Set Reservoir Engineering & Administration

Development of Oil & Gas Fields

Introduction

The purpose of this Course N Carry Set Reservoir Engineering & Administration training course is to pinpoint the sources of reservoir engineering data and emphasise the advantages of incorporating the data into the management of mature fields' reservoirs. The presentation will cover data collecting and integration, with a focus on the prerequisites for the mature reservoir's continuous successful functioning.

We'll also talk about the production recovery techniques' sequences and the reservoir life cycle. This Course N Carry training course will make clear how realising an efficient development plan and a successful operation over the reservoir's life depends on integrated and sound reservoir management. In addition, it will offer the guidelines for managing the reservoirs and optimising the extraction of the residual oil and gas. High recovery factors will be achieved if these reservoir management principles are successfully applied.

The engineering and management of reservoirs combines science and art. Therefore, the application of scientific concepts and principles to problems encountered during the development and production of oil and gas reservoirs will be covered in this Course N Carry training course on Applied Reservoir Engineering & Management. There will also be a discussion of the examination of the production performance and reservoir dynamics. The training programme will also offer a variety of tools and methods to assist in addressing the difficulties involved in delivering reservoir engineering and management that is more dependable and sounder. The economics of reservoir management and enhanced recovery techniques will be discussed, along with case studies from several disciplines.

Included in this Course N Carry training programme will be:

- Plan, elements, and procedure for reservoir management
- Data from reservoir engineering
- Estimating and categorising reserves
- Mechanisms of reservoir drive and characteristics of production
- Identifying the hydrocarbon present
- Describing floods of water
- Waterfall management and observation
- Techniques for improving oil recovery

Objectives

Participants in this Course N Carry training course will have the following skills at the end:

- Apply the proper techniques when managing and engineering reservoirs.
- Know the proper procedures for data collection, analysis, validation, and integration.
- Provide examples of how the many disciplines—geosciences, engineering, etc.—integrate when reservoir management principles and applications are used.
- Make that the reservoir management procedure is carried out correctly.
- For effective reservoir management, apply the interdisciplinary synergistic approach.
- Add all of the reservoir management components, stress the value of timing, and conduct a cost-benefit analysis.
- Utilise the various reservoir performance analysis and forecasting techniques, placing special emphasis on the integration of pressure, production, and injection data as well as any subsurface data.
- Current understanding of enhanced recovery techniques pertaining to thermal, chemical, water flooding and EOR screening guidelines

Training Methodology

A range of tried-and-true adult learning strategies will be employed in this Course N Carry training programme to guarantee that the material is understood, comprehended, and retained to the greatest extent possible. This course is structured to include presentations, seminars, group projects, hands-on training, field application and analysis, several industry videos that demonstrate all procedures, and general discussions.

Organizational impacts

The information that the participants will acquire will enable them to recognise the theories underlying the real-world applications of reservoir management concepts, which will support:

- Boost productivity at work
- Improve the reservoir management team's internal integration inside the organisation.
- Utilise the proper execution approach for the process of data integration and analysis.
- Use the right techniques while applying reservoir engineering and management.
- Utilise the Multidisciplinary Synergistic method to effectively manage reservoirs.
- Make fresh development plans for the corporate fields and research them.

Personal Imapct

After completing this Course N Carry training course, attendees will be able to comprehend reservoir management concepts. They'll be capable of:

- Recognise the proper procedures for data collection and validation.

- Utilise several techniques to effectively track reservoir performance.
- Learn about the enhanced recuperation procedures.
- Utilise economic principles to determine the best reservoir development strategy.
- Recognise the elements of reservoir management
- Take on a knowledgeable and organised position in the reservoir management group

Who should attend?

A wide range of professionals can benefit from this Course N Carry training course, but the following are particularly noteworthy:

- Engineers for petroleum, production, and reservoirs
- Employees in field operations and process engineers
- Geophysicists and Geologists
- Managers, government representatives, and other reservoir-related parties
- Fresh to the field of engineering

Course Outline

Day 1

Plan, Components, and Process of Reservoir Management

- Definition of Reservoir Management: A Multidisciplinary, Integrated Team Approach
- Life Cycle of Reservoirs
- Integrated reservoir management's scope and goal
- Principles and Available Resources for Reservoir Management
- Concepts and Procedures for Reservoir Management
- Plans for Reservoir Management
- Collaboration and Synergy
- Tasks Assigned to Team Members
- Combining Engineering and Geosciences
- Establishing Objectives: Formulating Objectives, Organising, Carrying Out, Supervising, and Assessing Reservoir Efficiency
- Planning and Economics (Scenarios): Optimising Profitability through Field Development and Field Operating Plans
- Integrative reservoir studies: why are they done?
- Revision of the Strategy and Plan
- Causes of Reservoir Management Programme Failure

Day 2

Data on Reservoir Engineering

- Info Required for an Integrated Research
- Data Types: Properties of Rock and Fluids in Reservoirs
- Data Management, Validation, Analysis, and Acquisition
- Integration of Log Data, Pressure Data, Production/Injection Data, and Any Subsurface Data for Analysis
- Effective Reservoir Performance Monitoring
- Finding and Obtaining Crucial Information, Gathering and Examining Data
- Analysis and Forecast of Reservoir Performance
- Geological Model in Static Form and Reservoir Simulation
- When the Need for Simulation Models Occurs
- History Correspondence and By-Passed Oil Identification
- Entire Surface and Subsurface Integration

Day 3

Estimating and Categorization of Reserves; Reservoir Drive Mechanisms and Producing Features

- Introduction of New Technologies to Minimise Risk, Capital Investment, and Operating Expenses and Maximise Economic Recovery
- Reservoir Management Plan Field Implementation Timing: During Primary Recovery, Pressure Maintenance, Secondary, and Tertiary Recovery
- Plans for managing reservoirs and scenarios
- Risks, Uncertainties, and the Economic Model
- Increasing Economic Recovery while Reducing Risk, Operating Expenses, and Capital Investment
- Types and Classification of Oil Reserves; Engineering and Assessment of Reservoirs
- Mechanisms of Natural Production
- Analysis and Forecast of Reservoir Performance
- Reserve Calculation and Performance Forecasting for Reservoirs
- Hydrocarbon Determination in Place Using Mathematical Simulation, Decline Curve, Material Balance, and Volumetric Methods

Day 4

Monitoring and Management of Floods

- Process of Secondary Recovery and Pressure Maintenance
- Mature Fields' Waterflood Management: Surface and Subsurface Issues
- Defining and describing the objectives of water flooding, as well as the candidates, patterns, and factors that affect the selection of patterns, well spacing, fractional flow, performance measures, practices, and issues
- Water Injection System Design Aspects

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- Water compatibilities and scale, basic water treatment, and water sources (produced water, aquifers, and seawater) are all covered in water injection systems.
- Water Quality: Implications for Quality and Related Risks, Impact of Injection Water Quality and Injectivity
- Monitoring and Management of Floods
- Waterflooding Project Performance with Reservoirs
- Water Injection's Effects on Reserves and Recovery Factor

Day 5

Techniques for Enhancing Oil Recovery

- Overview of Enhanced Oil Recovery (EOR) Methodologies
- EOR Processes: Conventional and Non-Conventional
- Methods of Chemical, Thermal, and Miscible EOR
- Mechanisms and Concepts of EOR Processes
- EOR Processes' Guidelines for Screening Criteria
- The EOR Processes' Performance and the Anticipated Recovery Factors
- Plans for the EOR Processes' Development
- The EOR Projects' Stages
- The Reservoir Management's Function in Applying EOR Processes
- Case Studies of Mature Fields in Reservoir Management: Multiple Development
- Plans for EOR and Flood Projects