LDI TRAINING
"Leading Edge Courses for Professionals" ™

An LDI Training Course

DRILLING FOR NON-DRILLING PERSONNELS

(An Introduction to Drilling)

by

Dr.Ing.- Ir. Bonar Tua Halomoan Marbun

Course Objective

This training course provides participants with least knowledge of drilling experience, a broad overview and complete understanding of the process involved in the Drilling of oil and gas wells.

The course addresses the basic concepts of drilling a well, the general overview of well construction, how it fits into the exploration and production process and its interaction with other domains. Participants will also learn what information is required to drill a well including the risk and safety involving drilling a well. It will also discuss the roles and responsibilities at the well site and at the office. Drilling equipment discusses various types of Rigs for different type of drilling environments.

The participants will also obtain an understanding of well designs, the purpose of running casings and the importance of fluids in drilling. Typical timelines, long lead items, offset well analysis, cost, risk and AFE generation will also be discussed.

By completion of the course, you will be able to understand phases, operations and terminology used in the drilling of an oil and gas well, the various equipments used and an overview of the engineering well design.

What You'll Learn

You will learn the following:

- Understanding the basic of Petroleum geology
- Well Design and Construction, understanding the concepts and consideration in Designing a well

- Drilling Rig, hoist and rotary system, Mud system, Drill string and Blow Out Preventers, understanding the basic equipments to drill a well
- Drilling Reporting, cost and AFE
- Drilling Safety
- Introduction to directional Drilling

Course Outline

Basic Petroleum Geology

1. Types of sedimentary rocks
2. Source Rock and Hydrocarbon generation
3. Pressure and temperature Gradient
4. What is a reservoir
5. Types of Hydrocarbon of interest to the Petroleum Exoloration

Well Design and Construction

1. Tangible Equipment

- Christmas Tree
- Well head
- Casing
- Tubing
- Sub Surface equipment

2. Introduction Well Design

- Understanding Pore Pressure Estimation
- Understanding basic Casing Design
- Understanding basic Drill String Design

Drilling Rigs

1. Type of Drilling RIgs

- Land Rig
- Jack Up
- Semi Sumbersible
- Drill ship

2. Basic elements of a Drilling Rig

- Hoist and Rotary System
- Mud Circulating and solids control System
- Drill string Rotary System
- Blow Out Preventers System

3. Other Equipments

- Handling Tools
- Cementing Unit
- Logging Unit

Drilling Report, Cost and AFE

1. **Drilling Report**
   - Morning Drilling Report
   - Days vs Depth Curve

2. **Cost and AFE**
   - Daily Drilling Accrual Cost
   - Planning the AFE

Drilling Safety

1. **OSHA Safety Statistics**
   - Lost Time Incident Rate
   - Recordable Incidents
   - Medical Treatment
   - Near Miss
2. **Drilling Safety Measures**
   - Personal Protective Equipment
   - Stop Card
   - Job Safety Analysis
   - Lock Out Tag out

Introduction to Directional Drilling

- Directional Equipment
- Calculation methods

Who Should Attend

The course is targeted for those who work in the support services of an Oil and Gas company whom requires Drilling overview to perform their work such as

- *Employees of the Financial Department*
- *Employees of the Human Resources Department*
- *Employees of the Safety, Health and Environment Department*
- *Employees of the Construction Department*
- *Employees of the Public Affairs Department*
- *Employees of the Planning and Risk Management Department*

Why You Should Attend

By completion of this course, the participants will have a good understanding of what and how a well is drilled, what equipment is required to drill a well and an overview of how the AFE cost estimation are generated. The process from the planning stage, design and execution will be better understood after going through this course.

LDI Training ensures that our instructor, learning tools and resources will provide course attendants with up-to-date knowledge for direct applications in their professional duties. It will also enable them to extrapolate and extend the provided information to related problems In different industrial situations. By requesting preliminary information about the technical back-ground of our participants we make sure that the course is taught at the appropriate level thus maximizing individual benefit. Furthermore we encourage a comprehensive and fully explorative question and answer teaching style.

About Instructor:

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Education:
Petroleum Engineering Bachelor Degree Bandung Institute of Technology, Institute of Petroleum Engineering, Bandung, Indonesia.

Petroleum Engineering Diplom Ingenieur Degree Clausthal University of Technology, Institute of Petroleum Engineering, Clausthal-Zellerfeld, Germany.

Dr.-Ingenieur in the field of Material Engineering and Science Clausthal University of Technology, Institute of Non-Metallic Materials, Clausthal-Zellerfeld, Germany.

Professional Experience
Member of Oil and Gas Independent Team Safety Control, General Directory of Oil and Gas, Ministry of Energy and Mineral Resources of Republic of Indonesia

Head of Petroleum Engineering Study Program, Institut Teknologi Bandung

He is currently holding the position of a Senior Trainer of LDI Training and he certified to conduct its courses.

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