

Mator News

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Mator AS – the separation specialist

Production chemicals and produced water

The use of production chemicals is a matter of necessity, but can sometimes cause operational problems that can be difficult to solve.

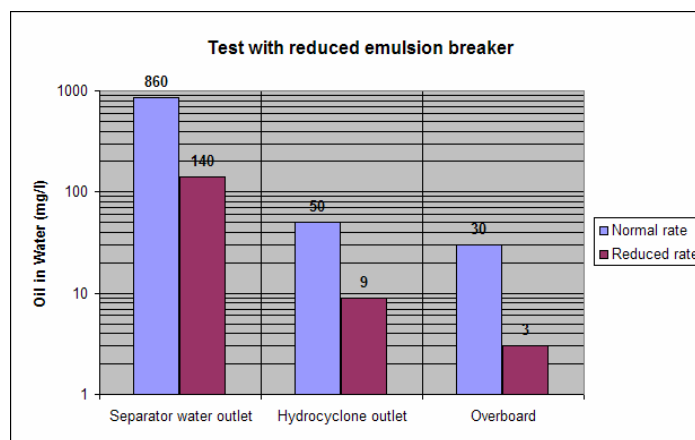
Mator recently conducted an offshore troubleshooting where the operator periodically experienced **large problems to meet the required oil in water discharge quality**. Such a problem can typically have many causes, and often the problem is related to upstream conditions rather than the direct operation of the water treatment system:

- use of artificial lifting
- slugging
- incorrect choke operation
- high separator loading and/or malfunctioning of separator
- incorrect level control measurement
- mechanical failure

Although it was found that several of the above factors contributed to the problem, a main cause was revealed to be high content of dispersed oil in the produced water with no or minor coalescence tendency, i.e. **typical for chemical stabilisation**.

Use of production chemicals were examined, and injection rate of **emulsion breaker** upstream of the inlet separator was reduced. The test results, presented in the figure below, show significantly improved performance at each separation stage. The tests were repeatable, thereby verifying the results.

The conclusion is that some production chemicals may have a negative effect on **produced water treatability**. Possible negative effects need to be examined in case of operational problems. Sometimes the solution is to **reduce** rather than increase chemical injection rates.



Recent Mator projects:

- ◆ StatoilHydro Gullfaks C: Test of new in-line separator technology.
- ◆ StatoilHydro Troll C: 1st stage separator troubleshooting.
- ◆ Sevan Marine: Goliat process study.
- ◆ ConocoPhillips Eldfisk: Testing of different produced water technologies.



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