

# Controlled Mud Level

- Controlled mud level systems use a modified riser joint and a subsea pump to return cuttings and mud back to the drilling vessel
- Systems use either an inert gas mixture or light mud in the upper part of the riser over a column of heavier mud
- The pressure gradient/BHP is controlled by adjusting the riser mud level through regulation of the return pump rate
- The BHP can be adjusted for both dynamic conditions (ECD effects), and static conditions (trip/connection margins)
- Changes in the return pump rate/power or the riser fluid level can be used to detect influxes or losses early, thus limiting their size
- The system can be effectively used in water depths over 1,000' with subsea pump placement from 500-ft to 3,000-ft

