

Ferrum Water and Sewage Authority

2014 Annual Drinking Water Quality Report

Introduction

This Annual Drinking Water Quality Report for calendar year 2014 is designed to inform you about your drinking water quality. Our goal is to provide you with a safe and dependable supply of drinking water, and we want you to understand the efforts we make to protect your water supply. The quality of your drinking water must meet state and federal requirements administered by the Virginia Department of Health.

If you have any questions about this report, want additional information about any aspect of your drinking water, or want to know how to participate in the decisions that may affect the quality of your drinking water, please contact:

Ferrum Water and Sewage Authority
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Plant Administrator
540-365-2193

General Information

The sources of drinking water include rivers, lakes, streams, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and can pick up substances resulting from the presence of animals or from human activity. Contaminants in source water may be naturally occurring substances or may come from septic systems, discharges from domestic or industrial wastewater treatment facilities, agricultural and farming activities, urban storm water runoff, residential uses, and many other types of activities. Water from surface sources is treated to make it drinkable, while groundwater may or may not have any treatment.

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 may be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can, also come from gas stations, urban storm water 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, EPA prescribes regulations that limit the amount of certain contaminants in water that is provided by the public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

All drinking water, including bottled drinking 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 can be obtained by calling the Environmental Protection Agency's Safe 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 undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be primarily at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/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 (800-426-4791).

Sources and Treatment of Your Drinking Water

The source of your drinking water is ground water from three drilled wells, located in an undeveloped area northwest of the FWSA wastewater treatment facility on Old Ferrum Road. Treatment of the water consists of the addition of chlorine as a disinfectant and filter aid, addition of caustic soda for pH adjustment to reduce the corrosiveness of the water, and greensand filtration to remove unwanted minerals.

A Source Water Assessment of our system was conducted in 2002 by the Virginia Department of Health. The wells were determined to be of high susceptibility to contamination using the criteria developed by the state in its approved Source Water Assessment Program. Waterworks assessed in this geographic area were rated highly susceptible primarily due to a lack of information about this region's geology. 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 6 years. The report is available by contacting you water system owner at the phone number given elsewhere in this drinking water quality report.

Definitions

Contaminants in your drinking water are routinely monitored according to federal and state regulations. The table below shows the results of this monitoring for the period January 1 through December 31, 2014. In the table and elsewhere in this report you will find terms and abbreviations you might not be familiar with. The following definitions are provided to help you better understand these terms:

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 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.

Milligrams per Liter (mg/L) or Parts per Million (ppm) – one part per million corresponds to one minute in two years or a single penny in \$10,000.

Micrograms per Liter (ug/L) or Parts per billion (ppb) – one part per billion corresponds to one minute in 2,000 years or a single penny in \$10,000,000.

Non-detects (ND) - lab analysis indicates that the contaminant is not detectable, based on the limits of the analytical equipment used.

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

HAA5 – Haloacetic Acids, byproducts of chlorine disinfection.

Picocuries per liter (pCi/L) - Picocuries per liter is a measure of the radioactivity in water.

TTHM – Total Trihalomethanes, byproducts of chlorine disinfection.

Maximum Residual Disinfection Level Goal or MRDLG- the level of drinking water disinfectant below 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.

Maximum Residual Disinfectant Level of MRDL - the highest level of a disinfectant allowed in drinking water. There is convincing evidence that additional of a disinfectant is necessary for control of microbial contaminants.

Water Quality Results

We routinely monitor for various contaminants in the water supply to meet all regulatory requirements. The table below lists only those contaminants that had some level of detection. Many other contaminants have been analyzed but were not present or were below the detection limits of the laboratory equipment.

This table includes results from the most recent testing September 2013 through December 31, 2014. However, the state allows us to monitor for some contaminants less than once per year because concentrations of these contaminants do not change frequently. (See table next page)

Inorganic Contaminants

Contaminant/ Unit of Measurement	MCLG	MCL	Level Found	Violation	Date of Sample	Typical Source of Contamination
Nitrate - ppm	10	10	0.15	No	August-2014	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Barium - ppm	2	2	0.039	No	October-2014	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.

Lead and Copper

Contaminant/ Unit of Measurement	MCLG	MCL	Level Found / Range	Violation	Date of Sample	Typical Source of Contamination
Lead/ ppb	0	AL= 15	2.6 (90th percentile) Range: 0.0 to 3.1. Of the ten samples collected none exceeded the AL.	No	September-2013	Corrosion of household plumbing systems; erosion of natural deposits.
Copper/ ppm	1.3	AL= 1.3	0.08 (90th percentile) Range: 0.02 to 0.09. Of the ten samples collected none exceeded the AL.	No	September-2013	Corrosion of household plumbing systems; erosion of natural deposits.

Disinfection Byproducts

Contaminant/ Unit of Measurement	MCLG	MCL	Level Found / Range	Violation	Date of Sample	Typical Source of Contamination
TTHMs (Total Trihalomethanes) - ppb	N/A	80	High- 3.1 Range - ND-3.1	No	August-2014	By-product of drinking water disinfection
HAA5s (Total Haloacetic Acids) - ppb	N/A	60	High - 1.1 Range - ND-1.1	No	August-2014	By-product of drinking water disinfection
Chlorine - ppm	MRDLG=4	MRDL=4	Highest Qrtly Avg - 1.14 Range - 0.52 to 1.70	No	Monthly 2014	Water additive used to control microbes.

We are pleased to report to you that there were no detections of total coliforms or fecal coliforms in the monthly samples collected during calendar year 2014.

There were no Notices of Violation in 2014 requiring public notification.

Additional Information for Lead

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. Ferrum Water and Sewage Authority 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 15 to 30 seconds or until it becomes cold and reaches a steady temperature 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 at 1-800-426-4791 or at www.epa.gov/safewater/lead.

The U.S. Environmental Protection Agency sets MCLs at very stringent levels. In developing the standards, EPA assumes that the average adult drinks two liters of water each day throughout a 70-year life span. EPA generally sets MCLs at levels that will result in no adverse effects for some contaminants or a one-in-ten-thousand to one-in one million chance of having the described health effect for other contaminants.

We are pleased that through the addition of corrosion control at the drinking water facility we have been put on reduced monitoring for lead and copper. Three years of sampling has shown levels of lead and copper that meet the standards. In addition, Disinfection Byproduct levels are very low, and reduced monitoring has been put in place.