

Geotube® Dewatering Technology Helps Manage Wastes From Power Generation

Power generation by-products such as fly ash and bottom ash can be a real challenge to remove and manage. But a simple technology allows facilities large and small to easily consolidate these materials—and make adjustments as needed based on volume.

It's called Geotube® dewatering technology, and it involves pumping sludge through a specially designed fabric container. The water filters through; the fly ash or other solids remain, in a form where they can be easily and economically removed.

Facilities around the nation have used Geotube® dewatering technology with remarkable success. It provides a solution that is more efficient, less costly, and easier to manage than complicated mechanical dewatering.

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 project, TenCate Geotube dewatering technology provided the answer.

At a powerplant in Camden, TX, Geotube® dewatering technology was used for dewatering a lagoon containing approximately one million gallons of boiler ash, with solids 2.6% by dry weight. Previous dewatering attempts using a long stick Trac Hoe were only partially successful, and the sludge had been laid up on the bank of the lagoon to dry—not an ideal approach.

However, by using Geotube® dewatering technology, the facility was able to remove and dewater practically all the solids in the lagoon. After 30 days, the material inside the Geotube® units had consolidated to 37% solids. It is estimated that this approach saved the powerplant more than \$60,000 annually. Plus, the material could be recovered and used for road base applications.

At a facility in North Carolina, Geotube® dewatering technology was used with a two-



Geotube® dewatering technology in use. Water drains from the specially designed fabric bags, while the solids are trapped behind, making removal and recovery simple and cost effective.

fold purpose to increase the capacity of its ash lagoons. Geotube® units were used to dewatering the material in the lagoons, and they were also used to raise the height of the lagoon, effectively adding capacity.

With Geotube® dewatering technology, solids increased from 22.5% to 60% in the first 30 days, and the waste material was transformed into a useful structure. This lengthened the useful lagoon life by more than two years, and the success at this one location led to the adoption of Geotube® technology corporate-wide.

“The effectiveness and simplicity of Geotube® dewatering technology makes it a natural choice for power generation operations,” notes Pete Kaye, Business Specialist for TenCate Geotube. “This industry must deal with a number of different dewatering challenges, and the flexibility of Geotube® dewatering technology makes them easy to manage.”

(More)



Geotube® dewatering technology can be used for large and small projects. The individual Geotube® units can be as long as 200 feet with a circumference up to 65 feet. Units can even be stacked if space is at a premium.

Better yet, the technology can be deployed almost anywhere. At a powerplant in Tampa, FL, space limitations made it difficult to use many dewatering systems. But a Geotube® dewatering system was temporarily deployed in a parking lot to remove and dewater the sludge in a lagoon.

Custom-sized units were created to fit the available space, and concrete highway barriers were used to hold the Geotube® units in place while in use.

Dewatering was remarkably efficient. Solids were in the range of 75% to 85%, and the effluent quality was very high.



And for many applications involving fly ash, there is no need for additives to induce floccing of the material. Fly ash can typically be pumped directly into the Geotube® unit without polymer additives, which keeps costs even lower.

“Geotube® dewatering technology is an ideal solution for this industry. It can be easily adjusted to the size and capacity of the project at hand, and costs are minimal compared to other dewatering approaches,” Kaye said.

Kaye said his company has a presentation that provides complete details on Geotube® operation and effectiveness. To learn more, call 1-888-795-0808 or visit www.geotube.com.



A Geotube® unit opened to show the dewatered ash inside. Often the material can be recovered and reused.

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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.



Step 1: Filling



Step 2: Dewatering



Step 3: Consolidation

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