



## 2008 Town of Hanson, Massachusetts DRINKING WATER QUALITY REPORT

### Public water system information

The Hanson Water Department is pleased to present our 2008 Drinking Water Quality Report. As required by the Environmental Protection Agency (EPA), this annual report will detail where your water comes from, what it contains, and the risks our water testing and treatment are designed to prevent. The Hanson Water Department is committed to providing you with the safest and most reliable water supply possible.

In 2008 we conducted more than 1,100 tests for over 60 drinking water contaminants. Five regulated contaminants were detected in your drinking water in 2008. Three of these contaminants—tetrachloroethylene, nitrate, and perchlorate—were below the EPA established maximum contaminant levels (MCLs). However, during the month of October total coliform and E. coli bacteria were detected in your system at a level higher than the state allows. Please see the section of this report titled *About our bacteriological violation* for additional information. Call us for more information about your water system. **Mr. Neal Merritt is the Water Superintendent. He can be reached at 781-447-1200.** Feel free to attend any of our regularly scheduled meetings. The Board of Water Commissioners meets on the second and fourth Wednesdays of each month at 5:00 p.m. in the Water Department office at 1073 West Washington Street.

### Your drinking water sources

The Hanson Water Department was created in 1916. From 1916 until the early 1980s, Hanson purchased its water from the City of Brockton and the Abington/Rockland Joint Waterworks. Since then, Hanson has developed its own water supply at the Crystal Spring Well Field while still maintaining one interconnection with the Brockton Water Department.

In 2008, the Hanson Water Department pumped 228 million gallons from the Crys-

tal Spring Well Field, which equates to approximately 620,000 gallons per day. The Department's peak day occurred on June 8, 2008, when approximately 1.2 million gallons were pumped into the system. We continue to rely on water from the Brockton Water Department to augment our supply. In June of 2008, we purchased approximately 400,000 gallons over a two day period in order to meet high consumer demand and in October we purchased an additional five million gallons of water from Brockton in order to make up for lost capacity as a result of Well #1 being taken out of service due to potential bacteriological contamination.

Source Name	DEP Source ID #	Source Type	Location of Source
Well # 1	4123000-01G	Groundwater	Crystal Spring Well Field
Well # 3	4123000-03G	Groundwater	Crystal Spring Well Field
Well # 4	4123000-04G	Groundwater	Crystal Spring Well Field
Well # 5	4123000-05G	Groundwater	Crystal Spring Well Field
Brockton Water Dept.	4044000-01S	Surface Water	Silver Lake

The Hanson Water Department makes every effort to provide you with safe and pure drinking water. To improve the quality of the water delivered to you the Department adds potassium hydroxide for pH adjustment. The groundwater in Hanson is naturally corrosive (i.e., it has a pH of less than 7.0), therefore, untreated water has a tendency to corrode and dissolve the metal piping it flows through. This not only damages the internal plumbing of your home but can also add harmful metals, such as lead and copper, to your water. By adding potassium hydroxide, we are able to raise the pH of your water to a non-corrosive level, thereby reducing lead and copper levels. The Department was not required by the Massachusetts Department of Environmental Protection (DEP) to monitor for lead and copper in 2008. However, in 2006, the Department tested the tap water of 25 homes in the distribution system for lead and copper. All the homes tested were well below EPA contaminant limits.

### Sources Water Assessment and Protection (SWAP)

The Source Water Assessment and Protection (SWAP) program was established in 1996 by the EPA as part of the Safe Drinking Water Act. SWAP requires every state to inventory land use within recharge areas of all public water supply sources and to assess the susceptibility of these drinking water sources to contamination. Hanson's SWAP report, which was completed in 2003, identifies the primary recharge area (Zone II) for the Crystal Spring Well Field as consisting primarily of forest and non-forested wetlands with small areas of cropland, residential, commercial, industrial and waste disposal land use. In addition, Hanson's wells are located in aquifers with high vulnerability to contamination due to the absence of hydrogeologic barriers (such as clay) that can prevent contaminant migration. As a result, Hanson's sources are considered highly susceptible to contamination from a variety of sources such as petroleum products, industrial solvents, fertilizers, and microbial contaminants. Susceptibility is a measure of a water supply's **potential** to become contaminated due to land uses and activities within its recharge area and does not imply poor water quality.

Two DEP Tier Classified Oil and/or Hazardous Material Release Sites are located within the Crystal Spring Well Field Zone II. They are Clayton's Auto Repair at 1158 Main Street (Site # 4-0001087) and Lynch's Laundromat & Carwash at 1615 Main Street (Site # 4-0000781). These sites are in the final phases of remediation and do not pose a threat to Hanson's water supply. For more information,

please visit the DEP's Bureau of Waste Site Cleanup (BWSC) searchable site database at <http://db.state.ma.us/dep/cleanup/sites/search.asp>.

The Hanson SWAP report is available at the Water Department Office at 1073 West Washington Street. In addition, the SWAP report is available on the DEP website at <http://www.mass.gov/dep/water/drinking/seroreps.htm>. The DEP commends the Hanson Water Department for its work to date on promoting source protection. Residents and businesses can do their part in protecting Hanson's groundwater sources by:

- Practicing good septic system maintenance
- Supporting water supply protection initiatives at the next town meeting
- Disposing of waste oil and hazardous materials properly; never in storm drains, septic systems or on the ground

## Substances found in tap water

**D**rinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contamination. 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 (1-800-426-4791).

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, can be particularly at risk from infections. These people should seek advice from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

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 Hanson Water Department 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 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>.

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, may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- **Inorganic contaminants** — such as salts and metals 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** — may come from a variety of sources such as agricultural, urban storm water runoff, and residential uses.
- **Organic chemical contaminants** — include synthetic and volatile organic chemicals that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- **Radioactive contaminants** — 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 DEP and EPA prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and the Massachusetts Department of Public Health (DPH) regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

## Cross connection

**A** cross connection is any physical connection between potable water and any source of contamination. In some cases, the source of contamination can be your own home. For example, if you were to spray fertilizer on your lawn the hose connection to the sprayer that contains the fertilizer could be considered a cross connection. If the water pressure were to drop while this connection was made, (say because of fire hydrant use in the town), the fertilizer may be sucked back into the drinking water system through the hose. Using an attachment on your hose called a backflow-prevention device can prevent this problem.

The Hanson Water Department recommends the installation of backflow prevention devices, such as a low cost hose bib vacuum breaker, for all inside and outside hose connections. You can purchase this at a hardware or plumbing supply store. This is a great way for you to help protect the water in your home as well as the drinking water system in your town.

## About our bacteriological violation

In October of 2008, total coliform bacteria were detected at eight locations within our distribution system and at two well locations. In addition, one distribution system location tested positive for *E. coli* bacteria. This resulted in an acute MCL violation and as a result you were immediately notified (via local newspapers and the town's web site) of this situation. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful bacteria may be present. *E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal waste. Microbes in these wastes can cause

## Water quality testing results

The following table lists all the drinking water contaminants detected during calendar year 2008 or during the most recent sampling period within the past five years. The state requires us to monitor for certain contaminants less than once per year because the concentration of these contaminants is not expected to vary significantly from year to year. The presence of these contaminants in the water does not necessarily indicate the water poses a health risk. Definitions of the terms and abbreviations used in the table are given below.

### Regulated Contaminants

Contaminant	MCL	MCLG	Highest Detected Level	Range (Low–High)	Violation	Likely Source
Total Coliform (#/100 ml)	See Note 1	0	26 (Oct. 2008)	ND-26	Yes	Naturally present in the environment
<i>E. coli</i> (#/100 ml)	See Note 2	0	1 (Oct. 2008)	ND-1	Yes	Human and animal fecal waste.
Tetrachloroethylene (ppb)	5	0	2.5	ND – 2.5	No	Discharge from asbestos cement lined pipes
Nitrate (ppm)	10	10	0.59	ND – 0.59	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrate (ppm)	1	1	ND	ND	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Perchlorate (ppb)	2	—	0.07	ND – 0.07	No	Rocket propellants, fireworks, munitions, flares, blasting agents
Alpha Emitters <sup>3</sup> (pCi/L)	15	0	2.8	0.5 – 2.8	No	Erosion of natural deposits
Combined Radium <sup>3</sup> (pCi/L)	5	0	0.7	0.2 – 0.7	No	Erosion of natural deposits

### Regulated at the Customer's Tap

Contaminant	A.L.	MCLG	90th Percentile	Homes above A.L.	Violation	Typical Source
Lead (ppb) <sup>4</sup>	15	0	3	0	No	Corrosion of household plumbing systems
Copper (ppm) <sup>4</sup>	1.3	1.3	0.98	0	No	Corrosion of household plumbing systems

### Unregulated Contaminants<sup>5</sup>

Contaminant	ORSG	Average Detected	Range (Low – High)	Typical Source
Sodium (ppm)	20	22.2	19.0 – 35.1	Natural sources; runoff from use on roadways
Methyl Tertiary Butyl Ether (ppb)	70	1.9	1.2 – 2.2	Fuel additive; leaks and spills from gasoline storage tanks

### Notes:

<sup>1</sup>Total Coliform MCL: Presence of coliform bacteria in >5% of monthly samples.

<sup>2</sup>*E. coli* MCL: A routine sample and a repeat sample are total coliform positive, and one is also *E. coli* positive.

<sup>3</sup>Samples collected February, 2003.

<sup>4</sup>Tap water samples collected September, 2006, from 25 homes throughout the distribution system.

<sup>5</sup>Unregulated Contaminants are those for which the 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.

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. We regret exposing you to any potential risk, however, we must emphasize that only one of over 200 samples collected in October was positive for *E. coli*. After extensive chlorination, flushing, and numerous re-samplings of our distribution system, the bacteriological contamination issue was resolved. Further investigation indicated that Well #1 was the likely source of the total coli-

form contamination. As a result, this well was taken off-line on October 21, 2008, and remained off-line for 37 days. During this time, the well was cleaned and disinfected. Subsequent testing of Well #1 determined that total coliform bacteria were no longer present in the well water, and, as a result, Well #1 was placed back in service on November 27, 2008. If you want more information about total coliform or *E. coli*, please call us at (781) 447-1200 or the Safe Drinking Water Hotline (800) 426-4791.



## Important Definitions

- ◆ **Maximum Contaminant Level (or MCL)** — The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs (see below) as feasible using the best available treatment technology.
- ◆ **Maximum Contaminant Level Goal (or 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.
- ◆ **ppm** — parts per million, or milligrams per liter (mg/L)
- ◆ **ppb** — parts per billion, or micrograms per liter (µg/L)
- ◆ **ND** — Not detectable at testing limit
- ◆ **pCi/L** — picocuries per liter (a measure of radioactivity)
- ◆ **Action Level (or AL)** — The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
- ◆ **90th Percentile** — Out of 10 homes, 9 were at or below this level.
- ◆ **Massachusetts DEP Office of Research and Standards Guidelines (ORSG)** — This is the concentration of a chemical in drinking water, at or below which, adverse health effects are unlikely to occur after chronic (lifetime) exposure, with a margin of safety. If exceeded, it serves as an indicator of the potential need for further action.

The Massachusetts Department of Environmental Protection has reduced the monitoring requirements for asbestos, alpha emitters, nitrites, combined radium, and synthetic organic compounds to less often than once per year because the source is not at risk of contamination. The most recent test for these contaminants yielded results that were not detectable or below the MCL.

## Water Conservation Tips

**W**ater conservation begins with you. Here are a few suggestions that will help preserve your water supply and at the same time save you money on your next water bill:

### Indoor

- ◆ Run your washing machine and dishwasher only when they are full.
- ◆ Keep showers under 5 minutes.
- ◆ Fix leaking faucets, pipes, toilets, etc.
- ◆ Replace old dishwashers and clothes washers with energy efficient machines that use less water and electricity.

### Outdoor

- ◆ Minimize evaporation by watering during the early morning hours, when temperatures are cooler and winds are lighter.
- ◆ Plant during the spring or fall when watering requirements are lower.
- ◆ Use a layer of organic mulch around plants to reduce evaporation.
- ◆ Use a broom instead of a hose to clean your driveway or sidewalk.
- ◆ Adjust your lawn mower to a higher setting. Longer grass shades root systems and holds soil moisture better than a closely clipped lawn.

The Internet has numerous web sites offering water conservation tips. The California Urban Water Conservation Council and the EPA provide one such site that can be found at <http://www.h2ouse.org>. Another useful web site providing landscape advice can be found at <http://www.greenscapes.org>.

*Hanson Water Customer*

*Drinking Water Information*



**Hanson Water**

Hanson Water Department  
1073 West Washington Street  
Hanson, MA 02341  
Tel. 781-447-1200  
PWS ID#4123000



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