

TOWN OF HUDSON DEPARTMENT OF PUBLIC WORKS – WATER DIVISION



1 MUNICIPAL DRIVE, HUDSON, MA 01749

Anthony Marques, Director Public Works

978 562-9333

Public Water Supply ID # 2141000

O relatório contém informações importantes sobre a qualidade da água da comunidade. Traduza-o ou peça ajuda de uma pessoa amiga para ajudá-lo a entender melhor.

2008 ANNUAL DRINKING WATER QUALITY REPORT

WATER SYSTEM

Our water system is routinely inspected and continuously monitored by the Massachusetts Department of Environmental Protection (DEP). To ensure that we provide the highest quality of water available, your water system is operated by a Massachusetts certified operator who oversees the routine operations of our system.

OPPORTUNITIES FOR PUBLIC PARTICIPATION

Water supply topics and concerns are addressed at Board of Selectmen's meetings. If you would like to participate in discussions regarding your water quality, you may attend these meetings. Please contact the Department of Public Works for information on meetings that contain water supply related agenda topics.

YOUR DRINKING WATER SOURCES

Where Does My Drinking Water Come From?

Your water is provided by a "blended water" supply. The sources of the water supply (with their DEP ID number) are as follows: Surface water from the Gates Pond Reservoir is treated and pumped into the Town's water supply system. Groundwater from the Cranberry Well and the Kane Well receives chemical addition and is then pumped into the system. Groundwater is pumped from the three Chestnut wells and treated to remove iron and manganese before entering the supply system.

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 your drinking water in a number of different ways, depending on the source water quality. How we treat water from the different sources is described below.

FILTRATION Gates Pond Reservoir is a surface water source that receives filtration. Small particles and organisms such as sediment, algae and bacteria can cause surface water to take on unpleasant odors or tastes, and sometimes make it unhealthy to drink. To remove this material, it is necessary to chemically treat the water and then pass it through two types of filtering units – an upflow clarifier and a mixed media filter bed.

The process begins when aluminum sulfate and a polymer are added to the water at a controlled rate. This helps the small particles to stick together and form larger particles. The chemically treated water flows upward through a clarifier with layers of coarse sand and gravel. As the treated water passes through this unit, the large particles are trapped and most of the particles are removed. The cleaner water then flows onto a filter bed made from several layers of coarse and fine sand, which trap the remaining particles. Over time, the clarifier and filter bed start to clog and are backwashed (much like a swimming pool filter) and the treatment process is restarted.

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

Disinfection does not sterilize the water; it destroys the harmful organisms. Sterilization is too costly and kills all organisms, even though most are not harmful. The Town uses sodium hypochlorite as a disinfectant. When combined with proper filtration, disinfection ensures the water is free of harmful organisms and is safe to drink.

Iron and manganese are often present in groundwater at levels that can discolor the water, or cause it to have unpleasant odors and tastes. Even though the water may be safe to drink, it is preferable that the iron and manganese be treated.

IRON & MANGANESE SEQUESTRATION is used to treat the groundwater from the Cranberry and Kane Wells. Treatment is done by adding metaphosphate to the water. This causes a chemical reaction called sequestration, which prevents the iron and manganese particles from forming nuisance particles.

IRON & MANGANESE FILTRATION is used to treat the water from the Chestnut wells. Removal requires a two step process of oxidation and filtration. Oxidation is done by adding sodium hypochlorite to the water. This chemical causes the iron and manganese to form tiny particles. The water then passes through filters that contain material that is designed to trap these iron and manganese particles. Over time these filters start to clog and are cleaned by a backwash operation.

CORROSION CONTROL Many New England water are sources naturally corrosive. The water from these sources tends to corrode and dissolve the metal pipes it flows through. Not only does this damage pipes, but it can also add metals such as lead and copper to the drinking water. For this reason, it is beneficial to add chemicals to the water to make the water noncorrosive.

The Town adds controlled amounts of potassium hydroxide to all its water to make it noncorrosive. Testing throughout the Town's water system has shown this treatment has been effective in reducing lead and copper in the drinking water.

All chemicals used for the various treatment processes described above are approved for water treatment by one of the following organizations: National Sanitation Foundation (known as NSF International), or UL, both accredited by the American National Standards Institute (ANSI). Chemicals also have to meet performance standards established by the American Water Works Association.

The water quality of our system is constantly monitored by us and the DEP to determine the effectiveness of existing water treatment and to determine if any additional treatment is required.

How Are These Sources Protected?

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

What is My System's Ranking?

A susceptibility ranking of high was assigned to this system using the information collected during the assessment by the DEP.

Where Can I See The SWAP Report?

The complete SWAP report is available at the Gates Pond Water Treatment, 172 Gates Pond Rd., Berlin and online at www.state.ma.us/dep/brp/dws/. For more information, call Mr. Peter Ferrantino at 978 568-9629.

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, domestic animal wastes and wildlife.

Inorganic contaminants -such as salts and metals, which can be naturally-occurring or result from urban stormwater 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 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 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.

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

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

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

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

ppb = parts per billion, or micrograms per liter (ug/l)

pCi/l = picocuries per liter (a measure of radioactivity)

NTU=Nephelometric Turbidity Units

N/A – Not Applicable; has no value or meaning for the column or the contaminant listed.

ND – Not detected; the contaminant value measured was not above the detection level of the test method.

Secondary Maximum 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) – 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. If exceeded, it serves as an indicator of the potential need for further action.

WATER QUALITY TESTING RESULTS

WHAT DOES THIS DATA REPRESENT?

The water quality information presented in the tables below is from the most recent round of testing done in accordance with the regulations. All data shown was collected during the year 2008 unless noted. A total of 2,475 water samples were collected and tested for over 145 substances during 2008. Only 6 regulated contaminants were found. Reports of laboratory analysis for these samples were submitted to DEP as required.

The Massachusetts Department of Environmental Protection has reduced the monitoring requirements for synthetic organic contaminants because the source is not at risk of contamination. The last samples collected for these contaminants were taken on April 10 and July 10, 2007 and none were found.

All of the samples collected and analyzed in 2008, including those in the following tables, meet all applicable EPA and DEP primary standards.

	Date(s) Collected	90 TH percentile	Action Level	MCLG	# of sites sampled	# of sites above Action Level	Possible Source of Contamination
Lead (ppb)	9/18-19/06	3.0	15	0	34	1	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	9/18-19/06	0.7	1.3	1.3	34	1	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

	Highest % Positive in a month	Total # Positive	MCL	MCLG	Violation (Y/N)	Possible Source of Contamination
Total Coliform	9	4	>5%	0	N	Naturally present in the environment
Fecal Coliform or E.coli	0	0	*	0	N	Human and animal fecal waste

* Compliance with the Fecal Coliform/E.coli MCL is determined upon additional repeat testing. Sites that tested positive for Total Coliform were retested along with locations upstream and downstream positive site. All positive site retests were Negative (NO TOTAL COLIFORM was found.)

Turbidity	TT	Lowest Monthly % of Samples	Highest Detected Daily Value	Violation (Y/N)	Possible Source of Contamination
Daily Compliance (NTU)	5	N/A	0.29	NO	Soil Runoff
Monthly Compliance*	At least 95%	100	N/A	NO	

Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of water quality.

*Monthly turbidity compliance is related to a specific treatment technique (TT). Our system filters the water so at least 95% of our samples each month must be below the turbidity limits specified in the regulations. All of our samples were below this level.

Regulated Contaminant	Date(s) Collected	Highest Detect	Range Detected	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Source(s) of Contamination
Inorganic Contaminants							
Fluoride (ppm) ■	Through out 2008	1.16	0.86-1.16	4	4	NO	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate (ppm)	5/13 & 6/17/08	1.5	ND-1.5	10	10	NO	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
Volatile Organic Contaminants							
1,1-Dichlorethylene (ppb)	11/9; 1/12; 4/17; 7/10; & 10/9/07	.68	ND – .68	7	7	NO	Discharge from industrial chemical factories

■ Fluoride also has a secondary contaminant level (SMCL) of 2 ppm.

Regulated Contaminant	Date(s) Collected	Highest Running Average	Range Detected	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Source(s) of Contamination
Disinfection By-Products							
Total Trihalomethanes (TTHMs) (ppb)	Quarterly in 2008	48	20-100	80	-----	NO	Byproduct of drinking water chlorination
Haloacetic Acids (HAA5) (ppb)	Quarterly in 2008	18.0	4.4-49	60	-----	NO	Byproduct of drinking water disinfection
Chlorine (ppm) (total)	Monthly in 2008	0.68	0.01-2.00	4	4	NO	Water additive used to control microbes

TTHMs Summary							
TTHMs	2nd quarter 2007	3rd quarter 2007	4th quarter 2007	1st quarter 2008	2nd quarter 2008	3rd quarter 2008	4th quarter 2008
5 Coolidge St.	-	-	-	42.0	30.0	100.0	61.0
1 Municipal Dr.	-	-	-	33.0	24.0	49.0	26.0
1 Washington St.	-	-	-	24.0	32.0	72.0	29.0
62 Packard St.	-	-	-	32.0	35.0	89.0	35.0
265 Washington St.	-	-	-	26.0	20.0	48.0	24.0
Quarterly Average	34.0	57.4	35.0	31.4	28.8	71.6	35.0
Running Annual Average	-	-	-	39.0	38.0	42.0	48.0

HAA5s Summary							
HAA5s	2nd quarter 2007	3rd quarter 2007	4th quarter 2007	1st quarter 2008	2nd quarter 2008	3rd quarter 2008	4th quarter 2008
5 Coolidge St.	-	-	-	25.0	22.0	30.0	30.0
1 Municipal Dr.	-	-	-	9.4	6.8	21.0	10.0
1 Washington St.	-	-	-	9.4	18.0	13.0	6.6
62 Packard St.	-	-	-	13.0	20.0	32.0	6.4
265 Washington St.	-	-	-	5.6	4.4	17.0	6.8
Quarterly Average	14.1	18.2	12.0	12.5	14.2	22.6	12.0
Running Annual Average	-	-	-	14.0	14.0	15.0	18.0

Note: The last 3 quarters of 2007 are shown because they are needed to

compute the running annual average.

Unregulated contaminants are those for which there are no established drinking water standards. The purpose of unregulated contaminant monitoring is to assist regulatory agencies in determining their occurrence in drinking water and whether future regulation is warranted.

Unregulated and Secondary Contaminants	Date(s) Collected	Result or Range Detected	Average Detected	SMCL	ORSG	Possible Source
Inorganic Contaminants						
Sodium (ppm)	5/13/08	4.7-37	20.57	----	20	Natural sources; runoff from use as salt on roadways; by-product of treatment process
Sulfate (ppm)	4/8; 6/17; 8/28; 11/13; 12/9 & 12/16/08	ND- 0.27	0.04	250	----	Natural sources
Organic Contaminants - When detected at treatment plant as VOC residuals, not TTHM compliance						
MTBE (ppb)	1/8; 4/8; 6/17 & 10/14/08	ND-0.72	0.12	20-40	70	Fuel additive
1,1-Dichloroethane (ppb)	1/8; 4/8; 6/17 & 10/14/08	ND-1	0.17	----	70	Discharge from use as a degreasing agent
Bromodichloromethane (ppb)	1/8; 4/8; 6/17 & 10/14/08	ND-5.3	1.42	---	---	By-product of drinking water chlorination
Chloroform (ppb)	1/8; 4/8; 6/17 & 10/14/08	ND-9	2.47	---	---	By-product of drinking water chlorination
Chlorodibromomethane	1/8; 4/8; 6/17 & 10/14/08	ND-3.8	0.63	---	---	By-product of drinking water chlorination
Secondary Contaminants						
Iron (ppm)	1/8; 4/8; 6/17; 7/8; 8/28; 10/14; 11/13; 12/9 & 12/16/08	ND-3.9	0.68	0.3	---	Naturally occurring, corrosion of cast iron pipes
Manganese (ppm)	1/8; 4/8; 6/17; 7/8; 8/28; 10/14; 11/13; 12/9 & 12/16/08	ND-0.97	0.25	0.05*	---	Erosion of natural deposits
Aluminum (ppm)	4/8; 6/17; 8/28; 11/13; 12/9 & 12/16/08	ND-0.27	0.047	0.2	---	By-product of treatment process
Chloride (ppm)	4/8; 6/17; 8/28; 11/13; 12/9 & 12/16/08	4.2-87	52.3	250	---	Runoff from road de-icing, use of inorganic fertilizers, septic tank effluents, animal feeds, industrial effluents, and irrigation drainage
Color (C.U.)	4/8; 6/17; 8/28; 11/13; 12/9 & 12/16/08	ND - 55	10.3	15	---	Naturally occurring organic material
Copper (ppm)	4/8; 6/17; 8/28; 11/13; 12/9 & 12/16/08	0.014-0.016	0.054	1	---	Naturally occurring organic material
Odor (T.O.N.)	4/8; 6/17; 8/28; 11/13; 12/9 & 12/16/08	1 - 2	1.4	3 TON	---	Erosion of natural deposits; Leaching from wood preservatives
PH	4/8; 6/17; 8/28; 11/13; 12/9 & 12/16/08	6.6-7.5	N/A	6.5-8.5	---	-----
Total Dissolved Solids (TDS) (ppm)	4/8; 6/17; 8/28; 11/13; 12/9 & 12/16/08	45-250	171	500	---	Erosion of natural deposits.
Zinc (ppm)	4/8; 6/17; 8/28; 11/13; 12/9 & 12/16/08	ND-0.028	0.006	5	---	Erosion of natural deposits, leaching from plumbing materials

* The EPA has established a lifetime health advisory (HA) value of 0.3 mg/L for manganese to protect against concerns of potential neurological effects, and a one-day and 10-day HA of 1 mg/L for acute exposure.

COMPLIANCE WITH DRINKING WATER REGULATIONS

Does My Drinking Water Meet Current Health Standards?

We are committed to providing you with the best water quality available. We are proud to report that last year your drinking water met all applicable health standards regulated by the state and federal government.

EDUCATIONAL INFORMATION

Do I Need To Be Concerned About Certain Contaminants Detected In My Water?

Lead: Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline at 800.426.4791.

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.

Manganese - EPA has established a lifetime health advisory (HA) value of 0.3 ppm for manganese to protect against concerns of potential neurological effects, and a One-day and 10-day HA of 1 ppm for acute exposure. However, it is advised that for infants younger than 6 months, the lifetime HA of 0.3 ppm be used even for an acute exposure of 10 days.

ADDITIONAL INFORMATION

During the year 2008 the Town supplied over 754 million gallons of water to its customers. Remember, water is a precious resource. It is everyone's responsibility to conserve water. Your conservation efforts allowed us to supply 51 million gallons of water less than 2007's amount. KEEP UP THE GOOD WORK AND CONTINUE TO USE WATER WISELY.

Protecting our water sources is just as important as conserving drinking water. You play an important role in protecting your water resources. To help us protect your water sources:

- Use fertilizers, insecticides, and herbicides sparingly and follow the manufacturers' instructions.
- Never pour harsh chemicals or cleaners down your toilet or sink. Instead, dispose of them and other materials such as paints and thinners during household hazardous waste collection programs.
- If you have a septic system, have it pumped out every two years and do not use septic system cleaners.
- Immediately notify the DPW (or Police outside 7AM to 3PM M-F) if you notice anyone - trespassing or riding motorized vehicles near the wells, reservoir, or storage tanks; swimming or allowing their animals to enter Gates Pond; vandalizing any water supply facilities.

Protecting drinking water from contamination is also done using backflow devices. These devices help prevent contaminated water entering the drinking water piping. Homeowners should have special outside faucets that prevent backflow. Also, inground sprinkler systems must have a backflow device and have the device tested every year. These devices help prevent contaminants such as lawn fertilizers and pesticides from entering the drinking water supply piping. Commercial, industrial, institutional and municipal water customers must have backflow devices. These devices must be tested (yearly or semiannually depending on the type of device) and the test report must be submitted to the DPW. There are 943 backflow devices protecting the water system. DPW Water Division staff tested approximately 430 of these devices. The balance of the devices were tested by private certified testers hired by the backflow device owners. We found and had over 30 backflow violations corrected during 2008. If you have questions about backflow devices please contact us.

This report was prepared using a template and guidance provided by the DEP Central Regional Office.

If you have any questions or comments about this report or the Department of Public Works - Water Division, please contact Mr. Anthony Marques, Public Works Director at (978) 562-9333.



TOWN OF HUDSON
DEPARTMENT OF PUBLIC WORKS
1 MUNICIPAL DRIVE
HUDSON MA 01749
TEL. 978 562 9333
FAX. 978 568 9612

On May 6, 2009, the Commonwealth of Massachusetts, Department of Environmental Protection (DEP), issued Water Management Act (WMA) Permit # 9P-2-14-141.02 to the Town of Hudson. This permit regulates the volume of water that can be withdrawn on a daily basis from the relevant river basin.

The drinking water sources for the Town of Hudson are located within the Concord River Basin, which is identified as a medium stressed basin by the Water Resources Commission. Water Management Policies establish various performance standards for all water suppliers withdrawing water from medium stressed river basins. Some of these standards include residential water usage to be less than 65 gallons per capita per day (RGPCD), and summer limits on withdrawals and non-essential outdoor use during specific calendar periods.

Condition number 7 of the permit, Nonessential Outdoor Water Use, contains restrictions which prohibit nonessential outdoor water use between 9:00 A.M. and 5:00 P.M. that are effective May 1, 2010. In light of this condition, and in order to preserve the sufficiency of our water supply without recourse to more drastic measures, the Board of Selectmen has approved the following mandatory water use restrictions effective July 1, 2009 through September 30, 2009:

- 1. Mandatory conservation which allows only alternate day use for non-essential outdoor activities including lawn watering and car washing between the hours of 5:00 P.M. and 9:00 A.M. Odd numbered houses will be permitted to water on Tuesday, Thursday, and Saturday, and even numbered houses on Wednesday, Friday, and Sunday.**
- 2. Filling of new swimming pools prohibited.**

Violations of the Water Regulations are subject to enforcement fines of up to \$100 per violation.

Additional notification and updates will be provided on town's web site, local cable TV, local newspapers and sign postings. Any questions regarding the restrictions can be addressed by contacting the Public Works Office at 978-562-9333 or through the comments and questions section of the Town's web page.

TOWN OF HUDSON
DEPARTMENT OF PUBLIC WORKS
1 MUNICIPAL DRIVE
HUDSON MA 01749
TEL. 978 562 9333
FAX. 978 568 9612

Dear Water Consumers,

This is your ANNUAL DRINKING WATER QUALITY REPORT for 2008. It contains important information about your water that is supplied by the Town of Hudson.

Landlords:

Please make this report available to your tenants.

Businesses:

Please post this report where your employees and customers may read it.

Public Building and School Officials:

Please post this report where people who may drink this water may read it.

Additional copies of this year's report are available from the Department of Public Works office at One Municipal Drive. A very limited supply of previous years' reports is also available.

Our goal is to provide you with a continuous supply of quality water. We welcome comments and suggestions you may have to help us reach and maintain that goal.

Very truly yours,



Anthony Marques
Director of Public Works

DEPARTMENT OF PUBLIC WORKS
1 MUNICIPAL DRIVE
HUDSON, MA 01749

PRESORT STANDARD U.S. POSTAGE PAID PERMIT #4 HUDSON, MA 01749

POSTAL PATRON

HUDSON, MA 01749