

Segflo®

Recirculating Biotower



Treating High-Strength Wastewater from Food Preparation and Meeting Stringent Effluent Criteria

Client: Loblaws' Atlantic Superstore, NS, Canada

Located near the busy capital of Halifax, Nova Scotia and the wildly popular town of Peggy's Cove, Loblaws' Atlantic Superstore in Upper Tantallon is part of a new wave of large-scale grocery stores offering wide selections of foods, including fresh fruits and vegetables, choice meats and seafood, baked items and prepared take-out and ready-to-eat meals cooked onsite in the grocery store's kitchens. Food preparation activities typically generate high-strength wastewaters – a treatment challenge Premier Tech Aqua (PTA) has had great success with over the years. Located in an area of Nova Scotia not connected to the municipal sewer line, the wastewater treatment plant PTA installed in Tantallon has delivered exceptional results in term of effluent quality.

Challenge

High strength organic loads (up to 820 mg/L in CBOD₅, 200 mg/L in TSS and 86 mg/L in O&G) generated by the food preparation as well as the fish and meat counters could not be addressed properly by conventional wastewater treatment systems.

The solution needed to treat up to 18 m³/d in conditions of important flow and load variations and a context where customer traffic can greatly vary depending on the day of the week or if the store is welcoming many tourists.

Meeting Loblaws' objectives of operating a supermarket which respects the environment and continues to meet all governmental environmental criteria regarding effluent, the Segflo® high-performance treatment plant from PTA was deemed to be the best solution to implement.



Case Study





Solution

The engineering firm F. Meloche Ingénieurs recommended the Segflo® Recirculating Biotowers – PTA’s solution for high-strength wastewater treatment. 50% more compact than conventional activated sludge systems, the treatment station handles flow and strength variations with high-efficiency. Designed to respect the strictest effluent norms, it also offers the following advantages:

- Robust system providing stable performances – even during peak periods and load variations
- Fully automated and supervised operating system for simple operations, maintenance and low energy consumption

Partners involved in the project capitalized on the expertise, skills and collaboration of local and regional suppliers to complete their project:

PTA’s process and engineering team designed the wastewater treatment station and HMJ Consulting Ltd of Halifax planned the site works and configuration of the components. Kynock Resources Ltd of Hammonds Plains performed the excavation work and concrete components were cast and assembled locally by The Shaw Group Ltd.

The Segflo® treatment chain is comprised of two trains of two recirculating biotowers coupled to the Ecoflex® textile filter and a tertiary treatment unit using ultraviolet (UV) light for the final stage of effluent disinfection.

Results

After one year of operation, the performances of the Segflo® wastewater treatment station have provided exceptional results.

Parameters	Effluent Quality Requirements	Average Performances
DBOD ₅	10 mg/L	< 5 mg/L
TSS	10 mg/L	< 7 mg/L
pH	6.5 to 9.0	7.1
Fecal coliforms after UV treatment	< 200 CFU/100 mL	< 5 CFU/100 mL

A Level IV NS Certified Wastewater Treatment Operator carries out the annual surveys and periodical sampling visits to ensure the treatment plant performs as planned.

Industry professionals agree that proper, regular and yearly maintenance and verifications remain imperatives to achieve optimal treatment performances for years to come.

The new Segflo® Recirculating Biotower system of the Tantallon Atlantic Superstore was fully operational by August 2010.

“HMJ Consulting designed site works, coordinated regulatory permitting and supervised the successful commissioning of the plant – it’s an owner-friendly operation that has presented no performance issues. The representatives of Premier Tech Aqua executed the project professionally and on time. They were a pleasure to work with!”

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