

Graver's Trisep® Oil Coalescer is an oil-water separation system designed to remove oil from oil-in-water emulsions and dispersions. It is ideal for treating produced water, gathering system condensates, oily wastes and other oil contaminated waters.

Most produced waters can be treated with the Trisep system to remove and recover for sale, 98-99% of free, dispersed and emulsified oil in the influent stream. This performance has been demonstrated in water containing 25ppm oil to 15% oil. In most cases, coalesced oil recovered from produced waters (and waste streams) contain only 1-5% bottom sediment and water, eliminating skim treatment costs associated with other oil removal systems.

The Trisep system does not require costly emulsion breakers or flocculants to be effective; a robust coalescing media acts to break emulsions and coalesce dispersions. Chemical regeneration is never required and the only moving components are externally mounted valves/actuators for simple maintenance.

## Advantages of the Trisep® System

The Trisep system can be used to deoil almost any oil-in-water emulsion or dispersion. Its advantages over other technologies are:

- Elimination of treatment chemicals
- Superior performance
- Removal efficiency exceeds 95%
- Consistency of effluent
- Clean and dry recovered oil
- Resistant to flow surges
- Reduced maintenance
- Impossible to upset
- Fully automatic operation
- Low operating costs

## Typical Applications:

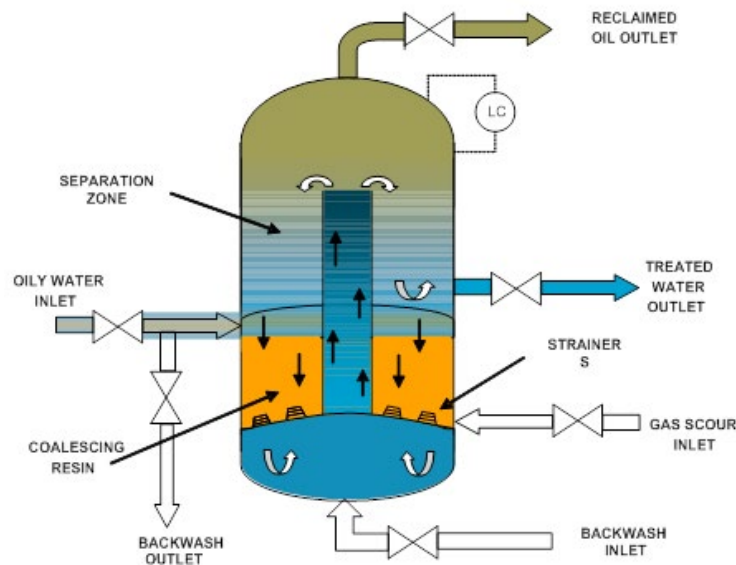
- **Produced Water for Steam generation:** Oil leakage which may foul downstream equipment is reduced or eliminated. The closed vessel prevents loss of expensive energy or emissions to the environment.
- **Produced Water for subsurface injection:** Well workovers are reduced by eliminating formation oil fouling and potentially fouling solids.
- **Produced Water Offshore Disposal:** Compact design results in space and weight savings. Effluent meets EPA guidelines with the use of chemicals. Eliminates the need for CPI.
- **Wastewater Treatment:** A wide variety of oil laden influents can be treated without adjustment.

## Specifications

- Resin: Graver GCR-16 or GCR-20
- Operating Conditions: Max 250 deg F, pH 2-12
- Standard sizes range from 2-12' diameter
- Customized systems can be designed to fit individual process requirements

## How it Works

1. The Trisep vessel contains two chambers divided by an internal partition. Oil water enters the lower chamber (coalescing zone) just below the partition and flows downward through a deep bed of olephilic resin where the finely divided oil coalesces.
2. Large oil droplets continually slip off the resin. The water and coalesced oil pass through the resin support plate and through a riser which penetrates the partition, entering the upper chamber (separation zone).
3. There the droplets rise to the crown of the vessel forming a thick oil layer which is decanted when the interface level reaches a pre-set point.
4. Deoiled water is collected above the partition and exits the vessel.



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