



ANNUAL WATER  
QUALITY  
REPORT

*Water testing performed in 2009*



*Presented By:*  
**MILFORD WATER COMPANY**

PWS ID#: 2185000

## Meeting the Challenge

The Milford Water Company is once again proud to present to you our annual water quality report. The report covers all testing done by the company from January 1 through December 31, 2009. Since our beginning in 1881, we have dedicated ourselves to producing the highest quality drinking water that meets or exceeds all state and federal drinking water standards. Though events from this past August have showed us that we must remain ever vigilant, we are continuing to strive to improve our customer service and finding better methods of delivering the best quality drinking water to you. As new regulations and challenges emerge we will remain vigilant in meeting these challenges and regulations through water conservation and community education and with the support from our local officials and regulators.

The year 2009, much like 2008, had Mother Nature deliver some 48 inches of precipitation. When you combine the amount of precipitation with the slowly recovering economy, they add up to a decline in pumping. Declining water sold causes a decline in revenue for the company, which has a direct impact upon planned improvements. Despite our decline in revenues, Milford Water Company still invested approximately \$1,017,000 in water system improvements in 2009 and is planning to invest approximately \$945,000 in 2010.

Our company is planning to file for a rate increase with the Department of Public Utilities in June of 2010. The company last filed for a rate increase in 2005, and the increase in operating costs and cost of inflation have made it necessary to file for an increase once again. Since our last increase, the company has invested approximately \$4,000,000 in system upgrades and improvements, which we plan to continue in the years to come.

We encourage you to share your thoughts with us on the information contained in this report. Should you ever have any questions, we are always available to assist you.

## Source Water Assessment

As part of the Source Water Assessment Program (SWAP), the Massachusetts Department of Environmental Protection conducted assessments of our drinking water sources in 2004 for the purpose of determining susceptibility of each drinking water source to potential contamination. The assessment susceptibility for Milford Water was reported to be high, based upon the presence of at least one high-threat land use within our protective areas. The complete SWAP report is available at the company's office and online at [www.mass.gov/dep/water/drinking/2185000.pdf](http://www.mass.gov/dep/water/drinking/2185000.pdf).

## Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or [www.epa.gov/safewater/hotline/](http://www.epa.gov/safewater/hotline/).



## Tap vs. Bottled

Thanks in part to aggressive marketing, the bottled water industry has successfully convinced us all that water purchased in bottles is a healthier alternative to tap water. However, according to a four-year study conducted by the Natural Resources Defense Council, bottled water is not necessarily cleaner or safer than most tap water. In fact, about 25 percent of bottled water is actually just bottled tap water (40 percent, according to government estimates).

The Food and Drug Administration is responsible for regulating bottled water, but these rules allow for less rigorous testing and purity standards than those required by the U.S. EPA for community tap water. For instance, the high mineral content of some bottled waters makes them unsuitable for babies and young children. Further, the FDA completely exempts bottled water that's packaged and sold within the same state, which accounts for about 70 percent of all bottled water sold in the United States.

People spend 10,000 times more per gallon for bottled water than they typically do for tap water. If you get your recommended eight glasses a day from bottled water, you could spend up to \$1,400 annually. The same amount of tap water would cost about 49 cents. Even if you installed a filter device on your tap, your annual expenditure would be far less than what you'd pay for bottled water.

For a detailed discussion on the NRDC study results, check out their Web site at [www.nrdc.org/water/drinking/bw/exesum.asp](http://www.nrdc.org/water/drinking/bw/exesum.asp).

## Where Does My Water Come From?

The Milford Water Company provides treated water from five different sources. Our Dilla Street facilities purify water from the Charles River, the Echo Lake reservoir, the Dilla Street wells, and the Clark's Island wells. Our company also maintains a facility off Depot Street that purifies water collected from five wells located along the Charles River and Godfrey Brook. All of our wells are constructed in sand-and-gravel aquifers with depths ranging from 22 feet to 52 feet. Due to this relatively shallow nature, it is critical that we protect our resources against contamination. Our distribution system contains more than 100 miles of pipes, three water storage tanks, and three pumping stations that deliver approximately 1 billion gallons of water each year. Because each of our five sources of supply cannot alone provide the volume of water needed by our customers, each is used during different times of the year. One single source cannot usually be identified for every customer because we blend the water before purification and also during delivery. We have developed mutual aid agreements with the towns of Bellingham, Holliston, Hopedale, Hopkinton, and Medway for providing water to meet our short-term and long-range customer needs.

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## Water Conservation

You can play a role in conserving water and save yourself money in the process by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water. Here are a few tips:

- Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
  - Turn off the tap when brushing your teeth.
  - Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.
  - Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you save more than 30,000 gallons a year.
  - Use your water meter to detect hidden leaks. Simply turn off all taps and water-using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.
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## Substances That Could Be in Water

To ensure that tap water is safe to drink, the Department of Environmental Protection (DEP) and the U.S. Environmental Protection Agency (U.S. EPA) prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and Massachusetts Department of Public Health (DPH) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Substances that may be present in source water include:

**Microbial Contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife;

**Inorganic Contaminants**, such as salts and metals, which can be naturally occurring or may result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;

**Pesticides and Herbicides**, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses;

**Organic Chemical Contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and which may also come from gas stations, urban stormwater runoff, and septic systems;

**Radioactive Contaminants**, which can be naturally occurring or may be the result of oil and gas production and mining activities.

More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

## Questions?

For more information about this report, or for any questions relating to your drinking water, please call David L. Condrey, Manager, at (508) 473-5110 or send an e-mail message to the company at [milfordwater@milfordwater.com](mailto:milfordwater@milfordwater.com).

## About Our Violation

On Wednesday August 5, 2009, one (1) routine sample location came back Fecal Coliform positive and two (2) routine sample locations came back Total Coliform (TC) positive. Six (6) repeat samples were taken on Friday, August 7th, which confirmed TC positive. On August 8, 2009, the Mass DEP issued a Tier 1 Boil Water Order for the acute MCL violation. The Boil Water Order remained in effect for 14 days and was officially lifted on August 21, 2009. A subsequent Administrative Consent Order with Penalty was issued on November 13, 2009.

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present. Coliforms were found in more samples than allowed, and this was a warning of potential problems.

Fecal coliforms and *E. coli* are bacteria the presence of which indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, and people with severely compromised immune systems.

## Lead and Drinking Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Milford Water is responsible for providing high-quality drinking water, but we cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

## LT2 Rule

The U.S. EPA has created the Long Term 2 Enhanced Surface Water Treatment Rule (LT2) for the sole purpose of reducing illness linked with the contaminant *Cryptosporidium* and other disease-causing microorganisms in drinking water. The rule will bolster existing regulations and provide a higher level of protection of your drinking water supply.

Sampling of our water source has shown the following:

*Cryptosporidium*: ND to 0.097 per L

*E. coli*: ND to 24 per 100 mL

It is important to note that these results are from our raw water source only and not our treated drinking water supply. For more information, contact U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

## What's a Cross-connection?

Cross-connections that contaminate drinking water distribution lines are a major concern. A cross-connection is formed at any point where a drinking water line connects to equipment (boilers), systems containing chemicals (air conditioning systems, fire sprinkler systems, irrigation systems), or water sources of questionable quality. Cross-connection contamination can occur when the pressure in the equipment or system is greater than the pressure inside the drinking water line (backpressure). Contamination can also occur when the pressure in the drinking water line drops due to fairly routine occurrences (main breaks, heavy water demand), causing contaminants to be sucked out from the equipment and into the drinking water line (backsiphonage).

Outside water taps and garden hoses tend to be the most common sources of cross-connection contamination at home. The garden hose creates a hazard when submerged in a swimming pool or when attached to a chemical sprayer for weed killing. Garden hoses that are left lying on the ground may be contaminated by fertilizers, cesspools, or garden chemicals. Improperly installed valves in your toilet could also be a source of cross-connection contamination.

Community water supplies are continuously jeopardized by cross-connections unless appropriate valves, known as backflow prevention devices, are installed and maintained. We have surveyed all industrial, commercial, and institutional facilities in the service area to make sure that all potential cross-connections are identified and eliminated or protected by a backflow preventer. We also inspect and test each backflow preventer to make sure that it is providing maximum protection.

For more information, review the Cross-Connection Control Manual from the U.S. EPA's Web site at [www.epa.gov/safewater/crossconnection.html](http://www.epa.gov/safewater/crossconnection.html). You can also call the Safe Drinking Water Hotline at (800) 426-4791.

## Sampling Results

In 2009 we took hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The tables below show only those contaminants that were detected in the water. The state

requires us to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

### REGULATED SUBSTANCES

| SUBSTANCE (UNIT OF MEASURE)  | YEAR SAMPLED | MCL [MRDL]                | MCLG [MRDLG] | AMOUNT DETECTED | RANGE LOW-HIGH | VIOLATION | TYPICAL SOURCE  |
|--|--------------|---------------------------|--------------|-----------------|----------------|-----------|---|
| <b>Barium</b> (ppm)  | 2009         | 2                         | 2            | 0.10            | 0.016–0.10     | No        | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits                        |
| <b>Chlorine</b> (ppm)  | 2009         | [4]                       | [4]          | 0.30            | 0.07–2.26      | No        | Water additive used to control microbes   |
| <b>Fecal coliform and <i>E. coli</i></b> (# positive samples)      | 2009         | 0                         | 0            | 1               | NA             | Yes       | Human and animal fecal waste  |
| <b>Haloacetic Acids [HAA]</b> (ppb)                                | 2009         | 60                        | NA           | 15.4            | 0.55–40        | No        | By-product of drinking water disinfection   |
| <b>Mercury [inorganic]</b> (ppb)                                   | 2009         | 2                         | 2            | 0.68            | ND–0.68        | No        | Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland |
| <b>Nitrate</b> (ppm)   | 2009         | 10                        | 10           | 0.90            | 0.14–0.90      | No        | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits                       |
| <b>Perchlorate</b> (ppb)   | 2009         | 2                         | NA           | 0.104           | ND–0.104       | No        | Inorganic chemicals used as oxidizers in solid propellants for rockets, missiles, fireworks, and explosives.      |
| <b>TTHMs [Total Trihalomethanes]</b> (ppb)                         | 2009         | 80                        | NA           | 61.2            | 23–140         | No        | By-product of drinking water chlorination   |
| <b>Total Coliform Bacteria</b> (# positive samples)                | 2009         | 1 positive monthly sample | 0            | 6               | NA             | Yes       | Naturally present in the environment  |
| <b>Total Organic Carbon</b> (ppm)                                  | 2009         | TT                        | NA           | 2.4             | ND–9.7         | No        | Naturally present in the environment  |
| <b>Turbidity</b> (NTU)   | 2009         | TT                        | NA           | 0.984           | 0.260–0.984    | No        | Soil runoff   |
| <b>Turbidity</b> (Lowest monthly percent of samples meeting limit) | 2009         | TT                        | NA           | 100             | NA             | No        | Soil runoff   |

### Tap water samples were collected for lead and copper analyses from sample sites throughout the community

| SUBSTANCE (UNIT OF MEASURE) | YEAR SAMPLED | AL  | MCLG | AMOUNT DETECTED (90TH%TILE) | SITES ABOVE AL/TOTAL SITES | VIOLATION | TYPICAL SOURCE   |
|-----------------------------|--------------|-----|------|-----------------------------|----------------------------|-----------|--|
| <b>Copper</b> (ppm)         | 2009         | 1.3 | 1.3  | 0.23                        | 0/30                       | No        | Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives |
| <b>Lead</b> (ppb)           | 2009         | 15  | 0    | 6.9                         | 1/30                       | No        | Corrosion of household plumbing systems; Erosion of natural deposits                                   |

## SECONDARY SUBSTANCES

| SUBSTANCE<br>(UNIT OF MEASURE)     | YEAR<br>SAMPLED | SMCL    | MCLG | AMOUNT<br>DETECTED | RANGE<br>LOW-HIGH | EXCEEDANCE       | TYPICAL SOURCE   |
|------------------------------------|-----------------|---------|------|--------------------|-------------------|------------------|--|
| Chloride (ppm)                     | 2009            | 250     | NA   | 110                | 38–110            | No               | Runoff/leaching from natural deposits                    |
| Iron (ppb)                         | 2009            | 300     | NA   | 240                | 56–750            | No               | Leaching from natural deposits; Industrial wastes        |
| Manganese (ppb)                    | 2009            | 50      | NA   | 100                | 4.8–750           | Yes <sup>2</sup> | Leaching from natural deposits                           |
| Odor (TON)                         | 2009            | 3       | NA   | 2                  | 1–2               | No               | Naturally occurring organic materials                    |
| pH (Units)                         | 2009            | 6.5–8.5 | NA   | 7.4                | 5.4–8.5           | No               | Naturally occurring                                      |
| Sulfate (ppm)                      | 2009            | 250     | NA   | 19                 | 7–19              | No               | Runoff/leaching from natural deposits; Industrial wastes |
| Total Dissolved Solids [TDS] (ppm) | 2009            | 500     | NA   | 240                | 95–240            | No               | Runoff/leaching from natural deposits                    |
| Zinc (ppm)                         | 2009            | 5       | NA   | 0.39               | 0.0069–0.39       | No               | Runoff/leaching from natural deposits; Industrial wastes |

## UNREGULATED SUBSTANCES<sup>3</sup>

| SUBSTANCE<br>(UNIT OF MEASURE) | YEAR<br>SAMPLED | AMOUNT<br>DETECTED | RANGE<br>LOW-HIGH | TYPICAL SOURCE   |
|--------------------------------|-----------------|--------------------|-------------------|--|
| Bromodichloromethane (ppb)     | 2009            | 9.8                | ND–9.8            | By-product of drinking water disinfection                |
| Chlorodibromomethane (ppb)     | 2009            | 2.2                | ND–2.2            | By-product of drinking water disinfection                |
| Chloroform (ppb)               | 2009            | 28                 | ND–28             | By-product of drinking water disinfection                |
| Sodium (ppm)                   | 2009            | 90                 | 25–90             | Naturally present in the environment; Storm water runoff |

## INITIAL DISTRIBUTION SYSTEM EVALUATION<sup>4</sup>

| SUBSTANCE<br>(UNIT OF MEASURE)                   | YEAR<br>SAMPLED | AMOUNT<br>DETECTED | RANGE<br>LOW-HIGH | TYPICAL SOURCE                            |
|--|-----------------|--------------------|-------------------|---|
| Haloacetic Acids [HAA]–IDSE Results (ppb)        | 2009            | 17.6               | 0.96–57           | By-product of drinking water disinfection |
| TTHMs [Total Trihalomethanes]–IDSE Results (ppb) | 2009            | 65.1               | 22–120            | By-product of drinking water disinfection |

<sup>1</sup> Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

<sup>2</sup> Manganese was measured in our filtered water at Godfrey Brook at levels exceeding the secondary MCL (SMCL), which was set to protect against unpleasant aesthetic effects such as color, taste, odor, and staining of plumbing fixtures and/or laundry. There are no adverse health effects expected with this exceedance.

<sup>3</sup> Unregulated contaminants are those for which the U.S. EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist U.S. EPA in determining their occurrence in drinking water and whether future regulation is warranted.

<sup>4</sup> We were required by the U.S. EPA to conduct an evaluation of our distribution system. This is known as an Initial Distribution System Evaluation (IDSE) and is intended to identify locations in our distribution system that have elevated disinfection by-product concentrations. Disinfection by-products (e.g., HAAs and TTHMs) result from continuous disinfection of drinking water and form when disinfectants combine with organic matter that naturally occurs in the source water.

## Definitions

**90th Percentile:** Out of every 10 homes sampled, 9 were at or below this level.

**AL (Action Level):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

**MCL (Maximum Contaminant Level):** The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

**MCLG (Maximum Contaminant Level Goal):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

**MRDL (Maximum Residual Disinfectant Level):** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**MRDLG (Maximum Residual Disinfectant Level Goal):** The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

**NA:** Not applicable

**ND (Not detected):** Indicates that the substance was not found by laboratory analysis.

**NTU (Nephelometric Turbidity Units):** Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

**ppb (parts per billion):** One part substance per billion parts water (or micrograms per liter).

**ppm (parts per million):** One part substance per million parts water (or milligrams per liter).

**TON (Threshold Odor Number):** A measure of odor in water.

**TT (Treatment Technique):** A required process intended to reduce the level of a contaminant in drinking water.