Practical HPHT Drilling and Well Engineering

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Introduction:

This course covers the key aspects HPHT Drilling Operations in detail through the media of: Course Materials (written by the Trainer); Videos; Case history examples; and Teamwork exercises. New technologies available to the Industry are also covered.

Provision is also made for delegates to discuss any aspect of HPHT Drilling Operations which are pertinent to their particular up-coming projects in order to secure maximum success first time. For each subject area, benefits of certain industry practices are covered in detail as well as why difficulties are encountered on the rig. Solutions are presented (e.g. optimal drilling and practices per IADC) so that the well to be drilled is a success first-time.

Objectives:

- **UNDERSTAND** the key drivers behind successful HPHT Drilling Operations so that their wells are successful.
- **LEARN** the techniques in HPHT Wells worldwide and what can be done to maximize success and minimize failure
- **APPLY** best practices for drilling, testing and tripping in HPHT wells
- **IMPROVE** on detecting and controlling well control events and implement techniques to maintain efficient operations in HPHT wells
- **MANAGE** to overcome barriers in efficient well operation by learning about well integrity practices and remedies, with a focus on handling annulus barriers

Who should attend?

This course is specifically designed for, but not limited to employees in the oil and gas industry who holds the following roles:

- Drilling Managers
- Drilling Supervisors
- Drilling Superintendents
- Senior Drillers
- Drilling Engineers
- Operation Engineers
- Project Engineers

Course Outline:

Day One: Introduction & Practices Overview

- Introduction to HPHT
- HPHT Drilling Practices Overview
- KEY ASPECTS OF HPHT WELL ENGINEERING 1: FUNDAMENTALS OF CASING DESIGN
- KEY ASPECTS OF HPHT WELL ENGINEERING 2: WELLHEAD GROWTH
- KEY ASPECTS OF HPHT WELL ENGINEERING 3: MUD (DRILLING FLUIDS)
- KEY ASPECTS OF HPHT WELL ENGINEERING 4: CEMENT
- SPECIALISED HPHT PRACTICES 1: FINGER-PRINTING CONNECTIONS
- SPECIALISED HPHT PRACTICES 2: TRAPPED PRESSURE
- HPHT WELL DRILLING 1: FORMATION BALLOONING OR “CHARGING”

Day Two: HPHT Well Drilling

- HPHT WELL DRILLING 2: GAS BEHAVIOUR IN MUD (DRILLING FLUID)
- HPHT WELL DRILLING 3: PRESSURE INTEGRITY TESTING
- HPHT WELL DRILLING 4: LOST CIRCULATION
- HPHT WELL DRILLING 5: UNDERGROUNG BLOWOUTS / CROSS-FLOWS
- HPHT WELL DRILLING 6: THE COMMONEST CAUSE OF BECOMING STUCK: DIFFERENTIAL STICKING

Day Three: HPHT Well Drilling (Continued)

- HPHT WELL DRILLING 7: JARRING IN HPHT WELLS
- HPHT WELL DRILLING 8: INDICATORS & CAUSES OF KICKS
- HPHT WELL DRILLING 9: MUD PIT MANAGEMENT
- HPHT WELL DRILLING 10: BOP SURFACE EQUIPMENT

Day Four: HPHT Well Drilling (Continued)

- HPHT WELL DRILLING 11: KICK TOLERANCE
- HPHT WELL DRILLING 12: HPHT WELL CONTROL / KILL METHODS
- HPHT WELL DRILLING 13: CHOKE DRILL
- HPHT WELL DRILLING 14: STRIPPING
- HPHT WELL DRILLING 15: HYDRATES

Day Five: HPHT Well Drilling (Continued)

- HPHT WELL DRILLING 16: MANAGING HPHT WELL OPERATIONS FROM DERRICKMAN TO DRILLER TO TOOLPUSHER TO OIM (INCLUDING OPERATOR'S DRILLING SUPERVISOR)
- HPHT WELL DRILLING 17: HPHT LESSONS LEARNED
- HPHT WELL DRILLING 18: HPHT LESSONS LEARNED
- HPHT WELL OPERATIONS: OPEN FORUM