

2011 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.



◀ Arlington's Water Quality Technician, Ronald Vaughn verifies the pH concentration at a pump station.



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

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.

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. 💧

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 2011 and none was detected. 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, the 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.

How to Read This Table

It's easy! Our water is tested to ensure it's safe and healthy. Test results from 2011 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 thirteen positive samples (out of 1510) for total coliform in the calendar year 2011. 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 2011.

ACTION LEVEL (AL) is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. **TREATMENT TECHNIQUE (TT)** is a required process intended to reduce the level of a contaminant in drinking water.

LEVELS OF COMPOUNDS IN ARLINGTON DRINKING WATER

Average Hardness	7.8 grains/gal or 134 mg/L
Average pH	7.7
Average Chloramine Residual	3.0 ppm
Average Fluoride	0.7 ppm
Average Sodium ¹	20 ppm
Average Nickel	2.1 ppb

Although sodium is not regulated by an MCL, the EPA's Fall 2009 Drinking Water Advisory Table identifies 20 mg/L as a health-based value for a person on a 500 mg/day restricted sodium diet.

Summary of 2011 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
Antimony	ppb	6	6	0.2	ND - 0.2	Discharge from petroleum refineries; fire retardants; ceramics;electronics; solder
Arsenic	ppb	0	10	0.9	0.2 - 0.9	Run off from orchards, glass and electronic produced waste ²
Atrazine	ppb	3	3	0.07	ND - 0.07	Runoff from herbicide used on row crops
Barium	ppm	2	2	0.05	0.03 - 0.05	Discharge of drilling waste from metal refineries ²
Beta/Photon Emitters ³	pCi/L	0	50 ⁴	3.2	ND - 3.2	Decay of natural and man-made deposits
Chromium	ppb	100	100	3.5	0.3 - 3.5	Discharge from steel and pulp mills ²
Fluoride	ppm	4.0	4.0	1.1	0.5 - 1.1	Water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate (as Nitrogen)	ppm	10	10	2.6	0.3 - 2.6	Runoff from fertilizer use; leaching from septic tanks, sewage
Selenium	ppb	50	50	1.1	ND - 1.1	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 ≥1.62		Naturally present in the environment.
Turbidity ⁵	NTU	n/a	TT	0.09 = highest single measurement. Lowest monthly percentage of samples meeting turbidity requirements = 100%.		Soil runoff
Uranium	ppb	0	30	ND	0.09	²
FINISHED WATER CHARACTERISTICS, DISTRIBUTION SYSTEM MONITORING						
Substance	Unit	Goal (MCLG)	Max. Allowed (MCL)	Detected Level	Range of Levels Detected	Source of Substance
Copper ⁶	ppm	1.3	AL - 1.3	0.069	0.017 - 0.11	Leaching from wood preservatives; corrosion of household plumbing ⁷
Lead ⁷	ppb	0	AL - 15	1.1	ND - 3.0	Runoff from fertilizer use; leaching from septic tanks; corrosion of household plumbing ⁷
Total Coliform ⁸	n/a	0	¹⁰	2.3%	ND - 2.3%	Naturally present in the environment
Chloramines ⁹	ppm	(MRDLG) 4	(MRDL) 4	3.0	ND - 4.4	Water additive used to control microbes
TTHM ⁹	ppb	n/a	80	49	24 - 59	By-product of drinking water chlorination
HAA5 ⁹	ppb	n/a	60	35	18 - 38	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 2011 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 2011 from the Dalecarlia treatment plant showed only trace amounts of perchlorate. The highest level detected was 1.9 ppb. If you have special health concerns, you may want to get additional information from the EPA at www.water.epa.gov/drink/contaminants/unregulated/perchlorate.cfm or contact the EPA's Safe Drinking Water Hotline at 1-800-426-4791.

TABLE FOOTNOTES

- All test results are from 2011, unless otherwise noted
- Erosion of natural deposits or products
- Triennial radionuclide monitoring was performed in 2011.
- The MCL for beta and photon emitters is 4 mrem/year and EPA considers 50 pCi/L to be the level of concern for beta/Photon emitters. Because the beta particle results were below 50 pCi/L, no testing for individual beta particle constituents was required.
- 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.
- The Detected Level represents the 90th percentile value. None of the 56 samples tested for copper exceeded the current Action Level of 1.3 ppm. Most recent testing for this parameter was 2010.
- The Detected Level represents the 90th percentile value. None of the 56 samples tested for lead exceeded the current Action Level of 15 ppb. Most recent testing for this parameter was 2010.
- The Detected Level represents the highest monthly percentage of positive results.
- The Detected Level represents the highest running annual compliance average during calendar year.
- Less than 5% of monthly samples contain coliform bacteria

Water and Sewer Rates Increase

On May 1, 2012, the water rate increases to \$3.98 per 1,000 gallons of metered water consumption (from \$3.68) and the sewer rate will be \$8.63 per 1,000 gallons (from \$8.51). The last increase was in May 2011. The rate changes will fund an additional Water Maintenance crew and also a new Water Quality Engineer, positions necessary primarily to maintain safety, provide quality customer service, ensure compliance with existing and emerging regulations, and allow for a more proactive approach to managing water quality. They also will fund increases in supplies and services for the Water Pollution Control Bureau, and an increase in debt service for repayment of bonds for various Utilities capital projects.

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 registered on the water meter that is adjacent to a residence or business. Every three months, residents in duplex and single-family homes receive utilities bills from the County. The utilities bills include charges for water, sewer and refuse services. Residential customers' summer

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.

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." 💧



An Arlington County Tap Water Station used at community events including the Arlington County Fair.

Because of consistent compliance and results below the Maximum Contaminant Level, Lead and Copper Sampling will only take place every three years.

Automated Meter Reading Coming to Arlington

Learn more about what this means to you

What is Automated Meter Reading (AMR)?

AMR allows water utilities to read meters without having to physically access meters located in boxes in the ground. Each of the new meters come equipped with a small radio transmitter that sends the meter reading to a communications receiver in a vehicle as a utility employee drives through your neighborhood.

Why are we replacing the current meters?

AMR systems are quickly becoming the standard for utilities around the country. In fact, Arlington County has used this technology since 2007 for larger properties. AMR devices allow more accurate and faster collection of water usage readings while also

creating a safer working environment for County staff. By introducing AMR, we are able to better serve our customers and ultimately upgrade to more advanced meter reading methods in the future.

How does AMR benefit you?

- Improved customer service by increasing accuracy of meter readings
- Minimized need to access meters at the property
- Reduction in the frequency of bill estimation



Will there be any changes in the water during installation?

The installation process is expected to have little to no impact on customers. However, it is possible you may experience a brief period of air or discolored water. In most cases, briefly running your cold water will clear this situation.

Questions?

If you have a leak, low pressure or other concerns after the installation, or at any other time, contact 703-228-6570 during business hours or 703-228-6555 after hours. 💧

Keeping Arlington's Sewers in Good Shape

Arlington County uses a number of methods to keep our water and sanitary pipelines in good condition. Many times, crews rehabilitate the pipelines to increase the capacity instead of using more costly replacement methods. 💧



The most common method of rehabilitation of sewers is done using CIPP, a process in which a resin-impregnated felt liner is pushed into the existing pipe to make it stronger and better sealed. CIPP reduces sewer flows to the Water Pollution Control Plant by preventing groundwater from entering the pipes.



Sewer lines 30" and greater have typically been overlooked for cured-in-place pipe (CIPP) rehabilitation because the process of lining these large sewers is much more complicated. In small residential lines, the water to individual properties is shut off to prevent flow into the sewer. In larger lines, the sewer has to be isolated using bypass pumps and temporary piping because the flow cannot be stopped. The new liner's curing time can also be longer for larger pipes, meaning the pipe may be out of service for more than a day.



This summer, the County will rehabilitate a 33-inch sanitary sewer along S. Four Mile Run between Columbia Pike and S. Walter Reed Dr. to make it more durable. This will give a new lease on life to an 80-year-old pipe and keep it in good working order for many years to come.

Water by the Numbers

8.2
billion
gallons

The total amount of water the County used in 2011. That's more than one trillion 8-ounce glasses of water!

33

The total number of water main leaks repaired between January and the end of April 2012.

8.5

Miles of sanitary sewers rehabilitated by cured-in-place pipe lining per year.

Did You Know?

Tap water is the ultimate green product: delivered to your home and removed without relying on a container that needs to be thrown away or recycled. The cost for the water including delivery and disposal is a mere \$12.61 per thousand gallons. Compare that to bottled water, which can cost more than \$10 for a single gallon!

Saving the Bay

One storm drain at a time

Thanks to a group of Thomas Jefferson Middle School students, over 200 storm drains are now marked with a no dumping warning. Under parent supervision, the future environmentalists placed signs over 200 storm drains in the Lower Long Branch and Doctor's Branch watersheds. 💧



From left to right, Cory Dudka, Monty Gillet, Jack Lechmanik, and Aiden Endo. Not pictured, Mathieu Delmar.



Mathieu Delmar placing a sign on an Arlington storm drain.