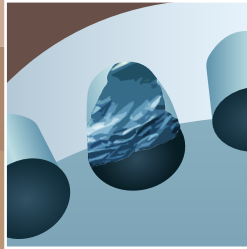
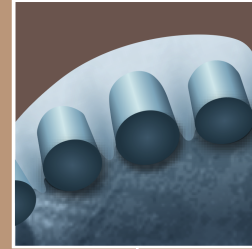


Common Drill Bit Problems Causes and Solutions



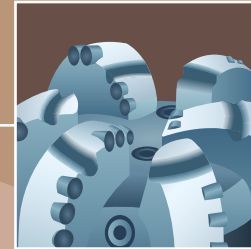
Broken Teeth/Cutters (BT)

- 🔍 Off center rotation of bit. Stick and slip.
- 💡 Use high abrasive and anti-concussion cutters. Adjust BHA.



Erosion (ER)

- 🔍 Bad hydraulic design. High solid content.
- 💡 Optimize hydraulic parameters. Decrease solid content.



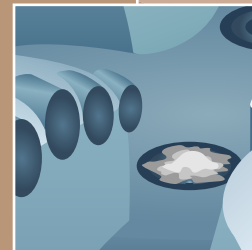
Ring Out (RO)

- 🔍 Uneven oscillation. Lost subject in the hole.
- 💡 Optimize drilling procedures. Rotate off bottom. Apply low RPM and WOB.



Balled Up (BU)

- 🔍 Water sensitive clays. High WOB. Hydrostatic Pressure in wellbore. Low flow rate. Bit nozzle plugged.
- 💡 Decrease WOB. Optimize bit and nozzle selection. Run drilling detergent. Run hi-vis sweeps with nut plug. Add sapp and soap sticks. Increase flow rate. Lift and drop the string. Spin the bit.



Plugged Nozzle (PN)

- 🔍 Formation. LCM or motor rubber. Hydraulic parameters. Mud property.
- 💡 Increase the flow rate off bottom. Lift and drop the drilling strings.