

BaraH₂O™ Slop Treatment Unit Delivers Cost Reduction and Safer Operations in UK North Sea

ELGIN-FRANKLIN FIELD, UK NORTH SEA

CHALLENGE

The operator wanted an alternative to onshore treatment/disposal of slop fluids, which involved:

- » Onshore processing costs of over USD 30,000
- » Multiple health, safety, and environmental (HSE) risks during transport and treatment

SOLUTION

The BaraH₂O™ slop treatment unit was installed for rigsite processing, providing the following:

- » Clean effluent discharged overboard
- » On-demand system operation for lower power usage
- » Improved safety

RESULTS

In just a two-week period, the offshore BaraH₂O unit enabled the operator to:

- » Treat and discharge approximately 1,200 bbl of slop fluid
- » Cut slop treatment costs by 35 percent, realizing savings of almost USD 11,000
- » Avoid spills and other HSE risks
- » Save operational costs, as there was no need for tank and vessel cleaning
- » Reach effluent levels of 10 ppm TPH

SHIP-TO-SHORE SLOP FLUID TREATMENT AND DISPOSAL PROVES COSTLY

A major operator in the UK North Sea was generating large volumes of slop fluids, which were sent to shore for processing and disposal. The goal was to reduce the volume of slop fluids and the associated costs.

In addition, there was a need to minimize hazards and risks associated with the transport of slop fluids.

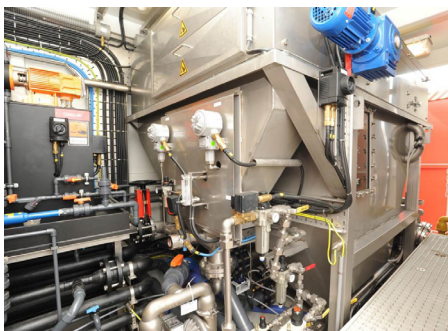
BARAH₂O™ SLOP TREATMENT UNIT ON RIG ENABLES ON-DEMAND PROCESSING

Baroid personnel installed a BaraH₂O™ slop treatment unit onboard the rig to enable the processing and discharging of slop fluids. The modular BaraH₂O unit is highly efficient and can treat the range of oily water slop that is typically produced on a rig.

The compact, rugged unit is ideally suited for offshore operations with deck space constraints, including remote locations and deepwater drillships and semi-submersibles.

The process includes a combination of chemical treatment and dissolved air flotation (DAF). The chemicals flocculate and bind particles, making them easier to separate, which then allows DAF to separate both particles and oil from the slop water. Clean water from the unit can be discharged directly to the environment or reused in pit washing operations.

With this treatment, the slop volumes sent to shore can be reduced up to 95 percent. The unit can also be operated as needed, such as when the volume of slop in the tank reaches a predetermined level.



Dissolved air flotation (DAF) unit



Pipe flocculator with chemical dosing system

OPERATOR CUTS SLOP TREATMENT COSTS BY 35 PERCENT, AVOIDS HSE RISKS

The offshore BaraH₂O treatment unit successfully processed the slop fluid to within the permitted specification for discharging to the sea, providing a significant financial benefit to the client. The slop water was treated from an average of 65 ppm total petroleum hydrocarbons (TPH) content down to approximately 10 ppm. The risks of spillage from pumping slop fluid from rig to boat and from boat to tanks was eliminated, along with the need for confined space entry for vessel cleaning. Hazards and emissions associated with onshore transportation were also avoided.

A total of 189 m³ (1,189 bbl) of slop fluid was treated and discharged during the two-week period that the unit was required, thus simplifying logistics and eliminating onshore treatment and disposal costs.

Typical onshore charges prior to installing the BaraH₂O unit are shown below:

Onshore Costs	U.S. Dollars
Disposal	25,436
Tank cleaning	4,013
Transportation	2,153

The savings were estimated at approximately USD 10,975, resulting in a 35 percent decrease in overall disposal costs – which was achieved in a short two-week interval.

This successful operation met the operator’s objectives, and proved that the BaraH₂O system is a safe and viable alternative to shipping slop fluid onshore for treatment.