FORMATION DAMAGE & STIMULATION

PRD051

COURSE DESCRIPTION

This training course covers the main aspects of Stimulation whose main objective is to repair formation damage in order to restore/increase production. This interactive training course starts by presenting the basic concepts for stimulation job design, execution and follow up.

Discussion is carried out on formation damage and its effect on well performance and planning of acid stimulation treatments. Focus is given to the main causes of formation damage (damage during drilling, cementing, perforating, producing and working over wells) and how these may be identified.

COURSE GOAL

To enhance the participants' knowledge, skills, and abilities necessary to learn about major areas of Acid Stimulation techniques, both on theoretical concepts and practical onsite experience. Acidizing with Coiled Tubing.

COURSE OBJECTIVES

This training course will highlight:

- Formation damage (Definition, mechanism, counter measures, etc.)
- Acidizing (Matrix Acidizing, Acid fracturing, etc.)
- Hydraulic fracturing Overview
- HSE and Stimulation

WHO SHOULD ATTEND

- Petroleum engineers.
- Process engineers.

COURSE DURATION

5 Working Days

COURSE OUTLINES

1. Introduction to formation damage.
    - Introduction
    - 1st day quiz
    - Diagnosis of formation damage
    - Formation damage while drilling

- Formation damage during well completion operations
- Formation damage during well workover
- Best practice to avoid formation damage.

2. **Introduction to stimulation and rock properties.**
   - Introduction to Acidizing.
   - Chemistry of carbonate acidizing
   - Chemistry of sandstone acidizing
   - Introduction to frac
3. **Types of Acid and Acid Formulations**
   - Candidate selection for matrix treatments
   - Acid reactions.
   - Acid additives.
   - Acid operations and evaluation
   - Acid treatment design in carbonates
   - Fluid selection for carbonate acidizing
   - Acid treatment design in sandstones
   - Fluids selection for sandstone acidizing
   - Additives used in acidizing and their functions
4. **Post-Job Procedure and execution techniques and basic of hydraulic frac**
   - Laboratory testing
   - Job design
   - Placement techniques
   - Acid Placement and Diversion
   - Problem solving
   - Job preparations
5. **Monitoring, Execution, Evaluation and Follow-Up**
   - Monitoring, Execution and Evaluation
   - Choosing Diverting Method
   - Examples of Successful Treatments
   - Example of Unsuccessful Diversion Design
   - Mechanical Acid Placement
   - Ball Sealers

- Particulate Diverting Agents
- Change of Skin due to Acidizing
- New acid systems
- Comparison of Diversion Methods
- HSE and Stimulation Operations
- Last day quiz
- Round table