CASE STUDY

rawwater

Souring Data Verification for Oilfield Chemistry Providers

Independent Bioreactor Testing Reduces Need for Treatment Chemistry by 20%

CHALLENGE

Committed to ensuring correct and bespoke chemical dosing strategies, a leading chemical vendor wanted to evaluate the efficacy of its biocidal treatment chemistry for microbiological souring control in the North Sea. The primary challenge was to establish whether its souring remediation chemistry could be successfully applied under either low-concentration – continuous injection, or high-concentration – batch dose application. The secondary challenge was to determine the differences in chemistry efficacy and product volumes required under the two separate dosing scenarios.

SOLUTION

High-Pressure Bioreactor Simulation

Rawwater operates the world's most advanced suite of high-pressure bioreactors for the simulation of oilfield microbiology. Rawwater's research in extreme environments has resulted in an unrivalled database containing over 600 'bioreactor years' of petroleum microbiology knowledge.

By completing a six-month bioreactor study, Rawwater demonstrated that the biocide treatment was effective for souring remediation and souring control under the two chemistry application scenarios. The study was completed using high-pressure bioreactors saturated with crude oil, with pressure and temperature conditions of 1,000psig and 30°C to simulate the downhole environment in the near-wellbore region. The efficacy of both treatment scenarios was determined against a mature oilfield microbiological consortium.

It was demonstrated that the application of the chemistry in a high-concentration batch dose was both more effective for souring control, as well as requiring a 20% lower product volume to achieve control.

BENEFITS

Proven treatment regime and a 20% reduction in chemistry

- Confirmed treatment efficacy under two different dosing scenarios
- Enabled a 20% chemistry cost saving, whilst maintaining microbial control
- Equipped the vendor with data to support effective, economical souring control across its global customer base