



PDHonline Course C270 (3 PDH)

Advanced Oil & Gas Drilling Technology

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Advancements in Oil and Gas Drilling Technology

Terms and Definitions

Blowout Preventer	High-pressure valve used to seal high-pressure drill lines and release high-pressure buildups.
Casing	Pipe used to line and stabilize the borehole.
Clastic	Sedimentary rock made of fragments of preexisting rocks & minerals.
Coalbed Methane	Methane formed in coal seams by microbes or from high heat created at depths of coal.
Coiled Tubing	1 3/5 in and 2 3/8 in diameter continuous pipe used for drilling hydrocarbon reservoirs and pipelines.
Diabase	Igneous rock commonly includes feldspar.
Dilatancy	Property of volume expansion due to deformation and the hydraulic integrity is altered and permeability is increased.
Dip	Angle of fractures, slip planes made with the horizon, measured on rock cores with protractors.
Drill Cuttings	Waste generated during oil well drilling which consist of oil soaked soil and rock.
Drill Strings	Sections of drill pipe connected together with collars.
Extrusive	Having been forced while molten into fissures of other rock.
Flatjack	A flexible steel envelope, thin as a mortar joint, is hydraulically pressurized to apply stress to the surrounding formation.
Intrusive	Having been forced out in molten condition at the earth's surface.
LVDT	Linear Variable Differential Transformer, electromechanical transducer that converts rectilinear motion of an object into an electrical signal for downhole applications
Marine Riser	Vertical pipeline connecting the oil well (sea floor) to the platform (surface). Underwater currents flow around the riser causing vortexes, which induce vibrations in the pipeline.
Mud Pits	Store drilling fluid until needed and allow sand and silt to settle before being reused for drilling.
Packers	The hydrofracture method places packers, expandable cylindrical rubber sleeves, in a borehole to isolate test sections while under water pressure
Proppants	Sand or lightweight ceramics (LWC) added to drilling fluids for fracturing formations. LWCs are less erosive to wellheads and other rig equipment than sand proppants.
Rotary Wash	Boring method used below groundwater levels, borehole sides are supported with casing or drilling mud
Shale Shakers	Shaker/sieve used to separate coarse material from drilling mud.
Slake	Some rocks that crumble when freshly exposed to air, water slaking also occurs
Storm Chokes	Used at offshore wells to detect damages to valves and shut the well down to prevent spills. Installation of safety valves is required at least 100 feet below the mudline. Storm oil losses are limited to oil stored on damaged structure or contained in damaged parts of pipeline.
Underbalanced Wells	Drilling method that reduces hydrostatic pressure in the drilling fluid column causing the formation pressure to exceed that of the wellbore. Viable for drilling in low pressure and depleted reservoirs.