# Quick® Standard Chambers Instrumental in Installation of Onsite Wastewater Treatment System

## Due to its remote location and proximity to a lake, Camp Hirondelle needed a resourceful solution in order to replace their failing septic system

**Project**
Replacement septic system including absorption bed at seasonal hunting and fishing camp.

**Installation Date**
September 2007

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

**Contractor/Installer**
Excavation Grandmont
SAINT-GÉDÉON, Québec

**Owner**
Société Immobilière du Québec (SEPAQ)
A/S Sylvain BOUCHER

**Design Flow**
Two cottages at 1.0 cu. meters per day (265 IGPD)
One cottage at 2.0 cu. meters per day (530 IGPD)

Camp Hirondelle is a seasonal hunting and fishing camp situated in the heart of the Laurentides Wildlife Reserve in the Province of Quebec. Because of its remote locations, it has no public services including electricity and public water supplies. Three cottages house guests, and there is a camp manager's residence and a few structures on-site that serve as temporary shelters. Until recently, wastewater from the lodging facilities was treated using a single septic tank and traditional absorption bed. A site investigation revealed that the absorption bed was hydraulically overloaded causing effluent to break out on the surface and flow in the direction of the lake. After fifteen years of service, the absorption bed was severely impacted by a thick biomat formation and needed to be repaired or replaced for the camp to continue operating.

A challenge for designers of the replacement system was to keep the camp in continual operation during the installation phase. In addition, clean stone was not available in the immediate area for a conventional absorption bed and the remote location of the camp made the cost of transporting stone cost-prohibitive. Engineers also had to consider options that did not require electricity since natural gas is the only source of energy on site. This eliminated the option to use dosing stations often selected for systems like this.

The economic advantage of Infiltrator chambers was immediately evident to the design team when factoring in material transportation costs and ease of installation. Engineers designed a system to include three soil-based wastewater treatment systems utilizing Infiltrator Quick4 Standard Chambers for the infiltration beds. The Infiltrator chambers provided superior effluent infiltration though the absorption beds without dosing stations. Also, the rapid progression of the excavation and installation process with the chambers eliminated any possible downtime in guest enjoyment of the facility.

The final installation included the construction of three individual septic systems, each serving a separate guest cottage. Two of these systems include a 40 square meter (430 square feet) infiltration bed, equivalent to a trench system containing eight rows of five chambers each in length. The third and larger septic system is an 80 square meter (861 square feet) infiltration field, which is equivalent to a trench system containing 26 rows of chambers, each three chambers in length. All three cottages are serviced by their own septic tank, one of which is connected to a distribution box equipped with flow dividers that evenly distribute effluent into the larger bed.

The wastewater flows by gravity from the cottages to the septic tanks and then to the infiltration beds. The septic tanks have an effective working capacity of 2.8 cu. meters (742 IG) and 3.8 cu. meters (1007 IG) per day.

Installation of the system was completed in three days. The owners of the facility were pleased with the low impact on the surrounding environment and the continual camp operation. The system is operating as planned and no further issues with effluent breakout have occurred.

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