

# TOWN OF BELLINGHAM

## DEPARTMENT OF PUBLIC WORKS

### **DRINKING WATER QUALITY AND CONSUMER INFORMATION REPORT CALENDAR YEAR 2009** (Public Water System ID# **2025000** – Telephone #508-966-5813)

#### **Introduction**

*This is the annual water quality report card that we prepare and deliver to our customers and the public. It contains important information about the quality of drinking water we distribute to our customers and other information about the water supply system. I apologize for the redundant nature of the report. Much of the text in this annual document is the same each year. Our system simply does not change that much from year to year and much of the text is required by regulation. As last year's report was in full compliance, I have not removed much and have added only a few paragraphs. The tables on page two detail the results of our 2009 water quality analysis. These are fully updated and are the key elements of this report. I suggest that everyone read this report but if pressed for time, I hope you will at least scan the list of detected contaminants and possible health effects they could cause.*

*The Town of Bellingham Department of Public Works (DPW) is committed to providing our customers with high quality drinking water that meets or surpasses state and federal standards for quality and safety. The Town has made significant investments in our pumping stations, filtration plant, and corrosion control facilities and annually performs thousands of dollars worth of water quality tests to ensure that we provide sufficient quantities of safe drinking water.*

*Bellingham water is safe to drink. The tasks the Bellingham DPW must perform as a public water supplier under the Federal Safe Drinking Water Act 1996 Amendments insure that to be the case. We are pleased to compile this annual report that summarizes the 2009 calendar year water quality testing, and hope it reassures our customers of the safety of our tap water.*

#### **Where does Bellingham get its drinking water?**

The Town of Bellingham's drinking water supply system includes seventeen groundwater wells, nine pumping stations, three storage tanks, and approximately ninety miles of water main. Thirteen wells, which are controlled by five pumping stations, are located in the southern part of Town; they draw water from the Blackstone River basin underground aquifer. Four wells, each operated by its own pumping station, are located in the northern part of Town; they draw water from the Charles River basin underground aquifer. The DPW has detailed maps showing these facilities. Anyone who would like to see a map or obtain a copy should contact the DPW.

#### **Is our water pure?**

No. Pure water would be only hydrogen and oxygen, the compound H<sub>2</sub>O. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. Sources of drinking water (tap water and bottled water) include rivers, lakes, reservoirs, streams, and wells. As water travels over land or through the ground, it dissolves naturally occurring minerals and radioactive materials, and can be polluted by animal and human activity. Contaminants that might be expected in untreated water include: microbial contaminants (such as viruses and bacteria), inorganic contaminants (such as metals and salts), pesticides, herbicides, organic chemicals from industrial or petroleum use, and radioactive materials. (See the next few pages of this report for more information on contaminants and what may cause them.)

More information on contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline (800-426-4791).

#### **If our water is not pure, what is in it?**

The answer to this question is the main purpose of this report. On the next page, you will see a table titled **Bellingham 2009 Source Water Quality Summary (THE SUMMARY)**. **THE SUMMARY** is the complete list of the contaminants detected in the samples collected at our drinking water sources and from our water distribution system in 2009. The list contains only the contaminants that were detected at levels above the "detection limit". The "detection limit" is the lowest concentration of a substance that today's laboratory technology can detect.

On page three, you will find the **2009 Contaminant Test List (Contaminant List)**. The **Contaminant List** is a complete list of the 146 contaminants for which we performed drinking water sampling and analysis in 2009.

If a contaminant is listed on the **Contaminant List**, but not in **THE SUMMARY**, the results were less than today's technology can detect.

**THE SUMMARY** also includes contaminants we were not required to monitor for in 2009, but for which we detected some level within the last six years. If there is a year noted after a contaminant, we were not required to monitor for it in 2009. The number notes the last year we tested and detected this contaminant.

## **Bellingham 2009 Source Water Quality Summary (THE SUMMARY)**

Substance	Units of Measure	Highest Level Detected	Lowest Level Detected	Highest Level Allowed	Goal Level	Source of Contaminant
<b>(Contaminant)</b>				<b>MCL (1)</b>	<b>MCLG (2)</b>	
Nitrate	ppm (3)	3.3	0.07	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Barium	ppm (3)	0.062	Zero	2.0		Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Sodium	ppm (3)	86	14	UR (5)		Naturally present in the environment
Total Coliform Bacteria	Monthly % (7)	11 (September) See Pg 6	Zero	10.6%	Zero	Naturally present in the environment
Combined Radium – 226 & 228 (2006)	pCi/L (9)	2.7	Zero	5.0	Zero	Erosion of natural deposits
Alpha Emitters (Gross Alpha Activity) (2006)	pCi/L (9)	2.6	0.34	15.0	Zero	Erosion of natural deposits

### **Disinfectant by Products**

Trihalomethanes (Sampled Quarterly)	ppb (4)	53.6 14.4 hra (6)	Zero	80	80	By Product of Drinking Water Chlorination
Haloacetic Acid (HAA5) (Sampled Quarterly)	ppb (4)	22.3 5.9 hra (6)	Zero	60	N/A	By Product of Drinking Water Chlorination
Free Chlorine Residual	ppm (3)	4.3 0.23 hra (6)	Zero	4 MRDL(10)	4 MRDLG(11)	Chemical added to control microbes.

- (1) **Maximum Contamination Level (MCL):** The highest level of a contaminant in drinking water. MCLs are set as close to the MCLGs (see below) as feasible using the best available treatment technology.
- (2) **Maximum Contamination Level Goal (MCLG):** 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.
- (3) **ppm** is the abbreviation for parts per million. Parts per million is the same as milligrams per liter (mg/L) which is the scientific unit of measure for most contaminants.
- (4) **ppb** is the abbreviation for parts per billion. Parts per billion is the same as micrograms per liter (ug/L) which is the scientific unit of measure for some contaminants.
- (5) **UR** means Un-Regulated. Unregulated contaminants are those contaminants for which the USEPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the USEPA in determining their occurrence in drinking water and whether future regulation is warranted.
- (6) **hra** is the Highest Running Average. The highest running average is used to determine if the MCL has been exceeded. It is the average of the last four quarterly results of the approved testing site. These results are added together and divided by 4 to yield the running average.
- (7) Monthly % is the percent of a months system samples that indicate a presence of Total Coliform Bacteria.
- (8) **mrem/yr** is the abbreviation for millirems per year (a measure of radiation absorbed by the body)
- (9) **pCi/L** is the abbreviation for picocuries per liter (a measure of radioactivity)
- (10) **MRDL** is the abbreviation for Maximum Residual Disinfectant Level. MRDL is the highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- (11) **MRDLG** is the abbreviation for Maximum Residual Disinfectant Level Goal. MRDLG is the level of drinking water disinfectant below, which there is no known or expected risk to health. MRDLGs do not reflect the benefit of the use of disinfectants to control microbial contaminants.

### **Possible Health Effects for All Detected Contaminants**

- **Nitrate:** Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
- **Barium:** Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.
- **Sodium and Sulfate:** are not regulated so no health effect information is included.
- **Total Coliform Bacteria:** Coliform are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful bacteria, may be present. If Coliform were found in more samples than allowed, this would be a warning of potential problems.
- **Beta/photon emitters:** Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta and photon emitters in excess of the MCL over many years may have an increased risk of getting cancer.
- **Combined radium:** Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increase risk of getting cancer.
- **Alpha Emitters - Gross Alpha Activity:** Certain minerals are radioactive and may emit forms of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.
- **Chloroform:** (a Trihalomethane) Some people who drink water containing chloroform at high concentrations for many years could experience liver and kidney problems and may have an increased risk of cancer.
- **Trihalomethanes (Chloroform, Bromodichloromethane, & Chlorodibromomethane):** Some people who drink water containing Trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.
- **Haloacetic Acids:** Some people who drink water containing Haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.
- **Chlorine:** Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.

The Mass DEP has reduced the monitoring requirements for Synthetic Organic Compound (SOC), Inorganic (IOC), and Radionuclides for some of our sources because these sources are not at risk of contamination. The last samples collected for these contaminants were: 2002 for SOC at all sources and 2006 for Radionuclides. Those sampling results were found to meet all applicable EPA and Mass DEP standards.

## **2009 Contaminant Test List**

Perchlorate	1,2,4-Trichlorobenzene	Naphthalene	Lead	Sulfate	PCBs (decachlorobiphenyl)
Coliform Bacteria	1,1,2-Trichloroethane	Hexachlorobutadiene	Odor	Carbofuran	Pentachlorophenol
Chlorine Residual	Chloroform	1,3,5-Trimethylbenzene	pH	Oxamyl (Vydate)	Toxaphene
Nitrate	Bromodichloromethane	p-Isopropyltoluene	Silver	2,4-D	Benzo (a) pyrene
Nitrite	Chlorodibromomethane	Isopropylbenzene	Sulfate	2,4,5-TP (Silvex)	Di (2-ethylhexyl) adipate
Asbestos	Bromoform	Tert-butylbenzene	TDS	Dalapon	Di (2-ethylhexyl) phthates
Benzene	m-Dichlorobenzene	Sec-butylbenzene	Zinc	Dinoseb	Hexachlorobenzene
Carbon Tetrachloride	Dibromomethan	Fluorotrichloromethane	Iron	Picloram	Hexachlorocyclopentadiene
1,1-Dichloroethylene	1,1-Dichloropropane	Dichlorodifluoromethane	Manganese	Alachlor	Simazine
1,2-Dichloroethan	1,1-Dichloroethane	Bromochloromethane	Alkalinity	Atrazine	Dibromochloropropane (DBCP)
para-Dichlorobenzene	1,1,2,2-Tetrachloroethane	Methyl Tertiary Butyl Ether	Calcium	Chlordane	Ethylene dibromide (EDB)
Trichloroethylene	1,3-Dichloropropane	Monochloroacetic Acid	Arsenic	Endrin	Aldicarb
1,1,1-Trichloroethane	Chloromethane	Dichloroacetic Acid	Barium	Heptachlor	Aldicarb sulfoxide
Vinyl Chloride	Bromomethane	Trichloroacetic Acid	Cadmium	Heptachlor epoxide	Aldicarb sulfone
Monochlorobenzene	1,2,3-Trichloropropane	Monobromoacetic Acid	Chromium	Lindane	Carbaryl
o-Dichlorobenzene	1,1,1,2-Tetrachloroethane	Dibromoacetic Acid	Fluoride	Methoxychlor	3-Hydroxycarbofuran
trans-1,2-Dichloroethylene	Chloroethane	Magnesium	Mercury	PCB Aroclor 1016	Methomyl
cis-1,2-Dichloroethylene	2,2-Dichloropropane	Hardness	Selenium	PCB Aroclor 1221	Dicamba
1,2-Dichloropropane	o-Chlorotoluene	Potassium	Sodium	PCB Aroclor 1232	Aldrin
Ethylbenzene	p-Chlorotoluene	Turbidity	Antimony	PCB Aroclor 1242	Butachlor
Styrene	Bromobenzene	Aluminum	Beryllium	PCB Aroclor 1248	Dieldrin
Tetrachloroethylene	1,3-Dichloropropene	Chloride	Nickel	PCB Aroclor 1254	Metolachlor
Toluene	1,2,4-Trimethylbenzene	Color	Thallium	PCB Aroclor 1254	Metribuzin
Xylene (total)	n-Propylbenzene	Copper	Cyanide	PCB Aroclor 1260	Propachlor
Dichloromethan	n-Butylbenzene				

### **There are allowable or safe levels of contaminants in water. How are these levels determined?**

To ensure that tap water is safe to drink, the United States Environmental Protection Agency (USEPA) prescribes regulations and the Massachusetts Department of Environmental Protection (MassDEP) administers regulations that limit the amount of certain contaminants allowed in water provided to public water systems customers. The USEPA sets Maximum Contamination Levels, Maximum Contamination Level Goals, Action Levels, and defines allowable testing procedures for over 100 water contaminants. Food and Drug Administration (FDA) and Massachusetts Department of Public Health regulations establish limits for contaminants in bottled water that provide the same protection for public health.

### **Is our water safe?**

**YES.** As a public water supply professional who must know the rules and laws that govern all public water suppliers in the United States, I feel comfortable drinking water from any bubbler or sink tap not only in Bellingham but nationwide.

In 2009, the DPW collected 860 water samples and certified labs performed tests for 146 various contaminants. We tested for Total Coliform Bacteria, Trihalomethanes (THM), Haloacetic Acid (HAA5), Nitrate, Tetrachloroethylene (PCE), Volatile Organic Compounds (VOC), Inorganic Compounds (IOC), and Perchlorate, which are the primary health related contaminants. We also tested for a list of generally harmless so called Secondary Contaminants (SEC CON), which include Iron and Manganese.

We will continue this routine testing and add testing related to proposed new regulations.

### **If my water is so safe, why doesn't it taste better?**

Our tap water is safe to drink! This is a true statement in Bellingham and for all customers of public water suppliers throughout the United States. However, to meet the extensive safe drinking water quality standards, public water suppliers must add treatment chemicals.

Caustics for corrosion control, Chlorine for disinfection and iron removal, Potassium Permanganate for manganese removal, and Alum for filtration enhancement are added to our sources. These chemicals work very well to make tap water safe, but they can often affect the water's taste and odor.

Consider the fact that the average cost for a gallon of bottled water from a store is \$1.50 and the average cost for that same gallon of safe tap water is \$0.004. The cleaner tasting bottled water cost 375 times more than the safe water coming out of the tap.

### **What measures are taken to insure that our water stays safe?**

The EPA and MassDEP are continuously studying drinking contaminants and adding them to the required list if there is a potential health risk and if technology is available to yield reliable analytical results.

In 2002, MassDEP issued a draft of our Source Water Assessment Program (SWAP) Report. The SWAP program was established under the Federal Safe Drinking Water Act and it requires that every state: Inventory land uses within the recharge areas of all public water supply sources, assess the susceptibility of drinking water sources to be contaminated from these uses, and publicize the results to provide support for improved protection.

Some of the land uses that exist within our recharge areas include: Auto Body & Repair Shops, Salvage Yards, Photo Processors, an Old Landfill, Railroad Tracks, Hazardous Material Storage, Industries and Industrial Parks, Large Quantity Hazardous Waste Generators, and Underground Storage Tanks. There are others but these are considered the highest threat.

A copy of our report is available upon request from the DPW (508-966-5813) or on line. Go to <http://www.mass.gov/dep/water/drinking/swapreps.htm>, search “SWAP”, Select “Central Region” and find Bellingham in the alphabetical listing. The report notes that all of our sources have a high susceptibility of future contamination.

It is impossible to eliminate all threats from past and present land use, but we have established protective land use restrictions that dramatically reduce our exposure to certain contaminants. We are well equipped to prevent future land uses that could further increase our susceptibility to aquifer contamination. Our key regulations include Board of Health Floor Drain Regulations, Water Resource Protection Bylaws, and Water Resource District Zoning Map. The Bylaws and Maps are available on line at Town’s Website [www.bellinghamma.org](http://www.bellinghamma.org).

The Water Resources Committee (WRC) scheduled two televised meetings in 2009 to discuss issues related to not only drinking water but also stormwater and wastewater. The WRC will be reviewing our existing bylaws and comparing them to the latest MassDEP model bylaws to insure that we are maximizing the protection of our aquifers.

### **Is our drinking water system at risk from a terrorist attack and prepared for a crisis?**

The actual risk of a terrorist attacking a water supply system like ours is minimal, but the nationwide fear such an attack would create is great. This fact makes all water systems potential targets, as creating fear is a terrorist’s goal.

Our system has many sources (wells) and auxiliary power capabilities. These redundancies make it hard to knock us out completely. We have studied our system’s vulnerable points and routinely discuss water system security at the Bellingham Emergency Planning Committee meetings. Also in 2009, our emergency response plan was completely revamped and updated.

In recent years, we have added some other very helpful tools to our disaster response arsenal. We now have very accurate maps, computerized and paper, which show all our main, gate valves, and hydrants. This should expedite the isolation of any part of our system should a crisis occur.

We also subscribed to an emergency phone call system. The “Code RED” system can call every Bellingham phone number and deliver a specialized warning to all of our customers within five minutes. If a health hazard ever occurs, the DPW will utilize this system and every other possible means to notify and protect our customers.

We have used the Code Red system to warn of relatively minor water main breaks and shut downs, as well as for routine activities like calling in our long list of snow plow vendors. Although subscription to the Code Red system was primarily for the water system, the members of Police and Fire Department staff are also trained in the use of the system. We hope we never have to use this system to its fullest, but it is very comforting to know that we have the tool to help us protect the health of our customers in case of a major crisis.

### **Should I be concerned about the Bacteria in my tap water?**

Each month we collect at least 40 tap water samples along with a raw and treated water sample at each active well. Bacterial testing requirements for public drinking water are very strict. Drinking water samples must have a count of zero Coliform Bacteria colonies. Coliform Bacteria is a very common and a non-harmful indicator. In 2009, Total Coliform Bacteria was present in 24 of the 615 samples we collected. This is the worse year we have ever seen for bacteria in Bellingham and we were not alone. MassDEP dealt with more bacteria issues than ever before statewide and Milford and other towns had to institute lengthy boil water orders. There was no clear cause; it is likely related to the abnormally rainy summer.

In July and September, we exceeded the allowable 5% of our samples showing a presence of Total Coliform Bacteria. In July, we had 9 of 89 and in September 11 of 104 showed a presence. That is a violation of the state drinking water regulations (310 CMR 22.05 (8)(a): Monthly Maximum Contaminant Level Violation). We addressed these issues and returned to compliance in the subsequent months. See the block titled “REGULATORY VIOLATIONS 2009” on Page 6 for the details about the violation and return to compliance.

We also detected the potentially harmful E. Coli or Fecal Bacteria in 5 samples in September. Confirmation sampling indicated that there was no acute health risk. All Total Coliform Bacteria samples that show a presence are automatically tested for these potentially harmful bacteria.

When we get preliminary indications of bacteria in any test, we move quickly to disinfect the system with chlorine and are able to do so within 24 hours. In 2009, we operated our chlorine feed system from mid July through early December. We were surprised that samples had a presence of any bacteria in September with a chlorine residual throughout the system.

In the event an acute health risk had occurred, we would have sent a message out using our Code RED system. You would have also heard about it on electronic media (radio and TV). We were prepared to issue a boil water order, but are glad to say there was no acute health risk and it was not necessary. We hope we never have to prepare to do so again.

### **There are a few ways that Drinking Water can become contaminated in the pipe system after being pumped from a clean source.**

- **Stagnation & Discoloration**

Water can deteriorate in the pipes before it gets to the tap. To avoid this, we routinely perform hydrant flushing, which cleans out any water that may be stagnating in the piping system and also removes iron and manganese particles that coat the walls of water pipes.

Iron and Manganese can cause severe water discoloration but are not harmful to drink. Iron and manganese is our greatest water quality problem. Even with flushing, some areas of town experience chronic discoloration. Please call us anytime you get discolored water as it will help us improve flushing to reduce and ideally eliminate the problem.

- **Cross Connections - Backflow**

The drinking water supply system can be contaminated if water from a customer's building flows back into the water supply system. This can occur if the water main pressure drops, or if the interior plumbing from a building is not properly installed. This backflow occurs through a plumbing connection that is called a Cross-Connection. (*Definition from MDEP "Protecting Your Water" flyer - A Cross-Connection occurs whenever a potable water line is directly or indirectly linked to a piece of equipment or piping containing non-potable water.*) To avoid this possibility, the DPW administers the Cross-Connection Control Program. Under this program, all commercial properties are routinely surveyed to be sure that special protective check valves are installed and maintained. The Cross-Connection Control Program and the Plumbing Code help to insure that the risk from this form of system contamination is avoided.

Residential water customers also need to be aware of this risk and understand how to prevent backflow at their homes. A backflow event can occur at a home as well as a business and can draw contaminants into **YOUR** water system, placing you and your family at risk.

The potential for backflow through a cross connection seems remote but the consequences are severe. Cross connection backflow has the greatest potential for having your water contaminated to a degree that it can cause immediate illness or death. Imagine taking a drink of water that is laced with pesticides or lawn chemicals.

#### **Some things you should do to prevent backflow at your home:**

- Have all changes to your plumbing system done by a licensed plumber with plumbing inspection.
- Install and maintain hose bib vacuum breakers on all outside faucets. (*The hose bib vacuum breaker isolates your garden hose from the rest of your plumbing system. Garden hoses are the most likely source of residential backflow. Hoses left in a swimming pool, on the ground in a puddle, or connected to a lawn or garden chemical sprayer without a hose bid vacuum breaker creates a potential for water system contamination.*)
- Do not attach any pesticide, chemical, or any other non-potable liquid applicator to your water line.
- Survey your home to make sure no hoses or pipes are connected to a potential source of contamination. (*Please contact the DPW (508-966-5813) or Plumbing Inspector (508-966-5821) if you have any questions about the plumbing at your house. We will gladly perform a survey of your plumbing free of charge.*)
- Contact us to get more information about Cross-Connections and our program to prevent them, or for a copy of the MDEP "Protecting Your Water" Flyer.

- **Corrosion**

Tap water can have high levels of Lead and Copper due to corrosion of internal plumbing pipes and fixtures. The regulations, known as the Lead and Copper Rule, require that we test samples from residential customer's water taps. This testing is performed to confirm our ability to control internal pipe and plumbing corrosion. The Lead and Copper Rule is different from other USEPA regulations in that it uses an Action Level for the contaminant as opposed to a Maximum Contamination Limit. (*See the Lead and Copper Summary Note 3 below for the definition of Action Level.*) The way the Lead and Copper Rule works is the Town must take residential first draw tap water samples from a specific list of homes that are the most likely to yield the highest Lead and Copper levels. The results are tabulated and the 90<sup>th</sup> percentile (7<sup>th</sup> highest out of 61 tested) is compared with the Action Level. If the result is below the Action Level, no additional action is needed. If the result is above the Action Level, additional action is required to reduce the customer's exposure to these contaminants.

In the early 1990's, when the Lead and Copper Rule took effect, we were exceeding the Action Level. We constructed Corrosion Control Facilities to address the problem and now feed Caustic Soda (NaOH) into the source water that lowers the water's acidity (raises the pH). This thereby reduces corrosion and our Lead and Copper levels.

## Lead and Copper Sampling Summary

The Summary lists the worst results for Lead and Copper from the sixty-one samples collected during 2009.

Parameter	Action level (AL) <sup>(3)</sup>	90th Percentile	90th Percentile > AL	Number of Samples	Number of Samples Above AL	Percentage of Samples Above AL	Action
Lead	15 ppb <sup>(1)</sup>	3.0 ppb	<b>NO</b>	61	2	3	Continue Corrosion Control
Copper <sup>(4)</sup>	1.3 ppm <sup>(2)</sup>	0.3 ppm	<b>NO</b>	61	None	Zero	Continue Corrosion Control

1. **ppb** is the abbreviation for parts per billion. The AL for Lead is set in this unit of measure.
2. **ppm** is the abbreviation for parts per million. Parts per million is the same as milligrams per liter (mg/L) which is the scientific unit of measure for most contaminants.
3. **AL** is the abbreviation for Action Level, which is the concentration of a contaminant that, if exceeded, triggers treatment or other requirements, which a water system must follow.
4. The source of Copper in tap water is corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives.

### Possible Health Effects of Copper and Lead in Drinking Water

- **Copper:** Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.
- **Lead:** Infants and children who drink water-containing lead in excess of the action level could experience delays in their physical or mental development and could show slight deficits in attention span and learning abilities. Adults who drink water containing lead in excess of the action level over many years could develop kidney problems or high blood pressure.

### Some more important info about Lead in 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. The Bellingham DPW is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When water has been sitting for several hours, you can minimize the potential 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 <http://www.epa.gov/safewater/lead>.

**REGULATORY VIOLATIONS 2009** - In July and September, we exceeded the allowable 5% of our samples showing a presence of Total Coliform Bacteria. In July, we had 9 of 89 and in September 11 of 104 showed a presence. That is a violation of the state drinking water regulations (310 CMR 22.05 (8)(a): Monthly Maximum Contaminant Level Violation). MassDEP issued a Notice of Noncompliance (NON-CE-09-5D094) for July and (NON-CE-09-5D116) for September and Return to Compliance (RTC-CE-09-5D094) for July and (RTC-CE-09-5D116) for September as we returned to below 5% in August and October. We publicized the violations as directed by MassDEP. MassDEP approved a written notice informing all customers of the higher than 5% results. The notices were published as general ads in the Milford Daily News and Woonsocket Call on August 13<sup>th</sup> and October 2<sup>nd</sup>, and were posted on the Town's website and noted on the Cable TV government scroll channel for several weeks.

### More information on contaminants in drinking water and why they may be in the water.

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

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

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

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

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

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised 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 can be particularly at risk from infections. These people should seek special advice from their health care providers. EPA/Centers for Disease Control and Prevention (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the US EPA's Safe Drinking Water Hotline (800-426-4791)

If you want to know more about the Bellingham water supply system, have any other questions about the report, or would be interested in volunteering to help us with our water education programs, please call Donald DiMartino, Director of the Bellingham Department of Public Works, at **508-966-5813**. The DPW office is located at 26 Blackstone Street beside the Fire Station.