



4964 Starr St. SE  
Grand Rapids, MI 49546  
Phone: (616) 575-8693  
www.gowatersolve.com



## Dewatering Water Filtration Plant Residuals

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**Location:**  
New York

**Products:**  
TenCate™ GT500D  
Geotube® Containers  
Solve 154 Polymer

**Equipment:**  
WSP-2400 Polymer  
Make-down unit  
Mixing Manifold  
Sample and injection ports



Water treatment residual storage lagoons were near capacity prior to commencement of the project.

### Objective

Storage lagoons at the Water Filtration Plant in New York were nearly full with water treatment residual from their backwash operations. The facility manager, searched for alternative dewatering processes to remove residuals from the lagoons that were economical and efficient. The overall objectives of this project were to dewater the residuals as needed to make room in the lagoons and allow for economical disposal of the dewatered materials. Several options were available including a trailer-mounted centrifuge, a trailer-mounted belt press, a filtering box, and TenCate™'s Geo-

tube® dewatering system. The manager selected the TenCate™'s Geotube® containers for their low cost of operation, ability to accept variable flow rates, rapid dewatering rates, and use of on-site labor to operate. The project was initiated in June, 2009.

### TenCate™ Geotube® Container Sizing

TenCate™ 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. Based on the available area and the volume of material to

be processed, a 30-ft circumference by 100-ft length Geotube® container was selected.

### WaterSolve's

### Conditioning Chemical

On-site testing was conducted by WaterSolve to select the dewatering polymer for this application. Dewatering polymers were evaluated based on water release rate, water clarity, and flocculent appearance. Dosing rates were determined during these on-site dewatering trials. WaterSolve recommended Solve 154 at a dose of 200-ppm in order to achieve optimum solids concentrations in the container and filtrate clarity.

### The Result

WaterSolve, LLC and Peter Kaye (TenCate™) were contracted by Water Filtration Plant to provide and assist in the installation of TenCate™ Geotube® dewatering system. This consisted of a 30-ft circumference by 100-ft long Geotube® container, a WSLP-2400 polymer make-down unit, mixing manifold, and other appurtenant piping and valves. WaterSolve and Peter Kaye were also tasked with optimizing and adjusting the polymer dose, and training the on-site employees to operate the equipment.

We instructed Water Filtration Plant employees on installing the polymer make-down unit with a suitable water supply and drums of Solve 154 polymer. The made-down polymer piping was connected to an injection port on the discharge coming from the lagoons. A mixing manifold, sample port, lay-flat hose and a Geoport™ were assembled and installed to connect the residual supply line to the Geotube® containers.

An on-site jar test was done of the residual, to verify the suitable polymer dose. One hundred and fifty gpm was the estimated flow of water treatment residual from the lagoon to the Geotube® container. The polymer make-down unit was set to deliver 1.25-gph of polymer. Within the first week of operations, the facility manager reported he had placed an entire lagoon of water treatment residual into the Geotube® container and he was extremely pleased with the results.



The lagoon residuals were homogenized by high-pressure spraying. The Geotube® container is being filled and is dewatering properly.



The sample port was used to collect conditioned residuals to verify polymer dose prior to transfer to the Geotube® container.



The Geotube® container after filling commenced.