Well Integrity
Drilling and Well Operations

Kingdom DRILLING TRAINING

Duration/Dates of Course
3 days (Classroom format)

Overview
A participative program to enable well operations personnel to develop the required knowledge to assure well integrity is maintained through a well's operating life cycle: drilling, completion, well testing, well services, intervention, work-over, to final well abandonment.

Target Participants
Personnel involved in the operational management, leadership, supervisory, engineering, technical or administrative support of a well's operational life cycle: drilling, completion, well testing, well services, intervention, work-over, to final well abandonment.

Purpose
- Assure compliant life of well integrity by assuring best operating practices, standards and guidelines are correctly managed and controlled.

Goals and Objectives
- To understand the importance of and grasp the process of well integrity management.
- Prevent well integrity issues using best practise design, planning and life of well execution.
- Acquire the technical skills to safely mitigate life of well integrity problems through appropriate planning, organisation, implementation and well control operations from project start to finish.
- Develop a multidisciplinary approach to deliver trouble free operations through compliant well integrity assurance.

Course Take Away
- View well integrity within the framework of key strategic operations efforts and maintain a compliant focus on the key areas of well integrity assurance.
- To understand the operational duties in regards to well integrity:
  - Ability to plan, design and engineer a well free from integrity problems during drilling and all associated well operations that follow.
  - Demonstrate a hazard and change management approach to reduce well integrity risks as low as reasonably practicable.
  - Be capable of recognizing and analyzing the warning signs and identify symptoms of well integrity issues that could arise within drilling and well operations.
  - How to employ best practice well integrity management throughout the operational life of wells.

Course Summary
Well Integrity in Drilling and Well Operations

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Session	Day 1	Day 2	Day 3
08:30 to 10:15	Course objectives Well Integrity Scope *Terms, and Definitions*	Completion Activities *WBS Examples*	Wireline, Coiled Tubing, Pumping and Production *WBS Examples*
15 mins		Break	
10:30 to 12:00	General principles of well integrity	Well testing Activities *WBS activities*	Well suspension and abandonment activities *WBS Examples*
12:00 to 13:00		Lunch Break	
13:00 to 14:30	Drilling activities Well Barrier Selection 'WBS'	Snubbing, managed pressure and underbalanced drilling activities *WBS Examples*	Well barrier acceptance Review of select situational drilling events
15 mins		Break	
14:45 to 16:30	*Well Integrity work group exercises and examples*	*Well Integrity work group exercises and examples*	*Well Integrity Post-test.* Course feedback and debrief

Continuous class assessment is applied through a variety of formats, techniques & methods:

Simple Tests and Questions - Individual and group assessments techniques are used to realize and analyze strengths and weaknesses of individuals and groups, allowing the instructor to facilitate course content and learning techniques to provide value added practical and technical support.

Group exercises - Group discussion and exercises are included where and when applicable.

Worked Examples - Real and practical base case studies and worked examples complement learning sessions for participants to demonstrate their understanding and reinforce learning of those subjects covered.

Case Studies - Well integrity issues from several operating regions and work environments to assure relevance to course structure and learning content.

Course Details

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Day 1

Well Integrity in Drilling Operations

General Principles
- Well barriers and design
- Risk assessment and verification
- Simultaneous and critical activities
- Operating criteria, programs
- Blow out and relief well plans
- Competency and leadership
- Translating and sustaining learning

Drilling Activities
- Well barrier schematics
- Well barrier acceptance
- Well barrier elements
- Well control actions
- Casing design

Well integrity workgroup 1
- WBS examples

Debrief: Drilling operations

Day 2

Well Operations

Completion Activities
- Well barrier schematics
- Well barrier acceptance
- Well barrier elements
- Well control actions
- Completion string design
- WBS examples

Well Testing Activities
- Well barrier schematics
- Well barrier acceptance
- Well barrier elements
- Well control actions
- Well test design
- WBS examples

Snubbing, MPD and UBD Activities
- Well barrier schematics
- Well barrier acceptance
- Well barrier elements
- Well control actions
- Well control Matrix
- Well test design
- WBS examples

Well integrity workgroup 2
- WBS examples

Debrief: Well operations

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Day 3

Well Operations and Abandonment

Wireline, Coiled Tubing, Pumping and Production Operations

- Well barrier schematics
- Well barrier acceptance
- Well barrier elements
- Well control actions
- Well handover documentation
- Well operating and monitoring
- Well anomalies
- Well design
- WBS examples

Well Abandonment

- Well barrier schematics
- Abandonment design
- Well suspension
- Temporary abandonment
- Permanent abandonment
- WBS examples

Well Integrity: Post-Test

Course Feedback & Debrief