



Technical Summary – Resolute Bay Airport Sewage Lagoon **(WL #3BM-YRB2126)**

Resolute Bay is a small Arctic community with an approximate population of 300, located in the Qikiqtaaluk Region of Nunavut. The settlement lies along Parry Channel on the southern coast of Cornwallis Island at latitude 70°42'00"N and longitude 94°50'00"W. The community is serviced by a utilidor system, and potable water is sourced from Char Lake. A new water treatment plant has been constructed at the lake, where water is disinfected through chlorination prior to distribution. Treated water is transported by truck to airport facilities, which are located approximately 7 km from the community.

Resolute Bay Airport (YRB) is a key strategic airport in the High Arctic, supporting runway operations, refueling services, research logistics, tourism activity, and Canadian Forces training. The airport functions as a major hub for charter flights into remote northern regions. Approximately 28 buildings—including federal and territorial government facilities as well as private operations—are situated within the airport area. ATCO Frontec supplies trucked potable water to these facilities and also manages sewage collection and hauling to the airport lagoon, located roughly 4 km from the airport.

Sewage Lagoon Description and Operation

The existing sewage lagoon is an unlined containment cell constructed in the 1980s and operating under Water Licence 3BM-YRB2126. The lagoon has an estimated storage capacity of 600 m³, while the average annual sewage volume produced is approximately 5,500 m³. During winter, exfiltration through the berms and occasional overflow events have been observed. Effluent ultimately discharges to the marine environment, approximately 3 km downstream, after passing through a natural wetland treatment zone of similar length.

Effluent quality is monitored at sampling station 1B, with additional monitoring stations 2, 3, and 4 situated along the wetland pathway.

Maintenance, Future Planning, and Licensing

Routine annual maintenance is undertaken on the lagoon berms to sustain structural integrity; however, no major capital upgrades are currently planned. The lagoon is considered an interim disposal system and will remain in operation until a new community wastewater treatment plant (WWTP) is constructed—anticipated within the next 3–4 years. Once operational, trucked sewage will be redirected to the WWTP, and the lagoon will be decommissioned.



The current water licence expires on December 21, 2026. The Licensee intends to apply for renewal for an additional five-year term (December 22, 2026 – December 21, 2031) under the existing terms and conditions. A formal lagoon decommissioning plan will be submitted to the Nunavut Water Board (NWB) when the facility is scheduled for permanent closure.

Nunavut Airports Division

Transportation and Infrastructure Nunavut

Government of Nunavut



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