



CONCORD PUBLIC WORKS

Water and Sewer Division

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Bromate in Drinking Water Frequently Asked Questions

- Q1. What is bromate?
- A. Bromate is an oxidized form of a naturally occurring trace element, bromide (Br⁻). It consists of a bromine atom with three oxygen atoms attached (BrO₃⁻).
- Q2. Why is bromate sometimes found in drinking water?
- A. When water is drawn from a surface water supply, like Nagog Pond, and is then disinfected with ozone, some of the trace levels of bromide that are naturally present in that water are oxidized to form bromate. Thus, bromate is a by-product of disinfection.
- Q3. Is bromate in drinking water toxic?
- A. It is likely, but only at concentrations that are vastly higher than those present in Concord's drinking water.
- Q4. Is there evidence that bromate in drinking water harms people's health?
- A. No. However, laboratory tests do show that rats drinking bromate at a concentration of 20,000 parts of bromate per billion parts of water (20,000 ppb) for their entire lifetime develop tumors at higher-than-normal rates.
- Q5. How much bromate is in Concord's drinking water?
- A. The highest average quarterly concentration detected in Concord's drinking water was 11 parts of bromate per billion parts of water (11 ppb) (Q3 2022).
- Q6. What is the allowable upper limit for bromate in drinking water?
- A. 10 parts of bromate per billion parts of water (10 ppb) – averaged over any 12 month-period.
- Q7. What is the 12 month-average concentration of bromate in Concord's drinking water?
- A. Less than 4 parts of bromate per billion parts of water (4ppb). This average includes representative sample results collected during normal operating conditions when Nagog Pond is not being utilized as a source of supply.
- Q8. Are short-term exposures to bromate at concentrations slightly above 10 parts per billion (10 ppb) harmful?
- A. No, such exposures are neither known nor reasonably expected to be harmful. In laboratory tests, rats have been exposed to 15,000 parts per billion (15,000 ppb) of bromate in their drinking water for their entire lives with no ill effect.

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Public Notice and Frequently Asked Questions were developed in consultation with Laura C. Green, Ph.D., D.A.B.T., Dr. Green is President and Senior Toxicologist at Green Toxicology, LLC. She holds a B.A. with honors from the Department of Chemistry at Wellesley College and a Ph.D. from the former Department of Nutrition and Food Science (currently the Department of Biological Engineering) at the Massachusetts Institute of Technology.