TENCATE Geotube

FYI
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Geotube® Dewatering Technology Solves Lagoon Cleanout for Mexico's Largest Chicken Processing Plant

Geotube® units used to solve immediate need for fast, cost-effective dewatering to keep plant in operation and allow plant expansion.

Mexico's largest chicken processing plant was experiencing high levels of BOD discharge into the local river because their two sludge lagoons were full of high percentage solids sludge. The plant was expanding operations and had no place to store the additional sludge that would be generated, nor did it have any onsite means of removal and dewatering.

The problem was compounded because the excess BOD discharge exceeded their operating permit limits and local environmental regulators were requiring immediate action or the plant would face an imposed shutdown.

TenCate develops and produces materials that function to increase performance, reduce cost, and deliver measurable results by working with our customers to provide advanced solutions. For this situation, Geotube® dewatering technology proved to be the solution.

The plant environmental management team contacted the TenCate Geotube distributor in Mexico City, GyG, to ask for a solution that could be implemented almost immediately and less expensively than the traditional mobile mechanical dewatering or pump and haul lagoon clean out methods. GyG reviewed the challenge and presented the plant with a strategy utilizing Geotube® dewatering technology.

Dewatering with Geotube® technology is a three-step process. In the confinement stage, the Geotube® container is filled with dredged waste materials. The Geotube® container's unique fabric confines the fine grains of the material. In the dewatering phase, excess water simply drains from the Geotube® container. The decanted water is often of a quality that can be reused or returned for processing or to native waterways without additional treatment.

Geotube® units installed on a baseball field next to the plant lagoons. Dewatering with Geotube® technology was extremely effective and was accomplished in much less time and with less expense than mechanical dewatering. If needed, more units could be stacked on top of these.

In the final phase, consolidation, the solids continue to densify due to desiccation as residual water vapor escapes through the fabric. Volume reduction can be as high as 90 percent.

After an initial site visit, GyG and TenCate Geotube recommended that the plant convert the onsite baseball field to a Geotube® dewatering cell by placing an impermeable liner on the field surface over which a three-dimensional net to facilitate drainage could be placed. Then the first of two layers of 90' circumference GT 500 Geotube® units could be unrolled in the cell.

After filling and dewatering, a second layer of Geotube® units could be installed if necessary. The sludge could be pumped from the lagoons by an 8" auger head dredge to the Geotube®

(More)

dewatering system through a manifold system. It was recommended that a cationic polymer be utilized to flocculate the sludge and accelerate dewatering and to improve the quality of the effluent. This polymer could be blended on site in 500-gallon mix tanks and injected in line.

THE RESULTS

Over a period of 90 days, more than 25,800 m^3 of 12% solids were removed from the two onsite lagoons by the 8" auger head dredge and pumped into seven 90' circumference x 217' long and five 90' circumference x 188' long GT 500 Geotube® units for dewatering. The entire dredging and dewatering functions were conducted without a single interruption of plant operations.

The dredge bulked the sludge to 5% solids for pumping, which resulted in more than 62,000 m^3 being pumped through the Geotube® dewatering system. Effluent from the Geotube® units was clear with more than 95% of the solids being removed. The two onsite lagoons have been restored to operating levels and discharge into the adjacent river are below BOD permitted limits. The sludge is continuing to dewater in the Geotube® units and will be made available to local farmers for fertilizer.

To learn more, visit www.geotube.com or call 1-888-795-0808.

The lagoon in danger of overflowing.

The dredge in operation.

Effluent analysis showed more than 95% of solids removed.

Water drainage shows effectiveness of Geotube® units.

How Geotube® Dewatering Technology Works

Dewatering with Geotube® technology is a three-step process.

In the ***confinement*** stage, the Geotube® container is filled with dredged waste materials. The Geotube® container's unique fabric confines the fine grains of the material.

In the ***dewatering*** phase, excess water simply drains from the Geotube® container. The decanted water is often of a quality that can be reused or returned for processing or to native waterways without additional treatment.

In the final phase, ***consolidation***, the solids continue to densify due to desiccation as residual water vapor escapes through the fabric. Volume reduction can be as high as 90 percent.

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