

Nigerian Drilling Platforms

Wastewater on a self-contained drilling platform comes from several sources. The following examples are samples obtained from the seven oil-drilling platforms off of the coast of Nigeria. The first platform had samples from the industrial laundry, kitchen, emulsified, cutting oily-water and drilling mud. The samples were treated individually and then combines so as to simplify the platform operations with only 2 treatment systems. All samples treated easily with the FloccinAgents. To meet reuse or discharge limits, post treatment with micro-filtration and reverse osmosis will be added to the treatment process.

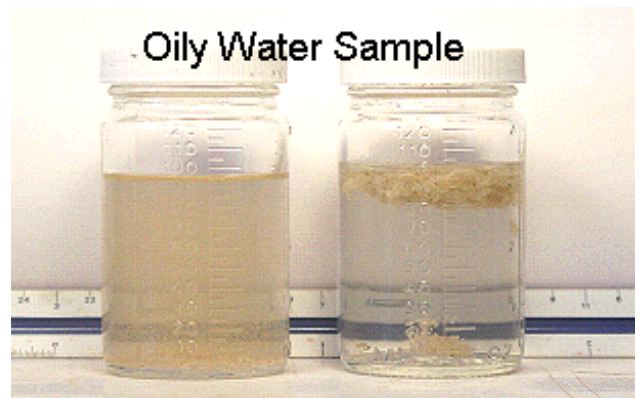


The Industrial Laundry sample was received at a pH of 6.6. It treated easily with Floccin at a dosage of 0.12 grams in 100 ml or about 10 lbs/1,000 gallons.

Constituent	Untreated	Treated
TDS	472.5 ppm	673 ppm
Conductivity	905.1 μ S	1,363 μ S
Suspended solids	335 ppm	15 ppm

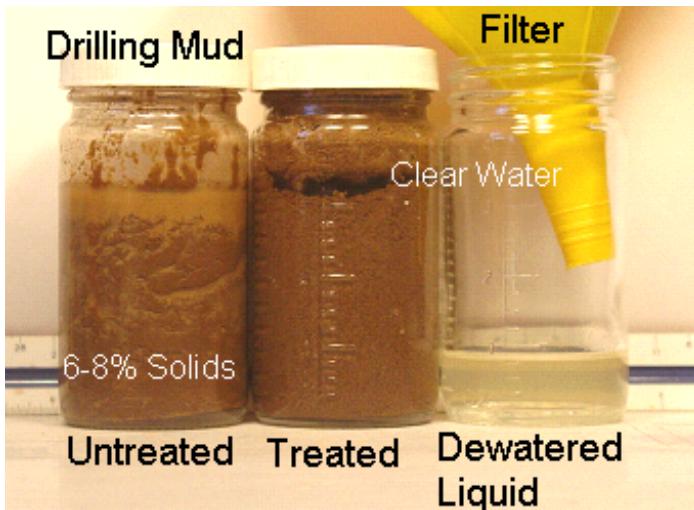
The Oil/Water sample was received at a pH of 8.5. The sample was treated with Floccin at a dosage of 0.1 gram/100ml or 8.3 lbs/1,000 gallons. Note the drop in TDS/Conductivity.

Constituent	Untreated	Treated
TDS	9,006 ppm	8,977 ppm
Conductivity	15.33 mS	15.29 mS
Suspended solids	171 ppm	56 ppm



The Kitchen Wastewater sample was at a pH of 5.0 so caustic was added to bring it up to 6.0. The sample was treated with Floccin at a dosage of 0.1 gram/100ml or 8.3 lbs/1,000 gallons. Note the drop in TDS/Conductivity.

Constituent	Untreated	Treated
TDS	557.1 ppm	457.3 ppm
Conductivity	1,063 μ S	876.2 μ S
Suspended solids	421 ppm	11 ppm



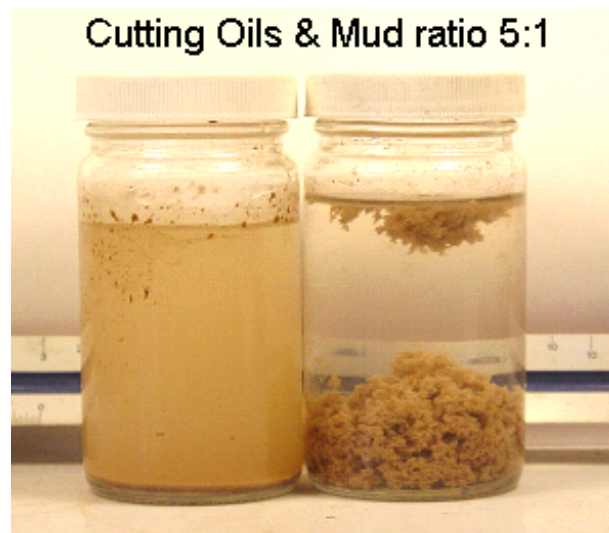
The Drilling Mud sample was at a near 7.0 pH. The sample dewatered well using 1.2 grams per 100ml sample making fairly clean water. The sludge dewatered further with pressure from squeezing.

Constituent	Untreated	Treated
TDS	12.41 ppt	42.04 ppt
Conductivity	65.5 mS	65.5 mS
Suspended solids	6-10% solids	85 ppm

Combined Wastewater Samples

The 50% Kitchen to 50% Laundry wastewater sample was at a pH of 5.0 so caustic was added to bring it up to 6.5. The sample was treated with Floccin K at a dosage of 0.1 gram/100ml or 8.3 lb s/1,000 gallons.

Constituent	Untreated	Treated
TDS	411 ppm	515 ppm
Conductivity	790 μ S	912 μ S
Suspended solids	250 ppm	12 ppm



The 1 part Drilling Mud to 5 parts Cutting Oils wastewater sample was at a pH of 6.5. The sample was treated with Floccin at a dosage of 0.1 gram/100ml or 8.3 lbs/1,000 gallons.

Constituent	Untreated	Treated
TDS	9,566 ppm	9,865 ppm
Conductivity	16.25 mS	16.74 mS
Suspended solids	1,375 ppm	61 ppm