



2010 Water Quality Report

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 2009. 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 2009.

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

In July 2004, the Public Utility Departments of the City of Roanoke and Roanoke County merged to form the Western Virginia Water Authority, a new public body independent of local government. 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.

If you are in Roanoke, come visit us. The Water Authority's headquarters, the Coulter Building, is in downtown Roanoke at 601 S. Jefferson Street, at the corner of Jefferson and Franklin. Free parking is available in front of the building on Jefferson Street, along adjacent streets and behind the building in the public parking lot on Franklin Road. At the Coulter Building, water and sewer customers may pay their bills, start, stop or transfer service and receive free water conservation information.



Mike McEvoy, Executive Director
Wastewater Services

Gary Robertson, P.E., Executive Director
Water Operations



601 S. Jefferson Street
Roanoke, VA 24011
Phone 540.853.5700
FAX 540.853.1600
info@westernvawater.org
www.westernvawater.org

Do You Have Questions for 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. 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.

What's the Status of all the Construction?

The Western Virginia Water Authority is involved in several large capital projects in Franklin County to bring reliable public water and fire protection to the residents and businesses in the U.S. Route 220, Scruggs Road and Wirtz Road areas.

The U.S. 220 Water Line, a joint project between Roanoke County, Franklin County and the Authority, began in the summer of 2008. Constructed by Aaron J. Conner General Contractor, the 65,000 foot water line will extend water from the Clearbrook area of Roanoke County to Wirtz Plateau in Franklin County. The portion of the water line that is in Roanoke County is already in service, and the entire project is expected to be completed this fall.

Once the U.S. 220 Water Line is complete, contractors will begin work on a connecting line along Wirtz Road. This line will offer residents in the Wirtz Plateau area, who are currently experiencing water quality and quantity issues, high quality public water.

The Scruggs Road Water Line is currently being extended by E.C. Pace Company. When complete later this year, the 12-inch water line will extend from the Westlake Commercial District down Scruggs Road just past the Windmere Point community. As this line is put into service, the Authority will connect the Waterfront, Boardwalk and Windmere Point communities to this line. The existing wells utilized by each of these communities will be taken out of service; however, they will be maintained as a reliable back-up supply of water.



Construction workers are installing fire hydrants along the U.S. 220 and Scruggs Road water line to offer residents and businesses much needed fire protection.



Construction on the U.S. 220 Water Line is expected to be completed this fall.

New customers have the opportunity to connect to these water lines as the lines are put into service. If your property adjoins one of these water line construction areas and you are interested in discussing a new connection, please contact the Water Authority at 853-5700 or info@westernvawater.org.

Drinking Water Information

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants; however, the presence of contaminants does not necessarily indicate that water poses a health risk.

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 in source water may come from septic systems, discharges from domestic or industrial wastewater treatment facilities, agricultural and farming activities, urban stormwater runoff, residual use and many other activities. Water from surface sources is treated to make it suitable for consumption while groundwater may or may not require treatment. 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.

More information can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline 1.800.426.4791.

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. EPA/Centers for Disease Control (CDC) guidelines on appropriate measures to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available

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.

Cryptosporidium & Giardia

The bacteria *Cryptosporidium* and *Giardia* are microscopic organisms that can cause fever, diarrhea and other gastrointestinal symptoms when ingested. The organisms come from animal and human wastes and are eliminated through water filtration and disinfection. Even though the presence of these organisms is not regulated by the state or federal

government, the Western Virginia Water Authority has tested for *Cryptosporidium* and *Giardia* in all of its water sources and has not detected either organism.

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 is available from the Safe Drinking Water Hotline at <http://www.epa.gov/safewater/lead>.



Franklin County 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 High Point Waterworks Facility to the Franklin County Public Water System that serves 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.

Substance	Units	Ideal Goals (EPA's MCLG)	Highest Level Allowed (EPA's MCL)	Level Found/ Range	Exceedence/Violation	Date of Sample	Typical Source of Contamination
Chlorine	ppm	4	4-MDRL	Average: 0.25 Range: 0.07 - 0.56	No	Monthly 2009	Required disinfectant added during treatment process to eliminate bacteria
TTHMs	ppb	N/A	80	Average: 37 Range: 21 to 49	No	Quarterly 2009	By-product of drinking water disinfection
HAAs's	ppb	0	60	Average: 19 Range: 3 to 34	No	Quarterly 2009	By-product of drinking water disinfection
pH	pH units		6.5-8.5	Average: 7.5 Range: 6.6 - 8.3)	No	Daily	Acidity or basicity of water
Turbidity	NTU	N/A	T. T.	Highest: 0.44 Range: 0.007-0.440	No	Continuously Monitored	Soil run-off
Fluoride	ppm	4	4	0.37	No	July 2009	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Total Nitrate & Nitrite (as N)	ppm	10	10	0.79	No	July 2009	Run-off from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits
Radiological Contaminants - Most Recent Monitoring Period							
Gross Alpha	pCi/L	0	15	0.1	No	July 2009	Erosion of natural deposits
Radium 226/228	pCi/L	0	5	0.8	No	July 2009	Erosion of natural deposits
Lead and Copper							
Lead	ppb	0 ug/L	AL = 15	2 (90th percentile) Of the ten samples collected, none exceeded the AL.	No	August 2009	Corrosion of household plumbing systems; Erosion of natural deposits
Copper	ppm	1.3 mg/L	AL = 1.3	0.65 (90th percentile) Of the ten samples collected, none exceeded the AL.	No	August 2009	Corrosion of household plumbing systems; Erosion of natural deposits
Microbiological Contaminants							
Total Coliform Bacteria	MPN/ 100 mL or P/A	0	> 1 positive monthly sample	0	No	Monthly 2009	Naturally present in the environment
Fecal Coliform or E-coli	MPN/ 100 mL or P/A	0	> 1 positive monthly sample	0	No	Monthly 2009	Human and Animal Fecal Waste
Other Parameters (Not Regulated)							
Hardness	ppm	unregulated		Average: 106 Range: 73-202	No	Monthly	Measurement of naturally occurring hardness metals

Additional Health Information

We are pleased to report to you that there were no detections of total coliforms or fecal coliforms in the monthly samples collected from the Franklin County Public Water System during calendar year 2009.

As mentioned on page three of this report, the Western Virginia Water Authority is constructing the Scruggs Road Water Line. As this line is put into service, the individual water systems along Scruggs

Road will be connected to the Franklin County Public Water System and the source of your drinking water will be the Franklin County Public Water System; however, the existing wells for the individual water systems will be maintained as a back-up supply of water. The Waterfront Sections I & XI were connected to the Franklin County Public Water System in the Spring of 2010.



The Water's Edge

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

Substance	Units	Ideal Goals (EPA's MCLG)	Highest Level Allowed (EPA's MCL)	Level Found/ Range	Exceedence/Violation	Date of Sample	Typical Source of Contamination
Chlorine	ppm	4	4-MDRL	Average: 0.6 Range: (0.06-1.85)	No	Monthly 2009	Required disinfectant added during treatment process to eliminate bacteria
Fluoride	ppm	4	4	0.06	No	July 2009	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminium factories
Total Nitrate & Nitrite (as N)	ppm	10	10	Highest: 0.42 Range: (0.02-0.42)	No	July 2009	Run-off from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits
Barium	ppm	2	2	0.057	No	July 2009	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chromium	ppb	0.1	100	1	No	July 2009	Discharge from steel and pulp mills; Erosion of natural deposits
TTHM'S	ppb	0	80	1.3	No	July 2009	By-product of drinking water disinfection
HAAS's	ppb	0	60	ND	No	July 2009	By-product of drinking water disinfection
pH	pH units		6.5-8.5	7.0	No	July 2009	Acidity or basicity of water
Turbidity	NTU	N/A	0.5	ND	No	July 2009	Soil run-off
Radiological Contaminants - Most Recent Monitoring Period							
Gross Alpha	pCi/L	0	15	Highest: 12 Range: (1.1 - 12)	No	November 2009	Erosion of natural deposits
Gross Beta	pCi/L	0	50	6.2	No	November 2009	Decay of natural and man-made deposits
Radium 226/228	pCi/L	0	5	Highest: 1.2 Range: (1.0 - 1.2)	No	November 2009	Erosion of natural deposits
Lead and Copper							
Lead	ppb	0 ug/L	AL = 15	12 (90th percentile) Of the eleven samples collected, one exceeded the AL.	No	July/August 2009	Corrosion of household plumbing systems; Erosion of natural deposits
Copper	ppm	1.3 mg/L	AL = 1.3	2.73 (90th percentile) Of the eleven samples collected, three exceeded the AL.	Yes	July/August 2009	Corrosion of household plumbing systems; Erosion of natural deposits
Microbiological Contaminants							
Total Coliform Bacteria	MPN/ 100 mL or P/A	0	> 1 positive monthly sample	0	No	Monthly 2009	Naturally present in the environment
Fecal Coliform or E-coli	MPN/ 100 mL or P/A	0	> 1 positive monthly sample	0	No	Monthly 2009	Human and Animal Fecal Waste
Other Parameters (Not Regulated)							
Iron	ppm	unregulated	0.3	ND	n/a	July 2009	Erosion of natural deposits
Manganese	ppm	unregulated	0.05	0.002	n/a	July 2009	Erosion of natural deposits
Zinc	ppm	unregulated	5	0.022	n/a	July 2009	Erosion of natural deposits
Alkalinity	ppm	unregulated		113	n/a	July 2009	Measurement of naturally occurring carbonates
Hardness	ppm	unregulated		94	n/a	July 2009	Measurement of naturally occurring hardness metals
Orthophosphate	ppm	unregulated		ND	n/a	July 2009	Corrosion inhibitor added during treatment process
Conductivity	umhos/cm	unregulated		332	n/a	July 2009	Physical property of water
Silica	ppm	unregulated		33.6	n/a	July 2009	Naturally present in the environment
Sodium	ppm	unregulated	20	26.4	n/a	July 2009	Naturally occurring in the environment
Corrosivity		unregulated	<-2.0 highly aggressive >0.0 non aggressive	-1.06	n/a	July 2009	Physical property that occurs when water reacts with metal

Additional Health Information

We are pleased to report to you that there were no detections of total coliforms or fecal coliforms in the monthly samples collected from the Water's Edge Water System during calendar year 2009.

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.

The Boardwalk

The source of your drinking water is from wells located in the Boardwalk subdivision. Treatment is provided by feeding chlorine for continuous disinfection of the water and orthophosphate to sequester iron and manganese.

Substance	Units	Ideal Goals (EPA's MCLG)	Highest Level Allowed (EPA's MCL)	Level Found/ Range	Exceedence/Violation	Date of Sample	Typical Source of Contamination
Chlorine	ppm		4-MDRL	Average: 0.28 Range: 0.02 - 2.2	No	Monthly 2009	Required disinfectant added during treatment process to eliminate bacteria
Fluoride	ppm	4	4	0.07	No	July 2009	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminium factories
Total Nitrate & Nitrite (as N)	ppm	10	10	ND	No	July 2009	Run-off from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits
TTHM'S	ppb	0	80	8.7	No	September 2009	By-product of drinking water disinfection
HAA5's	ppb	0	60	1.1	No	September 2009	By-product of drinking water disinfection
pH	pH units		6.5-8.5	7.5	No	July 2009	Acidity or basicity of water
Turbidity	NTU	N/A	0.5	0.3	No	July 2009	Soil run-off
Radiological Contaminants - Most Recent Monitoring Period							
Gross Alpha	pCi/L	0	15	1.6	No	November 2009	Erosion of natural deposits
Gross Beta	pCi/L	0	50	5.1	No	November 2009	Decay of natural and man-made deposits
Radium 226/228	pCi/L	0	5	1.5	No	November 2009	Erosion of natural deposits
Lead and Copper							
Lead	ppb	0 ug/L	AL = 15	5 (90th percentile) Range <2 to 5 Of the five samples collected, none exceeded the AL.	No	September 2008	Corrosion of household plumbing systems; Erosion of natural deposits
Copper	ppm	1.3 mg/L	AL = 1.3	0.1 (90th percentile) Range 0.02 to 0.12 Of the five samples collected, none exceeded the AL.	No	September 2008	Corrosion of household plumbing systems; Erosion of natural deposits
Microbiological Contaminants							
Total Coliform Bacteria	MPN/ 100 mL or P/A	0	> 1 positive monthly sample	Four of Thirteen samples collected were positive	Yes	March 2009	Naturally present in the environment
Total Coliform Bacteria	MPN/ 100 mL or P/A	0	> 1 positive monthly sample	Six of Twenty samples collected were positive	Yes	April 2009	Naturally present in the environment
Total Coliform Bacteria	MPN/ 100 mL or P/A	0	> 1 positive monthly sample	Ten of Forty-one samples collected were positive	Yes	June 2009	Naturally present in the environment
Fecal Coliform or E-coli	MPN/ 100 mL or P/A	0	> 1 positive monthly sample	Four of Forty-one samples collected were positive	Yes	June 2009	Human and Animal Fecal Waste
Other Parameters (Not Regulated)							
Iron	ppm	unregulated	0.3	0.45	n/a	July 2009	Erosion of natural deposits
Manganese	ppm	unregulated	0.05	0.3	n/a	July 2009	Erosion of natural deposits
Zinc	ppm	unregulated	5	0.3	n/a	July 2009	Erosion of natural deposits
Alkalinity	ppm	unregulated		143	n/a	July 2009	Measurement of naturally occurring carbonates
Hardness	ppm	unregulated		141	n/a	July 2009	Measurement of naturally occurring hardness metals
Orthophosphate	ppm	unregulated		1.89	n/a	July 2009	Corrosion inhibitor added during treatment process
Sodium	ppm	unregulated	20	12.6	n/a	July 2009	Naturally occurring in the environment
Corrosivity		unregulated	<-2.0 highly aggressive >0.0 non aggressive	-0.29	n/a	July 2009	Physical property that occurs when water reacts with metal

Additional Health Information

A source water assessment for The Boardwalk will be conducted in the next few years. After the assessment is conducted, we will provide you with information about potential sources of contamination and ways to reduce or eliminate them.

Violations

In March and April 2009, samples taken at the Boardwalk showed the presence of coliform bacteria (see microbiological contaminant data in chart above). The system was flushed and further tests for coliform bacteria came back negative. In June, 2009, additional testing indicated the presence of E. coli bacteria and residents were advised to boil their water for drinking and cooking purposes as a safety precaution. Chlorine disinfection was added to the Boardwalk water system and the distribution lines were flushed repeatedly. The VDH and the Water Authority lifted the boil water notice on June 22, 2009. Repeat tests at the Boardwalk have all been negative for the presence of coliform bacteria and E. coli bacteria.

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems. Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, and people with severely-compromised immune systems.

The level of iron detected at 0.45 mg/L and manganese t 0.3 mg/L are above their respective Secondary Maximum Contaminant Levels (SMCLs) of 0.3 mg/L and 0.05 mg/L. There are currently no known adverse health effects associated with the presence of iron and manganese at these levels, but they can result in aesthetic problems such as staining or discoloration of clothes and fixtures, as well as the impairment of taste of beverages made with water.

Windmere Point

The source of your drinking water is three drilled groundwater wells (Well No. 2, 3 and 4) located in the Windmere Point community. Treatment is provided by feeding chlorine for continuous disinfection of the water.

Substance	Units	Ideal Goals (EPA's MCLG)	Highest Level Allowed (EPA's MCL)	Level Found/ Range	Exceedence/Violation	Date of Sample	Typical Source of Contamination
Chlorine	ppm	4	4-MDRL	Average: 0.4 Range: (0.06-1.04)	No	Monthly 2009	Required disinfectant added during treatment process to eliminate bacteria
Fluoride	ppm	4	4	ND	No	2007	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminium factories
Total Nitrate & Nitrite (as N)	ppm	10	10	0.11	No	July 2009	Run-off from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits
TTHM'S	ppb	0	80	1.7	No	September 2009	By-product of drinking water disinfection
HAA5's	ppb	0	60	ND	No	September 2009	By-product of drinking water disinfection
pH	pH units		6.5-8.5				Acidity or basicity of water
Turbidity	NTU	N/A	0.5				Soil run-off
Radiological Contaminants - Most Recent Monitoring Period							
Gross Alpha	pCi/L	0	15	1.1	No	2005	Erosion of natural deposits
Gross Beta	pCi/L	0	50				Decay of natural and man-made deposits
Radium 226/228	pCi/L	0	5	1.9	No	2005	Erosion of natural deposits
Lead and Copper							
Lead	ppb	0 ug/L	AL = 15	3 (90th percentile) Of the ten samples collected, none exceeded the AL.	No	July 2008	Corrosion of household plumbing systems; Erosion of natural deposits
Copper	ppm	1.3 mg/L	AL = 1.3	0.14 (90th percentile) Of the ten samples collected, none exceeded the AL.	No	July 2008	Corrosion of household plumbing systems; Erosion of natural deposits
Microbiological Contaminants							
Total Coliform Bacteria	MPN/ 100 mL or P/A	0	> 1 positive monthly sample	Four of Five samples collected were positive	Yes	June 2009	Naturally present in the environment
Fecal Coliform or E-coli	MPN/ 100 mL or P/A	0	> 1 positive monthly sample	Zero of Five samples collected were positive	No	June 2009	Human and Animal Fecal Waste
Other Parameters (Not Regulated)							
Iron	ppm	unregulated	0.3	0.27	n/a	January 2007	Erosion of natural deposits
Manganese	ppm	unregulated	0.05	0.07	n/a	January 2007	Erosion of natural deposits
Zinc	ppm	unregulated	5	0.2	n/a	January 2007	Erosion of natural deposits
Alkalinity	ppm	unregulated					Measurement of naturally occurring carbonates
Hardness	ppm	unregulated					Measurement of naturally occurring hardness metals
Silica	ppm	unregulated					Naturally present in the environment
Sodium	ppm	unregulated	20				Naturally occurring in the environment
Corrosivity		unregulated	<-2.0 highly aggressive >0.0 non aggressive				Physical property that occurs when water reacts with metal

Additional Health Information

A source water assessment for Windmere Point was conducted during 2002 by the Virginia Department of Health. The sources of your water were determined to have a high susceptibility to contamination using 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 five years. The report is available by contacting the Western Virginia Water Authority at 853.5700 or info@westernvawater.org.

Violations

In June, 2009, samples taken from the Windmere Point water system indicated the presence of coliform bacteria. The Western Virginia Water Authority disinfected the well-head with chlorine and flushed the distribution system. In addition, chlorine disinfection was added to the Windmere Point water system in response to the bacteria discovery. All repeat tests at Windmere Point have been negative for coliform bacteria.

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.

The Waterfront Sections I & XI

Customers in the Waterfront Sections I & XI are now connected to the Westlake Water System via the Scruggs Road water line. This connection replaced the four drilled groundwater wells (Well No. 1, Well No. 2, Well No. 3 and Well No. 4) in use during 2009 and early 2010 that are located throughout the Waterfront Section I & XI subdivision. Treatment for those wells was provided by feeding orthophosphate to sequester iron and manganese.

Substance	Units	Ideal Goals (EPA's MCLG)	Highest Level Allowed (EPA's MCL)	Level Found/ Range	Exceedence/Violation	Date of Sample	Typical Source of Contamination
Chlorine	ppm	4	4-MDRL	Average: 0.4 Range: 0.04 to 1.22	No	Monthly 2009	Required disinfectant added during treatment process to eliminate bacteria
Fluoride	ppm	4	4				Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Total Nitrate & Nitrite (as N)	ppm	10	10	ND	No	July 2009	Run-off from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits
TTHM'S	ppb	0	80	3.4	No	September 2009	By-product of drinking water disinfection
HAAS's	ppb	0	60	ND	No	September 2009	By-product of drinking water disinfection
pH	pH units		6.5-8.5				Acidity or basicity of water
Turbidity	NTU	N/A	0.5				Soil run-off
Radiological Contaminants - Most Recent Monitoring Period							
Gross Alpha	pCi/L	0	15				Erosion of natural deposits
Gross Beta	pCi/L	0	50				Decay of natural and man-made deposits
Radium 226/228	pCi/L	0	5				Erosion of natural deposits
Lead and Copper							
Lead	ppb	0 ug/L	AL = 15	ND (90th percentile) Of the five samples collected, none exceeded the AL.	No	July-September 2009	Corrosion of household plumbing systems; Erosion of natural deposits
Copper	ppm	1.3 mg/L	AL = 1.3	0.2 (90th percentile) Of the five samples collected, none exceeded the AL.	No	July-September 2009	Corrosion of household plumbing systems; Erosion of natural deposits
Microbiological Contaminants							
Total Coliform Bacteria	MPN/ 100 mL or P/A	0	> 1 positive monthly sample	0	No	Monthly 2009	Naturally present in the environment
Fecal Coliform or E-coli	MPN/ 100 mL or P/A	0	> 1 positive monthly sample	0	No	Monthly 2009	Human and Animal Fecal Waste
Other Parameters (Not Regulated)							
Iron	ppm	unregulated	0.3	0.9	n/a	September 2007	Erosion of natural deposits
Manganese	ppm	unregulated	0.05	0.18	n/a	September 2007	Erosion of natural deposits
Zinc	ppm	unregulated	5		n/a		Erosion of natural deposits
Alkalinity	ppm	unregulated			n/a		Measurement of naturally occurring carbonates
Hardness	ppm	unregulated			n/a		Measurement of naturally occurring hardness metals
Silica	ppm	unregulated			n/a		Naturally present in the environment
Sodium	ppm	unregulated	20		n/a		Naturally occurring in the environment
Corrosivity		unregulated	<-2.0 highly aggressive >0.0 non aggressive		n/a		Physical property that occurs when water reacts with metal

Additional Health Information

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 2009.

A source water assessment for Waterfront Sections I & XI was conducted during 2002 by the Virginia Department of Health. The sources of your water were determined to have a high susceptibility to contamination using 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 five years. The report is available by contacting the Western Virginia Water Authority at 853.5700 or info@westernvawater.org.

The Waterfront Sections 2 - 9

Eight drilled groundwater wells (Well No. 2, 3, 4, 5, 6, 7, 15 and 16) that are located throughout the Waterfront Section 2-9 subdivision provide drinking water. Treatment is provided by feeding the following solutions: chlorine for continuous disinfection of the water, soda ash for pH adjustment of the water and potassium permanganate for removal of iron and manganese in the drinking water. Three greensand filters are used to remove iron, manganese and radium from the drinking water.

Substance	Units	Ideal Goals (EPA's MCLG)	Highest Level Allowed (EPA's MCL)	Level Found/ Range	Exceedence/Violation	Date of Sample	Typical Source of Contamination
Chlorine	ppm	4	4-MDRL	Average: 0.7 Range: (0.07 - 1.75)	No	Monthly 2009	Required disinfectant added during treatment process to eliminate bacteria
Fluoride	ppm	4	4	Highest: 0.18 Range: (ND to 0.18)	No	November 2009	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminium factories
Total Nitrate & Nitrite (as N)	ppm	10	10	Highest: 2.5 Range: (0.02 to 2.5)	No	November 2009	Run-off from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits
TTHM'S	ppb	0	80	4.5	No	September 2007	By-product of drinking water disinfection
HAAS's	ppb	0	60	1	No	September 2007	By-product of drinking water disinfection
pH	pH units		6.5-8.5				Acidity or basicity of water
Turbidity	NTU	N/A	0.5				Soil run-off
Radiological Contaminants - Most Recent Monitoring Period							
Gross Alpha	pCi/L	0	15	1.8	No	August 2009	Erosion of natural deposits
Gross Beta	pCi/L	0	50				Decay of natural and man-made deposits
Radium 226/228	pCi/L	0	5	1.2	No	August 2009	Erosion of natural deposits
Lead and Copper							
Lead	ppb	0 ug/L	AL = 15	5 (90th percentile) Of the five samples collected none exceeded the AL.	No	July 2009	Corrosion of household plumbing systems; Erosion of natural deposits
Copper	ppm	1.3 mg/L	AL = 1.3	0.7 (90th percentile) Of the five samples collected one exceeded the AL.	No	July 2009	Corrosion of household plumbing systems; Erosion of natural deposits
Microbiological Contaminants							
Total Coliform Bacteria	MPN/ 100 mL or P/A	0	> 1 positive monthly sample	0	No	Monthly 2009	Naturally present in the environment
Fecal Coliform or E-coli	MPN/ 100 mL or P/A	0	> 1 positive monthly sample	0	No	Monthly 2009	Human and Animal Fecal Waste
Other Parameters (Not Regulated)							
Iron	ppm	unregulated	0.3	Highest: 2.61 Range: (0.003-2.61)	n/a	November 2009	Erosion of natural deposits
Manganese	ppm	unregulated	0.05	Highest: 0.36 Range: (0.0003-0.36)	n/a	November 2009	Erosion of natural deposits
Zinc	ppm	unregulated	5	Highest: 0.49 Range: (0.004-0.49)	n/a	November 2009	Erosion of natural deposits
Alkalinity	ppm	unregulated		Highest: 148 Range: (59-148)	n/a	November 2009	Measurement of naturally occurring carbonates
Hardness	ppm	unregulated		Highest: 113 Range: (60-113)	n/a	November 2009	Measurement of naturally occurring hardness metals
Orthophosphate	ppm	unregulated		Highest: 0.05 Range: (ND-0.05)	n/a	November 2009	Corrosion inhibitor added during treatment process
Conductivity	umhos/cm	unregulated		Highest: 360 Range: (164-360)	n/a	November 2009	Physical property of water
Silica	ppm	unregulated		Highest: 44 Range: (22-44)	n/a	November 2009	Naturally present in the environment
Sodium	ppm	unregulated	20	Highest: 30.3 Range: (4.4-30.3)	n/a	November 2009	Naturally occurring in the environment
Corrosivity		unregulated	<-2.0 highly aggressive >0.0 non aggressive	Highest: -2.15 Range: (-0.7 - -2.15)	n/a	November 2009	Physical property that occurs when water reacts with metal

Additional Health Information

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 2009.

A source water assessment for Waterfront Sections 2-9 was conducted during 2002 by the Virginia Department of Health. The sources of your water were determined to have a high susceptibility to contamination using 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 five years. The report is available by contacting the Western Virginia Water Authority at 853.5700 or info@westernvwwater.org.

Both iron and manganese are above their respective Secondary Maximum Contaminant

Levels (SMCLs) of 0.3 mg/L and 0.05 mg/L. There are currently no known adverse health effects associated with the presence of iron and manganese at these levels, but they can result in aesthetic problems such as staining or discoloration of clothes and fixtures, as well as the impairment of taste of beverages made with the water.

Turbidity was determined to be 19.5 turbidity units (TU) at Entry Point 2. Turbidity is related to clarity of water and should generally be less than 1 TU at the point of entry to the distribution system for those groundwater supplies not under the influence of surface water. Elevated turbidity may be attributed to elevated concentrations of iron or manganese.

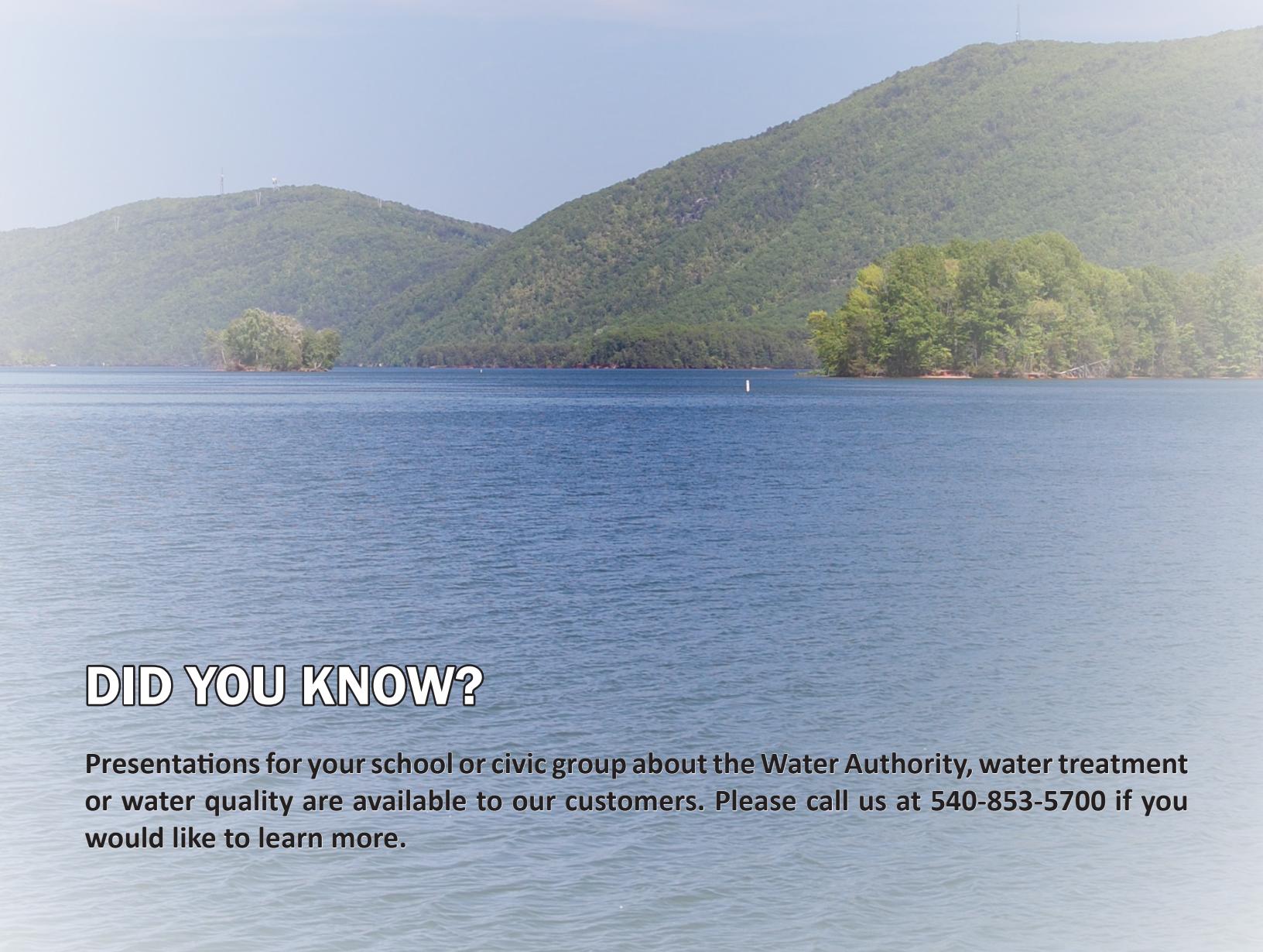
The sodium concentration of 30 mg/L (at Entry Point 3) in the treated water is above the EPA recommended optimal level of less than 20 mg/L for sodium in drinking water, which is established for those individuals on a "strict" sodium intake diet. The high sodium concentration may be due to the soda ash being added for pH adjustment.



WESTERN VIRGINIA
WATER AUTHORITY

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DID YOU KNOW?

Presentations for your school or civic group about the Water Authority, water treatment or water quality are available to our customers. Please call us at 540-853-5700 if you would like to learn more.