

April 14, 2026

Federal-Provincial-Territorial Committee on Drinking Water  
[water-eau@hc-sc.gc.ca](mailto:water-eau@hc-sc.gc.ca)

**RE: Draft Guidelines for Canadian drinking water quality, Chlorite and chlorate**

The Canadian Water and Wastewater Association (CWWA) is the professional association representing Canada's water and wastewater professionals and serves as THE national voice for municipal water utilities. The Association maintains a Committee on Drinking Water Quality composed of drinking water treatment experts from across the country. The Committee reviewed the Draft Guidelines for Canadian drinking water quality, Chlorite and chlorate.

As drafted, the document is heavily focused on discussing chlorine dioxide disinfection as the main contributor of chlorates to drinking water, even though the document acknowledges that chlorine dioxide use in drinking water systems in Canada is limited. There is much less emphasis on the challenges of chlorate and chlorite formation from the slow decomposition of sodium hypochlorite solutions, or via production issues of the solution from chemical suppliers. Regardless of the source of chlorite and chlorate, their presence must be managed within drinking water—both at the plant and within the distribution system. In contrast to the World Health Organization's (WHO) 2016 background document, 'Chlorine Dioxide, Chlorite and Chlorate in Drinking-water—Background document for the development of WHO Guidelines for Drinking-water Quality', Health Canada's consultation document disproportionately focuses on chlorine dioxide issues and much less on other potential sources. Most Canadian drinking water systems use liquid sodium hypochlorite as part of their disinfection processes (either chlorine-only or part of chloramination). Furthermore, as municipalities continue to move away from gaseous chlorine, many are selecting liquid sodium hypochlorite as a safer alternative. There is an opportunity within Health Canada's technical document to more fully highlight present-day operational challenges and risks, which utilities may not be thinking about in terms of the occurrence of unintended decomposition byproducts within hypochlorite solutions that would then need to be monitored and managed within drinking water. There are some excellent data within the consultation document that could be better tied into highlighting chlorate occurrences in systems that are not using chlorine dioxide. Specifically, Table 4 highlights the 90th percentile of chlorate occurrences from First Nations water systems that are not using chlorine dioxide (showing up to 550 µg/L). Presumably liquid hypochlorite would be the likely disinfectant used in many small systems, which also may have challenges around long storage times for chemicals prior to dosing. Recommendations around stability (particularly the use of commercially available lower-strength sodium hypochlorite solutions, e.g. 6% or lower) could be valuable for these small water systems.

Managing chlorate originating in hypochlorite solutions can be an operational issue in very large systems as well. In September 2024, Metro Vancouver was seriously challenged with managing low quality bulk sodium hypochlorite for its two water treatment plants and several rechlorination facilities, which serve

Suite / Pièce 11, 1010 chemin Polytek Street, Ottawa, Ontario K1J 9C3 Canada  
Tel: (613) 747-0524 Fax: (613) 747-0523 E-mail: [admin@cwwa.ca](mailto:admin@cwwa.ca) [www.cwwa.ca](http://www.cwwa.ca)

over 3 million residents. Chlorate concentrations in treated drinking water were averaging 340 µg/L with a maximum concentration of 593 µg/L. These high concentrations were well above the 10-year historical average of ~30 µg/L for chlorate. Significant effort was required to work with the primary chemical supplier and ultimately resolve a major operational challenge. Fortunately, Metro Vancouver has a program for the routine monitoring of chlorate in treated water as well as laboratory capabilities for conducting tests on bulk products, which small systems are unlikely to have. Finally, given the challenges of chlorate occurrence in sodium hypochlorite solutions, additional commentary and guidance on analytical method issues, especially for analyzing high-strength sodium hypochlorite solutions, would be valuable and a welcome addition to the technical guidance document.

A greater emphasis on the risks of chlorate from hypochlorite solutions, especially in the Executive Summary and a dedicated section that appears earlier within the main document would be valuable. Material within Appendix E from AWWA's Standard B300-24 could be better used to help bolster the discussion of risks from chlorate occurrences in hypochlorite within the main document.

Two potential references to consider for inclusion (also cited in WHO 2016) that highlight chlorate as an unintended decomposition byproduct:

- Adam LC et al. (1992) Hypochlorous acid decomposition in the pH 5–8 region. *Inorganic Chemistry*, 31:3534–3541.
- Hutchison J, Mole N, Fielding M (1994) Bromate and chlorate in water: the role of hypochlorite. In: *Proceedings of the First International Research Symposium on Water Treatment By-products*. Organized by Groupement de Recherche Universitaire sur les Techniques de Traitement et d'Épuration des Eaux (GRUTTEE), Poitiers, 29–30 September.

The CWWA Drinking Water Quality Committee is very supportive of the inclusion of recommendations within the Chlorite and Chlorate technical document as well as within other recent technical documents from Health Canada that promote a drinking water safety plan approach. Emphasizing and promoting the benefits of using a Drinking Water Safety Plan or Drinking Water Quality Management Standard (DWQMS) approach for ensuring the delivery of high-quality drinking water is valuable for creating greater awareness of best-in-class management approaches for utilities, regulators, and the public. There are no substantive comments on either the health risk assessment derivation of the MACs for chlorite and chlorate or the reaffirmation of the existing MAC values.

Thank you for your consideration

Kara Parisien  
On behalf of CWWA's Drinking Water Quality Committee  
Manager, Communications,  
Canadian Water and Wastewater Association