Annual Drinking Water Quality Report
Town of Gate City
PWSID # 1169405

INTRODUCTION

This Annual Drinking Water Quality Report for calendar year **2013** 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 (VDH).

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

Gate City Mayor France Perry, 156 East Jackson St., Gate City, VA 24251 276-386-3831

The times and location of regularly scheduled board meetings are as follows:

Town Council meets the 2nd Tuesday of each month at 7:00 PM in the Gate City Town Hall.

GENERAL INFORMATION

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: (1) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife. (2) 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. (3) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses. (4) 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 stormwater runoff, and septic systems. (5) 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 which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

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 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 infants can be particularly 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 OF YOUR DRINKING WATER

The sources of your drinking water are surface water as described below:

- Town of Gate City water treatment plant. The source of supply is Big Moccasin Creek with the raw water intake adjacent to the water treatment plant.
- Scott County PSA/Moccasin Gap water treatment plant. The sources of supply also Big Moccasin Creek with the raw water intake adjacent to the water treatment plant.

The Virginia Department of Health conducted a source water assessment of the Town of Gate City and Scott County PSA/Moccasin Gap water treatment plants during 2002. The Big Moccasin Creek was determined to be of high susceptibility to contamination using the criteria developed by the state in its approved Source Water Assessment Program. The assessment report consists of maps showing the source water assessment area and an inventory of known land use activities of concern. The report is available by contacting the Town of Gate City at the phone number or address 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 on the next page shows the results of our monitoring for the period of January 1st to December 31st, **2013**. In the table and elsewhere in this report you will find many terms and abbreviations you might not be familiar with. The following definitions are provided to help you better understand these terms:

Maximum Contaminant Level, or 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, or 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.

Non-detects (ND) - lab analysis indicates that the contaminant is not present

Parts per million (ppm) or Milligrams per liter (mg/l) - one part per million corresponds to one minute in two years or a single penny in $10,000.

Parts per billion (ppb) or Micrograms per liter - one part per billion corresponds to one minute in 2,000 years, or a single penny in $10,000,000.

Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.
Action Level - the concentration of a contaminant, which, if exceeded, triggers treatment or other requirements, which a water system must follow.

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

Nephelometric Turbidity Unit (NTU) - nephelometric turbidity unit is a measure of the clarity, or cloudiness, of water. Turbidity in excess of 5 NTU is just noticeable to the average person. Turbidity is monitored because it is a good indicator of the effectiveness of our filtration system.

Maximum Residual Disinfectant 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 or 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.

WATER QUALITY RESULTS

Regulated Contaminants

Contaminant (units)	MCLG	MCL	Level Detected	Violation (Y/N)	Range	Date of Sample	Typical Source of Contamination
Nitrate + Nitrite (ppm)	10	10	1.5	N	0.93 – 1.5	2013	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Fluoride (ppm)	4	4	0.71	N	0.54 – 0.71	2013	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Barium (ppm)	2	2	0.024	N	0.022 - 0.024	2013	Discharge of drilling waste; Discharge from metal refineries; Erosion of natural deposits
Alpha Emitters (pCi/l)	0	15	6.7	N	N/D – 6.7	2008	Erosion of Natural Deposits
Combined Radium (pCi/l)	0	5	0.6	N	0.2 – 0.6	2008	Erosion of Natural Deposits
Chlorine (ppm)	MRDLG = 4	MRDL = 4	1.48	N	0.4 – 2.04	2013	Water additive used to control microbes
Total Organic Carbon	N/A	TT,MET when > or = 1	1.0	N	1.00 – 1.87	2013	Naturally present in the environment
Haloacetic Acids (ppb)	N/A	60	36	N	27 - 66	2013	By-product of drinking water disinfection
Trihalomethanes (ppb)	N/A	80	46	N	24 - 84	2013	By-product of drinking water disinfection
Turbidity (NTU)	N/A	TT, 1 NTU Max	0.15	N	0.04 – 0.15	2013	Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.
		TT, ≤0.3 NTU 95% of the time	100%	N	N/A		

Lead and Copper Contaminants

Contaminant (units)	MCLG	Action Level	90th Percentile Level Detected	Date of Sampling	# of Sampling Sites Exceeding Action Level	Typical Source of Contamination
Lead (ppb)	0	AL = 15	4	2011	1	Corrosion of household plumbing system; Erosion of natural deposits
Copper (ppm)	1.3	AL = 1.3	0.062	2011	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

The water quality results in the above tables are from testing done in 2013. However, the state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though accurate, is more than one year old.

MCL's are set at very stringent levels by the U.S. Environmental Protection Agency. In developing the standards EPA assumes that the average adult drinks 2 liters of water each day throughout a 70-year life span. EPA generally sets MCLs at levels that will result in no adverse health effects for some contaminants or a one-in-ten-thousand to one-in-a-million chance of having the described health effect for other contaminants.

ADDITIONAL HEALTH INFORMATION

Cryptosporidium: In 2010, the Town of Gate City and Moccasin Gap - Scott County PSA began monitoring for *Cryptosporidium* in their source water (before treatment) as required by EPA's Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR). *Cryptosporidium* is a microscopic parasite found in surface water throughout the United States. Ingestion of Cryptosporidium may cause cryptosporidiosis, an abdominal infection. Although filtration removes *Cryptosporidium*, the most commonly used filtration methods cannot guarantee 100 percent removal. Under the LT2ESWTR, the average *Cryptosporidium* concentration determines if additional treatment measures are needed. Twenty-four samples are required for analysis over a two-year period. During 2012, the average *Cryptosporidium* concentration was 0.00 oocysts per liter for the 2 samples collected from each water source. While the *Cryptosporidium* monitoring doesn't indicate the presence of these organisms in each source water (before treatment), the current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Based on the *Cryptosporidium* monitoring results so far and the consistent performance of the treatment plant, we anticipate surpassing any future treatment requirements of the LT2ESWTR.

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. The Town of Gate City 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 two minutes or until it becomes cold or 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 or at http://www.epa.gov/safewater/lead.

VIOLATION INFORMATION

Your water system did not have any violations in 2013.

Additional Information:

Cross-Connection Control

What is a cross-connection?

A cross connection is defined as any direct connection between the public water supply and a non-potable water source, contaminant, or source of pollution. Cross Connections can exist both in residential homes and non-residential facilities.

The Town of Gate City Water Department maintains a robust **Cross-Connection Control Program Plan (CCCPP).** This program consists of several components including surveying all facilities serviced by the Department for cross-connections, regular inspection of all testable backflow prevention devices, and educational outreach to residential and nonresidential customers regarding the importance of cross-connection elimination and protection. Some important highlights of The Town of Gate City's CCCPP:

- The Town of Gate City Water Department requires that all facilities served by public water are equipped with appropriate backflow prevention devices where cross-connections exist. Unprotected cross connections are strictly prohibited by the Town of Gate City Water Department.
- The Town of Gate City Water Department has a Total Containment Policy which means that all facilities served by town water must have appropriate backflow protection at the meter to isolate that facility from the public water supply.
- The Town of Gate City Water Department is required to survey all facilities connected to the public water supply for cross connections.
- Failure to allow the Town of Gate City Water Department personnel access to a facility to perform a cross-connection survey or backflow prevention device inspection will result in termination of water service to that facility.
- Backflow prevention devices must be approved by the Town of Gate City Water Department prior to installation. A completed Design Data Sheet and attached plan must be submitted to the Town of Gate City Water Department for review and approval prior to installation. A plumbing permit is required for installation of all testable backflow prevention devices.
- The installed backflow prevention device must be inspected by the Town of Gate City Water Department within 14 days of installation. A defective backflow prevention device must be repaired or replaced within 14 days of the failure date.
- Testable backflow prevention devices are inspected by the Town of Gate City Water Department on a regular basis. The Town of Gate City Water Department has VDH certified cross connection surveyors and backflow prevention device inspectors on staff.
- Where applicable, backflow prevention devices must meet the new definition of "lead free" as described by The Reduction of Lead in Drinking Water Act.

Backflow Prevention Device Owner responsibilities

- The owner of any cross connection protected by a testable backflow prevention device must notify the Town of Gate City Water Department of all of these protected cross connections.
- Have suitable arrangements made so that inspections of backflow prevention devices and cross connection surveys can be made during regular business hours.
- Repair or replace within 14 days of the initial inspection date and retest any device which fails a test or is found defective.
- Inspection of backflow prevention devices must be performed by Town of Gate City Water Department personnel.

Where would a residential customer find a cross-connection?

Let's say you're going to spray fertilizer on your lawn. You hook up your hose (potable water supply) to the sprayer containing fertilizer (non-potable source). This establishes a direct connection from the non-potable source (fertilizer) to the public water supply. If the water pressure drops (say because of fire hydrant use nearby) when the hose is connected to the fertilizer, the fertilizer may be sucked back into your drinking water pipes through the hose. Using an attachment on your hose called a backflow prevention device can prevent this problem. The Town of Gate City Water Department recommends the installation of backflow prevention devices, such as a low cost hose bibb vacuum breaker, for all inside and outside hose connections. You can purchase this at a hardware store or plumbing supply store. This is a great way for you to help protect the water in your home as well as the drinking water system in your town. Other examples of where residential cross connections may be found are: *lawn irrigation systems, submerged hoses, auxiliary wells, boilers, solar heat systems, and fire sprinkler systems.*

What can residential customers do?
Provide Water Department personnel access to your residence during regular business hours (when requested) to perform required cross-connection surveys and backflow prevention device inspections (normally, surveys and inspections of residences are only needed if there is a fire sprinkler system installed).

Make sure there are no cross connections in your house – especially if you have an auxiliary private well, irrigation system, solar heat system, fire sprinkler system, or boiler. Comply with Virginia Plumbing Codes to ensure all cross-connections are protected with the appropriate device (a licensed plumber should be able to provide assistance). ***Any connection between the public water supply and a private well is strictly prohibited.*** If you have any questions do not hesitate to contact the Water Department at 276 386-3260.

A simple and inexpensive way for residential customers to protect against back siphonage from their garden hose is to install the hose bibb vacuum breaker described above. Installation is as easy as screwing on to the hose bibb. The peace of mind in protecting your drinking water is worth a few dollars.

Type of Testable Backflow Prevention Devices:
Reduced Pressure Zone Backflow Device (RPZ). This type of device utilizes two check valves and a relief valve, and is designed for high-hazard uses.
Double Check Valve (DC): This type of device utilizes two check valves, but no relief valve, and is designed for low hazard uses such as for a fire sprinkler line.
Pressure Vacuum Breaker (PVB): This type of device utilizes one check valve, and is typically used in irrigation systems.
Air Gap. This is not a device, but a physical separation (of twice the diameter of the supply pipe and never less than 1 inch) between the potable water supply and the non-potable supply. Although not strictly a device, it is measurable. The air gap is extremely effective but limited to uses where downstream system pressure is not required.
Type of Non-Testable Backflow Prevention Devices:
Hose Bibb Vacuum Breaker: This is a small, inexpensive device available at most hardware stores that can be easily attached to your outside tap before the garden hose. It's used to prevent back siphonage, and is a simple way to protect garden hose cross-connections.
Residential Dual-Check: This device is installed after the meter, and offers reliable protection against back siphonage and backpressure. As the name implies, it is used for residential applications.