Well Operation & Testing

3 days **WELLOP-EN-P**

Overview

LEVEL

Knowledge

PURPOSE

This course provides a comprehensive knowledge for the monitoring of eruptive and activated wells, as well as the monitoring and validation of well tests.

LEARNING OBJECTIVES

Upon completion of the course, participants will be able to:
list equipment comprising eruptive and activated wells, including surface equipment for gas lift,
analyze well behavior and well material balance,
efficiently identify abnormal conditions on eruptive and activated wells,
efficiently operate and monitor gas lifted wells, monitor wells safety test,
troubleshoot activated wells instabilities for tests validation.

WAYS AND MEANS

Highly interactive training by industry specialist lecturers.
Several applications on eruptive and activated well dynamics.
Several exercises on well material balance following well test.

LEARNING ASSESSMENT

Assessment by test at the end of the course.

PREREQUISITES

Engineer degree or equivalent experience in Oil & Gas production.

Agenda

ESSENTIALS OF RESERVOIRS & WELL EQUIPMENT — 0.5 d

Hydrocarbon in place. Composition and volume.
Permeability/porosity/reservoir/borehole interface. Productivity Index (IP).
Various completions; eruptive wells/activated wells.
Role of completion.
Hydrostatic and dynamic wells:
Conditions for eruptive wells.
Notions of fluid flow. Pressure drop/skin effect.

ARTIFICIAL LIFT — 1 d

Stimulation and activation principle.
The various methods of activation.
Well activation by gas lift:
Gas lift principle.
Pros and Cons.

Bottom hole and surface gas lift equipment.
Gas lift valve: role/technology.
Start-up methods in gas lift well.
Operation of multiple wells.

WELL INTERVENTIONS - WORKOVER, WIRELINE, METROLOGY - SAFETY — 0.5 d

Heavy/light wells intervention. Equipment.
Wireline/workover operations.
Metrology associated with the operating mode for eruptive or activated wells.
Downhole and surface safety equipment.
Safety levels.

WELL MONITORING & TESTING - TEST SEPARATOR — 1 d

Test separator:
Equipment, metrology and test separator control.
Control and stability of tested well.
Metering equipment.
Wells parameters determination: GLR, GOR, WOR, BSW, Specific gravity…
Sampling procedure.
Multi-Phase Flow Meter (MPFM):
Operating principle and equipment technology.
Results analysis.
Stability control and well test validation.
Potential problems. Tuning difficulties: analysis, solutions.
Troubleshooting of gas lift wells.
Troubleshooting of wells activated by Electric Submersible Pump (ESP).