



Infiltrator® Quick4® Chambers Meet Quebec's Provincial Wastewater Treatment Regulations

New Treatment and Disposal System Solves Transportation Center Woes

Project

Replacement of a malfunctioning 30-year-old wastewater treatment system servicing a Transportation Center.

Installation Date

November 2007

Engineer

Roy Vézina et associés
A/S de Christian Vézina, ing.

Contractor/Installer

Roger Dion et fils
A/S d'André Dion

Owner

Société Immobilière du Québec
A/S d'Yvon Proulx

Distributor

MEI Assainissement
A/S de Maxime Saint-Onge

Daily Flow Estimate

1585 US gallons per day
(6.0 cubic meters per day)



When the 30-year old wastewater treatment system servicing a Transportation Center located in the Eastern Townships, in Quebec, began to show signs of failure, it was time to look for an alternative solution or a replacement system. Due to the low density of population in the area, no centralized treatment system was available in the vicinity. Therefore, a full review of all possible options for the design and installation of a new onsite wastewater treatment system was required.

The existing system, which included a septic tank, siphon chamber and a distribution field, serviced a truck repair shop on site in addition to the administrative offices for the employees of two regional buildings owned by the government of Quebec. The need to continue operations with minimal site disturbance and to conserve as much space as possible for operations was crucial in deciding the replacement design. A number of technologies were considered including the construction of a new leaching bed, infiltration trenches, above ground sand filters, classic sand filters and an advanced treatment system with discharge to a municipal ditch.

Taking into account the sensitivity of the property, the high water table and wet surrounding in close proximity, and the narrow lot configuration, a trench type soil absorption system was ultimately chosen that includes 336 Infiltrator® Quick4® Standard chambers. The Infiltrator Chamber System was selected in part because it meets all of Quebec's provincial wastewater soil treatment regulations with respect to lot size, soil type and absorption bed design. Use of the Infiltrator Quick4 Standard Chambers also resulted in reduced transportation costs for the project due to their light weight, as well as lessened the overall construction window including the actual installation time for the disposal field.

The final system design includes a 2550-US gallon septic tank (9.6 cu. meters) followed by a duplex pumping station. The pumping station incorporates a tri-way valve to feed two separate but equally sized zones to allow resting periods for one zone between each year of operation. Each zone consists of eight infiltration trenches, each 59 feet (18 meters) in length. Each trench includes 14 Infiltrator Quick4 Standard chambers for a total of 336 chambers to complete the project. Additionally, the design incorporates an effluent filter in the septic tank, a zone valve, pressurized distribution and a duplex-zone dosing chamber equipped with frost protection.

The design flow of 1585 US gallons per day (6.0 cu. meters per day) is an estimate based on 60 office workers using the facility. The silty sand soils in the area have a permeability rating of greater than 4×10^{-3} cm/sec.

The Infiltrator chamber disposal system was installed in only a few days with very little material (fill, etc.) being transported to the site. The excavated soil from trenches was used to cover the Infiltrator chambers. The client was pleased to see that the topography of the property had not changed and that only a small area of the property had been altered to construct the soil absorption system.



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