Training - Drilling fluids: mud and cementing school

DMCS-EN-P | Face-to-face only | 30 days

This course provides the knowledge and skills needed to design & supervise drilling mud & cementing programs

Level

Knowledge

Public

Engineers, supervisors and lab professionals involved or interested in drilling fluids mud & cementing in water, geothermal or oil/gas drilling operations

Objectives

Attendees will be able to implement the following skills:

- acquire a thorough knowledge of drilling fluids and rheology
- learn how to choose the right equipment for solid removal
- learn how to communicate efficiently as drilling fluid specialist
- master the vocabulary specific to cementing
- understand and use primary cementing techniques and procedures
- select cement and necessary additives
- calculate major parameters in a cementing operation
- assess the quality of a cementing job

Pedagogical & technical resources

- Exercises, videos
- Application to a real case study
- Laboratory practices

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

Responsable

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

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DRILLING MUD

FUNCTIONS OF DRILLING FLUIDS

PHYSICAL & CHEMICAL CHARACTERISTICS

Specific gravity.
Rheology.
Filtration.
Alkalinity.
Chloride.
Hardness.

TYPES OF FLUIDS

Water base mud.
Oil base mud.

SHALE INHIBITION

Types of shale.
Chemical and physical inhibition.

MECHANICAL & WASTE TREATMENT

Function.
Selection of equipment and layout.
Separation ranges.
Overall efficiency.
Waste treatment:

- Solidification.
- Reinjection.
- Desorption.

TROUBLESHOOTING

Losses:

- Detection.
- Analysis and decision chart.
- Treatment.

Hole cleaning:

- Vertical well.
- Deviated and horizontal wells.

DRILLING MUD PROJECT

Design of a whole well muds: Application to real case drilling & completion program.

CEMENT

DRILLING MUD PROJECT

Cementing program.
Job planning and preparation:

- Casing running.

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- Selection of the fluids and flows.
- Cementing calculations.
- Primary, surface, multistage, liner cementing.
- Cement plugs.

CEMENT & SLURRIES

Cement chemistry, cement with environmental impact reduction (CO2).
Special slurries and additives.
Formulation and laboratory tests.
Rheology.
Displacement in eccentric annulus.
Salt zone and temperature problems.

SPECIAL CASES

Gas zone cementing.
Deviated and horizontal wells cementing.
Remedial techniques.
CO2 environment (CO2 resistant cement.

CEMENTING PROJECT

Design of a whole well cementing job: Application to real case drilling & completion project.

EVALUATION OF THE CEMENTING JOB

Principles and interpretation of the cement logs:

- Thermometry.
- Sonic (CBL - VDL).
- Ultrasonic (USIT).

Logs analysis on a real case

KNOWLEDGE ASSESSMENT

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

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