANDARD SOLUTION

Designed for chemical Enhanced Oil Recovery (EOR) flooding, Water Standard (WS), offers low hardness injection water using its H₂Ocean Spectrum® technology to achieve <10ppm hardness (Ca + Mg).

H₂Ocean Spectrum® Technology is a hybrid system that provides Operators with the ability to modify injection water quality and volumes on demand during the life of a field to optimize recovery and eliminate water quality fluctuations.

- Produces consistent, customized injection water quality with targeted hardness, sulphate, and salinity from seawater, produced water, and other sources to ensure reservoir compatibility
- Provides robust water treatment in a low weight and footprint configuration
- Eliminating the need for retrofitting equipment as a field moves from secondary to tertiary recovery, this is the only system available in the offshore EOR market with these features

LOW HARDNESS OR SOFTENED WATER VIA H₂OCEAN SPECTRUM®

WS has experience with alternative Nanofiltration (NF) membranes that can provide both sulphate and hardness removal, and depending on the application, blends with low energy Reverse Osmosis (RO) permeate for applications such as:

- Improved Waterflooding
- SRP
- Low salinity flooding
- Chemical EOR flooding

- Instead of conventional processes, WS uses low pressure Membrane Filtration (MF) (micro- or ultrafiltration) to remove suspended solids and biosolids during pretreatment and its membrane deaeration MDA® to remove oxygen below 10 ppb without the addition of oxygen scavenger
- Adjusting injection water quality on-demand for LSF and/ or chemical EOR flooding can enhance oil recovery and reduce operating costs
- In addition, our membrane processes provide weight and footprint savings up to 60% compared to conventional processes