

MBR

MBR system treats variable flows and organic loading in a modern building for newly-developed residential area

APPLICATION: Municipal Wastewater

CAPACITY: 400 m³/d (0.105 MGD)

LOCATION: St-Alphonse de Granby,
Quebec, Canada

COMMISSIONED: August 2016

BACKGROUND

St-Alphonse de Granby is a municipality within the La Haute-Yamaska Region of Quebec, located about an hour east of Montreal. In 2015, due to planned construction of approximately 200 residences and light commercial buildings, the municipality requested a proposal for sewer upgrades including installation of sanitary sewer lines, pump stations, and a municipal wastewater treatment plant including a building and associated civil works.

SOLUTION

Based on the site space constraints and effluent water quality requirements, H2O Innovation proposed a flat sheet MBR system using Toray TMR140-100S membranes. The system is comprised of three biological trains, with two membrane modules per train. This design was selected to accommodate the expected augmentation in demand over the construction period. Trains are modular, designed to be commissioned individually as average flows increase.

Working in collaboration with the engineer and mechanical contractor, H2O Innovation provided the mechanical equipment for the wastewater treatment plant: fine screens, equalization tank equipment, aerobic biological treatment, membrane equipment, and sludge holding equipment.

In order to minimize building footprint, the majority of the tankage and equipment was installed in buried concrete tanks. Common equalization and sludge holding volume was provided in below grade concrete tanks, and the three biological trains, each comprising of an aerobic bioreactor tank and membrane tank, were installed below the mechanical building. The mechanical building itself provides the space for membrane access, permeate skids for the three membrane trains, electrical controls and chemical dosing equipment.

H2O Innovation also provided value added services to the municipality by taking on the plant operations and water quality testing. Because of its strong local presence, staff is available to operate, troubleshoot and communicate effectively with respect to all plant operations.



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RESULTS

While actual plant influent during operation has been variable and has frequently exceeded expected influent design criteria, the plant performance on BOD and TSS removal has been consistently within effluent limits.

