

2012 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)

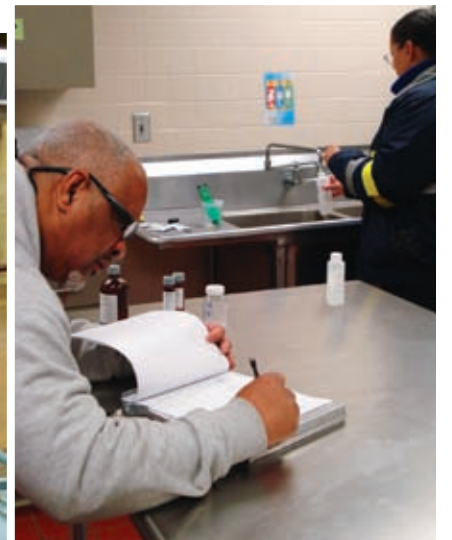
provides residents with a safe and reliable supply of high-quality drinking water. DES tests County water using sophisticated equipment and advanced procedures. Our water meets all state and federal standards for quality. View this report online at www.arlingtoncitizen.wordpress.com.

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.



This is one of several pumps at the Lee Pumping Station, which was upgraded in 2011.



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

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 2012 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 US 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 2012 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. **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.

Summary of 2012 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	0.6	0.2 – 0.6	Run off from orchards, glass and electronic produced waste ²
Atrazine	ppb	3	3	0.09	ND – 0.09	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	3.2	ND – 3.2	Decay of natural and man-made deposits
Cadmium	ppb	5	5	0.6	ND – 0.6	Corrosion of galvanized pipes; discharge from metal refineries; runoff from waste batteries and paints ²
Chromium	ppb	100	100	2	ND – 2	Discharge from steel and pulp mills ²
Fluoride	ppm	4.0	4.0	0.9	0.6 – 0.9	Water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate (as Nitrogen)	ppm	10	10	3	0.6 – 3	Runoff from fertilizer use; leaching from septic tanks, sewage
Selenium	ppb	50	50	1	ND – 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 ≥1.36		Naturally present in the environment
Turbidity ⁵	NTU	n/a	TT	0.25 = 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 ²
Lead ⁷	ppb	0	AL – 15	1.1	ND – 3.0	Runoff from fertilizer use; leaching from septic tanks; corrosion of household plumbing ²
Total Coliform ⁸	n/a	0	¹⁰	0.8%	ND – 0.8%	Naturally present in the environment
Chloramines ⁹	ppm	(MRDLG) 4	(MRDL) 4	3.0	ND – 4.3	Water additive used to control microbes
TTHM ⁹	ppb	n/a	80	43	14 – 62	By-product of drinking water chlorination
HAA5 ⁹	ppb	n/a	60	22	9 – 45	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 2012 from the Dalecarlia treatment plant showed only trace amounts of perchlorate. The highest level detected was 1.4 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.

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 one positive sample (out of 1481) for total coliform in the calendar year 2012. 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 2012.

ACTION LEVEL (AL) is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements that 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	7.3 grains/gal or 125 mg/L
Average pH	7.7
Average Chloramine Residual	3.0 ppm
Average Fluoride	0.7 ppm
Average Sodium ¹	20 ppm
Average Nickel	2.0 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.

Water and Sewer Rates
No change for FY 2014

On May 1, 2013, the water rate will continue at \$3.98 per 1,000 gallons of metered water consumption and the sewer rate will continue at \$8.63 per 1,000 gallons. The last increase was in May 2012. Water/sewer fees are the main source of revenue for the Utilities Fund, which pays for the operations and maintenance of the County's water distribution and sewage collection systems and the Water Pollution Control Plant, as well as wholesale water purchases from the Washington Aqueduct. Utilities Fund revenues also pay for debt service and a transfer to the utilities capital fund to finance projects that maintain, upgrade, and expand the County's water, sewer, and wastewater infrastructure.

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.

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.

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." 💧

Stay Cool with TapIt

Have you ever wondered where to refill your water bottle when you're walking or biking around Arlington? Now there's an easy way to find out. Arlington is a partner in the **TapIt program**, a network of businesses that allow people to refill water bottles on site. Search for locations at www.tapitwater.com, or on the free mobile phone app. To download the app, just visit the iTunes or Droid store. Arlington County has 14 businesses participating in the TapIt program. The goal is to have 500 more businesses join the program in the Washington, D.C. area in 2013. 💧



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

CAN the Grease to Prevent Sewer Backups

Protect your home, sanitary sewer, and the environment



Fats, oils and greases of all types can clog pipes and lead to backups.

Pouring fats, oils and grease – FOG – down your drain can cost you money, damage sanitary sewage lines and harm the environment.

Most people are aware that solid fats, like bacon or hamburger grease, should be disposed of in the trash. **Liquid oils can do just as much damage to the sanitary sewer** when they mix with other compounds and form solid blockages which are difficult to remove. These blockages stick to the sewer line and over time narrow the pipe, which can result in backups in the home. Remember: **when backups occur on private property, the homeowner or business owner is responsible for the cleanup.**

What can you do to fight FOG?

- **Do not pour fat, oil or grease down sink drains** or garbage disposals.

Do not use hot water to rinse grease off cookware or dishes.

- Pour or scrape grease or oily food waste from dishes and pans **into a metal can**. Allow grease to solidify before throwing it in the trash.
- Use a paper towel to **wipe grease off pans** before washing.
- Put **used liquid cooking oil in a sealable container** before throwing it in the trash.
- **Keep drains clean** by pouring 1/2 cup baking soda down the drain followed by 1/2 cup vinegar. Wait 10 to 15 minutes and then rinse with hot water.
- **Check your homeowner's insurance** to see if it covers sewage backups, and if not, consider adding the coverage. 💧

WATER BY THE NUMBERS

465

Miles of sanitary sewer in the County

3.5

Miles that are regularly flushed to reduce the impacts of FOG

51

Number of backups in County sewer lines in 2012, many of which were FOG-related

Rehabilitating Arlington's Drinking Water Main Pipes

Cleaning and lining



A worker in an access pit handles a mechanical scraper used for cleaning water mains.

used to provide water to the affected area. These temporary lines are disinfected and tested just like regular water mains before being placed in service. Residents experience a short disruption of water service during the installation and removal of the temporary lines.

Once the temporary water service is in place, pits are dug at either end of the pipe, and holes are cut in the pipe to allow the mechanical equipment access to the water main. The pipe is then cleaned of its tubercles using mechanical scrapers. After the cleaning, a thin coating of cement mortar is applied to the inside of the pipe and cured. This prevents the water from interacting with the iron pipe and forming more tubercles.

After the curing is complete, the rehabilitated water mains are disinfected, tested, and put into service. Temporary service lines and newly lined water mains must be flushed before putting them in service to make sure that all water lines are free from debris. The small quantity of lost water allows us to maintain a high water quality throughout the cleaning and lining process.

Following completion of the testing of the new main, temporary services are then removed and permanent service is restored. 💧

Arlington County has drinking water mains that are approaching the century mark. Rehabilitating old water pipes is an effective way to keep them in service longer while minimizing disruptions to surrounding properties, and is less costly than replacement. Arlington uses a rehabilitation method called cleaning and lining. This method improves water quality in some of the oldest pipes in our system and maximizes the amount of rehabilitation that the County is able to perform annually.

Why rehabilitate the pipes?

Corrosion deposits, known as tubercles, build up naturally over time in unlined iron water main pipes. The build-up decreases the capacity of the pipes, reduce the water pressure, and results in water that is discolored.

The process

First, the pipe is taken out of service by closing the valves at either end of the line. When a water main is out of service during the cleaning and lining process, temporary service lines are

New Stormwater Permit for Arlington

The Virginia Department of Conservation and Recreation (DCR) issues permit to localities for the discharge of stormwater into waterways, such as Four Mile Run and the Potomac River. As part of a new more stringent process Arlington's stormwater permit was recently updated.

The new permit requires significantly increased efforts to reduce stormwater pollution. Some of the changes include quantitative performance requirements for programs such as watershed retrofits, street sweeping, storm drain cleaning, and a substantial increase in water monitoring, inspections, and training. The new permit also includes a requirement to achieve 5 percent of Arlington's share of nutrient reductions to meet Chesapeake Bay cleanup goals in 5 years.

The Board's adoption of the Stormwater Fund in 2008 and the expansion of the County's comprehensive watershed management programs allow Arlington to comply with this new permitting process. Some of the steps we are taking include:

- Complete a Stormwater Master Plan Update in 2013.
- Created a Green Streets program, where stormwater treatment facilities are installed in street medians or along the street curb, to slow down and filter stormwater runoff.

- The renovation of Ballston Pond, the largest stormwater treatment facility in the County,
- Completion of a stream restoration project on Donaldson Run, and two more stream restoration projects will be constructed in the next year.
- In late 2011, we tightened the stormwater treatment requirements for development projects regulated by the County's Chesapeake Bay Preservation Ordinance. 💧



This Green Street facility on Patrick Henry Drive filters stormwater runoff before it enters Four Mile Run.