

**Annual Drinking Water Quality Report**  
**Calendar Year 2005**  
For  
**HILLCREST WATER DISTRICT**  
**Leicester, Massachusetts**  
**DEP 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: *Office of Leicester Water Supply, P.O. Box 86, 124 Pine St., Leicester, MA 01524*

Contact Person: *Frank W. Lyon*

Telephone #: *508-892-7585*

**Water System Improvements**

*The Department of Environmental Protection (DEP) routinely inspects our water system. The DEP 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, each year we review for necessary improvements to our system:*

- We continue to flush the entire system in the spring and fall of every year.
- Regular program now exists to locate, mark, and exercise gate valves as needed.
- Property maintenance is performed regularly on well sites, pumps and other equipment.

**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:*

- Commissioners meet monthly at 124 Pine Street (office) for regular business and any other business on the second Monday of each month, the public is always invited

**II. YOUR DRINKING WATER SOURCE**

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

Your water is provided by the following sources listed below:

<b>Source Name</b>	<b>DEP Source ID#</b>	<b>Source Type</b>	<b>Location of Source</b>
Rock Well #1	2151002-01G	Groundwater	West of Pleasant St. & Rt. 56 Intersection
Rock Well #2	2151002-02G	Groundwater	Temporarily out of service. Located in the same general area.

The active water source (Rock Well #1) for the Hillcrest Water District system is a drilled well located approximately 200 feet west of the intersection of Pleasant Street and Route 56 in Leicester. The well is 592 feet deep with a static water level of 104 feet and will provide more than 60 gallons per minute of water. The well is constructed with a surface seal and is greater than 200 feet from a surface water feature. A "standpipe" storage tank is located near the well to provide head pressure and adequate supply during peak use periods to the distribution 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 have been treating as follows.

- *We had been adding a disinfectant to protect you against microbial contaminants prior to January 2004. We are pleased to report that your water no longer needs to be treated as of January 2004 to meet the quality goals. The water quality of our system is constantly monitored by us and the DEP to determine if any future treatment may be required.*

*Residents can help protect sources by:*

- *Practicing good septic system maintenance*
- *Supporting water supply protection initiatives at the next town 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.*

## III. SUBSTANCES FOUND IN TAP WATER

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).

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.

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 (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.

## IV. 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.

**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.

- 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)

## V. WATER QUALITY TESTING RESULTS

### What Does This Data Represent?

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

Asbestos has not been required to be sampled for in this water district for some years, it has been sampled for during 2004 with none detected, the next required sampling for asbestos is due in the year 2013.

	Date(s) Collected	90 <sup>TH</sup> percentile	Action Level	MCLG	# of sites sampled	# of sites above Action Level	Possible Source of Contamination
<b>Lead (ppb)</b>	09/23/04	2.6	15	0	10	0	Corrosion of household plumbing systems; Erosion of natural deposits
<b>Copper (ppm)</b>	09/23/04	0.2	1.3	1.3	10	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

*Consistently low values for lead & copper have earned a reduction in DEP required testing for Hillcrest Water District for this category. The frequency of testing for lead & copper is now once every 3 years. The next scheduled monitoring for this category is in 2007.*

	Highest # Positive in a month	MCL	MCLG	Violation (Y/N)	Possible Source of Contamination
Total Coliform	2	1	0	Y	Naturally present in the environment
Fecal Coliform or E.coli	0	*	0	N	Human and animal fecal waste

\* Compliance with the Fecal Coliform/E.coli MCL is determined upon additional repeat testing.

Regulated Contaminant	Date(s) Collected	Highest Detect	Range Detected	Highest Average	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Source(s) of Contamination
<b>Inorganic Contaminants</b>								
Arsenic (ppb)	02/23/05 06/14/05 08/16/05 10/14/05	11 ND 10 13	---	---	50	----	N  * as of 1/23/06 the MCL has been changed to 10 ppb	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Asbestos (MFL)	06/14/04	0	---	---	7	7	N	Decay of asbestos cement water mains; erosion of natural deposits
Fluoride (ppm) ■	06/14/05	0.25	---	---	4	4	N	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate (ppm)	06/14/05	ND	---	---	10	10	N	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
Nitrite (ppm)	06/30/03 Next sampling in 2007	ND	---	---	1	1	N	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
<b>Volatile Organic Contaminants</b>	No regulated VOC's were detected in the 06/14/05 tests.							
<b>Radioactive Contaminants</b>								
Gross Alpha (pCi/l) (minus uranium)	02/22/05 06/14/05 08/16/05 10/12/05	9 pCi/l 22 pCi/l 18 pCi/l 17 pCi/l	9-22	22	15	0	Y	Erosion of natural deposits
GrossBeta/ photon emmitters (pCi/L) ▲	05/22/02	12	---	---	50	0	N	Decay of natural and man-made deposits

Radium 226 & 228 (pCi/L) (combined values)	02/22/05	3 pCi/l						Erosion of natural deposits
	06/14/05	3.2	2.6-4.4	4.4	5	0	N	
	08/16/05	4.4						
	10/12/05	2.6						
Uranium (ppb)	02/22/05	28.2ppb						Erosion of natural deposits
	06/14/05	43 ppb	37 - 43	43	30	0	Y	
	08/16/05	37 ppb						
	10/12/05	41 ppb						

Synthetic Organic Contaminants								
Dibromochloropropane (DBCP) (ppt)	03/01/04	ND	---	---	200	0	N	Runoff/leaching from soil fumigant used on soybeans, cotton, and orchards
Ethylene dibromide (EDB) (ppt)	03/01/04	ND	---	---	20	0	N	Residue of leaded gasoline or runoff from soil fumigant used on tobacco or strawberries

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

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

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.

Unregulated Contaminant	Date(s) Collected	Result or Range Detected	Average Detected	SMCL	ORSG	Possible Source
<b>Inorganic Contaminants</b>						
Sodium (ppm)	06/14/05	14	---	----	20	Natural sources; runoff from use as salt on roadways; by-product of treatment process
Sulfate (ppm)	12/24/02	35	---	250	----	Natural sources
<b>Radiological Contaminants</b>						
Radon (pCi/L)	06/14/04	3,700	---	----	10,000	Natural sources
<b>Organic Contaminants</b>						
MTBE (ppb)	06/14/05	1.1	---	20-40	70	Fuel additive
Chloroform (ppb)	06/14/04	ND	---	---	---	By-product of drinking water chlorination

## V. a ADDITIONAL WATER QUALITY TESTING RESULTS

### What Does This Data Represent?

Because the Hillcrest District purchases some water from the Leicester Water Supply District we have included below the water quality testing results from the LWSD CCR for the 2005 reporting year.

	Date(s) Collected	90 <sup>TH</sup> percentile	Action Level	MCLG	# of sites sampled	# of sites above Action Level	Violation (Y/N)	Possible Source of Contamination
<b>Lead (ppb)</b>	09/19/04	1	15	0	11	0	N	Corrosion of household plumbing systems; Erosion of natural deposits
<b>Copper (ppm)</b>	09/19/04	0.27	1.3	1.3	11	0	N	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

Consistently low values for lead & copper have earned a reduction in DEP required testing for Leicester Water Supply District for this category. The frequency of testing for lead & copper is now once every 3 years. The next scheduled monitoring for this category is in 2007.

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

\* Compliance with the Fecal Coliform/E.coli MCL is determined upon additional repeat testing.

Regulated Contaminant	Date(s) Collected	Highest Detect	Range Detected	Highest Average	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Source(s) of Contamination
<b>Inorganic Contaminants</b>								
<b>Arsenic (ppb)</b>	02/22/05 06/14/05 08/16/05 10/12/05	ND 14 17 25	0 - 25	5.1	50	-----	N  * as of 1/23/06 the MCL has been changed to 10 ppb	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
<b>Nitrate (ppm)</b>	06/14/05	4.7	0 - 4.7	N/A	10	10	N	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
<b>Nitrite (ppm)</b>	2003	ND	---	---	1	1	N	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
<b>Volatile Organic Contaminants</b>	No regulated VOC's were detected in the 06/14/05 tests.							

<b>Radioactive Contaminants</b>								
Gross Alpha (pCi/l) (minus uranium)	2005	12.2	4.8-12.2	8.4	15	0	N	Erosion of natural deposits
GrossBeta/pton emmitters (pCi/L) ▲	2003	23	12 - 23	16	50	0	N	Decay of natural and man-made deposits
Radium 226 & 228 (pCi/L) (combined values)	2005	2.47	1.8 - 2.5	2.47	5	0	N	Erosion of natural deposits
Uranium (ppb)	2005	10.9	4.8-10.9	10.9	30	0	N	Erosion of natural deposits

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

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.

Unregulated Contaminant	Date(s) Collected	Result or Range Detected	Average Detected	SMCL	ORSG	Possible Source
<b>Inorganic Contaminants</b>	No requirement to test in 2004					
Sodium (ppm)	06/14/05	45	24.6	none	20	Natural sources
<b>Radiological Contaminants</b>						
Radon (pCi/L)	06/14/05	11,000	---	---	10,000	Natural sources
<b>Organic Contaminants</b>						
MTBE (ppb)	06/14/05	ND	---	20-40	70	Fuel additive
Chloroform (ppb)	06/14/05	ND	---	---	---	By-product of drinking water chlorination
Bromodichloromethane (ppb)	06/14/05	ND	---	---	---	By-product of drinking water chlorination

## VI. 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. However some contaminants that were tested last year did not meet all applicable health standards regulated by the state and federal government.

*Gross Alpha emitters and Uranium* continue to be a concern, a study of removal technologies was done and submitted to the DEP and is awaiting review and approval.

Due to contaminant violations of *Total Coliform* during the period of 08/11/05 our system took the following corrective actions.

- We collected additional samples on 08/18/05 all of these were without occurrence of any coliform.

Our water system and the DEP monitor and record the effectiveness of actions taken in response to contaminant violations. The health effect statements for these contaminants are 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.

**Arsenic** – On January 23, 2006, the arsenic MCL was lowered from 50 ppb to 10 ppb. For monitoring done in 2005 and earlier, arsenic detections above 10 ppb but below 50 ppb were not in violation of the drinking water standards. Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.

**Ipha emitters** - Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.

**Uranium** - Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity.

**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).

## VII. EDUCATIONAL INFORMATON

### Cross Connections

A cross connection is an actual or potential connection between potable and non-potable water supplies where contamination of the potable water supply could occur. Cross connections are physical connections that potentially allow water to backflow from the non-potable system to the potable system.

At residential dwellings, potential sources of contamination to a water system are garden hoses (hose bibs) and irrigation systems. If the potable system were to experience a reduction in pressure (during fire fighting, water main breaks, and to a lesser extent during normal operations), water in a garden hose or irrigation system (and any contamination present such as lawn chemicals) may be fed back into the potable system. Therefore, the HILLCREST WATER DISTRICT and the LWSD requests the use of siphon breaks or backflow prevention devices on all hose bibs and irrigation systems to reduce the potential of backflow to our water system. Devices for hose bibs are available at your local hardware stores for approximately \$5.00.

Commercial and industrial users are required to monitor and test their backflow prevention devices on a regular basis

Hillcrest Water District  
P.O. Box 317  
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Permit No. 3  
Leicester, MA