ABERDEEN DRILLING INTERNATIONAL

IADC WellSharp Driller Level Well Control

OVERVIEW

The IADC WellSharp Driller Level Well Control course is essential training for those currently working in a role that is expected to shut-in a well. The course aims to reinforce and improve the candidate's existing knowledge and appreciation of the various stages of shutting-in a well; from kick detection to shutting in the well, to monitoring once the well is shut in and monitoring the well-kill operation.

DESIGNED FOR

The IADC WellSharp "**Well Control for Drilling Operations – for Drillers**" course has been designed for anyone expected to shut-in a well, such as drillers and assistant drillers.

COURSE DELIVERY

The course is delivered over 5 days through presentation of a series of interactive lectures supported by videos and animations, supplemented by a classroom workbook and further self-study exercises and practical work on a drilling simulator.

Under the WellSharp programme and unlike IWCF training, IADC Driller Level candidates are taught completely separately from IADC Supervisor Level candidates and will not be in a mixed class. The course ends with an online assessment on the final day which will be administered by IADC and invigilated by an independent proctor.

CERTIFICATION

Candidates may select either "Combined" (Surface & Subsea) or "Surface Only" BOP Stack certification. Successful completion of the course and a pass mark of 70% or above in the practical simulator assessment and the online written assessment will result in IADC WellSharp Diller Level certification which is valid for two years.

ENTRY REQUIREMENTS

Prior IWCF or IADC certification at Introductory or Driller Level is recommended but not mandatory. The training is role-specific so previous experience in an assistant driller or driller role during drilling operations is assumed. Please contact us to discuss candidate suitability if you have any doubts or queries.

LEARNING OUTCOMES

At the end of the course delegates will be able to:

- Perform static and dynamic pressure calculations across a range of wellbore and formation conditions

- Calculate volumes and capacities for a range of drilling and tripping operations and calculate the effects on bottom-hole pressure during these operations
- Explain the effects of gas migration on wellbore pressures
- Describe the causes of kicks for on-bottom and off-bottom conditions
- Explain the procedures for shutting in a well for a range of operations
- Complete a kill sheet for vertical and deviated wells
- Specify the well control equipment requirements for surface and subsea operations
- Describe the principles underpinning the constant bottom hole pressure methods of well kill
- Using a simulator, identify a kick and shut a well in

INDICATIVE COURSE CONTENT

The course covers the following modules:

Drilling, workover and completion plan - This section of the course looks at the overall well objectives including well planning, casing and cementing programme, completion programme, fluids programme, the completions programme, barrier management, kick tolerance and pore pressures.

Well control concepts – under this topic the delegate will learn about: basic characteristics of geology and rock formations, hydrostatic pressure, U-tube principles, capacities and displacements, static and dynamic wellbore pressure, formation stresses and strength, surge and swab pressures, MAASP, gas behaviour in fluids, the effect of temperature and pressure on drilling fluids, well control in high angle wells, the effects of a tapered drillstring, identifying ballooning.

Mud and pit management – The importance of mud and pit management is explored through: functions and type of drilling fluid, measuring fluid density, fluid contaminants and effect of temperature, maintaining fluid weight, pit management during normal operations, and pit management during kill operations.

Pre-recorded data – The section of the course looks at slow circulation rates, pre-kill kick sheets, kill line fluids.

Abnormal pressure warning signs – Topics covered include: shaker evidence, changes in mud properties, changes in drilling parameters, mud weight management while drilling a transition zone, and trend analysis.

Causes of kicks – An essential requirement is to fully understand the causes of kicks: abnormal formation pressure, mud weight contamination, improper mud weight, loss of circulation, tripping and hole fill, running liners and casing, barrier failure.

Kick prevention during drilling, casing and cementing operations – The avoidance of the need for well control through kick prevention is stressed. Topics include: Tripping operations, handling losses, interpreting a kick from ballooning, wellbore fluid displacement, wireline operations, inflow testing, well control drills, cementing and casing considerations.

Barriers – The importance of robust barrier testing, identification and use is covered in depth. Risk management including: assessing risks, safety margin selection, managing change during a kill operation, handling kill problems, the need for bridging documents and emergency procedures.

Tophole drilling – The special well control case of tophole drilling is discussed with respect of: shallow gas, shallow gas detection methods, options in tophole, cause of underbalance in tophole, tophole drilling and tripping procedures, the correct line up and use of diverters.

Kick detection and shut-in – The need for vigilance in identifying a flowing well is strongly emphasised: well flow with pumps off, pit gains, flow return rate increase, importance of early response and stop work authority. Shut-in methods using hard and soft shut-in are described for drilling and tripping operations and for running casing, wireline and non-shearable tubing. Following shut-in the need for recording shut-in data, monitor for gas migration, trapped pressure, identifying ballooning, opening float valve, equipment line up. Well control drills are described in detail.

Well control methods – This section of the course looks at the basic principles and differences between the constant bottom hole pressure methods including: Driller's Method, Weight and Wait, Volumetric Method, Bullheading and handling gas in the riser, kill problems, pump start up, lube and bleed, stack gas clearing, displacing riser post kill.

Equipment – The equipment section looks at: diverters, equipment alignment and stack configuration, BOP stack, valves and wellhead components, manifolds, piping and valves, drillstring valves, instrumentation, gas detection equipment, BOP closing unit, monitoring equipment, mud gas separator, control chokes and manifolds, stripping and tripping tanks.