

# Sand studies

Fixing equipment, process, and operational problems

## Using evidence and experience to improve your system robustness

There are many designs of sand handling processes and equipment out there that can struggle to provide the reliability you need. Frequently systems consist of equipment from multiple suppliers. We can use our experience in testing and field support along with your observations, measurements, and reports to identify the root causes of your operational problems, and to define optimized operational and practical solutions. By going back to the underlying cause, we can provide an evidence-based report with prioritized recommendations that can cover operational changes, equipment re-configuration, internals replacement, and/or new equipment packages. We aim to get you running with the minimum cost and wherever possible, fix the equipment you have rather than supplementing the system with anything new. Every study is different, but they all start with us understanding your priorities and objectives putting them at the front of the study. Whichever suppliers you originally bought from we can help.

### Benefits:

- Better define costs for improvement and set appropriate budgets
- Avoid purchasing new equipment that fails to solve the problem
- Understand potential risks in a project
- Avoid capital expenditure
- Prioritized recommendations enable major problems to be fixed first and minor to be delayed
- In-depth understanding enables NOV engineers to support the facility during and after the study

### Typical activities

Activity/equipment:	NOV offers:
Sampling and analysis	On-site sampling, 3 <sup>rd</sup> party analyses, results interpretation, critical analysis
Observations and reports	Rationalization of collected observations
Key vessels	Vessel design checks and mechanical engineering
Connecting equipment	Process review, pressure drop- and pipe sizing
Pumps	Sizing, re-rating, and advice
Packages and retrofits	Size, weight, layout, and budget prices for options suggested
Operational	Control and sequencing review. Hazop support



Ask us about the correct sampling techniques and equipment for representative analysis