

HEAVY-DUTY HDD

HDD DEFENSE

PRODUCT DESCRIPTION

HDD DEFENSE is blend of environmentally safe sealants and swellable materials designed to remediate frac outs and inadvertent return events in HDD applications.

Designed to be applied at the onset of inadvertent returns, HDD Defense should be spotted as a pill on bottom (or near the frac out), with typical concentrations varying from 1 – 1.5 lb/gallon.

Application Overview: At the onset of inadvertent returns, pumping should be stopped while mixing the HDD Defense pill. Isolate a mixing tank suitable of holding the desired finished volume, and fill with fresh mud. Add the required HDD Defense through the mixing hopper. Once the pill is mixed, the entire pill should be picked up and pumped down the drill pipe. Chase the pill with active mud until the tail of the pill is outside of the bit. Stop pumping and pull pipe out of the hole to position the bit behind the tail of the pill. Begin circulating at a slow rate while monitoring returns. Stage the pumps up slowly and circulate behind the pill for 1-2 hours to allow the material to create a seal. Wash and ream to bottom pumping sweeps with Drill Seal as needed to prevent further frac outs.

GENERAL MIXING INSTRUCTIONS

Gallons of fresh mud	HDD DEFENSE
1,000	50 Sacks
2,000	100 Sacks
4,000	200 Sacks

The above mixing instructions are based on average dosages. Actual dosages in the field may vary based on soil and drilling conditions.



PRODUCT ADVANTAGES

- Effectively seals inadvertent returns
- Easily mixed in the mud tanks
- Compatible with all drilling fluid types
- Environmentally friendly

PHYSICAL PROPERTIES

- Appearance: Light tan fibers and granules
- Bulk Density: 1.85 SG

PACKAGING

- Available in 25 lb bags/100 bags per pallet; palletized and shrink wrapped.



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