



## Where does the water come from?

The City of Lynchburg is fortunate to have two water sources: 125-acre Pedlar Reservoir in Amherst County and the James River. The water from Pedlar flows 22 miles by gravity to the City's two filtration plants and at certain times, water is also drawn from the James River.

The sources for drinking water (i.e., 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. It can also pick up substances resulting from human activity and the presence of animals.

### Contaminants may include the following:

- 1 **Microbial Contaminants**—viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- 2 **Inorganic Contaminants**—salts and metals, which can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- 3 **Pesticides & Herbicides**—chemical substances resulting from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- 4 **Organic Chemical Contaminants**—substances including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- 5 **Radioactive Contaminants**—substances that 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, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems.

The Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

**Water Assessment Program:** The Virginia Department of Health conducted a source water assessment of our system in 2002 in accordance with the 1996 amendments to the Safe Drinking Water Act. Based upon the criteria developed by the State in its Source Water Assessment Program, both of our surface water sources were classified as highly susceptible to contamination as a result of land use activities and potential sources of contamination in the assessment areas. However, this does not mean that our sources have or will be impacted. It does mean that if there were to be a release of pollutants in the assessment area, the source water could be impacted.

The assessment report consists of maps showing the source water assessment area, an inventory of known land use activities of concern, and documentation of any known contamination within the last five years. For copies of the report contact Leslie Gryder in the Utilities Department at 455-4263.

## What causes water to be discolored?

A sudden surge or a change in the direction of the water can cause normal oxidation particles present in the pipes to become mixed in the water. This may occur when there is a water main break, or when a fire hydrant is opened by the fire department or utilities crews for flushing the line. The City of Lynchburg does not recommend drinking discolored water or using it for laundry. Please notify the Utilities Department at 455-4250 if your water is discolored.

## Why does the water sometimes taste or smell like chlorine?

The Safe Drinking Water Act requires that water systems maintain a disinfectant residual throughout the distribution



system. This assures that our drinking water remains safe until it comes out of the tap. Before chlorine was used to disinfect drinking water, waterborne diseases, such as cholera and typhoid fever were serious health problems in the United States. Today, in the U.S. these diseases have been virtually eliminated. In other countries around the world that do not use chlorine, these diseases are still a major health concern.

Tests have shown that the amount of chlorine found in treated water is safe to drink. Although, some people may be sensitive to the smell and taste of chlorine. You can lessen the smell or taste of chlorine in your water by filling a pitcher or bottle of water and keeping it loosely capped in the refrigerator. Much of the chlorine will dissipate within a few hours.

## Should I be concerned about lead in my 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 City of Lynchburg 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 15 to 30 seconds or until it becomes cold or reaches a steady temperature before using it 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 (1-800-426-4791)** or at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).



## Is my water soft?

Lynchburg has two sources of water. Our primary source, Pedlar Reservoir is considered soft water. The James River, our secondary source, is considered moderately hard. The hardness of the river water may cause soap scum to form in your shower and mineral deposits on your pots and glassware.

## Who makes decisions about my drinking water?

Decisions addressing any changes to Utilities' infrastructure or rate changes may be discussed during a Lynchburg City Council meeting. Council meetings are held every month on the second and fourth Tuesday at 5:00 p.m. in City Council Chamber, City Hall, First Floor, 900 Church Street and broadcast live on Comcast cable LTV Channel 15, including video-streamed on the City's website at [www.lyncburgva.gov](http://www.lyncburgva.gov). Agendas for upcoming meetings, archived videos, and minutes to previous meetings are also available online.

## What if I have questions?

If you have any questions or comments concerning information within this water quality report, please contact Leslie Gryder, Chemist at 455-4263. For water or sewer emergencies, general inquiries, and tours, please contact the Utilities Department directly at 455-4250.

NOTE: Organized tours of the College Hill or Abert Water filtration plants are available upon request to school, civic, neighborhood, and other groups. The Utility Department personnel are available for group presentations about water supply, treatment, and quality.



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# WATER QUALITY REPORT

# 2011



Providing excellent water and wastewater services, to promote the health, safety, and prosperity of the community.

More than 100,000 citizens in Lynchburg and the surrounding communities depend on clean and safe drinking water every day. The city's abundant water supply is a critical asset for the economic growth and development of the region. In accordance with federal and state regulations, information on the quality of your drinking water must be shared with citizens annually through the distribution of a water quality report. The Lynchburg Department of Utilities is proud to present you with specific information about your drinking water from this past year. The results shown within this report reveal that your drinking water is better than the federal and state standards for safety and purity and is in compliance with regulations governing the quality of your 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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the **U.S. Environmental Protection Agency's (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. 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 infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers.

EPA and U.S. Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the **Safe Drinking Water Hotline (1-800-426-4791)**.

## What is in the water? Contaminants detected January 2010 through December 2010

The City of Lynchburg regularly monitors contaminants in drinking water in accordance with federal and state regulations. The EPA has determined that your water is completely safe at the indicated levels and meets or exceeds all federal and state requirements.

Contaminants / Unit of Measure	Violation	Levels Detected	Average	MCLG	MCL	Likely Source of Contamination
<b>INORGANIC CONTAMINANTS:</b>						
Barium, ppm	No	0.010	N/A	2	2	discharge of drilling waters, discharge from metal refineries, erosion of natural deposits
Chlorine, ppm	No	0 - 2.06 (range)	1.17 (highest average)	MRDLG=4.0	MRDL=4.0	water additive to control microbes
Copper, ppm <i>Results from 2009</i>	No	0 above action level	0.070 (90th percentile)	1.3	AL=1.3	corrosion of household plumbing systems, erosion of natural deposits
Fluoride, ppm	No	0.33 - 1.40 (range)	0.89 (average)	4	4	erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Lead, ppb <i>Results from 2009</i>	No	0 above action level	3.0 (90th percentile)	0	AL=15	corrosion of household plumbing systems, erosion of natural deposits
Nitrate + Nitrite (as Nitrogen), ppm	No	N/A (range)	0.09 (average)	10	10	runoff from fertilizer use; leaking from septic tanks, sewage; erosion of natural deposits

### MICROBIOLOGICAL CONTAMINANTS:

Total Coliform Bacteria, presence or absence	No	1.2% (highest monthly % positive)	N/A	0	5% (monthly samples positive)	naturally present in the environment
Turbidity, NTU	No	100% < 0.3	0.24 (highest level)	N/A	TT	soil runoff

NOTE: No single sample can be greater than 1 NTU. At least 95% of the samples taken every month must be less than 0.3 NTU.

### VOLATILE ORGANIC CONTAMINANTS:

Trihalomethanes (TTHM), ppb	No	16 - 77 (range)	39 (highest average)	0	80	by-product of drinking water disinfection
Haloacetic Acids (HAA), ppb	No	13 - 62 (range)	35 (highest average)	0	60	by-product of drinking water disinfection

### RADIOACTIVE CONTAMINANTS: *Results from 2009*

Gross Alpha Emitters, pCi/L	No	0.1 - 0.4	N/A	0	15	erosion of natural deposits
Gross Beta Emitters, pCi/L	No	0.9 - 2.5	N/A	0	50	decay of natural and man-made deposits
Radium 228 Emitters, pCi/L	No	0.2 - 0.3	N/A	0	5	erosion of natural deposits

### DISINFECTION BY-PRODUCT PRECURSOR CONTAMINANTS:

Total Organic Carbon, ppm (TOC) Raw Water, ppm	No	1.19 - 4.75 (range of results)	2.75 (highest average)	N/A	TT	naturally present in the environment
Total Organic Carbon, ppm (TOC) Treated Water, ppm	No	0.73 - 2.91 (range of results)	1.48 (highest average)	N/A	TT	naturally present in the environment

NOTE: The Disinfectants and Disinfection By-Products Rule provides several alternative compliance criteria besides TOC removal ratios. We did not report TOC removal ratios because we met an alternative compliance criterion. The alternative compliance criterion that we use is §141.135(a)(2)(ii). Our treated water TOC levels are <2.0 ppm.

### SECONDARY CONTAMINANTS:

Contaminants / Unit of Measure	SMCL	Levels Detected	Average	Likely Source of Contamination
Aluminum, ppb	200	71 - 88	80	erosion of natural deposits, addition of water treatment substances
Sodium, ppm	N/A	4.24 - 5.65	4.95	naturally present in the environment, addition of water treatment substances
Sulfate, ppm	250	8.2 - 8.7	8.45	naturally present in the environment, addition of water treatment substances

NOTE: Secondary Maximum Contaminant Levels (SMCL) are established only as guidelines to assist public water systems in managing their drinking water for aesthetic considerations, such as taste, color and odor. These contaminants are not considered to present a risk to human health at the SMCL.

## Terms & Abbreviations

**Action Level (AL):** Concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

**Maximum Contaminant Level (MCL):** Highest level of a contaminant allowed in drinking water. MCLs are set as close to the Maximum Contaminant Level Goal as feasible using the best available treatment technology.

**Maximum Contaminant Level Goal (MCLG):** Level of a contaminant in drinking water which there is no known or expected risk to health. MCLGs allow for a margin of safety.

**Maximum Residual Disinfection Level (MRDL):** Maximum level of disinfectant allowed in the water distribution system. There is convincing evidence that addition of disinfectant is necessary for control of microbial contaminants.

**Maximum Residual Disinfection Level Goal (MRDLG):** Level of disinfectant in drinking water which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

**Nephelometric Turbidity Unit (NTU):** Measure of water clarity. Turbidity in excess of five NTUs is barely noticeable to the average person.

**Parts per million (ppm) or Milligrams per liter (mg/l):** Equivalent to milligrams per liter. One ppm corresponds to one minute in two years or a single penny in \$10,000.

**Parts per billion (ppb) or Micrograms per liter:** Equivalent to micrograms per liter. One ppb corresponds to one minute in 2,000 years or a single penny in \$10,000,000.

**Picocuries per liter (pCi/l):** Measures radioactivity.

**Secondary Maximum Contaminant Level (SMCL):** Recommended levels for contaminants that affect the taste, odor, color or other aesthetic qualities of drinking water, rather than posing a health risk.

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