



ENVIRONMENTAL WATER TREATMENT SOLUTIONS

WaterSolve
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Overloaded Digester Requires Geotube® Dewatering Process

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The Challenge

This plant operator had heavy concentrations of residual in the digester that was causing upsets in the digestive process. He wanted a low cost system to dewater the biosolids and make use of the drying beds.

Chemical Conditioning

A representative sample of the digester residual was sent to the WaterSolve lab where it was tested. Dewatering polymers were evaluated based on water release rate, water clarity, and flocculent appearance. In addition, dosing rate(s) were determined during bench-top dewatering experiments and recommendations provided to the plant during this phase of the program. Solve 218 B was chosen as the most effective polymer for this residual.

Geotube® Container Sizing

Geotube® containers are manufactured from high strength polypropylene fabric and designed to allow effluent water to escape through the pores of the fabric while retaining the chemically-conditioned solids. A 30' circumference by 40' long Geotube® was determined to fit the best in the drying bed at this plant.



The WaterSolve technician trained the operators to attain a floc that looked like this when adjusting the dose of polymer.



This Geotube® container fits very well in the middle drying bed. Some pallets were placed under the tube to allow better drainage and access into the sand in the center of the drying beds.



WaterSolve provided a polymer make-down unit as seen in this photo. The made-down polymer is injected into one of the ports of the manifold on the berm of the drying beds.

This structure has 3 area partitions. The biosolids sent to the Geotube® container come from the 3rd partition with the oldest biosolids.

The Solution

The plant purchased a polymer make-down unit from WaterSolve and it was shipped with the Geotube® container prior to the arrival of a WaterSolve technician. On arrival, the technician assembled the polymer make-down system and showed the plant operators how to deploy the Geotube® container. Jar testing was performed with some of the biosolids from the digester prior to the startup to determine the estimated dose of polymer. A valve, operating flow to the manifold at the drying beds, was opened gradually until the desired flow was attained. The technician trained the operators how to view samples of treated biosolids from a sample port in the pipeline prior to the Geotube® container. Adjustments were made to the polymer make-down unit based on these observations. The flow was estimated at 100-gpm. The plant operator ran the system for 2 hour which lowered the concentration of solids in the digester. He was amazed how simple the system came together with minimal cost.