

# 2009 DRINKING WATER QUALITY REPORT

*The City of Leominster is dedicated to preserving the quality and reliability of its drinking supplies. In addition to continued source protection efforts and planned upgrades to its treatment facilities, the City has an aggressive flushing and water main replacement program. Further information about this report or any aspect of the public water supply can be obtained by contacting Charles Reed at 978-534-7590 / ext. 517 or e-mail: [Creed@dpw.leominster-ma.gov](mailto:Creed@dpw.leominster-ma.gov)*

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## YOUR DRINKING WATER SOURCE

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The City of Leominster lies entirely within the Nashua River basin. It encompasses about 30 square miles of land. Much of the western half of the city includes state forest, watershed lands, and other protected open space.

The City obtains its drinking water from the Distributing Reservoir system, including Haynes and Morse Reservoirs; the Fallbrook Reservoir at Wachusett Street; the NoTown Reservoir system, including Goodfellow Pond and Simonds Reservoir; and the Southeast Corner Well Fields at Jungle Road. Leominster also has an emergency connection to the Wachusett Reservoir at Rte 110.

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## SOURCE WATER ASSESSMENT AND PROTECTION

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### How are these sources protected?

In 2004 the Massachusetts Department of Environmental Protection (MassDEP) completed a Source Water Assessment and Protection (SWAP) report for the sources serving this water system.

MassDEP assigned an overall susceptibility ranking of *high* to Leominster's water sources, based on the presence of at least one high threat land use within the water supply protection areas. The highest threats come from industrial parks, chemical manufacture and storage, machine and metal working shops, service stations and auto repair shops, junkyards, transportation corridors, agricultural pesticide storage or use, aquatic wildlife, and illegal dumping. However, residential threats are also present, including lawn and garden chemicals and septic systems. The SWAP report commends the City of Leominster for actively promoting source protection through aggressive land acquisition, installation of sanitary sewers, and continued public education efforts

### What can be done to improve protection?

The SWAP report recommends:

- Regular inspection of the Zone A and Zone I protection areas (the areas closest to our sources) and the removal of non water supply activities from those zones where feasible.
- Continued public education.
- Training and awareness activities with emergency response personnel.
- Partnering with local business to ensure proper storage and handling of hazardous materials.
- Monitoring progress on remedial action sites.
- Developing a wellhead protection plan.

Leominster plans to address the protection recommendations by:

- Continuing our work with local and state educational agencies to promote water supply awareness education.
- Continued participation in the Local Emergency Planning Committee.
- Continued implementation of watershed and wellhead protection measures.
- Implementing a watershed stream monitoring program.

Residents can help protect sources by:

- Conserving water. Don't water your lawn in the rain. It wastes water and will not help your lawn.
- Practicing good septic system maintenance.
- Being aware of the need for cross connection control or backflow prevention.
- Supporting water supply protection initiatives.
- Taking hazardous household chemicals to hazardous materials collection days.
- Contacting the Water Division or Board of Health to volunteer for monitoring or education outreach to schools.
- Limiting pesticide and fertilizer use. And properly disposing of pet waste.

#### **Where can I see the SWAP Report?**

The complete SWAP report is available at the Leominster Water Division and online at [www.mass.gov/dep/water/drinking/2153000.pdf](http://www.mass.gov/dep/water/drinking/2153000.pdf)

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## **SUBSTANCES FOUND IN DRINKING WATER**

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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 mineral, and in some cases, radioactive material. It 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, or farming.

### **LEAD IN DRINKING WATER**

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 Leominster Water Division 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>. Please feel free to call Charles Reed – 978-534-7590 / ext. 517 or email [creed@dpw.leominster-MA.gov](mailto:creed@dpw.leominster-MA.gov)

Pesticides and herbicides -which may come from a variety of sources such as agricultural, 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.

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## EDUCATIONAL INFORMATION

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In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (EPA) and MassDEP prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) and Massachusetts Department of Public Health 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 Safe Drinking Water Hotline at 800-426-4791.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune system - 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 guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* are available from the Safe Drinking Water Hotline at 800-426-4791.

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## WATER SYSTEM COMPLIANCE

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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.

The health effects statement related to the provision of unfiltered drinking water by the Distributing Reservoir is provided below. Until the filtration plant was built and regulatory compliance was achieved, this statement was issued each calendar quarter to consumers within a separate mailing: *Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites, which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.*

The City has entered into an Administrative Consent Order (ACO) with MassDEP to correct certain problems and bring the City's water system back into compliance. Leominster Water Division, working closely with Veolia Water and Woodard & Curran, have made modifications to Notown Treatment Plant that have had significant success removing precursors that cause trihalomethanes to form in the distribution system. Further modifications are planned. Construction has been finished on the new water filtration system at Distributing Reservoir, and the plant went into operation on May 24, 2010. Fallbrook Plant has been modified to remove seasonal manganese with great success. Further improvements are being investigated. Over the past year the department has put in place significant infrastructure improvements to both improve the product and facilitate safety of the employees. In addition, we have increased security by installing fencing and hiring a reservoir guard. We have also initiated First Responder training in cooperation with the Leominster Fire Department and MassDEP. Older water mains continue to be changed by the Department, and a semi annual water main flushing program continues.

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## IMPORTANT DEFINITIONS

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**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 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, which a water system must follow.

**Range:** This column shows the lowest and highest values found in our tests.

**90<sup>th</sup> Percentile:** Lead and copper compliance is based on the 90<sup>th</sup> percentile value, which is the highest level found in 9 out of every 10 homes sampled. This number is compared to the action level for each contaminant

**Unregulated Contaminants:** Unregulated contaminants are substances without MCLs for which EPA requires monitoring. For some of these substances, the Massachusetts Office of Research and Standards (ORS) has developed state guidelines or secondary MCLs.

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

**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.

**Maximum Residual Disinfectant Level (MRDL):** The highest level of a disinfectant 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 below which there is no known expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

- ppm** = parts per million, or milligrams per liter (mg/l)
- ppb** = parts per billion, or micrograms per liter (µg/l)
- pCi/l** = picocuries per liter (a measure of radioactivity)
- NTU** = nephelometric turbidity units

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## WATER QUALITY TESTING RESULTS

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The following test results were from monitoring performed during 2009 or during the most recent sampling period for each contaminant group, as required by MassDEP. Only detected contaminants are shown.

Lead and Copper	Date Collected	90th Percentile	Action Level (AL)	MCLG	# of sites sampled	# of sites above AL	Exceeds AL (Y/N)	Possible Sources
Lead (ppb)	8/20/08	5	15	0	31	1	N	Corrosion of household plumbing
Copper (ppm)	8/28/08	0.4	1.3	1.3	31	1	N	Corrosion of household plumbing

Bacteria Detections	Highest % Positive in a Month	Total # Positive	MCL	MCLG	Violation (Y/N)	Possible Source
Total Coliform	3%	2	>5%	0	N	Naturally present in the environment
E.coli/Fecal Coliform	3%	2	*	0	N	Human and animal fecal waste

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

In July and August of 2009 coliform bacteria was detected in the distribution system. 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. The distribution system was immediately flushed with water containing a higher chlorine residual and multiple sites were retested immediately. Follow up samples tested negative. The Department feels the presence of coliform was due to unusually low water flow allowing chlorine residual to dissipate.

Regulated Contaminants	Date(s) Collected	Highest Result or Highest RAA*	Range Detected	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Sources
<b>Inorganic Contaminants</b>							
Nitrate (ppm)	4/14/09	0.20	0.02 - 0.20	10	10	N	Runoff from fertilizer use; leaching from septic tanks; natural deposits
Beryllium	4/14/09	0.001	<0.001 – 0.001	0.004	----	N	Electrical part mfg. and natural runoff
Perchlorate	7/7/09	0.08	----	2.0	----	N	Fireworks, firearms, blasting
Barium (ppm)	4/14/09	0.012	<0.005 – 0.012	2	2	N	Erosion of natural deposits
<b>Disinfection Contaminants</b>							
Haloacetic Acids (HAA5s) (ppb)	Quarterly	40.9	0 – 66.0	60	--	N	Byproduct of drinking water disinfection
Total Trihalomethanes (TTHMs) (ppb)	Quarterly	59.8	0 – 106.5	80	--	N	Byproduct of drinking water chlorination
Chlorine (ppm)	60 samples per month	0.47	0.07 – 1.34	4	4	N	Water additive used to control microbes
<b>Synthetic Organic Contaminants</b>							
Atrazine (ppb) -Southeast Wellfield only	Quarterly	0.19	<0.05 – 0.19	3	3	N	Runoff from herbicide applications

Unregulated and Secondary Contaminants	Date Collected	Highest Detected Amount	Average	SMCL	ORSG	Possible Sources
Manganese	4/14/09 & 5/13/09	0.141	0.0364	0.05	---	Erosion of deposits
Sodium (ppm)	4/14/09	21	12.9	--	20	Natural sources; runoff from road salt
Sulfate (ppm)	4/14/09	7.8	4.7	250	--	Natural sources

- Sodium sensitive individuals, such as those experiencing hypertension, kidney failure, or congestive heart failure, should be aware of sodium levels in their drinking water where exposures are being carefully controlled.
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Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of water quality.

Distributing Water Treatment Facility (Not Filtered)	MCL	Highest Detected Daily Value	Highest Monthly Average	Violation (Y/N)	Possible Source of Contamination
Turbidity (NTU)	1	0.52	0.48	N	Soil runoff

The turbidity MCL applies to unfiltered systems that MassDEP has determined in writing that filtration is required. The monthly average must be less than the MCL to meet compliance standards.

NoTown Water Treatment Facility (Filtered)	TT	Lowest Monthly % of Samples	Highest Detected Daily Value	Violation (Y/N)	Possible Source of Contamination
Daily Turbidity Compliance (NTU)	1	-----	0.63	N	Soil runoff
Monthly Compliance*	At least 95% < 0.3 NTU	99.4	-----	N	

\*Monthly turbidity compliance is related to a specific treatment technique (TT). This treatment facility filters the water so at least 95% of our samples each month must be below the turbidity limits specified in the regulations.

Fallbrook Water Treatment Facility (Filtered)	TT	Lowest Monthly % of Samples	Highest Detected Daily Value	Violation (Y/N)	Possible Source of Contamination
Daily Turbidity Compliance (NTU)	1	-----	0.87	N	Soil runoff
Monthly Compliance*	At least 95% < 0.3 NTU	99.8	-----	N	

\*Monthly turbidity compliance is related to a specific treatment technique (TT). This treatment facility filters the water so at least 95% of our samples each month must be below the turbidity limits specified in the regulations.

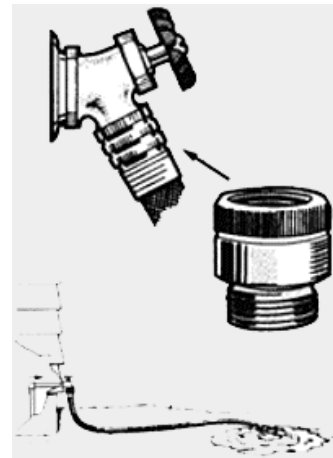
## CROSS CONNECTION INFORMATION FOR RESIDENTIAL CUSTOMERS

As users of a shared valuable resource, we should all be aware of the potential for drinking water contamination by cross connection. A cross connection occurs whenever a pipe or hose is placed in any container or machine, such as a hose placed in a pool or a pipe feeding a lawn sprinkler system.

When there is a reverse flow, caused by a water main break or other sudden loss of pressure, the drinking water pipes may get contaminated with whatever the line was feeding – such as pool water, fertilizers, or pesticides. This can be avoided by installing the proper backflow prevention device for a given application or maintaining an air gap between the outlet and the container being filled.

*Hose Bib Vacuum Breakers* are simple, low-cost devices that should be used to help prevent backflow of water when using water hoses. They are easy to install and available at many plumbing supply stores.

For more info, call Charles Reed at 978-534-7590, extension # 517.



*hose bib vacuum breaker*

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## PUBLIC PARTICIPATION

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The Leominster Water Division recognizes that it exists to meet the needs of its customers and welcomes comments from any person it serves. Please feel free to call at 978-534-7590 / ext. 517. For customers wishing to be more involved in the affairs of the Leominster Water Division, a Leominster City Council Water Oversight Committee oversees Water Division operations. The public is welcome to attend.

El informe contiene información importante sobre la calidad del agua en su comunidad. Tradúzcalo o hable con alguien que lo entienda bien.

Le rapport contient des informations concernant la qualité de l'eau de votre communauté. Faites-le traduire, ou parlez-en à un ami qui le comprend bien.