

Osorb Water Treatment Systems

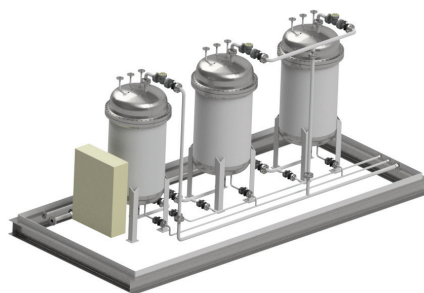
Complete hydrocarbon removal from process water to less than 1 ppm utilizing a regenerable media

FEATURES

The patented Osorb technology is applied in a fully automated system to provide superior water treatment to the most challenging water streams. Osorb uses both adsorption and absorption to remove dispersed, dissolved, and emulsified hydrocarbons from water. The media is regenerated in-situ for reuse, with regeneration method flexibility, and the hydrocarbons captured during water treatment are collected and concentrated. The regeneration and reuse of the media reduces the downtime, footprint, maintenance, and disposal costs of the system compared to additional offerings in the market.

DESIGN

Osorb Systems are designed with at least two vessels for continuous water treatment when regeneration is required. All systems are plug & play for each customer location and designed for simple operation. ProSep offers two standard regeneration methods depending on the client needs, but studies can be completed to further optimize the regeneration process to meet specific client requests.



APPLICATIONS

- Produced water treatment
- Quench water
- BTEX removal
- Membrane pre-treatment
- Chemical Enhanced Oil Recovery (polymer, ASP, SP applications)
- Replacement of steam strippers

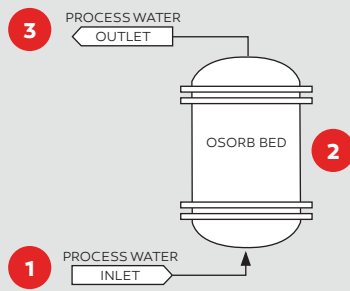
BENEFITS

- Regenerable – multiple methods
- High adsorption capacity
- Small footprint
- Long lifecycle
- Rapid Capture Mechanism
- Handle upset conditions 2,000 mg/L
- Hydrocarbon recovery
- <1 mg/L hydrocarbons effluent
- Continuous water treatment
- <1 µm oil droplet removal
- <1 mg/L hydrocarbon effluent

Osorb Media Systems

Simple Water Treatment & Optimized Regeneration
Guarantee System Performance and Longevity

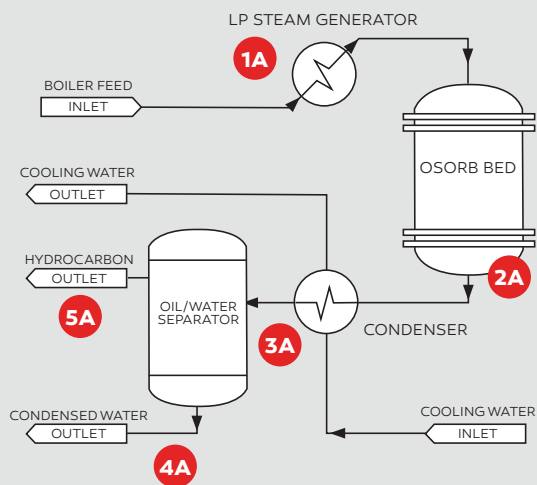
TREATMENT PROCESS



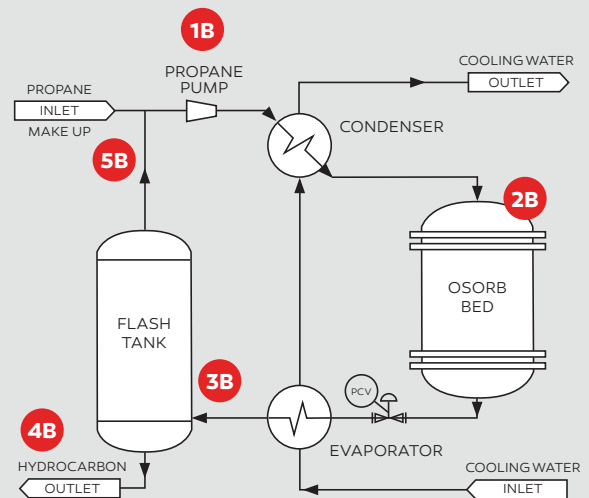
The water treatment is simple with an Osorb system.

1. Water and hydrocarbons enter the Osorb system
2. Hydrocarbons are captured by Osorb media as the water passes through
3. The clean water, now free of hydrocarbons, exits the Osorb System

STEAM REGENERATION PROCESS



PROPANE REGENERATION*



ProSep has the technical expertise to tailor each Osorb systems regeneration process to meet the clients specific requirements. The optimal regeneration process for a client is determined by the characteristic of the water being treated as well as client objectives such as disposal, recovery, or reuse.

During the Steam Regeneration Process:

- 1A. Low pressure (LP) steam is generated
- 2A. The LP steam evaporates the captured hydrocarbons
- 3A. Steam and hydrocarbons are condensed into liquid
- 4A. Water is separated from the hydrocarbons and recovered
- 5A. Hydrocarbons are separated from the water and recovered

During the Propane Regeneration Process:

- 1B. Propane is compressed and cooled into a liquid
- 2B. Liquid propane dissolves the captured hydrocarbons
- 3B. The liquid propane/hydrocarbon mixture is separated in a flash tank
- 4B. Clean hydrocarbons are recovered from the flash tank
- 5B. The propane is recycled

*Method being optimized is based on a concept developed by ABS Materials, Inc.