



# Training

in ToreScrub Sand Handling Unit,  
operation, and maintenance.

## Course objective

To provide technical knowledge of the ToreScrub and Handling Unit, its operation (including start-up, shutdown, troubleshooting), and maintenance.

## Who should attend?

Engineers, operators, and technicians working on production units.

## Upon completion of the course, participants will know the following:

- Fundamentals of desanding vessels
- Principles of cyclones and eductors and their use in sand cleaning
- Understanding hazards in sand handling
- Optimal operation of main equipment
- How to monitor performance of process
- Startup and shutdown
- Equipment maintenance and maintenance schedule for the main equipment

## Deliverables

- Training documentation
- Training execution
- Workshop participation

## Location

Selected NOV training centers or client preference. Training can also be offered online.

## Duration

2 days

## Contact

[wellstreamprocessing@nov.com](mailto:wellstreamprocessing@nov.com)

## Training course includes

- Training by experienced technology personnel
- 2 days training for up to 10 trainees
- Hard and soft copies of training material in English

## Course content

### Welcome

- Safety moment
- Review of agenda
- Course objectives
- Introduction of participants and their expectations

### Desanding of a vessel (ToreOVD/jetting)

- Deposition of solids
- Judging frequency of operation
- Performance and carryover
- Avoiding erosion
- Good piping design and blocking risk

### Safety

- Understand how system and process changes may impact process safety

### Water feed specifications

- Typical water composition, temperature, and pressure
- Impact of utility water quality on system operation

### Equipment description

- Process design basis
- Understanding key process parameters and limits
- Understanding eductors and their use
- Understanding the limits on cyclone

### System control

- Review of PFD
- Operational philosophy
- Key modes of operation

### Sample analysis

- Sample points
- When and where to sample
- Sample methods used
- Sampling for performance monitoring

### System performance monitoring

- Understanding pressure/flow relationship and its importance in operation
- Methods of checking performance
- Problems that can occur

### Instrumentation

- Continuous level measurement with nucleonics
- Tuning forks and their envelopes of operation
- Sand and the effect on your separator levels

### Maintenance and start-up and shutdown

- Maintenance plan
- Start-up and shutdown
- Spare parts management

### Evaluations

- Q&A session
- Review – have the learning objectives been met
- Evaluation of course