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phase inversion"; "1.2.6 Foam drilling"; "1.2.7 Chemically enhanced drilling"; "Temperature and salinity effects"; "1.2.8 Supercritical carbon dioxide drilling"; "1.3 Additives"; "1.3.1 Thickeners"; "Polymers"; "pH responsive thickeners"; "Mixed metal hydroxides"; "1.3.2 Lubricants"; "Hagfish slime"; "1.3.3 Bacteria"; "1.3.4 Corrosion inhibitors"; "1.3.5 Viscosity control"; "1.3.6 Clay stabilization"; "1.3.7 Formation damage"; "1.3.8 Shale stabilizer"; "1.3.9 Fluid loss additives"; "Water swellable polymers"; "Shear degradation of lost circulation materials"; "Anionic association polymer"; "Fragile gels"; "Aphrons"; "Permanent grouting"; "1.3.10 Scavengers"; "Oxygen scavenger"; "Hydrogen sulfide removal"; "1.3.11 Surfactants"; "Surfactant in hydrocarbon solvent"; "Biodegradable surfactants"; "Deflocculants and dispersants"; "Shale stabilizing surfactants"; "Toxicity"; "Defoamers"; "1.3.12 Hydrate inhibitors"; "1.3.13 Weighting materials"; "Barite"; "Ilmenite"; "Carbonate"; "Zinc oxide, zirconium oxide, and manganese tetroxide"; "Hollow glass microspheres"; "1.3.14 Organoclay compositions"; "Biodegradable organophilic clay"; "Poly(vinyl neodecanoate)"; "1.3.15 Miscellaneous"; "Reticulated bacterial cellulose"; "Scleroglucan"; "Uintaite"; "Sodium asphalt sulfonate"; "Formation damage by gilsonite and sulfonated asphalt"; "Illitic sandstone outcrop cores"; "1.3.16 Multicomponent additives"; "1.4 Cleaning operations"; "1.4.1 Cuttings removal"; "1.4.2 Junk removal"; "1.4.3 Filter cake removal"; "1.5 Drilling fluid disposal"; "1.5.1 Toxicity"; "1.5.2 Conversion into cements"; "1.5.3 Environmental regulations"

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## Sommario/riassunto

The oil and gas engineer on the job requires knowing all the available oil field chemicals and fluid applications that are applicable to the operation. Updated with the newest technology and available products, Petroleum Engineer's Guide to Oil Field Chemicals and Fluids, Second Edition, delivers all the necessary lists of chemicals by use, their basic components, benefits, and environmental implications. In order to maintain reservoir protection and peak well production performance, operators demand to know all the options that are available. Instead of searching through various sources

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