

Our Water Supply Source – The Potomac River

Drinking water for all of Washington, DC comes from the Potomac River, a "surface water" supply. As water travels over land and rocks, through creeks, and into the Potomac River, it dissolves naturally occurring minerals, leaves and vegetation, and sometimes even radioactive materials. It may also dissolve animal waste, pesticides, and other debris from human activity. Rain or other precipitation may also pick up contaminants as it falls through the atmosphere and into the river. Contaminants that may be present in source water (before treatment) include:

- ▲ Microbial contaminants, such as viruses and bacteria that come from agricultural livestock, septic systems and wildlife;
- ▲ Inorganic contaminants, such as salts and metals that can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges;
- ▲ Pesticides and herbicides that may come from agriculture, urban storm water runoff, and residential uses;
- ▲ Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum products; and
- ▲ Radioactive contaminants, which can be naturally occurring or due to mining activities.

To make sure that our drinking water does not contain harmful amounts of these contaminants, it is treated and disinfected to meet health and aesthetic standards set by the U.S. Environmental Protection Agency (EPA).

The DC Department of Health is conducting a Source Water Assessment of the Potomac River watershed, upstream of the water supply intakes for the District. The assessment includes the delineation of the District of Columbia source water area, the identification of potential contamination sources, a susceptibility analysis for the intakes, and modeling of contaminant transport within the river system. The study has been coordinated with various state and local government agencies and interest groups, and there will be opportunity for public participation at important stages of the project. For more information on this project, contact the DC Department of Health at 202-535-2190 or visit the web site <http://www.dchealth.com/eha/wqd/services.htm>.

Serving the Public – Protecting the Environment

Glenn S. Gerstell, Chairman of the Board

District of Columbia Water and Sewer Authority

What's In My Drinking Water?

EPA establishes standards for drinking water to make sure that it's safe for you to drink. The table summarizes DC's drinking water test results during the year 2000. The water is tested for the presence of 127 prescribed contaminants; however for clarity only those detected are listed in the table. The table compares the level of each detected contaminant to an allowable upper limit (maximum contaminant level, or MCL) and the ideal goal (maximum contaminant level goal, or MCLG) set by EPA. Note that the concentrations of all detected contaminants in DC's drinking water were considerably below EPA-established maximum limits. If you want a complete list of contaminants tested for and results call 202- 612-3440.

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. More information about contaminants and expected health risks can be obtained by calling the Environmental Protection Agency Safe Drinking Water [Hotline](#) at 1-800-426-4791.

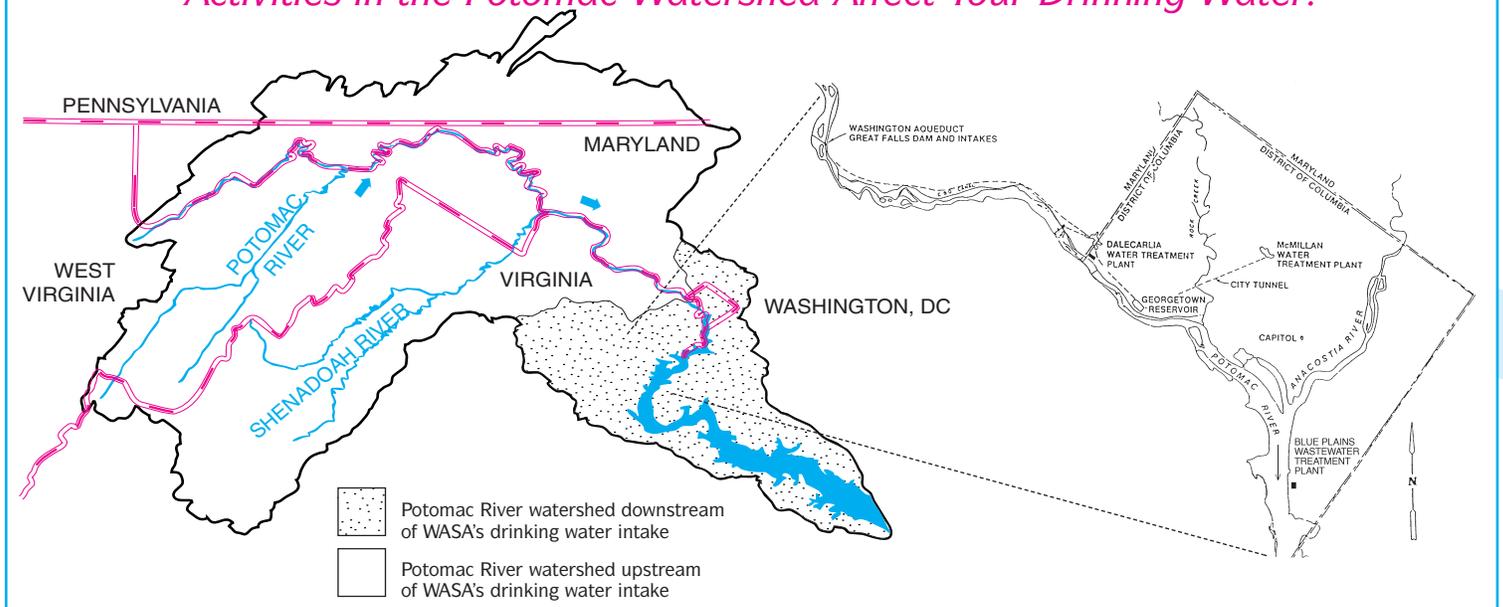
Important Health Information

Cryptosporidium, a microorganism that lives in the gut of animal hosts, is found in surface water throughout the U.S. People can be exposed to *Cryptosporidium* through ingestion of contaminated food, recreational water, or drinking water containing *Cryptosporidium* cysts.

Exposure to *Cryptosporidium* may cause diarrhea, fever, and gastrointestinal illness. The illness is generally easily handled by healthy individuals. However, 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 particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other biological contaminants are available from the Safe Drinking Water [Hotline](#) at 1-800-426-4791.

The Washington Aqueduct (WA) tests the untreated source water for *Cryptosporidium*. Tests of the source water (prior to treatment) have not detected *Cryptosporidium*. Because current test methods for *Cryptosporidium* cannot conclusively assure that the organism will never be present in our source water, WASA and WA continue to provide a multiple-barrier approach – chemical treatment, highly efficient filtration technology and disinfection – designed to remove *Cryptosporidium*, if present, at our water treatment plants and minimize the risk to public health.

Activities in the Potomac Watershed Affect Your Drinking Water!



What is Being Done to Improve Our Drinking Water Quality?

WASA has embarked on many projects in the distribution system to improve water quality and provide you with safe drinking water. The cross-connection program which protects the drinking water from potential contaminants is now being implemented in DC. In addition to compliance monitoring, WASA has conducted supplementary monitoring programs to ensure water quality. Supplying water also means making sure water delivery pipes, pumps and tanks are in place and working, even in emergencies. WASA is implementing a \$1.6 billion capital improvement plan to repair and upgrade the utility's infrastructure over the next 10 years.

Treatment Plant Enhancements

At the treatment plant, major infrastructure projects such as retrofitting the treatment plant for chloramine use, construction of new chemical feed systems and dredging of the Dalecarlia reservoir are completed. Use of new technologies and rigorous maintenance such as a comprehensive filter renovation project are underway.

Coliform Bacteria Monitoring - A primary method of testing the safety of drinking water is frequent laboratory analysis for coliform bacteria. Most coliform species are harmless; however, they have been found to be a useful measure of the effectiveness of the treatment process in the removal of harmful microorganisms, and of efforts to prevent their infiltration into the drinking water storage and distribution system. Thus, coliform bacteria monitoring throughout the District is used as an "early warning system" for potential contamination. If coliform bacteria are found in the water, more samples are immediately taken, and the situation is investigated to make sure that the water is safe to drink.

Lead and Copper Monitoring Program - The most common cause of lead in drinking water is corrosion, a reaction between the water and lead pipes, fixtures containing lead (such as some brass fixtures) or lead-based solder to connect copper pipes installed in interior household plumbing prior to 1987. One of the treatment objectives for DC's system is to control the corrosivity of water to minimize leaching of lead or copper from customer plumbing into the water. Therefore, WASA regularly monitors for elevated lead and copper concentrations by collecting water samples at consumer taps. Lead concentrations found in sampling of DC's drinking water comply with EPA's requirements; however, tap water in some homes may contain higher levels of lead. Infants, young children, and pregnant women tend to be more vulnerable to lead than the general public. The following are some tips to help you to further minimize lead in drinking water:

- ▲ Drink water or prepare beverages, especially infant formula, from the cold water tap. Hot water dissolves lead more quickly than cold water.
- ▲ If water has been standing in the pipes without use for a few hours, run the cold water tap for a few minutes before drinking it. This will get rid of stagnant water that may contain dissolved lead from household plumbing.

Comments can also be
e-mailed to info@dcwasa.com
or faxed to 202-787-2210

Water Quality Enhancement Programs

The quality of drinking water is affected as it flows through the distribution system. WASA has undertaken a number of programs to protect, maintain and enhance water quality in the distribution system. Examples include such proactive activities as comprehensive system flushing, water main rehabilitation, construction, and cross-connection control management.

Water Main Flushing -

Annually each spring through fall, WASA conducts an aggressive flushing program to systematically “flush” water mains in the distribution system. The water is released by sequentially opening the District’s 8,700 fire hydrants and flushing water in a unidirectional manner. As some of the water being flushed may end up in streams and rivers, we have taken steps to remove chloramines from the water being flushed to protect aquatic life. Flushing water through the pipes at high velocities removes buildup in pipes that can cause rusty or “dirty” water problems. Routine maintenance is also performed on the valves and hydrants as they are opened. Look for the flushing schedule in your area on our website, www.dcwasa.com.

Cross-Connection Control Regulation Program -

The purpose of WASA’s cross-connection control program is to eliminate potential “cross-connections” --- physical links that could allow contaminants to flow into the District’s water supply from customers’ facilities. WASA’s cross-connection control regulations are published in chapter 54 Title 21 DCMR under the heading “Cross-Connections.” Under these regulations to protect public health, local businesses are required to install backflow prevention devices at the water service connection, which will prevent contaminants from entering the drinking water supply. Backflow of contaminating materials may cause serious illness. WASA is leading this cooperative effort that includes the D.C. Department of Health, the D.C. Department of Consumer and Regulatory Affairs, the EPA and consumers.

How You Can Help To Protect Washington, DC’s Drinking Water Supply

Report Fire Hydrant Vandalism - The primary function of fire hydrants is to supply water for fire protection. WASA also issues permits for other specific hydrant uses, with prescribed requirements for the use of a special backflow prevention device when drawing water from a hydrant. Unauthorized opening of fire hydrants, or causing damage to fire hydrants are crimes punishable by fines and imprisonment. Vandals opening fire hydrants drain thousands of gallons of fresh drinking water into streets. The torrent of water can damage roads and be a safety hazard to traffic and pedestrians. In addition, by improper use of fire hydrants, the increased water velocity causes mineral sediment in the lines to come loose, resulting in discoloration and water quality problems in the area. Most importantly, unauthorized hydrant use without a backflow preventor can result in the introduction of contaminants into the system. Anyone seeing someone opening a fire hydrant without apparent authorization should call 202-612-3400.

Volunteer Program - WASA has number of drinking water quality monitoring programs offered during specific periods in which you can participate. By participating in these programs you will not only be serving the community but will also be able to receive detailed information about the water quality at your tap. We have recently mailed out the analysis data to all participants in our supplementary monitoring program. Also we have received numerous calls from volunteers for the Lead and Copper Program. We are maintaining a listing of volunteers for future contact. We are planning to increase our monitoring programs to accommodate the maximum number of participants. For more information call the WASA Water Quality Division at 202-612-3440.

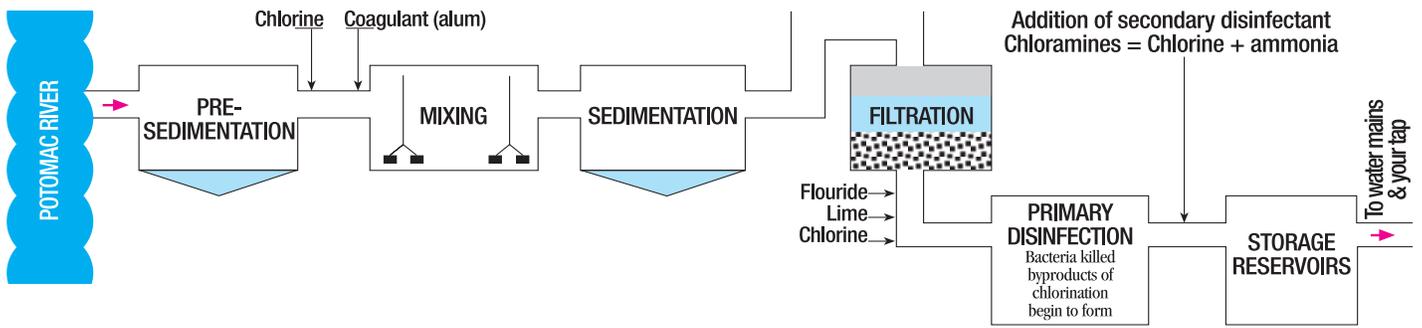
Watershed Protection - Everyone can help protect the Potomac River from contamination by protecting the watershed. A watershed is an area of land surrounding a river from which water eventually drains into the river. Dispose of household wastes and motor oil in a proper manner. Never dump anything down a storm drain. To participate in watershed protection activities, contact the Interstate Commission on the Potomac River Basin at 301-984-1908.

Be a Partner in our Cross-Connection Control Program.

Our cross-connection surveyors will be conducting inspections of the drinking water supply in commercial, industrial and apartment buildings on a schedule prioritized by hazard potential. We would appreciate your cooperation in assisting our surveyors. Depending on the survey finding, WASA will inform you of the type of back flow preventor which may be needed.

Community Meetings - WASA periodically conducts community meetings with Advisory Neighborhood Commissions, civic associations, schools, libraries, and other groups. If you are interested in attending a community meeting or would like a speaker from WASA to make a presentation to your community group, contact the WASA Public Affairs Office Director Ms. Libby Lawson at 202-787-2200.

Board of Directors Meetings - The WASA Board of Directors conducts regular business meetings, open to the public, generally on the first Thursday of each month. If you’d like to attend, please call the Board Secretary Linda Manley at 202-787-2330 to confirm the specific meeting time and location, and to advise on topics on which you may wish to comment.



Main Treatment Processes at Dalecarlia and McMillan Water Treatment Plants

Pre-Sedimentation – Allows large particles in untreated water to settle out naturally.

Mixing – “Coagulants” are added to the water to cause small particles to stick together when the water is mixed, making larger, heavier particles.

Sedimentation – Allows the newly formed larger particles to settle out naturally.

Filtration – Removes smaller particles by trapping them in sand filters.

Primary Disinfection – with Chlorine/Chloramines (after 11-1-2000). Other chemicals added include: **Lime** to adjust the pH (the water’s acidity) to prevent corrosion. **Fluoride** at low levels to protect teeth (as recommended by the American Dental Association).

Reminder! Chloramine is now the Secondary Disinfectant

As of November 1, 2000, chloramine is used as a secondary disinfectant to maintain protection against microbial contamination in the water distribution system. This is in addition to the use of free chlorine as the primary disinfectant in DC’s drinking water. The change in disinfectant is an effort to reduce the concentrations of disinfectant byproduct called trihalomethanes (THM’s), in compliance with more stringent national standards by EPA. Chronic exposure to high concentrations of trihalomethanes is considered to be potentially carcinogenic. Since the treatment change to chloramines, we have obtained an average reduction of trihalomethanes in the drinking water of more than 15%. We once again want to remind facilities providing kidney dialysis treatment, individuals and businesses maintaining fish tanks, and laboratories and businesses affected by chloraminated water that their pretreatment steps must remove chloramines. WASA will provide fact sheets on chloramines upon request.

Water Treatment and Distribution System

The DC Water and Sewer Authority (WASA) distributes water to residences and businesses throughout D.C. for drinking, fire fighting and other uses. WASA purchases the drinking water from the US Army Corps of Engineers, Washington Aqueduct. The Washington Aqueduct (WA) withdraws approximately 180 million gallons of water each day from the Potomac River at the Great Falls and the Little Falls intakes, and then treats the water at the two water treatment plants Dalecarlia and McMillan (see the water treatment scheme). Important treatment processes at WA’s Dalecarlia and McMillan facilities include sedimentation, filtration, fluoridation, pH adjustment, primary disinfection using free chlorine and finally, conversion of the free chlorine to chloramines through addition of ammonia. The chloramine residual provides secondary disinfection as the water travels through WASA’s network of 1,300 miles of distribution system water pipes.



Comment Card

What are your thoughts about our 2000 Water Quality Report? Please check the appropriate box.

How easy was it to read the Water Quality Report?

- Easy to read
- Mostly easy to read
- Difficult to read

How easy was it to understand the Water Quality Report?

- Easy to understand
- Mostly easy to understand
- Difficult to understand

Additional Comments:

Washington, DC Drinking Water Analysis Data for 2000

Regulated Contaminants

Category of Contaminants	Units	EPA Limits		DC Drinking Water		Typical Sources of Contaminants
		MCLG	MCL or TT	Highest ¹	Range	
Water Treatment Plant Performance						
Turbidity	NTU	NA (TT)	5 (maximum)	0.18	NA	Soil runoff.
	% of turbidity readings ≤ 0.5 NTU	NA (TT)	95% (minimum)	100%		
Microbiological Indicators						
Total Coliform Bacteria	% of total-coliform-positive samples	0	5% (maximum)	2.61%	0 to 2.61%	Naturally present in the environment.
Disinfectants and Disinfection Byproducts						
Chlorine	ppm	4 (MRDLG)	4.0 (MRDL)	3.8	2.3 to 3.8	Water additive that protects against microbiological contamination.
Total Trihalomethanes ³	ppb (4-quarter running average)	0	100	85	32 to 142 (individual samples)	Trihalomethanes are a byproduct of drinking water chlorination. Comment: Change over to chloramines has reduced trihalomethanes formation.
Inorganic Metals						
Selenium	ppb	50	50	1	0 to 1	Discharge from petroleum and metal refineries; erosion of natural deposits.
Barium	ppm	2	2	0.04	0.03 to 0.04	Discharge of drilling waste and metal refineries; erosion of natural deposits.
Chromium	ppb	100	100	3	0 to 3	Discharge from steel and pulp mills; erosion of natural deposits.
Copper (at the customer's tap)	ppm	1.3	1.3 ² (AL)	0 samples out of 55 above AL	90% of samples ≤ 0.1	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.
Lead (at the customer's tap)	ppb	0	15 ² (AL)	3 samples out of 55 above AL	90% of samples ≤ 12	Corrosion of household plumbing systems; erosion of natural deposits.
Inorganic Ions						
Fluoride	ppm	4	4	.9	0.7 to 0.9	Water additive that promotes strong teeth.
Nitrate (as N)	ppm	10	10	2.2	1.0 to 2.2	Runoff from fertilizer use; leaching from septic tanks; erosion of natural deposits.
Herbicides						
2,4-D	ppb	70	70	0.5	0 to 0.5	Runoff from herbicide used on row crops.
Atrazine	ppb	3	3	0.4	0 to 0.4	Herbicide runoff.
Simazine	ppb	4	4	0.1	0 to 0.1	
Radionuclides⁴						
Alpha Emitters	pCi/L	0	15	1.8	1.0 to 1.8	Erosion of natural deposits.
Beta Emitters ⁵	pCi/L	0	50	4.7	2.5 to 4.7	Decay of natural and man-made deposits.
Strontium-90	pCi/L	8	8	< 1	< 1	Decay of man-made radiation.
Tritium	pCi/L	20,000	20,000	1570	< 650 to 1570	

Washington, DC Drinking Water Analysis Data for 2000 (cont.)

Unregulated Contaminants

Category of Contaminants	Units	Status	DC Drinking Water		Typical Sources of Contaminants
			Highest ¹	Range	
Inorganic					
Sulfate	ppm	NR	63.91	31.1 to 63.91	Naturally present in the environment and in mine drainage wastes.
Nickel	ppb	NR ⁶	1	0 to 1	Used in manufacturing alloys, corrosion resistant batteries, and electroplating.
Disinfection Byproducts					
Chloral Hydrate	ppb	NR	6.0 ¹	1.6 to 13.0	The non-regulated (NR) contaminants shown here are byproducts of drinking water chlorination. EPA required that large water providers monitor for these compounds to help determine the need for future regulations. Note: The disinfectant byproduct analytical data are from year 1997 during the information collection rule. The Haloacetic acid data are from the 1999 monitoring.
Chloropicrin	ppb	NR	0.7 ¹	< 0.5 to 0.9	
Haloacetic Acids(6)	ppb	NR	46.5 ¹	12.5 to 82.6	
Haloacetonitriles	ppb	NR	6.2 ¹	2.3 to 12.3	
Haloketones	ppb	NR	2.4 ¹	1.1 to 4.9	
Total Organic Halides	ppb	NR	237.5 ¹	160 to 330	

¹ The average level detected is shown for disinfectant byproducts. ² EPA regulations require that corrective action be taken if greater than 5 of 50 samples exceed the action level. ³ **Health Effects Total Trihalomethanes** - Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with the liver, kidneys, or central nervous system, and may have an increased risk of getting cancer. ⁴ Radionuclides values shown are for 1998 as EPA requires them to be monitored every four years. ⁵ EPA considers 50 pCi/l to be the level of concern for beta particles. ⁶ Nickel is required to be monitored while EPA reconsiders its MCL.

A Quick Read on the Table

In 2000, the highest level of all contaminants detected in your tap water was always below the highest level allowed by EPA (the MCL), generally by a wide margin.

Abbreviations and Definitions

Action Level (AL) = The concentration of a contaminant which, if exceeded, triggers a treatment or other requirement that a water system must follow.

CDC = Centers for Disease Control and Prevention, located in Atlanta, Georgia, whose mission is to promote health and quality of life by preventing and controlling disease, injury, and disability. CDC is an agency of the U.S. Department of Health and Human Services.

Haloacetic Acids (6) (HAA6) = The six haloacetic acid species required to be monitored by EPA.

MRDL = Maximum Residual Disinfectant Level. The highest level of a disinfectant that is allowed in drinking water.

MRDLG = Maximum Residual Disinfectant Level Goal. The level of drinking water disinfectant in water below which there is no known or expected risk to health. MDRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

MCLG = Maximum Contaminant Level Goal. The level of a contaminant in water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

MCL = Maximum Contaminant Level. 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 technologies.

NA = Not Applicable.

NR = Not regulated by EPA at this time.

NTU = Turbidity is measured with an instrument called a nephelometer, which measures the intensity of light scattered by suspended matter in the water. Measurements are given in nephelometric turbidity units (NTUs).

pCi/L = Picocuries per liter (a measure of radioactivity).

ppm = Parts per million.

ppb = Parts per billion.

TT = Treatment Technique. A required process intended to reduce the level of a contaminant in drinking water.

Turbidity = A measure of the cloudiness of water. We measure turbidity because it is a good indicator of the effectiveness of the water treatment system. Turbidity in excess of 5 NTU is just noticeable to the average person.

"<" = less than. In some cases, the laboratory's analytical method was not capable of measuring at or below EPA's minimum detection level. In these cases, if the contaminant was not detected, a "less than" result is reported under the "Highest" detected level in DC's drinking water.

For More Information or Questions - concerning this report call Seema Bhat, Water Quality Division Manager, at 202-612-3440. For any other aspect please call one of the numbers listed below:

Drinking Water Quality	WASA Water Quality	202-612-3440
Other General Information	WASA Switchboard	202-787-2000
Water Bills	WASA Water Bill Action Line	202-354-3600
To Report Pipe Breaks, Leaks, or Open Hydrants (24 Hours per Day)	WASA Water Operations Emergency	202-612-3400
Information About WASA and WASA's Programs	WASA Public Affairs Office	202-787-2200
Storm Drain Complaints	WASA Department of Sewer Services	202-612-3400
Source Water Protection	DC Department of Health	202-535-2190
Source Water Protection	Interstate Commission on the Potomac River Basin	301-984-1908
Drinking Water Treatment	Washington Aqueduct Division, USACE	202-764-2753
Safe Drinking Water Hotline	EPA	800-426-4791

Visit Our Website - WASA's annual Water Quality Report and other information about WASA are available on the Internet at:

<http://www.dcwasa.com>

Other web sites with information about drinking water are listed below:

EPA's Surf Your Watershed <http://www.epa.gov/surf>
 American Water Works Association <http://www.awwa.org>

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Copias en español de este folleto están a la disposición en las bibliotecas públicas y en las clínicas del Departamento de Salud del District of Columbia, o llamando a la Oficina de Asuntos Públicos de la Autoridad de Agua y Desagües al teléfono 202-787-2200.

本手冊備有有關飲用水的信息，若在閱讀的過程中需要幫忙解釋，請與美京中華基督教會聯絡。電話是：202-898-0061

Cassette recordings of this brochure are available and can be obtained by calling the WASA Public Affairs Office at 202-787-2200.



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 Washington DC 20032

