

# Directional, Horizontal & Multilateral Drilling



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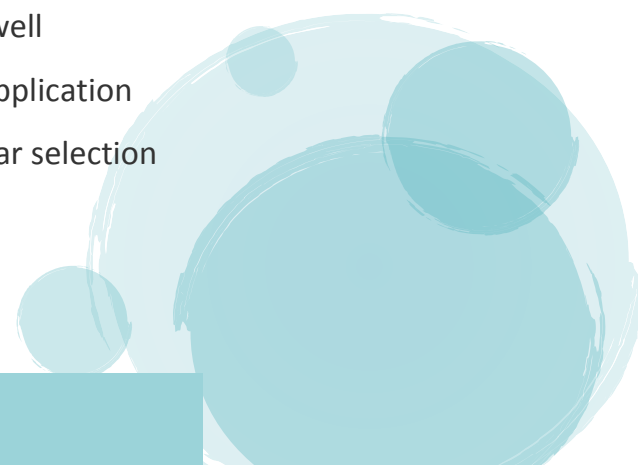
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## Introduction:

Horizontal well application has been proven successful worldwide. Horizontal wells have also applied for well stimulation and enhanced oil recovery processes the main objectives of this course are to provide attendants with all aspects of horizontal well technology and make them capable to make decisions and calculations of horizontal wells. The course includes different aspects and practical engineering issues of horizontal well technology.

The topics include definition and reasons to drill a horizontal wells, geologic aspects and considerations for horizontal wells, different types, limitations, screening, and cost of horizontal wells. The course also covers geological modeling and engineering reservoir characterization techniques. In addition, drilling and well completion techniques with considerations for horizontal wells will also be presented. The application of enhanced recovery methods using horizontal wells will be presented.

## Objectives:

- Make survey calculations
  - Interpret TVD, polar and rectangular coordinates and vertical section
  - Interpret dogleg severity and the problems associated with dogleg severity
  - Plan a two-dimensional directional well
  - Plan horizontal wells based on the objectives of the well
  - Determine the best multi-lateral completion for an application
  - Determine declination and non-magnetic drilling collar selection
  - Apply the best survey instrument for the job
  - Directionally drill with rotary
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- BHA's, jetting, whipstocks, motor, steerable motors, and rotary steerable systems
- Drill horizontally underbalanced
- Interpret torque and drag and determine what factors will affect the torque and drag.
- Determine cementing requirements for directional wells

## Who should attend?

Fresh engineers, petroleum reservoir and production engineers, drilling engineers, petrophysicists, workover engineers, mechanical engineers, and other discipline engineers, geologists, geophysicists, multi-disciplinary team members, and others need to know about horizontal wells.

## Methodology

This interactive Training will be highly interactive, with opportunities to advance your opinions and ideas and will include;

- Lectures
- Workshop & Work Presentation
- Case Studies and Practical Exercise
- Videos and General Discussions

## Certificate:

BTS attendance certificate will be issued to all attendees completing minimum of 80% of the total course duration

## Course Outline:

- Applications for directional drilling
- Directional profile
- Extended reach wells
- Survey calculations and accuracy
- Dogleg severity calculations and problems associated with doglegs
- Planning directional and horizontal wells
- Horizontal drilling methods and applications
- Logging high angle wells
- Hole cleaning
- Multi-laterals
- Types of survey instruments
- Tools used to deflect a wellbore
- Torque and drag calculations
- Cementing