

## **Emergency Faecal Sludge Management (FSM) Plant** **Standard Operating Procedure**

### **Purpose**

To safely manage and treat faecal sludge in Bentiu Camp in the event where the waste stabilization ponds are inaccessible.

### **Scope**

This document provides details the process of operating emergency FSM plant in Bentiu IDP camp

### **Procedure**

1. Raw sludge is pumped from desludging trucks to T70 holding tanks\*2 until 50cm space remains from the top of the tank.
2. Position an iron mesh sieve to filter out bottles and other waste dumped in the sludge pit.
3. Measure and record the pH of the raw Sewage.
4. Transfer 25m<sup>3</sup> sludge to lime stabilization tank (30m<sup>3</sup> metal frame tank).
5. Separately, using a 2m<sup>3</sup> PE tank, pump 1.5m<sup>3</sup> water at the same time adding 600kg lime one bag at a time (24 bags of 25kg ). Position the hose at an angle to ensure a circular flow and the lime is thoroughly mixed with water creating a slurry.
6. The pH of the sludge is then raised to remove pathogens. This is done by pumping the lime slurry to the lime stabilization tank using a 3" centrifugal pump. Ensure lime/sludge is well mixed by either pumping or mixing manually.
7. Monitor pH during the addition of lime until pH reaches minimum of 11.5, check again after 30mins. Allow sludge to settle for a period of between 16 to 24hrs.
8. Supernatant is then pumped into a settlement tank using 3" centrifugal pump.
9. Supernatant can be used to mix lime to create lime slurry (thereby reducing lime consumption) or added to raw sludge to decrease viscosity.
10. Measure and record the pH of the final effluent before discharge into the flood water.
11. Measure and record the pH of the receiving flood waters.
12. Remaining supernatant is diluted with floodwater and discharged back into floodwater. Treated sludge is pumped from the lime stabilization tanks to the drying bed (0.1m cake). Drying on average takes 4-7 days depending on the prevailing weather conditions and overall sludge volume is reduced by 90%
13. Take the dry sludge into sand bags for safe disposal

**treat 1m<sup>3</sup> sludge is between (20-25kg/m<sup>3</sup> sludge)**