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Biosolids Overload Relieved With Geotube® Dewatering

Objective

The drying beds at this Wastewater Treatment Plant were nearly full to capacity with biosolids from the digester. The facility manager searched for alternative dewatering processes to drain down the digester that were economical and efficient. The objective was to acquire a process to economically dewater the biosolids and relieve the plant from overload status. Several options were available including a trailer mounted centrifuge, a trailer mounted belt press, a filtering box and a Geotube® container. The site manager selected Geotube® containers for their low cost of operation, variable flow rate, rapid dewatering, and use of on site labor to operate. The project was started on March 10, 2009.

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. The 100 ft. long drying beds on site were an ideal lay-down and containment area for two 45 ft. circumference by 100 ft. long (390 cu. yd.) GT500 Geotube® containers.

Chemical Conditioning

The facility manager indicated polymer in use at the WWTP was tested and performed adequate for dewatering the digester biosolids.

The Result

WaterSolve was contracted by the facility manager to deliver 2 - 45ft circumference x 100 ft. long Geotube® containers, assemble the hoses and mixing manifold, plumb the WSLP-2400 polymer make-down unit, optimize the polymer, and train the employees on operating the equipment. WaterSolve personal arrived at 8:00 am and instructed the employees on installing the polymer make-down unit with a water supply and a tote of polymer. The made-down polymer hose was connected to an injection port on the 6" biosolids supply pipeline coming from the digester. A mixing manifold, sample port, lay-flat hose and a Geoport® were assembled and installed to connect the biosolids supply line to the Geotube® container. At 11:00am the Geotube® container was ready for the process to begin. A 150-mL jar test of the residual indicated 133-ppm of the polymer would be the proper dose and 150-gpm was the estimated gravity flow to the

Inside this issue:

Location:

California

Products:

*TenCate™ GT500D
Geotube® Containers*

Equipment:

*WSLP-2400 Polymer
Make-down unit
Mixing Manifold
Sample and injection ports*

Geotube® container. The polymer make-down unit was set to deliver 1.25-gph of polymer. An hour into the operation a pump was started and the flowed doubled to 300-gpm. The polymer setting was raised to 2.5-gph. Within the first week of operations the facility manager reported he put the equivalent of five drying beds of biosolids into one of the Geotube® containers and he was very happy with the results.

 **TENCATE**
Geotube®



A 45' circumference by 100' long Geotube® container is dewatering in the drying bed.



The WSLP-2400 polymer make-down unit is delivering 2.5-gph of polymer to the 300-gph stream of biosolids.



The blue soft hose transfers the chemically treated biosolids to the mixing manifold and Geotube® container.