

2011

Water Quality Report

Westlake Water • Water's Edge • Contentment Island



What You Will Find in Your Water Quality Report

This water quality report, supplied annually to our water customers, contains information about the source of your water, what it contains and how it compares to the standards set by regulatory agencies based on data collected during calendar year 2010. The Western Virginia Water Authority routinely monitors for the presence of drinking water contaminants according to federal and state regulations and was in full compliance with all state and federal monitoring and reporting requirements in 2010.

If you have questions about your water supply or any of the information in this report, please contact us. We will be happy to provide you with the information you need.

Getting to Know Us

Established in July 2004, the Western Virginia Water Authority, is a public authority funded by utility rates and new connection fees, not taxes. In November 2009, Franklin County joined the Water Authority, offering a larger regional approach to meeting our communities' water and wastewater needs. Although our customer base expanded, our mission remains the same - we proudly protect and manage essential water resources through the delivery of quality water and wastewater service to our customers.



The Western Virginia Water Authority provides quality water and wastewater service in the City of Roanoke, Roanoke County and Franklin County.



Executive Directors

Mike McEvoy, Wastewater Services

Gary Robertson, P.E., Water Operations

Contacting Us

We'd love to hear from you. Our customer service representatives are available Monday-Friday from 8am to 5pm to assist you on the phone or in person. You can also send us an email at info@westernvawater.org.

If you want more information online, we've created a link for Franklin County Customers directly on our home page so you can get project updates, rates and water quality reports all in one easy location.

And you are always welcome to attend our Board meetings at the Authority's main office, the Coulter Building in downtown Roanoke. Representatives from each member locality make up the Authority's Board of Directors. Board Members meet on the 3rd Thursday of every month with the exception of August and December.



**WESTERN VIRGINIA
WATER AUTHORITY**

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Drinking Water 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:

- 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;
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater 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 stormwater runoff, and septic systems; and
- 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, the EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems.

Lead & Copper

Copper is a nutritionally essential element, but at high levels, copper can cause gastrointestinal difficulties such as nausea and diarrhea. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children.

When water leaves the Water Authority's treatment facilities, it is virtually free of lead and copper. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Water 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 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 of at <http://www.epa.gov/safewater/lead>.



Do I Need to Take Special Precautions?

Some people may be more vulnerable to trace 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 or by calling the Environmental Protection Agency Safe Water Drinking Hotline 1.800.426.4791.

Water Discoloration

Changes in water pressure in water systems, such as when water mains break or technicians flush hydrants, can occasionally cause drinking water to be discolored. The discoloration is caused by sediments in pipes mixing with clear water. The sediments occur naturally from the oxidation of iron in pipes. While discolored water is ordinarily safe to drink, it is best to flush any discolored water from pipes by turning on all cold-water faucets in your home or business. Avoid turning on hot-water faucets so the discolored water is not drawn into water heaters. One cause of water pressure change is from the use or flushing of fire hydrants. If you notice evidence of a water main break or leaking fire hydrants, please call 853.5700.



Where Does Your Water Come From?

Westlake Area Public Water System

Customers who live in the Westlake Commercial District, the Chestnut Creek, Waterfront, Boardwalk and Windmere Point communities and along Scruggs Road are served by the Westlake Area Public Water System. The Authority has a successful working relationship with the Bedford County Public Service Authority (BCPSA) to provide treated drinking water from the Highpoint Water Treatment Plant to the Westlake area.

This membrane filtration facility treats water from Smith Mountain Lake. The Authority's share of the plant's capacity is 400,000 gallons per day (GPD). Filtered water is treated with chlorine for continuous disinfection.



Contentment Island Water System

Customers who live in the Contentment Island community get their drinking water from groundwater wells (Well No. 1, 2 and 3). Treatment of the water is provided by feeding chlorine for continuous disinfection of the water and soda ash for pH adjustment of the water.

The sodium concentration of 67.1 mg/L in the treated water is above the EPA recommended optimal level of less than 20 mg/L for sodium in drinking water, which is established for those individuals on a "strict" sodium intake diet. This elevated level of sodium could be caused by the soda ash being added to the water for pH adjustment.

Water's Edge Water System

Customers who live in the Water's Edge community get their drinking water from four groundwater wells (Well No. 3,4,7 and 12) that are located throughout the Water's Edge subdivision. Treatment of the water is provided by feeding chlorine for continuous disinfection of the water, soda ash for pH adjustment of the water and potassium permanganate for removal of iron and manganese. Three greensand filters are used to remove iron, manganese and radium from the drinking water.

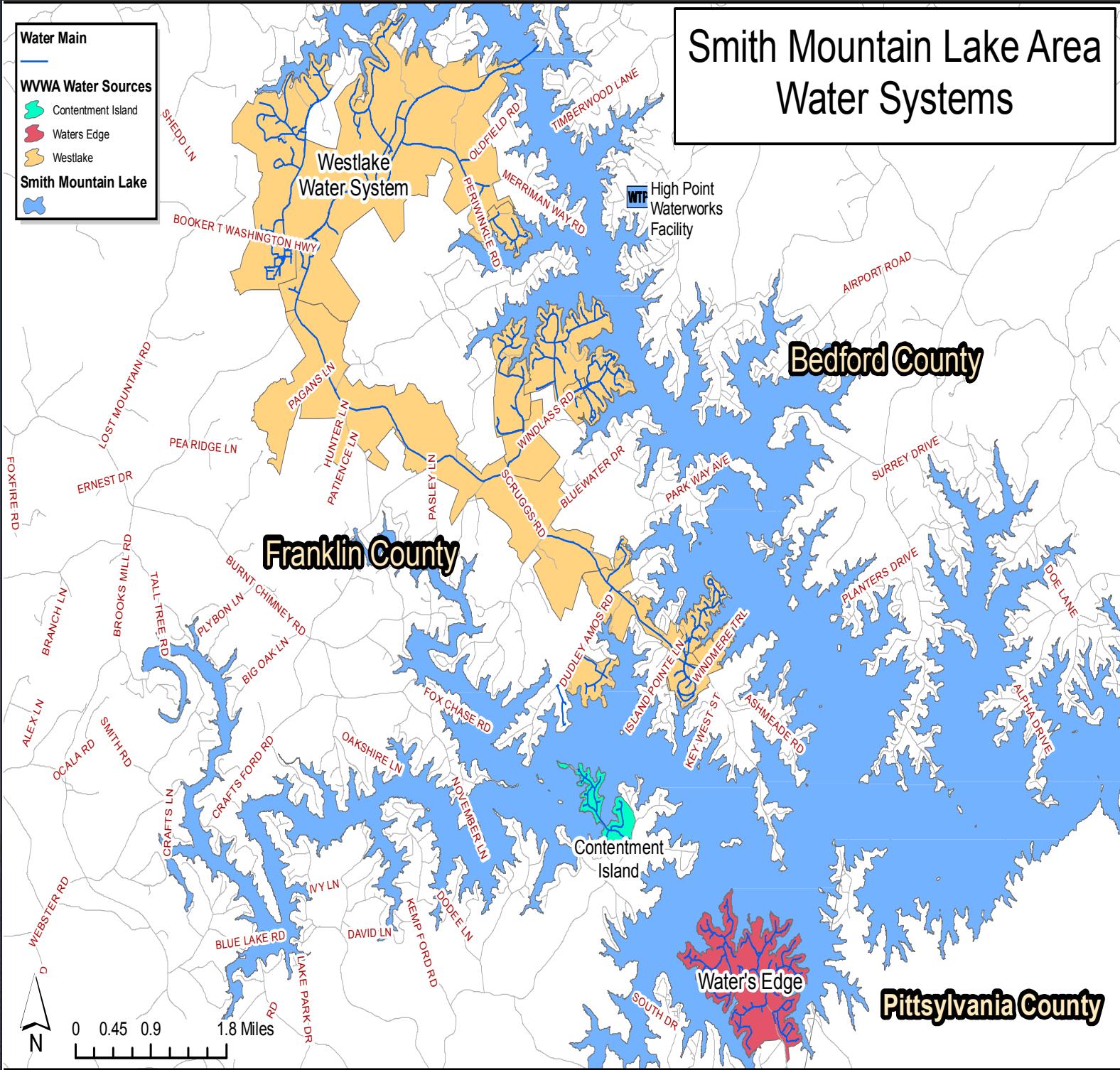
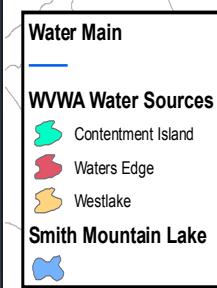
Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

The sodium concentration of 26.4 mg/L in the treated water is above the EPA recommended optimal level of less than 20 mg/L for sodium in drinking water, which is established for those individuals on a "strict" sodium intake diet. This elevated level of sodium could be caused by the soda ash being added to the water for pH adjustment.

A source water assessment of the Water's Edge Water System was conducted in 2002 by the Virginia Department of Health. Wells No. 3, No. 4 and No. 7 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 the Authority at the phone number or address given provided in the drinking water quality report.



Smith Mountain Lake Area Water Systems



2010 Water Quality Data

The water-testing results from calendar year 2010 summarized in the table on the following pages includes both regulated and non-regulated substances. The THMs/HAA5s were derived from running annual averages. The Western Virginia Water Authority constantly monitors its water supplies for various contaminants to meet all regulatory requirements. The table lists only those contaminants that had some level of detection. Many other contaminants have been analyzed but were not

present or were below the maximum contaminant level. The Authority has tested for volatile organics (VOC's) and pesticides, all of which met with current state and federal standards for drinking water.

Most Recent Data Presented as (Range) A

Substance	Units	Ideal Goals (EPA's MCLG)	Highest Level Allowed (EPA's MCL)	Violation	Westlake Area Public Water
Chlorine	ppm		4-MDRL	no	(0.01 - 1.4) 0.56
Fluoride	ppm	4	4	no	0.1
Total Nitrate & Nitrite (as N)	ppm	10	10	no	0.56
Barium	ppm	2	2	no	0.03
THM'S	ppb	0	80	no	(44 - 68) 57
HAA5's	ppb	0	60	no	(19-40) 29
pH	pH units		6.5 - 8.5	no	(6.4 - 8.5) 7.5
Turbidity	NTU	N/A	T. T.	no	0.992 (highest level detected 2010)
Total Coliforms	MPN/ 100 mL or P/A	0	Presence of coliform bacteria in >5% of monthly samples	no	0
Fecal Coliforms	MPN/ 100 mL or P/A	0	A routine and a repeat sample are total coliform positive, and one is also fecal coliform or E. coli positive.	no	0

Most Recent Monitoring Period

Gross Alpha	pCi/L	0	15	no	0.1
Gross Beta	pCi/L	0	50	no	
Radium 226/228	pCi/L	0	5	no	0.8
Lead	ppb	0 ppb	AL = 15	no	1.5 (90th percentile) None were above the action level
Copper	ppm	1.3 ppm	AL = 1.3	Yes - Water's Edge only	0.38 (90th percentile) None were above the action level

Other Parameters (Not Regulated)

Iron	ppm	unregulated	0.3	Exceedance on Well 7, Water's Edge only	
Manganese	ppm	unregulated	0.05	n/a	
Zinc	ppm	unregulated	5	n/a	
Alkalinity	ppm	unregulated		n/a	
Hardness	ppm	unregulated		n/a	(59 - 203) 105
Orthophosphate	ppm	unregulated		n/a	
Conductivity	µmhos/cm	unregulated		n/a	
Silica	ppm	unregulated		n/a	
Sodium	ppm	unregulated		n/a	
Corrosivity		unregulated	< - 2.0 highly aggressive > 0.0 non aggressive	n/a	

Water's Edge	Contentment Island	Source of Substance
(0.05 - 1.59) 0.76	(0.02 - 1.0) 0.64	Required Disinfectant added during treatment process to eliminate bacteria
ND		Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from aluminum and fertilizer factories
0.44	0.21	Run-off from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits
1.3	ND	By-product of drinking water chlorination
ND	ND	By-product of drinking water chlorination
6.12		Acidity or basicity of water
ND - 4.2		Soil run-off
0	0	Naturally present in the environment
0	0	Human and animal waste
4.1	1.9	Erosion of natural deposits
7.4		Decay of natural and man-made deposits
2.2	1.3	Erosion of natural deposits
Jan - June 2010 9 (90th percentile) Two were above the action level July - Dec 2010 14 (90th percentile) None were above the action level	3 (90th percentile) Range < 2 to 4 Of the five samples collected, none exceeded the AL	Natural\industrial deposits, plumbing solder, brass alloy in faucets
Jan - June 2010 2.8 (90th percentile) Four were above the action level July - Dec 2010 1.5(90th percentile) Five were above the action level	0.3 (90th percentile) Range < 0.02 to .004 Of the five samples collected, none exceeded the AL	Natural\industrial deposits, plumbing, wood preservatives
ND - 0.4		Naturally occurring in the environment
ND - 0.023		Naturally occurring in the environment
0.004 - 0.093		Naturally occurring in the environment
21.3 - 113		Measurement of naturally occurring carbonates
12.5 - 94		Measurement of naturally occurring hardness metals
ND - 0.06		Corrosion inhibitor added during treatment process
46.9 - 332		Physical property of water
33.6		Naturally occurring in the environment
3.49 - 26.4	67.1	Naturally occurring in the environment
-2.97 to -1.06		Physical property that occurs when water reacts with metal

Definitions

Action Level (AL): The concentration of a contaminant that triggers treatment or other requirement that a water system must follow.

HAA5s: Haloacetic acids.

Maximum Contaminant Level (MCL):

The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLG as feasible using the best available treatment 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.

Maximum Residual Disinfection Level (MRDL):

The highest level of a disinfection allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

mg/L: Milligrams per liter (for example, one minute in two years).

MPN: Most probable number.

ND: Analyte was not detected or was below the method detection limit of the laboratory's instrumentation.

NTUs: Nephelometric Turbidity Units; a measure of turbidity.

pCi/L: Picocuries per liter is a measure of the radioactivity in water.

ppm: One part per million (for example, one minute in two years).

ppb: One part per billion (for example, one minute in 2,000 years).

THMs: Trihalomethanes

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

µg/L: Micrograms per liter (for example, one minute in 2,000 years).

µmhos/cm: Micromhos per centimeter; a measure of conductivity.



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DID YOU KNOW?

The Western Virginia Water Authority offers free SOL-correlated classroom presentations and civic presentations for our customers.

Please contact us at 540.853.5700 or info@westernvawater.org if you would like to learn more.