

Enhanced sulfate removal- and deaeration package performance at Ivar Aasen

Master's thesis number: MT-05-22

Introduction and background:

Ivar Aasen is an oil and gas field situated in the northern part of the Norwegian continental shelf. A part of their operational strategy is to maintain reservoir pressure at a desirable level by injecting a combination of produced water and treated seawater into the reservoir. The seawater used for this purpose must be pretreated to remove both sulfate ions and dissolved oxygen to certain concentration levels. This is to prevent reservoir souring, scaling and corrosion damage in the topside process equipment and injection wells. At Ivar Aasen, the sulfate and oxygen in the seawater to be injected is removed by nanofiltration and vacuum/chemical deaeration in two separate unit operations.

Problem description and objective:

The availability of the Sulfate Removal Deaeration Package (SRDP) is crucial to be able to achieve the required reservoir pressure.

The overall objective of this project is to evaluate and potentially optimize the SRDP performance at Ivar Aasen. The method to do so is to do an initial plant study with a following literature review to be able to evaluate the expected system performance theoretically. And to be able to understand the detailed mechanisms of the unit operations to understand the functional relations between system response and parameter/process variable changes. The subsequent phase is a practical phase where the theoretical performance models will be validated, the system performance assessed, and the process attempted optimized through different practical plant tests based on the initial theoretical study.



Candidate:

Espen Nilsen

Telephone:

46774666

Email:

espen_nilsen@live.no