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This may also be of interest

Thermal Methods for
Heavy Oil Production

Water Alternate Gas
EOR

Enhanced Oil Recovery
Fundamentals and
Practices

Description

This training is focused to provide the fundamentals and practice of reservoir simulation applications to the design, evaluation, and implementation of Enhanced Oil Recovery projects.

The participants will be exposed to the different EOR process different numerical simulators available in the oil industry; it will be covered the water injection with chemicals, surfactants, Alkalis-Surfactants-Polymer solutions, thermal and miscible process

Objectives

- To provide fundamentals of numerical simulation practices applied to Enhanced Oil Recover
- Learn how to design an Enhanced Oil Recovery project using a numerical simulation model
- Understand the different methods of Enhanced Oil Recovery
- Review the water and gas injection methods to displace oil
- Review and model the factors that influence the final recovery factor
- Learn the differences between a displacing process and an Enhanced Oil Recovery.
- Learn the different Enhanced Oil Recovery methods, how to model and apply in the oil fields.

Audience

- Reservoir Engineers and Reservoir Managers,
- Production Engineers,
- Geologists and Geophysicists
- Technical field personnel from oil companies or service companies that need to gain or increase their understanding of reservoir performance under Enhanced Oil Recovery projects.

This training can n be done in house based on workshop sessions for groups of delegates with interest in understanding the principles and applications of simulation of Enhanced Oil Recovery Projects



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Content

Day 1

Introduction to EOR Reservoir Simulation

- Reservoir production fundamentals and driving mechanisms
- Types of simulators: black, compositional, thermal oil
- Benchmarking of different commercial simulators
- Basic structure of a simulation model in STARS
- Examples and visualization of results in results (CMG)
- Exercises

Day 2

Water injection and Chemical modelling fundamentals

- Basic concepts and data required
- Structure and examples of a input deck model
- Low salinity concepts and characteristic and how to model it
- Surfactants Basic concepts
- Types of models and structure
- Model construction
- Examples
- Sensitivity analysis

Day 3

Polymer injection and combinations with Surfactants and Alkalis

- Polymers, Alkalis and Surfactants (ASP)
- Construction of an ASP model
- Sensitivity analysis & Optimization
- Other methods
- Foams
- Gels
- Nanoparticles
- Microorganisms

Day 4

Simulation of thermal processes

- SAGD, CCS, Continuous steam injection, etc.
- Basic concepts & Data required.
- Structure of the models
- Construction of thermal models
- Sensitivity analysis
- Optimization

Day 5

Immiscible / miscible injection processes

- Basic concepts miscible and immiscible displacement
- Data required for modelling.
- Examples
- Training Evaluation: Simulation work of an improved recovery method.
- Discussions and Case Studies
- Wrap Up

End of the training