# Keeping Your Water Cooler Contamination-Free

## *Clean Your Bottled-Water Cooler With Every Bottle Change*

*For additional information, contact the following members of the BNL Drinking Water Quality Committee, who can get answers to your drinking-water questions, provide you with the latest copy of the annual BNL Water Quality Consumer Confidence Report, or obtain the most recent complete analysis of the Lab's tap-water samples for you:*

- *Ed Murphy, Division Manager, Plant Engineering Division, Ext. 3466, etmurphy@bnl.gov*
- *William Chaloupka, Assistant Manager of Operations & Environment, Plant Engineering Division, Ext. 7136, chaloupka@bnl.gov*
- *Bob Lee, Deputy Manager, Environment & Waste Management Services Division, Ext. 3148, blee@bnl.gov*
- *Ken Erickson, Safety & Health Services Division, Ext. 4935, erickson@bnl.gov*
- *Marsha Belford, Community, Education, Government & Public Affairs, Ext. 5053, belford@bnl.gov*

*Or contact:*

- *Suffolk County Department of Health Services,*

*Pictured above at BNL's Water Treatment Plant are some of the water treatment engineers and others involved in producing the Lab's drinking water. Last year, as in the past, BNL's drinking water was in full compliance with all county, state, and federal regulations governing drinking-water quality.*

*At BNL, the Plant Engineering Division is responsible for providing safe, high-quality drinking water and a reliable drinking-water supply on site. To ensure that the Lab's drinking water meets all local, state, and federal quality standards, BNL's Environmental Services Division is responsible for having the Lab's drinking water regularly tested and analyzed, using approved independent and in-house laboratories.*

Although Brookhaven Lab produces its own tap water which is in full compliance with all county, state and federal regulations governing drinking-water quality, there are locations around site where bottled water is used instead. Bottled water is provided either when a building does not have plumbing and cannot economically be connected to BNL's water-distribution system, or when testing determines that a building's plumbing system negatively impacts the water's quality.

So, while some employees and others at the Lab meet around their building's water fountain, others gather around the office water cooler. While illness caused by bottled water is rare in the U.S., it has been well documented that the users of a bottled water cooler are its principal source of contamination. In fact, the quality of bottled water in a cooler depends upon four things:

- **bottle storage:** how long and where the water bottle was stored
- **bottle handling and installation:** how hygienically the bottle was handled and installed.
- **cooler cleanliness:** how clean and sanitary the inside of the water cooler and its spigots are
- **cooler users:** how clean and sanitary the hands, cups, sports bottles and other things that come into contact with the water cooler and its spigots are.


***When filling your sports bottle or other container with bottled water from a water cooler:***

- ***wash your hands:*** *before touching the container*
- ***do NOT touch the end of the water spigot:*** *with your hands or the edge of the container.*

### How to keep my cooler clean?

So that water-cooler users around site can help maintain the quality of their bottled water, Brookhaven's Safety & Health Services (S&HS) Division has developed recommendations covering bottle storage, handling and installation; cooler cleanliness and sanitization; and hygienic cooler use. Developed by S&HS's Industrial Hygiene Group, this procedure is found at http://www.bnl.gov/esh/shsd/PDF/Bottled_Water_Hygiene_Procedure.pdf.

For instance, in addition to recommending that the water cooler be cleaned with every bottle change or every six weeks, the procedure covers how to replace a bottle properly. The reason is that, while the inside of the bottle is clean and sanitized at the bottler, the outside of the bottle — particularly the neck — is handled by everyone from the factory to you. Since the neck of the bottle sits inside the cooler's reservoir once the bottle is installed, the bottle's neck can contaminate the water.

To reduce contamination of the cooler itself, another recommendation is that bottled-water users wash their hands before using the water cooler, and that they never touch the ends of the cooler's spigots with their hands or water glasses, cups, sports bottles, etc.

### What is the difference: tap vs. bottled?

According to a recent World Wildlife Foundation study, except in areas where tap water is not available or contaminated, there is little difference in general around the world between tap water and bottled water except for the cost — bottled water can cost up to 1,000 times more than tap water — and the fact that one is distributed via pipes and the other via bottles — which results in 1.5 million tons of plastic waste per year. In the U.S., more than 700 brands of bottled water are sold. As a result of consumer need, preference, or convenience, over $6 billion in bottled water was sold in this country in 2001.

The U.S. Food and Drug Administration (FDA) classifies bottled water based on its origin:

- **municipal water:** treated tap water from a public water system, the source of which can be a river, lake, stream, pond, reservoir, spring, and/or aquifer. Approximately half of the bottled water sold in the U.S. is municipal water. Culligan, the bottled water on site, comes from a municipal source.
- **artesian well water:** water that comes from an aquifer that is under pressure, so the water may be pushed to the surface
- **mineral water:** water from an underground source that contains at least 250 parts per million total dissolved solids
- **spring water:** water that naturally flows from an underground source to the surface
- **well water:** water from a well tapped into an underground aquifer.

While the quality of tap water in the U.S. is mandated by the federal Safe Drinking Water Act, as regulated by the U.S. Environment Protection Agency (EPA), the quality of bottled water that is part of interstate commerce is covered as a food product under the federal Food, Drug, and Cosmetic Act, as enforced by the FDA.

While not all the same, the standards for contaminants in tap water and bottled water are very similar. In fact, each time the EPA establishes a new standard for a chemical or microbial contaminant in tap water, the FDA either adopts that standard for bottled water, or makes a finding that the standard is not necessary to protect the health of bottled-water drinkers.

The production of all water sealed in a bottle is also regulated and enforced through inspection by the FDA. In addition, some states require water bottlers to be licensed, and some 85 percent of U.S. bottlers belong to the International Bottled Water Association, a trade organization that requires independent oversight of its members' operations and practices.

On site, bottled water for consumption must meet all regulations set by the federal Occupational Health & Safety Administration (OHSA) regarding the sanitary handling, storage, and dispensing of food. Among its requirements, OHSA mandates that food, including bottled water, be "protected against contamination" and that "portable drinking water dispensers shall be . . . serviced so that sanitary conditions are maintained."

### Who should *not* use bottled water?

Because bottled water usually contains low numbers of bacteria, do **not** use bottled water for the following:

- infants or babies
- if your immune system is compromised
- for cleaning contact lenses

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