Geotube® Sludge Management System in North Rustico

A simple, effective dewatering technique has enabled North Rustico, PE to take control of their sludge management while saving thousands of dollars in trucking costs. Their previous plant was undersized, located in the centre of town on the waterfront and prone to flooding especially during large rain fall events. This had an impact on the town and the local fishery. Their only form of sludge management was to have the sludge was mostly water trucked away to another town for treatment and disposal at great expense.

The Community decided that it was necessary to build a new plant and the location decided upon was the old town dump site. This site had several advantages. Its proximity to the centre of town, the land could not be used for development, and the department of environment would allow sludge from the Geotube® containers to be used as ground cover at the site.

The decision was made to build an SBR plant which was engineered and supplied by Xylem. The SBR plant was built to meet North Rustico’s present and future needs. The sludge management system was designed and delivered by Bishop Water and Scotia Tech Fluid Services. The Geotube® dewatering system is a 3 stage process.

Step 1) As sludge is pumped into the Geotube® it is mixed with a pre-selected polymer that combines the solids into a flock which separates 75 to 80% of the clear processed effluent to pass through the Geotube® with the solids remaining inside the Geotube®. The treated effluent is then returned to the head works of the plant where it is eventually treated with UV lights and discharged.

Step 2) The sludge which remains in the bag undergoes digestion.

Step 3) The sludge in the bag further undergoes composting while in the Geotube®. If the Geotube® can go through a freeze/thaw cycle it will further de-water and lose up to 1/3 of its volume as it thaws allowing the Geotube® to possible used for another season.

North Rustico also decided to construct a greenhouse to facilitate the ability to dewater during winter months should their sludge storage capacity not last until the spring thaw. The operators purchased and redesigned a trailer which will allow them to de-water in the greenhouse during the winter months and remove it and let it continue to dry outside during the summer.

Treated filtrate from Geotube®

Polymer mixing piping

Geotube® and greenhouse