DEPARTMENT OF THE NAVY
NAVAL SUPPORT ACTIVITY WASHINGTON
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WASHINGTON NAVY YARD, DC 20374-5034

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MEMORANDUM

From: Commanding Officer, Naval Support Activity Washington
To: Washington Navy Yard Tenant Commands and Residents

Subj: 2019 ANNUAL DRINKING WATER QUALITY REPORT SUMMARIZING 2018 RESULTS, WASHINGTON NAVY YARD, PUBLIC WATER SYSTEM #DC0000003

Encl: (1) 2019 Annual Drinking Water Quality Report Summarizing 2018 Results for the Washington Navy Yard

1. In accordance with federal drinking water regulations, Naval Support Activity (NSA) Washington is providing Washington Navy Yard (WNY) Tenant Commands and Residents with the 2019 Annual Drinking Water Quality Report for the Washington Navy Yard and the 2019 Drinking Water Quality Report Summarizing 2018 Results from the District of Columbia Water and Sewer Authority (DC Water).

2. This routine report is required by law, and is being provided to ensure that you have accurate information regarding the quality of WNY drinking water. Please note that this is not being sent in response to a health threat, but because of a requirement of the law. The water being served at the Washington Navy Yard met all federal Safe Drinking Water Act standards in 2018 and continues to meet those standards.

3. Washington Navy Yard's drinking water originates from the Potomac River and is treated by the U.S. Army Corps of Engineers, Washington Aqueduct (WA). The WA uses chloramines as a disinfectant. DC Water purchases drinking water from the WA and distributes it to residences and businesses in the District, to include the Washington Navy Yard.

4. NAVFAC Washington is required to monitor the drinking water distribution system for specific contaminants at the Washington Navy Yard. The results of routine monitoring are an indicator of whether or not Washington Navy Yard's drinking water met Safe Drinking Water Act standards.

5. As required, enclosure (1) contains drinking water monitoring results conducted at the Washington Navy Yard in Calendar Year (CY) 2018. This enclosure also provides important information about the following topics:

a. Drinking Water Quality Monitoring Results for the Washington Navy Yard conducted in CY 2018;

b. Important health effects information;

c. Definitions of key terms, such as maximum contaminant level;

d. Contaminants reasonably expected to be found in drinking water;

e. Sources of drinking water and contaminants that may be present in source waters;

f. Environmental Protection Agency (EPA) and Food and Drug Administration regulations;

g. Non-English speaking population information; and

h. EPA Safe Drinking Water Hotline telephone number.

6. The 2019 Annual Drinking Water Quality Report Summarizing 2018 Results for the Washington Navy Yard contains no notice of violation issued by EPA Region III to the Washington Navy Yard.

7. If you have any questions with regard to the quality of the Washington Navy Yard's drinking water, contact PWD Washington's Drinking Water Program Manager, William Cruz at (202) 685-8007 or by email at William.Cruz2@navy.mil.

G. A. DICKS

2019 ANNUAL DRINKING WATER QUALITY REPORT

SUMMARIZING 2018 RESULTS FOR THE WASHINGTON NAVY YARD (WNY)

For questions please contact:
PWD Washington Drinking Water Manager - 202-685-8007
Installation Environmental Program Director - 202-433-0415

Información en Español

Este reporte contiene información importante sobre el agua potable que usted consume. Para obtener una traducción del reporte, por favor comuníquese con la Oficina de Asuntos Públicos al (202) 433-2669. Si necesita la asistencia de un traductor con respecto a información sobre DC Water, favor de contactar DC Water Asistencia al Cliente al (202) 354-3600 (8am a 5pm, Lunes a Viernes).

What is a Consumer Confidence Report?

A Consumer Confidence Report (CCR), also known as a safe drinking water or water quality report, is an annual report summarizing the drinking water quality for a community public water system. Each year, the Washington Navy Yard must prepare and distribute a CCR to its tenants and send a copy of the CCR to the US Environmental Protection Agency, Region 3. The system must also provide a signed certification regarding the contents of the report and its distribution.

The CCR is a great opportunity for the Public Work Department (PWD) Washington to describe for its water consumers what is required to provide WNY with drinking water. Information such as water sample results, how we handled any problems that might have occurred, and future improvements or requirements associated with operating the system, is included within the CCR.

Sources of Drinking Water

Drinking water for the District of Columbia comes from the Potomac River, a "surface water" supply. The U.S. Army Corps of Engineers, Washington Aqueduct filters and disinfects the water to meet safe drinking water standards. 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. After treatment, the District of Columbia Water and Sewer Authority (DC Water) purchases the water from them before selling it to Public Work Department (PWD) – Washington who distributes this drinking water to residential and non-residential buildings on the Washington Navy Yard.

DC Water conducts water quality monitoring throughout the city, ensuring that the water delivered throughout the District meets Federal drinking water quality standards. For more information on DC Water, assessment techniques and reports, susceptibility to potential sources of contamination, as well as a copy of the 2018 Consumer Confidence Report from DC Water, please visit their website at https://www.dcwater.com/waterquality. For more information on the drinking water treatment process, visit the Aqueduct's website at: http://www.nab.usace.army.mil.

Generally, sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source waters include:

- **Microbial Contaminants,** such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- **Pesticides and Herbicides,** which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- **Inorganic Contaminants**, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, or farming.
- **Organic Chemical Contaminants,** including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- **Radioactive Contaminants,** which can be naturally-occurring or be the result of oil and gas production and mining activities.

PWD Washington would notify customers immediately if source water contamination will result in drinking water that is unsafe for consumption and use.

If you have any questions with regard to the quality of the Washington Navy Yard's drinking water, contact PWD Washington's Drinking Water Program Manager, at (202) 685-4191 or the Installation Environmental Program Director at (202) 433-0415.

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 EPA and 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.

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 (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

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's Safe Drinking Water Hotline (800-426-4791).

Microbial and Inorganic Contaminants That You Should Know About

Cryptosporidium **-** The Washington Aqueduct monitors for *Cryptosporidium* in the Potomac River monthly. *Cryptosporidium* is a microbial pathogen found in most surface water in the U.S. Cryptosporidium was monitored in the source water monthly in 2017. Cryptosporidium oocysts were detected in six samples collected at the Little Falls and/or Great Falls Intakes in January, February, May, and October 2017 with concentrations ranging from 0.093 to 0.279 oocysts/L.

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. NAVFAC Washington 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 water service lines and home plumbing. WNY 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. WNY is required to test for lead every three years and the last testing period was in 2016. WNY met EPA standards for lead during that period (see Table 1).

If you are concerned about lead in WNY water, please contact Public Works Department (PWD) Washington Drinking Water Program Manager, at 202-433-4191. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at 1-800-426-4791 or at http://water.epa.gov/drink/info/lead/index.cfm.

Total Coliforms and E. Coli **-** Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. If coliforms are found in our water distribution system, PWD Washington would need to look for potential problems in the water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments. Coliforms were not found in our distribution system during 2018.

Changes to the Total Coliform Rule

This Consumer Confidence Report (CCR) reflects changes in drinking water regulatory requirements from 2016. All water systems were required to comply with the Total Coliform Rule from 1989 to March 31, 2016, and began compliance with a new rule, the Revised Total Coliform Rule on April 1, 2016. The new rule maintains the purpose to protect public health by ensuring the integrity of the drinking water distribution system and monitoring for the presence of microbials (i.e., total coliform and E.coli bacteria). The US Environmental Protection Agency (EPA) anticipates greater public health protection under the new rule, as it requires water systems that are vulnerable to microbial contamination to identify and fix problems. As a result, under the new rule there is no longer a monthly maximum contaminant level violation for multiple total coliform detections. Instead, the new rule requires water systems that exceed a specified frequency of total coliform occurrences to conduct a Level 1 or Level 2 assessment to determine if any sanitary defects exist. If found, these must be corrected.

What is a Level 1 and Level 2 Assessment?

A **Level 1 Assessment** is a basic examination of the source water, treatment, distribution system and relevant operational practices. It is intended as a self-assessment and will be performed by a responsible party of the water system in most cases. However, systems should consult additional experts if they think that they need assistance to properly conduct the assessment. A **Level 2 Assessment** is a more detailed examination of the system, its operational practices, and monitoring program and results. The elements of a Level 2 assessment are the same as those of a Level 1 assessment, but each element is investigated in greater detail. This is because the incidents that trigger a Level 2 assessment are of a more critical nature and may result in direct public health impact. A Level 2 assessment will likely include field investigations, additional sampling and additional inspections of facilities beyond those performed in a Level 1 assessment. It may involve the engagement of additional parties and expertise. Generally, the Level 2 assessment will not be conducted by the water system. It will mostly likely be conducted by the drinking water primacy agency or by a party approved by the drinking water primacy agency.

Notices of Violation

The WNY water system did not violate any National Primary Drinking Water Regulations requirements in 2018 and received no Notices of Violation. During 2017 we were required to conduct two Level 1 assessments for elevated total coliforms. Both Level 1 assessments were completed. Corrective actions included flushing of the main lines as well as flushing of the lines in the buildings affected.

Maintaining High Water Quality in Residential and Non-residential Buildings

What is the difference between building pipes and distribution mains?

Building pipes and distribution mains both move water. The difference is how fast the water is moving. Distribution mains typically have high water velocities that keep water fresh because of the continuous demand on the system. However, once the water leaves the main and enters a customer's service line, the water only turns over as fast as consumers use it. Water in buildings have a tendency to stagnate during off-work hours or vacation times.

Buildings also tend to keep water warmer, which can deteriorate water quality and at times create taste and odor issues.

What can I do as a building manager to improve water quality?

As a building manager, you play a larger role in enhancing the water quality within the building. Here are a few actions managers can take to prevent water quality degradation and even contamination.

- **Flush Lines After Extended Periods of Stagnation** - Often buildings will shut down over weekends and holidays. Following extended days of water stagnation, flush a tap at the farthest end of the building from where the water originates on each floor for 15 minutes. In addition, flush each frequently used fountain/tap for 2 minutes before use.

- **Maintain Water Fountains** - Many fountains have filters that remove chlorine taste, reduce byproducts of chlorine, and reduce sediments and particulate metals such as lead, copper, and iron which can leach from in-house plumbing. However, without routine maintenance and changing of these filters as recommended by the manufacturer, water quality will diminish

considerably. Carbon filters that are not changed will eventually accumulate enough nutrients for bacteria to grow. As bacteria activity increases, their byproducts can reduce water quality. Another common water filter is a sediment filter. If these filters are not routinely changed in accordance with the manufacturer's recommendation, they may introduce contaminants into the water.

- **Clean Strainers/ Aerators** - Periodically remove and clean the strainer/ aerator device on faucets in the building to remove debris.

- **Backflow Devices Must Be Tested** - Many commercial buildings have heating and cooling recirculation systems and other industrial equipment that utilize public water as the main component. The water is sometimes heated during the circulation process, which can cause an increase in bacterial levels within the loop. In addition, some of these systems inject chemicals in water used by the equipment. Backflow prevention devices are placed on the inlet of the industrial equipment to prevent industrial water from getting back into the cold, public drinking water lines. At times, these devices can become clogged with debris, or their parts can wear over time and create the potential for recirculated water to backflow into the potable water. These devices should be tested at least annually by a certified backflow tester to ensure they are working properly. Some devices require testing every six months.

- **Keep Water Coolers Clean** - Many buildings purchase bottled water coolers for drinking water purposes. Unlike tap water, the water provided in these coolers contains no disinfectant and therefore provides the potential for bacterial growth in the cooler dispenser. Coolers must be routinely cleaned as prescribed by the manufacturer.

Water Conservation. For information on what you can do to conserve water, please visit www.epa.gov/watersense.

Washington Aqueduct Water Quality

The quality of the water being produced at Washington Aqueduct is excellent. It meets or exceeds all United States Environmental Protection Agency (US EPA) standards and requirements.

Recent improvements in coagulation and filtration have enabled Washington Aqueduct to keep its filtered water turbidity at less than 0.1 NTU (Nephelometric Turbidity Unit). This is much lower than the US EPA standard of 0.3 NTU. This extremely low turbidity provides excellent barrier against pathogens such as Cryptosporidium and Giardia.

Their disinfection system is designed to keep the water safe in wholesale customers' distribution systems all the way to the consumer. The conversion to chloramines as a secondary disinfectant in the fall of 2000 has worked extremely well in controlling coliform bacteria in the distribution system as well as dramatically lowering the levels of disinfection byproducts. US EPA recently required that concentrations of these byproducts, which are compounds known as Trihalomethanes and Haloacetic acids, be reduced. Washington Aqueduct is in full compliance with those new lower limits.

Each year the Washington Aqueduct laboratory conducts more than 65,000 individual tests on water samples. The tests look for bacterial, as well as organic and inorganic compounds and metals. The treatment plant has state of the art equipment and are certified by US EPA for the tests the perform. Hundreds of elements and compounds are addressed. The goal of this is to know what's in the drinking water and to make sure that the treatment operations are operating to properly protect the consumer.

Potential contaminants of interest such as arsenic and lead are routinely tested for.

Washington Aqueduct. For information about your drinking water supplier, please visit www.nab.usace.army.mil/Missions/Washington-Aqueduct.

Water Treatment Process

Raw (untreated) water contains suspended solids, sediment, bacteria, and microorganisms that must be removed to produce drinking water. These are removed by full conventional treatment, described below:

- **Screening -** On its way from the river to the Dalecarlia and McMillan treatment plants, raw water passes through a series of screens designed to remove debris such as twigs and leaves.
- **Pre-sedimentation** – While the water moves slowly through Dalecarlia Reservoir, much of the sand and silt settles to the bottom.
- **Coagulation -** A coagulant, aluminum sulfate (alum), is added to the water as it flows to sedimentation basins. Coagulants aid in the removal of suspended particles by causing them to consolidate and settle. Alum contains positively charged atoms called ions which attract the negatively charged particles suspended in water causing them to gather into clumps of particles heavy enough to settle.
- **Flocculation** – The water is gently stirred with large paddles to distribute the coagulant; this causes particles to combine and grow large and heavy enough to settle. This process takes approximately 25 minutes.
- **Sedimentation** – The water flows into quiet sedimentation basins where the flocculated particles settle to the bottom. After about four hours, approximately 85 percent of the suspended material settles.
- **Filtration** – Water at the top of the basins flows to large gravity filters, where the water flows down through filter media consisting of layers of small pieces of hard coal (anthracite), sand, and gravel placed in the bottom of deep, concrete-walled boxes. Filtered water passes through to a collecting system underneath.
- **Disinfection** – Chlorine is added with precision equipment to kill pathogenic microscopic life such as bacteria or viruses. Ammonia is then added. The chlorine and ammonia combine to form chloramine compounds. The concentration of chloramines in the water is closely monitored from the time it is added at the treatment plants to points near the furthest reaches of the distribution systems. Disinfection is considered by many to be one of the most important scientific advances of the 20th century.

Fluoride, in the form of hydrofluorosilicic acid, is added to reduce tooth decay; this is especially beneficial for children. Orthophosphate is added to control corrosion in pipes, service lines, and household plumbing throughout the distribution system. It works by building up a thin film of insoluble material in lead, copper, and iron pipes and fixtures. This thin film acts a barrier to prevent leaching of metals into the water. Calcium hydroxide (lime) is also added to adjust the pH of the water to ensure optimal performance of the orthophosphate. Powdered activated carbon is occasionally used for taste and odor control. After the water has completed its path through the treatment process, it is referred to as finished or potable water. Most people simply call it drinking water.

Water Treatment Process. For information about your drinking water treatment process, please visit www.nab.usace.army.mil/Missions/Washington-Aqueduct/Treatment-Process.

Routine Sampling and Monitoring Results

Public Works Department – Environmental (PWD-E) conducts routine sampling and monitoring activities at the Washington Navy Yard (WNY). A summary of these monitoring results is contained in the following table.

Microbial Indicators							
	Units	EPA Limits		Washington Navy Yard Drinking Water			Description / Typical Sources of Contaminants
		MCLG	MCL or TT	Highest	Range	Violation	
Total Coliform Bacteria	Number Positive Samples	0	1	0	0	No	Naturally present in the environment
E. coli Bacteria	Number Positive Samples	0	0	0	0	No	Human and animal fecal waste

Disinfectants							
	Units	EPA Limits		Washington Navy Yard Drinking Water			Description / Typical Sources of Contaminants
		MRDLG (annual average)	MRDL (annual average)	Highest running annual average	Range of single site results	Violation	
Chlorine	ppm	4	4	2.8	0.11 - 4.30	No	Water additive that protects against microbiological contamination. Chlorine is combined with ammonia to form chloramine

Disinfection Byproducts							
	Units	EPA Limits		Washington Navy Yard Drinking Water			Description / Typical Sources of Contaminants
		MCLG	MCL or TT	Highest locational running annual average	Range of single site results	Violation	
Total Trihalomethanes	ppb	N/A	80	49	18 to 63	No	Trihalomethanes are a byproduct of drinking water
Haloacetic Acids	ppb	N/A	60	43	18 to 57	No	Haloacetic acids are a byproduct of drinking water
Disinfection byproducts are the result of providing continuous disinfection of your drinking water and form when disinfectants combine with organic matter naturally occurring in the source water. Disinfection byproducts are grouped into two categories, Total Trihalomethanes (TTHM) and Haloacetic Acids. USEPA set standards for controlling the levels of disinfectants and disinfectant byproducts in drinking water, including both TTHMs and HAAs.							

Nitrate and Nitrite							
	Units	EPA Limits		Washington Navy Yard Drinking Water			Description / Typical Sources of Contaminants
		MCLG	MCL or TT	Highest	Range	Violation	
Nitrate	ppm	10	10	2.1	2.0 - 2.1	No	Runoff from fertilizer use; erosion from natural deposits
Nitrite	ppm	1	1	< 0.20	< 0.20	No	Runoff from fertilizer use; erosion from natural deposits
Nitrite results are from the 2015 monitoring year, which is the most recent sampling completed in accordance with Federal regulations.							

Lead and Copper (at the consumer's Tap)							
	Units	EPA Limits		Washington Navy Yard Drinking Water			Description / Typical Sources of Contaminants
		MCLG	Action Level (AL)	Samples Above AL	90th Percentile	Violation	
Lead							
June-September 2017 Monitoring Period	ppb	0	15	0	< 0.002	No	Corrosion of household plumbing systems; erosion of natural deposits
Copper							
June-September 2017 Monitoring Period	ppm	1.3	1.3	0	0.150	No	Corrosion of household plumbing systems; erosion of natural deposits

Tap at the Yard

The Tap at the Yard campaign seeks to increase the consumption of tap water for drinking purposes while decreasing the consumption of bottled water at Washington Navy Yard (WNY). This effort will increase water flow rates through the distribution system, reducing maintenance efforts associate to system flushing and it will reduce the generation of plastic waste, decreasing the environmental impact at base.

In addition to water quality improvements, the campaign seeks to create consciousness of the large amount of waste generated at the installation every year, due to the consumption of bottled and canned drinks.

For additional information please contact: WNY Drinking Water Manager at 202-685-8007.

Abbreviations and Definitions

AL- Action Level. The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a system must follow.

Level 1 Assessment – A basic examination of the source water, treatment, distribution system and relevant operational practices.

Level 2 Assessment – A detailed examination of the water system, its operational practices and monitoring program and results. The elements of a Level 2 assessment are the same as those of a Level 1 assessment, but each element is investigated in greater detail.

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 -Maximum Contaminant Level Goal. The level of a contaminant in drinking water below which there is no known or expected risk to health.

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

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

ND- Not Detected

ppb - parts per billion

ppm - parts per million

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

Public Participation

PWD Washington welcomes your feedback, questions, and comments. Please contact (202) 685-8007 or (202) 433-0415 at any time to discuss your concerns. The DC Water Board of Directors conducts regularly scheduled board meetings that are open to the public, generally on the first Thursday of each month, at 9:30 a.m. at the Blue Plains Advanced Wastewater Treatment Plant, 5000 Overlook Avenue, SW, Washington, DC 20032. Please visit dcwater.com or contact the Office of the Board Secretary at (202) 787-2330 to confirm a meeting time and location.