



Reservoirs Training Course

Advanced Stimulation and Reservoir Treatment

From 13/11/2023 to 17/11/2023

UK – London - Marriott Marble Arch Hotel

5500 \$

Course Introduction

This Advanced Stimulation and Reservoir Treatment training course focuses on evaluation of well performance leading to determination of well conditions necessitating applications of stimulation and or fracturing to enhance oil recover from H/C reservoirs or at least to keep the steady production. The various methods of stimulation, the hydraulic fracturing along with their selection criteria are in this presented. The theoretical and practical aspects of the most important applicable methods will be covered. The highlights of this training course will be as follows:

- General understanding of the role of stimulation in the wells and fracturing.
- Extensive range of essential daily production technology practices.
- Advanced knowledge on reservoir and well stimulation in petroleum production.
- Formation characterization, well and reservoir testing, rock mechanics & well logs.

Course Objectives

By the end of this Advanced Stimulation and Reservoir Treatment training course, participants will learn to:

- Identify the various concepts of fracturing operations.
- Learn the basics and mechanics of hydraulic fracturing.
- Recognize the importance of fracturing fluid chemistry and proppants.
- Perform fracture evaluation using pressure diagnostics.
- Recognize the importance of fracture treatment design.
- Evaluate fractured well performance and post-treatment evaluation.

- Determine the basic concepts of matrix treatments.
- Apply specific techniques of formation damage, including origin, diagnosis and treatment strategy.
- Differentiate additives in acidizing fluids.
- Analyze carbonate acidizing design.
- Discuss sandstone acidizing.
- Utilize systematic techniques in fluid placement and pumping strategy.
- Evaluate Matrix Stimulation Treatment.

The Course Content & Outline

Day One: Formation Damage Overview

- Damage Characterization: types and causes of damage.
- Treatments & Prevention.
- Removal and areas of damage.
- Short presentation of inflow and outflow performances.
- Scales.
- Formation damage in drilling and production operations.
- Completion skin.
- Minimum damage while perforating production zones.
- Damage in injection operation.

Day Two: Hydraulic Fracturing, Fluids & Chemicals

- Quality Control I.
- The goal of water analysis.
- Quality limits for fracturing fluids.
- Functions of fracturing fluid system.
- Ideal fluid system properties.
- Guar and polymers.

- The types of fracturing fluid systems.
- Advantages & disadvantages of each fluid.
- Additives and biocides.
- Leak off theory.

Day Three: Acidizing Techniques

- Proper selection of acids according to formation damaged.
- Capabilities and limitations.
- Thermodynamic equilibrium.
- Economic Formation Stimulation.
- Reactants.
- Mineral acid.
- Organic acids.
- Powdered acids.
- Acid mixtures.
- Retarders.
- Types of acid stimulation.
- Applications and methods.
- Advanced design of a matrix acid treatment.
- Acid fracturing.

Day Four: Fracturing applications

- Mechanical behavior of the reservoir rock.
- Hydraulic fracturing.
- Fracture initiation. Elasticity and deformation of pay zones.
- Fracture extension.

- Well selection for fracturing and limitations.
- Oil Compatibility tests.
- Proppant movement, displacement and lock to position.
- Pre treatment considerations.
- Minimum requirements
- Treatment fluids and evaluation of proppants.
- Local geology influence.
- Core testing while design a fracturing operation.
- Fracture geometry and orientation evaluation.

Day Five: Hydraulic fracturing application and fractured wells

- Hydraulic fracturing stimulation.
- Purpose and operation options.
- Well candidates and restrictions.
- Treatment and function of fluids.
- Pre pad and pad.
- Proppant and flush.
- Lab tests and pre job tests in situ.
- Ideal operation.
- Flow regimes in operation of stimulation and fracturing.
- Post treatment well test analysis.
- Presentation of leak off and FIT tests as data for consideration prior to apply acid stimulation or hydraulic fracturing.

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