

*Annual*  
**WaterQualityReport**  
*Water testing performed in 2010*



*Presented By*  
**Town of Norton Water  
Sewer Department**

**PWS ID#: 4218000**

## Quality First Quality

Once again we are proud to present our annual water quality report covering all testing performed between January 1 and December 31, 2010. As in years past, we are committed to delivering the best-quality drinking water possible. To that end, we remain vigilant in meeting the challenges of new regulations, source water protection, water conservation, and community outreach and education while continuing to serve the needs of all of our water users. Thank you for allowing us to continue providing you and your family with high-quality drinking water.

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

## Where Does My Water Come From?

The Town of Norton's drinking water supply is groundwater, which comes from the Canoe River Aquifer, located within the Taunton River Basin. The groundwater supply is not exposed to air and is not subject to direct pollution and contamination, unlike a river or reservoir (surface water). In fact, groundwater is the highest quality water available to meet the public health demand of water intended for human consumption. Demand for good drinking water is high; we provided approximately 1.28 million gallons of drinking water each day during 2010.

Our distribution system consists of five gravel packed wells located on Pine, Plain, and Newland Streets; four storage facilities that store a combined amount of 5.85 million gallons of water (state regulations require a one-day minimum of water storage supply), and approximately 120 miles of water main. The wells are located within our Water Resource Protection District, an essential tool for protecting our water source. The Town established and accepted our district and our bylaws in 1980; they have since been incorporated into the Town's Zoning By-Laws.

## Ground Water Rule

On September 16, 2010 we were informed that a routine raw water bacteria sample collected from Well #4 on September 15, 2010 was positive for fecal coliform. The well was immediately taken offline and shut down. As required by the Ground Water Rule, we collected five additional samples from Well #4 for fecal contamination analysis. The Well #4 sample (which was raw water, not in the distribution system) was positive for fecal contamination by *E. coli*. In response, we notified the public within 24 hrs of learning of this positive sample by advertising in the local newspaper, on the local cable station, and via the Town's website. The DEP has mandated the installation of a chlorine analyzer to monitor the chlorine residuals in the water leaving Well #4. The proposed completion date is July 2011. Until such time, Well #4 remains shut down.

Fecal indicators are microbes whose presence 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, some of the elderly, and people with severely compromised immune systems.

## How Is My Water Treated and Purified?

### Primary Disinfection with Chlorine

All reservoirs and some groundwater sources contain numerous microorganisms, some of which can cause people to be sick. To eliminate disease-carrying organisms, it is necessary to disinfect the water.

Disinfection does not sterilize the water, but it does destroy harmful organisms. Sterilization kills all microorganisms, even though most are not harmful, and is too costly to use on a routine basis. The Norton Water Department uses sodium hypochlorite as its primary disinfectant. Chlorine destroys organisms by penetrating cell walls and reacting with enzymes. Disinfection with chlorine has been proven effective at ensuring that water is free of harmful organisms and safe to drink.

### Corrosion Control through pH Adjustment

Many drinking water sources in New England are naturally corrosive (i.e., they have a pH of less than 7.0). So, the water they supply has a tendency to corrode and dissolve the metal piping it flows through. This not only damages pipes but can also add harmful metals, such as lead and copper, to the water. For this reason, it is beneficial to add chemicals that make the water neutral or slightly alkaline.

This is done by adding any one, or a combination of several, approved chemicals. The Norton Water Department adds potassium hydroxide to its water, which adjusts the water to a noncorrosive pH. Testing throughout the water system has shown that this treatment has been effective at reducing lead and copper concentrations in the water.

### Sequestration for Iron and Manganese

Iron and manganese are often present in groundwater at levels that can discolor the water, or cause it to take on unpleasant odors or tastes. Even though the water may still be safe to drink, treatment is often desirable.

Our treatment consists of adding AquaMag, a blended polyphosphate, to the water. This results in a chemical reaction, known as sequestration, which prevents the iron and manganese from forming nuisance particles.

## Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. Our regularly scheduled meetings are held twice a month. Meeting schedules and times are posted with the Town Clerk, (508) 285-0230, or contact the Norton Water and Sewer Department directly at (508) 285-0280.

## Questions?

For more information about this report, or for any questions relating to your drinking water, please call Duane M. Knapp, Superintendent, at (508) 285-0282.

## Important Information and Updates

### Did You Know...?

A lot of customers pay their water and sewer bills through their bank's online service provider. But what you may not realize is that this service is actually issuing a paper check and mailing it through the U.S. Postal Service. So it could arrive beyond the due date or get lost in the mail altogether, blemishing your credit. These paper checks do not contain sufficient information for us to process the payment immediately (including the correct remit address), which also can delay crediting your account. To avoid these problems and to obtain secure and instant credit to your account (no paper check or mailing involved), please go to [www.nortonma.org](http://www.nortonma.org) and follow the online WATER PAYMENT instructions. There is no fee if you use a checking account; if you use a credit card, there is a fee schedule available for viewing before the transaction for your convenience.

### Reminders

October 1st is the lien deadline. Every year on this date, any accounts with outstanding water and/or sewer balances will AUTOMATICALLY BECOME A LIEN ON YOUR REAL ESTATE TAX BILL. So please pay your bills in full by their due dates.

### Hydrant Flushing

Hydrant flushing is conducted twice a year, in the Spring and in the Fall. Schedules are posted on the Web site, on the local cable access channel, and in The Sun Chronicle and the Water Department Office. Each flushing cycle consists of flushing approximately 1,000 hydrants and takes 10 to 12 weeks. During this time, iron particles may be visible in your home, and water color may vary from a tint ranging from yellow to that of dark tea. Although unsightly, the water is safe. Because the water mains are a "looped" system, discoloration can happen anywhere in Town regardless of the area where hydrants are open. For example, hydrants could be being flushed on South Washington Street, but you could experience discolored water on Pine Street. Filtering systems, washing machines, and dishwasher usage should be monitored during this time. We know how frustrating "dirty" water can be, so we really appreciate your cooperation and understanding.

For more information on any of these topics, call the water department office at (508) 285-0280.

## 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. The Norton Water Department 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).

## Source Water Assessment and Protection

The Source Water Assessment and Protection (SWAP) program, established under the Federal Safe Drinking Water Act, requires every state to inventory land uses within the recharge areas of all public water supply sources; to assess the susceptibility of drinking water sources to contamination from these land uses; and to publicize the results to provide support for improved protection.

A susceptibility ranking of high was assigned to this system using the information collected during the assessment by the Department of Environmental Protection (DEP). The complete SWAP report is available at the Norton Water and Sewer Department or online at [www.mass.gov/dep/water/drinking/4218000.pdf](http://www.mass.gov/dep/water/drinking/4218000.pdf). For more information, contact Duane Knapp, Superintendent, at (508) 285-0282.

## 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 <http://water.epa.gov/drink/hotline>.



## 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) prescribe 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.

## Sampling Results

During the past year we have taken 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 often 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
<i>E. coli</i> [at the groundwater source] <sup>1</sup> (# positive samples)	2010	NA	0	1	NA	Yes	Human and animal fecal waste in untreated groundwater
Haloacetic Acids [HAAs] (ppb)	2010	60	NA	5.23	ND–15.1	No	By-product of drinking water disinfection
Nitrate (ppm)	2010	10	10	1.98	0.14–1.98	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Perchlorate (ppb)	2010	2	NA	0.12	0.06–0.12	No	Inorganic chemicals used as oxidizers in solid propellants for rockets, missiles, fireworks, and explosives
TTHMs [Total Trihalomethanes] (ppb)	2010	80	NA	34.88	20.2–104	No	By-product of drinking water disinfection
Total Coliform Bacteria <sup>2</sup> (# positive samples)	2010	5% of monthly samples are positive	0	1	NA	No	Naturally present in the environment

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
Copper (ppm)	2010	1.3	1.3	0.81	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	2010	15	0	3	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits

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

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Chloroform (ppb)	2010	0.9	ND–0.9	By-product of drinking water chlorination

<sup>1</sup> One raw water sample from Well #4 tested positive for *E. coli* (see GROUND WATER RULE information for explanation).

<sup>2</sup> A water sample from the Cottage Street elevated tank tested positive for total coliform bacteria. Repeat samples were negative. Chlorine levels were increased as a precaution. No violations were issued.

<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 the EPA in determining their occurrence in drinking water and whether future regulation is warranted.

## 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.

**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).