

# ENVIROUNIT System Helps Save USD 9.8 Million on 16-Well Operation Offshore Mozambique and Tanzania

Efficient slop water treatment saves costs, reduces HSE footprint, and enables overboard disposal within regulatory requirements

**CHALLENGE**

Meet or exceed stringent oil discharge regulation for slop water of 15 ppm for a 16-well project offshore Mozambique and Tanzania.

**SOLUTION**

Install ENVIROUNIT\* offshore slop water treatment system to meet goals for waste minimization, fluid reuse, and cost savings.

**RESULTS**

- Cleaned slop water from an average of more than 5,000 ppm to an average 10.5 ppm, 30% less than the 15-ppm regulatory standard.
- Decreased shipment-to-shore requirements and storage and cleaning fees, saving USD 9,874,249 over the 16-well operation.



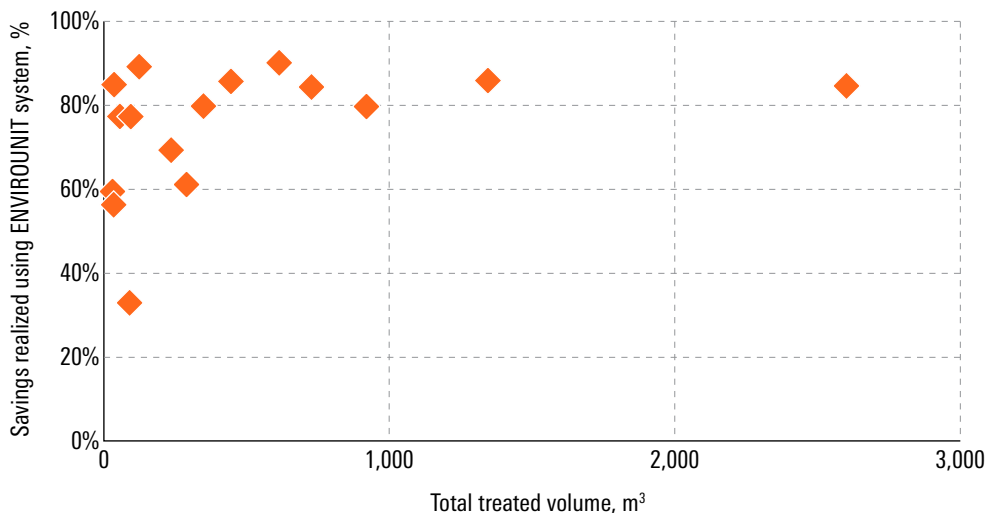
**Meeting stringent slop water discharge regulations**

For its 16-well operation, an operator sought to meet stringent slop water discharge regulations offshore Mozambique and Tanzania, where the discharge standard requires that slop water not exceed a contamination level of 15 ppm. Achieving this standard would be difficult using conventional onsite treatment systems, which can be operationally hindered by solids content above 2%. Meeting treatment standards typically requires transporting slop water to shore for treatment before it can be discharged, reinjected, or disposed. The cost of shipping slop water to shore can exceed USD 1,500 per cubic meter.

**Deploying ENVIROUNIT treatment system for waste minimization**

M-I SWACO recommended the ENVIROUNIT offshore slop water treatment system to meet goals for waste minimization, fluid reuse, and cost reduction. The treatment system allows fluids with up to 10% solids and 35% oil to be treated to less than 15 ppm while recycling expensive oil- and synthetic-base drilling fluid for direct reuse. Despite varying amounts of drilling fluid in slop water, optimal recovery is ideal to save expensive synthetic-base and oil-base mud and reduce waste. With the ENVIROUNIT system, slop water oil content treated to less than 15 ppm is diverted to a storage tank before being released overboard after regulator-approved water testing, and recovered drilling fluid is routed back to the active mud system. Solids and waste removed from both waste streams are redirected to a cuttings box for onshore disposal.

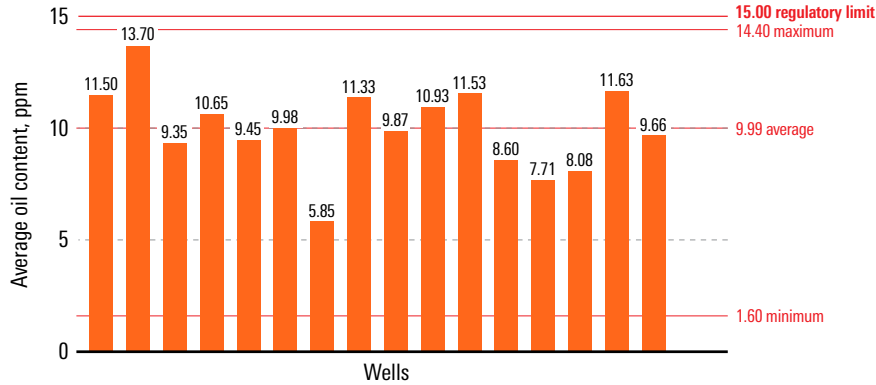
After using a diluted stock sample for reference, the Horiba method reads a 20-mL sample of the water and solvent mixture to determine oil content. Sufficiently low readings will allow operators to discharge water. Water presumed not to have contacted oil is discharged without treatment, and all water that courses through the system is stored in a tank for testing before discharge.



The conventional method of slop water treatment for the 16-well project cost an average of USD 1,500 per cubic meter of slop. Using the ENVIROUNIT system saved USD 9,874,249 over the 16-well operation.

### Consistently meeting discharge requirements for hydrocarbon content

The ENVIROUNIT system processed a total of 7,995-m<sup>3</sup> [2,112,285-galUS] slop water offshore Mozambique and Tanzania. Throughout the 16-well project, the highest oil content of the treated water was 14.4 ppm, the lowest was 1.60 ppm, and the average was 9.99 ppm. In each well, all water was tested against regulatory compliance and documented before discharge.



*The average oil content of treated water was 9.66 ppm—well within the 15-ppm regulatory guideline for overboard disposal.*

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