

Training - Well Architecture and Directional Drilling in Unconventional Wells



UARCDD-EN-P



Face-to-face only



5 days

This certifying training aims to provide the necessary knowledge to plan and carry out a directional drilling (geothermal, water, storage, oil, gas), including the architecture

Level

Knowledge

Public

Technicians, tool pushers, site managers, supervisors, superintendents and engineers who will be involved in oil/gas drilling operations

Objectives

Attendees will be able to implement the following skills:

- Select the right position & Calculate different casing strings
- Choose the right wellhead with regards to the casings used
- Know the equipment needed for directional drilling
- Design a directional well & calculate the trajectories of a deviated well in 2D
- Design the drill stem adapted to the well's profiles to reach a target

Pedagogical & technical resources

- Exercises
- Movies
- Work in groups, teamwork
- Computer use for the design of a personal spreadsheet program

Assessment of achievements

- Trainees are assessed throughout the training through practical application phases and interactions with the trainer
- A final on-the-spot evaluation may also be carried out at the end of the course and/or at the end of each module using tests designed to verify the learners' understanding and assimilation of the knowledge linked to the training objectives

Prerequisites

No prerequisites are necessary to follow this course

Responsible

IFP Training instructors, with expertise in the field and trained in modern teaching methods adapted to the specific needs of learners from the professional world

Program

DRILLING & CASING PROGRAM

0.5 day

Role of casings.

Parameters to be considered to determine well architecture:

- Well type.
- Pore and frac pressures.
- Completion, lithology.

Different types of casings:

- Surface.
- Intermediate.
- Production.

CHARACTERISTICS OF CASINGS

0.25 day

Geometric, physical and mechanical properties of pipes and connections.

Use of Drilling Data Handbook.

SHOE POSITIONING

0.25 day

Hypotheses to be considered, casing point - Kick tolerance.

Examples and exercises.

CASING STRING CALCULATION

0.25 day

Principles and assumptions to remember for the different strings.

Stress cases study:

- Collapse.
- Burst.
- Tension.
- Tri-axial study.
- Safety factors.

Casing selection: examples and exercises.

CALCULATION EXAMPLES

1 day

Case studies and writing of a spreadsheet in order to determine the casing point, the kick margin, the pressure max...

DIRECTIONAL DRILLING EQUIPMENT

0.5 day

Specific drilling equipment: downhole motors, rotary steerable system.

Measuring equipment: MWD.

DRILLING ENGINEERING

1 day

Well planning and trajectory calculations.

Limits of use of a drill string: buckling.

Drill string design.

Torque and drag calculation.

Drilling fluids and cementing program.

Hole cleaning.

Logging.

Well control.

HORIZONTAL & ERD

0.25 day

ERD, multilateral and short radius.

CASE STUDIES

0.5 day

Writing of a spreadsheet in order to determine the trajectory of a 2D well according to the needs.

KNOWLEDGE ASSESSMENT

0.5 day

To French entities : IFP Training is referenced to DataDock ; you may contact your OPCO about potential funding.

Please contact our disabled persons referent to check the accessibility of this training program : referent.handicap@ifptraining.com