

**2011 DRINKING WATER QUALITY REPORT  
TOWN OF HANOVER DEPARTMENT OF PUBLIC WORKS  
HANOVER, MASSACHUSETTS 02339  
DEP PWSID # 4122000**

This report is a snapshot of drinking water quality that we provided in 2011. Included are details about where your water comes from, what it contains, and how it compares to state and federal standards. We are committed to producing drinking water that meets all state and federal drinking water standards. We are committed to providing you with information because informed customers are our best allies.

**PUBLIC WATER SYSTEM INFORMATION**

Address: 40 POND STREET HANOVER MASSACHUSETTS 02339

Contact Person: DOUGLAS N. BILLINGS, WATER SUPERVISOR

Telephone #: (781) 826-3189

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**Website: [www.hanoverdpw.org](http://www.hanoverdpw.org)**

**Water System Improvements:**

*As part of our ongoing commitment to you, last year we made the following improvements to our system: Continued replacing water meters over 15 years old with radio read units to provide more accurate readings and to cut labor costs reading meters.*

**Opportunities for Public Participation:**

*Residents are encouraged to attend and participate in meetings of the Board of Public Works. Your commissioners are Louis Avitabile (Chairman), John Benevides and Edward Ryan. The meetings are generally held once a month at the Water Treatment Plant located at 40 Pond St. Please check the Town Hall's Bulletin Board or contact the D.P.W. office at (781) 826-3189 to determine the next scheduled meeting.*

**YOUR DRINKING WATER SOURCE**

**Where Does My Drinking Water Come From?**

Source Name	DEP Source ID#	Source Type	Location of Source
#1 & #2 Broadway Wells	4122000-06 & 07G	Groundwater	Broadway
#1 & #2 Hanover St. Wells	4122000-03 & 04G	Groundwater	Hanover St.
#1, #2 & #3 Pond St. Wells	4122000-01, 05 & 08G	Groundwater	Pond St.
# 1 & # 2 Beal Wells	4122000-09 & 10G	Groundwater	Riverside Dr.

**Is My Water Treated?**

Our water system makes every effort to provide you with safe and pure drinking water. To improve the quality of the water delivered to you, we treat it to remove several contaminants.

- We add a disinfectant to protect you against microbial contaminants.
- We chemically adjust the water to allow impurities to bond together to settle out of the water.
- We then filter the water to remove any remaining particles from the water.
- We chemically treat the water to a non-corrosive pH to reduce lead and copper concentrations.

**How Are These Sources Protected?**

The Department of Environmental Protection (DEP) has prepared a Source Water Assessment Program (SWAP) Report for the water supply sources serving this water system. The SWAP Report assesses the susceptibility of public water supplies.

The SWAP Report notes the key issues of 1). Zone 1 land uses 2). Residential land uses. 3). Transportation corridors. 4). Hazardous materials storage and use. 5). Oil or hazardous material contamination sites. 6). Comprehensive wellhead protection planning, in the water supply protection areas.

**What is My System's Ranking?**

The overall ranking of susceptibility to contamination for the system is high using the information collected during the assessment by the DEP.

**Where Can I See The SWAP Report?**

*The complete SWAP report is available at DPW Office located at 40 Pond St. For more information, call Doug Billings, Water Supervisor at (781) 826-3189.*

## What Can Be Done To Improve Protection?

### Our public water system plans to address the protection recommendations by

- Continue implementation of the federal Phase II Storm Water Management Program.
- Continue to enforce Hanover's current Aquifer Protection By-laws.
- Continue to work with the Board of Health and Fire Department to identify hazardous materials storage and use to be sure Best Management Practices are being used to prevent contaminants from reaching drinking water supplies.

## SUBSTANCES FOUND IN TAP WATER

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.

### **Contaminants 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, and wildlife.

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

**Pesticides and herbicides** -which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

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

**Radioactive contaminants** -which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the Department of Environmental Protection (DEP) and U.S. Environmental Protection Agency (EPA) prescribe regulations that limit 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 that must provide the same protection for public health. All 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. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800-426-4791).

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 some infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control and Prevention (CDC) guidelines on lowering the risk of infection by cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

## IMPORTANT DEFINITIONS

**Maximum Contaminant Level (MCL)** – 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.

**Maximum Contaminant 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.

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

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

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

**90<sup>th</sup> Percentile** – Out of every 10 homes sampled, 9 were at or below this level.

**Secondary Contaminant Level (SMCL)** – These standards are developed to protect the aesthetic qualities of drinking water and are not health based.

**Massachusetts Office of Research and Standards Guideline (ORSG)** is the concentration of a chemical in drinking water, at or below which, adverse health effects are unlikely to occur after chronic (lifetime) exposure. If exceeded, it serves as an indicator of potential need for further action.

**ppm** = parts per million, or milligrams per liter (mg/l)

**ppb** = parts per billion, or micrograms per liter (ug/l)  
**ppt** = parts per trillion, or nanograms per liter  
**pCi/l** = picocuries per liter (a measure of radioactivity)  
**NTU** = Nephelometric Turbidity Units  
**ND** = Not Detected  
**N/A** = Not Applicable  
**mrem/year** = millirem per year (a measure of radiation absorbed by the body)

## WATER QUALITY TESTING RESULTS

### What Does This Data Represent?

The water quality information presented in the tables are from the most recent round of testing done in accordance with the regulations. All data shown was collected during the last calendar year unless otherwise noted in the table(s).

	Highest % Positive in a month	Total # Positive	MCL	MCLG	Violation (Y/N)	Possible Source of Contamination
Total Coliform	14%	-----	>5%	0	Y	Naturally present in the environment
Fecal Coliform or <i>E.coli</i>	-----	1	*	0	Y	Human and animal fecal waste

Regulated Contaminant	Year(s) Collected	Highest Detect	Range Detected	Highest Average	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Source(s) of Contamination
Nitrate (ppm)	2011	0.99	ND to 0.99	N/A	10	10	N	Runoff from fertilizer, leaching from septic tanks, sewerage, erosion of natural deposits
Perchlorate (ppb)	2011	.27	<.05 to .27	N/A	2.0		N	Rocket propellants, fireworks, munitions
Total Trihalomethanes (TTHMs) (ppb)	2011	120.0	18.4 to 120.0	64.43	80	-----	N	Byproduct of drinking water chlorination
Haloacetic Acids (HAA5) (ppb)	2011	9.5	ND to 9.5	4.38	60	----	N	Byproduct of drinking water disinfection
Chlorine (ppm)	2011	1.99	.02 to 1.99	.57	4	4	N	Water additive used to control microbes
Tetrachloroethylene (PCE) (ppb)	2011	2.2	ND to 2.2	N/A	5	0	N	Discharge from factories and dry cleaners
Gross Alpha (pCi/l) <sup>1</sup> (minus uranium)	2003 & 2004	1.7	ND to 1.7	N/A	15	0	N	Erosion of natural deposits
Radium 226 & 228 (pCi/L) (combined values)	2003 & 2004	1.5	.1 to 1.5	N/A	5	0	N	Erosion of natural deposits

<sup>1</sup> The MCL for beta particles is 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for beta particles.

Tap water samples were collected from sample sites throughout the community.							
	Date(s) Collected	90 <sup>th</sup> percentile	Action Level	MCLG	# of sites sampled	# of sites above Action Level	Possible Source of Contamination
Lead (ppb)	2011	5	15	0	30	2	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	2011	0.51	1.3	1.3	30	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

**Unregulated contaminants** are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining their occurrence in drinking water and whether future regulation is warranted.

<b>Unregulated Contaminant</b>	<b>Date(s) Collected</b>	<b>Result or Range Detected</b>	<b>Average Detected</b>	<b>SMCL</b>	<b>ORSG</b>	<b>Possible Source</b>
Sodium (ppm)	6/15/2011	36.8 to 67.0	51.4	----	20	Natural sources; runoff from use as salt on roadways; by-product of treatment process
Sulfate (ppm)	2011	21.6 to 89.5	N/A	250	---	Natural sources
Bromodichloromethane (ppb)	2011	6.2 to 33.8	N/A	---	---	By-product of drinking water chlorination
Chloroform (ppb)	2011	5.3 to 73.7	N/A	---	---	By-product of drinking water chlorination
Bromoform (ppb)	2011	1.4 to 10.1	N/A	---	---	By-product of drinking water chlorination
Dibromochloromethane (ppb)	2011	4.9 to 27.3	N/A	---	---	By-product of drinking water chlorination
<b>Radioactive Contaminants</b>						
Radon (pCi/L)	2003	15 to 1060	N/A	---	10,000	Natural sources

## COMPLIANCE WITH DRINKING WATER REGULATIONS

### ABOUT OUR VIOLATION

*During the month of September 2011 our system violated the Monthly Maximum Contaminant Level (MCL) for coliform bacteria and the Acute Maximum Contaminant Level for total coliform bacteria due to the presence of E.coli bacteria. Although this incident was not an emergency, if it had been you would have been notified immediately. Notice was provided immediately to radio and TV news media and published in local newspapers. As our customer, you have a right to know what happened and what we did to correct this situation. We routinely monitor for drinking water contaminants. We took 93 samples to test for the presence of total coliform bacteria during the month of September 2011. Fourteen percent of our samples showed the presence of total coliform bacteria and one the presence of E.coli. The standard is that no more than 5 percent of the total coliform bacteria samples and any E. coli positive may do so. Corrective action was taken immediately by increasing the chlorine residual coming from our water treatment plants, adding chlorine to our storage tanks, flushing the distribution system and removing the .68 million gallon tank at Union St. from service where the E.coli positive sample was found, draining ,cleaning and completely disinfecting it before returning it to service.*

*Total Coliform: 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 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, and people with severely-compromised immune systems.*

## EDUCATIONAL INFORMATION

**Lead:** *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 Town of Hanover Department of Public Works is responsible for providing high quality drinking water, but 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 it 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 at 800.426.4791 or at <http://www.epa.gov/safewater/lead>.*

**Total Trihalomethanes:** *Some people who drink water containing trihalomethanes in excess of the MCL over many years experience problems with their liver, kidneys, or central nervous systems, and may have increased risk of getting cancer.*

**Sodium-***sensitive individuals, such as those experiencing hypertension, kidney failure, or congestive heart failure, should be aware of the sodium levels where exposures are being carefully controlled.*

**Radon** is a radioactive gas that you cannot see, taste, or smell. It is found throughout the U.S. Radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can build up to high levels in all types of homes. Radon can also get into indoor air when released from tap water from showering, washing dishes, and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water will in most cases be a small source of radon in indoor air. Radon is a known human carcinogen. Breathing air-containing radon can lead to lung cancer. Drinking water containing radon can lead to lung cancer. Drinking water containing radon may also cause increase risk of stomach cancer. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. Fix your home if the level of radon in your air is 4 picocuries per liter of air (pCi/l) or higher. There are simple ways to fix a radon problem that aren't too costly. For additional information, call the Massachusetts Department of Public Health, Radon Program at 413-586-7525 or call EPA's Radon Hotline (800-SOS-RADON).

**HELP PRESERVE AND PROTECT WATER  
OUR MOST PRECIOUS NATURAL RESOURCE**

**WATER CONSERVATION TIPS**

- Check faucets and toilets for leaks.
- Install low flow aerators on bathroom and kitchen faucets.
- Install low –flow showerheads.
- Run dishwasher and washing machine only when they are full.
- Water in the early morning or evening.
- Use a broom instead of a hose to clean driveways, walks and patios.
- Keep grass at least three inches high to shade roots and hold moisture.

**GROUND WATER PROTECTION**

- Never pour toxic chemicals down the drain, on the ground, in catch basins or in the street.
- Take hazardous household chemicals to hazardous materials collection days.
- Properly maintain your septic system by pumping it out every two years.
- Don't use septic system cleaners.

**BACKFLOW PREVENTION**

Backflow can occur when the pressure drops in the water distribution system causing water and possibly non-potable substances to siphon from the consumer's system back into the public water supply. This type of backflow is called *Backsiphonage* and may occur when there is unusually high use of water, for example, during fire fighting or when a water main breaks. You can help protect your drinking water by taking the following steps:

- Never submerge hoses in buckets, pools, tubs or sinks, keep the end of the hose clear of possible contaminants.
- Don't use spray attachments without a backflow prevention device. The chemicals used on your lawn are toxic. Buy and install inexpensive backflow prevention devices called *Hose Bibb Atmospheric Vacuum Breakers* on all threaded faucets around your home. They are available at hardware stores, home-improvement centers and plumbing supply stores.
- Install backflow prevention devices called *Pressure Atmospheric Vacuum Breakers* on your lawn irrigation Systems.

**GREENSCAPES**

The Town of Hanover Department of Public Works has partnered with the North and South Rivers Watershed Association's Greenscapes Program. The Greenscapes Program provides tips for low-maintenance landscape and free workshops that will save you money and help protect the environment by reducing the need for water and chemicals. You can learn more about the Greenscape Program by logging onto their web site at [www.greenscapes.org](http://www.greenscapes.org) and download the Greenscapes Reference Guide and sign up for their free e-mail newsletter.