Drinking Water

QUALITY REPORT 2010

Dear Customers: A newborn child at United Medical Center, a visitor from Wichita in a hotel room, and the President of the United States all have something in common. Along with some 16 million other people every year, none of them could start their days without the life-giving service we provide.

Water is life. And to be sure, throughout history and around the world, lives have been lost by the millions for lack of access to clean water and sanitation. In the United States, most of us are fortunate to have both. In the nation's capital, the job of supplying, reclaiming and recycling water belongs to the District of Columbia Water and Sewer Authority (DC Water).

I am very pleased to present your 2010 Water Quality Report. Inside, you'll learn the specifics on the safe, reliable and cost-effective drinking water we deliver. I believe it is important for our customers to know where the water comes from, how it gets to your home or business, and exactly what it contains. This includes the results of the thousands of water quality tests we perform every year. We mail this information to every address in the District.

We always welcome your feedback, on water quality or our other work. We will gladly take your comments on Facebook, Twitter, our website at dcwater.com, or by email at gmsuggestions@dcwater.com.

Sincerely,

George S. Hawkins

George S. Hawkins, *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

CONTINUED ON PAGE 2

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
- Report spills that could potentially enter the waterways
- Do not flush pharmaceuticals down the toilet or drain

For more information on pharmaceutical disposal, please visit the following websites:

- http://ddoe.dc.gov/ddoe/lib/ddoe/2009.11.19_Pharmaceutical_Waste.pdf
- www.epa.gov/ppcp/

Please contact the District of Columbia's 311 call center to report spills or to seek assistance on waste disposal.

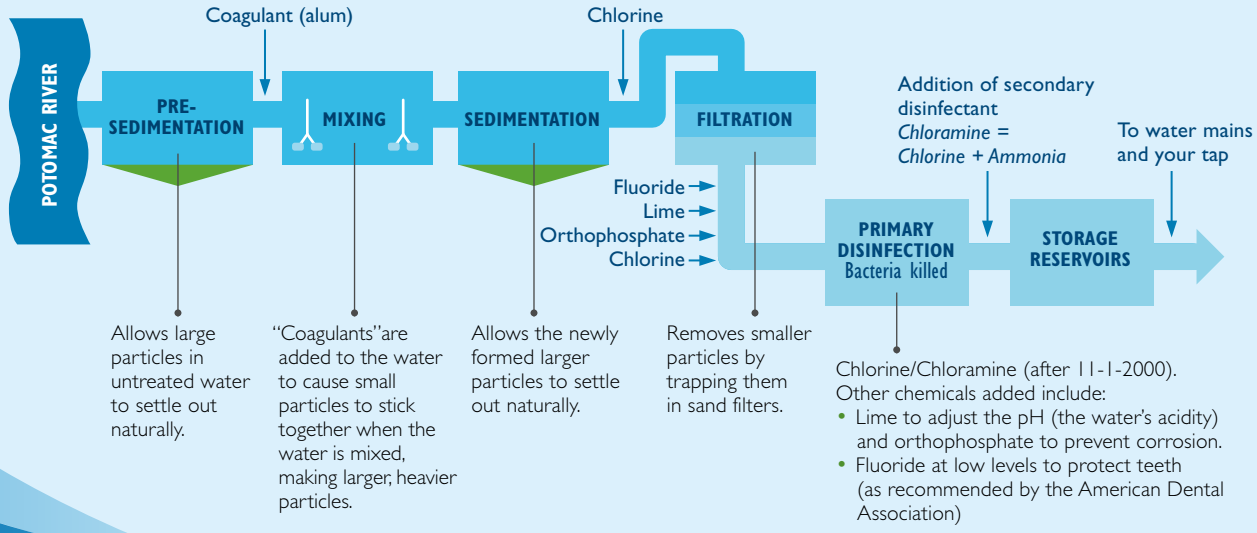
Get Involved – The DC Water Board of Directors conducts regular business meetings that are open to the public, generally on the first Thursday of each month at the Blue Plains Facility, 5000 Overlook Ave, SW, Washington, DC 20032. Please visit www.dcwater.com or contact the Office of the Board Secretary at (202) 787-2330 to confirm the specific meeting time and location.

THE WATER TREATMENT AND DISTRIBUTION SYSTEM

DC Water maintains about 1,300 miles of pipe and distributes potable water to over 500,000 residents and businesses throughout the District of Columbia and portions of Maryland and Virginia. DC Water purchases drinking water from the US Army Corps of Engineers, Washington Aqueduct. The Washington Aqueduct draws water from the Potomac River 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 chloramine through the addition of ammonia, and corrosion control with orthophosphate.

Chloramine is a federally approved alternative to free chlorine. Chloramine 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. For more information about chloramine, visit www.dcwater.com/water/faqs or www.epa.gov/safewater/disinfection/chloramine.

Main Water Treatment Processes at Dalecarlia and McMillan Water Treatment Plants



POTOMAC RIVER CONTINUED FROM PAGE 1

- 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 under contract to the District of Columbia government. The assessment identified urban runoff, toxic spills, agriculture and inadequate wastewater treatment as potential contamination sources to the water supply. A redacted version of this document can be found at www.potomacriver.org/cms/index.php?option=com_content&view=article&id=122&Itemid=95.

Contact the Interstate Commission on the Potomac River Basin at (301) 984-1908 for more information or to join your neighbors in activities that help protect our water supply.

WASHINGTON AQUEDUCT TURBIDITY MONITORING VIOLATION

On October 21, 2010, the US Army Corps of Engineers Washington Aqueduct, who treats the drinking water that is purchased by DC Water, failed to collect the correct number of turbidity drinking water samples. Although this incident was not an emergency, as our customers, you have a right to know what happened and what the Washington Aqueduct did to correct the situation. This notice is for informational purposes only, and no action on the part of the consumer is required.

The Washington Aqueduct is required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. From October 20, 2010 at 7:27 p.m. to October 21, 2010 at 6:50 a.m., the Washington Aqueduct did not monitor for turbidity in two of 48 filters, and therefore cannot be sure of the quality of our drinking water during that time. Simultaneous monitoring of the other 46 filters and the final treated water showed no problems. The operators were re-trained on proper monitoring procedures.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

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. The U.S. Environmental Protection Agency (EPA) and the Centers for Disease Control and Prevention (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).

Cryptosporidium

Cryptosporidium is a microbial pathogen found in most surface water in the U.S. The Washington Aqueduct monitors for *Cryptosporidium* in the Potomac River every month. In October 2005, the Washington Aqueduct detected *Cryptosporidium* at 1.5 oocysts per 100 liters in one sample. *Cryptosporidium* has not been detected in any sample since October 2005.

Ingesting *Cryptosporidium* may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. *Cryptosporidium* must be ingested to cause disease, and it may be spread through means other than drinking water. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people are at greater risk of developing a life-threatening illness. DC Water encourages immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection.

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. DC Water 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 at least 2 minutes before using water for drinking or cooking. If you are concerned about lead in your drinking water, you may wish to have your water tested. If you are pregnant or have children under age six, you should consider using filtered tap water for drinking and cooking until all sources of lead have been removed. This includes water used for making infant formula, beverages and ice. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (800-426-4791), www.epa.gov/safewater/lead and www.dcwater.com/lead.

THE IMPACT OF AGING PIPES ON TAP WATER

The median age of water mains in the District is 77 years, and many District residents are experiencing similar challenges with aging pipes in their households. Over many years, old, corrosion scales form inside the walls of iron pipes and may impact water quality. Iron in water is not a health risk, but can cause discoloration at the tap and other issues.

Replacing and maintaining aging pipes is a shared responsibility of DC Water and individual residents. DC Water is tripling the rate of our water main replacement program and pursuing additional measures to address aging pipes throughout the District. We encourage homeowners to identify and replace old household pipes, particularly galvanized plumbing. For more information about household plumbing, visit www.dcwater.com/water.

ABBREVIATIONS AND DEFINITIONS

AL – Action Level. The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which 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).

$CaCO_3$ – Calcium carbonate

Haloacetic acids (5) – The five haloacetic acid species required to be monitored by EPA.

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.

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.

MRDL – Maximum Residual Disinfectant Level. The highest level of a disinfectant 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. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

mrem/year – millirems per year. A measure of radiation absorbed by the body.

NA – Not Applicable

ND – Non-Detectable

NH_3-N – Measurement of ammonia in the form of nitrogen.

NO_2-N – Measurement of nitrite in the form of nitrogen.

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).

oocyst – The earliest stage of the life cycle of a parasitic protozoan (e.g., *Cryptosporidium*) in which it is enclosed in a hard-shelled capsule.

pCi/L – Picocuries per liter. A measure of radioactivity.

PO_4 – Phosphate

Potable – Water of sufficiently high quality that can be consumed or used without risk of immediate or long term harm.

ppb – Parts per billion

ppm – Parts per million

ppt – Parts per trillion

SMCL – Secondary Maximum Contaminant Limit. Established only as a guideline to assist public water systems in managing their drinking water for aesthetic considerations, such as taste, color, and odor. These contaminants are not considered to present a risk to human health at the SMCL.

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 and a good indicator of the effectiveness of the water treatment system. Turbidity in excess of 5 NTU is just noticeable to the average person.

WHAT'S IN MY DRINKING WATER?

DC Water is committed to safeguarding its water supply. 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 Environmental Protection Agency's (EPA) Safe Drinking Water Hotline (800-426-4791).

EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems to ensure that tap water is safe to drink. 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 below table compares the level of each contaminant detected in 2010 to limits set by EPA: an allowable upper limit, the maximum contaminant level (MCL) or treatment technique requirement (TT), and a goal, the maximum contaminant level goal (MCLG).

WASHINGTON, DC DRINKING WATER ANALYSIS DATA FOR 2010

Regulated Contaminants

WASHINGTON AQUEDUCT WATER TREATMENT PLANT PERFORMANCE

	Units	EPA Limits		DC Drinking Water	Description / Typical Sources of Contaminants
		MCLG	MCL or TT		
Turbidity	NTU	NA	TT = 1 (maximum)	(maximum) 0.18 (hourly)	Turbidity is often caused by soil runoff
	% of monthly turbidity readings ≤ 0.3 NTU	NA	TT = 95% (minimum)	100%	
Total Organic Carbon (TOC)	% removal	NA	TT 25%	36% (lowest annual average) 25% to 51% (range of monthly averages)	Naturally present in the environment

WATER ENTERING DC WATER'S DISTRIBUTION SYSTEM

	Units	EPA Limits		DC Drinking Water		Description / Typical Sources of Contaminants
		MCLG	MCL	Highest	Range	
Inorganic Metal						
Arsenic	ppb	0	10.	0.8	ND to 0.8	Erosion of natural deposits; runoff from orchards
Barium	ppm	2	2	0.07	0.03 to 0.07	Erosion of natural deposits
Cadmium	ppb	5	5	0.2	ND to 0.2	Corrosion of galvanized pipes; erosion of natural deposits
Chromium	ppb	100	100	4.4	ND to 4.4	Erosion of natural deposits
Selenium	ppb	50	50	1.3	ND to 1.3	Erosion of natural deposits; discharge from mines
Inorganic Anions						
Fluoride	ppm	4.0	4.0	1.2	0.5 to 1.2	Water additive which promotes strong teeth; erosion of natural deposits
Nitrate [1]	ppm	10	10	3.1	0.06 to 3.1	Runoff from fertilizer use; erosion of natural deposits
Nitrite [1]	ppm	1	1	0.09	ND to 0.09	Runoff from fertilizer use; erosion of natural deposits
Synthetic Organic Contaminants						
Ethylene Dibromide (EDB)	ppt	0	50	10	ND to 10	Discharge from petroleum refineries
Volatile Organic Contaminants						
None Detected						
Radionuclides						
Beta emitters [2]	pCi/L	0	50 [3]	4	ND to 4	Decay of natural and man-made deposits
Combined radium [2]	pCi/L	0	5	2	ND to 2	Erosion of natural deposits

[1] The levels shown for this parameter were derived from both compliance data and routine process control data.

[2] Results are from the 2008 monitoring year, which is the most recent sampling completed in accordance with EPA regulations.

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

DC WATER'S DISTRIBUTION SYSTEM

	Units	EPA Limits		DC Drinking Water		Description / Typical Sources of Contaminants
		MCLG	MCL or TT	Highest	Range	
Microbial Indicators						
Total Coliform Bacteria	% of total coliform-positive samples	0	5% (maximum)	0.5%	0 to 0.5%	Naturally present in the environment
Fecal Coliform or *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)	3.2 (Highest running annual average)	0.0 to 4.3 (Range of single site results)	Water additive that protects against microbiological contamination. Chlorine is combined with ammonia to form chloramine.
Total Trihalomethanes	ppb	NA	80 (4-quarter running average)	38 (Highest 4-quarter running average)	10 to 57 (Range of single site results)	By-products of drinking water disinfection
Haloacetic Acids (5)	ppb	NA	60 (4-quarter running average)	25 (Highest 4-quarter running average)	9 to 35 (Range of single site results)	By-products 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						
January-June 2010 Monitoring Period	ppb	0	15	3 of 100	7	Corrosion of household plumbing systems; erosion of natural deposits
July-December 2010 Monitoring Period	ppb	0	15	6 of 105	9	
Copper						
January-June 2010 Monitoring Period	ppm	1.3	1.3	0 of 100	0.1	Corrosion of household plumbing systems; erosion of natural deposits
July-December 2010 Monitoring Period	ppm	1.3	1.3	0 of 105	0.1	

Contaminants without Primary MCLs or Treatment Techniques

WATER ENTERING DC WATER'S DISTRIBUTION SYSTEM

Parameter	Units	Average	Range	Parameter	Units	Average	Range
Aluminum	ppb	59	19 to 903	Orthophosphate	ppm as PO_4	2.6	2.1 to 3.0
Bromide	ppm	ND	ND to 0.06	Perchlorate	ppb	0.6	ND to 3.7
Calcium	ppm	40	27 to 59	Sodium	ppm	20	6.5 to 41
Chloride	ppm	38	15 to 77	Strontium	ppb	178	94 to 258
Cobalt	ppb	0.1	ND to 0.4	Sulfate	ppm	54	32 to 81
Copper[4]	ppb	2.8	0.5 to 11	Thorium	ppb	ND	ND to 0.3
Iodide	ppb	5.7	ND to 13	Total Ammonia	ppm as nitrogen	0.6	0.0 to 1.0
Iron	ppb	12	ND to 880	Total Hardness	ppm as $CaCO_3$	136	91 to 196
Lead[4]	ppb	0.1	ND to 0.6	Total Hardness	Grains per gallon (GPG)	8	5.3 to 11
Lithium	ppb	2.3	1.2 to 4.4	Tritium[5]	pCi/L	100	ND to 800
Magnesium	ppm	8.8	3.0 to 15	Vanadium	ppb	0.8	0.1 to 1.9
Manganese	ppb	1.3	0.2 to 17	Zinc	ppb	1.1	0.2 to 8.7
Molybdenum	ppb	0.8	ND to 1.7				
Nickel	ppb	2.2	1.5 to 3.8				

[4] Results represent levels entering DC Water's distribution system and are distinct from lead and copper compliance monitoring conducted in residential homes.

[5] EPA requested the monitoring for tritium once every 3 years. In 2008, the Washington Aqueduct monitored quarterly samples for tritium. EPA considers 20,000 pCi/L to be the level of concern for tritium.

[6] The secondary maximum contaminant level (SMCL) for iron is 0.3 ppm. SMCLs are established by EPA only as guidelines to assist public water systems in managing their drinking water for aesthetic considerations, such as taste, color, or odor. These contaminants are not considered to present a risk to human health at the SMCL.

OTHER WATER QUALITY PARAMETERS—DC WATER'S DISTRIBUTION SYSTEM

Parameter	Units	Average	Range
Alkalinity	ppm	63	37 to 111
Aluminum	ppm	0.011	0 to 0.056
Ammonia-Free	ppm as NH_3-N	0.10	0 to 0.37
Calcium Hardness	ppm as $CaCO_3$	105	80 to 155
Calcium Hardness	Grains per gallon (GPG)	6.1	4.5 to 9.0
Dissolved Orthophosphate	ppm	2.45	1.79 to 3.1
Iron[6]	ppm	0.11	0 to 0.91
Nitrite	ppm as $N0_2$-N	0.050	0 to 0.338
pH	—	7.55	7.26 to 7.69
Sulfate	ppm	55	35 to 98
Temperature	Degrees Fahrenheit	66	38 to 89
Total Dissolved Solids	ppm	176	124 to 228

Drinking Water

QUALITY REPORT 2010

District of Columbia Water and Sewer Authority
5000 Overlook Avenue, SW
Washington, DC 20032

William M. Walker – *Chairman of the Board*
George S. Hawkins – *General Manager*

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Drinking Water Quality Report 2010: 297,000 units

trees	water	energy	solid waste	greenhouse gases
76 fully grown	34697 gallons	24 Million BTUs	2107 pounds	7204 pounds

Calculations based on research by Environmental Defense Fund and other members of the Paper Task Force.
www.newleafpaper.com

TIPS TO ENSURE WATER QUALITY IN YOUR HOME

- **Run the cold water tap for two minutes before using it for drinking and cooking.** Water quality can decline when it sits in pipes for a few hours.
- **Do not use hot tap water for drinking and cooking.** Hot water can contain a greater amount of sediment and metals that build up in the water heater. Always use cold tap water, including water used for making food, beverages and infant formula.
- **Remove and clean faucet aerators.** Particles can collect in the aerator screen located at the tip of your faucet.
- **Replace filter cartridges routinely.** Sediment and bacteria can accumulate if filter cartridges are not replaced according to the manufacturer's instructions.
- **Drain your water heater annually.** Sediment and metals can build up over time.
- **Replace old household pipes.** Aging pipes, particularly galvanized plumbing, can cause discolored water and pressure issues.
- **Flush your taps if you replace water pipes or fixtures.** After pipe replacement, flush cold water taps at least five minutes for three days to remove any particles.

CONTACT INFORMATION

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

Customer Service ..... (202) 354-3600
24-Hour Command Center ..... (202) 612-3400
Public Affairs ..... (202) 787-2200

Other important numbers:

Source Water Protection
District Department of the Environment ..... (202) 535-2600
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

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

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

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.