

Drinking Water

QUALITY REPORT

2003



DC WASA

DISTRICT OF COLUMBIA
Water and Sewer Authority

Serving the Public

Protecting the Environment



Dear Customers:

The District of Columbia Water and Sewer Authority ("WASA") is pleased to provide to you our 2003 Drinking Water Quality Report, the seventh in a series of annual water quality reports that we have issued since our creation in 1996.

Every resident and visitor expects and we have no higher priority than to provide the highest water quality possible. WASA purchases treated water from the Washington Aqueduct (owned and operated by the U.S. Army Corps of Engineers), and distributes it to our customers in the District of Columbia. Providing safe drinking water is our most important mission, and the federal Safe Drinking Water Act ("SDWA") provides a road map that we follow to achieve this goal.

As you may know, the sample tests of tap water from 26 District of Columbia homes showed elevated lead concentrations in 2002. These elevated lead concentrations resulted in WASA developing a program to notify the public and provide information about the potential risks of environmental lead exposure that could occur. WASA began the effort to comply with Environmental Protection Agency ("EPA") requirements, and also took the additional step of launching a massive and unprecedented testing program (over 6,000 households sampled). WASA's public education and lead service line replacement programs continue alongside the work of the Washington Aqueduct to develop and implement a plan to address lead leaching with a new treatment process.

We are providing information about the precautions that should be taken, particularly by pregnant and nursing women and children under the age of six. There is also other important information, including an explanation of the SDWA, the source and treatment of your water supply, our very extensive water quality monitoring program, and facts about water chemistry.

I hope you find the 2003 Water Quality Report useful and informative. Please send a fax to 202-787-2210, or contact us at www.dcwasa.com or info@dcwasa.com if you would like to share your opinion about how we might improve this annual report in the future.

Jerry N. Johnson, *General Manager*
District of Columbia Water and Sewer Authority

The Safe Drinking Water Act

The Safe Drinking Water Act was established in 1974 (and subsequently amended) to protect the quality of drinking water in the United States, and it focuses on water that is actually or potentially designed for drinking, regardless of whether the source is an underground well, or an above ground stream, like the Potomac River. Under the Act, the U.S. Environmental Protection Agency establishes rules for health and non-health related standards. All public water systems, in our community the Washington Aqueduct and WASA, must comply with them. Except for Wyoming, Washington, DC is the only jurisdiction that EPA regulates directly. Generally, water systems in the United States are regulated by state governments.

Water Treatment and Distribution System

The DC Water and Sewer Authority distributes water to residences and businesses throughout DC for drinking, washing, fire fighting and many other uses. WASA purchases the drinking water from the U.S. Army Corps of Engineers' Washington Aqueduct. WASA purchases about 130 million gallons of treated water from the Washington Aqueduct on a daily basis and distributes it to our customers. WASA serves over 500,000 residents through approximately 130,000 metered connections in the District of Columbia through a system of 1,300 miles of large water main pipes in the streets in a system that also includes a series of elevated and underground storage facilities, pumping and monitoring stations throughout the District.

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 on the following page). Important treatment processes at WA's Dalecarlia and McMillan facilities include sedimentation, filtration, fluoridation, pH adjustment (to help control the leaching of metals like lead from service line pipes), primary disinfection

using free chlorine to disinfect treated water, and finally, conversion of the free chlorine to chloramines through addition of ammonia. The chloramine residual stays in water to provide secondary disinfection as the water travels through WASA's network of distribution system water pipes and all the way to your home.

Chloramine as Our Disinfectant

On November 1, 2000, chloramines began to be used by the Washington Aqueduct as a disinfectant to maintain protection against microbial contamination in the water distribution system. The change in disinfectant from chlorine to chloramines was an effort to reduce the concentrations of "disinfection byproducts" called Trihalomethanes (THMs). This change was made in order to comply with more stringent national standards established by EPA to further reduce their presence in the water and reduce exposure of all Americans to THMs. Chronic (longterm) exposure to high concentrations of Trihalomethanes is considered to be potentially carcinogenic. Since the treatment change to chloramines, there has been a significant reduction of Trihalomethanes in the drinking water. 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.

Note: the Washington Aqueduct and WASA follow the general practice among utilities using chloramines to switch from chloramines back to free chlorine during the spring flushing program. This periodic conversion back to free chlorine in combination with the system-wide flushing program helps to maintain water quality control in the distribution system. The switch to free chlorine is performed for six weeks from April to May each year since chloramines have been used as the disinfectant.

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

Watershed Protection—A watershed is an area of land surrounding a river from which water eventually drains into the river. Everyone can help protect the Potomac River, the source of our drinking water, by protecting the watershed. 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**.

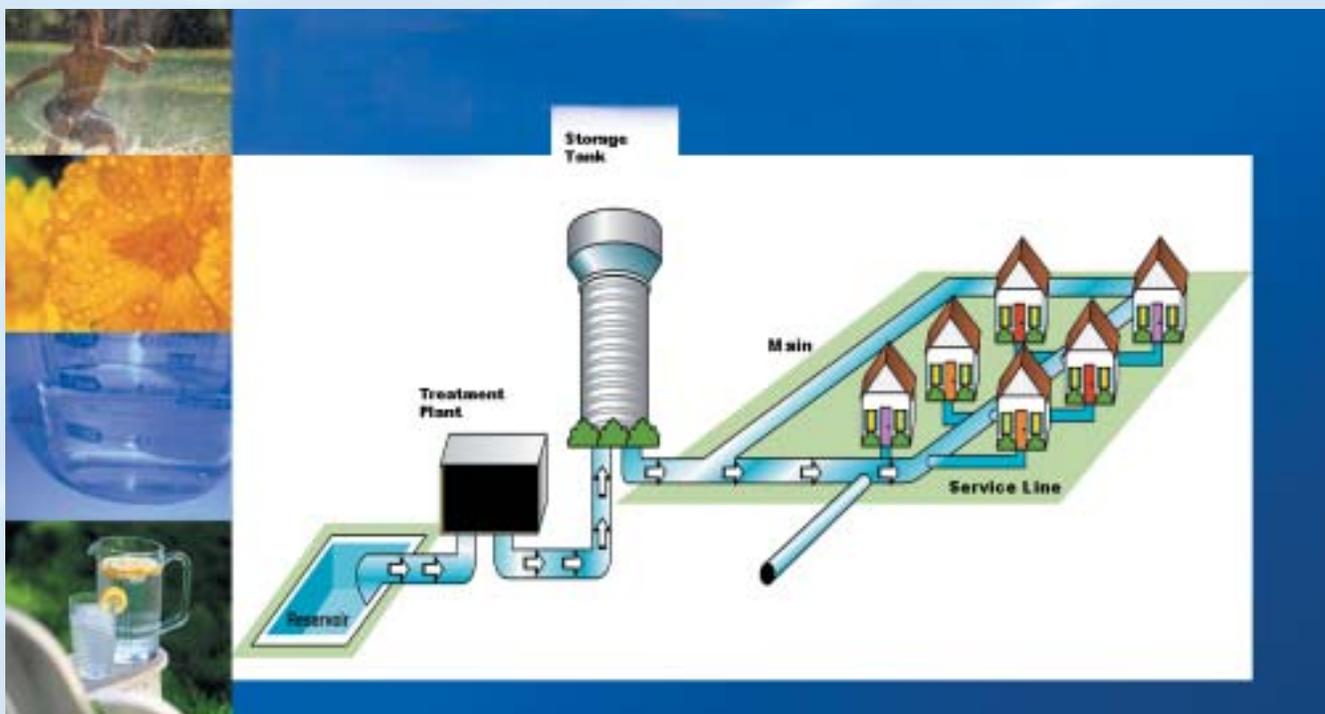
Report Fire Hydrant Vandalism—Fire hydrants are used primarily to supply water for fire protection. WASA also issues permits for other specific hydrant uses, with prescribed requirements for the use of a special backflow prevention device when drawing water from a hydrant. Unauthorized opening of fire 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

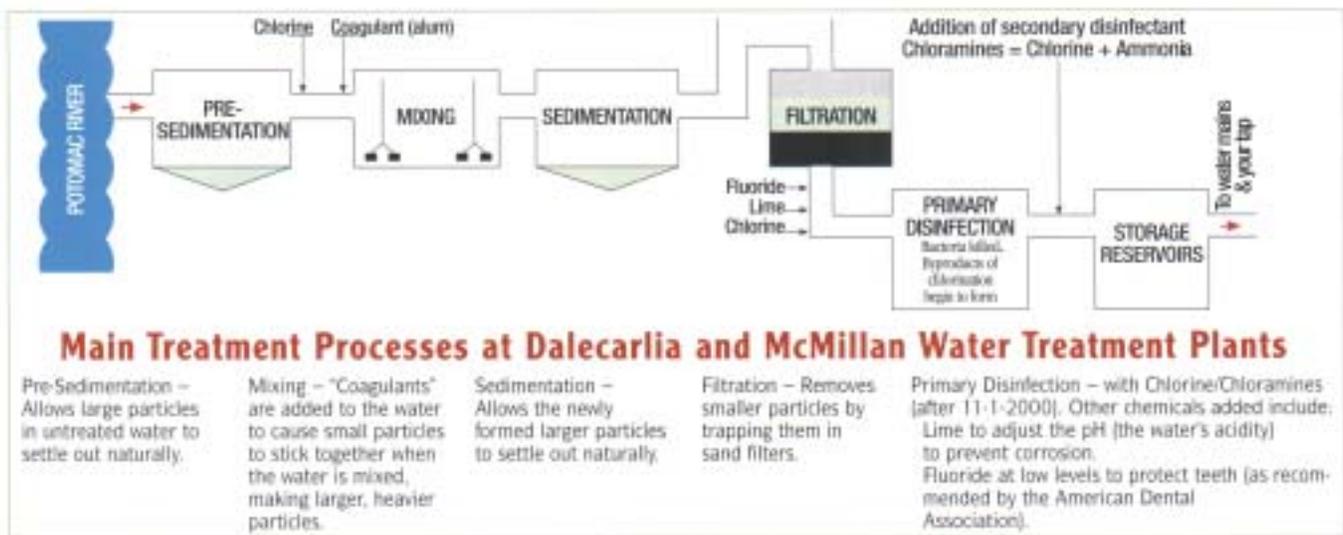
water into streets. The torrent of water can damage roads and be a safety hazard to traffic and pedestrians. Unauthorized opening of fire hydrants can also significantly reduce water pressure in some neighborhoods. In addition, by improper use of fire hydrants, the increased water velocity causes mineral sediment in the lines to come loose, resulting in discoloration and potential water quality problems in the surrounding 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** immediately.

Volunteer Program—WASA has a 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. We also have received numerous calls from volunteers for the Lead and Copper Program. We are maintaining a list of volunteers for future contact, and 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**.

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. The goal of this program is to keep the drinking water from being contaminated where it's being used. We would appreciate your cooperation in assisting our surveyors. Depending on the survey findings, WASA will inform you of the type of back flow preventor which may be needed.

Community Meetings—WASA conducts frequent community meetings with Advisory Neighborhood Commissions, civic associations, schools, libraries, and other groups. If you would like a speaker from





lion (ppb). Under federal law when the action level is exceeded the water system is required to have a program in place to minimize lead in your drinking water.

In order to comply with the EPA requirements for controlling copper and lead, water systems, in this case WASA and the Washington Aqueduct, must:

1. **Install and operate an EPA approved “optimal corrosion control treatment”** plan that makes water less likely to leach metals from pipes and other plumbing;
2. **Replace the publicly owned portion of seven percent (1,615) of the identified number of lead service line pipes** until lead concentrations fall below the EPA action level;
3. **Implement a lead public education program.**

The Washington Aqueduct Division of the Army Corps of Engineers is the wholesale supplier of water to WASA. In compliance with federal requirements, the Washington Aqueduct conducted **optimal corrosion control** studies and implemented plans to address the potential problem of lead in the drinking water. The purpose is to use the water treatment process to make the water less corrosive so that it is less likely to leach lead or copper from lead service line pipes and other plumbing into drinking water.

To fulfill the lead service line pipe physical replacement requirement, EPA’s regulations allow for physical replacement of the publicly-owned portion of the service line pipe or testing to make sure that tap water tests below 15 ppb at a specific number of addresses with lead service line pipes. In 2003, WASA used a combination of testing and physical replacements of service line pipes in public space (from the property line to the water main in the street) to achieve the seven percent replacement goal.

It is important for property owners with a lead service line pipe to know that WASA will offer the property owners the option of paying WASA’s contractor to replace the portion of the service line pipe on private property at the time that we schedule work to replace the portion of the lead service line pipe in public space. There may be some advantage in cost and convenience to property owners who choose to use this option.

If you have any questions about how we are carrying out the requirements of the lead regulation, please e-mail us at WQP2003@dcwasa.com or give us a call at **202-787-2732**.

The following information explains the simple steps you can take to protect your family by reducing potential exposure to lead in drinking water.

More About Lead in Drinking Water

Lead in drinking water can increase a person’s total lead exposure, particularly the exposure of infants who drink baby formulas and concentrated juices that are mixed with water from homes with lead service lines and/or plumbing systems.

Health Effects of Lead

Lead is a common metal found throughout the environment in lead-based paint, soil, especially near highways (because lead was used in gasoline for many years); household dust, especially in older homes with lead paint; food to a small degree, certain types of pottery glazes, pewter and water. Lead can pose a significant risk to your health if too much of it enters your body. **The greatest risk is to young children and the offspring of pregnant and nursing women.** Amounts of lead that won’t hurt adults can slow normal mental and physical development of growing bodies and may cause behavioral problems. In addition, a child at play often comes into contact with sources of lead contamination—like dirt and dust, so it is important to wash children’s hands and toys often. The goal is to reduce lead intake from every source.

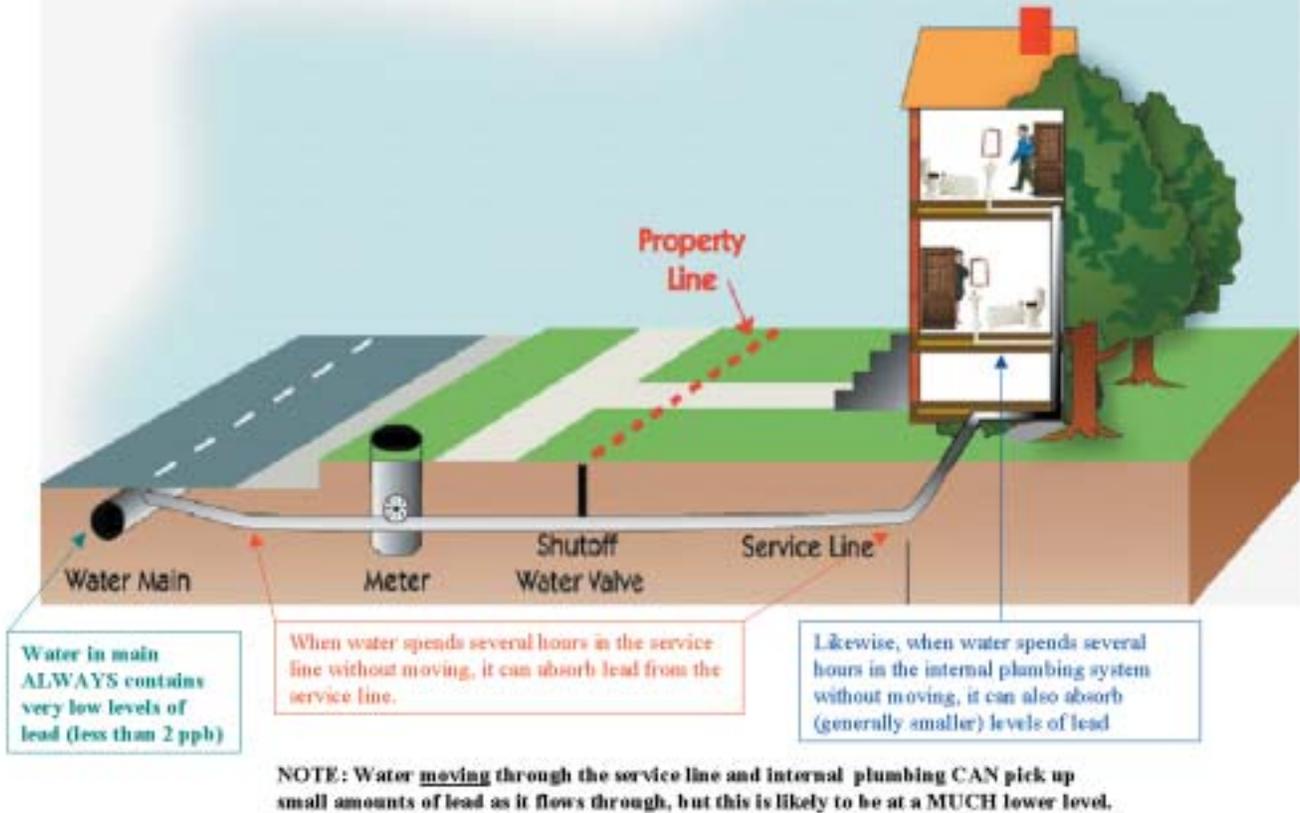
Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or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

For more information about the health effects of lead and how to obtain a blood lead level screening test, contact the Department of Health at **202-671-0733** (www.dchealth.dc.gov).

Steps to Reduce Exposure to Lead in Drinking Water

Determine whether or not the service line that connects your home to the water main is made of lead. The best way to determine if your service line is made of lead is by either hiring a licensed plumber to inspect the line or by contacting the plumbing contractor who

How Can Lead Enter Your Drinking Water??



installed the line. WASA also maintains records of the materials located in the public portions of the distribution system. E-mail us at WQP2003@dcwasa.com or call **202-787-2732** for information to determine the material of your service line. A test of the water drawn from the service line pipe can also provide an indication of the material.

To find out whether you need to take further action in your own home, have your drinking water tested to determine if it contains excessive concentrations of lead. Testing the water is essential because you cannot see, taste, or smell lead in drinking water. For more information on having your water tested, please e-mail us at WQP2003@dcwasa.com or call us at **202-787-2732**.

If a water test indicates that the drinking water drawn from a tap in your home contains lead above 15 ppb, or if you think you have a lead service line then you should take the following precautions:

Flushing Instructions and Consumer Advisory

Homes with lead service line pipes

- Use water that you will consume only after 10 minutes of high water use activity (toilet flushing, showering, washing dishes or clothes)
- After the high water use activity, flush the tap for 60 seconds and collect cold water for drinking and store some in the refrigerator for future use

- Pregnant women, nursing mothers and children under 6 years old should only drink filtered tap water

All homes

- Flush the tap for 60 seconds before drawing water for drinking
- Use only cold water for drinking or cooking
- Remove and clean the strainer/aerator/screen device from your faucet on a regular basis
- Boiling water will not remove lead!
- Lead in water is not absorbed across the skin.

For More Information

You can consult a variety of sources for additional information on this issue:

- Your family doctor or pediatrician can perform a blood test for lead and provide you with information about the health effects of lead.
- The District of Columbia Water and Sewer Authority can provide additional informational brochures, and there is also useful information on our website at www.dcwasa.com. You can also contact us at **202-787-2732**, and by e-mail at WQP2003@dcwasa.com.
- The DC Department of Consumer and Regulatory Affairs at **202-442-4641** may have information about building permit records containing the names of plumbing contractors that plumbed your home.

- The DC Department of Health at **202-671-0733** can provide you with information about the health effects of lead and how you can have your blood tested.
- U.S. EPA Safe Drinking Water Hotline is **800-426-4791**, and e-mail at **www.epa.gov/dclead**.

What is Being Done to Improve Our Drinking Water Quality?

WASA has developed a \$1.6 billion capital improvement plan to repair and upgrade the utility's overall infrastructure during the next ten years. This initiative is, for example, helping to replace and repair large water mains, valves and pumping stations. Very recently, we completed a major overhaul of elevated storage facilities around the city which help maintain water quality and adequate water pressure for fire protection as well as home use.

WASA has embarked on many projects in the distribution system to improve water quality and provide you with safe drinking water. The cross-connection control program, which protects the drinking water from potential contaminants, is now established in DC. In addition to compliance monitoring, WASA has implemented 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.

The Washington Aqueduct's potential use of a chemical in the treatment process, like orthophosphate, to prevent lead leaching from pipes, is an example of the type of research that is always underway. Over the past several months, WASA has been conducting comprehensive studies at our Fort Reno facility and in a number of residential homes to determine the possible cause and best treatment for reducing lead concentrations that have been found in some District homes.

Water Quality Enhancement Program

Maintaining water quality is more than treating the water, it's also ensuring that the water delivered to our customers consistently meets all standards promulgated under the Safe Drinking Water Act and Environmental Protection Agency.

To meet this goal, WASA's Water Quality Division has developed an aggressive program that includes the following:

- **Monitoring the water supply** as it enters the distribution system, documenting special and temporal changes in the water quality;
- Ensuring that the water remains safe, **technicians and analysts collect hundreds of samples** every month from various locations in the distribution system and residential homes to be analyzed for coliform bacteria, chlorine residual, pH, turbidity, temperature and other water quality parameters;
- **Identifying and responding rapidly** to customer complaints or other water quality episodes;
- **Developing baseline conditions** for water quality data management;

- **Standardizing quality assurance and quality control procedures** in all water quality units for sampling and testing;
- **Designing a small mobile lab** that will be able to address routine sampling, water quality complaints and emergency situations efficiently.

Other 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 maintenance activities as comprehensive system flushing, water main rehabilitation and 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 are dechlorinating the water being flushed to protect aquatic life. Flushing water through the pipes at high velocities removes potential buildup of materials in pipes that may cause discolored water. Look for the continuously updated flushing schedule on our website, **www.dcwasa.com**. In addition, fliers will be placed on your door at least 48 hours in advance to notify you when flushing will be occurring in your neighborhood.

How To Flush Your Household Pipes—Organic or other matter in your household pipes which may cause taste and odor problems can be eliminated by flushing your water pipes. The procedure is outlined in the following steps.

Remove the screens (called aerators) from the ends of the indoor faucets and run all of the faucets wide open and simultaneously for 3 to 5 minutes.

Flush the toilets two or three times each while the faucets are running. This generates a large flow of water through the pipes and will hopefully dislodge any build-up of organic material that causes taste and odor problems. Removing the aerators before flushing the plumbing will prevent anything dislodged from accumulating on the screens.

After 3 to 5 minutes of flushing, turn off the water faucets, clean the aerators, and reinstall the aerators on the ends of the faucets. Replace worn-out aerators with new ones.

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, WASA is requiring local businesses 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 DC Department of Health, the DC Department of Consumer and Regulatory Affairs, the EPA and consumers.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as individuals with cancer undergoing chemotherapy, people 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. Federal EPA and Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at **1-800-426-4791**.

The Washington Aqueduct 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, the Washington Aqueduct's treatment plants provide a multiple-barrier approach—chemical treatment, highly efficient filtration technology and disinfection—designed to remove *Cryptosporidium*.

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. Healthy individuals generally easily manage this illness.

About our compliance with the EPA lead and copper rule:

Since the Authority triggered the action level for lead in the drinking water, the Authority is required to engage in public education and begin replacements of lead service lines. Over the course of 2003, the Authority distributed educational materials to the public regarding the health risks of lead and steps consumers could take to mitigate lead exposure and began lead service line replacements. The EPA, in a March 31, 2004 Show Cause letter and pursuant to a compliance audit, has identified several instances in which it asserts that the Authority did not fully comply with the regulations. While the Authority does not necessarily agree with the EPA, the information is being provided to you. This information is accurate and up to date as of the date of this printing. You can find a copy of the EPA's Show Cause letter at www.epa.gov/dclead/johnson-letter2.htm.

Public Outreach

The public education requirements are set forth in federal regulations (40 CFR §141.85). The regulations require that a public service announcement be submitted to five or more radio and television stations every six months. The Authority submitted a public service announcement to over 31 radio and television stations in October of 2002 and again in September of 2003. We did not submit an announcement in the Spring of 2003. The EPA has also cited the Authority for language used in the public service announcements that were submitted to media outlets but not aired. The Authority referred to “*potential* elevated levels of lead” in your drinking water rather than stating that “*unhealthy* levels of lead” can enter your drinking water from the plumbing in your home. However,

because not one of our public service announcements was aired, the Authority placed a paid advertisement in the *Washington Post* to alert its consumers to the presence of lead in its drinking water.

The regulations also require that public education materials be included with the Authority's water bills; and that notice language be included on the bill itself. The EPA has alleged that the Authority's notice language was deficient because the phrase “in their drinking water” was reordered and the Authority omitted the term “significant” on the face of the bill.

Because the Authority believes the residents and water consumers of the District of Columbia could benefit from additional information beyond what the lead and copper rules require, the Authority is committed to conducting a far more expansive public outreach program.

Lead Line Replacements

As part of the enhanced requirements for triggering the action level, the Authority has undertaken a lead service line replacement program. This program requires that the Authority replace at least seven percent of the lead service lines each year until the monitoring results demonstrates reduced levels of lead in the drinking water. The Authority can only replace that portion of the service line that exists in public space, but must offer each homeowner the opportunity to replace the portion of the service line that exists on private property. If the homeowner does not elect to have the private portion replaced, the Authority will do a “partial” replacement. For each partial replacement, the regulations require that, within 72 hours following the replacement, a water sample be taken at the tap. Unfortunately, many homeowners (although provided advance notice and sampling kits with instructions) did not provide the Authority with the samples. Because of the importance of timely completing the testing, the Authority has begun a new outreach program to urge homeowners to complete the testing as soon as possible.

Late Reports

The lead and copper rules also contain reporting requirements. For example, the rule requires that regular monitoring of lead in the water be conducted. For the Authority, that means that for each six month period, the drinking water of 100 residences must be tested (at the tap). The samples are sent to the laboratory and tested for lead content. The laboratory reports back to the Authority thirty days later and the Authority reports these results to EPA. The report to EPA should be made no later than 10 days after the close of the monitoring period. The official reports provided by the Authority did not meet the 10 day requirement. However, the Authority is committed to timely reporting and will request homeowners to conduct the sampling earlier in the monitoring period so the Authority will have time to send the samples to the laboratory and receive the results early enough so that it may timely report.

In addition to reporting after monitoring periods, reports are to be made to EPA regarding public education and lead service line replacements requirements as well. Although the Authority worked closely with EPA on its public education pieces, the Authority did not make some of its formal reports timely. While, the Authority did provide EPA with several progress reports on lead line replacements, its end of year compliance report was untimely as well.

The Authority commits to more timely formal reporting.

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. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health. The table summarizes the District's drinking water test results during the year 2003. 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. If you would like a complete list of contaminant test 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**.

Washington, DC Drinking Water Analysis Data for 2003 Regulated Contaminants

Category of Contaminants	Units	EPA Limits		DC Drinking Water		Typical Sources of Contaminants
		MCLG	MCL or TT	Highest	Range	
Potomac River Source						
pH	NA	NA	NA	7.8	7.0 to 7.8	NA
Alkalinity	ppm	NA	NA	88	50 to 88	NA
Water Treatment Plant Performance						
Turbidity	NTU	NA (TT)	5 (maximum)	0.08	0.04 to 0.08	Soil Runoff
	% of turbidity readings ≤ 0.5 NTU	NA (TT)	95% (minimum)	100%		
pH		NA	NA	8.5	7.7 to 8.4	
Alkalinity	ppm	NA	NA	83	47 to 83	
Total Hardness	ppm	NA	NA	152	106 to 152	
TOC	ppm	NA	NA	2.1	1.15 to 2.1	Naturally present in the environment
Microbiological Indicators						
Total Coliform Bacteria	% of total-coliform-positive samples	0	5% (maximum)	4.0%	0% to 4.0%	Naturally present in the environment
Disinfectants and Disinfection Byproducts						
Chlorine	ppm (MRDLG)	4	4.0 (MRDL)	3.8	3.5 to 3.8	Water additive that protects against microbiological contamination. Chlorine is combined with ammonia to form Chloramine
Total Trihalomethanes	ppb (4-quarter running average)	0	80	43.3 (highest 4-quarter running average)	14.2 to 55.5	Trihalomethanes are a byproduct of drinking water chlorination. Comment: Changeover to chloramines has reduced trihalomethanes formation
Haloacetic Acids (6)	ppb (4-quarter running average)	0	60	34.8 (highest 4-quarter running average)	12 to 38	Trihalomethanes are a byproduct of drinking water chlorination. Comment: Changeover to chloramines has reduced trihalomethanes formation

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Washington, DC, Drinking Water Analysis Data for 2003

Regulated Contaminants (continued)

Category of Contaminants	Units	EPA Limits		DC Drinking Water		Typical Sources of Contaminants
		MCLG	MCL or TT	Highest	Range	
Inorganic Metal						
Selenium	ppb	50	50	0.8	ND to 0.8	Discharge from petroleum and metal refineries; erosion of natural deposits
Barium	ppm	2	2	0.046	.028 to 0.046	Discharge of drilling waste and metal refineries; erosion of natural deposits
Arsenic	ppb	50	50	0.6	ND to 0.6	Erosion of natural deposits
Chromium	ppb	100	100	3.0	0.6 to 3.0	Discharge from steel and pulp mills; erosion of natural deposits
Copper (at the customers' tap) Jul. 2003 to Dec. 2003	ppm	1.3	1.3 (AL)	0 samples ¹ out of 108 above AL	0.01 to 0.623 90th percentile 0.194	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (at the customers' tap) Jul. 2003 to Dec. 2003	ppb	0	15 (AL)	35 samples ¹ out of 108 above AL	<0.5 to 142 90th percentile 63	Corrosion of household plumbing systems; erosion of natural deposits
Inorganic Ions						
Fluoride	ppm	4	4	0.99	0.71 to 0.99	Water additive that promotes strong teeth
Nitrate (as N)	ppm	10	10	3.02	1.31 to 3.02	Runoff from fertilizer use; leaching from septic tanks; erosion of natural deposits
Chloride	ppm			46	16 to 46	
SOCs						
Atrazine	ppb	3	3	0.3	ND to 0.3	Herbicide runoff
Herbicides						
Dalapon	ppb	200	200	2.0	ND to 2.0	Runoff from herbicide used on rights-of-way
2-4, D	ppb	70	70	ND	ND	Runoff from herbicide used on rights-of-way
Radionuclides²						
Alpha Emitters	pCi/L	0	15	2.1	ND to 2.1	Erosion of natural deposits
Beta Emitters ³	pCi/L	0	50	3.0	1.2 to 3.0	Decay of natural and man-made deposits

1. EPA regulations require that corrective action be taken if greater than 5 of 50 samples exceed the action level.

2. EPA requirements allow for some contaminants to be monitored for less frequently than once per year because the concentrations of these contaminants do not change frequently. The most recent radionuclides data was obtained in 2002.

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

4. Nickel is required to be monitored while EPA reconsiders its MCL.

Washington, DC, Drinking Water Analysis Data for 2003

Unregulated Contaminants

Category of Contaminants	Units	Status	Highest	Range	Typical Sources of Contaminants
Inorganic					
Sulfate	ppm	NR	54	35 to 54	Naturally present in the environment and in mine drainage wastes
Nickel	ppb	NR ⁴	1.5	0.8 to 1.5	
Aluminum	ppb	NA	158	26 to 158	
Iron	ppb	NA	123	ND to 123	
Lithium	ppb	NA	2.5	0.9 to 2.5	
Magnesium	ppm	NA	9	6 to 9	
Manganese	ppb	NA	14.3	ND to 14.3	
Molybdenum	ppb	NA	1.6	ND to 1.6	
Potassium	Ppm	NA	3.3	1.8 to 3.3	
Sodium	ppm	NA	14	8.4 to 14	
Strontium	ppb	NA	202	106 to 202	
Vanadium	ppb	NA	1.4	ND to 1.4	
Zinc	ppb	NA	5.2	ND to 5.2	
2,4 & 2,6 di-nitrotolulene, Acetochlor, DCPA mono & di-acid degradate, 4,4-DDE, EPTC, Molinate, MTBE, Nitrobenzene, Perchlorate and Terbacil			The contaminants shown in the adjacent column are required to be monitored under the "unregulated contaminant monitoring rule" (UCMR) by large water providers on a quarterly basis for one year. EPA requires that large water systems monitor for these compounds to help determine the need for future regulations. The monitoring for the UCMR began January 2002. None of the contaminants listed is detected. Results are available on request		
Disinfection Byproducts					
Chloral Hydrate	ppb	NR	13	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
Chloropicrin	ppb	NR	0.9	<0.5 to 0.9	
Haloacetonitriles	ppb	NR	12.3	2.3 to 12.3	
Haloketones	ppb	NR	4.9	1.1 to 4.9	
Total Organic Halides	ppb	NR	330	160 to 330	

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, venting and controlling disease, injury, and disability. CDC is an agency of the U.S. Department of Health and Human Services.

Haloacetic Acid (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. MRDLGs 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.

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

SOCs = Synthetic Organic Chemicals

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.



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Drinking Water QUALITY REPORT 2003

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For More Information or Questions concerning this report call the WASA Water Quality Division, at 202-612-3440.

For other information, 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
Lead Hotline	WASA Lead Control	202-787-2732
Water Bills	Water Bill Action Line	202-354-3600
To Report Pipe Breaks, Leaks, or Open Hydrants Emergencies (24 Hours per Day)	WASA Water Operations	202-612-3400
Information on 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	202-724-7694
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>

Glenn S. Gerstell — *Chairman of the Board*
Jerry N. Johnson — *General Manager*

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

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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

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