Drinking Water Quality Report 2006

District of Columbia Water and Sewer Authority

SERVING THE PUBLIC ■ PROTECTING THE ENVIRONMENT

Dear Consumer:

The District of Columbia Water and Sewer Authority (WASA) is pleased to provide you with our 2006 Annual Water Quality Report containing information about your drinking water – where the water comes from, what is in the water, how the water is treated, and how we distribute the water to your home or place of business. The Report also contains any notice of violations.

WASA is committed to providing customers with the highest quality drinking water by first ensuring that the water we deliver to you meets or surpasses federal Safe Drinking Water Act standards, and secondly by providing you with the most reliable service possible. I am confident that you will find our 2006 Water Quality Report informative.

Jerry N. Johnson
General Manager

The Potomac River – Our Water Supply Source

Drinking water for the District of Columbia comes from the Potomac River, a "surface water" supply. As water travels over the surface of the land, and into the Potomac River, it dissolves naturally occurring minerals, leaves and vegetation, and sometimes even radioactive materials and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water (before treatment) include:

- Microorganisms, such as viruses and bacteria that come from agricultural livestock operations, septic systems, wastewater treatment plants and wildlife
- Inorganic chemicals, such as salts and metals that can be naturally occurring or result from urban stormwater runoff, farming, and industrial or domestic wastewater discharges
- Pesticides and herbicides that may come from agriculture, urban stormwater runoff, and residential uses
- Organic chemicals, including synthetic and volatile organic chemicals which are by-products of industrial processes, petroleum products from gas stations and urban stormwater runoff and septic systems
- Radioactive chemicals that can be naturally occurring or the result of mining activities

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 or visit their website at **www.potomacriver.org/water_quality/dc.htm** for more information.

Protecting The District Drinking Water Supply

Protect The Watershed – A watershed is an area of land that drains to a particular point along a stream or river. The best way to protect the Potomac River from contamination is to help protect the watershed. Simple reminders that play a crucial role in protecting the watershed include:

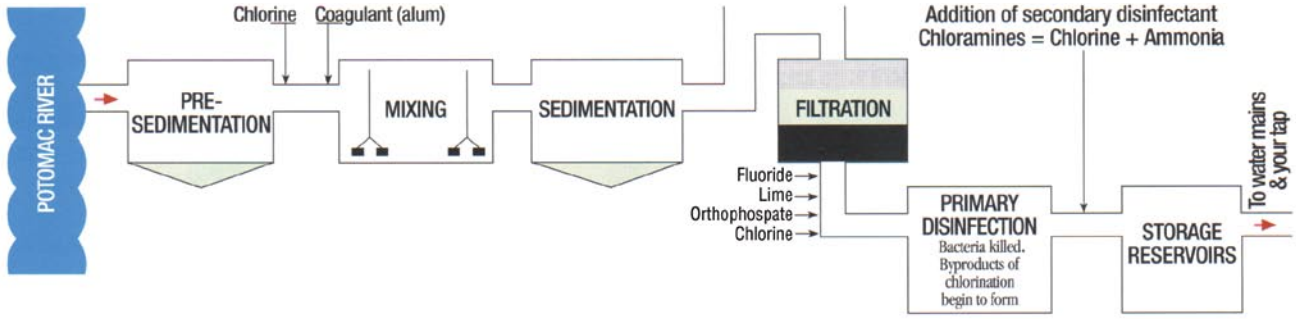
- Take precautions to ensure that trash and debris do not enter storm drains and catch basins
- Dispose of household waste, grease and motor oil properly. Disposal information is available by calling the District's Recycle Hotline at (202) 645-8245
- Report spills that could potentially enter the waterways to the DC Homeland Security and Emergency Management Agency at (202) 727-6161
- Join your neighbors in watershed protection activities by contacting the Interstate Commission on the Potomac River Basin at (301) 984-1908.

Get Involved – The **WASA Board of Directors** conducts regular business meetings that are open to the public, generally on the first Thursday of each month, 9:30 AM at the Blue Plains Facility, 5000 Overlook Ave, SW, Washington, DC 20032. If you would like to attend and learn more about WASA's current business agenda or our involvement in the community, please call the Office of the Board Secretary at (202) 787-2330 to confirm the specific meeting time and location.

The Water Treatment and Distribution System

The District of Columbia Water and Sewer Authority (WASA) maintains about 1,300 miles of pipe and distributes potable water to over 500,000 residents and businesses throughout the District. WASA purchases drinking water from the US Army Corps of Engineers, Washington Aqueduct. The Washington Aqueduct draws water from the Potomac River at the Great Falls and the Little Falls intakes and treats the water at the Dalecarlia and McMillan Treatment Plants (see the water treatment diagram). The treatment process includes sedimentation, filtration, fluoridation, pH adjustment, primary disinfection using free chlorine, secondary disinfection with chloramines through the addition of ammonia, and corrosion control with orthophosphate.

Chloramines are a federally approved alternative to free chlorine. Chloramines must be removed from water used for kidney dialysis or aquariums. Please contact your physician or kidney dialysis center for the appropriate water treatment process. Contact your local pet store for the appropriate water treatment for fish tanks. Chloramines fact sheets are also available by calling our Water Quality Office at (202) 612-3440.



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).

Compliance with EPA Drinking Water Standards

Notice of Violations

This section provides a summary of violations that occurred in 2006, which must be included in this report.

Stage 1 Disinfectant and Disinfection Byproduct Rule (DBPR) Monitoring Total Chlorine

WASA is required to monitor your drinking water for specific contaminants on a regular basis to ensure drinking water meets health standards. Under the DBPR, WASA is required to collect samples for Total Chlorine when samples are collected for Total Coliform. Chlorine monitoring is an indicator of whether or not our drinking water meets health standards. In January 2006, WASA collected eight Total Coliform and eight Total Chlorine samples but improperly analyzed the eight Total Chlorine samples, and therefore, WASA cannot be sure of the quality of our drinking water during that time.

On January 23, 2006, WASA notified EPA of this situation requesting to invalidate these samples. EPA responded on February 2, 2006, informing WASA that the samples could not be invalidated and since there was no viable Total Chlorine data for this monitoring period, this resulted in a "minor monitoring violation." On March 13, 2006, WASA revised its quality assurance/quality control procedures to ensure proper collection and analysis of future samples. WASA also provided public notice of this violation in our 2005 Drinking Water Quality Report.

2004 Safe Drinking Water Act Administrative Order Data Management and Reporting Requirements

WASA is required to monitor your drinking water for specific contaminants on a regular basis and to report the results to EPA. On January 3, 2006, WASA submitted the lead and copper compliance report for the July to December 2005 monitoring period. EPA determined that six of the 101 addresses identified as tier 1 sampling locations, were not reported correctly. In response, WASA collected six lead and copper samples from other tier 1 locations to replace these samples and those results were included in the 90th percentile compliance calculations. EPA further determined that seven of the 101 sampling addresses identified as having full lead service lines, were not reported correctly. In response, WASA collected lead and copper samples from other tier 1 locations to replace five of the seven samples and those results were included in the 90th percentile compliance calculations. For the two remaining addresses, WASA corrected the service line information in its database to reflect that the service lines were partial lead. These two addresses still met the tier 1 criteria and were included in the 90th percentile compliance calculations.

Regardless of these reporting violations, the final 90th percentile calculation results were below the lead and copper action levels. The reporting violations were related to data management and recordkeeping. WASA revised its quality assurance/quality control procedures to ensure proper data management and recordkeeping for future compliance monitoring.

As a reminder, infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

Please contact WASA's Water Quality Division at (202) 612-3440, or by email at **WaterQuality@dcwasa.com** if you have questions or concerns regarding these notifications.

What's In My Drinking Water?

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. The US Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

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.

Washington, DC Drinking Water Analysis Data for 2006

Regulated Contaminants

Washington Aqueduct Water Treatment Plant Performance

	Units	EPA Limits MCLG	EPA Limits MCL or TT	DC Drinking Water	Description / Typical Sources of Contaminants
Turbidity	NTU	0	TT = 1 (maximum)	0.13 (maximum)	Turbidity can indicate the presence of disease causing microorganisms
	% of monthly turbidity readings ≤ 0.3 NTU	0	TT = 95% (minimum)	100%	Turbidity is often caused by soil runoff
Total Organic Carbon (TOC)	% ppm removal	NA	TT 25-35 percent removal	43% (lowest annual average) 30% to 65% (range of monthly averages)	Naturally present in the environment

Water Entering WASA's Distribution System

Inorganic Metal

	Units	EPA Limits MCLG	EPA Limits MCL	DC Drinking Water Highest	DC Drinking Water Range	Description / Typical Sources of Contaminants
Arsenic	ppb	0	10	0.7	ND to 0.7	Erosion of natural deposits; Runoff from orchards
Barium	ppm	2	2	0.04	0.03 to 0.04	Erosion of natural deposits
Chromium	ppb	100	100	1.3	ND to 1.3	Erosion of natural deposits
Selenium	ppb	50	50	0.7	ND to 0.7	Erosion of natural deposits; discharge from mines
Inorganic Anions						
Fluoride	ppm	4	4	1.2	0.1 to 1.2	Erosion of natural deposits; water additive which promotes strong teeth
Nitrate	ppm	10	10	2.9	0.4 to 2.9	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite	ppm	1	1	0.05	ND to 0.05	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Synthetic Organic Contaminants						
Atrazine	ppb	3	3	0.2	ND to 0.2	Runoff from herbicide used on row crops
Hexachlorocyclopentadiene	ppb	50	50	0.05	ND to 0.05	Discharge from chemical factories
Simazine	ppb	4	4	0.08	ND to 0.08	Herbicide runoff
Radionuclides[1]						
Beta emitters[2]	pCi/L	0	50	3.8	ND to 3.8	Decay of natural and man-made deposits
Combined radium	pCi/L	0	5	0.81	ND to 0.81	Erosion of natural deposits

[1]Results are from the 2005 monitoring year, which is the most recent sampling complete in accordance with EPA regulations.

[2]The MCL for beta particles is 4 mrem/year. EPA considers 50pCi/L to be the level of concern for beta particles.

WASA's Distribution System

Microbial Indicators

	Units	EPA Limits		DC Drinking Water		Description / Typical Sources of Contaminants
		MCLG	MCL or TT	Highest	Range	
Total Coliform Bacteria	% of total-coliform-positive samples	0	5% (maximum)	0.9%	0 to 0.9%	Naturally present in the environment
Fecal Coliform	Number positive	0	0	0	0	Human and animal fecal waste
E.coli bacteria	Number positive	0	0	0	0	Human and animal fecal waste

Disinfectants and Disinfection Byproducts

Chlorine	ppm	4 (MRDLG) (annual average)	4 (MRDL) (annual average)	3.5 (Highest running annual average)	0.2 to 4.2 (Range of single site results)	Water additive that protects against microbiological contamination. Chlorine is combined with ammonia to form chloramines.
Total Trihalomethanes[3]	ppb	NA	80 (4-quarter running average)	46 (Highest 4-quarter running average)	17 to 85 (Range of single site results)	Trihalomethanes are a byproduct of drinking water disinfection
Haloacetic Acids (5)	ppb	NA	60 (4-quarter running average)	38 (Highest 4-quarter running average)	19 to 53 (Range of single site results)	Haloacetic acids are a byproduct of drinking water disinfection

Lead and Copper (at the customer's tap)

	Units	EPA Limits		DC Drinking Water		Description / Typical Sources of Contaminants
		MCLG	Action Level	Samples above AL	90th Percentile	
Lead						
Jan.-June 2006 Monitoring Period	ppb	0	15	5 of 104	10	Corrosion of household plumbing systems; erosion of natural deposits
July-Dec. 2006 Monitoring Period				5 of 106	12	
Copper						
Jan.-June 2006 Monitoring Period	ppm	1.3	1.3	0 of 104	0.1	Corrosion of household plumbing systems and erosion of natural deposits
July-Dec. 2006 Monitoring Period				0 of 106	0.1	

[3] Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

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 potential health effects can be obtained by calling the EPA Safe Drinking Water Hotline (800) 426-4791 or at **www.epa.gov/safewater**.

The Washington Aqueduct and WASA routinely monitor numerous water quality parameters outside of the regulated contaminates to optimize the quality of water delivered to customers. The *Unregulated Contaminant* section in the table summarizes some of these contaminants. WASA also provides regular updates on our website for routine water quality monitoring at **www.dcwasa.com/waterquality**.

Unregulated Contaminants

Water Entering WASA's Distribution System			
Contaminant	**Units**	**Average**	**Range**
Nickel	ppb	1.1	0.7 to 2.0
Chloride	ppm	28	15 to 53
Aluminum	ppb	47	18 to 97
Iodide	ppb	4.9	3.4 to 6.6
Sulfate	ppm	49	36 to 80
Lithium	ppb	2.3	1.3 to 4.1
Magnesium	ppm	8	2 to 18
Manganese	ppb	2.6	ND to 30.7
Metolachlor	ppb	ND	ND to 0.2
Molybdenum	ppb	1.0	ND to 2.4
Potassium	ppm	2.9	2.2 to 3.6
Sodium	ppm	13.8	8.5 to 18.0
Strontium	ppb	171	116 to 245
Zinc	ppb	1.6	0.7 to 5.1
Perchlorate[1]	ppb	ND	ND[1]
Vanadium	ppb	0.6	ND to 1.4
N-Nitrosodimethylamine (NDMA)	ppt	ND	ND to 2.3
Other Water Quality Parameters – WASA's Distribution System			
Alkalinity	ppm as $CaCO_3$	71	35 to 98
Calcium Hardness	ppm as $CaCO_3$	113	79 to 144
	grains per gallon (gpg)	6.6	5 to 8
Dissolved Orthophosphate	ppm	2.6	1.9 to 3.9
pH		7.6	7.3 to 7.8
Temperature	degrees Fahrenheit	69	49 to 89

[1] The Washington Aqueduct (WA) used the EPA-approved method to determine the perchlorate levels reported in the table at a detection limit of 4 parts per billion (ppb). The WA conducted additional tests with a new laboratory method, not yet approved by EPA, and results ranged from ND to 1.6 ppb. For more information pertaining to perchlorate go to **http://www.dcwasa.com/waterquality/waterquality_reports.cfm**

Abbreviations and Definitions

AL = Action Level. The concentration of a contaminant which, if exceeded, triggers a treatment or other requirement that a water system must follow. Other requirements may include additional testing, public notification or capital improvements. The AL is not equivalent to a maximum contaminant level or MCL (see definition below).

CDC = Centers for Disease Control and Prevention, located in Atlanta, preventing and controlling disease, injury, and disability. CDC is an agency of the U.S. Department of Health and Human Services.

HAA5 = Haloacetic Acid 5. The five 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. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG = Maximum Residual Disinfectant Level Goal. The level of a drinking water disinfectant below which there is no known or expected risk to health. MDRLGs 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 drinking 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 technology.

mrem/year = millirems per year (a measure of radiation absorbed by the body)

NA = Not Applicable.

ND = Non-Detectable.

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

ppt = parts per trillion

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.

Improving Drinking Water Quality in Your Home

Water quality may deteriorate once it leaves the public mains and enters your household plumbing especially during long stagnation periods. Your home naturally warms the water in the internal plumbing and, combined with stagnation, can further deteriorate water quality and sometimes create taste and odor problems.

Tips for Improving Water Quality in Your Home:

Reduce water stagnation in your home

Run your cold water tap for approximately two minutes before using for drinking and cooking if the water has been stagnant for more than 6 hours.

Clean your faucet aerator

Routinely remove the faucet aerator and clean the strainer of debris to prevent the buildup of metals and other sediments.

Replace your home water filter routinely

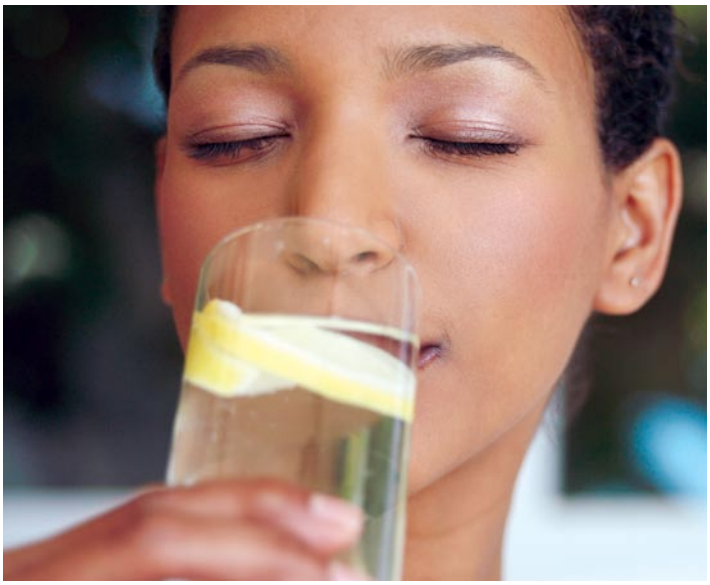
Replace the water filter in water pitchers and other devices as instructed by the manufacturer since used filters can elevate bacteria levels and accumulated metal.

Don't use hot water for cooking

Use only cold water for cooking as hot water can contain sediments that accumulate in your water heater.

Drain your hot water heater annually

Draining your water heater helps remove sediment and calcium particles that can affect your water pressure. For instructions on how to drain your hot water heater, go to **www.dcwasa.com/waterquality/water-heater.pdf**



DC Water & Sewer Authority
5000 Overlook Ave., SW
Washington, DC 20032

Important Health Information

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 microbial contaminants are available from the Safe Drinking Water Hotline (800) 426-4791.

The EPA's Maximum Contaminant Limit (MCL) for total trihalomethane (TTHM) is a running annual average of 80 ppb. WASA's highest running annual average was 46 ppb during the 2006 Disinfection Byproduct Compliance monitoring; although one sample had a result of 85 parts per billion.

Trihalomethanes are a byproduct of drinking water disinfection. Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

Contact Information

If you have any questions about this report or your drinking water, please call WASA's Water Quality Division at (202) 612-3440 or visit us on the web at **www.dcwasa.com**. For other WASA-related information or services, please call:

Customer Services..... **(202) 354-3600**
Emergency ..... **(202) 612-3400**
Public Affairs ..... **(202) 787-2200**

Other important numbers:

Source Water Protection
DC Department of Environment..... **(202) 535-2194**
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**

You can also visit the EPA on the web at **www.epa.gov/surf**

Robin B. Martin, Chairman of the Board
Jerry N. Johnson, General Manager

이 안내지에는 귀하께서 드시는 식수의 질에 대한 중요한 정보가 들어있습니다. 이해하시는데 도움이 필요하시거나 질문이 있으시면 한인봉사센타 (Korean Community Service Center: KCSC) 에서 도와드릴 것이오니, 240-683-6663 으로 연락 주시기 바랍니다.

本手册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

Copias en español de estes 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**