

MUNICIPAL WASTE DISPOSAL SYSTEM CFB VALCARTIER, QUEBEC, CANADA

Geotextile Tubes for Slurry Dewatering Products: MacTube™ Geotextile Tubes

Problem:

In an effort to make the most of tight budgets for military base operations, the Canadian Armed Forces have started to look at alternative methods to deal with the municipal waste sludge that result from operating the small cities that military bases truly are. In lieu of purchasing and operating expense mechanical belt presses to dewater the sewage sludge after primary treatment, a number of bases are trying a new, economical process to solve the problem of trying to separate the waste solids from the waste effluent. During the spring of 2008, the military issued a tender call for the supply of geotextile tubes for use in a municipal waste dewatering facility located at CFB Valcartier. The base is located near Quebec City.

A geotextile tube or container can be used for dewatering a wide variety of wet slurries, wastes, and sludges, as well as erosion protection for coastal and river structures.

Solution:

Maccaferri Canada Ltd. was awarded the contract to supply 5 MacTube™ geotextile tubes, 15.2m long by 9.1m in circumference. Based upon the operations of the waste water treatment plant, the five tubes were sufficient to treat all of the municipal sludge that would be produced by the plant during the next year.

Once the municipal waste has undergone primary treatment, it is pumped into a series of geotextile tubes that have been laid out in concrete draining beds that allow for the geotextile tubes to dewater and the effluent to be collected for further treatment. The tubes are connected through a manifold that allows for the continual operation of the wastewater treatment plant, but a controlled use of the geotextile tubes. This allows for a rotating operation where some tubes are draining at the same time as other tubes are on-line in the treatment process.

MacTube™ containers are constructed of high-strength woven geotextile fabrics that are strong and durable. The geotextile fabric is woven in a rip-resistant weave pattern for maximum resistance to damage. MacTube™ containers are filled with a slurry through a reinforced port using a hydraulic pump. The porosity of the geotextile fabric allows excess water to drain from the tube resulting in an effective and relatively inexpensive method of dewatering. In some instances, environmentally safe



Owner/Operator:

Department of National Defence

Products used:

MacTube™ Geotextile Tubes

Date of operation

2008

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polymers are added to aid in coagulating solids and releasing water. As the excess water drains, the tube can be refilled multiple times. Once the tube is filled to capacity, the material inside will continue to dewater. The amount of dewatering time depends on the type of material being dewatered, the use of polymers and other site conditions. After dewatering is completed, the tube can be cut open and the solid material removed and disposed of in a landfill or disposed of in other methods as a solid.

MacTube™ geotextile containers are the perfect solution for dewatering when space is limited. With a small foot print and the ability to stack tubes, you can set up a dewatering operation just about *anywhere*.

For more information on the MacTube™ or any other Maccaferri geosynthetic solutions, contact any one of our regional offices.



MacTubes™ connected via manifold to Treatment Plant



MacTube™ in early stage of filling operation



MacTube™ in full operation

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