

2012 Annual Drinking Water Quality Report  
 For  
 Hillcrest Water District  
 Leicester, Massachusetts  
 MASSDEP PWSID # 2151002

This report is a snapshot of drinking water quality that we provided last year. 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 providing you with information because informed customers are our best allies.

**I. PUBLIC WATER SYSTEM INFORMATION**

Address: P.O. Box 317, 124 Pine Street, Leicester, MA 01524

Contact Person: Roger Hammond, Superintendent

Telephone #: (508) 892-7585

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**Water System Improvements**

Our water system is routinely inspected by the Massachusetts Department of Environmental Protection (MassDEP). MassDEP inspects our system for its technical, financial, and managerial capacity to provide safe drinking water to you. 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. As part of our ongoing commitment to you, last year we made the following improvements to our system: Our Emergency Response plan was upgraded; we contracted with Woodard & Curran to create a hydraulic model of our system; and, we are moving forward with a plan to re-paint the water tank.

**Opportunities for Public Participation**

If you would like to participate in discussions regarding your water quality, you may attend the following meetings or educational events: monthly/bi-monthly Commissioner meetings (please call office for upcoming events) and our Annual Meeting held every second Tuesday in May.

**2. YOUR DRINKING WATER SOURCE**

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

*Your water is provided by the following sources listed below:*

Source Name	MassDEP Source ID#	Source Type	Location of Source
Well #1	2151002-01G	Groundwater	Lehigh Road

**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 filter the water to remove uranium and other naturally occurring radionuclides.
- We filter the water to remove arsenic.

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

Our water system makes every effort to provide you with safe and pure drinking water. We are pleased to report that your water does not need to be treated at this time to meet these goals. The water quality of our system is constantly monitored by us and MassDEP to determine if any future treatment may be required.

#### **How Are These Sources Protected?**

MassDEP 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 moderate was assigned to this system using the information collected during the assessment by MassDEP.

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

The complete SWAP report is available at Hillcrest Water District offices, 124 Pine Street, Leicester, MA 01524 and online at <http://www.mass.gov/dep/water/drinking/sourcewa.htm#reports> . For more information, call Roger Hammond at (508) 892-7585

#### **What Can Be Done To Improve Protection?**

Residents can help protect sources by:

- *Practicing good septic system maintenance*
- *Supporting water supply protection initiatives at the next town/annual meeting*
- *Taking hazardous household chemicals to hazardous materials collection days*
- *Contacting the water department or Board of Health to volunteer for monitoring or education outreach to schools*
- *Limiting pesticide and fertilizer use, etc.*

### **3. 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 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 (MassDEP) 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).

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. Hillcrest Water District 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>.

#### 4. 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.

**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.

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

**Variations and Exemptions** – State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

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 = milliremms per year (a measure of radiation absorbed by the body)

**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.

## 5. WATER QUALITY TESTING RESULTS

### What Does This Data Represent?

The water quality information presented in the table(s) is 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).

	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)	10/25/11	0.002	15	0	<b>20</b>	<b>none</b>	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	10/25/11	0.20	1.3	1.3	<b>20</b>	<b>none</b>	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

*“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. [INSERT THE NAME OF YOUR UTILITY] 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>.”*

	Highest # Positive in a month	MCL	MCLG	Violation (Y/N)	Possible Source of Contamination
Total Coliform	4	1	0	Y	Naturally present in the environment

Regulated Contaminant	Date(s) Collected	Highest Result or Highest Running Average Detected	Range Detected	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Source(s) of Contamination
<b>Inorganic Contaminants</b>							
Arsenic (ppb)	1/10/2012 5/3/2012 8/14/12 11/9/12		ND ND 0.0058 0.0075	10	-----	<b>N</b>	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Asbestos (MFL)	5/10/2011	ND		7	7		Decay of asbestos cement water mains; erosion of natural deposits
Nitrate (ppm)	5/11/2012	ND		10	10		Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
Nitrite (ppm)	5/11/2012	ND		1	1		Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits

Regulated Contaminant	Date(s) Collected	Highest Result or Highest Running Average Detected	Range Detected	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Source(s) of Contamination
Perchlorate	8/14/2012	ND		2	N/A		Rocket propellants, fireworks, munitions, flares, blasting agents
<b>Volatile Organic Contaminants</b>							
Benzene (ppb)	5/3/2012	ND		5	0		Discharge from factories; leaching from gas storage tanks and landfills
Carbon tetrachloride (ppb)	5/3/2012	ND		5	0		Discharge from chemical plants and other industrial activities
o-Dichlorobenzene (ppb)	5/3/2012	ND		600	600		Discharge from industrial chemical factories
1,2-Dichloroethane (ppb)	5/3/2012	ND		5	0		Discharge from industrial chemical factories
1,1-Dichloroethylene (ppb)	5/3/2012	ND		7	7		Discharge from industrial chemical factories
cis-1,2-Dichloroethylene (ppb)	5/3/2012	ND		70	70		Breakdown product of trichloroethylene and tetrachloroethylene
trans-1,2-Dichloroethylene (ppb)	5/3/2012	ND		100	100		Discharge from industrial chemical factories
Dichloromethane (ppb)	5/3/2012	ND		5	0		Discharge from pharmaceutical and chemical factories
1,2-Dichloropropane (ppb)	5/3/2012	ND		5	0		Discharge from industrial chemical factories
Ethylbenzene (ppb)	5/3/2012	ND		700	700		Leaks and spills from gasoline and petroleum storage tanks
MTBE - Methyl Tertiary Butyl Ether (ppb)	5/3/2012	ND		ORS GL 70	-		Fuel additive; leaks and spills from gasoline storage tanks
Styrene (ppb)	5/3/2012	ND		100	100		Discharge from rubber and plastic factories; leaching from landfills
Tetrachloroethylene (PCE) (ppb)	5/3/2012	ND		5	0		Discharge from factories and dry cleaners; residual of vinyl-lined water mains
1,2,4-Trichlorobenzene (ppb)	5/3/2012	ND		70	70		Discharge from textile-finishing factories
1,1,1-Trichloroethane (ppb)	5/3/2012	ND		200	200		Discharge from use in septic system cleaners
1,1,2-Trichloroethane (ppb)	5/3/2012	ND		5	3		Discharge from industrial chemical factories
Trichloroethylene (TCE) (ppb)	5/3/2012	ND		5	0		Discharge from metal degreasing sites and other factories
Toluene (ppm)	5/3/2012	ND		1	1		Leaks and spills from gasoline and petroleum storage tanks; discharge from petroleum factories
Xylenes (ppm)	5/3/2012	ND		10	10		Leaks and spills from gasoline and petroleum storage tanks; discharge from petroleum factories; discharge from chemical factories

Regulated Contaminant	Date(s) Collected	Highest Result or Highest Running Average Detected	Range Detected	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Source(s) of Contamination
<b>Radioactive Contaminants</b>							
Gross Alpha (pCi/l) (minus uranium)	1/10/2012 5/10/2012	1.31 0.76		15	0		Erosion of natural deposits
Radium 226 & 228 (pCi/L) (combined values)	1/23/2012	4.4		5	0		Erosion of natural deposits
Uranium (ppb)	1/10/2012 8/14/2012	ND ND		30	0		Erosion of natural deposits
<b>Synthetic Organic Contaminants</b>							
2,4-D (ppb)	5/3/2012	ND		70	70		Runoff from herbicide used on row crops
2,4,5-TP (Silvex) (ppb)	5/3/2012	ND		50	50		Residue of banned herbicide
Alachlor (ppb)	5/3/2012	ND		2	0		Runoff from herbicide used on row crops
Atrazine (ppb)	5/3/2012	ND		3	3		Runoff from herbicide used on row crops
Benzo(a)pyrene (ppt)	5/3/2012	ND		200	0		Leaching from linings of water storage tanks and distribution lines
Carbofuran (ppb)	5/3/2012	ND		40	40		Leaching of soil fumigant used on rice and alfalfa
Chlordane (ppb)	5/3/2012	ND		2	0		Residue of banned termiticide
Dalapon (ppb)	5/3/2012	ND		200	200		Runoff from herbicide used on rights of way
Di (2-ethylhexyl) adipate (ppb)	5/3/2012	ND		400	400		Discharge from chemical factories
Di (2-ethylhexyl) phthalate (ppb)	5/3/2012	ND		6	0		Discharge from rubber and chemical factories
Dibromochloropropane (DBCP) (ppt)	5/3/2012	ND		200	0		Runoff/leaching from soil fumigant used on soybeans, cotton, and orchards
Dinoseb (ppb)	5/3/2012	ND		7	7		Runoff from herbicide used on soybeans and vegetables
Endrin (ppb)	5/3/2012	ND		2	2		Residue of banned insecticide
Epichlorohydrin	5/3/2012	ND		TT=1 %	0		Discharge from industrial chemical factories; an impurity of some water treatment chemicals
Ethylene dibromide (EDB) (ppt)	5/3/2012	ND		20	0		Residue of leaded gasoline or runoff from soil fumigant used on tobacco or strawberries
Heptachlor (ppt)	5/3/2012	ND		400	0		Residue of banned pesticide
Heptachlor epoxide (ppt)	5/3/2012	ND		200	0		Breakdown of heptachlor
Hexachlorobenzene (ppb)	5/3/2012	ND		1	0		Discharge from metal refineries and agricultural chemical factories
Hexachlorocyclopentadiene (ppb)	5/3/2012	ND		50	50		Discharge from chemical factories

Regulated Contaminant	Date(s) Collected	Highest Result or Highest Running Average Detected	Range Detected	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Source(s) of Contamination
Lindane (ppt)	5/3/2012	ND		200	200		Runoff/leaching from insecticide used on cattle, lumber, gardens
Methoxychlor (ppb)	5/3/2012	ND		40	40		Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock
Oxamyl (Vydate) (ppb)	5/3/2012	ND		200	200		Runoff/leaching from insecticide used on apples, potatoes and tomatoes
Polychlorinated biphenyls (PCBs) (ppt)	5/3/2012	ND		500	0		Runoff from landfills; discharge of waste chemicals; residue of banned use in electrical transformers
Pentachlorophenol (ppb)	5/3/2012	ND		1	0		Discharge from wood preserving factories
Picloram (ppb)	5/3/2012	ND		500	500		Herbicide runoff
Simazine (ppb)	5/3/2012	ND		4	4		Herbicide runoff
Toxaphene (ppb)	5/3/2012	ND		3	0		Runoff/leaching from insecticide used on cotton and cattle
<b>Disinfectants and Disinfection By-Products</b>							
Total Trihalomethanes (TTHMs) (ppb)	8/14/2012	24	6.2-24	80	-----		Byproduct of drinking water chlorination
Haloacetic Acids (HAA5) (ppb)	8/14/2012	0.7	0-0.7	60	-----		Byproduct of drinking water disinfection
Chlorine (ppm) (free, total or combined)	Monthly	0.10	0 -0.10	4	4		Water additive used to control microbes

## 6. COMPLIANCE WITH DRINKING WATER REGS

### Does My Drinking Water Meet Current Health Standards?

We are committed to providing you with the best water quality available. However some contaminants that were tested last year did not meet all applicable health standards regulated by the state and federal government. Due to contaminant violations of Total Coliform during the period of 9/11/2012 to 9/13/2012 our system took the following corrective actions.

- We collected additional samples.
- We announced public notification by newspaper, posting notices etc.
- We disinfected and flushed the distribution system to eliminate coliform bacteria.

Our water system and MassDEP monitor and record the effectiveness of actions taken in response to contaminant violations. The health effect statement for this contaminant is listed below.

### Health Effects Statements

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.

## 7. EDUCATIONAL INFORMATON

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

**Arsenic:** While your drinking water meets EPA's standard for arsenic, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the cost of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic which is a mineral know to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

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).

## 8. ADDITIONAL INFORMATION

Preventing backflow is an important part of maintaining a healthy water supply. The Hillcrest Water District's water distribution system is designed to carry water from the water treatment plant to the consumer. Cross connections, or connections between potable water in the distribution system to any non-potable water, exist. These connections make the water distribution system susceptible to backflow, which is the reversal of water flow from its intended direction. In other words, non-potable water could be introduced into the distribution system.

There are two types of backflow:

- **Backpressure backflow**, which occurs when the pressure outside the water distribution system exceeds the pressure within the system.
- **Backsiphonage**, which occurs when a partial vacuum is created in the system sucking non-potable water back into it.



### Three Common Types of Backflow Prevention Devices for Irrigation Systems

#### Pressure Vacuum Breaker

##### Pressure Vacuum Breaker.

This device is approved for irrigation systems, however it is rarely used because of above ground installation and is subject to freezing during winter months. This device is also approved for chemical injection systems on sprinklers. Irrigation system can be turned off at 1 of 2 shut off handles.

#### Atmospheric Vacuum Breaker

##### Atmospheric Vacuum Breaker.

This device is commonly found on older sprinkler systems, but is not approved for new installations because it is non-testable. It must be replaced by a Double Check Valve when upgrading irrigation system. No shut off handles to isolate irrigation system.

## Double Check Valve

### Double Check Valve.

This is the most widely used backflow prevention device on sprinkler systems. It is installed below grade in a standard valve box. Irrigation system can be turned off at 1 of 2 shut off handles.

### Simple Steps to Prevent Backflow:

- Guard against cross connections. A garden hose is a direct connection to the drinking water in the home. Don't attach chemical sprayers or leave a garden hose submerged in a swimming pool. (Hose Bibb Vacuum Breakers may also be installed on garden hoses)
- Make sure backflow prevention device is installed on your home sprinkler system. Common devices are Double Check Valve Assemblies and Pressure Vacuum Breakers.



Permitting