

2010 Annual Drinking Water Quality Report

This Annual Drinking Water Quality Report for calendar year 2010 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).

A source water assessment of our system was conducted in 2001 by the Virginia Department of Health. The Town Springs and Middle Fork of the Holston River sources were 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, an inventory of known land use activities of concern, and documentation of any known contamination within the last 5 years. The report is available by contacting John Clark at the phone number or address given elsewhere in this drinking water quality report.

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 storm water 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 storm water 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 storm water 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).

SOURCE(S) OF YOUR DRINKING WATER

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

The Marion Town Springs are located along State Route 16 and Currin Valley Road.

The Marion Water Treatment Plant obtains water for the Middle Fork of the Holston River.

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, 2010. 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:

DEFINITIONS:

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 corre-

sponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Parts per trillion (ppt) or Nanograms per liter (nanograms/l) - one part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.

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

Contaminant (units)	MCLG	MCL	Level Detected	Violation (Y/N)	Range	Date of Sample	Typical Source of Contamination
Nitrate (ppm)	10	10	0.96	N	0.11 – 0.96	2010	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Fluoride (ppm)	4	4	0.82	N	0.57 – 0.82	2010	Water additive which promotes strong teeth
Barium (ppm)	2	2	0.034	N	0.021 – 0.034	2010	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Alpha Emitters (pCi/l)	0	15	0.2	N	0.1 – 0.2	2009	Erosion of Natural Deposits
Combined Radium (pCi/l)	0	5	1.0	N	0.5 – 1.0	2009	Erosion of Natural Deposits
Chlorine (ppm)	MRDL G = 4	MRDL = 4	2.07	N	1.3 – 2.5	2010	Water additive used to control microbes
Total Organic Carbon	NA	Inside Story Headline, met when 31	1.00	N	1.00 – 1.60	2010	Naturally present in the environment
Haloacetic Acids (ppb)	NA	60	6	N	ND – 14	2010	By-product of drinking water disinfection
TTHMs [Total Trihalomethanes] (ppb)	NA	80	6	N	ND - 26	2010	By-product of drinking water disinfection
Turbidity (NTU)	NA	TT, 1 NTU Max	0.10	N	0.03 – 0.10	2010	Soil runoff
		TT, ≤0.3 NTU 95% of the time	100%	N	NA		

Contaminant (units)	MCLG	Action Level	90th Percentile	Sample Date	# of samples exceeding Action Level	Typical Source of Contamination
Copper (ppm)	1.3	AL = 1.3	0.294	08-26-2009	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives



Most of the water quality results in the above table are from testing done in 2010. 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.



“Turbidity is a measure of the cloudiness of the water.”

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.

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 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. The **Town of Marion** is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumb-

ing 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 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>.

“...you can minimize the potential for lead exposure by flushing your tap for 15 to 30 seconds...”

Additional Information for Cryptosporidium

In 2008, the Town of Marion began monitoring for Cryptosporidium in the 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 2010, the average Cryptosporidium concentration was 0 oocysts per liter for the 3 samples collected. While our monitoring indicates the presence of these organisms in our 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 current performance of the treatment plant, we anticipate meeting the future treatment requirements of the LT2ESWTR.

Town of Marion

VIOLATION INFORMATION

Your water system did not have any MCL or TT violations during 2010.

Your water system did not have any monitoring violations during 2010.



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

Marion Town Council meets the 1st and 3rd Monday of each month at 7:00 p.m. in the Municipal Building located at 138 East Main Street, Marion, Virginia. Please call 783-4113 for advance copy of Agenda, or to be included on the Agenda. Regular Council meeting which fall on a holiday are held on Thursday of that week.



If you have questions about this report, please contact:
Donald R. Coley, director of Water and Wastewater Operations;
Town of Marion; P.O. Box 1005, Marion, Virginia 24354

We're on the Web!
www.marionva.org

Town of Marion Water Treatment
P.O. Box 1005
160 Watermill Road
Marion, VA 24354

Phone: 276-783-5950
Fax: 276-783-8413
E-mail: tedwards@marionva.org