

Advanced Regenerative Water Treatment Media

Processing and separation solution

APPLICATIONS

- Onshore and offshore water treatment
- Produced water treatment for discharge and recycle
- Enhanced oil recovery
 - Chemical enhanced oil recovery (CEOR)
 - Steam-assisted gravity drainage (SAGD)

BENEFITS

- Removes free and dispersed oil, solids, and oil-coated solids in one step without requiring additional chemicals for water separation
- Treats CEOR produced water from polymer and alkaline surfactant polymer (ASP) floods without absorbing polymer
- Provides long lifecycle and low operating cost
- Ensures reliable and predictable performance down to 5 µm for free and dispersed oil, solids, and oil-coated solids
- Prevents process upsets and excursions with minimal impact on performance

FEATURES

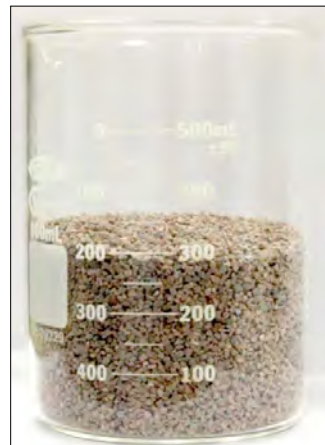
- Standard (vertical) vessel configuration runs at any flow rate in multiple trains or horizontal design
- High effluent loading of 500-ppm oil and particulates
- Discharge at 5–50 ppm at outlet (depending on oil type and droplet size)
- Capable of extended excursions exceeding 2,000-ppm oil recovered with increased backwash frequency

Advanced regenerative water treatment media oil-free water technology instantly and permanently removes or reduces oil, suspended solids, and highly emulsified oils from water. Built on this technology, the advanced media is a proprietary back-washable system used in oily wastewater streams and produced and process water. Coated with a proprietary technology patented polymer, the regenerative media provides an economically sustainable treatment for the removal of oils and suspended solids down to 5 µm with 95% single-pass effectiveness—without chemicals.

For CEOR applications, polymer- and chemical-laden water that has been treated with the media can be recycled for reuse in the injection field and, in the case of polymer, with no viscosity loss across the system. The media removes oils and solids while enabling process chemistries to pass through with very little to no removal of the water-soluble EOR products. Removing the oil and solids prior to sending the produced water to a softener in thermal EOR generates process and cost savings.

This granular filtration media is used in conventional deep-bedded media filter vessels and the oil trapped on the media is recovered through typical backwash techniques. The backwash removes contaminants by reversing the flow direction and fluidizing the packed bed, loosening the media, and releasing both solids and oil droplets from the media. When the media is backwashed, the effluent is captured in a static separation vessel. Free oil and solids are easily decanted from the surface and recovered or disposed. The remaining supernatant is used to backwash the filters during the next backwash cycle. Backwash is either manual or automatic depending on the system deployed.

The media can function as a primary or secondary treatment option for oil and solids removal. Influent water quality, discharge, and end use of the treated water dictate the treatment system design.



Advanced regenerative water treatment media.



Advanced regenerative water treatment media vessels.