

Washington Suburban Sanitary Commission

2007 WATER REPORT

Dear Customer,

This spring the Washington Suburban Sanitary Commission (WSSC) turns 90. We have grown to become the eighth largest public water and wastewater utility in the nation. Delivering high quality drinking water--from two Patuxent River reservoirs and the Potomac River-requires extensive expertise and commitment to our customers. Our dedicated employees continue to strive for excellence.

True to our mission statement that at WSSC "we are entrusted by our community to provide safe and reliable water," we are pleased, through our annual Water Quality Report, to inform you, the nearly 1.8 million residents in Montgomery and Prince George's counties we serve, that once again WSSC drinking water meets or exceeds U.S. Environmental Protection Agency (EPA) standards for safety and quality. We have never had a drinking water violation in our 90-year history.

But in order for that record to continue, and as we strive to ensure that we can fulfill our mission in the future, we need to begin now to replace the underground network that delivers fresh water to your homes every day. In the past year, working with Montgomery and Prince George's counties, we developed a 30-year infrastructure plan to begin repairing and replacing our aging system. With nearly 5,500 miles of fresh water pipeline and over 5,300 miles of wastewater pipeline our expansive system requires immediate attention.

This is an expensive undertaking. Our next step is to continue our work with the counties to find a way to fund the water pipe replacement while taking into consideration the potential hardships this can cause for our customers. It is a difficult task, one that is facing utilities all across our nation.

And in line with our mission statement, we must act in an "ethically and financially responsible manner." I want to share with you one example of a cost effective initiative in which we take great pride: wind power. Another milestone for us this spring is that we now obtain onethird of our electrical needs from wind power. Working with Constellation Energy, a wind farm was built in Southwest Pennsylvania. We locked in a price for the next ten years and with energy prices soaring, we anticipate a savings of at least \$20 million over that period. Turning wind power into water not only makes financial sense, but environmental sense as well as it helps improve air quality.

We hope you find the information in this report useful in illustrating our steadfast commitment to excellence, the environment and our customers.

Teresa D. Daniell Interim General Manager

IMPORTANT HEALTH INFORMATION FROM THE U.S. EPA

rinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily mean that the water poses a health risk.

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 EPA's Safe Drinking Water Hotline (1-800-426-4791) or EPA's website at www.epa.gov/safewater. More information about contaminants and potential health effects can also be obtained from the Hotline or EPA's website.

FOR MORE INFORMATION



SSC provides updated information about water quality and other aspects of the service delivery system at our website, www.wsscwater.com, or customers can call 301-206-8100. The public is also invited to a variety of project- and

policy-related public hearings and informational workshops throughout the year. Commissioners' meetings are generally held on the third Wednesday of every month, from 8:30 am to 5 pm. Public hearings on our proposed capital improvements program are held in September, in Rockville and in Largo. Budget hearings are usually scheduled to begin in February.

WSSC provides speakers and tours for schools, homeowner associations and service groups. We also organize numerous public events each April as a month-long celebration of Earth Day.

To request a speaker, a tour, or to obtain times and locations of the public hearings and events, please visit our website or call 301-206-8100.



This report contains very important information about your drinking water. Please translate it, or speak with someone who understands it. Este informe contiene información importante acerca de su agua potable. Haga que alguien lo traduzca para usted, o hable con alguien que lo entienda. 此报告包含有关您的饮用水的重要信息。请人帮您翻译出来,或请看懂此 报告的人将内容说给您听。 Tài liệu này có tin tức quan trọng về nước uống của quý vị. Hãy nhờ người dịch cho quý vị, hoặc hỏi người nào hiểu tài liệu này.

Water Quality Data

DETECTED REG	ULAIED	JLATED CONTAMINANT							
SUBSTANCES	UNITS	PATU LEVEL	XENT RANGE	POTOMAC		MCL	MCLG	VIOLA- TION?	MAJOR SOURCE IN DRINKING WATER
		FOUND*		FOUND*					
PHYSICAL									
pH Turbidity	S.U. NTU	7.4 0.08 '	7.2 - 8.0 n/a	7.4 0.09 '	7.2 - 7.6 n/a	n/a TT-l NTU	n/a n/a	NO NO	Soil runoff
	% <0.3 NTU	100	n/a	100	n/a	TT=95% min	n/a	NO	
METALS	ug/I	n/d	n/d - <2	n/d	$n/d = \leq 2$	6	6	NO	Fire retardants: ceramics: electronics:
Anumony	µg/L	n/d	n/u - ~2	m/d	11/4 - ~2	0	U	NO	solder
Barium	μg/L		24 16 - 34		34 20 - 44	2000	2000	NO	Discharge of drilling wastes & metal refineries; erosion of natural deposits
Chromium	μg/L	<2	n/d - 3		2 n/d - 5	100	100	NO	Discharge from steel & pulp mills; erosion of natural deposits
Mercury	μg/L	n/d	n/d - 0.4	n/d	n/d - 0.2	2	2	NO	Erosion of natural deposits; discharge from refineries and factories; runoff from
Selenium	µg/L	n/d	n/d - <2	n/d	n/d - <2	50	50	NO	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
INORGANICS									
Residual Chlorine	mg/L	1.6	1.1 - 2.1	2.1	1.3 - 4.2	11=>0.2	n/a	NO	Water additive used to control microbes
Fluoride	mg/L	1.04	0.52 - 1.40	0.91	0.10 - 1.10	4	4	NO	Water additive which promotes strong teeth; erosion of natural deposits
Nitrate	mg/L	1.18	0.27 - 2.03	1.31	<0.2 - 3.06	10	10	NO	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural dependent
Nitrite	mg/L	n/d	n/d - <0.02	n/d	n/d - <0.02	1	1	NO	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
DISINFECTION BY	PRODUC	T (DBP) PR	ECURSORS						
Total Organic Carbon	n/a	met TT requirements		met TT requirements		TT	n/a	NO	Naturally present in the environment
Di(2-ethylhexyl)	NIHEIIC	ORGANIC	CHEMICAI	2.5					Discharge from rubber & chemical
phthalate	μg/L	n/d	n/d - <2	n/d	n/d - <2	6	0	NO	factories
VOLATILE ORGA	NIC CHE	MICALS							
1,2,4-Trichlorobenzene	μg/L	n/d	n/d - <0.5	n/d	n/d	70	70	NO	Discharge from textile-finishing factories
Carbon tetrachloride	μg/L	n/d	n/d - <0.5	n/d	n/d	5	0	NO	industrial activities
RADIONUCLIDES							0	NG	
Gross Alpha	pC1/L	1	<1 - 2	2	<1 - 2	15	0	NO	Erosion of natural deposits
Gross Beta Radium 228	pCi/L pCi/L	4 <1.5	<3 - 5 <0.8 - <1.7	4 <1.5	3 - 5 <0.9 - <1.7	50 ⁻² n/a	n/a n/a	NO NO	Decay of natural and man-made deposits Erosion of natural deposits
SUBSTANCES	UNITS	CUSTOMER TAP ³			AL	MCLG	VIOLA- TION?	MAJOR SOURCE IN DRINKING WATER	
		90 th PERCENTILE ⁴		# of SITES ABOVE AL					
METALS									
Copper	μg/L	123		0 sample		1300	1300	NO	Corrosion of household plumbing systems; erosion of natural deposits
Lead	μg/L	2.1		1 sample		15	0	NO	Corrosion of household plumbing systems
								VIOLA-	MAJOR SOURCE IN
SUBSTANCES		LEVEL FOUND *		RANGE		(or MRDL)	MCLG (or MRDLG)	TION?	DRINKING WATER
BACTERIOLOGICAL									
Total Coliform	% Positive per month	0.	34	0.00	- 1.98	5	0	NO	Naturally present in the environment
F. coli	% Positive	0	04	0.00	- 0.51	n/a	n/a	NO	Human and animal fecal waste
No. of <i>E. coli</i> Positive	C	0.		0.00	0.01			No	
Repeat Samples	Count		0	r	ı/a	0	0	NO	
DISINFECTANT &	DBPS								
Residual Chlorine	mg/L	1.33 5		n/d - 4.90		4 6	4	NO	Water additive used to control microbes
Haloacetic Acids	μg/L	38.7 ⁷		2.71 - 75.3 ++++		60 ⁸	n/a	NO	By-product of drinking water chlorination
Trihalomethanes, Total	μg/L	43.8 ⁷		8.44 - 115 +++++		80 ⁸	n/a	NO	By-product of drinking water chlorination
DETECTED UNRE	GULATEI	<u>O CONTAMINANTS</u>							
SUBSTANCES	UNITS	DATINENT		POTOMAG				VIOLA-	MAJOR SOURCE IN
SOBSHANCES		LEVEL FOUND*	RANGE	FOUND*	RANGE	(or TT)	MCLG	- HON?	DRINKING WATER
Cryntosporidium ++	Occyst/I	n/d	n/d	0.008	n/d = 0.1	n/a	n/a	NO	
Perchlorate +++	ug/L	n/a	n/a	0.55	0.28 - 0.95	n/a	n/a	NO	
Bromomethane	μg/L	n/d	n/d - <0.5	<0.5	n/d - <0.5	n/a	n/a	NO	
Chloromethane	µg/L	n/d	n/d - <0.5	n/d	n/d	n/a	n/a	NO	

++ - Source Water, see "Information on Cryptosporidium monitoring and Health Effects"

+++ - see "Note on special perchlorate monitoring study"

++++ - Previously reported as "7.85 - 75.1", amended to include inadvertently excluded special monitoring data.

+++++ - Previously reported as "8.44 - 113", amended to include inadvertently excluded special monitoring data.

TERMS DEFINED

- 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.
- TT Treatment Technique. A required process intended to reduce the level of a contaminant in drinking water.
- AL Action level. The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- 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 contamination.
- Turbidity a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.
- S.U. Standard Unit
- NTU Nephelometric Turbidity Unit

- mg/L milligrams per liter, equal to parts per million (ppm). The equivalent of one minute in 2 Years or one penny in \$10,000.
- $\mu g/L$ micrograms per liter, equal to parts per billion (ppb). The equivalent of one minute in 2,000 years or one penny in \$10 million.
- pCi/L picocuries per liter (a measure of radiation)
- n/d not detected
- n/a not applicable
- = equals
- < less than
- * Based on yearly average except as noted.
- 1 Hourly maximum
- 2 EPA considers 50 pCi/L to be the level of concern for beta particles.
- 3 Most recent sampling, between July and December 2005
- 4 If more than 10% of qualified customer taps exceed the action level, water system is required to take additional steps to control corrosiveness of their water.
- 5 Running annual average
- 6 MRDL; based on running annual average.
- 7 Highest running annual average
- 8 Based on running annual average



WATER IS TREATED TO EPA STANDARDS

o ensure that our water is safe to drink, we treat and disinfect it to meet standards set by the U.S. EPA. WSSC drinking water undergoes extensive purification and treatment after it arrives at the plant and before it is sent to the distribution system for delivery to half a million homes and businesses. Our water treatment process includes: coagulation and flocculation (to make small particles and microorganisms in the raw source water to adhere to each other); sedimentation (to remove most of those particles); filtration (to remove nearly all the remaining particles); chlorination (for disinfection); lime addition (to minimize the potential for dissolving lead solder used in older homes); and fluoridation (to prevent tooth decay). Orthophosphate is also added to help minimize copper pipe pinhole leaks in home plumbing.

AN INFORMATIONAL STATEMENT FROM EPA ON LEAD

f 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. WSSC 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 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at http://www.epa.gov/safewater/lead.

INFORMATION ON CRYPTOSPORIDIUM MONITORING AND HEALTH EFFECTS

ryptosporidium is a microbial pathogen found in surface water throughout the U.S. Although filtration removes Cryptosporidium, the most commonly-used filtration methods cannot guarantee 100 percent removal. EPA only requires monitoring of our source water for Cryptosporidium because the approved test method is not sensitive enough to reliably detect the minimal remaining organisms (if any) in the treated water. Cryptosporidium was not detected in our required monitoring in 2007 for our Patuxent source water, but our required monitoring for our Potomac source water indicated the presence of these organisms in 2 of the 24 samples collected. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Based on our Cryptosporidium monitoring results to date for the Potomac source water, our existing treatment process is anticipated to meet pending EPA requirements for treatment of Cryptosporidium; nevertheless, as a precaution, we are proceeding with the installation of UV disinfection to provide an extra barrier of protection against Cryptosporidium.

Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water. Ingestion of Cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people, infants and small children, and the elderly are at greater risk of developing lifethreatening illness. As stated above, our existing treatment is anticipated to be adequate for treatment of Cryptosporidium, and the addition of UV disinfection will soon provide an additional safeguard. Nevertheless, we encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection.

WHERE DOES MY WATER COME FROM?

wo rivers, the Patuxent and Potomac, are the sources of all the water we filter and process. The source water treated at the Patuxent Water Filtration Plant (WFP) is held in two reservoirs – Triadelphia and Rocky Gorge – and is pumped to the plant. The Potomac WFP draws water directly from the Potomac River. The map shows the approximate service areas of both plants. As indicated, some areas receive blended water, processed at both the Patuxent and Potomac WFPs.

IS MY WATER HARD OR SOFT?



otomac water tends to be hard (120-130 milligrams per liter). Patuxent water is soft (60-65 milligrams per liter). (Hard water contains more dissolved calcium and magnesium.)

NOTE ON SPECIAL PERCHLORATE MONITORING STUDY

erchlorate is a naturally occurring as well as a manmade compound. Its presence in drinking water is currently unregulated and utilities are not required to monitor for it. However, WSSC is voluntarily participating in a non-regulatory perchlorate sampling project for the Potomac River funded by the U.S. Environmental Protection Agency (EPA). We are participating because of a concern that high enough exposure to perchlorate can impact thyroid functions, and through our participation we hope to confirm that perchlorate presence in our water, if any, is well below the 24.5 part per billion (ppb) level considered by EPA as a threshold for health concerns. The samples collected in 2007 from our Potomac water filtration plant source and treated water show trace occurrence of perchlorate at levels that are far below the EPA threshold level. Furthermore, the treated water perchlorate levels in the 2007 samples were also below the much more stringent 1 ppb advisory level currently recommended by the MDE. We thus consider the occurrence of perchlorate at levels observed in our Potomac plant water to be insignificant and not a health concern. If you have special health concerns, you may want to get additional information from the EPA at http://www.epa.gov/ safewater/ccl/perchlorate/perchlorate.html or contact the EPA's Safe Drinking Water Hotline at 1-800-426-4791.





STARTING AT THE SOURCE

n 2002 and 2004, WSSC conducted source water assessments in cooperation with the Maryland Department of the Environment (MDE), evaluating the vulnerability of our two drinking water sources (Potomac and Patuxent) to contamination. The reports are available for public review at the main branches of the Montgomery and Prince George's County Libraries, or by contacting MDE at 410-537-3714.

Source water from rivers generally picks up contaminants before it reaches water treatment plants. As water travels over the land surface or through the ground on its way to the rivers, it dissolves naturally occurring minerals and vegetation/organic matter. It can also pick up pesticides and herbicides from agricultural land, golf courses, or residential use. Sewage treatment plants and septic systems, as well as animal waste from pets, agricultural livestock and wildlife, may be sources of microbial contaminants. The salts and byproducts from winter road treatments may also be present in source water.

Potential sources of contamination in the Potomac River watershed include urban and agricultural land uses, and potential spills from highways and petroleum pipelines. Contaminants of particular concern include natural organic matter and disinfection by-product (DBP) precursors, pathogenic microorganisms (Cryptosporidium, Giardia, fecal coliform), taste and odor causing compounds, ammonia, sediment/turbidity, and algae.

Potential sources of contamination in the Patuxent Reservoirs watershed include transportation, petroleum pipelines, agriculture, onsite septic systems, developed areas, and minor permitted discharges. Phosphorus is the primary contaminant of concern for this watershed, while turbidity, DBP precursors, iron, manganese, and protozoa are also concerns.

WSSC works with local agencies to protect Potomac and Patuxent drinking water supplies, playing key roles in the Potomac Drinking Water Source Protection Partnership and the Patuxent Reservoirs Watershed Protection Group. Partnering with customers and neighbors is crucial to our efforts. If you are interested in learning more about how you can protect your drinking water supplies, please contact our environmental senior scientist at 301-206-8052.

> Washington Suburban Sanitary Commission

14501 Sweitzer Lane, Laurel, MD 20707 301-206-WSSC (9772) • www.wsscwater.com