

2009 ANNUAL WATER QUALITY REPORT

Arlington's High-Quality Water

This annual "Consumer Confidence Report," required by the Safe Drinking Water Act, tells you where your water comes from, what our tests show about it and other things you should know about drinking water.

Arlington's Department of Environmental Services (DES)

provides residents with a safe and reliable supply of high-quality drinking water. DES tests County water using sophisticated equipment and advanced procedures. Our water meets all state and federal standards for quality. View this report online at www.arlingtoncitizen.wordpress.com.

Notice to building managers for office, commercial and multifamily residential buildings: Please share the information in this Water Quality report with all occupants of your facility. Contact the Water Control Center at 703-228-6555 for additional information or copies of this report.

Aviso a los administradores de edificios de oficinas, propiedades comerciales y unidades residenciales: Por favor comparta la información de este informe sobre la Calidad del Agua con los ocupantes de su establecimiento. Comuníquese con el Centro Para Control del Agua al 703-228-6555 para mayor información o para recibir copias de este informe.



Installed in 2009, these booster pumps at Arlington's Minor Hill facility provide improved water pressure to the surrounding area.



What's in the Water?

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. The water also can pick up substances resulting from animals or 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 by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff and septic systems.
- Radioactive contaminants, which can be naturally occurring or the result of oil and gas production and mining activities.

The water treatment process removes contaminants, making Arlington's water safe to drink. 💧

Where Arlington's Water Comes From

Arlington County purchases its water from the Washington Aqueduct Division of the Army Corps of Engineers.



The Washington Aqueduct operates two water treatment plants in the District of Columbia. The plants treat water from a surface water source, the Potomac River.

Arlington's water is treated at the Dalecarlia Treatment Plant located on MacArthur Boulevard in Northwest Washington. The Interstate Commission on the Potomac River Basin conducted a Source Water Assessment of the Potomac River watershed in April 2002. The assessment

identified urban runoff, toxic spills, agriculture and inadequate wastewater treatment as potential contamination sources to the water supply. Contact the Interstate Commission on the Potomac River Basin at 301-984-1908 for more information.

Arlington County maintains water quality assurance through our regular water distribution and storage evaluations and routine water sampling analysis.

Prescription for Safe Disposal of Unwanted Medicines



In the past, the advice was to flush or pour extra or unwanted medicines down the drain. Today, there's a new antidote for safe disposal, due to growing concerns about local waterways and ultimately our drinking water supply.

Arlington County water experts and federal officials strongly recommend **disposing of over-the-counter and prescription medications with your regular trash.** Physicians nationwide are also being discouraged from over-prescribing medications to prevent the need for patients to dispose of leftover drugs.

Here are two easy ways to properly dispose of unwanted medications:

- Remove unused or expired prescription drugs from the original container. Disguise them in an unattractive substance such as used coffee grounds or kitty litter to avoid theft and put them in your garbage.

- Ask your pharmacist if they accept unused prescriptions as part of a drug take-back program that properly and safely disposes of medications.

Though there have been concerns about trace amounts of prescription medications found in drinking water, **Arlington's water supply is safe and meets Environmental Protection Agency standards.** The Washington Aqueduct provides our drinking water, after being drawn from the Potomac River and treated. Regular sampling and testing ensure the water delivered to **residents is safe and of the highest quality.**

Who to call with questions

How to dispose of medications: 703-228-6570.

Arlington's water quality: call 703-228-6555.

Since 2005, this Water Quality Report has been provided to residents as a special insert in *The Citizen* – delivering the report to twice as many residents at half the cost of the previous mailed brochure.

Water and Sewer Rates Increase

On May 1, 2010, the water rate increased to \$3.50 per 1,000 gallons of metered water consumption (from \$3.42) and the sewer rate will be \$8.24 per 1,000 gallons (from \$7.78). The last increase was in May 2009. The rate changes reflect a critical investment to the County's Water Pollution Control Plant, located in South Arlington. Significant renovations now under way at the plant will modernize our infrastructure and enable the County to meet stringent new state and federal environmental regulations. The facility upgrade also will increase capacity, which is essential to managing Arlington's growing population.

Other benefits include cleaner water discharged to Four Mile Run, minimized plant-related odors and improved removal of nitrogen, resulting in a healthier Chesapeake Bay.

Measuring the Rates

Each year, the County Board approves the water rate and a separate sanitary sewer rate. Both charges are based on the amount of water consumed. Water usage is measured by meters adjacent to a residence or business.

Every three months, residents in duplex and single-family homes receive utility bills from the County.

Simple Steps to Save Water and Lower Your Bill

- Repair leaks in faucets, toilets and hoses.
- Install more efficient water fixtures, such as aerators and low-volume toilets.
- Run your clothes washer and dishwasher only when full.
- Take shorter showers.
- Turn off the water while you brush your teeth, shave and shampoo your hair.
- Conserve when watering your lawn – use only what is needed, prevent run-off and avoid watering during the heat of the day. Reminder: There are no credits available to sewer charges for water used for irrigation.

The utility bills include charges for water, sewer and trash/recycling services. Residential customers' summer quarterly bills will be the first to reflect the increase.

Need more information? Call 703-228-6570 with questions about your water and sewer bills. Or go to www.arlingtonva.us/des and click on "Water & Wastewater."

How to Read This Table

It's easy! Our water is tested to ensure it's safe and healthy. Test results from 2009 are presented in the table (footnotes below).

The column marked **GOAL** shows the Maximum Contaminant Level Goal or **MCLG**. This is 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.

The column marked **MAXIMUM ALLOWED** is the Maximum Contaminant Level or **MCL**. This is 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 RESIDUAL DISINFECTANT LEVEL (MRDL) is the highest level of a

residual disinfectant that is allowed in drinking water.

MAXIMUM RESIDUAL DISINFECTANT LEVEL GOAL (MRDLG) is the level of residual disinfectant below which there is no known or expected risk to health. MRDLGs allow for a margin of safety.

NON-DETECTS (ND) – lab analysis indicates the contaminant is not present.

NEPHELOMETRIC TURBIDITY UNIT (NTU) is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

PARTS PER MILLION (PPM) OR MILLIGRAMS PER LITER (MG/L) corresponds to one minute in two years or a single penny in \$10,000.

PARTS PER BILLION (PPB) corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

PARTS PER TRILLION (PPT) corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.

PICOCURIES PER LITER (PCI/L) is a measure of the radioactivity in water. The column marked **DETECTED LEVEL** shows the results observed in our water during the most recent round of testing.

SOURCE OF SUBSTANCE provides an explanation of the typical natural or man-made origins of the contaminant.

NOTE: Arlington County received five positive samples (out of 1498) for total coliform in the calendar year 2009. Subsequent resampling at the locations did not detect coliform bacteria. There were no detections of *E. coli* in any of the monthly samples during calendar year 2009.

Summary of 2009 Water Quality Data¹

FINISHED WATER CHARACTERISTICS, TREATMENT PLANT MONITORING						
Substance	Unit	Goal (MCLG)	Max. Allowed (MCL)	Detected Level	Range of Levels Detected	Source of Substance
Arsenic	ppb	0	10	0.66	0.18 – 0.66	Run off from orchards, glass and electronic product waste ²
Atrazine	ppb	3	3	0.06	ND – 0.06	Runoff from herbicide used on row crops
Barium	ppm	2	2	0.04	0.03 – 0.04	Discharge of drilling waste from metal refineries ²
Beta/Photon Emitters ³	pCi/L	0	50 ⁴	ND	ND	Decay of natural and man-made deposits
Chromium	ppb	100	100	2	ND – 2	Discharge from steel and pulp mills ²
Combined Radium 226/228 ³	pCi/L	0	5	2	ND – 2	Erosion of natural deposits or products
Fluoride	ppm	4.0	4.0	1.3	0.41 – 1.3	Water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate (as Nitrogen)	ppm	10	10	2.6	0.6 – 2.6	Runoff from fertilizer use; leaching from septic tanks, sewage
Nitrite (as Nitrogen)	ppm	1	1	0.09	ND – 0.09	Runoff from fertilizer use; leaching from septic tanks, sewage
Selenium	ppb	50	50	0.8	0.4 – 0.8	Discharge from petroleum, mines and metal refineries
Total Organic Carbon (TOC)	ppm	n/a	TT	Running annual average removal ratio is required to be greater than 1.0. Removal ratio actually achieved ≥ 1.53.		Naturally present in the environment
Turbidity ⁵	NTU	n/a	TT	0.12 = highest single measurement. Lowest monthly percentage of samples meeting minimum turbidity requirements = 100%.		Soil runoff

FINISHED WATER CHARACTERISTICS, DISTRIBUTION SYSTEM MONITORING						
Substance	Unit	Goal (MCLG)	Max. Allowed (MCL)	Detected Level	Range of Levels Tested	Source of Substance
Copper ⁶	ppm	1.3	AL – 1.3	0.053	0.002 – 0.119	Leaching from wood preservatives; corrosion of household plumbing ⁷
Lead ⁷	ppb	0	AL – 15	3.1	ND – 26.4	Runoff from fertilizer use; leaching from septic tanks; corrosion of household plumbing ⁷
Total Coliform ⁸	n/a	n/a	10	1.6%	ND – 1.6%	Naturally present in the environment
Chloramines ⁹	ppm	(MRDLG) 4	(MRDL) 4	3.1	0.4 – 4.7	Water additive used to control microbes
TTHM ⁹	ppb	n/a	80	38.7	18.6 – 73.1	By-product of drinking water chlorination
HAAs ⁹	ppb	n/a	60	30.7	17.2 – 55.8	By-product of drinking water chlorination

Notice About Perchlorate

Perchlorate is a naturally occurring as well as man-made compound. Its presence in drinking water is currently unregulated and utilities are not required to monitor for it. The Washington Aqueduct has been voluntarily monitoring for perchlorate since 2002. The EPA initially established a reference dose of 24.5 parts per billion (ppb) for perchlorate and beginning in 2009 has proposed an interim health advisory of 15 ppb. A reference dose is a scientific estimate of daily exposure level that is not expected to cause adverse health effects in humans. The reference dose concentration was

used in EPA's efforts to address perchlorate in drinking water and to establish the interim health advisory.

The source and treated water samples collected in 2009 from the Dalecarlia treatment plant showed only trace amounts of perchlorate. The highest level detected was 1.1 ppb. If you have special health concerns, you may want to get additional information from the EPA at www.epa.gov/safewater/contaminants/unregulated/perchlorate.html or contact the EPA's Safe Drinking Water Hotline at 1-800-426-4791.

TABLE FOOTNOTES

- ¹ All test results are from 2009, unless otherwise noted (Beta/Photon Emitters and Combined Radium 226/228, Copper and Lead)
- ² Erosion of natural deposits or products
- ³ Most recent testing for this parameter was 2008.
- ⁴ The MCL for Beta particles is 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for Beta particles.
- ⁵ Turbidity is the measure of cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of the filtration process. The turbidity level of filtered water shall be less than or equal to 0.3 NTU in at least 95% of the measurements taken each month, and shall at no time exceed 1 NTU.
- ⁶ The Detected Level represents the 90th percentile value. None of the 50 samples tested for copper exceeded the current Action Level of 1.3 ppm. Most recent monitoring for this parameter was 2007.
- ⁷ The Detected Level represents the 90th percentile value. One of the 50 samples tested for lead (2% of sample set) exceeded the current Action Level of 15 ppb. Most recent monitoring for this parameter was 2007.
- ⁸ The Detected Level represents the highest monthly percentage of positive results.
- ⁹ The Detected Level represents the highest running annual compliance average during the calendar year.
- ¹⁰ Less than 5% of monthly samples contain coliform bacteria

Important Health Information



U.S. EPA

Source water is tested for *Cryptosporidium*, a parasite that has caused outbreaks of intestinal disease in the United States and overseas. It is common in surface water, difficult to kill and even the best water system will contain some live parasites. The Environmental Protection Agency (EPA) is currently working to improve the control of

microbial pathogens, namely the protozoan *Cryptosporidium*, in drinking water. The Potomac River source was monitored monthly at Great Falls for *Cryptosporidium* during 2009 and there were no detects. No precaution about County drinking water is currently necessary for the general public.

Advice for Special Populations

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 at risk from infections.

These people should seek advice from their health care providers about drinking water. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline, (800) 426-4791.

EPA Regulations

To ensure tap water is safe to drink, EPA mandates regulations that limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Drinking water, including bottled 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.

Call the EPA's Safe Drinking Water Hotline at 1-800-426-4791 for information about contaminants and potential health effects.

Lead in Drinking Water

The U.S. EPA finalized Lead and Copper Rule Short-Term Regulatory Revisions and Clarifications in October 2007 with one of its goals being to improve customer awareness. Hundreds of water samples have been taken throughout Arlington County to determine the lead concentration in our water. Historically these concentrations have been below the action level 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. Arlington County 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 at www.epa.gov/safewater/lead.

Water Main Breaks

The bad, the worse and the really ugly

CLOSING THE VALVE



Crew members close a valve at a water pumping station. Closing the upstream and downstream valves on a segment of water main will stop the flow to a broken section.

OUT WITH THE OLD



A cracked section of pipe is removed. In this case, a 12-inch pipe at Kirkwood Rd. and Washington Blvd. split at the joint and needed to be replaced.

IN ALL CONDITIONS



Crew members have to be prepared to work in all weather conditions and at all times of the day or night, since it is important to return water mains to service as soon as possible.

IN WITH THE NEW



A new segment of pipe is positioned in place. Once connected, the water main is returned to service. After ensuring the main has been repaired satisfactorily, the trench is backfilled. Proper backfill and compaction reduce roadway settling.

When more than 60 percent of water mains are 50 years or older, as Arlington's are, breaks in the pipes are as unavoidable as they are unpredictable. Each break brings its own set of challenges. Small breaks are easier to fix, but can be harder to find. Large breaks can wreak havoc on traffic and sometimes cause damaging floods and water shortages. Maintaining the water system is a full-time job for the County's hardworking Water, Sewer, and Streets (WSS) Bureau of the Department of Environmental Services.

What causes breaks?

In addition to age, other factors include the way the pipes were installed; previous repairs; variations in water pressure; corrosion; and even seasonal temperature changes.

How do we know when a pipe breaks?

We regularly monitor water pressure at various points in the system – a drop in pressure can signal a problem. But often, the WSS staff learns about a break when a resident calls the 24-hour hotline (703-228-6555) to report water running in an unusual location. A crew is sent to investigate. If the crew finds no obvious source, they run tests to help determine whether it is drinking or ground water. If it is drinking water, but no break is visible, the crew uses leak detection

equipment to "listen" for and locate the break.

How do you fix a leak?

Once a crew finds a leak, the crew closes the valves on the pipe to stop the flow of water to the broken section. This might cause a temporary service disruption to some properties. After isolating the broken section, the crew repairs or replaces it depending on the type and severity of the break.

In most cases, repairs are made within several hours to a day after the first report. However, repairs on major water transmission mains may require complex repairs that take longer to complete.

Report all water emergencies and possible main breaks to the Water, Sewer, and Streets Bureau at 703-228-6555. 💧

Why does the water from the tap sometimes look rusty?

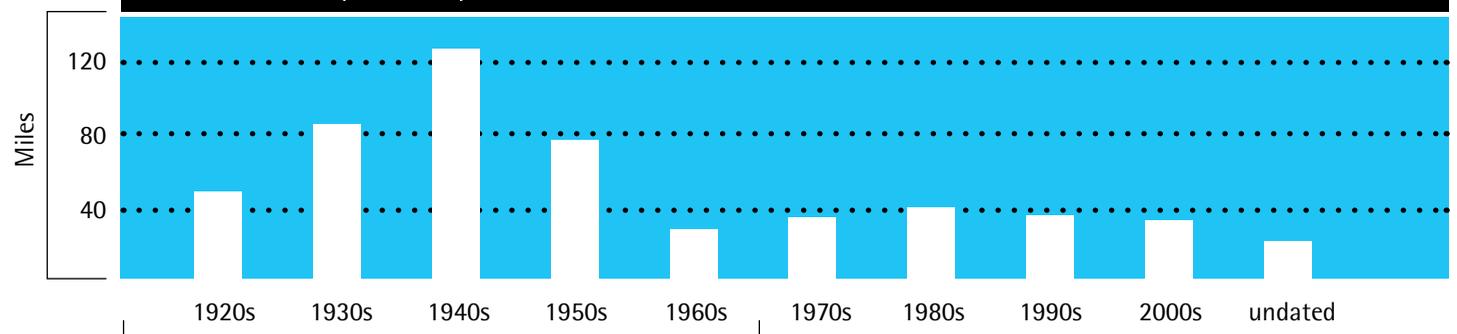
Discolored water is caused by iron oxide from the water distribution piping and results in reddish tinted water. Sudden changes in the system, such as when a fire hydrant is opened, can stir up the iron oxide sediments and cause temporary discoloration. Even though the water is discolored and has sediments, disinfectants are still present and the water is safe once it clears up. If you run your water for a short time it should clear. If not, call the 24-hour line at 703-228-6555 and a crew will be sent to flush the line.

FINAL TOUCHES



Final restoration of the pavement surface is done after backfilling is complete.

WATER MAIN (IN MILES) INSTALLED BY DECADE



A majority of the County's mains are 50 or more years old, with some approaching the century mark!

Sanitary sewer rehabilitation will be taking place in my neighborhood. What's involved in the process?

For Arlington's sanitary sewer pipes, a different relining process, called cured-in-place pipe, is used to restore water flow and prevent future problems. Crews push a resin-impregnated "sock" into the pipe and then it is cured using steam.

If relining is taking place on your street, you will receive a letter from the Department of Environmental Services. You may notice an odor from the resin, however it is NOT harmful at the low levels used in the relining process. To prevent odors from entering your home, fill all traps (for the toilet bowl, floor drain, laundry tub, shower stall

and the outside stairwell drain) with water since those not used regularly can dry up and allow sewer gases to enter.

If lining is occurring on your street and you would like more information about the project, please contact our Water Control Center at 703-228-6555.

