Drilling fluids–commonly called mud are essential in petroleum drilling operations.These adjustments help oil the wheels of drilling operations, a phrase meaning to make processes run more smoothly and efficiently.They cool and lubricate the drill bit, carry rock cuttings to the surface, maintain proper pressure inside the well, and prevent the borehole from collapsing If these fluids fail to perform correctly, drilling may stop, or the well could become unsafe.They may be water–based, oil–based, or synthetic, and include additives such as bentonite, barite, and polymers to control thickness, density, and filtration.Researchers are developing nanoparticle muds, biodegradable polymers that are already in the pipeline that is, being tested or prepared for use.New technologies are improving drilling fluids.