

# Water Quality Fact Sheet: Disinfection By-Products



The Province of Newfoundland and Labrador has established drinking water guidelines based on Health Canada's *Guidelines for Canadian Drinking Water Quality*. (GCDWQ) Source water and tap water are routinely sampled and analyzed by the Province, and compared with the Maximum Acceptable Concentration (MAC) of the GCDWQ. Disinfection by-products (DBPs) are formed through reactions between the disinfectant and compounds in the water. Formation of DBPs is affected by the water's pH, organic concentrations, temperature, available disinfection reaction time, and type of disinfectant that is used. This fact sheet describes the common disinfection by-products that are monitored in Newfoundland and Labrador.

The two most common groups of DBPs are trihalomethanes (THMs) and haloacetic acids (HAAs).

- **THMs:** THMs found in drinking water include chloroform, bromodichloromethane, dibromochloromethane, and bromoform. The required sampling location is typically the farthest end of the water distribution system from the source. MAC: 0.10 mg/L.
- **HAAs:** There are five significant HAAs in disinfected water and their combined concentration is referred to as total HAA5. The required sampling locations are typically the middle and farthest end of the water distribution system from the source. MAC: 0.08 mg/L.

Concentrations of DBPs are best controlled by reducing organic concentrations in the water prior to the disinfection stage. This may be accomplished through conventional treatment (coagulation, flocculation, clarification, filtration), direct filtration (coagulation, flocculation, filtration), membrane filtration, ion exchange, or granular activated carbon (GAC).